LONGHORN ARMY AMMUNITION PLANT KARNACK, TEXAS

ADMINISTRATIVE RECORD

Volume 10

2018

Bate Stamp Numbers

00848516 - 00850365

Prepared for

Department of the Army
Longhorn Army Ammunition Plant

1976 – 2018

LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS
ADMINISTRATIVE RECORD – CHRONOLOGICAL INDEX

VOLUME 10

2018

A. Title: Report (cont'd) – Quarterly Evaluation Report, 1st Quarter (January-March) 2017, Groundwater Treatment Plant, Longhorn Army Ammunition Plant, Karnack, Texas
Author(s): AECOM Technical Services
Recipient: U.S. Army Corps of Engineers
Date: August 2017
Bate Stamp: 00848516 – 00850365

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032517\8M418525.D Vial: 2
Acq On : 25 Mar 2017 12:05 Operator: JDS
Sample : WG607680-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 08:26:28 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	655718	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.80	117	514741	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.82	152	284673	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.89	111	179668	24.1595	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.64%			
43) 1,2-Dichloroethane-d4	10.53	65	149066	23.1302	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 92.52%			
58) Toluene-d8	12.91	98	643825	24.8650	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.44%			
80) p-Bromofluorobenzene	16.30	95	251184	23.3174	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.28%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.34	85	558639	54.3849	ug/L	100
3) Chloromethane	3.82	50	674645	54.1975	ug/L	99
4) Vinyl Chloride	4.05	62	675505	58.0369	ug/L	99
5) 1,3-Butadiene	4.10	54	302101	84.8176	ug/L	99
6) Bromomethane	4.97	94	290430	49.2618	ug/L	100
7) Chloroethane	5.13	64	237410	50.2891	ug/L	100
8) Trichlorofluoromethane	5.61	101	632343	50.2044	ug/L	99
9) Diethyl ether	6.14	59	380274	93.3512	ug/L	99
10) Isoprene	6.18	67	539565	55.4436	ug/L	99
11) Acrolein	6.38	56	23887	45.8603	ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	346068	51.0805	ug/L	99
13) Acetone	6.48	43	36804	46.9341	ug/L	96
14) 1,1-Dichloroethene	6.71	61	478962	50.6637	ug/L	99
15) Tert-Butyl Alcohol	6.81	59	49335	197.6689	ug/L	96
16) Dimethyl Sulfide	6.97	62	343975	51.1871	ug/L	99
17) Iodomethane	7.23	142	259695	33.2024	ug/L	97
18) Methyl acetate	7.24	43	110295	49.1862	ug/L	98
19) Methylene Chloride	7.49	84	350171	48.6439	ug/L	99
20) Carbon Disulfide	7.54	76	1202413	55.8422	ug/L	100
21) Acrylonitrile	7.67	53	56449	51.4667	ug/L	98
22) Methyl Tert Butyl Ether	7.70	73	670041	48.3561	ug/L	100
23) trans-1,2-Dichloroethene	7.94	61	455704	49.7153	ug/L	98
24) n-Hexane	8.01	57	438976	56.5363	ug/L	99
25) Diisopropyl ether	8.35	45	1711945	97.7789	ug/L	99
26) Vinyl Acetate	8.53	43	379094	55.0179	ug/L	99
27) 1,1-Dichloroethane	8.56	63	606216	50.7095	ug/L	100
28) Ethyl-Tert-Butyl ether	8.92	59	1640963	97.8874	ug/L	100
29) 2-Butanone	9.11	43	58721	46.4773	ug/L	99
30) Propionitrile	9.22	54	37424	100.0598	ug/L	100
31) 2,2-Dichloropropane	9.34	77	585918	54.9397	ug/L	100
32) cis-1,2-Dichloroethene	9.40	96	395267	50.8061	ug/L	98
33) Chloroform	9.60	83	649935	46.9071	ug/L	100
35) Bromochloromethane	9.84	130	203882	48.7855	ug/L	98
36) Tetrahydrofuran	9.86	42	81553	101.4262	ug/L	99
38) 1,1,1-Trichloroethane	10.14	97	590575	51.8203	ug/L	100
39) Cyclohexane	10.17	56	531592	53.9746	ug/L	100
40) 1,1-Dichloropropene	10.33	75	502920	51.3840	ug/L	99
41) Tert-Amyl-Methyl ether	10.43	73	1550524	99.1113	ug/L	98
42) Carbon Tetrachloride	10.48	117	550808	54.0167	ug/L	99
45) 1,2-Dichloroethane	10.65	62	384400	49.1394	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M418525.D 8260WTR.M Mon Mar 27 08:26:30 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032517\8M418525.D Vial: 2
Acq On : 25 Mar 2017 12:05 Operator: JDS
Sample : WG607680-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 08:26:28 2017 Quant Results File: 8260WTR.RES

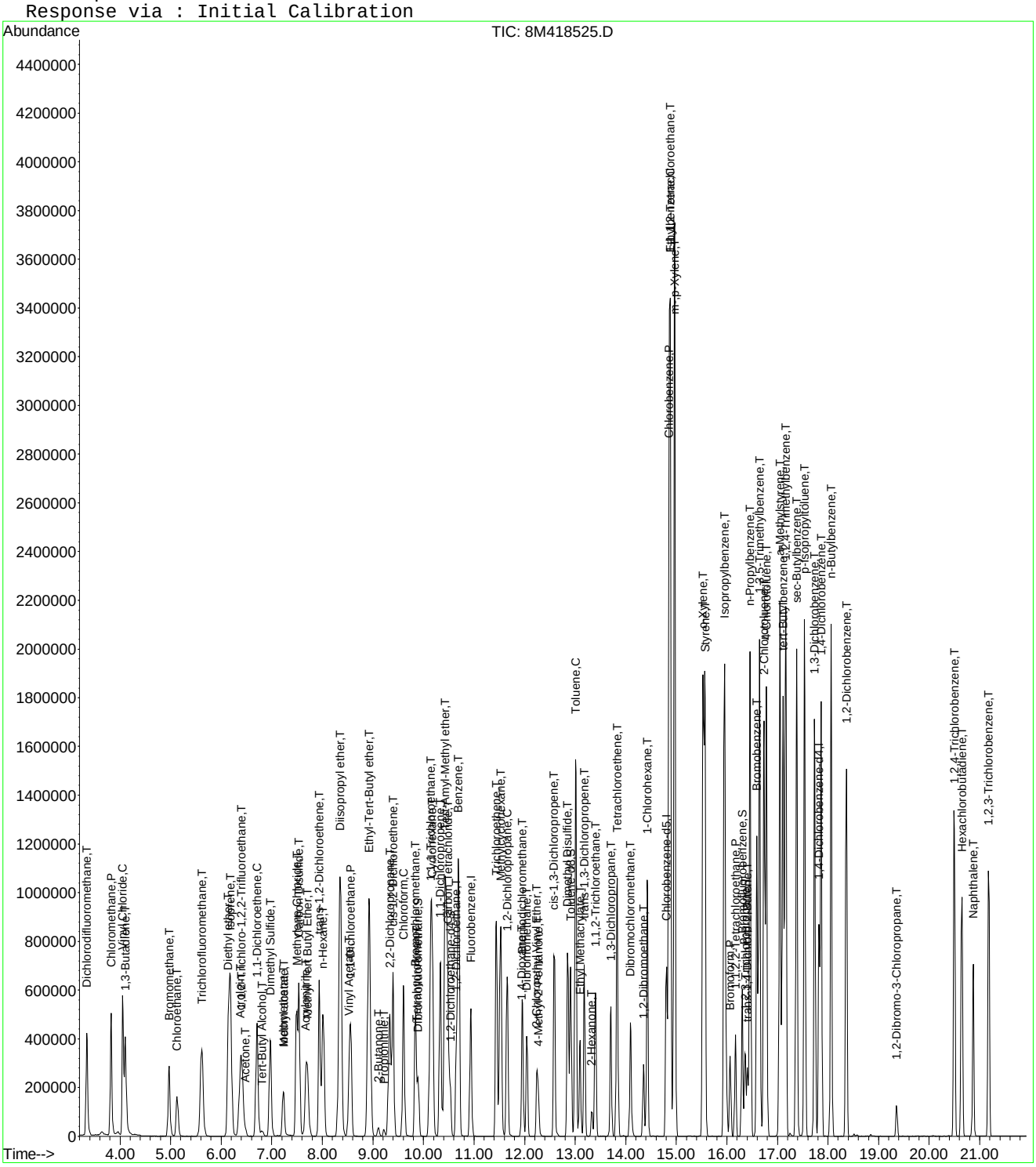
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
46)	Benzene	10.69	78	1441686	51.0810	ug/L		99
47)	Trichloroethene	11.44	130	375144	49.7096	ug/L		99
48)	Methylcyclohexane	11.53	83	605283	53.3762	ug/L		99
49)	1,2-Dichloropropane	11.65	63	330366	50.9094	ug/L		100
50)	Bromodichloromethane	11.95	83	478733	52.1838	ug/L		99
51)	1,4-Dioxane	11.94	88	7413	237.7225	ug/L		93
52)	Dibromomethane	12.04	93	179583	51.6405	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.24	63	139766	47.3653	ug/L		100
54)	4-Methyl-2-Pentanone	12.27	58	57327	45.3935	ug/L		98
55)	cis-1,3-Dichloropropene	12.58	75	550163	51.6669	ug/L		99
56)	Dimethyl Disulfide	12.85	79	308125	49.0733	ug/L		100
59)	Toluene	13.01	91	1574715	51.4353	ug/L		99
60)	Ethyl Methacrylate	13.10	69	305343	51.5793	ug/L		98
62)	trans-1,3-Dichloropropene	13.18	75	459562	50.8900	ug/L		100
63)	1,1,2-Trichloroethane	13.40	97	235975	48.9317	ug/L		99
64)	2-Hexanone	13.33	58	51859	44.8555	ug/L		99
65)	1,3-Dichloropropane	13.71	76	415395	48.1048	ug/L		98
66)	Tetrachloroethene	13.83	164	326911	49.2809	ug/L		99
67)	Dibromochloromethane	14.09	129	318913	48.9111	ug/L		100
68)	1,2-Dibromoethane	14.35	107	242062	48.9193	ug/L		99
69)	1-Chlorohexane	14.42	91	539564	51.7133	ug/L		100
70)	Chlorobenzene	14.86	112	1148674	53.3093	ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.88	131	418499	48.6993	ug/L		100
72)	Ethylbenzene	14.88	106	640821	53.5889	ug/L		97
73)	m-,p-Xylene	14.97	106	1548057	107.9391	ug/L		99
74)	o-Xylene	15.53	106	713955	50.2010	ug/L		100
75)	Styrene	15.57	104	1235438	53.8105	ug/L		98
76)	Bromoform	16.07	173	197605	50.1696	ug/L		100
77)	Isopropylbenzene	15.95	105	1810513	52.6189	ug/L		100
79)	1,1,2,2-Tetrachloroethane	16.17	83	273375	49.2719	ug/L		99
81)	1,2,3-Trichloropropane	16.37	110	73325	46.4208	ug/L	#	28
82)	trans-1,4-Dichloro-2-Buten	16.41	53	69330	53.2727	ug/L	#	17
83)	n-Propylbenzene	16.46	91	2151486	51.3125	ug/L		99
84)	Bromobenzene	16.59	156	454019	48.9255	ug/L		99
85)	1,3,5-Trimethylbenzene	16.65	105	1555141	51.3521	ug/L		100
86)	2-Chlorotoluene	16.74	91	1420643	50.4068	ug/L		95
87)	4-Chlorotoluene	16.78	91	1242217	50.4515	ug/L		100
88)	a-Methylstyrene	17.05	118	904981	53.4565	ug/L		99
89)	tert-Butylbenzene	17.11	134	331501	49.5658	ug/L		98
90)	1,2,4-Trimethylbenzene	17.16	105	1652370	52.4828	ug/L		100
91)	sec-Butylbenzene	17.38	105	1966465	52.3134	ug/L		99
92)	p-Isopropyltoluene	17.53	119	1628501	52.8887	ug/L		99
93)	1,3-Dichlorobenzene	17.73	146	933895	50.4865	ug/L		99
94)	1,4-Dichlorobenzene	17.87	146	909582	48.8204	ug/L		100
95)	n-Butylbenzene	18.06	91	1554903	52.0481	ug/L		99
96)	1,2-Dichlorobenzene	18.36	146	804605	49.9192	ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.35	75	42656	48.9881	ug/L		99
98)	1,2,4-Trichlorobenzene	20.50	180	552777	45.8520	ug/L		100
99)	Hexachlorobutadiene	20.65	225	262464	44.5293	ug/L		99
100)	Naphthalene	20.87	128	721825	45.3331	ug/L		100
101)	1,2,3-Trichlorobenzene	21.17	180	442690	44.4040	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M418525.D 8260WTR.M Mon Mar 27 08:26:30 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032517\8M418525.D Vial: 2
Acq On : 25 Mar 2017 12:05 Operator: JDS
Sample : WG607680-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 8:26 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



8M418525.D 8260WTR.M Mon Mar 27 08:26:31 2017 Page 3

Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 21 Mar 2017 19:11
CCV date: 25 Mar 2017 12:05
CCV Filename: 8M418525.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	821515	10.94	635449	14.81	345493	17.83
CCV	655718	10.94	514741	14.80	284673	17.82

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032517\8M418525.D Vial: 2
Acq On : 25 Mar 2017 12:05 Operator: JDS
Sample : WG607680-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	80	0.00
2	T	Dichlorodifluoromethane	0.3916	0.4260	-8.8	79	0.00
3	P	Chloromethane	0.4746	0.5144	-8.4	88	0.00
4	C	Vinyl Chloride	0.4438	0.5151	-16.1	97	0.00
5	T	1,3-Butadiene	0.1726	0.2304	-33.4#	106	0.00
6	T	Bromomethane	0.2248	0.2215	1.5	79	0.00
7	T	Chloroethane	0.1800	0.1810	-0.6	78	0.00
8	T	Trichlorofluoromethane	0.4802	0.4822	-0.4	78	0.00
9	T	Diethyl ether	0.1553	0.1450	6.7	73	0.00
10	T	Isoprene	0.3710	0.4114	-10.9	89	0.00
11	T	Acrolein	0.0199	0.0182	8.3	71	-0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2583	0.2639	-2.2	78	0.00
13	T	Acetone	0.0299	0.0281	6.2	73	0.00
14	C	1,1-Dichloroethene	0.3604	0.3652	-1.3	80	0.00
15	T	Tert-Butyl Alcohol	0.0095	0.0094	1.3	74	0.00
16	T	Dimethyl Sulfide	0.2562	0.2623	-2.4	82	-0.01
17	T	Iodomethane	0.2687	0.1980	26.3#	53	-0.01
18	T	Methyl acetate	0.0855	0.0841	1.6	80	0.00
19	T	Methylene Chloride	0.2745	0.2670	2.7	77	0.00
20	T	Carbon Disulfide	0.8209	0.9169	-11.7	88	0.00
21	T	Acrylonitrile	0.0418	0.0430	-2.9	75	0.00
22	T	Methyl Tert Butyl Ether	0.5283	0.5109	3.3	73	0.00
23	T	trans-1,2-Dichloroethene	0.3495	0.3475	0.6	80	0.00
24	T	n-Hexane	0.2960	0.3347	-13.1	91	-0.01
25	T	Diisopropyl ether	0.6675	0.6527	2.2	76	0.00
26	T	Vinyl Acetate	0.2627	0.2891	-10.0	91	0.00
27	P	1,1-Dichloroethane	0.4558	0.4622	-1.4	80	0.00
28	T	Ethyl-Tert-Butyl ether	0.6391	0.6256	2.1	75	-0.01
29	T	2-Butanone	0.0482	0.0448	7.0	74	0.00
30	T	Propionitrile	0.0143	0.0143	-0.1	77	0.00
31	T	2,2-Dichloropropane	0.4066	0.4468	-9.9	90	0.00
32	T	cis-1,2-Dichloroethene	0.2966	0.3014	-1.6	80	0.00
33	C	Chloroform	0.5283	0.4956	6.2	79	0.00
34		1-Bromopropane	0.0567	0.0000	100.0#	0#	-9.75#
35	T	Bromochloromethane	0.1593	0.1555	2.4	75	0.00
36	T	Tetrahydrofuran	0.0307	0.0311	-1.4	78	0.00
37	S	Dibromofluoromethane	0.2835	0.2740	3.4	79	0.00
38	T	1,1,1-Trichloroethane	0.4345	0.4503	-3.6	80	0.00
39	T	Cyclohexane	0.3755	0.4053	-7.9	86	0.00
40	T	1,1-Dichloropropene	0.3732	0.3835	-2.8	81	-0.01
41	T	Tert-Amyl-Methyl ether	0.5965	0.5912	0.9	75	0.00
42	T	Carbon Tetrachloride	0.3888	0.4200	-8.0	82	0.00
43	S	1,2-Dichloroethane-d4	0.2457	0.2273	7.5	75	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.61#
45	T	1,2-Dichloroethane	0.2983	0.2931	1.7	77	-0.01
46	T	Benzene	1.0761	1.0993	-2.2	81	-0.01
47	T	Trichloroethene	0.2877	0.2861	0.6	77	0.00
48	T	Methylcyclohexane	0.4324	0.4615	-6.8	87	0.00
49	C	1,2-Dichloropropane	0.2474	0.2519	-1.8	79	0.00
50	T	Bromodichloromethane	0.3498	0.3650	-4.4	79	-0.01
51	T	1,4-Dioxane	0.0012	0.0014	-18.5	82	0.00
52	T	Dibromomethane	0.1326	0.1369	-3.3	76	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1125	0.1066	5.3	76	0.00
54	T	4-Methyl-2-Pentanone	0.0481	0.0437	9.2	71	0.00

(#) = Out of Range
8M418525.D 8260WTR.M Mon Mar 27 08:28:39 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032517\8M418525.D Vial: 2
Acq On : 25 Mar 2017 12:05 Operator: JDS
Sample : WG607680-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4060	0.4195	-3.3	79	-0.01
56	T	Dimethyl Disulfide	0.2197	0.2349	-7.0	85	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	81	0.00
58	S	Toluene-d8	1.2576	1.2508	0.5	83	0.00
59	C	Toluene	1.4869	1.5296	-2.9	82	-0.01
60	T	Ethyl Methacrylate	0.2875	0.2966	-3.2	79	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.40#
62	T	trans-1,3-Dichloropropene	0.4386	0.4464	-1.8	78	0.00
63	T	1,1,2-Trichloroethane	0.2342	0.2292	2.1	76	0.00
64	T	2-Hexanone	0.0561	0.0504	10.3	70	-0.01
65	T	1,3-Dichloropropane	0.4194	0.4035	3.8	76	0.00
66	T	Tetrachloroethene	0.3222	0.3176	1.4	80	0.00
67	T	Dibromochloromethane	0.2861	0.3098	-8.3	78	0.00
68	T	1,2-Dibromoethane	0.2403	0.2351	2.2	76	0.00
69	T	1-Chlorohexane	0.5068	0.5241	-3.4	87	-0.01
70	P	Chlorobenzene	1.0465	1.1158	-6.6	84	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3805	0.4065	-6.8	80	0.00
72	C	Ethylbenzene	0.5808	0.6225	-7.2	80	0.00
73	T	m-,p-Xylene	0.6966	0.7519	-7.9	82	0.00
74	T	o-Xylene	0.6907	0.6935	-0.4	81	0.00
75	T	Styrene	1.1151	1.2001	-7.6	81	0.00
76	P	Bromoform	0.1739	0.1920	-10.4	79	0.00
77	T	Isopropylbenzene	1.6711	1.7587	-5.2	81	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	82	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4873	0.4802	1.5	78	0.00
80	S	p-Bromofluorobenzene	0.9460	0.8824	6.7	81	0.00
81	T	1,2,3-Trichloropropane	0.1387	0.1288	7.2	73	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1143	0.1218	-6.5	80	0.00
83	T	n-Propylbenzene	3.6822	3.7789	-2.6	82	0.00
84	T	Bromobenzene	0.8149	0.7974	2.1	79	0.00
85	T	1,3,5-Trimethylbenzene	2.6595	2.7315	-2.7	80	0.00
86	T	2-Chlorotoluene	2.4751	2.4952	-0.8	81	0.00
87	T	4-Chlorotoluene	2.1623	2.1818	-0.9	80	0.00
88	T	a-Methylstyrene	1.4867	1.5895	-6.9	88	0.00
89	T	tert-Butylbenzene	0.5874	0.5823	0.9	81	0.00
90	T	1,2,4-Trimethylbenzene	2.7649	2.9022	-5.0	82	0.00
91	T	sec-Butylbenzene	3.3012	3.4539	-4.6	82	0.00
92	T	p-Isopropyltoluene	2.7041	2.8603	-5.8	82	0.00
93	T	1,3-Dichlorobenzene	1.6245	1.6403	-1.0	81	-0.01
94	T	1,4-Dichlorobenzene	1.6362	1.5976	2.4	80	0.00
95	T	n-Butylbenzene	2.6236	2.7310	-4.1	82	0.00
96	T	1,2-Dichlorobenzene	1.4155	1.4132	0.2	79	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.0765	0.0749	2.0	75	0.00
98	T	1,2,4-Trichlorobenzene	1.0587	0.9709	8.3	75	0.00
99	T	Hexachlorobutadiene	0.5176	0.4610	10.9	76	0.00
100	T	Naphthalene	1.3983	1.2678	9.3	70	0.00
101	T	1,2,3-Trichlorobenzene	0.8755	0.7775	11.2	72	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M418525.D 8260WTR.M Mon Mar 27 08:28:40 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032517\8M418525.D Vial: 2
Acq On : 25 Mar 2017 12:05 Operator: JDS
Sample : WG607680-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	80	0.00
2	T	Dichlorodifluoromethane	50.0000	54.3849	-8.8	79	0.00
3	P	Chloromethane	50.0000	54.1975	-8.4	88	0.00
4	C	Vinyl Chloride	50.0000	58.0369	-16.1	97	0.00
5	T	1,3-Butadiene	50.0000	84.8176	-69.6#	106	0.00
6	T	Bromomethane	50.0000	49.2618	1.5	79	0.00
7	T	Chloroethane	50.0000	50.2891	-0.6	78	0.00
8	T	Trichlorofluoromethane	50.0000	50.2044	-0.4	78	0.00
9	T	Diethyl ether	100.0000	93.3512	6.6	73	0.00
10	T	Isoprene	50.0000	55.4436	-10.9	89	0.00
11	T	Acrolein	50.0000	45.8603	8.3	71	-0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.0805	-2.2	78	0.00
13	T	Acetone	50.0000	46.9341	6.1	73	0.00
14	C	1,1-Dichloroethene	50.0000	50.6637	-1.3	80	0.00
15	T	Tert-Butyl Alcohol	200.0000	197.6689	1.2	74	0.00
16	T	Dimethyl Sulfide	50.0000	51.1871	-2.4	82	-0.01
17	T	Iodomethane	50.0000	33.2024	33.6#	53	-0.01
18	T	Methyl acetate	50.0000	49.1863	1.6	80	0.00
19	T	Methylene Chloride	50.0000	48.6439	2.7	77	0.00
20	T	Carbon Disulfide	50.0000	55.8422	-11.7	88	0.00
21	T	Acrylonitrile	50.0000	51.4667	-2.9	75	0.00
22	T	Methyl Tert Butyl Ether	50.0000	48.3561	3.3	73	0.00
23	T	trans-1,2-Dichloroethene	50.0000	49.7153	0.6	80	0.00
24	T	n-Hexane	50.0000	56.5363	-13.1	91	-0.01
25	T	Diisopropyl ether	100.0000	97.7789	2.2	76	0.00
26	T	Vinyl Acetate	50.0000	55.0179	-10.0	91	0.00
27	P	1,1-Dichloroethane	50.0000	50.7095	-1.4	80	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	97.8875	2.1	75	-0.01
29	T	2-Butanone	50.0000	46.4773	7.0	74	0.00
30	T	Propionitrile	100.0000	100.0598	-0.1	77	0.00
31	T	2,2-Dichloropropane	50.0000	54.9397	-9.9	90	0.00
32	T	cis-1,2-Dichloroethene	50.0000	50.8061	-1.6	80	0.00
33	C	Chloroform	50.0000	46.9071	6.2	79	0.00
34		1-Bromopropane	50.0000	0.0000	100.0#	0	-9.75#
35	T	Bromochloromethane	50.0000	48.7855	2.4	75	0.00
36	T	Tetrahydrofuran	100.0000	101.4262	-1.4	78	0.00
37	S	Dibromofluoromethane	25.0000	24.1595	3.4	79	0.00
38	T	1,1,1-Trichloroethane	50.0000	51.8203	-3.6	80	0.00
39	T	Cyclohexane	50.0000	53.9746	-7.9	86	0.00
40	T	1,1-Dichloropropene	50.0000	51.3840	-2.8	81	-0.01
41	T	Tert-Amyl-Methyl ether	100.0000	99.1113	0.9	75	0.00
42	T	Carbon Tetrachloride	50.0000	54.0167	-8.0	82	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.1302	7.5	75	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.61#
45	T	1,2-Dichloroethane	50.0000	49.1394	1.7	77	-0.01
46	T	Benzene	50.0000	51.0810	-2.2	81	-0.01
47	T	Trichloroethene	50.0000	49.7096	0.6	77	0.00
48	T	Methylcyclohexane	50.0000	53.3762	-6.8	87	0.00
49	C	1,2-Dichloropropane	50.0000	50.9094	-1.8	79	0.00
50	T	Bromodichloromethane	50.0000	52.1838	-4.4	79	-0.01
51	T	1,4-Dioxane	200.0000	237.7225	-18.9	82	0.00
52	T	Dibromomethane	50.0000	51.6405	-3.3	76	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	47.3653	5.3	76	0.00
54	T	4-Methyl-2-Pentanone	50.0000	45.3935	9.2	71	0.00

(#) = Out of Range
8M418525.D 8260WTR.M Mon Mar 27 08:28:42 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032517\8M418525.D Vial: 2
Acq On : 25 Mar 2017 12:05 Operator: JDS
Sample : WG607680-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	51.6669	-3.3	79	-0.01
56	T	Dimethyl Disulfide	50.0000	49.0733	1.9	85	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	81	0.00
58	S	Toluene-d8	25.0000	24.8650	0.5	83	0.00
59	C	Toluene	50.0000	51.4353	-2.9	82	-0.01
60	T	Ethyl Methacrylate	50.0000	51.5793	-3.2	79	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.40#
62	T	trans-1,3-Dichloropropene	50.0000	50.8900	-1.8	78	0.00
63	T	1,1,2-Trichloroethane	50.0000	48.9317	2.1	76	0.00
64	T	2-Hexanone	50.0000	44.8555	10.3	70	-0.01
65	T	1,3-Dichloropropane	50.0000	48.1048	3.8	76	0.00
66	T	Tetrachloroethene	50.0000	49.2809	1.4	80	0.00
67	T	Dibromochloromethane	50.0000	48.9111	2.2	78	0.00
68	T	1,2-Dibromoethane	50.0000	48.9193	2.2	76	0.00
69	T	1-Chlorohexane	50.0000	51.7133	-3.4	87	-0.01
70	P	Chlorobenzene	50.0000	53.3093	-6.6	84	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	48.6994	2.6	80	0.00
72	C	Ethylbenzene	50.0000	53.5889	-7.2	80	0.00
73	T	m-,p-Xylene	100.0000	107.9391	-7.9	82	0.00
74	T	o-Xylene	50.0000	50.2010	-0.4	81	0.00
75	T	Styrene	50.0000	53.8105	-7.6	81	0.00
76	P	Bromoform	50.0000	50.1696	-0.3	79	0.00
77	T	Isopropylbenzene	50.0000	52.6189	-5.2	81	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	82	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.2719	1.5	78	0.00
80	S	p-Bromofluorobenzene	25.0000	23.3174	6.7	81	0.00
81	T	1,2,3-Trichloropropane	50.0000	46.4207	7.2	73	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	53.2727	-6.5	80	0.00
83	T	n-Propylbenzene	50.0000	51.3125	-2.6	82	0.00
84	T	Bromobenzene	50.0000	48.9255	2.1	79	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.3521	-2.7	80	0.00
86	T	2-Chlorotoluene	50.0000	50.4068	-0.8	81	0.00
87	T	4-Chlorotoluene	50.0000	50.4515	-0.9	80	0.00
88	T	a-Methylstyrene	50.0000	53.4565	-6.9	88	0.00
89	T	tert-Butylbenzene	50.0000	49.5658	0.9	81	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	52.4828	-5.0	82	0.00
91	T	sec-Butylbenzene	50.0000	52.3134	-4.6	82	0.00
92	T	p-Isopropyltoluene	50.0000	52.8887	-5.8	82	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.4865	-1.0	81	-0.01
94	T	1,4-Dichlorobenzene	50.0000	48.8204	2.4	80	0.00
95	T	n-Butylbenzene	50.0000	52.0481	-4.1	82	0.00
96	T	1,2-Dichlorobenzene	50.0000	49.9192	0.2	79	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.9881	2.0	75	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	45.8520	8.3	75	0.00
99	T	Hexachlorobutadiene	50.0000	44.5293	10.9	76	0.00
100	T	Naphthalene	50.0000	45.3331	9.3	70	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	44.4040	11.2	72	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M418525.D 8260WTR.M Mon Mar 27 08:28:42 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418558.D Vial: 3
Acq On : 27 Mar 2017 10:28 Operator: TMB
Sample : WG607733-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 13:26:21 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.94	96	703112	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	566126	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.82	152	315154	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.89	111	193794	24.3025 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.20%		
43) 1,2-Dichloroethane-d4	10.53	65	164643	23.8252 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 95.32%		
58) Toluene-d8	12.91	98	696748	24.4665 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.88%		
80) p-Bromofluorobenzene	16.30	95	276841	23.2136 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.84%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.34	85	617652	56.0768 ug/L	99
3) Chloromethane	3.82	50	709970	53.1908 ug/L	99
4) Vinyl Chloride	4.05	62	704225	56.4260 ug/L	99
5) 1,3-Butadiene	4.09	54	253858	63.3320 ug/L	98
6) Bromomethane	4.97	94	288617	45.6545 ug/L	100
7) Chloroethane	5.13	64	261175	51.5939 ug/L	100
8) Trichlorofluoromethane	5.61	101	684341	50.6704 ug/L	100
9) Diethyl ether	6.14	59	428975	98.2082 ug/L	100
10) Isoprene	6.18	67	552507	52.9466 ug/L	99
11) Acrolein	6.38	56	25854	46.2909 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	376208	51.7862 ug/L	99
13) Acetone	6.48	43	40342	47.9781 ug/L	95
14) 1,1-Dichloroethene	6.71	61	511426	50.4511 ug/L	99
15) Tert-Butyl Alcohol	6.81	59	62545	233.7053 ug/L	95
16) Dimethyl Sulfide	6.98	62	384531	53.3651 ug/L	98
17) Iodomethane	7.24	142	281918	33.6079 ug/L	95
18) Methyl acetate	7.24	43	129088	53.6867 ug/L	100
19) Methylene Chloride	7.50	84	385448	49.9351 ug/L	99
20) Carbon Disulfide	7.54	76	1269157	54.9688 ug/L	100
21) Acrylonitrile	7.67	53	65893	56.0276 ug/L	96
22) Methyl Tert Butyl Ether	7.70	73	783391	52.7256 ug/L	100
23) trans-1,2-Dichloroethene	7.94	61	489080	49.7599 ug/L	99
24) n-Hexane	8.01	57	445403	53.4973 ug/L	98
25) Diisopropyl ether	8.35	45	1865878	99.3873 ug/L	99
26) Vinyl Acetate	8.53	43	421659	57.0704 ug/L	100
27) 1,1-Dichloroethane	8.56	63	656516	51.2153 ug/L	100
28) Ethyl-Tert-Butyl ether	8.92	59	1844361	102.6046 ug/L	100
29) 2-Butanone	9.11	43	68436	50.5155 ug/L	97
30) Propionitrile	9.22	54	43606	108.7297 ug/L	97
31) 2,2-Dichloropropane	9.34	77	625955	54.7376 ug/L	100
32) cis-1,2-Dichloroethene	9.40	96	432219	51.8109 ug/L	99
33) Chloroform	9.60	83	706999	47.5861 ug/L	100
34) 1-Bromopropane	9.75	122	83748	52.5474 ug/L	99
35) Bromochloromethane	9.84	130	229898	51.3026 ug/L	100
36) Tetrahydrofuran	9.86	42	87182	101.1183 ug/L	99
38) 1,1,1-Trichloroethane	10.14	97	632133	51.7280 ug/L	100
39) Cyclohexane	10.17	56	543453	51.4595 ug/L	99
40) 1,1-Dichloropropene	10.33	75	533370	50.8218 ug/L	99
41) Tert-Amyl-Methyl ether	10.43	73	1777769	105.9772 ug/L	97
42) Carbon Tetrachloride	10.48	117	590189	53.9774 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M418558.D 8260WTR.M Mon Mar 27 13:26:24 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418558.D Vial: 3
Acq On : 27 Mar 2017 10:28 Operator: TMB
Sample : WG607733-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 13:26:21 2017 Quant Results File: 8260WTR.RES

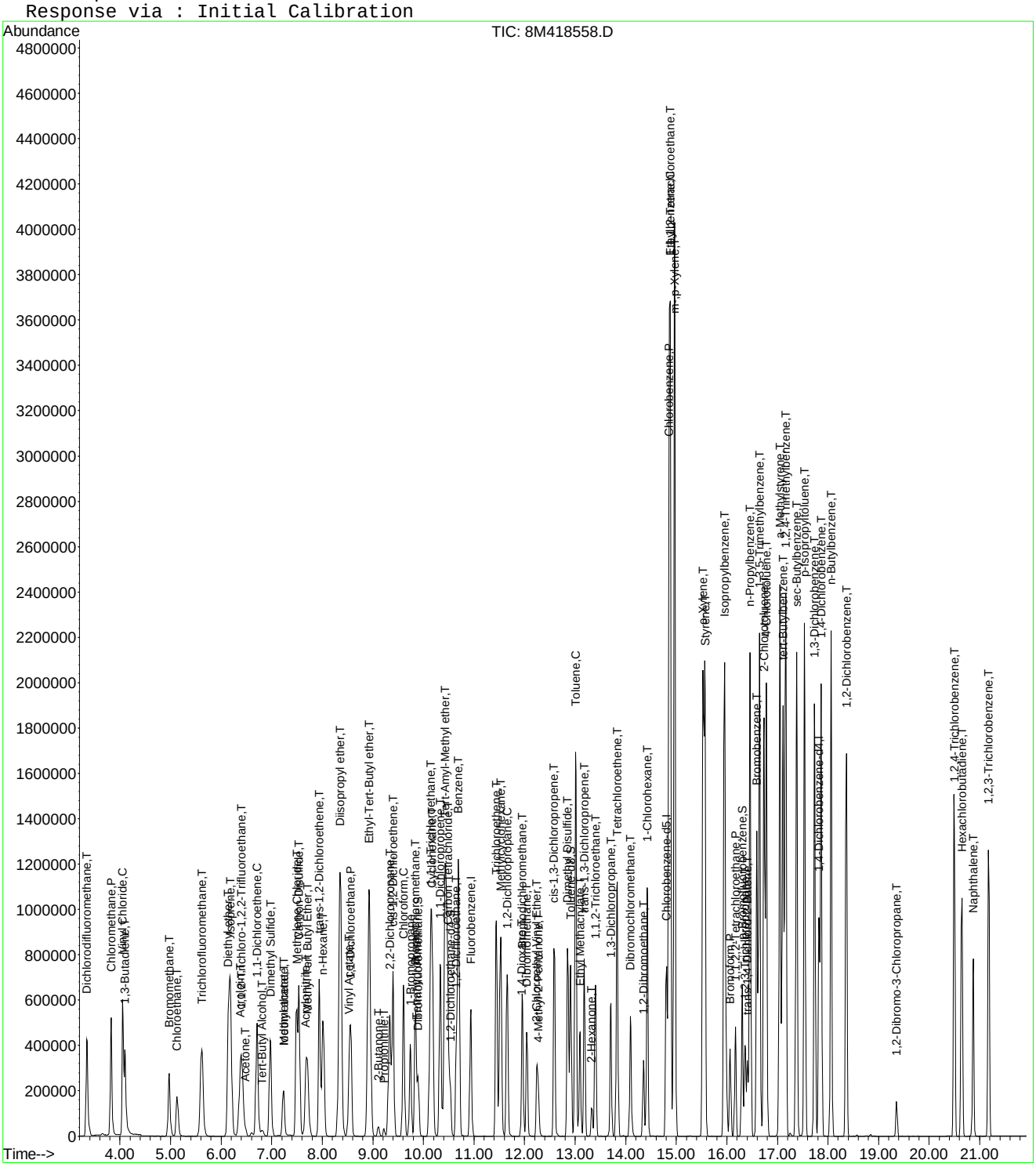
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.65	62	421417	50.2402	ug/L		99
46)	Benzene	10.69	78	1559127	51.5185	ug/L		99
47)	Trichloroethene	11.44	130	407333	50.3367	ug/L		99
48)	Methylcyclohexane	11.53	83	618940	50.9015	ug/L		98
49)	1,2-Dichloropropane	11.65	63	359088	51.6055	ug/L		99
50)	Bromodichloromethane	11.95	83	534136	54.2984	ug/L		98
51)	1,4-Dioxane	11.94	88	9015	269.6092	ug/L		95
52)	Dibromomethane	12.04	93	202006	54.1729	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.24	63	161231	50.9565	ug/L		99
54)	4-Methyl-2-Pentanone	12.27	58	69573	51.3769	ug/L		99
55)	cis-1,3-Dichloropropene	12.58	75	609231	53.3575	ug/L		99
56)	Dimethyl Disulfide	12.85	79	339533	50.3529	ug/L		100
59)	Toluene	13.01	91	1704423	50.6188	ug/L		99
60)	Ethyl Methacrylate	13.10	69	365583	56.1499	ug/L		97
62)	trans-1,3-Dichloropropene	13.18	75	513514	51.7030	ug/L		99
63)	1,1,2-Trichloroethane	13.40	97	266188	50.1867	ug/L		99
64)	2-Hexanone	13.33	58	63506	49.9439	ug/L		98
65)	1,3-Dichloropropane	13.71	76	467787	49.2551	ug/L		97
66)	Tetrachloroethene	13.83	164	350637	48.0598	ug/L		99
67)	Dibromochloromethane	14.09	129	362620	50.4800	ug/L		99
68)	1,2-Dibromoethane	14.35	107	276647	50.8341	ug/L		99
69)	1-Chlorohexane	14.42	91	569085	49.5921	ug/L		98
70)	Chlorobenzene	14.86	112	1203811	50.7972	ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.88	131	462711	48.9330	ug/L		100
72)	Ethylbenzene	14.88	106	698760	53.1303	ug/L		99
73)	m-,p-Xylene	14.97	106	1668738	105.7927	ug/L		99
74)	o-Xylene	15.53	106	776298	49.6302	ug/L		100
75)	Styrene	15.57	104	1349083	53.4269	ug/L		98
76)	Bromoform	16.07	173	229754	52.8049	ug/L		100
77)	Isopropylbenzene	15.95	105	1955038	51.6620	ug/L		100
79)	1,1,2,2-Tetrachloroethane	16.17	83	315580	51.3776	ug/L		100
81)	1,2,3-Trichloropropane	16.36	110	87457	50.0124	ug/L	#	27
82)	trans-1,4-Dichloro-2-Buten	16.41	53	82935	57.5632	ug/L	#	16
83)	n-Propylbenzene	16.46	91	2306183	49.6823	ug/L		100
84)	Bromobenzene	16.59	156	506757	49.3270	ug/L		98
85)	1,3,5-Trimethylbenzene	16.65	105	1691116	50.4412	ug/L		100
86)	2-Chlorotoluene	16.74	91	1544827	49.5117	ug/L		95
87)	4-Chlorotoluene	16.78	91	1339659	49.1467	ug/L		100
88)	a-Methylstyrene	17.05	118	982585	52.4270	ug/L		99
89)	tert-Butylbenzene	17.11	134	354526	47.8817	ug/L		98
90)	1,2,4-Trimethylbenzene	17.16	105	1790735	51.3765	ug/L		99
91)	sec-Butylbenzene	17.38	105	2115582	50.8371	ug/L		99
92)	p-Isopropyltoluene	17.53	119	1744404	51.1735	ug/L		100
93)	1,3-Dichlorobenzene	17.73	146	1034044	50.4940	ug/L		99
94)	1,4-Dichlorobenzene	17.87	146	1018760	49.3918	ug/L		99
95)	n-Butylbenzene	18.06	91	1653053	49.9818	ug/L		100
96)	1,2-Dichlorobenzene	18.36	146	897631	50.3044	ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.35	75	49057	50.8903	ug/L		96
98)	1,2,4-Trichlorobenzene	20.50	180	616188	46.1684	ug/L		100
99)	Hexachlorobutadiene	20.65	225	284437	43.5899	ug/L		99
100)	Naphthalene	20.87	128	794208	45.0548	ug/L		99
101)	1,2,3-Trichlorobenzene	21.17	180	502377	45.5172	ug/L		100

(#) = qualifier out of range (m) = manual integration
8M418558.D 8260WTR.M Mon Mar 27 13:26:24 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418558.D Vial: 3
Acq On : 27 Mar 2017 10:28 Operator: TMB
Sample : WG607733-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 13:26 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 21 Mar 2017 19:11
CCV date: 27 Mar 2017 10:28
CCV Filename: 8M418558.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	821515	10.94	635449	14.81	345493	17.83
CCV	703112	10.94	566126	14.81	315154	17.82

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418558.D Vial: 3
Acq On : 27 Mar 2017 10:28 Operator: TMB
Sample : WG607733-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	86	0.00
2	T	Dichlorodifluoromethane	0.3916	0.4392	-12.2	87	0.00
3	P	Chloromethane	0.4746	0.5049	-6.4	93	0.00
4	C	Vinyl Chloride	0.4438	0.5008	-12.9	101	0.00
5	T	1,3-Butadiene	0.1726	0.1805	-4.6	89	-0.01
6	T	Bromomethane	0.2248	0.2052	8.7	78	0.00
7	T	Chloroethane	0.1800	0.1857	-3.2	86	0.00
8	T	Trichlorofluoromethane	0.4802	0.4867	-1.3	85	0.00
9	T	Diethyl ether	0.1553	0.1525	1.8	82	0.00
10	T	Isoprene	0.3710	0.3929	-5.9	91	0.00
11	T	Acrolein	0.0199	0.0184	7.4	77	-0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2583	0.2675	-3.6	85	0.00
13	T	Acetone	0.0299	0.0287	4.0	80	0.00
14	C	1,1-Dichloroethene	0.3604	0.3637	-0.9	85	0.00
15	T	Tert-Butyl Alcohol	0.0095	0.0111	-16.8	94	0.00
16	T	Dimethyl Sulfide	0.2562	0.2735	-6.7	92	0.00
17	T	Iodomethane	0.2687	0.2005	25.4#	58	0.00
18	T	Methyl acetate	0.0855	0.0918	-7.4	93	0.00
19	T	Methylene Chloride	0.2745	0.2741	0.1	85	0.00
20	T	Carbon Disulfide	0.8209	0.9025	-9.9	92	0.00
21	T	Acrylonitrile	0.0418	0.0469	-12.1	88	0.00
22	T	Methyl Tert Butyl Ether	0.5283	0.5571	-5.5	86	0.00
23	T	trans-1,2-Dichloroethene	0.3495	0.3478	0.5	86	0.00
24	T	n-Hexane	0.2960	0.3167	-7.0	93	-0.01
25	T	Diisopropyl ether	0.6675	0.6634	0.6	83	0.00
26	T	Vinyl Acetate	0.2627	0.2999	-14.1	101	0.00
27	P	1,1-Dichloroethane	0.4558	0.4669	-2.4	86	0.00
28	T	Ethyl-Tert-Butyl ether	0.6391	0.6558	-2.6	84	-0.01
29	T	2-Butanone	0.0482	0.0487	-1.0	86	0.00
30	T	Propionitrile	0.0143	0.0155	-8.7	89	0.00
31	T	2,2-Dichloropropane	0.4066	0.4451	-9.5	96	0.00
32	T	cis-1,2-Dichloroethene	0.2966	0.3074	-3.6	87	0.00
33	C	Chloroform	0.5283	0.5028	4.8	86	0.00
34		1-Bromopropane	0.0567	0.0596	-5.1	89	0.00
35	T	Bromochloromethane	0.1593	0.1635	-2.6	84	0.00
36	T	Tetrahydrofuran	0.0307	0.0310	-1.1	84	0.00
37	S	Dibromofluoromethane	0.2835	0.2756	2.8	85	0.00
38	T	1,1,1-Trichloroethane	0.4345	0.4495	-3.5	86	0.00
39	T	Cyclohexane	0.3755	0.3865	-2.9	88	0.00
40	T	1,1-Dichloropropene	0.3732	0.3793	-1.6	86	-0.01
41	T	Tert-Amyl-Methyl ether	0.5965	0.6321	-6.0	86	0.00
42	T	Carbon Tetrachloride	0.3888	0.4197	-8.0	88	0.00
43	S	1,2-Dichloroethane-d4	0.2457	0.2342	4.7	83	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.61#
45	T	1,2-Dichloroethane	0.2983	0.2997	-0.5	84	-0.01
46	T	Benzene	1.0761	1.1087	-3.0	87	-0.01
47	T	Trichloroethene	0.2877	0.2897	-0.7	83	0.00
48	T	Methylcyclohexane	0.4324	0.4401	-1.8	89	0.00
49	C	1,2-Dichloropropane	0.2474	0.2554	-3.2	86	0.00
50	T	Bromodichloromethane	0.3498	0.3798	-8.6	88	-0.01
51	T	1,4-Dioxane	0.0012	0.0016	-34.5#	100	0.00
52	T	Dibromomethane	0.1326	0.1437	-8.3	86	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1125	0.1147	-1.9	88	0.00
54	T	4-Methyl-2-Pentanone	0.0481	0.0495	-2.8	87	0.00

(#) = Out of Range
8M418558.D 8260WTR.M Mon Mar 27 13:26:58 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418558.D Vial: 3
Acq On : 27 Mar 2017 10:28 Operator: TMB
Sample : WG607733-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4060	0.4332	-6.7	87	-0.01
56	T	Dimethyl Disulfide	0.2197	0.2415	-9.9	94	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	89	0.00
58	S	Toluene-d8	1.2576	1.2307	2.1	89	0.00
59	C	Toluene	1.4869	1.5053	-1.2	88	-0.01
60	T	Ethyl Methacrylate	0.2875	0.3229	-12.3	95	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.40#
62	T	trans-1,3-Dichloropropene	0.4386	0.4535	-3.4	87	0.00
63	T	1,1,2-Trichloroethane	0.2342	0.2351	-0.4	86	0.00
64	T	2-Hexanone	0.0561	0.0561	0.1	86	-0.01
65	T	1,3-Dichloropropane	0.4194	0.4132	1.5	86	0.00
66	T	Tetrachloroethene	0.3222	0.3097	3.9	86	0.00
67	T	Dibromochloromethane	0.2861	0.3203	-12.0	88	0.00
68	T	1,2-Dibromoethane	0.2403	0.2443	-1.7	87	0.00
69	T	1-Chlorohexane	0.5068	0.5026	0.8	92	-0.01
70	P	Chlorobenzene	1.0465	1.0632	-1.6	88	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3805	0.4087	-7.4	88	0.00
72	C	Ethylbenzene	0.5808	0.6171	-6.3	88	0.00
73	T	m-,p-Xylene	0.6966	0.7369	-5.8	89	0.00
74	T	o-Xylene	0.6907	0.6856	0.7	88	0.00
75	T	Styrene	1.1151	1.1915	-6.9	89	0.00
76	P	Bromoform	0.1739	0.2029	-16.7	92	0.00
77	T	Isopropylbenzene	1.6711	1.7267	-3.3	88	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	91	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4873	0.5007	-2.8	90	0.00
80	S	p-Bromofluorobenzene	0.9460	0.8784	7.1	89	0.00
81	T	1,2,3-Trichloropropane	0.1387	0.1388	-0.0	87	-0.01
82	T	trans-1,4-Dichloro-2-Butene	0.1143	0.1316	-15.1	96	0.00
83	T	n-Propylbenzene	3.6822	3.6588	0.6	88	0.00
84	T	Bromobenzene	0.8149	0.8040	1.3	88	0.00
85	T	1,3,5-Trimethylbenzene	2.6595	2.6830	-0.9	87	0.00
86	T	2-Chlorotoluene	2.4751	2.4509	1.0	88	0.00
87	T	4-Chlorotoluene	2.1623	2.1254	1.7	87	0.00
88	T	a-Methylstyrene	1.4867	1.5589	-4.9	95	0.00
89	T	tert-Butylbenzene	0.5874	0.5625	4.2	86	0.00
90	T	1,2,4-Trimethylbenzene	2.7649	2.8411	-2.8	89	0.00
91	T	sec-Butylbenzene	3.3012	3.3564	-1.7	88	0.00
92	T	p-Isopropyltoluene	2.7041	2.7675	-2.3	88	0.00
93	T	1,3-Dichlorobenzene	1.6245	1.6405	-1.0	90	-0.01
94	T	1,4-Dichlorobenzene	1.6362	1.6163	1.2	89	0.00
95	T	n-Butylbenzene	2.6236	2.6226	0.0	87	0.00
96	T	1,2-Dichlorobenzene	1.4155	1.4241	-0.6	89	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.0765	0.0778	-1.8	86	0.00
98	T	1,2,4-Trichlorobenzene	1.0587	0.9776	7.7	84	0.00
99	T	Hexachlorobutadiene	0.5176	0.4513	12.8	82	0.00
100	T	Naphthalene	1.3983	1.2600	9.9	77	0.00
101	T	1,2,3-Trichlorobenzene	0.8755	0.7970	9.0	82	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M418558.D 8260WTR.M Mon Mar 27 13:26:58 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418558.D Vial: 3
Acq On : 27 Mar 2017 10:28 Operator: TMB
Sample : WG607733-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	86	0.00
2	T	Dichlorodifluoromethane	50.0000	56.0768	-12.2	87	0.00
3	P	Chloromethane	50.0000	53.1908	-6.4	93	0.00
4	C	Vinyl Chloride	50.0000	56.4260	-12.9	101	0.00
5	T	1,3-Butadiene	50.0000	63.3320	-26.7#	89	-0.01
6	T	Bromomethane	50.0000	45.6545	8.7	78	0.00
7	T	Chloroethane	50.0000	51.5939	-3.2	86	0.00
8	T	Trichlorofluoromethane	50.0000	50.6704	-1.3	85	0.00
9	T	Diethyl ether	100.0000	98.2082	1.8	82	0.00
10	T	Isoprene	50.0000	52.9466	-5.9	91	0.00
11	T	Acrolein	50.0000	46.2909	7.4	77	-0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.7862	-3.6	85	0.00
13	T	Acetone	50.0000	47.9781	4.0	80	0.00
14	C	1,1-Dichloroethene	50.0000	50.4511	-0.9	85	0.00
15	T	Tert-Butyl Alcohol	200.0000	233.7053	-16.9	94	0.00
16	T	Dimethyl Sulfide	50.0000	53.3651	-6.7	92	0.00
17	T	Iodomethane	50.0000	33.6079	32.8#	58	0.00
18	T	Methyl acetate	50.0000	53.6867	-7.4	93	0.00
19	T	Methylene Chloride	50.0000	49.9351	0.1	85	0.00
20	T	Carbon Disulfide	50.0000	54.9688	-9.9	92	0.00
21	T	Acrylonitrile	50.0000	56.0276	-12.1	88	0.00
22	T	Methyl Tert Butyl Ether	50.0000	52.7256	-5.5	86	0.00
23	T	trans-1,2-Dichloroethene	50.0000	49.7599	0.5	86	0.00
24	T	n-Hexane	50.0000	53.4973	-7.0	93	-0.01
25	T	Diisopropyl ether	100.0000	99.3873	0.6	83	0.00
26	T	Vinyl Acetate	50.0000	57.0704	-14.1	101	0.00
27	P	1,1-Dichloroethane	50.0000	51.2153	-2.4	86	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	102.6046	-2.6	84	-0.01
29	T	2-Butanone	50.0000	50.5155	-1.0	86	0.00
30	T	Propionitrile	100.0000	108.7297	-8.7	89	0.00
31	T	2,2-Dichloropropane	50.0000	54.7376	-9.5	96	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.8109	-3.6	87	0.00
33	C	Chloroform	50.0000	47.5861	4.8	86	0.00
34		1-Bromopropane	50.0000	52.5474	-5.1	89	0.00
35	T	Bromochloromethane	50.0000	51.3026	-2.6	84	0.00
36	T	Tetrahydrofuran	100.0000	101.1183	-1.1	84	0.00
37	S	Dibromofluoromethane	25.0000	24.3025	2.8	85	0.00
38	T	1,1,1-Trichloroethane	50.0000	51.7280	-3.5	86	0.00
39	T	Cyclohexane	50.0000	51.4595	-2.9	88	0.00
40	T	1,1-Dichloropropene	50.0000	50.8218	-1.6	86	-0.01
41	T	Tert-Amyl-Methyl ether	100.0000	105.9772	-6.0	86	0.00
42	T	Carbon Tetrachloride	50.0000	53.9774	-8.0	88	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.8252	4.7	83	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.61#
45	T	1,2-Dichloroethane	50.0000	50.2402	-0.5	84	-0.01
46	T	Benzene	50.0000	51.5185	-3.0	87	-0.01
47	T	Trichloroethene	50.0000	50.3367	-0.7	83	0.00
48	T	Methylcyclohexane	50.0000	50.9015	-1.8	89	0.00
49	C	1,2-Dichloropropane	50.0000	51.6056	-3.2	86	0.00
50	T	Bromodichloromethane	50.0000	54.2984	-8.6	88	-0.01
51	T	1,4-Dioxane	200.0000	269.6092	-34.8#	100	0.00
52	T	Dibromomethane	50.0000	54.1729	-8.3	86	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	50.9565	-1.9	88	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.3769	-2.8	87	0.00

(#) = Out of Range
8M418558.D 8260WTR.M Mon Mar 27 13:27:01 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418558.D Vial: 3
Acq On : 27 Mar 2017 10:28 Operator: TMB
Sample : WG607733-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.3575	-6.7	87	-0.01
56	T	Dimethyl Disulfide	50.0000	50.3529	-0.7	94	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	89	0.00
58	S	Toluene-d8	25.0000	24.4665	2.1	89	0.00
59	C	Toluene	50.0000	50.6188	-1.2	88	-0.01
60	T	Ethyl Methacrylate	50.0000	56.1499	-12.3	95	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.40#
62	T	trans-1,3-Dichloropropene	50.0000	51.7030	-3.4	87	0.00
63	T	1,1,2-Trichloroethane	50.0000	50.1867	-0.4	86	0.00
64	T	2-Hexanone	50.0000	49.9439	0.1	86	-0.01
65	T	1,3-Dichloropropane	50.0000	49.2550	1.5	86	0.00
66	T	Tetrachloroethene	50.0000	48.0598	3.9	86	0.00
67	T	Dibromochloromethane	50.0000	50.4800	-1.0	88	0.00
68	T	1,2-Dibromoethane	50.0000	50.8341	-1.7	87	0.00
69	T	1-Chlorohexane	50.0000	49.5921	0.8	92	-0.01
70	P	Chlorobenzene	50.0000	50.7972	-1.6	88	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	48.9330	2.1	88	0.00
72	C	Ethylbenzene	50.0000	53.1303	-6.3	88	0.00
73	T	m-,p-Xylene	100.0000	105.7927	-5.8	89	0.00
74	T	o-Xylene	50.0000	49.6302	0.7	88	0.00
75	T	Styrene	50.0000	53.4269	-6.9	89	0.00
76	P	Bromoform	50.0000	52.8049	-5.6	92	0.00
77	T	Isopropylbenzene	50.0000	51.6620	-3.3	88	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	91	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	51.3776	-2.8	90	0.00
80	S	p-Bromofluorobenzene	25.0000	23.2136	7.1	89	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.0125	-0.0	87	-0.01
82	T	trans-1,4-Dichloro-2-Butene	50.0000	57.5632	-15.1	96	0.00
83	T	n-Propylbenzene	50.0000	49.6823	0.6	88	0.00
84	T	Bromobenzene	50.0000	49.3270	1.3	88	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	50.4412	-0.9	87	0.00
86	T	2-Chlorotoluene	50.0000	49.5117	1.0	88	0.00
87	T	4-Chlorotoluene	50.0000	49.1467	1.7	87	0.00
88	T	a-Methylstyrene	50.0000	52.4270	-4.9	95	0.00
89	T	tert-Butylbenzene	50.0000	47.8817	4.2	86	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	51.3765	-2.8	89	0.00
91	T	sec-Butylbenzene	50.0000	50.8371	-1.7	88	0.00
92	T	p-Isopropyltoluene	50.0000	51.1735	-2.3	88	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.4940	-1.0	90	-0.01
94	T	1,4-Dichlorobenzene	50.0000	49.3918	1.2	89	0.00
95	T	n-Butylbenzene	50.0000	49.9818	0.0	87	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.3044	-0.6	89	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	50.8903	-1.8	86	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	46.1684	7.7	84	0.00
99	T	Hexachlorobutadiene	50.0000	43.5899	12.8	82	0.00
100	T	Naphthalene	50.0000	45.0548	9.9	77	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	45.5172	9.0	82	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M418558.D 8260WTR.M Mon Mar 27 13:27:01 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032817\8M418588.D Vial: 3
Acq On : 28 Mar 2017 18:19 Operator: FJB
Sample : WG607985-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 29 08:34:44 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	745584	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.81	117	600351	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	339105	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.90	111	208373	24.6422	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.56%			
43) 1,2-Dichloroethane-d4	10.54	65	172298	23.5126	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.04%			
58) Toluene-d8	12.91	98	741555	24.5554	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.24%			
80) p-Bromofluorobenzene	16.31	95	295147	23.0006	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.00%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.34	85	657866	56.3255	ug/L	99
3) Chloromethane	3.83	50	756835	53.4719	ug/L	100
4) Vinyl Chloride	4.05	62	769867	58.1717	ug/L	100
5) 1,3-Butadiene	4.11	54	363045	90.8078	ug/L	98
6) Bromomethane	4.97	94	328337	48.9789	ug/L	99
7) Chloroethane	5.13	64	273739	50.9955	ug/L	99
8) Trichlorofluoromethane	5.62	101	743529	51.9168	ug/L	100
9) Diethyl ether	6.14	59	465780	100.5599	ug/L	99
10) Isoprene	6.18	67	622535	56.2590	ug/L	99
11) Acrolein	6.38	56	27153	45.8473	ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	410903	53.3400	ug/L	100
13) Acetone	6.48	43	38505	43.1848	ug/L	97
14) 1,1-Dichloroethene	6.71	61	552110	51.3620	ug/L	100
15) Tert-Butyl Alcohol	6.80	59	49735	175.2532	ug/L	96
16) Dimethyl Sulfide	6.98	62	402702	52.7033	ug/L	99
17) Iodomethane	7.24	142	287890	32.3834	ug/L	98
18) Methyl acetate	7.24	43	127275	49.9173	ug/L	99
19) Methylene Chloride	7.50	84	405962	49.5968	ug/L	100
20) Carbon Disulfide	7.54	76	1398831	57.1340	ug/L	100
21) Acrylonitrile	7.67	53	63961	51.2869	ug/L	99
22) Methyl Tert Butyl Ether	7.70	73	815313	51.7482	ug/L	100
23) trans-1,2-Dichloroethene	7.94	61	519675	49.8608	ug/L	100
24) n-Hexane	8.01	57	504023	57.0897	ug/L	98
25) Diisopropyl ether	8.36	45	2026163	101.7771	ug/L	100
26) Vinyl Acetate	8.53	43	436087	55.6609	ug/L	100
27) 1,1-Dichloroethane	8.56	63	691398	50.8640	ug/L	100
28) Ethyl-Tert-Butyl ether	8.92	59	1988747	104.3346	ug/L	100
29) 2-Butanone	9.11	43	60260	41.9467	ug/L	95
30) Propionitrile	9.22	54	37926	89.1799	ug/L	98
31) 2,2-Dichloropropane	9.34	77	671717	55.3932	ug/L	100
32) cis-1,2-Dichloroethene	9.40	96	454210	51.3455	ug/L	100
33) Chloroform	9.61	83	745031	47.2893	ug/L	99
34) 1-Bromopropane	9.75	122	91375	54.0670	ug/L	99
35) Bromochloromethane	9.84	130	240384	50.5869	ug/L	100
36) Tetrahydrofuran	9.86	42	81176	88.7888	ug/L	98
38) 1,1,1-Trichloroethane	10.14	97	683866	52.7736	ug/L	99
39) Cyclohexane	10.18	56	612775	54.7183	ug/L	99
40) 1,1-Dichloropropene	10.34	75	573587	51.5405	ug/L	100
41) Tert-Amyl-Methyl ether	10.43	73	1896225	106.5995	ug/L	97
42) Carbon Tetrachloride	10.49	117	638173	55.0411	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M418588.D 8260WTR.M Wed Mar 29 08:34:46 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032817\8M418588.D Vial: 3
Acq On : 28 Mar 2017 18:19 Operator: FJB
Sample : WG607985-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 29 08:34:44 2017 Quant Results File: 8260WTR.RES

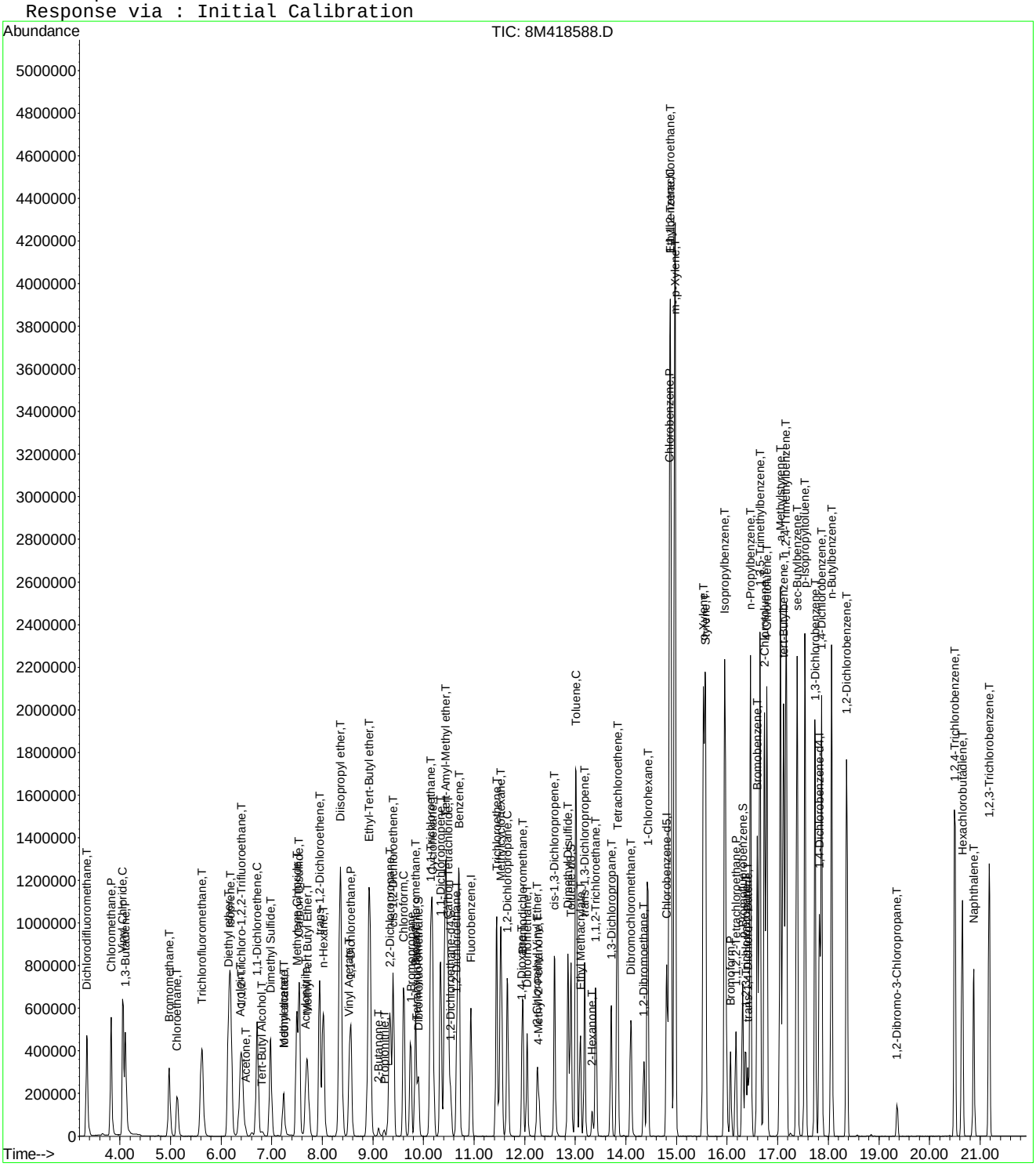
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.65	62	440852	49.5632	ug/L	98
46)	Benzene	10.70	78	1632889	50.8822	ug/L	99
47)	Trichloroethene	11.45	130	431856	50.3271	ug/L	99
48)	Methylcyclohexane	11.53	83	693565	53.7895	ug/L	98
49)	1,2-Dichloropropane	11.65	63	375299	50.8629	ug/L	100
50)	Bromodichloromethane	11.95	83	550825	52.8052	ug/L	99
51)	1,4-Dioxane	11.94	88	8602	242.6031	ug/L	98
52)	Dibromomethane	12.05	93	211072	53.3797	ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.24	63	167026	49.7809	ug/L	99
54)	4-Methyl-2-Pentanone	12.27	58	66829	46.5393	ug/L	96
55)	cis-1,3-Dichloropropene	12.58	75	631781	52.1805	ug/L	99
56)	Dimethyl Disulfide	12.85	79	355222	49.7163	ug/L	100
59)	Toluene	13.02	91	1789238	50.1084	ug/L	99
60)	Ethyl Methacrylate	13.10	69	367164	53.1779	ug/L	97
62)	trans-1,3-Dichloropropene	13.18	75	536147	50.9044	ug/L	100
63)	1,1,2-Trichloroethane	13.40	97	278880	49.5822	ug/L	100
64)	2-Hexanone	13.33	58	60030	44.5188	ug/L	100
65)	1,3-Dichloropropane	13.71	76	486062	48.2616	ug/L	97
66)	Tetrachloroethene	13.84	164	377694	48.8171	ug/L	99
67)	Dibromochloromethane	14.09	129	374886	49.2770	ug/L	100
68)	1,2-Dibromoethane	14.35	107	283701	49.1584	ug/L	99
69)	1-Chlorohexane	14.43	91	627597	51.5732	ug/L	99
70)	Chlorobenzene	14.86	112	1251095	49.7828	ug/L	99
71)	1,1,1,2-Tetrachloroethane	14.88	131	480524	48.0122	ug/L	99
72)	Ethylbenzene	14.88	106	727021	52.1277	ug/L	98
73)	m-,p-Xylene	14.97	106	1753465	104.8268	ug/L	100
74)	o-Xylene	15.53	106	814302	49.0920	ug/L	99
75)	Styrene	15.57	104	1412323	52.7428	ug/L	98
76)	Bromoform	16.07	173	235989	51.2760	ug/L	99
77)	Isopropylbenzene	15.95	105	2060056	51.3338	ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.17	83	319376	48.3231	ug/L	99
81)	1,2,3-Trichloropropane	16.37	110	87990	46.7633	ug/L	95
82)	trans-1,4-Dichloro-2-Buten	16.41	53	81062	52.2893	ug/L	94
83)	n-Propylbenzene	16.46	91	2430965	48.6715	ug/L	99
84)	Bromobenzene	16.60	156	524888	47.4832	ug/L	98
85)	1,3,5-Trimethylbenzene	16.65	105	1786762	49.5299	ug/L	99
86)	2-Chlorotoluene	16.74	91	1594665	47.4991	ug/L	94
87)	4-Chlorotoluene	16.78	91	1428705	48.7115	ug/L	100
88)	a-Methylstyrene	17.05	118	1046241	51.8806	ug/L	99
89)	tert-Butylbenzene	17.11	134	375139	47.0871	ug/L	98
90)	1,2,4-Trimethylbenzene	17.16	105	1877892	50.0717	ug/L	100
91)	sec-Butylbenzene	17.38	105	2217019	49.5118	ug/L	99
92)	p-Isopropyltoluene	17.54	119	1840547	50.1803	ug/L	99
93)	1,3-Dichlorobenzene	17.74	146	1081046	49.0607	ug/L	98
94)	1,4-Dichlorobenzene	17.87	146	1065625	48.0149	ug/L	98
95)	n-Butylbenzene	18.06	91	1710145	48.0559	ug/L	100
96)	1,2-Dichlorobenzene	18.36	146	935981	48.7488	ug/L	99
97)	1,2-Dibromo-3-Chloropropan	19.36	75	47020	45.3320	ug/L	99
98)	1,2,4-Trichlorobenzene	20.50	180	633260	44.0963	ug/L	99
99)	Hexachlorobutadiene	20.65	225	293376	41.7843	ug/L	99
100)	Naphthalene	20.88	128	801502	42.2571	ug/L	100
101)	1,2,3-Trichlorobenzene	21.18	180	516333	43.4775	ug/L	100

(#) = qualifier out of range (m) = manual integration
8M418588.D 8260WTR.M Wed Mar 29 08:34:47 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032817\8M418588.D Vial: 3
Acq On : 28 Mar 2017 18:19 Operator: FJB
Sample : WG607985-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 29 8:34 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 21 Mar 2017 19:11
CCV date: 28 Mar 2017 18:19
CCV Filename: 8M418588.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	821515	10.94	635449	14.81	345493	17.83
CCV	745584	10.94	600351	14.81	339105	17.83

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032817\8M418588.D Vial: 3
Acq On : 28 Mar 2017 18:19 Operator: FJB
Sample : WG607985-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	91	0.00
2	T	Dichlorodifluoromethane	0.3916	0.4412	-12.6	92	0.00
3	P	Chloromethane	0.4746	0.5075	-6.9	99	0.00
4	C	Vinyl Chloride	0.4438	0.5163	-16.3	110	0.00
5	T	1,3-Butadiene	0.1726	0.2435	-41.0#	127	0.00
6	T	Bromomethane	0.2248	0.2202	2.0	89	0.00
7	T	Chloroethane	0.1800	0.1836	-2.0	90	0.00
8	T	Trichlorofluoromethane	0.4802	0.4986	-3.8	92	0.00
9	T	Diethyl ether	0.1553	0.1562	-0.6	89	0.00
10	T	Isoprene	0.3710	0.4175	-12.5	103	0.00
11	T	Acrolein	0.0199	0.0182	8.3	81	-0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2583	0.2756	-6.7	93	0.00
13	T	Acetone	0.0299	0.0258	13.6	77	0.00
14	C	1,1-Dichloroethene	0.3604	0.3703	-2.7	92	0.00
15	T	Tert-Butyl Alcohol	0.0095	0.0083	12.4	75	-0.01
16	T	Dimethyl Sulfide	0.2562	0.2701	-5.4	96	0.00
17	T	Iodomethane	0.2687	0.1931	28.1#	59	0.00
18	T	Methyl acetate	0.0855	0.0853	0.2	92	0.00
19	T	Methylene Chloride	0.2745	0.2722	0.8	90	0.00
20	T	Carbon Disulfide	0.8209	0.9381	-14.3	102	0.00
21	T	Acrylonitrile	0.0418	0.0429	-2.6	85	0.00
22	T	Methyl Tert Butyl Ether	0.5283	0.5468	-3.5	89	0.00
23	T	trans-1,2-Dichloroethene	0.3495	0.3485	0.3	91	0.00
24	T	n-Hexane	0.2960	0.3380	-14.2	105	-0.01
25	T	Diisopropyl ether	0.6675	0.6794	-1.8	90	0.00
26	T	Vinyl Acetate	0.2627	0.2924	-11.3	104	0.00
27	P	1,1-Dichloroethane	0.4558	0.4637	-1.7	91	0.00
28	T	Ethyl-Tert-Butyl ether	0.6391	0.6668	-4.3	91	-0.01
29	T	2-Butanone	0.0482	0.0404	16.1	76	0.00
30	T	Propionitrile	0.0143	0.0127	10.8	78	0.00
31	T	2,2-Dichloropropane	0.4066	0.4505	-10.8	103	0.00
32	T	cis-1,2-Dichloroethene	0.2966	0.3046	-2.7	91	0.00
33	C	Chloroform	0.5283	0.4996	5.4	91	0.00
34		1-Bromopropane	0.0567	0.0613	-8.1	97	0.00
35	T	Bromochloromethane	0.1593	0.1612	-1.2	88	0.00
36	T	Tetrahydrofuran	0.0307	0.0272	11.2	78	0.00
37	S	Dibromofluoromethane	0.2835	0.2795	1.4	92	0.00
38	T	1,1,1-Trichloroethane	0.4345	0.4586	-5.5	93	0.00
39	T	Cyclohexane	0.3755	0.4109	-9.4	99	0.00
40	T	1,1-Dichloropropene	0.3732	0.3847	-3.1	93	0.00
41	T	Tert-Amyl-Methyl ether	0.5965	0.6358	-6.6	92	0.00
42	T	Carbon Tetrachloride	0.3888	0.4280	-10.1	95	0.00
43	S	1,2-Dichloroethane-d4	0.2457	0.2311	6.0	87	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.61#
45	T	1,2-Dichloroethane	0.2983	0.2956	0.9	88	-0.01
46	T	Benzene	1.0761	1.0950	-1.8	91	0.00
47	T	Trichloroethene	0.2877	0.2896	-0.7	88	0.00
48	T	Methylcyclohexane	0.4324	0.4651	-7.6	99	0.00
49	C	1,2-Dichloropropane	0.2474	0.2517	-1.7	90	0.00
50	T	Bromodichloromethane	0.3498	0.3694	-5.6	90	0.00
51	T	1,4-Dioxane	0.0012	0.0014	-21.0	95	0.00
52	T	Dibromomethane	0.1326	0.1416	-6.8	89	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1125	0.1120	0.4	91	0.00
54	T	4-Methyl-2-Pentanone	0.0481	0.0448	6.9	83	0.00

(#) = Out of Range
8M418588.D 8260WTR.M Wed Mar 29 08:42:55 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032817\8M418588.D Vial: 3
Acq On : 28 Mar 2017 18:19 Operator: FJB
Sample : WG607985-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4060	0.4237	-4.4	91	0.00
56	T	Dimethyl Disulfide	0.2197	0.2382	-8.4	98	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	94	0.00
58	S	Toluene-d8	1.2576	1.2352	1.8	95	0.00
59	C	Toluene	1.4869	1.4902	-0.2	93	0.00
60	T	Ethyl Methacrylate	0.2875	0.3058	-6.4	95	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.40#
62	T	trans-1,3-Dichloropropene	0.4386	0.4465	-1.8	91	0.00
63	T	1,1,2-Trichloroethane	0.2342	0.2323	0.8	90	0.00
64	T	2-Hexanone	0.0561	0.0500	11.0	81	-0.01
65	T	1,3-Dichloropropane	0.4194	0.4048	3.5	89	0.00
66	T	Tetrachloroethene	0.3222	0.3146	2.4	93	0.00
67	T	Dibromochloromethane	0.2861	0.3122	-9.1	91	0.00
68	T	1,2-Dibromoethane	0.2403	0.2363	1.7	89	0.00
69	T	1-Chlorohexane	0.5068	0.5227	-3.1	101	0.00
70	P	Chlorobenzene	1.0465	1.0420	0.4	92	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3805	0.4002	-5.2	91	0.00
72	C	Ethylbenzene	0.5808	0.6055	-4.3	91	0.00
73	T	m-,p-Xylene	0.6966	0.7302	-4.8	93	0.00
74	T	o-Xylene	0.6907	0.6782	1.8	92	0.00
75	T	Styrene	1.1151	1.1763	-5.5	93	0.00
76	P	Bromoform	0.1739	0.1965	-13.0	94	0.00
77	T	Isopropylbenzene	1.6711	1.7157	-2.7	92	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	98	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4873	0.4709	3.4	92	0.00
80	S	p-Bromofluorobenzene	0.9460	0.8704	8.0	95	0.00
81	T	1,2,3-Trichloropropane	0.1387	0.1297	6.5	87	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1143	0.1195	-4.6	94	0.00
83	T	n-Propylbenzene	3.6822	3.5844	2.7	93	0.00
84	T	Bromobenzene	0.8149	0.7739	5.0	91	0.00
85	T	1,3,5-Trimethylbenzene	2.6595	2.6345	0.9	92	0.00
86	T	2-Chlorotoluene	2.4751	2.3513	5.0	91	0.00
87	T	4-Chlorotoluene	2.1623	2.1066	2.6	92	0.00
88	T	a-Methylstyrene	1.4867	1.5427	-3.8	101	0.00
89	T	tert-Butylbenzene	0.5874	0.5531	5.8	91	0.00
90	T	1,2,4-Trimethylbenzene	2.7649	2.7689	-0.1	93	0.00
91	T	sec-Butylbenzene	3.3012	3.2689	1.0	93	0.00
92	T	p-Isopropyltoluene	2.7041	2.7138	-0.4	93	0.00
93	T	1,3-Dichlorobenzene	1.6245	1.5940	1.9	94	0.00
94	T	1,4-Dichlorobenzene	1.6362	1.5712	4.0	93	0.00
95	T	n-Butylbenzene	2.6236	2.5216	3.9	91	0.00
96	T	1,2-Dichlorobenzene	1.4155	1.3801	2.5	92	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.0765	0.0693	9.3	83	0.00
98	T	1,2,4-Trichlorobenzene	1.0587	0.9337	11.8	86	0.00
99	T	Hexachlorobutadiene	0.5176	0.4326	16.4	84	0.00
100	T	Naphthalene	1.3983	1.1818	15.5	77	0.00
101	T	1,2,3-Trichlorobenzene	0.8755	0.7613	13.0	84	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M418588.D 8260WTR.M Wed Mar 29 08:42:55 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032817\8M418588.D Vial: 3
Acq On : 28 Mar 2017 18:19 Operator: FJB
Sample : WG607985-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	91	0.00
2	T	Dichlorodifluoromethane	50.0000	56.3255	-12.7	92	0.00
3	P	Chloromethane	50.0000	53.4719	-6.9	99	0.00
4	C	Vinyl Chloride	50.0000	58.1717	-16.3	110	0.00
5	T	1,3-Butadiene	50.0000	90.8078	-81.6#	127	0.00
6	T	Bromomethane	50.0000	48.9789	2.0	89	0.00
7	T	Chloroethane	50.0000	50.9955	-2.0	90	0.00
8	T	Trichlorofluoromethane	50.0000	51.9168	-3.8	92	0.00
9	T	Diethyl ether	100.0000	100.5599	-0.6	89	0.00
10	T	Isoprene	50.0000	56.2590	-12.5	103	0.00
11	T	Acrolein	50.0000	45.8473	8.3	81	-0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	53.3400	-6.7	93	0.00
13	T	Acetone	50.0000	43.1848	13.6	77	0.00
14	C	1,1-Dichloroethene	50.0000	51.3620	-2.7	92	0.00
15	T	Tert-Butyl Alcohol	200.0000	175.2532	12.4	75	-0.01
16	T	Dimethyl Sulfide	50.0000	52.7033	-5.4	96	0.00
17	T	Iodomethane	50.0000	32.3834	35.2#	59	0.00
18	T	Methyl acetate	50.0000	49.9173	0.2	92	0.00
19	T	Methylene Chloride	50.0000	49.5968	0.8	90	0.00
20	T	Carbon Disulfide	50.0000	57.1340	-14.3	102	0.00
21	T	Acrylonitrile	50.0000	51.2869	-2.6	85	0.00
22	T	Methyl Tert Butyl Ether	50.0000	51.7482	-3.5	89	0.00
23	T	trans-1,2-Dichloroethene	50.0000	49.8608	0.3	91	0.00
24	T	n-Hexane	50.0000	57.0896	-14.2	105	-0.01
25	T	Diisopropyl ether	100.0000	101.7771	-1.8	90	0.00
26	T	Vinyl Acetate	50.0000	55.6609	-11.3	104	0.00
27	P	1,1-Dichloroethane	50.0000	50.8640	-1.7	91	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	104.3346	-4.3	91	-0.01
29	T	2-Butanone	50.0000	41.9467	16.1	76	0.00
30	T	Propionitrile	100.0000	89.1799	10.8	78	0.00
31	T	2,2-Dichloropropane	50.0000	55.3932	-10.8	103	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.3455	-2.7	91	0.00
33	C	Chloroform	50.0000	47.2893	5.4	91	0.00
34		1-Bromopropane	50.0000	54.0670	-8.1	97	0.00
35	T	Bromochloromethane	50.0000	50.5869	-1.2	88	0.00
36	T	Tetrahydrofuran	100.0000	88.7888	11.2	78	0.00
37	S	Dibromofluoromethane	25.0000	24.6422	1.4	92	0.00
38	T	1,1,1-Trichloroethane	50.0000	52.7736	-5.5	93	0.00
39	T	Cyclohexane	50.0000	54.7183	-9.4	99	0.00
40	T	1,1-Dichloropropene	50.0000	51.5405	-3.1	93	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	106.5995	-6.6	92	0.00
42	T	Carbon Tetrachloride	50.0000	55.0411	-10.1	95	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.5126	5.9	87	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.61#
45	T	1,2-Dichloroethane	50.0000	49.5632	0.9	88	-0.01
46	T	Benzene	50.0000	50.8822	-1.8	91	0.00
47	T	Trichloroethene	50.0000	50.3271	-0.7	88	0.00
48	T	Methylcyclohexane	50.0000	53.7895	-7.6	99	0.00
49	C	1,2-Dichloropropane	50.0000	50.8629	-1.7	90	0.00
50	T	Bromodichloromethane	50.0000	52.8052	-5.6	90	0.00
51	T	1,4-Dioxane	200.0000	242.6031	-21.3	95	0.00
52	T	Dibromomethane	50.0000	53.3797	-6.8	89	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	49.7809	0.4	91	0.00
54	T	4-Methyl-2-Pentanone	50.0000	46.5393	6.9	83	0.00

(#) = Out of Range
8M418588.D 8260WTR.M Wed Mar 29 08:42:57 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032817\8M418588.D Vial: 3
Acq On : 28 Mar 2017 18:19 Operator: FJB
Sample : WG607985-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	52.1805	-4.4	91	0.00
56	T	Dimethyl Disulfide	50.0000	49.7163	0.6	98	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	94	0.00
58	S	Toluene-d8	25.0000	24.5554	1.8	95	0.00
59	C	Toluene	50.0000	50.1084	-0.2	93	0.00
60	T	Ethyl Methacrylate	50.0000	53.1779	-6.4	95	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.40#
62	T	trans-1,3-Dichloropropene	50.0000	50.9044	-1.8	91	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.5822	0.8	90	0.00
64	T	2-Hexanone	50.0000	44.5188	11.0	81	-0.01
65	T	1,3-Dichloropropane	50.0000	48.2617	3.5	89	0.00
66	T	Tetrachloroethene	50.0000	48.8171	2.4	93	0.00
67	T	Dibromochloromethane	50.0000	49.2770	1.4	91	0.00
68	T	1,2-Dibromoethane	50.0000	49.1584	1.7	89	0.00
69	T	1-Chlorohexane	50.0000	51.5732	-3.1	101	0.00
70	P	Chlorobenzene	50.0000	49.7829	0.4	92	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	48.0122	4.0	91	0.00
72	C	Ethylbenzene	50.0000	52.1277	-4.3	91	0.00
73	T	m-,p-Xylene	100.0000	104.8268	-4.8	93	0.00
74	T	o-Xylene	50.0000	49.0920	1.8	92	0.00
75	T	Styrene	50.0000	52.7428	-5.5	93	0.00
76	P	Bromoform	50.0000	51.2760	-2.6	94	0.00
77	T	Isopropylbenzene	50.0000	51.3338	-2.7	92	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	98	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	48.3231	3.4	92	0.00
80	S	p-Bromofluorobenzene	25.0000	23.0006	8.0	95	0.00
81	T	1,2,3-Trichloropropane	50.0000	46.7633	6.5	87	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	52.2893	-4.6	94	0.00
83	T	n-Propylbenzene	50.0000	48.6716	2.7	93	0.00
84	T	Bromobenzene	50.0000	47.4832	5.0	91	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	49.5299	0.9	92	0.00
86	T	2-Chlorotoluene	50.0000	47.4991	5.0	91	0.00
87	T	4-Chlorotoluene	50.0000	48.7115	2.6	92	0.00
88	T	a-Methylstyrene	50.0000	51.8806	-3.8	101	0.00
89	T	tert-Butylbenzene	50.0000	47.0871	5.8	91	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	50.0717	-0.1	93	0.00
91	T	sec-Butylbenzene	50.0000	49.5118	1.0	93	0.00
92	T	p-Isopropyltoluene	50.0000	50.1803	-0.4	93	0.00
93	T	1,3-Dichlorobenzene	50.0000	49.0607	1.9	94	0.00
94	T	1,4-Dichlorobenzene	50.0000	48.0149	4.0	93	0.00
95	T	n-Butylbenzene	50.0000	48.0559	3.9	91	0.00
96	T	1,2-Dichlorobenzene	50.0000	48.7488	2.5	92	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	45.3320	9.3	83	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	44.0963	11.8	86	0.00
99	T	Hexachlorobutadiene	50.0000	41.7843	16.4	84	0.00
100	T	Naphthalene	50.0000	42.2571	15.5	77	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	43.4774	13.0	84	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M418588.D 8260WTR.M Wed Mar 29 08:42:58 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032917\8M418624.D Vial: 3
Acq On : 29 Mar 2017 15:10 Operator: TMB
Sample : WG608100-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 29 15:41:08 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	934297	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.81	117	768073	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.82	152	439724	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.90	111	264664	24.9772	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.92%			
43) 1,2-Dichloroethane-d4	10.54	65	220328	23.9940	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 95.96%			
58) Toluene-d8	12.91	98	935759	24.2198	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.88%			
80) p-Bromofluorobenzene	16.30	95	376817	22.6457	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 90.60%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.35	85	835965	57.1172	ug/L	99
3) Chloromethane	3.83	50	980853	55.3019	ug/L	99
4) Vinyl Chloride	4.06	62	989864	59.6875	ug/L	100
5) 1,3-Butadiene	4.11	54	528686	109.8991	ug/L	98
6) Bromomethane	4.97	94	421589	50.1869	ug/L	98
7) Chloroethane	5.14	64	349046	51.8907	ug/L	100
8) Trichlorofluoromethane	5.62	101	932036	51.9343	ug/L	100
9) Diethyl ether	6.15	59	577852	99.5571	ug/L	100
10) Isoprene	6.19	67	757738	54.6461	ug/L	99
11) Acrolein	6.39	56	31452	42.3795	ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	517443	53.6029	ug/L	100
13) Acetone	6.48	43	45187	40.4426	ug/L	99
14) 1,1-Dichloroethene	6.71	61	690843	51.2870	ug/L	100
15) Tert-Butyl Alcohol	6.81	59	62315	175.2298	ug/L	95
16) Dimethyl Sulfide	6.98	62	509318	53.1930	ug/L	99
17) Iodomethane	7.24	142	432612	38.7331	ug/L	100
18) Methyl acetate	7.24	43	162477	50.8525	ug/L	99
19) Methylene Chloride	7.50	84	520093	50.7062	ug/L	99
20) Carbon Disulfide	7.55	76	1697197	55.3188	ug/L	99
21) Acrylonitrile	7.67	53	82302	52.6639	ug/L	97
22) Methyl Tert Butyl Ether	7.70	73	1032986	52.3211	ug/L	100
23) trans-1,2-Dichloroethene	7.95	61	659495	50.4953	ug/L	100
24) n-Hexane	8.02	57	623723	56.3781	ug/L	99
25) Diisopropyl ether	8.35	45	2543796	101.9694	ug/L	99
26) Vinyl Acetate	8.53	43	535203	54.5139	ug/L	98
27) 1,1-Dichloroethane	8.56	63	889412	52.2152	ug/L	100
28) Ethyl-Tert-Butyl ether	8.93	59	2503123	104.7955	ug/L	99
29) 2-Butanone	9.12	43	79472	44.1463	ug/L	98
30) Propionitrile	9.22	54	49023	91.9902	ug/L	99
31) 2,2-Dichloropropane	9.34	77	856002	56.3322	ug/L	100
32) cis-1,2-Dichloroethene	9.41	96	583373	52.6264	ug/L	99
33) Chloroform	9.62	83	949765	48.1079	ug/L	100
34) 1-Bromopropane	9.75	122	115598	54.5842	ug/L	99
35) Bromochloromethane	9.84	130	310061	52.0704	ug/L	100
36) Tetrahydrofuran	9.86	42	103817	90.6172	ug/L	97
38) 1,1,1-Trichloroethane	10.14	97	857421	52.8021	ug/L	100
39) Cyclohexane	10.17	56	755530	53.8387	ug/L	99
40) 1,1-Dichloropropene	10.34	75	721283	51.7210	ug/L	100
41) Tert-Amyl-Methyl ether	10.43	73	2375978	106.5907	ug/L	98
42) Carbon Tetrachloride	10.48	117	807034	55.5459	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M418624.D 8260WTR.M Wed Mar 29 15:41:11 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032917\8M418624.D Vial: 3
Acq On : 29 Mar 2017 15:10 Operator: TMB
Sample : WG608100-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 29 15:41:08 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

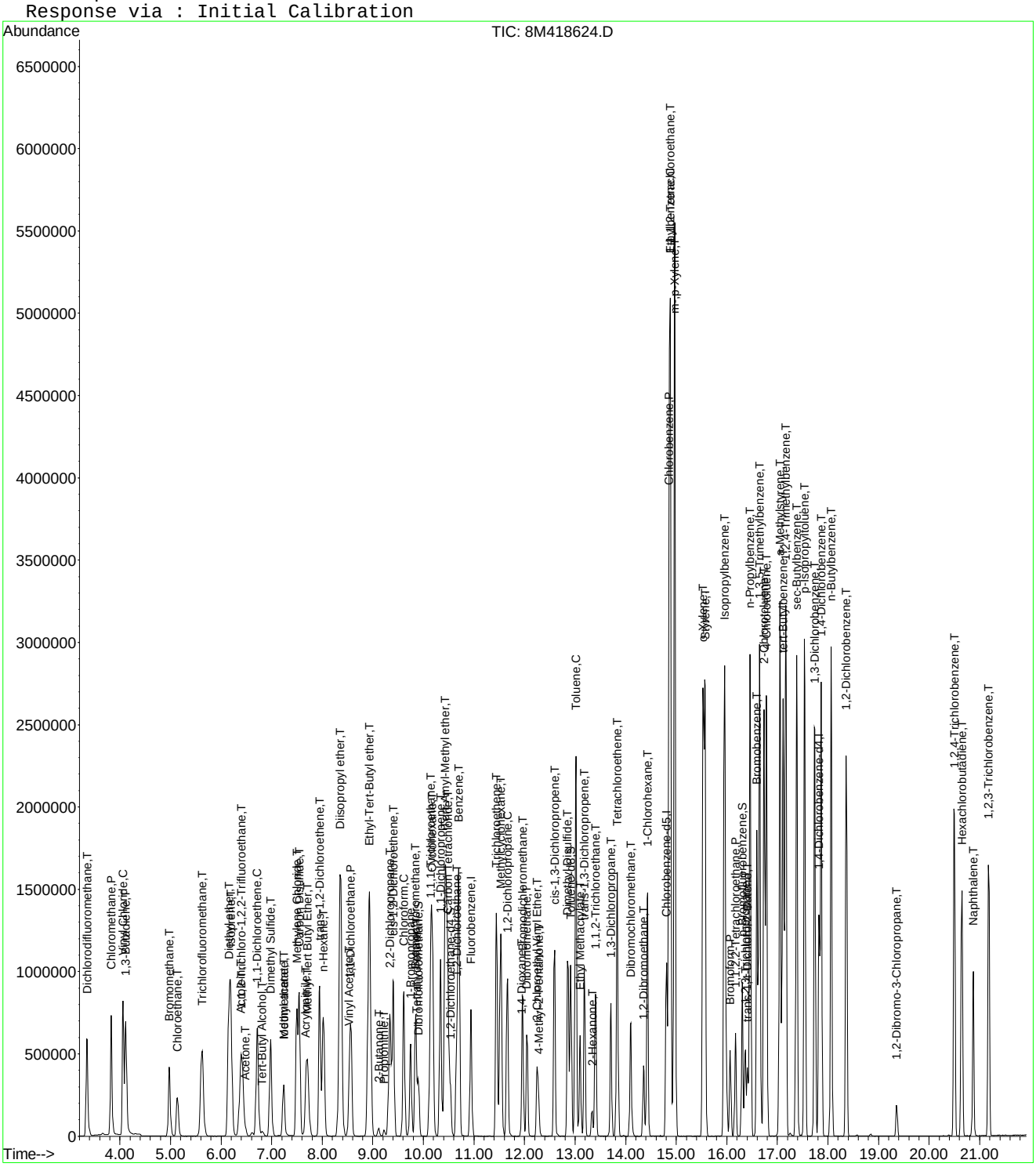
	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.66	62	567102	50.8791 ug/L	99
46)	Benzene	10.70	78	2078025	51.6740 ug/L	100
47)	Trichloroethene	11.45	130	549038	51.0596 ug/L	99
48)	Methylcyclohexane	11.53	83	857883	53.0945 ug/L	99
49)	1,2-Dichloropropane	11.66	63	480134	51.9275 ug/L	100
50)	Bromodichloromethane	11.96	83	704177	53.8712 ug/L	100
51)	1,4-Dioxane	11.94	88	7442	167.4936 ug/L	99
52)	Dibromomethane	12.04	93	271234	54.7395 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.25	63	208575	49.6081 ug/L	100
54)	4-Methyl-2-Pentanone	12.28	58	84802	47.1273 ug/L	98
55)	cis-1,3-Dichloropropene	12.59	75	811583	53.4917 ug/L	99
56)	Dimethyl Disulfide	12.85	79	451870	50.4264 ug/L	99
59)	Toluene	13.02	91	2289110	50.1086 ug/L	100
60)	Ethyl Methacrylate	13.10	69	467178	52.8879 ug/L	97
62)	trans-1,3-Dichloropropene	13.18	75	687338	51.0088 ug/L	100
63)	1,1,2-Trichloroethane	13.40	97	356700	49.5694 ug/L	99
64)	2-Hexanone	13.34	58	76674	44.4453 ug/L	98
65)	1,3-Dichloropropane	13.71	76	624115	48.4371 ug/L	97
66)	Tetrachloroethene	13.83	164	483825	48.8791 ug/L	99
67)	Dibromochloromethane	14.10	129	476338	48.9571 ug/L	100
68)	1,2-Dibromoethane	14.35	107	356824	48.3275 ug/L	99
69)	1-Chlorohexane	14.43	91	773811	49.7028 ug/L	99
70)	Chlorobenzene	14.86	112	1612203	50.1432 ug/L	99
71)	1,1,1,2-Tetrachloroethane	14.88	131	619225	48.3282 ug/L	99
72)	Ethylbenzene	14.88	106	942693	52.8317 ug/L	99
73)	m-,p-Xylene	14.97	106	2244228	104.8685 ug/L	98
74)	o-Xylene	15.53	106	1054419	49.6868 ug/L	98
75)	Styrene	15.57	104	1799882	52.5383 ug/L	98
76)	Bromoform	16.07	173	307948	52.2182 ug/L	99
77)	Isopropylbenzene	15.95	105	2640132	51.4224 ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.17	83	409068	47.7312 ug/L	100
81)	1,2,3-Trichloropropane	16.37	110	112119	45.9521 ug/L	93
82)	trans-1,4-Dichloro-2-Buten	16.41	53	103581	51.5264 ug/L	95
83)	n-Propylbenzene	16.46	91	3116725	48.1226 ug/L	99
84)	Bromobenzene	16.59	156	685345	47.8120 ug/L	98
85)	1,3,5-Trimethylbenzene	16.65	105	2291727	48.9911 ug/L	100
86)	2-Chlorotoluene	16.74	91	2047588	47.0341 ug/L	95
87)	4-Chlorotoluene	16.78	91	1864821	49.0320 ug/L	99
88)	a-Methylstyrene	17.05	118	1317133	50.3683 ug/L	99
89)	tert-Butylbenzene	17.11	134	490433	47.4726 ug/L	99
90)	1,2,4-Trimethylbenzene	17.16	105	2422555	49.8138 ug/L	99
91)	sec-Butylbenzene	17.38	105	2854760	49.1658 ug/L	100
92)	p-Isopropyltoluene	17.54	119	2379986	50.0398 ug/L	100
93)	1,3-Dichlorobenzene	17.74	146	1405499	49.1897 ug/L	98
94)	1,4-Dichlorobenzene	17.87	146	1387641	48.2173 ug/L	99
95)	n-Butylbenzene	18.06	91	2228555	48.2938 ug/L	100
96)	1,2-Dichlorobenzene	18.36	146	1216197	48.8489 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	19.35	75	61442	45.6816 ug/L	99
98)	1,2,4-Trichlorobenzene	20.50	180	826148	44.3641 ug/L	99
99)	Hexachlorobutadiene	20.65	225	391685	43.0209 ug/L	99
100)	Naphthalene	20.87	128	1008780	41.0153 ug/L	100
101)	1,2,3-Trichlorobenzene	21.17	180	672970	43.7002 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M418624.D 8260WTR.M Wed Mar 29 15:41:11 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032917\8M418624.D Vial: 3
Acq On : 29 Mar 2017 15:10 Operator: TMB
Sample : WG608100-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 29 15:41 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



8M418624.D 8260WTR.M Wed Mar 29 15:41:12 2017 Page 3

Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 21 Mar 2017 19:11
CCV date: 29 Mar 2017 15:10
CCV Filename: 8M418624.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	821515	10.94	635449	14.81	345493	17.83
CCV	934297	10.94	768073	14.81	439724	17.82

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032917\8M418624.D Vial: 3
Acq On : 29 Mar 2017 15:10 Operator: TMB
Sample : WG608100-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	114	0.00
2	T	Dichlorodifluoromethane	0.3916	0.4474	-14.2	118	0.00
3	P	Chloromethane	0.4746	0.5249	-10.6	129	0.00
4	C	Vinyl Chloride	0.4438	0.5297	-19.4	142	0.00
5	T	1,3-Butadiene	0.1726	0.2829	-63.9#	185#	0.00
6	T	Bromomethane	0.2248	0.2256	-0.4	114	0.00
7	T	Chloroethane	0.1800	0.1868	-3.8	114	0.00
8	T	Trichlorofluoromethane	0.4802	0.4988	-3.9	115	0.00
9	T	Diethyl ether	0.1553	0.1546	0.4	110	0.00
10	T	Isoprene	0.3710	0.4055	-9.3	125	0.00
11	T	Acrolein	0.0199	0.0168	15.3	93	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2583	0.2769	-7.2	117	0.00
13	T	Acetone	0.0299	0.0242	19.1	90	0.00
14	C	1,1-Dichloroethene	0.3604	0.3697	-2.6	115	0.00
15	T	Tert-Butyl Alcohol	0.0095	0.0083	12.4	94	0.00
16	T	Dimethyl Sulfide	0.2562	0.2726	-6.4	121	0.00
17	T	Iodomethane	0.2687	0.2315	13.8	88	0.00
18	T	Methyl acetate	0.0855	0.0870	-1.7	117	0.00
19	T	Methylene Chloride	0.2745	0.2783	-1.4	115	0.00
20	T	Carbon Disulfide	0.8209	0.9083	-10.6	124	0.00
21	T	Acrylonitrile	0.0418	0.0440	-5.3	110	0.00
22	T	Methyl Tert Butyl Ether	0.5283	0.5528	-4.6	113	0.00
23	T	trans-1,2-Dichloroethene	0.3495	0.3529	-1.0	116	0.00
24	T	n-Hexane	0.2960	0.3338	-12.8	130	0.00
25	T	Diisopropyl ether	0.6675	0.6807	-2.0	113	0.00
26	T	Vinyl Acetate	0.2627	0.2864	-9.0	128	0.00
27	P	1,1-Dichloroethane	0.4558	0.4760	-4.4	117	0.00
28	T	Ethyl-Tert-Butyl ether	0.6391	0.6698	-4.8	114	0.00
29	T	2-Butanone	0.0482	0.0425	11.7	100	0.00
30	T	Propionitrile	0.0143	0.0131	8.0	100	0.00
31	T	2,2-Dichloropropane	0.4066	0.4581	-12.7	131	0.00
32	T	cis-1,2-Dichloroethene	0.2966	0.3122	-5.3	117	0.00
33	C	Chloroform	0.5283	0.5083	3.8	116	0.00
34		1-Bromopropane	0.0567	0.0619	-9.2	123	0.00
35	T	Bromochloromethane	0.1593	0.1659	-4.1	114	0.00
36	T	Tetrahydrofuran	0.0307	0.0278	9.4	100	0.00
37	S	Dibromofluoromethane	0.2835	0.2833	0.1	116	0.00
38	T	1,1,1-Trichloroethane	0.4345	0.4589	-5.6	116	0.00
39	T	Cyclohexane	0.3755	0.4043	-7.7	122	0.00
40	T	1,1-Dichloropropene	0.3732	0.3860	-3.4	117	0.00
41	T	Tert-Amyl-Methyl ether	0.5965	0.6358	-6.6	115	0.00
42	T	Carbon Tetrachloride	0.3888	0.4319	-11.1	120	0.00
43	S	1,2-Dichloroethane-d4	0.2457	0.2358	4.0	111	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.61#
45	T	1,2-Dichloroethane	0.2983	0.3035	-1.8	113	0.00
46	T	Benzene	1.0761	1.1121	-3.3	116	0.00
47	T	Trichloroethene	0.2877	0.2938	-2.1	112	0.00
48	T	Methylcyclohexane	0.4324	0.4591	-6.2	123	0.00
49	C	1,2-Dichloropropane	0.2474	0.2570	-3.9	115	0.00
50	T	Bromodichloromethane	0.3498	0.3769	-7.7	116	0.00
51	T	1,4-Dioxane	0.0012	0.0010	16.0	82	0.00
52	T	Dibromomethane	0.1326	0.1452	-9.5	115	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1125	0.1116	0.8	114	0.00
54	T	4-Methyl-2-Pentanone	0.0481	0.0454	5.8	106	0.00

(#) = Out of Range
8M418624.D 8260WTR.M Wed Mar 29 15:41:21 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032917\8M418624.D Vial: 3
Acq On : 29 Mar 2017 15:10 Operator: TMB
Sample : WG608100-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4060	0.4343	-7.0	116	0.00
56	T	Dimethyl Disulfide	0.2197	0.2418	-10.1	125	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	121	0.00
58	S	Toluene-d8	1.2576	1.2183	3.1	120	0.00
59	C	Toluene	1.4869	1.4902	-0.2	119	0.00
60	T	Ethyl Methacrylate	0.2875	0.3041	-5.8	121	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.40#
62	T	trans-1,3-Dichloropropene	0.4386	0.4474	-2.0	117	0.00
63	T	1,1,2-Trichloroethane	0.2342	0.2322	0.9	115	0.00
64	T	2-Hexanone	0.0561	0.0499	11.1	104	0.00
65	T	1,3-Dichloropropane	0.4194	0.4063	3.1	115	0.00
66	T	Tetrachloroethene	0.3222	0.3150	2.2	119	0.00
67	T	Dibromochloromethane	0.2861	0.3101	-8.4	116	0.00
68	T	1,2-Dibromoethane	0.2403	0.2323	3.3	112	0.00
69	T	1-Chlorohexane	0.5068	0.5037	0.6	124	0.00
70	P	Chlorobenzene	1.0465	1.0495	-0.3	118	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3805	0.4031	-5.9	118	0.00
72	C	Ethylbenzene	0.5808	0.6137	-5.7	118	0.00
73	T	m-,p-Xylene	0.6966	0.7305	-4.9	119	0.00
74	T	o-Xylene	0.6907	0.6864	0.6	119	0.00
75	T	Styrene	1.1151	1.1717	-5.1	118	0.00
76	P	Bromoform	0.1739	0.2005	-15.3	123	0.00
77	T	Isopropylbenzene	1.6711	1.7187	-2.8	118	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	127	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4873	0.4651	4.5	117	0.00
80	S	p-Bromofluorobenzene	0.9460	0.8569	9.4	121	0.00
81	T	1,2,3-Trichloropropane	0.1387	0.1275	8.1	111	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1143	0.1178	-3.1	120	0.00
83	T	n-Propylbenzene	3.6822	3.5440	3.8	119	0.00
84	T	Bromobenzene	0.8149	0.7793	4.4	119	0.00
85	T	1,3,5-Trimethylbenzene	2.6595	2.6059	2.0	118	0.00
86	T	2-Chlorotoluene	2.4751	2.3283	5.9	117	0.00
87	T	4-Chlorotoluene	2.1623	2.1204	1.9	120	0.00
88	T	a-Methylstyrene	1.4867	1.4977	-0.7	128	0.00
89	T	tert-Butylbenzene	0.5874	0.5577	5.1	119	0.00
90	T	1,2,4-Trimethylbenzene	2.7649	2.7546	0.4	120	0.00
91	T	sec-Butylbenzene	3.3012	3.2461	1.7	119	0.00
92	T	p-Isopropyltoluene	2.7041	2.7062	-0.1	120	0.00
93	T	1,3-Dichlorobenzene	1.6245	1.5982	1.6	122	0.00
94	T	1,4-Dichlorobenzene	1.6362	1.5779	3.6	122	0.00
95	T	n-Butylbenzene	2.6236	2.5340	3.4	118	0.00
96	T	1,2-Dichlorobenzene	1.4155	1.3829	2.3	120	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.0765	0.0699	8.6	108	0.00
98	T	1,2,4-Trichlorobenzene	1.0587	0.9394	11.3	112	0.00
99	T	Hexachlorobutadiene	0.5176	0.4454	14.0	113	0.00
100	T	Naphthalene	1.3983	1.1471	18.0	97	0.00
101	T	1,2,3-Trichlorobenzene	0.8755	0.7652	12.6	109	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M418624.D 8260WTR.M Wed Mar 29 15:41:22 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032917\8M418624.D Vial: 3
Acq On : 29 Mar 2017 15:10 Operator: TMB
Sample : WG608100-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	114	0.00
2	T	Dichlorodifluoromethane	50.0000	57.1172	-14.2	118	0.00
3	P	Chloromethane	50.0000	55.3019	-10.6	129	0.00
4	C	Vinyl Chloride	50.0000	59.6875	-19.4	142	0.00
5	T	1,3-Butadiene	50.0000	109.8991	-119.8#	185	0.00
6	T	Bromomethane	50.0000	50.1869	-0.4	114	0.00
7	T	Chloroethane	50.0000	51.8907	-3.8	114	0.00
8	T	Trichlorofluoromethane	50.0000	51.9343	-3.9	115	0.00
9	T	Diethyl ether	100.0000	99.5571	0.4	110	0.00
10	T	Isoprene	50.0000	54.6461	-9.3	125	0.00
11	T	Acrolein	50.0000	42.3795	15.2	93	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	53.6029	-7.2	117	0.00
13	T	Acetone	50.0000	40.4426	19.1	90	0.00
14	C	1,1-Dichloroethene	50.0000	51.2870	-2.6	115	0.00
15	T	Tert-Butyl Alcohol	200.0000	175.2298	12.4	94	0.00
16	T	Dimethyl Sulfide	50.0000	53.1930	-6.4	121	0.00
17	T	Iodomethane	50.0000	38.7331	22.5	88	0.00
18	T	Methyl acetate	50.0000	50.8524	-1.7	117	0.00
19	T	Methylene Chloride	50.0000	50.7062	-1.4	115	0.00
20	T	Carbon Disulfide	50.0000	55.3188	-10.6	124	0.00
21	T	Acrylonitrile	50.0000	52.6639	-5.3	110	0.00
22	T	Methyl Tert Butyl Ether	50.0000	52.3211	-4.6	113	0.00
23	T	trans-1,2-Dichloroethene	50.0000	50.4953	-1.0	116	0.00
24	T	n-Hexane	50.0000	56.3781	-12.8	130	0.00
25	T	Diisopropyl ether	100.0000	101.9694	-2.0	113	0.00
26	T	Vinyl Acetate	50.0000	54.5139	-9.0	128	0.00
27	P	1,1-Dichloroethane	50.0000	52.2152	-4.4	117	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	104.7955	-4.8	114	0.00
29	T	2-Butanone	50.0000	44.1463	11.7	100	0.00
30	T	Propionitrile	100.0000	91.9902	8.0	100	0.00
31	T	2,2-Dichloropropane	50.0000	56.3322	-12.7	131	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.6264	-5.3	117	0.00
33	C	Chloroform	50.0000	48.1079	3.8	116	0.00
34		1-Bromopropane	50.0000	54.5842	-9.2	123	0.00
35	T	Bromochloromethane	50.0000	52.0704	-4.1	114	0.00
36	T	Tetrahydrofuran	100.0000	90.6172	9.4	100	0.00
37	S	Dibromofluoromethane	25.0000	24.9772	0.1	116	0.00
38	T	1,1,1-Trichloroethane	50.0000	52.8021	-5.6	116	0.00
39	T	Cyclohexane	50.0000	53.8387	-7.7	122	0.00
40	T	1,1-Dichloropropene	50.0000	51.7210	-3.4	117	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	106.5907	-6.6	115	0.00
42	T	Carbon Tetrachloride	50.0000	55.5459	-11.1	120	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.9940	4.0	111	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.61#
45	T	1,2-Dichloroethane	50.0000	50.8791	-1.8	113	0.00
46	T	Benzene	50.0000	51.6740	-3.3	116	0.00
47	T	Trichloroethene	50.0000	51.0596	-2.1	112	0.00
48	T	Methylcyclohexane	50.0000	53.0945	-6.2	123	0.00
49	C	1,2-Dichloropropane	50.0000	51.9275	-3.9	115	0.00
50	T	Bromodichloromethane	50.0000	53.8712	-7.7	116	0.00
51	T	1,4-Dioxane	200.0000	167.4936	16.3	82	0.00
52	T	Dibromomethane	50.0000	54.7395	-9.5	115	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	49.6081	0.8	114	0.00
54	T	4-Methyl-2-Pentanone	50.0000	47.1273	5.7	106	0.00

(#) = Out of Range
8M418624.D 8260WTR.M Wed Mar 29 15:41:24 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032917\8M418624.D Vial: 3
Acq On : 29 Mar 2017 15:10 Operator: TMB
Sample : WG608100-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

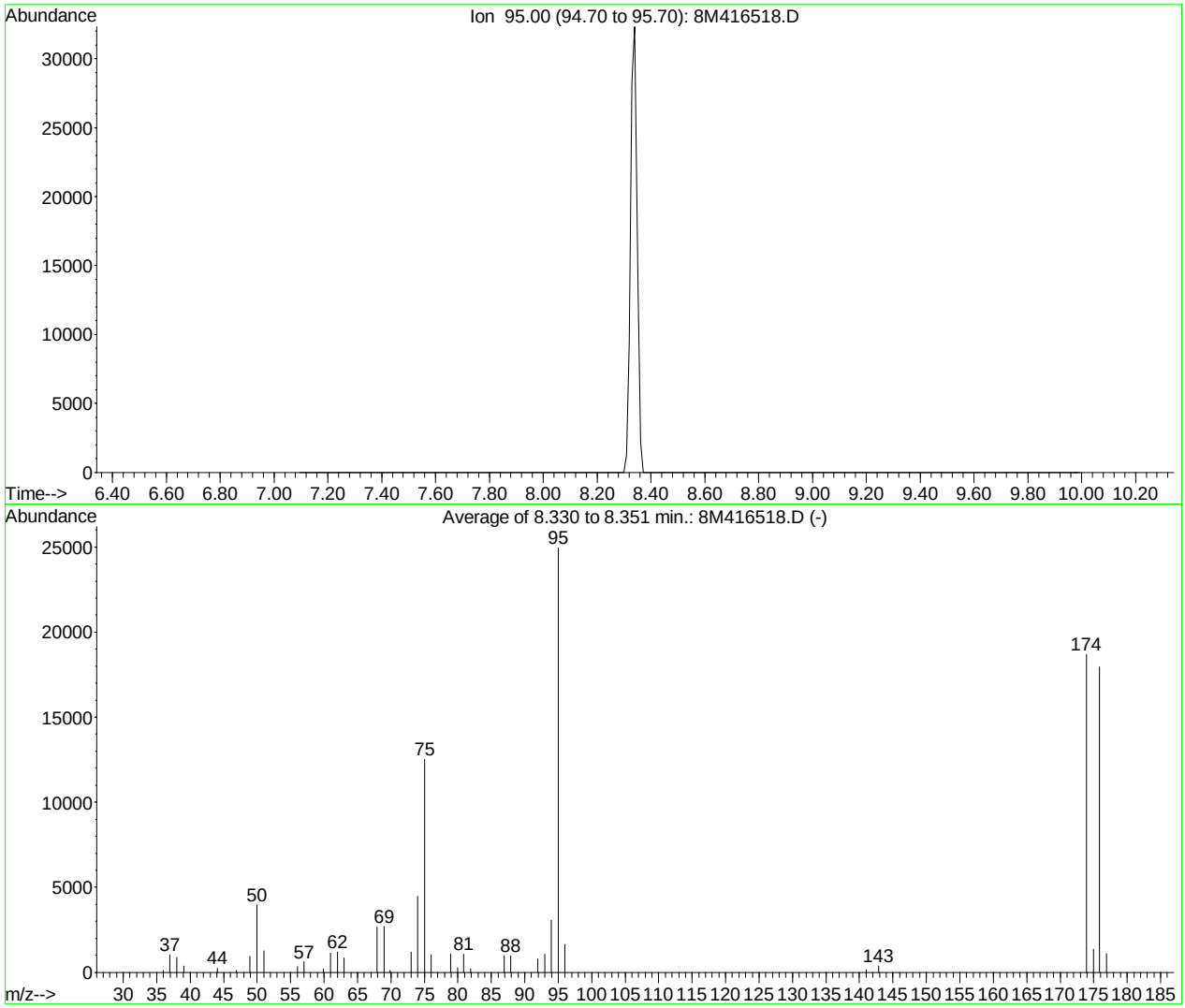
		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.4917	-7.0	116	0.00
56	T	Dimethyl Disulfide	50.0000	50.4264	-0.9	125	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	121	0.00
58	S	Toluene-d8	25.0000	24.2198	3.1	120	0.00
59	C	Toluene	50.0000	50.1086	-0.2	119	0.00
60	T	Ethyl Methacrylate	50.0000	52.8879	-5.8	121	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.40#
62	T	trans-1,3-Dichloropropene	50.0000	51.0088	-2.0	117	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.5694	0.9	115	0.00
64	T	2-Hexanone	50.0000	44.4453	11.1	104	0.00
65	T	1,3-Dichloropropane	50.0000	48.4371	3.1	115	0.00
66	T	Tetrachloroethene	50.0000	48.8791	2.2	119	0.00
67	T	Dibromochloromethane	50.0000	48.9571	2.1	116	0.00
68	T	1,2-Dibromoethane	50.0000	48.3274	3.3	112	0.00
69	T	1-Chlorohexane	50.0000	49.7028	0.6	124	0.00
70	P	Chlorobenzene	50.0000	50.1432	-0.3	118	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	48.3282	3.3	118	0.00
72	C	Ethylbenzene	50.0000	52.8317	-5.7	118	0.00
73	T	m-,p-Xylene	100.0000	104.8685	-4.9	119	0.00
74	T	o-Xylene	50.0000	49.6868	0.6	119	0.00
75	T	Styrene	50.0000	52.5383	-5.1	118	0.00
76	P	Bromoform	50.0000	52.2182	-4.4	123	0.00
77	T	Isopropylbenzene	50.0000	51.4224	-2.8	118	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	127	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	47.7312	4.5	117	0.00
80	S	p-Bromofluorobenzene	25.0000	22.6457	9.4	121	0.00
81	T	1,2,3-Trichloropropane	50.0000	45.9521	8.1	111	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	51.5264	-3.1	120	0.00
83	T	n-Propylbenzene	50.0000	48.1226	3.8	119	0.00
84	T	Bromobenzene	50.0000	47.8120	4.4	119	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	48.9911	2.0	118	0.00
86	T	2-Chlorotoluene	50.0000	47.0341	5.9	117	0.00
87	T	4-Chlorotoluene	50.0000	49.0320	1.9	120	0.00
88	T	a-Methylstyrene	50.0000	50.3683	-0.7	128	0.00
89	T	tert-Butylbenzene	50.0000	47.4727	5.1	119	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.8138	0.4	120	0.00
91	T	sec-Butylbenzene	50.0000	49.1658	1.7	119	0.00
92	T	p-Isopropyltoluene	50.0000	50.0398	-0.1	120	0.00
93	T	1,3-Dichlorobenzene	50.0000	49.1897	1.6	122	0.00
94	T	1,4-Dichlorobenzene	50.0000	48.2173	3.6	122	0.00
95	T	n-Butylbenzene	50.0000	48.2938	3.4	118	0.00
96	T	1,2-Dichlorobenzene	50.0000	48.8489	2.3	120	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	45.6816	8.6	108	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	44.3641	11.3	112	0.00
99	T	Hexachlorobutadiene	50.0000	43.0209	14.0	113	0.00
100	T	Naphthalene	50.0000	41.0153	18.0	97	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	43.7002	12.6	109	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M418624.D 8260WTR.M Wed Mar 29 15:41:24 2017 Page 2

2.1.1.5 Raw QC Data

CLPBFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416518.D Vial: 1
Acq On    :  8 Dec 2016   8:55                      Operator: TMB
Sample    : WG594051-01 50ng BFB STD A9/FOO         Inst    : HPMS8
Misc      : 1,1 STD78995                            Multiplr: 1.00
MS Integration Params: rteint.p
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWTR.M (RTE Integrator)
Title     : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
```



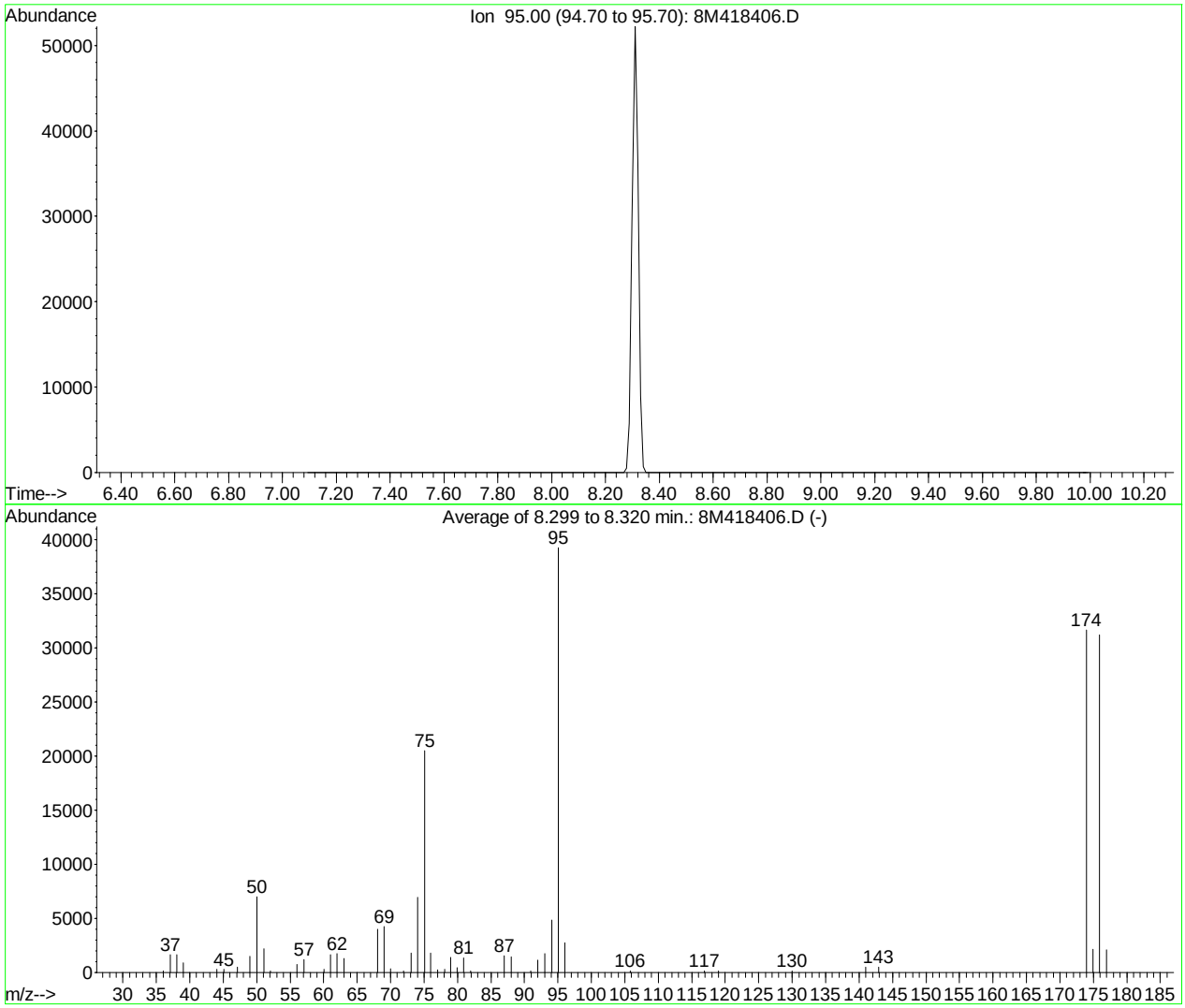
AutoFind: Scans 122, 123, 124; Background Corrected with Scan 117

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	15.9	3959	PASS
75	95	30	60	50.2	12523	PASS
95	95	100	100	100.0	24967	PASS
96	95	5	9	6.6	1651	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	74.9	18700	PASS
175	174	5	9	7.2	1355	PASS
176	174	95	101	96.0	17959	PASS
177	176	5	9	6.1	1092	PASS

8M416518.D A9FOOWTR.M Thu Dec 08 14:42:12 2016

BFB

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418406.D Vial: 1
Acq On : 21 Mar 2017 15:10 Operator: TMB
Sample : WG607066-01 50ng BFB STD 8260 Inst : HPMS8
Misc : 1,1 STD80989 Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8

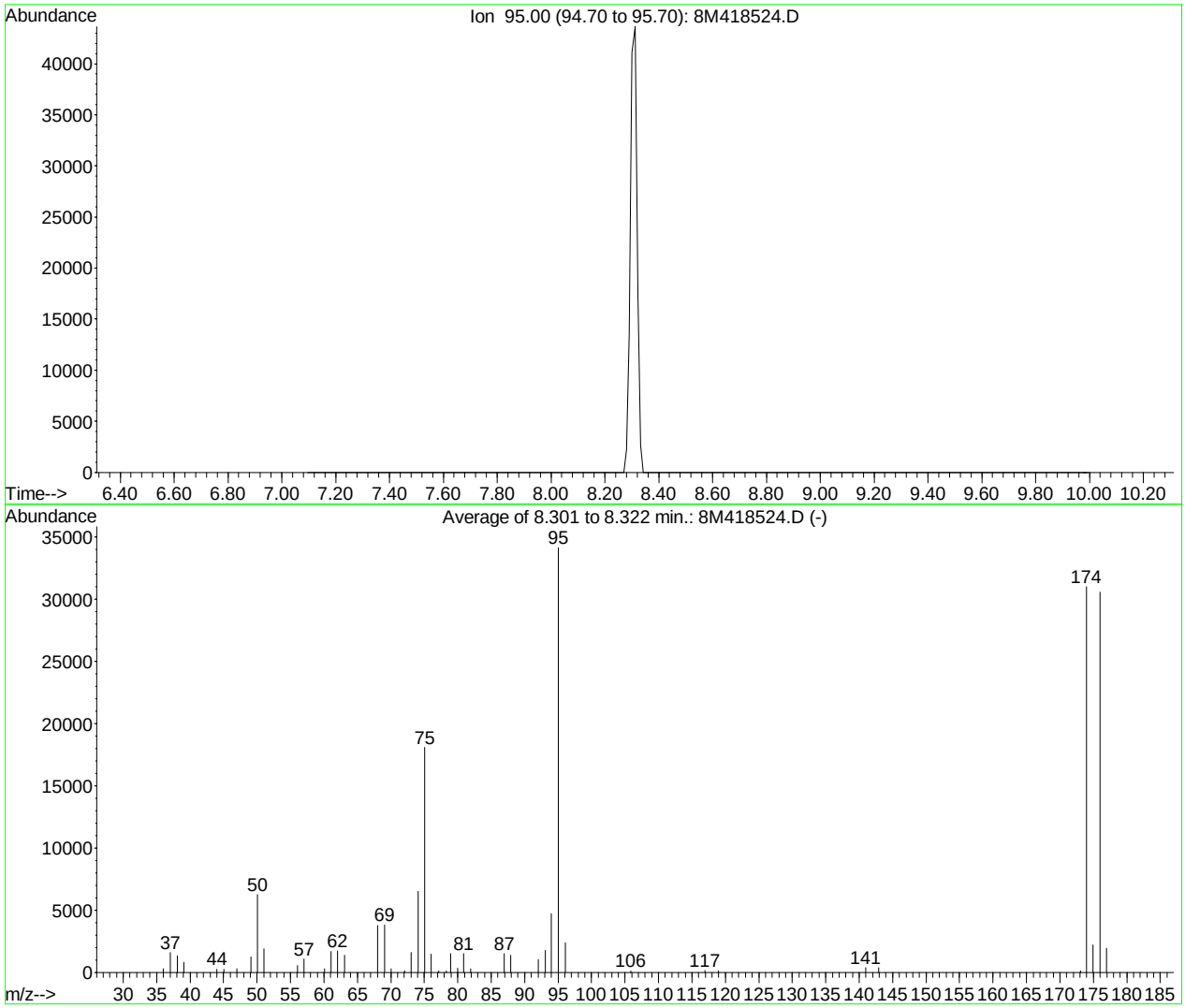


AutoFind: Scans 119, 120, 121; Background Corrected with Scan 114

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.8	6993	PASS
75	95	30	60	52.2	20477	PASS
95	95	100	100	100.0	39240	PASS
96	95	5	9	6.9	2704	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	80.6	31623	PASS
175	174	5	9	6.8	2141	PASS
176	174	95	101	98.6	31189	PASS
177	176	5	9	6.6	2060	PASS

8M418406.D 8260WTR.M Thu Mar 23 08:41:50 2017

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032517\8M418524.D Vial: 1
Acq On : 25 Mar 2017 11:42 Operator: JDS
Sample : WG607680-01 50ng BFB STD 8260 Inst : HPMS8
Misc : 1,1 STD80989 Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8



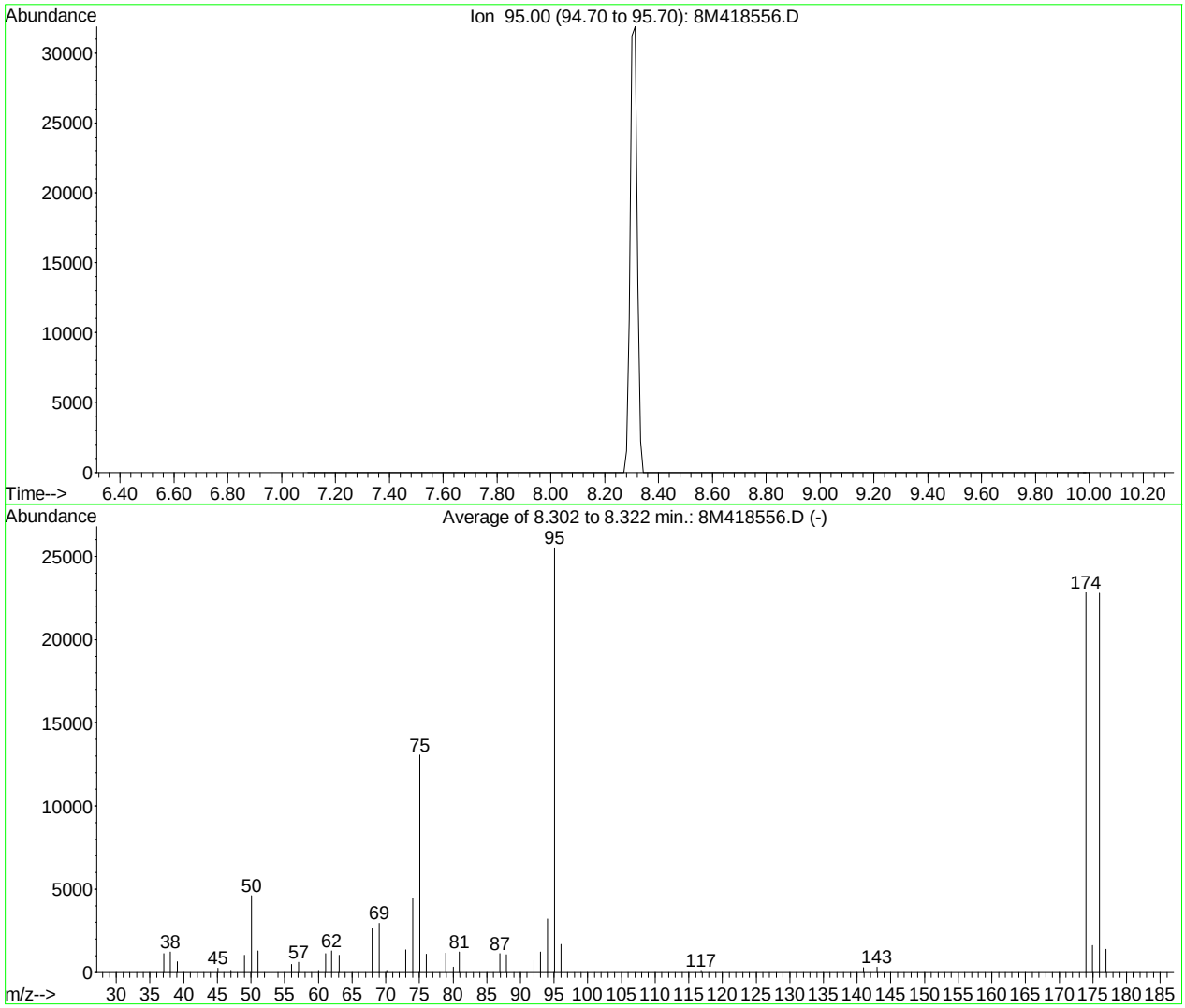
AutoFind: Scans 119, 120, 121; Background Corrected with Scan 114

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.3	6240	PASS
75	95	30	60	53.0	18105	PASS
95	95	100	100	100.0	34160	PASS
96	95	5	9	7.0	2395	PASS
173	174	0.00	2	0.4	113	PASS
174	95	50	100	90.8	31005	PASS
175	174	5	9	7.2	2219	PASS
176	174	95	101	98.6	30578	PASS
177	176	5	9	6.4	1945	PASS

8M418524.D 8260WTR.M Mon Mar 27 08:26:13 2017

BFB

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418556.D Vial: 1
Acq On : 27 Mar 2017 9:29 Operator: TMB
Sample : WG607733-01 50ng BFB STD 8260 Inst : HPMS8
Misc : 1,1 STD80989 Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8



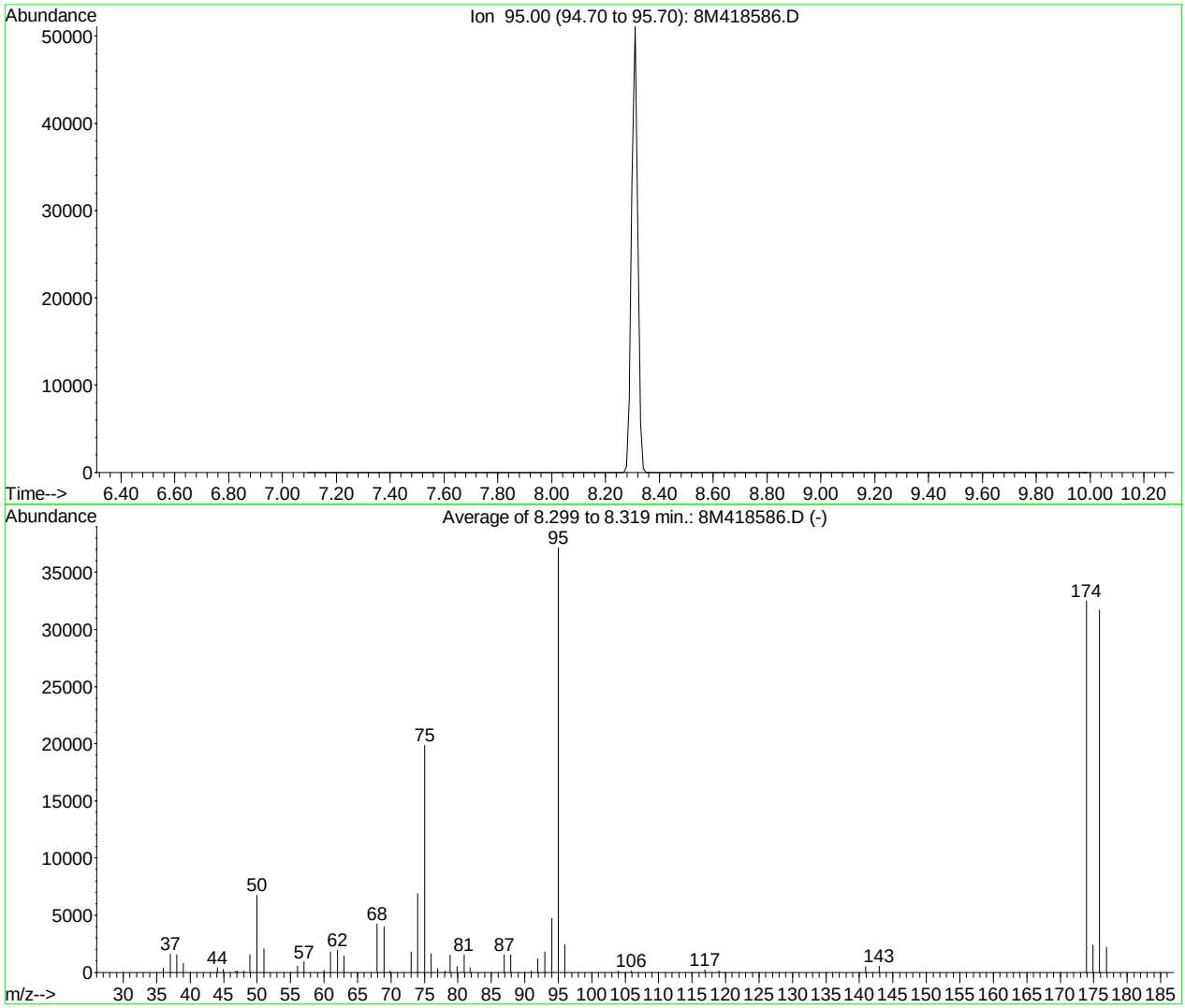
AutoFind: Scans 119, 120, 121; Background Corrected with Scan 114

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.0	4601	PASS
75	95	30	60	51.2	13074	PASS
95	95	100	100	100.0	25530	PASS
96	95	5	9	6.6	1679	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	89.5	22850	PASS
175	174	5	9	7.1	1615	PASS
176	174	95	101	99.7	22776	PASS
177	176	5	9	6.1	1398	PASS

8M418556.D 8260WTR.M Mon Mar 27 13:26:00 2017

BFB

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032817\8M418586.D Vial: 1
Acq On : 28 Mar 2017 17:24 Operator: FJB
Sample : WG607985-01 BFB 50ng 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8



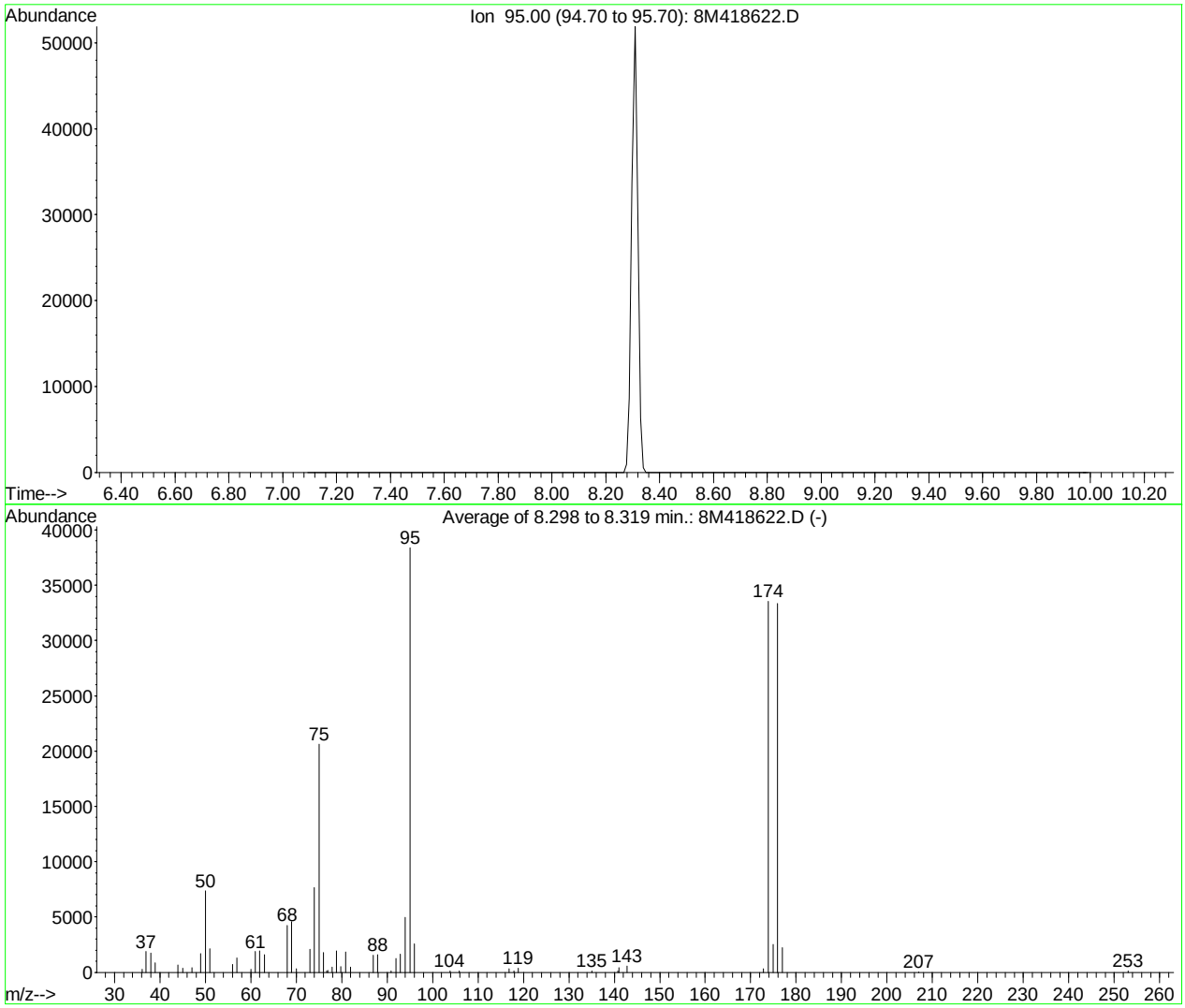
AutoFind: Scans 119, 120, 121; Background Corrected with Scan 114

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.1	6731	PASS
75	95	30	60	53.4	19853	PASS
95	95	100	100	100.0	37165	PASS
96	95	5	9	6.6	2461	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	87.5	32514	PASS
175	174	5	9	7.3	2375	PASS
176	174	95	101	97.6	31728	PASS
177	176	5	9	6.9	2180	PASS

8M418586.D 8260WTR.M Wed Mar 29 08:34:24 2017

BFB

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032917\8M418622.D Vial: 3
Acq On : 29 Mar 2017 14:15 Operator: TMB
Sample : WG608100-01 50ng BFB STD 8260 Inst : HPMS8
Misc : 1,1 STD80989 Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8



AutoFind: Scans 119, 120, 121; Background Corrected with Scan 114

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.1	7350	PASS
75	95	30	60	53.7	20615	PASS
95	95	100	100	100.0	38397	PASS
96	95	5	9	6.7	2563	PASS
173	174	0.00	2	1.0	324	PASS
174	95	50	100	87.4	33546	PASS
175	174	5	9	7.5	2500	PASS
176	174	95	101	99.4	33357	PASS
177	176	5	9	6.7	2230	PASS

8M418622.D 8260WTR.M Wed Mar 29 15:40:49 2017

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032517\8M418527.D Vial: 4
Acq On : 25 Mar 2017 13:06 Operator: JDS
Sample : WG607681-01 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 08:29:18 2017 Quant Results File: 8260WTR.RES

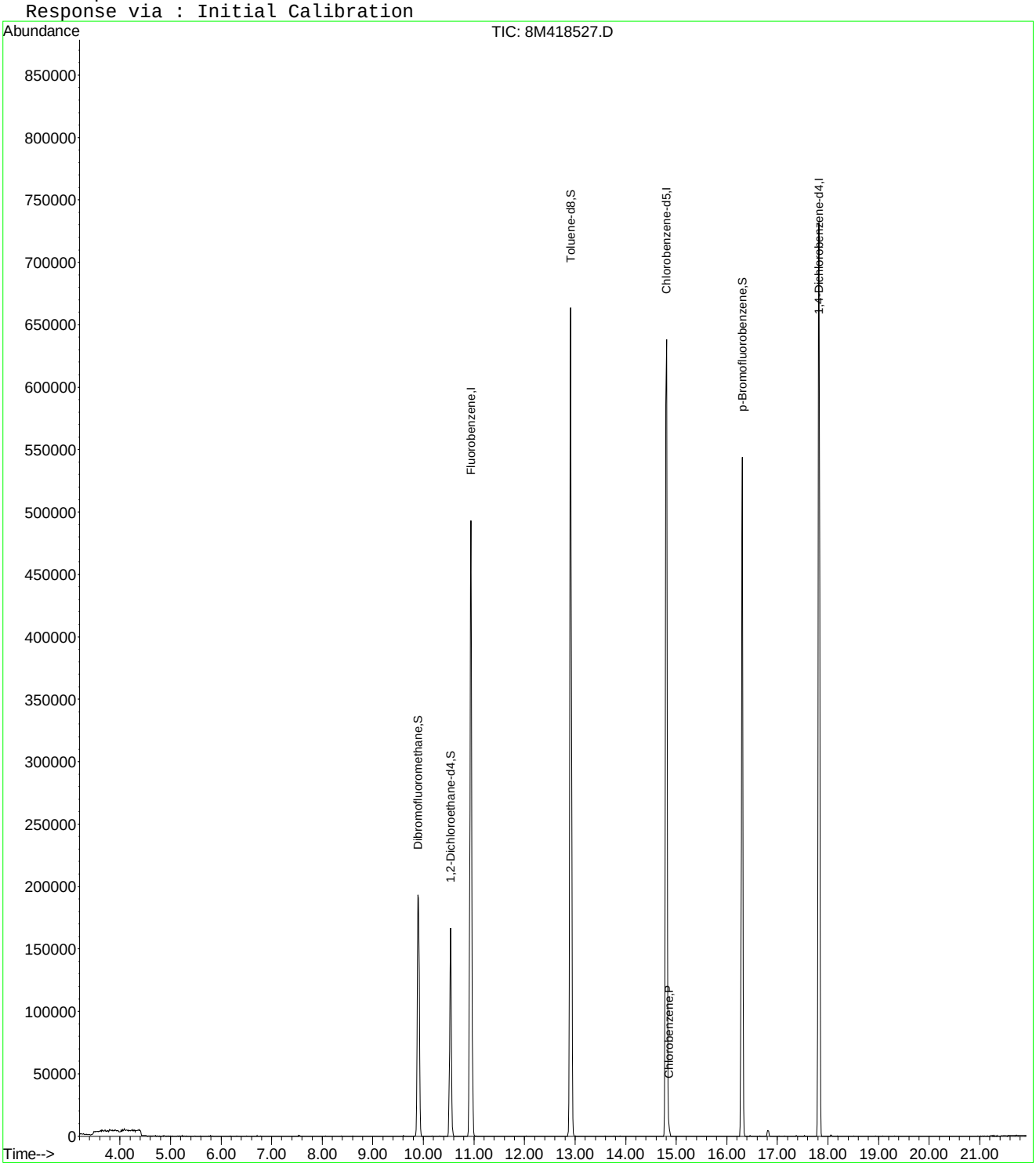
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

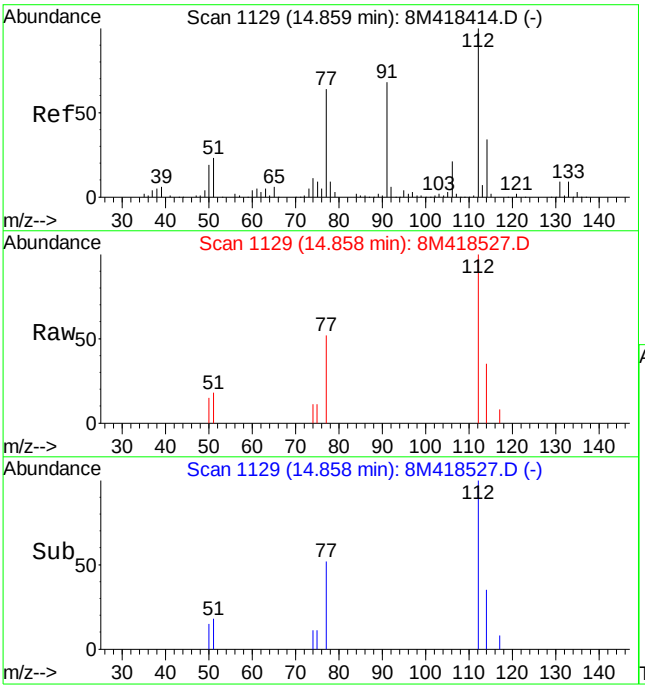
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	618397	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.81	117	473591	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	245754	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.89	111	165981	23.6660	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.68%			
43) 1,2-Dichloroethane-d4	10.54	65	140960	23.1924	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 92.76%			
58) Toluene-d8	12.91	98	607652	25.5071	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.04%			
80) p-Bromofluorobenzene	16.31	95	226262	24.3302	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.32%			
Target Compounds						Qvalue
70) Chlorobenzene	14.86	112	8631	0.4354	ug/L	75

(#) = qualifier out of range (m) = manual integration
8M418527.D 8260WTR.M Mon Mar 27 08:29:21 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032517\8M418527.D Vial: 4
Acq On : 25 Mar 2017 13:06 Operator: JDS
Sample : WG607681-01 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 8:29 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration

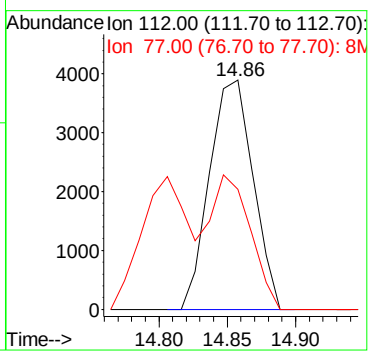




#70
Chlorobenzene
Concen: 0.44 ug/L
RT: 14.86 min Scan# 1129
Delta R.T. -0.00 min
Lab File: 8M418527.D
Acq: 25 Mar 2017 13:06

Tgt Ion:112 Resp: 8631

Ion	Ratio	Lower	Upper
112	100		
77	54.5	45.5	106.1



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418560.D Vial: 5
Acq On : 27 Mar 2017 11:29 Operator: TMB
Sample : WG607735-01 VBLK0327 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 11:51:20 2017 Quant Results File: 8260WTR.RES

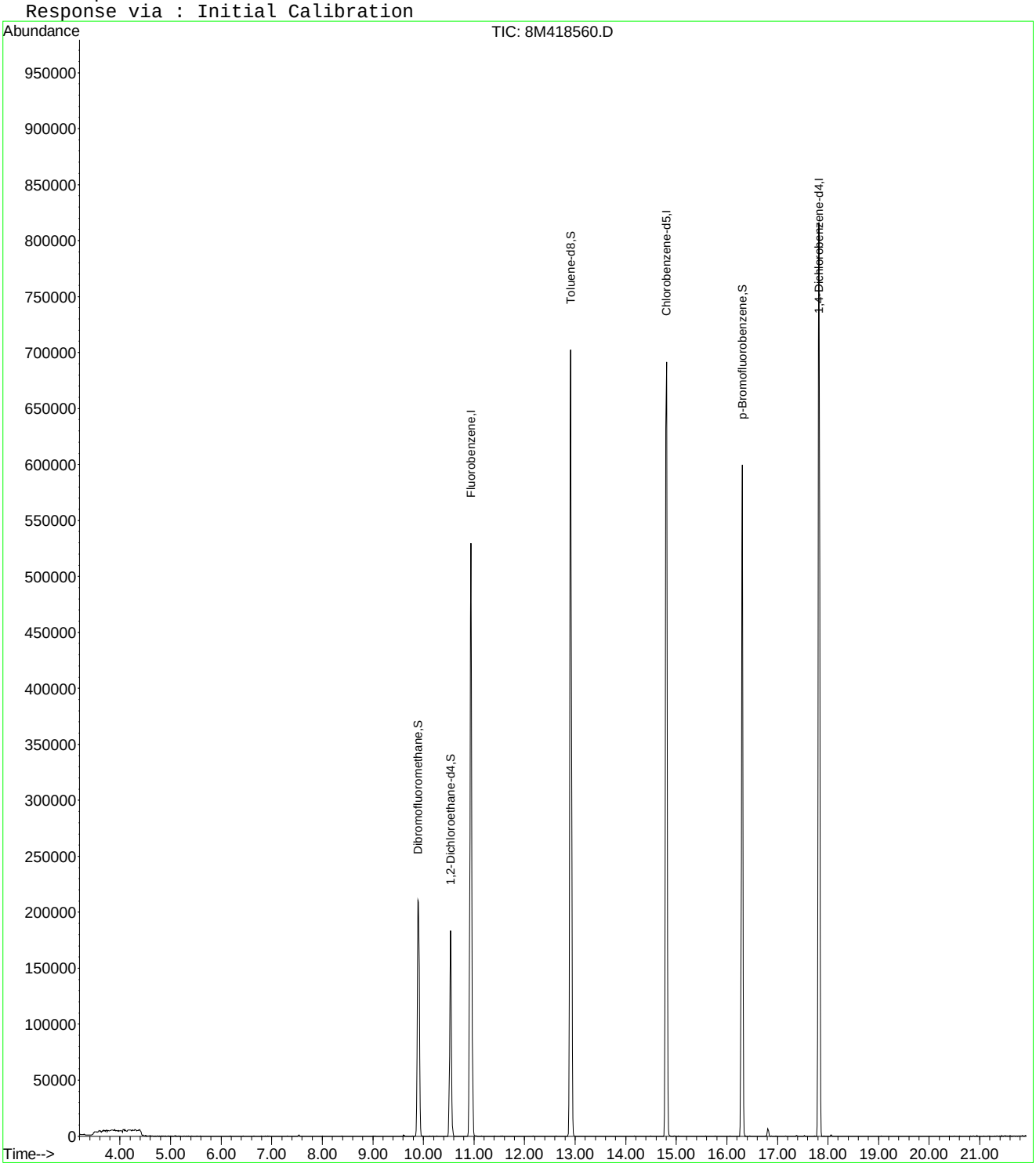
Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 09:07:42 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	649536	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.81	117	514548	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.82	152	271399	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.89	111	177610	24.1101	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.44%			
43) 1,2-Dichloroethane-d4	10.53	65	155976	24.4327	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.72%			
58) Toluene-d8	12.91	98	643289	24.8536	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.40%			
80) p-Bromofluorobenzene	16.30	95	248537	24.2001	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.80%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration
8M418560.D 8260WTR.M Tue Mar 28 08:29:38 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418560.D Vial: 5
Acq On : 27 Mar 2017 11:29 Operator: TMB
Sample : WG607735-01 VBLK0327 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 13:26 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032817\8M418590.D Vial: 5
Acq On : 28 Mar 2017 19:20 Operator: FJB
Sample : WG607986-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 29 08:40:44 2017 Quant Results File: 8260WTR.RES

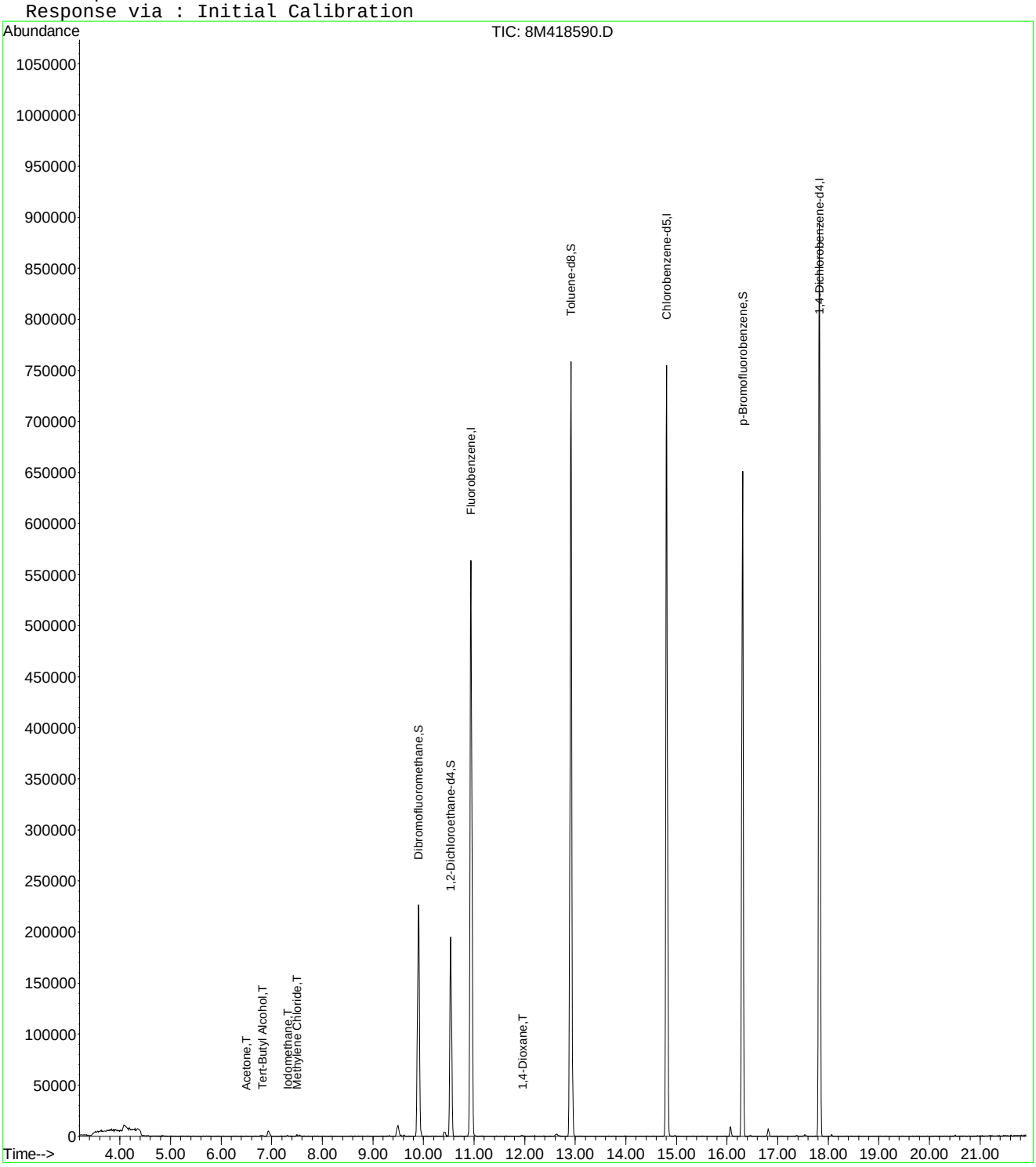
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

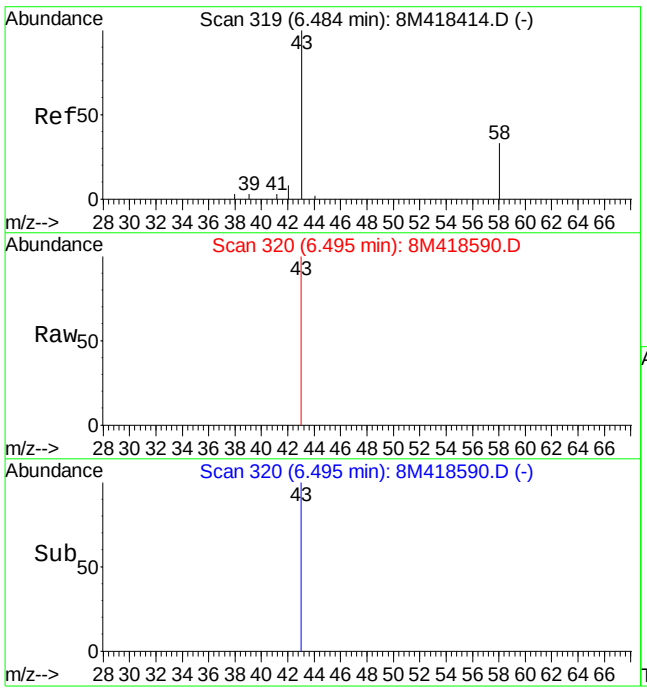
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.94	96	700624	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	554960	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	295933	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.90	111	191273	24.0715 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.28%		
43) 1,2-Dichloroethane-d4	10.54	65	166495	24.1787 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.72%		
58) Toluene-d8	12.92	98	695117	24.9004 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.60%		
80) p-Bromofluorobenzene	16.31	95	269689	24.0827 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.32%		
Target Compounds					Qvalue
13) Acetone	6.49	43	205	0.2447 ug/L #	42
15) Tert-Butyl Alcohol	6.82	59	1656	6.2098 ug/L #	59
17) Iodomethane	7.32	142	1242	0.6506 ug/L #	31
19) Methylene Chloride	7.50	84	997	0.1296 ug/L	100
51) 1,4-Dioxane	11.95	88	1128	33.8546 ug/L	86

(#) = qualifier out of range (m) = manual integration
8M418590.D 8260WTR.M Wed Mar 29 08:40:47 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032817\8M418590.D Vial: 5
Acq On : 28 Mar 2017 19:20 Operator: FJB
Sample : WG607986-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 29 8:40 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration

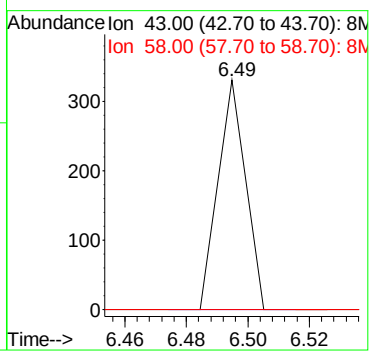


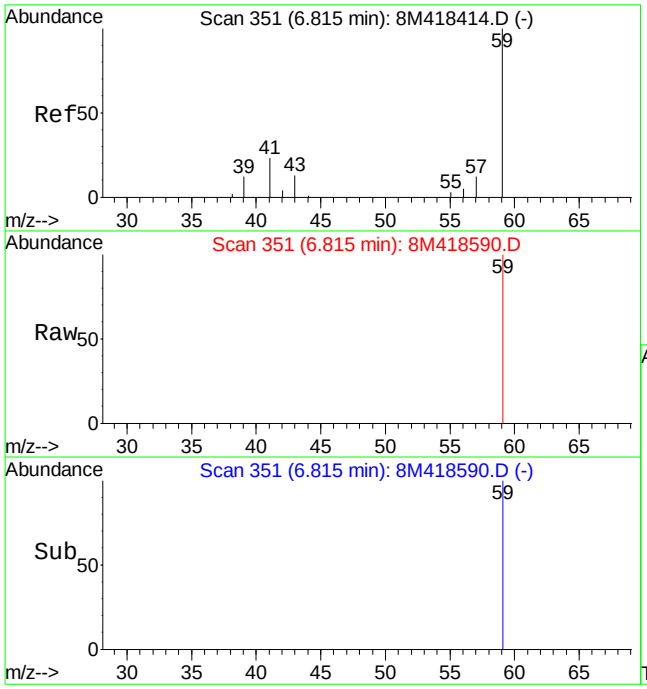


#13
Acetone
Concen: 0.24 ug/L
RT: 6.49 min Scan# 320
Delta R.T. 0.01 min
Lab File: 8M418590.D
Acq: 28 Mar 2017 19:20

Tgt Ion: 43 Resp: 205

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.4	45.4#

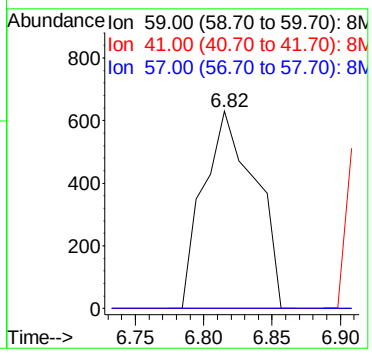


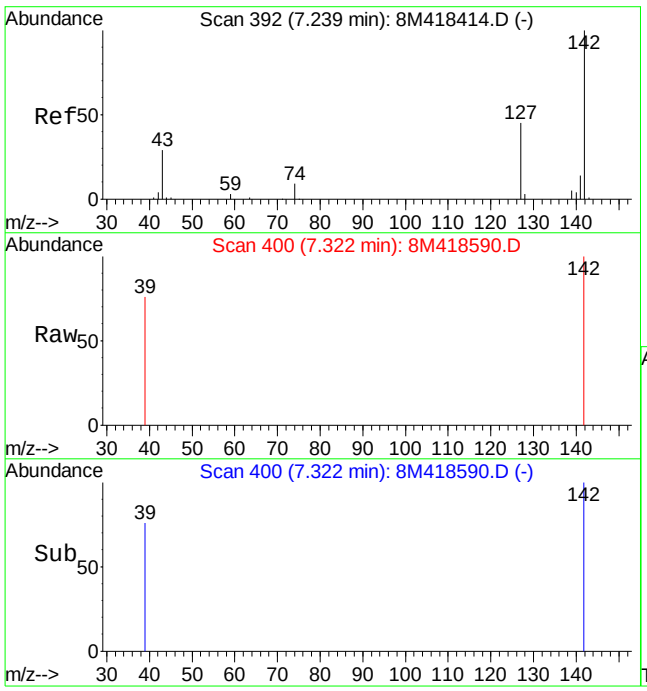


#15
Tert-Butyl Alcohol
Concen: 6.21 ug/L
RT: 6.82 min Scan# 351
Delta R.T. 0.00 min
Lab File: 8M418590.D
Acq: 28 Mar 2017 19:20

Tgt Ion: 59 Resp: 1656

Ion	Ratio	Lower	Upper
59	100		
41	0.0	14.0	32.6#
57	0.0	5.8	13.4#

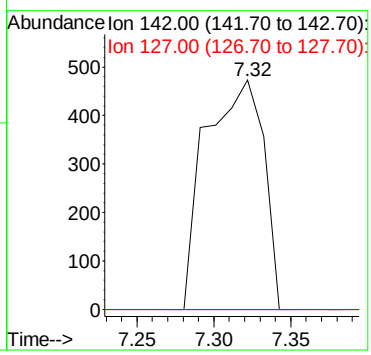


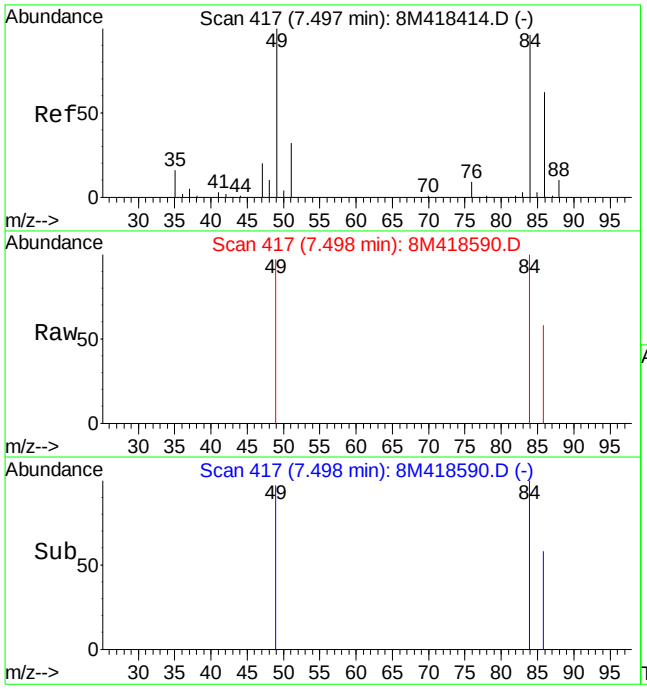


#17
Iodomethane
Concen: 0.65 ug/L
RT: 7.32 min Scan# 400
Delta R.T. 0.08 min
Lab File: 8M418590.D
Acq: 28 Mar 2017 19:20

Tgt Ion:142 Resp: 1242

Ion	Ratio	Lower	Upper
142	100		
127	0.0	27.0	63.0#

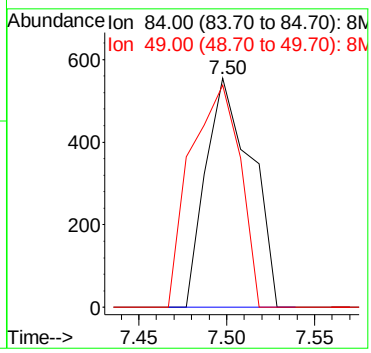


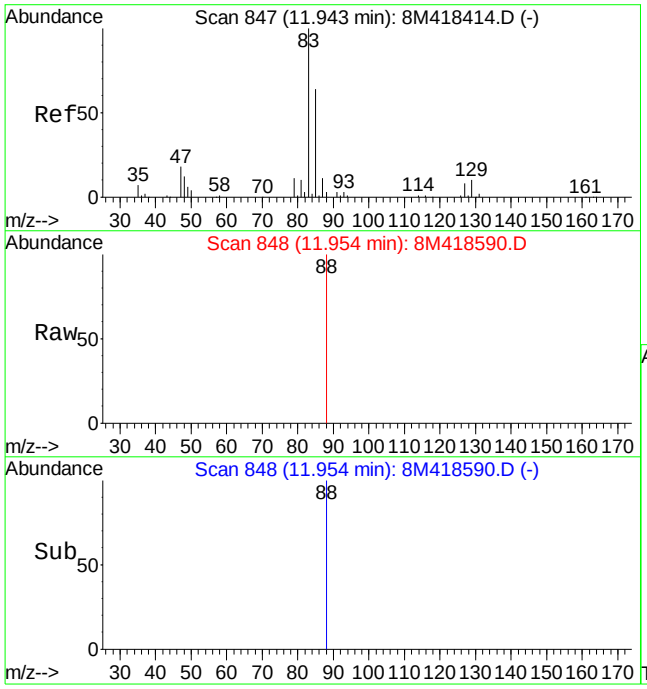


#19
Methylene Chloride
Concen: 0.13 ug/L
RT: 7.50 min Scan# 417
Delta R.T. 0.00 min
Lab File: 8M418590.D
Acq: 28 Mar 2017 19:20

Tgt Ion: 84 Resp: 997

Ion	Ratio	Lower	Upper
84	100		
49	106.2	63.9	149.1

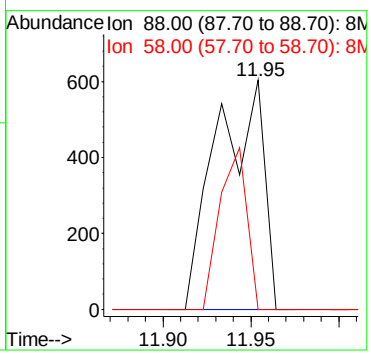




#51
1,4-Dioxane
Concen: 33.85 ug/L
RT: 11.95 min Scan# 848
Delta R.T. 0.01 min
Lab File: 8M418590.D
Acq: 28 Mar 2017 19:20

Tgt Ion: 88 Resp: 1128

Ion	Ratio	Lower	Upper
88	100		
58	40.4	30.0	70.0



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032917\8M418626.D Vial: 5
Acq On : 29 Mar 2017 16:21 Operator: TMB
Sample : WG608101-01 VBLK0329 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 30 08:25:29 2017 Quant Results File: 8260WTR.RES

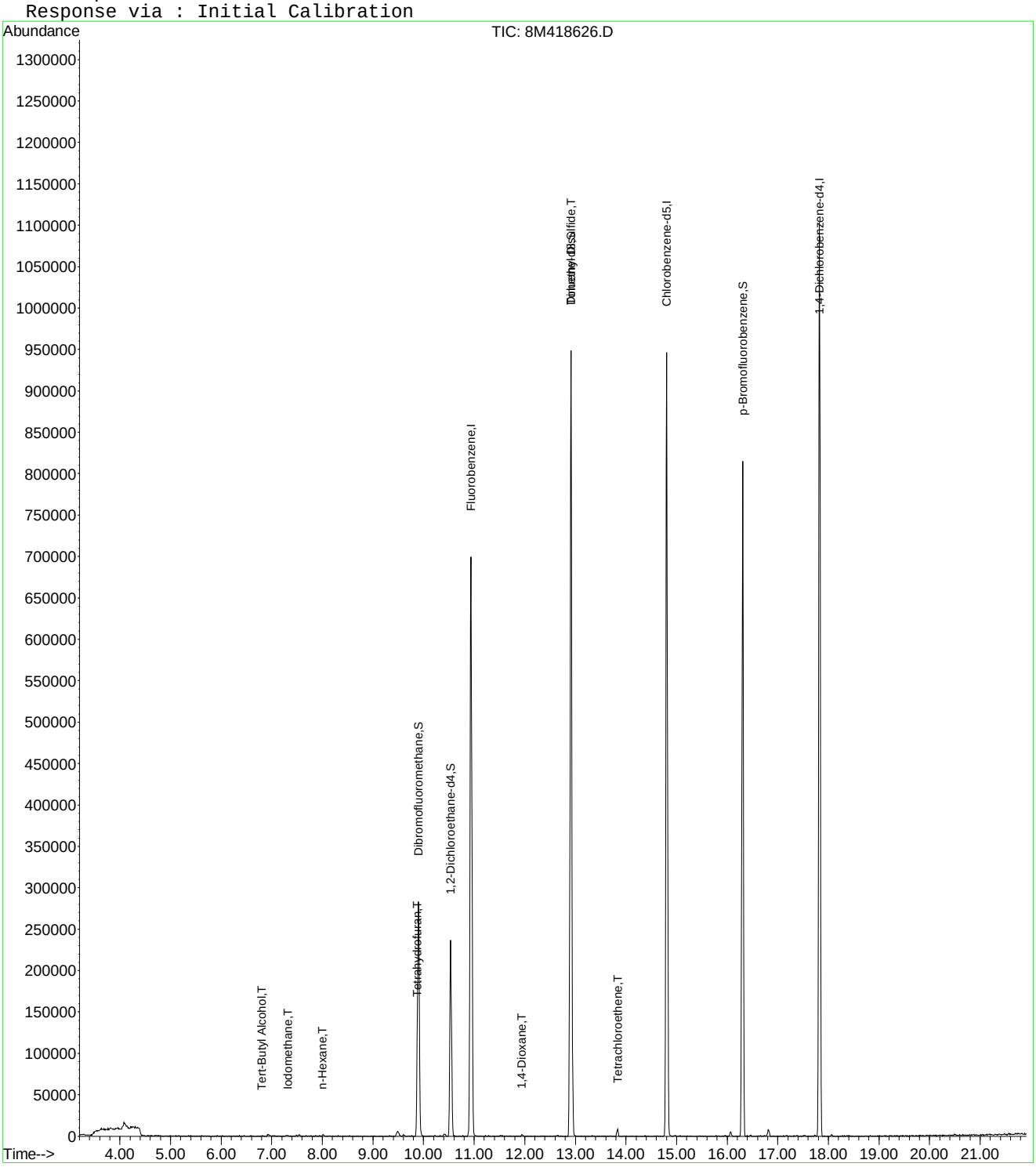
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

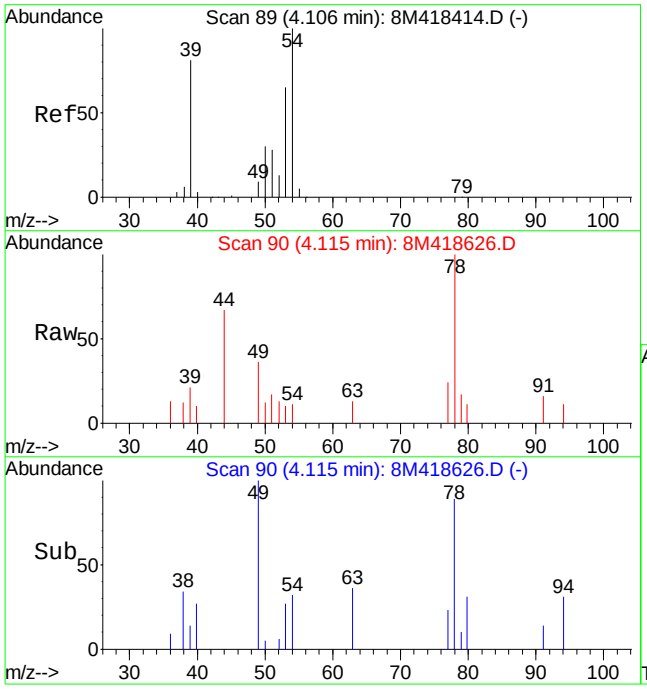
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.94	96	860933	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	686263	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	355604	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.89	111	232016	23.7620 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.04%		
43) 1,2-Dichloroethane-d4	10.54	65	199470	23.5736 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.28%		
58) Toluene-d8	12.91	98	856944	24.8240 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.28%		
80) p-Bromofluorobenzene	16.31	95	321603	23.8995 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.60%		
Target Compounds					Qvalue
5) 1,3-Butadiene	4.12	54	236	Below Cal #	1
15) Tert-Butyl Alcohol	6.80	59	892	2.7220 ug/L #	59
17) Iodomethane	7.32	142	964	0.5967 ug/L #	31
24) n-Hexane	8.00	57	1396	0.1369 ug/L #	66
36) Tetrahydrofuran	9.87	42	793	0.7512 ug/L #	24
51) 1,4-Dioxane	11.94	88	1701	41.5459 ug/L	90
56) Dimethyl Disulfide	12.91	79	241	2.8321 ug/L #	1
66) Tetrachloroethene	13.83	164	2551	0.2884 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M418626.D 8260WTR.M Thu Mar 30 08:25:32 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032917\8M418626.D Vial: 5
Acq On : 29 Mar 2017 16:21 Operator: TMB
Sample : WG608101-01 VBLK0329 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 30 8:25 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration

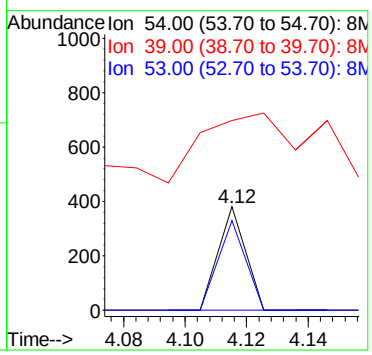


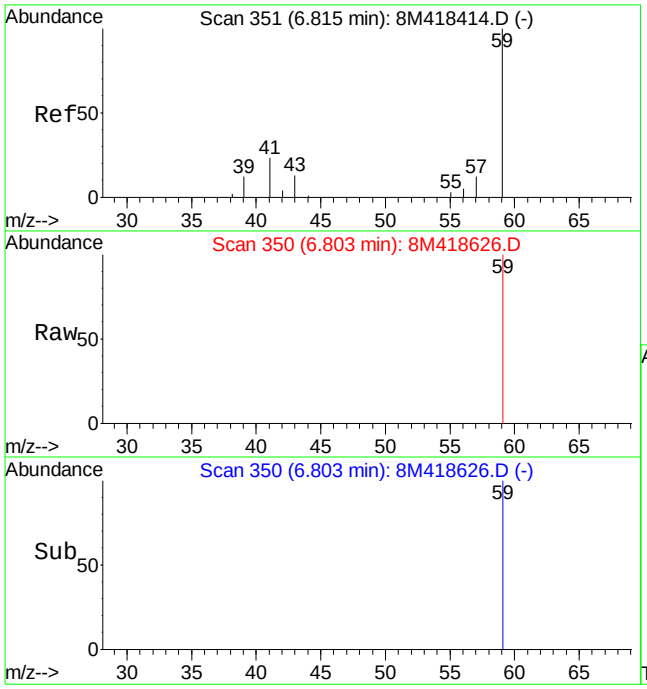


#5
1,3-Butadiene
Concen: Below Cal
RT: 4.12 min Scan# 90
Delta R.T. 0.01 min
Lab File: 8M418626.D
Acq: 29 Mar 2017 16:21

Tgt Ion: 54 Resp: 236

Ion	Ratio	Lower	Upper
54	100		
39	633.1	48.5	113.3#
53	86.9	39.3	91.7

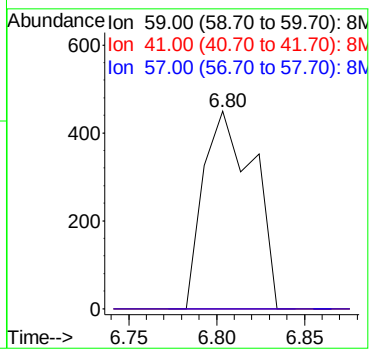


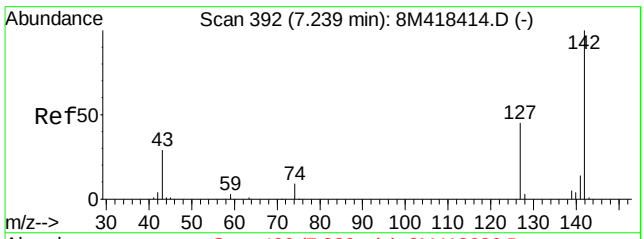


#15
Tert-Butyl Alcohol
Concen: 2.72 ug/L
RT: 6.80 min Scan# 350
Delta R.T. -0.01 min
Lab File: 8M418626.D
Acq: 29 Mar 2017 16:21

Tgt Ion: 59 Resp: 892

Ion	Ratio	Lower	Upper
59	100		
41	0.0	14.0	32.6#
57	0.0	5.8	13.4#

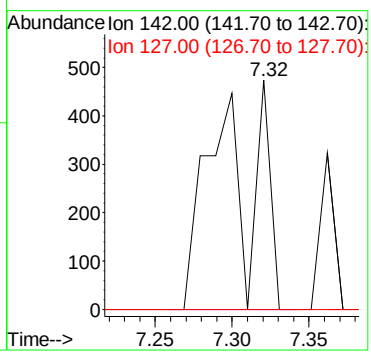


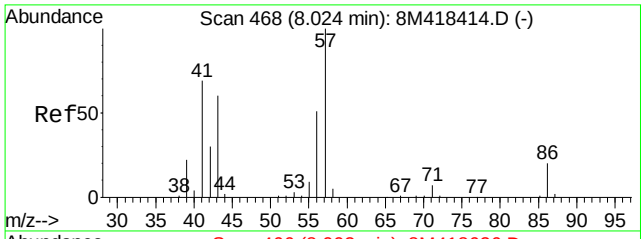


#17
Iodomethane
Concen: 0.60 ug/L
RT: 7.32 min Scan# 400
Delta R.T. 0.08 min
Lab File: 8M418626.D
Acq: 29 Mar 2017 16:21

Tgt Ion:142 Resp: 964

Ion	Ratio	Lower	Upper
142	100		
127	0.0	27.0	63.0#

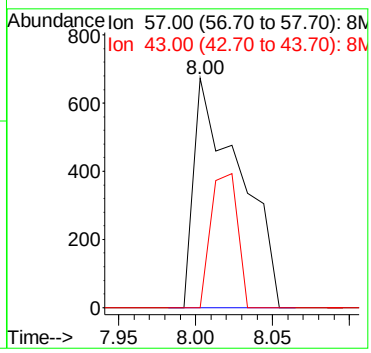


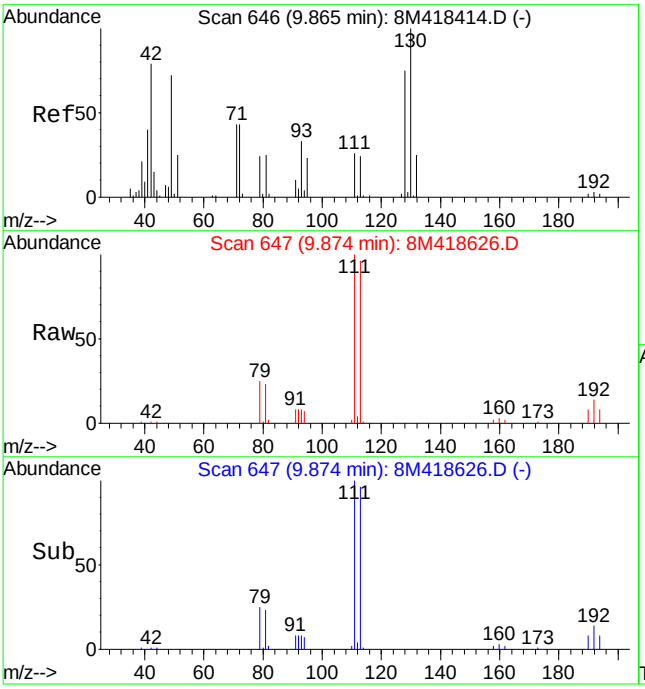


#24
n-Hexane
Concen: 0.14 ug/L
RT: 8.00 min Scan# 466
Delta R.T. -0.02 min
Lab File: 8M418626.D
Acq: 29 Mar 2017 16:21

Tgt Ion: 57 Resp: 1396

Ion	Ratio	Lower	Upper
57	100		
43	34.1	35.9	83.7#

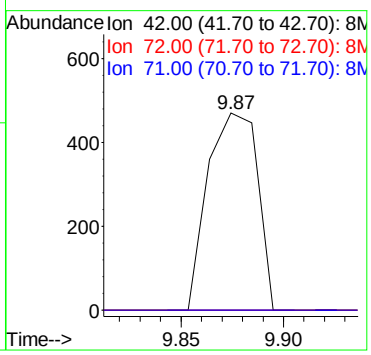


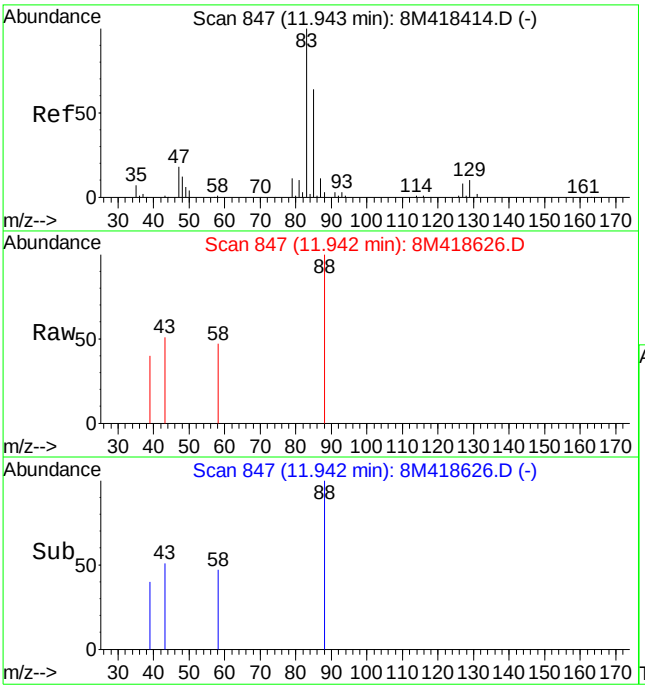


#36
Tetrahydrofuran
Concen: 0.75 ug/L
RT: 9.87 min Scan# 647
Delta R.T. 0.01 min
Lab File: 8M418626.D
Acq: 29 Mar 2017 16:21

Tgt Ion: 42 Resp: 793

Ion	Ratio	Lower	Upper
42	100		
72	0.0	32.9	76.9#
71	0.0	32.1	74.9#

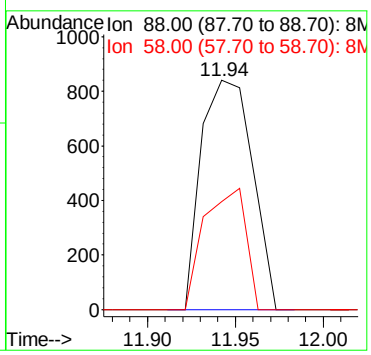


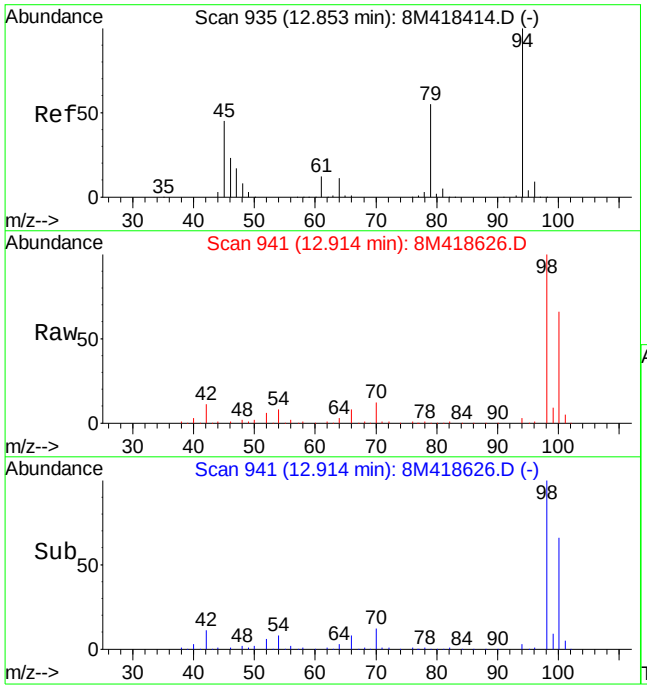


#51
1,4-Dioxane
Concen: 41.55 ug/L
RT: 11.94 min Scan# 847
Delta R.T. -0.00 min
Lab File: 8M418626.D
Acq: 29 Mar 2017 16:21

Tgt Ion: 88 Resp: 1701

Ion	Ratio	Lower	Upper
88	100		
58	43.1	30.0	70.0

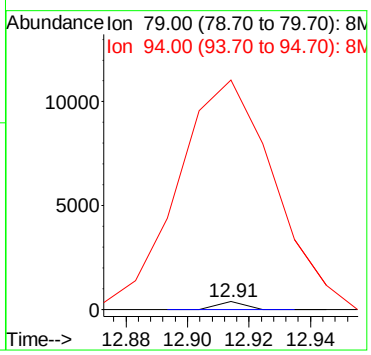


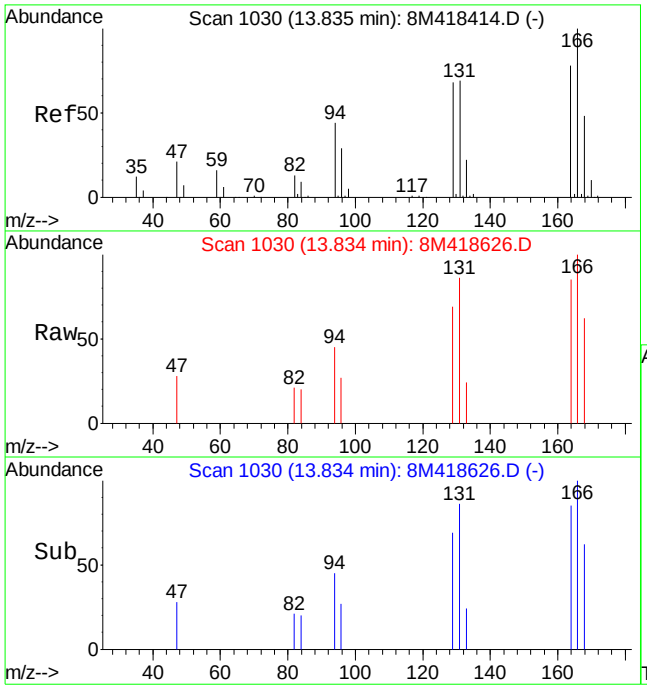


#56
Dimethyl Disulfide
Concen: 2.83 ug/L
RT: 12.91 min Scan# 941
Delta R.T. 0.06 min
Lab File: 8M418626.D
Acq: 29 Mar 2017 16:21

Tgt Ion: 79 Resp: 241

Ion	Ratio	Lower	Upper
79	100		
94	10092.9	114.1	266.1#

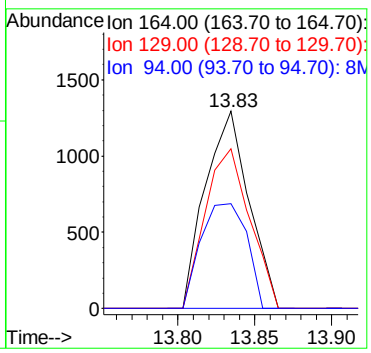




#66
Tetrachloroethene
Concen: 0.29 ug/L
RT: 13.83 min Scan# 1030
Delta R.T. -0.00 min
Lab File: 8M418626.D
Acq: 29 Mar 2017 16:21

Tgt Ion:164 Resp: 2551

Ion	Ratio	Lower	Upper
164	100		
129	82.8	53.4	124.6
94	55.9	34.7	81.1



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032517\8M418547.D Vial: 24
Acq On : 25 Mar 2017 23:04 Operator: JDS
Sample : WG607681-04 BLANK STD 624 Inst : HPMS8
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 08:31:01 2017 Quant Results File: 8260WTR.RES

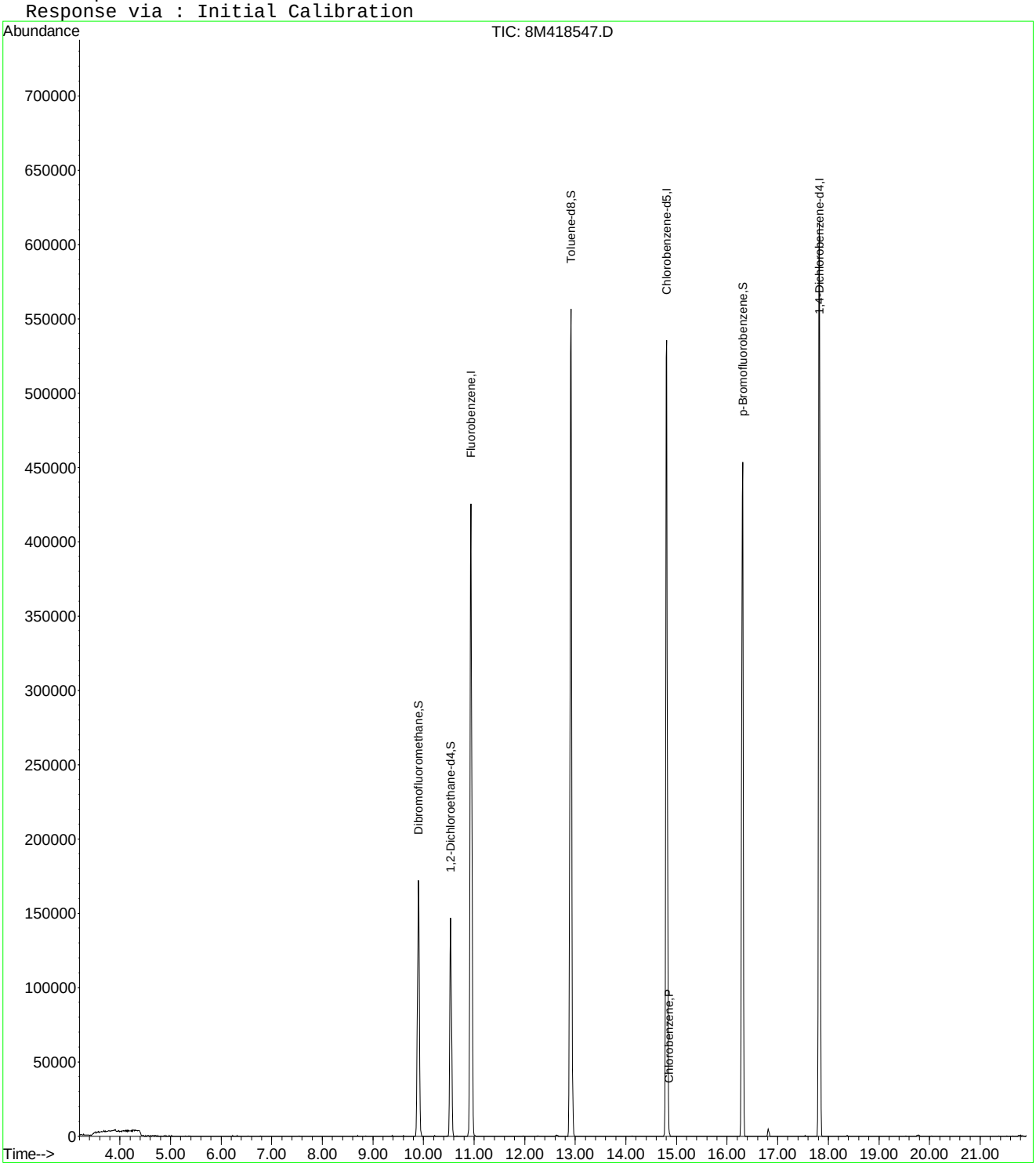
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

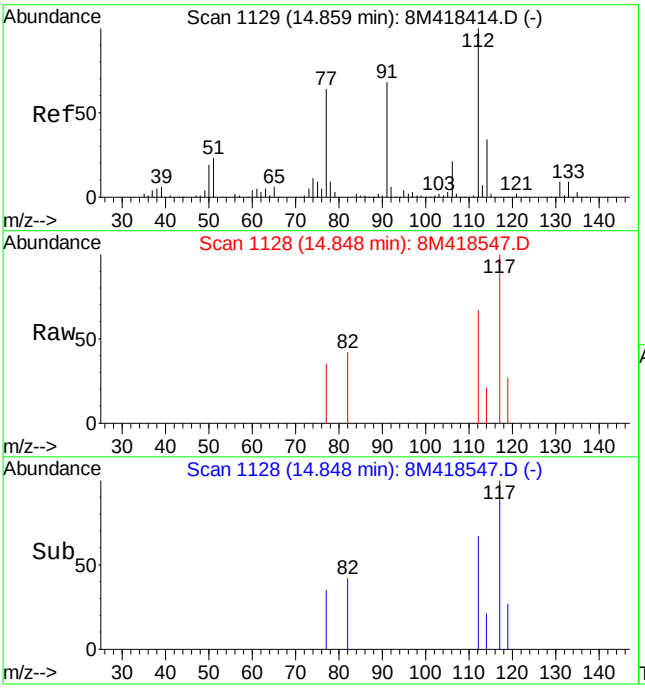
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.94	96	520577	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	402560	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	211094	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.90	111	138478	23.4547 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.80%		
43) 1,2-Dichloroethane-d4	10.54	65	124167	24.2683 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.08%		
58) Toluene-d8	12.91	98	513753	25.3707 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.48%		
80) p-Bromofluorobenzene	16.31	95	191329	23.9519 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.80%		
Target Compounds					Qvalue
70) Chlorobenzene	14.85	112	2231	0.1324 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M418547.D 8260WTR.M Mon Mar 27 08:31:04 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032517\8M418547.D Vial: 24
Acq On : 25 Mar 2017 23:04 Operator: JDS
Sample : WG607681-04 BLANK STD 624 Inst : HPMS8
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 8:30 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration

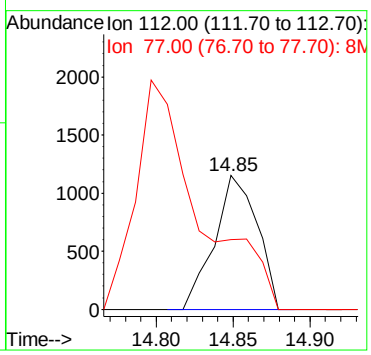




#70
Chlorobenzene
Concen: 0.13 ug/L
RT: 14.85 min Scan# 1128
Delta R.T. -0.01 min
Lab File: 8M418547.D
Acq: 25 Mar 2017 23:04

Tgt Ion:112 Resp: 2231

Ion	Ratio	Lower	Upper
112	100		
77	253.1	45.5	106.1#



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032517\8M418528.D Vial: 5
Acq On : 25 Mar 2017 13:36 Operator: JDS
Sample : WG607681-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 08:26:40 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	650586	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.81	117	505777	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.82	152	278901	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.89	111	177375	24.0393	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.16%			
43) 1,2-Dichloroethane-d4	10.54	65	147612	23.0852	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 92.36%			
58) Toluene-d8	12.91	98	635302	24.9707	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.88%			
80) p-Bromofluorobenzene	16.30	95	248138	23.5114	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.04%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.34	85	202716	19.8906	ug/L	100
3) Chloromethane	3.83	50	262118	21.2233	ug/L	99
4) Vinyl Chloride	4.05	62	252174	21.8368	ug/L	99
5) 1,3-Butadiene	4.09	54	98802	23.3250	ug/L	99
6) Bromomethane	4.97	94	109769	18.7655	ug/L	99
7) Chloroethane	5.13	64	93728	20.0104	ug/L	99
8) Trichlorofluoromethane	5.61	101	240997	19.2847	ug/L	100
9) Diethyl ether	6.14	59	357928	88.5587	ug/L	100
10) Isoprene	6.18	67	200691	20.7849	ug/L	100
11) Acrolein	6.39	56	31823	61.5785	ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	143110	21.2900	ug/L	99
13) Acetone	6.49	43	13734	17.6524	ug/L	94
14) 1,1-Dichloroethene	6.71	61	181697	19.3712	ug/L	98
15) Tert-Butyl Alcohol	6.82	59	51795	209.1623	ug/L	97
16) Dimethyl Sulfide	6.98	62	131581	19.7351	ug/L	99
17) Iodomethane	7.24	142	86429	11.4724	ug/L	99
18) Methyl acetate	7.24	43	44213	19.8724	ug/L	100
19) Methylene Chloride	7.50	84	134721	18.8623	ug/L	100
20) Carbon Disulfide	7.54	76	360586	16.8783	ug/L	99
21) Acrylonitrile	7.67	53	21011	19.3077	ug/L	96
22) Methyl Tert Butyl Ether	7.70	73	258400	18.7956	ug/L	99
23) trans-1,2-Dichloroethene	7.94	61	172938	19.0156	ug/L	99
24) n-Hexane	8.01	57	158367	20.5572	ug/L	98
25) Diisopropyl ether	8.35	45	1672984	96.3073	ug/L	100
26) Vinyl Acetate	8.53	43	131074	19.1728	ug/L	100
27) 1,1-Dichloroethane	8.56	63	228841	19.2934	ug/L	100
28) Ethyl-Tert-Butyl ether	8.93	59	1533457	92.1960	ug/L	100
29) 2-Butanone	9.12	43	21981	17.5351	ug/L	97
30) Propionitrile	9.22	54	37527	101.1267	ug/L	97
31) 2,2-Dichloropropane	9.34	77	215764	20.3911	ug/L	100
32) cis-1,2-Dichloroethene	9.40	96	151111	19.5764	ug/L	100
33) Chloroform	9.60	83	255091	18.5556	ug/L	99
34) 1-Bromopropane	9.75	122	37803	25.6344	ug/L	99
35) Bromochloromethane	9.84	130	79284	19.1210	ug/L	98
36) Tetrahydrofuran	9.86	42	73377	91.9777	ug/L	98
38) 1,1,1-Trichloroethane	10.14	97	230148	20.3537	ug/L	100
39) Cyclohexane	10.17	56	172654	17.6685	ug/L	99
40) 1,1-Dichloropropene	10.34	75	192807	19.8547	ug/L	99
41) Tert-Amyl-Methyl ether	10.43	73	1523292	98.1387	ug/L	99
42) Carbon Tetrachloride	10.48	117	211336	20.8888	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M418528.D 8260WTR.M Mon Mar 27 08:26:42 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032517\8M418528.D Vial: 5
Acq On : 25 Mar 2017 13:36 Operator: JDS
Sample : WG607681-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 08:26:40 2017 Quant Results File: 8260WTR.RES

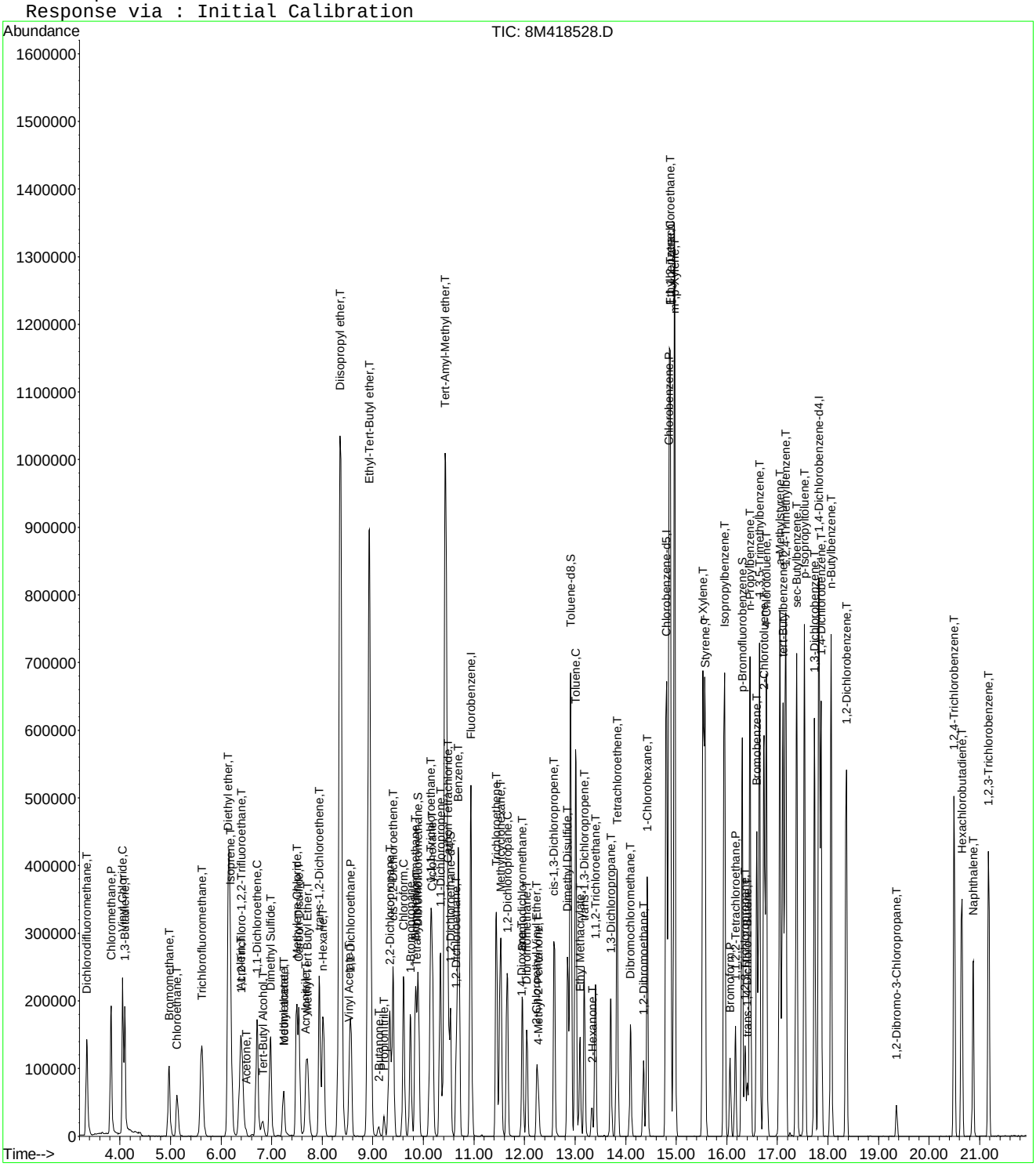
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.65	62	146180	18.8342	ug/L	99
46)	Benzene	10.69	78	552250	19.7214	ug/L	99
47)	Trichloroethene	11.45	130	142043	18.9703	ug/L	99
48)	Methylcyclohexane	11.53	83	210163	18.6792	ug/L	99
49)	1,2-Dichloropropane	11.66	63	124245	19.2972	ug/L	99
50)	Bromodichloromethane	11.95	83	176144	19.3519	ug/L	99
51)	1,4-Dioxane	11.94	88	7050	227.8651	ug/L	93
52)	Dibromomethane	12.04	93	69658	20.1887	ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.24	63	54354	18.5653	ug/L	100
54)	4-Methyl-2-Pentanone	12.27	58	21765	17.3702	ug/L	98
55)	cis-1,3-Dichloropropene	12.58	75	213736	20.2307	ug/L	99
56)	Dimethyl Disulfide	12.85	79	108512	19.2275	ug/L	93
59)	Toluene	13.01	91	595048	19.7807	ug/L	98
60)	Ethyl Methacrylate	13.10	69	117523	20.2041	ug/L	96
62)	trans-1,3-Dichloropropene	13.18	75	169399	19.0910	ug/L	99
63)	1,1,2-Trichloroethane	13.40	97	89768	18.9442	ug/L	100
64)	2-Hexanone	13.34	58	21953	19.3248	ug/L	95
65)	1,3-Dichloropropane	13.71	76	165067	19.4544	ug/L	97
66)	Tetrachloroethene	13.83	164	123323	18.9201	ug/L	98
67)	Dibromochloromethane	14.09	129	114718	18.5939	ug/L	99
68)	1,2-Dibromoethane	14.35	107	91598	18.8395	ug/L	100
69)	1-Chlorohexane	14.42	91	198880	19.3990	ug/L	99
70)	Chlorobenzene	14.86	112	400754	18.9284	ug/L	100
71)	1,1,1,2-Tetrachloroethane	14.88	131	140015	17.7984	ug/L	100
72)	Ethylbenzene	14.88	106	225306	19.1752	ug/L	93
73)	m-,p-Xylene	14.97	106	552854	39.2312	ug/L	94
74)	o-Xylene	15.53	106	257984	18.4614	ug/L	97
75)	Styrene	15.57	104	444785	19.7163	ug/L	99
76)	Bromoform	16.07	173	68300	18.7987	ug/L	98
77)	Isopropylbenzene	15.95	105	661325	19.5607	ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.17	83	106318	19.5589	ug/L	99
81)	1,2,3-Trichloropropane	16.36	110	29987	19.3771	ug/L	79
82)	trans-1,4-Dichloro-2-Buten	16.41	53	21395	16.7800	ug/L	93
83)	n-Propylbenzene	16.46	91	789937	19.2297	ug/L	98
84)	Bromobenzene	16.59	156	168700	18.5555	ug/L	99
85)	1,3,5-Trimethylbenzene	16.65	105	571431	19.2596	ug/L	98
86)	2-Chlorotoluene	16.74	91	524974	19.0125	ug/L	97
87)	4-Chlorotoluene	16.78	91	457242	18.9548	ug/L	98
88)	a-Methylstyrene	17.05	118	316890	19.1058	ug/L	99
89)	tert-Butylbenzene	17.11	134	119376	18.2184	ug/L	96
90)	1,2,4-Trimethylbenzene	17.16	105	598350	19.3982	ug/L	98
91)	sec-Butylbenzene	17.38	105	720469	19.5631	ug/L	98
92)	p-Isopropyltoluene	17.54	119	597064	19.7921	ug/L	98
93)	1,3-Dichlorobenzene	17.73	146	334395	18.4516	ug/L	99
94)	1,4-Dichlorobenzene	17.87	146	340120	18.6332	ug/L	99
95)	n-Butylbenzene	18.06	91	575082	19.6484	ug/L	98
96)	1,2-Dichlorobenzene	18.36	146	294885	18.6739	ug/L	98
97)	1,2-Dibromo-3-Chloropropan	19.35	75	15334	17.9747	ug/L	99
98)	1,2,4-Trichlorobenzene	20.49	180	204637	17.3256	ug/L	99
99)	Hexachlorobutadiene	20.65	225	96201	16.6591	ug/L	99
100)	Naphthalene	20.87	128	276347	17.7147	ug/L	100
101)	1,2,3-Trichlorobenzene	21.17	180	168987	17.3010	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M418528.D 8260WTR.M Mon Mar 27 08:26:43 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032517\8M418528.D Vial: 5
Acq On : 25 Mar 2017 13:36 Operator: JDS
Sample : WG607681-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 8:26 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418566.D Vial: 11
Acq On : 27 Mar 2017 14:28 Operator: TMB
Sample : WG607735-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 14:54:48 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	600378	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.80	117	477425	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	275401	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.90	111	166390	24.4364	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.76%			
43) 1,2-Dichloroethane-d4	10.54	65	141755	24.0232	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.08%			
58) Toluene-d8	12.91	98	590887	24.6042	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.40%			
80) p-Bromofluorobenzene	16.30	95	235378	22.5858	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 90.36%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.34	85	173519	18.4496	ug/L	100
3) Chloromethane	3.83	50	258038	22.6402	ug/L	97
4) Vinyl Chloride	4.06	62	250828	23.5366	ug/L	99
5) 1,3-Butadiene	4.10	54	111752	29.4962	ug/L	95
6) Bromomethane	4.96	94	83575	15.4824	ug/L	99
7) Chloroethane	5.13	64	85630	19.8104	ug/L	99
8) Trichlorofluoromethane	5.62	101	212703	18.4440	ug/L	98
9) Diethyl ether	6.14	59	332553	89.1613	ug/L	99
10) Isoprene	6.18	67	176260	19.7812	ug/L	100
11) Acrolein	6.38	56	26833	56.2649	ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	124285	20.0357	ug/L	97
13) Acetone	6.47	43	13152	18.3180	ug/L	96
14) 1,1-Dichloroethene	6.71	61	165945	19.1713	ug/L	99
15) Tert-Butyl Alcohol	6.82	59	40411	176.8378	ug/L	97
16) Dimethyl Sulfide	6.97	62	123075	20.0030	ug/L	99
17) Iodomethane	7.23	142	59557	8.6943	ug/L	97
18) Methyl acetate	7.24	43	42957	20.9225	ug/L	99
19) Methylene Chloride	7.49	84	123461	18.7314	ug/L	95
20) Carbon Disulfide	7.54	76	322137	16.3396	ug/L	100
21) Acrylonitrile	7.67	53	21051	20.9621	ug/L	94
22) Methyl Tert Butyl Ether	7.70	73	241205	19.0120	ug/L	98
23) trans-1,2-Dichloroethene	7.94	61	158377	18.8709	ug/L	98
24) n-Hexane	8.02	57	131059	18.4351	ug/L	98
25) Diisopropyl ether	8.36	45	1570032	97.9391	ug/L	99
26) Vinyl Acetate	8.52	43	98557	15.6220	ug/L	99
27) 1,1-Dichloroethane	8.56	63	216471	19.7767	ug/L	99
28) Ethyl-Tert-Butyl ether	8.92	59	1436014	93.5576	ug/L	99
29) 2-Butanone	9.11	43	20458	17.6849	ug/L	99
30) Propionitrile	9.22	54	33922	99.0566	ug/L	99
31) 2,2-Dichloropropane	9.34	77	174788	17.9000	ug/L	99
32) cis-1,2-Dichloroethene	9.40	96	140272	19.6919	ug/L	99
33) Chloroform	9.61	83	239127	18.8490	ug/L	99
34) 1-Bromopropane	9.74	122	34246	25.1644	ug/L	98
35) Bromochloromethane	9.85	130	74964	19.5910	ug/L	98
36) Tetrahydrofuran	9.87	42	67780	92.0670	ug/L	98
38) 1,1,1-Trichloroethane	10.13	97	212284	20.3439	ug/L	99
39) Cyclohexane	10.17	56	152936	16.9595	ug/L	99
40) 1,1-Dichloropropene	10.33	75	177493	19.8063	ug/L	97
41) Tert-Amyl-Methyl ether	10.43	73	1429573	99.8029	ug/L	99
42) Carbon Tetrachloride	10.48	117	194164	20.7964	ug/L	98

(#) = qualifier out of range (m) = manual integration
8M418566.D 8260WTR.M Mon Mar 27 14:54:51 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418566.D Vial: 11
Acq On : 27 Mar 2017 14:28 Operator: TMB
Sample : WG607735-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 14:54:48 2017 Quant Results File: 8260WTR.RES

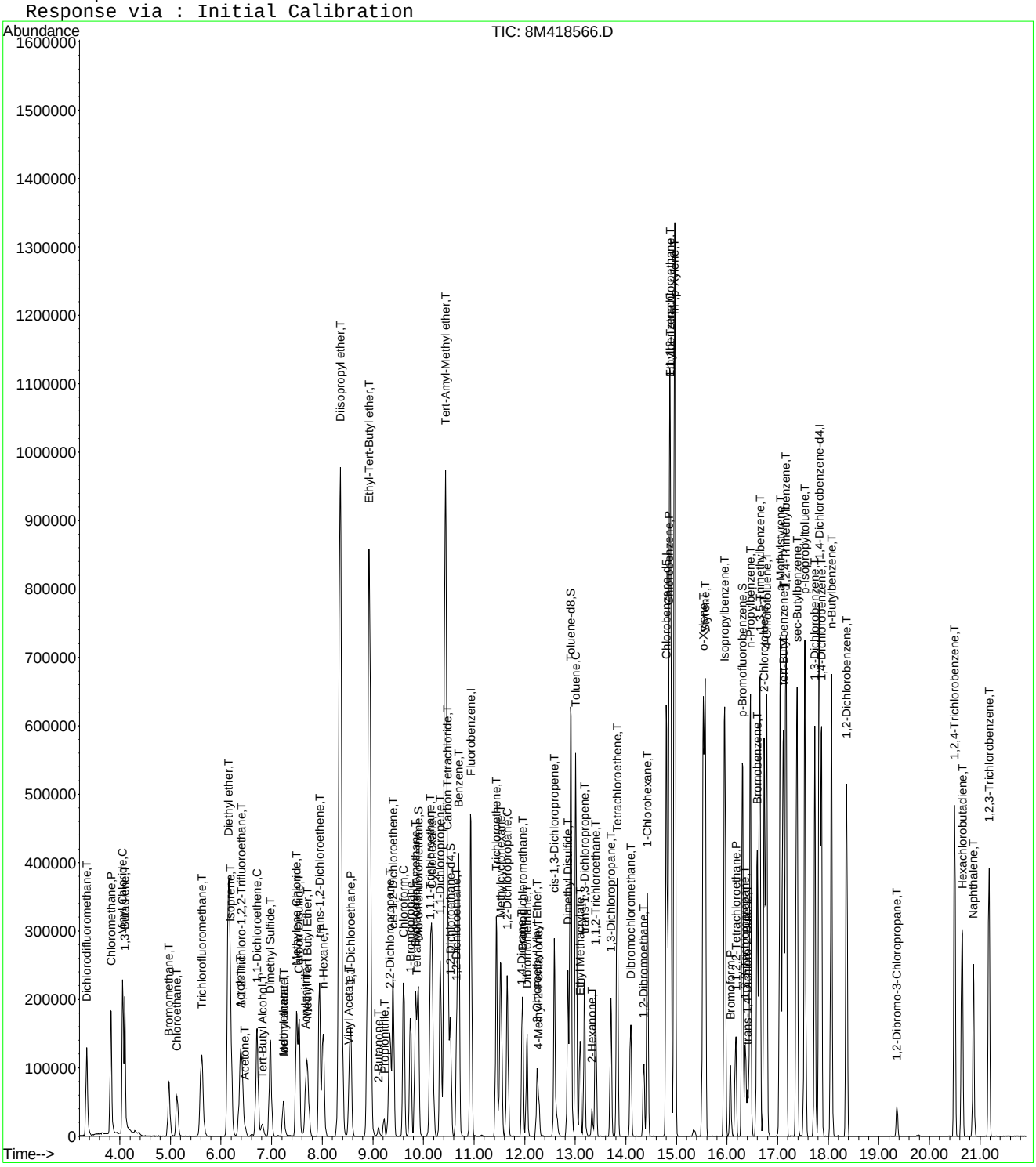
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.65	62	142387	19.8797	ug/L	98
46)	Benzene	10.69	78	520038	20.1241	ug/L	99
47)	Trichloroethene	11.44	130	134575	19.4760	ug/L	99
48)	Methylcyclohexane	11.53	83	180594	17.3934	ug/L	99
49)	1,2-Dichloropropane	11.65	63	119864	20.1736	ug/L	98
50)	Bromodichloromethane	11.95	83	166818	19.8599	ug/L	99
51)	1,4-Dioxane	11.94	88	3816	133.6525	ug/L	92
52)	Dibromomethane	12.05	93	66544	20.8990	ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.24	63	50865	18.8265	ug/L	99
54)	4-Methyl-2-Pentanone	12.27	58	21478	18.5746	ug/L	99
55)	cis-1,3-Dichloropropene	12.59	75	198769	20.3874	ug/L	98
56)	Dimethyl Disulfide	12.85	79	97537	18.8009	ug/L	93
59)	Toluene	13.01	91	555668	19.5685	ug/L	98
60)	Ethyl Methacrylate	13.09	69	113154	20.6082	ug/L	94
62)	trans-1,3-Dichloropropene	13.18	75	157594	18.8153	ug/L	100
63)	1,1,2-Trichloroethane	13.40	97	85182	19.0439	ug/L	100
64)	2-Hexanone	13.33	58	19240	17.9424	ug/L	99
65)	1,3-Dichloropropane	13.70	76	156749	19.5711	ug/L	99
66)	Tetrachloroethene	13.83	164	112881	18.3465	ug/L	99
67)	Dibromochloromethane	14.09	129	110724	18.9999	ug/L	97
68)	1,2-Dibromoethane	14.35	107	84871	18.4925	ug/L	100
69)	1-Chlorohexane	14.43	91	175243	18.1086	ug/L	100
70)	Chlorobenzene	14.85	112	372037	18.6155	ug/L	99
71)	1,1,1,2-Tetrachloroethane	14.88	131	131925	17.7674	ug/L	100
72)	Ethylbenzene	14.88	106	213893	19.2850	ug/L	94
73)	m-,p-Xylene	14.96	106	518573	38.9839	ug/L	93
74)	o-Xylene	15.53	106	244811	18.5591	ug/L	98
75)	Styrene	15.56	104	422045	19.8193	ug/L	99
76)	Bromoform	16.07	173	64094	18.6943	ug/L	98
77)	Isopropylbenzene	15.96	105	617296	19.3427	ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.17	83	97366	18.1396	ug/L	100
81)	1,2,3-Trichloropropane	16.36	110	27885	18.2478	ug/L	77
82)	trans-1,4-Dichloro-2-Buten	16.40	53	16645	13.2205	ug/L	66
83)	n-Propylbenzene	16.46	91	736653	18.1605	ug/L	97
84)	Bromobenzene	16.60	156	157096	17.4988	ug/L	95
85)	1,3,5-Trimethylbenzene	16.65	105	538293	18.3733	ug/L	99
86)	2-Chlorotoluene	16.73	91	445011	16.3213	ug/L	86
87)	4-Chlorotoluene	16.78	91	492110	20.6595	ug/L	89
88)	a-Methylstyrene	17.05	118	302591	18.4756	ug/L	98
89)	tert-Butylbenzene	17.11	134	110895	17.1392	ug/L	94
90)	1,2,4-Trimethylbenzene	17.17	105	569337	18.6922	ug/L	99
91)	sec-Butylbenzene	17.38	105	680046	18.7002	ug/L	97
92)	p-Isopropyltoluene	17.54	119	561383	18.8458	ug/L	98
93)	1,3-Dichlorobenzene	17.73	146	324960	18.1588	ug/L	98
94)	1,4-Dichlorobenzene	17.87	146	322774	17.9077	ug/L	99
95)	n-Butylbenzene	18.07	91	531152	18.3781	ug/L	98
96)	1,2-Dichlorobenzene	18.36	146	286652	18.3832	ug/L	99
97)	1,2-Dibromo-3-Chloropropan	19.36	75	14566	17.2914	ug/L	96
98)	1,2,4-Trichlorobenzene	20.49	180	191606	16.4285	ug/L	99
99)	Hexachlorobutadiene	20.65	225	83679	14.6748	ug/L	99
100)	Naphthalene	20.87	128	257422	16.7113	ug/L	100
101)	1,2,3-Trichlorobenzene	21.18	180	157658	16.3463	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M418566.D 8260WTR.M Mon Mar 27 14:54:51 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418566.D Vial: 11
Acq On : 27 Mar 2017 14:28 Operator: TMB
Sample : WG607735-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 14:54 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032817\8M418591.D Vial: 6
Acq On : 28 Mar 2017 19:50 Operator: FJB
Sample : WG607986-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 29 08:34:56 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	715432	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.81	117	567792	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	316227	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.90	111	198371	24.4481	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.80%			
43) 1,2-Dichloroethane-d4	10.54	65	161385	22.9516	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.80%			
58) Toluene-d8	12.92	98	704538	24.6675	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.68%			
80) p-Bromofluorobenzene	16.31	95	275387	23.0133	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.04%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.34	85	218253	19.4740	ug/L	99
3) Chloromethane	3.83	50	297989	21.9408	ug/L	99
4) Vinyl Chloride	4.07	62	313763	24.7073	ug/L	99
5) 1,3-Butadiene	4.12	54	260866	64.0716	ug/L	98
6) Bromomethane	4.98	94	112469	17.4844	ug/L	100
7) Chloroethane	5.14	64	101899	19.7830	ug/L	99
8) Trichlorofluoromethane	5.62	101	266091	19.3628	ug/L	99
9) Diethyl ether	6.14	59	363191	81.7160	ug/L	100
10) Isoprene	6.19	67	219704	20.6916	ug/L	99
11) Acrolein	6.39	56	26600	46.8065	ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.41	101	158348	21.4217	ug/L	98
13) Acetone	6.49	43	9619	11.2427	ug/L	100
14) 1,1-Dichloroethene	6.71	61	204277	19.8045	ug/L	99
15) Tert-Butyl Alcohol	6.82	59	11943	43.8577	ug/L #	84
16) Dimethyl Sulfide	6.98	62	143987	19.6384	ug/L	99
17) Iodomethane	7.24	142	72011	8.8144	ug/L	94
18) Methyl acetate	7.24	43	45452	18.5776	ug/L	97
19) Methylene Chloride	7.50	84	148922	18.9608	ug/L	99
20) Carbon Disulfide	7.55	76	399726	17.0145	ug/L	99
21) Acrylonitrile	7.67	53	20650	17.2560	ug/L	95
22) Methyl Tert Butyl Ether	7.71	73	275596	18.2294	ug/L	98
23) trans-1,2-Dichloroethene	7.94	61	194781	19.4761	ug/L	99
24) n-Hexane	8.03	57	166616	19.6676	ug/L	99
25) Diisopropyl ether	8.36	45	1806880	94.5874	ug/L	99
26) Vinyl Acetate	8.53	43	119166	15.8510	ug/L	99
27) 1,1-Dichloroethane	8.56	63	258500	19.8185	ug/L	100
28) Ethyl-Tert-Butyl ether	8.94	59	1639553	89.6401	ug/L	100
29) 2-Butanone	9.11	43	16885	12.2489	ug/L	99
30) Propionitrile	9.23	54	24500	60.0377	ug/L	98
31) 2,2-Dichloropropane	9.34	77	238950	20.5355	ug/L	98
32) cis-1,2-Dichloroethene	9.40	96	167582	19.7424	ug/L	99
33) Chloroform	9.61	83	289270	19.1346	ug/L	100
34) 1-Bromopropane	9.75	122	42459	26.1820	ug/L	99
35) Bromochloromethane	9.85	130	88806	19.4761	ug/L	99
36) Tetrahydrofuran	9.87	42	59466	67.7841	ug/L	99
38) 1,1,1-Trichloroethane	10.15	97	264292	21.2548	ug/L	99
39) Cyclohexane	10.18	56	194676	18.1164	ug/L	99
40) 1,1-Dichloropropene	10.34	75	217381	20.3563	ug/L	100
41) Tert-Amyl-Methyl ether	10.43	73	1622478	95.0544	ug/L	98
42) Carbon Tetrachloride	10.49	117	242727	21.8170	ug/L	98

(#) = qualifier out of range (m) = manual integration
8M418591.D 8260WTR.M Wed Mar 29 08:34:59 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032817\8M418591.D Vial: 6
Acq On : 28 Mar 2017 19:50 Operator: FJB
Sample : WG607986-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 29 08:34:56 2017 Quant Results File: 8260WTR.RES

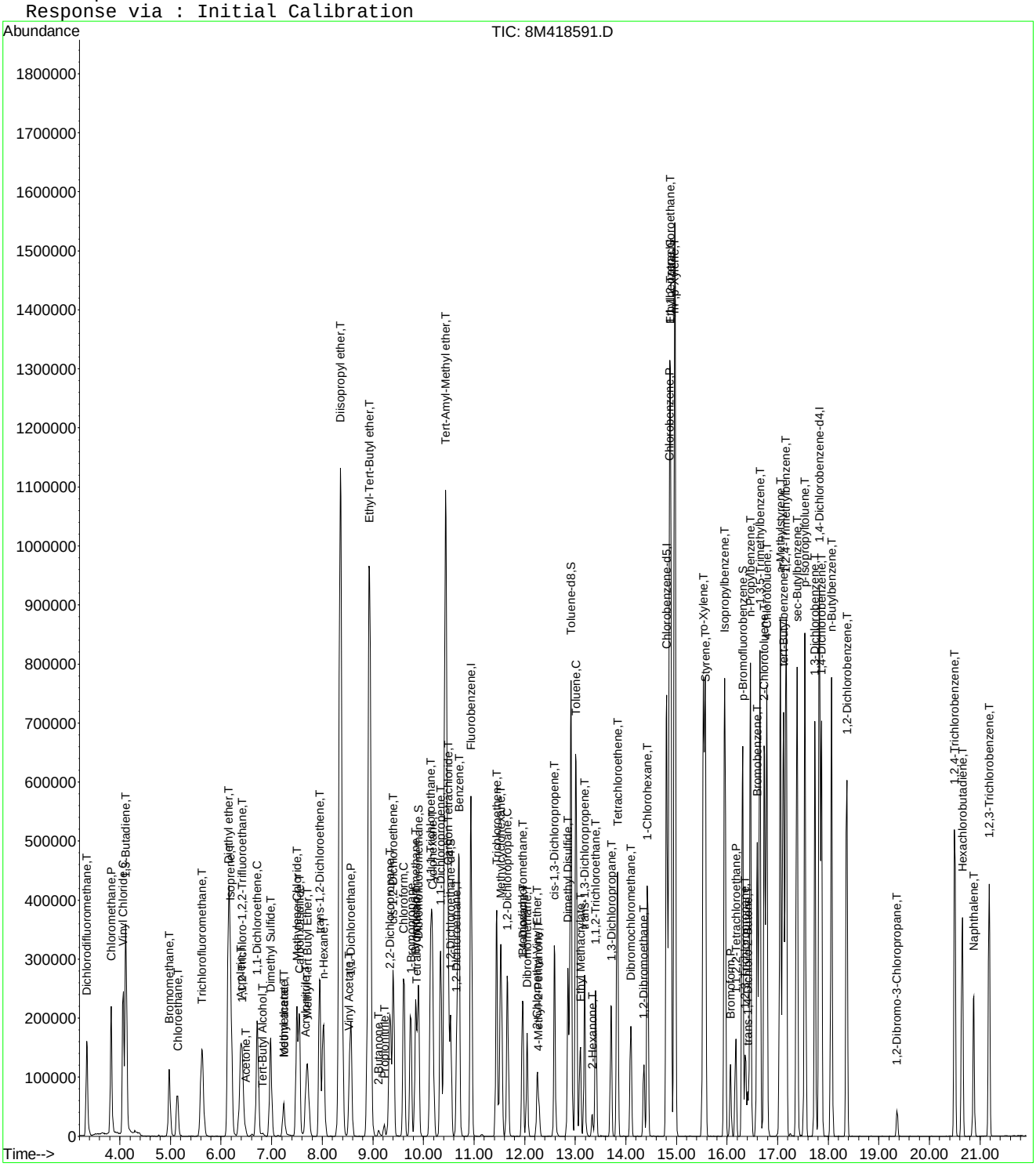
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.65	62	161750	18.9513	ug/L		99
46)	Benzene	10.70	78	624183	20.2698	ug/L		99
47)	Trichloroethene	11.45	130	163334	19.8366	ug/L		99
48)	Methylcyclohexane	11.53	83	229699	18.5651	ug/L		98
49)	1,2-Dichloropropane	11.65	63	139188	19.6586	ug/L		99
50)	Bromodichloromethane	11.95	83	196824	19.6639	ug/L		99
51)	1,4-Dioxane	11.97	88	1271	37.3569	ug/L	#	55
52)	Dibromomethane	12.05	93	75883	19.9995	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.24	63	56977	17.6973	ug/L		98
54)	4-Methyl-2-Pentanone	12.28	58	21327	15.4779	ug/L		98
55)	cis-1,3-Dichloropropene	12.59	75	237239	20.4200	ug/L		98
56)	Dimethyl Disulfide	12.85	79	116383	18.8222	ug/L		94
59)	Toluene	13.02	91	677078	20.0492	ug/L		97
60)	Ethyl Methacrylate	13.10	69	124151	19.0124	ug/L		95
62)	trans-1,3-Dichloropropene	13.19	75	183368	18.4082	ug/L		98
63)	1,1,2-Trichloroethane	13.40	97	97993	18.4213	ug/L		100
64)	2-Hexanone	13.34	58	17983	14.1011	ug/L		98
65)	1,3-Dichloropropane	13.71	76	180006	18.8979	ug/L		97
66)	Tetrachloroethene	13.84	164	139944	19.1250	ug/L		98
67)	Dibromochloromethane	14.10	129	126130	18.2217	ug/L		99
68)	1,2-Dibromoethane	14.35	107	97303	17.8270	ug/L		99
69)	1-Chlorohexane	14.43	91	218978	19.0265	ug/L		99
70)	Chlorobenzene	14.86	112	443175	18.6458	ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.88	131	156988	17.7774	ug/L		99
72)	Ethylbenzene	14.88	106	254541	19.2973	ug/L		93
73)	m-,p-Xylene	14.96	106	623687	39.4238	ug/L		94
74)	o-Xylene	15.53	106	295899	18.8619	ug/L		99
75)	Styrene	15.57	104	497179	19.6317	ug/L		98
76)	Bromoform	16.07	173	72624	17.8549	ug/L		100
77)	Isopropylbenzene	15.96	105	748518	19.7216	ug/L		98
79)	1,1,2,2-Tetrachloroethane	16.17	83	108843	17.6599	ug/L		99
81)	1,2,3-Trichloropropane	16.36	110	30634	17.4587	ug/L		67
82)	trans-1,4-Dichloro-2-Buten	16.41	53	18310	12.6654	ug/L		80
83)	n-Propylbenzene	16.46	91	890669	19.1226	ug/L		98
84)	Bromobenzene	16.60	156	186901	18.1310	ug/L		99
85)	1,3,5-Trimethylbenzene	16.65	105	645734	19.1951	ug/L		99
86)	2-Chlorotoluene	16.73	91	586873	18.7454	ug/L		96
87)	4-Chlorotoluene	16.78	91	508124	18.5778	ug/L		98
88)	a-Methylstyrene	17.05	118	352616	18.7504	ug/L		98
89)	tert-Butylbenzene	17.11	134	133396	17.9551	ug/L		95
90)	1,2,4-Trimethylbenzene	17.17	105	678028	19.3867	ug/L		98
91)	sec-Butylbenzene	17.38	105	799838	19.1547	ug/L		98
92)	p-Isopropyltoluene	17.54	119	660634	19.3145	ug/L		98
93)	1,3-Dichlorobenzene	17.73	146	373259	18.1650	ug/L		99
94)	1,4-Dichlorobenzene	17.87	146	375204	18.1290	ug/L		100
95)	n-Butylbenzene	18.07	91	598079	18.0222	ug/L		98
96)	1,2-Dichlorobenzene	18.37	146	327659	18.3001	ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.36	75	14159	14.6383	ug/L		95
98)	1,2,4-Trichlorobenzene	20.50	180	208468	15.5666	ug/L		99
99)	Hexachlorobutadiene	20.65	225	101952	15.5711	ug/L		99
100)	Naphthalene	20.88	128	252981	14.3027	ug/L		100
101)	1,2,3-Trichlorobenzene	21.18	180	170268	15.3746	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M418591.D 8260WTR.M Wed Mar 29 08:35:00 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032817\8M418591.D Vial: 6
Acq On : 28 Mar 2017 19:50 Operator: FJB
Sample : WG607986-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 29 8:34 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032917\8M418627.D Vial: 6
Acq On : 29 Mar 2017 16:52 Operator: TMB
Sample : WG608101-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 30 08:23:25 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	906534	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.81	117	719675	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	407864	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.90	111	249802	24.2966	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.20%			
43) 1,2-Dichloroethane-d4	10.54	65	216176	24.2628	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.04%			
58) Toluene-d8	12.92	98	893510	24.6815	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.72%			
80) p-Bromofluorobenzene	16.31	95	353212	22.8852	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.56%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.34	85	267978	18.8703	ug/L	98
3) Chloromethane	3.83	50	390260	22.6773	ug/L	98
4) Vinyl Chloride	4.06	62	384139	23.8724	ug/L	100
5) 1,3-Butadiene	4.12	54	313309	60.1656	ug/L	98
6) Bromomethane	4.97	94	148596	18.2309	ug/L	99
7) Chloroethane	5.13	64	129360	19.8202	ug/L	99
8) Trichlorofluoromethane	5.63	101	332046	19.0687	ug/L	100
9) Diethyl ether	6.14	59	497688	88.3718	ug/L	99
10) Isoprene	6.19	67	273294	20.3128	ug/L	100
11) Acrolein	6.39	56	39331	54.6190	ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	198352	21.1769	ug/L	98
13) Acetone	6.48	43	15919	14.6839	ug/L	100
14) 1,1-Dichloroethene	6.71	61	255123	19.5199	ug/L	98
15) Tert-Butyl Alcohol	6.82	59	29000	84.0455	ug/L	95
16) Dimethyl Sulfide	6.98	62	185689	19.9872	ug/L	99
17) Iodomethane	7.24	142	123369	11.7400	ug/L	99
18) Methyl acetate	7.24	43	65444	21.1101	ug/L	99
19) Methylene Chloride	7.50	84	192200	19.3123	ug/L	99
20) Carbon Disulfide	7.55	76	497705	16.7191	ug/L	100
21) Acrylonitrile	7.68	53	27734	18.2901	ug/L	100
22) Methyl Tert Butyl Ether	7.70	73	367921	19.2060	ug/L	98
23) trans-1,2-Dichloroethene	7.94	61	245427	19.3670	ug/L	99
24) n-Hexane	8.02	57	208946	19.4650	ug/L	99
25) Diisopropyl ether	8.36	45	2384155	98.4969	ug/L	99
26) Vinyl Acetate	8.53	43	147283	15.4612	ug/L	98
27) 1,1-Dichloroethane	8.56	63	328526	19.8776	ug/L	100
28) Ethyl-Tert-Butyl ether	8.92	59	2180803	94.0974	ug/L	100
29) 2-Butanone	9.11	43	27729	15.8750	ug/L	96
30) Propionitrile	9.22	54	42168	81.5503	ug/L	100
31) 2,2-Dichloropropane	9.34	77	289221	19.6161	ug/L	100
32) cis-1,2-Dichloroethene	9.40	96	214001	19.8964	ug/L	99
33) Chloroform	9.61	83	364491	19.0278	ug/L	99
34) 1-Bromopropane	9.74	122	53321	25.9487	ug/L	98
35) Bromochloromethane	9.84	130	113797	19.6959	ug/L	98
36) Tetrahydrofuran	9.87	42	91878	82.6523	ug/L	98
38) 1,1,1-Trichloroethane	10.14	97	328929	20.8766	ug/L	100
39) Cyclohexane	10.18	56	245758	18.0489	ug/L	99
40) 1,1-Dichloropropene	10.34	75	268860	19.8695	ug/L	99
41) Tert-Amyl-Methyl ether	10.43	73	2180908	100.8358	ug/L	98
42) Carbon Tetrachloride	10.49	117	302766	21.4767	ug/L	100

(#) = qualifier out of range (m) = manual integration
8M418627.D 8260WTR.M Thu Mar 30 08:23:27 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032917\8M418627.D Vial: 6
Acq On : 29 Mar 2017 16:52 Operator: TMB
Sample : WG608101-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 30 08:23:25 2017 Quant Results File: 8260WTR.RES

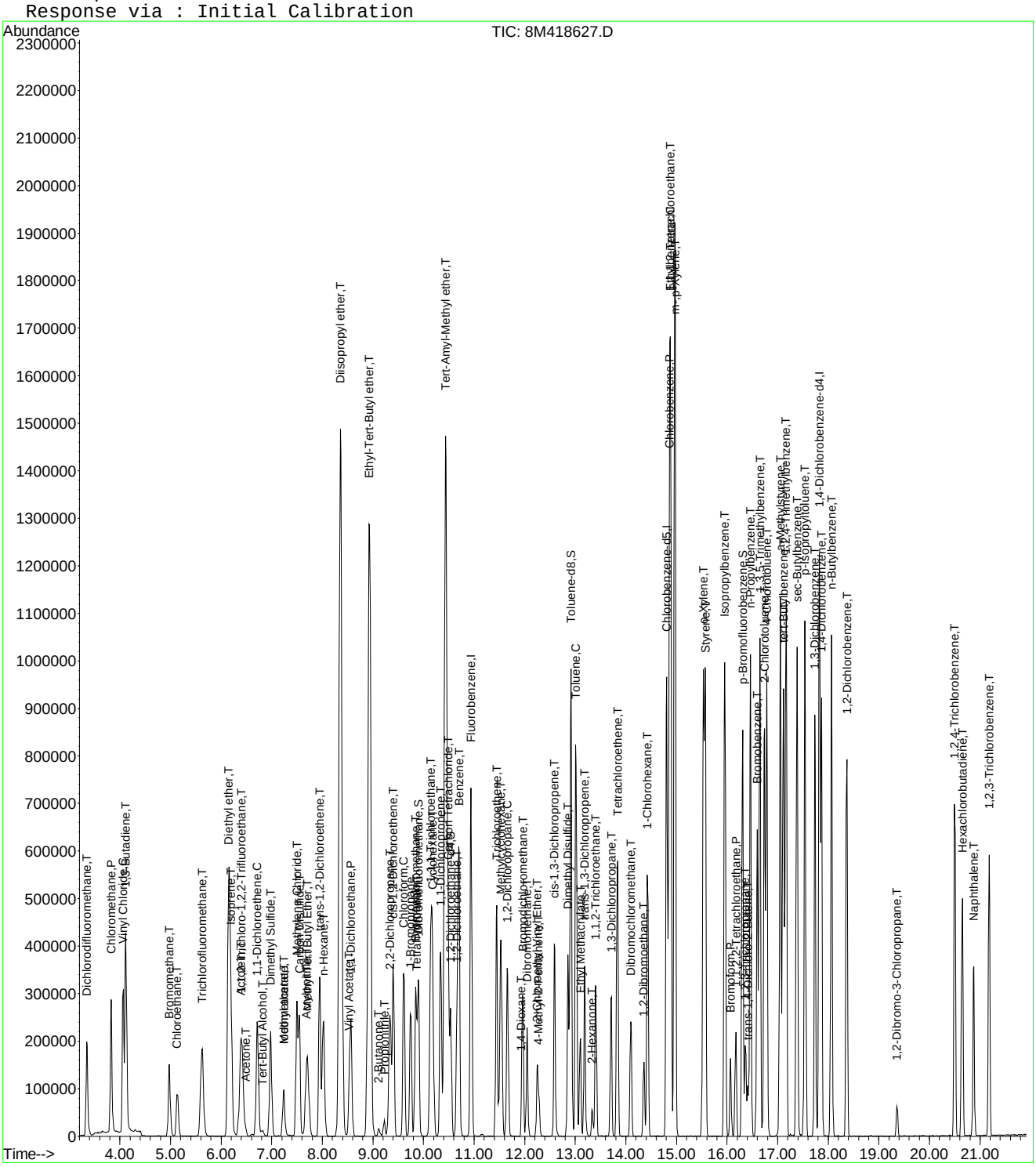
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.66	62	208500	19.2790	ug/L		98
46)	Benzene	10.70	78	797625	20.4419	ug/L		99
47)	Trichloroethene	11.45	130	205073	19.6555	ug/L		100
48)	Methylcyclohexane	11.53	83	291625	18.6015	ug/L		98
49)	1,2-Dichloropropane	11.65	63	178961	19.9478	ug/L		100
50)	Bromodichloromethane	11.96	83	253180	19.9620	ug/L		99
51)	1,4-Dioxane	11.93	88	2052	47.5978	ug/L	#	48
52)	Dibromomethane	12.05	93	101141	21.0371	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.24	63	78191	19.1667	ug/L		98
54)	4-Methyl-2-Pentanone	12.27	58	30783	17.6311	ug/L		97
55)	cis-1,3-Dichloropropene	12.58	75	304301	20.6708	ug/L		98
56)	Dimethyl Disulfide	12.85	79	156713	19.8261	ug/L		96
59)	Toluene	13.01	91	851665	19.8967	ug/L		97
60)	Ethyl Methacrylate	13.10	69	169035	20.4229	ug/L		95
62)	trans-1,3-Dichloropropene	13.18	75	238870	18.9192	ug/L		99
63)	1,1,2-Trichloroethane	13.40	97	127375	18.8913	ug/L		99
64)	2-Hexanone	13.33	58	28836	17.8394	ug/L		91
65)	1,3-Dichloropropane	13.71	76	233741	19.3604	ug/L		98
66)	Tetrachloroethene	13.84	164	177794	19.1698	ug/L		98
67)	Dibromochloromethane	14.09	129	162697	18.5346	ug/L		98
68)	1,2-Dibromoethane	14.35	107	127805	18.4737	ug/L		100
69)	1-Chlorohexane	14.43	91	276381	18.9461	ug/L		99
70)	Chlorobenzene	14.86	112	559059	18.5573	ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.88	131	202045	18.0382	ug/L		99
72)	Ethylbenzene	14.88	106	325230	19.4528	ug/L		95
73)	m-,p-Xylene	14.97	106	782213	39.0094	ug/L		93
74)	o-Xylene	15.53	106	369433	18.5793	ug/L		98
75)	Styrene	15.57	104	629670	19.6160	ug/L		99
76)	Bromoform	16.07	173	96899	18.7463	ug/L		98
77)	Isopropylbenzene	15.96	105	945679	19.6579	ug/L		98
79)	1,1,2,2-Tetrachloroethane	16.17	83	142452	17.9201	ug/L		99
81)	1,2,3-Trichloropropane	16.36	110	41104	18.1625	ug/L		67
82)	trans-1,4-Dichloro-2-Buten	16.41	53	30013	16.0962	ug/L		87
83)	n-Propylbenzene	16.46	91	1121026	18.6608	ug/L		98
84)	Bromobenzene	16.60	156	240842	18.1144	ug/L		99
85)	1,3,5-Trimethylbenzene	16.65	105	818801	18.8711	ug/L		98
86)	2-Chlorotoluene	16.74	91	748485	18.5361	ug/L		96
87)	4-Chlorotoluene	16.78	91	654690	18.5585	ug/L		98
88)	a-Methylstyrene	17.05	118	466169	19.2192	ug/L		98
89)	tert-Butylbenzene	17.11	134	173367	18.0923	ug/L		97
90)	1,2,4-Trimethylbenzene	17.17	105	855781	18.9716	ug/L		100
91)	sec-Butylbenzene	17.38	105	1033883	19.1968	ug/L		98
92)	p-Isopropyltoluene	17.54	119	853080	19.3373	ug/L		99
93)	1,3-Dichlorobenzene	17.73	146	481663	18.1741	ug/L		98
94)	1,4-Dichlorobenzene	17.87	146	485930	18.2039	ug/L		99
95)	n-Butylbenzene	18.06	91	800747	18.7080	ug/L		98
96)	1,2-Dichlorobenzene	18.36	146	428143	18.5398	ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.36	75	21012	16.8426	ug/L		100
98)	1,2,4-Trichlorobenzene	20.49	180	288945	16.7284	ug/L		99
99)	Hexachlorobutadiene	20.65	225	135392	16.0325	ug/L		99
100)	Naphthalene	20.88	128	374125	16.3995	ug/L		100
101)	1,2,3-Trichlorobenzene	21.18	180	235036	16.4546	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M418627.D 8260WTR.M Thu Mar 30 08:23:28 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032917\8M418627.D Vial: 6
Acq On : 29 Mar 2017 16:52 Operator: TMB
Sample : WG608101-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 30 8:23 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032517\8M418529.D Vial: 6
Acq On : 25 Mar 2017 14:05 Operator: JDS
Sample : WG607681-03 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 08:26:44 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.94	96	672323	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	523866	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	287727	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.89	111	184719	24.2252 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.92%		
43) 1,2-Dichloroethane-d4	10.54	65	152786	23.1219 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 92.48%		
58) Toluene-d8	12.91	98	653774	24.8094 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.24%		
80) p-Bromofluorobenzene	16.31	95	253507	23.2833 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.12%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.34	85	215185	20.4314 ug/L	100
3) Chloromethane	3.83	50	262927	20.6005 ug/L	100
4) Vinyl Chloride	4.05	62	248353	20.8106 ug/L	100
5) 1,3-Butadiene	4.09	54	97762	22.1768 ug/L	98
6) Bromomethane	4.96	94	115442	19.0973 ug/L	97
7) Chloroethane	5.13	64	98514	20.3522 ug/L	98
8) Trichlorofluoromethane	5.61	101	250454	19.3935 ug/L	99
9) Diethyl ether	6.14	59	379338	90.8215 ug/L	99
10) Isoprene	6.18	67	207388	20.7841 ug/L	99
11) Acrolein	6.38	56	33060	61.9038 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	148749	21.4135 ug/L	100
13) Acetone	6.48	43	14269	17.7470 ug/L	97
14) 1,1-Dichloroethene	6.71	61	187374	19.3305 ug/L	99
15) Tert-Butyl Alcohol	6.81	59	57999	226.6433 ug/L	96
16) Dimethyl Sulfide	6.98	62	137525	19.9597 ug/L	98
17) Iodomethane	7.24	142	106509	13.5836 ug/L	100
18) Methyl acetate	7.24	43	46637	20.2842 ug/L	99
19) Methylene Chloride	7.50	84	139853	18.9478 ug/L	98
20) Carbon Disulfide	7.54	76	373313	16.9091 ug/L	100
21) Acrylonitrile	7.67	53	22280	19.8118 ug/L	96
22) Methyl Tert Butyl Ether	7.70	73	271417	19.1041 ug/L	99
23) trans-1,2-Dichloroethene	7.94	61	177198	18.8541 ug/L	98
24) n-Hexane	8.01	57	162321	20.3892 ug/L	96
25) Diisopropyl ether	8.35	45	1729834	96.3604 ug/L	99
26) Vinyl Acetate	8.53	43	135070	19.1185 ug/L	100
27) 1,1-Dichloroethane	8.56	63	235269	19.1940 ug/L	100
28) Ethyl-Tert-Butyl ether	8.92	59	1599918	93.0819 ug/L	99
29) 2-Butanone	9.11	43	22738	17.5525 ug/L	96
30) Propionitrile	9.22	54	39788	103.7530 ug/L	99
31) 2,2-Dichloropropane	9.34	77	223126	20.4051 ug/L	100
32) cis-1,2-Dichloroethene	9.40	96	157890	19.7933 ug/L	98
33) Chloroform	9.61	83	263087	18.5185 ug/L	100
34) 1-Bromopropane	9.75	122	40396	26.5071 ug/L	97
35) Bromochloromethane	9.84	130	82479	19.2484 ug/L	98
36) Tetrahydrofuran	9.86	42	77668	94.2088 ug/L	98
38) 1,1,1-Trichloroethane	10.14	97	238549	20.4146 ug/L	99
39) Cyclohexane	10.17	56	175429	17.3721 ug/L	99
40) 1,1-Dichloropropene	10.33	75	197905	19.7208 ug/L	100
41) Tert-Amyl-Methyl ether	10.43	73	1596341	99.5198 ug/L	99
42) Carbon Tetrachloride	10.48	117	218385	20.8877 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M418529.D 8260WTR.M Mon Mar 27 08:26:46 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032517\8M418529.D Vial: 6
Acq On : 25 Mar 2017 14:05 Operator: JDS
Sample : WG607681-03 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 08:26:44 2017 Quant Results File: 8260WTR.RES

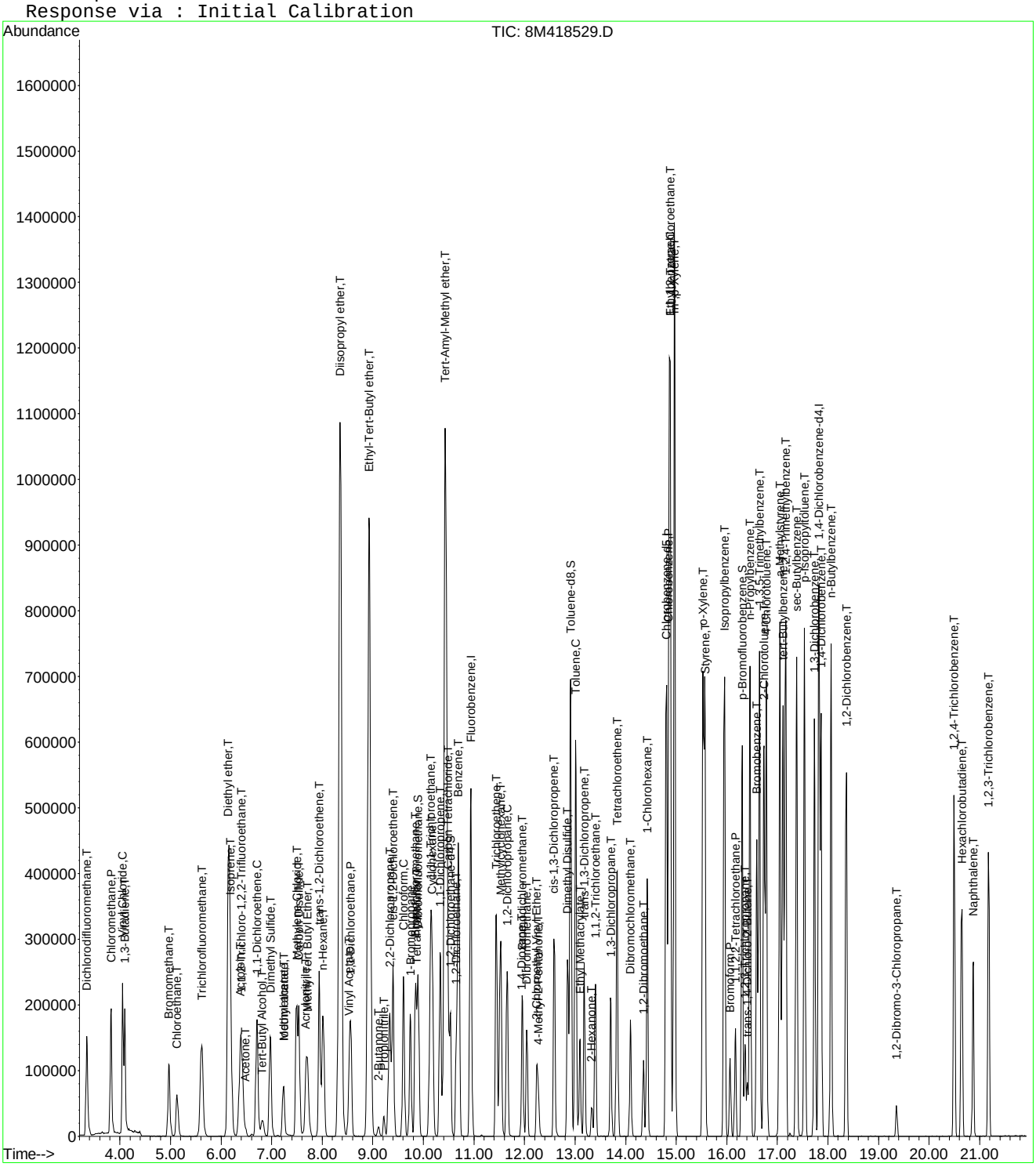
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.65	62	151750	18.9197	ug/L	99
46)	Benzene	10.69	78	571494	19.7488	ug/L	99
47)	Trichloroethene	11.45	130	147099	19.0104	ug/L	99
48)	Methylcyclohexane	11.53	83	214548	18.4524	ug/L	99
49)	1,2-Dichloropropane	11.65	63	127658	19.1862	ug/L	99
50)	Bromodichloromethane	11.95	83	183656	19.5248	ug/L	99
51)	1,4-Dioxane	11.94	88	7882	246.5198	ug/L	98
52)	Dibromomethane	12.05	93	71756	20.1244	ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.24	63	58432	19.3129	ug/L	99
54)	4-Methyl-2-Pentanone	12.27	58	23155	17.8821	ug/L	98
55)	cis-1,3-Dichloropropene	12.58	75	222620	20.3903	ug/L	98
56)	Dimethyl Disulfide	12.85	79	110388	18.9713	ug/L	91
59)	Toluene	13.01	91	611188	19.6156	ug/L	98
60)	Ethyl Methacrylate	13.10	69	123103	20.4326	ug/L	95
62)	trans-1,3-Dichloropropene	13.18	75	175042	19.0458	ug/L	98
63)	1,1,2-Trichloroethane	13.40	97	93467	19.0437	ug/L	100
64)	2-Hexanone	13.33	58	21909	18.6201	ug/L	98
65)	1,3-Dichloropropane	13.71	76	171426	19.5062	ug/L	96
66)	Tetrachloroethene	13.83	164	128548	19.0407	ug/L	99
67)	Dibromochloromethane	14.09	129	121013	18.9268	ug/L	100
68)	1,2-Dibromoethane	14.35	107	96111	19.0851	ug/L	97
69)	1-Chlorohexane	14.42	91	202564	19.0761	ug/L	100
70)	Chlorobenzene	14.85	112	409820	18.6882	ug/L	99
71)	1,1,1,2-Tetrachloroethane	14.88	131	144602	17.7492	ug/L	99
72)	Ethylbenzene	14.88	106	232012	19.0641	ug/L	93
73)	m-,p-Xylene	14.96	106	564057	38.6441	ug/L	94
74)	o-Xylene	15.53	106	264689	18.2872	ug/L	98
75)	Styrene	15.57	104	452804	19.3787	ug/L	98
76)	Bromoform	16.07	173	72172	19.1590	ug/L	98
77)	Isopropylbenzene	15.95	105	673773	19.2408	ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.17	83	109566	19.5381	ug/L	100
81)	1,2,3-Trichloropropane	16.36	110	30642	19.1930	ug/L	83
82)	trans-1,4-Dichloro-2-Buten	16.41	53	19658	14.9448	ug/L	70
83)	n-Propylbenzene	16.46	91	803659	18.9636	ug/L	98
84)	Bromobenzene	16.59	156	172479	18.3892	ug/L	99
85)	1,3,5-Trimethylbenzene	16.65	105	584709	19.1027	ug/L	98
86)	2-Chlorotoluene	16.74	91	535662	18.8045	ug/L	96
87)	4-Chlorotoluene	16.78	91	459753	18.4743	ug/L	98
88)	a-Methylstyrene	17.05	118	330954	19.3417	ug/L	100
89)	tert-Butylbenzene	17.11	134	121875	18.0293	ug/L	98
90)	1,2,4-Trimethylbenzene	17.16	105	605798	19.0372	ug/L	99
91)	sec-Butylbenzene	17.38	105	736069	19.3736	ug/L	98
92)	p-Isopropyltoluene	17.54	119	605926	19.4697	ug/L	99
93)	1,3-Dichlorobenzene	17.73	146	344658	18.4345	ug/L	99
94)	1,4-Dichlorobenzene	17.87	146	346936	18.4236	ug/L	99
95)	n-Butylbenzene	18.06	91	573512	18.9937	ug/L	99
96)	1,2-Dichlorobenzene	18.36	146	303790	18.6477	ug/L	98
97)	1,2-Dibromo-3-Chloropropan	19.36	75	15792	17.9437	ug/L	99
98)	1,2,4-Trichlorobenzene	20.49	180	209348	17.1808	ug/L	99
99)	Hexachlorobutadiene	20.65	225	97021	16.2857	ug/L	99
100)	Naphthalene	20.88	128	280799	17.4480	ug/L	100
101)	1,2,3-Trichlorobenzene	21.18	180	171899	17.0593	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M418529.D 8260WTR.M Mon Mar 27 08:26:47 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032517\8M418529.D Vial: 6
Acq On : 25 Mar 2017 14:05 Operator: JDS
Sample : WG607681-03 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 8:26 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



8M418529.D 8260WTR.M Mon Mar 27 08:26:47 2017 Page 3

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418567.D Vial: 12
Acq On : 27 Mar 2017 14:58 Operator: TMB
Sample : WG607735-03 20ug/L LCS2 STD 8260 Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 15:20:44 2017 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 09:07:42 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.94	96	632692	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	498427	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	279331	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.90	111	172775	24.0781 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.32%		
43) 1,2-Dichloroethane-d4	10.54	65	145364	23.3766 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.52%		
58) Toluene-d8	12.92	98	627061	25.0102 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.04%		
80) p-Bromofluorobenzene	16.30	95	244729	23.1527 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.60%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.34	85	204099	20.5927 ug/L	99
3) Chloromethane	3.83	50	269680	22.4532 ug/L	99
4) Vinyl Chloride	4.06	62	268481	23.9064 ug/L	99
5) 1,3-Butadiene	4.10	54	104656	25.7489 ug/L	99
6) Bromomethane	4.97	94	102423	18.0049 ug/L	99
7) Chloroethane	5.13	64	96790	21.2486 ug/L	98
8) Trichlorofluoromethane	5.62	101	236247	19.4393 ug/L	100
9) Diethyl ether	6.14	59	343062	87.2812 ug/L	99
10) Isoprene	6.19	67	196111	20.8850 ug/L	98
11) Acrolein	6.38	56	28133	55.9779 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	136859	20.9359 ug/L	99
13) Acetone	6.48	43	13268	17.5357 ug/L	100
14) 1,1-Dichloroethene	6.71	61	179029	19.6265 ug/L	100
15) Tert-Butyl Alcohol	6.82	59	41056	170.4844 ug/L	97
16) Dimethyl Sulfide	6.97	62	132303	20.4046 ug/L	100
17) Iodomethane	7.23	142	81981	11.2022 ug/L	99
18) Methyl acetate	7.24	43	43704	20.1992 ug/L	99
19) Methylene Chloride	7.50	84	135386	19.4916 ug/L	99
20) Carbon Disulfide	7.54	76	353927	17.0352 ug/L	100
21) Acrylonitrile	7.67	53	20702	19.5617 ug/L	95
22) Methyl Tert Butyl Ether	7.70	73	251568	18.8161 ug/L	99
23) trans-1,2-Dichloroethene	7.94	61	174588	19.7400 ug/L	97
24) n-Hexane	8.02	57	147909	19.7427 ug/L	98
25) Diisopropyl ether	8.36	45	1630027	96.4883 ug/L	99
26) Vinyl Acetate	8.53	43	108252	16.2824 ug/L	100
27) 1,1-Dichloroethane	8.56	63	230356	19.9704 ug/L	99
28) Ethyl-Tert-Butyl ether	8.93	59	1469707	90.8623 ug/L	100
29) 2-Butanone	9.11	43	20826	17.0836 ug/L	96
30) Propionitrile	9.22	54	33514	92.8668 ug/L	100
31) 2,2-Dichloropropane	9.34	77	199146	19.3529 ug/L	99
32) cis-1,2-Dichloroethene	9.40	96	149327	19.8924 ug/L	98
33) Chloroform	9.61	83	255699	19.1259 ug/L	100
34) 1-Bromopropane	9.74	122	36824	25.6767 ug/L	99
35) Bromochloromethane	9.85	130	79378	19.6851 ug/L	97
36) Tetrahydrofuran	9.87	42	66458	85.6608 ug/L	98
38) 1,1,1-Trichloroethane	10.15	97	227487	20.6874 ug/L	99
39) Cyclohexane	10.18	56	167488	17.6246 ug/L	100
40) 1,1-Dichloropropene	10.33	75	189272	20.0419 ug/L	100
41) Tert-Amyl-Methyl ether	10.43	73	1458799	96.6418 ug/L	99
42) Carbon Tetrachloride	10.49	117	208706	21.2123 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M418567.D 8260WTR.M Tue Mar 28 08:24:42 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418567.D Vial: 12
Acq On : 27 Mar 2017 14:58 Operator: TMB
Sample : WG607735-03 20ug/L LCS2 STD 8260 Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 15:20:44 2017 Quant Results File: 8260WTR.RES

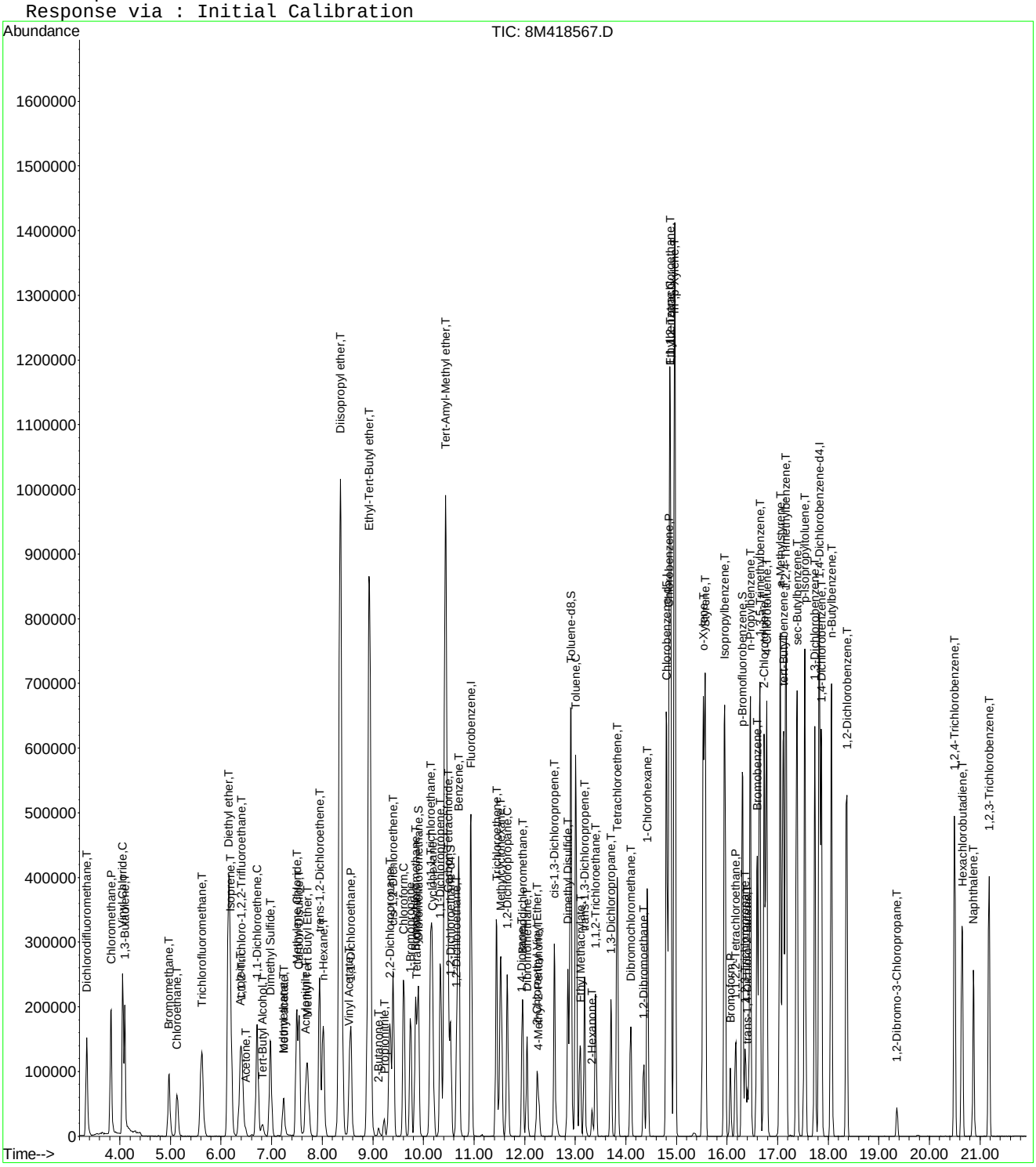
Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 09:07:42 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.65	62	147012	19.4771 ug/L	99
46)	Benzene	10.69	78	550415	20.2118 ug/L	100
47)	Trichloroethene	11.45	130	142325	19.5456 ug/L	99
48)	Methylcyclohexane	11.53	83	198103	18.1053 ug/L	99
49)	1,2-Dichloropropane	11.65	63	124289	19.8500 ug/L	99
50)	Bromodichloromethane	11.95	83	175742	19.8538 ug/L	99
51)	1,4-Dioxane	11.94	88	5460	181.4654 ug/L	100
52)	Dibromomethane	12.05	93	68561	20.4327 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.24	63	51490	18.0845 ug/L	99
54)	4-Methyl-2-Pentanone	12.28	58	21566	17.6982 ug/L	96
55)	cis-1,3-Dichloropropene	12.59	75	210781	20.5153 ug/L	98
56)	Dimethyl Disulfide	12.85	79	105615	19.2411 ug/L	97
59)	Toluene	13.01	91	592659	19.9918 ug/L	98
60)	Ethyl Methacrylate	13.10	69	114906	20.0455 ug/L	95
62)	trans-1,3-Dichloropropene	13.18	75	164476	18.8095 ug/L	100
63)	1,1,2-Trichloroethane	13.40	97	87777	18.7972 ug/L	99
64)	2-Hexanone	13.33	58	20220	18.0618 ug/L	97
65)	1,3-Dichloropropane	13.70	76	164834	19.7134 ug/L	96
66)	Tetrachloroethene	13.83	164	123091	19.1629 ug/L	97
67)	Dibromochloromethane	14.09	129	113794	18.7125 ug/L	99
68)	1,2-Dibromoethane	14.35	107	89492	18.6778 ug/L	99
69)	1-Chlorohexane	14.43	91	190748	18.8802 ug/L	100
70)	Chlorobenzene	14.85	112	391500	18.7640 ug/L	99
71)	1,1,1,2-Tetrachloroethane	14.88	131	139788	18.0207 ug/L	99
72)	Ethylbenzene	14.88	106	223534	19.3050 ug/L	91
73)	m-,p-Xylene	14.96	106	551578	39.7179 ug/L	93
74)	o-Xylene	15.53	106	260665	18.9283 ug/L	99
75)	Styrene	15.56	104	448535	20.1757 ug/L	98
76)	Bromoform	16.07	173	65819	18.4040 ug/L	98
77)	Isopropylbenzene	15.96	105	656394	19.7012 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.16	83	99742	18.3209 ug/L	100
81)	1,2,3-Trichloropropane	16.36	110	28808	18.5866 ug/L	74
82)	trans-1,4-Dichloro-2-Buten	16.40	53	17372	13.6038 ug/L	71
83)	n-Propylbenzene	16.46	91	781694	18.9998 ug/L	98
84)	Bromobenzene	16.60	156	168194	18.4714 ug/L	97
85)	1,3,5-Trimethylbenzene	16.65	105	571552	19.2341 ug/L	98
86)	2-Chlorotoluene	16.73	91	470815	17.0248 ug/L	87
87)	4-Chlorotoluene	16.78	91	513949	21.2728 ug/L	89
88)	a-Methylstyrene	17.05	118	318080	19.1481 ug/L	98
89)	tert-Butylbenzene	17.11	134	119967	18.2804 ug/L	97
90)	1,2,4-Trimethylbenzene	17.17	105	601789	19.4796 ug/L	99
91)	sec-Butylbenzene	17.38	105	715485	19.3979 ug/L	98
92)	p-Isopropyltoluene	17.54	119	595737	19.7177 ug/L	98
93)	1,3-Dichlorobenzene	17.73	146	338475	18.6480 ug/L	98
94)	1,4-Dichlorobenzene	17.87	146	337596	18.4665 ug/L	99
95)	n-Butylbenzene	18.07	91	557669	19.0241 ug/L	98
96)	1,2-Dichlorobenzene	18.36	146	296164	18.7260 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	19.36	75	14662	17.1605 ug/L	100
98)	1,2,4-Trichlorobenzene	20.49	180	194865	16.4729 ug/L	99
99)	Hexachlorobutadiene	20.65	225	89273	15.4356 ug/L	98
100)	Naphthalene	20.87	128	258155	16.5231 ug/L	100
101)	1,2,3-Trichlorobenzene	21.18	180	159237	16.2777 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M418567.D 8260WTR.M Tue Mar 28 08:24:42 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418567.D Vial: 12
Acq On : 27 Mar 2017 14:58 Operator: TMB
Sample : WG607735-03 20ug/L LCS2 STD 8260 Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 16:20 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032917\8M418628.D Vial: 7
Acq On : 29 Mar 2017 17:22 Operator: TMB
Sample : WG608101-03 20ug/L LCS2 STD 8260 Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 30 08:23:29 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	927329	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.81	117	745496	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	427479	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.90	111	258803	24.6076	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.44%			
43) 1,2-Dichloroethane-d4	10.54	65	217694	23.8853	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 95.56%			
58) Toluene-d8	12.92	98	922075	24.5884	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.36%			
80) p-Bromofluorobenzene	16.31	95	367184	22.6988	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 90.80%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.34	85	290233	19.9791	ug/L	100
3) Chloromethane	3.83	50	383785	21.8009	ug/L	99
4) Vinyl Chloride	4.06	62	371754	22.5847	ug/L	99
5) 1,3-Butadiene	4.10	54	168785	28.7465	ug/L	98
6) Bromomethane	4.98	94	156257	18.7409	ug/L	99
7) Chloroethane	5.13	64	140185	20.9971	ug/L	98
8) Trichlorofluoromethane	5.62	101	357320	20.0599	ug/L	100
9) Diethyl ether	6.14	59	529683	91.9438	ug/L	99
10) Isoprene	6.19	67	290428	21.1023	ug/L	99
11) Acrolein	6.39	56	40376	54.8128	ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	211315	22.0550	ug/L	100
13) Acetone	6.49	43	15883	14.3222	ug/L	95
14) 1,1-Dichloroethene	6.71	61	264027	19.7482	ug/L	99
15) Tert-Butyl Alcohol	6.82	59	52694	149.2890	ug/L	94
16) Dimethyl Sulfide	6.98	62	197057	20.7352	ug/L	99
17) Iodomethane	7.23	142	154277	14.2398	ug/L	99
18) Methyl acetate	7.24	43	68979	21.7514	ug/L	97
19) Methylene Chloride	7.50	84	199425	19.5889	ug/L	99
20) Carbon Disulfide	7.54	76	523240	17.1828	ug/L	99
21) Acrylonitrile	7.67	53	30958	19.9584	ug/L	94
22) Methyl Tert Butyl Ether	7.71	73	391541	19.9807	ug/L	98
23) trans-1,2-Dichloroethene	7.94	61	252204	19.4555	ug/L	100
24) n-Hexane	8.02	57	231280	21.0624	ug/L	96
25) Diisopropyl ether	8.36	45	2451349	99.0019	ug/L	99
26) Vinyl Acetate	8.53	43	168342	17.2756	ug/L	100
27) 1,1-Dichloroethane	8.56	63	332608	19.6733	ug/L	100
28) Ethyl-Tert-Butyl ether	8.93	59	2283307	96.3110	ug/L	100
29) 2-Butanone	9.11	43	28044	15.6953	ug/L	100
30) Propionitrile	9.23	54	43229	81.7275	ug/L	99
31) 2,2-Dichloropropane	9.34	77	311498	20.6532	ug/L	99
32) cis-1,2-Dichloroethene	9.40	96	220927	20.0797	ug/L	99
33) Chloroform	9.61	83	373626	19.0673	ug/L	100
34) 1-Bromopropane	9.75	122	54787	26.0642	ug/L	98
35) Bromochloromethane	9.85	130	119456	20.2117	ug/L	98
36) Tetrahydrofuran	9.87	42	96270	84.6612	ug/L	98
38) 1,1,1-Trichloroethane	10.15	97	337339	20.9303	ug/L	100
39) Cyclohexane	10.18	56	253259	18.1827	ug/L	98
40) 1,1-Dichloropropene	10.34	75	279684	20.2060	ug/L	100
41) Tert-Amyl-Methyl ether	10.43	73	2291509	103.5737	ug/L	98
42) Carbon Tetrachloride	10.49	117	314302	21.7951	ug/L	98

(#) = qualifier out of range (m) = manual integration
8M418628.D 8260WTR.M Thu Mar 30 08:23:31 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032917\8M418628.D Vial: 7
Acq On : 29 Mar 2017 17:22 Operator: TMB
Sample : WG608101-03 20ug/L LCS2 STD 8260 Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 30 08:23:29 2017 Quant Results File: 8260WTR.RES

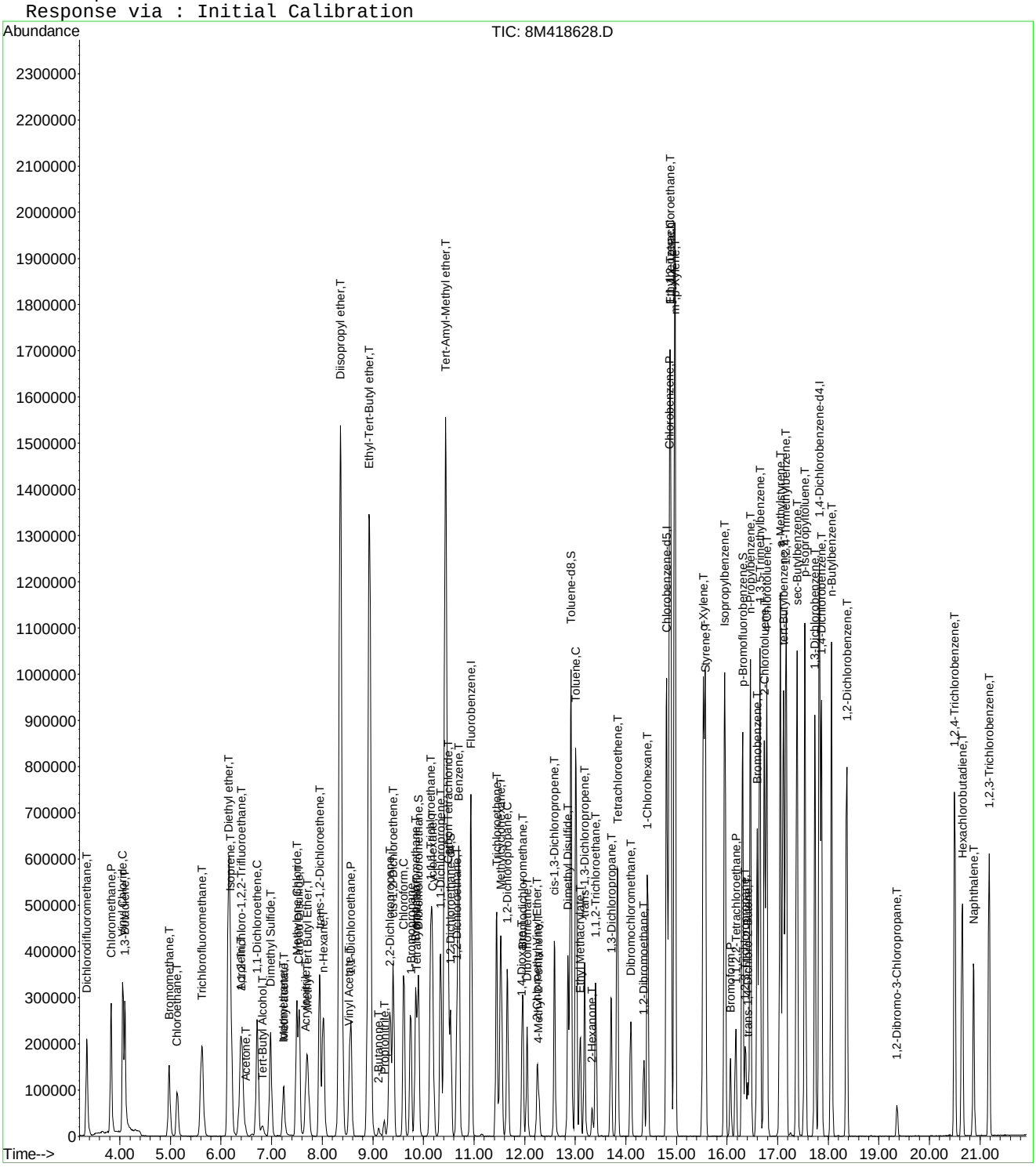
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.66	62	214684	19.4057	ug/L	98
46)	Benzene	10.69	78	804265	20.1498	ug/L	100
47)	Trichloroethene	11.45	130	209607	19.6396	ug/L	99
48)	Methylcyclohexane	11.53	83	309014	19.2686	ug/L	98
49)	1,2-Dichloropropane	11.65	63	181784	19.8081	ug/L	99
50)	Bromodichloromethane	11.95	83	260379	20.0693	ug/L	100
51)	1,4-Dioxane	11.94	88	6597	149.5912	ug/L	97
52)	Dibromomethane	12.05	93	103832	21.1125	ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.24	63	82236	19.7062	ug/L	99
54)	4-Methyl-2-Pentanone	12.28	58	32597	18.2514	ug/L	99
55)	cis-1,3-Dichloropropene	12.59	75	312764	20.7693	ug/L	98
56)	Dimethyl Disulfide	12.85	79	161914	19.9966	ug/L	94
59)	Toluene	13.01	91	859563	19.3856	ug/L	99
60)	Ethyl Methacrylate	13.09	69	176883	20.6308	ug/L	96
62)	trans-1,3-Dichloropropene	13.19	75	247485	18.9226	ug/L	100
63)	1,1,2-Trichloroethane	13.40	97	131837	18.8758	ug/L	98
64)	2-Hexanone	13.33	58	29296	17.4962	ug/L	97
65)	1,3-Dichloropropane	13.71	76	240527	19.2324	ug/L	97
66)	Tetrachloroethene	13.84	164	184726	19.2274	ug/L	99
67)	Dibromochloromethane	14.10	129	169451	18.6324	ug/L	99
68)	1,2-Dibromoethane	14.35	107	133541	18.6342	ug/L	100
69)	1-Chlorohexane	14.43	91	291954	19.3205	ug/L	99
70)	Chlorobenzene	14.86	112	572554	18.3470	ug/L	100
71)	1,1,1,2-Tetrachloroethane	14.88	131	205551	17.7305	ug/L	98
72)	Ethylbenzene	14.88	106	330105	19.0605	ug/L	95
73)	m-,p-Xylene	14.97	106	808936	38.9448	ug/L	95
74)	o-Xylene	15.53	106	378344	18.3684	ug/L	99
75)	Styrene	15.57	104	643090	19.3402	ug/L	99
76)	Bromoform	16.07	173	101616	18.9661	ug/L	99
77)	Isopropylbenzene	15.96	105	959962	19.2636	ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.17	83	152440	18.2966	ug/L	100
81)	1,2,3-Trichloropropane	16.36	110	43497	18.3380	ug/L	81
82)	trans-1,4-Dichloro-2-Buten	16.41	53	26842	13.7350	ug/L	65
83)	n-Propylbenzene	16.46	91	1148596	18.2425	ug/L	98
84)	Bromobenzene	16.60	156	249839	17.9289	ug/L	100
85)	1,3,5-Trimethylbenzene	16.65	105	834156	18.3429	ug/L	99
86)	2-Chlorotoluene	16.74	91	770160	18.1977	ug/L	96
87)	4-Chlorotoluene	16.78	91	657532	17.7838	ug/L	99
88)	a-Methylstyrene	17.05	118	474888	18.6803	ug/L	100
89)	tert-Butylbenzene	17.11	134	177665	17.6901	ug/L	97
90)	1,2,4-Trimethylbenzene	17.17	105	880959	18.6336	ug/L	99
91)	sec-Butylbenzene	17.38	105	1055503	18.6990	ug/L	98
92)	p-Isopropyltoluene	17.54	119	877852	18.9857	ug/L	98
93)	1,3-Dichlorobenzene	17.73	146	498361	17.9413	ug/L	97
94)	1,4-Dichlorobenzene	17.87	146	500272	17.8812	ug/L	100
95)	n-Butylbenzene	18.07	91	819439	18.2663	ug/L	99
96)	1,2-Dichlorobenzene	18.37	146	442704	18.2907	ug/L	97
97)	1,2-Dibromo-3-Chloropropan	19.36	75	21783	16.6594	ug/L	97
98)	1,2,4-Trichlorobenzene	20.50	180	293134	16.1922	ug/L	99
99)	Hexachlorobutadiene	20.65	225	140239	15.8444	ug/L	99
100)	Naphthalene	20.88	128	394021	16.4791	ug/L	99
101)	1,2,3-Trichlorobenzene	21.18	180	243754	16.2819	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M418628.D 8260WTR.M Thu Mar 30 08:23:32 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032917\8M418628.D Vial: 7
Acq On : 29 Mar 2017 17:22 Operator: TMB
Sample : WG608101-03 20ug/L LCS2 STD 8260 Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 30 8:23 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



2.2 Metals Data

2.2.1 Metals I C P Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	126F-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/27/2017 10:00
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/27/2017 15:36
Collect Date:	03/21/2017 08:15	**Dilution:**	1	**File ID:**	T3.032717.153641
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	4.56		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	126F-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/30/2017 10:37
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/30/2017 11:25
Collect Date:	03/21/2017 08:15	**Dilution:**	5	**File ID:**	T3.033017.112529
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	1.96		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	126F-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/29/2017 10:06
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/29/2017 13:51
Collect Date:	03/21/2017 08:15	**Dilution:**	100	**File ID:**	T3.032917.135125
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	312		50.0	25.0	12.5
Magnesium, Total	7439-95-4	244		100	50.0	25.0
Sodium, Total	7440-23-5	913		100	50.0	25.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	126FDF-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/27/2017 10:00
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/27/2017 15:40
Collect Date:	03/21/2017 08:15	**Dilution:**	1	**File ID:**	T3.032717.154030
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	4.51		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	126FDF-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/30/2017 10:37
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/30/2017 11:29
Collect Date:	03/21/2017 08:15	**Dilution:**	5	**File ID:**	T3.033017.112913
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	1.81		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	126FDF-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/29/2017 10:06
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/29/2017 14:02
Collect Date:	03/21/2017 08:15	**Dilution:**	100	**File ID:**	T3.032917.140234
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	315		50.0	25.0	12.5
Magnesium, Total	7439-95-4	245		100	50.0	25.0
Sodium, Total	7440-23-5	909		100	50.0	25.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW2-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/27/2017 10:00
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/27/2017 15:44
Collect Date:	03/21/2017 09:35	**Dilution:**	1	**File ID:**	T3.032717.154421
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	3.63		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0105	J	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW2-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/29/2017 10:06
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/29/2017 14:06
Collect Date:	03/21/2017 09:35	**Dilution:**	10	**File ID:**	T3.032917.140620
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	77.3		5.00	2.50	1.25
Magnesium, Total	7439-95-4	59.1		10.0	5.00	2.50
Sodium, Total	7440-23-5	239		10.0	5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW2-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/30/2017 10:37
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/30/2017 11:32
Collect Date:	03/21/2017 09:35	**Dilution:**	20	**File ID:**	T3.033017.113257
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	13.7		4.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW01DW-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/27/2017 10:00
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/27/2017 15:48
Collect Date:	03/21/2017 10:35	**Dilution:**	1	**File ID:**	T3.032717.154801
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.0828	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	64.8		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW01DW-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/30/2017 10:37
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/30/2017 11:51
Collect Date:	03/21/2017 10:35	**Dilution:**	5	**File ID:**	T3.033017.115126
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	0.948	J	1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW01DW-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/29/2017 10:06
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/29/2017 14:10
Collect Date:	03/21/2017 10:35	**Dilution:**	10	**File ID:**	T3.032917.141004
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	20.1		5.00	2.50	1.25
Magnesium, Total	7439-95-4	7.21	J	10.0	5.00	2.50
Sodium, Total	7440-23-5	265		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW01SW-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/27/2017 10:00
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/27/2017 15:51
Collect Date:	03/21/2017 11:35	**Dilution:**	1	**File ID:**	T3.032717.155144
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	5.44		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW01SW-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/29/2017 10:06
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/29/2017 14:13
Collect Date:	03/21/2017 11:35	**Dilution:**	20	**File ID:**	T3.032917.141352
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	28.0		10.0	5.00	2.50
Magnesium, Total	7439-95-4	19.8	J	20.0	10.0	5.00
Sodium, Total	7440-23-5	97.3		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW01SW-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/30/2017 10:37
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/30/2017 11:55
Collect Date:	03/21/2017 11:35	**Dilution:**	50	**File ID:**	T3.033017.115510
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	49.7		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW13-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/27/2017 10:00
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/27/2017 15:55
Collect Date:	03/21/2017 13:40	**Dilution:**	1	**File ID:**	T3.032717.155528
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.222		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	3.95		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	97.1		1.00	0.500	0.250

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW13-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/29/2017 10:06
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/29/2017 14:17
Collect Date:	03/21/2017 13:40	**Dilution:**	20	**File ID:**	T3.032917.141738
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	27.3		10.0	5.00	2.50
Magnesium, Total	7439-95-4	15.1	J	20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW13-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/30/2017 10:37
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/30/2017 11:58
Collect Date:	03/21/2017 13:40	**Dilution:**	50	**File ID:**	T3.033017.115857
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	93.2		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-09	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW13FD-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/27/2017 10:00
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/27/2017 15:59
Collect Date:	03/21/2017 13:40	**Dilution:**	1	**File ID:**	T3.032717.155907
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.299		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	3.93		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	94.5		1.00	0.500	0.250

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-09	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW13FD-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/29/2017 10:06
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/29/2017 14:21
Collect Date:	03/21/2017 13:40	**Dilution:**	20	**File ID:**	T3.032917.142124
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	28.4		10.0	5.00	2.50
Magnesium, Total	7439-95-4	13.5	J	20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-09	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW13FD-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/30/2017 10:37
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/30/2017 12:02
Collect Date:	03/21/2017 13:40	**Dilution:**	50	**File ID:**	T3.033017.120243
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	87.4		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-11	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	CO2F-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/27/2017 10:00
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/27/2017 16:02
Collect Date:	03/21/2017 14:40	**Dilution:**	1	**File ID:**	T3.032717.160246
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	3.24		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	72.7		1.00	0.500	0.250

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-11	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	CO2F-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/29/2017 10:06
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/29/2017 14:25
Collect Date:	03/21/2017 14:40	**Dilution:**	10	**File ID:**	T3.032917.142511
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	17.1		5.00	2.50	1.25
Magnesium, Total	7439-95-4	10.6		10.0	5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-11	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	CO2F-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/30/2017 10:37
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/30/2017 12:06
Collect Date:	03/21/2017 14:40	**Dilution:**	10	**File ID:**	T3.033017.120630
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	7.78		2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-13	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW16F-032217	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/27/2017 10:00
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/27/2017 16:06
Collect Date:	03/22/2017 08:45	**Dilution:**	1	**File ID:**	T3.032717.160630
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.164	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	3.65		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	109		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-13	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW16F-032217	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/29/2017 10:06
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/29/2017 14:28
Collect Date:	03/22/2017 08:45	**Dilution:**	10	**File ID:**	T3.032917.142857
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	22.1		5.00	2.50	1.25
Magnesium, Total	7439-95-4	12.4		10.0	5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-13	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW16F-032217	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/30/2017 10:37
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/30/2017 12:10
Collect Date:	03/22/2017 08:45	**Dilution:**	50	**File ID:**	T3.033017.121016
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	28.0		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-15	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW19F-032217	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/27/2017 10:00
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/27/2017 16:10
Collect Date:	03/22/2017 10:00	**Dilution:**	1	**File ID:**	T3.032717.161013
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	36.8		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	4.61		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-15	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW19F-032217	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/29/2017 10:06
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/29/2017 14:32
Collect Date:	03/22/2017 10:00	**Dilution:**	20	**File ID:**	T3.032917.143242
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	24.2		10.0	5.00	2.50
Magnesium, Total	7439-95-4	10.6	J	20.0	10.0	5.00
Sodium, Total	7440-23-5	96.4		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-15	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW19F-032217	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/30/2017 10:37
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/30/2017 12:14
Collect Date:	03/22/2017 10:00	**Dilution:**	50	**File ID:**	T3.033017.121404
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	59.2		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

2.2.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG607726
Analyst: ERP
Spike Analyst: ERP
Run Date: 03/27/2017 09:08
Method: 3015A
Balance: BAL019
Instrument: MW-1
Instrument Start: 03/27/2017 09:25

SOP: ME407 Revison 19
Spike Solution: STD80805
Spike Witness: VC
HNO3 Lot #: COA19483
HCL Lot #: COA19441
40 & 50 ML. DIGESTION TU COA19487
ICP FILTERS LOT#R6EA4780 RGT38286

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG607726-02	BLANK	1	40 mL	50 mL	206.284 g	206.27 g		
2	WG607726-03	LCS	1	40 mL	50 mL	212.8 g	212.78 g	5 mL	
3	L17031266-01	SAMP	1	40 mL	50 mL	206.243 g	206.205 g		04/03/17
4	L17031266-02	SAMP	1	40 mL	50 mL	206.816 g	206.8 g		04/03/17
5	L17031304-01	SAMP	1	40 mL	50 mL	206.514 g	206.485 g		04/03/17
6	L17031304-02	SAMP	1	40 mL	50 mL	202.668 g	202.647 g		04/03/17
7	L17031304-03	SAMP	1	40 mL	50 mL	206.678 g	206.668 g		04/03/17
8	L17031313-01	SAMP	1	40 mL	50 mL	205.559 g	205.545 g		04/03/17
9	L17031313-02	SAMP	1	40 mL	50 mL	205.27 g	205.252 g		04/03/17
10	L17031313-03	SAMP	1	40 mL	50 mL	207.123 g	207.086 g		04/03/17
11	L17031313-04	SAMP	1	40 mL	50 mL	207.134 g	207.111 g		04/03/17
12	L17031339-02	SAMP	1	40 mL	50 mL	207.138 g	207.112 g		04/03/17
13	L17031339-04	SAMP	1	40 mL	50 mL	208.428 g	208.386 g		04/03/17
14	L17031339-05	SAMP	1	40 mL	50 mL	207.822 g	207.794 g		04/03/17
15	L17031339-06	SAMP	1	40 mL	50 mL	203.269 g	203.249 g		04/03/17
16	L17031339-07	SAMP	1	40 mL	50 mL	205.693 g	205.665 g		04/03/17
17	L17031339-08	SAMP	1	40 mL	50 mL	206.871 g	206.845 g		04/03/17
18	L17031339-09	SAMP	1	40 mL	50 mL	205.834 g	205.815 g		04/03/17
19	L17031339-11	SAMP	1	40 mL	50 mL	205.652 g	205.641 g		04/03/17
20	L17031339-13	SAMP	1	40 mL	50 mL	204.675 g	204.626 g		04/03/17
21	L17031339-15	SAMP	1	40 mL	50 mL	206.929 g	206.906 g		04/03/17
22	WG607726-01	REF	1	40 mL	50 mL	208.157 g	208.136 g		
23	L17031383-01	SAMP	1	40 mL	50 mL	208.157 g	208.136 g		04/03/17
24	WG607726-04	MS	1	40 mL	50 mL	210.458 g	210.439 g	5 mL	
25	WG607726-05	MSD	1	40 mL	50 mL	210.696 g	210.678 g	5 mL	

L17031304-03	filtered digestate
L17031339-08	filtered digestate
L17031339-09	filtered digestate
L17031339-15	filtered digestate

Analyst: Erin Potter

Reviewer: Vicki Collins

MW_DIG - Modified 09/30/2009
PDF ID: 5217342
Report generated: 03/27/2017 10:15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 032717T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD80661 ICV Std: STD80660 Post Spike: STD80131
ICSA: STD80691 ICSAB: STD81114 Int. Std: RGT37691
CCV: STD80800 LLCCV: STD81025 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 607241,607757,607804,607652,607769

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.032717.094514	WG607785-01	Calibration Point		1		03/27/17 09:45
2	T3.032717.094902	WG607785-02	Calibration Point		1		03/27/17 09:49
3	T3.032717.095249	WG607785-03	Calibration Point		1		03/27/17 09:52
4	T3.032717.095638	WG607785-04	Calibration Point		1		03/27/17 09:56
5	T3.032717.100012	WG607785-05	Calibration Point		1		03/27/17 10:00
6	T3.032717.100343	WG607785-06	Initial Calibration Verification		1		03/27/17 10:03
7	T3.032717.100718	WG607785-07	Initial Calib Blank		1		03/27/17 10:07
8	T3.032717.101106	WG607785-08	Low Level Initial Calibration V		1		03/27/17 10:11
9	T3.032717.101450	WG607785-09	Interference Check		1		03/27/17 10:14
10	T3.032717.101830	WG607785-10	Interference Check		1		03/27/17 10:18
11	T3.032717.102214	WG607785-11	CCV		1		03/27/17 10:22
12	T3.032717.102537	WG607785-12	CCB		1		03/27/17 10:25
13	T3.032717.102926	WG607119-02	Method/Prep Blank	40/50	1		03/27/17 10:29
14	T3.032717.103314	WG607119-03	Laboratory Control S	40/50	1		03/27/17 10:33
15	T3.032717.103649	WG607119-01	Reference Sample		1	L17031100-01	03/27/17 10:36
16	T3.032717.104033	WG607119-04	Matrix Spike	40/50	1	L17031100-01	03/27/17 10:40
17	T3.032717.104408	WG607119-05	Matrix Spike Duplica	40/50	1	L17031100-01	03/27/17 10:44
18	T3.032717.104742	L17031066-01	12110-F01-WQ-W0010	40/50	1		03/27/17 10:47
19	T3.032717.105129	L17031066-02	14103-B01-WQ-W0004	40/50	1		03/27/17 10:51
20	T3.032717.105516	L17031066-03	14103-L01-WQ-W0014	40/50	1		03/27/17 10:55
21	T3.032717.105904	L17031066-04	17509-B01-WQ-W0002	40/50	1		03/27/17 10:59
22	T3.032717.110251	L17031066-05	46013-G113-WQ-W0236	40/50	1		03/27/17 11:02
23	T3.032717.110639	WG607785-13	CCV		1		03/27/17 11:06
24	T3.032717.111012	WG607785-14	CCB		1		03/27/17 11:10
25	T3.032717.111400	L17031066-06	91402-A01-WQ-W0002	40/50	1		03/27/17 11:14
26	T3.032717.111748	L17031066-07	91404-A02-WQ-W0007	40/50	1		03/27/17 11:17
27	T3.032717.112135	WG607241-03	Post Digestion Spike		1	L17031066-07	03/27/17 11:21
28	T3.032717.112510	WG607241-04	Serial Dilution		5	L17031066-07	03/27/17 11:25
29	T3.032717.112857	WG607241-04	Serial Dilution		25	L17031066-07	03/27/17 11:28
30	T3.032717.113245	WG607785-15	CCV		1		03/27/17 11:32
31	T3.032717.113619	WG607785-16	CCB		1		03/27/17 11:36
32	T3.032717.114008	WG607785-17	Low Level Continuing Calibra		1		03/27/17 11:40
33	T3.032717.115105	WG607342-02	Method/Prep Blank	40/50	1		03/27/17 11:51
34	T3.032717.115453	WG607342-03	Laboratory Control S	40/50	1		03/27/17 11:54

Page: 1 Approved: March 27, 2017

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 032717T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD80661 ICV Std: STD80660 Post Spike: STD80131
ICSA: STD80691 ICSAB: STD81114 Int. Std: RGT37691
CCV: STD80800 LLCCV: STD81025 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 607241,607757,607804,607652,607769

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.032717.115827	WG607342-01	Reference Sample		1	L17031210-01	03/27/17 11:58
36	T3.032717.120210	WG607342-04	Matrix Spike	40/50	1	L17031210-01	03/27/17 12:02
37	T3.032717.120544	WG607342-05	Matrix Spike Duplica	40/50	1	L17031210-01	03/27/17 12:05
38	T3.032717.120918	L17031094-01	45-10-16 S1-975	40/50	1		03/27/17 12:09
39	T3.032717.121303	L17031094-02	45-10-16 S5/S7	40/50	1		03/27/17 12:13
40	T3.032717.121647	WG607757-01	Post Digestion Spike		1	L17031094-02	03/27/17 12:16
41	T3.032717.122021	WG607757-02	Serial Dilution		5	L17031094-02	03/27/17 12:20
42	T3.032717.122406	WG607757-02	Serial Dilution		25	L17031094-02	03/27/17 12:24
43	T3.032717.122753	WG607785-18	CCV		1		03/27/17 12:27
44	T3.032717.123127	WG607785-19	CCB		1		03/27/17 12:31
45	T3.032717.123517	L17031094-03	45-10-16 S7	40/50	1		03/27/17 12:35
46	T3.032717.123902	L17031094-04	45-10-16 S10	40/50	1		03/27/17 12:39
47	T3.032717.124247	L17031094-05	45-10-16 S11/S10	40/50	1		03/27/17 12:42
48	T3.032717.124631	L17031094-06	45-10-16 S24	40/50	1		03/27/17 12:46
49	T3.032717.125015	L17031094-07	45-10-16 P1	40/50	1		03/27/17 12:50
50	T3.032717.125400	L17031095-01	1302-100 W1	40/50	1		03/27/17 12:54
51	T3.032717.125745	L17031095-02	1302-100 S1	40/50	1		03/27/17 12:57
52	T3.032717.130129	L17031095-03	1302-102 S1	40/50	1		03/27/17 13:01
53	T3.032717.130515	L17031095-04	2212-118 S6	40/50	1		03/27/17 13:05
54	T3.032717.130859	L17031163-01	WADE SPRING	40/50	1		03/27/17 13:08
55	T3.032717.131245	WG607785-20	CCV		1		03/27/17 13:12
56	T3.032717.131618	WG607785-21	CCB		1		03/27/17 13:16
57	T3.032717.132007	L17031168-01	1802-123D-W1	40/50	1		03/27/17 13:20
58	T3.032717.132352	L17031168-02	1802-123D-P1	40/50	1		03/27/17 13:23
59	T3.032717.132737	L17031168-03	1802-123D-S2	40/50	1		03/27/17 13:27
60	T3.032717.133121	L17031168-04	1802-123D-S3	40/50	1		03/27/17 13:31
61	T3.032717.133505	L17031168-05	1802-123D-S4	40/50	1		03/27/17 13:35
62	T3.032717.133849	L17031183-01	17C1136-01	40/50	1		03/27/17 13:38
63	T3.032717.134232	L17031183-02	17C1136-02	40/50	1		03/27/17 13:42
64	T3.032717.134614	WG607785-22	CCV		1		03/27/17 13:46
65	T3.032717.134948	WG607785-23	CCB		1		03/27/17 13:49
66	T3.032717.135338	Sample-52	Sample-52		1		03/27/17 13:53
67	T3.032717.135726	Sample-53	Sample-53		1		03/27/17 13:57
68	T3.032717.144501	WG607785-24	CCV		1		03/27/17 14:45

Page: 2 Approved: March 27, 2017

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 032717T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD80661 ICV Std: STD80660 Post Spike: STD80131
ICSA: STD80691 ICSAB: STD81114 Int. Std: RGT37691
CCV: STD80800 LLCCV: STD81025 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 607241,607757,607804,607652,607769

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.032717.144835	WG607785-25	CCB		1		03/27/17 14:48
70	T3.032717.145222	WG607726-02	Method/Prep Blank	40/50	1		03/27/17 14:52
71	T3.032717.145610	WG607726-03	Laboratory Control S	40/50	1		03/27/17 14:56
72	T3.032717.145944	WG607726-01	Reference Sample		1	L17031383-01	03/27/17 14:59
73	T3.032717.150329	WG607726-04	Matrix Spike	40/50	1	L17031383-01	03/27/17 15:03
74	T3.032717.150703	WG607726-05	Matrix Spike Duplica	40/50	1	L17031383-01	03/27/17 15:07
75	T3.032717.151038	L17031266-01	A05-MW10D-Y2S2	40/50	1		03/27/17 15:10
76	T3.032717.151425	L17031266-02	A05-MW11S-Y2S2	40/50	1		03/27/17 15:14
77	T3.032717.151809	WG607804-01	Post Digestion Spike		1	L17031266-02	03/27/17 15:18
78	T3.032717.152144	L17031266-02	A05-MW11S-Y2S2		5		03/27/17 15:21
79	T3.032717.152529	WG607804-02	Serial Dilution		25	L17031266-02	03/27/17 15:25
80	T3.032717.152918	WG607785-26	CCV		1		03/27/17 15:29
81	T3.032717.153252	WG607785-27	CCB		1		03/27/17 15:32
82	T3.032717.153641	L17031339-02	126F-032117	40/50	1		03/27/17 15:36
83	T3.032717.154030	L17031339-04	126FDF-032117	40/50	1		03/27/17 15:40
84	T3.032717.154421	L17031339-05	MW2-032117	40/50	1		03/27/17 15:44
85	T3.032717.154801	L17031339-06	18CPTMW01DW-032117	40/50	1		03/27/17 15:48
86	T3.032717.155144	L17031339-07	18CPTMW01SW-032117	40/50	1		03/27/17 15:51
87	T3.032717.155528	L17031339-08	MW13-032117	40/50	1		03/27/17 15:55
88	T3.032717.155907	L17031339-09	MW13FD-032117	40/50	1		03/27/17 15:59
89	T3.032717.160246	L17031339-11	CO2F-032117	40/50	1		03/27/17 16:02
90	T3.032717.160630	L17031339-13	MW16F-032217	40/50	1		03/27/17 16:06
91	T3.032717.161013	L17031339-15	MW19F-032217	40/50	1		03/27/17 16:10
92	T3.032717.161351	WG607785-28	CCV		1		03/27/17 16:13
93	T3.032717.161725	WG607785-29	CCB		1		03/27/17 16:17
94	T3.032717.162104	WG607785-30	Low Level Continuing Calibra		1		03/27/17 16:21
95	T3.032717.162446	L17031304-01	MW-1	40/50	1		03/27/17 16:24
96	T3.032717.162832	L17031304-02	WW-2A	40/50	1		03/27/17 16:28
97	T3.032717.163217	L17031304-03	MW-4	40/50	1		03/27/17 16:32
98	T3.032717.163600	L17031313-01	103	40/50	1		03/27/17 16:36
99	T3.032717.163941	L17031313-02	103	40/50	1		03/27/17 16:39
100	T3.032717.164322	L17031313-03	107	40/50	1		03/27/17 16:43
101	T3.032717.164705	L17031313-04	107	40/50	1		03/27/17 16:47
102	T3.032717.165038	L17031177-01	A05-MW10S-Y2S2	40/50	5		03/27/17 16:50

Page: 3 Approved: March 27, 2017

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 032717T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD80661 ICV Std: STD80660 Post Spike: STD80131
ICSA: STD80691 ICSAB: STD81114 Int. Std: RGT37691
CCV: STD80800 LLCCV: STD81025 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 607241,607757,607804,607652,607769

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.032717.165425	WG607652-01	Post Digestion Spike		5	L17031177-01	03/27/17 16:54
104	T3.032717.165800	WG607652-02	Serial Dilution		25	L17031177-01	03/27/17 16:58
105	T3.032717.170148	WG607785-31	CCV		1		03/27/17 17:01
106	T3.032717.170522	WG607785-32	CCB		1		03/27/17 17:05
107	T3.032717.170910	WG607345-02	Method/Prep Blank	40/50	1		03/27/17 17:09
108	T3.032717.171256	WG607345-03	Laboratory Control S	40/50	1		03/27/17 17:12
109	T3.032717.171632	WG607345-01	Reference Sample		1	L17031161-01	03/27/17 17:16
110	T3.032717.172016	WG607345-04	Matrix Spike	40/50	1	L17031161-01	03/27/17 17:20
111	T3.032717.172351	WG607345-05	Matrix Spike Duplica	40/50	1	L17031161-01	03/27/17 17:23
112	T3.032717.172726	L17031161-04	18CPTMW23SW-032017		1		03/27/17 17:27
113	T3.032717.173109	L17031161-05	18WW24-032017		1		03/27/17 17:31
114	T3.032717.173453	L17031161-07	18WW25F-032017	40/50	1		03/27/17 17:34
115	T3.032717.173836	WG607769-01	Post Digestion Spike		1	L17031161-07	03/27/17 17:38
116	T3.032717.174210	WG607769-02	Serial Dilution		5	L17031161-07	03/27/17 17:42
117	T3.032717.174555	WG607785-33	CCV		1		03/27/17 17:45
118	T3.032717.174929	WG607785-34	CCB		1		03/27/17 17:49
119	T3.032717.175316	WG607769-02	Serial Dilution		25	L17031161-07	03/27/17 17:53
120	T3.032717.175701	L17031161-09	MW10F-032017		1		03/27/17 17:57
121	T3.032717.180045	L17031176-01	A05-MW03D-Y2S2	40/50	1		03/27/17 18:00
122	T3.032717.180430	L17031176-02	A05-MW08D-Y2S2	40/50	1		03/27/17 18:04
123	T3.032717.180815	L17031176-03	A05-MW08S-Y2S2	40/50	1		03/27/17 18:08
124	T3.032717.181159	L17031176-05	A05-TM06-Y2S2	40/50	1		03/27/17 18:11
125	T3.032717.181541	L17031188-01	12610-B01-WQ-W0002		1		03/27/17 18:15
126	T3.032717.181926	L17031188-02	14310-F01-WQ-W0015		1		03/27/17 18:19
127	T3.032717.182312	L17031188-03	46002-G18-WQ-W0095		1		03/27/17 18:23
128	T3.032717.182659	WG607785-35	CCV		1		03/27/17 18:26
129	T3.032717.183033	WG607785-36	CCB		1		03/27/17 18:30
130	T3.032717.183422	L17031188-04	46010-G24-WQ-W0053		1		03/27/17 18:34
131	T3.032717.183808	L17031184-01	17C1137-01	40/50	1		03/27/17 18:38
132	T3.032717.184151	L17031184-02	17C1137-02	40/50	1		03/27/17 18:41
133	T3.032717.184538	L17031202-02	PERMEATE	1/50	1		03/27/17 18:45
134	T3.032717.184922	L17031202-04	BLEED	1/50	1		03/27/17 18:49
135	T3.032717.185305	L17031202-06	N. DOCK FLUME	1/50	1		03/27/17 18:53
136	T3.032717.185653	L17031215-01	17C0685-01	40/50	1		03/27/17 18:56

Page: 4 Approved: March 27, 2017

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 032717T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD80661 ICV Std: STD80660 Post Spike: STD80131
ICSA: STD80691 ICSAB: STD81114 Int. Std: RGT37691
CCV: STD80800 LLCCV: STD81025 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 607241,607757,607804,607652,607769

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	T3.032717.190032	WG607785-37	CCV		1		03/27/17 19:00
138	T3.032717.190406	WG607785-38	CCB		1		03/27/17 19:04

Comments

Seq.	Rerun	Dil.	Reason	Analytes
66			Seq. 66-67: No sample tubes were in place. JYH	
119			Seq.119-127: Wrong sample labels. JYH	
130			Seq. 130-136: Wrong sample labels. JYH	

Page: 5 Approved: March 27, 2017

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 032917T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD81180 ICV Std: STD81182 Post Spike: STD80131
ICSA: STD81187 ICSAB: STD81114 Int. Std: RGT37691
CCV: STD81186 LLCCV: STD81025 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 607769,607804,607776,607947

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.032917.095205	WG608115-01	Calibration Point		1		03/29/17 09:52
2	T3.032917.095542	WG608115-02	Calibration Point		1		03/29/17 09:55
3	T3.032917.095929	WG608115-03	Calibration Point		1		03/29/17 09:59
4	T3.032917.100316	WG608115-04	Calibration Point		1		03/29/17 10:03
5	T3.032917.100650	WG608115-05	Calibration Point		1		03/29/17 10:06
6	T3.032917.101018	WG608115-06	Initial Calibration Verification		1		03/29/17 10:10
7	T3.032917.101349	WG608115-07	Initial Calib Blank		1		03/29/17 10:13
8	T3.032917.101727	WG608115-08	Low Level Initial Calibration V		1		03/29/17 10:17
9	T3.032917.102104	WG608115-09	Interference Check		1		03/29/17 10:21
10	T3.032917.102448	WG608115-10	Interference Check		1		03/29/17 10:24
11	T3.032917.102827	WG608115-11	CCV		1		03/29/17 10:28
12	T3.032917.103156	WG608115-12	CCB		1		03/29/17 10:31
13	T3.032917.103539	WG607345-02	Method/Prep Blank	40/50	1		03/29/17 10:35
14	T3.032917.103923	WG607345-03	Laboratory Control S	40/50	1		03/29/17 10:39
15	T3.032917.104254	WG607345-01	Reference Sample		1	L17031161-01	03/29/17 10:42
16	T3.032917.104634	WG607345-04	Matrix Spike	40/50	1	L17031161-01	03/29/17 10:46
17	T3.032917.105003	WG607345-05	Matrix Spike Duplica	40/50	1	L17031161-01	03/29/17 10:50
18	T3.032917.105332	L17031161-04	18CPTMW23SW-032017	40/50	1		03/29/17 10:53
19	T3.032917.105710	L17031161-05	18WW24-032017	40/50	1		03/29/17 10:57
20	T3.032917.110050	WG607769-03	Post Digestion Spike		1	L17031161-05	03/29/17 11:00
21	T3.032917.110421	WG607769-04	Serial Dilution		5	L17031161-05	03/29/17 11:04
22	T3.032917.110800	WG608115-13	CCV		1		03/29/17 11:08
23	T3.032917.111130	WG608115-14	CCB		1		03/29/17 11:11
24	T3.032917.111512	L17031161-07	18WW25F-032017	40/50	1		03/29/17 11:15
25	T3.032917.111852	L17031161-09	MW10F-032017	40/50	1		03/29/17 11:18
26	T3.032917.112231	L17031188-01	12610-B01-WQ-W0002	40/50	1		03/29/17 11:22
27	T3.032917.112611	L17031188-02	14310-F01-WQ-W0015	40/50	1		03/29/17 11:26
28	T3.032917.112952	L17031188-03	46002-G18-WQ-W0095	40/50	1		03/29/17 11:29
29	T3.032917.113335	L17031188-04	46010-G24-WQ-W0053	40/50	1		03/29/17 11:33
30	T3.032917.113718	L17031215-02	17C0685-02	40/50	1		03/29/17 11:37
31	T3.032917.114054	L17031176-01	A05-MW03D-Y2S2	40/50	10		03/29/17 11:40
32	T3.032917.114436	L17031176-02	A05-MW08D-Y2S2	40/50	10		03/29/17 11:44
33	T3.032917.114817	L17031176-03	A05-MW08S-Y2S2	40/50	10		03/29/17 11:48
34	T3.032917.115155	WG608115-15	CCV		1		03/29/17 11:51

Page: 1 Approved: March 29, 2017

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 032917T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD81180 ICV Std: STD81182 Post Spike: STD80131
ICSA: STD81187 ICSAB: STD81114 Int. Std: RGT37691
CCV: STD81186 LLCCV: STD81025 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 607769,607804,607776,607947

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.032917.115525	WG608115-16	CCB		1		03/29/17 11:55
36	T3.032917.115856	L17031176-01	A05-MW03D-Y2S2	40/50	1		03/29/17 11:58
37	T3.032917.120236	L17031176-02	A05-MW08D-Y2S2	40/50	1		03/29/17 12:02
38	T3.032917.120616	L17031176-03	A05-MW08S-Y2S2	40/50	1		03/29/17 12:06
39	T3.032917.120956	L17031176-05	A05-TM06-Y2S2	40/50	1		03/29/17 12:09
40	T3.032917.121336	L17031176-05	A05-TM06-Y2S2	40/50	10		03/29/17 12:13
41	T3.032917.121717	WG607345-01	Reference Sample		10	L17031161-01	03/29/17 12:17
42	T3.032917.122058	WG607345-04	Matrix Spike	40/50	10	L17031161-01	03/29/17 12:20
43	T3.032917.122434	WG607345-05	Matrix Spike Duplica	40/50	10	L17031161-01	03/29/17 12:24
44	T3.032917.122809	L17031161-04	18CPTMW23SW-032017	40/50	10		03/29/17 12:28
45	T3.032917.123150	WG608115-17	CCV		1		03/29/17 12:31
46	T3.032917.123519	WG608115-18	CCB		1		03/29/17 12:35
47	T3.032917.123903	L17031161-05	18WW24-032017	40/50	10		03/29/17 12:39
48	T3.032917.124243	WG607769-03	Post Digestion Spike		10	L17031161-05	03/29/17 12:42
49	T3.032917.124613	WG607769-04	Serial Dilution		50	L17031161-05	03/29/17 12:46
50	T3.032917.124954	L17031161-07	18WW25F-032017	40/50	10		03/29/17 12:49
51	T3.032917.125334	L17031161-09	MW10F-032017	40/50	10		03/29/17 12:53
52	T3.032917.125716	WG608115-19	CCV		1		03/29/17 12:57
53	T3.032917.130045	WG608115-20	CCB		1		03/29/17 13:00
54	T3.032917.130428	WG608115-21	Low Level Continuing Calibra		1		03/29/17 13:04
55	T3.032917.130804	WG607726-02	Method/Prep Blank	40/50	1		03/29/17 13:08
56	T3.032917.131146	WG607726-03	Laboratory Control S	40/50	1		03/29/17 13:11
57	T3.032917.131517	WG607726-01	Reference Sample		1	L17031383-01	03/29/17 13:15
58	T3.032917.131857	WG607726-04	Matrix Spike	40/50	1	L17031383-01	03/29/17 13:18
59	T3.032917.133259	WG607726-05	Matrix Spike Duplica	40/50	1	L17031383-01	03/29/17 13:32
60	T3.032917.133633	L17031266-01	A05-MW10D-Y2S2	40/50	1		03/29/17 13:36
61	T3.032917.134020	WG607804-03	Post Digestion Spike		1	L17031266-01	03/29/17 13:40
62	T3.032917.134355	WG607804-04	Serial Dilution		5	L17031266-01	03/29/17 13:43
63	T3.032917.134741	L17031266-02	A05-MW11S-Y2S2	40/50	1		03/29/17 13:47
64	T3.032917.135125	L17031339-02	126F-032117	40/50	100		03/29/17 13:51
65	T3.032917.135512	WG608115-22	CCV		1		03/29/17 13:55
66	T3.032917.135846	WG608115-23	CCB		1		03/29/17 13:58
67	T3.032917.140234	L17031339-04	126FDF-032117	40/50	100		03/29/17 14:02
68	T3.032917.140620	L17031339-05	MW2-032117	40/50	10		03/29/17 14:06

Page: 2 Approved: March 29, 2017

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 032917T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD81180 ICV Std: STD81182 Post Spike: STD80131
ICSA: STD81187 ICSAB: STD81114 Int. Std: RGT37691
CCV: STD81186 LLCCV: STD81025 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 607769,607804,607776,607947

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.032917.141004	L17031339-06	18CPTMW01DW-032117	40/50	10		03/29/17 14:10
70	T3.032917.141352	L17031339-07	18CPTMW01SW-032117	40/50	20		03/29/17 14:13
71	T3.032917.141738	L17031339-08	MW13-032117	40/50	20		03/29/17 14:17
72	T3.032917.142124	L17031339-09	MW13FD-032117	40/50	20		03/29/17 14:21
73	T3.032917.142511	L17031339-11	CO2F-032117	40/50	10		03/29/17 14:25
74	T3.032917.142857	L17031339-13	MW16F-032217	40/50	10		03/29/17 14:28
75	T3.032917.143242	L17031339-15	MW19F-032217	40/50	20		03/29/17 14:32
76	T3.032917.143629	WG608115-24	CCV		1		03/29/17 14:36
77	T3.032917.144003	WG608115-25	CCB		1		03/29/17 14:40
78	T3.032917.144352	WG608115-26	Low Level Continuing Calibra		1		03/29/17 14:43
79	T3.032917.151537	WG607688-02	Method/Prep Blank	40/50	1		03/29/17 15:15
80	T3.032917.151924	WG607688-03	Laboratory Control S	40/50	1		03/29/17 15:19
81	T3.032917.152259	L17031237-01	HAMILTON_03-04-0105_Pl	40/50	1		03/29/17 15:22
82	T3.032917.152643	WG607688-01	Reference Sample		1	L17031268-01	03/29/17 15:26
83	T3.032917.153025	L17031268-02	A05-MW09S-Y2S2	40/50	1		03/29/17 15:30
84	T3.032917.153408	WG607688-04	Matrix Spike	40/50	1	L17031268-01	03/29/17 15:34
85	T3.032917.153742	WG607688-05	Matrix Spike Duplica	40/50	1	L17031268-01	03/29/17 15:37
86	T3.032917.154117	L17031268-05	A05-TM07-Y2S2	40/50	1		03/29/17 15:41
87	T3.032917.154504	WG607776-01	Post Digestion Spike		1	L17031268-05	03/29/17 15:45
88	T3.032917.154838	WG607776-02	Serial Dilution		5	L17031268-05	03/29/17 15:48
89	T3.032917.155224	WG608115-27	CCV		1		03/29/17 15:52
90	T3.032917.155559	WG608115-28	CCB		1		03/29/17 15:55
91	T3.032917.155946	L17031268-07	A05-RB01-Y2S2	40/50	1		03/29/17 15:59
92	T3.032917.160333	L17031317-01	1001-142 W1	40/50	1		03/29/17 16:03
93	T3.032917.160714	L17031317-02	1001-142 P1	40/50	1		03/29/17 16:07
94	T3.032917.161100	L17031317-03	1001-142 S2	40/50	1		03/29/17 16:11
95	T3.032917.161445	L17031318-01	2211-112 S1	40/50	1		03/29/17 16:14
96	T3.032917.161830	L17031318-02	2211-112 S2	40/50	1		03/29/17 16:18
97	T3.032917.162213	L17031318-03	2211-112 S3	40/50	1		03/29/17 16:22
98	T3.032917.162557	L17031318-04	2211-112 S4	40/50	1		03/29/17 16:25
99	T3.032917.162941	L17031319-01	0302-112D W1	40/50	1		03/29/17 16:29
100	T3.032917.163323	L17031320-01	1802-126 S1	40/50	1		03/29/17 16:33
101	T3.032917.163708	WG608115-29	CCV		1		03/29/17 16:37
102	T3.032917.164043	WG608115-30	CCB		1		03/29/17 16:40

Page: 3 Approved: March 29, 2017

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 032917T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

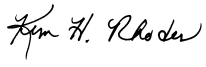
Calibration Std: STD81180 ICV Std: STD81182 Post Spike: STD80131
ICSA: STD81187 ICSAB: STD81114 Int. Std: RGT37691
CCV: STD81186 LLCCV: STD81025 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 607769,607804,607776,607947

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.032917.164419	L17031354-01	T7C0981-01	40/50	1		03/29/17 16:44
104	T3.032917.164752	L17031354-02	T7C0981-02	40/50	1		03/29/17 16:47
105	T3.032917.165135	L17031363-01	17702-F01-WQ-W0013	40/50	1		03/29/17 16:51
106	T3.032917.165520	L17031363-02	19301-C10-WQ-W0096	40/50	1		03/29/17 16:55
107	T3.032917.165907	L17031363-03	46011-G09-WQ-W0023	40/50	1		03/29/17 16:59
108	T3.032917.170253	L17031382-01	0303-105A-S1	40/50	1		03/29/17 17:02
109	T3.032917.170637	WG607688-01	Reference Sample		10	L17031268-01	03/29/17 17:06
110	T3.032917.171023	L17031268-02	A05-MW09S-Y2S2	40/50	10		03/29/17 17:10
111	T3.032917.171409	WG607688-04	Matrix Spike	40/50	10	L17031268-01	03/29/17 17:14
112	T3.032917.171749	WG607688-05	Matrix Spike Duplica	40/50	10	L17031268-01	03/29/17 17:17
113	T3.032917.172129	WG608115-31	CCV		1		03/29/17 17:21
114	T3.032917.172503	WG608115-32	CCB		1		03/29/17 17:25
115	T3.032917.172850	L17031363-01	17702-F01-WQ-W0013		10		03/29/17 17:28
116	T3.032917.173237	L17031363-02	19301-C10-WQ-W0096		10		03/29/17 17:32
117	T3.032917.173623	L17031363-03	46011-G09-WQ-W0023		10		03/29/17 17:36
118	T3.032917.174011	WG608115-33	CCV		1		03/29/17 17:40
119	T3.032917.174346	WG608115-34	CCB		1		03/29/17 17:43
120	T3.032917.174731	WG608115-35	Low Level Continuing Calibra		1		03/29/17 17:47
121	T3.032917.175114	WG607863-02	Method/Prep Blank	40/50	1		03/29/17 17:51
122	T3.032917.175501	WG607863-03	Laboratory Control S	40/50	1		03/29/17 17:55
123	T3.032917.175836	L17031409-01	J7C1297-01		1	WG607863-01	03/29/17 17:58
124	T3.032917.180217	WG607863-04	Matrix Spike	5/50	1	L17031409-01	03/29/17 18:02
125	T3.032917.180552	WG607863-05	Matrix Spike Duplica	5/50	1	L17031409-01	03/29/17 18:05
126	T3.032917.180926	L17031386-01	40561-03	40/50	1		03/29/17 18:09
127	T3.032917.181311	WG607947-03	Post Digestion Spike		1	L17031386-01	03/29/17 18:13
128	T3.032917.181646	WG607947-04	Serial Dilution		5	L17031386-01	03/29/17 18:16
129	T3.032917.182030	WG608115-36	CCV		1		03/29/17 18:20
130	T3.032917.182404	WG608115-37	CCB		1		03/29/17 18:24
131	T3.032917.182751	L17031387-01	1801-145-W4	40/50	1		03/29/17 18:27
132	T3.032917.183132	L17031388-01	32758-04	40/50	1		03/29/17 18:31
133	T3.032917.183517	L17031389-01	1802-115-S5	40/50	1		03/29/17 18:35
134	T3.032917.183902	L17031396-01	1804-118 W1	40/50	1		03/29/17 18:39
135	T3.032917.184247	L17031397-01	2212-147-C W1	40/50	1		03/29/17 18:42
136	T3.032917.184630	L17031397-02	2212-147-C W1	40/50	1		03/29/17 18:46

Page: 4 Approved: March 29, 2017



Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 032917T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD81180 ICV Std: STD81182 Post Spike: STD80131
ICSA: STD81187 ICSAB: STD81114 Int. Std: RGT37691
CCV: STD81186 LLCCV: STD81025 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 607769,607804,607776,607947

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	T3.032917.185014	WG608115-38	CCV		1		03/29/17 18:50
138	T3.032917.185348	WG608115-39	CCB		1		03/29/17 18:53

Page: 5 Approved: March 29, 2017

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 033017T3.3R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD81180 ICV Std: STD81182 Post Spike: STD80131
ICSA: STD81187 ICSAB: STD81114 Int. Std: RGT37691
CCV: STD81186 LLCCV: STD81025 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 607804,608189,608278

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.033017.102259	WG608293-01	Calibration Point		1		03/30/17 10:22
2	T3.033017.102647	WG608293-02	Calibration Point		1		03/30/17 10:26
3	T3.033017.103034	WG608293-03	Calibration Point		1		03/30/17 10:30
4	T3.033017.103422	WG608293-04	Calibration Point		1		03/30/17 10:34
5	T3.033017.103756	WG608293-05	Calibration Point		1		03/30/17 10:37
6	T3.033017.104125	WG608293-06	Initial Calibration Verification		1		03/30/17 10:41
7	T3.033017.104459	WG608293-07	Initial Calib Blank		1		03/30/17 10:44
8	T3.033017.104847	WG608293-08	Low Level Initial Calibration V		1		03/30/17 10:48
9	T3.033017.105229	WG608293-09	Interference Check		1		03/30/17 10:52
10	T3.033017.105619	WG608293-10	Interference Check		1		03/30/17 10:56
11	T3.033017.110003	WG608293-11	CCV		1		03/30/17 11:00
12	T3.033017.110336	WG608293-12	CCB		1		03/30/17 11:03
13	T3.033017.110724	WG607726-02	Method/Prep Blank	40/50	1		03/30/17 11:07
14	T3.033017.111113	WG607726-03	Laboratory Control S	40/50	1		03/30/17 11:11
15	T3.033017.111447	WG607726-01	Reference Sample		1	L17031383-01	03/30/17 11:14
16	T3.033017.111832	WG607726-04	Matrix Spike	40/50	1	L17031383-01	03/30/17 11:18
17	T3.033017.112155	WG607726-05	Matrix Spike Duplica	40/50	1	L17031383-01	03/30/17 11:21
18	T3.033017.112529	L17031339-02	126F-032117	40/50	5		03/30/17 11:25
19	T3.033017.112913	L17031339-04	126FDF-032117	40/50	5		03/30/17 11:29
20	T3.033017.113257	L17031339-05	MW2-032117	40/50	20		03/30/17 11:32
21	T3.033017.113642	WG607804-05	Post Digestion Spike		20	L17031339-05	03/30/17 11:36
22	T3.033017.114016	WG607804-06	Serial Dilution		100	L17031339-05	03/30/17 11:40
23	T3.033017.114402	WG608293-13	CCV		1		03/30/17 11:44
24	T3.033017.114736	WG608293-14	CCB		1		03/30/17 11:47
25	T3.033017.115126	L17031339-06	18CPTMW01DW-032117	40/50	5		03/30/17 11:51
26	T3.033017.115510	L17031339-07	18CPTMW01SW-032117	40/50	50		03/30/17 11:55
27	T3.033017.115857	L17031339-08	MW13-032117	40/50	50		03/30/17 11:58
28	T3.033017.120243	L17031339-09	MW13FD-032117	40/50	50		03/30/17 12:02
29	T3.033017.120630	L17031339-11	CO2F-032117	40/50	10		03/30/17 12:06
30	T3.033017.121016	L17031339-13	MW16F-032217	40/50	50		03/30/17 12:10
31	T3.033017.121404	L17031339-15	MW19F-032217	40/50	50		03/30/17 12:14
32	T3.033017.121751	WG608293-15	CCV		1		03/30/17 12:17
33	T3.033017.122126	WG608293-16	CCB		1		03/30/17 12:21
34	T3.033017.122512	WG608293-17	LLCCV		1		03/30/17 12:25

Page: 1 Approved: March 31, 2017

Kristi K Buck

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 033017T3.3R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD81180 ICV Std: STD81182 Post Spike: STD80131
ICSA: STD81187 ICSAB: STD81114 Int. Std: RGT37691
CCV: STD81186 LLCCV: STD81025 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 607804,608189,608278

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.033017.122903	WG607998-02	Method/Prep Blank	40/50	1		03/30/17 12:29
36	T3.033017.123250	WG607998-03	Laboratory Control S	40/50	1		03/30/17 12:32
37	T3.033017.123626	L17031361-02	MW2B-331-14	40/50	1		03/30/17 12:36
38	T3.033017.124012	WG607998-01	Reference Sample		1	L17031361-07	03/30/17 12:40
39	T3.033017.124359	WG607998-04	Matrix Spike	40/50	1	L17031361-07	03/30/17 12:43
40	T3.033017.124733	WG607998-05	Matrix Spike Duplica	40/50	1	L17031361-07	03/30/17 12:47
41	T3.033017.125108	L17031361-14	MW4B-331-14	40/50	1		03/30/17 12:51
42	T3.033017.125449	WG608189-01	Post Digestion Spike		1	L17031361-14	03/30/17 12:54
43	T3.033017.125822	WG608189-02	Serial Dilution		5	L17031361-14	03/30/17 12:58
44	T3.033017.130205	WG608293-18	CCV		1		03/30/17 13:02
45	T3.033017.130538	WG608293-19	CCB		1		03/30/17 13:05
46	T3.033017.130927	WG608293-20	Low Level Continuing Calibra		1		03/30/17 13:09
47	T3.033017.131309	L17031361-17	MW5A-331-14	40/50	1		03/30/17 13:13
48	T3.033017.131654	L17031361-20	MW5A2-331-14	40/50	1		03/30/17 13:16
49	T3.033017.132040	L17031361-23	OW1B-331-14	40/50	1		03/30/17 13:20
50	T3.033017.132425	L17031361-26	OW2A-331-14	40/50	1		03/30/17 13:24
51	T3.033017.132813	L17031361-29	OW3A-331-14	40/50	1		03/30/17 13:28
52	T3.033017.133159	L17031399-01	6-8-20 W1	40/50	1		03/30/17 13:31
53	T3.033017.133543	L17031399-02	6-10-6 W1	40/50	1		03/30/17 13:35
54	T3.033017.133928	L17031450-01	1804-222 W1	40/50	1		03/30/17 13:39
55	T3.033017.134313	L17031451-01	1802-108 W4	40/50	1		03/30/17 13:43
56	T3.033017.134656	L17031451-02	1802-108 P1	40/50	1		03/30/17 13:46
57	T3.033017.135041	WG608293-21	CCV		1		03/30/17 13:50
58	T3.033017.135417	WG608293-22	CCB		1		03/30/17 13:54
59	T3.033017.135755	L17031455-01	2212-126 W2	40/50	1		03/30/17 13:57
60	T3.033017.140141	L17031455-02	2212-126 W1	40/50	1		03/30/17 14:01
61	T3.033017.140550	L17031468-01	MNA-GMW-518	40/50	1		03/30/17 14:05
62	T3.033017.140929	L17031468-02	MNA-GMW-607	40/50	1		03/30/17 14:09
63	T3.033017.141313	L17031468-04	FB-01-032717	40/50	1		03/30/17 14:13
64	T3.033017.141700	L17031468-05	EB-01-032717	40/50	1		03/30/17 14:17
65	T3.033017.142048	L17031468-06	MNA-GMW-606	40/50	1		03/30/17 14:20
66	T3.033017.142432	WG608293-23	CCV		1		03/30/17 14:24
67	T3.033017.142805	WG608293-24	CCB		1		03/30/17 14:28
68	T3.033017.151135	WG608293-25	CCV		1		03/30/17 15:11

Page: 2 Approved: March 31, 2017

Kristi K Buck

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 033017T3.3R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD81180 ICV Std: STD81182 Post Spike: STD80131
ICSA: STD81187 ICSAB: STD81114 Int. Std: RGT37691
CCV: STD81186 LLCCV: STD81025 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 607804,608189,608278

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.033017.151516	WG608293-26	CCB		1		03/30/17 15:15
70	T3.033017.151904	WG608021-02	Method/Prep Blank	40/50	1		03/30/17 15:19
71	T3.033017.152253	WG608021-03	Laboratory Control S	40/50	1		03/30/17 15:22
72	T3.033017.152627	WG607868-01	Fluid Blank 1		1		03/30/17 15:26
73	T3.033017.153016	L17031465-01	INTERIOR PRESSURE WAS		1	WG608021-01	03/30/17 15:30
74	T3.033017.153401	WG608021-04	Matrix Spike	5/50	1	L17031465-01	03/30/17 15:34
75	T3.033017.153734	WG608021-05	Matrix Spike Duplica	5/50	1	L17031465-01	03/30/17 15:37
76	T3.033017.154110	L17031447-01	CBD-IDW-SO01-032217	5/50	1		03/30/17 15:41
77	T3.033017.154455	WG608278-01	Post Digestion Spike		1	L17031447-01	03/30/17 15:44
78	T3.033017.154829	WG608278-02	Serial Dilution		5	L17031447-01	03/30/17 15:48
79	T3.033017.155216	WG608278-02	Serial Dilution		25	L17031447-01	03/30/17 15:52
80	T3.033017.155605	WG608293-27	CCV		1		03/30/17 15:56
81	T3.033017.155940	WG608293-28	CCB		1		03/30/17 15:59
82	T3.033017.160327	L17031447-02	CBD-IDW-SO02-032217	5/50	1		03/30/17 16:03
83	T3.033017.160712	L17031448-01	BIO BAG	5/50	1		03/30/17 16:07
84	T3.033017.161056	L17031454-01	0303-100F W1	40/50	1		03/30/17 16:10
85	T3.033017.161438	L17031456-01	LEHMAN_280070060000_F	40/50	1		03/30/17 16:14
86	T3.033017.161824	L17031456-02	LEHMAN_280070060000_F	40/50	1		03/30/17 16:18
87	T3.033017.162157	L17031456-03	LEHMAN_280070060000_F	40/50	1		03/30/17 16:21
88	T3.033017.162542	L17031456-04	LEHMAN_280070060000_F	40/50	1		03/30/17 16:25
89	T3.033017.162928	L17031456-05	LEHMAN_280070060000_F	40/50	1		03/30/17 16:29
90	T3.033017.163313	L17031456-06	LEHMAN_280070060000_F	40/50	1		03/30/17 16:33
91	T3.033017.163656	L17031461-01	CARLSON - SOIL	5/50	1		03/30/17 16:36
92	T3.033017.164041	WG608293-29	CCV		1		03/30/17 16:40
93	T3.033017.164415	WG608293-30	CCB		1		03/30/17 16:44
94	T3.033017.164803	L17031463-01	941-SOURCE	40/50	1		03/30/17 16:48
95	T3.033017.165149	L17031464-01	4009-SOURCE	40/50	10		03/30/17 16:51
96	T3.033017.165546	L17031464-01	4009-SOURCE		100		03/30/17 16:55
97	T3.033017.165931	L17031464-01	4009-SOURCE	40/50	1000		03/30/17 16:59
98	T3.033017.170315	L17031502-01	45-10-15 W1 (T)	40/50	1		03/30/17 17:03
99	T3.033017.170702	L17031507-01	1802-140-B-S3	40/50	1		03/30/17 17:07
100	T3.033017.171047	L17031507-02	1802-140-B-W1	40/50	1		03/30/17 17:10
101	T3.033017.171432	L17031507-03	1802-140-B-S2	40/50	1		03/30/17 17:14
102	T3.033017.171816	L17031507-04	1802-140-B-S1	40/50	1		03/30/17 17:18

Page: 3 Approved: March 31, 2017

Kristi K Buck

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 033017T3.3R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD81180 ICV Std: STD81182 Post Spike: STD80131
ICSA: STD81187 ICSAB: STD81114 Int. Std: RGT37691
CCV: STD81186 LLCCV: STD81025 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 607804,608189,608278

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.033017.172159	WG608293-31	CCV		1		03/30/17 17:21
104	T3.033017.172533	WG608293-32	CCB		1		03/30/17 17:25

 Approved: March 31, 2017

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 27-MAR-2017
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 607785
Runlog ID: 81179
Analytical Workgroups: 607119,607757,607804,607652,607769

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	1066,1210,1266,1339,1177,1176
Client Forms	X
Level X	
Level 3	
Level 4	1066,1210,1266,1339,1177,1176
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer:

Secondary Reviewer:
28-MAR-2017

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-28-2017 10:32:15

Microbac Laboratories Inc.

Data Checklist

Date: 29-MAR-2017
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 608115
Runlog ID: 81238
Analytical Workgroups: 607769,607804,607776,607947

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	1161,1188,1339,1268,1363
Client Forms	X
Level X	
Level 3	
Level 4	1161,1176,1188,1266,1339,1268
	1363
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer:

Secondary Reviewer:
30-MAR-2017

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-30-2017 09:08:11

Microbac Laboratories Inc.

Data Checklist

Date: 30-MAR-2017
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 608293
Runlog ID: 81260
Analytical Workgroups: 607804,608189,608278

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	1447,1448,1454,1456,1461,1507
Client Forms	X
Level X	
Level 3	1447
Level 4	1339
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KKB
Comments	

Primary Reviewer:
31-MAR-2017

Secondary Reviewer:
31-MAR-2017

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-31-2017 10:37:39

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C AAB#: WG607804

Login Number: L17031339

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
126F-032117	02	03/21/17					03/27/2017	6	180		03/29/17	8.2	180	
126F-032117	02	03/21/17					03/27/2017	6	180		03/30/17	9.1	180	
126F-032117	02	03/21/17					03/27/2017	6	180		03/27/17	6.3	180	
126FDF-032117	04	03/21/17					03/27/2017	6	180		03/30/17	9.1	180	
126FDF-032117	04	03/21/17					03/27/2017	6	180		03/29/17	8.2	180	
126FDF-032117	04	03/21/17					03/27/2017	6	180		03/27/17	6.3	180	
MW2-032117	05	03/21/17					03/27/2017	6	180		03/30/17	9.1	180	
MW2-032117	05	03/21/17					03/27/2017	6	180		03/27/17	6.3	180	
MW2-032117	05	03/21/17					03/27/2017	6	180		03/29/17	8.2	180	
18CPTMW01DW-032117	06	03/21/17					03/27/2017	5.9	180		03/29/17	8.1	180	
18CPTMW01DW-032117	06	03/21/17					03/27/2017	5.9	180		03/30/17	9.1	180	
18CPTMW01DW-032117	06	03/21/17					03/27/2017	5.9	180		03/27/17	6.2	180	
18CPTMW01SW-032117	07	03/21/17					03/27/2017	5.9	180		03/29/17	8.1	180	
18CPTMW01SW-032117	07	03/21/17					03/27/2017	5.9	180		03/27/17	6.2	180	
18CPTMW01SW-032117	07	03/21/17					03/27/2017	5.9	180		03/30/17	9	180	
MW13-032117	08	03/21/17					03/27/2017	5.8	180		03/29/17	8	180	
MW13-032117	08	03/21/17					03/27/2017	5.8	180		03/30/17	8.9	180	
MW13-032117	08	03/21/17					03/27/2017	5.8	180		03/27/17	6.1	180	
MW13FD-032117	09	03/21/17					03/27/2017	5.8	180		03/30/17	8.9	180	
MW13FD-032117	09	03/21/17					03/27/2017	5.8	180		03/27/17	6.1	180	
MW13FD-032117	09	03/21/17					03/27/2017	5.8	180		03/29/17	8	180	
CO2F-032117	11	03/21/17					03/27/2017	5.8	180		03/30/17	8.9	180	
CO2F-032117	11	03/21/17					03/27/2017	5.8	180		03/29/17	8	180	
CO2F-032117	11	03/21/17					03/27/2017	5.8	180		03/27/17	6.1	180	
MW16F-032217	13	03/22/17					03/27/2017	5	180		03/27/17	5.3	180	
MW16F-032217	13	03/22/17					03/27/2017	5	180		03/29/17	7.2	180	
MW16F-032217	13	03/22/17					03/27/2017	5	180		03/30/17	8.1	180	
MW19F-032217	15	03/22/17					03/27/2017	5	180		03/27/17	5.3	180	
MW19F-032217	15	03/22/17					03/27/2017	5	180		03/30/17	8.1	180	
MW19F-032217	15	03/22/17					03/27/2017	5	180		03/29/17	7.2	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 5222762
Report generated 03/30/2017 15:17

METHOD BLANK SUMMARY

Login Number: L17031339
Blank File ID: T3.032717.145222
Prep Date: 03/27/17 09:08
Analyzed Date: 03/27/17 14:52
Analyst: JYH

Work Group: WG607804
Blank Sample ID: WG607726-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG607726-03	T3.032717.145610	03/27/17 14:56	01
126F-032117	L17031339-02	T3.032717.153641	03/27/17 15:36	01
126FDF-032117	L17031339-04	T3.032717.154030	03/27/17 15:40	01
MW2-032117	L17031339-05	T3.032717.154421	03/27/17 15:44	01
18CPTMW01DW-032117	L17031339-06	T3.032717.154801	03/27/17 15:48	01
18CPTMW01SW-032117	L17031339-07	T3.032717.155144	03/27/17 15:51	01
MW13-032117	L17031339-08	T3.032717.155528	03/27/17 15:55	01
MW13FD-032117	L17031339-09	T3.032717.155907	03/27/17 15:59	01
CO2F-032117	L17031339-11	T3.032717.160246	03/27/17 16:02	01
MW16F-032217	L17031339-13	T3.032717.160630	03/27/17 16:06	01
MW19F-032217	L17031339-15	T3.032717.161013	03/27/17 16:10	01
LCS	WG607726-03	T3.032917.131146	03/29/17 13:11	02
126F-032117	L17031339-02	T3.032917.135125	03/29/17 13:51	DL01
126FDF-032117	L17031339-04	T3.032917.140234	03/29/17 14:02	DL01
MW2-032117	L17031339-05	T3.032917.140620	03/29/17 14:06	DL01
18CPTMW01DW-032117	L17031339-06	T3.032917.141004	03/29/17 14:10	DL01
18CPTMW01SW-032117	L17031339-07	T3.032917.141352	03/29/17 14:13	DL01
MW13-032117	L17031339-08	T3.032917.141738	03/29/17 14:17	DL01
MW13FD-032117	L17031339-09	T3.032917.142124	03/29/17 14:21	DL01
CO2F-032117	L17031339-11	T3.032917.142511	03/29/17 14:25	DL01
MW16F-032217	L17031339-13	T3.032917.142857	03/29/17 14:28	DL01
MW19F-032217	L17031339-15	T3.032917.143242	03/29/17 14:32	DL01
LCS	WG607726-03	T3.033017.111113	03/30/17 11:11	03
126F-032117	L17031339-02	T3.033017.112529	03/30/17 11:25	DL02
126FDF-032117	L17031339-04	T3.033017.112913	03/30/17 11:29	DL02
MW2-032117	L17031339-05	T3.033017.113257	03/30/17 11:32	DL02
18CPTMW01DW-032117	L17031339-06	T3.033017.115126	03/30/17 11:51	DL02
18CPTMW01SW-032117	L17031339-07	T3.033017.115510	03/30/17 11:55	DL02
MW13-032117	L17031339-08	T3.033017.115857	03/30/17 11:58	DL02
MW13FD-032117	L17031339-09	T3.033017.120243	03/30/17 12:02	DL02
CO2F-032117	L17031339-11	T3.033017.120630	03/30/17 12:06	DL02
MW16F-032217	L17031339-13	T3.033017.121016	03/30/17 12:10	DL02
MW19F-032217	L17031339-15	T3.033017.121404	03/30/17 12:14	DL02

Report Name: BLANK_SUMMARY
PDF File ID: 5219108
Report generated 03/30/2017 15:17

METHOD BLANK SUMMARY

Login Number: L17031339
Blank File ID: T3.032917.130804
Prep Date: 03/27/17 09:08
Analyzed Date: 03/29/17 13:08
Analyst: JYH

Work Group: WG607804
Blank Sample ID: WG607726-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG607726-03	T3.032717.145610	03/27/17 14:56	01
126F-032117	L17031339-02	T3.032717.153641	03/27/17 15:36	01
126FDF-032117	L17031339-04	T3.032717.154030	03/27/17 15:40	01
MW2-032117	L17031339-05	T3.032717.154421	03/27/17 15:44	01
18CPTMW01DW-032117	L17031339-06	T3.032717.154801	03/27/17 15:48	01
18CPTMW01SW-032117	L17031339-07	T3.032717.155144	03/27/17 15:51	01
MW13-032117	L17031339-08	T3.032717.155528	03/27/17 15:55	01
MW13FD-032117	L17031339-09	T3.032717.155907	03/27/17 15:59	01
CO2F-032117	L17031339-11	T3.032717.160246	03/27/17 16:02	01
MW16F-032217	L17031339-13	T3.032717.160630	03/27/17 16:06	01
MW19F-032217	L17031339-15	T3.032717.161013	03/27/17 16:10	01
LCS	WG607726-03	T3.032917.131146	03/29/17 13:11	02
126F-032117	L17031339-02	T3.032917.135125	03/29/17 13:51	DL01
126FDF-032117	L17031339-04	T3.032917.140234	03/29/17 14:02	DL01
MW2-032117	L17031339-05	T3.032917.140620	03/29/17 14:06	DL01
18CPTMW01DW-032117	L17031339-06	T3.032917.141004	03/29/17 14:10	DL01
18CPTMW01SW-032117	L17031339-07	T3.032917.141352	03/29/17 14:13	DL01
MW13-032117	L17031339-08	T3.032917.141738	03/29/17 14:17	DL01
MW13FD-032117	L17031339-09	T3.032917.142124	03/29/17 14:21	DL01
CO2F-032117	L17031339-11	T3.032917.142511	03/29/17 14:25	DL01
MW16F-032217	L17031339-13	T3.032917.142857	03/29/17 14:28	DL01
MW19F-032217	L17031339-15	T3.032917.143242	03/29/17 14:32	DL01
LCS	WG607726-03	T3.033017.111113	03/30/17 11:11	03
126F-032117	L17031339-02	T3.033017.112529	03/30/17 11:25	DL02
126FDF-032117	L17031339-04	T3.033017.112913	03/30/17 11:29	DL02
MW2-032117	L17031339-05	T3.033017.113257	03/30/17 11:32	DL02
18CPTMW01DW-032117	L17031339-06	T3.033017.115126	03/30/17 11:51	DL02
18CPTMW01SW-032117	L17031339-07	T3.033017.115510	03/30/17 11:55	DL02
MW13-032117	L17031339-08	T3.033017.115857	03/30/17 11:58	DL02
MW13FD-032117	L17031339-09	T3.033017.120243	03/30/17 12:02	DL02
CO2F-032117	L17031339-11	T3.033017.120630	03/30/17 12:06	DL02
MW16F-032217	L17031339-13	T3.033017.121016	03/30/17 12:10	DL02
MW19F-032217	L17031339-15	T3.033017.121404	03/30/17 12:14	DL02

Report Name: BLANK_SUMMARY
PDF File ID: 5219108
Report generated 03/30/2017 15:17

METHOD BLANK SUMMARY

Login Number: L17031339
Blank File ID: T3.033017.110724
Prep Date: 03/27/17 09:08
Analyzed Date: 03/30/17 11:07
Analyst: JYH

Work Group: WG607804
Blank Sample ID: WG607726-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG607726-03	T3.032717.145610	03/27/17 14:56	01
126F-032117	L17031339-02	T3.032717.153641	03/27/17 15:36	01
126FDF-032117	L17031339-04	T3.032717.154030	03/27/17 15:40	01
MW2-032117	L17031339-05	T3.032717.154421	03/27/17 15:44	01
18CPTMW01DW-032117	L17031339-06	T3.032717.154801	03/27/17 15:48	01
18CPTMW01SW-032117	L17031339-07	T3.032717.155144	03/27/17 15:51	01
MW13-032117	L17031339-08	T3.032717.155528	03/27/17 15:55	01
MW13FD-032117	L17031339-09	T3.032717.155907	03/27/17 15:59	01
CO2F-032117	L17031339-11	T3.032717.160246	03/27/17 16:02	01
MW16F-032217	L17031339-13	T3.032717.160630	03/27/17 16:06	01
MW19F-032217	L17031339-15	T3.032717.161013	03/27/17 16:10	01
LCS	WG607726-03	T3.032917.131146	03/29/17 13:11	02
126F-032117	L17031339-02	T3.032917.135125	03/29/17 13:51	DL01
126FDF-032117	L17031339-04	T3.032917.140234	03/29/17 14:02	DL01
MW2-032117	L17031339-05	T3.032917.140620	03/29/17 14:06	DL01
18CPTMW01DW-032117	L17031339-06	T3.032917.141004	03/29/17 14:10	DL01
18CPTMW01SW-032117	L17031339-07	T3.032917.141352	03/29/17 14:13	DL01
MW13-032117	L17031339-08	T3.032917.141738	03/29/17 14:17	DL01
MW13FD-032117	L17031339-09	T3.032917.142124	03/29/17 14:21	DL01
CO2F-032117	L17031339-11	T3.032917.142511	03/29/17 14:25	DL01
MW16F-032217	L17031339-13	T3.032917.142857	03/29/17 14:28	DL01
MW19F-032217	L17031339-15	T3.032917.143242	03/29/17 14:32	DL01
LCS	WG607726-03	T3.033017.111113	03/30/17 11:11	03
126F-032117	L17031339-02	T3.033017.112529	03/30/17 11:25	DL02
126FDF-032117	L17031339-04	T3.033017.112913	03/30/17 11:29	DL02
MW2-032117	L17031339-05	T3.033017.113257	03/30/17 11:32	DL02
18CPTMW01DW-032117	L17031339-06	T3.033017.115126	03/30/17 11:51	DL02
18CPTMW01SW-032117	L17031339-07	T3.033017.115510	03/30/17 11:55	DL02
MW13-032117	L17031339-08	T3.033017.115857	03/30/17 11:58	DL02
MW13FD-032117	L17031339-09	T3.033017.120243	03/30/17 12:02	DL02
CO2F-032117	L17031339-11	T3.033017.120630	03/30/17 12:06	DL02
MW16F-032217	L17031339-13	T3.033017.121016	03/30/17 12:10	DL02
MW19F-032217	L17031339-15	T3.033017.121404	03/30/17 12:14	DL02

Report Name: BLANK_SUMMARY
PDF File ID: 5219108
Report generated 03/30/2017 15:17

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L17031339 Prep Date: 03/27/17 09:08 Sample ID: WG607726-02
Instrument ID: ICP-THERMO3 Run Date: 03/27/17 14:52 Prep Method: 3015A
File ID: T3.032717.145222 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG607804 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-27-MAR-17

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Aluminum, Total	0.0500	0.200	0.0500	1	U
Beryllium, Total	0.00500	0.0200	0.00500	1	U
Calcium, Total	0.125	0.500	0.125	1	U
Potassium, Total	0.500	2.00	0.500	1	U
Selenium, Total	0.00500	0.0200	0.00500	1	U
Sodium, Total	0.250	1.00	0.250	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 5219109
31-MAR-2017 12:29

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L17031339 Prep Date: 03/27/17 09:08 Sample ID: WG607726-02
Instrument ID: ICP-THERMO3 Run Date: 03/29/17 13:08 Prep Method: 3015A
File ID: T3.032917.130804 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG607804 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-29-MAR-17

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Magnesium, Total	0.250	1.00	0.250	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 5219109
31-MAR-2017 12:29

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L17031339 Prep Date: 03/27/17 09:08 Sample ID: WG607726-02
Instrument ID: ICP-THERMO3 Run Date: 03/30/17 11:07 Prep Method: 3015A
File ID: T3.033017.110724 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG607804 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-30-MAR-17

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Iron, Total	0.0500	0.200	0.0500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 5219109
31-MAR-2017 12:29

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L17031339 Run Date: 03/27/2017 Sample ID: WG607726-03
Instrument ID: ICP-THERMO3 Run Time: 14:56 Prep Method: 3015A
File ID: T3.032717.145610 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG607804 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD80805 Cal ID: ICP-TH-27-MAR-17

Analytes	Expected	Found	% Rec	LCS Limits	Q
Aluminum, Total	6.25	6.31	101	80 - 120	
Beryllium, Total	0.0313	0.0307	98.2	80 - 120	
Calcium, Total	6.25	6.31	101	80 - 120	
Potassium, Total	31.3	30.5	97.5	80 - 120	
Selenium, Total	0.250	0.248	99.0	80 - 120	
Sodium, Total	31.3	30.8	98.6	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 5219110
Report generated: 03/31/2017 12:29

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L17031339 Run Date: 03/29/2017 Sample ID: WG607726-03
Instrument ID: ICP-THERMO3 Run Time: 13:11 Prep Method: 3015A
File ID: T3.032917.131146 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG607804 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD80805 Cal ID: ICP-TH-29-MAR-17

Analytes	Expected	Found	% Rec	LCS Limits	Q
Magnesium, Total	6.25	6.06	97.0	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 5219110
Report generated: 03/31/2017 12:29

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L17031339 Run Date: 03/30/2017 Sample ID: WG607726-03
Instrument ID: ICP-THERMO3 Run Time: 11:11 Prep Method: 3015A
File ID: T3.033017.111113 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG607804 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD80805 Cal ID: ICP-TH-30-MAR-17

Analytes	Expected	Found	% Rec	LCS Limits	Q
Iron, Total	2.50	2.56	102	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 5219110
Report generated: 03/31/2017 12:29

Loginnum:L17031339 Cal ID:ICP-THERMO3- Worknum:WG607804
Instrument ID:ICP-THERMO3 Contract #: Method:6010C
Parent ID:WG607726-01 File ID:T3.032717.145944 Dil:1 Matrix:WATER
Sample ID:WG607726-04 MS File ID:T3.032717.150329 Dil:1 Units:mg/L
Sample ID:WG607726-05 MSD File ID:T3.032717.150703 Dil:1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum	ND	6.25	6.50	104	6.25	6.46	103	0.642	80 - 120	20	
Beryllium	ND	0.0313	0.0322	103	0.0313	0.0320	102	0.857	80 - 120	20	
Calcium	69.5	6.25	74.0	72.8	6.25	76.3	109	3.03	80 - 120	20	*
Potassium	1.36	31.3	32.6	100	31.3	33.2	102	1.90	80 - 120	20	
Selenium	ND	0.250	0.263	105	0.250	0.256	102	2.80	80 - 120	20	
Sodium	6.65	31.3	37.8	99.6	31.3	38.4	102	1.77	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 5220167
Report generated 03/31/2017 12:29

Loginnum:L17031339 Cal ID:ICP-THERMO3- Worknum:WG607804
Instrument ID:ICP-THERMO3 Contract #: Method:6010C
Parent ID:WG607726-01 File ID:T3.032917.131517 Dil:1 Matrix:WATER
Sample ID:WG607726-04 MS File ID:T3.032917.131857 Dil:1 Units:mg/L
Sample ID:WG607726-05 MSD File ID:T3.032917.133259 Dil:1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Magnesium	11.5	6.25	17.0	88.1	6.25	16.9	86.9	0.420	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 5220167
Report generated 03/31/2017 12:29

Microbac Laboratories Inc.

MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum:L17031339 Cal ID:ICP-THERMO3- Worknum:WG607804

Instrument ID:ICP-THERMO3 Contract #: Method:6010C

Parent ID:WG607726-01 File ID:T3.033017.111447 Dil:1 Matrix:WATER

Sample ID:WG607726-04 MS File ID:T3.033017.111832 Dil:1 Units:mg/L

Sample ID:WG607726-05 MSD File ID:T3.033017.112155 Dil:1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Iron	ND	2.50	2.47	98.7	2.50	2.52	101	2.11	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011

PDF File ID: 5220167

Report generated 03/31/2017 12:29

Microbac Laboratories Inc.
Serial Dilution Report

Login: L17031339 **Worknum:** WG607804
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG607804-06 **File ID:** T3.033017.114016 **Dil:** 100 **Units:** ug/L
Sample: L17031339-05 **File ID:** T3.033017.113257 **Dil:** 20

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	16.0	X	ND	U		
Beryllium	1.80	X	4.00		122.00	
Calcium	64700		64100		0.96	
Iron	10900		9800		10.30	E
Magnesium	49900		52000		4.34	
Potassium	ND	U	8920		1290.00	
Selenium	29.2		383		1210.00	E
Sodium	200000		199000		0.36	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 5219106
03/30/2017 15:16

Microbac Laboratories Inc.
Serial Dilution Report

Login: L17031339 **Worknum:** WG607804
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG607804-04 **File ID:** T3.032917.134355 **Dil:** 5 **Units:** ug/L
Sample: L17031266-01 **File ID:** T3.032917.133633 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	28.2		2.95		89.50	E
Beryllium	0.0400	X	0.550		1280.00	
Calcium	1100		755		31.50	E
Iron	202		105		47.80	E
Magnesium	562		380		32.40	E
Potassium	2060		1820		11.40	E
Selenium	0.880		ND	U		
Sodium	42100		39800		5.48	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 5219106
03/30/2017 15:16

Microbac Laboratories Inc.
Serial Dilution Report

Login: L17031339 **Worknum:** WG607804
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG607804-02 **File ID:** T3.032717.152144 **Dil:** 5 **Units:** ug/L
Sample: L17031266-02 **File ID:** T3.032717.151425 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	35.4		56.8		60.20	E
Beryllium	0.0700	X	ND	U		
Calcium	27300		28400		4.03	
Iron	2890		3090		6.64	
Magnesium	10800		11400		5.24	
Potassium	4970		5440		9.54	
Selenium	ND	U	ND	U		
Sodium	62300		66600		6.97	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 5219106
03/30/2017 15:16

Microbac Laboratories Inc.
Serial Dilution Report

Login: L17031339 **Worknum:** WG607804
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG607804-02 **File ID:** T3.032717.152529 **Dil:** 25 **Units:** ug/L
Sample: L17031266-02 **File ID:** T3.032717.152144 **Dil:** 5

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	56.8		72.3		27.30	E
Beryllium	ND	U	ND	U		
Calcium	28400		28200		0.57	
Iron	3090		3390		9.70	
Magnesium	11400		10900		4.43	
Potassium	5440		4280		21.30	E
Selenium	ND	U	43.3		425.00	
Sodium	66600		66300		0.45	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 5219106
03/30/2017 15:16

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L17031339 **Worknum:** WG607804
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG607804-01 **File ID:** T3.032717.151809 **Dil:** 1 **Units:** ug/L
Sample ID: L17031266-02 **File ID:** T3.032717.151425 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	5000		0	U	5000	100.0	75 - 125	
BERYLLIUM	25.0		0	U	25	99.9	75 - 125	
CALCIUM	28500		27300		5000	79.4	75 - 125	
IRON	4520		2890		2000	95.7	75 - 125	
MAGNESIUM	14300		10800		5000	90.4	75 - 125	
POTASSIUM	28400		4970		25000	95.7	75 - 125	
SELENIUM	201		0	U	200	100.7	75 - 125	
SODIUM	78200		62300		25000	88.7	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 5219107
Report generated: 03/30/2017 15:16

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L17031339 **Worknum:** WG607804
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG607804-03 **File ID:** T3.032917.134020 **Dil:** 1 **Units:** ug/L
Sample ID: L17031266-01 **File ID:** T3.032917.133633 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	4840		0	U	5000	96.8	75 - 125	
BERYLLIUM	24.1		0	U	25	96.2	75 - 125	
CALCIUM	5600		1100		5000	92.2	75 - 125	
IRON	2080		202		2000	94.9	75 - 125	
MAGNESIUM	5280		562	F	5000	95.4	75 - 125	
POTASSIUM	25500		2060		25000	94.7	75 - 125	
SELENIUM	188		0	U	200	93.8	75 - 125	
SODIUM	60100		42100		25000	89.1	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 5219107
Report generated: 03/30/2017 15:16

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L17031339 **Worknum:** WG607804
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG607804-05 **File ID:** T3.033017.113642 **Dil:** 20 **Units:** ug/L
Sample ID: L17031339-05 **File ID:** T3.033017.113257 **Dil:** 20 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	5040		0	U	5000	100.9	75 - 125	
BERYLLIUM	24.7		0	U	25	98.9	75 - 125	
CALCIUM	8030		3230		5000	95.9	75 - 125	
IRON	2510		546		2000	98.0	75 - 125	
MAGNESIUM	7370		2490		5000	97.5	75 - 125	
POTASSIUM	24800		0	U	25000	99.4	75 - 125	
SELENIUM	199		0	U	200	99.4	75 - 125	
SODIUM	34700		9990		25000	98.8	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 5219107
Report generated: 03/30/2017 15:16

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	**L17031339**	Workgroup (AAB#):	**WG607804**
Analytical Method:	**6010C**	Instrument ID:	**ICP-THERMO3**
ICAL Worknum:	**WG607785**	Initial Calibration Date:	**27-MAR-2017 10:00**

	WG607785-01		WG607785-02		WG607785-03		WG607785-04		WG607785-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.00115	.1	0.00229	.2	0.00342	10	0.141	20	0.279	.999993	
BERYLLIUM	0	0.000710	.0005	0.00131	.001	0.00179	.05	0.0721	.1	0.145	.999972	
CALCIUM	0	0.00412	.1	0.00843	.2	0.0109	10	0.360	20	0.722	.999567	
IRON	0	-0.000390	.04	0.000650	.08	0.00132	4	0.123	8	0.246	.999947	
MAGNESIUM	0	-0.0000100	NA	NA	.2	-0.0000100	10	0.0993	20	0.200	.99737	
POTASSIUM	0	-0.0224	.5	0.00249	1	0.0177	50	2.52	100	5.13	.999921	
SELENIUM	0	-0.000190	NA	NA	.008	-0.000150	.4	0.00667	.8	0.0135	.999161	
SODIUM	0	-0.0216	.5	0.0218	1	0.0753	50	6.32	100	12.8	.999947	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 5220168
Report generated: 30-MAR-2017 15:17

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	**L17031339**	Workgroup (AAB#):	**WG607804**
Analytical Method:	**6010C**	Instrument ID:	**ICP-THERMO3**
ICAL Worknum:	**WG608115**	Initial Calibration Date:	**29-MAR-2017 10:06**

	WG608115-01		WG608115-02		WG608115-03		WG608115-04		WG608115-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000930	.1	0.00200	.2	0.00283	10	0.123	20	0.248	.999982	
BERYLLIUM	0	0.000430	.0005	0.000850	.001	0.00132	.05	0.0625	.1	0.125	.99994	
CALCIUM	0	0.00452	.1	0.00673	.2	0.00952	10	0.307	20	0.617	.999968	
IRON	0	-0.000270	.04	0.0000200	.08	0.000960	4	0.102	8	0.212	.999105	
MAGNESIUM	0	-0.0000700	NA	NA	.2	0.000620	10	0.0821	20	0.170	.999259	
POTASSIUM	0	-0.0164	.5	0.00198	1	0.0190	50	2.04	100	4.12	.999969	
SELENIUM	0	-0.000200	NA	NA	.008	-0.000100	.4	0.00581	.8	0.0120	.999986	
SODIUM	0	-0.00758	.5	0.0329	1	0.0722	50	5.46	100	11.1	.999949	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 5220168
Report generated: 30-MAR-2017 15:17

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	**L17031339**	Workgroup (AAB#):	**WG607804**
Analytical Method:	**6010C**	Instrument ID:	**ICP-THERMO3**
ICAL Worknum:	**WG608293**	Initial Calibration Date:	**30-MAR-2017 10:37**

	WG608293-01		WG608293-02		WG608293-03		WG608293-04		WG608293-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000950	.1	0.00198	.2	0.00292	10	0.120	20	0.232	.999881	
BERYLLIUM	0	0.000470	.0005	0.000960	.001	0.00149	.05	0.0611	.1	0.120	.999973	
CALCIUM	0	0.00383	.1	0.00506	.2	0.00884	10	0.300	20	0.589	.999668	
IRON	0	0.000150	.04	0.000750	.08	0.00139	4	0.101	8	0.201	.999774	
MAGNESIUM	0	-0.000170	NA	NA	.2	0.000950	10	0.0810	20	0.160	.999943	
POTASSIUM	0	-0.0178	.5	-0.000900	1	0.0182	50	2.04	100	4.07	.999968	
SELENIUM	0	-0.000160	NA	NA	.008	-0.0000200	.4	0.00575	.8	0.0115	.999495	
SODIUM	0	-0.00276	.5	0.0354	1	0.0738	50	5.09	100	10.1	.999975	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 5220168
Report generated: 30-MAR-2017 15:17

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L17031339 Run Date: 03/27/2017 Sample ID: WG607785-07
Instrument ID: ICP-THERMO3 Run Time: 10:07 Method: 6010C
File ID: T3.032717.100718 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG607804 Cal ID: ICP-THERI - 27-MAR-17
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.004	U
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 5220170
Report generated 03/30/2017 15:16

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L17031339 Run Date: 03/29/2017 Sample ID: WG608115-07
Instrument ID: ICP-THERMO3 Run Time: 10:13 Method: 6010C
File ID: T3.032917.101349 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG607804 Cal ID: ICP-THERI - 29-MAR-17
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.00514	F
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 5220170
Report generated 03/30/2017 15:16

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L17031339 Run Date: 03/30/2017 Sample ID: WG608293-07
Instrument ID: ICP-THERMO3 Run Time: 10:44 Method: 6010C
File ID: T3.033017.104459 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG607804 Cal ID: ICP-THERI - 30-MAR-17
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.004	U
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 5220170
Report generated 03/30/2017 15:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031339 Run Date: 03/27/2017 Sample ID: WG607785-12
Instrument ID: ICP-THERMO3 Run Time: 10:25 Method: 6010C
File ID: T3.032717.102537 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG607804 Cal ID: ICP-TH - 27-MAR-17
Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5220176
Report generated 03/30/2017 15:16

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031339 | Run Date: 03/27/2017 | Sample ID: WG607785-25
Instrument ID: ICP-THERMO3 | Run Time: 14:48 | Method: 6010C
File ID: T3.032717.144835 | Analyst: JYH | Units: mg/L
Workgroup (AAB#): WG607804 | Cal ID: ICP-TH - 27-MAR-17
Matrix: WATER | QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5220176
Report generated 03/30/2017 15:16

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031339 | Run Date: 03/27/2017 | Sample ID: WG607785-27
Instrument ID: ICP-THERMO3 | Run Time: 15:32 | Method: 6010C
File ID: T3.032717.153252 | Analyst: JYH | Units: mg/L
Workgroup (AAB#): WG607804 | Cal ID: ICP-TH - 27-MAR-17
Matrix: WATER | QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	-0.00632	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5220176
Report generated 03/30/2017 15:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031339 Run Date: 03/27/2017 Sample ID: WG607785-29
Instrument ID: ICP-THERMO3 Run Time: 16:17 Method: 6010C
File ID: T3.032717.161725 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG607804 Cal ID: ICP-TH - 27-MAR-17
Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	-0.00631	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5220176
Report generated 03/30/2017 15:16

Login Number: L17031339 Run Date: 03/29/2017 Sample ID: WG608115-12
Instrument ID: ICP-THERMO3 Run Time: 10:31 Method: 6010C
File ID: T3.032917.103156 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG607804 Cal ID: ICP-TH - 29-MAR-17
Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5220176
Report generated 03/30/2017 15:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031339 Run Date: 03/29/2017 Sample ID: WG608115-20
Instrument ID: ICP-THERMO3 Run Time: 13:00 Method: 6010C
File ID: T3.032917.130045 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG607804 Cal ID: ICP-TH - 29-MAR-17
Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5220176
Report generated 03/30/2017 15:16

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031339 | Run Date: 03/29/2017 | Sample ID: WG608115-23
Instrument ID: ICP-THERMO3 | Run Time: 13:58 | Method: 6010C
File ID: T3.032917.135846 | Analyst: JYH | Units: mg/L
Workgroup (AAB#): WG607804 | Cal ID: ICP-TH - 29-MAR-17
Matrix: WATER | QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5220176
Report generated 03/30/2017 15:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031339 Run Date: 03/29/2017 Sample ID: WG608115-25

Instrument ID: ICP-THERMO3 Run Time: 14:40 Method: 6010C

File ID: T3.032917.144003 Analyst: JYH Units: mg/L

Workgroup (AAB#): WG607804 Cal ID: ICP-TH - 29-MAR-17

Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5220176
Report generated 03/30/2017 15:16

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031339 | Run Date: 03/30/2017 | Sample ID: WG608293-12
Instrument ID: ICP-THERMO3 | Run Time: 11:03 | Method: 6010C
File ID: T3.033017.110336 | Analyst: JYH | Units: mg/L
Workgroup (AAB#): WG607804 | Cal ID: ICP-TH - 30-MAR-17
Matrix: WATER | QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5220176
Report generated 03/30/2017 15:16

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031339 | Run Date: 03/30/2017 | Sample ID: WG608293-14
Instrument ID: ICP-THERMO3 | Run Time: 11:47 | Method: 6010C
File ID: T3.033017.114736 | Analyst: JYH | Units: mg/L
Workgroup (AAB#): WG607804 | Cal ID: ICP-TH - 30-MAR-17
Matrix: WATER | QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5220176
Report generated 03/30/2017 15:16

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031339 | Run Date: 03/30/2017 | Sample ID: WG608293-16
Instrument ID: ICP-THERMO3 | Run Time: 12:21 | Method: 6010C
File ID: T3.033017.122126 | Analyst: JYH | Units: mg/L
Workgroup (AAB#): WG607804 | Cal ID: ICP-TH - 30-MAR-17
Matrix: WATER | QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5220176
Report generated 03/30/2017 15:16

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L17031339 Run Date: 03/27/2017 Sample ID: WG607785-06
Instrument ID: ICP-THERMO3 Run Time: 10:03 Method: 6010C
File ID: T3.032717.100343 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG607804 Cal ID: ICP-TH - 27-MAR-17
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	9.94	99.4	90 - 110	
Beryllium		.05	0.0502	100	90 - 110	
Calcium		10	10.1	101	90 - 110	
Iron		4	3.98	99.5	90 - 110	
Magnesium		10	9.81	98.1	90 - 110	
Potassium		50	49.6	99.3	90 - 110	
Selenium		.4	0.404	101	90 - 110	
Sodium		50	49.6	99.2	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 5220169
Report generated 03/30/2017 15:17

Microbac Laboratories Inc.
INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L17031339 Run Date: 03/30/2017 Sample ID: WG608293-06
Instrument ID: ICP-THERMO3 Run Time: 10:41 Method: 6010C
File ID: T3.033017.104125 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG607804 Cal ID: ICP-TH - 30-MAR-17
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	9.94	99.4	90 - 110	
Beryllium		.05	0.0493	98.6	90 - 110	
Calcium		10	10.1	101	90 - 110	
Iron		4	3.99	99.7	90 - 110	
Magnesium		10	10.0	100	90 - 110	
Potassium		50	49.8	99.6	90 - 110	
Selenium		.4	0.392	98.1	90 - 110	
Sodium		50	49.8	99.7	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 5220169
Report generated 03/30/2017 15:17

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L17031339 Run Date: 03/29/2017 Sample ID: WG608115-06
Instrument ID: ICP-THERMO3 Run Time: 10:10 Method: 6010C
File ID: T3.032917.101018 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG607804 Cal ID: ICP-TH - 29-MAR-17
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	9.78	97.8	90 - 110	
Beryllium		.05	0.0490	98.1	90 - 110	
Calcium		10	10.1	101	90 - 110	
Iron		4	3.95	98.8	90 - 110	
Magnesium		10	9.86	98.6	90 - 110	
Potassium		50	49.3	98.5	90 - 110	
Selenium		.4	0.390	97.5	90 - 110	
Sodium		50	49.4	98.7	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 5220169
Report generated 03/30/2017 15:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031339 Run Date: 03/27/2017 Sample ID: WG607785-11

Instrument ID: ICP-THERMO3 Run Time: 10:22 Method: 6010C

File ID: T3.032717.102214 Analyst: JYH QC Key: DOD4

Workgroup (AAB#): WG607804 Cal ID: ICP-TH - 27-MAR-17

Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.0	mg/L	100	90 - 110		
Beryllium		0.0500	0.0491	mg/L	98.2	90 - 110		
Calcium		10.0	9.80	mg/L	98.0	90 - 110		
Iron		4.00	3.96	mg/L	98.9	90 - 110		
Magnesium		10.0	9.88	mg/L	98.8	90 - 110		
Potassium		50.0	49.0	mg/L	97.9	90 - 110		
Selenium		0.400	0.395	mg/L	98.6	90 - 110		
Sodium		50.0	49.1	mg/L	98.1	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008

PDF File ID: 5220175

Report generated 03/30/2017 15:16

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031339 Run Date: 03/27/2017 Sample ID: WG607785-24
Instrument ID: ICP-THERMO3 Run Time: 14:45 Method: 6010C
File ID: T3.032717.144501 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG607804 Cal ID: ICP-TH - 27-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.4	mg/L	104	90 - 110		
Beryllium		0.0500	0.0511	mg/L	102	90 - 110		
Calcium		10.0	10.2	mg/L	102	90 - 110		
Iron		4.00	4.13	mg/L	103	90 - 110		
Magnesium		10.0	10.2	mg/L	102	90 - 110		
Potassium		50.0	49.8	mg/L	99.6	90 - 110		
Selenium		0.400	0.423	mg/L	106	90 - 110		
Sodium		50.0	49.6	mg/L	99.3	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 5220175
Report generated 03/30/2017 15:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031339 Run Date: 03/27/2017 Sample ID: WG607785-26

Instrument ID: ICP-THERMO3 Run Time: 15:29 Method: 6010C

File ID: T3.032717.152918 Analyst: JYH QC Key: DOD4

Workgroup (AAB#): WG607804 Cal ID: ICP-TH - 27-MAR-17

Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.5	mg/L	105	90 - 110		
Beryllium		0.0500	0.0510	mg/L	102	90 - 110		
Calcium		10.0	10.1	mg/L	101	90 - 110		
Iron		4.00	4.13	mg/L	103	90 - 110		
Magnesium		10.0	10.2	mg/L	102	90 - 110		
Potassium		50.0	48.8	mg/L	97.7	90 - 110		
Selenium		0.400	0.420	mg/L	105	90 - 110		
Sodium		50.0	48.9	mg/L	97.8	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008

PDF File ID: 5220175

Report generated 03/30/2017 15:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031339 Run Date: 03/27/2017 Sample ID: WG607785-28

Instrument ID: ICP-THERMO3 Run Time: 16:13 Method: 6010C

File ID: T3.032717.161351 Analyst: JYH QC Key: DOD4

Workgroup (AAB#): WG607804 Cal ID: ICP-TH - 27-MAR-17

Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.6	mg/L	106	90 - 110		
Beryllium		0.0500	0.0520	mg/L	104	90 - 110		
Calcium		10.0	10.3	mg/L	103	90 - 110		
Iron		4.00	4.16	mg/L	104	90 - 110		
Magnesium		10.0	10.4	mg/L	104	90 - 110		
Potassium		50.0	50.0	mg/L	99.9	90 - 110		
Selenium		0.400	0.428	mg/L	107	90 - 110		
Sodium		50.0	49.9	mg/L	99.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008

PDF File ID: 5220175

Report generated 03/30/2017 15:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031339 Run Date: 03/29/2017 Sample ID: WG608115-11

Instrument ID: ICP-THERMO3 Run Time: 10:28 Method: 6010C

File ID: T3.032917.102827 Analyst: JYH QC Key: DOD4

Workgroup (AAB#): WG607804 Cal ID: ICP-TH - 29-MAR-17

Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.51	mg/L	95.1	90 - 110		
Beryllium		0.0500	0.0475	mg/L	95.0	90 - 110		
Calcium		10.0	9.50	mg/L	95.0	90 - 110		
Iron		4.00	3.82	mg/L	95.6	90 - 110		
Magnesium		10.0	9.53	mg/L	95.3	90 - 110		
Potassium		50.0	48.6	mg/L	97.2	90 - 110		
Selenium		0.400	0.385	mg/L	96.2	90 - 110		
Sodium		50.0	48.5	mg/L	97.0	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008

PDF File ID: 5220175

Report generated 03/30/2017 15:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031339 Run Date: 03/29/2017 Sample ID: WG608115-19

Instrument ID: ICP-THERMO3 Run Time: 12:57 Method: 6010C

File ID: T3.032917.125716 Analyst: JYH QC Key: DOD4

Workgroup (AAB#): WG607804 Cal ID: ICP-TH - 29-MAR-17

Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.8	mg/L	108	90 - 110		
Beryllium		0.0500	0.0529	mg/L	106	90 - 110		
Calcium		10.0	10.4	mg/L	104	90 - 110		
Iron		4.00	4.18	mg/L	105	90 - 110		
Magnesium		10.0	10.5	mg/L	105	90 - 110		
Potassium		50.0	51.8	mg/L	104	90 - 110		
Selenium		0.400	0.405	mg/L	101	90 - 110		
Sodium		50.0	52.0	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008

PDF File ID: 5220175

Report generated 03/30/2017 15:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031339 Run Date: 03/29/2017 Sample ID: WG608115-22

Instrument ID: ICP-THERMO3 Run Time: 13:55 Method: 6010C

File ID: T3.032917.135512 Analyst: JYH QC Key: DOD4

Workgroup (AAB#): WG607804 Cal ID: ICP-TH - 29-MAR-17

Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.10	mg/L	91.0	90 - 110		
Beryllium		0.0500	0.0454	mg/L	90.9	90 - 110		
Calcium		10.0	9.36	mg/L	93.6	90 - 110		
Iron		4.00	3.73	mg/L	93.3	90 - 110		
Magnesium		10.0	9.41	mg/L	94.1	90 - 110		
Potassium		50.0	48.2	mg/L	96.3	90 - 110		
Selenium		0.400	0.363	mg/L	90.7	90 - 110		
Sodium		50.0	47.5	mg/L	95.0	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008

PDF File ID: 5220175

Report generated 03/30/2017 15:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031339 Run Date: 03/29/2017 Sample ID: WG608115-24

Instrument ID: ICP-THERMO3 Run Time: 14:36 Method: 6010C

File ID: T3.032917.143629 Analyst: JYH QC Key: DOD4

Workgroup (AAB#): WG607804 Cal ID: ICP-TH - 29-MAR-17

Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.79	mg/L	97.9	90 - 110		
Beryllium		0.0500	0.0489	mg/L	97.7	90 - 110		
Calcium		10.0	9.57	mg/L	95.7	90 - 110		
Iron		4.00	3.83	mg/L	95.6	90 - 110		
Magnesium		10.0	9.65	mg/L	96.5	90 - 110		
Potassium		50.0	49.3	mg/L	98.7	90 - 110		
Selenium		0.400	0.384	mg/L	95.9	90 - 110		
Sodium		50.0	48.6	mg/L	97.1	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008

PDF File ID: 5220175

Report generated 03/30/2017 15:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031339 Run Date: 03/30/2017 Sample ID: WG608293-11

Instrument ID: ICP-THERMO3 Run Time: 11:00 Method: 6010C

File ID: T3.033017.110003 Analyst: JYH QC Key: DOD4

Workgroup (AAB#): WG607804 Cal ID: ICP-TH - 30-MAR-17

Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.1	mg/L	101	90 - 110		
Beryllium		0.0500	0.0503	mg/L	101	90 - 110		
Calcium		10.0	10.0	mg/L	100	90 - 110		
Iron		4.00	4.01	mg/L	100	90 - 110		
Magnesium		10.0	10.2	mg/L	102	90 - 110		
Potassium		50.0	50.7	mg/L	101	90 - 110		
Selenium		0.400	0.402	mg/L	100	90 - 110		
Sodium		50.0	51.0	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008

PDF File ID: 5220175

Report generated 03/30/2017 15:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031339 Run Date: 03/30/2017 Sample ID: WG608293-13

Instrument ID: ICP-THERMO3 Run Time: 11:44 Method: 6010C

File ID: T3.033017.114402 Analyst: JYH QC Key: DOD4

Workgroup (AAB#): WG607804 Cal ID: ICP-TH - 30-MAR-17

Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.0	mg/L	100	90 - 110		
Beryllium		0.0500	0.0500	mg/L	100	90 - 110		
Calcium		10.0	9.95	mg/L	99.5	90 - 110		
Iron		4.00	4.01	mg/L	100	90 - 110		
Magnesium		10.0	10.1	mg/L	101	90 - 110		
Potassium		50.0	51.1	mg/L	102	90 - 110		
Selenium		0.400	0.403	mg/L	101	90 - 110		
Sodium		50.0	51.5	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008

PDF File ID: 5220175

Report generated 03/30/2017 15:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031339 Run Date: 03/30/2017 Sample ID: WG608293-15

Instrument ID: ICP-THERMO3 Run Time: 12:17 Method: 6010C

File ID: T3.033017.121751 Analyst: JYH QC Key: DOD4

Workgroup (AAB#): WG607804 Cal ID: ICP-TH - 30-MAR-17

Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.3	mg/L	103	90 - 110		
Beryllium		0.0500	0.0517	mg/L	103	90 - 110		
Calcium		10.0	10.3	mg/L	103	90 - 110		
Iron		4.00	4.05	mg/L	101	90 - 110		
Magnesium		10.0	10.3	mg/L	103	90 - 110		
Potassium		50.0	51.9	mg/L	104	90 - 110		
Selenium		0.400	0.405	mg/L	101	90 - 110		
Sodium		50.0	52.6	mg/L	105	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008

PDF File ID: 5220175

Report generated 03/30/2017 15:16

Login Number: L17031339 Run Date: 03/27/2017 Sample ID: WG607785-08
Instrument ID: ICP-THERMO3 Run Time: 10:11 Method: 6010C
File ID: T3.032717.101106 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG607804 Cal ID: ICP-TH - 27-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.171	mg/L	107	70 - 130		
Beryllium		0.00160	0.00152	mg/L	95.0	70 - 130		
Calcium		0.400	0.504	mg/L	126	70 - 130		
Iron		0.0800	0.117	mg/L	146	70 - 130		*
Magnesium		0.400	0.352	mg/L	87.9	70 - 130		
Potassium		0.800	1.02	mg/L	127	70 - 130		
Selenium		0.0160	0.0200	mg/L	125	70 - 130		
Sodium		0.400	0.340	mg/L	85.1	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 5219111
Report generated 03/30/2017 15:17

Login Number: L17031339 Run Date: 03/27/2017 Sample ID: WG607785-17
Instrument ID: ICP-THERMO3 Run Time: 11:40 Method: 6010C
File ID: T3.032717.114008 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG607804 Cal ID: ICP-TH - 27-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.189	mg/L	118	70 - 130		
Beryllium		0.00160	0.00166	mg/L	104	70 - 130		
Calcium		0.400	0.466	mg/L	117	70 - 130		
Iron		0.0800	0.0911	mg/L	114	70 - 130		
Magnesium		0.400	0.385	mg/L	96.3	70 - 130		
Potassium		0.800	0.942	mg/L	118	70 - 130		
Selenium		0.0160	0.0165	mg/L	103	70 - 130		
Sodium		0.400	0.423	mg/L	106	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 5219111
Report generated 03/30/2017 15:17

Login Number: L17031339 Run Date: 03/27/2017 Sample ID: WG607785-30
Instrument ID: ICP-THERMO3 Run Time: 16:21 Method: 6010C
File ID: T3.032717.162104 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG607804 Cal ID: ICP-TH - 27-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.193	mg/L	120	70 - 130		
Beryllium		0.00160	0.00163	mg/L	102	70 - 130		
Calcium		0.400	0.453	mg/L	113	70 - 130		
Iron		0.0800	0.0876	mg/L	109	70 - 130		
Magnesium		0.400	0.400	mg/L	100	70 - 130		
Potassium		0.800	0.740	mg/L	92.5	70 - 130		
Selenium		0.0160	0.0190	mg/L	119	70 - 130		
Sodium		0.400	0.521	mg/L	130	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 5219111
Report generated 03/30/2017 15:17

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L17031339 Run Date: 03/29/2017 Sample ID: WG608115-08
Instrument ID: ICP-THERMO3 Run Time: 10:17 Method: 6010C
File ID: T3.032917.101727 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG607804 Cal ID: ICP-TH - 29-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.169	mg/L	106	70 - 130		
Beryllium		0.00160	0.00146	mg/L	91.3	70 - 130		
Calcium		0.400	0.402	mg/L	101	70 - 130		
Iron		0.0800	0.0915	mg/L	114	70 - 130		
Magnesium		0.400	0.345	mg/L	86.3	70 - 130		
Potassium		0.800	0.877	mg/L	110	70 - 130		
Selenium		0.0160	0.0189	mg/L	118	70 - 130		
Sodium		0.400	0.389	mg/L	97.3	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 5219111
Report generated 03/30/2017 15:17

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L17031339 Run Date: 03/29/2017 Sample ID: WG608115-21

Instrument ID: ICP-THERMO3 Run Time: 13:04 Method: 6010C

File ID: T3.032917.130428 Analyst: JYH QC Key: DOD4

Workgroup (AAB#): WG607804 Cal ID: ICP-TH - 29-MAR-17

Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.177	mg/L	111	70 - 130		
Beryllium		0.00160	0.00159	mg/L	99.4	70 - 130		
Calcium		0.400	0.474	mg/L	118	70 - 130		
Iron		0.0800	0.0889	mg/L	111	70 - 130		
Magnesium		0.400	0.371	mg/L	92.7	70 - 130		
Potassium		0.800	0.738	mg/L	92.2	70 - 130		
Selenium		0.0160	0.0195	mg/L	122	70 - 130		
Sodium		0.400	0.440	mg/L	110	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010

PDF File ID: 5219111

Report generated 03/30/2017 15:17

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L17031339 Run Date: 03/29/2017 Sample ID: WG608115-26
Instrument ID: ICP-THERMO3 Run Time: 14:43 Method: 6010C
File ID: T3.032917.144352 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG607804 Cal ID: ICP-TH - 29-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Calcium		0.400	0.383	mg/L	95.8	70 - 130		
Iron		0.0800	0.105	mg/L	131	70 - 130		*
Magnesium		0.400	0.303	mg/L	75.6	70 - 130		
Sodium		0.400	0.389	mg/L	97.2	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 5219111
Report generated 03/30/2017 15:17

Login Number: L17031339 Run Date: 03/30/2017 Sample ID: WG608293-08
Instrument ID: ICP-THERMO3 Run Time: 10:48 Method: 6010C
File ID: T3.033017.104847 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG607804 Cal ID: ICP-TH - 30-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.0800	0.0730	mg/L	91.2	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 5219111
Report generated 03/30/2017 15:17

Login Number: L17031339 Run Date: 03/30/2017 Sample ID: WG608293-20
Instrument ID: ICP-THERMO3 Run Time: 13:09 Method: 6010C
File ID: T3.033017.130927 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG607804 Cal ID: ICP-TH - 30-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.0800	0.0778	mg/L	97.2	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 5219111
Report generated 03/30/2017 15:17

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L17031339 **Workgroup (AAB#):** WG607804
Instrument ID: ICP-THERMO3 **Method:** 6010C
Sol. A : WG607785-09 **File ID:** T3.032717.101450 **Units:** mg/L
Sol. AB : WG607785-10 **File ID:** T3.032717.101830 **Matrix:** Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	252	101	250	248	99.2	
Beryllium	NS	-0.0000900	NS	0.250	0.251	100	
Calcium	250	237	94.8	250	238	95.2	
Iron	100	94.9	94.9	100	95.6	95.6	
Magnesium	250	244	97.6	250	245	98.0	
Potassium	NS	0.0639	NS	5.00	5.21	104	
Selenium	NS	-0.000890	NS	0.250	0.241	96.4	
Sodium	NS	-0.00695	NS	5.00	5.16	103	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 5220171
Report generated 03/30/2017 15:16

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L17031339 **Workgroup (AAB#):** WG607804
Instrument ID: ICP-THERMO3 **Method:** 6010C
Sol. A : WG608115-09 **File ID:** T3.032917.102104 **Units:** mg/L
Sol. AB : WG608115-10 **File ID:** T3.032917.102448 **Matrix:** Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	250	100	250	248	99.2	
Beryllium	NS	0.0000300	NS	0.250	0.243	97.2	
Calcium	250	233	93.2	250	230	92.0	
Iron	100	93.9	93.9	100	92.6	92.6	
Magnesium	250	242	96.8	250	237	94.8	
Potassium	NS	0.147	NS	5.00	5.09	102	
Selenium	NS	-0.00228	NS	0.250	0.247	98.8	
Sodium	NS	-0.0138	NS	5.00	5.05	101	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 5220171
Report generated 03/30/2017 15:16

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L17031339 **Workgroup (AAB#):** WG607804
Instrument ID: ICP-THERMO3 **Method:** 6010C
Sol. A : WG608293-09 **File ID:** T3.033017.105229 **Units:** mg/L
Sol. AB : WG608293-10 **File ID:** T3.033017.105619 **Matrix:** Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	255	102	250	257	103	
Beryllium	NS	-0.0000500	NS	0.250	0.253	101	
Calcium	250	240	96.0	250	239	95.6	
Iron	100	96.9	96.9	100	95.8	95.8	
Magnesium	250	248	99.2	250	244	97.6	
Potassium	NS	0.0608	NS	5.00	5.14	103	
Selenium	NS	0.00161	NS	0.250	0.249	99.6	
Sodium	NS	-0.0463	NS	5.00	5.15	103	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 5220171
Report generated 03/30/2017 15:16

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L17031339 **Date:** 01/04/2017
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000310	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0145	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000250	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000400	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.00000700	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 5222764
Report generated: 03/30/2017 15:17

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L17031339 **Date:** 01/04/2017
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0260
ARSENIC	189.00	0	0	0	0	-0.00730
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00350
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 5222764
Report generated: 03/30/2017 15:17

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L17031339 **Date:** 01/04/2017
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000210	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.000220	0	0	0
CADMIUM	228.80	0	-0.0000100	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000400	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.000650	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	0.0390	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000150	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000300	0	0	0
VANADIUM	292.40	0	0.0000100	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 5222764
Report generated: 03/30/2017 15:17

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L17031339 **Date:** 01/04/2017
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	0.000910	0	-0.00190	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.000610	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000100	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00160	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 5222764
Report generated: 03/30/2017 15:17

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L17031339 **Date:** 01/04/2017
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0320
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 5222764
Report generated: 03/30/2017 15:17

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L17031339 **Date:** 01/04/2017
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0720	0
ANTIMONY	206.80	0	0.000500	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00170	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.00100	0	-0.0420	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 5222764
Report generated: 03/30/2017 15:17

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L17031339 **Date:** 01/04/2017
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 5222764
Report generated: 03/30/2017 15:17

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L17031339 **Date:** 01/13/2017
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	4.5
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	90.0
Iron	5.00	810.0
Lead	20.00	180.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	360.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	45.0
Vanadium	20.00	36.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

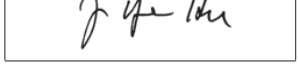
Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 5222763
Report generated: 03/30/2017 15:17

2.2.1.3 Raw Data

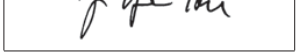
Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	3/27/2017 11:47:49	3/27/2017 10:03:38	Linear	1/Conc	-0.000002	0.072760	0.000000	1.000000
Al 308.215 {109}	3/27/2017 11:47:49	3/27/2017 10:03:38	Linear	1/Conc	0.001154	0.013811	0.000000	1.000000
As 189.042 {478}	3/27/2017 11:47:49	3/27/2017 10:03:38	Linear	1/Conc	0.000044	0.025326	0.000000	1.000000
B 249.678 {135}	3/27/2017 11:47:49	3/27/2017 10:03:38	Linear	1/Conc	-0.000273	0.026776	0.000000	1.000000
Ba 455.403 { 74}	3/27/2017 11:47:49	3/27/2017 10:03:38	Linear	1/Conc	0.023242	1.767589	0.000000	1.000000
Be 313.107 {108}	3/27/2017 11:47:49	3/27/2017 10:03:38	Linear	1/Conc	0.000713	1.411068	0.000000	1.000000
Ca 422.673 { 80}	3/27/2017 11:47:49	3/27/2017 10:03:38	Linear	1/Conc	0.004120	0.035872	0.000000	1.000000
Cd 228.802 {447}	3/27/2017 11:47:49	3/27/2017 10:03:38	Linear	1/Conc	-0.000210	0.553467	0.000000	1.000000
Co 228.616 {447}	3/27/2017 11:47:49	3/27/2017 10:03:38	Linear	1/Conc	-0.000279	0.387128	0.000000	1.000000
Cr 267.716 {126}	3/27/2017 11:47:49	3/27/2017 10:03:38	Linear	1/Conc	0.000068	0.085773	0.000000	1.000000
Cu 224.700 {450}	3/27/2017 11:47:49	3/27/2017 10:03:38	Linear	1/Conc	0.000050	0.168428	0.000000	1.000000
Fe 261.187 {129}	3/27/2017 11:47:49	3/27/2017 10:03:38	Linear	1/Conc	-0.000386	0.030758	0.000000	1.000000
K 766.490 { 44}	3/27/2017 11:47:49	3/27/2017 10:03:38	Linear	1/Conc	-0.022420	0.051323	0.000000	1.000000
Li 670.784 { 50}	3/27/2017 11:47:49	3/27/2017 10:03:38	Linear	1/Conc	-0.033972	1.097097	0.000000	1.000000
Mg 279.079 {121}	3/27/2017 11:47:49	3/27/2017 10:03:38	Linear	1/Conc	-0.000015	0.009935	0.000000	1.000000
Mn 257.610 {131}	3/27/2017 11:47:49	3/27/2017 10:03:38	Linear	1/Conc	-0.001443	0.357158	0.000000	1.000000
Mo 202.030 {467}	3/27/2017 11:47:49	3/27/2017 10:03:38	Linear	1/Conc	-0.000002	0.194286	0.000000	1.000000
Na 589.592 { 57}	3/27/2017 11:47:49	3/27/2017 10:03:39	Linear	1/Conc	-0.021642	0.127772	0.000000	1.000000
Ni 231.604 {446}	3/27/2017 11:47:49	3/27/2017 10:03:39	Linear	1/Conc	-0.001148	0.147528	0.000000	1.000000
P 214.914 {457}	3/27/2017 11:47:49	3/27/2017 10:03:39	Linear	1/Conc	-0.000235	0.013224	0.000000	1.000000
Pb 220.353 {453}	3/27/2017 11:47:49	3/27/2017 10:03:39	Linear	1/Conc	-0.000310	0.071384	0.000000	1.000000
Sb 206.833 {463}	3/27/2017 11:47:49	3/27/2017 10:03:39	Linear	1/Conc	0.000587	0.030099	0.000000	1.000000
Se 196.090 {472}	3/27/2017 11:47:49	3/27/2017 10:03:39	Linear	1/Conc	-0.000194	0.017054	0.000000	1.000000
Si 212.412 {459}	3/27/2017 11:47:49	3/27/2017 10:03:39	Linear	1/Conc	0.000307	0.037274	0.000000	1.000000
Sn 189.989 {477}	3/27/2017 11:47:49	3/27/2017 10:03:39	Linear	1/Conc	0.000094	0.081169	0.000000	1.000000
Sr 407.771 { 83}	3/27/2017 11:47:49	3/27/2017 10:03:39	Linear	1/Conc	0.001895	2.737248	0.000000	1.000000
Ti 337.280 {100}	3/27/2017 11:47:49	3/27/2017 10:03:39	Linear	1/Conc	-0.002463	0.134679	0.000000	1.000000
Tl 190.856 {477}	3/27/2017 11:47:49	3/27/2017 10:03:39	Linear	1/Conc	-0.000300	0.031784	0.000000	1.000000
V 292.402 {115}	3/27/2017 11:47:49	3/27/2017 10:03:39	Linear	1/Conc	0.000153	0.103822	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	3/27/2017 11:47:49	3/27/2017 10:03:39	Linear	1/Conc	0.000109	0.490807	0.000000	1.000000
Zr 339.198 { 99}	3/27/2017 11:47:49	3/27/2017 10:03:39	Linear	1/Conc	-0.011541	0.004469	0.000000	1.000000

Approved: March 28, 2017



Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999553	0.000005	0.001928	0.006428	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999993	0.000003	0.007455	0.024851	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999451	0.000003	0.003243	0.010809	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999927	0.000002	0.003106	0.010355	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999970	0.000086	0.001541	0.005135	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999972	0.000003	0.000087	0.000289	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999567	0.000067	0.061636	0.205454	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999729	0.000004	0.000306	0.001019	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999993	0.000002	0.000420	0.001400	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999889	0.000004	0.001116	0.003719	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999919	0.000007	0.001169	0.003897	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999947	0.000008	0.026886	0.089620	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999921	0.000205	0.135987	0.453289	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999827	0.000200	0.006001	0.020002	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.997370	0.000071	0.086115	0.287051	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999560	0.000034	0.002696	0.008986	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999965	0.000010	0.000437	0.001458	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999947	0.000418	0.045926	0.153088	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999932	0.000005	0.001158	0.003859	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999953	0.000008	0.008066	0.026886	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999736	0.000005	0.003493	0.011644	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999721	0.000005	0.004848	0.016158	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999161	0.000003	0.007070	0.023567	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999975	0.000008	0.002676	0.008921	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999976	0.000004	0.000834	0.002781	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999992	0.000069	0.000690	0.002300	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.997914	0.000055	0.008444	0.028147	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999899	0.000002	0.003015	0.010051	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999976	0.000005	0.000891	0.002972	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999997	0.000007	0.000189	0.000629	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.239380	0.000115	0.665066	2.216888	OK.	1.000000	0.000000	1	0

Approved: March 28, 2017



Sample Name: S0 Acquired: 3/27/2017 9:45:14 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00000**	**.00115**	**.00004**	**-.00027**	**.02324**	**.00071**	**.00412**
Stddev	.00005	.00005	.00004	.00002	.00142	.00005	.00224
%RSD	2252.2	4.5777	101.94	8.1786	6.1100	6.5710	54.390
#1	-.00006	.00121	.00009	-.00025	.02351	.00075	.00232
#2	.00001	.00110	.00003	-.00028	.02451	.00066	.00663
#3	.00004	.00115	.00001	-.00029	.02170	.00073	.00341

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00021**	**-.00028**	**.00007**	**.00005**	**-.00039**	**-.02242**	**-.03397**
Stddev	.00017	.00018	.00006	.00020	.00050	.00886	.00579
%RSD	82.513	65.585	85.696	392.81	129.08	39.499	17.057
#1	-.00031	-.00039	.00003	-.00015	-.00086	-.02569	-.02728
#2	-.00001	-.00007	.00014	.00007	-.00044	-.01240	-.03715
#3	-.00031	-.00038	.00004	.00024	.00014	-.02919	-.03747

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00001**	**-.00144**	**-.00000**	**-.02163**	**-.00115**	**-.00024**	**-.00031**
Stddev	.00051	.00027	.00007	.01165	.00006	.00012	.00021
%RSD	3874.9	19.030	3252.8	53.842	5.6475	48.978	67.175
#1	-.00012	-.00113	-.00006	-.03270	-.00114	-.00027	-.00009
#2	.00054	-.00157	.00007	-.02271	-.00109	-.00011	-.00050
#3	-.00047	-.00163	-.00001	-.00948	-.00122	-.00033	-.00035

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00059**	**-.00019**	**.00031**	**.00009**	**.00189**	**-.00246**	**-.00030**
Stddev	.00009	.00002	.00006	.00005	.00123	.00097	.00004
%RSD	14.685	8.6090	18.108	55.635	65.225	39.573	12.263
#1	.00067	-.00021	.00034	.00007	.00141	-.00202	-.00033
#2	.00060	-.00018	.00024	.00015	.00098	-.00358	-.00026
#3	.00050	-.00019	.00033	.00006	.00330	-.00178	-.00032

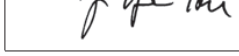
Approved: March 28, 2017

Sample Name: S0 Acquired: 3/27/2017 9:45:14 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.00015**	**.00011**	**-.01154**
Stddev	.00005	.00004	.00406
%RSD	33.400	37.871	35.166
#1	.00021	.00008	-.01600
#2	.00014	.00016	-.01058
#3	.00011	.00009	-.00805

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11286.**	**77439.**	**2713.3**
Stddev	52.	669.	97.1
%RSD	.46319	.86375	3.5798
#1	11244.	76942.	2688.8
#2	11271.	77174.	2630.7
#3	11345.	78199.	2820.3

Approved: March 28, 2017



Sample Name: S1 Acquired: 3/27/2017 9:49:02 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00014**	**.00229**	**.03929**	**.00131**	**.00843**	**-.00009**	**.00030**
Stddev	.00004	.00005	.00108	.00012	.00042	.00006	.00017
%RSD	33.088	2.2686	2.7367	9.0333	4.9944	62.701	56.850
#1	.00010	.00225	.04036	.00144	.00891	-.00005	.00018
#2	.00012	.00235	.03821	.00122	.00810	-.00016	.00022
#3	.00019	.00226	.03929	.00126	.00828	-.00007	.00049

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00051**	**.00061**	**.00065**	**.00249**	**.00034**	**.00149**	**.02178**
Stddev	.00004	.00011	.00079	.00713	.00054	.00009	.00758
%RSD	7.2726	17.900	121.76	286.54	158.30	6.0353	34.821
#1	.00055	.00050	-.00011	.00858	.00095	.00146	.01349
#2	.00049	.00061	.00060	.00422	-.00008	.00160	.02347
#3	.00048	.00072	.00147	-.00535	.00016	.00143	.02837

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00049**	**.00080**	**.00009**	**.00095**	**.00194**	**.00073**	**.02537**
Stddev	.00010	.00001	.00012	.00016	.00004	.00004	.00216
%RSD	20.922	1.1607	129.68	17.332	2.2338	5.3891	8.5320
#1	-.00039	.00080	.00012	.00102	.00196	.00070	.02736
#2	-.00059	.00080	-.00004	.00107	.00197	.00071	.02307
#3	-.00048	.00079	.00020	.00076	.00189	.00077	.02568

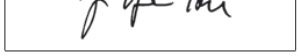
Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00052**	**.00093**	**.00411**	**-.00888**
Stddev	.00107	.00004	.00007	.00159
%RSD	204.45	4.7919	1.6182	17.904
#1	-.00175	.00093	.00418	-.01060
#2	.00017	.00088	.00410	-.00747
#3	.00001	.00097	.00405	-.00858

Approved: March 28, 2017

Sample Name: S1 Acquired: 3/27/2017 9:49:02 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11304.**	**79277.**	**2700.1**
Stddev	107.	692.	66.4
%RSD	.94521	.87266	2.4591
#1	11416.	78685.	2627.5
#2	11204.	80038.	2757.8
#3	11291.	79109.	2715.0

Approved: March 28, 2017



Sample Name: S2 Acquired: 3/27/2017 9:52:49 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00033**	**.00342**	**.00013**	**-.00003**	**.05240**	**.00179**	**.01093**
Stddev	.00011	.00010	.00007	.00003	.00111	.00003	.00293
%RSD	31.803	2.9227	54.075	109.10	2.1161	1.7510	26.849
#1	.00030	.00353	.00022	.00000	.05263	.00183	.00765
#2	.00045	.00341	.00009	-.00003	.05119	.00179	.01330
#3	.00024	.00333	.00010	-.00006	.05337	.00177	.01183

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00021**	**.00096**	**.00078**	**.00124**	**.00132**	**.01768**	**-.02088**
Stddev	.00016	.00005	.00006	.00014	.00051	.01297	.00461
%RSD	74.561	5.2577	8.2455	11.640	38.928	73.382	22.073
#1	.00013	.00101	.00080	.00132	.00086	.01300	-.02542
#2	.00011	.00097	.00071	.00107	.00122	.03234	-.02102
#3	.00039	.00091	.00083	.00133	.00187	.00770	-.01621

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00001**	**.00245**	**.00296**	**.07532**	**.00018**	**.00170**	**.00020**
Stddev	.00034	.00113	.00002	.00286	.00003	.00001	.00030
%RSD	6567.9	46.165	.80189	3.7931	15.330	.69922	155.61
#1	-.00018	.00118	.00297	.07646	.00016	.00168	.00054
#2	-.00023	.00336	.00299	.07207	.00016	.00170	.00004
#3	.00039	.00282	.00294	.07743	.00021	.00171	.00000

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00128**	**-.00015**	**.00327**	**.00134**	**.04515**	**-.00175**	**-.00009**
Stddev	.00003	.00009	.00004	.00005	.00113	.00019	.00004
%RSD	2.2512	65.108	1.2365	3.5024	2.5065	10.738	47.206
#1	.00130	-.00006	.00323	.00137	.04445	-.00185	-.00011
#2	.00130	-.00025	.00331	.00135	.04455	-.00186	-.00004
#3	.00125	-.00013	.00327	.00128	.04646	-.00153	-.00013

Approved: March 28, 2017

Sample Name: S2 Acquired: 3/27/2017 9:52:49 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.00175**	**.00774**	**-.01292**
Stddev	.00009	.00006	.00479
%RSD	5.0754	.77141	37.099
#1	.00167	.00781	-.01332
#2	.00173	.00773	-.00794
#3	.00184	.00769	-.01750

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11332.**	**76506.**	**2585.9**
Stddev	128.	492.	62.1
%RSD	1.1271	.64363	2.4032
#1	11474.	76093.	2621.5
#2	11294.	76374.	2622.1
#3	11227.	77051.	2514.2

Approved: March 28, 2017

Sample Name: S3 Acquired: 3/27/2017 9:56:38 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.02875**	**.14113**	**.01006**	**.01293**	**1.7839**	**.07208**	**.36038**
Stddev	.00018	.00049	.00013	.00004	.0045	.00053	.00302
%RSD	.63345	.35012	1.3048	.28919	.25259	.73651	.83683
#1	.02861	.14101	.01020	.01290	1.7888	.07168	.35770
#2	.02895	.14168	.01002	.01292	1.7831	.07268	.35980
#3	.02868	.14071	.00995	.01297	1.7799	.07186	.36365

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.02994**	**.07707**	**.04278**	**.08488**	**.12279**	**2.5209**	**1.0659**
Stddev	.00010	.00042	.00005	.00036	.00117	.0213	.0116
%RSD	.32803	.54666	.12217	.42314	.95093	.84308	1.0871
#1	.03004	.07756	.04279	.08527	.12350	2.5286	1.0752
#2	.02984	.07681	.04282	.08478	.12144	2.4969	1.0529
#3	.02995	.07686	.04272	.08458	.12342	2.5372	1.0697

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.09926**	**.17592**	**.19229**	**6.3201**	**.07296**	**.13110**	**.03591**
Stddev	.00138	.00236	.00082	.0204	.00040	.00047	.00007
%RSD	1.3899	1.3426	.42433	.32228	.54942	.35746	.20401
#1	.10057	.17600	.19312	6.3257	.07337	.13164	.03594
#2	.09782	.17824	.19227	6.2975	.07295	.13079	.03596
#3	.09939	.17352	.19148	6.3371	.07257	.13087	.03583

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.03553**	**.00667**	**.18592**	**.08044**	**2.7349**	**.13021**	**.01450**
Stddev	.00018	.00007	.00095	.00011	.0082	.00280	.00010
%RSD	.50833	1.1232	.51214	.13190	.29963	2.1541	.69085
#1	.03571	.00668	.18694	.08056	2.7440	.12900	.01462
#2	.03551	.00675	.18578	.08036	2.7328	.13342	.01446
#3	.03535	.00660	.18505	.08040	2.7280	.12821	.01444

Approved: March 28, 2017

Sample Name: S3 Acquired: 3/27/2017 9:56:38 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.10294**	**.49050**	**-.00872**
Stddev	.00039	.00174	.00057
%RSD	.37912	.35440	6.5873
#1	.10299	.49242	-.00810
#2	.10331	.49003	-.00882
#3	.10253	.48904	-.00924

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11156.**	**75438.**	**2739.9**
Stddev	142.	1058.	55.9
%RSD	1.2759	1.4018	2.0387
#1	10993.	74467.	2733.5
#2	11218.	75284.	2798.7
#3	11257.	76564.	2687.5

Approved: March 28, 2017

Sample Name: S4 Acquired: 3/27/2017 10:00:12 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.05829**	**.27909**	**.02031**	**.02649**	**3.5625**	**.14522**	**.72150**
Stddev	.00048	.00289	.00009	.00022	.0321	.00122	.01036
%RSD	.81663	1.0357	.46340	.82779	.89961	.83955	1.4354
#1	.05827	.27967	.02035	.02651	3.5256	.14579	.70955
#2	.05877	.28165	.02020	.02670	3.5827	.14605	.72790
#3	.05782	.27596	.02038	.02626	3.5793	.14382	.72704

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.06041**	**.15430**	**.08600**	**.16840**	**.24571**	**5.1292**	**2.1619**
Stddev	.00033	.00029	.00076	.00101	.00341	.0458	.0272
%RSD	.54527	.18686	.88824	.59682	1.3872	.89275	1.2594
#1	.06078	.15463	.08629	.16949	.24185	5.0797	2.1306
#2	.06015	.15418	.08658	.16752	.24831	5.1701	2.1801
#3	.06029	.15409	.08514	.16818	.24697	5.1378	2.1750

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.19953**	**.35568**	**.39070**	**12.815**	**.14582**	**.26640**	**.07124**
Stddev	.00154	.00304	.00121	.133	.00065	.00106	.00047
%RSD	.77157	.85425	.31066	1.0363	.44914	.39738	.65700
#1	.19849	.35219	.39210	12.674	.14655	.26762	.07178
#2	.19881	.35776	.39002	12.937	.14561	.26572	.07100
#3	.20130	.35708	.38998	12.836	.14529	.26586	.07095

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.07184**	**.01348**	**.37579**	**.16286**	**5.4800**	**.26892**	**.02859**
Stddev	.00035	.00009	.00112	.00052	.0511	.00307	.00027
%RSD	.48950	.63112	.29706	.32071	.93185	1.1434	.93980
#1	.07220	.01356	.37707	.16346	5.4211	.26538	.02890
#2	.07185	.01339	.37502	.16257	5.5122	.27052	.02844
#3	.07149	.01349	.37528	.16255	5.5066	.27088	.02843

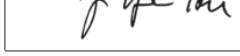
Approved: March 28, 2017

Sample Name: S4 Acquired: 3/27/2017 10:00:12 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.20813**	**.98105**	**-.00213**
Stddev	.00160	.00357	.00183
%RSD	.76966	.36370	85.861
#1	.20867	.98517	-.00017
#2	.20940	.97888	-.00243
#3	.20633	.97910	-.00378

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10916.**	**73712.**	**2634.8**
Stddev	62.	1417.	72.4
%RSD	.57118	1.9223	2.7483
#1	10981.	72732.	2616.4
#2	10857.	73068.	2714.6
#3	10912.	75337.	2573.3

Approved: March 28, 2017



Sample Name: ICV Acquired: 3/27/2017 10:03:43 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40149**	**9.9383**	**.40306**	**.49511**	**.99300**	**.05023**	**10.059**
Stddev	.00173	.0396	.00326	.00418	.00930	.00013	.064
%RSD	.43016	.39828	.80879	.84383	.93690	.25896	.63598
#1	.39962	9.9497	.40598	.49497	.98249	.05012	9.9868
#2	.40301	9.9709	.39954	.49936	1.0002	.05037	10.081
#3	.40185	9.8942	.40366	.49101	.99635	.05019	10.109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05032**	**.20038**	**.49464**	**.50168**	**3.9815**	**49.631**	**.99853**
Stddev	.00022	.00085	.00254	.00183	.0054	.440	.00407
%RSD	.44656	.42461	.51396	.36542	.13602	.88681	.40792
#1	.05056	.20094	.49702	.50315	3.9869	49.123	.99393
#2	.05029	.19940	.49495	.49963	3.9760	49.883	1.0017
#3	.05011	.20079	.49196	.50228	3.9816	49.888	.99997
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.8101**	**.49645**	F **.93966**	**49.609**	**.49579**	**9.8927**	**.50099**
Stddev	.1032	.00352	.00251	.357	.00185	.0281	.00184
%RSD	1.0522	.70935	.26685	.71864	.37229	.28429	.36668
#1	9.7025	.49288	.94136	49.201	.49792	9.9107	.50016
#2	9.8197	.49654	.93678	49.768	.49482	9.8603	.50310
#3	9.9082	.49992	.94083	49.859	.49464	9.9070	.49971
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			1.0000				
Range			-5.0000%				

Approved: March 28, 2017

Sample Name: ICV Acquired: 3/27/2017 10:03:43 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2000**	**.40368**	**4.9219**	**.99986**	**.99449**	**.98348**	**.49816**
Stddev	.0061	.00394	.0086	.00345	.00859	.01080	.00433
%RSD	.50557	.97547	.17372	.34473	.86331	1.0985	.86907
#1	1.1930	.39926	4.9284	1.0022	.98469	.97137	.50230
#2	1.2033	.40496	4.9122	.99591	.99808	.99212	.49367
#3	1.2037	.40682	4.9251	1.0014	1.0007	.98696	.49851
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.98170**	**.99544**	F **1.2770**
Stddev	.00543	.00334	.8810
%RSD	.55338	.33544	68.988
#1	.98445	.99846	1.1287
#2	.98520	.99185	.47957
#3	.97544	.99600	2.2226
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			5.0000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11141.**	**74974.**	**2690.5**
Stddev	197.	655.	35.5
%RSD	1.7666	.87328	1.3203
#1	11066.	75699.	2661.7
#2	11364.	74796.	2679.7
#3	10993.	74427.	2730.2

Approved: March 28, 2017

Sample Name: ICB Acquired: 3/27/2017 10:07:18 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00212**	**-.00539**	**-.00073**	**.00339**	**-.00031**	**.00001**	**.00937**
Stddev	.00125	.00539	.00451	.00190	.00176	.00004	.02626
%RSD	58.826	100.07	616.98	55.991	563.10	377.90	280.14
#1	-.00140	-.00180	.00447	.00396	.00160	.00005	.03349
#2	-.00357	-.00278	-.00356	.00493	-.00068	-.00002	-.01861
#3	-.00141	-.01159	-.00310	.00127	-.00185	-.00000	.01324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**-.00020**	**.00080**	**-.00019**	**.01536**	**.17918**	**-.00476**
Stddev	.00030	.00050	.00101	.00098	.00996	.10279	.00521
%RSD	145.16	250.65	126.48	526.86	64.808	57.366	109.51
#1	-.00006	.00030	-.00015	-.00120	.02107	.29428	-.00189
#2	.00015	-.00069	.00068	-.00011	.02116	.14673	-.01077
#3	.00052	-.00020	.00186	.00075	.00387	.09654	-.00162
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.02766**	**.00075**	**.00007**	**-.02728**	**.00099**	**-.00470**	**.00063**
Stddev	.01230	.00127	.00017	.01612	.00098	.00374	.00098
%RSD	44.470	169.35	249.07	59.082	99.152	79.462	154.38
#1	-.01449	.00154	-.00005	-.03953	.00136	-.00883	.00019
#2	-.03885	.00142	.00027	-.03329	-.00012	-.00156	-.00005
#3	-.02964	-.00071	-.00001	-.00902	.00174	-.00371	.00175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: ICB Acquired: 3/27/2017 10:07:18 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**-.00038**	**.00419**	**-.00014**	**.00035**	**-.00448**	**-.00221**
Stddev	.00180	.00448	.00210	.00029	.00063	.00085	.00243
%RSD	4061.6	1171.3	50.180	210.68	179.20	18.953	110.00
#1	-.00036	-.00278	.00216	-.00040	.00032	-.00500	-.00288
#2	-.00167	.00478	.00406	-.00019	-.00026	-.00494	.00049
#3	.00189	-.00315	.00636	.00017	.00100	-.00350	-.00422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00036**	**.00082**	F **-.24199**
Stddev	.00074	.00003	.21521
%RSD	204.81	3.5073	88.934
#1	-.00094	.00081	-.47599
#2	.00048	.00080	-.19745
#3	-.00063	.00085	-.05253
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11411.**	**77877.**	**2727.8**
Stddev	176.	731.	23.2
%RSD	1.5425	.93845	.85002
#1	11600.	78078.	2731.0
#2	11252.	78487.	2703.1
#3	11380.	77067.	2749.2

Approved: March 28, 2017

Sample Name: LLICV Acquired: 3/27/2017 10:11:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00782**	**.17106**	**.00639**	**.07836**	**.00879**	**.00152**	**.50449**
Stddev	.00169	.00364	.00268	.00053	.00111	.00002	.02205
%RSD	21.608	2.1293	41.901	.67063	12.577	1.1095	4.3713
#1	.00935	.16711	.00624	.07849	.00846	.00154	.48611
#2	.00600	.17176	.00913	.07882	.00789	.00150	.49841
#3	.00810	.17430	.00378	.07779	.01003	.00151	.52894
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00086**	**.00416**	**.00415**	**.00442**	**.11710**	**1.0185**	**.08280**
Stddev	.00025	.00042	.00046	.00142	.00800	.1265	.00458
%RSD	29.184	10.194	11.192	32.090	6.8335	12.421	5.5358
#1	.00067	.00370	.00361	.00387	.12044	.95137	.08073
#2	.00076	.00427	.00446	.00603	.12289	.93965	.08806
#3	.00114	.00453	.00437	.00336	.10797	1.1644	.07962
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.35172**	**.01227**	**.00788**	**.34044**	**.01729**	**.81054**	**.01267**
Stddev	.09100	.00233	.00020	.03727	.00050	.01233	.00201
%RSD	25.874	18.986	2.5913	10.948	2.9146	1.5214	15.893
#1	.40578	.00979	.00764	.38347	.01788	.82465	.01109
#2	.24666	.01441	.00798	.31929	.01698	.80182	.01199
#3	.40274	.01260	.00800	.31855	.01702	.80515	.01494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: LLICV Acquired: 3/27/2017 10:11:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.08460**	**.02001**	**.78987**	**.40649**	**.04172**	**.01147**	**.15964**
Stddev	.00521	.00533	.00311	.00530	.00040	.01114	.00262
%RSD	6.1596	26.626	.39414	1.3045	.95505	97.160	1.6394
#1	.09061	.02533	.78868	.40883	.04134	.02256	.15729
#2	.08142	.02003	.79341	.41022	.04213	.01156	.16246
#3	.08176	.01467	.78753	.40042	.04169	.00028	.15917
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00860**	**.01775**	F **56.072**
Stddev	.00069	.00027	1.381
%RSD	7.9761	1.5177	2.4629
#1	.00848	.01778	55.125
#2	.00934	.01800	55.435
#3	.00798	.01747	57.657
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11395.**	**76991.**	**2699.0**
Stddev	62.	473.	50.2
%RSD	.54466	.61463	1.8593
#1	11362.	77412.	2756.9
#2	11467.	77082.	2671.3
#3	11357.	76479.	2668.8

Approved: March 28, 2017

Sample Name: ICSA Acquired: 3/27/2017 10:14:50 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00101**	**251.80**	**-.00787**	**.01932**	**.00099**	**-.00009**	**237.18**
Stddev	.00239	7.84	.00370	.00224	.00221	.00002	2.23
%RSD	236.15	3.1132	47.068	11.579	222.07	27.502	.93869
#1	-.00313	255.89	-.00533	.01995	.00200	-.00007	235.04
#2	-.00149	256.74	-.01212	.01684	.00252	-.00008	239.49
#3	.00158	242.76	-.00615	.02118	-.00154	-.00011	237.00
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00054**	**-.00109**	**-.00031**	**.00153**	**94.878**	**.06386**	**.00250**
Stddev	.00016	.00058	.00033	.00288	.918	.18235	.00761
%RSD	29.854	53.396	104.76	188.82	.96718	285.57	304.14
#1	.00050	-.00109	-.00020	.00476	93.967	.07913	.01052
#2	.00072	-.00051	-.00006	.00059	95.802	-.12566	.00159
#3	.00040	-.00167	-.00069	-.00077	94.866	.23809	-.00461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**243.86**	**.00098**	**-.00115**	**-.00695**	**-.00009**	**.02786**	**.00100**
Stddev	2.11	.00098	.00029	.01423	.00066	.00860	.00180
%RSD	.86394	99.937	25.535	204.68	701.33	30.862	180.04
#1	241.61	.00192	-.00083	-.01990	.00024	.01937	.00085
#2	245.79	.00107	-.00121	.00829	.00034	.03656	-.00072
#3	244.17	-.00004	-.00140	-.00925	-.00086	.02763	.00287
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: ICSA Acquired: 3/27/2017 10:14:50 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00399**	**-.00089**	**.01422**	**.00033**	**.00058**	**.00015**	**-.00132**
Stddev	.00176	.00458	.00287	.00067	.00012	.00619	.00203
%RSD	44.224	513.72	20.181	200.97	21.353	4142.1	154.29
#1	.00364	-.00608	.01467	-.00044	.00051	.00379	-.00244
#2	.00590	.00261	.01115	.00074	.00073	-.00700	-.00254
#3	.00243	.00079	.01684	.00070	.00051	.00365	.00103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00145**	**.00149**	F **-8.0850**
Stddev	.00060	.00018	.3193
%RSD	41.522	11.866	3.9488
#1	-.00096	.00129	-7.7236
#2	-.00212	.00155	-8.3286
#3	-.00127	.00162	-8.2028
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02000
Low Limit			-.02000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10836.**	**70976.**	**2666.5**
Stddev	124.	900.	28.8
%RSD	1.1440	1.2678	1.0795
#1	10854.	72011.	2676.0
#2	10950.	70543.	2634.2
#3	10704.	70376.	2689.3

Approved: March 28, 2017

Sample Name: ICSAB Acquired: 3/27/2017 10:18:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52438**	**247.98**	**.24292**	F **.52259**	**.24952**	**.25139**	**238.45**
Stddev	.00140	13.81	.00541	.00335	.00323	.00139	4.14
%RSD	.26738	5.5700	2.2260	.64158	1.2947	.55458	1.7353
#1	.52600	263.22	.23684	.52345	.25235	.25283	240.73
#2	.52356	244.46	.24722	.51889	.24600	.25130	233.67
#3	.52358	236.28	.24469	.52542	.25021	.25005	240.95
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				.10000			
Low Limit				-.10000			

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49099**	**.23537**	**.24578**	**.24556**	**95.565**	**5.2113**	**.00680**
Stddev	.00085	.00039	.00255	.00110	1.861	.1247	.00606
%RSD	.17285	.16374	1.0380	.44607	1.9471	2.3922	89.184
#1	.49156	.23579	.24638	.24538	96.240	5.3500	.00725
#2	.49139	.23526	.24798	.24674	93.461	5.1755	.01262
#3	.49001	.23504	.24298	.24457	96.994	5.1085	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**244.93**	**.24266**	**-.00046**	**5.1593**	**.47348**	**-.08477**	**.48916**
Stddev	4.61	.00546	.00035	.1079	.00062	.01276	.00743
%RSD	1.8833	2.2500	75.858	2.0915	.13173	15.048	1.5197
#1	246.69	.24711	-.00020	5.2491	.47280	-.07005	.48106
#2	239.70	.23657	-.00033	5.0396	.47363	-.09257	.49074
#3	248.41	.24429	-.00086	5.1892	.47402	-.09169	.49568
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: ICSAB Acquired: 3/27/2017 10:18:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51002**	**.24072**	**.01177**	**.48815**	**.00025**	**.00342**	**.45160**
Stddev	.00958	.00190	.00240	.00223	.00069	.00743	.00308
%RSD	1.8780	.79122	20.419	.45764	275.43	217.08	.68228
#1	.50774	.23953	.01114	.48567	.00097	-.00512	.45458
#2	.52054	.23970	.01442	.49002	-.00042	.00836	.44842
#3	.50179	.24291	.00974	.48874	.00021	.00703	.45179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.24849**	**.47653**	F **-8.3800**
Stddev	.00148	.00048	.7488
%RSD	.59605	.09980	8.9349
#1	.24989	.47665	-7.5387
#2	.24862	.47693	-8.9731
#3	.24694	.47601	-8.6283
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02500
Low Limit			-.02500

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10787.**	**72469.**	**2739.0**
Stddev	138.	541.	61.6
%RSD	1.2778	.74649	2.2480
#1	10808.	72067.	2746.9
#2	10914.	72256.	2673.9
#3	10641.	73084.	2796.3

Approved: March 28, 2017

Sample Name: CCV Acquired: 3/27/2017 10:22:14 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39572**	**10.002**	**.39219**	**.49776**	**.98389**	**.04911**	**9.8028**
Stddev	.00244	.048	.00301	.00417	.00452	.00007	.0209
%RSD	.61757	.48038	.76771	.83875	.45957	.15028	.21318
#1	.39311	9.9558	.38980	.49348	.97894	.04911	9.8143
#2	.39795	10.052	.39557	.50182	.98492	.04918	9.7787
#3	.39609	9.9989	.39120	.49799	.98781	.04903	9.8155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04918**	**.19758**	**.49491**	**.49531**	**3.9560**	**48.957**	**.98223**
Stddev	.00012	.00045	.00416	.00166	.0323	.224	.00282
%RSD	.23744	.22809	.84083	.33608	.81641	.45664	.28666
#1	.04904	.19706	.49201	.49353	3.9850	48.813	.97905
#2	.04922	.19780	.49967	.49557	3.9617	48.843	.98323
#3	.04926	.19788	.49304	.49683	3.9212	49.214	.98441
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.8795**	**.49278**	**.97555**	**49.071**	**.49524**	**9.7762**	**.50089**
Stddev	.0777	.00413	.00099	.303	.00057	.0202	.00178
%RSD	.78640	.83737	.10134	.61764	.11548	.20641	.35567
#1	9.9619	.49077	.97641	48.889	.49545	9.7803	.50270
#2	9.8076	.49752	.97578	48.902	.49459	9.7941	.50082
#3	9.8691	.49003	.97447	49.421	.49567	9.7543	.49914
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 28, 2017

Sample Name: CCV Acquired: 3/27/2017 10:22:14 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1725**	**.39450**	**4.8887**	**.97709**	**.98697**	**.97401**	**.50047**
Stddev	.0096	.00410	.0148	.00085	.00621	.01066	.00167
%RSD	.81682	1.0404	.30213	.08730	.62894	1.0939	.33363
#1	1.1769	.39278	4.8862	.97770	.98227	.96175	.50069
#2	1.1790	.39918	4.9046	.97746	.98465	.97933	.50201
#3	1.1615	.39153	4.8754	.97611	.99401	.98096	.49870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.98556**	**.98530**	F **.79462**
Stddev	.00524	.00101	.26669
%RSD	.53203	.10209	33.561
#1	.98025	.98536	.85192
#2	.99073	.98627	1.0280
#3	.98568	.98426	.50394
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11135.**	**75268.**	**2709.6**
Stddev	124.	266.	48.6
%RSD	1.1111	.35292	1.7936
#1	11208.	75023.	2760.7
#2	11204.	75231.	2664.0
#3	10992.	75550.	2704.1

Approved: March 28, 2017

Sample Name: CCB Acquired: 3/27/2017 10:25:37 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00100**	**.00202**	**-.00145**	**.00276**	**.00001**	**-.00002**	**.01457**	**.00019**
Stddev	.00125	.00768	.00143	.00155	.00171	.00005	.07016	.00023
%RSD	124.97	380.57	98.727	56.270	14143.	301.93	481.38	125.05
#1	-.00219	.00826	-.00132	.00451	-.00119	.00001	.08973	-.00006
#2	-.00111	-.00656	-.00294	.00156	-.00075	.00001	-.04920	.00040
#3	.00030	.00437	-.00009	.00221	.00198	-.00007	.00319	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.00150**	**-.00149**	**-.00415**	**.28053**	**-.00349**	**-.08124**	**.00289**
Stddev	.00037	.00105	.00048	.00948	.02898	.00257	.06781	.00244
%RSD	210.14	69.648	31.978	228.25	10.330	73.763	83.468	84.474
#1	.00018	.00117	-.00154	.00585	.25550	-.00335	-.08631	.00062
#2	-.00015	.00267	-.00194	-.01299	.31228	-.00098	-.01104	.00547
#3	-.00056	.00066	-.00099	-.00532	.27382	-.00612	-.14637	.00257
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**-.09058**	**.00093**	**.00290**	**.00144**	**.00097**	**.00183**	**.00448**
Stddev	.00020	.05365	.00036	.00344	.00243	.00155	.00656	.00133
%RSD	306.44	59.234	38.283	118.69	169.37	158.85	357.96	29.721
#1	-.00017	-.05135	.00062	.00057	.00412	.00275	-.00523	.00572
#2	-.00018	-.15172	.00086	.00128	.00084	-.00008	.00774	.00464
#3	.00016	-.06867	.00132	.00686	-.00064	.00026	.00298	.00307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: CCB Acquired: 3/27/2017 10:25:37 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**.00025**	**-.00274**	**-.00092**	**-.00063**	**.00011**	**-.02316**
Stddev	.00039	.00060	.00360	.00265	.00086	.00005	.18107
%RSD	242.90	242.84	131.58	288.72	137.05	43.586	781.75
#1	.00020	-.00041	-.00563	-.00035	-.00124	.00015	.16717
#2	-.00025	.00039	.00130	.00140	.00035	.00006	-.19327
#3	.00053	.00076	-.00389	-.00381	-.00099	.00011	-.04339
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11370.**	**76311.**	**2653.1**
Stddev	75.	1411.	37.8
%RSD	.65993	1.8489	1.4266
#1	11456.	77821.	2675.2
#2	11323.	75027.	2674.6
#3	11331.	76085.	2609.4

Approved: March 28, 2017

Sample Name: PBW B7 Acquired: 3/27/2017 10:29:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607119-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00106**	**-.00019**	**-.00389**	**.00283**	**.00019**	**-.00005**	**-.01453**	**-.00012**
Stddev	.00040	.00827	.00446	.00231	.00151	.00009	.05135	.00037
%RSD	37.570	4426.9	114.72	81.636	802.70	169.45	353.37	313.14
#1	-.00115	.00536	-.00391	.00114	.00192	-.00009	-.06102	.00026
#2	-.00062	.00377	.00058	.00189	-.00058	-.00011	.04059	-.00048
#3	-.00140	-.00969	-.00834	.00546	-.00078	.00005	-.02317	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**.00093**	**.00006**	**.02375**	**.05793**	**.00449**	**-.01491**	**.00218**
Stddev	.00016	.00092	.00081	.01511	.03482	.00123	.01698	.00173
%RSD	260.73	98.729	1281.0	63.647	60.102	27.399	113.89	79.079
#1	.00004	.00148	-.00076	.00640	.07810	.00308	-.01012	.00336
#2	-.00008	.00144	.00086	.03407	.07796	.00501	-.00084	.00020
#3	.00023	-.00013	.00008	.03077	.01773	.00537	-.03378	.00299
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.03191**	**.00070**	**-.00849**	**.00067**	**.00232**	**-.00015**	**.00760**
Stddev	.00028	.02835	.00015	.00717	.00160	.00378	.00010	.00174
%RSD	196.37	88.851	21.883	84.452	239.00	163.12	68.225	22.946
#1	.00015	.04535	.00073	-.00522	-.00044	-.00049	-.00006	.00961
#2	-.00014	.05104	.00053	-.00354	-.00005	.00082	-.00026	.00669
#3	.00043	-.00066	.00084	-.01672	.00250	.00662	-.00013	.00650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: PBW B7 Acquired: 3/27/2017 10:29:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607119-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00049**	**-.00042**	**.00353**	**-.00184**	**.00005**	**.00144**	**.64593**
Stddev	.00064	.00016	.00583	.00038	.00101	.00018	.63025
%RSD	131.39	37.191	165.42	20.760	1860.3	12.306	97.574
#1	.00021	-.00024	.00960	-.00171	-.00047	.00154	.16355
#2	-.00062	-.00048	.00301	-.00154	-.00058	.00124	1.3590
#3	-.00105	-.00054	-.00203	-.00227	.00122	.00154	.41520
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11376.**	**77949.**	**2819.2**
Stddev	148.	1592.	72.9
%RSD	1.2997	2.0428	2.5871
#1	11540.	79526.	2735.5
#2	11251.	76342.	2869.3
#3	11338.	77980.	2852.9

Approved: March 28, 2017

Sample Name: LCSW B7 Acquired: 3/27/2017 10:33:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607119-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20550**	**5.0951**	**.19894**	**.97219**	**.50844**	**.02500**	**5.0637**	**.02581**
Stddev	.00163	.0321	.00080	.00769	.00761	.00011	.0244	.00021
%RSD	.79503	.62965	.40397	.79061	1.4969	.43110	.48093	.81092
#1	.20538	5.1043	.19966	.96394	.50944	.02491	5.0580	.02603
#2	.20719	5.1216	.19807	.97915	.51549	.02512	5.0904	.02578
#3	.20393	5.0594	.19908	.97348	.50037	.02497	5.0427	.02561
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10364**	**.25625**	**.25569**	**2.0527**	**25.444**	**.51335**	**5.1139**	**.26016**
Stddev	.00041	.00088	.00121	.0173	.313	.00270	.0469	.00381
%RSD	.39262	.34468	.47147	.84013	1.2314	.52549	.91627	1.4644
#1	.10344	.25575	.25684	2.0549	25.486	.51134	5.0880	.26294
#2	.10338	.25727	.25444	2.0688	25.735	.51229	5.1680	.26173
#3	.10411	.25574	.25578	2.0345	25.112	.51641	5.0858	.25582
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50043**	**25.630**	**.25721**	**4.9563**	**.26041**	**.60569**	**.19903**	**2.5667**
Stddev	.00130	.182	.00064	.0179	.00136	.00547	.00718	.0089
%RSD	.25979	.71037	.24807	.36008	.52381	.90343	3.6096	.34509
#1	.50037	25.766	.25649	4.9483	.26185	.59944	.20139	2.5593
#2	.50175	25.701	.25741	4.9768	.25914	.60958	.20473	2.5766
#3	.49916	25.423	.25772	4.9439	.26024	.60807	.19096	2.5644
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: LCSW B7 Acquired: 3/27/2017 10:33:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607119-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51545**	**.51582**	**.50245**	**.25997**	**.50814**	**.50638**	**.61426**
Stddev	.00048	.00584	.00203	.00212	.00285	.00163	.98057
%RSD	.09312	1.1325	.40364	.81456	.56044	.32100	159.63
#1	.51601	.51792	.50441	.26009	.50740	.50710	-.04850
#2	.51517	.52032	.50257	.25779	.51128	.50752	1.7407
#3	.51518	.50922	.50036	.26202	.50573	.50451	.15060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11370.**	**78551.**	**2825.9**
Stddev	56.	1224.	41.7
%RSD	.49148	1.5576	1.4765
#1	11311.	77212.	2862.4
#2	11422.	78828.	2780.4
#3	11377.	79612.	2834.8

Approved: March 28, 2017

Sample Name: L1703110001 Acquired: 3/27/2017 10:36:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607119-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00170**	**.21532**	**-.00162**	**.01227**	**.03172**	**-.00006**	**28.297**	**.00039**
Stddev	.00109	.00272	.00156	.00068	.00212	.00009	.239	.00019
%RSD	63.845	1.2649	96.607	5.5686	6.7760	142.59	.84435	49.054
#1	-.00068	.21838	.00006	.01190	.03144	-.00005	28.305	.00029
#2	-.00284	.21317	-.00188	.01184	.02975	-.00016	28.054	.00027
#3	-.00158	.21440	-.00303	.01305	.03396	.00002	28.531	.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**.00111**	**.00002**	**.24624**	**.89752**	**-.00030**	**4.7997**	**.01022**
Stddev	.00025	.00085	.00074	.00555	.11109	.00226	.1270	.00268
%RSD	73.514	76.563	4321.8	2.2540	12.377	759.35	2.6456	26.240
#1	-.00005	.00203	.00014	.24155	.77968	.00127	4.7745	.00806
#2	-.00048	.00098	-.00078	.24480	.91255	.00072	4.6872	.01322
#3	-.00049	.00034	.00069	.25237	1.0003	-.00288	4.9374	.00937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**3.5456**	**.00176**	**.01389**	**.00150**	**.00015**	**-.00627**	**2.8526**
Stddev	.00024	.0369	.00069	.00802	.00220	.00273	.00423	.0282
%RSD	476.28	1.0414	39.410	57.760	146.76	1865.8	67.372	.98787
#1	.00023	3.5400	.00205	.00927	-.00032	.00326	-.00364	2.8211
#2	.00013	3.5118	.00097	.02316	.00087	-.00186	-.00403	2.8755
#3	-.00022	3.5850	.00226	.00925	.00395	-.00096	-.01115	2.8612
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703110001 Acquired: 3/27/2017 10:36:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607119-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00080**	**.10372**	**.00448**	**-.00103**	**.00044**	**.00178**	**.15306**
Stddev	.00070	.00105	.00366	.00220	.00087	.00017	.76641
%RSD	87.683	1.0115	81.596	213.84	196.29	9.4251	500.74
#1	-.00121	.10317	.00130	-.00346	.00011	.00197	.85621
#2	-.00119	.10307	.00367	.00081	.00143	.00166	-.66388
#3	.00001	.10493	.00847	-.00043	-.00021	.00170	.26684
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11427.**	**78152.**	**2793.2**
Stddev	47.	1111.	45.4
%RSD	.41050	1.4210	1.6266
#1	11414.	79182.	2756.5
#2	11387.	78299.	2844.0
#3	11479.	76976.	2779.0

Approved: March 28, 2017

Sample Name: L1703110001D Acquired: 3/27/2017 10:40:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607119-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20415**	**5.2538**	**.19858**	**.98767**	**.53563**	**.02497**	**33.032**	**.02529**
Stddev	.00184	.0172	.00082	.00358	.00253	.00005	.120	.00014
%RSD	.90319	.32774	.41414	.36217	.47222	.19767	.36390	.56348
#1	.20253	5.2346	.19796	.98548	.53468	.02495	32.896	.02531
#2	.20375	5.2680	.19828	.98574	.53370	.02494	33.077	.02513
#3	.20616	5.2587	.19952	.99180	.53849	.02503	33.124	.02541
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10196**	**.25357**	**.25109**	**2.2565**	**26.152**	**.51175**	**9.6366**	**.26209**
Stddev	.00051	.00114	.00047	.0227	.161	.00356	.0236	.00201
%RSD	.50316	.44798	.18887	1.0051	.61606	.69569	.24508	.76832
#1	.10164	.25271	.25159	2.2346	25.991	.50783	9.6153	.26026
#2	.10169	.25313	.25065	2.2799	26.152	.51264	9.6327	.26424
#3	.10256	.25485	.25102	2.2548	26.314	.51479	9.6620	.26176
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49916**	**28.927**	**.25313**	**5.0326**	**.25513**	**.60187**	**.19694**	**5.4900**
Stddev	.00090	.106	.00053	.0089	.00316	.00051	.00404	.0112
%RSD	.18088	.36710	.20924	.17782	1.2371	.08549	2.0531	.20400
#1	.49832	28.835	.25253	5.0232	.25826	.60133	.19370	5.4821
#2	.49905	29.043	.25354	5.0410	.25518	.60191	.19565	5.4850
#3	.50012	28.902	.25332	5.0335	.25195	.60236	.20147	5.5028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703110001D Acquired: 3/27/2017 10:40:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607119-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51493**	**.61235**	**.50873**	**.26016**	**.50668**	**.50026**	**.84709**
Stddev	.00122	.00317	.01188	.00090	.00261	.00119	.37466
%RSD	.23743	.51795	2.3359	.34686	.51578	.23791	44.229
#1	.51387	.61160	.49753	.25981	.50464	.49983	.41802
#2	.51465	.60962	.50746	.26118	.50577	.49934	1.0138
#3	.51627	.61583	.52120	.25948	.50963	.50160	1.1095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11566.**	**78876.**	**2831.8**
Stddev	110.	593.	107.4
%RSD	.95418	.75198	3.7932
#1	11572.	79158.	2847.7
#2	11673.	78195.	2717.3
#3	11453.	79276.	2930.3

Approved: March 28, 2017

Sample Name: L1703110001S Acquired: 3/27/2017 10:44:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607119-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20327**	**5.2593**	**.19778**	**.98821**	**.53447**	**.02485**	**33.598**	**.02500**
Stddev	.00174	.0170	.00078	.00266	.00188	.00006	.122	.00021
%RSD	.85668	.32356	.39685	.26895	.35204	.25027	.36432	.84870
#1	.20519	5.2399	.19692	.98828	.53524	.02478	33.589	.02494
#2	.20281	5.2663	.19795	.98552	.53584	.02487	33.724	.02523
#3	.20180	5.2717	.19846	.99083	.53232	.02491	33.480	.02482
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10079**	**.25360**	**.24842**	**2.2502**	**26.025**	**.50787**	**9.7706**	**.26313**
Stddev	.00017	.00197	.00146	.0060	.129	.00523	.0530	.00298
%RSD	.17149	.77615	.58619	.26522	.49541	1.0298	.54267	1.1331
#1	.10075	.25359	.24817	2.2447	26.100	.50331	9.8296	.26549
#2	.10063	.25163	.24711	2.2566	26.098	.51358	9.7270	.26412
#3	.10097	.25557	.24999	2.2493	25.876	.50674	9.7551	.25978
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49510**	**28.773**	**.25027**	**4.9897**	**.25500**	**.59909**	**.18999**	**5.4391**
Stddev	.00084	.046	.00117	.0038	.00589	.00985	.00336	.0144
%RSD	.16911	.15903	.46912	.07673	2.3115	1.6445	1.7675	.26468
#1	.49447	28.753	.24902	4.9854	.25247	.58994	.18664	5.4313
#2	.49605	28.825	.25135	4.9926	.26173	.59781	.18997	5.4557
#3	.49477	28.740	.25043	4.9911	.25079	.60952	.19336	5.4303
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703110001S Acquired: 3/27/2017 10:44:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607119-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50950**	**.61183**	**.50504**	**.25441**	**.50569**	**.49513**	**.68455**
Stddev	.00071	.00391	.00739	.00239	.00095	.00063	.42717
%RSD	.13968	.63921	1.4625	.93753	.18820	.12713	62.402
#1	.51032	.60876	.51350	.25167	.50554	.49442	1.0092
#2	.50908	.61624	.50174	.25556	.50483	.49562	.20063
#3	.50909	.61050	.49987	.25600	.50672	.49535	.84378
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11435.**	**76881.**	**2781.3**
Stddev	74.	459.	48.1
%RSD	.65145	.59751	1.7288
#1	11469.	76867.	2727.7
#2	11349.	77348.	2820.5
#3	11486.	76429.	2795.8

Approved: March 28, 2017

Sample Name: L1703106601 Acquired: 3/27/2017 10:47:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00021**	**.15518**	**-.00134**	**.01158**	**.00193**	**-.00006**	**1.0020**	**.00042**
Stddev	.00050	.00387	.00085	.00227	.00068	.00003	.0258	.00011
%RSD	243.67	2.4921	63.156	19.621	35.461	56.148	2.5743	25.909
#1	-.00029	.15123	-.00101	.01318	.00257	-.00002	.97905	.00030
#2	.00071	.15896	-.00071	.00898	.00121	-.00009	.99704	.00051
#3	.00020	.15534	-.00230	.01259	.00200	-.00007	1.0299	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.00512**	**.02479**	**.83572**	**.15220**	**-.00017**	**-.00929**	**.00739**
Stddev	.00018	.00027	.00116	.01371	.12177	.00261	.05241	.00365
%RSD	136.35	5.2816	4.6637	1.6410	80.006	1521.8	564.34	49.433
#1	.00022	.00481	.02609	.84903	.02390	.00258	.05123	.00534
#2	-.00007	.00524	.02440	.83648	.16653	-.00048	-.03884	.01160
#3	.00024	.00531	.02388	.82163	.26618	-.00261	-.04026	.00522
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00099**	**.05471**	**.00252**	**-.01549**	**.00419**	**-.00220**	**-.00327**	**.32101**
Stddev	.00004	.03369	.00073	.00479	.00155	.00638	.00356	.00347
%RSD	4.4380	61.581	28.869	30.942	37.003	289.33	108.77	1.0799
#1	.00104	.06577	.00301	-.02075	.00459	.00247	-.00600	.32399
#2	.00096	.08149	.00169	-.01137	.00248	.00039	-.00456	.32185
#3	.00097	.01688	.00287	-.01435	.00551	-.00947	.00075	.31721
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703106601 Acquired: 3/27/2017 10:47:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00062**	**.00168**	**.01138**	**.00043**	**.00011**	**.02511**	**.60217**
Stddev	.00043	.00063	.00495	.00384	.00061	.00019	.58167
%RSD	68.836	37.749	43.503	886.47	536.08	.75399	96.595
#1	.00031	.00139	.00765	-.00333	-.00059	.02526	.08291
#2	.00111	.00124	.01700	.00027	.00057	.02517	.49288
#3	.00044	.00241	.00949	.00436	.00036	.02490	1.2307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11801.**	**80145.**	**2860.5**
Stddev	48.	1642.	11.2
%RSD	.40716	2.0493	.39107
#1	11852.	82040.	2870.3
#2	11794.	79278.	2862.8
#3	11757.	79119.	2848.3

Approved: March 28, 2017

Sample Name: L1703106602 Acquired: 3/27/2017 10:51:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00376**	**.09139**	**-.00001**	**.00837**	**.00224**	**-.00005**	**.58592**	**.00034**
Stddev	.00154	.00305	.00096	.00033	.00063	.00002	.05538	.00023
%RSD	40.836	3.3403	8523.9	3.9571	28.295	41.132	9.4524	66.940
#1	-.00420	.08850	-.00111	.00804	.00269	-.00005	.62695	.00043
#2	-.00503	.09458	.00066	.00837	.00252	-.00003	.60789	.00008
#3	-.00205	.09109	.00042	.00870	.00152	-.00007	.52293	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.00444**	**.03398**	**.40588**	**.23305**	**.00110**	**.05206**	**.00804**
Stddev	.00027	.00061	.00070	.01062	.29416	.00730	.04159	.00088
%RSD	213.35	13.711	2.0711	2.6172	126.22	664.06	79.888	10.941
#1	-.00019	.00388	.03438	.41750	.50474	-.00403	.08847	.00771
#2	.00028	.00509	.03316	.39667	.27377	.00946	.00673	.00737
#3	.00029	.00434	.03438	.40347	-.07935	-.00213	.06099	.00903
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00046**	**.32882**	**.00213**	**-.01349**	**.00423**	**-.00149**	**-.00548**	**.19086**
Stddev	.00036	.03638	.00101	.00089	.00320	.00316	.00625	.00176
%RSD	78.286	11.063	47.133	6.6286	75.690	212.56	114.01	.92273
#1	.00054	.31130	.00211	-.01287	.00793	.00131	-.01196	.18999
#2	.00077	.37064	.00315	-.01309	.00225	-.00085	-.00497	.19288
#3	.00007	.30451	.00114	-.01452	.00252	-.00492	.00050	.18970
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703106602 Acquired: 3/27/2017 10:51:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00049**	**.00181**	**.00405**	**-.00153**	**.00020**	**.02628**	**.60952**
Stddev	.00033	.00083	.00456	.00076	.00008	.00011	.95416
%RSD	66.275	45.810	112.62	49.880	41.412	.42012	156.54
#1	.00087	.00162	.00103	-.00165	.00029	.02616	1.6708
#2	.00036	.00272	.00930	-.00072	.00019	.02637	.33528
#3	.00026	.00109	.00183	-.00223	.00012	.02632	-.17748
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11746.**	**81431.**	**2896.3**
Stddev	42.	600.	19.9
%RSD	.35502	.73682	.68829
#1	11721.	81348.	2894.3
#2	11723.	82068.	2917.2
#3	11795.	80877.	2877.5

Approved: March 28, 2017

Sample Name: L1703106603 Acquired: 3/27/2017 10:55:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00043**	**.09723**	**-.00082**	**.00876**	**.00130**	**-.00003**	**.29220**	**.00012**
Stddev	.00039	.00316	.00234	.00201	.00083	.00007	.05651	.00011
%RSD	91.891	3.2460	287.19	22.975	64.424	201.33	19.340	96.304
#1	-.00016	.09482	-.00061	.00645	.00166	-.00008	.26907	.00009
#2	-.00024	.10080	.00142	.01011	.00034	-.00007	.35661	.00024
#3	-.00088	.09606	-.00326	.00973	.00189	.00004	.25092	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00312**	**.02164**	**.17660**	**.07296**	**.00322**	**.06007**	**.00496**
Stddev	.00025	.00069	.00026	.02133	.15128	.00219	.06658	.00271
%RSD	148.75	22.129	1.1886	12.076	207.35	68.019	110.83	54.556
#1	-.00002	.00233	.02184	.20118	-.06838	.00573	.00555	.00717
#2	-.00045	.00347	.02174	.16561	.23253	.00170	.04039	.00194
#3	-.00002	.00357	.02135	.16301	.05473	.00223	.13427	.00578
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00029**	**.03479**	**.00208**	**-.01621**	**.00558**	**-.00146**	**.00193**	**.18516**
Stddev	.00031	.05400	.00052	.00584	.00511	.00447	.00421	.00074
%RSD	104.16	155.24	25.043	36.003	91.656	305.46	218.70	.39894
#1	-.00006	-.02749	.00267	-.01795	-.00030	-.00420	.00674	.18549
#2	.00046	.06875	.00187	-.00971	.00809	.00369	-.00108	.18568
#3	.00048	.06310	.00169	-.02099	.00894	-.00388	.00012	.18431
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703106603 Acquired: 3/27/2017 10:55:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.00101**	**.00180**	**-.00234**	**.00028**	**.01775**	**.53687**
Stddev	.00107	.00074	.00609	.00123	.00036	.00013	.07070
%RSD	259.12	73.759	338.31	52.490	127.62	.70750	13.169
#1	.00090	.00072	.00746	-.00192	-.00005	.01775	.59936
#2	.00115	.00185	-.00464	-.00137	.00023	.01788	.46013
#3	-.00081	.00046	.00258	-.00372	.00067	.01763	.55110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11833.**	**81559.**	**2818.2**
Stddev	121.	579.	96.7
%RSD	1.0212	.71034	3.4295
#1	11920.	82225.	2921.3
#2	11695.	81171.	2803.7
#3	11885.	81281.	2729.7

Approved: March 28, 2017

Sample Name: L1703106604 Acquired: 3/27/2017 10:59:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00136**	**.01721**	**-.00141**	**.00745**	**-.00113**	**-.00010**	**.10936**
Stddev	.00092	.00808	.00184	.00268	.00078	.00011	.03693
%RSD	67.905	46.954	130.18	36.049	68.842	112.98	33.767
#1	-.00061	.01807	.00048	.00513	-.00204	.00001	.12412
#2	-.00108	.02482	-.00319	.01039	-.00071	-.00021	.06734
#3	-.00240	.00873	-.00153	.00683	-.00066	-.00009	.13663
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00023**	**.00015**	**.00145**	**.01635**	**.03923**	**.10802**	**.00332**
Stddev	.00012	.00051	.00039	.00046	.02915	.04761	.00241
%RSD	52.367	335.24	26.947	2.8333	74.311	44.075	72.630
#1	.00027	.00038	.00128	.01655	.04012	.13154	.00601
#2	.00033	-.00043	.00117	.01582	.06792	.13929	.00135
#3	.00010	.00051	.00189	.01668	.00964	.05323	.00261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01152**	**.00517**	**.00007**	**.04277**	**.00130**	**-.01159**	**.00203**
Stddev	.10806	.00219	.00014	.00615	.00080	.00980	.00127
%RSD	938.37	42.297	201.23	14.385	61.635	84.594	62.207
#1	-.04720	.00488	.00005	.03585	.00169	-.01323	.00059
#2	.10987	.00748	-.00006	.04486	.00038	-.02047	.00256
#3	-.09722	.00314	.00022	.04761	.00182	-.00107	.00295
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: L1703106604 Acquired: 3/27/2017 10:59:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00035**	**-.00127**	**.04324**	**-.00022**	**.00046**	**-.00250**	**-.00235**
Stddev	.00225	.00869	.00196	.00079	.00086	.00860	.00263
%RSD	639.20	685.66	4.5273	352.25	187.87	343.85	111.89
#1	.00278	-.00775	.04374	-.00105	-.00052	-.00149	-.00178
#2	-.00005	.00860	.04490	.00053	.00081	.00555	-.00522
#3	-.00167	-.00465	.04108	-.00015	.00108	-.01156	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00042**	**.00452**	F **-.24772**
Stddev	.00048	.00006	.16963
%RSD	113.96	1.2665	68.478
#1	-.00096	.00446	-.16882
#2	-.00003	.00455	-.13190
#3	-.00028	.00457	-.44243
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11703.**	**80080.**	**2804.1**
Stddev	27.	1641.	14.0
%RSD	.23483	2.0496	.49861
#1	11719.	78186.	2789.9
#2	11718.	81063.	2817.9
#3	11671.	80993.	2804.5

Approved: March 28, 2017

Sample Name: L1703106605 Acquired: 3/27/2017 11:02:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00081**	**.00427**	**-.00154**	**.00895**	**.00036**	**-.00001**	**.13886**	**.00005**
Stddev	.00084	.00576	.00285	.00140	.00287	.00007	.06448	.00024
%RSD	103.16	134.94	185.44	15.637	788.64	834.40	46.438	474.51
#1	-.00065	.00222	-.00200	.00851	.00354	.00001	.08558	-.00009
#2	-.00171	-.00019	.00152	.00783	-.00203	-.00009	.21054	-.00008
#3	-.00006	.01077	-.00412	.01052	-.00042	.00005	.12045	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**.00159**	**.00575**	**.02138**	**.13630**	**.00321**	**-.02642**	**.00484**
Stddev	.00013	.00035	.00043	.01498	.04084	.00466	.08291	.00303
%RSD	627.93	21.952	7.4471	70.043	29.965	145.10	313.76	62.671
#1	-.00007	.00171	.00583	.02756	.08914	.00694	.00031	.00161
#2	.00016	.00120	.00528	.00431	.15984	-.00201	-.11940	.00763
#3	-.00004	.00186	.00613	.03228	.15991	.00470	.03981	.00528
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.01866**	**.00120**	**-.01177**	**.00366**	**-.00041**	**-.00494**	**.02708**
Stddev	.00008	.01553	.00048	.00320	.00146	.00252	.00248	.00221
%RSD	32.040	83.221	39.695	27.153	39.742	615.75	50.175	8.1489
#1	.00018	.00200	.00114	-.01525	.00359	-.00259	-.00767	.02599
#2	.00021	.02124	.00076	-.01110	.00515	-.00098	-.00434	.02962
#3	.00032	.03274	.00170	-.00897	.00225	.00235	-.00282	.02563
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703106605 Acquired: 3/27/2017 11:02:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00071**	**.00004**	**.00009**	**-.00158**	**-.00067**	**.00289**	**.34611**
Stddev	.00020	.00061	.00777	.00178	.00095	.00025	.49735
%RSD	28.394	1698.9	8982.3	112.79	142.46	8.6485	143.70
#1	-.00048	.00069	-.00840	-.00226	-.00059	.00317	.22064
#2	-.00079	-.00008	.00182	.00044	.00025	.00283	-.07649
#3	-.00087	-.00051	.00684	-.00291	-.00165	.00268	.89418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11815.**	**80586.**	**2810.9**
Stddev	30.	544.	86.1
%RSD	.25709	.67558	3.0613
#1	11786.	80287.	2885.9
#2	11812.	80256.	2830.0
#3	11847.	81214.	2716.9

Approved: March 28, 2017

Sample Name: CCV Acquired: 3/27/2017 11:06:39 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40782**	**10.316**	**.40009**	**.50718**	**1.0064**	**.05062**	**10.020**	**.05016**
Stddev	.00248	.048	.00247	.00368	.0023	.00016	.065	.00055
%RSD	.60841	.46614	.61668	.72514	.23094	.30965	.65161	1.0898
#1	.40981	10.343	.39779	.50309	1.0062	.05059	9.9466	.04995
#2	.40504	10.260	.40269	.51022	1.0042	.05048	10.072	.04975
#3	.40860	10.344	.39977	.50823	1.0088	.05079	10.040	.05078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20168**	**.50909**	**.50801**	**4.0466**	**50.125**	**1.0161**	**10.189**	**.50459**
Stddev	.00072	.00276	.00195	.0343	.461	.0046	.046	.00096
%RSD	.35820	.54208	.38460	.84804	.91903	.45692	.45570	.19064
#1	.20175	.50726	.50811	4.0338	49.920	1.0137	10.241	.50562
#2	.20092	.50775	.50600	4.0204	49.803	1.0131	10.175	.50372
#3	.20236	.51227	.50991	4.0854	50.653	1.0215	10.151	.50443
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99807**	**50.027**	**.50472**	**9.9537**	**.50758**	**1.1870**	**.40216**	**4.9818**
Stddev	.00234	.223	.00062	.0309	.00248	.0045	.00424	.0199
%RSD	.23445	.44532	.12229	.31057	.48924	.37779	1.0540	.39999
#1	.99683	50.007	.50420	9.9334	.50955	1.1919	.40558	4.9659
#2	.99662	49.815	.50540	9.9383	.50479	1.1832	.39742	4.9755
#3	1.0008	50.259	.50456	9.9892	.50840	1.1858	.40350	5.0042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: March 28, 2017

Sample Name: CCV Acquired: 3/27/2017 11:06:39 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	TI1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99989**	**1.0115**	**1.0047**	**.51206**	**1.0135**	**1.0080**	**1.0352**
Stddev	.00035	.0031	.0076	.00234	.0042	.0022	.0776
%RSD	.03472	.30576	.75401	.45775	.40992	.22119	7.4933
#1	.99955	1.0125	.99917	.50935	1.0117	1.0077	1.0624
#2	.99989	1.0080	1.0017	.51335	1.0106	1.0059	1.0954
#3	1.0002	1.0139	1.0134	.51348	1.0183	1.0103	.94764
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10822.**	**73163.**	**2733.7**
Stddev	104.	827.	43.3
%RSD	.95869	1.1298	1.5853
#1	10756.	72249.	2684.3
#2	10767.	73859.	2751.2
#3	10941.	73381.	2765.5

Approved: March 28, 2017

Sample Name: CCB Acquired: 3/27/2017 11:10:12 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00223**	**-.00723**	**.00051**	**.00137**	**-.00029**	**.00000**	**.04187**
Stddev	.00090	.00104	.00215	.00123	.00133	.00006	.02829
%RSD	40.527	14.421	419.67	89.549	452.82	2817.3	67.560
#1	-.00120	-.00608	-.00147	.00205	-.00126	.00002	.02485
#2	-.00256	-.00810	.00022	-.00005	-.00085	-.00007	.07452
#3	-.00291	-.00752	.00279	.00211	.00123	.00005	.02624
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**.00027**	**.00096**	**-.00102**	**.02244**	**.01643**	**-.00423**
Stddev	.00016	.00051	.00121	.00016	.00605	.18638	.00743
%RSD	106.15	188.81	126.71	15.919	26.972	1134.6	175.67
#1	.00034	.00018	.00148	-.00109	.02399	.21551	-.00119
#2	.00004	-.00019	.00182	-.00114	.01577	-.15391	.00120
#3	.00008	.00082	-.00043	-.00083	.02757	-.01232	-.01270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.03099**	**.00200**	**.00038**	**-.04419**	**.00053**	**.00564**	**-.00115**
Stddev	.04388	.00055	.00048	.06042	.00109	.00266	.00299
%RSD	141.62	27.341	124.13	136.73	203.69	47.119	260.99
#1	-.05349	.00145	.00093	.01910	.00154	.00332	.00223
#2	-.05906	.00255	.00009	-.10127	-.00061	.00854	-.00345
#3	.01958	.00199	.00013	-.05040	.00067	.00507	-.00221
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: CCB Acquired: 3/27/2017 11:10:12 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00204**	**-.00635**	**.00602**	**-.00031**	**.00099**	**.00157**	**-.00142**
Stddev	.00164	.00219	.00201	.00079	.00028	.00732	.00256
%RSD	80.286	34.480	33.359	253.76	28.447	465.50	180.54
#1	.00353	-.00410	.00505	.00023	.00131	.00681	.00104
#2	.00230	-.00847	.00468	-.00121	.00081	.00470	-.00406
#3	.00029	-.00647	.00833	.00006	.00085	-.00679	-.00123
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00002**	**.00005**	F **-.60258**
Stddev	.00159	.00013	.63610
%RSD	10462.	263.75	105.56
#1	.00046	-.00005	-.21683
#2	-.00175	.00020	-1.3368
#3	.00133	.00000	-.25413
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10969.**	**75515.**	**2674.9**
Stddev	182.	482.	75.1
%RSD	1.6575	.63829	2.8068
#1	11158.	75467.	2743.6
#2	10796.	75059.	2686.4
#3	10953.	76019.	2594.8

Approved: March 28, 2017

Sample Name: L1703106606 Acquired: 3/27/2017 11:14:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.03133**	**-.00164**	**.00811**	**-.00049**	**-.00000**	**.37327**	**.00018**
Stddev	.00081	.00441	.00045	.00197	.00039	.00005	.02454	.00016
%RSD	727.30	14.063	27.560	24.312	80.934	3244.1	6.5748	87.536
#1	.00054	.02817	-.00132	.00585	-.00086	-.00006	.39752	.00009
#2	.00015	.02945	-.00144	.00949	-.00007	.00004	.34845	.00037
#3	-.00102	.03636	-.00215	.00897	-.00053	.00002	.37384	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**.00136**	**.01698**	**.03177**	**.10389**	**.00321**	**.08807**	**.00431**
Stddev	.00023	.00034	.00090	.02801	.04554	.00747	.02544	.00177
%RSD	492.02	25.038	5.2927	88.169	43.837	232.47	28.887	41.011
#1	-.00022	.00102	.01594	.00676	.10533	.00535	.10545	.00635
#2	.00020	.00170	.01755	.06203	.14869	.00939	.05887	.00318
#3	.00016	.00138	.01743	.02651	.05764	-.00509	.09988	.00341
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.06990**	**.00105**	**-.00590**	**.00143**	**-.00188**	**.00018**	**.09686**
Stddev	.00025	.02057	.00026	.00457	.00269	.00286	.00235	.00075
%RSD	130.64	29.427	24.502	77.548	187.78	151.94	1295.9	.77420
#1	-.00008	.05678	.00106	-.01111	.00019	-.00316	.00006	.09647
#2	-.00048	.09361	.00130	-.00256	-.00041	.00139	-.00210	.09773
#3	-.00001	.05932	.00079	-.00402	.00452	-.00387	.00259	.09639
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703106606 Acquired: 3/27/2017 11:14:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00031**	**.00194**	**.00011**	**-.00160**	**-.00014**	**.00522**	**.40146**
Stddev	.00054	.00020	.00444	.00017	.00078	.00016	.72093
%RSD	173.08	10.422	4036.1	10.767	571.21	3.0260	179.58
#1	-.00006	.00177	.00523	-.00178	.00075	.00535	1.0059
#2	.00007	.00190	-.00225	-.00156	-.00043	.00526	.59490
#3	.00093	.00216	-.00265	-.00145	-.00073	.00505	-.39645
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11699.**	**79394.**	**2886.3**
Stddev	72.	749.	49.3
%RSD	.61895	.94283	1.7089
#1	11667.	78750.	2905.3
#2	11648.	79217.	2923.3
#3	11782.	80215.	2830.3

Approved: March 28, 2017

Sample Name: L1703106607 Acquired: 3/27/2017 11:17:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00142**	**.03273**	**-.00039**	**.01183**	**-.00016**	**-.00008**	**.23191**	**.00016**
Stddev	.00165	.00351	.00035	.00281	.00165	.00007	.03204	.00021
%RSD	116.64	10.713	88.507	23.741	1063.6	86.673	13.817	133.31
#1	.00036	.02936	-.00017	.01369	.00144	-.00007	.26885	.00039
#2	-.00292	.03636	-.00079	.01321	-.00186	-.00016	.21530	-.00004
#3	-.00170	.03248	-.00021	.00860	-.00004	-.00001	.21159	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00036**	**.00122**	**.02041**	**.02953**	**.20217**	**.00550**	**-.05962**	**.00497**
Stddev	.00018	.00087	.00018	.01744	.13892	.00413	.14804	.00254
%RSD	48.418	71.072	.85939	59.056	68.717	75.059	248.31	51.100
#1	.00054	.00066	.02022	.02867	.35660	.00771	.10660	.00724
#2	.00034	.00077	.02045	.04739	.08736	.00805	-.17730	.00544
#3	.00020	.00222	.02056	.01254	.16255	.00074	-.10815	.00223
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00021**	**.11987**	**.00115**	**-.01370**	**.00001**	**.00018**	**-.00287**	**.06673**
Stddev	.00033	.03941	.00080	.00431	.00153	.00317	.00162	.00095
%RSD	154.14	32.879	70.019	31.429	17962.	1737.2	56.411	1.4221
#1	-.00013	.12161	.00161	-.01547	-.00118	.00145	-.00462	.06568
#2	.00025	.15839	.00161	-.00879	-.00053	.00252	-.00254	.06751
#3	.00052	.07962	.00022	-.01683	.00174	-.00342	-.00144	.06701
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703106607 Acquired: 3/27/2017 11:17:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00028**	**.00049**	**.00409**	**-.00208**	**-.00057**	**.00507**	**.13903**
Stddev	.00039	.00025	.00580	.00226	.00082	.00005	.76599
%RSD	138.58	50.409	141.64	108.61	144.14	1.0665	550.97
#1	-.00012	.00065	-.00257	.00040	-.00023	.00513	.71740
#2	.00066	.00062	.00684	-.00263	.00003	.00502	-.72969
#3	.00030	.00021	.00801	-.00402	-.00149	.00506	.42937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11762.**	**81243.**	**2859.8**
Stddev	135.	1488.	29.9
%RSD	1.1457	1.8312	1.0439
#1	11775.	82920.	2889.1
#2	11889.	80727.	2861.0
#3	11621.	80081.	2829.4

Approved: March 28, 2017

Sample Name: L1703106607PS Acquired: 3/27/2017 11:21:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607241-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20278**	**5.0434**	**.19557**	**.96938**	**.50152**	**.02450**	**5.1655**	**.02488**
Stddev	.00140	.0392	.00425	.01325	.00282	.00020	.0986	.00030
%RSD	.68815	.77763	2.1718	1.3664	.56130	.79894	1.9096	1.2112
#1	.20190	5.0289	.19465	.96515	.50250	.02454	5.1068	.02523
#2	.20206	5.0134	.20020	.95877	.49834	.02429	5.1104	.02475
#3	.20439	5.0878	.19186	.98423	.50371	.02467	5.2794	.02467
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10133**	**.25069**	**.27106**	**2.0684**	**24.768**	**.50177**	**5.0660**	**.25665**
Stddev	.00065	.00208	.00103	.0368	.112	.00164	.0398	.00187
%RSD	.63806	.83069	.37816	1.7787	.45063	.32627	.78556	.72689
#1	.10207	.25128	.27177	2.0355	24.639	.50259	5.0832	.25484
#2	.10094	.24837	.27152	2.1081	24.834	.49989	5.0205	.25856
#3	.10097	.25241	.26988	2.0615	24.831	.50284	5.0943	.25656
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49011**	**25.163**	**.25425**	**4.8687**	**.25630**	**.59166**	**.19080**	**2.5561**
Stddev	.00080	.151	.00130	.0300	.00382	.00281	.00487	.0041
%RSD	.16322	.60056	.51181	.61618	1.4906	.47421	2.5502	.15940
#1	.49029	25.228	.25542	4.8832	.26059	.58909	.18597	2.5595
#2	.49081	24.990	.25448	4.8887	.25325	.59465	.19072	2.5573
#3	.48924	25.271	.25285	4.8342	.25507	.59124	.19570	2.5516
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703106607PS Acquired: 3/27/2017 11:21:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607241-03

Elem	Sn1899	Sr4077	Ti3372	TI1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50652**	**.50564**	**.51346**	**.25500**	**.49845**	**.50129**	**.44446**
Stddev	.00051	.00458	.00796	.00279	.00307	.00037	.54631
%RSD	.10030	.90481	1.5501	1.0933	.61561	.07479	122.92
#1	.50680	.50796	.51755	.25178	.50036	.50163	.43284
#2	.50681	.50037	.50429	.25668	.49491	.50134	-.09594
#3	.50593	.50859	.51855	.25655	.50007	.50089	.99649
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11577.**	**79117.**	**2862.3**
Stddev	134.	1126.	58.2
%RSD	1.1607	1.4232	2.0318
#1	11557.	80145.	2796.0
#2	11720.	77913.	2886.7
#3	11453.	79291.	2904.4

Approved: March 28, 2017

Sample Name: L1703106607SDL Acquired: 3/27/2017 11:25:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG607241-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00072**	**.00250**	**.00077**	**.00485**	**-.00074**	**-.00001**	**.04724**
Stddev	.00132	.00733	.00210	.00194	.00242	.00005	.02625
%RSD	183.50	293.17	271.75	40.101	325.59	433.10	55.556
#1	.00021	.00211	.00296	.00494	-.00110	-.00006	.05181
#2	-.00013	-.00462	.00058	.00675	-.00297	.00004	.01901
#3	-.00224	.01002	-.00122	.00286	.00184	-.00001	.07090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**.00017**	**.00087**	**.00456**	**.01510**	**.05507**	**-.00277**
Stddev	.00019	.00038	.00033	.00079	.02753	.07226	.00650
%RSD	991.64	218.70	37.598	17.292	182.34	131.22	234.37
#1	.00024	.00052	.00094	.00381	.04571	-.00082	-.00486
#2	-.00009	-.00024	.00051	.00450	-.00764	.02935	-.00797
#3	-.00009	.00024	.00115	.00539	.00723	.13667	.00451
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04444**	**.00233**	**-.00009**	**.04613**	**-.00026**	**.00041**	**-.00165**
Stddev	.08367	.00006	.00003	.01934	.00096	.00441	.00098
%RSD	188.25	2.4114	27.161	41.918	373.72	1074.9	59.204
#1	-.04769	.00231	-.00012	.03002	-.00124	-.00301	-.00052
#2	.11569	.00239	-.00009	.06757	.00067	-.00114	-.00227
#3	.06533	.00228	-.00007	.04079	-.00020	.00539	-.00215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: L1703106607SDL Acquired: 3/27/2017 11:25:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG607241-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00095**	**-.00519**	**.01803**	**-.00030**	**.00057**	**-.00579**	**-.00227**
Stddev	.00381	.00558	.00094	.00040	.00040	.00132	.00276
%RSD	399.56	107.46	5.2092	135.75	70.031	22.834	121.75
#1	-.00329	-.00928	.01873	-.00030	.00057	-.00700	-.00445
#2	.00407	.00116	.01839	-.00070	.00017	-.00599	.00084
#3	.00209	-.00745	.01696	.00011	.00097	-.00438	-.00320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00000**	**.00168**	F **-.09244**
Stddev	.00103	.00009	.56395
%RSD	134490.	5.1612	610.06
#1	.00081	.00160	.39394
#2	.00034	.00177	.03936
#3	-.00115	.00167	-.71062
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11144.**	**77098.**	**2669.3**
Stddev	21.	466.	22.9
%RSD	.19047	.60436	.85955
#1	11121.	76837.	2695.6
#2	11147.	76820.	2658.5
#3	11163.	77636.	2653.7

Approved: March 28, 2017

Sample Name: L1703106607SDL Acquired: 3/27/2017 11:28:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG607241-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00068**	**-.00504**	**.00095**	**-.00008**	**.00085**	**.00004**	**-.00551**	**.00011**
Stddev	.00249	.00744	.00344	.00158	.00132	.00004	.01446	.00026
%RSD	368.11	147.51	361.37	1963.0	155.91	110.25	262.35	228.87
#1	-.00355	-.01357	.00174	-.00189	-.00059	.00002	.00320	-.00016
#2	.00083	.00007	-.00281	.00062	.00113	.00009	.00247	.00014
#3	.00070	-.00163	.00393	.00103	.00200	.00001	-.02220	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.00098**	**.00033**	**-.00537**	**-.07520**	**.00235**	**.00204**	**.00263**
Stddev	.00035	.00031	.00110	.00758	.07619	.00670	.05708	.00484
%RSD	181.70	31.667	335.97	141.19	101.32	284.87	2797.7	183.87
#1	.00014	.00113	-.00094	-.00057	-.16315	.00966	.06790	.00079
#2	-.00055	.00063	.00104	-.00143	-.03296	.00089	-.02871	.00813
#3	-.00017	.00120	.00088	-.01412	-.02948	-.00350	-.03307	-.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**-.04739**	**.00033**	**-.00244**	**.00104**	**.00139**	**.00317**	**.00518**
Stddev	.00015	.05552	.00041	.00577	.00203	.00185	.00387	.00258
%RSD	849.04	117.17	123.65	236.12	194.98	132.86	122.05	49.928
#1	-.00013	-.01634	.00039	-.00897	.00039	.00041	-.00088	.00791
#2	.00017	-.01434	.00071	-.00033	.00331	.00352	.00683	.00277
#3	.00002	-.11149	-.00011	.00197	-.00059	.00024	.00356	.00485
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703106607SDL Acquired: 3/27/2017 11:28:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG607241-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00060**	**.00079**	**-.00093**	**-.00192**	**.00063**	**.00107**	**.47930**
Stddev	.00105	.00013	.00902	.00124	.00065	.00012	.25776
%RSD	174.79	16.568	973.66	64.365	102.73	11.440	53.778
#1	-.00075	.00087	-.00599	-.00065	-.00005	.00093	.42534
#2	.00052	.00086	.00949	-.00312	.00069	.00116	.25280
#3	-.00157	.00064	-.00628	-.00198	.00125	.00113	.75978
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11277.**	**76156.**	**2688.8**
Stddev	116.	793.	57.6
%RSD	1.0300	1.0412	2.1426
#1	11173.	76829.	2727.3
#2	11403.	75282.	2716.5
#3	11255.	76358.	2622.5

Approved: March 28, 2017

Sample Name: CCV Acquired: 3/27/2017 11:32:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42275**	**10.660**	**.41888**	**.52772**	**1.0448**	**.05224**	**10.422**	**.05289**
Stddev	.00174	.062	.00200	.00489	.0044	.00030	.078	.00032
%RSD	.41164	.57749	.47688	.92750	.41807	.57490	.74752	.59830
#1	.42420	10.731	.42117	.52428	1.0436	.05252	10.369	.05311
#2	.42322	10.624	.41796	.53332	1.0497	.05228	10.512	.05253
#3	.42082	10.625	.41751	.52556	1.0412	.05193	10.387	.05304
Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21114**	**.52639**	**.53036**	**4.1699**	**51.118**	**1.0332**	**10.524**	**.52101**
Stddev	.00020	.00209	.00142	.0247	.372	.0097	.064	.00119
%RSD	.09571	.39762	.26803	.59143	.72800	.93756	.60720	.22893
#1	.21136	.52863	.52900	4.1434	51.398	1.0413	10.462	.51971
#2	.21097	.52605	.53183	4.1742	51.260	1.0359	10.590	.52127
#3	.21109	.52448	.53024	4.1922	50.695	1.0225	10.519	.52205
Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0415**	**51.547**	**.52776**	**10.464**	**.52664**	**1.2452**	**.42424**	**5.2127**
Stddev	.0010	.382	.00037	.012	.00270	.0052	.00285	.0054
%RSD	.09550	.74167	.06972	.11878	.51210	.41940	.67104	.10425
#1	1.0417	51.754	.52755	10.451	.52685	1.2485	.42703	5.2099
#2	1.0404	51.781	.52818	10.463	.52384	1.2391	.42435	5.2190
#3	1.0424	51.106	.52754	10.476	.52922	1.2479	.42134	5.2093
Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass

Approved: March 28, 2017

Sample Name: CCV Acquired: 3/27/2017 11:32:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	TI1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0472**	**1.0495**	**1.0404**	**.53644**	**1.0457**	**1.0522**	**1.0982**
Stddev	.0016	.0061	.0055	.00147	.0034	.0006	.6243
%RSD	.15583	.57999	.52941	.27440	.32016	.05472	56.849
#1	1.0462	1.0462	1.0350	.53477	1.0494	1.0521	.92612
#2	1.0491	1.0565	1.0460	.53705	1.0445	1.0528	1.7906
#3	1.0464	1.0458	1.0402	.53752	1.0431	1.0516	.57802
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10796.**	**72394.**	**2694.2**
Stddev	145.	1014.	12.1
%RSD	1.3408	1.4003	.45022
#1	10629.	71485.	2698.7
#2	10876.	73487.	2680.5
#3	10884.	72210.	2703.4

Approved: March 28, 2017

Sample Name: CCB Acquired: 3/27/2017 11:36:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00143**	**.00555**	**-.00170**	**.00354**	**-.00048**	**.00002**	**.03901**
Stddev	.00015	.00640	.00027	.00145	.00057	.00003	.01655
%RSD	10.461	115.40	16.085	41.046	119.09	181.16	42.426
#1	-.00126	.00038	-.00171	.00210	-.00109	-.00001	.02292
#2	-.00149	.00355	-.00142	.00351	.00002	.00005	.05599
#3	-.00154	.01271	-.00197	.00500	-.00036	.00001	.03813
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**-.00006**	**.00050**	**.00021**	**-.00741**	**.02111**	**-.00039**
Stddev	.00036	.00039	.00089	.00024	.02087	.05469	.00110
%RSD	445.05	669.16	177.40	112.03	281.75	259.03	284.36
#1	-.00023	-.00017	-.00051	.00000	-.00883	.08265	-.00130
#2	.00000	-.00038	.00114	.00047	-.02753	.00261	.00083
#3	.00047	.00037	.00087	.00017	.01414	-.02192	-.00069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03690**	**.00168**	**.00019**	**.01495**	**.00054**	**-.00408**	**-.00114**
Stddev	.13708	.00110	.00023	.05804	.00083	.00889	.00345
%RSD	371.45	65.762	121.12	388.21	154.75	217.89	302.75
#1	-.12110	.00267	.00017	.06846	-.00040	-.01051	-.00512
#2	.10771	.00187	.00044	-.04675	.00118	.00607	.00076
#3	.12411	.00049	-.00003	.02314	.00084	-.00780	.00095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: CCB Acquired: 3/27/2017 11:36:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00492**	**-.00384**	**.00483**	**-.00027**	**.00003**	**-.00437**	**-.00108**
Stddev	.00361	.00746	.00026	.00044	.00079	.00419	.00079
%RSD	73.375	194.44	5.3095	163.83	2292.8	95.956	72.692
#1	.00395	-.01186	.00475	.00004	-.00066	-.00717	-.00025
#2	.00190	.00289	.00461	-.00008	.00089	-.00638	-.00181
#3	.00892	-.00255	.00511	-.00077	-.00013	.00045	-.00118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00004**	**-.00012**	F **-.12214**
Stddev	.00079	.00011	.56753
%RSD	1965.7	90.993	464.65
#1	.00062	.00000	.03259
#2	.00036	-.00021	-.75099
#3	-.00086	-.00015	.35198
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11113.**	**75282.**	**2612.7**
Stddev	143.	543.	86.2
%RSD	1.2893	.72135	3.2989
#1	10991.	74810.	2586.4
#2	11271.	75876.	2542.7
#3	11077.	75161.	2708.9

Approved: March 28, 2017

Sample Name: LLCCV Acquired: 3/27/2017 11:40:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00841**	**.18850**	**.00705**	**.08233**	**.00770**	**.00166**	**.46626**
Stddev	.00050	.00393	.00231	.00175	.00013	.00004	.06653
%RSD	5.9988	2.0853	32.788	2.1225	1.6796	2.5905	14.268
#1	.00871	.18415	.00627	.08325	.00771	.00163	.53054
#2	.00868	.19180	.00966	.08031	.00757	.00165	.47055
#3	.00782	.18953	.00524	.08342	.00783	.00171	.39769
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00090**	**.00454**	**.00688**	**.00402**	**.09110**	**.94171**	**.09064**
Stddev	.00031	.00032	.00043	.00061	.01949	.04331	.01174
%RSD	34.040	7.0083	6.2679	15.264	21.390	4.5996	12.953
#1	.00060	.00417	.00694	.00456	.09016	.89170	.09439
#2	.00089	.00475	.00728	.00414	.07210	.96631	.07748
#3	.00121	.00468	.00643	.00336	.11104	.96713	.10005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38504**	**.00971**	**.00822**	**.42298**	**.01877**	**.87958**	**.01007**
Stddev	.08830	.00208	.00025	.07508	.00024	.00458	.00084
%RSD	22.933	21.386	3.0048	17.750	1.2941	.52079	8.3072
#1	.43755	.01003	.00798	.42851	.01897	.87482	.01104
#2	.43447	.00749	.00848	.49514	.01850	.88396	.00958
#3	.28309	.01160	.00821	.34529	.01884	.87997	.00960
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: LLCCV Acquired: 3/27/2017 11:40:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1271) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09482**	**.01649**	**.85482**	**.44191**	**.04463**	**.02724**	**.17131**
Stddev	.00058	.01006	.00330	.00190	.00054	.00806	.00230
%RSD	.61552	60.995	.38600	.42918	1.2186	29.590	1.3424
#1	.09417	.00613	.85113	.43989	.04418	.02173	.16911
#2	.09531	.01712	.85587	.44220	.04448	.03649	.17369
#3	.09498	.02622	.85747	.44365	.04524	.02350	.17112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00914**	**.01950**	F **57.855**
Stddev	.00035	.00015	.191
%RSD	3.8722	.74375	.32928
#1	.00914	.01944	57.643
#2	.00879	.01940	58.012
#3	.00950	.01967	57.910
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11148.**	**74148.**	**2725.1**
Stddev	114.	491.	40.3
%RSD	1.0183	.66257	1.4774
#1	11238.	74707.	2771.6
#2	11185.	73954.	2702.4
#3	11020.	73785.	2701.3

Approved: March 28, 2017

Sample Name: PBW F Acquired: 3/27/2017 11:51:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607342-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00108**	**-.00410**	**-.00117**	**.00240**	**-.00015**	**-.00012**	**.00672**	**.00025**
Stddev	.00091	.00621	.00172	.00117	.00066	.00007	.02956	.00022
%RSD	83.443	151.39	146.98	48.786	424.44	55.315	439.72	89.501
#1	-.00016	-.01038	-.00245	.00322	.00045	-.00005	.04015	.00051
#2	-.00197	.00204	.00079	.00106	-.00005	-.00013	-.01597	.00013
#3	-.00113	-.00396	-.00185	.00292	-.00086	-.00019	-.00402	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**.00022**	**-.00042**	**.01120**	**.08911**	**.00026**	**-.03287**	**.00372**
Stddev	.00030	.00094	.00080	.02799	.13502	.00462	.06854	.00133
%RSD	267.11	430.24	189.28	250.02	151.53	1804.5	208.53	35.895
#1	-.00023	.00087	.00001	-.01528	.18874	.00029	-.11134	.00504
#2	.00032	-.00086	-.00135	.04050	.14315	-.00438	.01532	.00374
#3	.00024	.00065	.00007	.00837	-.06457	.00486	-.00259	.00237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**-.00972**	**.00143**	**-.01248**	**.00164**	**-.00085**	**.00005**	**.00698**
Stddev	.00013	.11131	.00098	.00321	.00222	.00142	.00294	.00276
%RSD	311.79	1145.4	68.515	25.753	135.60	167.69	6029.3	39.620
#1	.00014	.08650	.00090	-.00958	.00354	-.00193	.00286	.00380
#2	-.00011	.01598	.00257	-.01193	.00219	.00076	.00029	.00883
#3	.00009	-.13163	.00083	-.01593	-.00081	-.00138	-.00300	.00830
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: PBW F Acquired: 3/27/2017 11:51:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607342-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.00039**	**.00314**	**-.00192**	**-.00011**	**.00109**	**.84917**
Stddev	.00084	.00018	.00503	.00281	.00051	.00016	.62614
%RSD	300.51	45.237	160.13	146.58	465.19	14.418	73.736
#1	.00056	.00019	.00570	-.00215	.00025	.00112	1.4910
#2	-.00029	.00051	-.00266	-.00461	.00011	.00123	.81654
#3	-.00111	.00047	.00638	.00100	-.00069	.00092	.23998
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11887.**	**80159.**	**2844.3**
Stddev	37.	1158.	48.0
%RSD	.31166	1.4441	1.6872
#1	11930.	81494.	2883.4
#2	11867.	79436.	2790.7
#3	11864.	79546.	2858.7

Approved: March 28, 2017

Sample Name: LCSW F Acquired: 3/27/2017 11:54:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607342-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20525**	**5.0925**	**.19598**	**.96664**	**.50631**	**.02490**	**5.0404**	**.02517**
Stddev	.00148	.0078	.00149	.00767	.00281	.00011	.0584	.00038
%RSD	.72068	.15328	.76010	.79307	.55509	.45384	1.1585	1.4930
#1	.20690	5.0929	.19460	.95779	.50933	.02490	5.0845	.02496
#2	.20484	5.0846	.19578	.97100	.50584	.02479	5.0624	.02561
#3	.20403	5.1002	.19756	.97114	.50377	.02502	4.9742	.02495
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10252**	**.25424**	**.25361**	**2.0529**	**25.101**	**.50799**	**5.0127**	**.25654**
Stddev	.00016	.00177	.00054	.0608	.047	.00181	.0392	.00096
%RSD	.15331	.69520	.21457	2.9602	.18800	.35585	.78191	.37250
#1	.10260	.25226	.25410	2.0583	25.074	.50591	5.0526	.25756
#2	.10261	.25565	.25371	2.1108	25.074	.50894	5.0114	.25640
#3	.10234	.25482	.25303	1.9896	25.156	.50913	4.9742	.25567
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49497**	**25.345**	**.25477**	**4.9017**	**.25630**	**.59505**	**.19357**	**2.5329**
Stddev	.00057	.098	.00203	.0030	.00155	.00220	.00574	.0056
%RSD	.11576	.38753	.79579	.06125	.60375	.37053	2.9645	.22285
#1	.49431	25.345	.25704	4.8997	.25646	.59760	.19117	2.5394
#2	.49534	25.444	.25313	4.9052	.25777	.59378	.20011	2.5302
#3	.49525	25.248	.25415	4.9004	.25468	.59377	.18942	2.5291
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: LCSW F Acquired: 3/27/2017 11:54:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607342-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50914**	**.51339**	**.50664**	**.25654**	**.50409**	**.49775**	**1.5943**
Stddev	.00141	.00024	.01039	.00493	.00214	.00084	.2767
%RSD	.27756	.04713	2.0508	1.9204	.42467	.16823	17.356
#1	.51075	.51313	.50952	.26223	.50312	.49863	1.7585
#2	.50852	.51343	.51529	.25369	.50262	.49767	1.2748
#3	.50814	.51361	.49512	.25371	.50655	.49696	1.7496
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11632.**	**78162.**	**2832.4**
Stddev	76.	956.	37.9
%RSD	.65448	1.2226	1.3396
#1	11582.	77855.	2795.0
#2	11719.	77397.	2870.9
#3	11594.	79233.	2831.3

Approved: March 28, 2017

Sample Name: L1703121001 Acquired: 3/27/2017 11:58:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607342-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**.09229**	**-.00183**	**.02373**	**.01114**	**-.00006**	**12.234**	**.00029**
Stddev	.00065	.00153	.00059	.00181	.00123	.00003	.039	.00016
%RSD	110.69	1.6551	32.242	7.6158	11.066	46.070	.31559	54.957
#1	-.00067	.09405	-.00245	.02323	.01256	-.00008	12.212	.00013
#2	-.00119	.09157	-.00176	.02573	.01045	-.00003	12.279	.00045
#3	.00010	.09126	-.00128	.02222	.01040	-.00008	12.212	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**.00134**	**.00238**	**.11833**	**.89895**	**-.00006**	**2.6445**	**.02044**
Stddev	.00027	.00108	.00067	.02902	.11412	.00605	.0457	.00300
%RSD	90.739	80.964	27.930	24.521	12.695	10223.	1.7300	14.664
#1	.00057	.00259	.00303	.15104	.77097	.00503	2.6358	.02333
#2	.00003	.00065	.00242	.10827	.93574	-.00674	2.6038	.01735
#3	.00030	.00078	.00170	.09568	.99013	.00153	2.6940	.02064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00079**	**3.4766**	**.00220**	**.02883**	**-.00027**	**.00223**	**-.00202**	**1.2087**
Stddev	.00013	.0207	.00091	.00351	.00354	.00404	.00342	.0047
%RSD	16.140	.59513	41.462	12.165	1325.5	180.84	168.67	.39060
#1	.00090	3.4577	.00321	.02825	-.00346	-.00240	-.00329	1.2112
#2	.00082	3.4733	.00142	.02565	.00354	.00408	.00184	1.2117
#3	.00065	3.4987	.00198	.03259	-.00088	.00502	-.00463	1.2033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703121001 Acquired: 3/27/2017 11:58:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607342-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.05404**	**-.00206**	**-.00158**	**-.00022**	**.02676**	**.56571**
Stddev	.00085	.00017	.00578	.00237	.00052	.00034	.80607
%RSD	436.80	.30905	280.39	149.31	231.48	1.2747	142.49
#1	-.00107	.05402	.00392	.00090	.00009	.02696	.61334
#2	.00062	.05422	-.00249	-.00183	-.00082	.02696	-.26312
#3	-.00014	.05389	-.00762	-.00382	.00006	.02637	1.3469
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11902.**	**82120.**	**2865.6**
Stddev	154.	1378.	92.4
%RSD	1.2905	1.6782	3.2250
#1	11948.	81595.	2774.0
#2	12028.	81081.	2864.1
#3	11731.	83683.	2958.8

Approved: March 28, 2017

Sample Name: L1703121001S Acquired: 3/27/2017 12:02:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607342-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20656**	**5.2001**	**.19703**	**1.0106**	**.52537**	**.02510**	**17.372**	**.02526**
Stddev	.00180	.0070	.00336	.0010	.00272	.00003	.112	.00023
%RSD	.87330	.13429	1.7037	.09901	.51761	.10437	.64457	.90546
#1	.20557	5.1925	.20070	1.0101	.52483	.02512	17.347	.02506
#2	.20864	5.2016	.19627	1.0098	.52297	.02511	17.275	.02551
#3	.20547	5.2063	.19412	1.0117	.52832	.02507	17.495	.02521
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10211**	**.25758**	**.25501**	**2.1727**	**26.244**	**.51367**	**7.6352**	**.27595**
Stddev	.00024	.00088	.00153	.0178	.194	.00284	.1105	.00240
%RSD	.23037	.34089	.60182	.81913	.73752	.55287	1.4474	.87083
#1	.10238	.25727	.25592	2.1560	26.280	.51693	7.5217	.27674
#2	.10200	.25690	.25587	2.1915	26.034	.51171	7.6414	.27325
#3	.10195	.25857	.25324	2.1707	26.416	.51238	7.7425	.27786
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49769**	**28.959**	**.25601**	**5.0525**	**.25571**	**.59946**	**.20149**	**4.4199**
Stddev	.00330	.145	.00133	.0205	.00279	.00210	.00220	.0088
%RSD	.66404	.50091	.52076	.40670	1.0912	.34986	1.0905	.19814
#1	.50127	28.977	.25683	5.0716	.25659	.60134	.20363	4.4280
#2	.49703	28.806	.25672	5.0550	.25796	.59720	.19924	4.4106
#3	.49476	29.095	.25447	5.0308	.25259	.59985	.20158	4.4211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703121001S Acquired: 3/27/2017 12:02:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607342-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51187**	**.57307**	**.51756**	**.25856**	**.51067**	**.52546**	**1.3140**
Stddev	.00271	.00312	.00937	.00380	.00160	.00181	.2785
%RSD	.52922	.54491	1.8100	1.4702	.31414	.34436	21.195
#1	.51348	.57272	.52437	.25787	.51187	.52734	1.3028
#2	.51340	.57014	.50688	.25515	.50885	.52530	1.0412
#3	.50875	.57636	.52144	.26266	.51130	.52373	1.5979
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11792.**	**79299.**	**2900.2**
Stddev	157.	842.	69.9
%RSD	1.3308	1.0617	2.4090
#1	11719.	78613.	2978.5
#2	11972.	79046.	2844.2
#3	11684.	80239.	2877.9

Approved: March 28, 2017

Sample Name: L1703121001SD Acquired: 3/27/2017 12:05:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607342-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20382**	**5.1087**	**.19784**	**.99442**	**.51274**	**.02473**	**17.032**	**.02492**
Stddev	.00172	.0234	.00034	.00631	.00176	.00013	.171	.00029
%RSD	.84374	.45800	.16986	.63471	.34392	.53915	1.0055	1.1670
#1	.20511	5.1309	.19785	.99715	.51303	.02465	17.001	.02464
#2	.20448	5.1110	.19749	.99890	.51433	.02488	17.216	.02489
#3	.20186	5.0843	.19816	.98720	.51084	.02465	16.878	.02522
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10123**	**.25422**	**.25241**	**2.1217**	**25.787**	**.49603**	**7.4912**	**.26923**
Stddev	.00070	.00142	.00055	.0206	.158	.00638	.2096	.00387
%RSD	.69130	.56022	.21812	.97089	.61161	1.2860	2.7982	1.4360
#1	.10064	.25434	.25300	2.1270	25.752	.49490	7.4778	.27158
#2	.10104	.25558	.25231	2.1391	25.960	.50289	7.7072	.27135
#3	.10200	.25273	.25191	2.0989	25.650	.49029	7.2886	.26477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49295**	**28.465**	**.25290**	**4.9950**	**.25718**	**.60103**	**.19670**	**4.3411**
Stddev	.00102	.159	.00062	.0139	.00061	.00267	.00618	.0133
%RSD	.20612	.55783	.24692	.27838	.23858	.44469	3.1423	.30713
#1	.49178	28.532	.25221	4.9800	.25781	.59795	.19137	4.3282
#2	.49347	28.580	.25307	5.0075	.25658	.60269	.19525	4.3403
#3	.49360	28.284	.25343	4.9975	.25716	.60246	.20347	4.3548
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703121001SD Acquired: 3/27/2017 12:05:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607342-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50687**	**.56207**	**.50607**	**.25422**	**.50387**	**.52135**	**1.4092**
Stddev	.00135	.00545	.01449	.00227	.00258	.00086	.5420
%RSD	.26709	.96897	2.8642	.89160	.51230	.16539	38.460
#1	.50576	.56161	.49849	.25614	.50478	.52057	1.5969
#2	.50648	.56774	.52278	.25172	.50588	.52120	1.8325
#3	.50838	.55688	.49693	.25478	.50096	.52228	.79837
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11853.**	**79403.**	**2917.1**
Stddev	132.	330.	55.7
%RSD	1.1129	.41542	1.9099
#1	11706.	79732.	2911.4
#2	11960.	79406.	2975.5
#3	11894.	79072.	2864.5

Approved: March 28, 2017

Sample Name: L1703109401 Acquired: 3/27/2017 12:09:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00070**	**.13020**	**-.00126**	**.01712**	**.06657**	**-.00007**	**46.176**	**.00026**
Stddev	.00125	.00766	.00179	.00068	.00085	.00005	.168	.00015
%RSD	179.23	5.8870	142.07	3.9603	1.2821	74.350	.36355	55.985
#1	-.00022	.12288	-.00112	.01740	.06567	-.00011	46.059	.00043
#2	-.00211	.12954	.00045	.01761	.06737	-.00001	46.100	.00016
#3	.00024	.13817	-.00311	.01634	.06666	-.00008	46.368	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**.00128**	**.00037**	**.16449**	**.87591**	**.00108**	**6.7138**	**.00650**
Stddev	.00032	.00022	.00105	.03742	.12389	.00048	.0816	.00322
%RSD	516.72	17.605	285.72	22.748	14.144	44.695	1.2156	49.483
#1	-.00027	.00125	-.00010	.18636	.75291	.00127	6.6199	.00641
#2	.00037	.00151	.00157	.12128	.87415	.00144	6.7540	.00333
#3	.00009	.00106	-.00036	.18582	1.0007	.00053	6.7676	.00976
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00047**	**3.5741**	**.00064**	**.00520**	**.00031**	**.00615**	**.00444**	**4.1116**
Stddev	.00018	.0360	.00021	.00389	.00206	.00184	.00220	.0351
%RSD	38.165	1.0071	32.238	74.862	655.40	29.976	49.648	.85324
#1	.00039	3.5481	.00078	.00732	.00109	.00420	.00471	4.1395
#2	.00067	3.5590	.00040	.00757	.00187	.00786	.00650	4.1231
#3	.00034	3.6152	.00073	.00071	-.00202	.00640	.00211	4.0722
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703109401 Acquired: 3/27/2017 12:09:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00071**	**.16982**	**.00105**	**-.00112**	**-.00020**	**.00240**	**.35641**
Stddev	.00053	.00159	.00397	.00126	.00033	.00007	.43541
%RSD	74.689	.93539	379.07	112.11	164.54	3.0492	122.17
#1	-.00122	.17097	-.00027	-.00178	.00007	.00233	.34110
#2	-.00075	.16801	.00551	-.00192	-.00057	.00239	-.07115
#3	-.00016	.17049	-.00210	.00033	-.00010	.00247	.79927
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11592.**	**79782.**	**2874.7**
Stddev	34.	1478.	59.1
%RSD	.28988	1.8523	2.0561
#1	11611.	80107.	2846.1
#2	11611.	81071.	2835.3
#3	11553.	78169.	2942.7

Approved: March 28, 2017

Sample Name: L1703109402 Acquired: 3/27/2017 12:13:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00167**	**.09754**	**-.00229**	**.01216**	**.05469**	**-.00006**	**48.574**
Stddev	.00073	.00324	.00225	.00227	.00201	.00009	.249
%RSD	43.610	3.3241	98.399	18.691	3.6833	139.81	.51305
#1	-.00184	.09562	-.00288	.01479	.05238	-.00003	48.406
#2	-.00230	.09572	-.00419	.01080	.05562	-.00016	48.456
#3	-.00087	.10129	.00020	.01090	.05608	.00001	48.861
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**-.00031**	**.00172**	**.00003**	**.28342**	**.81030**	**.00274**
Stddev	.00005	.00066	.00071	.00063	.02771	.20071	.00263
%RSD	60.248	214.65	41.662	2316.0	9.7784	24.770	95.782
#1	-.00005	-.00088	.00141	-.00064	.31094	.57897	.00499
#2	-.00007	-.00046	.00120	.00011	.25552	.93821	-.00014
#3	-.00015	.00042	.00253	.00062	.28381	.91372	.00338
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.8529**	**.00341**	**.00038**	**3.4649**	**.00106**	**.00474**	**.00136**
Stddev	.0109	.00121	.00027	.0427	.00111	.00732	.00218
%RSD	.15840	35.553	69.209	1.2322	104.77	154.41	160.48
#1	6.8642	.00208	.00038	3.4682	.00107	.00797	-.00055
#2	6.8519	.00446	.00012	3.4206	-.00005	.00990	.00374
#3	6.8426	.00369	.00065	3.5058	.00217	-.00364	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: L1703109402 Acquired: 3/27/2017 12:13:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00270**	**-.00372**	**4.0414**	**-.00069**	**.15909**	**-.00693**	**-.00241**
Stddev	.00198	.00032	.0372	.00086	.00153	.00660	.00237
%RSD	73.168	8.5731	.92008	124.24	.96073	95.291	98.065
#1	-.00061	-.00408	4.0656	.00020	.15733	-.00553	-.00026
#2	-.00295	-.00358	4.0601	-.00151	.15977	-.00113	-.00202
#3	-.00454	-.00349	3.9986	-.00077	.16015	-.01411	-.00495
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00033**	**.00482**	F **-.38940**
Stddev	.00023	.00007	.55546
%RSD	69.391	1.3960	142.65
#1	.00060	.00475	-1.0150
#2	.00024	.00487	.04593
#3	.00016	.00486	-.19914
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11754.**	**79390.**	**2803.8**
Stddev	16.	1530.	35.0
%RSD	.13240	1.9273	1.2491
#1	11762.	81083.	2794.6
#2	11763.	78107.	2774.2
#3	11736.	78979.	2842.5

Approved: March 28, 2017

Sample Name: L1703109402PS Acquired: 3/27/2017 12:16:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607757-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20330**	**5.0858**	**.19681**	**.98240**	**.54803**	**.02472**	**48.549**	**.02500**
Stddev	.00081	.0222	.00224	.00532	.00553	.00012	.385	.00025
%RSD	.39597	.43545	1.1380	.54170	1.0095	.49636	.79230	.99416
#1	.20265	5.1114	.19640	.98834	.54259	.02465	48.109	.02528
#2	.20420	5.0735	.19922	.97808	.55365	.02465	48.821	.02486
#3	.20306	5.0725	.19480	.98079	.54784	.02486	48.718	.02484
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09915**	**.25131**	**.24618**	**2.2207**	**25.617**	**.50429**	**11.251**	**.25262**
Stddev	.00035	.00049	.00118	.0224	.162	.00674	.075	.00188
%RSD	.34864	.19322	.47891	1.0068	.63186	1.3369	.66603	.74242
#1	.09954	.25163	.24551	2.1959	25.445	.50034	11.333	.25104
#2	.09892	.25154	.24549	2.2271	25.766	.51207	11.185	.25212
#3	.09898	.25075	.24754	2.2392	25.642	.50045	11.236	.25469
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49144**	**27.958**	**.24690**	**4.9718**	**.25323**	**.58920**	**.19210**	**6.1839**
Stddev	.00077	.143	.00120	.0174	.00229	.00307	.00521	.0166
%RSD	.15657	.51246	.48516	.34961	.90398	.52127	2.7113	.26856
#1	.49134	27.794	.24629	4.9649	.25140	.59247	.19489	6.1762
#2	.49072	28.024	.24614	4.9590	.25580	.58637	.18609	6.1725
#3	.49225	28.057	.24829	4.9916	.25250	.58878	.19533	6.2029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703109402PS Acquired: 3/27/2017 12:16:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607757-01

Elem	Sn1899	Sr4077	Ti3372	TI1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50632**	**.64505**	**.50051**	**.25330**	**.50032**	**.49237**	**.13919**
Stddev	.00104	.00340	.00516	.00241	.00269	.00058	.52294
%RSD	.20623	.52701	1.0314	.95329	.53856	.11864	375.70
#1	.50516	.64157	.49821	.25609	.50218	.49197	.62806
#2	.50664	.64836	.50642	.25196	.50154	.49209	-.41219
#3	.50717	.64523	.49689	.25185	.49723	.49304	.20170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11652.**	**77352.**	**2786.5**
Stddev	44.	825.	9.1
%RSD	.37720	1.0667	.32572
#1	11634.	77960.	2796.2
#2	11620.	77684.	2785.3
#3	11702.	76413.	2778.2

Approved: March 28, 2017

Sample Name: L1703109402SDL Acquired: 3/27/2017 12:20:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG607757-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00174**	**.02092**	**-.00205**	**.00523**	**.01209**	**.00005**	**9.8426**	**.00041**
Stddev	.00039	.00507	.00164	.00196	.00132	.00003	.0783	.00019
%RSD	22.659	24.241	79.605	37.507	10.916	69.334	.79597	47.409
#1	-.00219	.01515	-.00318	.00583	.01352	.00006	9.8113	.00062
#2	-.00159	.02295	-.00280	.00304	.01184	.00001	9.9317	.00023
#3	-.00144	.02467	-.00018	.00682	.01092	.00007	9.7847	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.00114**	**-.00007**	**.06347**	**.17645**	**-.00061**	**1.4432**	**.00323**
Stddev	.00019	.00086	.00145	.02637	.08503	.00676	.0634	.00380
%RSD	133.03	75.178	2203.9	41.542	48.191	1104.3	4.3915	117.44
#1	.00034	.00188	.00148	.09360	.07981	.00038	1.5016	.00143
#2	.00012	.00134	-.00140	.04466	.23981	-.00781	1.3758	.00759
#3	-.00004	.00020	-.00028	.05213	.20973	.00560	1.4523	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.66288**	**-.00028**	**.00251**	**.00167**	**.00367**	**.00178**	**.83270**
Stddev	.00017	.05088	.00128	.00728	.00274	.00485	.00381	.00567
%RSD	521.48	7.6749	457.48	290.01	164.16	132.26	214.26	.68070
#1	-.00014	.71798	-.00023	-.00585	.00479	.00715	-.00252	.83762
#2	-.00012	.61769	-.00158	.00748	.00051	-.00187	.00314	.83399
#3	.00017	.65296	.00098	.00590	-.00030	.00573	.00472	.82650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703109402SDL Acquired: 3/27/2017 12:20:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG607757-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00080**	**.03245**	**-.00405**	**-.00376**	**.00046**	**.00156**	**.19056**
Stddev	.00103	.00015	.00652	.00250	.00062	.00014	.33443
%RSD	129.28	.47170	161.08	66.431	136.55	9.0743	175.50
#1	.00038	.03262	-.00050	-.00489	-.00026	.00144	.17476
#2	-.00152	.03234	-.00007	-.00550	.00088	.00172	.53261
#3	-.00126	.03238	-.01158	-.00090	.00075	.00154	-.13570
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11087.**	**75116.**	**2586.7**
Stddev	39.	963.	73.5
%RSD	.34954	1.2817	2.8430
#1	11055.	75800.	2660.4
#2	11130.	74015.	2513.3
#3	11077.	75532.	2586.5

Approved: March 28, 2017

Sample Name: L1703109402SDL Acquired: 3/27/2017 12:24:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG607757-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00287**	**.00720**	**-.00064**	**.00004**	**.00373**	**.00003**	**1.9822**
Stddev	.00064	.00113	.00069	.00446	.00021	.00008	.0289
%RSD	22.422	15.741	108.92	10059.	5.6358	308.42	1.4565
#1	-.00335	.00701	-.00104	.00519	.00348	-.00003	1.9920
#2	-.00312	.00618	-.00103	-.00238	.00386	-.00001	1.9497
#3	-.00214	.00842	.00016	-.00267	.00383	.00011	2.0049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**.00024**	**.00122**	**.00014**	F **-.02349**	**.10418**	**-.00448**
Stddev	.00001	.00032	.00028	.00131	.03459	.01809	.00597
%RSD	6.6034	132.60	22.947	944.31	147.24	17.368	133.34
#1	.00019	.00024	.00151	.00099	.01561	.10459	-.00257
#2	.00018	-.00008	.00095	.00079	-.05011	.08588	-.01117
#3	.00016	.00057	.00118	-.00136	-.03598	.12206	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					810.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22367**	**.00294**	**-.00002**	**.10268**	**-.00046**	**-.00387**	**-.00215**
Stddev	.06457	.00098	.00004	.07066	.00030	.01048	.00231
%RSD	28.869	33.476	206.14	68.814	64.903	270.47	107.76
#1	.16797	.00273	-.00007	.03744	-.00049	.00523	-.00366
#2	.20861	.00400	-.00000	.09286	-.00074	-.00153	.00052
#3	.29445	.00207	.00001	.17773	-.00015	-.01532	-.00329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: L1703109402SDL Acquired: 3/27/2017 12:24:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG607757-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00226**	**.00157**	**.18211**	**-.00079**	**.00655**	**-.00064**	**-.00050**
Stddev	.00537	.00788	.00360	.00003	.00073	.01210	.00261
%RSD	237.39	502.94	1.9756	3.4169	11.189	1888.0	525.54
#1	.00063	.00947	.17887	-.00076	.00573	-.01361	-.00028
#2	-.00210	.00153	.18148	-.00080	.00680	.01035	-.00321
#3	.00826	-.00629	.18598	-.00081	.00713	.00133	.00200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00027**	**.00078**	**.07687**
Stddev	.00080	.00009	.77769
%RSD	300.56	11.911	1011.7
#1	.00057	.00078	-.24957
#2	-.00035	.00087	.96458
#3	-.00102	.00068	-.48440
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11029.**	**75548.**	**2678.0**
Stddev	254.	107.	26.8
%RSD	2.3035	.14159	.99996
#1	10736.	75433.	2649.6
#2	11182.	75644.	2681.4
#3	11169.	75568.	2702.8

Approved: March 28, 2017

Sample Name: CCV Acquired: 3/27/2017 12:27:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41953**	**10.588**	**.41513**	**.52733**	**1.0328**	**.05188**	**10.287**
Stddev	.00148	.045	.00325	.00291	.0043	.00042	.037
%RSD	.35201	.42079	.78216	.55168	.42030	.80755	.36297
#1	.41839	10.571	.41736	.52882	1.0324	.05209	10.306
#2	.41900	10.554	.41140	.52398	1.0286	.05140	10.244
#3	.42120	10.638	.41662	.52919	1.0373	.05216	10.312
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05210**	**.20863**	**.52253**	**.52395**	**4.1324**	**50.900**	**1.0294**
Stddev	.00017	.00054	.00247	.00111	.0347	.378	.0064
%RSD	.31756	.26032	.47200	.21174	.83903	.74323	.61811
#1	.05200	.20923	.52416	.52518	4.1030	51.092	1.0221
#2	.05201	.20848	.51969	.52303	4.1235	50.464	1.0323
#3	.05229	.20817	.52372	.52363	4.1706	51.143	1.0338
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.372**	**.51562**	**1.0320**	**51.116**	**.52295**	**10.378**	**.52346**
Stddev	.048	.00129	.0006	.268	.00061	.034	.00303
%RSD	.46423	.25028	.06009	.52475	.11739	.32282	.57879
#1	10.414	.51707	1.0320	51.082	.52365	10.415	.51999
#2	10.319	.51519	1.0327	50.867	.52265	10.369	.52486
#3	10.383	.51460	1.0314	51.400	.52253	10.350	.52554
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 28, 2017

Sample Name: CCV Acquired: 3/27/2017 12:27:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2320**	**.41308**	**5.1826**	**1.0357**	**1.0376**	**1.0196**	**.52657**
Stddev	.0037	.00363	.0168	.0033	.0008	.0095	.00376
%RSD	.29946	.87996	.32346	.32113	.07956	.93467	.71392
#1	1.2362	.40909	5.2019	1.0386	1.0372	1.0283	.53021
#2	1.2294	.41621	5.1716	1.0364	1.0371	1.0094	.52270
#3	1.2303	.41393	5.1744	1.0321	1.0386	1.0211	.52680
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0404**	**1.0417**	F **1.1071**
Stddev	.0031	.0018	.2561
%RSD	.29800	.16824	23.128
#1	1.0414	1.0424	.84958
#2	1.0369	1.0431	1.3616
#3	1.0428	1.0397	1.1100
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11103.**	**74866.**	**2733.2**
Stddev	102.	320.	43.3
%RSD	.91443	.42719	1.5841
#1	11174.	74854.	2687.6
#2	10986.	74552.	2738.2
#3	11148.	75191.	2773.8

Approved: March 28, 2017

Sample Name: CCB Acquired: 3/27/2017 12:31:27 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00171**	**-.00548**	**.00093**	**.00308**	**-.00034**	**-.00002**	**.02592**
Stddev	.00100	.00601	.00242	.00228	.00124	.00006	.06502
%RSD	58.191	109.63	260.88	74.218	368.28	326.46	250.89
#1	-.00056	-.00018	.00372	.00565	.00015	-.00003	.04601
#2	-.00230	-.01202	-.00049	.00231	.00058	-.00007	-.04678
#3	-.00228	-.00425	-.00045	.00128	-.00175	.00005	.07852
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.00002**	**.00151**	**-.00137**	**-.00763**	**.08708**	**-.00714**
Stddev	.00011	.00018	.00018	.00143	.02005	.15590	.00406
%RSD	195.88	752.30	11.790	104.31	262.74	179.04	56.892
#1	-.00018	-.00017	.00146	.00002	.00970	.17611	-.00924
#2	.00001	.00004	.00170	-.00283	-.02959	.17805	-.00973
#3	.00000	.00020	.00136	-.00130	-.00300	-.09294	-.00246
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.07504**	**.00331**	**-.00023**	**.01886**	**.00006**	**-.00152**	**-.00007**
Stddev	.03096	.00320	.00007	.04376	.00050	.00286	.00308
%RSD	41.260	96.811	32.575	232.01	858.22	187.74	4421.3
#1	-.08458	.00421	-.00031	-.00068	.00056	-.00402	.00328
#2	-.10010	.00596	-.00022	.06899	.00005	.00160	-.00071
#3	-.04043	-.00025	-.00016	-.01172	-.00044	-.00216	-.00279
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: CCB Acquired: 3/27/2017 12:31:27 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00392**	**-.00242**	**.00873**	**-.00012**	**.00027**	**-.00631**	**-.00060**
Stddev	.00168	.00644	.00246	.00053	.00025	.01367	.00232
%RSD	42.769	265.61	28.205	459.12	91.786	216.71	387.08
#1	.00544	.00366	.00717	.00039	.00011	-.01812	-.00233
#2	.00212	-.00917	.01157	-.00067	.00015	-.00946	.00204
#3	.00419	-.00177	.00746	-.00006	.00056	.00866	-.00151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00012**	**.00012**	F **.13891**
Stddev	.00083	.00006	.55737
%RSD	707.85	46.880	401.25
#1	.00104	.00018	-.00011
#2	-.00055	.00006	-.33580
#3	-.00014	.00012	.75263
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10883.**	**75969.**	**2688.8**
Stddev	32.	1558.	26.8
%RSD	.29786	2.0511	.99772
#1	10852.	77721.	2671.5
#2	10916.	75449.	2675.3
#3	10880.	74738.	2719.7

Approved: March 28, 2017

Sample Name: L1703109403 Acquired: 3/27/2017 12:35:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00059**	**.04547**	**-.00407**	**.01192**	**.03562**	**.00000**	**53.296**	**.00046**
Stddev	.00134	.00605	.00211	.00041	.00222	.00004	.233	.00003
%RSD	228.77	13.300	51.818	3.4188	6.2407	1648.9	.43742	7.4797
#1	.00023	.05178	-.00373	.01239	.03398	-.00001	53.313	.00049
#2	.00014	.03972	-.00215	.01172	.03473	-.00003	53.054	.00044
#3	-.00214	.04490	-.00632	.01165	.03815	.00004	53.520	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**.00117**	**.00047**	**.00399**	**.80725**	**.00243**	**7.2400**	**.00366**
Stddev	.00012	.00152	.00053	.00564	.10864	.00425	.0655	.00250
%RSD	512.19	129.39	112.93	141.42	13.458	175.22	.90519	68.261
#1	-.00005	.00287	-.00013	-.00225	.91159	.00672	7.2986	.00196
#2	.00016	.00073	.00064	.00875	.81539	-.00178	7.1692	.00653
#3	-.00004	-.00007	.00089	.00547	.69478	.00234	7.2521	.00249
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**3.1480**	**.00023**	**.00207**	**.00125**	**.00283**	**.00227**	**3.8777**
Stddev	.00046	.0382	.00114	.00551	.00422	.00445	.00922	.0097
%RSD	259.23	1.2134	490.46	266.59	338.76	157.35	405.73	.25089
#1	-.00014	3.1718	.00134	-.00388	.00155	.00788	.00076	3.8666
#2	.00070	3.1039	.00028	.00309	.00531	-.00045	-.00610	3.8847
#3	-.00004	3.1683	-.00093	.00699	-.00312	.00104	.01215	3.8818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703109403 Acquired: 3/27/2017 12:35:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.13780**	**-.01123**	**.00000**	**-.00005**	**.00155**	**.12955**
Stddev	.00064	.00032	.00381	.00095	.00032	.00010	.49939
%RSD	371.52	.23370	33.957	32139.	605.75	6.4392	385.48
#1	.00022	.13773	-.00691	.00032	-.00038	.00165	-.40318
#2	.00018	.13752	-.01413	-.00107	-.00003	.00146	.58707
#3	-.00090	.13816	-.01265	.00075	.00026	.00153	.20476
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11531.**	**78200.**	**2826.5**
Stddev	60.	495.	57.7
%RSD	.51868	.63294	2.0425
#1	11576.	77652.	2858.6
#2	11555.	78614.	2861.1
#3	11463.	78334.	2759.9

Approved: March 28, 2017

Sample Name: L1703109404 Acquired: 3/27/2017 12:39:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00185**	**.01126**	**.00033**	**.01447**	**.04723**	**-.00015**	**58.184**	**.00020**
Stddev	.00074	.00136	.00231	.00241	.00175	.00006	.458	.00010
%RSD	40.117	12.120	705.97	16.669	3.7093	41.620	.78767	47.508
#1	-.00101	.00968	.00290	.01612	.04924	-.00022	58.538	.00030
#2	-.00211	.01205	-.00157	.01170	.04604	-.00014	58.347	.00019
#3	-.00243	.01204	-.00035	.01558	.04640	-.00009	57.666	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**.00159**	**-.00047**	**.02593**	**.71689**	**.00744**	**8.6587**	**.00299**
Stddev	.00023	.00016	.00110	.01581	.14696	.00464	.0783	.00057
%RSD	127.73	10.306	232.60	60.979	20.500	62.431	.90418	19.002
#1	.00023	.00161	.00074	.03816	.85012	.01193	8.7199	.00320
#2	.00038	.00142	-.00142	.03156	.74129	.00266	8.6857	.00235
#3	-.00007	.00174	-.00075	.00807	.55925	.00771	8.5705	.00343
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**3.5667**	**.00134**	**.00597**	**.00077**	**.00103**	**-.00058**	**3.9336**
Stddev	.00025	.0775	.00089	.00260	.00024	.00256	.00539	.0107
%RSD	2472.4	2.1738	66.538	43.595	31.214	249.90	930.25	.27275
#1	-.00009	3.5619	.00173	.00756	.00104	-.00128	.00501	3.9271
#2	.00027	3.6466	.00198	.00738	.00071	.00058	-.00573	3.9460
#3	-.00021	3.4917	.00032	.00297	.00057	.00378	-.00102	3.9276
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703109404 Acquired: 3/27/2017 12:39:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.18197**	**-.00901**	**-.00269**	**-.00072**	**.00125**	**.66573**
Stddev	.00027	.00268	.01080	.00149	.00029	.00002	.71202
%RSD	358.04	1.4713	119.95	55.359	40.222	1.8993	106.95
#1	-.00028	.18346	-.02025	-.00125	-.00074	.00123	-.15015
#2	.00023	.18357	-.00806	-.00423	-.00101	.00128	.98576
#3	-.00018	.17888	.00129	-.00260	-.00042	.00125	1.1616
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11608.**	**78361.**	**2903.2**
Stddev	14.	768.	22.0
%RSD	.12286	.97998	.75776
#1	11622.	78514.	2918.4
#2	11594.	79041.	2878.0
#3	11608.	77528.	2913.2

Approved: March 28, 2017

Sample Name: L1703109405 Acquired: 3/27/2017 12:42:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00089**	**.01557**	**-.00346**	**.01815**	**.06990**	**-.00009**	**51.993**	**.00019**
Stddev	.00174	.00468	.00194	.00106	.00042	.00006	.163	.00029
%RSD	195.76	30.054	56.112	5.8650	.60447	66.374	.31419	148.40
#1	.00065	.01353	-.00564	.01824	.07035	-.00012	52.160	-.00000
#2	-.00054	.02093	-.00190	.01917	.06952	-.00013	51.833	.00052
#3	-.00278	.01226	-.00285	.01705	.06983	-.00002	51.985	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.00079**	**-.00039**	**.04197**	**.67264**	**.00369**	**10.663**	**.00288**
Stddev	.00016	.00041	.00070	.03407	.15764	.00516	.103	.00283
%RSD	174.81	52.497	179.09	81.177	23.437	139.87	.96596	98.177
#1	-.00028	.00106	-.00028	.00300	.71907	-.00068	10.567	.00415
#2	-.00000	.00100	.00025	.05683	.49699	.00237	10.772	-.00036
#3	.00000	.00031	-.00114	.06610	.80185	.00938	10.651	.00486
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00068**	**7.4652**	**.00135**	**.00693**	**.00013**	**.00164**	**-.00107**	**3.5685**
Stddev	.00022	.0453	.00024	.00808	.00179	.00075	.00240	.0115
%RSD	32.362	.60628	18.018	116.57	1366.6	46.042	223.52	.32074
#1	.00064	7.5038	.00112	.01534	.00097	.00142	.00059	3.5557
#2	.00092	7.4154	.00160	.00624	.00134	.00102	.00001	3.5777
#3	.00048	7.4763	.00133	-.00078	-.00192	.00248	-.00382	3.5721
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703109405 Acquired: 3/27/2017 12:42:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**.27957**	**-.00384**	**.00052**	**-.00040**	**.00202**	**.46287**
Stddev	.00068	.00094	.00256	.00279	.00067	.00010	.18066
%RSD	201.30	.33636	66.680	535.55	167.89	5.0051	39.030
#1	-.00006	.28064	-.00097	.00363	-.00118	.00193	.26078
#2	.00016	.27919	-.00590	-.00029	.00001	.00213	.60871
#3	-.00111	.27887	-.00464	-.00177	-.00004	.00199	.51913
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11849.**	**80330.**	**2942.3**
Stddev	80.	1408.	38.4
%RSD	.67902	1.7527	1.3035
#1	11848.	78827.	2952.7
#2	11770.	80544.	2899.8
#3	11931.	81619.	2974.3

Approved: March 28, 2017

Sample Name: L1703109406 Acquired: 3/27/2017 12:46:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00132**	**.03538**	**-.00254**	**.01236**	**.04296**	**-.00008**	**33.294**	**.00046**
Stddev	.00159	.00730	.00324	.00322	.00048	.00008	.259	.00016
%RSD	120.37	20.630	127.56	26.024	1.1113	92.660	.77909	35.109
#1	-.00185	.04320	-.00553	.01109	.04248	-.00014	32.995	.00063
#2	.00047	.02876	-.00298	.01601	.04343	.00000	33.430	.00031
#3	-.00258	.03418	.00090	.00997	.04298	-.00011	33.457	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00143**	**.00061**	**.04567**	**.88877**	**.00399**	**5.6434**	**.00380**
Stddev	.00015	.00042	.00089	.00134	.14430	.00555	.0896	.00086
%RSD	185.65	29.394	146.46	2.9332	16.236	139.07	1.5880	22.502
#1	.00022	.00184	.00010	.04427	.78984	.01017	5.5413	.00325
#2	.00010	.00100	.00009	.04581	.82213	.00236	5.6801	.00336
#3	-.00008	.00144	.00164	.04694	1.0543	-.00056	5.7089	.00479
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**3.8811**	**.00073**	**.00738**	**.00288**	**-.00058**	**.00025**	**2.9725**
Stddev	.00021	.0650	.00080	.00175	.00331	.00261	.00109	.0054
%RSD	13493.	1.6747	109.72	23.674	114.79	450.36	428.70	.18095
#1	-.00021	3.8061	.00071	.00548	.00646	.00203	-.00036	2.9695
#2	.00022	3.9178	-.00006	.00776	-.00007	-.00318	.00151	2.9693
#3	-.00001	3.9196	.00153	.00891	.00226	-.00059	-.00038	2.9787
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703109406 Acquired: 3/27/2017 12:46:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.13180**	**-.00176**	**-.00104**	**-.00004**	**.00118**	**1.0420**
Stddev	.00056	.00120	.00738	.00156	.00027	.00011	.5266
%RSD	506.83	.90932	420.32	149.71	618.16	8.9835	50.541
#1	.00054	.13043	-.00996	.00062	-.00001	.00106	1.3365
#2	-.00047	.13231	.00433	-.00246	-.00033	.00127	1.3554
#3	-.00040	.13267	.00036	-.00128	.00021	.00120	.43398
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11898.**	**79928.**	**2932.0**
Stddev	116.	963.	40.9
%RSD	.97200	1.2051	1.3955
#1	11775.	79450.	2886.0
#2	11915.	79297.	2964.4
#3	12005.	81037.	2945.6

Approved: March 28, 2017

Sample Name: L1703109407 Acquired: 3/27/2017 12:50:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00124**	**.09217**	**-.00121**	**.01264**	**.05117**	**-.00009**	**38.117**	**.00003**
Stddev	.00229	.00259	.00157	.00170	.00083	.00003	.199	.00033
%RSD	185.31	2.8076	130.08	13.431	1.6141	32.430	.52152	1025.7
#1	.00052	.09485	-.00143	.01417	.05155	-.00013	38.078	-.00022
#2	-.00040	.09197	.00046	.01081	.05174	-.00008	38.333	.00040
#3	-.00382	.08969	-.00265	.01294	.05022	-.00007	37.941	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00020**	**.00074**	**.20154**	**.79880**	**.00371**	**6.5921**	**.05551**
Stddev	.00044	.00031	.00121	.00703	.02598	.00233	.0554	.00111
%RSD	544.17	157.34	164.80	3.4874	3.2522	62.876	.84116	2.0048
#1	.00007	.00016	.00115	.19346	.80658	.00125	6.5285	.05654
#2	.00052	-.00009	-.00063	.20621	.76982	.00400	6.6171	.05566
#3	-.00035	.00053	.00169	.20496	.81999	.00588	6.6306	.05433
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**4.3447**	**.00087**	**.00496**	**.00204**	**.00025**	**-.00321**	**3.2889**
Stddev	.00015	.0644	.00042	.00208	.00407	.00247	.00670	.0031
%RSD	92.375	1.4813	48.248	41.986	199.09	988.52	208.90	.09396
#1	.00020	4.2772	.00066	.00411	.00602	.00043	.00162	3.2857
#2	-.00000	4.4054	.00059	.00344	.00221	-.00230	-.01087	3.2918
#3	.00028	4.3514	.00135	.00733	-.00210	.00262	-.00038	3.2893
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703109407 Acquired: 3/27/2017 12:50:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00042**	**.16581**	**.00193**	**.00138**	**.00030**	**.00173**	**.61611**
Stddev	.00073	.00028	.01086	.00259	.00044	.00007	.16650
%RSD	175.24	.16609	563.25	187.93	146.07	3.9653	27.024
#1	-.00100	.16552	-.00999	.00380	-.00010	.00170	.76961
#2	-.00065	.16607	.00454	-.00135	.00023	.00180	.43911
#3	.00040	.16585	.01124	.00169	.00078	.00167	.63962
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11980.**	**80120.**	**2900.2**
Stddev	93.	202.	8.0
%RSD	.77517	.25267	.27483
#1	11883.	80048.	2893.2
#2	11989.	79963.	2898.6
#3	12068.	80348.	2908.9

Approved: March 28, 2017

Sample Name: L1703109501 Acquired: 3/27/2017 12:54:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00261**	**.04298**	**-.00163**	**.02193**	**.11952**	**-.00008**	**51.344**	**.00018**
Stddev	.00168	.00795	.00237	.00130	.00233	.00003	.299	.00032
%RSD	64.445	18.491	145.25	5.9123	1.9512	36.838	.58153	179.14
#1	-.00370	.05089	-.00362	.02155	.11690	-.00010	51.114	-.00014
#2	-.00067	.03499	.00099	.02086	.12027	-.00005	51.236	.00018
#3	-.00346	.04305	-.00226	.02337	.12138	-.00008	51.681	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**.00128**	**.00291**	**.09483**	**1.5799**	**.00268**	**18.509**	**.00462**
Stddev	.00030	.00033	.00070	.03363	.0943	.00276	.132	.00370
%RSD	264.05	26.048	24.151	35.464	5.9661	102.89	.71293	80.043
#1	.00012	.00138	.00346	.07583	1.4770	.00157	18.360	.00586
#2	.00041	.00090	.00212	.13366	1.6620	.00583	18.610	.00046
#3	-.00019	.00154	.00315	.07499	1.6007	.00066	18.558	.00755
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**5.8178**	**.00090**	**-.00336**	**.00099**	**.00161**	**-.00399**	**3.5616**
Stddev	.00020	.0640	.00017	.00450	.00265	.00209	.00125	.0047
%RSD	2335.2	1.1009	18.627	133.95	268.72	129.92	31.267	.13330
#1	.00022	5.7862	.00087	-.00669	.00402	.00401	-.00485	3.5614
#2	-.00009	5.7756	.00075	-.00515	-.00085	.00026	-.00256	3.5570
#3	-.00016	5.8915	.00108	.00176	-.00021	.00055	-.00456	3.5665
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703109501 Acquired: 3/27/2017 12:54:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00043**	**.21041**	**-.00833**	**-.00106**	**-.00091**	**.01219**	**.52755**
Stddev	.00060	.00105	.00237	.00028	.00056	.00008	.63090
%RSD	138.77	.49807	28.423	26.818	62.164	.65978	119.59
#1	-.00112	.20920	-.01058	-.00093	-.00131	.01215	-.19768
#2	-.00018	.21107	-.00586	-.00086	-.00026	.01228	.94992
#3	.00000	.21096	-.00853	-.00138	-.00116	.01213	.83040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11703.**	**79357.**	**2889.7**
Stddev	93.	81.	41.1
%RSD	.79494	.10249	1.4211
#1	11595.	79436.	2850.8
#2	11759.	79363.	2885.7
#3	11754.	79273.	2932.6

Approved: March 28, 2017

Sample Name: L1703109502 Acquired: 3/27/2017 12:57:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00239**	**.13639**	**-.00345**	**.01595**	**.05824**	**-.00015**	**59.386**	**.00039**
Stddev	.00128	.00563	.00069	.00108	.00102	.00007	.315	.00005
%RSD	53.730	4.1301	19.873	6.8013	1.7579	46.445	.53088	12.931
#1	-.00329	.13488	-.00267	.01473	.05755	-.00007	59.023	.00044
#2	-.00295	.14262	-.00397	.01634	.05776	-.00018	59.589	.00039
#3	-.00092	.13166	-.00371	.01679	.05942	-.00019	59.547	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**.00179**	**.00100**	**.13866**	**1.1003**	**.00296**	**14.894**	**.00917**
Stddev	.00053	.00058	.00071	.02507	.0398	.00772	.140	.00259
%RSD	237.76	32.191	71.020	18.084	3.6190	261.17	.94035	28.283
#1	.00083	.00204	.00046	.16681	1.0561	.01125	14.742	.00671
#2	.00001	.00113	.00181	.11871	1.1116	-.00402	15.019	.01188
#3	-.00017	.00221	.00074	.13046	1.1333	.00163	14.920	.00892
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00092**	**5.6907**	**.00045**	**.01111**	**-.00052**	**.00266**	**-.00154**	**3.4330**
Stddev	.00012	.0314	.00106	.00212	.00319	.00287	.00672	.0115
%RSD	12.873	.55133	238.61	19.068	618.58	107.89	435.43	.33388
#1	.00080	5.6805	.00021	.01045	.00057	.00256	.00201	3.4345
#2	.00091	5.7259	.00161	.00939	-.00411	.00558	.00266	3.4437
#3	.00104	5.6657	-.00048	.01347	.00199	-.00016	-.00929	3.4209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703109502 Acquired: 3/27/2017 12:57:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00078**	**.17225**	**-.00365**	**-.00046**	**.00063**	**.00212**	**.46480**
Stddev	.00035	.00087	.00236	.00095	.00082	.00019	.10109
%RSD	45.315	.50364	64.626	207.13	129.16	8.9886	21.749
#1	-.00066	.17178	-.00424	.00064	.00158	.00232	.55674
#2	-.00118	.17325	-.00567	-.00105	.00012	.00195	.48113
#3	-.00050	.17172	-.00106	-.00097	.00020	.00209	.35654
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11772.**	**79805.**	**2943.1**
Stddev	81.	194.	66.1
%RSD	.68729	.24286	2.2459
#1	11679.	80029.	3005.4
#2	11825.	79691.	2873.8
#3	11812.	79695.	2950.1

Approved: March 28, 2017

Sample Name: L1703109503 Acquired: 3/27/2017 13:01:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00075**	**.07992**	**-.00303**	**.01498**	**.03006**	**-.00010**	**29.496**	**.00016**
Stddev	.00080	.00217	.00075	.00124	.00183	.00005	.113	.00016
%RSD	107.68	2.7193	24.776	8.2585	6.0765	43.783	.38478	102.33
#1	.00016	.08080	-.00290	.01625	.03023	-.00006	29.624	.00016
#2	-.00103	.07745	-.00235	.01378	.02815	-.00015	29.406	-.00000
#3	-.00137	.08152	-.00383	.01490	.03179	-.00010	29.458	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00021**	**.00111**	**-.00063**	**.06177**	**1.2013**	**.00239**	**8.9105**	**.01130**
Stddev	.00015	.00118	.00070	.01263	.0609	.00837	.0736	.00166
%RSD	72.615	105.70	111.97	20.448	5.0666	350.17	.82538	14.722
#1	.00038	.00193	-.00067	.05257	1.1599	.00602	8.9924	.01070
#2	.00015	-.00024	.00010	.05657	1.1727	-.00718	8.8501	.01318
#3	.00009	.00165	-.00130	.07617	1.2712	.00833	8.8892	.01002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**3.3803**	**.00066**	**-.00462**	**.00045**	**.00104**	**-.00116**	**3.1585**
Stddev	.00012	.0536	.00133	.00265	.00138	.00373	.00406	.0095
%RSD	120.77	1.5852	202.70	57.282	307.36	358.94	350.94	.29939
#1	.00003	3.3939	.00093	-.00161	.00195	.00521	.00188	3.1623
#2	.00003	3.3213	.00183	-.00658	.00014	-.00199	-.00577	3.1654
#3	.00024	3.4259	-.00079	-.00567	-.00075	-.00010	.00042	3.1477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703109503 Acquired: 3/27/2017 13:01:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**.10221**	**-.00322**	**-.00128**	**.00018**	**.00130**	**.19597**
Stddev	.00023	.00098	.00826	.00272	.00088	.00004	.70061
%RSD	50.308	.96355	256.74	213.26	487.33	3.4393	357.51
#1	-.00028	.10333	.00587	.00017	-.00081	.00132	.89345
#2	-.00037	.10151	-.01026	.00041	.00047	.00124	-.50774
#3	-.00071	.10177	-.00526	-.00442	.00088	.00132	.20221
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11901.**	**80192.**	**2943.4**
Stddev	129.	1119.	18.0
%RSD	1.0843	1.3959	.61317
#1	12032.	80965.	2937.7
#2	11896.	78909.	2929.0
#3	11774.	80703.	2963.7

Approved: March 28, 2017

Sample Name: L1703109504 Acquired: 3/27/2017 13:05:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00065**	**.15906**	**-.00200**	**.00687**	**.01963**	**-.00001**	**17.524**	**.00029**
Stddev	.00171	.00613	.00104	.00231	.00039	.00010	.291	.00022
%RSD	265.08	3.8562	52.036	33.577	1.9807	1000.5	1.6626	76.519
#1	-.00245	.15475	-.00320	.00611	.01993	.00002	17.330	.00018
#2	.00096	.16609	-.00144	.00504	.01976	.00007	17.382	.00054
#3	-.00045	.15636	-.00135	.00946	.01919	-.00012	17.859	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00096**	**-.00061**	**.09391**	**.11085**	**-.00057**	**2.9031**	**.00354**
Stddev	.00011	.00029	.00054	.01823	.18871	.00284	.0453	.00075
%RSD	276.60	30.355	89.662	19.407	170.24	498.65	1.5606	21.047
#1	.00006	.00064	-.00032	.09691	.31876	-.00384	2.8528	.00268
#2	-.00015	.00103	-.00123	.07438	-.04957	.00085	2.9406	.00392
#3	-.00003	.00121	-.00026	.11046	.06336	.00128	2.9161	.00402
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**1.7910**	**.00031**	**.00063**	**.00169**	**.00045**	**-.00207**	**3.5097**
Stddev	.00022	.0534	.00061	.00628	.00090	.00654	.00719	.0088
%RSD	100.05	2.9803	198.40	1004.1	53.352	1453.2	348.27	.25089
#1	-.00006	1.8449	.00040	.00414	.00117	-.00584	-.01031	3.5079
#2	-.00046	1.7900	.00086	.00436	.00273	.00721	.00295	3.5019
#3	-.00012	1.7382	-.00034	-.00663	.00116	-.00002	.00116	3.5192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703109504 Acquired: 3/27/2017 13:05:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00043**	**.05865**	**-.00057**	**.00067**	**.00004**	**.00132**	**.44077**
Stddev	.00067	.00068	.01004	.00300	.00086	.00004	.36237
%RSD	156.47	1.1624	1761.7	445.61	2419.6	3.2875	82.213
#1	-.00079	.05819	-.01178	.00257	-.00077	.00132	.62853
#2	.00035	.05832	.00250	-.00278	.00095	.00127	.67074
#3	-.00085	.05943	.00758	.00223	-.00007	.00136	.02305
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12183.**	**82853.**	**2985.1**
Stddev	66.	326.	35.6
%RSD	.53916	.39303	1.1923
#1	12234.	83141.	3005.7
#2	12109.	82500.	3005.6
#3	12206.	82918.	2944.0

Approved: March 28, 2017

Sample Name: L1703116301 Acquired: 3/27/2017 13:08:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00047**	**.04130**	**-.00328**	**.01100**	**.04409**	**-.00010**	**28.897**	**.00034**
Stddev	.00289	.00585	.00282	.00145	.00247	.00004	.072	.00018
%RSD	615.02	14.161	85.779	13.192	5.6011	39.891	.24950	53.107
#1	-.00206	.04033	-.00460	.00945	.04662	-.00014	28.836	.00043
#2	.00362	.03600	-.00005	.01233	.04396	-.00006	28.977	.00046
#3	-.00015	.04757	-.00520	.01124	.04168	-.00010	28.879	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**.00099**	**-.00059**	**.03226**	**.50524**	**.00106**	**7.9148**	**.00280**
Stddev	.00027	.00150	.00046	.00741	.13738	.00326	.0383	.00298
%RSD	247.83	151.89	77.766	22.977	27.191	309.11	.48379	106.40
#1	-.00017	-.00068	-.00093	.02472	.36058	-.00119	7.8982	-.00064
#2	.00014	.00140	-.00007	.03954	.52119	-.00044	7.8876	.00452
#3	.00035	.00224	-.00077	.03253	.63395	.00480	7.9586	.00452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00067**	**3.0527**	**.00114**	**.00474**	**-.00184**	**-.00009**	**-.00325**	**2.6690**
Stddev	.00041	.0482	.00045	.00414	.00303	.00454	.00297	.0031
%RSD	60.694	1.5801	39.666	87.315	165.21	5302.4	91.427	.11574
#1	.00106	3.0406	.00161	.00695	.00141	-.00190	-.00616	2.6689
#2	.00070	3.0117	.00108	-.00003	-.00233	.00509	-.00022	2.6660
#3	.00025	3.1059	.00072	.00729	-.00459	-.00344	-.00337	2.6721
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703116301 Acquired: 3/27/2017 13:08:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**.16327**	**.00283**	**-.00170**	**.00027**	**.00222**	**.32555**
Stddev	.00043	.00037	.00236	.00096	.00078	.00022	.45815
%RSD	173.89	.22455	83.317	56.596	291.27	10.002	140.73
#1	-.00072	.16297	.00076	-.00214	.00101	.00217	.84563
#2	-.00012	.16317	.00233	-.00236	-.00055	.00203	.14941
#3	.00011	.16368	.00540	-.00060	.00035	.00247	-.01838
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11986.**	**81145.**	**2916.3**
Stddev	72.	633.	22.0
%RSD	.60056	.78056	.75395
#1	12037.	81232.	2891.0
#2	12019.	81731.	2930.2
#3	11904.	80473.	2927.9

Approved: March 28, 2017

Sample Name: CCV Acquired: 3/27/2017 13:12:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42120**	**10.620**	**.41447**	**.52459**	**1.0351**	**.05197**	**10.292**
Stddev	.00203	.067	.00186	.00519	.0024	.00012	.054
%RSD	.48281	.63513	.44932	.98876	.23582	.22259	.52848
#1	.42132	10.624	.41234	.53057	1.0337	.05197	10.244
#2	.42317	10.686	.41530	.52178	1.0379	.05209	10.351
#3	.41911	10.551	.41577	.52141	1.0337	.05186	10.280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05223**	**.20858**	**.52227**	**.52660**	**4.1298**	**50.475**	**1.0329**
Stddev	.00039	.00013	.00286	.00240	.0120	.186	.0061
%RSD	.74298	.06424	.54835	.45488	.29000	.36768	.58638
#1	.05193	.20844	.52009	.52588	4.1414	50.678	1.0398
#2	.05267	.20859	.52551	.52927	4.1306	50.433	1.0288
#3	.05209	.20870	.52120	.52465	4.1175	50.314	1.0300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.407**	**.51935**	**1.0360**	**50.531**	**.51997**	**10.373**	**.52414**
Stddev	.099	.00504	.0019	.163	.00145	.017	.00181
%RSD	.95573	.97044	.18059	.32223	.27832	.16742	.34461
#1	10.373	.52514	1.0340	50.526	.51835	10.354	.52332
#2	10.519	.51593	1.0363	50.696	.52111	10.375	.52621
#3	10.330	.51697	1.0377	50.370	.52047	10.389	.52290
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 28, 2017

Sample Name: CCV Acquired: 3/27/2017 13:12:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2311**	**.42805**	**5.1570**	**1.0375**	**1.0413**	**1.0286**	**.52918**
Stddev	.0036	.00419	.0023	.0039	.0010	.0068	.00309
%RSD	.29399	.97864	.04521	.37965	.09849	.66100	.58377
#1	1.2274	.42323	5.1588	1.0370	1.0404	1.0364	.52801
#2	1.2346	.43079	5.1578	1.0416	1.0424	1.0240	.53268
#3	1.2314	.43013	5.1543	1.0337	1.0410	1.0254	.52684
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0374**	**1.0389**	F **1.2657**
Stddev	.0044	.0032	.4038
%RSD	.42460	.30969	31.907
#1	1.0392	1.0360	.86146
#2	1.0406	1.0424	1.6691
#3	1.0324	1.0383	1.2664
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11197.**	**76437.**	**2899.8**
Stddev	236.	761.	34.0
%RSD	2.1064	.99562	1.1711
#1	11416.	76446.	2928.9
#2	10947.	75671.	2862.5
#3	11229.	77193.	2907.9

Approved: March 28, 2017

Sample Name: CCB Acquired: 3/27/2017 13:16:18 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00211**	**.00249**	**-.00118**	**.00297**	**-.00145**	**-.00001**	**.01673**
Stddev	.00084	.00274	.00342	.00175	.00194	.00003	.02938
%RSD	39.949	109.83	289.93	58.940	133.73	213.80	175.62
#1	-.00114	.00154	-.00432	.00237	.00013	.00000	.00664
#2	-.00254	.00036	.00247	.00160	-.00362	.00000	-.00627
#3	-.00266	.00558	-.00170	.00494	-.00087	-.00005	.04983
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.00041**	**.00114**	**-.00060**	**-.00436**	**.11846**	**-.00016**
Stddev	.00026	.00003	.00064	.00134	.02529	.07204	.00148
%RSD	18646.	6.8591	55.651	223.08	580.22	60.808	948.27
#1	.00027	.00040	.00042	.00066	.01058	.17480	.00037
#2	-.00024	.00038	.00162	-.00046	-.03356	.03730	.00099
#3	-.00003	.00044	.00139	-.00200	.00991	.14329	-.00183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00333**	**.00104**	**.00040**	**.03960**	**.00013**	**-.00124**	**.00109**
Stddev	.09679	.00071	.00024	.04871	.00046	.00342	.00240
%RSD	2907.9	68.193	59.177	123.01	351.35	276.41	220.93
#1	.04948	.00106	.00038	-.01582	.00035	-.00133	.00200
#2	-.11503	.00174	.00017	.07566	-.00040	-.00462	-.00164
#3	.05556	.00032	.00064	.05897	.00044	.00223	.00290
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: CCB Acquired: 3/27/2017 13:16:18 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00210**	**-.00475**	**.00664**	**.00028**	**.00064**	**-.00472**	**-.00247**
Stddev	.00465	.00326	.00096	.00019	.00082	.00503	.00188
%RSD	221.93	68.603	14.495	67.890	128.82	106.57	76.158
#1	-.00103	-.00851	.00610	.00048	.00026	-.00618	-.00144
#2	.00745	-.00270	.00775	.00011	.00008	-.00886	-.00133
#3	-.00012	-.00304	.00607	.00025	.00159	.00088	-.00465
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00023**	**.00017**	F **-.05678**
Stddev	.00048	.00009	.17261
%RSD	208.02	49.348	304.02
#1	-.00032	.00014	-.22125
#2	.00045	.00027	.12296
#3	.00055	.00011	-.07204
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11559.**	**77909.**	**2842.3**
Stddev	84.	537.	70.4
%RSD	.72734	.68893	2.4778
#1	11617.	77390.	2761.0
#2	11463.	78462.	2879.6
#3	11597.	77875.	2886.1

Approved: March 28, 2017

Sample Name: L1703116801 Acquired: 3/27/2017 13:20:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00242**	**.00295**	**-.00174**	**.01815**	**.12416**	**-.00012**	**64.455**
Stddev	.00153	.00358	.00095	.00200	.00024	.00012	.298
%RSD	63.221	121.43	54.659	11.033	.19099	103.06	.46264
#1	-.00087	.00664	-.00065	.02031	.12438	-.00018	64.792
#2	-.00393	-.00051	-.00215	.01635	.12421	-.00020	64.346
#3	-.00247	.00271	-.00241	.01778	.12391	.00002	64.226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.00001**	**.00182**	**.00432**	**.01189**	**1.3272**	**.00494**
Stddev	.00042	.00044	.00054	.00034	.02469	.0719	.00388
%RSD	289.15	4477.5	29.899	7.9376	207.63	5.4153	78.590
#1	.00023	.00046	.00229	.00449	-.01607	1.4100	.00047
#2	.00051	-.00043	.00195	.00455	.02106	1.2820	.00694
#3	-.00031	.00000	.00122	.00393	.03068	1.2894	.00741
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**12.316**	**.00645**	**.00087**	**6.1081**	**.00108**	**-.00665**	**-.00052**
Stddev	.148	.00183	.00017	.0554	.00061	.00396	.00326
%RSD	1.2017	28.429	19.798	.90735	56.670	59.476	628.61
#1	12.477	.00538	.00067	6.1686	.00114	-.00560	-.00406
#2	12.185	.00856	.00093	6.0959	.00166	-.01102	.00237
#3	12.287	.00539	.00100	6.0598	.00044	-.00332	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: L1703116801 Acquired: 3/27/2017 13:20:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00201**	**-.00180**	**3.8991**	**.00044**	**.29758**	**-.00612**	**-.00072**
Stddev	.00521	.00440	.0084	.00028	.00190	.00963	.00168
%RSD	260.04	244.50	.21665	63.676	.63757	157.35	232.13
#1	-.00793	-.00582	3.8900	.00032	.29873	-.00247	.00087
#2	.00003	-.00249	3.9067	.00075	.29539	-.01704	-.00248
#3	.00188	.00291	3.9006	.00024	.29862	.00115	-.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00001**	**.00305**	F **-.19146**
Stddev	.00020	.00018	.29040
%RSD	2337.3	5.8931	151.68
#1	.00016	.00309	.05273
#2	-.00023	.00286	-.11453
#3	.00005	.00321	-.51257
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11888.**	**79778.**	**2967.1**
Stddev	122.	977.	74.7
%RSD	1.0222	1.2246	2.5166
#1	12024.	80651.	2965.3
#2	11792.	79960.	3042.7
#3	11847.	78723.	2893.4

Approved: March 28, 2017

Sample Name: L1703116802 Acquired: 3/27/2017 13:23:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00061**	**.51023**	**-.00377**	**.01183**	**.03488**	**-.00004**	**37.113**	**.00010**
Stddev	.00047	.00840	.00307	.00052	.00094	.00002	.045	.00004
%RSD	77.014	1.6470	81.427	4.4243	2.6962	61.081	.12021	45.679
#1	-.00009	.50992	-.00255	.01224	.03421	-.00006	37.134	.00005
#2	-.00099	.51879	-.00727	.01124	.03447	-.00001	37.144	.00013
#3	-.00075	.50199	-.00150	.01200	.03595	-.00005	37.062	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00029**	**.00140**	**.00085**	**.55505**	**.70935**	**.00094**	**6.6625**	**.08544**
Stddev	.00026	.00075	.00063	.02680	.12824	.00309	.0809	.00274
%RSD	89.364	53.070	74.896	4.8284	18.078	327.44	1.2143	3.2030
#1	.00027	.00210	.00064	.58043	.85371	.00342	6.5735	.08687
#2	.00004	.00062	.00156	.52703	.66570	.00193	6.7315	.08717
#3	.00055	.00150	.00034	.55769	.60863	-.00252	6.6826	.08229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00043**	**2.1642**	**.00202**	**.02162**	**-.00141**	**.00160**	**-.00270**	**2.7733**
Stddev	.00021	.0315	.00054	.00784	.00319	.00403	.00330	.0041
%RSD	48.383	1.4568	26.909	36.242	225.43	251.62	122.15	.14659
#1	.00043	2.2000	.00265	.01392	.00165	.00614	-.00402	2.7695
#2	.00022	2.1520	.00175	.02958	-.00471	.00025	.00105	2.7729
#3	.00064	2.1406	.00166	.02136	-.00119	-.00158	-.00513	2.7776
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703116802 Acquired: 3/27/2017 13:23:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00096**	**.10955**	**-.00301**	**-.00166**	**.00009**	**.00315**	**.95576**
Stddev	.00030	.00085	.00401	.00067	.00045	.00007	.44820
%RSD	31.675	.77523	133.24	40.341	527.42	2.0624	46.894
#1	-.00061	.10978	.00021	-.00116	-.00043	.00315	.87708
#2	-.00119	.10861	-.00174	-.00242	.00043	.00322	1.4381
#3	-.00107	.11026	-.00749	-.00140	.00026	.00309	.55211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11861.**	**79729.**	**3001.3**
Stddev	98.	651.	27.2
%RSD	.82903	.81637	.90622
#1	11972.	80475.	3000.9
#2	11827.	79277.	2974.3
#3	11784.	79434.	3028.6

Approved: March 28, 2017

Sample Name: L1703116803 Acquired: 3/27/2017 13:27:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00048**	**.79263**	**-.00215**	**.01081**	**.03141**	**-.00008**	**24.642**	**.00033**
Stddev	.00100	.00485	.00369	.00062	.00071	.00008	.038	.00004
%RSD	210.14	.61193	171.95	5.7287	2.2568	91.358	.15315	13.402
#1	.00036	.79760	-.00336	.01111	.03193	-.00000	24.647	.00037
#2	-.00021	.78791	.00200	.01122	.03060	-.00016	24.677	.00028
#3	-.00158	.79238	-.00508	.01009	.03170	-.00009	24.602	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00035**	**.00287**	**.00008**	**.94452**	**.55962**	**-.00203**	**4.3360**	**.02156**
Stddev	.00009	.00042	.00095	.02660	.14179	.00265	.0270	.00210
%RSD	24.866	14.499	1144.2	2.8165	25.336	130.90	.62157	9.7404
#1	.00028	.00267	.00050	.91491	.49957	-.00394	4.3646	.02052
#2	.00032	.00334	.00074	.95226	.45774	-.00315	4.3111	.02019
#3	.00044	.00258	-.00100	.96639	.72155	.00100	4.3323	.02398
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**1.8343**	**.00244**	**.02196**	**.00335**	**-.00119**	**-.00382**	**3.8780**
Stddev	.00018	.0483	.00039	.00167	.00210	.00301	.00280	.0399
%RSD	869.32	2.6308	15.897	7.6165	62.635	252.53	73.465	1.0296
#1	.00001	1.7793	.00200	.02390	.00404	.00177	-.00580	3.8932
#2	-.00015	1.8541	.00260	.02101	.00099	-.00110	-.00061	3.9081
#3	.00020	1.8696	.00272	.02099	.00501	-.00424	-.00504	3.8327
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703116803 Acquired: 3/27/2017 13:27:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.07124**	**.01167**	**-.00246**	**.00114**	**.00386**	**.39897**
Stddev	.00028	.00031	.00520	.00222	.00045	.00004	.59787
%RSD	86.278	.43322	44.579	90.353	39.585	1.0321	149.85
#1	-.00015	.07115	.01331	-.00174	.00083	.00384	.23124
#2	-.00065	.07158	.01586	-.00496	.00166	.00391	-.09712
#3	-.00017	.07098	.00585	-.00069	.00094	.00384	1.0628
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11948.**	**81230.**	**2934.9**
Stddev	58.	1158.	53.4
%RSD	.48906	1.4254	1.8202
#1	11887.	80174.	2961.6
#2	11954.	82468.	2969.6
#3	12003.	81048.	2873.4

Approved: March 28, 2017

Sample Name: L1703116804 Acquired: 3/27/2017 13:31:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00051**	**.13523**	**-.00043**	**.01269**	**.03033**	**-.00012**	**28.504**	**-.00001**
Stddev	.00071	.00491	.00130	.00236	.00093	.00004	.082	.00024
%RSD	139.39	3.6308	304.74	18.630	3.0651	30.238	.28786	2576.0
#1	-.00023	.13959	.00107	.01342	.03119	-.00008	28.592	-.00021
#2	.00119	.13619	-.00121	.01004	.03047	-.00015	28.430	.00026
#3	.00057	.12991	-.00114	.01459	.02934	-.00014	28.489	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**.00133**	**-.00014**	**.15569**	**1.0647**	**.00228**	**3.7239**	**.00810**
Stddev	.00022	.00044	.00019	.00792	.1041	.00088	.0678	.00086
%RSD	85.447	33.441	140.66	5.0846	9.7764	38.307	1.8193	10.651
#1	.00000	.00096	-.00036	.14905	1.1832	.00317	3.8011	.00757
#2	.00037	.00182	-.00003	.16445	.98805	.00142	3.6742	.00763
#3	.00041	.00120	-.00003	.15356	1.0229	.00226	3.6964	.00909
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**3.4289**	**.00186**	**.06676**	**-.00036**	**.00002**	**-.00086**	**3.8761**
Stddev	.00010	.0271	.00104	.00415	.00174	.00508	.00697	.0528
%RSD	109.88	.78933	55.951	6.2097	488.31	23528.	809.76	1.3632
#1	-.00002	3.4088	.00247	.06263	-.00172	-.00579	.00343	3.9085
#2	.00013	3.4181	.00066	.07092	.00161	.00220	-.00891	3.9047
#3	.00016	3.4596	.00246	.06673	-.00096	.00365	.00289	3.8151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703116804 Acquired: 3/27/2017 13:31:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**.06965**	**-.00064**	**-.00181**	**.00020**	**.00405**	**.15236**
Stddev	.00094	.00072	.00359	.00233	.00029	.00009	.14136
%RSD	4275.2	1.0359	560.41	129.15	144.20	2.0985	92.778
#1	.00039	.07048	.00297	-.00402	.00054	.00411	.18522
#2	.00072	.06924	-.00069	.00063	.00007	.00395	-.00253
#3	-.00104	.06922	-.00421	-.00203	.00000	.00410	.27441
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11948.**	**81213.**	**2963.1**
Stddev	77.	725.	93.0
%RSD	.64507	.89233	3.1397
#1	11896.	80423.	2937.3
#2	12036.	81366.	2885.7
#3	11911.	81848.	3066.3

Approved: March 28, 2017

Sample Name: L1703116805 Acquired: 3/27/2017 13:35:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00119**	**.16823**	**-.00132**	**.01123**	**.05618**	**-.00011**	**46.025**	**.00029**
Stddev	.00207	.00473	.00187	.00219	.00138	.00008	.112	.00008
%RSD	174.60	2.8122	141.70	19.515	2.4487	69.808	.24334	28.554
#1	.00092	.16933	-.00139	.01003	.05523	-.00008	45.946	.00028
#2	-.00322	.17231	.00059	.00989	.05776	-.00021	45.976	.00038
#3	-.00126	.16304	-.00316	.01375	.05556	-.00006	46.153	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00040**	**.00148**	**.00030**	**.17936**	**.75756**	**.00107**	**7.0901**	**.00704**
Stddev	.00013	.00138	.00057	.02831	.03511	.00106	.0375	.00270
%RSD	33.273	93.233	189.81	15.782	4.6348	98.858	.52897	38.318
#1	.00028	.00001	.00045	.18881	.75667	.00085	7.0770	.01007
#2	.00054	.00169	-.00033	.20172	.72290	.00014	7.0610	.00611
#3	.00039	.00274	.00079	.14753	.79310	.00223	7.1324	.00492
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00029**	**3.0408**	**.00134**	**.00812**	**.00084**	**.00111**	**-.00254**	**3.8584**
Stddev	.00019	.0341	.00062	.00760	.00112	.00278	.00242	.0051
%RSD	68.103	1.1219	46.314	93.657	133.60	249.20	95.259	.13237
#1	.00051	3.0020	.00062	-.00047	.00154	-.00206	-.00134	3.8533
#2	.00018	3.0541	.00171	.01399	-.00045	.00233	-.00532	3.8635
#3	.00017	3.0662	.00168	.01083	.00144	.00308	-.00095	3.8584
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703116805 Acquired: 3/27/2017 13:35:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.13481**	**.00317**	**.00045**	**-.00023**	**.00139**	**.44543**
Stddev	.00040	.00087	.00240	.00200	.00053	.00002	.32012
%RSD	626.66	.64799	75.665	440.85	226.14	1.5552	71.867
#1	-.00004	.13582	.00435	.00180	-.00083	.00142	.74059
#2	.00033	.13439	.00041	.00141	.00015	.00139	.49056
#3	-.00048	.13423	.00474	-.00185	-.00001	.00137	.10514
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11974.**	**80760.**	**2981.4**
Stddev	130.	190.	49.5
%RSD	1.0819	.23489	1.6586
#1	11835.	80612.	3034.0
#2	12090.	80695.	2935.9
#3	11998.	80974.	2974.4

Approved: March 28, 2017

Sample Name: L1703118301 Acquired: 3/27/2017 13:38:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**.44508**	**.01571**	**.06983**	**.08951**	**-.00013**	**56.522**	**.00022**
Stddev	.00146	.00552	.00187	.00067	.00115	.00002	.296	.00012
%RSD	537.03	1.2413	11.932	.95934	1.2795	15.820	.52319	56.854
#1	.00128	.43930	.01781	.06941	.08896	-.00011	56.726	.00008
#2	-.00162	.45031	.01420	.07060	.08875	-.00013	56.658	.00032
#3	-.00048	.44561	.01512	.06948	.09083	-.00016	56.183	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00093**	**.00461**	**.01101**	**.77981**	**9.0808**	**.01017**	**12.852**	**.07361**
Stddev	.00021	.00128	.00067	.02936	.1485	.00306	.132	.00274
%RSD	22.583	27.887	6.1258	3.7645	1.6349	30.096	1.0233	3.7215
#1	.00077	.00535	.01134	.80164	9.1553	.01304	12.958	.07153
#2	.00085	.00534	.01023	.79135	8.9098	.00695	12.892	.07672
#3	.00117	.00312	.01145	.74644	9.1772	.01052	12.705	.07258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00193**	**118.13**	**.00388**	**.09991**	**.00244**	**.00818**	**-.00184**	**12.385**
Stddev	.00016	.12	.00105	.00747	.00059	.00315	.00223	.125
%RSD	8.3027	.10050	27.089	7.4793	24.023	38.544	121.68	1.0093
#1	.00195	118.12	.00460	.10823	.00304	.01162	.00072	12.481
#2	.00176	118.26	.00437	.09771	.00188	.00751	-.00341	12.431
#3	.00208	118.02	.00267	.09378	.00239	.00542	-.00282	12.244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703118301 Acquired: 3/27/2017 13:38:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50373**	**.26333**	**-.01155**	**-.00057**	**.00136**	**.03509**	**.53882**
Stddev	.01014	.00116	.00703	.00141	.00089	.00067	.34737
%RSD	2.0140	.44068	60.888	248.01	65.907	1.8978	64.468
#1	.51074	.26238	-.01039	-.00030	.00041	.03530	.14448
#2	.50835	.26463	-.01910	.00069	.00146	.03562	.67247
#3	.49210	.26299	-.00518	-.00210	.00219	.03434	.79952
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11970.**	**78850.**	**3040.0**
Stddev	104.	567.	70.6
%RSD	.86806	.71864	2.3212
#1	12076.	78406.	2980.6
#2	11868.	78656.	3021.3
#3	11965.	79489.	3118.0

Approved: March 28, 2017

Sample Name: L1703118302 Acquired: 3/27/2017 13:42:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**.48439**	**.00604**	**.08309**	**.01497**	**-.00011**	**52.479**	**.00016**
Stddev	.00075	.00609	.00064	.00163	.00161	.00006	.347	.00003
%RSD	160.84	1.2574	10.593	1.9647	10.721	52.666	.66035	16.913
#1	.00006	.49055	.00533	.08423	.01625	-.00005	52.480	.00014
#2	-.00013	.47837	.00624	.08122	.01317	-.00011	52.132	.00016
#3	-.00132	.48424	.00656	.08382	.01549	-.00017	52.825	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00083**	**.00407**	**.00733**	**.54359**	**9.6227**	**.01153**	**16.944**	**.05476**
Stddev	.00054	.00061	.00093	.01484	.0989	.00479	.214	.00040
%RSD	64.215	14.992	12.658	2.7292	1.0280	41.567	1.2642	.72572
#1	.00022	.00468	.00764	.54983	9.7271	.01568	17.156	.05513
#2	.00120	.00346	.00629	.55429	9.6106	.01262	16.728	.05480
#3	.00108	.00408	.00806	.52665	9.5304	.00629	16.948	.05434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00193**	**121.22**	**.00241**	**.06825**	**.00288**	**.00859**	**-.00108**	**5.2632**
Stddev	.00027	.60	.00056	.00860	.00103	.00101	.00209	.0094
%RSD	14.099	.49186	23.244	12.606	35.784	11.808	194.14	.17905
#1	.00204	121.91	.00281	.06033	.00188	.00959	.00072	5.2678
#2	.00213	120.88	.00265	.07740	.00394	.00756	-.00337	5.2694
#3	.00162	120.87	.00177	.06703	.00281	.00860	-.00058	5.2523
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703118302 Acquired: 3/27/2017 13:42:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41156**	**.23242**	**-.00188**	**-.00131**	**.00043**	**.02744**	**.18160**
Stddev	.00260	.00026	.00559	.00074	.00101	.00029	.50715
%RSD	.63267	.11049	297.52	56.801	235.19	1.0725	279.27
#1	.41392	.23269	-.00356	-.00206	.00048	.02752	.18489
#2	.41200	.23237	-.00644	-.00058	-.00061	.02768	.68709
#3	.40876	.23218	.00436	-.00129	.00141	.02711	-.32719
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11818.**	**77935.**	**3022.9**
Stddev	98.	441.	50.4
%RSD	.83087	.56644	1.6679
#1	11708.	78313.	2970.9
#2	11851.	77450.	3071.6
#3	11895.	78043.	3026.2

Approved: March 28, 2017

Sample Name: CCV Acquired: 3/27/2017 13:46:14 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.43587**	**10.934**	**.42152**	**.53993**	**1.0624**	**.05345**	**10.705**
Stddev	.00064	.040	.00173	.00422	.0061	.00020	.100
%RSD	.14746	.36192	.41091	.78107	.57208	.37731	.93404
#1	.43547	10.906	.42212	.53550	1.0559	.05355	10.685
#2	.43661	10.917	.42288	.54039	1.0633	.05322	10.813
#3	.43553	10.979	.41957	.54389	1.0679	.05359	10.616
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05352**	**.21244**	**.53786**	**.53717**	**4.3158**	**51.990**	**1.0504**
Stddev	.00023	.00148	.00160	.00350	.0351	.142	.0098
%RSD	.42760	.69674	.29690	.65066	.81394	.27261	.93178
#1	.05370	.21317	.53663	.53966	4.2781	51.982	1.0465
#2	.05360	.21342	.53729	.53867	4.3476	51.852	1.0433
#3	.05326	.21074	.53967	.53317	4.3217	52.135	1.0616
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.766**	**.53826**	**1.0568**	**51.810**	**.52412**	**10.596**	**.52977**
Stddev	.081	.00350	.0082	.197	.00484	.060	.00402
%RSD	.75351	.64969	.77458	.37971	.92363	.56490	.75949
#1	10.699	.54001	1.0619	51.605	.52565	10.649	.52990
#2	10.856	.54053	1.0613	51.830	.52801	10.609	.53373
#3	10.743	.53423	1.0474	51.997	.51870	10.531	.52568
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 28, 2017

Sample Name: CCV Acquired: 3/27/2017 13:46:14 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2589**	**.43717**	**5.2526**	**1.0520**	**1.0769**	**1.0607**	**.54009**
Stddev	.0129	.00088	.0189	.0122	.0039	.0086	.00097
%RSD	1.0278	.20144	.35932	1.1575	.36613	.81332	.18000
#1	1.2688	.43808	5.2635	1.0588	1.0747	1.0526	.53966
#2	1.2637	.43709	5.2636	1.0594	1.0747	1.0598	.54120
#3	1.2443	.43632	5.2309	1.0380	1.0815	1.0698	.53940
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0619**	**1.0509**	F **2.0365**
Stddev	.0007	.0078	.0921
%RSD	.06687	.74606	4.5214
#1	1.0613	1.0554	1.9838
#2	1.0616	1.0553	1.9829
#3	1.0627	1.0418	2.1428
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11526.**	**75221.**	**2861.8**
Stddev	76.	454.	91.4
%RSD	.66081	.60392	3.1954
#1	11472.	75020.	2961.5
#2	11493.	75741.	2781.9
#3	11614.	74901.	2842.0

Approved: March 28, 2017

Sample Name: CCB Acquired: 3/27/2017 13:49:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00114**	**-.00090**	**-.00107**	**.00311**	**-.00130**	**-.00004**	**.01458**
Stddev	.00158	.00439	.00202	.00182	.00152	.00004	.03824
%RSD	138.30	489.35	188.70	58.516	116.75	99.041	262.38
#1	-.00293	-.00486	-.00207	.00202	.00005	-.00006	.00651
#2	.00004	-.00166	-.00239	.00521	-.00295	.00001	.05621
#3	-.00054	.00383	.00125	.00210	-.00101	-.00007	-.01899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**.00028**	**.00128**	**-.00005**	**.01204**	**-.06671**	**-.00834**
Stddev	.00019	.00032	.00008	.00030	.01586	.07863	.00242
%RSD	76.674	113.83	5.8946	620.66	131.78	117.87	29.038
#1	.00021	.00058	.00122	-.00039	-.00272	-.10421	-.01010
#2	.00046	-.00006	.00126	.00004	.02882	-.11958	-.00558
#3	.00008	.00032	.00137	.00020	.01002	.02365	-.00935
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03854**	**.00184**	**-.00000**	**.06855**	**.00056**	**-.00306**	**.00206**
Stddev	.04279	.00181	.00015	.02797	.00040	.00738	.00179
%RSD	111.03	98.280	61480.	40.810	70.293	240.90	87.034
#1	-.00630	.00234	-.00013	.06646	.00035	-.00936	.00404
#2	.07894	-.00017	.00017	.09751	.00032	-.00488	.00053
#3	.04298	.00334	-.00004	.04168	.00102	.00505	.00162
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: CCB Acquired: 3/27/2017 13:49:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00188**	**.00166**	**.00879**	**-.00020**	**-.00039**	**.00014**	**-.00124**
Stddev	.00506	.00491	.00136	.00089	.00104	.00653	.00169
%RSD	270.08	296.03	15.499	452.75	270.06	4624.8	136.66
#1	.00074	.00575	.00948	-.00118	-.00062	-.00736	-.00113
#2	-.00253	.00300	.00967	.00054	.00075	.00324	-.00298
#3	.00741	-.00378	.00722	.00005	-.00130	.00455	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00068**	**-.00001**	F **.19958**
Stddev	.00065	.00004	.57805
%RSD	95.729	515.63	289.64
#1	-.00004	-.00003	.21096
#2	.00084	.00004	.77186
#3	.00122	-.00003	-.38408
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11544.**	**77275.**	**2775.7**
Stddev	54.	742.	40.6
%RSD	.47110	.96053	1.4621
#1	11516.	76684.	2805.9
#2	11509.	78108.	2729.6
#3	11606.	77032.	2791.6

Approved: March 28, 2017

Sample Name: Sample-52 Acquired: 3/27/2017 13:53:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s **-.00116**	s **-.03279**	k **-.00223**	s **.00253**	**2.5976**	s **-.00002**
Stddev	.00104	.01219	.00214	.00251	4.4982	.00010
%RSD	89.606	37.162	95.778	99.432	173.17	490.04
#1	s -.00011	s -.02792	k -.00122	s .00197	7.7917	s .00002
#2	-.00219	-.02380	-.00079	.00034	.00248	.00006
#3	-.00118	-.04666	-.00469	.00528	-.00136	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	Ca4226	Cd2288	Co2286	Cr2677	Cu2247	Fe2611
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**37.321**	k **.00064**	k **.00012**	s **.00080**	k **.00005**	kF **-9.9594**
Stddev	64.556	.00047	.00016	.00050	.00081	17.236
%RSD	172.97	73.849	130.91	63.057	1723.0	173.06
#1	111.86	k .00118	k .00001	s .00111	k -.00032	k -29.861
#2	.1136	.00032	.00030	.00106	-.00052	-.0124
#3	-.0137	.00042	.00005	.00022	.00098	-.0045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit						810.00
Low Limit						-.02000

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **-89.861**	F **-7.7122**	k **15.916**	k **.72660**	k **.00001**	F **-40.047**
Stddev	155.51	13.327	27.734	1.2548	.00011	69.532
%RSD	173.06	172.81	174.25	172.69	1580.2	173.62
#1	-269.43	-23.101	k 47.940	k 2.1755	k -.00007	-120.34
#2	-.128	-.0300	-.16828	.00454	.00014	.057
#3	-.023	-.0053	-.02339	-.00024	-.00005	.136
Check ?	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit	450.00	36.000				360.00
Low Limit	-.50000	-.10000				-.50000

Approved: March 28, 2017

Sample Name: Sample-52 Acquired: 3/27/2017 13:53:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k **.00325**	k **-.00463**	k **.00254**	k **-.01052**	k **.00333**	k **.00319**
Stddev	.00054	.00084	.00217	.00127	.00382	.00055
%RSD	16.587	18.213	85.546	12.067	114.88	17.154
#1	k .00282	k -.00369	k .00502	k -.01093	k .00214	k .00338
#2	.00385	-.00489	.00166	-.01153	.00760	.00363
#3	.00306	-.00532	.00095	-.00909	.00024	.00258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k **-.00092**	**.18377**	kF **-8.5555**	k **.00096**	s **-.00002**	k **-.00005**
Stddev	.00023	.31854	14.800	.00042	.00081	.00005
%RSD	25.307	173.34	172.99	43.900	3816.2	97.709
#1	k -.00066	.55160	k -25.645	k .00145	s -.00056	k -.00004
#2	-.00109	-.00025	-.0176	.00068	.00090	-.00009
#3	-.00102	-.00002	-.0040	.00076	-.00041	-.00000
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit			45.000			
Low Limit			-.03000			

Elem	Zr3391
Units	ppm
Avg	kF **-740.54**
Stddev	1283.1
%RSD	173.26
#1	k -2222.1
#2	-.21
#3	.71
Check ?	Chk Fail
High Limit	45.000
Low Limit	-.04000

Approved: March 28, 2017

Sample Name: Sample-52 Acquired: 3/27/2017 13:53:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**19462.**	^ *****	**1627.8**
Stddev	207.	-----	1460.4
%RSD	1.0649	-----	89.718
#1	19664.	^ -----	3.954
#2	19473.	81526.	2045.7
#3	19250.	129610.	2833.6

Approved: March 28, 2017

Sample Name: Sample-53 Acquired: 3/27/2017 13:57:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	sF **-.00651**	s **-.03939**	k **-.00271**	s **.00111**	**1.6534**	s **-.00013**
Stddev	.00947	.00791	.00171	.00605	2.8684	.00009
%RSD	145.36	20.090	63.075	544.29	173.49	66.342
#1	-.01731	-.04191	-.00258	-.00573	4.9655	-.00016
#2	s -.00261	s -.03052	k -.00107	s .00332	-.00345	s -.00003
#3	.00038	-.04574	-.00448	.00574	-.00192	-.00020
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	9.0000					
Low Limit	-.00400					

Elem	Ca4226	Cd2288	Co2286	Cr2677	Cu2247	Fe2611
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**14.619**	k **.00020**	k **.00658**	s **.00200**	k **.00716**	kF **-8.5501**
Stddev	25.341	.00025	.01051	.00182	.01320	14.802
%RSD	173.35	122.96	159.74	91.201	184.24	173.12
#1	43.879	-.00008	.01872	.00410	.02240	-25.642
#2	-.03776	k .00037	k .00053	s .00100	k -.00042	k -.0169
#3	.01408	.00032	.00049	.00089	-.00049	.0086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit						810.00
Low Limit						-.02000

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **-121.51**	F **-6.7719**	k **2.1750**	kF **-.43273**	k **.00002**	F **-23.863**
Stddev	210.21	11.698	3.9087	.75507	.00022	41.454
%RSD	172.99	172.74	179.71	174.49	1047.1	173.72
#1	-364.24	-20.279	6.6861	-1.3046	-.00008	-71.729
#2	-.361	-.0127	k .04548	k .00134	k -.00013	.1088
#3	.062	-.0238	-.20656	.00507	.00028	.0321
Check ?	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Pass	Chk Fail
High Limit	450.00	36.000		36.000		360.00
Low Limit	-.50000	-.10000		-.00300		-.50000

Approved: March 28, 2017

Sample Name: Sample-53 Acquired: 3/27/2017 13:57:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k **.00380**	k **.00272**	k **.00211**	k **-.00535**	k **.00134**	k **.00395**
Stddev	.00039	.01253	.00104	.00104	.00522	.00299
%RSD	10.386	459.80	49.231	19.462	389.72	75.621
#1	.00415	.01714	.00094	-.00471	.00734	.00098
#2	k .00337	k -.00350	k .00247	k -.00656	k -.00214	k .00391
#3	.00387	-.00547	.00292	-.00480	-.00119	.00695
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k **-.00750**	**.01476**	kF **-3.6605**	k **-.00205**	s **.00314**	k **-.00004**
Stddev	.01170	.02581	6.3345	.00380	.00518	.00007
%RSD	156.03	174.89	173.05	184.94	164.86	160.83
#1	-.02101	.04456	-10.975	-.00635	.00912	-.00012
#2	k -.00105	.00003	k -.0049	k .00087	s .00043	k .00002
#3	-.00044	-.00032	-.0017	-.00068	-.00011	-.00003
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit			45.000			
Low Limit			-.03000			

Elem	Zr3391
Units	ppm
Avg	kF **-421.32**
Stddev	729.36
%RSD	173.11
#1	-1263.5
#2	k .69
#3	-1.13
Check ?	Chk Fail
High Limit	45.000
Low Limit	-.04000

Approved: March 28, 2017

Sample Name: Sample-53 Acquired: 3/27/2017 13:57:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**17802.**	^ *****	**1759.2**
Stddev	1935.	-----	1520.9
%RSD	10.869	-----	86.454
#1	19358.	97587.	5.492
#2	18412.	^ -----	2555.2
#3	15636.	134510.	2716.9

Approved: March 28, 2017

Sample Name: CCV Acquired: 3/27/2017 14:45:01 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41421**	**10.411**	**.39875**	**.51085**	**1.0201**	**.05106**	**10.212**
Stddev	.00263	.026	.00094	.00229	.0015	.00014	.031
%RSD	.63490	.25393	.23587	.44737	.14555	.26999	.30538
#1	.41682	10.436	.39819	.50949	1.0208	.05119	10.176
#2	.41426	10.412	.39984	.51348	1.0184	.05107	10.235
#3	.41156	10.383	.39823	.50956	1.0211	.05092	10.224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05083**	**.20062**	**.50911**	**.50791**	**4.1338**	**49.791**	**1.0175**
Stddev	.00013	.00044	.00305	.00029	.0486	.096	.0047
%RSD	.25054	.21996	.59958	.05730	1.1744	.19183	.46579
#1	.05086	.20101	.51251	.50821	4.1391	49.737	1.0141
#2	.05094	.20071	.50821	.50789	4.0829	49.735	1.0229
#3	.05069	.20014	.50661	.50762	4.1795	49.902	1.0154
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.225**	**.51277**	**1.0071**	**49.634**	**.49515**	**9.9735**	**.49671**
Stddev	.038	.00234	.0011	.161	.00130	.0133	.00361
%RSD	.37546	.45614	.10946	.32390	.26264	.13294	.72738
#1	10.214	.51246	1.0078	49.694	.49365	9.9850	.49807
#2	10.194	.51061	1.0077	49.452	.49580	9.9766	.49944
#3	10.268	.51525	1.0059	49.757	.49599	9.9590	.49261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 28, 2017

Sample Name: CCV Acquired: 3/27/2017 14:45:01 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1849**	**.42278**	**4.9719**	**.99775**	**1.0305**	**1.0044**	**.51446**
Stddev	.0045	.00332	.0041	.00058	.0018	.0132	.00198
%RSD	.38301	.78589	.08276	.05767	.17059	1.3187	.38438
#1	1.1882	.42287	4.9766	.99842	1.0324	.99308	.51259
#2	1.1868	.41941	4.9691	.99743	1.0290	1.0012	.51653
#3	1.1797	.42606	4.9699	.99741	1.0300	1.0190	.51425
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0064**	**.99261**	F **1.1853**
Stddev	.0040	.00169	.7507
%RSD	.39824	.17057	63.334
#1	1.0092	.99442	.52177
#2	1.0082	.99233	2.0002
#3	1.0018	.99107	1.0341
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11604.**	**76620.**	**2829.3**
Stddev	48.	819.	93.0
%RSD	.41400	1.0684	3.2882
#1	11659.	76637.	2744.0
#2	11581.	77430.	2928.5
#3	11571.	75793.	2815.4

Approved: March 28, 2017

Sample Name: CCB Acquired: 3/27/2017 14:48:35 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00142**	**-.00170**	**-.00189**	**.00423**	**-.00199**	**-.00008**	**-.00321**	**.00013**
Stddev	.00170	.00426	.00265	.00149	.00165	.00003	.01425	.00004
%RSD	119.37	251.19	139.71	35.239	82.975	37.633	443.85	30.661
#1	-.00279	.00208	-.00352	.00502	-.00176	-.00010	-.01881	.00011
#2	-.00195	-.00086	.00116	.00251	-.00374	-.00005	.00912	.00010
#3	.00048	-.00631	-.00332	.00517	-.00046	-.00010	.00006	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**.00131**	**.00034**	**.00826**	**-.02956**	**-.00383**	**-.02513**	**.00262**
Stddev	.00007	.00098	.00094	.00936	.12483	.00243	.04506	.00153
%RSD	39.786	74.684	273.96	113.33	422.32	63.314	179.31	58.320
#1	.00010	.00169	.00136	.00561	-.00205	-.00396	-.01577	.00391
#2	.00024	.00020	.00014	.01866	.07922	-.00135	.01451	.00302
#3	.00021	.00205	-.00048	.00051	-.16584	-.00620	-.07414	.00093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.06108**	**.00118**	**-.00310**	**.00048**	**.00106**	**.00240**	**.00580**
Stddev	.00021	.06895	.00054	.00868	.00356	.00468	.00097	.00197
%RSD	147.65	112.88	45.395	279.68	742.35	442.55	40.317	33.908
#1	.00034	-.00826	.00172	.00257	-.00286	-.00429	.00237	.00772
#2	.00016	.12965	.00065	.00122	.00422	.00308	.00338	.00590
#3	-.00007	.06187	.00117	-.01310	.00008	.00438	.00144	.00379
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: CCB Acquired: 3/27/2017 14:48:35 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**-.00008**	**-.00011**	**-.00027**	**-.00039**	**.00001**	**.01648**
Stddev	.00025	.00033	.00562	.00090	.00084	.00003	.24547
%RSD	89.846	391.00	5335.1	336.34	214.91	251.71	1489.2
#1	-.00023	-.00031	.00081	.00064	-.00102	-.00000	-.13653
#2	-.00055	-.00023	-.00613	-.00115	.00056	-.00001	-.11365
#3	-.00005	.00029	.00500	-.00029	-.00071	.00005	.29962
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11869.**	**79279.**	**2843.7**
Stddev	81.	751.	34.9
%RSD	.68654	.94695	1.2277
#1	11854.	80118.	2815.3
#2	11956.	78672.	2833.1
#3	11796.	79046.	2882.7

Approved: March 28, 2017

Sample Name: PBW A1 Acquired: 3/27/2017 14:52:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00040**	**.00887**	**-.00473**	**.00172**	**-.00321**	**-.00013**	**-.02774**	**.00028**
Stddev	.00279	.00107	.00226	.00161	.00168	.00002	.02796	.00035
%RSD	702.90	12.100	47.771	93.757	52.322	17.481	100.82	124.72
#1	.00046	.00986	-.00441	.00261	-.00136	-.00014	-.03588	.00052
#2	.00316	.00900	-.00265	-.00014	-.00361	-.00014	-.05073	-.00012
#3	-.00243	.00773	-.00713	.00269	-.00464	-.00010	.00339	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**.00085**	**.00000**	**.03036**	**-.00902**	**-.00714**	**.00033**	**.00305**
Stddev	.00018	.00057	.00115	.00752	.06345	.00284	.07619	.00151
%RSD	152.16	67.238	29755.	24.776	703.28	39.828	22759.	49.417
#1	.00033	.00072	.00067	.03893	.06151	-.00464	-.00406	.00364
#2	.00001	.00148	-.00133	.02485	-.06148	-.01023	-.07356	.00417
#3	.00002	.00035	.00067	.02731	-.02709	-.00654	.07863	.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.11513**	**.00085**	**-.00506**	**-.00102**	**-.00065**	**.00108**	**.00699**
Stddev	.00025	.04571	.00046	.00701	.00030	.00520	.00648	.00255
%RSD	250.29	39.709	54.135	138.37	29.757	803.71	597.97	36.447
#1	.00011	.06465	.00104	.00294	-.00116	.00281	-.00359	.00993
#2	-.00004	.12699	.00033	-.01012	-.00122	.00188	-.00164	.00557
#3	-.00037	.15374	.00119	-.00802	-.00067	-.00663	.00848	.00547
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: PBW A1 Acquired: 3/27/2017 14:52:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00017**	**-.00301**	**-.00274**	**.00040**	**.00106**	**.51686**
Stddev	.00007	.00068	.00408	.00214	.00041	.00001	.49013
%RSD	160.66	390.84	135.61	78.030	103.32	.82996	94.827
#1	-.00013	.00088	-.00366	-.00220	.00002	.00105	.16538
#2	-.00000	-.00046	.00136	-.00093	.00034	.00107	.30845
#3	-.00000	.00010	-.00671	-.00511	.00083	.00105	1.0768
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11910.**	**81587.**	**2952.6**
Stddev	139.	537.	58.4
%RSD	1.1700	.65834	1.9770
#1	12038.	82204.	3017.8
#2	11929.	81335.	2905.1
#3	11762.	81222.	2935.0

Approved: March 28, 2017

Sample Name: LCSW A1 Acquired: 3/27/2017 14:56:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20354**	**5.0509**	**.19377**	**.95798**	**.49828**	**.02455**	**5.0459**	**.02495**
Stddev	.00095	.0185	.00172	.00971	.00091	.00014	.0474	.00047
%RSD	.46468	.36544	.88647	1.0131	.18197	.55752	.93965	1.8724
#1	.20250	5.0350	.19328	.94677	.49927	.02453	5.0041	.02539
#2	.20436	5.0712	.19235	.96369	.49809	.02469	5.0361	.02499
#3	.20376	5.0466	.19568	.96348	.49748	.02442	5.0974	.02446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10021**	**.24882**	**.25074**	**2.0224**	**24.384**	**.50048**	**5.0050**	**.25366**
Stddev	.00097	.00059	.00075	.0138	.037	.00262	.0699	.00155
%RSD	.96461	.23646	.30020	.68458	.15354	.52293	1.3968	.61114
#1	.10000	.24815	.25123	2.0163	24.427	.50133	5.0737	.25541
#2	.10127	.24926	.25111	2.0126	24.366	.49754	5.0074	.25246
#3	.09937	.24905	.24987	2.0382	24.358	.50256	4.9339	.25312
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49173**	**24.647**	**.24684**	**4.8358**	**.25079**	**.58642**	**.19806**	**2.4987**
Stddev	.00428	.105	.00252	.0301	.00326	.00758	.00620	.0095
%RSD	.87135	.42500	1.0203	.62223	1.2993	1.2933	3.1313	.38204
#1	.49349	24.737	.24821	4.8361	.25392	.59190	.20491	2.5004
#2	.49486	24.532	.24837	4.8657	.25104	.58959	.19282	2.5073
#3	.48685	24.673	.24393	4.8055	.24742	.57776	.19646	2.4884
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: LCSW A1 Acquired: 3/27/2017 14:56:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50128**	**.50927**	**.50404**	**.25175**	**.49347**	**.48756**	**1.1106**
Stddev	.00583	.00280	.00410	.00292	.00350	.00413	.6724
%RSD	1.1632	.55035	.81379	1.1616	.70871	.84710	60.547
#1	.50305	.51251	.50839	.25009	.49037	.48927	.45865
#2	.50603	.50761	.50024	.25513	.49726	.49056	1.8018
#3	.49477	.50770	.50351	.25004	.49277	.48285	1.0714
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11942.**	**81019.**	**3002.7**
Stddev	110.	1225.	28.3
%RSD	.91813	1.5123	.94277
#1	11816.	79898.	2989.2
#2	12007.	80832.	2983.7
#3	12004.	82327.	3035.2

Approved: March 28, 2017

Sample Name: L1703138301 Acquired: 3/27/2017 14:59:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00056**	**.01285**	**-.00038**	**.02321**	**.07069**	**-.00014**	**55.593**	**.00035**
Stddev	.00026	.00123	.00364	.00052	.00074	.00002	.423	.00040
%RSD	45.256	9.5307	954.47	2.2337	1.0399	13.858	.76112	114.71
#1	-.00076	.01259	.00223	.02377	.06986	-.00012	55.216	-.00009
#2	-.00028	.01178	-.00453	.02311	.07092	-.00016	55.513	.00069
#3	-.00065	.01419	.00115	.02275	.07128	-.00013	56.050	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00023**	**.00206**	**.05027**	**.02058**	**1.0872**	**.00130**	**9.7861**	**.01007**
Stddev	.00023	.00092	.00239	.00197	.0307	.00124	.0582	.00152
%RSD	100.65	44.779	4.7560	9.5832	2.8237	95.854	.59433	15.113
#1	.00011	.00241	.05146	.02109	1.1158	.00033	9.7204	.01181
#2	.00008	.00275	.05184	.02225	1.0548	.00270	9.8073	.00942
#3	.00050	.00101	.04752	.01840	1.0912	.00086	9.8308	.00898
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**5.3177**	**.00122**	**-.02626**	**.00113**	**.00028**	**-.00297**	**4.2170**
Stddev	.00008	.0798	.00084	.00484	.00033	.00066	.00307	.0438
%RSD	14.095	1.5012	68.246	18.419	29.505	230.81	103.35	1.0385
#1	.00056	5.2290	.00141	-.03158	.00079	.00073	.00052	4.2437
#2	.00047	5.3403	.00031	-.02504	.00114	-.00047	-.00419	4.2409
#3	.00062	5.3839	.00195	-.02214	.00146	.00059	-.00524	4.1665
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703138301 Acquired: 3/27/2017 14:59:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**.22147**	**-.01074**	**-.00007**	**-.00020**	**.00494**	**.76206**
Stddev	.00020	.00150	.00264	.00217	.00081	.00006	.06014
%RSD	167.86	.67655	24.556	2914.1	398.12	1.2676	7.8919
#1	-.00022	.21978	-.01175	.00165	.00033	.00501	.82547
#2	.00011	.22204	-.00774	-.00251	-.00113	.00494	.75490
#3	-.00026	.22261	-.01272	.00064	.00019	.00488	.70582
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11935.**	**81249.**	**2973.2**
Stddev	101.	342.	67.1
%RSD	.84911	.42111	2.2554
#1	11975.	81172.	2914.4
#2	11820.	80952.	2958.9
#3	12011.	81624.	3046.2

Approved: March 28, 2017

Sample Name: L1703138301S Acquired: 3/27/2017 15:03:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21166**	**5.2025**	**.20518**	**1.0261**	**.58329**	**.02579**	**59.232**	**.02610**
Stddev	.00059	.0525	.00447	.0115	.00096	.00035	.158	.00026
%RSD	.27875	1.0087	2.1801	1.1215	.16478	1.3476	.26598	.98801
#1	.21193	5.1533	.20328	1.0156	.58430	.02550	59.396	.02609
#2	.21098	5.1966	.20197	1.0243	.58238	.02568	59.082	.02636
#3	.21207	5.2577	.21029	1.0384	.58319	.02617	59.218	.02584
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10243**	**.25912**	**.30391**	**2.0780**	**26.077**	**.51213**	**14.467**	**.26777**
Stddev	.00032	.00272	.00070	.0140	.271	.00134	.058	.00099
%RSD	.31489	1.0513	.23113	.67362	1.0411	.26206	.40200	.36870
#1	.10259	.25659	.30404	2.0646	26.370	.51075	14.449	.26887
#2	.10265	.25875	.30453	2.0768	25.834	.51221	14.532	.26746
#3	.10206	.26200	.30315	2.0926	26.027	.51343	14.420	.26697
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51476**	**30.215**	**.25143**	**5.1284**	**.25550**	**.61481**	**.21056**	**6.8373**
Stddev	.00229	.179	.00171	.0316	.00134	.00541	.00259	.0329
%RSD	.44414	.59152	.68122	.61515	.52509	.87950	1.2282	.48127
#1	.51606	30.421	.25332	5.1643	.25650	.61942	.21081	6.8698
#2	.51610	30.097	.25099	5.1159	.25398	.60886	.20786	6.8383
#3	.51212	30.128	.24998	5.1050	.25603	.61615	.21301	6.8040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703138301S Acquired: 3/27/2017 15:03:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52290**	**.73311**	**.50991**	**.26087**	**.51991**	**.50284**	**.54911**
Stddev	.00437	.00465	.00211	.00185	.00533	.00227	.15308
%RSD	.83604	.63457	.41443	.70750	1.0255	.45182	27.878
#1	.52537	.73836	.51114	.26282	.51464	.50525	.62111
#2	.52548	.72950	.51112	.26065	.51980	.50252	.65293
#3	.51785	.73146	.50747	.25915	.52530	.50074	.37331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11643.**	**78898.**	**3033.3**
Stddev	89.	390.	8.9
%RSD	.76829	.49422	.29427
#1	11615.	79165.	3042.9
#2	11743.	79079.	3025.2
#3	11570.	78451.	3031.8

Approved: March 28, 2017

Sample Name: L1703138301SD Acquired: 3/27/2017 15:07:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21426**	**5.1692**	**.20248**	**1.0229**	**.59533**	**.02557**	**61.056**	**.02582**
Stddev	.00205	.0143	.00227	.0060	.00441	.00005	.880	.00005
%RSD	.95795	.27623	1.1206	.59085	.74117	.17805	1.4421	.21065
#1	.21613	5.1639	.20382	1.0254	.59922	.02553	61.921	.02586
#2	.21458	5.1854	.19986	1.0272	.59623	.02556	61.087	.02576
#3	.21207	5.1584	.20376	1.0160	.59054	.02562	60.161	.02584
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10118**	**.25817**	**.30075**	**2.0959**	**26.576**	**.52395**	**14.872**	**.27220**
Stddev	.00046	.00089	.00110	.0315	.471	.00807	.300	.00288
%RSD	.45531	.34330	.36421	1.5020	1.7730	1.5405	2.0149	1.0597
#1	.10067	.25852	.30006	2.1137	27.037	.52791	15.144	.27545
#2	.10128	.25883	.30202	2.1144	26.596	.52928	14.922	.27124
#3	.10157	.25716	.30019	2.0595	26.096	.51466	14.551	.26992
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51106**	**30.756**	**.24989**	**5.0831**	**.25542**	**.61459**	**.20475**	**6.8282**
Stddev	.00103	.423	.00044	.0068	.00210	.00261	.00706	.0115
%RSD	.20176	1.3763	.17554	.13395	.82025	.42395	3.4466	.16890
#1	.51009	31.173	.25035	5.0761	.25459	.61195	.20247	6.8301
#2	.51215	30.769	.24984	5.0897	.25387	.61715	.19911	6.8386
#3	.51095	30.327	.24948	5.0837	.25780	.61467	.21266	6.8158
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703138301SD Acquired: 3/27/2017 15:07:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52011**	**.74766**	**.51800**	**.25918**	**.51543**	**.50038**	**.98352**
Stddev	.00159	.00820	.00478	.00093	.00318	.00106	.25995
%RSD	.30593	1.0967	.92223	.35722	.61742	.21270	26.430
#1	.51892	.75109	.52350	.25856	.51785	.49975	1.1362
#2	.52192	.75359	.51561	.25874	.51661	.50161	.68337
#3	.51949	.73830	.51488	.26025	.51182	.49979	1.1309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11650.**	**77884.**	**2938.8**
Stddev	59.	354.	92.2
%RSD	.50724	.45474	3.1381
#1	11713.	77568.	2836.1
#2	11596.	78267.	2965.6
#3	11640.	77816.	3014.7

Approved: March 28, 2017

Sample Name: L1703126601 Acquired: 3/27/2017 15:10:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00092**	**.02538**	**-.00394**	**.04358**	**.01200**	**-.00006**	**1.0734**	**.00046**
Stddev	.00147	.00112	.00469	.00033	.00013	.00010	.0415	.00006
%RSD	159.07	4.4002	119.03	.74712	1.0578	156.59	3.8666	13.297
#1	-.00183	.02639	-.00808	.04352	.01188	-.00015	1.0780	.00050
#2	-.00170	.02558	.00116	.04329	.01198	-.00008	1.0297	.00039
#3	.00077	.02418	-.00491	.04393	.01213	.00004	1.1124	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00148**	**.00131**	**-.00002**	**.21167**	**2.1349**	**-.00122**	**.49474**	**.02451**
Stddev	.00011	.00039	.00059	.01372	.0386	.00721	.02974	.00134
%RSD	7.3537	29.636	2382.7	6.4797	1.8083	592.52	6.0119	5.4616
#1	.00160	.00091	.00002	.19634	2.1659	.00161	.47161	.02590
#2	.00145	.00134	.00054	.22276	2.0917	.00415	.48431	.02441
#3	.00139	.00168	-.00063	.21592	2.1473	-.00941	.52829	.02323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**42.800**	**.00154**	**-.00542**	**.00051**	**-.00160**	**-.00138**	**4.2947**
Stddev	.00008	.232	.00103	.00629	.00345	.00392	.00188	.0813
%RSD	37.194	.54294	66.787	116.12	677.34	244.94	136.55	1.8938
#1	.00015	42.983	.00270	-.01135	-.00154	-.00350	-.00295	4.3483
#2	.00029	42.538	.00117	.00119	-.00143	-.00421	.00070	4.3346
#3	.00016	42.878	.00075	-.00610	.00449	.00291	-.00188	4.2011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703126601 Acquired: 3/27/2017 15:10:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00067**	**.00776**	**-.00460**	**.00021**	**-.00007**	**.00297**	**.63574**
Stddev	.00024	.00038	.00386	.00048	.00008	.00024	.21249
%RSD	35.121	4.9205	83.942	230.30	111.09	8.0134	33.424
#1	-.00094	.00745	-.00157	-.00026	.00002	.00304	.60607
#2	-.00058	.00765	-.00895	.00019	-.00011	.00317	.43964
#3	-.00049	.00819	-.00329	.00070	-.00012	.00271	.86150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11832.**	**79776.**	**3007.7**
Stddev	14.	470.	42.0
%RSD	.11858	.58958	1.3971
#1	11843.	80257.	2972.8
#2	11816.	79318.	3054.3
#3	11837.	79753.	2995.8

Approved: March 28, 2017

Sample Name: L1703126602 Acquired: 3/27/2017 15:14:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00065**	**.03542**	**.00036**	**.04087**	**.10798**	**.00007**	**27.293**	**.00031**
Stddev	.00193	.00324	.00084	.00110	.00164	.00008	.106	.00018
%RSD	297.56	9.1544	232.69	2.6815	1.5224	113.73	.38698	56.681
#1	.00116	.03196	.00017	.04037	.10721	.00012	27.407	.00012
#2	-.00042	.03840	-.00037	.04212	.10987	-.00002	27.275	.00035
#3	-.00269	.03590	.00128	.04011	.10687	.00011	27.198	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00702**	**.00198**	**.00076**	**2.8939**	**4.9680**	**-.00443**	**10.830**	**.69739**
Stddev	.00010	.00072	.00060	.0620	.1447	.00149	.102	.00534
%RSD	1.4694	36.701	78.537	2.1412	2.9130	33.731	.94168	.76624
#1	.00703	.00275	.00039	2.9425	5.0328	-.00273	10.898	.70328
#2	.00712	.00131	.00045	2.8241	4.8022	-.00502	10.712	.69286
#3	.00691	.00187	.00145	2.9151	5.0689	-.00554	10.879	.69604
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**62.286**	**.01212**	**-.00227**	**.00291**	**.00361**	**-.00269**	**1.9416**
Stddev	.00030	.036	.00040	.00357	.00219	.00268	.00065	.0229
%RSD	259.73	.05719	3.2632	157.80	75.244	74.220	24.074	1.1786
#1	-.00035	62.312	.01226	-.00387	.00490	.00461	-.00303	1.9532
#2	.00022	62.245	.01243	-.00476	.00328	.00058	-.00311	1.9563
#3	-.00022	62.301	.01167	.00183	.00056	.00566	-.00195	1.9152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703126602 Acquired: 3/27/2017 15:14:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.16052**	**-.00165**	**-.00123**	**-.00011**	**.01706**	**.20679**
Stddev	.00045	.00109	.01384	.00115	.00093	.00039	.31313
%RSD	976.82	.67871	840.59	93.491	823.35	2.3039	151.43
#1	-.00022	.16152	-.01338	-.00166	-.00012	.01739	.04433
#2	-.00039	.16068	-.00517	-.00212	.00082	.01716	.56776
#3	.00047	.15936	.01361	.00007	-.00104	.01662	.00827
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11788.**	**78530.**	**2962.4**
Stddev	65.	630.	45.4
%RSD	.55401	.80211	1.5326
#1	11713.	77803.	2947.7
#2	11833.	78864.	2926.1
#3	11817.	78922.	3013.3

Approved: March 28, 2017

Sample Name: L1703126602PS Acquired: 3/27/2017 15:18:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607804-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20346**	**5.0009**	**.19409**	**1.0088**	**.59385**	**.02497**	**28.533**	**.02528**
Stddev	.00094	.0067	.00096	.0041	.00324	.00012	.093	.00028
%RSD	.46213	.13469	.49385	.41020	.54623	.46966	.32737	1.1025
#1	.20446	5.0084	.19374	1.0068	.59021	.02509	28.425	.02529
#2	.20260	4.9953	.19335	1.0061	.59644	.02496	28.578	.02555
#3	.20332	4.9990	.19517	1.0136	.59489	.02486	28.595	.02499
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10464**	**.25156**	**.24470**	**4.5175**	**28.391**	**.48672**	**14.267**	**.85975**
Stddev	.00155	.00172	.00163	.0099	.075	.00353	.108	.00371
%RSD	1.4859	.68332	.66782	.21876	.26576	.72590	.75393	.43107
#1	.10616	.25307	.24427	4.5062	28.467	.48462	14.266	.85588
#2	.10472	.25191	.24651	4.5224	28.316	.49080	14.375	.86013
#3	.10305	.24969	.24333	4.5241	28.390	.48475	14.160	.86326
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48895**	**78.236**	**.25244**	**4.9376**	**.24643**	**.58629**	**.20146**	**4.2227**
Stddev	.00489	.147	.00100	.0274	.00079	.00528	.00570	.0308
%RSD	.99934	.18823	.39620	.55502	.32260	.90102	2.8273	.72967
#1	.49295	78.254	.25331	4.9629	.24724	.59189	.19623	4.2486
#2	.49039	78.374	.25266	4.9415	.24565	.58559	.20753	4.2309
#3	.48350	78.081	.25135	4.9085	.24640	.58140	.20061	4.1887
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703126602PS Acquired: 3/27/2017 15:18:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607804-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49574**	**.64616**	**.50402**	**.24940**	**.49975**	**.49502**	**.68695**
Stddev	.00509	.00128	.00098	.00225	.00165	.00442	.49856
%RSD	1.0258	.19748	.19402	.90062	.33065	.89286	72.575
#1	.49978	.64469	.50515	.25168	.50097	.49815	.12976
#2	.49741	.64689	.50349	.24932	.49787	.49694	1.0909
#3	.49003	.64691	.50342	.24719	.50042	.48996	.84019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11720.**	**77923.**	**2980.8**
Stddev	69.	414.	43.2
%RSD	.59044	.53091	1.4492
#1	11790.	78119.	2963.7
#2	11651.	78202.	2948.7
#3	11720.	77448.	3029.9

Approved: March 28, 2017

Sample Name: L1703126602SDL Acquired: 3/27/2017 15:21:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG607804-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**.01135**	**-.00270**	**.01207**	**.02175**	**-.00003**	**5.6788**	**.00031**
Stddev	.00035	.00528	.00133	.00307	.00142	.00003	.0050	.00026
%RSD	44.908	46.550	49.262	25.427	6.5137	121.11	.08816	82.894
#1	-.00047	.00534	-.00119	.00880	.02275	-.00006	5.6731	.00044
#2	-.00072	.01528	-.00322	.01252	.02236	-.00003	5.6816	.00048
#3	-.00117	.01342	-.00369	.01489	.02013	.00001	5.6818	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00153**	**.00003**	**-.00033**	**.61722**	**1.0884**	**-.00841**	**2.2794**	**.15386**
Stddev	.00025	.00087	.00020	.04514	.1722	.00204	.0509	.00303
%RSD	16.567	2565.9	60.891	7.3138	15.825	24.218	2.2334	1.9662
#1	.00179	-.00097	-.00031	.62394	1.2060	-.00630	2.2691	.15272
#2	.00128	.00055	-.00054	.65863	1.1686	-.01037	2.3347	.15158
#3	.00153	.00052	-.00014	.56910	.89072	-.00857	2.2344	.15730
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**13.325**	**.00298**	**-.00372**	**.00287**	**.00168**	**-.00266**	**.41393**
Stddev	.00024	.085	.00021	.00352	.00219	.00601	.00261	.00643
%RSD	251.19	.63719	7.0442	94.739	76.082	358.28	98.215	1.5523
#1	.00037	13.423	.00294	.00035	.00421	.00776	-.00451	.41874
#2	-.00009	13.274	.00280	-.00569	.00405	.00154	.00033	.41641
#3	.00001	13.279	.00321	-.00581	.00035	-.00426	-.00378	.40663
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703126602SDL Acquired: 3/27/2017 15:21:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG607804-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00063**	**.03391**	**-.00482**	**.00079**	**.00013**	**.00424**	**.57261**
Stddev	.00014	.00090	.01004	.00167	.00105	.00014	.72480
%RSD	21.557	2.6571	208.13	210.78	837.28	3.2496	126.58
#1	-.00059	.03494	-.01331	.00176	.00122	.00438	-.26374
#2	-.00052	.03324	.00626	-.00113	.00003	.00411	.96373
#3	-.00079	.03356	-.00742	.00175	-.00088	.00423	1.0178
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11135.**	**75823.**	**2747.7**
Stddev	80.	517.	65.7
%RSD	.72293	.68154	2.3911
#1	11154.	75544.	2702.1
#2	11047.	76419.	2823.0
#3	11205.	75505.	2717.9

Approved: March 28, 2017

Sample Name: L1703126602SDL Acquired: 3/27/2017 15:25:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG607804-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00094**	**.00289**	**.00040**	**.00433**	**.00175**	**-.00003**	**1.1293**	**.00033**
Stddev	.00182	.00430	.00275	.00215	.00137	.00005	.0454	.00011
%RSD	194.28	148.81	693.69	49.720	78.493	192.88	4.0155	33.550
#1	.00024	-.00193	.00016	.00586	.00061	-.00001	1.0893	.00036
#2	-.00304	.00633	.00325	.00187	.00327	-.00009	1.1785	.00043
#3	-.00001	.00426	-.00223	.00527	.00136	.00001	1.1201	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**.00150**	**-.00074**	**.13542**	**.17139**	**-.00579**	**.43569**	**.03051**
Stddev	.00044	.00060	.00054	.04479	.03702	.00218	.05368	.00299
%RSD	173.36	40.214	73.096	33.077	21.597	37.747	12.320	9.8035
#1	.00061	.00081	-.00126	.17119	.12868	-.00340	.47614	.03307
#2	.00040	.00186	-.00019	.14988	.19399	-.00627	.45613	.02722
#3	-.00024	.00184	-.00076	.08518	.19151	-.00768	.37479	.03122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**2.6531**	**.00041**	**-.00073**	**-.00100**	**.00281**	**.00173**	**.08563**
Stddev	.00058	.0213	.00065	.00704	.00121	.00476	.00120	.00169
%RSD	4346.4	.80412	157.08	963.15	120.37	169.39	69.395	1.9727
#1	-.00022	2.6621	.00077	-.00062	-.00125	.00290	.00060	.08755
#2	-.00041	2.6685	.00081	-.00782	.00031	-.00199	.00159	.08440
#3	.00067	2.6288	-.00034	.00625	-.00207	.00751	.00299	.08492
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703126602SDL Acquired: 3/27/2017 15:25:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG607804-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**.00661**	**-.00489**	**-.00161**	**.00057**	**.00194**	**.86540**
Stddev	.00077	.00050	.00694	.00254	.00052	.00001	.31142
%RSD	171.51	7.5409	141.95	157.89	91.772	.50966	35.985
#1	.00044	.00608	.00083	.00060	.00015	.00195	.87527
#2	-.00084	.00667	-.01262	-.00438	.00116	.00195	1.1718
#3	-.00093	.00707	-.00289	-.00105	.00041	.00193	.54916
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11312.**	**73900.**	**2809.9**
Stddev	44.	591.	19.5
%RSD	.39000	.80002	.69562
#1	11300.	74106.	2831.4
#2	11362.	74360.	2793.3
#3	11276.	73233.	2804.8

Approved: March 28, 2017

Sample Name: CCV Acquired: 3/27/2017 15:29:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41931**	**10.493**	**.40433**	**.51553**	**1.0147**	**.05099**	**10.139**
Stddev	.00303	.081	.00206	.00623	.0061	.00029	.093
%RSD	.72247	.77116	.50970	1.2080	.60317	.56196	.92015
#1	.42076	10.525	.40591	.51202	1.0161	.05102	10.034
#2	.42135	10.552	.40508	.52272	1.0199	.05126	10.171
#3	.41583	10.400	.40200	.51185	1.0080	.05069	10.212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05170**	**.20308**	**.51258**	**.51552**	**4.1303**	**48.834**	**.99901**
Stddev	.00033	.00134	.00319	.00462	.0246	.228	.01291
%RSD	.63087	.66100	.62241	.89573	.59676	.46759	1.2924
#1	.05197	.20403	.51377	.51798	4.1442	48.810	1.0061
#2	.05179	.20368	.51500	.51839	4.1449	49.073	1.0068
#3	.05134	.20155	.50897	.51019	4.1019	48.618	.98410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.166**	**.50972**	**1.0169**	**48.893**	**.50384**	**10.139**	**.51058**
Stddev	.122	.00403	.0071	.258	.00348	.063	.00178
%RSD	1.1968	.79088	.70183	.52817	.69010	.61771	.34881
#1	10.237	.51402	1.0216	49.000	.50650	10.180	.51264
#2	10.236	.50603	1.0205	49.081	.50511	10.170	.50946
#3	10.025	.50912	1.0087	48.599	.49990	10.067	.50964
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 28, 2017

Sample Name: CCV Acquired: 3/27/2017 15:29:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2038**	**.41973**	**5.0397**	**1.0090**	**1.0245**	**1.0100**	**.51867**
Stddev	.0080	.00683	.0266	.0108	.0035	.0122	.00453
%RSD	.66121	1.6281	.52740	1.0672	.34060	1.2053	.87307
#1	1.2090	.42176	5.0671	1.0149	1.0233	1.0081	.52278
#2	1.2077	.42531	5.0377	1.0156	1.0285	.99895	.51942
#3	1.1946	.41211	5.0141	.99659	1.0218	1.0231	.51381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0117**	**1.0072**	F **1.4619**
Stddev	.0054	.0066	.3127
%RSD	.53667	.65925	21.388
#1	1.0135	1.0092	1.8179
#2	1.0161	1.0126	1.3356
#3	1.0056	.99981	1.2321
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11224.**	**74846.**	**2854.9**
Stddev	97.	1335.	47.4
%RSD	.85984	1.7837	1.6595
#1	11289.	73844.	2908.6
#2	11113.	74332.	2837.0
#3	11269.	76361.	2819.0

Approved: March 28, 2017

Sample Name: CCB Acquired: 3/27/2017 15:32:52 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00218**	**-.00258**	**-.00353**	**.00399**	**-.00162**	**-.00004**	**.02937**
Stddev	.00062	.00170	.00353	.00298	.00313	.00009	.02769
%RSD	28.448	66.110	99.875	74.605	193.68	221.24	94.289
#1	-.00202	-.00075	-.00277	.00616	.00155	.00003	-.00086
#2	-.00286	-.00412	-.00739	.00060	-.00168	-.00001	.03546
#3	-.00165	-.00285	-.00045	.00522	-.00471	-.00015	.05350
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00039**	**-.00007**	**.00131**	**-.00064**	**-.00716**	**-.04401**	**-.00624**
Stddev	.00012	.00012	.00055	.00076	.02546	.01506	.00142
%RSD	29.792	181.63	41.858	117.92	355.56	34.232	22.761
#1	.00044	-.00014	.00141	-.00025	.02135	-.02925	-.00773
#2	.00049	.00007	.00180	-.00152	-.01519	-.04341	-.00490
#3	.00026	-.00013	.00072	-.00016	-.02764	-.05936	-.00610
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01653**	**.00132**	**.00022**	**.05263**	**-.00026**	**-.00456**	**.00261**
Stddev	.01571	.00188	.00005	.03530	.00060	.00437	.00222
%RSD	95.011	142.23	22.113	67.065	232.98	95.711	85.047
#1	-.00150	.00259	.00019	.01388	.00024	-.00590	.00016
#2	.02384	.00221	.00028	.06106	-.00009	-.00811	.00318
#3	.02724	-.00084	.00020	.08294	-.00093	.00032	.00450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: CCB Acquired: 3/27/2017 15:32:52 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00142**	**-.00632**	**.00785**	**-.00070**	**.00022**	**.00417**	**.00136**
Stddev	.00218	.00407	.00245	.00029	.00048	.00580	.00170
%RSD	153.14	64.410	31.255	41.836	219.29	139.32	125.80
#1	.00056	-.00280	.01015	-.00051	.00024	.00984	.00287
#2	.00390	-.01079	.00813	-.00055	-.00027	-.00176	-.00049
#3	-.00019	-.00539	.00527	-.00104	.00068	.00442	.00169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00048**	**-.00021**	F **.45639**
Stddev	.00042	.00006	1.1623
%RSD	87.689	29.033	254.67
#1	.00096	-.00017	1.7980
#2	.00033	-.00018	-.18253
#3	.00016	-.00028	-.24628
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11514.**	**75804.**	**2785.9**
Stddev	113.	234.	59.8
%RSD	.97741	.30832	2.1474
#1	11386.	75569.	2767.4
#2	11595.	76036.	2852.8
#3	11562.	75805.	2737.5

Approved: March 28, 2017

Sample Name: LL1703133902 Acquired: 3/27/2017 15:36:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00244**	**.02464**	**-.00358**	**.02166**	**8.6574**	**-.00003**	**263.93**
Stddev	.00034	.00160	.00262	.00268	.0144	.00007	.64
%RSD	13.888	6.4938	73.118	12.393	.16652	209.40	.24302
#1	-.00214	.02445	-.00127	.02307	8.6517	-.00009	263.25
#2	-.00280	.02633	-.00305	.01856	8.6467	.00005	264.53
#3	-.00237	.02315	-.00643	.02335	8.6738	-.00006	263.99
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00079**	**.02386**	**.00258**	**.00036**	**1.6482**	**3.6464**	**.13065**
Stddev	.00010	.00089	.00163	.00116	.0078	.1336	.00513
%RSD	12.682	3.7295	63.186	321.43	.47419	3.6649	3.9231
#1	.00067	.02418	.00285	.00115	1.6395	3.7997	.12751
#2	.00083	.02455	.00406	.00091	1.6503	3.5540	.12789
#3	.00086	.02286	.00083	-.00097	1.6547	3.5856	.13657
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**213.34**	**.43922**	**.00024**	F **719.47**	**.01220**	**.00521**	**.00286**
Stddev	.77	.00221	.00022	6.37	.00097	.00549	.00512
%RSD	.36171	.50390	90.557	.88556	7.9783	105.49	179.06
#1	212.59	.43668	-.00001	718.43	.01269	.00458	.00538
#2	213.30	.44074	.00037	726.30	.01108	.01099	-.00303
#3	214.13	.44024	.00036	713.68	.01283	.00006	.00622
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				360.00			
Low Limit				-.50000			

Approved: March 28, 2017

Sample Name: LL1703133902 Acquired: 3/27/2017 15:36:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00318**	**-.00208**	**17.473**	**.00028**	**6.6784**	F **-.03083**	**-.00068**
Stddev	.00689	.00540	.366	.00069	.0067	.01038	.00131
%RSD	216.60	260.17	2.0955	252.14	.09999	33.674	192.32
#1	.01114	.00386	17.685	-.00006	6.6840	-.01925	-.00003
#2	-.00060	-.00670	17.683	-.00019	6.6710	-.03394	.00018
#3	-.00099	-.00339	17.050	.00107	6.6803	-.03930	-.00218
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						45.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00131**	**.03395**	**.74363**
Stddev	.00045	.00086	.59396
%RSD	34.477	2.5225	79.872
#1	-.00106	.03450	.11521
#2	-.00105	.03438	.81994
#3	-.00184	.03296	1.2958
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10476.**	**69218.**	**2835.4**
Stddev	53.	868.	87.2
%RSD	.50315	1.2535	3.0755
#1	10419.	68673.	2915.6
#2	10486.	68763.	2742.6
#3	10523.	70219.	2848.0

Approved: March 28, 2017

Sample Name: LL1703133904 Acquired: 3/27/2017 15:40:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00057**	**.02634**	**-.00135**	**.02113**	**8.6106**	**-.00006**	**263.51**
Stddev	.00065	.00457	.00176	.00145	.0589	.00005	2.04
%RSD	114.12	17.368	130.28	6.8497	.68448	79.008	.77400
#1	-.00102	.02928	-.00175	.02046	8.5946	-.00006	262.60
#2	-.00087	.02107	-.00288	.02015	8.6759	-.00001	265.85
#3	.00018	.02867	.00058	.02280	8.5613	-.00011	262.09
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00048**	**.02277**	**.00284**	**.00084**	**1.6265**	**3.6068**	**.13358**
Stddev	.00025	.00067	.00090	.00096	.0175	.1051	.00580
%RSD	51.596	2.9477	31.545	113.77	1.0756	2.9145	4.3435
#1	.00075	.02323	.00270	.00172	1.6421	3.6311	.13938
#2	.00029	.02307	.00380	.00099	1.6299	3.6976	.13358
#3	.00038	.02200	.00203	-.00018	1.6076	3.4916	.12778
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**213.19**	**.43216**	**.00000**	F **711.26**	**.01263**	**.00987**	**.00262**
Stddev	1.83	.00359	.00050	11.17	.00144	.00491	.00199
%RSD	.86069	.83148	11764.	1.5704	11.430	49.774	75.712
#1	212.85	.43181	-.00048	705.63	.01302	.01538	.00170
#2	215.17	.43591	-.00003	704.03	.01384	.00593	.00126
#3	211.54	.42875	.00052	724.13	.01103	.00831	.00490
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				360.00			
Low Limit				-.50000			

Approved: March 28, 2017

Sample Name: LL1703133904 Acquired: 3/27/2017 15:40:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00253**	**-.00212**	**17.406**	**.00039**	**6.6636**	**-.02981**	**-.00140**
Stddev	.00357	.00476	.493	.00087	.0388	.00470	.00148
%RSD	140.78	224.15	2.8303	220.11	.58265	15.779	105.86
#1	-.00156	-.00169	17.740	.00136	6.6525	-.03462	-.00029
#2	.00420	.00240	17.639	-.00031	6.7068	-.02961	-.00083
#3	.00496	-.00709	16.840	.00014	6.6316	-.02522	-.00309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00117**	**.03146**	**.54453**
Stddev	.00066	.00113	.44453
%RSD	56.050	3.6056	81.635
#1	-.00114	.03230	.95684
#2	-.00185	.03191	.07360
#3	-.00053	.03017	.60315
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10494.**	**68357.**	**2832.6**
Stddev	59.	1341.	46.9
%RSD	.55755	1.9611	1.6569
#1	10458.	66939.	2877.3
#2	10561.	68527.	2783.8
#3	10462.	69604.	2836.9

Approved: March 28, 2017

Sample Name: LL1703133905 Acquired: 3/27/2017 15:44:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00044**	**.03900**	**.00434**	**.01825**	**2.6741**	**.00026**	**69.545**
Stddev	.00163	.00281	.00041	.00371	.0094	.00008	.498
%RSD	373.05	7.1961	9.4287	20.312	.35075	30.885	.71613
#1	-.00108	.03607	.00402	.02158	2.6763	.00032	69.497
#2	.00141	.04167	.00420	.01426	2.6822	.00028	70.065
#3	-.00165	.03925	.00480	.01891	2.6638	.00017	69.073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00091**	**.04987**	**.01499**	**.00131**	**12.423**	**2.9061**	**.04495**
Stddev	.00023	.00010	.00068	.00034	.042	.1525	.00292
%RSD	25.172	.20698	4.5375	25.718	.33690	5.2478	6.4924
#1	.00066	.04978	.01562	.00156	12.425	3.0760	.04738
#2	.00110	.04986	.01427	.00146	12.464	2.8612	.04575
#3	.00098	.04998	.01508	.00093	12.381	2.7811	.04171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**51.747**	**2.9706**	**.00005**	**206.03**	**.04057**	**.05535**	**.00459**
Stddev	.267	.0155	.00007	1.03	.00040	.00723	.00311
%RSD	.51548	.52031	141.89	.50136	.98792	13.058	67.632
#1	51.831	2.9538	.00009	206.27	.04028	.05118	.00784
#2	51.962	2.9843	.00010	206.92	.04040	.06370	.00428
#3	51.449	2.9736	-.00003	204.90	.04103	.05117	.00165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: LL1703133905 Acquired: 3/27/2017 15:44:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00190**	**.00840**	**30.498**	**.00090**	**1.6005**	**.00056**	**-.00233**
Stddev	.00049	.00527	.044	.00043	.0082	.00541	.00296
%RSD	25.602	62.755	.14448	47.702	.51249	967.19	127.28
#1	.00209	.00851	30.545	.00084	1.5959	.00518	-.00556
#2	.00225	.00307	30.457	.00136	1.6100	-.00539	.00026
#3	.00134	.01361	30.491	.00050	1.5956	.00190	-.00168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00075**	**.08153**	F **-.86811**
Stddev	.00051	.00008	.41446
%RSD	67.278	.10387	47.743
#1	-.00112	.08147	-.59612
#2	-.00096	.08162	-.66308
#3	-.00017	.08149	-1.3451
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11350.**	**76302.**	**2990.0**
Stddev	34.	493.	28.2
%RSD	.29518	.64584	.94268
#1	11343.	75818.	2981.5
#2	11321.	76285.	2967.0
#3	11387.	76803.	3021.4

Approved: March 28, 2017

Sample Name: LL1703133906 Acquired: 3/27/2017 15:48:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00071**	**.06626**	**.00203**	**.46445**	**.20240**	**-.00013**	**19.036**	**.00025**
Stddev	.00063	.00634	.00199	.00169	.00009	.00009	.066	.00021
%RSD	88.699	9.5743	97.858	.36415	.04376	63.877	.34550	83.394
#1	-.00026	.05945	.00425	.46538	.20249	-.00005	19.063	.00003
#2	-.00045	.06732	.00143	.46249	.20240	-.00022	19.084	.00044
#3	-.00143	.07201	.00041	.46546	.20232	-.00014	18.961	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00137**	**.01712**	**.00068**	**.99427**	**51.872**	**.14722**	**6.8869**	**.10610**
Stddev	.00042	.00113	.00088	.00719	.172	.00404	.0862	.00209
%RSD	30.618	6.5921	130.26	.72268	.33221	2.7433	1.2510	1.9655
#1	.00142	.01695	-.00033	1.0026	51.840	.14961	6.9570	.10714
#2	.00093	.01609	.00133	.98984	51.717	.14255	6.9129	.10370
#3	.00176	.01832	.00102	.99041	52.058	.14948	6.7907	.10746
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00179**	**232.14**	**.00339**	**.01866**	**.00232**	**.00296**	**-.00022**	**7.6943**
Stddev	.00028	.62	.00119	.01103	.00185	.00251	.00615	.1054
%RSD	15.492	.26578	35.021	59.138	79.473	84.652	2786.2	1.3697
#1	.00202	232.85	.00465	.02362	.00250	.00471	.00649	7.7729
#2	.00187	231.83	.00321	.02633	.00040	.00009	-.00559	7.7355
#3	.00148	231.74	.00230	.00601	.00408	.00409	-.00156	7.5746
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: LL1703133906 Acquired: 3/27/2017 15:48:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00081**	**1.0605**	**-.00160**	**-.00146**	**-.00021**	**.00345**	**.53653**
Stddev	.00027	.0031	.00424	.00057	.00054	.00016	.54351
%RSD	33.949	.29549	265.06	38.884	263.80	4.7322	101.30
#1	.00053	1.0635	-.00122	-.00144	-.00079	.00361	1.1475
#2	.00108	1.0572	.00244	-.00204	-.00012	.00347	.10667
#3	.00082	1.0609	-.00602	-.00091	.00029	.00328	.35545
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11245.**	**74923.**	**2908.1**
Stddev	61.	177.	45.2
%RSD	.54272	.23673	1.5538
#1	11279.	75055.	2865.5
#2	11281.	74994.	2903.2
#3	11174.	74722.	2955.5

Approved: March 28, 2017

Sample Name: LL1703133907 Acquired: 3/27/2017 15:51:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00078**	**.02906**	**.00974**	**.04135**	**.82963**	**-.00008**	**25.403**
Stddev	.00125	.00308	.00046	.00307	.00286	.00000	.085
%RSD	159.28	10.599	4.7329	7.4315	.34496	5.9720	.33624
#1	.00125	.03166	.01021	.03788	.82888	-.00009	25.393
#2	.00173	.02566	.00929	.04240	.83279	-.00008	25.493
#3	-.00063	.02986	.00973	.04375	.82722	-.00008	25.323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00046**	**.00118**	**.00055**	**-.00236**	**47.189**	**4.3539**	**.03126**
Stddev	.00017	.00002	.00050	.00096	.040	.0650	.00266
%RSD	36.309	1.5783	90.738	40.854	.08379	1.4935	8.5039
#1	.00063	.00119	.00107	-.00126	47.197	4.3884	.02832
#2	.00046	.00116	.00049	-.00304	47.146	4.3944	.03349
#3	.00030	.00119	.00008	-.00278	47.223	4.2788	.03197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**17.890**	**.52046**	**-.00060**	**86.018**	**.00279**	**.18537**	**.00188**
Stddev	.112	.00383	.00035	.271	.00123	.00529	.00236
%RSD	.62426	.73505	58.783	.31487	43.995	2.8521	125.35
#1	17.865	.51680	-.00061	86.149	.00416	.18830	-.00084
#2	18.012	.52013	-.00095	86.199	.00181	.18855	.00325
#3	17.792	.52443	-.00024	85.707	.00239	.17927	.00325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: LL1703133907 Acquired: 3/27/2017 15:51:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00189**	**-.00721**	**16.974**	**.00019**	**.60667**	**.01682**	**-.00226**
Stddev	.00395	.00288	.186	.00029	.00055	.00461	.00200
%RSD	209.20	39.986	1.0946	147.44	.09014	27.382	88.374
#1	.00423	-.01039	17.057	.00052	.60691	.01236	-.00265
#2	-.00268	-.00478	17.104	.00006	.60604	.02156	-.00404
#3	.00412	-.00644	16.761	-.00000	.60706	.01654	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00049**	**.00694**	F **-3.2616**
Stddev	.00060	.00010	.6175
%RSD	122.41	1.4123	18.934
#1	.00010	.00705	-2.6366
#2	-.00048	.00686	-3.2768
#3	-.00110	.00691	-3.8714
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11486.**	**77343.**	**2916.0**
Stddev	58.	995.	31.8
%RSD	.50641	1.2867	1.0922
#1	11422.	77287.	2898.4
#2	11536.	76377.	2896.7
#3	11501.	78365.	2952.7

Approved: March 28, 2017

Sample Name: LL1703133908 Acquired: 3/27/2017 15:55:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00052**	**.17780**	**-.00633**	**.05828**	**.45530**	**-.00010**	**25.320**
Stddev	.00147	.00496	.00102	.00221	.00437	.00006	.010
%RSD	282.40	2.7874	16.165	3.7903	.95929	62.064	.03770
#1	-.00115	.18336	-.00634	.05806	.45283	-.00005	25.311
#2	.00110	.17383	-.00735	.06058	.46034	-.00007	25.330
#3	.00161	.17622	-.00531	.05618	.45273	-.00016	25.319
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00095**	**.00097**	**.04151**	**.00045**	**80.060**	**3.1581**	**.02256**
Stddev	.00003	.00048	.00096	.00186	.206	.1245	.00507
%RSD	3.5854	49.834	2.3010	413.73	.25774	3.9438	22.494
#1	.00098	.00073	.04041	.00208	79.839	3.0436	.02499
#2	.00092	.00152	.04195	.00086	80.248	3.1399	.02597
#3	.00095	.00065	.04216	-.00158	80.093	3.2907	.01673
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**12.643**	**1.1898**	**.00031**	**77.679**	**.05606**	**.19132**	**.00423**
Stddev	.080	.0066	.00012	.203	.00069	.00257	.00248
%RSD	.63521	.55742	39.834	.26079	1.2282	1.3421	58.708
#1	12.676	1.1892	.00020	77.493	.05607	.19031	.00324
#2	12.701	1.1967	.00044	77.895	.05675	.18942	.00705
#3	12.551	1.1835	.00029	77.649	.05537	.19425	.00239
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: LL1703133908 Acquired: 3/27/2017 15:55:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00609**	**-.00818**	**16.804**	**.00007**	**.50527**	**.02854**	**-.00018**
Stddev	.00139	.00070	.062	.00015	.00082	.00425	.00121
%RSD	22.786	8.4976	.36891	221.74	.16326	14.886	656.64
#1	.00678	-.00743	16.854	-.00007	.50533	.03177	.00068
#2	.00699	-.00879	16.824	.00005	.50607	.02373	-.00156
#3	.00449	-.00832	16.735	.00022	.50442	.03013	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00054**	**.04675**	F **-5.9724**
Stddev	.00056	.00028	.3513
%RSD	104.47	.59884	5.8819
#1	.00065	.04697	-6.3077
#2	.00103	.04685	-5.6071
#3	-.00007	.04644	-6.0024
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11438.**	**76882.**	**2924.8**
Stddev	122.	247.	64.3
%RSD	1.0698	.32148	2.1968
#1	11540.	76647.	2854.4
#2	11302.	76859.	2939.9
#3	11472.	77139.	2980.2

Approved: March 28, 2017

Sample Name: LL1703133909 Acquired: 3/27/2017 15:59:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00269**	**.23929**	**-.00565**	**.05651**	**.45152**	**.00000**	**25.489**
Stddev	.00217	.00569	.00158	.00077	.00672	.00009	.335
%RSD	80.744	2.3762	27.951	1.3689	1.4882	2261.6	1.3124
#1	.00363	.24507	-.00683	.05562	.45703	.00001	25.837
#2	.00021	.23909	-.00626	.05694	.45351	.00008	25.460
#3	.00424	.23370	-.00385	.05698	.44403	-.00009	25.170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00079**	**.00099**	**.04110**	**.00129**	**76.443**	**3.1478**	**.02018**
Stddev	.00011	.00042	.00087	.00154	.863	.0358	.00675
%RSD	13.914	42.042	2.1055	119.10	1.1289	1.1361	33.434
#1	.00092	.00146	.04207	.00097	77.332	3.1567	.02273
#2	.00076	.00082	.04081	.00296	76.390	3.1085	.01253
#3	.00071	.00068	.04041	-.00006	75.608	3.1784	.02529
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**12.710**	**1.1703**	**.00019**	**75.594**	**.06129**	**.16889**	**.00399**
Stddev	.197	.0115	.00035	.960	.00090	.00378	.00273
%RSD	1.5514	.98621	187.33	1.2698	1.4703	2.2356	68.237
#1	12.899	1.1802	.00043	76.356	.06161	.17269	.00087
#2	12.725	1.1731	-.00021	75.910	.06198	.16513	.00588
#3	12.505	1.1576	.00034	74.516	.06027	.16886	.00523
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: LL1703133909 Acquired: 3/27/2017 15:59:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00225**	**-.00664**	**16.414**	**.00038**	**.50226**	**.02251**	**-.00097**
Stddev	.00334	.00150	.109	.00041	.00477	.01158	.00289
%RSD	148.64	22.533	.66662	107.67	.94904	51.463	297.23
#1	.00610	-.00834	16.437	.00045	.50626	.02171	.00103
#2	.00016	-.00601	16.510	-.00006	.50354	.01135	-.00429
#3	.00048	-.00556	16.295	.00076	.49699	.03448	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00003**	**.04488**	F **-5.7122**
Stddev	.00085	.00049	.6025
%RSD	3314.9	1.0997	10.547
#1	-.00076	.04498	-6.2224
#2	.00093	.04532	-5.8665
#3	-.00010	.04434	-5.0475
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11489.**	**75396.**	**2840.1**
Stddev	115.	609.	74.1
%RSD	1.0045	.80762	2.6074
#1	11411.	75051.	2843.3
#2	11622.	75038.	2912.6
#3	11435.	76099.	2764.6

Approved: March 28, 2017

Sample Name: LL1703133911 Acquired: 3/27/2017 16:02:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00192**	**.02696**	**-.00265**	**.02048**	**.68546**	**.00032**	**16.102**
Stddev	.00009	.00494	.00287	.00241	.00731	.00008	.132
%RSD	4.4413	18.312	108.00	11.757	1.0666	24.645	.82253
#1	-.00185	.02796	-.00532	.02215	.69193	.00023	16.254
#2	-.00189	.03132	-.00301	.02158	.68693	.00038	16.047
#3	-.00202	.02160	.00038	.01772	.67753	.00035	16.006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00049**	**.00046**	**.00218**	**-.00040**	**6.8711**	**2.5883**	**.01762**
Stddev	.00005	.00008	.00096	.00069	.0309	.0562	.00540
%RSD	10.828	16.879	44.172	173.51	.44915	2.1729	30.665
#1	.00054	.00043	.00130	-.00112	6.9060	2.6525	.01609
#2	.00043	.00039	.00202	.00025	6.8598	2.5478	.02363
#3	.00049	.00054	.00321	-.00032	6.8475	2.5645	.01315
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.9528**	**1.1396**	**-.00018**	**58.130**	**.00183**	**.01573**	**.00395**
Stddev	.1261	.0072	.00027	.309	.00054	.00663	.00471
%RSD	1.2671	.62759	148.74	.53241	29.242	42.157	119.25
#1	10.083	1.1459	-.00011	58.441	.00212	.01642	.00796
#2	9.8317	1.1318	.00005	58.128	.00121	.00878	-.00124
#3	9.9433	1.1409	-.00048	57.822	.00216	.02199	.00513
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: LL1703133911 Acquired: 3/27/2017 16:02:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00090**	**-.00495**	**11.687**	**.00008**	**.39217**	**-.00552**	**-.00190**
Stddev	.00191	.00292	.017	.00030	.00167	.00075	.00019
%RSD	212.20	59.023	.14383	374.63	.42529	13.608	10.091
#1	.00031	-.00531	11.682	.00025	.39347	-.00548	-.00210
#2	.00303	-.00767	11.674	-.00027	.39275	-.00629	-.00173
#3	-.00065	-.00186	11.706	.00026	.39029	-.00479	-.00186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00027**	**.00790**	F **-.12968**
Stddev	.00048	.00005	.42837
%RSD	176.75	.66369	330.33
#1	-.00059	.00784	.30743
#2	.00028	.00791	-.14775
#3	-.00050	.00794	-.54873
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11516.**	**77065.**	**2873.1**
Stddev	125.	114.	69.3
%RSD	1.0843	.14799	2.4115
#1	11575.	76939.	2794.4
#2	11373.	77161.	2900.0
#3	11601.	77096.	2924.9

Approved: March 28, 2017

Sample Name: LL1703133913 Acquired: 3/27/2017 16:06:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00128**	**.13115**	**.00190**	**.01866**	**.36619**	**-.00001**	**18.232**
Stddev	.00062	.00582	.00171	.00135	.00369	.00002	.076
%RSD	48.809	4.4402	90.056	7.2451	1.0066	218.73	.41431
#1	.00199	.12525	.00083	.01780	.36430	-.00000	18.167
#2	.00082	.13130	.00101	.01796	.36384	-.00004	18.213
#3	.00103	.13689	.00388	.02022	.37044	.00001	18.315
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00094**	**.00467**	**.00731**	**-.00085**	**24.210**	**2.9203**	**.00684**
Stddev	.00016	.00040	.00088	.00141	.159	.1828	.00967
%RSD	17.074	8.6080	12.099	165.26	.65680	6.2607	141.44
#1	.00082	.00504	.00698	-.00215	24.187	2.8711	-.00420
#2	.00112	.00425	.00663	.00065	24.064	2.7670	.01092
#3	.00089	.00473	.00831	-.00106	24.380	3.1226	.01379
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**11.371**	**.43187**	**-.00031**	**87.421**	**.03646**	**.01714**	**.00275**
Stddev	.035	.00105	.00013	.386	.00117	.00236	.00528
%RSD	.30653	.24203	40.792	.44146	3.2115	13.739	192.08
#1	11.383	.43288	-.00036	87.479	.03611	.01533	-.00158
#2	11.398	.43079	-.00040	87.010	.03776	.01630	.00119
#3	11.331	.43194	-.00017	87.776	.03550	.01980	.00863
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: LL1703133913 Acquired: 3/27/2017 16:06:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00238**	**.00123**	**9.5840**	**.00080**	**.40771**	**.00765**	**-.00057**
Stddev	.00278	.00263	.1024	.00056	.00158	.00286	.00152
%RSD	116.93	213.14	1.0679	70.134	.38682	37.423	268.77
#1	.00503	.00426	9.6437	.00052	.40704	.00576	-.00159
#2	.00263	-.00009	9.6425	.00044	.40657	.01095	-.00129
#3	-.00052	-.00047	9.4658	.00145	.40951	.00626	.00118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00037**	**.01567**	F **-1.6518**
Stddev	.00032	.00026	.7383
%RSD	87.469	1.6896	44.693
#1	.00073	.01596	-2.1580
#2	.00011	.01559	-.80471
#3	.00026	.01545	-1.9928
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11408.**	**77190.**	**2888.3**
Stddev	165.	963.	21.9
%RSD	1.4502	1.2474	.75883
#1	11221.	76182.	2874.5
#2	11468.	78101.	2876.7
#3	11536.	77286.	2913.5

Approved: March 28, 2017

Sample Name: LL1703133915 Acquired: 3/27/2017 16:10:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**29.420**	**.00922**	**.03220**	**.51770**	**.00374**	**22.681**
Stddev	.00151	.016	.00259	.00219	.00518	.00013	.057
%RSD	553.50	.05299	28.104	6.7935	1.0013	3.5413	.25320
#1	-.00054	29.437	.01128	.03247	.51324	.00360	22.615
#2	.00201	29.414	.01006	.02989	.51647	.00387	22.711
#3	-.00066	29.408	.00631	.03424	.52339	.00374	22.717
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00412**	**.01544**	**.07862**	**.07406**	**51.138**	**3.6854**	**.02386**
Stddev	.00058	.00022	.00115	.00191	.204	.2134	.00325
%RSD	14.185	1.3988	1.4639	2.5806	.39933	5.7911	13.610
#1	.00353	.01568	.07906	.07529	50.923	3.5394	.02252
#2	.00413	.01537	.07949	.07503	51.162	3.5864	.02150
#3	.00470	.01526	.07732	.07186	51.329	3.9303	.02757
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.441**	**1.4017**	**.00083**	**82.266**	**.07405**	**.54724**	**.04414**
Stddev	.069	.0038	.00034	.201	.00147	.00725	.00164
%RSD	.66096	.27210	40.652	.24454	1.9917	1.3242	3.7093
#1	10.425	1.4043	.00107	82.062	.07539	.55521	.04594
#2	10.381	1.3973	.00044	82.271	.07429	.54105	.04376
#3	10.517	1.4035	.00096	82.465	.07247	.54544	.04273
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: LL1703133915 Acquired: 3/27/2017 16:10:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00401**	**.00126**	F **48.959**	**.00173**	**.32918**	**.16845**	**.00130**
Stddev	.00706	.00457	.421	.00044	.00093	.00578	.00070
%RSD	176.29	363.11	.85896	25.550	.28398	3.4294	54.111
#1	.01175	.00289	49.218	.00174	.32856	.16585	.00055
#2	.00234	.00479	49.186	.00216	.32872	.16443	.00140
#3	-.00207	-.00390	48.474	.00128	.33026	.17507	.00195
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.06923**	**.16789**	**.02113**
Stddev	.00105	.00154	.94872
%RSD	1.5227	.91938	4489.7
#1	.06896	.16880	-.56732
#2	.07040	.16877	-.48487
#3	.06834	.16611	1.1156
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11563.**	**76348.**	**2899.6**
Stddev	89.	1222.	60.9
%RSD	.76593	1.6000	2.1015
#1	11566.	76833.	2865.5
#2	11651.	74959.	2863.5
#3	11474.	77253.	2970.0

Approved: March 28, 2017

Sample Name: CCV Acquired: 3/27/2017 16:13:51 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42592**	**10.648**	**.41169**	**.52219**	**1.0323**	**.05202**	**10.322**	**.05204**
Stddev	.00171	.029	.00257	.00204	.0044	.00022	.062	.00013
%RSD	.40048	.27616	.62338	.38982	.42882	.42252	.60285	.25740
#1	.42768	10.672	.40961	.52312	1.0321	.05191	10.384	.05198
#2	.42427	10.615	.41456	.51986	1.0280	.05187	10.322	.05220
#3	.42582	10.657	.41089	.52360	1.0369	.05227	10.259	.05195
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20594**	**.52126**	**.52231**	**4.1626**	**49.961**	**1.0205**	**10.449**	**.52048**
Stddev	.00150	.00191	.00329	.0435	.054	.0049	.050	.00517
%RSD	.72723	.36610	.62945	1.0442	.10785	.47981	.47996	.99411
#1	.20685	.52132	.52524	4.1186	50.011	1.0170	10.392	.52494
#2	.20676	.51932	.52293	4.1637	49.904	1.0185	10.464	.51481
#3	.20421	.52314	.51875	4.2055	49.968	1.0261	10.489	.52169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0305**	**49.932**	**.50961**	**10.266**	**.51450**	**1.2158**	**.42826**	**5.0940**
Stddev	.0053	.144	.00338	.032	.00123	.0064	.00795	.0200
%RSD	.51706	.28813	.66250	.31102	.23857	.52926	1.8566	.39224
#1	1.0337	49.908	.51230	10.286	.51309	1.2168	.43535	5.1125
#2	1.0334	49.801	.51072	10.283	.51512	1.2216	.42975	5.0965
#3	1.0243	50.086	.50582	10.229	.51530	1.2089	.41966	5.0728
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: March 28, 2017

Sample Name: CCV Acquired: 3/27/2017 16:13:51 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0239**	**1.0422**	**1.0249**	**.52664**	**1.0331**	**1.0211**	**.96339**
Stddev	.0086	.0039	.0105	.00348	.0021	.0059	.61908
%RSD	.83623	.37192	1.0236	.65989	.20341	.57259	64.260
#1	1.0280	1.0422	1.0253	.53054	1.0344	1.0249	1.1975
#2	1.0297	1.0384	1.0142	.52389	1.0307	1.0240	1.4313
#3	1.0141	1.0461	1.0352	.52548	1.0342	1.0144	.26139
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11146.**	**74998.**	**2791.0**
Stddev	72.	228.	50.6
%RSD	.64626	.30349	1.8144
#1	11065.	75128.	2835.9
#2	11203.	74735.	2736.1
#3	11170.	75132.	2801.0

Approved: March 28, 2017

Sample Name: CCB Acquired: 3/27/2017 16:17:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00039**	**.00177**	**-.00118**	**.00237**	**-.00174**	**-.00008**	**.01719**
Stddev	.00150	.00797	.00040	.00357	.00038	.00004	.06123
%RSD	388.93	449.84	33.670	150.32	22.006	51.530	356.12
#1	.00106	.00369	-.00088	-.00134	-.00162	-.00005	-.00908
#2	-.00027	-.00698	-.00163	.00577	-.00216	-.00006	-.02651
#3	-.00194	.00861	-.00102	.00269	-.00143	-.00013	.08717
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**-.00006**	**.00094**	**-.00054**	**.00874**	**-.03094**	**-.00854**
Stddev	.00031	.00044	.00044	.00011	.04214	.26394	.00865
%RSD	102.41	685.39	46.224	19.464	482.29	853.15	101.20
#1	.00062	-.00045	.00142	-.00055	.05733	-.11560	-.01491
#2	.00002	-.00015	.00058	-.00043	-.01785	.26494	.00130
#3	.00026	.00041	.00082	-.00064	-.01327	-.24215	-.01202
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.07660**	**.00434**	**-.00005**	**.04809**	**.00118**	**-.00311**	**.00010**
Stddev	.06039	.00181	.00037	.07235	.00049	.00488	.00030
%RSD	78.847	41.752	684.22	150.44	41.460	157.06	302.44
#1	-.09776	.00531	-.00024	-.03535	.00138	-.00785	-.00019
#2	-.00847	.00225	-.00029	.09342	.00062	-.00337	.00008
#3	-.12355	.00547	.00037	.08620	.00153	.00190	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: CCB Acquired: 3/27/2017 16:17:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**-.00631**	**.00830**	**-.00033**	**.00034**	**-.00448**	**.00097**
Stddev	.00375	.00689	.00156	.00012	.00026	.01330	.00264
%RSD	5825.4	109.08	18.772	35.519	76.277	296.50	273.09
#1	-.00209	-.00289	.00741	-.00046	.00061	.01059	.00263
#2	.00439	-.00181	.01010	-.00028	.00030	-.00948	-.00207
#3	-.00211	-.01424	.00739	-.00025	.00010	-.01456	.00234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00004**	**.00005**	F **.33916**
Stddev	.00048	.00015	.48801
%RSD	1209.0	291.01	143.89
#1	-.00037	.00021	.21516
#2	-.00026	-.00009	.87721
#3	.00051	.00003	-.07489
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11393.**	**76478.**	**2825.6**
Stddev	66.	814.	65.6
%RSD	.57892	1.0645	2.3207
#1	11404.	76523.	2855.1
#2	11322.	77269.	2871.3
#3	11452.	75642.	2750.5

Approved: March 28, 2017

Sample Name: LLCCV Acquired: 3/27/2017 16:21:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00840**	**.19252**	**.00771**	**.08694**	**.00556**	**.00163**	**.45333**
Stddev	.00236	.00736	.00076	.00313	.00067	.00006	.03295
%RSD	28.127	3.8249	9.8873	3.5949	12.020	3.8224	7.2694
#1	.00579	.18479	.00749	.08347	.00573	.00156	.49086
#2	.00902	.19331	.00856	.08780	.00614	.00168	.44002
#3	.01040	.19946	.00708	.08954	.00483	.00165	.42912
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00105**	**.00469**	**.00656**	**.00391**	**.08756**	**.73975**	**.08638**
Stddev	.00014	.00035	.00100	.00047	.02080	.06417	.00332
%RSD	13.442	7.4135	15.230	12.116	23.755	8.6743	3.8403
#1	.00092	.00506	.00599	.00347	.08258	.77756	.08666
#2	.00120	.00437	.00599	.00441	.11040	.66566	.08954
#3	.00103	.00464	.00772	.00384	.06970	.77602	.08293
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40042**	**.01187**	**.00858**	**.52083**	**.01931**	**.88212**	**.00934**
Stddev	.02194	.00026	.00020	.04058	.00093	.00969	.00453
%RSD	5.4790	2.2090	2.3019	7.7924	4.8283	1.0985	48.518
#1	.42275	.01163	.00856	.55401	.01944	.88556	.01221
#2	.39960	.01184	.00839	.47558	.02018	.87117	.00412
#3	.37890	.01215	.00878	.53289	.01832	.88961	.01169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: LLCCV Acquired: 3/27/2017 16:21:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09410**	**.01896**	**.85603**	**.44125**	**.04351**	**.02694**	**.17336**
Stddev	.00349	.00112	.00462	.00210	.00066	.00223	.00343
%RSD	3.7064	5.8941	.53934	.47670	1.5057	8.2660	1.9813
#1	.09570	.01951	.85248	.44184	.04397	.02437	.17360
#2	.09650	.01767	.86125	.44300	.04276	.02824	.17667
#3	.09010	.01969	.85435	.43892	.04380	.02821	.16981
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00797**	**.02030**	F **57.218**
Stddev	.00056	.00011	2.972
%RSD	6.9910	.55400	5.1934
#1	.00783	.02039	60.595
#2	.00859	.02018	55.006
#3	.00750	.02035	56.052
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11382.**	**76842.**	**2887.6**
Stddev	89.	1447.	98.5
%RSD	.78289	1.8833	3.4098
#1	11283.	78433.	2777.5
#2	11407.	75604.	2918.1
#3	11457.	76489.	2967.2

Approved: March 28, 2017

Sample Name: L1703130401 Acquired: 3/27/2017 16:24:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00103**	**.32623**	**-.00130**	**.02245**	**.01729**	**-.00012**	**33.748**	**.00039**
Stddev	.00166	.00525	.00110	.00336	.00201	.00002	.373	.00018
%RSD	161.24	1.6081	84.932	14.986	11.630	18.168	1.1064	46.256
#1	-.00129	.32337	-.00095	.01932	.01711	-.00011	33.337	.00020
#2	.00075	.33228	-.00253	.02601	.01538	-.00015	33.838	.00056
#3	-.00255	.32304	-.00041	.02201	.01939	-.00011	34.067	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**.00249**	**.00390**	**.43635**	**1.0102**	**.00133**	**24.425**	**.01901**
Stddev	.00057	.00035	.00081	.02830	.0301	.00419	.464	.00127
%RSD	226.79	14.190	20.899	6.4867	2.9779	316.02	1.8978	6.6862
#1	-.00039	.00277	.00409	.40935	1.0291	.00515	23.901	.01776
#2	.00046	.00261	.00460	.43389	1.0259	-.00316	24.592	.02030
#3	.00068	.00209	.00300	.46580	.97549	.00200	24.782	.01897
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**41.117**	**.00163**	**.08477**	**.00114**	**.00104**	**-.00363**	**5.2899**
Stddev	.00008	.553	.00070	.00314	.00388	.00405	.00130	.1250
%RSD	26.222	1.3438	43.271	3.7007	341.40	388.86	35.890	2.3639
#1	.00027	40.497	.00140	.08294	-.00134	.00123	-.00250	5.3861
#2	.00024	41.296	.00107	.08840	.00561	.00498	-.00506	5.3351
#3	.00039	41.557	.00242	.08298	-.00086	-.00310	-.00333	5.1485
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703130401 Acquired: 3/27/2017 16:24:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**.13781**	**.00654**	**-.00002**	**-.00056**	**.00465**	**1.1311**
Stddev	.00060	.00167	.00467	.00162	.00066	.00010	.6616
%RSD	340.33	1.2096	71.451	8973.1	117.49	2.1644	58.495
#1	-.00044	.13601	.01068	-.00176	-.00098	.00456	.62307
#2	.00075	.13811	.00746	.00144	.00020	.00476	1.8792
#3	.00021	.13930	.00147	.00027	-.00090	.00464	.89089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11367.**	**76688.**	**2887.4**
Stddev	170.	214.	37.6
%RSD	1.4961	.27956	1.3020
#1	11171.	76935.	2888.6
#2	11470.	76580.	2849.1
#3	11461.	76550.	2924.3

Approved: March 28, 2017

Sample Name: L1703130402 Acquired: 3/27/2017 16:28:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**.14827**	**-.00055**	**.12044**	**.21219**	**-.00015**	**27.488**	**.00034**
Stddev	.00097	.00333	.00086	.00114	.00179	.00002	.051	.00015
%RSD	1648.7	2.2480	157.61	.94969	.84198	16.314	.18412	43.900
#1	-.00106	.14898	-.00051	.11916	.21078	-.00013	27.518	.00018
#2	.00070	.15120	.00030	.12078	.21420	-.00017	27.430	.00048
#3	.00054	.14464	-.00143	.12137	.21158	-.00015	27.516	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00033**	**.00143**	**.00277**	**.24936**	**1.2960**	**.00587**	**11.225**	**.01095**
Stddev	.00018	.00076	.00054	.02218	.0602	.00493	.105	.00077
%RSD	55.293	52.922	19.699	8.8952	4.6461	84.057	.93126	6.9994
#1	.00014	.00093	.00251	.25057	1.3642	.00060	11.246	.01036
#2	.00049	.00230	.00339	.22659	1.2736	.01037	11.317	.01181
#3	.00034	.00106	.00239	.27090	1.2501	.00664	11.111	.01067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00390**	**55.498**	**.00071**	**.00862**	**.00231**	**.00225**	**-.00133**	**4.0162**
Stddev	.00015	.037	.00070	.00178	.00274	.00205	.00808	.0503
%RSD	3.8139	.06745	99.132	20.594	118.74	91.007	607.54	1.2534
#1	.00405	55.541	.00013	.00658	.00178	.00094	-.00682	4.0511
#2	.00391	55.469	.00149	.00958	-.00013	.00461	.00795	4.0390
#3	.00375	55.486	.00050	.00972	.00528	.00120	-.00511	3.9585
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703130402 Acquired: 3/27/2017 16:28:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.68919**	**.00122**	**-.00314**	**.00009**	**.00378**	**.48008**
Stddev	.00041	.00167	.00639	.00131	.00040	.00001	.37862
%RSD	541.95	.24242	524.12	41.675	430.64	.33933	78.867
#1	.00038	.68781	-.00440	-.00465	.00019	.00378	.10727
#2	-.00020	.68872	.00816	-.00228	.00044	.00377	.46870
#3	-.00042	.69105	-.00011	-.00249	-.00035	.00380	.86426
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11449.**	**75659.**	**2879.7**
Stddev	98.	383.	27.9
%RSD	.85339	.50598	.96752
#1	11390.	76053.	2883.1
#2	11562.	75289.	2850.3
#3	11395.	75636.	2905.7

Approved: March 28, 2017

Sample Name: L1703130403 Acquired: 3/27/2017 16:32:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**4.0225**	**-.00239**	**.01226**	**.08855**	**.00028**	**12.477**	**.00044**
Stddev	.00253	.0143	.00168	.00035	.00173	.00009	.058	.00023
%RSD	2523.8	.35530	70.373	2.8525	1.9577	30.561	.46508	51.636
#1	.00198	4.0390	-.00048	.01248	.09019	.00032	12.518	.00066
#2	-.00292	4.0147	-.00305	.01185	.08871	.00018	12.411	.00046
#3	.00064	4.0138	-.00364	.01244	.08674	.00035	12.503	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00494**	**.00882**	**.01222**	**7.6870**	**1.8093**	**-.00130**	**9.7265**	**.13487**
Stddev	.00024	.00028	.00043	.0658	.0850	.00443	.0636	.00243
%RSD	4.8414	3.1686	3.5104	.85533	4.6971	340.68	.65416	1.7997
#1	.00473	.00866	.01185	7.7532	1.7215	-.00595	9.7906	.13704
#2	.00520	.00914	.01269	7.6863	1.8153	.00285	9.7255	.13533
#3	.00489	.00865	.01212	7.6217	1.8912	-.00080	9.6634	.13225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00040**	**21.407**	**.01115**	**.05642**	**.00599**	**-.00151**	**.00144**	**9.8427**
Stddev	.00009	.177	.00085	.00838	.00319	.00089	.00135	.0036
%RSD	23.343	.82635	7.6301	14.854	53.302	59.091	93.278	.03665
#1	.00043	21.588	.01103	.05104	.00302	-.00215	.00229	9.8458
#2	.00029	21.235	.01205	.05214	.00937	-.00049	.00215	9.8436
#3	.00047	21.398	.01036	.06607	.00558	-.00189	-.00011	9.8387
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703130403 Acquired: 3/27/2017 16:32:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**.19623**	**.08037**	**-.00232**	**.00812**	**.12070**	**1.8527**
Stddev	.00025	.00118	.00404	.00047	.00079	.00013	.7010
%RSD	105.27	.60262	5.0322	20.270	9.7342	.10495	37.837
#1	.00002	.19738	.08346	-.00203	.00903	.12082	2.6101
#2	-.00024	.19501	.08186	-.00286	.00769	.12057	1.2267
#3	-.00047	.19630	.07579	-.00207	.00763	.12070	1.7214
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11473.**	**77680.**	**2940.2**
Stddev	20.	1737.	46.7
%RSD	.17602	2.2364	1.5883
#1	11492.	76486.	2886.5
#2	11452.	79673.	2963.5
#3	11474.	76881.	2970.8

Approved: March 28, 2017

Sample Name: L1703131301 Acquired: 3/27/2017 16:36:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00034**	**.15817**	**.05653**	**.07000**	**.51151**	**-.00012**	**77.699**
Stddev	.00046	.01049	.00067	.00219	.00223	.00005	.322
%RSD	133.71	6.6300	1.1936	3.1315	.43539	45.840	.41420
#1	.00060	.16655	.05703	.06977	.50972	-.00014	77.754
#2	-.00019	.14641	.05680	.07230	.51400	-.00015	77.990
#3	.00062	.16155	.05576	.06794	.51081	-.00005	77.354
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00094**	**-.00010**	**-.00033**	**.00016**	**53.139**	**2.0978**	**-.00091**
Stddev	.00014	.00034	.00037	.00198	.067	.0437	.00950
%RSD	15.247	349.26	113.18	1265.6	.12634	2.0818	1047.6
#1	.00097	.00011	-.00010	.00081	53.070	2.1081	-.00571
#2	.00107	.00009	-.00013	-.00207	53.144	2.1355	-.00704
#3	.00078	-.00049	-.00076	.00173	53.204	2.0500	.01003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**12.678**	**3.5010**	**.00078**	**65.445**	**.00351**	**.81416**	**.00362**
Stddev	.024	.0111	.00016	.267	.00064	.00360	.00250
%RSD	.19297	.31690	20.713	.40782	18.334	.44260	69.120
#1	12.686	3.4887	.00089	65.441	.00328	.81804	.00085
#2	12.696	3.5103	.00087	65.713	.00302	.81092	.00570
#3	12.650	3.5039	.00060	65.180	.00424	.81352	.00430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: L1703131301 Acquired: 3/27/2017 16:36:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00115**	**-.00121**	**10.485**	**.00018**	**.24465**	**.01626**	**-.00170**
Stddev	.00416	.00869	.025	.00074	.00019	.01779	.00318
%RSD	361.40	716.97	.23478	414.93	.07919	109.36	187.34
#1	-.00319	-.00047	10.506	.00070	.24445	.03559	.00006
#2	.00152	-.01026	10.491	-.00067	.24484	.00058	.00021
#3	.00512	.00708	10.457	.00051	.24465	.01261	-.00537
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00019**	**.00420**	F **-3.8087**
Stddev	.00153	.00022	.1652
%RSD	810.85	5.1586	4.3369
#1	.00162	.00411	-3.8129
#2	-.00143	.00445	-3.9717
#3	.00038	.00404	-3.6415
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11304.**	**76861.**	**2866.3**
Stddev	64.	954.	89.6
%RSD	.56472	1.2413	3.1276
#1	11245.	77929.	2810.2
#2	11297.	76092.	2819.0
#3	11372.	76562.	2969.6

Approved: March 28, 2017

Sample Name: L1703131302 Acquired: 3/27/2017 16:39:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00180**	**.01883**	**.03977**	**.07066**	**.45595**	**-.00010**	**77.711**
Stddev	.00160	.00426	.00330	.00195	.00184	.00002	.278
%RSD	88.820	22.640	8.2968	2.7650	.40385	21.987	.35742
#1	.00070	.01434	.03687	.06841	.45489	-.00013	77.513
#2	.00107	.02282	.04336	.07171	.45488	-.00009	77.591
#3	.00364	.01932	.03908	.07187	.45807	-.00009	78.028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00082**	**-.00017**	**.00061**	**-.00177**	**45.517**	**1.9615**	**.00019**
Stddev	.00024	.00017	.00056	.00083	.330	.1110	.01034
%RSD	28.794	104.49	92.464	47.211	.72459	5.6591	5384.4
#1	.00077	-.00007	.00126	-.00080	45.289	2.0782	.00917
#2	.00108	-.00006	.00028	-.00224	45.367	1.8572	.00252
#3	.00062	-.00037	.00029	-.00226	45.895	1.9492	-.01111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**12.616**	**3.4977**	**.00075**	**65.281**	**.00206**	**.45366**	**.00399**
Stddev	.063	.0127	.00023	.290	.00084	.00789	.00085
%RSD	.49599	.36404	31.416	.44380	40.714	1.7382	21.324
#1	12.643	3.4969	.00067	65.124	.00110	.45536	.00313
#2	12.544	3.4854	.00056	65.103	.00264	.46055	.00402
#3	12.660	3.5108	.00101	65.615	.00243	.44506	.00483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: L1703131302 Acquired: 3/27/2017 16:39:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00113**	**-.00185**	**9.8936**	**.00057**	**.24380**	**.00156**	**-.00314**
Stddev	.00356	.00150	.0753	.00034	.00214	.00224	.00286
%RSD	315.07	81.215	.76128	60.193	.87793	143.72	90.993
#1	-.00173	-.00296	9.9361	.00030	.24296	.00412	-.00640
#2	.00512	-.00014	9.9380	.00045	.24221	.00060	-.00111
#3	.00001	-.00244	9.8066	.00095	.24624	-.00005	-.00191
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00033**	**.00451**	F **-2.8722**
Stddev	.00069	.00010	.7022
%RSD	207.57	2.2554	24.449
#1	-.00033	.00448	-2.4433
#2	.00028	.00462	-3.6826
#3	.00105	.00442	-2.4906
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11248.**	**75616.**	**2899.3**
Stddev	155.	1138.	35.2
%RSD	1.3809	1.5055	1.2145
#1	11069.	74775.	2895.7
#2	11339.	75162.	2936.2
#3	11337.	76912.	2866.1

Approved: March 28, 2017

Sample Name: L1703131303 Acquired: 3/27/2017 16:43:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00125**	**.37277**	**.00099**	**.02402**	**.04127**	**.00009**	**17.951**	**.00053**
Stddev	.00122	.00209	.00045	.00149	.00107	.00002	.125	.00021
%RSD	97.612	.55975	45.529	6.1941	2.6037	24.870	.69393	38.934
#1	-.00256	.37465	.00107	.02293	.04199	.00010	18.054	.00073
#2	-.00106	.37052	.00139	.02342	.04003	.00011	17.986	.00032
#3	-.00014	.37314	.00050	.02571	.04178	.00006	17.812	.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00485**	**.00320**	**.00236**	**4.3591**	**.44417**	**.00008**	**3.3319**	**1.0195**
Stddev	.00009	.00092	.00116	.0301	.07250	.00224	.0336	.0027
%RSD	1.8539	28.672	49.346	.68969	16.323	2651.5	1.0097	.25976
#1	.00475	.00407	.00361	4.3255	.41850	-.00186	3.3603	1.0221
#2	.00493	.00224	.00213	4.3834	.52601	.00254	3.3406	1.0196
#3	.00485	.00327	.00132	4.3684	.38799	-.00042	3.2947	1.0168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**8.4459**	**.01535**	**.17832**	**-.00046**	**-.00010**	**-.00142**	**6.1109**
Stddev	.00021	.1126	.00072	.00161	.00217	.00358	.00357	.0493
%RSD	327.55	1.3327	4.6898	.90471	471.36	3590.2	251.44	.80737
#1	.00010	8.5758	.01468	.18015	.00093	-.00405	-.00545	6.1405
#2	-.00030	8.3833	.01611	.17711	.00065	.00079	.00135	6.1383
#3	.00001	8.3785	.01527	.17768	-.00296	.00295	-.00016	6.0540
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703131303 Acquired: 3/27/2017 16:43:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**.07296**	**.00985**	**-.00207**	**.00122**	**.01554**	**.68680**
Stddev	.00061	.00067	.00563	.00276	.00022	.00022	.27717
%RSD	246.53	.91556	57.143	133.21	18.426	1.3973	40.357
#1	.00094	.07252	.00349	-.00129	.00126	.01550	.42090
#2	-.00023	.07264	.01188	.00022	.00142	.01577	.66548
#3	.00004	.07373	.01418	-.00513	.00098	.01534	.97401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11736.**	**78155.**	**2990.3**
Stddev	108.	531.	91.5
%RSD	.92016	.67899	3.0595
#1	11738.	77554.	2937.3
#2	11626.	78561.	3095.9
#3	11842.	78349.	2937.7

Approved: March 28, 2017

Sample Name: L1703131304 Acquired: 3/27/2017 16:47:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**.02361**	**.00056**	**.02162**	**.03810**	**.00000**	**17.610**	**.00064**
Stddev	.00137	.00484	.00136	.00398	.00230	.00002	.031	.00010
%RSD	536.71	20.480	242.64	18.385	6.0386	704.35	.17406	15.741
#1	-.00173	.02786	-.00082	.02600	.03929	-.00001	17.601	.00069
#2	-.00001	.01835	.00191	.02064	.03545	-.00001	17.585	.00071
#3	.00097	.02463	.00060	.01823	.03956	.00002	17.645	.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00465**	**.00249**	**.00090**	**1.0030**	**.19274**	**-.00562**	**3.3146**	**.98635**
Stddev	.00018	.00098	.00046	.0186	.15347	.00298	.0673	.00184
%RSD	3.8883	39.470	50.641	1.8579	79.623	53.038	2.0319	.18605
#1	.00445	.00205	.00103	.99289	.28143	-.00896	3.3585	.98573
#2	.00472	.00362	.00128	1.0245	.01553	-.00324	3.3482	.98842
#3	.00479	.00181	.00040	.99155	.28127	-.00465	3.2371	.98491
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**8.3161**	**.01536**	**.01308**	**.00094**	**.00005**	**.00194**	**5.5291**
Stddev	.00013	.1014	.00054	.00416	.00054	.00527	.00286	.0543
%RSD	128.20	1.2196	3.5013	31.799	57.332	11146.	147.47	.98201
#1	.00013	8.4126	.01487	.01298	.00121	-.00387	.00338	5.5557
#2	.00022	8.3254	.01594	.00897	.00129	-.00203	.00379	5.5649
#3	-.00004	8.2104	.01527	.01728	.00032	.00604	-.00135	5.4666
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703131304 Acquired: 3/27/2017 16:47:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**.07200**	**-.00790**	**-.00318**	**-.00031**	**.01481**	**.65401**
Stddev	.00090	.00108	.00722	.00026	.00038	.00014	.44508
%RSD	180.53	1.5004	91.361	8.2560	125.57	.93388	68.055
#1	-.00049	.07243	-.01591	-.00288	-.00061	.01480	1.1673
#2	.00127	.07280	-.00191	-.00329	.00013	.01496	.37445
#3	.00072	.07077	-.00588	-.00336	-.00043	.01468	.42032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11610.**	**78903.**	**2930.6**
Stddev	61.	614.	62.8
%RSD	.52921	.77755	2.1446
#1	11574.	78195.	2889.7
#2	11681.	79254.	3002.9
#3	11575.	79261.	2899.1

Approved: March 28, 2017

Sample Name: L1703117701 Acquired: 3/27/2017 16:50:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00176**	**.15864**	**.00087**	**.00890**	**.02127**	**-.00009**	**1.2443**
Stddev	.00149	.00324	.00154	.00132	.00036	.00003	.0273
%RSD	84.764	2.0439	176.37	14.868	1.6776	37.104	2.1961
#1	-.00007	.15493	.00240	.01034	.02092	-.00012	1.2221
#2	-.00290	.16001	-.00067	.00861	.02125	-.00006	1.2748
#3	-.00232	.16097	.00089	.00774	.02164	-.00008	1.2360
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**.00112**	**.00078**	**-.00036**	**5.2892**	**.19339**	**-.00888**
Stddev	.00015	.00018	.00057	.00133	.0151	.09166	.00538
%RSD	106.06	16.529	72.657	365.97	.28631	47.394	60.560
#1	-.00003	.00129	.00052	-.00182	5.3034	.16971	-.00311
#2	.00026	.00115	.00039	.00079	5.2911	.29456	-.00978
#3	.00021	.00092	.00143	-.00006	5.2732	.11590	-.01375
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47820**	**.04835**	**-.00012**	**14.809**	**.00147**	**.01105**	**-.00151**
Stddev	.12141	.00274	.00020	.075	.00039	.00721	.00405
%RSD	25.389	5.6655	176.40	.50921	26.332	65.287	268.72
#1	.34053	.05025	-.00011	14.723	.00189	.01413	.00163
#2	.56998	.04958	.00009	14.840	.00140	.00280	-.00608
#3	.52410	.04521	-.00032	14.865	.00112	.01620	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: L1703117701 Acquired: 3/27/2017 16:50:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00075**	**-.00344**	**.71105**	**-.00033**	**.00920**	**-.00490**	**-.00072**
Stddev	.00333	.00191	.00080	.00051	.00023	.00044	.00252
%RSD	444.09	55.466	.11249	155.73	2.5177	9.0613	350.68
#1	.00238	-.00130	.71079	-.00031	.00945	-.00491	-.00315
#2	-.00037	-.00406	.71041	.00018	.00899	-.00445	.00189
#3	-.00426	-.00495	.71194	-.00085	.00916	-.00533	-.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00063**	**.00273**	F **-1.0344**
Stddev	.00038	.00008	.1019
%RSD	60.528	3.0376	9.8521
#1	.00024	.00265	-.92798
#2	.00100	.00282	-1.1311
#3	.00065	.00272	-1.0440
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11561.**	**78001.**	**2767.7**
Stddev	61.	1354.	46.4
%RSD	.53122	1.7365	1.6771
#1	11504.	77613.	2821.0
#2	11626.	79507.	2745.1
#3	11555.	76883.	2736.8

Approved: March 28, 2017

Sample Name: L1703117701PS Acquired: 3/27/2017 16:54:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG607652-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22281**	**5.6808**	**.21162**	**1.0799**	**.54958**	**.02687**	**6.5143**	**.02744**
Stddev	.00188	.0391	.00248	.0039	.00231	.00013	.0634	.00045
%RSD	.84240	.68913	1.1708	.35949	.41994	.47146	.97372	1.6402
#1	.22264	5.6819	.21371	1.0774	.55034	.02692	6.5203	.02754
#2	.22477	5.7194	.21226	1.0843	.55142	.02697	6.4480	.02695
#3	.22103	5.6412	.20888	1.0779	.54699	.02673	6.5745	.02783
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10877**	**.26951**	**.27129**	**7.6669**	**26.236**	**.51964**	**5.8992**	**.31468**
Stddev	.00050	.00250	.00231	.0750	.120	.00629	.0198	.00291
%RSD	.46204	.92708	.85109	.97812	.45624	1.2110	.33556	.92450
#1	.10901	.26833	.26900	7.7360	26.254	.52463	5.9147	.31154
#2	.10910	.27238	.27362	7.6775	26.109	.51257	5.8769	.31728
#3	.10819	.26782	.27126	7.5871	26.346	.52171	5.9061	.31523
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52187**	**41.244**	**.26656**	**5.3375**	**.27010**	**.64204**	**.22398**	**3.4270**
Stddev	.00282	.106	.00057	.0093	.00070	.00258	.00309	.0058
%RSD	.54130	.25595	.21488	.17497	.25917	.40132	1.3817	.17021
#1	.52182	41.228	.26628	5.3282	.27090	.63907	.22743	3.4208
#2	.52472	41.356	.26722	5.3469	.26964	.64335	.22145	3.4324
#3	.51907	41.146	.26618	5.3376	.26975	.64370	.22306	3.4278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703117701PS Acquired: 3/27/2017 16:54:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG607652-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53672**	**.54630**	**.53528**	**.27063**	**.52939**	**.53759**	**.09890**
Stddev	.00227	.00042	.00540	.00223	.00328	.00174	.42975
%RSD	.42336	.07633	1.0088	.82366	.62022	.32378	434.55
#1	.53874	.54633	.53744	.27307	.53148	.53710	.50786
#2	.53715	.54586	.53927	.26870	.53107	.53952	.13782
#3	.53426	.54669	.52913	.27011	.52560	.53614	-.34899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11292.**	**74147.**	**2835.8**
Stddev	142.	1183.	42.8
%RSD	1.2537	1.5956	1.5100
#1	11261.	74428.	2824.0
#2	11169.	72848.	2800.1
#3	11447.	75164.	2883.3

Approved: March 28, 2017

Sample Name: L1703117701SDL Acquired: 3/27/2017 16:58:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG607652-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00148**	**.02876**	**-.00135**	**.00494**	**.00444**	**-.00000**	**.25754**	**.00024**
Stddev	.00084	.00780	.00164	.00167	.00174	.00004	.03067	.00024
%RSD	56.591	27.121	121.75	33.814	39.148	1139.5	11.907	100.46
#1	-.00053	.03761	-.00324	.00312	.00532	-.00004	.29207	.00052
#2	-.00213	.02576	-.00031	.00640	.00556	.00004	.24708	.00009
#3	-.00178	.02290	-.00049	.00532	.00244	-.00001	.23348	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00046**	**.00149**	**-.00035**	**1.0595**	**.03268**	**-.00376**	**.12478**	**.01318**
Stddev	.00010	.00053	.00075	.0106	.13018	.00767	.08816	.00168
%RSD	21.909	35.132	217.48	.99605	398.33	203.97	70.648	12.716
#1	.00036	.00192	-.00082	1.0716	.15173	-.01191	.22638	.01290
#2	.00047	.00166	.00052	1.0530	-.10633	-.00267	.07946	.01498
#3	.00056	.00091	-.00074	1.0537	.05265	.00330	.06851	.01166
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**3.0988**	**-.00009**	**.00431**	**.00241**	**.00337**	**.00058**	**.14959**
Stddev	.00055	.0255	.00093	.00274	.00303	.00402	.00334	.00257
%RSD	255.87	.82412	1067.6	63.638	125.87	118.99	580.29	1.7164
#1	.00047	3.0911	.00009	.00123	.00527	.00592	-.00286	.14694
#2	.00059	3.1274	-.00109	.00522	-.00077	-.00125	.00382	.15207
#3	-.00042	3.0781	.00074	.00648	.00272	.00546	.00077	.14975
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703117701SDL Acquired: 3/27/2017 16:58:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG607652-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00145**	**-.00052**	**-.00068**	**-.00007**	**.00151**	**.29222**
Stddev	.00037	.00037	.00301	.00303	.00048	.00011	.45061
%RSD	269.02	25.774	574.68	444.56	649.21	7.3102	154.20
#1	.00025	.00126	.00233	-.00303	-.00050	.00153	.69993
#2	-.00018	.00188	-.00024	-.00176	.00044	.00139	-.19159
#3	-.00049	.00121	-.00367	.00274	-.00016	.00161	.36833
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11739.**	**76943.**	**2791.9**
Stddev	89.	1378.	36.5
%RSD	.75495	1.7913	1.3065
#1	11772.	77823.	2790.5
#2	11639.	77652.	2756.1
#3	11807.	75355.	2829.0

Approved: March 28, 2017

Sample Name: CCV Acquired: 3/27/2017 17:01:48 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42633**	**10.703**	**.41960**	**.52789**	**1.0368**	**.05236**	**10.374**	**.05244**
Stddev	.00126	.022	.00074	.00220	.0062	.00004	.128	.00031
%RSD	.29652	.20781	.17550	.41631	.59784	.07819	1.2313	.59403
#1	.42641	10.683	.41995	.52962	1.0314	.05233	10.320	.05214
#2	.42756	10.700	.41875	.52863	1.0353	.05236	10.281	.05276
#3	.42503	10.727	.42009	.52541	1.0436	.05241	10.519	.05242
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20929**	**.52612**	**.52862**	**4.2122**	**50.709**	**1.0228**	**10.431**	**.52490**
Stddev	.00010	.00194	.00087	.0455	.166	.0076	.105	.00603
%RSD	.04808	.36955	.16464	1.0806	.32650	.74399	1.0057	1.1489
#1	.20935	.52418	.52870	4.1690	50.519	1.0213	10.329	.51795
#2	.20935	.52611	.52771	4.2079	50.788	1.0160	10.424	.52797
#3	.20918	.52807	.52944	4.2598	50.821	1.0310	10.539	.52878
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0469**	**50.657**	**.52121**	**10.427**	**.52305**	**1.2429**	**.42644**	**5.2047**
Stddev	.0028	.179	.00090	.020	.00216	.0062	.00232	.0023
%RSD	.27080	.35336	.17226	.19508	.41298	.49585	.54510	.04503
#1	1.0436	50.542	.52019	10.418	.52080	1.2471	.42817	5.2048
#2	1.0483	50.566	.52157	10.450	.52511	1.2358	.42736	5.2069
#3	1.0488	50.863	.52187	10.412	.52323	1.2457	.42380	5.2023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: March 28, 2017

Sample Name: CCV Acquired: 3/27/2017 17:01:48 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0476**	**1.0443**	**1.0416**	**.53137**	**1.0410**	**1.0392**	**1.0615**
Stddev	.0015	.0096	.0128	.00179	.0005	.0007	.3411
%RSD	.13944	.91555	1.2254	.33667	.04971	.06401	32.132
#1	1.0491	1.0394	1.0447	.52978	1.0407	1.0392	1.3604
#2	1.0474	1.0382	1.0276	.53331	1.0416	1.0399	.68994
#3	1.0462	1.0553	1.0526	.53103	1.0407	1.0385	1.1341
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10888.**	**74597.**	**2728.6**
Stddev	61.	913.	33.3
%RSD	.56409	1.2235	1.2203
#1	10912.	75573.	2761.4
#2	10934.	74454.	2729.5
#3	10818.	73765.	2694.8

Approved: March 28, 2017

Sample Name: CCB Acquired: 3/27/2017 17:05:22 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00030**	**-.00156**	**-.00284**	**.00202**	**-.00115**	**-.00003**	**.07088**
Stddev	.00180	.00633	.00055	.00153	.00198	.00009	.01282
%RSD	594.82	406.47	19.290	75.631	171.51	269.43	18.082
#1	.00129	-.00873	-.00339	.00275	-.00255	.00007	.06308
#2	-.00225	.00325	-.00283	.00306	-.00201	-.00008	.06389
#3	.00006	.00081	-.00229	.00027	.00111	-.00010	.08568
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**.00019**	**.00090**	**-.00190**	**-.00292**	**-.07399**	**.00058**
Stddev	.00038	.00008	.00052	.00182	.03045	.09408	.00602
%RSD	209.28	41.310	58.348	96.039	1042.8	127.16	1047.0
#1	-.00022	.00027	.00149	-.00188	.03116	-.12050	.00361
#2	.00022	.00012	.00052	-.00008	-.02745	-.13575	-.00636
#3	.00053	.00017	.00067	-.00372	-.01246	.03429	.00447
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03436**	**.00319**	**-.00008**	**.04701**	**.00017**	**.00136**	**.00138**
Stddev	.08264	.00180	.00060	.05416	.00101	.00145	.00025
%RSD	240.54	56.410	784.73	115.22	599.50	106.68	18.177
#1	.00211	.00511	-.00074	.08987	.00053	-.00011	.00166
#2	-.02730	.00295	.00045	-.01387	.00095	.00279	.00130
#3	.12826	.00153	.00005	.06503	-.00097	.00141	.00118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: CCB Acquired: 3/27/2017 17:05:22 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00525**	**.00065**	**.00957**	**.00029**	**.00023**	**.00098**	**-.00110**
Stddev	.00673	.00181	.00127	.00143	.00025	.00534	.00077
%RSD	128.23	277.94	13.235	494.96	107.64	541.75	70.148
#1	-.00063	-.00041	.00855	.00087	.00018	.00713	-.00051
#2	.01260	.00274	.01098	-.00134	.00051	-.00173	-.00082
#3	.00379	-.00038	.00917	.00133	.00002	-.00245	-.00196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00071**	**.00015**	F **.17417**
Stddev	.00102	.00009	.18108
%RSD	143.88	60.247	103.97
#1	-.00167	.00025	.07792
#2	.00036	.00008	.38304
#3	-.00081	.00011	.06154
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11156.**	**74718.**	**2761.1**
Stddev	30.	940.	29.4
%RSD	.27291	1.2577	1.0639
#1	11177.	75516.	2793.8
#2	11169.	74955.	2737.0
#3	11121.	73682.	2752.5

Approved: March 28, 2017

Sample Name: PBW A Acquired: 3/27/2017 17:09:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607345-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00147**	**.00023**	**-.00056**	**.00427**	**-.00279**	**-.00009**	**.03766**
Stddev	.00080	.00177	.00175	.00060	.00025	.00004	.02600
%RSD	54.909	780.73	311.27	13.926	9.0708	44.771	69.032
#1	-.00225	-.00116	.00109	.00426	-.00300	-.00007	.04279
#2	-.00064	.00222	-.00038	.00487	-.00251	-.00005	.06071
#3	-.00151	-.00038	-.00239	.00368	-.00288	-.00013	.00948
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**.00013**	**.00090**	**-.00023**	**.00670**	**-.02312**	**.00152**
Stddev	.00011	.00014	.00109	.00077	.01197	.12103	.00470
%RSD	102.54	107.40	121.42	337.53	178.79	523.49	310.36
#1	-.00000	.00028	.00116	.00054	.00409	-.16115	.00127
#2	.00010	.00009	-.00030	-.00022	.01976	.02693	-.00306
#3	.00021	.00001	.00182	-.00101	-.00376	.06486	.00634
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **-.10344**	**.00304**	**.00009**	**.07671**	**.00042**	**-.00627**	**-.00045**
Stddev	.01808	.00118	.00003	.04598	.00016	.00791	.00127
%RSD	17.478	38.807	32.998	59.939	38.152	126.11	282.97
#1	-.11789	.00179	.00009	.03771	.00024	.00131	-.00183
#2	-.08317	.00319	.00006	.12740	.00047	-.01447	.00069
#3	-.10926	.00414	.00012	.06502	.00054	-.00565	-.00021
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	900.00						
Low Limit	-.10000						

Approved: March 28, 2017

Sample Name: PBW A Acquired: 3/27/2017 17:09:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607345-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00059**	**.00015**	**.00995**	**.00018**	**.00023**	**.00639**	**.00153**
Stddev	.00246	.00186	.00073	.00054	.00060	.00496	.00137
%RSD	420.52	1225.6	7.3429	300.03	257.50	77.630	89.769
#1	-.00212	.00203	.01048	-.00009	.00055	.01175	.00151
#2	.00270	.00012	.00911	-.00017	-.00046	.00198	.00017
#3	.00118	-.00169	.01024	.00080	.00062	.00543	.00291
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00007**	**.00091**	**.15405**
Stddev	.00032	.00019	.43440
%RSD	474.79	20.610	282.00
#1	.00024	.00107	-.29475
#2	-.00005	.00096	.57246
#3	-.00040	.00070	.18443
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11573.**	**79308.**	**2856.1**
Stddev	121.	265.	34.6
%RSD	1.0480	.33361	1.2104
#1	11438.	79052.	2823.3
#2	11611.	79580.	2852.7
#3	11671.	79292.	2892.2

Approved: March 28, 2017

Sample Name: LCSW A Acquired: 3/27/2017 17:12:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607345-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21434**	**5.2791**	**.20248**	**1.0132**	**.52216**	**.02569**	**5.2237**	**.02619**
Stddev	.00074	.0135	.00160	.0034	.00065	.00005	.0593	.00026
%RSD	.34686	.25647	.79170	.33378	.12357	.18313	1.1357	.99312
#1	.21453	5.2655	.20423	1.0152	.52146	.02569	5.2501	.02649
#2	.21353	5.2791	.20214	1.0093	.52272	.02573	5.1558	.02607
#3	.21498	5.2926	.20107	1.0151	.52231	.02564	5.2653	.02602
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10535**	**.26077**	**.26195**	**2.1121**	**25.517**	**.52163**	**5.0967**	**.26268**
Stddev	.00108	.00085	.00169	.0123	.149	.00549	.1736	.00227
%RSD	1.0295	.32639	.64584	.58233	.58470	1.0522	3.4058	.86356
#1	.10632	.26169	.26252	2.1261	25.396	.51563	5.1668	.26255
#2	.10553	.26063	.26329	2.1034	25.471	.52286	4.8991	.26049
#3	.10418	.26000	.26005	2.1066	25.684	.52640	5.2243	.26502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51264**	**25.666**	**.26063**	**5.0847**	**.26249**	**.61726**	**.20396**	**2.6278**
Stddev	.00297	.025	.00231	.0209	.00088	.00370	.00481	.0102
%RSD	.57854	.09792	.88730	.41140	.33501	.59981	2.3607	.38746
#1	.51460	25.660	.26297	5.0983	.26323	.62144	.20557	2.6301
#2	.51409	25.644	.26057	5.0952	.26272	.61597	.20776	2.6366
#3	.50922	25.694	.25835	5.0606	.26152	.61438	.19854	2.6167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: LCSW A Acquired: 3/27/2017 17:12:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607345-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52563**	**.53308**	**.52248**	**.26478**	**.51759**	**.51047**	**.86134**
Stddev	.00494	.00095	.00895	.00141	.00278	.00261	1.0748
%RSD	.94000	.17820	1.7121	.53081	.53703	.51166	124.79
#1	.52941	.53407	.51387	.26509	.51527	.51247	.88370
#2	.52744	.53299	.52184	.26325	.51683	.51142	-.22450
#3	.52004	.53218	.53172	.26601	.52067	.50751	1.9248
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11552.**	**78376.**	**2934.3**
Stddev	75.	113.	29.3
%RSD	.64903	.14446	.99722
#1	11469.	78467.	2900.6
#2	11573.	78250.	2949.5
#3	11614.	78413.	2952.9

Approved: March 28, 2017

Sample Name: L1703116101 Acquired: 3/27/2017 17:16:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607345-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**.56305**	**-.00081**	**.01166**	**.05643**	**.00009**	**4.3218**
Stddev	.00050	.00667	.00179	.00182	.00121	.00006	.0166
%RSD	143.48	1.1850	220.63	15.608	2.1459	68.986	.38456
#1	.00022	.55625	-.00063	.00957	.05782	.00014	4.3094
#2	-.00073	.56332	.00088	.01291	.05570	.00002	4.3407
#3	-.00054	.56959	-.00268	.01249	.05576	.00009	4.3152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00039**	**.00441**	**.04348**	**.00097**	**4.2801**	**.67762**	**-.00124**
Stddev	.00007	.00024	.00067	.00154	.0386	.08448	.00514
%RSD	18.043	5.4720	1.5356	158.89	.90279	12.467	415.83
#1	.00036	.00448	.04311	.00209	4.2388	.58047	-.00658
#2	.00048	.00461	.04308	-.00079	4.2863	.71860	-.00078
#3	.00034	.00414	.04425	.00160	4.3153	.73380	.00366
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.3375**	**.15059**	**.00374**	**123.92**	**.00931**	**.10148**	**.00230**
Stddev	.0735	.00078	.00028	.58	.00047	.00793	.00049
%RSD	1.3767	.52026	7.5117	.46498	5.0045	7.8097	21.094
#1	5.3090	.15048	.00384	123.25	.00981	.10071	.00284
#2	5.2825	.14986	.00395	124.28	.00890	.09397	.00189
#3	5.4209	.15142	.00342	124.22	.00921	.10976	.00217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: L1703116101 Acquired: 3/27/2017 17:16:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607345-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00125**	**-.00136**	**14.142**	**.00030**	**.11252**	**.00497**	**-.00284**
Stddev	.00208	.00595	.139	.00090	.00060	.00830	.00142
%RSD	165.90	436.89	.98529	294.27	.53157	167.02	49.893
#1	-.00068	.00145	14.245	-.00001	.11221	.01317	-.00447
#2	.00099	.00266	14.198	.00132	.11321	-.00343	-.00193
#3	.00344	-.00820	13.984	-.00039	.11214	.00517	-.00212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00475**	**.00953**	F **-.05399**
Stddev	.00015	.00006	.43567
%RSD	3.2381	.61456	806.98
#1	.00493	.00957	.10784
#2	.00464	.00955	-.54741
#3	.00469	.00946	.27760
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11444.**	**77097.**	**2921.7**
Stddev	87.	1098.	21.4
%RSD	.75987	1.4236	.73196
#1	11349.	77524.	2940.0
#2	11464.	77917.	2898.2
#3	11519.	75850.	2926.9

Approved: March 28, 2017

Sample Name: L1703116102S Acquired: 3/27/2017 17:20:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607345-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21502**	**6.1208**	**.21361**	**1.0372**	**.59351**	**.02690**	**9.5265**	**.02682**
Stddev	.00090	.0136	.00233	.0079	.00214	.00013	.0791	.00031
%RSD	.42084	.22249	1.0897	.75908	.36039	.46608	.82992	1.1632
#1	.21508	6.1270	.21577	1.0391	.59373	.02681	9.6154	.02702
#2	.21589	6.1302	.21390	1.0439	.59553	.02704	9.5004	.02699
#3	.21408	6.1052	.21115	1.0285	.59127	.02684	9.4639	.02646
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.11116**	**.30801**	**.26802**	**6.6674**	**26.784**	**.53220**	**10.689**	**.42224**
Stddev	.00065	.00130	.00155	.0536	.086	.00232	.028	.00473
%RSD	.58827	.42163	.57715	.80387	.32113	.43500	.25756	1.1200
#1	.11072	.30944	.26625	6.6799	26.828	.53328	10.715	.42240
#2	.11191	.30769	.26866	6.7136	26.685	.53378	10.660	.42689
#3	.11086	.30690	.26913	6.6086	26.840	.52955	10.693	.41744
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52803**	**148.81**	**.27330**	**5.3885**	**.26867**	**.63113**	**.21166**	**17.572**
Stddev	.00068	.45	.00173	.0132	.00126	.00096	.00785	.028
%RSD	.12867	.30207	.63248	.24578	.46968	.15170	3.7089	.16043
#1	.52726	149.00	.27198	5.3790	.26729	.63081	.21528	17.541
#2	.52852	149.13	.27526	5.4036	.26896	.63221	.21704	17.597
#3	.52832	148.30	.27266	5.3828	.26976	.63038	.20265	17.577
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703116102S Acquired: 3/27/2017 17:20:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607345-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53864**	**.65576**	**.54279**	**.26215**	**.53782**	**.53764**	**1.0452**
Stddev	.00079	.00244	.00965	.00284	.00181	.00075	.8103
%RSD	.14714	.37161	1.7784	1.0818	.33646	.14011	77.527
#1	.53782	.65639	.53907	.26440	.53774	.53677	1.2471
#2	.53940	.65783	.55375	.26310	.53967	.53810	.15301
#3	.53870	.65307	.53554	.25897	.53606	.53805	1.7354
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11387.**	**76037.**	**2916.2**
Stddev	60.	466.	50.1
%RSD	.52349	.61338	1.7180
#1	11349.	76528.	2896.9
#2	11455.	75983.	2973.1
#3	11355.	75600.	2878.6

Approved: March 28, 2017

Sample Name: L1703116103SD Acquired: 3/27/2017 17:23:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607345-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21881**	**6.3475**	**.21247**	**1.0592**	**.59454**	**.02692**	**9.6199**	**.02692**
Stddev	.00088	.0303	.00383	.0061	.00483	.00006	.1250	.00027
%RSD	.40333	.47772	1.8020	.57576	.81239	.21360	1.2995	1.0136
#1	.21908	6.3253	.21669	1.0555	.58934	.02689	9.4862	.02694
#2	.21953	6.3351	.21149	1.0560	.59888	.02688	9.6396	.02718
#3	.21783	6.3820	.20922	1.0663	.59541	.02699	9.7339	.02663
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.11115**	**.31760**	**.26501**	**6.8434**	**26.698**	**.53660**	**10.763**	**.43350**
Stddev	.00051	.00180	.00067	.0387	.192	.00177	.121	.00151
%RSD	.45540	.56663	.25174	.56506	.71854	.33035	1.1267	.34752
#1	.11117	.31576	.26452	6.8230	26.532	.53480	10.881	.43192
#2	.11164	.31936	.26577	6.8880	26.908	.53667	10.639	.43365
#3	.11063	.31769	.26475	6.8192	26.653	.53834	10.769	.43492
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52643**	**151.24**	**.27106**	**5.3563**	**.26467**	**.62809**	**.20818**	**18.079**
Stddev	.00316	.59	.00277	.0207	.00491	.00169	.00418	.041
%RSD	.60115	.38972	1.0233	.38581	1.8541	.26960	2.0064	.22901
#1	.52815	150.56	.27399	5.3719	.26980	.62846	.20407	18.114
#2	.52836	151.65	.27070	5.3642	.26419	.62956	.21242	18.089
#3	.52278	151.50	.26848	5.3329	.26002	.62624	.20806	18.033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703116103SD Acquired: 3/27/2017 17:23:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607345-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53521**	**.65563**	**.53946**	**.26164**	**.54062**	**.53758**	**1.5328**
Stddev	.00352	.00195	.00527	.00371	.00081	.00249	.3845
%RSD	.65816	.29804	.97737	1.4184	.14951	.46387	25.087
#1	.53745	.65354	.53674	.25858	.53972	.53958	1.0998
#2	.53703	.65742	.53610	.26577	.54127	.53838	1.8346
#3	.53115	.65592	.54554	.26056	.54087	.53479	1.6639
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11340.**	**76430.**	**2919.7**
Stddev	67.	621.	17.6
%RSD	.58673	.81214	.60242
#1	11349.	76927.	2903.4
#2	11269.	76629.	2917.4
#3	11402.	75734.	2938.3

Approved: March 28, 2017

Sample Name: L1703116104 Acquired: 3/27/2017 17:27:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00061**	**.13000**	**-.00759**	**.05684**	**.25421**	**-.00004**	**20.102**
Stddev	.00096	.00388	.00174	.00121	.00044	.00006	.120
%RSD	157.22	2.9869	22.896	2.1218	.17149	147.20	.59474
#1	-.00054	.13044	-.00906	.05545	.25412	.00002	20.210
#2	.00031	.12592	-.00567	.05750	.25382	-.00010	19.973
#3	-.00161	.13365	-.00804	.05758	.25468	-.00004	20.122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00059**	**-.00013**	**.00016**	**.00001**	**47.364**	**2.3702**	**.01959**
Stddev	.00029	.00041	.00033	.00040	.135	.1312	.00590
%RSD	48.892	317.78	208.78	5055.9	.28560	5.5339	30.109
#1	.00092	-.00034	-.00004	-.00045	47.483	2.3707	.01674
#2	.00045	-.00039	.00054	.00017	47.391	2.2387	.02637
#3	.00040	.00034	-.00003	.00030	47.217	2.5011	.01566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.7842**	**.68026**	**.00030**	**68.041**	**.00242**	**.44580**	**.00524**
Stddev	.0769	.00690	.00018	.282	.00078	.00881	.00298
%RSD	.78628	1.0146	59.548	.41447	32.340	1.9766	56.842
#1	9.7080	.68741	.00037	68.364	.00258	.44709	.00847
#2	9.7827	.67973	.00043	67.846	.00157	.43641	.00461
#3	9.8619	.67364	.00010	67.914	.00311	.45389	.00262
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: L1703116104 Acquired: 3/27/2017 17:27:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00228**	**-.00267**	**16.492**	**.00045**	**.45667**	**.00812**	**-.00303**
Stddev	.00295	.00198	.017	.00112	.00111	.00632	.00103
%RSD	129.33	74.269	.10250	247.07	.24279	77.849	33.922
#1	-.00542	-.00154	16.496	-.00044	.45628	.00273	-.00219
#2	.00044	-.00495	16.473	.00171	.45580	.01507	-.00417
#3	-.00187	-.00151	16.507	.00009	.45791	.00655	-.00272
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00052**	**.00431**	F **-3.3521**
Stddev	.00036	.00005	.6595
%RSD	68.947	1.2399	19.675
#1	.00082	.00428	-2.6066
#2	.00013	.00428	-3.8595
#3	.00060	.00437	-3.5902
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11479.**	**76147.**	**2885.9**
Stddev	112.	988.	87.0
%RSD	.97740	1.2970	3.0135
#1	11482.	75862.	2793.2
#2	11366.	77246.	2965.6
#3	11590.	75333.	2898.9

Approved: March 28, 2017

Sample Name: L1703116105 Acquired: 3/27/2017 17:31:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00078**	**.16971**	**-.00120**	**.00523**	**.06888**	**.00022**	**25.935**
Stddev	.00285	.00576	.00149	.00162	.00163	.00009	.088
%RSD	367.95	3.3912	123.93	30.928	2.3706	41.086	.33874
#1	.00071	.16990	-.00154	.00383	.07076	.00028	26.027
#2	-.00407	.16386	-.00249	.00486	.06807	.00028	25.852
#3	.00103	.17537	.00043	.00700	.06780	.00012	25.926
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**.00302**	**.00176**	**-.00065**	**.19569**	**.52215**	**.08965**
Stddev	.00027	.00025	.00170	.00020	.00899	.06144	.00387
%RSD	110.84	8.1237	96.456	30.539	4.5917	11.767	4.3212
#1	.00025	.00330	.00220	-.00042	.20136	.54750	.08703
#2	.00052	.00288	-.00011	-.00073	.20038	.45209	.08782
#3	-.00003	.00287	.00320	-.00080	.18533	.56687	.09410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**22.887**	**.23495**	**.00007**	F **476.42**	**.01116**	**.06670**	**.00254**
Stddev	.191	.00301	.00012	2.37	.00130	.00602	.00083
%RSD	.83655	1.2805	180.57	.49664	11.620	9.0207	32.833
#1	22.978	.23815	.00004	479.12	.01189	.06053	.00324
#2	23.017	.23450	.00020	475.38	.00967	.07255	.00276
#3	22.667	.23219	-.00004	474.74	.01193	.06701	.00162
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				360.00			
Low Limit				-.50000			

Approved: March 28, 2017

Sample Name: L1703116105 Acquired: 3/27/2017 17:31:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00099**	**-.00270**	**25.261**	**.00008**	**.57665**	**-.00445**	**-.00088**
Stddev	.00171	.00412	.039	.00052	.00413	.00608	.00150
%RSD	172.33	152.78	.15402	683.73	.71631	136.73	169.58
#1	-.00257	.00189	25.244	.00061	.58138	-.01127	-.00230
#2	.00082	-.00609	25.305	-.00043	.57377	-.00245	.00068
#3	-.00121	-.00390	25.233	.00006	.57480	.00039	-.00103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00012**	**.01721**	**.77431**
Stddev	.00102	.00007	.38975
%RSD	830.01	.39722	50.335
#1	.00095	.01713	.48618
#2	.00043	.01722	.61897
#3	-.00102	.01727	1.2178
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10928.**	**72001.**	**2801.3**
Stddev	62.	699.	48.9
%RSD	.57019	.97136	1.7460
#1	10990.	72250.	2838.4
#2	10930.	71211.	2745.9
#3	10865.	72542.	2819.6

Approved: March 28, 2017

Sample Name: L1703116107 Acquired: 3/27/2017 17:34:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00091**	**.01356**	**-.00149**	**.02214**	**.26093**	**-.00007**	**19.133**
Stddev	.00140	.00457	.00171	.00066	.00103	.00003	.044
%RSD	153.63	33.723	115.14	2.9979	.39644	41.179	.22806
#1	-.00247	.01246	-.00339	.02154	.26074	-.00004	19.113
#2	-.00051	.01859	-.00007	.02285	.26000	-.00006	19.183
#3	.00024	.00964	-.00100	.02203	.26204	-.00010	19.102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**.00355**	**.00126**	**-.00047**	**11.776**	**1.2950**	**.00626**
Stddev	.00040	.00048	.00034	.00085	.021	.0828	.00615
%RSD	133.20	13.522	26.728	181.29	.18094	6.3961	98.317
#1	-.00010	.00410	.00124	.00051	11.763	1.3745	.00115
#2	.00069	.00331	.00093	-.00104	11.800	1.3013	.01309
#3	.00031	.00324	.00161	-.00087	11.763	1.2092	.00454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**11.329**	**2.6438**	**-.00015**	**34.591**	**.00255**	**.05078**	**.00272**
Stddev	.169	.0037	.00027	.045	.00095	.00949	.00172
%RSD	1.4874	.14132	181.37	.13100	37.405	18.697	63.197
#1	11.294	2.6480	.00001	34.620	.00345	.03992	.00405
#2	11.180	2.6407	-.00046	34.539	.00155	.05751	.00078
#3	11.512	2.6428	.00000	34.614	.00265	.05490	.00335
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: L1703116107 Acquired: 3/27/2017 17:34:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00083**	**-.00444**	**15.008**	**-.00084**	**.37911**	**.00410**	**-.00143**
Stddev	.00224	.00129	.022	.00063	.00058	.01329	.00244
%RSD	270.32	28.969	.14655	75.938	.15227	324.05	170.32
#1	.00167	-.00369	15.003	-.00111	.37978	.00261	.00094
#2	-.00148	-.00370	15.031	-.00129	.37879	.01807	-.00130
#3	-.00268	-.00592	14.988	-.00011	.37877	-.00838	-.00394
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00040**	**.00367**	F **-.34448**
Stddev	.00014	.00007	.27053
%RSD	34.478	2.0144	78.532
#1	.00024	.00373	-.12495
#2	.00049	.00370	-.64670
#3	.00048	.00359	-.26178
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11413.**	**77212.**	**2905.3**
Stddev	89.	1845.	30.0
%RSD	.77705	2.3896	1.0337
#1	11384.	77883.	2871.8
#2	11513.	75125.	2914.2
#3	11343.	78627.	2929.9

Approved: March 28, 2017

Sample Name: L1703116107PS Acquired: 3/27/2017 17:38:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607769-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20902**	**5.0967**	**.20250**	**1.0121**	**.73764**	**.02531**	**21.899**
Stddev	.00057	.0288	.00189	.0039	.00291	.00007	.039
%RSD	.27341	.56445	.93108	.38112	.39499	.27944	.17645
#1	.20965	5.0835	.20250	1.0079	.73559	.02525	21.854
#2	.20885	5.1297	.20061	1.0130	.74097	.02530	21.918
#3	.20855	5.0769	.20438	1.0155	.73634	.02539	21.924
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02549**	**.10463**	**.25623**	**.25306**	**12.292**	**25.951**	**.50319**
Stddev	.00048	.00003	.00044	.00100	.037	.108	.00377
%RSD	1.8968	.02765	.17183	.39384	.29826	.41739	.74948
#1	.02586	.10462	.25598	.25304	12.251	25.826	.50320
#2	.02567	.10460	.25674	.25406	12.305	26.003	.49941
#3	.02494	.10466	.25597	.25207	12.321	26.023	.50695
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**14.859**	**2.5636**	**.49851**	**55.049**	**.25254**	**5.0520**	**.25433**
Stddev	.134	.0153	.00203	.278	.00154	.0236	.00179
%RSD	.89904	.59491	.40666	.50434	.60980	.46771	.70311
#1	15.009	2.5554	.49933	54.969	.25404	5.0696	.25228
#2	14.751	2.5812	.50000	55.358	.25261	5.0614	.25515
#3	14.818	2.5542	.49621	54.820	.25096	5.0252	.25556
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: L1703116107PS Acquired: 3/27/2017 17:38:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607769-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.60364**	**.20405**	**15.744**	**.51373**	**.83803**	**.50894**	**.25384**
Stddev	.00230	.00696	.032	.00360	.00508	.00374	.00074
%RSD	.38113	3.4109	.20163	.70010	.60584	.73431	.29310
#1	.60525	.19981	15.765	.51542	.83497	.50561	.25311
#2	.60467	.20026	15.759	.51618	.84389	.51298	.25382
#3	.60101	.21208	15.707	.50960	.83523	.50821	.25460
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.50836**	**.49938**	F **-.37339**
Stddev	.00184	.00174	.11726
%RSD	.36232	.34872	31.403
#1	.50632	.50049	-.24300
#2	.50991	.50028	-.40701
#3	.50885	.49737	-.47016
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11368.**	**77648.**	**2916.0**
Stddev	62.	890.	37.9
%RSD	.54630	1.1459	1.3004
#1	11416.	78623.	2920.5
#2	11298.	76880.	2876.0
#3	11390.	77442.	2951.5

Approved: March 28, 2017

Sample Name: L1703116107SDL Acquired: 3/27/2017 17:42:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG607769-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00069**	**-.00831**	**-.00477**	**.00655**	**.04621**	**-.00001**	**3.6269**
Stddev	.00064	.00763	.00256	.00189	.00119	.00007	.0131
%RSD	91.984	91.883	53.663	28.808	2.5703	1008.0	.36128
#1	.00090	-.00080	-.00757	.00735	.04738	-.00002	3.6219
#2	.00120	-.00806	-.00421	.00439	.04501	.00007	3.6170
#3	-.00002	-.01606	-.00254	.00790	.04622	-.00006	3.6418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**.00055**	**.00125**	**-.00104**	**2.1977**	**.16405**	**-.00283**
Stddev	.00004	.00030	.00056	.00177	.0472	.13425	.00911
%RSD	20.561	54.413	45.047	171.08	2.1480	81.837	321.80
#1	.00022	.00077	.00068	-.00264	2.1905	.15767	-.00830
#2	.00015	.00021	.00180	.00087	2.2481	.30137	.00769
#3	.00017	.00067	.00127	-.00134	2.1545	.03310	-.00788
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.0901**	**.50225**	**-.00006**	**6.6999**	**.00113**	**.01162**	**-.00112**
Stddev	.0285	.00199	.00010	.0418	.00045	.00294	.00120
%RSD	1.3655	.39644	154.23	.62467	39.935	25.322	107.63
#1	2.0656	.50277	-.00017	6.7139	.00090	.01419	-.00196
#2	2.1215	.50392	.00003	6.6528	.00085	.00841	.00026
#3	2.0832	.50004	-.00005	6.7330	.00165	.01224	-.00165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: L1703116107SDL Acquired: 3/27/2017 17:42:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG607769-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00146**	**-.00294**	**2.8123**	**-.00085**	**.07096**	**-.00258**	**-.00108**
Stddev	.00187	.00332	.0322	.00033	.00036	.00228	.00177
%RSD	128.24	112.83	1.1459	38.834	.50034	88.560	164.78
#1	-.00301	.00007	2.8281	-.00075	.07058	-.00498	-.00272
#2	.00062	-.00650	2.8335	-.00121	.07128	-.00230	.00080
#3	-.00199	-.00240	2.7752	-.00058	.07101	-.00044	-.00132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00026**	**.00142**	F **-.51941**
Stddev	.00017	.00003	.12710
%RSD	66.897	2.1018	24.469
#1	-.00041	.00144	-.66397
#2	-.00007	.00143	-.42521
#3	-.00029	.00138	-.46905
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11631.**	**77950.**	**2818.0**
Stddev	181.	1708.	7.4
%RSD	1.5566	2.1907	.26284
#1	11771.	78136.	2811.4
#2	11426.	76156.	2826.0
#3	11694.	79556.	2816.7

Approved: March 28, 2017

Sample Name: CCV Acquired: 3/27/2017 17:45:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42280**	**10.614**	**.41832**	**.52443**	**1.0350**	**.05209**	**10.350**
Stddev	.00076	.024	.00224	.00587	.0077	.00005	.084
%RSD	.17863	.22793	.53591	1.1189	.74402	.10323	.81252
#1	.42273	10.633	.41935	.51849	1.0264	.05212	10.384
#2	.42359	10.622	.41986	.53022	1.0413	.05203	10.412
#3	.42209	10.587	.41575	.52459	1.0372	.05213	10.254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05238**	**.20780**	**.52311**	**.52390**	**4.1382**	**50.503**	**1.0247**
Stddev	.00013	.00139	.00030	.00230	.0099	.379	.0092
%RSD	.24440	.66897	.05817	.43882	.23972	.75022	.90226
#1	.05247	.20912	.52333	.52635	4.1386	50.112	1.0199
#2	.05243	.20793	.52325	.52357	4.1479	50.868	1.0353
#3	.05223	.20635	.52276	.52179	4.1281	50.529	1.0188
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.322**	**.51932**	**1.0323**	**50.470**	**.51840**	**10.334**	**.52163**
Stddev	.101	.00137	.0070	.316	.00318	.035	.00361
%RSD	.97793	.26420	.68133	.62708	.61260	.33522	.69261
#1	10.219	.51804	1.0389	50.170	.52143	10.366	.52044
#2	10.326	.51915	1.0332	50.801	.51868	10.339	.52569
#3	10.421	.52077	1.0249	50.439	.51510	10.297	.51877
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 28, 2017

Sample Name: CCV Acquired: 3/27/2017 17:45:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2235**	**.42586**	**5.1570**	**1.0350**	**1.0411**	**1.0350**	**.52835**
Stddev	.0076	.00445	.0336	.0098	.0053	.0060	.00273
%RSD	.62395	1.0442	.65252	.95198	.50809	.57884	.51703
#1	1.2284	.43062	5.1927	1.0420	1.0366	1.0284	.52952
#2	1.2147	.42181	5.1526	1.0391	1.0469	1.0366	.52523
#3	1.2273	.42516	5.1258	1.0237	1.0398	1.0400	.53030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0362**	**1.0308**	F **.67304**
Stddev	.0020	.0051	.28743
%RSD	.18922	.49556	42.705
#1	1.0380	1.0354	.83369
#2	1.0341	1.0317	.84424
#3	1.0366	1.0253	.34121
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10824.**	**72293.**	**2706.7**
Stddev	80.	790.	48.2
%RSD	.74153	1.0934	1.7823
#1	10736.	71421.	2750.1
#2	10893.	72494.	2715.2
#3	10845.	72962.	2654.8

Approved: March 28, 2017

Sample Name: CCB Acquired: 3/27/2017 17:49:29 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00115**	**.00143**	**-.00012**	**.00686**	**-.00131**	**-.00006**	**-.00925**
Stddev	.00038	.00296	.00173	.00050	.00155	.00001	.05343
%RSD	33.209	207.03	1463.5	7.3124	118.23	8.7503	577.91
#1	-.00095	.00171	.00022	.00742	-.00096	-.00006	-.07094
#2	-.00159	-.00166	.00141	.00667	.00003	-.00006	.02162
#3	-.00091	.00424	-.00199	.00647	-.00301	-.00005	.02158
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**.00032**	**.00101**	**-.00048**	**.01542**	**.10997**	**-.00810**
Stddev	.00019	.00021	.00063	.00050	.01768	.04191	.00578
%RSD	114.22	67.574	62.685	104.20	114.63	38.114	71.262
#1	.00034	.00020	.00130	-.00018	.01114	.07052	-.01448
#2	.00017	.00057	.00028	-.00020	.00028	.15398	-.00660
#3	-.00003	.00019	.00145	-.00105	.03484	.10540	-.00323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03191**	**.00047**	**.00033**	**.02866**	**.00116**	**.00024**	**.00246**
Stddev	.04257	.00139	.00016	.00631	.00061	.00223	.00136
%RSD	133.40	293.14	46.984	22.000	52.142	927.08	55.480
#1	-.00962	.00183	.00051	.03100	.00121	.00278	.00398
#2	.02991	.00052	.00028	.02152	.00174	-.00136	.00137
#3	.07545	-.00094	.00021	.03346	.00053	-.00070	.00201
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: CCB Acquired: 3/27/2017 17:49:29 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00278**	**-.00261**	**.00825**	**-.00066**	**-.00001**	**-.00776**	**.00005**
Stddev	.00354	.00523	.00121	.00056	.00065	.01333	.00112
%RSD	127.45	200.48	14.670	85.671	6653.8	171.85	2078.2
#1	-.00125	.00321	.00926	-.00116	.00015	.00643	.00038
#2	.00417	-.00690	.00860	-.00075	.00055	-.02003	-.00119
#3	.00542	-.00414	.00691	-.00005	-.00073	-.00968	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00021**	**.00005**	F **-.34019**
Stddev	.00094	.00007	.26446
%RSD	448.58	159.27	77.739
#1	.00025	.00003	-.62057
#2	-.00075	-.00002	-.30478
#3	.00113	.00013	-.09522
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11046.**	**75305.**	**2693.6**
Stddev	207.	701.	36.7
%RSD	1.8761	.93026	1.3621
#1	11285.	74629.	2708.2
#2	10924.	76028.	2651.9
#3	10929.	75258.	2720.8

Approved: March 28, 2017

L1703116107SDL

Sample Name: L~~1703116109~~ Acquired: 3/27/2017 17:53:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00151**	**-.00393**	**-.00065**	**.00308**	**.00749**	**-.00004**	**.73778**
Stddev	.00150	.00307	.00176	.00114	.00302	.00004	.03422
%RSD	99.580	77.948	271.12	37.058	40.368	93.572	4.6380
#1	-.00005	-.00709	-.00150	.00436	.00476	-.00006	.69951
#2	-.00306	-.00096	.00137	.00266	.00697	.00000	.76542
#3	-.00142	-.00375	-.00182	.00220	.01075	-.00006	.74842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00049**	**.00027**	**.00134**	**.00040**	**.43313**	**.14058**	**-.00343**
Stddev	.00012	.00010	.00143	.00050	.00520	.08697	.00190
%RSD	24.075	36.556	107.20	127.43	1.2013	61.866	55.544
#1	.00046	.00018	.00035	.00051	.43862	.11029	-.00477
#2	.00040	.00026	.00068	.00083	.43249	.07280	-.00125
#3	.00063	.00038	.00298	-.00016	.42827	.23865	-.00427
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.32293**	**.09897**	**.00004**	**1.2970**	**.00123**	**.00536**	**.00115**
Stddev	.04394	.00114	.00020	.0449	.00028	.00152	.00343
%RSD	13.606	1.1563	576.35	3.4579	22.716	28.413	297.94
#1	.37308	.09792	.00026	1.3354	.00115	.00633	-.00063
#2	.30451	.09880	-.00014	1.3079	.00154	.00614	-.00102
#3	.29119	.10019	-.00002	1.2477	.00100	.00360	.00511
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: L1703116109 Acquired: 3/27/2017 17:53:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00220**	**-.00358**	**.54667**	**-.00063**	**.01409**	**-.00679**	**-.00093**
Stddev	.00423	.00742	.00450	.00036	.00067	.01269	.00097
%RSD	192.18	207.02	.82323	57.568	4.7710	186.93	104.07
#1	-.00268	-.01088	.55031	-.00034	.01418	-.00546	-.00189
#2	.00446	.00395	.54807	-.00103	.01338	.00519	-.00095
#3	.00482	-.00383	.54164	-.00051	.01472	-.02010	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00025**	**.00076**	F **-.14286**
Stddev	.00037	.00008	.23369
%RSD	148.02	10.011	163.58
#1	-.00064	.00068	-.32296
#2	-.00022	.00077	-.22683
#3	.00011	.00083	.12121
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11601.**	**79662.**	**2816.2**
Stddev	141.	536.	73.0
%RSD	1.2141	.67295	2.5920
#1	11648.	79176.	2886.9
#2	11443.	79573.	2820.6
#3	11712.	80237.	2741.1

Approved: March 28, 2017

L1703116109

Sample Name: ~~L1703117601~~ Acquired: 3/27/2017 17:57:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00115**	**.01035**	**-.00639**	**.02398**	**.38182**	**-.00007**	**11.803**
Stddev	.00194	.00683	.00096	.00132	.00173	.00003	.114
%RSD	168.89	66.025	15.039	5.5235	.45320	46.242	.96440
#1	.00063	.00389	-.00749	.02258	.37987	-.00010	11.809
#2	-.00322	.01750	-.00572	.02521	.38239	-.00009	11.687
#3	-.00087	.00965	-.00595	.02414	.38319	-.00004	11.914
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00088**	**.00200**	**.00101**	**.00041**	**21.543**	**2.5539**	**.01915**
Stddev	.00004	.00010	.00064	.00095	.069	.1350	.00120
%RSD	3.9979	5.2392	63.157	233.16	.31943	5.2867	6.2449
#1	.00088	.00190	.00036	.00147	21.475	2.4855	.01787
#2	.00091	.00211	.00163	.00011	21.540	2.4668	.02024
#3	.00084	.00199	.00105	-.00036	21.613	2.7094	.01934
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.8390**	**.46664**	**-.00008**	**46.276**	**.01444**	**.01166**	**.00215**
Stddev	.0028	.00563	.00020	.101	.00107	.00279	.00240
%RSD	.04849	1.2058	251.33	.21856	7.3808	23.887	111.64
#1	5.8423	.47193	-.00031	46.297	.01443	.01485	.00339
#2	5.8374	.46073	.00002	46.166	.01552	.01043	.00368
#3	5.8374	.46727	.00005	46.364	.01339	.00970	-.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: L1703117601 Acquired: 3/27/2017 17:57:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00240**	**-.00171**	**11.514**	**-.00072**	**.25131**	**.00119**	**-.00116**
Stddev	.00359	.00092	.111	.00021	.00136	.00658	.00158
%RSD	149.80	53.884	.96494	29.368	.54094	553.09	136.37
#1	.00423	-.00198	11.564	-.00096	.25105	-.00641	-.00072
#2	-.00174	-.00069	11.591	-.00056	.25009	.00484	-.00290
#3	.00470	-.00247	11.387	-.00065	.25278	.00514	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00018**	**.01505**	F **-1.3762**
Stddev	.00065	.00012	.6223
%RSD	366.73	.80644	45.220
#1	-.00093	.01499	-1.8883
#2	.00025	.01520	-1.5568
#3	.00014	.01498	-.68360
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11374.**	**77768.**	**2844.7**
Stddev	132.	267.	32.7
%RSD	1.1646	.34390	1.1483
#1	11285.	77460.	2807.2
#2	11311.	77944.	2866.5
#3	11526.	77900.	2860.5

Approved: March 28, 2017

L1703117601

Sample Name: ~~L1703117602~~ Acquired: 3/27/2017 18:00:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00101**	**.10103**	**-.00229**	**.06049**	**.20967**	**-.00009**	**61.887**	**.00032**
Stddev	.00104	.01143	.00173	.00205	.00067	.00002	.173	.00007
%RSD	102.87	11.316	75.601	3.3932	.31728	21.045	.27927	21.521
#1	-.00219	.09711	-.00089	.05814	.20998	-.00010	61.805	.00037
#2	-.00023	.09207	-.00423	.06142	.21012	-.00009	61.770	.00035
#3	-.00062	.11390	-.00176	.06192	.20890	-.00007	62.085	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00129**	**.00201**	**.00141**	**1.6936**	**6.2401**	**-.00021**	**9.8724**	**.17566**
Stddev	.00018	.00149	.00080	.0043	.2009	.00594	.0920	.00133
%RSD	13.809	74.107	56.738	.25537	3.2203	2873.0	.93183	.75543
#1	.00118	.00065	.00152	1.6902	6.1301	.00578	9.8613	.17541
#2	.00119	.00178	.00215	1.6920	6.4720	-.00611	9.7864	.17448
#3	.00150	.00360	.00056	1.6984	6.1181	-.00029	9.9694	.17710
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**235.42**	**.00191**	**.00156**	**.00063**	**.00276**	**-.00023**	**.86613**
Stddev	.00042	.32	.00065	.00503	.00146	.00159	.00221	.00781
%RSD	167.76	.13570	34.122	321.91	233.26	57.736	969.89	.90140
#1	.00015	235.21	.00212	-.00422	.00230	.00098	.00025	.86976
#2	-.00011	235.25	.00118	.00499	-.00033	.00324	.00171	.87146
#3	.00071	235.78	.00243	.00392	-.00010	.00405	-.00264	.85716
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

L1703117601

Sample Name: ~~L1703117602~~ Acquired: 3/27/2017 18:00:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**.33066**	**-.00866**	**-.00033**	**.00176**	**.00414**	**.60916**
Stddev	.00033	.00260	.00526	.00250	.00080	.00012	.55415
%RSD	59.591	.78688	60.743	758.58	45.737	2.8200	90.970
#1	.00024	.32797	-.01226	.00084	.00209	.00403	1.1556
#2	.00052	.33086	-.01109	-.00320	.00233	.00426	.62431
#3	.00089	.33316	-.00262	.00137	.00084	.00413	.04759
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10914.**	**73884.**	**2821.1**
Stddev	50.	238.	17.2
%RSD	.45816	.32265	.60855
#1	10868.	74112.	2805.4
#2	10906.	73903.	2839.4
#3	10967.	73637.	2818.3

Approved: March 28, 2017

L1703117602

Sample Name: ~~L1703117603~~ Acquired: 3/27/2017 18:04:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00259**	**.24491**	**-.00103**	**.04661**	**.22147**	**.00027**	**27.793**	**.00058**
Stddev	.00215	.00475	.00236	.00053	.00999	.00003	1.252	.00052
%RSD	83.213	1.9382	228.68	1.1372	4.5118	12.704	4.5042	89.887
#1	-.00026	.25023	-.00244	.04611	.21138	.00023	26.572	.00073
#2	-.00451	.24338	.00169	.04655	.23136	.00027	29.074	-.00000
#3	-.00299	.24111	-.00235	.04717	.22167	.00030	27.732	.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01308**	**.00184**	**.00053**	**.05632**	**6.7798**	**-.00314**	**11.758**	**.27087**
Stddev	.00014	.00087	.00032	.01318	.3393	.00465	.452	.01295
%RSD	1.0633	47.411	61.585	23.410	5.0041	148.28	3.8436	4.7803
#1	.01295	.00135	.00044	.06608	6.4651	-.00296	11.361	.25831
#2	.01308	.00285	.00089	.04132	7.1392	.00142	12.250	.28417
#3	.01323	.00132	.00026	.06155	6.7352	-.00787	11.663	.27013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**69.773**	**.00406**	**-.00297**	**.00139**	**-.00061**	**-.00104**	**2.6242**
Stddev	.00029	3.055	.00144	.00117	.00336	.00165	.00552	.0347
%RSD	135.85	4.3786	35.493	39.549	242.23	271.74	531.09	1.3209
#1	-.00002	66.817	.00259	-.00161	.00423	.00120	-.00696	2.6396
#2	-.00007	72.918	.00412	-.00366	.00225	-.00203	.00397	2.6486
#3	-.00055	69.583	.00548	-.00364	-.00232	-.00098	-.00014	2.5845
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

L1703117602

Sample Name: ~~L1703117603~~ Acquired: 3/27/2017 18:04:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.19710**	**-.00899**	**-.00188**	**.00032**	**.00821**	**.62986**
Stddev	.00026	.00962	.01010	.00319	.00003	.00015	.51033
%RSD	184.10	4.8818	112.41	169.75	9.7554	1.8663	81.023
#1	.00016	.18801	-.00094	.00172	.00028	.00834	.07961
#2	-.00033	.20718	-.00569	-.00435	.00034	.00826	.72236
#3	-.00025	.19612	-.02032	-.00302	.00034	.00804	1.0876
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11160.**	**75589.**	**2787.4**
Stddev	15.	845.	24.3
%RSD	.13132	1.1184	.87278
#1	11163.	74628.	2796.6
#2	11144.	75922.	2759.9
#3	11173.	76217.	2805.9

Approved: March 28, 2017

L1703117603

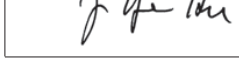
Sample Name: L~~1703117605~~ Acquired: 3/27/2017 18:08:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00175**	**.23247**	**-.00444**	**.05242**	**.12253**	**.00015**	**13.364**
Stddev	.00170	.00721	.00118	.00026	.00097	.00001	.183
%RSD	97.073	3.1027	26.462	.50440	.79280	7.6072	1.3718
#1	-.00052	.22840	-.00451	.05227	.12277	.00014	13.247
#2	-.00105	.22821	-.00324	.05273	.12337	.00014	13.269
#3	-.00369	.24080	-.00558	.05227	.12147	.00016	13.575
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00021**	**.00578**	**.00121**	**-.00095**	**22.236**	**4.4767**	**-.00013**
Stddev	.00017	.00028	.00053	.00084	.218	.0580	.00439
%RSD	83.677	4.8164	43.649	88.271	.97842	1.2968	3490.7
#1	.00030	.00608	.00061	-.00142	21.986	4.4506	.00483
#2	.00001	.00553	.00140	.00002	22.339	4.4362	-.00170
#3	.00031	.00573	.00162	-.00145	22.382	4.5432	-.00351
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.3943**	**.66201**	**.00021**	**55.916**	**.00383**	**.03888**	**.00132**
Stddev	.0759	.00523	.00030	.279	.00082	.00873	.00239
%RSD	1.1867	.78990	141.27	.49901	21.532	22.453	181.69
#1	6.3378	.65601	.00001	55.616	.00379	.04894	.00077
#2	6.3645	.66561	.00007	55.966	.00467	.03320	-.00075
#3	6.4805	.66440	.00055	56.168	.00303	.03451	.00393
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017



L1703117603

Sample Name: ~~L1703117605~~ Acquired: 3/27/2017 18:08:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00162**	**-.00101**	**3.5177**	**.00019**	**.09994**	**.00356**	**-.00060**
Stddev	.00046	.00397	.0099	.00067	.00106	.00890	.00042
%RSD	28.626	391.89	.28127	351.36	1.0655	250.11	70.322
#1	-.00186	-.00181	3.5267	-.00024	.09872	-.00646	-.00011
#2	-.00192	.00330	3.5193	-.00015	.10039	.00660	-.00087
#3	-.00109	-.00453	3.5071	.00096	.10070	.01054	-.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00159**	**.00449**	F **-1.7283**
Stddev	.00104	.00012	.5160
%RSD	65.630	2.5961	29.854
#1	.00272	.00440	-1.4543
#2	.00068	.00462	-1.4072
#3	.00136	.00445	-2.3235
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11391.**	**76240.**	**2774.0**
Stddev	56.	762.	40.2
%RSD	.49258	.99995	1.4498
#1	11437.	76244.	2789.1
#2	11328.	77001.	2804.5
#3	11406.	75476.	2728.4

Approved: March 28, 2017

L1703117605

Sample Name: ~~L1703118801~~ Acquired: 3/27/2017 18:11:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00191**	**.81108**	**.00546**	**.08134**	**.01369**	**-.00005**	**51.346**	**.00029**
Stddev	.00044	.00899	.00300	.00507	.00086	.00005	.134	.00031
%RSD	23.121	1.1081	54.841	6.2370	6.2754	84.700	.26066	106.72
#1	-.00142	.80546	.00200	.08585	.01310	-.00000	51.252	.00046
#2	-.00227	.82144	.00711	.08231	.01330	-.00008	51.288	.00047
#3	-.00204	.80632	.00728	.07585	.01468	-.00007	51.499	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00033**	**.00298**	**.00639**	**.57315**	**9.5912**	**.00698**	**17.086**	**.05884**
Stddev	.00040	.00029	.00096	.04019	.1129	.00035	.191	.00096
%RSD	120.64	9.8976	14.987	7.0124	1.1766	4.9833	1.1169	1.6312
#1	.00063	.00279	.00704	.52693	9.7209	.00734	17.075	.05979
#2	.00049	.00283	.00685	.59265	9.5153	.00665	16.901	.05885
#3	-.00012	.00332	.00529	.59987	9.5374	.00694	17.282	.05787
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00231**	**126.41**	**.00215**	**.05816**	**-.00030**	**.00966**	**-.00398**	**3.3017**
Stddev	.00022	.27	.00085	.00411	.00231	.00268	.00432	.0079
%RSD	9.5545	.21404	39.680	7.0595	764.26	27.778	108.60	.23995
#1	.00256	126.63	.00192	.05861	-.00029	.00807	-.00894	3.2927
#2	.00218	126.49	.00310	.05384	.00200	.00815	-.00109	3.3047
#3	.00218	126.11	.00144	.06201	-.00262	.01276	-.00190	3.3076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

L1703117605

Sample Name: ~~L1703118801~~ Acquired: 3/27/2017 18:11:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.45850**	**.23402**	**-.00787**	**-.00282**	**-.00004**	**.02561**	**.30790**
Stddev	.00066	.00171	.00780	.00232	.00080	.00037	.38481
%RSD	.14289	.73188	99.110	82.170	2245.7	1.4643	124.98
#1	.45784	.23437	-.01675	-.00058	-.00019	.02542	.61633
#2	.45849	.23215	-.00476	-.00267	-.00075	.02536	-.12331
#3	.45915	.23552	-.00210	-.00521	.00083	.02604	.43069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11050.**	**74449.**	**2815.2**
Stddev	59.	723.	17.1
%RSD	.53000	.97163	.60681
#1	11001.	74251.	2817.6
#2	11115.	75250.	2830.9
#3	11034.	73844.	2797.0

Approved: March 28, 2017

L1703118801

Sample Name: ~~L1703118802~~ Acquired: 3/27/2017 18:15:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00134**	**.28809**	**.00032**	**.01610**	**-.00041**	**-.00002**	**.76553**	**.00032**
Stddev	.00218	.00662	.00160	.00151	.00161	.00011	.02890	.00025
%RSD	162.71	2.2972	494.39	9.3896	397.16	622.69	3.7754	77.458
#1	-.00300	.29322	-.00056	.01491	.00134	-.00012	.78742	.00015
#2	-.00216	.28062	-.00063	.01559	-.00073	-.00003	.73277	.00060
#3	.00113	.29043	.00216	.01780	-.00183	.00010	.77639	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**.00190**	**.09624**	**.24239**	**.20573**	**.00229**	**.11681**	**.00665**
Stddev	.00012	.00055	.00132	.00817	.07171	.00390	.00790	.00428
%RSD	305.64	28.723	1.3734	3.3713	34.855	170.60	6.7651	64.258
#1	.00017	.00253	.09480	.23676	.21610	.00326	.12434	.00188
#2	-.00008	.00159	.09740	.25176	.27169	-.00201	.11750	.00797
#3	.00003	.00158	.09653	.23863	.12940	.00561	.10858	.01012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**1.0145**	**.00206**	**-.04163**	**.00656**	**.00085**	**.00061**	**.56811**
Stddev	.00032	.0128	.00059	.00253	.00215	.00220	.00370	.00312
%RSD	242.89	1.2636	28.461	6.0774	32.761	257.25	603.24	.54910
#1	.00031	1.0170	.00229	-.04095	.00900	-.00168	-.00280	.57100
#2	-.00024	1.0260	.00139	-.04443	.00574	.00220	.00454	.56853
#3	.00034	1.0007	.00249	-.03951	.00494	.00205	.00010	.56480
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703118802 Acquired: 3/27/2017 18:15:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00533**	**.00097**	**.00869**	**-.00112**	**.00063**	**.02523**	**.22719**
Stddev	.00054	.00009	.00727	.00148	.00103	.00009	.40004
%RSD	10.091	9.2364	83.654	132.10	164.55	.36910	176.08
#1	.00494	.00106	.00082	-.00042	-.00054	.02520	.29543
#2	.00511	.00088	.01009	-.00283	.00099	.02515	.58872
#3	.00595	.00099	.01516	-.00012	.00144	.02533	-.20257
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11693.**	**79866.**	**2933.2**
Stddev	62.	287.	62.9
%RSD	.53046	.35979	2.1452
#1	11763.	80134.	2936.2
#2	11670.	79562.	2994.5
#3	11646.	79901.	2868.8

Approved: March 28, 2017

L1703118802

Sample Name: ~~L1703118803~~ Acquired: 3/27/2017 18:19:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**.27960**	**-.00321**	**.00808**	**.00096**	**-.00006**	**.73043**	**.00024**
Stddev	.00119	.00572	.00144	.00090	.00152	.00005	.04112	.00015
%RSD	2710.0	2.0459	44.862	11.088	158.08	78.377	5.6292	62.454
#1	.00027	.28234	-.00333	.00737	.00254	-.00005	.71976	.00040
#2	-.00124	.28343	-.00459	.00909	.00083	-.00011	.69571	.00013
#3	.00110	.27303	-.00172	.00779	-.00049	-.00002	.77584	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00044**	**.00313**	**.03621**	**.37264**	**.09331**	**-.00335**	**.15340**	**.00711**
Stddev	.00046	.00074	.00066	.01640	.10867	.00558	.08126	.00212
%RSD	103.62	23.712	1.8298	4.4006	116.46	166.84	52.972	29.761
#1	.00001	.00343	.03565	.37877	-.02816	-.00939	.22913	.00728
#2	.00093	.00229	.03604	.35406	.12678	-.00227	.16351	.00492
#3	.00039	.00368	.03694	.38509	.18131	.00162	.06756	.00914
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.09029**	**.00208**	**-.01549**	**.00383**	**-.00159**	**-.00471**	**.56943**
Stddev	.00040	.00727	.00109	.00240	.00273	.00410	.00103	.00682
%RSD	294.67	8.0490	52.537	15.491	71.402	258.47	21.967	1.1979
#1	.00047	.09864	.00180	-.01528	.00101	-.00599	-.00528	.57322
#2	-.00030	.08539	.00328	-.01799	.00401	.00213	-.00533	.57352
#3	.00023	.08683	.00115	-.01320	.00647	-.00090	-.00352	.56156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703118803 Acquired: 3/27/2017 18:19:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00065**	**.00159**	**.01725**	**-.00258**	**-.00010**	**.01332**	**.84317**
Stddev	.00083	.00041	.01120	.00225	.00123	.00020	.48008
%RSD	127.87	25.734	64.909	86.972	1255.9	1.4978	56.937
#1	.00141	.00181	.00449	-.00518	.00078	.01332	1.3716
#2	.00079	.00112	.02542	-.00134	-.00151	.01352	.72405
#3	-.00024	.00184	.02185	-.00123	.00043	.01312	.43387
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11476.**	**78481.**	**2816.5**
Stddev	40.	718.	36.9
%RSD	.34518	.91474	1.3116
#1	11493.	79276.	2793.4
#2	11430.	78287.	2859.1
#3	11504.	77880.	2797.0

Approved: March 28, 2017

L1703118803

Sample Name: ~~L1703118804~~ Acquired: 3/27/2017 18:23:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.05224**	**-.00056**	**.01299**	**-.00153**	**-.00004**	**.19672**	**-.00001**
Stddev	.00021	.00593	.00198	.00191	.00200	.00003	.07755	.00006
%RSD	160.87	11.358	352.59	14.693	131.05	67.887	39.422	562.07
#1	-.00013	.05623	-.00258	.01303	-.00068	-.00001	.18972	.00004
#2	.00008	.05507	.00137	.01487	-.00381	-.00004	.12291	-.00008
#3	-.00033	.04543	-.00047	.01106	-.00009	-.00007	.27754	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00039**	**.00145**	**.01483**	**.05548**	**-.06297**	**.00057**	**-.03016**	**.00515**
Stddev	.00040	.00041	.00098	.00433	.07947	.00985	.11433	.00217
%RSD	103.19	28.109	6.5919	7.8027	126.20	1727.0	379.13	42.188
#1	.00011	.00174	.01595	.05599	.01246	.01041	-.16012	.00670
#2	.00021	.00163	.01414	.05953	-.05543	.00059	.01476	.00267
#3	.00085	.00098	.01440	.05092	-.14595	-.00929	.05490	.00610
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**.15883**	**.00136**	**-.00730**	**-.00020**	**-.00128**	**.00573**	**.10053**
Stddev	.00021	.01347	.00050	.00638	.00259	.00280	.00363	.00162
%RSD	1177.3	8.4784	36.454	87.399	1312.4	219.13	63.311	1.6116
#1	.00018	.17089	.00108	-.00004	-.00198	.00173	.00976	.10167
#2	-.00022	.16129	.00193	-.00987	.00277	-.00382	.00473	.10126
#3	.00009	.14430	.00107	-.01200	-.00138	-.00175	.00271	.09868
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703118804 Acquired: 3/27/2017 18:23:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00067**	**.00089**	**.00943**	**-.00218**	**-.00000**	**.00497**	**.15247**
Stddev	.00033	.00056	.00627	.00159	.00054	.00027	.09142
%RSD	49.718	62.284	66.533	72.956	188150.	5.4377	59.959
#1	.00099	.00035	.00220	-.00305	.00038	.00505	.13707
#2	.00032	.00086	.01342	-.00315	.00024	.00519	.25061
#3	.00070	.00147	.01266	-.00034	-.00062	.00467	.06973
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11370.**	**77189.**	**2800.3**
Stddev	68.	726.	39.1
%RSD	.60010	.94037	1.3974
#1	11407.	76938.	2843.5
#2	11412.	78007.	2790.4
#3	11292.	76621.	2767.1

Approved: March 28, 2017

Sample Name: CCV Acquired: 3/27/2017 18:26:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41121**	**10.332**	**.41023**	**.50490**	**1.0107**	**.05084**	**10.051**
Stddev	.00223	.010	.00418	.00455	.0025	.00005	.107
%RSD	.54163	.09404	1.0180	.90065	.24614	.09378	1.0661
#1	.41060	10.332	.41417	.50038	1.0086	.05079	9.9276
#2	.40935	10.322	.41067	.50947	1.0134	.05087	10.102
#3	.41368	10.341	.40585	.50483	1.0101	.05088	10.123
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05107**	**.20464**	**.50797**	**.51642**	**4.0493**	**49.736**	**.99843**
Stddev	.00018	.00063	.00140	.00086	.0308	.205	.00378
%RSD	.34812	.30851	.27598	.16625	.76034	.41170	.37814
#1	.05089	.20474	.50729	.51727	4.0193	49.547	.99650
#2	.05125	.20521	.50703	.51643	4.0476	49.954	1.0028
#3	.05106	.20396	.50958	.51555	4.0808	49.709	.99601
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.094**	**.50483**	**1.0150**	**49.885**	**.51126**	**10.174**	**.51211**
Stddev	.027	.00401	.0013	.204	.00095	.020	.00343
%RSD	.26546	.79348	.12859	.40973	.18542	.20129	.66917
#1	10.107	.50462	1.0150	49.737	.51227	10.197	.51489
#2	10.112	.50893	1.0163	50.118	.51114	10.159	.50828
#3	10.063	.50093	1.0137	49.800	.51038	10.166	.51315
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 28, 2017

Sample Name: CCV Acquired: 3/27/2017 18:26:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2159**	**.40891**	**5.0750**	**1.0235**	**1.0143**	**1.0077**	**.51701**
Stddev	.0020	.00249	.0144	.0009	.0034	.0073	.00263
%RSD	.16162	.60827	.28445	.09004	.33696	.72367	.50883
#1	1.2180	.41164	5.0728	1.0245	1.0118	1.0161	.51970
#2	1.2156	.40677	5.0904	1.0230	1.0182	1.0026	.51444
#3	1.2141	.40831	5.0618	1.0229	1.0129	1.0045	.51690
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0126**	**1.0198**	F **.89315**
Stddev	.0052	.0020	.65429
%RSD	.51114	.19478	73.256
#1	1.0108	1.0213	.28929
#2	1.0085	1.0206	.80187
#3	1.0184	1.0176	1.5883
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10873.**	**73947.**	**2707.5**
Stddev	68.	643.	44.8
%RSD	.62861	.86908	1.6554
#1	10906.	73297.	2684.5
#2	10795.	74582.	2678.9
#3	10919.	73962.	2759.2

Approved: March 28, 2017

Sample Name: CCB Acquired: 3/27/2017 18:30:33 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00063**	**-.00038**	**-.00131**	**.00264**	**-.00230**	**-.00011**	**.04142**
Stddev	.00130	.00229	.00116	.00112	.00096	.00010	.05543
%RSD	205.17	599.19	88.314	42.223	41.860	89.216	133.84
#1	.00068	.00118	-.00002	.00365	-.00322	-.00022	.05770
#2	-.00066	-.00301	-.00227	.00144	-.00130	-.00007	.08689
#3	-.00191	.00069	-.00165	.00284	-.00237	-.00004	-.02033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.00001**	**.00161**	**-.00038**	**.00860**	**.13111**	**-.00189**
Stddev	.00012	.00023	.00028	.00160	.03152	.08653	.00551
%RSD	130.84	1813.4	17.308	415.68	366.53	65.996	291.55
#1	-.00001	.00027	.00174	-.00223	.02726	.17165	-.00414
#2	.00023	-.00019	.00180	.00050	.02632	.03176	-.00593
#3	.00007	-.00004	.00129	.00058	-.02779	.18994	.00439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01311**	**.00253**	**.00021**	**.01415**	**.00082**	**.00308**	**.00106**
Stddev	.01063	.00263	.00016	.02000	.00163	.00356	.00334
%RSD	81.134	103.96	79.225	141.40	200.12	115.60	316.08
#1	-.01722	-.00019	.00030	.00173	-.00104	.00355	.00421
#2	-.02107	.00506	.00030	.00349	.00148	.00639	-.00245
#3	-.00103	.00271	.00002	.03722	.00201	-.00069	.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: CCB Acquired: 3/27/2017 18:30:33 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00093**	**-.00241**	**.01023**	**-.00010**	**.00012**	**-.00763**	**-.00106**
Stddev	.00552	.00780	.00090	.00017	.00072	.00283	.00229
%RSD	593.21	324.08	8.8291	173.59	607.01	37.137	215.11
#1	.00502	-.00188	.01127	-.00024	.00023	-.00493	.00147
#2	.00312	-.01045	.00963	.00008	.00077	-.01058	-.00168
#3	-.00535	.00512	.00980	-.00013	-.00065	-.00739	-.00298
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00013**	**-.00005**	F **.05792**
Stddev	.00148	.00007	.36544
%RSD	1151.3	154.79	630.92
#1	.00122	-.00002	-.04065
#2	-.00156	.00001	.46253
#3	.00072	-.00012	-.24812
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11135.**	**75022.**	**2765.4**
Stddev	103.	1756.	98.9
%RSD	.92497	2.3411	3.5754
#1	11126.	73121.	2870.2
#2	11241.	75361.	2752.1
#3	11036.	76584.	2673.8

Approved: March 28, 2017

L1703118804

Sample Name: ~~L1703118401~~ Acquired: 3/27/2017 18:34:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00202**	**.24101**	**-.00452**	**.04718**	**.22248**	**.00024**	**27.435**	**.00043**
Stddev	.00038	.00348	.00144	.00162	.00125	.00009	.079	.00029
%RSD	18.868	1.4445	31.971	3.4325	.55985	36.159	.28630	68.649
#1	-.00173	.24503	-.00614	.04549	.22276	.00014	27.396	.00046
#2	-.00189	.23898	-.00337	.04733	.22356	.00029	27.384	.00071
#3	-.00245	.23902	-.00403	.04871	.22112	.00027	27.526	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01363**	**.00147**	**.00142**	**.10943**	**6.6737**	**.00137**	**11.713**	**.26879**
Stddev	.00022	.00039	.00035	.02190	.0970	.00831	.102	.00237
%RSD	1.6195	26.611	24.647	20.012	1.4532	608.14	.87229	.88034
#1	.01388	.00135	.00179	.08640	6.5925	.00564	11.676	.26803
#2	.01345	.00190	.00139	.13000	6.6475	.00667	11.634	.27144
#3	.01355	.00115	.00109	.11190	6.7811	-.00821	11.828	.26689
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**68.275**	**.00482**	**-.00159**	**-.00154**	**-.00066**	**-.00157**	**2.6794**
Stddev	.00042	.116	.00078	.00441	.00229	.00390	.00330	.0158
%RSD	245.76	.17012	16.240	277.48	148.35	594.40	211.04	.59069
#1	-.00063	68.409	.00392	-.00419	-.00094	-.00335	.00047	2.6913
#2	.00018	68.210	.00536	.00350	-.00408	-.00243	-.00538	2.6854
#3	-.00005	68.206	.00517	-.00409	.00039	.00382	.00021	2.6614
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

Sample Name: L1703118401 Acquired: 3/27/2017 18:34:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00055**	**.19546**	**-.00773**	**-.00111**	**.00021**	**.00925**	**.54813**
Stddev	.00086	.00066	.00669	.00049	.00005	.00003	.49131
%RSD	156.52	.33602	86.579	43.980	22.452	.33507	89.635
#1	.00029	.19471	-.01363	-.00064	.00017	.00927	.93500
#2	-.00052	.19592	-.00908	-.00107	.00019	.00926	-.00466
#3	-.00144	.19574	-.00046	-.00161	.00026	.00921	.71404
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11336.**	**75768.**	**2782.8**
Stddev	63.	655.	75.2
%RSD	.55846	.86446	2.7030
#1	11386.	75074.	2711.3
#2	11356.	75854.	2775.7
#3	11265.	76375.	2861.2

Approved: March 28, 2017

L1703118401

Sample Name: L~~1703118402~~ Acquired: 3/27/2017 18:38:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00118**	**.45288**	**.02009**	**.07246**	**.09522**	**-.00005**	**57.220**	**.00037**
Stddev	.00056	.00820	.00054	.00020	.00206	.00012	.228	.00031
%RSD	46.905	1.8103	2.6816	.26949	2.1636	241.58	.39818	83.555
#1	-.00158	.45026	.01997	.07268	.09751	-.00015	57.409	.00002
#2	-.00055	.46207	.01962	.07240	.09353	.00008	57.284	.00059
#3	-.00142	.44632	.02068	.07231	.09461	-.00008	56.967	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00109**	**.00488**	**.01340**	**1.0211**	**9.4791**	**.00741**	**13.019**	**.08403**
Stddev	.00027	.00060	.00046	.0233	.2083	.00293	.125	.00021
%RSD	24.479	12.218	3.4155	2.2837	2.1976	39.548	.96314	.25091
#1	.00110	.00429	.01391	1.0075	9.6985	.00910	13.119	.08405
#2	.00082	.00548	.01302	1.0480	9.4549	.00403	13.061	.08381
#3	.00135	.00487	.01327	1.0079	9.2840	.00911	12.878	.08423
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00192**	**129.30**	**.00348**	**.11035**	**.00236**	**.01276**	**.00007**	**13.026**
Stddev	.00021	.59	.00023	.00081	.00144	.00154	.00285	.005
%RSD	10.970	.45854	6.5157	.73346	61.266	12.074	4069.4	.03742
#1	.00216	129.98	.00364	.11062	.00366	.01129	-.00130	13.021
#2	.00186	128.94	.00359	.10943	.00080	.01436	-.00184	13.031
#3	.00175	128.97	.00322	.11098	.00261	.01262	.00335	13.024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

L1703118401

Sample Name: L~~1703118402~~ Acquired: 3/27/2017 18:38:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.59207**	**.26836**	**-.00567**	**-.00040**	**.00106**	**.03799**	**.27119**
Stddev	.00100	.00052	.00750	.00152	.00084	.00010	.73481
%RSD	.16922	.19471	132.36	376.30	79.068	.26057	270.96
#1	.59149	.26777	-.00448	-.00176	.00156	.03803	-.52718
#2	.59322	.26855	.00117	.00124	.00153	.03806	.91919
#3	.59149	.26876	-.01370	-.00069	.00009	.03787	.42156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11294.**	**76617.**	**2863.5**
Stddev	68.	1730.	66.5
%RSD	.60493	2.2586	2.3232
#1	11244.	78115.	2788.3
#2	11265.	74723.	2914.8
#3	11372.	77012.	2887.3

Approved: March 28, 2017

L1703118402

Sample Name: ~~L1703120202~~ Acquired: 3/27/2017 18:41:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**.03366**	**-.00170**	**.01489**	**-.00118**	**-.00002**	**.23815**	**.00032**
Stddev	.00113	.00500	.00174	.00350	.00147	.00005	.07179	.00026
%RSD	420.79	14.842	102.49	23.508	125.04	298.26	30.145	80.044
#1	-.00066	.03720	.00028	.01129	-.00042	-.00006	.32052	.00005
#2	.00100	.03584	-.00239	.01828	-.00023	-.00001	.20508	.00056
#3	-.00115	.02795	-.00298	.01511	-.00287	.00003	.18886	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00029**	**.00159**	**.00895**	**.03413**	**.04533**	**-.00172**	**.03489**	**.00340**
Stddev	.00005	.00138	.00014	.02013	.05160	.00763	.04954	.00071
%RSD	17.892	86.647	1.5446	58.983	113.84	443.43	141.98	20.919
#1	.00023	.00100	.00906	.02137	.02042	.00677	-.01998	.00349
#2	.00031	.00317	.00880	.02369	.10465	-.00390	.07632	.00407
#3	.00033	.00061	.00899	.05734	.01091	-.00803	.04834	.00265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00023**	**.24687**	**.00094**	**-.00618**	**-.00169**	**.00046**	**-.00389**	**.09003**
Stddev	.00064	.02513	.00177	.00725	.00342	.00050	.00600	.00301
%RSD	281.81	10.179	188.65	117.19	202.26	108.36	154.13	3.3395
#1	.00002	.22034	.00138	-.01431	-.00497	.00102	.00049	.09191
#2	.00094	.24994	-.00101	-.00040	-.00195	.00003	-.00143	.09163
#3	-.00028	.27032	.00244	-.00383	.00185	.00034	-.01074	.08657
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

L1703118402

Sample Name: ~~L1703120202~~ Acquired: 3/27/2017 18:41:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**.00066**	**.00696**	**-.00375**	**.00006**	**.00293**	**.47831**
Stddev	.00052	.00037	.00410	.00097	.00049	.00024	.14836
%RSD	117.50	56.534	58.939	25.799	788.84	8.2274	31.018
#1	-.00081	.00045	.01115	-.00482	.00011	.00315	.31211
#2	-.00068	.00044	.00295	-.00350	.00053	.00297	.59738
#3	.00015	.00109	.00678	-.00294	-.00045	.00268	.52543
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11448.**	**78755.**	**2876.9**
Stddev	77.	943.	43.5
%RSD	.66928	1.1976	1.5122
#1	11536.	78009.	2884.5
#2	11412.	79815.	2916.0
#3	11396.	78441.	2830.1

Approved: March 28, 2017

L1703120202

Sample Name: ~~L1703120204~~ Acquired: 3/27/2017 18:45:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00070**	**.01401**	**-.00256**	**.01333**	**.00033**	**-.00004**	**5.9842**	**.00007**
Stddev	.00089	.01323	.00293	.00215	.00045	.00002	.1155	.00011
%RSD	128.22	94.425	114.45	16.104	136.13	42.893	1.9306	162.90
#1	-.00150	.00446	.00068	.01513	.00059	-.00003	5.8534	.00014
#2	.00026	.00847	-.00502	.01095	.00058	-.00006	6.0720	-.00006
#3	-.00085	.02912	-.00335	.01390	-.00019	-.00004	6.0274	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00021**	**.00120**	**.00076**	**.00530**	**13.313**	**.00080**	**.80831**	**.00733**
Stddev	.00029	.00057	.00072	.02590	.162	.00472	.05768	.00118
%RSD	135.84	47.403	94.547	489.14	1.2200	590.42	7.1356	16.142
#1	.00049	.00055	-.00007	-.00193	13.126	.00313	.86757	.00856
#2	-.00009	.00141	.00124	-.01623	13.393	-.00464	.75236	.00620
#3	.00024	.00163	.00112	.03404	13.419	.00390	.80500	.00723
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00046**	**27.878**	**.00266**	**.88504**	**-.00132**	**-.00016**	**-.00340**	**.23024**
Stddev	.00015	.148	.00099	.01230	.00223	.00103	.00270	.00292
%RSD	31.542	.52978	37.070	1.3894	168.41	660.12	79.457	1.2682
#1	.00043	27.942	.00379	.89790	-.00111	-.00124	-.00140	.23352
#2	.00034	27.983	.00204	.88382	.00079	-.00004	-.00648	.22931
#3	.00062	27.709	.00214	.87339	-.00365	.00081	-.00232	.22790
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

L1703120202

Sample Name: ~~L1703120204~~ Acquired: 3/27/2017 18:45:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**.00536**	**.00106**	**.00065**	**-.00030**	**.00688**	**.40525**
Stddev	.00076	.00077	.01092	.00097	.00042	.00011	.37529
%RSD	745.50	14.424	1029.3	149.59	138.42	1.5646	92.607
#1	.00091	.00551	.00803	.00172	-.00052	.00696	-.02351
#2	-.00059	.00605	-.01152	.00037	-.00057	.00692	.67408
#3	-.00001	.00453	.00667	-.00015	.00018	.00676	.56519
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11540.**	**78259.**	**2891.2**
Stddev	50.	1183.	19.5
%RSD	.42902	1.5114	.67611
#1	11541.	79012.	2881.3
#2	11491.	78869.	2878.5
#3	11590.	76895.	2913.7

Approved: March 28, 2017

L1703120204

Sample Name: ~~L1703120206~~ Acquired: 3/27/2017 18:49:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00091**	**.06800**	**-.00251**	**.01305**	**.00698**	**-.00016**	**52.696**	**.00029**
Stddev	.00011	.00295	.00182	.00161	.00094	.00003	.266	.00019
%RSD	11.816	4.3456	72.376	12.339	13.454	19.449	.50420	66.508
#1	-.00104	.07026	-.00199	.01127	.00719	-.00013	52.791	.00042
#2	-.00084	.06907	-.00102	.01348	.00780	-.00016	52.396	.00007
#3	-.00086	.06466	-.00454	.01441	.00596	-.00019	52.901	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00044**	**.00239**	**.01174**	**.29642**	**13.943**	**.00887**	**2.7157**	**.13964**
Stddev	.00031	.00050	.00028	.01285	.085	.00576	.0808	.00159
%RSD	71.700	20.897	2.4257	4.3334	.61211	64.943	2.9756	1.1390
#1	.00009	.00182	.01141	.30651	13.958	.00248	2.6666	.13784
#2	.00052	.00274	.01191	.28196	14.019	.01367	2.6715	.14086
#3	.00069	.00260	.01191	.30080	13.851	.01047	2.8090	.14022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00158**	**28.710**	**.00527**	**28.134**	**-.00115**	**-.00213**	**.00141**	**.30271**
Stddev	.00041	.194	.00086	.267	.00238	.00279	.00437	.00154
%RSD	26.068	.67625	16.235	.94999	207.79	131.09	310.01	.51015
#1	.00117	28.931	.00459	28.310	-.00051	.00088	-.00350	.30258
#2	.00199	28.633	.00500	28.265	.00085	-.00264	.00488	.30431
#3	.00159	28.566	.00623	27.827	-.00378	-.00463	.00284	.30123
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

L1703120204

Sample Name: ~~L1703120206~~ Acquired: 3/27/2017 18:49:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.03589**	**-.00622**	**.00020**	**.00130**	**.08323**	**.55915**
Stddev	.00053	.00058	.00297	.00193	.00034	.00083	.15947
%RSD	167.86	1.6155	47.818	984.51	26.185	1.0030	28.520
#1	-.00065	.03527	-.00767	.00204	.00159	.08369	.70940
#2	.00029	.03600	-.00819	-.00181	.00137	.08374	.57622
#3	-.00059	.03642	-.00280	.00036	.00093	.08226	.39183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**12835.**	**87301.**	**3342.0**
Stddev	22.	182.	38.7
%RSD	.17117	.20875	1.1565
#1	12813.	87350.	3301.7
#2	12857.	87100.	3378.8
#3	12835.	87454.	3345.3

Approved: March 28, 2017

L1703120206

Sample Name: L1703121501 Acquired: 3/27/2017 18:53:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00053**	**.00487**	**-.00197**	**.00507**	**-.00151**	**-.00010**	**5.8123**	**.00027**
Stddev	.00168	.01122	.00085	.00057	.00267	.00004	.0727	.00003
%RSD	316.11	230.36	43.391	11.292	177.17	41.467	1.2512	11.719
#1	-.00127	-.00706	-.00172	.00571	-.00372	-.00008	5.7659	.00026
#2	-.00172	.00647	-.00127	.00489	-.00226	-.00008	5.8961	.00024
#3	.00139	.01520	-.00292	.00461	.00146	-.00015	5.7749	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00034**	**.00086**	**-.00013**	**-.00684**	**2.1701**	**-.00006**	**.27620**	**.04282**
Stddev	.00004	.00050	.00016	.01663	.2073	.00137	.07715	.00401
%RSD	11.680	57.672	124.59	243.27	9.5530	2452.4	27.931	9.3663
#1	.00034	.00084	-.00020	.00522	2.3825	-.00160	.27061	.03859
#2	.00030	.00038	-.00024	.00008	1.9683	.00046	.20201	.04330
#3	.00038	.00137	.00006	-.02581	2.1593	.00098	.35599	.04657
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**.75737**	**.00141**	**.13397**	**-.00109**	**.00472**	**-.00292**	**.09188**
Stddev	.00008	.01368	.00081	.01174	.00429	.00094	.00294	.00506
%RSD	159.58	1.8058	57.780	8.7641	393.77	19.825	100.65	5.5061
#1	.00012	.76466	.00106	.14060	.00386	.00557	-.00356	.09657
#2	-.00004	.74159	.00083	.14090	-.00368	.00487	.00029	.09254
#3	.00007	.76585	.00234	.12041	-.00345	.00372	-.00548	.08652
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 28, 2017

L1703120206

Sample Name: ~~L1703121501~~ Acquired: 3/27/2017 18:53:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00039**	**.00980**	**-.00270**	**-.00346**	**-.00004**	**.00237**	**.67096**
Stddev	.00100	.00081	.00244	.00119	.00044	.00015	.07367
%RSD	258.29	8.2821	90.098	34.344	1202.7	6.3542	10.979
#1	.00075	.00886	-.00443	-.00209	-.00053	.00228	.71527
#2	-.00112	.01026	-.00376	-.00421	.00010	.00254	.58593
#3	-.00079	.01028	.00008	-.00409	.00032	.00229	.71170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11391.**	**77951.**	**2861.5**
Stddev	71.	479.	31.7
%RSD	.62623	.61422	1.1066
#1	11410.	78489.	2887.2
#2	11312.	77572.	2871.1
#3	11451.	77793.	2826.1

Approved: March 28, 2017

L1703121501

Sample Name: L~~1703121502~~ Acquired: 3/27/2017 18:56:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00091**	**.62521**	**.03228**	**.10060**	**.12834**	**-.00012**	**78.174**
Stddev	.00179	.00524	.00119	.00134	.00134	.00008	.155
%RSD	197.24	.83846	3.6900	1.3326	1.0446	66.782	.19850
#1	.00038	.63073	.03365	.10023	.12755	-.00015	78.239
#2	-.00015	.62460	.03172	.09949	.12758	-.00018	77.997
#3	-.00295	.62030	.03147	.10209	.12988	-.00003	78.286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**.00132**	**.00613**	**.01809**	**1.1970**	**13.309**	**.00858**
Stddev	.00023	.00027	.00137	.00094	.0269	.034	.00456
%RSD	89.895	20.405	22.415	5.1860	2.2492	.25711	53.151
#1	.00034	.00163	.00534	.01755	1.1992	13.336	.00505
#2	-.00000	.00118	.00532	.01918	1.2227	13.321	.01373
#3	.00044	.00115	.00771	.01755	1.1690	13.271	.00696
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**17.939**	**.10507**	**.00271**	**173.84**	**.00542**	**.17022**	**.00175**
Stddev	.106	.00217	.00061	.25	.00054	.00189	.00083
%RSD	.58874	2.0699	22.602	.14362	10.037	1.1076	47.323
#1	17.954	.10679	.00314	173.82	.00561	.16982	.00206
#2	17.827	.10579	.00299	174.10	.00481	.17228	.00239
#3	18.036	.10263	.00201	173.60	.00584	.16857	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

L1703121501

Sample Name: ~~L1703121502~~ Acquired: 3/27/2017 18:56:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00866**	**-.00073**	**17.604**	**.55762**	**.36744**	**-.00450**	**-.00010**
Stddev	.00526	.00666	.201	.01281	.00075	.01085	.00321
%RSD	60.692	916.93	1.1445	2.2975	.20492	241.05	3167.3
#1	.01422	-.00318	17.713	.56662	.36678	-.00839	-.00334
#2	.00799	.00682	17.727	.56328	.36728	.00776	-.00003
#3	.00377	-.00581	17.372	.54295	.36826	-.01287	.00307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00199**	**.05170**	F **-.21016**
Stddev	.00055	.00076	.30774
%RSD	27.564	1.4681	146.43
#1	.00215	.05221	-.50523
#2	.00244	.05207	.10885
#3	.00138	.05083	-.23410
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11165.**	**74905.**	**2875.6**
Stddev	103.	605.	24.8
%RSD	.92489	.80721	.86368
#1	11111.	75408.	2901.8
#2	11284.	75073.	2872.7
#3	11099.	74235.	2852.3

Approved: March 28, 2017

Sample Name: CCV Acquired: 3/27/2017 19:00:32 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40748**	**10.257**	**.40523**	**.50773**	**1.0024**	**.05049**	**9.9479**
Stddev	.00128	.028	.00492	.00451	.0016	.00018	.1171
%RSD	.31299	.27763	1.2137	.88733	.15945	.35429	1.1770
#1	.40610	10.233	.41031	.50255	1.0039	.05041	9.9942
#2	.40862	10.251	.40490	.51075	1.0007	.05037	10.035
#3	.40771	10.289	.40049	.50990	1.0025	.05070	9.8148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05043**	**.20222**	**.50751**	**.50810**	**4.0726**	**49.367**	**.99236**
Stddev	.00046	.00180	.00072	.00449	.0286	.063	.01394
%RSD	.90817	.89013	.14268	.88340	.70291	.12666	1.4046
#1	.05095	.20404	.50679	.51327	4.0412	49.427	1.0074
#2	.05025	.20217	.50751	.50520	4.0972	49.371	.98969
#3	.05008	.20045	.50824	.50583	4.0796	49.302	.97995
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.9948**	**.50363**	**.99912**	**49.497**	**.50713**	**10.079**	**.51092**
Stddev	.0305	.00149	.00916	.110	.00460	.054	.00481
%RSD	.30544	.29602	.91711	.22248	.90633	.53495	.94075
#1	9.9735	.50229	1.0084	49.553	.51191	10.137	.51615
#2	9.9812	.50524	.99892	49.567	.50674	10.067	.50988
#3	10.030	.50337	.99006	49.370	.50274	10.031	.50671
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 28, 2017

Sample Name: CCV Acquired: 3/27/2017 19:00:32 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2005**	**.40256**	**5.0201**	**1.0087**	**1.0058**	**.99948**	**.51315**
Stddev	.0055	.00370	.0448	.0094	.0049	.00185	.00169
%RSD	.46156	.91796	.89255	.93599	.48271	.18480	.32870
#1	1.2068	.39917	5.0698	1.0183	1.0082	.99737	.51380
#2	1.1983	.40200	5.0080	1.0082	1.0089	1.0003	.51443
#3	1.1963	.40650	4.9827	.99948	1.0002	1.0008	.51124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0080**	**1.0075**	F **.65411**
Stddev	.0028	.0078	.86514
%RSD	.27936	.77509	132.26
#1	1.0058	1.0160	1.6528
#2	1.0071	1.0056	.13257
#3	1.0112	1.0008	.17701
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10858.**	**73177.**	**2675.0**
Stddev	128.	616.	83.1
%RSD	1.1748	.84123	3.1071
#1	10720.	73885.	2579.6
#2	10972.	72875.	2713.3
#3	10882.	72770.	2732.0

Approved: March 28, 2017

Sample Name: CCB Acquired: 3/27/2017 19:04:06 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**-.00286**	**-.00081**	**.00209**	**.00006**	**-.00000**	**.00424**
Stddev	.00098	.00834	.00232	.00410	.00026	.00006	.03707
%RSD	530.62	291.67	286.21	196.52	424.34	3765.4	874.99
#1	.00064	-.01198	-.00183	.00360	-.00022	-.00002	.00890
#2	-.00126	.00438	-.00244	.00522	.00009	-.00005	.03875
#3	.00007	-.00098	.00184	-.00256	.00031	.00006	-.03494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**.00048**	**.00049**	**-.00052**	**.00044**	**.08555**	**-.00381**
Stddev	.00012	.00006	.00065	.00099	.03315	.15861	.00503
%RSD	104.26	12.304	133.18	192.33	7610.4	185.40	132.13
#1	.00025	.00049	.00096	.00062	-.03728	.00641	.00157
#2	.00010	.00053	.00076	-.00120	.02500	.26815	-.00460
#3	.00000	.00041	-.00025	-.00097	.01358	-.01792	-.00840
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.07717**	**-.00034**	**.00039**	**.03338**	**.00019**	**-.00063**	**-.00287**
Stddev	.03122	.00387	.00020	.04781	.00082	.00647	.00069
%RSD	40.454	1149.1	50.568	143.24	422.57	1030.6	23.901
#1	-.04459	.00407	.00034	.01393	.00106	.00136	-.00366
#2	-.08008	-.00317	.00060	.08785	.00009	-.00785	-.00257
#3	-.10682	-.00191	.00022	-.00164	-.00057	.00461	-.00239
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 28, 2017

Sample Name: CCB Acquired: 3/27/2017 19:04:06 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1272) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00226**	**-.00077**	**.01000**	**-.00024**	**.00026**	**-.00001**	**-.00109**
Stddev	.00253	.00344	.00082	.00042	.00074	.01084	.00347
%RSD	111.60	445.44	8.2066	178.93	283.23	85011.	316.90
#1	.00413	.00074	.01006	.00024	.00015	.01121	-.00506
#2	-.00061	.00165	.00915	-.00057	.00105	-.00081	.00042
#3	.00327	-.00471	.01078	-.00038	-.00042	-.01044	.00136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

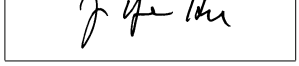
Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00097**	**.00024**	F **.23800**
Stddev	.00100	.00006	.98408
%RSD	102.82	23.503	413.49
#1	.00033	.00030	.53132
#2	.00046	.00022	1.0421
#3	.00212	.00020	-.85940
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10891.**	**73632.**	**2631.3**
Stddev	162.	877.	38.3
%RSD	1.4874	1.1916	1.4550
#1	10825.	74645.	2654.1
#2	11075.	73141.	2652.6
#3	10772.	73109.	2587.1

Approved: March 28, 2017

	Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
	Ag 328.068 {103}	3/29/2017 10:10:14	3/29/2017 10:10:14	Linear	1/Conc	-0.000030	0.066055	0.000000	1.000000
	Al 308.215 {109}	3/29/2017 10:10:14	3/29/2017 10:10:14	Linear	1/Conc	0.000929	0.012202	0.000000	1.000000
	As 189.042 {478}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	0.000031	0.022208	0.000000	1.000000
	B 249.678 {135}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	-0.000276	0.024335	0.000000	1.000000
	Ba 455.403 { 74}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	0.011343	1.475134	0.000000	1.000000
	Be 313.107 {108}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	0.000427	1.219358	0.000000	1.000000
	Ca 422.673 { 80}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	0.004516	0.030499	0.000000	1.000000
	Cd 228.802 {447}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	-0.000050	0.463802	0.000000	1.000000
	Co 228.616 {447}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	-0.000227	0.316667	0.000000	1.000000
	Cr 267.716 {126}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	0.000206	0.074048	0.000000	1.000000
	Cu 224.700 {450}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	0.000007	0.140017	0.000000	1.000000
	Fe 261.187 {129}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	-0.000267	0.026141	0.000000	1.000000
	K 766.490 { 44}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	-0.016364	0.041319	0.000000	1.000000
	Li 670.784 { 50}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	-0.029327	0.913578	0.000000	1.000000
	Mg 279.079 {121}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	-0.000067	0.008395	0.000000	1.000000
	Mn 257.610 {131}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	-0.000398	0.297096	0.000000	1.000000
	Mo 202.030 {467}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	0.000006	0.164690	0.000000	1.000000
	Na 589.592 { 57}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	-0.007584	0.110148	0.000000	1.000000
	Ni 231.604 {446}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	-0.000955	0.125135	0.000000	1.000000
	P 214.914 {457}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	-0.000168	0.011935	0.000000	1.000000
	Pb 220.353 {453}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	-0.000417	0.061746	0.000000	1.000000
	Sb 206.833 {463}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	0.000781	0.025878	0.000000	1.000000
	Se 196.090 {472}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	-0.000197	0.015116	0.000000	1.000000
	Si 212.412 {459}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	0.000466	0.031226	0.000000	1.000000
	Sn 189.989 {477}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	0.000046	0.066968	0.000000	1.000000
	Sr 407.771 { 83}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	0.002256	2.327491	0.000000	1.000000
	Ti 337.280 {100}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	-0.002642	0.120170	0.000000	1.000000
	Tl 190.856 {477}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	-0.000282	0.026590	0.000000	1.000000
	V 292.402 {115}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	0.000114	0.086567	0.000000	1.000000
	Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
	Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
	Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
	Zn 206.200 {463}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	0.000020	0.427403	0.000000	1.000000
	Zr 339.198 { 99}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	-0.008563	0.008102	0.000000	1.000000

Approved: March 30, 2017



Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999841	0.000003	0.001739	0.005796	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999982	0.000005	0.006861	0.022871	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999838	0.000002	0.002985	0.009951	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999737	0.000003	0.002803	0.009344	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999938	0.000105	0.001480	0.004933	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999940	0.000004	0.000081	0.000271	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999968	0.000015	0.058240	0.194132	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999546	0.000005	0.000293	0.000977	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999985	0.000002	0.000413	0.001377	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999685	0.000006	0.001049	0.003496	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999839	0.000008	0.001131	0.003769	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999105	0.000028	0.025653	0.085510	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999969	0.000104	0.136258	0.454194	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999829	0.000166	0.005814	0.019381	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999259	0.000032	0.082561	0.275204	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999713	0.000023	0.002603	0.008678	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999864	0.000017	0.000416	0.001388	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999949	0.000352	0.042828	0.142761	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999984	0.000002	0.001097	0.003656	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999882	0.000012	0.007201	0.024003	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999507	0.000006	0.003261	0.010871	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999514	0.000006	0.004512	0.015041	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999986	0.000000	0.006432	0.021441	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999954	0.000010	0.002570	0.008565	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999972	0.000003	0.000815	0.002718	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999899	0.000210	0.000654	0.002179	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999852	0.000013	0.007801	0.026003	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999933	0.000001	0.002907	0.009691	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999958	0.000005	0.000865	0.002884	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999958	0.000025	0.000174	0.000581	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.427814	0.000109	0.297951	0.993169	OK.	1.000000	0.000000	1	0

Approved: March 30, 2017

Sample Name: S0 Acquired: 3/29/2017 9:52:05 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00003**	**.00093**	**.00003**	**-.00028**	**.01134**	**.00043**	**.00452**
Stddev	.00011	.00000	.00001	.00004	.00085	.00003	.00311
%RSD	382.18	.42656	35.711	12.922	7.5067	6.5564	68.969
#1	-.00014	.00093	.00003	-.00028	.01228	.00042	.00806
#2	-.00003	.00093	.00004	-.00024	.01061	.00046	.00222
#3	.00008	.00093	.00002	-.00031	.01114	.00040	.00327

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00005**	**-.00023**	**.00021**	**.00001**	**-.00027**	**-.01637**	**-.02932**
Stddev	.00013	.00002	.00003	.00002	.00062	.00475	.00373
%RSD	265.62	10.706	13.299	314.80	231.58	29.007	12.730
#1	-.00000	-.00021	.00024	-.00002	-.00040	-.01333	-.02969
#2	-.00020	-.00025	.00020	.00001	-.00080	-.02184	-.03286
#3	.00005	-.00022	.00019	.00002	.00041	-.01393	-.02542

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00007**	**-.00040**	**.00001**	**-.00758**	**-.00095**	**-.00017**	**-.00042**
Stddev	.00052	.00040	.00002	.00411	.00007	.00006	.00015
%RSD	778.56	101.01	238.49	54.270	6.9823	35.531	35.119
#1	.00016	-.00021	-.00001	-.00449	-.00095	-.00010	-.00054
#2	-.00066	-.00086	.00002	-.01224	-.00089	-.00019	-.00026
#3	.00030	-.00012	.00001	-.00599	-.00102	-.00021	-.00046

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00078**	**-.00020**	**.00047**	**.00005**	**.00226**	**-.00264**	**-.00028**
Stddev	.00004	.00005	.00007	.00003	.00083	.00050	.00001
%RSD	5.1342	23.586	15.742	56.399	36.594	18.789	4.3584
#1	.00082	-.00024	.00041	.00007	.00254	-.00226	-.00027
#2	.00074	-.00015	.00055	.00003	.00133	-.00246	-.00028
#3	.00078	-.00021	.00044	.00004	.00291	-.00320	-.00029

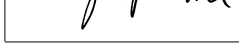
Approved: March 30, 2017

Sample Name: S0 Acquired: 3/29/2017 9:52:05 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.00011**	**.00002**	**-.00856**
Stddev	.00002	.00001	.00049
%RSD	16.307	49.897	5.7471
#1	.00012	.00003	-.00913
#2	.00009	.00002	-.00833
#3	.00013	.00001	-.00823

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14351.**	**96686.**	**3560.7**
Stddev	147.	140.	29.8
%RSD	1.0271	.14498	.83736
#1	14396.	96549.	3582.7
#2	14471.	96680.	3526.8
#3	14186.	96830.	3572.7

Approved: March 30, 2017



Sample Name: S1 Acquired: 3/29/2017 9:55:42 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00013**	**.00200**	**.02267**	**.00085**	**.00673**	**.00001**	**.00027**
Stddev	.00005	.00004	.00056	.00004	.00164	.00008	.00008
%RSD	35.289	2.0766	2.4793	5.2051	24.344	607.33	29.871
#1	.00018	.00205	.02291	.00080	.00500	.00009	.00024
#2	.00011	.00198	.02307	.00088	.00826	.00002	.00036
#3	.00010	.00197	.02203	.00087	.00695	-.00007	.00021

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00043**	**.00047**	**.00002**	**.00198**	**.00111**	**.00117**	**.03287**
Stddev	.00007	.00008	.00044	.00343	.00084	.00006	.00361
%RSD	15.033	17.883	2034.5	173.42	75.938	4.7877	10.967
#1	.00049	.00056	.00017	-.00142	.00177	.00120	.03686
#2	.00046	.00043	-.00047	.00192	.00140	.00121	.03192
#3	.00036	.00041	.00036	.00544	.00016	.00111	.02984

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00042**	**.00069**	**-.00002**	**.00103**	**.00163**	**.00055**	**.01917**
Stddev	.00010	.00004	.00006	.00006	.00003	.00002	.00119
%RSD	22.904	5.2173	332.43	6.0862	1.7978	2.8084	6.1903
#1	-.00052	.00065	.00004	.00107	.00166	.00056	.01792
#2	-.00038	.00071	-.00008	.00106	.00162	.00056	.02029
#3	-.00034	.00072	-.00002	.00096	.00160	.00053	.01931

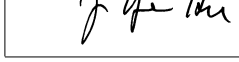
Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00179**	**.00078**	**.00311**	**-.01094**
Stddev	.00035	.00002	.00005	.00254
%RSD	19.306	2.5511	1.6698	23.225
#1	-.00209	.00076	.00311	-.00826
#2	-.00189	.00078	.00305	-.01331
#3	-.00141	.00080	.00316	-.01126

Approved: March 30, 2017

Sample Name: S1 Acquired: 3/29/2017 9:55:42 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14532.**	**96615.**	**3516.4**
Stddev	79.	254.	28.0
%RSD	.54187	.26239	.79558
#1	14605.	96322.	3528.0
#2	14542.	96770.	3484.5
#3	14448.	96752.	3536.7

Approved: March 30, 2017



Sample Name: S2 Acquired: 3/29/2017 9:59:29 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00038**	**.00283**	**.00014**	**-.00013**	**.03392**	**.00132**	**.00952**
Stddev	.00010	.00003	.00007	.00003	.00179	.00002	.00052
%RSD	26.069	1.1508	47.981	24.664	5.2889	1.1812	5.4834
#1	.00038	.00281	.00012	-.00016	.03599	.00131	.00892
#2	.00048	.00287	.00021	-.00011	.03290	.00134	.00984
#3	.00028	.00281	.00008	-.00011	.03287	.00131	.00980

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00033**	**.00072**	**.00064**	**.00089**	**.00096**	**.01896**	**-.01753**
Stddev	.00009	.00004	.00004	.00012	.00068	.00294	.00201
%RSD	27.637	5.1210	6.4989	13.607	70.986	15.517	11.448
#1	.00023	.00069	.00062	.00095	.00022	.02185	-.01883
#2	.00038	.00076	.00062	.00097	.00109	.01907	-.01522
#3	.00039	.00072	.00069	.00075	.00157	.01597	-.01854

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00062**	**.00146**	**.00242**	**.07223**	**.00010**	**.00147**	**.00004**
Stddev	.00066	.00054	.00004	.00366	.00011	.00002	.00017
%RSD	105.91	37.025	1.8331	5.0630	116.21	1.3237	372.22
#1	.00117	.00155	.00237	.07618	-.00003	.00148	.00022
#2	-.00011	.00195	.00244	.07157	.00018	.00148	.00003
#3	.00079	.00088	.00246	.06896	.00013	.00145	-.00011

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00108**	**-.00010**	**.00274**	**.00102**	**.03676**	**-.00070**	**-.00012**
Stddev	.00011	.00003	.00005	.00003	.00115	.00078	.00002
%RSD	10.206	25.484	1.8370	2.5716	3.1331	111.56	15.218
#1	.00100	-.00008	.00272	.00101	.03554	-.00145	-.00013
#2	.00103	-.00013	.00280	.00105	.03692	-.00078	-.00010
#3	.00120	-.00009	.00271	.00100	.03783	.00012	-.00013

Approved: March 30, 2017

Sample Name: S2 Acquired: 3/29/2017 9:59:29 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.00139**	**.00619**	**-.00922**
Stddev	.00003	.00012	.00040
%RSD	1.9016	1.9614	4.2978
#1	.00139	.00624	-.00961
#2	.00136	.00628	-.00922
#3	.00141	.00605	-.00882

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14740.**	**99107.**	**3474.6**
Stddev	193.	1214.	51.9
%RSD	1.3083	1.2249	1.4937
#1	14962.	97900.	3431.0
#2	14611.	99092.	3460.8
#3	14648.	100330.	3532.0

Approved: March 30, 2017

Sample Name: S3 Acquired: 3/29/2017 10:03:16 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.02578**	**.12346**	**.00878**	**.01158**	**1.4650**	**.06249**	**.30689**
Stddev	.00009	.00034	.00005	.00013	.0469	.00021	.01009
%RSD	.34351	.27576	.62134	1.1203	3.1977	.34208	3.2883
#1	.02580	.12328	.00877	.01165	1.4131	.06251	.29528
#2	.02568	.12326	.00873	.01143	1.4775	.06227	.31186
#3	.02585	.12386	.00884	.01166	1.5043	.06270	.31353

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.02534**	**.06329**	**.03674**	**.07032**	**.10218**	**2.0414**	**.86972**
Stddev	.00029	.00059	.00008	.00052	.00449	.0711	.03272
%RSD	1.1516	.93801	.21432	.74132	4.3920	3.4847	3.7626
#1	.02528	.06299	.03676	.06988	.09725	1.9637	.83235
#2	.02508	.06291	.03665	.07017	.10325	2.0572	.88359
#3	.02566	.06398	.03680	.07090	.10603	2.1033	.89323

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.08213**	**.14583**	**.16149**	**5.4566**	**.06138**	**.11795**	**.03055**
Stddev	.00238	.00491	.00134	.1845	.00060	.00080	.00020
%RSD	2.8979	3.3689	.82797	3.3811	.98054	.67535	.66134
#1	.07941	.14084	.16118	5.2573	.06104	.11761	.03045
#2	.08316	.14597	.16033	5.4913	.06103	.11738	.03043
#3	.08383	.15066	.16295	5.6213	.06208	.11886	.03079

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.03081**	**.00581**	**.15604**	**.06672**	**2.2906**	**.11466**	**.01195**
Stddev	.00033	.00008	.00116	.00057	.0803	.00448	.00011
%RSD	1.0763	1.2915	.74284	.85854	3.5038	3.9100	.92839
#1	.03048	.00578	.15570	.06653	2.2026	.11016	.01188
#2	.03079	.00575	.15510	.06625	2.3097	.11469	.01189
#3	.03114	.00589	.15734	.06736	2.3596	.11912	.01208

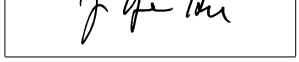
Approved: March 30, 2017

Sample Name: S3 Acquired: 3/29/2017 10:03:16 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.08565**	**.42551**	**-.00739**
Stddev	.00037	.00332	.00019
%RSD	.43390	.77983	2.6189
#1	.08594	.42358	-.00761
#2	.08523	.42361	-.00734
#3	.08577	.42934	-.00723

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13580.**	**89483.**	**3257.6**
Stddev	101.	2525.	90.4
%RSD	.74348	2.8215	2.7748
#1	13696.	92398.	3335.7
#2	13515.	88098.	3278.4
#3	13528.	87955.	3158.6

Approved: March 30, 2017



Sample Name: S4 Acquired: 3/29/2017 10:06:50 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.05304**	**.24768**	**.01780**	**.02426**	**2.9846**	**.12504**	**.61722**	**.05063**
Stddev	.00015	.00066	.00005	.00012	.0138	.00021	.00405	.00007
%RSD	.28827	.26577	.28934	.49406	.46408	.16427	.65595	.13134
#1	.05299	.24806	.01785	.02426	3.0002	.12500	.62174	.05069
#2	.05291	.24692	.01775	.02414	2.9799	.12485	.61601	.05063
#3	.05321	.24806	.01781	.02438	2.9737	.12526	.61392	.05056

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.12601**	**.07506**	**.14027**	**.21194**	**4.1196**	**1.8152**	**.16956**	**.29934**
Stddev	.00016	.00014	.00037	.00027	.0077	.0092	.00059	.00169
%RSD	.13019	.18537	.26079	.12634	.18610	.50947	.34803	.56537
#1	.12607	.07492	.14066	.21174	4.1263	1.8250	.17019	.30128
#2	.12614	.07506	.14023	.21184	4.1112	1.8140	.16946	.29859
#3	.12583	.07519	.13993	.21224	4.1213	1.8066	.16902	.29815

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.33291**	**11.062**	**.12432**	**.24107**	**.06176**	**.06242**	**.01195**	**.31536**
Stddev	.00082	.041	.00044	.00070	.00036	.00018	.00009	.00086
%RSD	.24734	.37180	.35203	.29201	.58841	.29300	.79155	.27413
#1	.33375	11.109	.12478	.24183	.06217	.06259	.01201	.31621
#2	.33287	11.046	.12429	.24092	.06163	.06246	.01184	.31538
#3	.33211	11.032	.12390	.24045	.06147	.06223	.01200	.31449

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.13402**	**4.7011**	**.24018**	**.02405**	**.17374**	**.85666**	**.01779**
Stddev	.00057	.0288	.00110	.00010	.00040	.00218	.00176
%RSD	.42560	.61349	.45610	.40073	.22775	.25481	9.8846
#1	.13468	4.7336	.24144	.02415	.17395	.85903	.01968
#2	.13378	4.6913	.23965	.02404	.17329	.85622	.01620
#3	.13362	4.6785	.23945	.02395	.17399	.85473	.01750

Approved: March 30, 2017

Sample Name: S4 Acquired: 3/29/2017 10:06:50 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13529.**	**87016.**	**3347.1**
Stddev	19.	497.	44.8
%RSD	.14016	.57116	1.3388
#1	13516.	86902.	3298.0
#2	13551.	87560.	3357.7
#3	13520.	86586.	3385.7

Approved: March 30, 2017

Sample Name: ICV Acquired: 3/29/2017 10:10:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38545**	**9.7756**	**.38934**	**.48556**	**.98855**	**.04903**	**10.050**
Stddev	.00653	.0899	.00295	.00726	.00489	.00054	.039
%RSD	1.6944	.91990	.75858	1.4956	.49512	1.1040	.38956
#1	.38166	9.7275	.38851	.47955	.99333	.04865	10.050
#2	.39299	9.8793	.39262	.49363	.98878	.04965	10.011
#3	.38171	9.7199	.38689	.48349	.98355	.04880	10.089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04892**	**.19470**	**.48785**	**.48948**	**3.9535**	**49.271**	**.98826**
Stddev	.00025	.00077	.00490	.00313	.0116	.237	.00468
%RSD	.52021	.39769	1.0045	.63936	.29235	.48092	.47327
#1	.04896	.19556	.48391	.49201	3.9597	49.320	.99194
#2	.04915	.19447	.49334	.49044	3.9607	49.480	.98984
#3	.04865	.19406	.48630	.48598	3.9402	49.014	.98300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.8636**	**.49253**	F **.92197**	**49.357**	**.48634**	**9.6281**	**.48808**
Stddev	.0690	.00167	.00303	.254	.00350	.0412	.00176
%RSD	.69983	.33855	.32882	.51439	.71972	.42826	.36115
#1	9.9345	.49208	.92503	49.428	.48963	9.6744	.48912
#2	9.8598	.49438	.92190	49.568	.48672	9.6146	.48907
#3	9.7966	.49114	.91897	49.075	.48266	9.5953	.48605
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			1.0000				
Range			-5.0000%				

Approved: March 30, 2017

Sample Name: ICV Acquired: 3/29/2017 10:10:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1750**	**.38996**	**4.8337**	**.97078**	**.99028**	**.96604**	**.48932**
Stddev	.0109	.00835	.0199	.00398	.00232	.00983	.00153
%RSD	.92630	2.1412	.41256	.40988	.23453	1.0179	.31263
#1	1.1857	.39672	4.8486	.97523	.99296	.97739	.49002
#2	1.1755	.38062	4.8414	.96955	.98892	.96023	.49037
#3	1.1639	.39253	4.8110	.96756	.98896	.96049	.48756
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.96756**	**.97258**	F **.30086**
Stddev	.01107	.00247	.31510
%RSD	1.1445	.25382	104.73
#1	.96019	.97511	.53133
#2	.98029	.97246	.42946
#3	.96218	.97018	-.05820
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-5.0000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14152.**	**90626.**	**3378.8**
Stddev	178.	1205.	83.1
%RSD	1.2581	1.3291	2.4586
#1	14279.	89290.	3342.7
#2	14228.	90957.	3319.9
#3	13948.	91630.	3473.8

Approved: March 30, 2017

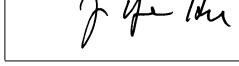
Sample Name: ICB Acquired: 3/29/2017 10:13:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.00521**	**.00126**	**.00201**	**.00004**	**.00005**	**.00311**
Stddev	.00106	.00293	.00202	.00112	.00201	.00004	.03971
%RSD	618.99	56.138	159.89	55.455	5368.0	86.233	1277.9
#1	.00087	.00190	.00229	.00126	-.00047	.00010	.04318
#2	-.00014	.00744	.00257	.00329	-.00167	.00005	-.03623
#3	-.00124	.00629	-.00106	.00148	.00225	.00001	.00238
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**-.00013**	**-.00067**	**-.00024**	**-.00169**	**.16374**	**-.00132**
Stddev	.00030	.00005	.00118	.00044	.01906	.06713	.00125
%RSD	122.19	36.163	177.37	180.02	1127.0	41.001	94.216
#1	-.00002	-.00018	-.00138	-.00021	-.02366	.23503	-.00189
#2	-.00058	-.00009	.00070	-.00070	.01057	.10173	.00011
#3	-.00013	-.00012	-.00131	.00018	.00801	.15445	-.00219
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01909**	**.00029**	**-.00000**	**.01922**	**-.00042**	**.00164**	**.00125**
Stddev	.10808	.00206	.00033	.03452	.00025	.00634	.00489
%RSD	566.05	710.63	10646.	179.63	58.412	386.97	391.00
#1	.14098	-.00147	.00006	.05908	-.00057	.00021	-.00328
#2	-.06506	-.00022	.00029	-.00102	-.00014	.00857	.00060
#3	-.01864	.00256	-.00036	-.00040	-.00057	-.00386	.00643
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: ICB Acquired: 3/29/2017 10:13:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00300**	**.00514**	**.00262**	**.00023**	**-.00029**	**-.00181**	**-.00004**
Stddev	.00428	.00263	.00058	.00050	.00049	.00358	.00271
%RSD	142.60	51.308	22.177	215.28	171.19	197.59	7156.7
#1	-.00092	.00275	.00287	.00051	.00000	-.00497	-.00234
#2	-.00016	.00797	.00196	.00054	-.00085	-.00256	.00295
#3	-.00793	.00469	.00304	-.00035	-.00001	.00208	-.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00016**	**.00133**	F **.05018**
Stddev	.00058	.00011	.35657
%RSD	359.18	8.0655	710.65
#1	-.00026	.00140	-.24884
#2	-.00068	.00138	-.04544
#3	.00046	.00120	.44481
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14542.**	**96194.**	**3420.7**
Stddev	95.	903.	95.1
%RSD	.65363	.93886	2.7800
#1	14522.	95276.	3314.5
#2	14459.	96223.	3449.7
#3	14646.	97082.	3497.9

Approved: March 30, 2017

Sample Name: LLICV Acquired: 3/29/2017 10:17:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00739**	**.16905**	**.00617**	**.07472**	**.00801**	**.00146**	**.40234**	**.00084**
Stddev	.00087	.00374	.00294	.00330	.00111	.00011	.04586	.00022
%RSD	11.837	2.2135	47.654	4.4214	13.815	7.5091	11.397	26.375
#1	.00675	.17039	.00804	.07395	.00758	.00149	.45396	.00059
#2	.00703	.17194	.00768	.07187	.00719	.00135	.36631	.00100
#3	.00838	.16482	.00278	.07834	.00927	.00156	.38676	.00093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00395**	**.00309**	**.00368**	**.09153**	**.87749**	**.07800**	**.34529**	**.00738**
Stddev	.00016	.00082	.00019	.00331	.17237	.00145	.09313	.00160
%RSD	4.1221	26.580	5.1993	3.6150	19.644	1.8541	26.971	21.729
#1	.00408	.00241	.00388	.09313	1.0626	.07896	.23802	.00699
#2	.00377	.00400	.00349	.08772	.72151	.07634	.39231	.00914
#3	.00401	.00286	.00368	.09373	.84840	.07870	.40553	.00600
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00765**	**.38917**	**.01591**	**.75714**	**.00905**	**.07606**	**.01887**	**.75802**
Stddev	.00032	.05753	.00052	.00261	.00205	.00386	.00268	.00141
%RSD	4.1806	14.784	3.2480	.34465	22.610	5.0713	14.191	.18555
#1	.00795	.45550	.01607	.75863	.01108	.07208	.01585	.75710
#2	.00731	.35925	.01533	.75413	.00699	.07978	.02098	.75964
#3	.00770	.35276	.01633	.75866	.00908	.07633	.01976	.75731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: LLICV Acquired: 3/29/2017 10:17:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39015**	**.03864**	**.02529**	**.15496**	**.00745**	**.01679**	**24.340**
Stddev	.00101	.00030	.00118	.00150	.00051	.00015	.407
%RSD	.25770	.78299	4.6818	.96920	6.8911	.90231	1.6711
#1	.38900	.03852	.02555	.15559	.00803	.01667	24.083
#2	.39067	.03842	.02633	.15324	.00708	.01696	24.128
#3	.39080	.03899	.02400	.15604	.00723	.01675	24.809
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14447.**	**95831.**	**3492.6**
Stddev	116.	1853.	57.1
%RSD	.80276	1.9333	1.6355
#1	14577.	97299.	3551.8
#2	14409.	93749.	3437.8
#3	14355.	96444.	3488.3

Approved: March 30, 2017

Sample Name: ICSA Acquired: 3/29/2017 10:21:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00227**	**249.63**	**.00269**	**.00082**	**.00045**	**.00003**	**232.77**
Stddev	.00089	.65	.00268	.00211	.00083	.00004	.17
%RSD	39.435	.25855	99.849	258.42	186.53	102.85	.07156
#1	.00169	249.00	.00573	.00271	.00138	.00000	232.58
#2	.00329	249.59	.00065	-.00146	-.00020	.00007	232.83
#3	.00181	250.29	.00169	.00120	.00015	.00003	232.90
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00074**	**-.00143**	**-.00229**	**.00191**	**93.939**	**.14662**	**-.00403**
Stddev	.00009	.00008	.00092	.00109	.421	.16029	.00419
%RSD	11.935	5.3263	40.443	57.068	.44855	109.32	103.89
#1	.00084	-.00147	-.00235	.00229	93.513	.25417	-.00717
#2	.00068	-.00147	-.00317	.00068	93.949	-.03761	-.00564
#3	.00070	-.00134	-.00133	.00275	94.356	.22329	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**241.54**	**-.00278**	**-.00091**	**-.01380**	**-.00053**	**.01316**	**-.00171**
Stddev	.86	.00102	.00054	.06369	.00089	.00636	.00414
%RSD	.35677	36.679	59.442	461.40	168.73	48.376	241.66
#1	241.77	-.00192	-.00029	-.04390	-.00098	.00582	-.00620
#2	240.58	-.00390	-.00129	-.05687	-.00109	.01725	-.00088
#3	242.26	-.00252	-.00116	.05936	.00050	.01640	.00195
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: ICSA Acquired: 3/29/2017 10:21:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00785**	**-.00228**	**.01028**	**-.00034**	**-.00017**	**.00598**	**-.00014**
Stddev	.00400	.00330	.00222	.00038	.00051	.00160	.00088
%RSD	50.981	145.09	21.624	113.34	295.65	26.857	648.90
#1	.00697	.00153	.00882	.00010	.00038	.00446	.00018
#2	.00436	-.00400	.00918	-.00059	-.00063	.00580	.00054
#3	.01221	-.00436	.01284	-.00053	-.00027	.00766	-.00113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00219**	**.00053**	F **-3.6813**
Stddev	.00031	.00023	.1528
%RSD	14.126	42.529	4.1512
#1	-.00187	.00029	-3.8550
#2	-.00249	.00057	-3.6213
#3	-.00220	.00074	-3.5675
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02000
Low Limit			-.02000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13472.**	**86413.**	**3371.0**
Stddev	61.	120.	67.6
%RSD	.45107	.13886	2.0040
#1	13433.	86276.	3321.0
#2	13442.	86502.	3344.2
#3	13542.	86460.	3447.9

Approved: March 30, 2017

Sample Name: ICSAB Acquired: 3/29/2017 10:24:48 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49854**	**248.14**	**.24171**	F **.49388**	**.24499**	**.24254**	**230.45**
Stddev	.00269	1.97	.00135	.00107	.00059	.00024	.39
%RSD	.53991	.79338	.55694	.21616	.24240	.09921	.17069
#1	.50076	250.15	.24025	.49279	.24430	.24255	230.00
#2	.49555	246.21	.24197	.49393	.24535	.24277	230.65
#3	.49932	248.06	.24291	.49492	.24532	.24229	230.71
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				.10000			
Low Limit				-.10000			

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.46570**	**.22870**	**.23896**	**.23958**	**92.634**	**5.0900**	**.00134**
Stddev	.00084	.00065	.00031	.00073	.289	.1149	.00349
%RSD	.18097	.28552	.12768	.30536	.31248	2.2573	260.89
#1	.46503	.22875	.23923	.23915	92.306	4.9597	.00221
#2	.46664	.22933	.23901	.24043	92.854	5.1771	-.00250
#3	.46542	.22803	.23863	.23917	92.742	5.1330	.00431
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**236.67**	**.23635**	**-.00061**	**5.0450**	**.46089**	**-.01298**	**.46584**
Stddev	.43	.00214	.00016	.0733	.00104	.00555	.00468
%RSD	.18102	.90400	25.313	1.4528	.22650	42.737	1.0039
#1	236.28	.23518	-.00056	5.0082	.46041	-.01936	.46044
#2	237.13	.23506	-.00049	4.9974	.46209	-.00923	.46863
#3	236.60	.23882	-.00079	5.1294	.46018	-.01036	.46844
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: ICSAB Acquired: 3/29/2017 10:24:48 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49170**	**.24749**	**.01525**	**.47439**	**.00028**	**.00648**	**.44245**
Stddev	.00811	.00152	.00077	.00068	.00039	.00205	.00090
%RSD	1.6491	.61299	5.0661	.14400	138.29	31.644	.20413
#1	.48381	.24720	.01477	.47388	.00034	.00820	.44249
#2	.49126	.24615	.01483	.47412	.00065	.00421	.44153
#3	.50001	.24914	.01614	.47517	-.00013	.00704	.44334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.24098**	**.46216**	F **-3.7668**
Stddev	.00064	.00052	.1250
%RSD	.26707	.11318	3.3181
#1	.24169	.46160	-3.7861
#2	.24044	.46263	-3.8810
#3	.24081	.46224	-3.6333
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02500
Low Limit			-.02500

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13553.**	**87836.**	**3425.5**
Stddev	12.	786.	55.3
%RSD	.08509	.89516	1.6152
#1	13552.	87115.	3361.7
#2	13542.	88674.	3460.6
#3	13565.	87719.	3454.1

Approved: March 30, 2017

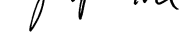
Sample Name: CCV Acquired: 3/29/2017 10:28:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37510**	**9.5070**	**.38023**	**.46926**	**.95810**	**.04748**	**9.5040**
Stddev	.00143	.0457	.00099	.00721	.00796	.00024	.0974
%RSD	.38157	.48098	.25929	1.5357	.83044	.50063	1.0252
#1	.37539	9.4926	.37922	.46256	.95024	.04738	9.4291
#2	.37637	9.5582	.38119	.47689	.96615	.04775	9.4688
#3	.37355	9.4702	.38028	.46835	.95792	.04731	9.6142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04900**	**.19471**	**.47073**	**.48456**	**3.8240**	**48.602**	**.97017**
Stddev	.00018	.00068	.00207	.00016	.0445	.223	.00888
%RSD	.36766	.34952	.43974	.03385	1.1645	.45962	.91484
#1	.04885	.19397	.47172	.48467	3.7790	48.496	.96414
#2	.04920	.19531	.47211	.48437	3.8680	48.858	.98036
#3	.04894	.19487	.46835	.48464	3.8250	48.451	.96600
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.5258**	**.47996**	**.96714**	**48.479**	**.48450**	**9.5544**	**.47957**
Stddev	.1319	.00107	.00097	.350	.00030	.0139	.00195
%RSD	1.3849	.22256	.10009	.72216	.06125	.14535	.40561
#1	9.3970	.47872	.96719	48.152	.48453	9.5494	.47853
#2	9.6606	.48061	.96809	48.848	.48418	9.5437	.48181
#3	9.5199	.48054	.96615	48.437	.48477	9.5701	.47836
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 30, 2017



Sample Name: CCV Acquired: 3/29/2017 10:28:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1324**	**.38475**	**4.8261**	**.96290**	**.95348**	**.95950**	**.48692**
Stddev	.0045	.00474	.0052	.00122	.00542	.00746	.00118
%RSD	.39976	1.2324	.10677	.12715	.56872	.77725	.24136
#1	1.1284	.38368	4.8216	.96403	.94767	.95239	.48688
#2	1.1315	.38994	4.8248	.96309	.95841	.96726	.48811
#3	1.1373	.38064	4.8317	.96160	.95435	.95885	.48576
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.95116**	**.96026**	F **.37855**
Stddev	.00355	.00050	.36755
%RSD	.37332	.05189	97.093
#1	.94896	.95972	.43922
#2	.95525	.96070	-.01555
#3	.94925	.96037	.71200
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14184.**	**93670.**	**3486.1**
Stddev	84.	1553.	2.0
%RSD	.58876	1.6582	.05654
#1	14280.	94596.	3488.1
#2	14128.	91877.	3484.1
#3	14143.	94537.	3486.2

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 10:31:56 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00096**	**.00256**	**-.00050**	**.00125**	**-.00059**	**.00002**	**.00789**
Stddev	.00149	.00634	.00063	.00192	.00087	.00007	.02664
%RSD	155.54	247.08	125.68	153.37	147.41	420.88	337.70
#1	-.00003	-.00057	-.00112	.00053	-.00105	-.00001	.03598
#2	-.00267	-.00159	-.00052	.00343	-.00113	-.00004	.00472
#3	-.00016	.00986	.00014	-.00021	.00041	.00009	-.01703
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**-.00001**	**.00032**	**-.00124**	**-.00551**	**-.05373**	**-.00332**
Stddev	.00030	.00022	.00057	.00012	.02505	.08204	.00611
%RSD	402.10	3450.2	174.83	9.3932	454.21	152.68	183.93
#1	.00008	-.00019	.00005	-.00112	-.00821	-.14761	.00007
#2	.00037	.00023	.00098	-.00136	.02077	-.01778	-.01038
#3	-.00023	-.00007	-.00005	-.00124	-.02911	.00419	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00103**	**.00009**	**.00004**	**-.00753**	**.00025**	**-.00203**	**-.00054**
Stddev	.08236	.00146	.00042	.00475	.00054	.00786	.00175
%RSD	8008.8	1701.3	1068.1	63.019	219.28	386.78	322.11
#1	-.09366	.00163	.00040	-.00575	.00055	-.00691	.00147
#2	.05600	-.00128	.00013	-.01291	.00057	.00704	-.00138
#3	.04075	-.00009	-.00042	-.00393	-.00038	-.00622	-.00172
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 10:31:56 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00130**	**-.00274**	**.00469**	**.00062**	**.00026**	**.00074**	**.00038**
Stddev	.00149	.00246	.00209	.00044	.00046	.00363	.00092
%RSD	114.83	89.879	44.598	71.850	179.22	487.69	241.55
#1	.00231	-.00093	.00287	.00028	-.00020	-.00279	.00090
#2	-.00041	-.00554	.00422	.00112	.00025	.00056	.00092
#3	.00200	-.00174	.00697	.00046	.00072	.00446	-.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00003**	**.00008**	F **.11861**
Stddev	.00010	.00009	.14978
%RSD	384.78	108.66	126.28
#1	-.00012	.00016	.28297
#2	-.00004	-.00002	-.01020
#3	.00008	.00010	.08306
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14498.**	**95990.**	**3537.2**
Stddev	295.	1255.	19.9
%RSD	2.0369	1.3075	.56323
#1	14645.	95410.	3533.2
#2	14692.	97430.	3558.8
#3	14158.	95130.	3519.6

Approved: March 30, 2017

Sample Name: PBW A Acquired: 3/29/2017 10:35:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607345-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**.00522**	**.00024**	**.00251**	**-.00137**	**-.00004**	**-.01186**
Stddev	.00107	.00315	.00300	.00162	.00105	.00007	.00806
%RSD	485.24	60.382	1261.0	64.634	76.768	161.30	67.947
#1	.00144	.00853	.00370	.00107	-.00238	.00004	-.00294
#2	-.00060	.00226	-.00136	.00427	-.00028	-.00007	-.01862
#3	-.00017	.00487	-.00162	.00220	-.00146	-.00010	-.01401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**-.00008**	**-.00110**	**-.00074**	**-.00723**	**-.11344**	**-.00168**
Stddev	.00019	.00017	.00021	.00041	.02429	.05780	.00320
%RSD	1354.2	206.42	18.850	54.944	335.90	50.953	189.87
#1	-.00017	.00011	-.00128	-.00027	-.02830	-.04804	-.00317
#2	.00020	-.00022	-.00087	-.00093	.01934	-.13459	.00199
#3	-.00007	-.00014	-.00116	-.00102	-.01274	-.15769	-.00387
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00526**	**.00143**	**.00007**	**.01134**	**.00091**	**-.00160**	**.00037**
Stddev	.09389	.00240	.00017	.00335	.00034	.00396	.00171
%RSD	1784.3	168.57	258.37	29.561	37.572	247.47	465.23
#1	.10916	.00394	.00003	.01061	.00074	-.00237	.00231
#2	-.01986	-.00085	.00026	.01500	.00069	-.00512	-.00088
#3	-.07351	.00118	-.00008	.00841	.00131	.00269	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: PBW A Acquired: 3/29/2017 10:35:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607345-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00090**	**-.00035**	**.00683**	**-.00006**	**-.00038**	**-.00026**	**-.00024**
Stddev	.00104	.00412	.00100	.00015	.00104	.00268	.00287
%RSD	115.45	1172.2	14.572	237.67	270.20	1045.4	1211.2
#1	.00103	.00304	.00630	.00008	-.00116	-.00329	.00307
#2	.00188	-.00493	.00798	-.00022	.00079	.00073	-.00166
#3	-.00020	.00084	.00621	-.00005	-.00079	.00179	-.00212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00021**	**.00113**	F **-.15844**
Stddev	.00026	.00005	.14120
%RSD	124.83	4.4360	89.117
#1	-.00000	.00110	-.30542
#2	-.00050	.00110	-.02385
#3	-.00012	.00119	-.14605
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14475.**	**96485.**	**3503.8**
Stddev	34.	124.	23.1
%RSD	.23510	.12867	.65949
#1	14482.	96539.	3494.3
#2	14438.	96573.	3486.9
#3	14505.	96343.	3530.1

Approved: March 30, 2017

Sample Name: LCSW A Acquired: 3/29/2017 10:39:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607345-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19239**	**4.8511**	**.19000**	**.93321**	**.49877**	**.02376**	**4.8640**	**.02450**
Stddev	.00262	.0149	.00204	.00165	.00540	.00007	.0438	.00034
%RSD	1.3634	.30650	1.0755	.17697	1.0821	.30378	.90007	1.3736
#1	.19335	4.8645	.18998	.93145	.50441	.02369	4.9099	.02442
#2	.18942	4.8537	.18796	.93473	.49827	.02377	4.8227	.02420
#3	.19440	4.8351	.19205	.93346	.49365	.02383	4.8596	.02487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09976**	**.24296**	**.24629**	**1.9796**	**24.619**	**.50320**	**4.9376**	**.25121**
Stddev	.00035	.00026	.00088	.0222	.101	.00940	.1131	.00261
%RSD	.34677	.10835	.35798	1.1207	.41170	1.8680	2.2912	1.0406
#1	.10004	.24316	.24683	1.9752	24.713	.51364	5.0355	.24938
#2	.09987	.24305	.24527	2.0036	24.512	.49539	4.9637	.25420
#3	.09937	.24266	.24677	1.9599	24.631	.50058	4.8137	.25005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48436**	**24.980**	**.24995**	**4.7568**	**.24904**	**.58324**	**.18952**	**2.4865**
Stddev	.00093	.287	.00101	.0212	.00313	.00231	.00093	.0073
%RSD	.19106	1.1490	.40307	.44617	1.2555	.39578	.49228	.29276
#1	.48449	25.302	.24879	4.7597	.25105	.58390	.19059	2.4938
#2	.48337	24.889	.25044	4.7343	.25063	.58514	.18905	2.4792
#3	.48521	24.750	.25061	4.7764	.24543	.58067	.18891	2.4865
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: LCSW A Acquired: 3/29/2017 10:39:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607345-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49432**	**.50113**	**.49895**	**.25049**	**.48668**	**.48468**	**.08409**
Stddev	.00073	.00361	.00383	.00270	.00056	.00082	.18401
%RSD	.14696	.72097	.76797	1.0797	.11510	.16872	218.83
#1	.49379	.50508	.49525	.24883	.48733	.48477	-.11281
#2	.49403	.50033	.49869	.24903	.48634	.48382	.11338
#3	.49515	.49799	.50290	.25361	.48637	.48545	.25170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14722.**	**97598.**	**3679.0**
Stddev	67.	321.	58.0
%RSD	.45729	.32841	1.5762
#1	14767.	97701.	3660.0
#2	14644.	97239.	3632.9
#3	14753.	97855.	3744.1

Approved: March 30, 2017

Sample Name: L1703116101 Acquired: 3/29/2017 10:42:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607345-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.50155**	**.00460**	**.01040**	**.05483**	**.00016**	**3.9699**	**.00018**
Stddev	.00162	.00157	.00250	.00326	.00047	.00004	.0184	.00026
%RSD	4818.9	.31344	54.230	31.296	.85543	25.742	.46351	139.65
#1	-.00053	.50263	.00487	.01373	.05503	.00011	3.9817	-.00004
#2	-.00135	.49975	.00199	.01026	.05515	.00018	3.9793	.00046
#3	.00178	.50228	.00696	.00722	.05429	.00018	3.9487	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00391**	**.03756**	**.00118**	**3.9600**	**.68942**	**.00197**	**4.9647**	**.13749**
Stddev	.00028	.00096	.00117	.0532	.03656	.00389	.0710	.00144
%RSD	7.2803	2.5594	99.598	1.3431	5.3032	197.92	1.4304	1.0448
#1	.00370	.03866	.00179	3.9219	.69859	.00189	4.8923	.13915
#2	.00381	.03687	.00192	3.9374	.64914	-.00189	4.9676	.13658
#3	.00424	.03716	-.00017	4.0208	.72052	.00590	5.0343	.13676
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00373**	**118.17**	**.00797**	**.09781**	**.00132**	**-.00121**	**.00369**	**13.273**
Stddev	.00023	.20	.00127	.00055	.00146	.00256	.00357	.021
%RSD	6.2537	.16603	15.888	.56013	110.39	211.41	96.664	.16149
#1	.00399	118.38	.00651	.09844	.00205	.00063	.00749	13.295
#2	.00355	118.15	.00860	.09744	.00228	-.00012	.00318	13.271
#3	.00364	117.99	.00880	.09754	-.00036	-.00414	.00041	13.252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703116101 Acquired: 3/29/2017 10:42:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607345-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.10302**	**.00882**	**.00041**	**.00428**	**.00905**	**.22729**
Stddev	.00054	.00087	.00266	.00251	.00027	.00022	.24041
%RSD	130.06	.84263	30.184	608.59	6.2063	2.3762	105.77
#1	-.00001	.10202	.00662	.00317	.00399	.00920	-.01372
#2	.00024	.10363	.01178	-.00020	.00432	.00915	.46709
#3	.00102	.10340	.00806	-.00173	.00451	.00880	.22850
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14335.**	**95551.**	**3623.4**
Stddev	114.	152.	66.3
%RSD	.79469	.15868	1.8284
#1	14446.	95427.	3578.6
#2	14342.	95507.	3592.1
#3	14218.	95720.	3699.5

Approved: March 30, 2017

Sample Name: L1703116102 Acquired: 3/29/2017 10:46:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607345-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19620**	**5.7414**	**.19923**	**.98651**	**.55867**	**.02487**	**8.9216**	**.02499**
Stddev	.00041	.0299	.00372	.00347	.00113	.00011	.0453	.00005
%RSD	.20754	.52044	1.8662	.35150	.20228	.44088	.50739	.20427
#1	.19636	5.7319	.19522	.98358	.55981	.02493	8.8809	.02494
#2	.19650	5.7175	.19992	.98561	.55865	.02475	8.9135	.02500
#3	.19573	5.7749	.20256	.99034	.55756	.02495	8.9704	.02504
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10384**	**.28937**	**.25035**	**6.2249**	**25.007**	**.50099**	**10.031**	**.39616**
Stddev	.00048	.00149	.00208	.0336	.142	.00741	.190	.00165
%RSD	.46638	.51456	.83199	.53951	.56747	1.4797	1.8915	.41642
#1	.10391	.28821	.24997	6.1891	24.857	.49652	9.8773	.39496
#2	.10332	.28886	.24847	6.2301	25.025	.50955	10.243	.39548
#3	.10428	.29105	.25259	6.2557	25.139	.49691	9.9723	.39804
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49442**	**141.26**	**.25683**	**5.0424**	**.24667**	**.59400**	**.19409**	**16.610**
Stddev	.00153	.16	.00083	.0080	.00072	.00292	.00555	.035
%RSD	.30877	.11113	.32357	.15855	.29205	.49224	2.8609	.20974
#1	.49414	141.35	.25623	5.0415	.24646	.59073	.18865	16.600
#2	.49305	141.35	.25778	5.0348	.24607	.59491	.19386	16.582
#3	.49606	141.08	.25647	5.0508	.24747	.59636	.19975	16.649
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703116102 Acquired: 3/29/2017 10:46:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607345-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50168**	**.60698**	**.49819**	**.24659**	**.50432**	**.51124**	**.14446**
Stddev	.00090	.00128	.00966	.00263	.00321	.00148	.23649
%RSD	.17966	.21089	1.9386	1.0679	.63613	.28883	163.71
#1	.50076	.60560	.48740	.24709	.50167	.51044	.40241
#2	.50173	.60813	.50604	.24375	.50340	.51035	-.06212
#3	.50256	.60719	.50112	.24894	.50789	.51295	.09307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14198.**	**93053.**	**3600.5**
Stddev	82.	550.	17.3
%RSD	.57995	.59064	.47941
#1	14174.	93332.	3604.4
#2	14290.	93407.	3581.6
#3	14131.	92420.	3615.5

Approved: March 30, 2017

Sample Name: L1703116103 Acquired: 3/29/2017 10:50:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607345-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19444**	**5.8785**	**.19545**	**.99013**	**.55546**	**.02469**	**9.0093**	**.02469**
Stddev	.00069	.0126	.00105	.00031	.00470	.00007	.0891	.00006
%RSD	.35711	.21443	.53928	.03082	.84694	.26571	.98948	.23684
#1	.19365	5.8666	.19551	.99011	.55004	.02463	8.9129	.02473
#2	.19471	5.8773	.19648	.98983	.55848	.02476	9.0260	.02462
#3	.19496	5.8917	.19437	.99044	.55787	.02469	9.0888	.02471
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10272**	**.29444**	**.24582**	**6.3272**	**24.936**	**.49854**	**10.079**	**.40213**
Stddev	.00022	.00061	.00133	.0397	.125	.00226	.084	.00372
%RSD	.21165	.20849	.54077	.62810	.49976	.45423	.83581	.92487
#1	.10291	.29417	.24666	6.2815	24.809	.49901	9.9908	.39813
#2	.10248	.29401	.24652	6.3534	24.941	.49608	10.086	.40277
#3	.10278	.29515	.24429	6.3468	25.058	.50053	10.159	.40549
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48825**	**143.38**	**.25533**	**4.9649**	**.24808**	**.58558**	**.19224**	**16.943**
Stddev	.00017	.80	.00127	.0047	.00173	.00294	.00550	.012
%RSD	.03388	.55535	.49827	.09554	.69778	.50264	2.8585	.06886
#1	.48830	142.46	.25629	4.9703	.24821	.58611	.18670	16.956
#2	.48807	143.76	.25389	4.9621	.24974	.58241	.19769	16.934
#3	.48839	143.91	.25580	4.9621	.24628	.58822	.19232	16.939
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703116103 Acquired: 3/29/2017 10:50:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607345-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49393**	**.60519**	**.48535**	**.24288**	**.50073**	**.50509**	**.18013**
Stddev	.00090	.00439	.00280	.00379	.00168	.00044	.29688
%RSD	.18210	.72570	.57590	1.5609	.33581	.08785	164.81
#1	.49301	.60029	.48213	.24232	.49878	.50462	.48894
#2	.49481	.60876	.48707	.23941	.50168	.50550	-.10317
#3	.49397	.60652	.48686	.24693	.50171	.50514	.15463
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14414.**	**93475.**	**3615.8**
Stddev	95.	766.	102.0
%RSD	.65649	.81989	2.8203
#1	14497.	92607.	3697.8
#2	14434.	93757.	3648.0
#3	14311.	94060.	3501.6

Approved: March 30, 2017

Sample Name: L1703116104 Acquired: 3/29/2017 10:53:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**.12565**	**.00106**	**.04445**	**.23737**	**-.00000**	**18.667**
Stddev	.00099	.00140	.00069	.00111	.00549	.00007	.358
%RSD	815.33	1.1156	64.814	2.4982	2.3117	2017.3	1.9175
#1	-.00101	.12460	.00065	.04375	.24371	-.00005	19.073
#2	.00063	.12510	.00068	.04388	.23430	.00007	18.532
#3	.00075	.12724	.00186	.04573	.23411	-.00003	18.397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**-.00001**	**-.00042**	**.00142**	**43.916**	**2.1977**	**.02479**
Stddev	.00004	.00036	.00040	.00210	.618	.1623	.00094
%RSD	10.285	2488.6	96.810	147.66	1.4066	7.3833	3.8012
#1	.00040	-.00036	-.00085	.00095	44.623	2.3447	.02544
#2	.00039	-.00005	-.00033	.00372	43.648	2.0236	.02523
#3	.00033	.00037	-.00006	-.00040	43.478	2.2248	.02371
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.0520**	**.63096**	**.00036**	**64.705**	**.00085**	**.40024**	**.00301**
Stddev	.1708	.00841	.00019	1.111	.00074	.00810	.00091
%RSD	1.8864	1.3326	53.413	1.7168	87.319	2.0243	30.221
#1	9.2472	.64057	.00025	65.952	.00137	.40507	.00383
#2	8.9784	.62734	.00057	64.341	-.00000	.40475	.00203
#3	8.9303	.62496	.00024	63.822	.00119	.39088	.00318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703116104 Acquired: 3/29/2017 10:53:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**-.00332**	**15.606**	**.00141**	**.41790**	**.01757**	**-.00161**
Stddev	.00290	.00555	.285	.00033	.00603	.00397	.00321
%RSD	365.30	167.03	1.8283	23.211	1.4424	22.590	199.74
#1	.00222	-.00693	15.656	.00103	.42483	.02150	.00207
#2	-.00104	-.00611	15.863	.00162	.41495	.01767	-.00303
#3	-.00357	.00307	15.299	.00157	.41390	.01356	-.00386
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00068**	**.00359**	F **-1.2953**
Stddev	.00040	.00009	.1337
%RSD	59.417	2.5015	10.321
#1	.00113	.00350	-1.2705
#2	.00057	.00368	-1.1757
#3	.00034	.00357	-1.4396
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14421.**	**95610.**	**3681.0**
Stddev	147.	1944.	60.6
%RSD	1.0181	2.0336	1.6451
#1	14341.	95346.	3617.2
#2	14331.	93811.	3688.1
#3	14590.	97673.	3737.7

Approved: March 30, 2017

Sample Name: L1703116105 Acquired: 3/29/2017 10:57:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.16102**	**.00080**	**.00602**	**.06603**	**.00030**	**24.334**
Stddev	.00054	.00120	.00099	.00103	.00133	.00008	.116
%RSD	241.31	.74596	124.60	17.080	2.0176	26.421	.47559
#1	.00027	.16021	-.00005	.00599	.06481	.00035	24.229
#2	-.00014	.16240	.00055	.00706	.06582	.00021	24.316
#3	-.00080	.16044	.00190	.00501	.06745	.00035	24.458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00300**	**.00053**	**.00025**	**.16138**	**.77310**	**.08102**
Stddev	.00019	.00006	.00060	.00139	.01649	.06762	.00333
%RSD	436.63	2.1443	111.85	560.47	10.218	8.7462	4.1141
#1	-.00012	.00299	.00052	.00012	.16128	.75540	.07725
#2	.00017	.00293	-.00006	.00170	.17792	.84781	.08227
#3	-.00019	.00306	.00113	-.00107	.14494	.71609	.08355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**21.503**	**.22152**	**.00019**	F **461.62**	**.00995**	**.05539**	**.00347**
Stddev	.120	.00188	.00042	2.12	.00101	.00232	.00177
%RSD	.55619	.84727	220.44	.45871	10.116	4.1804	51.010
#1	21.370	.21938	.00062	460.01	.01105	.05299	.00312
#2	21.534	.22288	-.00021	460.83	.00972	.05557	.00539
#3	21.603	.22230	.00016	464.02	.00907	.05762	.00190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				360.00			
Low Limit				-.50000			

Approved: March 30, 2017

Sample Name: L1703116105 Acquired: 3/29/2017 10:57:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00115**	**-.00546**	**23.702**	**-.00017**	**.53526**	**-.00196**	**.00143**
Stddev	.00564	.00302	.141	.00045	.00392	.00677	.00053
%RSD	490.21	55.325	.59603	258.45	.73172	345.18	37.373
#1	.00515	-.00304	23.859	-.00038	.53075	-.00392	.00196
#2	-.00286	-.00884	23.663	-.00048	.53777	.00557	.00142
#3	-.00574	-.00450	23.584	.00034	.53726	-.00753	.00090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00059**	**.01570**	F **-.31660**
Stddev	.00079	.00010	.21804
%RSD	133.54	.65191	68.871
#1	.00008	.01574	-.11904
#2	-.00146	.01577	-.28020
#3	-.00039	.01558	-.55055
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13800.**	**89188.**	**3419.0**
Stddev	91.	1589.	14.0
%RSD	.66149	1.7821	.41080
#1	13838.	90694.	3416.9
#2	13696.	89342.	3434.0
#3	13867.	87527.	3406.1

Approved: March 30, 2017

Sample Name: L1703116105PS Acquired: 3/29/2017 11:00:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607769-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19422**	**4.8615**	**.19975**	**.96131**	**.55350**	**.02521**	**26.609**
Stddev	.00253	.0151	.00138	.00304	.00186	.00003	.183
%RSD	1.3010	.31044	.69078	.31670	.33638	.13318	.68810
#1	.19208	4.8445	.20130	.96156	.55164	.02518	26.401
#2	.19358	4.8734	.19930	.95815	.55537	.02521	26.682
#3	.19701	4.8665	.19866	.96422	.55350	.02525	26.744
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02479**	**.10135**	**.24423**	**.24575**	**2.1259**	**26.165**	**.57245**
Stddev	.00012	.00021	.00055	.00102	.0221	.121	.00506
%RSD	.49576	.21090	.22633	.41381	1.0408	.46052	.88386
#1	.02488	.10156	.24446	.24687	2.1086	26.201	.57013
#2	.02465	.10114	.24464	.24548	2.1182	26.031	.57825
#3	.02483	.10135	.24361	.24489	2.1508	26.264	.56897
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**24.096**	**.44355**	**.49022**	F **439.24**	**.25351**	**5.0507**	**.24259**
Stddev	.066	.00545	.00185	1.36	.00177	.0065	.00274
%RSD	.27559	1.2284	.37670	.31073	.69956	.12780	1.1309
#1	24.053	.43771	.49231	439.94	.25540	5.0481	.24575
#2	24.063	.44443	.48955	440.10	.25189	5.0459	.24082
#3	24.173	.44850	.48880	437.66	.25323	5.0580	.24121
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				360.00			
Low Limit				-.50000			

Approved: March 30, 2017

Sample Name: L1703116105PS Acquired: 3/29/2017 11:00:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607769-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.59524**	**.19097**	**24.188**	**.50175**	**.96456**	**.50216**	**.24135**
Stddev	.00179	.00156	.016	.00182	.00289	.00429	.00143
%RSD	.30091	.81532	.06473	.36228	.30003	.85502	.59310
#1	.59527	.19158	24.205	.50378	.96122	.49791	.24053
#2	.59702	.18920	24.174	.50029	.96619	.50650	.24051
#3	.59343	.19214	24.184	.50117	.96626	.50209	.24300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.50398**	**.52488**	**.19108**
Stddev	.00132	.00066	.29453
%RSD	.26277	.12641	154.14
#1	.50525	.52564	-.02137
#2	.50407	.52456	.52730
#3	.50261	.52443	.06732
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13709.**	**88773.**	**3442.5**
Stddev	137.	331.	78.2
%RSD	.99994	.37321	2.2729
#1	13553.	89152.	3532.4
#2	13810.	88542.	3405.0
#3	13765.	88623.	3390.0

Approved: March 30, 2017

Sample Name: L1703116105SDL Acquired: 3/29/2017 11:04:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG607769-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.03137**	**.00177**	**.00300**	**.01253**	**.00009**	**4.5108**
Stddev	.00067	.00097	.00066	.00104	.00121	.00001	.0585
%RSD	207.24	3.1058	37.476	34.867	9.6437	11.122	1.2971
#1	-.00060	.03145	.00236	.00324	.01276	.00010	4.5248
#2	-.00080	.03231	.00105	.00390	.01122	.00009	4.4466
#3	.00044	.03036	.00190	.00185	.01360	.00008	4.5611
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00079**	**.00022**	**-.00080**	**.02828**	**.12481**	**.00837**
Stddev	.00029	.00024	.00103	.00103	.02223	.07628	.00767
%RSD	76.335	30.404	476.01	128.10	78.589	61.122	91.650
#1	-.00023	.00107	.00110	-.00166	.05288	.20891	.01569
#2	-.00020	.00062	-.00092	.00034	.02233	.10544	.00904
#3	-.00071	.00069	.00047	-.00108	.00964	.06007	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.0651**	**.04055**	**.00000**	**87.269**	**.00217**	**.01176**	**.00136**
Stddev	.0545	.00306	.00029	.809	.00011	.00739	.00358
%RSD	1.3416	7.5561	7405.1	.92686	5.2782	62.876	264.04
#1	4.0029	.04392	-.00028	86.736	.00210	.01196	-.00207
#2	4.0879	.03979	.00030	86.870	.00231	.01905	.00507
#3	4.1046	.03794	-.00000	88.199	.00212	.00427	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703116105SDL Acquired: 3/29/2017 11:04:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG607769-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00056**	**-.00143**	**4.6078**	**.00008**	**.09963**	**.00082**	**.00204**
Stddev	.00634	.00382	.0576	.00055	.00065	.00784	.00244
%RSD	1128.2	267.87	1.2493	679.42	.64872	950.45	119.92
#1	.00664	.00243	4.5472	.00051	.09932	.00985	.00486
#2	-.00304	-.00521	4.6144	-.00054	.09919	-.00429	.00068
#3	-.00529	-.00150	4.6618	.00027	.10037	-.00309	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00044**	**.00342**	F **-.11317**
Stddev	.00046	.00012	.07404
%RSD	105.87	3.6044	65.418
#1	.00085	.00344	-.06141
#2	-.00006	.00352	-.08013
#3	.00052	.00328	-.19798
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14068.**	**92019.**	**3414.6**
Stddev	99.	1256.	15.7
%RSD	.70218	1.3645	.46002
#1	14182.	93063.	3431.2
#2	14005.	90626.	3412.6
#3	14019.	92367.	3400.0

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 11:08:00 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41054**	**10.444**	**.41479**	**.52073**	**1.0401**	**.05158**	**10.349**
Stddev	.00283	.050	.00346	.00379	.0060	.00016	.134
%RSD	.68866	.48347	.83358	.72693	.58214	.31089	1.2994
#1	.40734	10.387	.41159	.51636	1.0428	.05146	10.496
#2	.41271	10.483	.41434	.52301	1.0331	.05151	10.232
#3	.41157	10.461	.41846	.52282	1.0443	.05176	10.318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05224**	**.20991**	**.51733**	**.52238**	**4.1459**	**51.408**	**1.0332**
Stddev	.00041	.00054	.00318	.00164	.0508	.310	.0058
%RSD	.78920	.25599	.61516	.31340	1.2264	.60218	.56369
#1	.05266	.20929	.51368	.52058	4.1917	51.360	1.0275
#2	.05222	.21015	.51883	.52280	4.0912	51.125	1.0328
#3	.05183	.21028	.51949	.52377	4.1549	51.738	1.0392
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.410**	**.51831**	**1.0416**	**51.682**	**.52208**	**10.372**	**.52549**
Stddev	.040	.00267	.0022	.107	.00060	.034	.00419
%RSD	.38759	.51587	.21095	.20632	.11540	.32560	.79652
#1	10.439	.52079	1.0391	51.728	.52140	10.333	.52162
#2	10.364	.51548	1.0423	51.560	.52229	10.386	.52493
#3	10.427	.51868	1.0433	51.758	.52255	10.396	.52993
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 11:08:00 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2311**	**.41638**	**5.2113**	**1.0368**	**1.0371**	**1.0203**	**.52412**
Stddev	.0076	.00494	.0087	.0014	.0054	.0056	.00638
%RSD	.62152	1.1872	.16646	.13115	.52009	.54829	1.2177
#1	1.2223	.41086	5.2013	1.0353	1.0425	1.0138	.51675
#2	1.2349	.42040	5.2164	1.0371	1.0317	1.0234	.52765
#3	1.2362	.41788	5.2163	1.0379	1.0369	1.0235	.52795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0294**	**1.0377**	F **-.03399**
Stddev	.0058	.0030	.18038
%RSD	.56764	.29230	530.63
#1	1.0230	1.0347	.13286
#2	1.0307	1.0375	-.00944
#3	1.0345	1.0408	-.22539
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13569.**	**87346.**	**3310.7**
Stddev	84.	714.	39.8
%RSD	.61577	.81773	1.2023
#1	13576.	88166.	3329.7
#2	13649.	87013.	3337.5
#3	13482.	86859.	3265.0

Approved: March 30, 2017

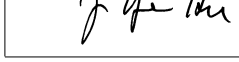
Sample Name: CCB Acquired: 3/29/2017 11:11:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00089**	**.00882**	**.00057**	**.00266**	**.00042**	**.00003**	**.02567**
Stddev	.00058	.00529	.00051	.00209	.00077	.00010	.04408
%RSD	65.276	59.955	88.968	78.561	183.20	326.14	171.73
#1	-.00030	.01077	.00067	.00425	.00081	-.00008	-.01706
#2	-.00090	.00283	.00103	.00342	.00092	.00006	.07098
#3	-.00146	.01285	.00002	.00030	-.00047	.00010	.02308
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**.00025**	**.00069**	**-.00073**	**-.01505**	**.10066**	**-.00570**
Stddev	.00033	.00007	.00119	.00073	.03950	.05495	.00209
%RSD	97.134	29.550	172.27	99.739	262.40	54.584	36.652
#1	.00004	.00021	.00040	-.00074	-.00736	.12569	-.00329
#2	-.00057	.00033	.00201	.00000	.02003	.03766	-.00678
#3	-.00048	.00020	-.00033	-.00145	-.05783	.13864	-.00702
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01004**	**-.00258**	**.00004**	**.04287**	**-.00002**	**.00131**	**-.00045**
Stddev	.07847	.00316	.00030	.01317	.00060	.00152	.00162
%RSD	781.18	122.47	843.89	30.713	2553.7	116.04	356.95
#1	.03736	-.00565	-.00031	.03595	.00038	.00082	-.00223
#2	-.10062	-.00276	.00024	.05806	-.00071	.00010	-.00009
#3	.03313	.00067	.00017	.03461	.00026	.00302	.00095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: CCB Acquired: 3/29/2017 11:11:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00431**	**-.00098**	**.00542**	**.00043**	**-.00043**	**.00152**	**-.00036**
Stddev	.00663	.00377	.00364	.00067	.00051	.00918	.00099
%RSD	153.78	383.61	67.121	154.10	120.07	604.25	276.76
#1	.00894	-.00425	.00124	.00077	-.00006	.00102	-.00106
#2	.00728	.00314	.00787	-.00034	-.00020	-.00740	-.00079
#3	-.00328	-.00184	.00714	.00087	-.00101	.01094	.00077
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00044**	**.00026**	F **-.41829**
Stddev	.00015	.00008	.16160
%RSD	32.738	30.897	38.633
#1	.00030	.00034	-.46265
#2	.00059	.00018	-.23915
#3	.00043	.00027	-.55308
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13637.**	**91588.**	**3361.5**
Stddev	32.	137.	76.9
%RSD	.23272	.15001	2.2865
#1	13668.	91570.	3449.6
#2	13639.	91733.	3308.0
#3	13604.	91460.	3327.0

Approved: March 30, 2017

Sample Name: L1703116107 Acquired: 3/29/2017 11:15:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**.02008**	**.00018**	**.01584**	**.25269**	**.00001**	**18.449**
Stddev	.00252	.00800	.00156	.00263	.00136	.00010	.043
%RSD	10275.	39.838	881.21	16.597	.53802	1207.6	.23540
#1	-.00016	.02154	-.00035	.01358	.25112	-.00001	18.398
#2	.00263	.02725	-.00105	.01523	.25344	.00012	18.473
#3	-.00239	.01145	.00193	.01873	.25351	-.00008	18.474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.00318**	**-.00063**	**-.00006**	**11.245**	**1.1852**	**-.00068**
Stddev	.00011	.00029	.00018	.00060	.090	.0699	.00371
%RSD	6178.8	9.2409	28.987	979.99	.80224	5.8958	548.09
#1	-.00008	.00292	-.00081	.00063	11.142	1.2621	.00226
#2	-.00005	.00312	-.00045	-.00033	11.285	1.1257	.00055
#3	.00013	.00350	-.00063	-.00048	11.309	1.1677	-.00485
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.818**	**2.5453**	**-.00002**	**34.046**	**.00122**	**.04696**	**.00118**
Stddev	.171	.0208	.00019	.183	.00082	.00357	.00208
%RSD	1.5820	.81778	1194.6	.53630	67.139	7.6071	176.26
#1	10.691	2.5215	-.00017	33.855	.00052	.04529	-.00083
#2	10.752	2.5548	.00020	34.218	.00213	.05107	.00105
#3	11.013	2.5597	-.00007	34.065	.00103	.04453	.00332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703116107 Acquired: 3/29/2017 11:15:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00289**	**.00125**	**14.222**	**.00012**	**.35804**	**.00420**	**.00048**
Stddev	.00468	.00412	.048	.00037	.00198	.00571	.00170
%RSD	161.74	331.08	.33965	317.03	.55222	136.12	353.61
#1	-.00828	-.00270	14.277	-.00020	.35584	.00185	-.00059
#2	-.00060	.00553	14.202	.00002	.35967	.00003	-.00041
#3	.00020	.00090	14.187	.00053	.35860	.01071	.00244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00066**	**.00321**	F **-.54339**
Stddev	.00035	.00002	.11442
%RSD	52.611	.77152	21.057
#1	-.00093	.00318	-.64658
#2	-.00027	.00323	-.56327
#3	-.00078	.00321	-.42033
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14265.**	**94292.**	**3488.9**
Stddev	65.	307.	8.4
%RSD	.45221	.32538	.24171
#1	14214.	94158.	3490.7
#2	14242.	94076.	3479.7
#3	14337.	94644.	3496.3

Approved: March 30, 2017

Sample Name: L1703116109 Acquired: 3/29/2017 11:18:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00152**	**.01305**	**-.00013**	**.02147**	**.36424**	**-.00007**	**11.228**
Stddev	.00120	.00541	.00033	.00193	.00225	.00006	.141
%RSD	79.036	41.464	252.27	8.9769	.61761	77.639	1.2578
#1	-.00277	.00718	-.00010	.02270	.36164	-.00007	11.065
#2	-.00142	.01412	.00018	.02247	.36545	-.00002	11.302
#3	-.00037	.01784	-.00047	.01925	.36562	-.00013	11.316
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.00190**	**-.00041**	**.00078**	**20.396**	**2.4185**	**.00727**
Stddev	.00014	.00005	.00014	.00029	.145	.2010	.00823
%RSD	59.345	2.8455	34.434	36.605	.71220	8.3103	113.12
#1	.00030	.00184	-.00050	.00066	20.297	2.3069	.00536
#2	.00034	.00191	-.00025	.00058	20.329	2.2981	.01629
#3	.00008	.00195	-.00048	.00111	20.563	2.6505	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.4959**	**.44443**	**.00004**	**44.332**	**.01237**	**.01319**	**.00042**
Stddev	.0402	.00775	.00016	.312	.00142	.00318	.00165
%RSD	.73222	1.7434	456.99	.70366	11.478	24.104	392.51
#1	5.5398	.43833	-.00004	43.991	.01100	.01356	.00233
#2	5.4608	.44180	-.00007	44.404	.01383	.00984	-.00057
#3	5.4870	.45315	.00022	44.602	.01227	.01617	-.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703116109 Acquired: 3/29/2017 11:18:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00064**	**-.00056**	**10.857**	**.00015**	**.23547**	**.00474**	**.00263**
Stddev	.00267	.00290	.021	.00055	.00119	.00591	.00361
%RSD	420.48	518.82	.19422	361.88	.50740	124.68	137.05
#1	-.00239	.00279	10.834	-.00024	.23412	.00461	.00281
#2	-.00196	-.00220	10.876	.00078	.23593	.01071	-.00106
#3	.00244	-.00226	10.859	-.00008	.23637	-.00110	.00615
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00033**	**.01455**	F **-1.0361**
Stddev	.00022	.00029	.3516
%RSD	65.990	2.0050	33.936
#1	-.00013	.01445	-.66674
#2	-.00030	.01488	-1.3668
#3	-.00057	.01432	-1.0747
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14257.**	**92010.**	**3460.9**
Stddev	73.	336.	36.7
%RSD	.51083	.36567	1.0599
#1	14315.	91653.	3468.0
#2	14175.	92321.	3493.6
#3	14281.	92057.	3421.2

Approved: March 30, 2017

Sample Name: L1703118801 Acquired: 3/29/2017 11:22:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00127**	**.27494**	**.00061**	**.01445**	**.00282**	**.00001**	**.73562**	**.00000**
Stddev	.00228	.00488	.00141	.00104	.00185	.00004	.04648	.00013
%RSD	179.75	1.7750	228.94	7.1674	65.643	596.85	6.3189	5174.9
#1	-.00385	.27326	-.00096	.01520	.00096	.00001	.78925	-.00015
#2	-.00044	.28044	.00105	.01327	.00283	-.00004	.71060	.00011
#3	.00048	.27113	.00175	.01488	.00466	.00004	.70700	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**.00072**	**.08676**	**.22230**	**.18347**	**.00029**	**.12494**	**.00475**
Stddev	.00041	.00071	.00084	.02094	.15825	.00711	.03166	.00091
%RSD	245.29	98.402	.96983	9.4193	86.254	2488.7	25.337	19.201
#1	.00049	.00103	.08771	.23038	.20209	-.00534	.14200	.00579
#2	.00031	.00121	.08647	.19852	.01674	-.00208	.14441	.00438
#3	-.00030	-.00009	.08610	.23799	.33160	.00827	.08842	.00408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**.91746**	**.00127**	**.00076**	**.00886**	**-.00114**	**.00259**	**.51690**
Stddev	.00014	.05174	.00083	.00120	.00338	.00181	.00248	.00413
%RSD	279.83	5.6398	65.079	158.11	38.138	158.71	95.616	.79960
#1	.00018	.90993	.00108	.00063	.00496	-.00320	-.00027	.52094
#2	-.00010	.86990	.00055	.00202	.01095	-.00042	.00414	.51268
#3	.00007	.97256	.00217	-.00037	.01067	.00020	.00391	.51708
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703118801 Acquired: 3/29/2017 11:22:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00509**	**.00097**	**.00920**	**-.00083**	**.00065**	**.02270**	**.31084**
Stddev	.00026	.00047	.00133	.00267	.00007	.00009	.44381
%RSD	5.1852	48.515	14.402	323.39	11.423	.38605	142.78
#1	.00502	.00142	.00774	-.00095	.00056	.02280	.53565
#2	.00538	.00102	.01032	-.00343	.00071	.02268	-.20039
#3	.00487	.00048	.00955	.00191	.00067	.02263	.59725
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14957.**	**97431.**	**3731.2**
Stddev	47.	557.	3.9
%RSD	.31486	.57173	.10561
#1	14925.	98000.	3735.3
#2	15011.	96886.	3727.4
#3	14935.	97407.	3730.9

Approved: March 30, 2017

Sample Name: L1703118802 Acquired: 3/29/2017 11:26:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00041**	**.26557**	**.00291**	**.00728**	**.00171**	**-.00003**	**.69964**
Stddev	.00186	.00233	.00154	.00329	.00116	.00010	.06902
%RSD	458.72	.87642	53.028	45.216	67.723	340.82	9.8646
#1	-.00255	.26795	.00161	.00441	.00045	.00006	.64116
#2	.00054	.26330	.00251	.00656	.00273	-.00002	.68198
#3	.00080	.26546	.00462	.01087	.00194	-.00013	.77577
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**.00037**	**.00194**	**.03458**	**.38515**	**-.03250**	**-.00887**
Stddev	.00013	.00015	.00048	.00057	.03885	.06547	.00262
%RSD	1418.7	40.680	24.978	1.6551	10.087	201.48	29.524
#1	.00002	.00042	.00231	.03398	.34358	.00592	-.01072
#2	.00014	.00020	.00139	.03462	.42053	-.10810	-.01002
#3	-.00013	.00049	.00212	.03512	.39135	.00468	-.00587
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10637**	**.00553**	**.00025**	**.10692**	**.00177**	**.00718**	**.00521**
Stddev	.04541	.00244	.00023	.04089	.00028	.00246	.00215
%RSD	42.689	44.056	91.077	38.238	15.966	34.289	41.169
#1	.13159	.00309	.00011	.12894	.00162	.00988	.00628
#2	.05395	.00554	.00013	.13208	.00160	.00661	.00661
#3	.13358	.00797	.00051	.05975	.00210	.00505	.00274
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703118802 Acquired: 3/29/2017 11:26:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00193**	**-.00124**	**.53153**	**.00069**	**.00169**	**.01331**	**.00040**
Stddev	.00338	.00175	.00576	.00077	.00048	.00886	.00216
%RSD	175.07	140.95	1.0842	111.58	28.230	66.573	533.89
#1	-.00351	-.00168	.53516	-.00003	.00193	.01669	.00021
#2	-.00423	-.00274	.53455	.00150	.00201	.02000	-.00165
#3	.00195	.00069	.52488	.00059	.00114	.00326	.00265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00003**	**.01260**	F **-.11632**
Stddev	.00069	.00008	.26750
%RSD	2026.7	.60521	229.98
#1	-.00075	.01269	-.01122
#2	.00057	.01257	.08268
#3	.00028	.01255	-.42041
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14574.**	**97388.**	**3630.9**
Stddev	88.	766.	22.0
%RSD	.60381	.78619	.60473
#1	14522.	96652.	3648.9
#2	14676.	97332.	3637.4
#3	14524.	98180.	3606.4

Approved: March 30, 2017

Sample Name: L1703118803 Acquired: 3/29/2017 11:29:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00172**	**.04256**	**-.00061**	**.01343**	**-.00039**	**.00003**	**.15280**	**-.00007**
Stddev	.00054	.00512	.00313	.00189	.00045	.00003	.03874	.00003
%RSD	31.406	12.038	514.67	14.084	115.78	98.670	25.355	42.575
#1	-.00113	.04746	-.00385	.01212	-.00085	.00002	.16056	-.00010
#2	-.00185	.03724	-.00037	.01257	.00006	.00001	.18707	-.00007
#3	-.00219	.04297	.00239	.01560	-.00039	.00007	.11076	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**-.00020**	**.01470**	**.03345**	**.09628**	**-.00386**	**-.07853**	**.00114**
Stddev	.00027	.00074	.00025	.03658	.05707	.00234	.05217	.00221
%RSD	173.62	364.88	1.7132	109.38	59.270	60.487	66.432	193.01
#1	.00026	-.00097	.01496	.04440	.05664	-.00438	-.13796	.00338
#2	.00037	.00051	.01446	-.00736	.07052	-.00589	-.04031	-.00103
#3	-.00015	-.00015	.01468	.06330	.16169	-.00131	-.05732	.00108
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.11020**	**.00032**	**.00149**	**-.00055**	**.00008**	**.00651**	**.09022**
Stddev	.00025	.03208	.00110	.00755	.00179	.00367	.00476	.00289
%RSD	190.24	29.111	342.17	505.90	328.10	4781.7	73.107	3.2003
#1	.00005	.12345	-.00031	-.00687	-.00018	-.00364	.00840	.09043
#2	.00042	.13353	.00159	.00353	-.00249	.00370	.00109	.09299
#3	-.00007	.07362	-.00032	.00781	.00104	.00017	.01002	.08723
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703118803 Acquired: 3/29/2017 11:29:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00080**	**.00005**	**.00222**	**-.00023**	**.00020**	**.00660**	**.01759**
Stddev	.00061	.00058	.00552	.00179	.00109	.00010	.05362
%RSD	76.019	1114.2	249.04	786.60	542.73	1.5644	304.84
#1	.00075	-.00027	.00616	-.00214	-.00073	.00663	.05717
#2	.00022	.00072	.00459	.00004	-.00008	.00649	.03904
#3	.00143	-.00029	-.00409	.00141	.00141	.00669	-.04344
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14473.**	**96416.**	**3469.8**
Stddev	65.	1164.	22.9
%RSD	.44899	1.2075	.66044
#1	14418.	95978.	3466.8
#2	14455.	97735.	3448.6
#3	14545.	95534.	3494.1

Approved: March 30, 2017

Sample Name: L1703118804 Acquired: 3/29/2017 11:33:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00105**	**.03404**	**.00034**	**.01240**	**.00092**	**-.00002**	**.15636**
Stddev	.00066	.00294	.00248	.00133	.00112	.00005	.04733
%RSD	62.593	8.6421	722.79	10.727	121.95	230.37	30.269
#1	.00029	.03552	.00098	.01394	.00199	.00003	.15228
#2	.00146	.03065	-.00239	.01166	-.00025	-.00005	.11121
#3	.00141	.03594	.00244	.01161	.00104	-.00005	.20560
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.00010**	**.00036**	**.00814**	**.05273**	**.00854**	**.00146**
Stddev	.00031	.00014	.00049	.00079	.02090	.08492	.00355
%RSD	2630.4	141.76	136.66	9.6496	39.633	994.80	242.93
#1	.00013	-.00002	.00091	.00792	.03861	.09589	-.00106
#2	.00020	.00025	.00015	.00901	.04284	.00343	.00552
#3	-.00037	.00006	.00000	.00749	.07673	-.07371	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00228**	**.00110**	**-.00043**	**.19470**	**.00042**	**.00255**	**-.00056**
Stddev	.08611	.00136	.00024	.02501	.00092	.00626	.00358
%RSD	3772.1	123.25	56.495	12.844	218.47	245.67	635.85
#1	.05745	-.00042	-.00054	.18775	.00125	.00585	.00321
#2	.04634	.00155	-.00015	.17390	.00058	.00647	-.00391
#3	-.09694	.00218	-.00060	.22245	-.00057	-.00467	-.00098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703118804 Acquired: 3/29/2017 11:33:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00110**	**.00183**	**.07943**	**.00040**	**.00050**	**.00012**	**-.00021**
Stddev	.00310	.00446	.00179	.00074	.00024	.00118	.00150
%RSD	281.26	243.85	2.2477	187.88	48.742	996.09	716.11
#1	.00333	.00004	.07737	-.00040	.00030	.00148	-.00181
#2	-.00244	-.00146	.08056	.00107	.00043	-.00044	.00001
#3	.00242	.00690	.08036	.00052	.00077	-.00068	.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00045**	**.00311**	F **-.07588**
Stddev	.00023	.00004	.16485
%RSD	50.331	1.4065	217.25
#1	.00049	.00306	.11445
#2	.00066	.00313	-.16860
#3	.00021	.00314	-.17349
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14674.**	**98645.**	**3719.5**
Stddev	159.	1340.	101.9
%RSD	1.0846	1.3583	2.7393
#1	14762.	99065.	3815.4
#2	14770.	97146.	3730.5
#3	14490.	99725.	3612.5

Approved: March 30, 2017

Sample Name: L1703121502 Acquired: 3/29/2017 11:37:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00115**	**.45935**	**.01802**	**.09044**	**.02537**	**-.00003**	**67.131**	**.00010**
Stddev	.00049	.00471	.00342	.00077	.00173	.00005	.520	.00001
%RSD	42.432	1.0254	18.951	.84866	6.8383	194.93	.77426	14.906
#1	-.00063	.46465	.01670	.09021	.02506	-.00001	66.530	.00009
#2	-.00123	.45776	.02190	.08981	.02724	-.00009	67.426	.00009
#3	-.00159	.45564	.01547	.09129	.02381	.00001	67.435	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00106**	**.00278**	**.00810**	**.66224**	**12.150**	**.00459**	**16.754**	**.06243**
Stddev	.00076	.00068	.00108	.03465	.034	.00223	.112	.00245
%RSD	71.443	24.582	13.343	5.2323	.27680	48.618	.66791	3.9236
#1	.00033	.00325	.00920	.65967	12.114	.00303	16.628	.05961
#2	.00102	.00200	.00805	.69810	12.153	.00715	16.793	.06404
#3	.00184	.00308	.00704	.62895	12.181	.00359	16.841	.06363
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00254**	**156.56**	**.00247**	**.09166**	**.00190**	**.00227**	**.00585**	**9.8408**
Stddev	.00034	.57	.00088	.00950	.00236	.00064	.00582	.0255
%RSD	13.353	.36365	35.740	10.369	124.21	28.305	99.361	.25948
#1	.00290	156.51	.00252	.09546	.00022	.00198	-.00060	9.8675
#2	.00251	157.16	.00156	.09868	.00460	.00182	.00746	9.8167
#3	.00222	156.02	.00332	.08085	.00088	.00301	.01070	9.8383
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703121502 Acquired: 3/29/2017 11:37:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39689**	**.31208**	**.00217**	**.00134**	**.00134**	**.03146**	**.07143**
Stddev	.00128	.00170	.00900	.00031	.00071	.00004	.24795
%RSD	.32207	.54440	414.23	23.332	53.046	.11354	347.13
#1	.39834	.31012	-.00080	.00126	.00081	.03142	-.21474
#2	.39594	.31311	-.00496	.00108	.00215	.03147	.20674
#3	.39637	.31302	.01228	.00169	.00106	.03148	.22228
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14185.**	**92449.**	**3600.0**
Stddev	40.	1109.	63.6
%RSD	.28393	1.1996	1.7666
#1	14183.	93711.	3531.1
#2	14227.	92006.	3612.4
#3	14146.	91629.	3656.5

Approved: March 30, 2017

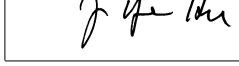
Sample Name: L1703117601 Acquired: 3/29/2017 11:40:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00060**	**.01169**	**.00153**	**.00560**	**.02055**	**.00009**	**5.9599**
Stddev	.00068	.00206	.00167	.00120	.00049	.00004	.0497
%RSD	114.12	17.640	109.20	21.364	2.3816	47.770	.83463
#1	.00002	.01399	.00270	.00663	.02065	.00007	5.9122
#2	-.00049	.01001	-.00039	.00429	.02098	.00014	5.9561
#3	-.00132	.01106	.00228	.00587	.02002	.00006	6.0114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**.00039**	**.00014**	**.00078**	**.15209**	**.37297**	**-.00721**
Stddev	.00021	.00026	.00051	.00020	.00847	.12341	.00562
%RSD	183.54	66.893	363.22	25.730	5.5681	33.090	78.034
#1	-.00012	.00021	.00032	.00093	.15890	.39270	-.01302
#2	-.00033	.00068	-.00044	.00055	.14260	.24087	-.00180
#3	.00010	.00027	.00054	.00086	.15476	.48533	-.00680
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.94722**	**.01718**	**-.00037**	**22.999**	**-.00083**	**.00343**	**-.00042**
Stddev	.07749	.00273	.00041	.234	.00064	.00861	.00105
%RSD	8.1806	15.914	110.86	1.0163	76.724	250.82	250.18
#1	.92616	.01533	.00010	22.772	-.00157	-.00583	-.00078
#2	.88244	.02032	-.00065	22.986	-.00056	.00494	.00076
#3	1.0331	.01589	-.00058	23.239	-.00038	.01118	-.00124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: L1703117601 Acquired: 3/29/2017 11:40:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00082**	**-.00127**	**.09170**	**.00034**	**.03068**	**-.00249**	**-.00140**
Stddev	.00234	.00550	.00180	.00076	.00080	.00717	.00146
%RSD	287.15	434.40	1.9592	221.69	2.5923	287.52	104.20
#1	.00242	.00099	.08963	.00082	.03016	-.00487	-.00307
#2	-.00187	.00275	.09277	.00074	.03029	-.00817	-.00077
#3	.00190	-.00754	.09271	-.00053	.03160	.00556	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00024**	**.00106**	F **-.12746**
Stddev	.00023	.00005	.10199
%RSD	98.775	4.4376	80.013
#1	.00042	.00102	-.16292
#2	.00031	.00111	-.20699
#3	-.00003	.00105	-.01248
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13791.**	**90266.**	**3213.9**
Stddev	123.	1978.	48.2
%RSD	.88938	2.1916	1.4998
#1	13877.	88278.	3257.7
#2	13650.	90285.	3221.7
#3	13845.	92235.	3162.3

Approved: March 30, 2017

Sample Name: L1703117602 Acquired: 3/29/2017 11:44:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00065**	**.03408**	**.00134**	**.00367**	**.02402**	**.00008**	**2.7492**
Stddev	.00063	.00559	.00074	.00066	.00151	.00006	.0053
%RSD	97.745	16.401	55.456	18.035	6.2711	83.746	.19366
#1	.00006	.03704	.00218	.00328	.02371	.00002	2.7450
#2	-.00083	.02763	.00082	.00330	.02270	.00006	2.7551
#3	-.00116	.03757	.00101	.00444	.02566	.00015	2.7474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**.00123**	**.00021**	**-.00119**	**.00231**	**.48992**	**-.01064**
Stddev	.00017	.00052	.00046	.00030	.01259	.02144	.00120
%RSD	74.678	42.133	219.40	25.097	546.09	4.3764	11.244
#1	-.00043	.00177	.00074	-.00127	.01281	.46643	-.01186
#2	-.00011	.00074	-.00006	-.00144	.00575	.50843	-.01060
#3	-.00015	.00118	-.00005	-.00086	-.01165	.49489	-.00947
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1255**	**.02360**	**-.00009**	**7.0221**	**.00055**	**.00006**	**-.00081**
Stddev	.0493	.00323	.00022	.0813	.00063	.00249	.00112
%RSD	4.3843	13.703	240.36	1.1580	114.34	4133.3	138.58
#1	1.1087	.02123	-.00029	6.9823	.00070	-.00207	-.00068
#2	1.0867	.02229	-.00013	6.9684	-.00014	-.00055	.00024
#3	1.1810	.02728	.00014	7.1157	.00109	.00280	-.00199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703117602 Acquired: 3/29/2017 11:44:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00087**	**-.00473**	**.26710**	**-.00013**	**.01913**	**-.00129**	**-.00147**
Stddev	.00266	.00551	.00531	.00034	.00039	.00909	.00177
%RSD	304.10	116.62	1.9878	264.32	2.0225	702.14	120.01
#1	.00331	-.00354	.26098	-.00027	.01941	.00880	-.00350
#2	.00128	-.01074	.27050	.00026	.01929	-.00884	-.00028
#3	-.00196	.00009	.26981	-.00037	.01869	-.00384	-.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00045**	**.00150**	F **-.13030**
Stddev	.00030	.00006	.10753
%RSD	67.567	3.7954	82.520
#1	.00064	.00150	-.22398
#2	.00010	.00156	-.15404
#3	.00060	.00145	-.01289
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13904.**	**89855.**	**3247.0**
Stddev	46.	456.	64.4
%RSD	.32952	.50796	1.9838
#1	13852.	89863.	3174.6
#2	13923.	90308.	3298.1
#3	13938.	89395.	3268.3

Approved: March 30, 2017

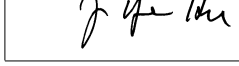
Sample Name: L1703117603 Acquired: 3/29/2017 11:48:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00134**	**.02765**	**.00254**	**.00353**	**.01163**	**.00013**	**1.1922**
Stddev	.00117	.00350	.00292	.00241	.00048	.00001	.0328
%RSD	87.588	12.642	115.03	68.340	4.1332	9.9129	2.7474
#1	-.00248	.02397	.00015	.00175	.01145	.00015	1.1586
#2	-.00140	.02806	.00167	.00256	.01217	.00012	1.1939
#3	-.00014	.03093	.00580	.00627	.01125	.00012	1.2241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.00082**	**-.00051**	**.00047**	**2.1062**	**.34278**	**-.00662**
Stddev	.00026	.00044	.00065	.00054	.0237	.02021	.00361
%RSD	131.86	53.292	127.98	114.08	1.1256	5.8966	54.536
#1	-.00018	.00102	.00006	.00109	2.0810	.32563	-.01067
#2	.00005	.00113	-.00123	.00020	2.1095	.33764	-.00376
#3	-.00046	.00032	-.00036	.00013	2.1281	.36506	-.00542
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.58323**	**.06289**	**.00003**	**5.4070**	**.00016**	**.00435**	**-.00012**
Stddev	.07788	.00085	.00009	.1087	.00067	.00548	.00280
%RSD	13.354	1.3454	259.96	2.0101	434.45	125.91	2391.3
#1	.67133	.06279	.00013	5.3032	-.00053	.00978	-.00030
#2	.52355	.06210	-.00002	5.3977	.00018	.00446	.00277
#3	.55479	.06378	-.00002	5.5200	.00081	-.00118	-.00283
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: L1703117603 Acquired: 3/29/2017 11:48:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00058**	**.00216**	**.37284**	**.00056**	**.00885**	**.00513**	**.00208**
Stddev	.00444	.00587	.00590	.00150	.00091	.00938	.00174
%RSD	759.39	271.85	1.5823	268.74	10.270	183.06	83.518
#1	-.00096	.00856	.36709	-.00038	.00797	.00089	.00259
#2	-.00288	.00087	.37255	-.00023	.00879	-.00139	.00351
#3	.00559	-.00296	.37888	.00228	.00979	.01588	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00070**	**.05534**	F **-.07191**
Stddev	.00005	.00740	.44194
%RSD	7.6456	13.379	614.55
#1	.00074	.04704	-.50914
#2	.00071	.05774	.37459
#3	.00064	.06125	-.08119
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13832.**	**92253.**	**3424.4**
Stddev	72.	327.	100.4
%RSD	.51845	.35468	2.9326
#1	13803.	92425.	3317.1
#2	13914.	92458.	3440.0
#3	13781.	91875.	3516.1

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 11:51:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39043**	**9.9476**	**.39229**	**.48952**	**.99727**	**.04945**	**9.9332**
Stddev	.00141	.0128	.00599	.00593	.00154	.00018	.0741
%RSD	.36237	.12845	1.5258	1.2124	.15488	.36091	.74641
#1	.38965	9.9563	.39920	.49362	.99564	.04952	9.9998
#2	.38958	9.9535	.38876	.48272	.99871	.04958	9.9466
#3	.39206	9.9329	.38891	.49224	.99745	.04924	9.8533
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04957**	**.19874**	**.49182**	**.49547**	**4.0069**	**50.193**	**.99720**
Stddev	.00047	.00185	.00030	.00508	.0367	.240	.00847
%RSD	.95366	.93328	.06077	1.0261	.91547	.47810	.84947
#1	.05011	.20080	.49217	.50132	3.9858	50.088	.98848
#2	.04923	.19819	.49162	.49217	4.0493	50.468	1.0054
#3	.04936	.19722	.49168	.49291	3.9857	50.024	.99774
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.9855**	**.49864**	**.98354**	**50.082**	**.49321**	**9.7861**	**.49351**
Stddev	.0669	.00447	.01060	.246	.00546	.0947	.00415
%RSD	.66944	.89638	1.0773	.49142	1.1071	.96754	.84024
#1	10.049	.49495	.99565	49.850	.49948	9.8941	.49827
#2	9.9912	.50361	.97902	50.340	.49063	9.7468	.49069
#3	9.9160	.49735	.97596	50.055	.48952	9.7174	.49156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 11:51:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1609**	**.39098**	**4.9307**	**.98432**	**.99427**	**.98791**	**.50302**
Stddev	.0091	.00218	.0613	.01095	.00045	.01711	.00367
%RSD	.77993	.55642	1.2429	1.1123	.04519	1.7317	.73018
#1	1.1714	.38937	4.9981	.99651	.99425	.97880	.50656
#2	1.1560	.39346	4.9157	.98115	.99383	1.0076	.50327
#3	1.1554	.39012	4.8783	.97531	.99473	.97728	.49923
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.99238**	**.98043**	F **.48945**
Stddev	.00167	.00961	.09551
%RSD	.16820	.97972	19.514
#1	.99344	.99147	.46617
#2	.99324	.97577	.59445
#3	.99046	.97403	.40774
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13853.**	**90353.**	**3389.2**
Stddev	71.	200.	72.5
%RSD	.51296	.22120	2.1401
#1	13794.	90322.	3356.1
#2	13932.	90171.	3472.4
#3	13834.	90567.	3339.2

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 11:55:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00123**	**.00645**	**.00037**	**.00074**	**-.00077**	**-.00001**	**-.00971**	**-.00017**
Stddev	.00177	.00215	.00225	.00130	.00083	.00001	.04968	.00026
%RSD	143.35	33.273	607.08	174.84	107.45	96.617	511.46	152.87
#1	-.00026	.00860	.00230	.00185	-.00055	-.00001	.04147	.00005
#2	-.00327	.00645	.00092	.00106	-.00169	-.00003	-.05774	-.00010
#3	-.00017	.00431	-.00210	-.00068	-.00008	-.00000	-.01287	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00032**	**.00001**	**.00001**	**.00967**	**-.06110**	**-.00610**	**-.02215**	**-.00240**
Stddev	.00016	.00126	.00050	.00310	.13005	.00535	.04647	.00305
%RSD	48.306	11158.	3796.2	32.055	212.86	87.700	209.82	126.68
#1	.00050	-.00137	-.00056	.00668	-.14623	-.01187	-.01851	-.00469
#2	.00022	.00111	.00020	.00947	.08860	-.00130	-.07034	.00105
#3	.00025	.00029	.00039	.01287	-.12567	-.00514	.02240	-.00357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.02975**	**-.00015**	**-.00567**	**-.00070**	**.00113**	**-.00132**	**.00624**
Stddev	.00026	.03942	.00139	.00645	.00126	.00043	.00019	.00109
%RSD	197.97	132.52	919.01	113.77	181.05	38.572	14.581	17.495
#1	.00011	.00731	.00145	.00171	.00073	.00156	-.00110	.00498
#2	-.00012	.00667	-.00084	-.00847	-.00165	.00069	-.00145	.00682
#3	.00041	.07527	-.00106	-.01023	-.00117	.00114	-.00141	.00691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 11:55:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**-.00021**	**-.00226**	**.00221**	**.00013**	**.00006**	**.02439**
Stddev	.00097	.00037	.00950	.00081	.00006	.00010	.25679
%RSD	321.47	176.38	419.67	36.739	44.584	174.00	1052.7
#1	.00021	.00021	.00844	.00258	.00012	.00010	.02307
#2	-.00062	-.00038	-.00552	.00128	.00007	-.00006	.28184
#3	.00132	-.00047	-.00971	.00277	.00018	.00012	-.23173
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14225.**	**94186.**	**3507.1**
Stddev	30.	420.	73.4
%RSD	.21288	.44575	2.0919
#1	14192.	94665.	3439.6
#2	14251.	93883.	3496.6
#3	14232.	94009.	3585.2

Approved: March 30, 2017

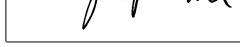
Sample Name: L1703117601 Acquired: 3/29/2017 11:58:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**.08625**	**.00202**	**.05325**	**.19325**	**-.00006**	**57.058**
Stddev	.00227	.00607	.00207	.00120	.00282	.00008	.354
%RSD	286.26	7.0422	102.36	2.2623	1.4607	134.64	.62069
#1	.00154	.07984	-.00014	.05186	.18999	-.00010	56.653
#2	-.00093	.08698	.00399	.05395	.19500	-.00011	57.312
#3	-.00299	.09193	.00222	.05395	.19475	.00003	57.208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00128**	**.00109**	**.00110**	**1.5654**	**5.9022**	**-.00417**
Stddev	.00013	.00004	.00065	.00038	.0397	.0792	.00848
%RSD	96.426	3.1786	59.307	34.796	2.5351	1.3413	203.28
#1	.00002	.00125	.00145	.00067	1.5633	5.8484	.00556
#2	-.00021	.00126	.00149	.00126	1.6062	5.9931	-.00994
#3	-.00022	.00132	.00034	.00138	1.5269	5.8650	-.00812
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**8.8946**	**.15999**	**.00012**	**219.68**	**.00122**	**.00906**	**.00044**
Stddev	.1045	.00115	.00014	.19	.00059	.00572	.00135
%RSD	1.1752	.71835	120.17	.08767	48.484	63.084	308.48
#1	8.9339	.16104	.00002	219.52	.00109	.01072	-.00107
#2	8.9739	.16017	.00028	219.63	.00070	.00270	.00084
#3	8.7762	.15877	.00006	219.89	.00186	.01377	.00154
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: L1703117601 Acquired: 3/29/2017 11:58:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00101**	**.00014**	**.78967**	**.00034**	**.30136**	**-.00589**	**-.00022**
Stddev	.00463	.00179	.00024	.00049	.00095	.00514	.00233
%RSD	457.68	1249.2	.03023	142.91	.31386	87.212	1046.0
#1	-.00586	-.00033	.78974	.00009	.30048	-.01155	-.00049
#2	.00337	-.00137	.78987	.00091	.30123	-.00152	-.00240
#3	-.00055	.00212	.78940	.00003	.30236	-.00460	.00223
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00127**	**.00288**	F **-.18913**
Stddev	.00057	.00010	.26854
%RSD	44.998	3.3612	141.99
#1	.00064	.00277	-.28229
#2	.00142	.00295	-.39868
#3	.00175	.00292	.11359
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14183.**	**93066.**	**3532.6**
Stddev	225.	607.	40.2
%RSD	1.5837	.65243	1.1380
#1	14364.	93647.	3539.2
#2	13932.	93115.	3489.5
#3	14255.	92436.	3569.1

Approved: March 30, 2017

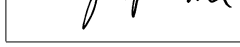
Sample Name: L1703117602 Acquired: 3/29/2017 12:02:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00048**	**.21434**	**.00276**	**.04029**	**.21002**	**.00030**	**26.009**	**.00045**
Stddev	.00217	.00201	.00163	.00047	.00057	.00007	.285	.00020
%RSD	447.86	.93761	59.216	1.1714	.27043	21.825	1.0964	44.913
#1	.00078	.21641	.00446	.04065	.20993	.00038	25.860	.00054
#2	-.00298	.21239	.00262	.04048	.21063	.00028	25.830	.00022
#3	.00076	.21422	.00120	.03976	.20950	.00025	26.338	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01235**	**-.00008**	**.00076**	**.07310**	**6.4157**	**-.00200**	**10.975**	**.24890**
Stddev	.00018	.00003	.00116	.02186	.0293	.00660	.073	.00280
%RSD	1.4894	40.783	152.93	29.905	.45590	329.75	.66259	1.1231
#1	.01247	-.00011	.00003	.06876	6.4103	-.00778	10.936	.24568
#2	.01244	-.00007	.00209	.05374	6.3895	.00519	10.930	.25074
#3	.01214	-.00005	.00015	.09681	6.4472	-.00342	11.059	.25027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**66.380**	**.00336**	**.00295**	**-.00016**	**-.00078**	**-.00258**	**2.4002**
Stddev	.00031	.538	.00062	.00230	.00225	.00076	.00636	.0185
%RSD	146.88	.81109	18.444	78.120	1390.9	97.381	246.83	.76883
#1	-.00008	66.453	.00293	.00035	-.00132	-.00116	.00442	2.4063
#2	.00002	65.809	.00308	.00376	-.00160	.00009	-.00416	2.4149
#3	-.00056	66.879	.00407	.00473	.00244	-.00127	-.00799	2.3795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017



Sample Name: L1703117602 Acquired: 3/29/2017 12:02:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00047**	**.18226**	**-.00580**	**.00040**	**.00059**	**.00767**	**-.01189**
Stddev	.00019	.00097	.00825	.00301	.00023	.00003	.42683
%RSD	40.886	.53243	142.25	755.13	39.905	.45503	3588.9
#1	.00066	.18114	-.00032	-.00048	.00044	.00765	.47506
#2	.00045	.18278	-.00180	.00375	.00085	.00765	-.32128
#3	.00028	.18285	-.01529	-.00208	.00047	.00771	-.18946
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14395.**	**95824.**	**3538.4**
Stddev	115.	208.	26.1
%RSD	.79953	.21693	.73664
#1	14528.	95940.	3551.6
#2	14330.	95584.	3555.2
#3	14328.	95949.	3508.4

Approved: March 30, 2017

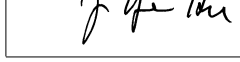
Sample Name: L1703117603 Acquired: 3/29/2017 12:06:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.21641**	**.00099**	**.04128**	**.11420**	**.00013**	**12.124**
Stddev	.00042	.00167	.00180	.00169	.00223	.00001	.073
%RSD	417.47	.77316	182.72	4.1061	1.9570	8.3162	.60594
#1	-.00053	.21480	.00219	.04105	.11591	.00014	12.181
#2	-.00007	.21629	-.00109	.04307	.11502	.00012	12.151
#3	.00030	.21814	.00186	.03970	.11167	.00013	12.041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00551**	**-.00137**	**.00069**	**20.157**	**4.3254**	**-.00436**
Stddev	.00013	.00014	.00080	.00015	.186	.0912	.00753
%RSD	90.596	2.5268	58.222	21.326	.92284	2.1086	172.62
#1	-.00016	.00562	-.00077	.00069	20.281	4.3148	-.01292
#2	-.00001	.00554	-.00106	.00083	20.247	4.4215	-.00142
#3	-.00026	.00535	-.00228	.00054	19.943	4.2400	.00125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.8574**	**.60022**	**.00006**	**51.915**	**.00158**	**.03018**	**.00026**
Stddev	.0521	.00551	.00023	.331	.00064	.00395	.00242
%RSD	.88990	.91740	389.02	.63775	40.557	13.081	946.14
#1	5.8369	.60575	.00033	52.027	.00184	.03057	.00190
#2	5.8187	.60018	-.00006	52.176	.00205	.02605	.00139
#3	5.9167	.59474	-.00009	51.542	.00085	.03391	-.00252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: L1703117603 Acquired: 3/29/2017 12:06:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.00495**	**3.2037**	**.00007**	**.08895**	**.00614**	**.00073**
Stddev	.00215	.00461	.0073	.00057	.00116	.01159	.00287
%RSD	956.87	93.036	.22682	790.71	1.3085	188.82	394.09
#1	.00109	.00424	3.2121	-.00045	.09024	-.00706	-.00100
#2	.00094	.00988	3.1991	-.00001	.08862	.01466	.00404
#3	-.00271	.00074	3.1998	.00068	.08799	.01081	-.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00071**	**.00375**	F **-.64253**
Stddev	.00068	.00003	.25328
%RSD	95.048	.76561	39.419
#1	.00112	.00373	-.35115
#2	-.00007	.00378	-.76648
#3	.00108	.00375	-.80995
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14540.**	**96124.**	**3606.9**
Stddev	66.	814.	52.4
%RSD	.45541	.84663	1.4524
#1	14611.	96026.	3656.3
#2	14531.	96983.	3612.5
#3	14479.	95364.	3552.0

Approved: March 30, 2017

Sample Name: L1703117605 Acquired: 3/29/2017 12:09:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00107**	**.22774**	**.00073**	**.04168**	**.20729**	**.00030**	**25.463**	**.00043**
Stddev	.00076	.00934	.00071	.00158	.00129	.00008	.429	.00021
%RSD	70.791	4.1014	97.294	3.7890	.62272	27.089	1.6851	47.953
#1	-.00169	.21827	.00145	.04119	.20605	.00035	24.968	.00023
#2	-.00129	.22803	.00003	.04345	.20863	.00035	25.713	.00043
#3	-.00023	.23694	.00071	.04041	.20718	.00021	25.708	.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01238**	**-.00020**	**.00082**	**.08737**	**6.3064**	**-.00397**	**10.808**	**.24716**
Stddev	.00019	.00037	.00039	.01788	.1885	.00238	.111	.00659
%RSD	1.5450	180.13	47.258	20.469	2.9885	59.885	1.0282	2.6649
#1	.01222	-.00063	.00115	.07624	6.2380	-.00567	10.688	.23993
#2	.01259	.00003	.00040	.10800	6.5195	-.00499	10.907	.25282
#3	.01232	-.00002	.00090	.07787	6.1617	-.00125	10.829	.24873
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**64.128**	**.00378**	**.00100**	**-.00037**	**-.00073**	**-.00075**	**2.4394**
Stddev	.00008	.933	.00043	.00718	.00196	.00186	.00122	.0145
%RSD	215.92	1.4555	11.444	720.10	531.03	255.63	162.22	.59285
#1	.00004	63.178	.00426	.00488	.00126	.00128	-.00089	2.4509
#2	-.00003	65.044	.00342	.00539	-.00254	-.00106	.00053	2.4440
#3	-.00012	64.161	.00367	-.00728	.00017	-.00241	-.00189	2.4231
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703117605 Acquired: 3/29/2017 12:09:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**.17935**	**.00250**	**-.00154**	**-.00014**	**.00812**	**.15279**
Stddev	.00049	.00210	.00326	.00137	.00039	.00015	.30732
%RSD	1023.7	1.1717	130.34	89.434	270.87	1.8667	201.14
#1	.00019	.17695	.00609	-.00096	.00024	.00796	.18707
#2	.00046	.18087	.00170	-.00310	-.00053	.00826	-.17024
#3	-.00050	.18022	-.00029	-.00054	-.00014	.00813	.44153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14315.**	**93364.**	**3572.9**
Stddev	111.	1382.	37.3
%RSD	.77539	1.4804	1.0434
#1	14187.	94088.	3611.5
#2	14373.	91770.	3537.1
#3	14386.	94233.	3570.3

Approved: March 30, 2017

Sample Name: L1703117605 Acquired: 3/29/2017 12:13:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00074**	**.03127**	**.00290**	**.00317**	**.02243**	**.00008**	**2.6074**
Stddev	.00102	.00228	.00304	.00204	.00173	.00005	.0142
%RSD	138.55	7.2953	104.76	64.198	7.6915	58.364	.54626
#1	-.00002	.03168	.00557	.00179	.02441	.00006	2.6233
#2	.00033	.03332	-.00041	.00551	.02165	.00013	2.6031
#3	.00190	.02881	.00355	.00222	.02124	.00005	2.5959
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.00190**	**.00023**	**-.00087**	**.01142**	**.37816**	**-.00648**
Stddev	.00010	.00046	.00051	.00116	.02565	.08019	.00264
%RSD	85.411	24.358	218.87	132.92	224.62	21.205	40.703
#1	-.00018	.00184	.00006	-.00156	.02291	.29382	-.00346
#2	-.00000	.00147	.00081	.00047	-.01797	.45342	-.00766
#3	-.00016	.00238	-.00017	-.00152	.02931	.38725	-.00831
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2039**	**.02587**	**-.00036**	**6.7321**	**.00060**	**.00321**	**-.00050**
Stddev	.0936	.00076	.00014	.1319	.00103	.00547	.00045
%RSD	7.7786	2.9236	39.488	1.9598	172.52	170.46	89.957
#1	1.1032	.02505	-.00027	6.7245	.00012	-.00023	-.00011
#2	1.2883	.02601	-.00028	6.6042	-.00010	.00952	-.00040
#3	1.2203	.02654	-.00052	6.8677	.00178	.00034	-.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703117605 Acquired: 3/29/2017 12:13:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00122**	**-.00551**	**.30364**	**.00005**	**.01803**	**-.00224**	**-.00059**
Stddev	.00151	.00119	.01085	.00056	.00051	.00042	.00266
%RSD	124.12	21.542	3.5740	1172.9	2.8402	18.541	449.61
#1	.00264	-.00548	.29274	-.00059	.01765	-.00186	-.00029
#2	.00137	-.00671	.30374	.00038	.01782	-.00268	.00190
#3	-.00036	-.00434	.31444	.00035	.01861	-.00219	-.00339
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00069**	**.00177**	F **-.04315**
Stddev	.00029	.00016	.31870
%RSD	41.561	9.0902	738.54
#1	.00096	.00159	.18723
#2	.00070	.00180	-.40686
#3	.00039	.00191	.09017
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13648.**	**88081.**	**3206.6**
Stddev	37.	1985.	47.2
%RSD	.27302	2.2533	1.4720
#1	13647.	90318.	3259.5
#2	13686.	86533.	3191.3
#3	13611.	87391.	3168.9

Approved: March 30, 2017

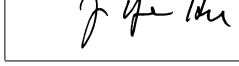
Sample Name: L1703116101 Acquired: 3/29/2017 12:17:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG607345-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00070**	**.05869**	**.00098**	**.00017**	**.00798**	**.00008**	**.38967**
Stddev	.00031	.00191	.00241	.00167	.00248	.00004	.03185
%RSD	43.385	3.2578	244.95	961.77	31.102	51.812	8.1745
#1	-.00061	.06067	.00219	.00207	.01074	.00007	.37148
#2	-.00045	.05854	.00255	-.00043	.00591	.00013	.37109
#3	-.00104	.05686	-.00179	-.00111	.00730	.00005	.42645
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.00058**	**.00376**	**-.00090**	**.37861**	**-.09561**	**-.00548**
Stddev	.00026	.00016	.00064	.00090	.00498	.18391	.00120
%RSD	150.78	27.811	17.116	100.15	1.3149	192.35	21.947
#1	-.00043	.00076	.00320	-.00184	.38426	.10069	-.00686
#2	.00010	.00054	.00363	-.00080	.37486	-.12361	-.00478
#3	-.00019	.00044	.00447	-.00005	.37672	-.26393	-.00479
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49866**	**.01202**	**.00024**	**11.753**	**.00083**	**.00883**	**-.00182**
Stddev	.14531	.00290	.00025	.397	.00122	.00680	.00258
%RSD	29.140	24.119	101.98	3.3762	146.53	77.001	141.90
#1	.66327	.01533	.00024	12.191	.00009	.01650	-.00435
#2	.44448	.01082	-.00000	11.419	.00017	.00640	-.00190
#3	.38823	.00991	.00049	11.648	.00225	.00357	.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: L1703116101 Acquired: 3/29/2017 12:17:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG607345-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00280**	**.00017**	**1.3214**	**-.00046**	**.00956**	**-.00840**	**.00056**
Stddev	.00444	.00079	.0136	.00023	.00018	.00876	.00064
%RSD	158.64	452.05	1.0296	50.529	1.8963	104.20	114.37
#1	-.00037	.00104	1.3082	-.00022	.00966	-.00159	-.00012
#2	.00090	-.00003	1.3206	-.00068	.00968	-.00534	.00115
#3	.00787	-.00049	1.3353	-.00048	.00936	-.01828	.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00060**	**.00150**	F **-.35729**
Stddev	.00037	.00008	.37509
%RSD	62.007	5.3347	104.98
#1	.00052	.00157	-.78900
#2	.00028	.00141	-.17156
#3	.00101	.00151	-.11130
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14174.**	**91675.**	**3234.9**
Stddev	94.	855.	68.6
%RSD	.66112	.93264	2.1193
#1	14165.	92624.	3170.3
#2	14272.	90966.	3306.8
#3	14085.	91433.	3227.5

Approved: March 30, 2017

Sample Name: L1703116102S Acquired: 3/29/2017 12:20:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG607345-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01980**	**.61109**	**.02074**	**.09337**	**.05509**	**.00246**	**.86619**
Stddev	.00075	.01143	.00052	.00354	.00248	.00006	.04204
%RSD	3.8072	1.8709	2.4878	3.7897	4.4956	2.3202	4.8530
#1	.02000	.60678	.02121	.09203	.05350	.00240	.87110
#2	.02043	.60245	.02018	.09069	.05383	.00247	.90556
#3	.01896	.62406	.02082	.09738	.05795	.00251	.82192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00265**	**.01097**	**.02764**	**.02558**	**.59855**	**2.3370**	**.04047**
Stddev	.00032	.00047	.00075	.00145	.01466	.0424	.00243
%RSD	12.186	4.2581	2.7085	5.6856	2.4493	1.8153	5.9930
#1	.00273	.01106	.02677	.02499	.60638	2.3583	.03876
#2	.00230	.01046	.02807	.02452	.60763	2.2881	.03940
#3	.00293	.01138	.02807	.02724	.58163	2.3645	.04325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.93202**	**.03772**	**.04901**	**14.058**	**.02640**	**.50725**	**.02556**
Stddev	.04952	.00322	.00087	.295	.00115	.01138	.00288
%RSD	5.3127	8.5497	1.7706	2.0989	4.3643	2.2428	11.269
#1	.88781	.03883	.04830	13.751	.02529	.49612	.02440
#2	.98552	.03409	.04874	14.084	.02632	.50676	.02344
#3	.92273	.04024	.04998	14.340	.02759	.51886	.02884
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703116102S Acquired: 3/29/2017 12:20:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG607345-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.06706**	**.02405**	**1.6936**	**.05187**	**.05796**	**.04436**	**.02693**
Stddev	.00443	.00640	.0341	.00132	.00159	.00388	.00166
%RSD	6.6000	26.595	2.0159	2.5537	2.7420	8.7524	6.1536
#1	.06202	.02415	1.6640	.05083	.05618	.04527	.02735
#2	.06881	.01761	1.6860	.05142	.05843	.04771	.02510
#3	.07034	.03040	1.7309	.05336	.05926	.04010	.02833
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.04981**	**.05440**	F **-.30506**
Stddev	.00033	.00091	.29523
%RSD	.66044	1.6720	96.775
#1	.04969	.05345	.03359
#2	.05018	.05450	-.44057
#3	.04955	.05526	-.50821
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13704.**	**92017.**	**3325.7**
Stddev	90.	1054.	63.3
%RSD	.65978	1.1452	1.9038
#1	13610.	90949.	3341.8
#2	13713.	93056.	3379.4
#3	13790.	92047.	3255.9

Approved: March 30, 2017

Sample Name: L1703116103SD Acquired: 3/29/2017 12:24:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG607345-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02117**	**.70450**	**.02144**	**.10170**	**.06145**	**.00279**	**.95186**
Stddev	.00061	.00796	.00015	.00253	.00169	.00007	.06410
%RSD	2.8674	1.1305	.70673	2.4840	2.7497	2.6088	6.7341
#1	.02084	.69550	.02140	.10279	.06011	.00272	.92646
#2	.02187	.70737	.02160	.09881	.06089	.00278	.90434
#3	.02080	.71063	.02131	.10350	.06335	.00287	1.0248
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00278**	**.01214**	**.03291**	**.02821**	**.67923**	**2.4963**	**.04419**
Stddev	.00013	.00063	.00050	.00138	.03629	.1417	.00475
%RSD	4.4994	5.1597	1.5220	4.8906	5.3431	5.6777	10.745
#1	.00281	.01236	.03323	.02763	.63907	2.3887	.04966
#2	.00264	.01143	.03317	.02721	.70967	2.4434	.04181
#3	.00289	.01262	.03233	.02978	.68895	2.6569	.04110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0659**	**.04204**	**.05478**	**15.684**	**.02848**	**.56432**	**.02769**
Stddev	.0709	.00163	.00050	.309	.00143	.00882	.00239
%RSD	6.6524	3.8795	.91370	1.9709	5.0085	1.5636	8.6323
#1	1.0872	.04043	.05427	15.340	.02744	.55803	.02506
#2	.98683	.04201	.05481	15.773	.02789	.56052	.02974
#3	1.1238	.04369	.05527	15.938	.03011	.57441	.02827
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703116103SD Acquired: 3/29/2017 12:24:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG607345-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.07099**	**.01920**	**1.9500**	**.05765**	**.06345**	**.04556**	**.02761**
Stddev	.00412	.00431	.0392	.00118	.00058	.00178	.00214
%RSD	5.8032	22.473	2.0095	2.0524	.90730	3.9067	7.7621
#1	.06680	.01751	1.9218	.05652	.06291	.04524	.02858
#2	.07503	.01599	1.9334	.05756	.06337	.04748	.02910
#3	.07113	.02410	1.9947	.05888	.06406	.04397	.02516
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.05488**	**.06060**	F **-.14634**
Stddev	.00157	.00104	.11335
%RSD	2.8523	1.7154	77.459
#1	.05355	.06004	-.22182
#2	.05661	.05997	-.01599
#3	.05449	.06180	-.20120
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13013.**	**85690.**	**3128.6**
Stddev	119.	661.	55.6
%RSD	.91628	.77107	1.7766
#1	12994.	86425.	3168.1
#2	12904.	85146.	3065.1
#3	13140.	85498.	3152.7

Approved: March 30, 2017

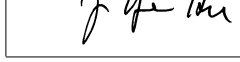
Sample Name: L1703116104 Acquired: 3/29/2017 12:28:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00136**	**.02459**	**.00014**	**.00382**	**.02450**	**.00007**	**1.9611**
Stddev	.00094	.00735	.00306	.00238	.00075	.00003	.0902
%RSD	69.230	29.899	2146.0	62.228	3.0573	50.630	4.6004
#1	-.00206	.02961	-.00310	.00137	.02525	.00007	1.9243
#2	-.00029	.02802	.00299	.00398	.02376	.00003	1.8950
#3	-.00172	.01615	.00054	.00612	.02448	.00010	2.0639
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00017**	**-.00011**	**-.00031**	**4.5215**	**.15766**	**-.00665**
Stddev	.00034	.00021	.00066	.00056	.0857	.14414	.00164
%RSD	649.19	123.56	614.20	180.69	1.8959	91.426	24.700
#1	-.00042	.00012	.00064	.00014	4.4236	.18125	-.00852
#2	.00003	.00040	-.00062	-.00094	4.5580	.28855	-.00602
#3	.00024	-.00001	-.00034	-.00013	4.5830	.00318	-.00542
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.91386**	**.06459**	**.00028**	**6.7216**	**-.00067**	**.03826**	**.00051**
Stddev	.09710	.00165	.00031	.0452	.00007	.00316	.00078
%RSD	10.626	2.5468	109.29	.67319	10.217	8.2657	151.94
#1	.81761	.06293	.00017	6.6723	-.00068	.04065	.00114
#2	.91219	.06622	.00005	6.7612	-.00059	.03467	.00076
#3	1.0118	.06463	.00064	6.7314	-.00073	.03946	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: L1703116104 Acquired: 3/29/2017 12:28:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00187**	**.00138**	**1.7406**	**.00008**	**.04228**	**.00754**	**-.00302**
Stddev	.00276	.00319	.0297	.00067	.00107	.00642	.00075
%RSD	147.54	230.78	1.7082	791.45	2.5261	85.157	24.864
#1	.00466	.00496	1.7087	.00084	.04164	.01474	-.00241
#2	-.00087	-.00116	1.7456	-.00043	.04169	.00243	-.00386
#3	.00183	.00034	1.7675	-.00016	.04351	.00544	-.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00072**	**.00118**	F **-.85884**
Stddev	.00054	.00007	.17515
%RSD	75.521	5.9746	20.394
#1	-.00009	.00123	-.80168
#2	-.00107	.00121	-.71941
#3	-.00099	.00110	-1.0554
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13386.**	**87457.**	**3254.7**
Stddev	56.	842.	38.7
%RSD	.41645	.96298	1.1881
#1	13326.	87631.	3213.2
#2	13436.	88198.	3261.2
#3	13395.	86541.	3289.7

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 12:31:50 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39506**	**10.046**	**.40051**	**.49669**	**1.0051**	**.04954**	**10.033**
Stddev	.00265	.073	.00199	.00184	.0061	.00024	.084
%RSD	.66980	.72384	.49611	.36986	.61133	.48283	.84096
#1	.39663	10.087	.39850	.49469	1.0107	.04962	10.129
#2	.39654	10.089	.40247	.49709	1.0061	.04974	9.9970
#3	.39200	9.9621	.40055	.49830	.99853	.04928	9.9724
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05088**	**.20399**	**.49494**	**.50680**	**4.0024**	**49.777**	**1.0021**
Stddev	.00029	.00096	.00326	.00147	.0297	.117	.0064
%RSD	.56195	.47130	.65783	.29101	.74130	.23429	.63575
#1	.05056	.20303	.49627	.50742	4.0244	49.912	1.0025
#2	.05111	.20397	.49732	.50512	3.9687	49.716	1.0084
#3	.05097	.20496	.49123	.50787	4.0141	49.704	.99563
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.011**	**.50331**	**1.0098**	**49.944**	**.50526**	**9.9712**	**.50397**
Stddev	.067	.00018	.0053	.059	.00186	.0470	.00154
%RSD	.66444	.03656	.52596	.11832	.36783	.47147	.30622
#1	10.074	.50325	1.0058	50.000	.50440	9.9301	.50382
#2	9.9414	.50316	1.0079	49.949	.50398	9.9610	.50558
#3	10.016	.50351	1.0159	49.882	.50739	10.022	.50250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 12:31:50 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1857**	**.39471**	**5.0465**	**1.0071**	**1.0012**	**.97959**	**.50841**
Stddev	.0076	.00370	.0353	.0049	.0047	.00826	.00320
%RSD	.63868	.93683	.69942	.48225	.47301	.84337	.62904
#1	1.1836	.39356	5.0083	1.0036	1.0033	.97512	.50842
#2	1.1794	.39172	5.0532	1.0051	1.0045	.98913	.50521
#3	1.1941	.39885	5.0779	1.0127	.99579	.97453	.51161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.99537**	**1.0023**	F **.04648**
Stddev	.00389	.0046	.46679
%RSD	.39065	.45780	1004.3
#1	.99582	.99808	-.44619
#2	.99901	1.0017	.10346
#3	.99127	1.0072	.48217
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13706.**	**89239.**	**3293.0**
Stddev	56.	2568.	31.7
%RSD	.40630	2.8778	.96120
#1	13768.	87523.	3321.0
#2	13660.	88004.	3258.6
#3	13690.	92192.	3299.4

Approved: March 30, 2017

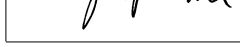
Sample Name: CCB Acquired: 3/29/2017 12:35:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00072**	**.00382**	**-.00068**	**.00293**	**.00220**	**.00010**	**.00942**
Stddev	.00101	.00566	.00148	.00243	.00221	.00005	.03421
%RSD	140.22	148.06	219.19	82.774	100.68	53.229	363.33
#1	-.00123	.00510	-.00007	.00357	.00159	.00013	-.00446
#2	.00044	-.00237	.00040	.00025	.00465	.00013	.04838
#3	-.00137	.00873	-.00237	.00497	.00035	.00004	-.01568
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**-.00006**	**-.00047**	**-.00069**	**.00502**	**-.20292**	**-.00205**
Stddev	.00029	.00021	.00092	.00085	.02409	.06511	.00532
%RSD	148.24	343.54	194.04	122.32	479.63	32.086	259.41
#1	.00004	-.00029	-.00146	-.00018	.03268	-.13946	-.00194
#2	-.00052	-.00002	-.00032	-.00168	-.00625	-.19973	-.00743
#3	-.00010	.00012	.00036	-.00023	-.01136	-.26956	.00322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.09915**	**.00134**	**.00028**	**.01321**	**-.00027**	**.00240**	**-.00029**
Stddev	.01215	.00285	.00019	.04772	.00120	.00728	.00024
%RSD	12.257	212.25	68.181	361.29	447.61	303.74	81.305
#1	-.10682	.00212	.00047	.02092	.00011	.00502	-.00027
#2	-.10549	-.00182	.00028	.05661	.00070	-.00583	-.00054
#3	-.08514	.00373	.00009	-.03790	-.00161	.00800	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: CCB Acquired: 3/29/2017 12:35:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00240**	**-.00200**	**.00627**	**.00035**	**-.00051**	**-.00026**	**.00154**
Stddev	.00038	.00682	.00125	.00049	.00051	.00198	.00192
%RSD	15.693	341.64	19.882	140.30	101.01	757.91	124.39
#1	.00234	-.00779	.00491	.00027	-.00013	.00137	.00065
#2	.00206	-.00373	.00653	.00088	-.00110	-.00246	.00023
#3	.00280	.00552	.00736	-.00009	-.00030	.00031	.00374
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00004**	**.00009**	F **-.24176**
Stddev	.00045	.00012	.15506
%RSD	1040.3	130.08	64.137
#1	.00029	.00014	-.41000
#2	.00031	-.00004	-.10458
#3	-.00048	.00018	-.21070
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14101.**	**93118.**	**3386.2**
Stddev	116.	1554.	59.8
%RSD	.82478	1.6691	1.7656
#1	14064.	91489.	3318.1
#2	14008.	94585.	3410.4
#3	14232.	93279.	3430.1

Approved: March 30, 2017

Sample Name: L1703116105 Acquired: 3/29/2017 12:39:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00172**	**.02150**	**.00076**	**.00238**	**.00800**	**.00009**	**2.3943**
Stddev	.00064	.00739	.00284	.00117	.00096	.00007	.0940
%RSD	37.183	34.382	375.49	49.168	11.947	78.152	3.9271
#1	-.00224	.01297	.00262	.00316	.00892	.00017	2.4996
#2	-.00101	.02604	.00216	.00103	.00701	.00003	2.3649
#3	-.00191	.02550	-.00251	.00294	.00806	.00007	2.3186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.00018**	**-.00015**	**-.00126**	**.01498**	**-.15180**	**.00001**
Stddev	.00017	.00033	.00116	.00098	.00381	.11899	.00875
%RSD	85.256	181.77	775.52	78.044	25.397	78.390	72261.
#1	-.00030	-.00019	-.00096	-.00223	.01735	-.22429	.00691
#2	-.00000	.00029	.00118	-.00027	.01700	-.21663	-.00983
#3	-.00030	.00044	-.00067	-.00127	.01059	-.01447	.00296
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.1333**	**.02287**	**.00010**	**46.003**	**-.00008**	**.00401**	**-.00000**
Stddev	.0410	.00153	.00012	.091	.00119	.00035	.00446
%RSD	1.9196	6.6944	126.30	.19711	1419.6	8.7883	111340.
#1	2.1591	.02413	-.00004	45.995	.00129	.00406	.00498
#2	2.1548	.02117	.00014	45.917	-.00078	.00363	-.00135
#3	2.0861	.02332	.00019	46.098	-.00077	.00433	-.00364
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703116105 Acquired: 3/29/2017 12:39:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00173**	**.00100**	**2.2860**	**-.00019**	**.05262**	**-.00408**	**-.00100**
Stddev	.00345	.00338	.0081	.00032	.00031	.00199	.00222
%RSD	199.47	336.74	.35275	174.20	.58564	48.797	222.14
#1	.00408	.00328	2.2941	-.00035	.05253	-.00189	-.00287
#2	.00334	-.00288	2.2860	-.00039	.05296	-.00578	-.00159
#3	-.00223	.00261	2.2779	.00019	.05236	-.00456	.00146
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00057**	**.00261**	F **-.20713**
Stddev	.00024	.00022	.11283
%RSD	42.112	8.4644	54.473
#1	.00083	.00260	-.18496
#2	.00036	.00240	-.10703
#3	.00052	.00284	-.32939
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13708.**	**91134.**	**3169.3**
Stddev	94.	1317.	58.2
%RSD	.68633	1.4446	1.8355
#1	13614.	89615.	3107.4
#2	13802.	91858.	3177.7
#3	13707.	91930.	3222.9

Approved: March 30, 2017

Sample Name: L1703116105PS Acquired: 3/29/2017 12:42:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG607769-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19357**	**4.9841**	**.20061**	**.98498**	**.48880**	**.02447**	**7.1608**	**.02537**
Stddev	.00114	.0468	.00443	.01015	.00767	.00019	.1151	.00038
%RSD	.58699	.93805	2.2074	1.0304	1.5681	.76842	1.6075	1.5068
#1	.19232	4.9322	.19687	.97348	.48064	.02426	7.1184	.02502
#2	.19454	4.9972	.20550	.98877	.48992	.02456	7.0728	.02532
#3	.19385	5.0230	.19945	.99268	.49585	.02460	7.2911	.02578
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10268**	**.24235**	**.25574**	**1.9388**	**23.898**	**.48151**	**7.0361**	**.26590**
Stddev	.00120	.00274	.00432	.0346	.388	.00506	.1181	.00468
%RSD	1.1722	1.1297	1.6892	1.7850	1.6224	1.0513	1.6786	1.7586
#1	.10137	.23924	.25076	1.9043	23.507	.47577	6.9412	.26508
#2	.10292	.24338	.25812	1.9387	23.903	.48535	6.9987	.26168
#3	.10374	.24442	.25835	1.9735	24.283	.48340	7.1683	.27093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49249**	**69.190**	**.25563**	**5.0766**	**.25609**	**.61070**	**.20714**	**5.0269**
Stddev	.00565	1.025	.00411	.0575	.00383	.00805	.00074	.0653
%RSD	1.1470	1.4817	1.6097	1.1327	1.4960	1.3189	.35568	1.2983
#1	.48607	68.188	.25155	5.0122	.25183	.60143	.20694	4.9532
#2	.49473	69.145	.25557	5.0946	.25719	.61467	.20796	5.0498
#3	.49669	70.237	.25978	5.1228	.25926	.61599	.20653	5.0776
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703116105PS Acquired: 3/29/2017 12:42:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG607769-03

Elem	Sn1899	Sr4077	Ti3372	TI1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51290**	**.53937**	**.47506**	**.25691**	**.48995**	**.51885**	**.11245**
Stddev	.00616	.00756	.00837	.00252	.00480	.00586	.47401
%RSD	1.2012	1.4016	1.7622	.98193	.97997	1.1298	421.53
#1	.50659	.53204	.46922	.25978	.48444	.51226	-.28448
#2	.51322	.53894	.47131	.25505	.49216	.52080	-.01546
#3	.51890	.54714	.48465	.25590	.49325	.52348	.63728
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13771.**	**90249.**	**3436.3**
Stddev	77.	212.	151.6
%RSD	.55683	.23523	4.4130
#1	13859.	90142.	3561.4
#2	13722.	90112.	3479.8
#3	13731.	90494.	3267.6

Approved: March 30, 2017

Sample Name: L1703116105SDL Acquired: 3/29/2017 12:46:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG607769-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**.00405**	**.00212**	**.00412**	**.00203**	**-.00001**	**.42657**
Stddev	.00131	.00555	.00214	.00223	.00121	.00004	.03138
%RSD	11303.	137.01	100.83	54.099	59.864	438.74	7.3567
#1	-.00061	.01037	.00399	.00444	.00156	-.00004	.44605
#2	.00151	.00181	.00258	.00175	.00341	-.00002	.39037
#3	-.00087	-.00003	-.00021	.00617	.00112	.00004	.44328
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**-.00010**	**.00025**	**-.00113**	F **-.02466**	**-.04996**	**-.00596**
Stddev	.00025	.00009	.00116	.00031	.02617	.07549	.00257
%RSD	68.725	98.133	469.66	27.743	106.12	151.08	43.220
#1	-.00038	-.00000	.00156	-.00110	.00379	-.10261	-.00490
#2	-.00062	-.00009	-.00060	-.00146	-.03007	-.08380	-.00408
#3	-.00011	-.00019	-.00022	-.00083	-.04769	.03652	-.00889
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					810.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40643**	**.00923**	**.00009**	**8.8142**	**-.00037**	**.00482**	**.00313**
Stddev	.01760	.00246	.00025	.1234	.00030	.00661	.00205
%RSD	4.3313	26.645	285.71	1.3996	81.232	137.12	65.378
#1	.42528	.00913	.00026	8.7136	-.00002	-.00039	.00549
#2	.40362	.01174	.00019	8.9519	-.00058	.00259	.00184
#3	.39041	.00682	-.00020	8.7772	-.00052	.01226	.00206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703116105SDL Acquired: 3/29/2017 12:46:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG607769-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00087**	**-.00031**	**.43823**	**.00002**	**.01026**	**-.00062**	**.00406**
Stddev	.00282	.00128	.00172	.00057	.00033	.00618	.00091
%RSD	324.51	418.91	.39287	2820.2	3.2159	990.32	22.515
#1	.00237	-.00165	.43940	-.00017	.01056	-.00745	.00378
#2	-.00274	-.00015	.43903	-.00043	.01032	.00099	.00508
#3	-.00224	.00089	.43625	.00066	.00991	.00458	.00332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00006**	**.00148**	F **-.39243**
Stddev	.00110	.00010	.04841
%RSD	1968.9	6.5315	12.337
#1	.00013	.00149	-.43466
#2	-.00108	.00157	-.40305
#3	.00112	.00138	-.33959
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14346.**	**94310.**	**3407.9**
Stddev	182.	2443.	39.2
%RSD	1.2716	2.5907	1.1503
#1	14510.	92177.	3382.9
#2	14150.	93778.	3387.7
#3	14379.	96976.	3453.1

Approved: March 30, 2017

Sample Name: L1703116107 Acquired: 3/29/2017 12:49:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00191**	**-.00136**	**-.00066**	**.00281**	**.02374**	**.00013**	**1.7031**	**-.00009**
Stddev	.00119	.00945	.00086	.00103	.00142	.00003	.0288	.00018
%RSD	62.591	697.20	130.90	36.771	6.0006	22.648	1.6925	205.60
#1	-.00056	-.01219	.00033	.00195	.02513	.00013	1.6782	-.00003
#2	-.00233	.00295	-.00126	.00396	.02382	.00015	1.6965	-.00029
#3	-.00283	.00517	-.00105	.00253	.02228	.00009	1.7347	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00032**	**.00003**	**.00017**	**1.0590**	**.02681**	**-.00517**	**.97420**	**.24216**
Stddev	.00009	.00059	.00153	.0143	.03939	.00532	.07465	.00285
%RSD	28.635	1837.3	904.42	1.3474	146.91	102.90	7.6622	1.1773
#1	.00033	-.00036	-.00040	1.0429	.03154	.00096	.98327	.24541
#2	.00023	-.00026	-.00099	1.0641	.06363	-.00790	.89544	.24006
#3	.00041	.00072	.00190	1.0701	-.01473	-.00858	1.0439	.24102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**3.2298**	**-.00033**	**.00196**	**.00123**	**.00209**	**.00491**	**1.4037**
Stddev	.00017	.0618	.00043	.00283	.00058	.00214	.00292	.0261
%RSD	182.51	1.9136	131.47	144.79	47.623	102.23	59.453	1.8599
#1	-.00029	3.2404	.00004	.00446	.00127	.00029	.00225	1.3826
#2	.00004	3.1633	-.00081	.00253	.00062	.00153	.00804	1.3955
#3	-.00003	3.2856	-.00022	-.00112	.00179	.00446	.00445	1.4329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703116107 Acquired: 3/29/2017 12:49:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00049**	**.03391**	**.00408**	**-.00072**	**.00084**	**.00097**	**.02885**
Stddev	.00036	.00045	.00667	.00285	.00012	.00017	.10068
%RSD	73.393	1.3306	163.49	395.84	14.639	17.144	349.00
#1	.00010	.03368	.00067	-.00321	.00070	.00081	.13587
#2	.00058	.03443	.01177	.00239	.00091	.00095	.01463
#3	.00080	.03362	-.00020	-.00134	.00092	.00115	-.06397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14431.**	**96742.**	**3427.0**
Stddev	81.	1343.	77.3
%RSD	.56118	1.3884	2.2551
#1	14374.	95468.	3479.3
#2	14524.	98145.	3338.3
#3	14396.	96613.	3463.5

Approved: March 30, 2017

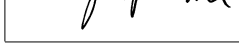
Sample Name: L1703116109 Acquired: 3/29/2017 12:53:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00126**	**.00054**	**.00179**	**.00097**	**.03494**	**.00009**	**1.0266**
Stddev	.00196	.00884	.00438	.00161	.00222	.00007	.0699
%RSD	155.21	1633.4	244.96	166.19	6.3619	83.069	6.8133
#1	.00012	-.00236	.00003	-.00084	.03666	.00006	.96588
#2	-.00350	-.00649	.00678	.00151	.03243	.00018	1.1031
#3	-.00041	.01047	-.00144	.00224	.03574	.00004	1.0109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.00033**	**-.00041**	**-.00090**	**1.8592**	**.06651**	**-.00954**
Stddev	.00003	.00020	.00055	.00072	.0152	.09603	.00670
%RSD	12.218	61.745	136.43	79.387	.81783	144.39	70.290
#1	-.00024	.00010	.00019	-.00098	1.8564	.02918	-.01689
#2	-.00019	.00048	-.00051	-.00015	1.8756	-.00526	-.00795
#3	-.00023	.00042	-.00090	-.00157	1.8455	.17559	-.00377
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51584**	**.03975**	**-.00003**	**4.1578**	**.00111**	**.00087**	**-.00225**
Stddev	.04657	.00328	.00026	.0124	.00078	.00321	.00162
%RSD	9.0278	8.2438	742.22	.29838	70.173	370.43	71.722
#1	.56195	.04099	.00026	4.1437	.00057	.00369	-.00408
#2	.46883	.04222	-.00016	4.1630	.00076	.00154	-.00099
#3	.51675	.03603	-.00020	4.1668	.00201	-.00263	-.00170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: L1703116109 Acquired: 3/29/2017 12:53:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.00264**	**1.0596**	**.00035**	**.02105**	**.00263**	**-.00055**
Stddev	.00204	.00664	.0180	.00026	.00031	.01382	.00191
%RSD	487.58	251.37	1.6945	74.530	1.4749	525.32	350.40
#1	.00029	.00346	1.0431	.00005	.02102	.01844	-.00274
#2	-.00155	-.00437	1.0570	.00055	.02076	-.00341	.00032
#3	.00252	.00884	1.0787	.00046	.02138	-.00714	.00078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00015**	**.00207**	F **-.04705**
Stddev	.00035	.00021	.18234
%RSD	232.41	10.269	387.56
#1	-.00019	.00195	.09968
#2	.00052	.00195	.01037
#3	.00013	.00232	-.25119
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14271.**	**93903.**	**3356.3**
Stddev	129.	949.	67.8
%RSD	.90148	1.0102	2.0206
#1	14417.	94998.	3316.2
#2	14175.	93359.	3318.1
#3	14220.	93352.	3434.6

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 12:57:16 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42049**	**10.767**	**.39978**	**.52702**	**1.0448**	**.05292**	**10.438**
Stddev	.00789	.196	.00167	.01151	.0055	.00091	.086
%RSD	1.8774	1.8210	.41734	2.1849	.52885	1.7128	.82829
#1	.41566	10.657	.39790	.51970	1.0445	.05232	10.396
#2	.41620	10.651	.40109	.52106	1.0394	.05247	10.380
#3	.42960	10.994	.40035	.54029	1.0504	.05396	10.537
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05040**	**.20223**	**.53181**	**.50458**	**4.1836**	**51.754**	**1.0361**
Stddev	.00047	.00083	.00955	.00150	.0202	.312	.0089
%RSD	.93440	.41245	1.7953	.29826	.48357	.60264	.85933
#1	.05072	.20262	.52688	.50458	4.2043	51.592	1.0438
#2	.04986	.20127	.52574	.50307	4.1638	51.556	1.0263
#3	.05062	.20279	.54282	.50608	4.1828	52.114	1.0382
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.492**	**.52416**	**1.0026**	**52.041**	**.50290**	**10.002**	**.50265**
Stddev	.039	.00637	.0032	.195	.00160	.030	.00422
%RSD	.37198	1.2156	.32432	.37438	.31826	.29845	.83945
#1	10.447	.51700	1.0048	52.080	.50225	10.024	.50701
#2	10.520	.52921	.99891	51.829	.50172	9.9677	.50235
#3	10.508	.52626	1.0042	52.213	.50472	10.013	.49859
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 12:57:16 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1790**	**.40534**	**5.0144**	**1.0007**	**1.0442**	**1.0308**	**.50945**
Stddev	.0033	.00286	.0006	.0034	.0037	.0078	.00311
%RSD	.28106	.70496	.01214	.33758	.35060	.76064	.60971
#1	1.1754	.40477	5.0142	1.0040	1.0422	1.0226	.50798
#2	1.1795	.40845	5.0151	.99722	1.0421	1.0315	.50734
#3	1.1820	.40282	5.0139	1.0008	1.0485	1.0382	.51301
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0616**	**.99884**	F **.41794**
Stddev	.0196	.00353	.37970
%RSD	1.8437	.35346	90.851
#1	1.0494	1.0016	.83986
#2	1.0512	.99486	.10372
#3	1.0842	1.0001	.31024
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13674.**	**84131.**	**3219.4**
Stddev	95.	955.	59.2
%RSD	.69675	1.1357	1.8382
#1	13564.	83582.	3151.1
#2	13737.	85234.	3253.5
#3	13721.	83576.	3253.6

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 13:00:45 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.01131**	**.00163**	**.00025**	**-.00022**	**.00008**	**-.01834**
Stddev	.00134	.00203	.00184	.00419	.00106	.00002	.04944
%RSD	808.99	17.958	112.82	1708.7	489.78	30.772	269.60
#1	.00120	.00915	.00050	-.00038	-.00131	.00005	-.01189
#2	-.00148	.01318	.00376	.00472	-.00016	.00009	.02756
#3	-.00022	.01161	.00064	-.00360	.00081	.00010	-.07068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**.00014**	**.00038**	**-.00036**	**.00829**	**-.04420**	**-.00518**
Stddev	.00046	.00015	.00092	.00129	.01659	.06711	.00623
%RSD	103.04	101.74	239.51	353.83	200.11	151.84	120.31
#1	.00009	.00027	.00051	.00111	-.01086	-.11965	-.00973
#2	-.00071	-.00002	.00123	-.00126	.01812	-.02175	.00192
#3	-.00073	.00018	-.00059	-.00094	.01761	.00881	-.00772
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.07621**	**-.00155**	**-.00017**	**.00890**	**-.00055**	**-.00076**	**-.00085**
Stddev	.05509	.00349	.00014	.01527	.00182	.00270	.00264
%RSD	72.281	224.80	81.525	171.59	330.98	357.89	309.92
#1	-.11465	.00137	-.00002	.02516	.00118	-.00372	.00197
#2	-.01310	-.00062	-.00021	-.00515	-.00038	-.00014	-.00128
#3	-.10088	-.00541	-.00029	.00669	-.00245	.00159	-.00325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 13:00:45 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00185**	**-.00224**	**.00540**	**.00043**	**-.00008**	**.00242**	**.00148**
Stddev	.00400	.00493	.00267	.00055	.00035	.00092	.00186
%RSD	215.83	220.70	49.454	126.86	415.10	38.062	125.76
#1	-.00196	-.00308	.00356	-.00019	-.00004	.00148	.00352
#2	.00151	-.00670	.00417	.00062	-.00046	.00245	-.00011
#3	.00602	.00306	.00846	.00086	.00024	.00332	.00102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00020**	**-.00002**	F **-.44621**
Stddev	.00023	.00013	.02540
%RSD	111.78	595.09	5.6933
#1	.00008	.00009	-.46998
#2	.00047	-.00016	-.41944
#3	.00007	.00000	-.44921
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13720.**	**90741.**	**3415.9**
Stddev	83.	1938.	83.8
%RSD	.60728	2.1358	2.4527
#1	13812.	92876.	3511.3
#2	13701.	89093.	3382.1
#3	13648.	90254.	3354.3

Approved: March 30, 2017

Sample Name: LLCCV Acquired: 3/29/2017 13:04:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00705**	**.17723**	**.00832**	**.07677**	**.00829**	**.00159**	**.47364**	**.00058**
Stddev	.00114	.00252	.00172	.00142	.00128	.00007	.05698	.00030
%RSD	16.161	1.4226	20.729	1.8441	15.394	4.4029	12.031	52.127
#1	.00575	.17926	.00942	.07688	.00808	.00160	.41276	.00056
#2	.00788	.17802	.00921	.07530	.00713	.00165	.52570	.00029
#3	.00750	.17441	.00633	.07812	.00965	.00151	.48246	.00090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00442**	**.00349**	**.00402**	**.08893**	**.73754**	**.07710**	**.37099**	**.01028**
Stddev	.00017	.00113	.00027	.01341	.19956	.00685	.08474	.00057
%RSD	3.8295	32.531	6.8048	15.075	27.058	8.8784	22.841	5.5609
#1	.00430	.00446	.00434	.08900	.58809	.06934	.45513	.01045
#2	.00461	.00376	.00383	.07549	.66036	.07966	.28566	.01075
#3	.00434	.00224	.00390	.10230	.96416	.08229	.37218	.00964
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00771**	**.43952**	**.01613**	**.78425**	**.00850**	**.08310**	**.01947**	**.79428**
Stddev	.00029	.03715	.00060	.00683	.00096	.00219	.00668	.00194
%RSD	3.8237	8.4533	3.7034	.87031	11.346	2.6301	34.321	.24384
#1	.00767	.39899	.01641	.78883	.00961	.08214	.01208	.79336
#2	.00744	.47198	.01545	.77640	.00783	.08560	.02508	.79651
#3	.00803	.44759	.01654	.78751	.00807	.08156	.02124	.79298
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: LLCCV Acquired: 3/29/2017 13:04:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40882**	**.03999**	**.02332**	**.16051**	**.00862**	**.01743**	**25.968**
Stddev	.00187	.00066	.00525	.00123	.00061	.00012	.381
%RSD	.45718	1.6568	22.506	.76927	7.0885	.70970	1.4660
#1	.41046	.04013	.01874	.16065	.00808	.01750	26.331
#2	.40922	.03927	.02217	.16167	.00850	.01750	25.572
#3	.40679	.04057	.02905	.15922	.00928	.01729	26.000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13859.**	**92682.**	**3340.8**
Stddev	119.	219.	15.6
%RSD	.86102	.23578	.46602
#1	13753.	92538.	3349.9
#2	13836.	92574.	3349.6
#3	13989.	92933.	3322.8

Approved: March 30, 2017

Sample Name: PBW A1 Acquired: 3/29/2017 13:08:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00217**	**.00925**	**.00115**	**.00165**	**.00087**	**-.00001**	**.01554**
Stddev	.00093	.00227	.00270	.00156	.00060	.00006	.03035
%RSD	42.783	24.572	235.59	94.296	69.407	482.53	195.36
#1	-.00124	.01131	.00379	.00336	.00062	-.00007	.02001
#2	-.00216	.00964	.00125	.00030	.00042	.00004	-.01680
#3	-.00310	.00681	-.00161	.00130	.00155	-.00001	.04340
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.00014**	**-.00012**	**-.00074**	**.00527**	**-.00117**	**-.00639**
Stddev	.00024	.00014	.00064	.00133	.01823	.08173	.00360
%RSD	344.67	98.634	511.81	179.87	345.85	6969.9	56.348
#1	-.00026	.00030	-.00086	.00075	.01357	.04294	-.00916
#2	-.00015	.00010	.00019	-.00116	-.01563	.04903	-.00232
#3	.00020	.00003	.00029	-.00180	.01788	-.09549	-.00768
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02501**	**.00021**	**-.00019**	**.01150**	**-.00012**	**.00195**	**-.00007**
Stddev	.02833	.00256	.00034	.01943	.00087	.00363	.00092
%RSD	113.27	1229.4	174.38	168.94	730.35	186.29	1263.7
#1	.00393	.00111	-.00058	.02498	-.00044	.00611	-.00063
#2	.05722	-.00268	.00006	-.01077	.00086	.00034	-.00058
#3	.01389	.00220	-.00006	.02028	-.00078	-.00060	.00099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: PBW A1 Acquired: 3/29/2017 13:08:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00150**	**.00206**	**.00692**	**.00023**	**-.00039**	**.00314**	**-.00270**
Stddev	.00178	.00416	.00138	.00072	.00074	.00430	.00082
%RSD	118.29	201.95	19.987	316.71	190.86	137.24	30.400
#1	.00000	.00605	.00626	.00012	-.00124	.00009	-.00227
#2	.00104	.00239	.00851	-.00043	-.00009	.00126	-.00365
#3	.00347	-.00226	.00599	.00100	.00016	.00806	-.00218
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00009**	**.00137**	F **-.21867**
Stddev	.00068	.00003	.30731
%RSD	716.06	2.4162	140.54
#1	-.00065	.00134	-.22174
#2	.00067	.00140	.09017
#3	.00027	.00135	-.52443
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14323.**	**96204.**	**3412.0**
Stddev	103.	1344.	16.0
%RSD	.71640	1.3966	.46808
#1	14309.	96817.	3400.8
#2	14432.	97131.	3430.3
#3	14228.	94663.	3404.9

Approved: March 30, 2017

Sample Name: LCSW A1 Acquired: 3/29/2017 13:11:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18908**	**4.8220**	**.18892**	**.91293**	**.49407**	**.02371**	**4.8045**	**.02465**
Stddev	.00162	.0182	.00080	.00405	.00240	.00005	.0459	.00024
%RSD	.85874	.37751	.42246	.44310	.48507	.19679	.95495	.97952
#1	.18967	4.8361	.18973	.91757	.49211	.02365	4.7746	.02471
#2	.19033	4.8015	.18813	.91010	.49336	.02373	4.7816	.02438
#3	.18725	4.8284	.18889	.91113	.49674	.02374	4.8574	.02485
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09975**	**.23970**	**.24796**	**1.9579**	**24.707**	**.49886**	**4.8495**	**.24595**
Stddev	.00033	.00066	.00057	.0233	.207	.00307	.0141	.00230
%RSD	.33388	.27348	.22847	1.1875	.83761	.61569	.29170	.93376
#1	.09948	.24040	.24795	1.9818	24.897	.50138	4.8389	.24531
#2	.10012	.23957	.24740	1.9564	24.487	.49544	4.8440	.24405
#3	.09965	.23911	.24854	1.9354	24.737	.49975	4.8656	.24850
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48421**	**24.784**	**.24747**	**4.7082**	**.24776**	**.58011**	**.18892**	**2.4749**
Stddev	.00014	.141	.00124	.0009	.00250	.00575	.00315	.0043
%RSD	.02876	.56784	.49934	.01931	1.0077	.99085	1.6648	.17561
#1	.48436	24.811	.24818	4.7072	.24838	.57815	.18574	2.4760
#2	.48421	24.632	.24604	4.7083	.24989	.57559	.19203	2.4785
#3	.48408	24.910	.24817	4.7090	.24501	.58658	.18899	2.4701
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: LCSW A1 Acquired: 3/29/2017 13:11:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49858**	**.49439**	**.49173**	**.25582**	**.48985**	**.48366**	**.41093**
Stddev	.00094	.00151	.00190	.00035	.00293	.00024	.29426
%RSD	.18847	.30575	.38629	.13843	.59911	.04986	71.609
#1	.49750	.49478	.48965	.25622	.49323	.48341	.54719
#2	.49903	.49273	.49337	.25556	.48843	.48389	.07324
#3	.49922	.49567	.49218	.25568	.48790	.48369	.61237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14456.**	**96008.**	**3581.3**
Stddev	43.	134.	10.5
%RSD	.29432	.13943	.29418
#1	14414.	96025.	3570.3
#2	14499.	95866.	3591.3
#3	14455.	96132.	3582.2

Approved: March 30, 2017

Sample Name: L1703138301 Acquired: 3/29/2017 13:15:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00031**	**.01215**	**.00256**	**.02128**	**.07257**	**-.00001**	**52.631**
Stddev	.00155	.00238	.00078	.00276	.00044	.00008	.111
%RSD	498.13	19.620	30.283	12.981	.60580	1493.7	.21147
#1	.00061	.01222	.00325	.02325	.07307	-.00007	52.749
#2	.00056	.01449	.00272	.02247	.07223	.00008	52.527
#3	-.00210	.00973	.00172	.01812	.07241	-.00003	52.617
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**-.00026**	**.00088**	**.04796**	**.01365**	**.97495**	**-.00113**
Stddev	.00017	.00019	.00098	.00112	.02729	.02756	.00273
%RSD	292.44	71.774	112.10	2.3286	199.88	2.8265	242.08
#1	.00014	-.00045	.00171	.04683	.02466	.99491	-.00094
#2	-.00019	-.00007	.00113	.04799	-.01742	.94351	.00151
#3	-.00013	-.00027	-.00021	.04906	.03372	.98644	-.00394
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.1969**	**.00643**	**.00063**	**5.1989**	**-.00002**	**-.00349**	**.00086**
Stddev	.0425	.00128	.00039	.0259	.00054	.00066	.00070
%RSD	.46158	19.866	62.930	.49885	2968.8	18.958	80.846
#1	9.2028	.00590	.00018	5.2225	.00004	-.00302	.00159
#2	9.2361	.00789	.00076	5.1711	-.00059	-.00425	.00020
#3	9.1518	.00550	.00094	5.2030	.00049	-.00321	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703138301 Acquired: 3/29/2017 13:15:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00042**	**.00401**	**4.0351**	**.00032**	**.20735**	**-.00279**	**-.00138**
Stddev	.00179	.00372	.0160	.00048	.00061	.00337	.00088
%RSD	423.00	92.700	.39599	152.15	.29505	120.46	63.922
#1	.00104	.00770	4.0256	.00030	.20723	-.00643	-.00060
#2	-.00241	.00027	4.0262	-.00015	.20802	.00022	-.00120
#3	.00010	.00406	4.0535	.00081	.20681	-.00217	-.00234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00060**	**.00472**	F **-.16969**
Stddev	.00026	.00004	.20492
%RSD	43.104	.95077	120.76
#1	-.00030	.00477	-.25797
#2	-.00069	.00472	.06457
#3	-.00079	.00468	-.31568
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14199.**	**94473.**	**3490.8**
Stddev	38.	796.	44.2
%RSD	.26987	.84255	1.2655
#1	14223.	94299.	3440.5
#2	14155.	93777.	3508.5
#3	14219.	95341.	3523.3

Approved: March 30, 2017

Sample Name: L1703138301S Acquired: 3/29/2017 13:18:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19008**	**4.7308**	**.18912**	**.94056**	**.55412**	**.02341**	**55.972**
Stddev	.00213	.0299	.00272	.00842	.00755	.00013	.577
%RSD	1.1218	.63212	1.4364	.89525	1.3623	.54522	1.0312
#1	.19254	4.7638	.19226	.94529	.54858	.02353	55.589
#2	.18892	4.7054	.18751	.93084	.55106	.02328	55.690
#3	.18878	4.7232	.18759	.94556	.56271	.02344	56.635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02390**	**.09583**	**.23721**	**.28161**	**1.9095**	**24.972**	**.48109**
Stddev	.00025	.00039	.00114	.00054	.0274	.127	.00111
%RSD	1.0385	.40741	.48050	.19307	1.4351	.50888	.23047
#1	.02362	.09595	.23843	.28209	1.9219	24.936	.48002
#2	.02406	.09540	.23618	.28102	1.8781	24.866	.48223
#3	.02403	.09615	.23702	.28172	1.9286	25.113	.48103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**13.601**	**.25039**	**.47488**	**28.899**	**.23707**	**4.7519**	**.24204**
Stddev	.085	.00260	.00106	.206	.00177	.0172	.00120
%RSD	.62772	1.0384	.22258	.71197	.74676	.36193	.49468
#1	13.572	.25319	.47583	28.779	.23892	4.7548	.24175
#2	13.535	.24806	.47374	28.781	.23539	4.7335	.24101
#3	13.698	.24991	.47508	29.136	.23690	4.7675	.24336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703138301S Acquired: 3/29/2017 13:18:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.57619**	**.18771**	**6.3662**	**.48784**	**.68958**	**.47478**	**.24232**
Stddev	.00544	.00246	.0185	.00157	.00635	.01155	.00192
%RSD	.94329	1.3112	.29029	.32243	.92129	2.4322	.79097
#1	.58176	.18902	6.3771	.48832	.68490	.46487	.24451
#2	.57091	.18923	6.3449	.48609	.68704	.47201	.24099
#3	.57590	.18487	6.3767	.48912	.69681	.48746	.24145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.48065**	**.47232**	F **-.20365**
Stddev	.00244	.00062	.16533
%RSD	.50681	.13057	81.182
#1	.48340	.47263	-.03934
#2	.47875	.47161	-.20163
#3	.47981	.47273	-.36998
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14186.**	**93709.**	**3486.5**
Stddev	92.	500.	23.5
%RSD	.64632	.53318	.67455
#1	14280.	93138.	3510.4
#2	14096.	93921.	3463.4
#3	14182.	94067.	3485.7

Approved: March 30, 2017

Sample Name: L1703138301SD Acquired: 3/29/2017 13:32:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18900**	**4.7430**	**.19015**	**.93715**	**.54815**	**.02351**	**56.118**	**.02357**
Stddev	.00153	.0388	.00534	.00699	.00407	.00006	.494	.00013
%RSD	.80763	.81811	2.8078	.74595	.74275	.26022	.87968	.56766
#1	.18743	4.7163	.18964	.93069	.54587	.02346	55.773	.02342
#2	.18908	4.7252	.19573	.93620	.55285	.02349	56.683	.02364
#3	.19048	4.7876	.18509	.94457	.54573	.02358	55.897	.02365
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09587**	**.23760**	**.28305**	**1.9517**	**24.938**	**.48545**	**13.544**	**.24674**
Stddev	.00084	.00149	.00444	.0186	.147	.00087	.236	.00211
%RSD	.87561	.62632	1.5669	.95224	.59069	.17945	1.7398	.85676
#1	.09491	.23621	.27865	1.9698	24.832	.48636	13.362	.24549
#2	.09625	.23741	.28752	1.9326	25.106	.48462	13.810	.24918
#3	.09646	.23917	.28298	1.9526	24.875	.48537	13.459	.24555
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47950**	**29.233**	**.23860**	**4.7660**	**.24801**	**.58006**	**.18756**	**6.4994**
Stddev	.00691	.205	.00329	.0606	.00540	.00880	.00567	.1006
%RSD	1.4403	.70137	1.3785	1.2718	2.1785	1.5170	3.0209	1.5482
#1	.47232	29.116	.23529	4.7025	.24233	.57107	.18811	6.3971
#2	.48609	29.470	.24186	4.8233	.25309	.58865	.19294	6.5983
#3	.48008	29.113	.23865	4.7723	.24861	.58046	.18164	6.5029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703138301SD Acquired: 3/29/2017 13:32:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48976**	**.68467**	**.47754**	**.24562**	**.48123**	**.47778**	**.03413**
Stddev	.00631	.00468	.00917	.00498	.00097	.00781	.19252
%RSD	1.2875	.68367	1.9192	2.0260	.20219	1.6337	564.12
#1	.48366	.68052	.46699	.24045	.48110	.46980	.24485
#2	.49625	.68974	.48207	.25038	.48033	.48539	-.13256
#3	.48938	.68374	.48355	.24603	.48226	.47817	-.00991
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14034.**	**93678.**	**3459.0**
Stddev	264.	941.	86.4
%RSD	1.8818	1.0048	2.4973
#1	14250.	93634.	3468.4
#2	13739.	94641.	3368.4
#3	14112.	92760.	3540.4

Approved: March 30, 2017

Sample Name: L1703126601 Acquired: 3/29/2017 13:36:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00152**	**.02818**	**-.00019**	**.03739**	**.01600**	**.00004**	**1.1020**	**-.00020**
Stddev	.00027	.00698	.00178	.00193	.00140	.00011	.0591	.00024
%RSD	17.787	24.767	931.85	5.1689	8.7676	298.99	5.3609	120.78
#1	-.00126	.02015	-.00068	.03555	.01537	-.00008	1.0421	-.00023
#2	-.00149	.03283	-.00168	.03721	.01503	.00013	1.1036	-.00043
#3	-.00180	.03155	.00179	.03940	.01761	.00007	1.1602	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00147**	**-.00000**	**.00069**	**.20156**	**2.0567**	**-.00721**	**.56221**	**.02092**
Stddev	.00031	.00108	.00034	.01491	.0344	.00554	.10959	.00122
%RSD	21.118	54559.	48.811	7.3999	1.6723	76.852	19.493	5.8364
#1	.00126	.00043	.00075	.21641	2.0172	-.01279	.63700	.02220
#2	.00182	.00079	.00033	.20168	2.0798	-.00170	.61323	.02079
#3	.00132	-.00123	.00100	.18658	2.0731	-.00714	.43642	.01976
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**42.074**	**.00016**	**.00284**	**.00268**	**-.00197**	**.00088**	**4.1765**
Stddev	.00037	.176	.00125	.00227	.00119	.00382	.00377	.0259
%RSD	348.91	.41923	792.79	79.742	44.442	193.84	427.55	.61932
#1	-.00026	42.219	-.00055	.00303	.00252	.00191	.00492	4.1845
#2	.00009	42.126	.00160	.00049	.00395	-.00573	.00028	4.1475
#3	.00048	41.878	-.00058	.00501	.00158	-.00209	-.00255	4.1974
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703126601 Acquired: 3/29/2017 13:36:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00090**	**.00736**	**-.00085**	**.00102**	**-.00002**	**.00312**	**-.01220**
Stddev	.00053	.00025	.00978	.00222	.00049	.00009	.17514
%RSD	58.606	3.4354	1153.8	217.96	2289.9	2.8163	1435.7
#1	.00108	.00765	.00158	.00279	-.00028	.00322	-.00891
#2	.00030	.00722	.00749	-.00147	-.00033	.00306	-.18896
#3	.00131	.00720	-.01162	.00174	.00054	.00308	.16127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14100.**	**94284.**	**3564.2**
Stddev	143.	1374.	44.5
%RSD	1.0152	1.4571	1.2486
#1	14222.	95760.	3608.5
#2	14135.	93043.	3564.4
#3	13942.	94048.	3519.5

Approved: March 30, 2017

Sample Name: L1703126601PS Acquired: 3/29/2017 13:40:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607804-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19119**	**4.8405**	**.19151**	**.96830**	**.49122**	**.02406**	**5.6027**	**.02422**
Stddev	.00617	.1125	.00269	.02140	.01259	.00052	.2071	.00016
%RSD	3.2250	2.3241	1.4046	2.2103	2.5633	2.1570	3.6966	.64448
#1	.18469	4.7483	.19321	.94715	.49659	.02358	5.6798	.02429
#2	.19696	4.9658	.18841	.98995	.50024	.02461	5.7601	.02432
#3	.19192	4.8073	.19291	.96781	.47684	.02398	5.3680	.02404
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10062**	**.24292**	**.24812**	**2.0798**	**25.528**	**.48352**	**5.2755**	**.25571**
Stddev	.00034	.00548	.00079	.0466	.668	.01505	.1012	.00944
%RSD	.34267	2.2578	.31742	2.2428	2.6164	3.1121	1.9175	3.6912
#1	.10090	.23798	.24869	2.0943	25.758	.48857	5.2847	.26286
#2	.10024	.24882	.24722	2.1174	26.050	.49539	5.3717	.25927
#3	.10071	.24195	.24845	2.0276	24.776	.46660	5.1700	.24501
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48273**	**60.148**	**.24846**	**4.7687**	**.24847**	**.57697**	**.18765**	**6.3132**
Stddev	.00061	1.665	.00164	.0097	.00369	.00221	.00043	.0212
%RSD	.12613	2.7678	.65842	.20314	1.4847	.38368	.23163	.33538
#1	.48330	61.035	.25033	4.7797	.24681	.57603	.18800	6.3377
#2	.48209	61.182	.24726	4.7614	.24590	.57538	.18717	6.3000
#3	.48281	58.228	.24780	4.7650	.25270	.57950	.18780	6.3021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703126601PS Acquired: 3/29/2017 13:40:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607804-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49772**	**.48493**	**.47316**	**.24895**	**.48963**	**.49300**	**.09858**
Stddev	.00343	.01328	.00771	.00193	.01209	.00106	.06254
%RSD	.68823	2.7391	1.6300	.77326	2.4698	.21448	63.439
#1	.50168	.49009	.47568	.25109	.47887	.49422	.02749
#2	.49570	.49486	.47930	.24838	.50272	.49231	.14512
#3	.49580	.46984	.46451	.24737	.48731	.49247	.12314
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14238.**	**94479.**	**3534.3**
Stddev	186.	2139.	108.2
%RSD	1.3074	2.2634	3.0602
#1	14414.	95708.	3419.1
#2	14044.	92010.	3550.1
#3	14257.	95719.	3633.7

Approved: March 30, 2017

Sample Name: L1703126601SDL Acquired: 3/29/2017 13:43:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG607804-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00033**	**.00059**	**.00382**	**.00780**	**.00352**	**.00011**	**.15103**
Stddev	.00101	.00254	.00094	.00102	.00160	.00005	.02567
%RSD	301.47	429.08	24.584	13.026	45.550	47.666	16.996
#1	-.00081	-.00003	.00459	.00663	.00536	.00017	.17762
#2	.00082	-.00158	.00277	.00848	.00238	.00010	.12639
#3	-.00102	.00338	.00409	.00829	.00283	.00007	.14909
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.00037**	**-.00049**	**.00008**	**.02104**	**.36449**	**-.00469**
Stddev	.00007	.00016	.00065	.00115	.02525	.04659	.00393
%RSD	81.550	42.930	132.40	1368.0	119.99	12.783	83.694
#1	-.00016	.00042	-.00113	.00065	-.00752	.32334	-.00078
#2	-.00006	.00049	-.00052	.00084	.03027	.41508	-.00863
#3	-.00003	.00019	.00017	-.00124	.04037	.35507	-.00466
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.07599**	**.00363**	**-.00025**	**7.9535**	**.00016**	**-.00006**	**.00165**
Stddev	.05537	.00147	.00026	.0317	.00073	.00169	.00345
%RSD	72.872	40.418	103.26	.39876	463.07	2756.1	209.44
#1	.08760	.00525	-.00001	7.9370	.00026	.00166	-.00231
#2	.12463	.00323	-.00052	7.9900	-.00062	-.00011	.00324
#3	.01573	.00240	-.00022	7.9334	.00083	-.00173	.00401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703126601SDL Acquired: 3/29/2017 13:43:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG607804-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00143**	**-.00166**	**.79214**	**.00016**	**.00116**	**-.00177**	**.00188**
Stddev	.00627	.00130	.02078	.00056	.00099	.00394	.00425
%RSD	437.01	78.485	2.6238	353.05	85.132	222.79	225.89
#1	.00578	-.00308	.76931	-.00038	.00230	-.00557	-.00290
#2	-.00553	-.00053	.79712	.00073	.00062	-.00202	.00524
#3	-.00455	-.00137	.80997	.00013	.00056	.00229	.00330
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00041**	**.00453**	F **-.07491**
Stddev	.00047	.00023	.14903
%RSD	116.41	5.0751	198.94
#1	.00031	.00427	-.18014
#2	-.00001	.00464	-.14022
#3	.00092	.00469	.09563
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14559.**	**96091.**	**3529.8**
Stddev	257.	1379.	100.9
%RSD	1.7625	1.4354	2.8578
#1	14835.	94525.	3417.8
#2	14515.	97125.	3558.0
#3	14327.	96624.	3613.6

Approved: March 30, 2017

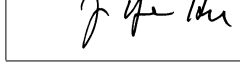
Sample Name: L1703126602 Acquired: 3/29/2017 13:47:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.03249**	**-.00020**	**.03335**	**.10374**	**.00016**	**25.506**
Stddev	.00090	.00305	.00293	.00304	.00099	.00005	.226
%RSD	607.39	9.3963	1428.7	9.1072	.95821	33.089	.88425
#1	.00082	.02989	-.00108	.03674	.10431	.00017	25.507
#2	-.00095	.03174	.00306	.03086	.10431	.00010	25.731
#3	-.00031	.03585	-.00260	.03246	.10259	.00020	25.279
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**.00659**	**-.00023**	**.00067**	**2.6961**	**4.7787**	**-.00093**
Stddev	.00018	.00035	.00060	.00018	.0364	.1927	.00335
%RSD	113.99	5.3052	257.78	26.203	1.3502	4.0319	360.89
#1	.00014	.00628	-.00002	.00048	2.7162	4.6313	-.00208
#2	.00036	.00697	-.00091	.00083	2.7180	4.9967	-.00355
#3	-.00001	.00653	.00023	.00070	2.6541	4.7080	.00285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.043**	**.65691**	**-.00015**	**60.335**	**.01099**	**-.00416**	**-.00009**
Stddev	.200	.00332	.00035	.420	.00122	.00597	.00266
%RSD	1.9917	.50502	235.34	.69548	11.111	143.53	3113.8
#1	10.076	.65489	-.00050	60.551	.01008	.00081	.00293
#2	10.224	.66074	.00020	60.602	.01237	-.01077	-.00206
#3	9.8285	.65510	-.00015	59.851	.01050	-.00251	-.00113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: L1703126602 Acquired: 3/29/2017 13:47:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00029**	**.00255**	**1.8385**	**.00016**	**.14829**	**.00272**	**-.00089**
Stddev	.00139	.00358	.0033	.00028	.00122	.00704	.00085
%RSD	485.53	140.27	.17972	179.18	.81936	258.61	95.342
#1	.00189	.00668	1.8413	.00026	.14913	.00956	-.00002
#2	-.00051	.00070	1.8348	-.00016	.14884	.00312	-.00093
#3	-.00052	.00027	1.8393	.00037	.14690	-.00451	-.00172
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00042**	**.01654**	F **-.14626**
Stddev	.00058	.00012	.33550
%RSD	140.22	.72098	229.39
#1	.00012	.01661	-.23262
#2	-.00104	.01640	.22398
#3	-.00032	.01661	-.43015
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14063.**	**93886.**	**3458.4**
Stddev	120.	1451.	65.1
%RSD	.85646	1.5454	1.8816
#1	14191.	93642.	3483.1
#2	13952.	92572.	3384.6
#3	14045.	95443.	3507.6

Approved: March 30, 2017

Sample Name: L1703133902 Acquired: 3/29/2017 13:51:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.00226**	**.00339**	**-.00152**	**.08014**	**.00007**	**2.4925**
Stddev	.00244	.00455	.00087	.00053	.00197	.00003	.0548
%RSD	1243.5	200.83	25.756	34.776	2.4619	43.095	2.1980
#1	.00116	-.00114	.00384	-.00092	.08194	.00007	2.4878
#2	.00126	.00743	.00239	-.00192	.07803	.00004	2.4402
#3	-.00302	.00050	.00396	-.00172	.08045	.00009	2.5494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**.00032**	**.00001**	**-.00101**	**-.00507**	**-.01537**	**-.00440**
Stddev	.00014	.00022	.00094	.00059	.01495	.09364	.00731
%RSD	52.443	68.782	15148.	57.693	294.77	609.39	166.19
#1	-.00044	.00047	-.00013	-.00037	-.00088	.08739	-.01284
#2	-.00022	.00043	.00101	-.00152	-.02166	-.09588	-.00003
#3	-.00016	.00007	-.00086	-.00115	.00734	-.03760	-.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.9490**	**.00619**	**.00006**	**7.3057**	**-.00015**	**.00582**	**.00008**
Stddev	.0405	.00308	.00018	.0831	.00011	.00801	.00221
%RSD	2.0771	49.761	287.40	1.1374	68.266	137.69	2751.6
#1	1.9079	.00899	.00022	7.4010	-.00006	.00119	.00252
#2	1.9889	.00289	.00010	7.2486	-.00014	.01506	-.00179
#3	1.9503	.00670	-.00013	7.2675	-.00026	.00119	-.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703133902 Acquired: 3/29/2017 13:51:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00137**	**-.00143**	**.15419**	**-.00040**	**.06013**	**.00055**	**-.00095**
Stddev	.00125	.00875	.00180	.00040	.00068	.00388	.00196
%RSD	91.281	613.89	1.1701	99.042	1.1297	701.72	207.43
#1	-.00188	.00745	.15566	-.00083	.05936	.00126	.00131
#2	-.00229	-.00168	.15473	-.00036	.06040	-.00363	-.00228
#3	.00005	-.01005	.15218	-.00003	.06063	.00403	-.00186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00034**	**.00160**	F **-.28265**
Stddev	.00020	.00002	.23592
%RSD	59.593	.93923	83.464
#1	.00048	.00160	-.27236
#2	.00043	.00161	-.05206
#3	.00011	.00158	-.52355
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13794.**	**91893.**	**3287.7**
Stddev	131.	2556.	60.6
%RSD	.95054	2.7819	1.8425
#1	13920.	94714.	3221.5
#2	13805.	91237.	3301.3
#3	13659.	89729.	3340.3

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 13:55:12 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **.35870**	**9.0972**	**.36446**	F **.44570**	**.94614**	**.04543**	**9.3631**
Stddev	.00414	.0308	.00900	.00280	.01402	.00018	.1592
%RSD	1.1551	.33844	2.4698	.62747	1.4821	.39497	1.6999
#1	.35405	9.0643	.35965	.44414	.93807	.04526	9.2920
#2	.36008	9.1020	.35888	.44404	.96233	.04541	9.5455
#3	.36199	9.1253	.37484	.44893	.93801	.04562	9.2519
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value	.40000			.50000			
Range	-10.000%			-10.000%			

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04711**	**.19000**	F **.44711**	**.47199**	**3.7310**	**48.151**	**.94995**
Stddev	.00026	.00220	.00185	.00539	.0413	.620	.01479
%RSD	.55766	1.1583	.41297	1.1419	1.1066	1.2868	1.5570
#1	.04705	.18971	.44569	.47003	3.7163	47.785	.94458
#2	.04689	.18795	.44644	.46786	3.7776	48.866	.96667
#3	.04740	.19232	.44920	.47809	3.6991	47.800	.93859
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			.50000				
Range			-10.000%				

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.4107**	**.47016**	**.93186**	**47.490**	**.46253**	**9.0965**	**.46245**
Stddev	.0813	.00886	.00912	.672	.00597	.1001	.00196
%RSD	.86419	1.8840	.97876	1.4145	1.2907	1.1003	.42304
#1	9.4215	.47074	.92731	47.282	.45907	9.0522	.46124
#2	9.4860	.47872	.92592	48.241	.45910	9.0262	.46140
#3	9.3245	.46103	.94237	46.947	.46943	9.2111	.46471
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 13:55:12 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0886**	**.36276**	**4.6208**	**.93626**	**.93873**	**.93812**	**.47834**
Stddev	.0124	.00106	.0508	.00885	.01370	.01142	.00320
%RSD	1.1400	.29223	1.0997	.94504	1.4589	1.2176	.66865
#1	1.0805	.36158	4.5924	.93335	.93538	.93277	.47789
#2	1.0824	.36363	4.5906	.92924	.95379	.95123	.47538
#3	1.1029	.36307	4.6795	.94620	.92702	.93035	.48173
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.91995**	**.91854**	F **.19407**
Stddev	.00472	.00966	.32085
%RSD	.51276	1.0521	165.33
#1	.91450	.91276	.17066
#2	.92250	.91316	-.11444
#3	.92284	.92969	.52599
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14058.**	**95112.**	**3461.3**
Stddev	119.	395.	128.8
%RSD	.84907	.41551	3.7198
#1	14145.	95500.	3569.4
#2	14107.	95126.	3318.8
#3	13922.	94710.	3495.7

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 13:58:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00136**	**.00410**	**-.00058**	**.00118**	**.00192**	**.00008**	**-.03886**
Stddev	.00108	.00637	.00558	.00090	.00106	.00007	.12452
%RSD	79.829	155.29	958.42	75.763	55.006	90.601	320.45
#1	-.00191	-.00139	.00479	.00123	.00147	.00016	-.12948
#2	-.00205	.00260	-.00634	.00205	.00313	.00005	-.09023
#3	-.00011	.01109	-.00020	.00026	.00117	.00003	.10313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**.00014**	**-.00086**	**-.00098**	**-.01231**	**-.01541**	**.00041**
Stddev	.00025	.00013	.00041	.00013	.00515	.04372	.00467
%RSD	100.53	91.098	47.200	13.617	41.806	283.72	1133.2
#1	-.00022	.00005	-.00116	-.00098	-.01345	.02463	.00556
#2	-.00051	.00009	-.00102	-.00085	-.01679	-.00880	-.00356
#3	-.00002	.00029	-.00040	-.00112	-.00669	-.06206	-.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01197**	**.00083**	**.00015**	**-.00987**	**-.00039**	**-.00449**	**.00087**
Stddev	.15502	.00231	.00016	.05350	.00024	.00560	.00336
%RSD	1295.2	277.04	105.89	542.03	62.514	124.69	383.80
#1	-.08830	.00347	.00017	-.04545	-.00014	-.00936	-.00284
#2	-.11403	-.00084	-.00001	.05165	-.00040	.00163	.00178
#3	.16642	-.00013	.00031	-.03581	-.00063	-.00575	.00369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 13:58:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00063**	**.00088**	**.00402**	**.00015**	**.00011**	**.00026**	**.00079**
Stddev	.00233	.00245	.00081	.00086	.00058	.00942	.00241
%RSD	371.54	277.17	20.129	582.49	539.31	3640.9	306.11
#1	-.00272	.00167	.00417	-.00024	-.00044	-.00799	-.00120
#2	-.00104	-.00186	.00473	.00113	.00004	-.00175	.00347
#3	.00188	.00285	.00314	-.00045	.00072	.01052	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00083**	**.00016**	F **-.04379**
Stddev	.00149	.00021	.42371
%RSD	180.64	135.64	967.68
#1	-.00016	.00030	-.25008
#2	.00009	.00026	-.32485
#3	.00254	-.00009	.44357
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14240.**	**96326.**	**3489.9**
Stddev	96.	1276.	83.7
%RSD	.67597	1.3250	2.3984
#1	14322.	97307.	3586.2
#2	14134.	96788.	3448.4
#3	14264.	94883.	3435.0

Approved: March 30, 2017

Sample Name: L1703133904 Acquired: 3/29/2017 14:02:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**.00333**	**.00207**	**.00316**	**.08014**	**.00009**	**2.5160**
Stddev	.00152	.00117	.00164	.00189	.00238	.00007	.0255
%RSD	559.02	35.093	79.386	59.751	2.9725	72.712	1.0121
#1	-.00119	.00457	.00317	.00218	.08254	.00012	2.4954
#2	.00185	.00226	.00285	.00534	.07778	.00002	2.5080
#3	.00016	.00314	.00018	.00197	.08009	.00014	2.5445
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**.00003**	**-.00103**	**.00004**	**.01879**	**-.00964**	**-.00929**
Stddev	.00022	.00025	.00032	.00100	.01146	.10982	.00520
%RSD	61.325	913.47	31.472	2781.7	60.983	1138.8	55.983
#1	-.00056	-.00025	-.00069	.00118	.01649	-.00848	-.00736
#2	-.00013	.00013	-.00106	-.00039	.00865	-.12004	-.00533
#3	-.00037	.00020	-.00134	-.00068	.03121	.09959	-.01518
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.9605**	**.00659**	**-.00015**	**7.2759**	**-.00133**	**.00297**	**.00047**
Stddev	.0030	.00198	.00007	.0343	.00101	.00199	.00164
%RSD	.15238	30.093	47.804	.47205	75.914	67.176	349.75
#1	1.9572	.00447	-.00008	7.2825	-.00018	.00499	-.00112
#2	1.9610	.00688	-.00022	7.2388	-.00174	.00292	.00216
#3	1.9631	.00841	-.00014	7.3065	-.00207	.00100	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703133904 Acquired: 3/29/2017 14:02:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00192**	**.00222**	**.15610**	**.00028**	**.06049**	**.00078**	**-.00020**
Stddev	.00455	.00081	.00171	.00057	.00047	.00568	.00173
%RSD	236.62	36.655	1.0942	205.47	.77006	725.82	873.68
#1	.00527	.00181	.15668	.00093	.06101	-.00119	-.00196
#2	.00374	.00168	.15418	-.00012	.06011	-.00365	-.00013
#3	-.00325	.00315	.15745	.00003	.06035	.00719	.00150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00101**	**.00100**	F **-.34997**
Stddev	.00040	.00006	.10596
%RSD	39.777	5.9649	30.276
#1	.00071	.00102	-.34905
#2	.00087	.00093	-.24448
#3	.00147	.00104	-.45638
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13690.**	**89814.**	**3240.9**
Stddev	81.	651.	54.6
%RSD	.58876	.72482	1.6838
#1	13662.	90547.	3242.8
#2	13627.	89305.	3294.4
#3	13781.	89588.	3185.4

Approved: March 30, 2017

Sample Name: L1703133905 Acquired: 3/29/2017 14:06:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.00961**	**.00395**	**.00058**	**.23733**	**.00014**	**6.1842**
Stddev	.00067	.00709	.00162	.00146	.00075	.00008	.0468
%RSD	336.52	73.793	40.987	252.29	.31550	56.073	.75658
#1	-.00042	.01127	.00283	.00045	.23647	.00020	6.1698
#2	.00055	.00183	.00320	.00210	.23774	.00016	6.1462
#3	-.00073	.01572	.00580	-.00081	.23779	.00005	6.2364
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.00466**	**.00040**	**-.00018**	**1.0598**	**.24426**	**.00261**
Stddev	.00026	.00064	.00087	.00055	.0148	.09696	.00380
%RSD	145.87	13.714	216.03	309.90	1.3970	39.695	145.50
#1	-.00038	.00477	.00103	-.00036	1.0762	.16235	.00501
#2	.00011	.00398	.00078	.00044	1.0557	.35132	-.00177
#3	-.00026	.00524	-.00059	-.00061	1.0475	.21911	.00460
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.7281**	**.26947**	**.00028**	**19.129**	**.00331**	**.00625**	**-.00199**
Stddev	.1114	.00126	.00026	.065	.00045	.00503	.00161
%RSD	2.3563	.46673	91.902	.33750	13.484	80.531	80.586
#1	4.6911	.26820	.00007	19.167	.00374	.00741	-.00014
#2	4.8533	.27071	.00056	19.054	.00285	.01061	-.00279
#3	4.6399	.26949	.00020	19.165	.00333	.00074	-.00305
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703133905 Acquired: 3/29/2017 14:06:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00160**	**.00133**	**2.7248**	**.00032**	**.14132**	**-.00299**	**.00075**
Stddev	.00047	.00648	.0022	.00032	.00172	.00750	.00272
%RSD	29.381	487.90	.08018	101.27	1.2157	251.16	364.22
#1	-.00213	.00820	2.7239	.00011	.14302	-.00581	.00264
#2	-.00144	.00048	2.7233	.00015	.14135	.00552	-.00237
#3	-.00123	-.00469	2.7273	.00069	.13958	-.00867	.00198
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00020**	**.00973**	F **-.22547**
Stddev	.00052	.00019	.32240
%RSD	260.01	1.9730	142.99
#1	-.00039	.00981	-.29737
#2	.00039	.00987	-.50585
#3	.00060	.00951	.12680
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13821.**	**90726.**	**3279.5**
Stddev	134.	920.	83.1
%RSD	.96903	1.0139	2.5349
#1	13975.	91315.	3362.6
#2	13731.	91196.	3196.4
#3	13758.	89666.	3279.4

Approved: March 30, 2017

Sample Name: L1703133906 Acquired: 3/29/2017 14:10:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00092**	**.01201**	**.00164**	**.03910**	**.01973**	**.00010**	**1.6058**
Stddev	.00140	.00831	.00221	.00268	.00159	.00017	.0616
%RSD	151.70	69.198	134.52	6.8497	8.0552	166.37	3.8352
#1	-.00127	.00246	.00390	.04024	.01789	-.00005	1.5347
#2	.00062	.01764	.00153	.03604	.02064	.00028	1.6438
#3	-.00211	.01593	-.00051	.04101	.02065	.00007	1.6388
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00049**	**.00026**	**-.00068**	**.08246**	**5.0060**	**.01763**
Stddev	.00013	.00014	.00087	.00060	.02421	.0340	.00094
%RSD	97.015	28.079	336.14	87.732	29.357	.67904	5.3254
#1	-.00022	.00064	-.00074	-.00110	.09356	5.0384	.01674
#2	.00002	.00046	.00080	.00000	.09912	5.0091	.01754
#3	-.00021	.00037	.00072	-.00096	.05469	4.9706	.01861
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.57704**	**.00711**	**.00004**	**21.190**	**-.00068**	**.00092**	**-.00051**
Stddev	.03487	.00081	.00038	.066	.00054	.00829	.00229
%RSD	6.0434	11.451	858.23	.31164	80.554	901.37	446.42
#1	.55915	.00733	-.00014	21.148	-.00046	.01041	-.00164
#2	.55474	.00621	-.00021	21.157	-.00130	-.00487	-.00202
#3	.61723	.00779	.00048	21.266	-.00027	-.00279	.00212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703133906 Acquired: 3/29/2017 14:10:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00119**	**-.00550**	**.72185**	**.00044**	**.09116**	**-.00696**	**-.00053**
Stddev	.00200	.00544	.01190	.00099	.00136	.00004	.00040
%RSD	168.58	99.057	1.6481	223.55	1.4943	.54423	76.432
#1	.00075	-.00585	.70818	.00014	.08960	-.00693	-.00020
#2	-.00106	.00011	.72751	.00155	.09212	-.00700	-.00098
#3	-.00324	-.01076	.72987	-.00036	.09175	-.00695	-.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00033**	**.00146**	F **-.04395**
Stddev	.00036	.00003	.23515
%RSD	108.87	2.3867	535.03
#1	.00074	.00142	-.11419
#2	.00023	.00149	.21832
#3	.00003	.00148	-.23598
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13811.**	**90887.**	**3353.3**
Stddev	144.	475.	22.7
%RSD	1.0420	.52221	.67693
#1	13874.	90474.	3338.6
#2	13913.	90780.	3379.5
#3	13647.	91405.	3341.9

Approved: March 30, 2017

Sample Name: L1703133907 Acquired: 3/29/2017 14:13:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00075**	**-.00149**	**.00317**	**.00239**	**.03879**	**.00012**	**1.1202**
Stddev	.00155	.00723	.00334	.00177	.00158	.00005	.0989
%RSD	206.51	485.56	105.42	74.044	4.0691	40.069	8.8287
#1	-.00121	.00118	-.00049	.00365	.03988	.00017	1.0952
#2	.00098	-.00967	.00607	.00037	.03698	.00010	1.2291
#3	-.00202	.00403	.00394	.00314	.03952	.00008	1.0361
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**-.00003**	**-.00042**	**-.00023**	**2.0310**	**.09433**	**-.00386**
Stddev	.00014	.00052	.00036	.00055	.0096	.19294	.00733
%RSD	89.916	1905.1	83.925	239.15	.47326	204.54	190.05
#1	-.00026	.00052	-.00018	.00033	2.0414	.31704	-.00551
#2	.00000	-.00009	-.00083	-.00076	2.0290	-.01196	.00416
#3	-.00022	-.00051	-.00026	-.00025	2.0225	-.02209	-.01023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.79167**	**.02354**	**-.00011**	**3.8906**	**-.00010**	**.00591**	**.00069**
Stddev	.04516	.00231	.00016	.0274	.00077	.00224	.00380
%RSD	5.7044	9.8301	138.05	.70438	791.76	37.803	546.96
#1	.76128	.02193	.00006	3.8702	-.00066	.00335	.00252
#2	.77016	.02619	-.00024	3.8798	-.00041	.00693	-.00367
#3	.84356	.02250	-.00016	3.9217	.00078	.00746	.00323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703133907 Acquired: 3/29/2017 14:13:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00051**	**.00035**	**.76854**	**-.00058**	**.02488**	**.00342**	**.00190**
Stddev	.00500	.00326	.01160	.00040	.00027	.00718	.00121
%RSD	977.70	926.32	1.5096	69.708	1.0905	209.84	63.797
#1	-.00613	.00406	.76141	-.00034	.02458	.00735	.00060
#2	.00346	-.00097	.76230	-.00035	.02511	.00778	.00299
#3	.00113	-.00204	.78193	-.00104	.02494	-.00487	.00209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00021**	**.00139**	F **-.19732**
Stddev	.00063	.00012	.34597
%RSD	296.53	8.5297	175.33
#1	.00012	.00142	-.31503
#2	-.00037	.00148	-.46908
#3	.00088	.00125	.19214
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13977.**	**93235.**	**3362.3**
Stddev	174.	1236.	24.3
%RSD	1.2451	1.3255	.72162
#1	13986.	93801.	3334.3
#2	14146.	94086.	3376.2
#3	13798.	91817.	3376.5

Approved: March 30, 2017

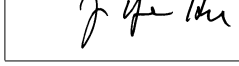
Sample Name: L1703133908 Acquired: 3/29/2017 14:17:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00145**	**.01562**	**.00027**	**.00208**	**.02164**	**.00012**	**1.0939**
Stddev	.00131	.00492	.00322	.00271	.00155	.00008	.0369
%RSD	90.752	31.499	1208.5	130.17	7.1571	68.763	3.3728
#1	.00007	.02117	.00018	-.00033	.02092	.00020	1.0517
#2	-.00226	.01178	-.00291	.00156	.02342	.00014	1.1200
#3	-.00214	.01392	.00353	.00501	.02058	.00003	1.1099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.00032**	**.00090**	**-.00041**	**3.5933**	**.16920**	**-.00485**
Stddev	.00019	.00017	.00046	.00078	.0134	.05849	.00633
%RSD	59.238	52.200	50.754	190.25	.37401	34.566	130.62
#1	-.00029	.00021	.00114	-.00080	3.5928	.14729	.00054
#2	-.00015	.00052	.00119	-.00091	3.5801	.12483	-.00326
#3	-.00052	.00024	.00037	.00049	3.6070	.23547	-.01182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.60471**	**.05387**	**-.00011**	**3.6647**	**.00147**	**.00549**	**-.00087**
Stddev	.12269	.00175	.00011	.0789	.00094	.00350	.00250
%RSD	20.288	3.2429	95.601	2.1519	64.000	63.845	286.48
#1	.61443	.05358	-.00012	3.5871	.00109	.00237	-.00020
#2	.47746	.05228	-.00000	3.7448	.00078	.00928	.00122
#3	.72225	.05574	-.00022	3.6622	.00253	.00481	-.00364
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: L1703133908 Acquired: 3/29/2017 14:17:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00185**	**-.00223**	**.75728**	**.00016**	**.02159**	**.00110**	**.00050**
Stddev	.00270	.00456	.00289	.00069	.00030	.00044	.00139
%RSD	145.86	204.97	.38136	423.30	1.3678	39.545	279.24
#1	.00418	-.00510	.75668	.00067	.02165	.00158	.00204
#2	.00248	-.00461	.76042	-.00062	.02185	.00074	.00009
#3	-.00111	.00304	.75473	.00044	.02127	.00098	-.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00087**	**.00278**	F **-.26601**
Stddev	.00033	.00011	.04791
%RSD	38.051	3.9747	18.010
#1	.00124	.00283	-.28730
#2	.00077	.00286	-.21115
#3	.00060	.00265	-.29958
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13656.**	**89521.**	**3228.0**
Stddev	112.	1664.	27.0
%RSD	.82373	1.8585	.83730
#1	13526.	87675.	3218.9
#2	13730.	89983.	3206.6
#3	13711.	90905.	3258.3

Approved: March 30, 2017

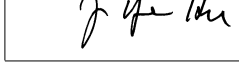
Sample Name: L1703133909 Acquired: 3/29/2017 14:21:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00036**	**.01431**	**.00283**	**-.00091**	**.02373**	**.00013**	**1.1367**
Stddev	.00049	.00279	.00185	.00167	.00107	.00009	.0289
%RSD	133.75	19.473	65.387	182.55	4.5216	72.548	2.5388
#1	-.00092	.01389	.00077	-.00011	.02389	.00016	1.1355
#2	-.00001	.01176	.00435	-.00283	.02259	.00002	1.1662
#3	-.00016	.01729	.00338	.00020	.02472	.00020	1.1085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**-.00013**	**.00137**	**-.00015**	**3.3972**	**.11461**	**-.00446**
Stddev	.00019	.00033	.00087	.00063	.0335	.13589	.00679
%RSD	438.08	249.14	63.676	422.33	.98559	118.56	152.41
#1	-.00004	-.00051	.00038	-.00087	3.4342	.25011	-.00648
#2	.00014	.00003	.00173	.00032	3.3689	-.02167	.00312
#3	-.00023	.00009	.00200	.00010	3.3885	.11540	-.01001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53899**	**.05186**	**-.00010**	**3.5428**	**.00193**	**.00756**	**-.00267**
Stddev	.05289	.00222	.00037	.0351	.00125	.00193	.00376
%RSD	9.8130	4.2733	369.76	.98979	64.769	25.483	140.91
#1	.52368	.05432	-.00030	3.5542	.00205	.00978	-.00542
#2	.49544	.05123	-.00032	3.5034	.00311	.00633	.00162
#3	.59784	.05002	.00032	3.5707	.00062	.00657	-.00421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: L1703133909 Acquired: 3/29/2017 14:21:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00070**	**.00607**	**.72962**	**.00048**	**.02158**	**-.00443**	**.00077**
Stddev	.00131	.00036	.00448	.00056	.00055	.00864	.00174
%RSD	186.60	6.0015	.61343	116.77	2.5466	195.19	226.54
#1	-.00054	.00648	.73194	.00110	.02220	-.01251	-.00034
#2	.00058	.00591	.73246	.00029	.02138	.00468	-.00013
#3	.00207	.00581	.72446	.00004	.02115	-.00545	.00277
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00037**	**.00270**	F **-.33701**
Stddev	.00050	.00010	.43772
%RSD	136.05	3.7238	129.88
#1	.00017	.00280	-.75274
#2	.00093	.00260	-.37811
#3	-.00001	.00270	.11981
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13725.**	**89023.**	**3089.1**
Stddev	179.	763.	76.2
%RSD	1.3009	.85670	2.4662
#1	13586.	89420.	3096.0
#2	13663.	88144.	3161.6
#3	13926.	89506.	3009.7

Approved: March 30, 2017

Sample Name: L1703133911 Acquired: 3/29/2017 14:25:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**.00466**	**.00102**	**.00050**	**.05940**	**.00007**	**1.3717**
Stddev	.00048	.00803	.00233	.00259	.00231	.00012	.0894
%RSD	479.90	172.50	228.36	513.66	3.8950	165.48	6.5184
#1	-.00040	-.00229	.00039	-.00043	.05786	.00003	1.3592
#2	.00054	.00281	-.00093	-.00149	.06206	-.00002	1.2892
#3	.00016	.01345	.00359	.00344	.05828	.00021	1.4667
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**.00034**	**-.00047**	**.00015**	**.55075**	**.00265**	**-.00506**
Stddev	.00004	.00026	.00040	.00098	.01541	.06920	.00465
%RSD	17.538	74.837	84.840	667.18	2.7979	2611.4	91.739
#1	-.00023	.00013	-.00001	-.00026	.55823	.07659	-.00809
#2	-.00026	.00062	-.00071	.00126	.53303	-.00806	-.00739
#3	-.00019	.00028	-.00068	-.00056	.56099	-.06057	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.84432**	**.09813**	**.00022**	**5.2361**	**-.00020**	**.00489**	**.00019**
Stddev	.06045	.00420	.00023	.0517	.00064	.00497	.00256
%RSD	7.1591	4.2836	106.01	.98670	321.91	101.60	1317.4
#1	.91101	.09548	.00020	5.1851	.00041	-.00064	-.00054
#2	.79314	.09593	-.00000	5.2884	-.00015	.00897	-.00192
#3	.82880	.10298	.00045	5.2348	-.00086	.00635	.00304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703133911 Acquired: 3/29/2017 14:25:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00089**	**.00386**	**1.0397**	**.00079**	**.03213**	**-.00230**	**.00060**
Stddev	.00168	.00671	.0113	.00063	.00023	.01332	.00076
%RSD	188.27	174.05	1.0833	80.395	.72946	579.48	126.79
#1	.00222	.00627	1.0267	.00147	.03191	-.01630	.00146
#2	.00146	-.00373	1.0467	.00023	.03237	.01021	.00031
#3	-.00100	.00903	1.0457	.00065	.03210	-.00080	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00062**	**.00129**	F **-.24737**
Stddev	.00029	.00009	.07339
%RSD	47.548	6.5920	29.666
#1	.00029	.00136	-.21362
#2	.00071	.00120	-.19694
#3	.00086	.00132	-.33156
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13989.**	**93452.**	**3354.4**
Stddev	85.	2049.	41.4
%RSD	.60739	2.1926	1.2332
#1	13894.	94438.	3327.2
#2	14015.	94821.	3333.9
#3	14057.	91096.	3402.0

Approved: March 30, 2017

Sample Name: L1703133913 Acquired: 3/29/2017 14:28:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00173**	**.00953**	**.00142**	**.00046**	**.03757**	**.00014**	**1.7717**
Stddev	.00229	.00292	.00162	.00262	.00365	.00010	.0510
%RSD	132.87	30.661	113.66	569.86	9.7252	70.368	2.8802
#1	-.00018	.00882	-.00012	.00148	.03488	.00024	1.7811
#2	-.00436	.01274	.00311	-.00251	.04173	.00010	1.7167
#3	-.00064	.00703	.00128	.00241	.03609	.00006	1.8174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.00072**	**-.00030**	**-.00071**	**2.2686**	**.22905**	**-.00519**
Stddev	.00026	.00005	.00058	.00094	.0338	.13791	.00546
%RSD	118.51	6.3618	192.55	133.60	1.4913	60.209	105.24
#1	-.00017	.00077	-.00093	-.00030	2.2350	.38770	.00061
#2	-.00050	.00070	.00022	-.00004	2.3027	.16158	-.01024
#3	.00002	.00069	-.00019	-.00179	2.2682	.13786	-.00593
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99104**	**.04082**	**-.00012**	**8.6813**	**.00316**	**-.00256**	**.00212**
Stddev	.04752	.00104	.00033	.0670	.00050	.00514	.00101
%RSD	4.7947	2.5370	285.97	.77221	15.865	200.95	47.504
#1	.97764	.04170	-.00008	8.6201	.00357	.00077	.00127
#2	1.0438	.04107	.00020	8.6707	.00260	-.00847	.00186
#3	.95166	.03968	-.00047	8.7530	.00332	.00004	.00324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703133913 Acquired: 3/29/2017 14:28:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00048**	**.00201**	**.99036**	**.00012**	**.03845**	**.00172**	**-.00031**
Stddev	.00130	.00235	.02503	.00026	.00042	.00668	.00057
%RSD	270.90	117.13	2.5272	206.79	1.0928	388.77	184.17
#1	.00179	-.00071	.96569	.00039	.03797	.00034	-.00021
#2	.00045	.00334	.98966	-.00012	.03873	-.00417	-.00093
#3	-.00080	.00339	1.0157	.00010	.03866	.00899	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00021**	**.00244**	F **-.41220**
Stddev	.00113	.00020	.20038
%RSD	540.73	8.0580	48.614
#1	.00145	.00224	-.18118
#2	-.00007	.00263	-.51638
#3	-.00075	.00246	-.53903
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13914.**	**94110.**	**3290.3**
Stddev	72.	1278.	66.0
%RSD	.52056	1.3575	2.0048
#1	13860.	92637.	3290.6
#2	13885.	94779.	3224.1
#3	13996.	94915.	3356.0

Approved: March 30, 2017

Sample Name: L1703133915 Acquired: 3/29/2017 14:32:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00036**	**1.3768**	**.00234**	**.00072**	**.02356**	**.00020**	**.96773**
Stddev	.00111	.0227	.00194	.00132	.00077	.00002	.05419
%RSD	308.09	1.6453	82.854	183.47	3.2620	10.709	5.5995
#1	-.00029	1.3609	.00304	-.00057	.02313	.00021	.92308
#2	-.00027	1.3667	.00384	.00066	.02310	.00018	1.0280
#3	.00164	1.4027	.00015	.00207	.02444	.00022	.95209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.00082**	**.00308**	**.00275**	**2.2473**	**.06470**	**-.00748**
Stddev	.00008	.00009	.00121	.00083	.0302	.23936	.00570
%RSD	117.57	10.429	39.460	30.297	1.3439	369.95	76.234
#1	-.00004	.00086	.00287	.00366	2.2230	.13657	-.00927
#2	-.00015	.00072	.00198	.00203	2.2378	-.20236	-.00110
#3	-.00000	.00088	.00438	.00255	2.2811	.25989	-.01207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42505**	**.06209**	**-.00008**	**3.8550**	**.00320**	**.02508**	**.00178**
Stddev	.02386	.00222	.00031	.0436	.00037	.00655	.00160
%RSD	5.6125	3.5788	405.94	1.1308	11.645	26.126	90.030
#1	.42834	.06251	-.00018	3.8395	.00337	.02616	.00001
#2	.39972	.05969	.00027	3.9042	.00277	.01806	.00313
#3	.44709	.06408	-.00032	3.8212	.00345	.03103	.00219
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703133915 Acquired: 3/29/2017 14:32:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**.00096**	**2.2156**	**.00052**	**.01463**	**.00493**	**-.00094**
Stddev	.00490	.00277	.0233	.00065	.00079	.00612	.00125
%RSD	1423.3	288.72	1.0530	125.06	5.4208	124.15	133.10
#1	-.00593	.00019	2.1888	-.00006	.01372	-.00203	-.00235
#2	.00163	-.00135	2.2274	.00040	.01516	.00948	.00006
#3	.00326	.00404	2.2308	.00121	.01501	.00734	-.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00263**	**.00866**	F **-.35385**
Stddev	.00137	.00009	.23338
%RSD	52.010	1.0940	65.954
#1	.00210	.00861	-.19531
#2	.00418	.00859	-.24439
#3	.00160	.00876	-.62184
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14004.**	**94297.**	**3294.2**
Stddev	266.	1094.	62.4
%RSD	1.9024	1.1596	1.8938
#1	14291.	95544.	3354.8
#2	13764.	93503.	3230.2
#3	13956.	93843.	3297.6

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 14:36:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38497**	**9.7919**	**.38724**	**.47675**	**.97619**	**.04886**	**9.5704**
Stddev	.00177	.0568	.00230	.00343	.00697	.00017	.1153
%RSD	.45911	.58011	.59399	.72031	.71397	.34048	1.2046
#1	.38442	9.8043	.38923	.47283	.96818	.04875	9.4830
#2	.38694	9.8414	.38776	.47819	.97953	.04905	9.7011
#3	.38353	9.7299	.38472	.47923	.98086	.04878	9.5273
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05005**	**.20206**	**.48052**	**.50016**	**3.8256**	**49.327**	**.97507**
Stddev	.00024	.00094	.00249	.00331	.0265	.596	.00686
%RSD	.47443	.46456	.51817	.66256	.69373	1.2083	.70332
#1	.05030	.20311	.48032	.50385	3.8322	48.711	.96868
#2	.04983	.20177	.48311	.49922	3.7964	49.370	.98231
#3	.05002	.20130	.47814	.49742	3.8482	49.901	.97420
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.6541**	**.48612**	**.98581**	**48.567**	**.49024**	**9.6762**	**.48958**
Stddev	.0649	.00669	.00561	.510	.00352	.0339	.00098
%RSD	.67190	1.3767	.56913	1.0504	.71776	.35029	.19999
#1	9.6553	.47843	.99221	48.004	.49428	9.7146	.49064
#2	9.5887	.48924	.98172	48.701	.48784	9.6505	.48871
#3	9.7184	.49067	.98351	48.998	.48860	9.6635	.48941
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 14:36:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1509**	**.38371**	**4.8710**	**.99650**	**.96721**	**.96829**	**.50155**
Stddev	.0036	.00614	.0191	.00628	.00875	.01828	.00314
%RSD	.31500	1.6005	.39238	.63017	.90484	1.8876	.62686
#1	1.1545	.39057	4.8775	1.0035	.95849	.94749	.50190
#2	1.1473	.38184	4.8859	.99447	.96715	.98182	.49825
#3	1.1509	.37872	4.8494	.99148	.97599	.97555	.50451
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.98807**	**.97392**	F **.25576**
Stddev	.00433	.00464	.16706
%RSD	.43782	.47645	65.318
#1	.98705	.97923	.15612
#2	.99282	.97190	.44863
#3	.98435	.97064	.16254
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13624.**	**89199.**	**3307.9**
Stddev	235.	869.	75.7
%RSD	1.7274	.97372	2.2874
#1	13356.	88723.	3220.5
#2	13796.	88673.	3350.9
#3	13720.	90202.	3352.2

Approved: March 30, 2017

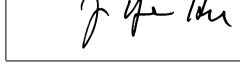
Sample Name: CCB Acquired: 3/29/2017 14:40:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00087**	**.01067**	**.00049**	**.00081**	**.00250**	**.00012**	**-.00555**
Stddev	.00118	.00199	.00168	.00345	.00167	.00003	.05214
%RSD	135.75	18.614	342.96	425.28	66.646	22.047	939.00
#1	.00005	.00852	.00081	.00412	.00429	.00012	-.04935
#2	-.00046	.01105	.00199	-.00277	.00221	.00009	-.01943
#3	-.00221	.01243	-.00133	.00108	.00100	.00014	.05213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00030**	**.00012**	**-.00057**	**-.00059**	**-.01271**	**.00402**	**-.00506**
Stddev	.00026	.00012	.00009	.00077	.01596	.18458	.00133
%RSD	86.312	97.133	15.905	131.59	125.62	4595.6	26.274
#1	-.00033	-.00001	-.00051	.00015	.00283	-.18910	-.00439
#2	-.00054	.00020	-.00067	-.00052	-.02906	.17868	-.00419
#3	-.00003	.00018	-.00052	-.00139	-.01189	.02247	-.00659
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.09422**	**.00101**	**.00001**	**-.02265**	**-.00063**	**-.00668**	**.00010**
Stddev	.00355	.00150	.00036	.03347	.00071	.00594	.00094
%RSD	3.7695	148.23	3287.4	147.77	112.02	89.002	929.58
#1	-.09822	.00185	.00010	.01580	-.00092	-.00880	.00115
#2	-.09143	.00190	-.00038	-.03845	-.00116	-.01126	-.00017
#3	-.09303	-.00072	.00032	-.04530	.00017	.00004	-.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: CCB Acquired: 3/29/2017 14:40:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00218**	**.00272**	**.00467**	**.00020**	**.00011**	**-.00029**	**.00101**
Stddev	.00351	.00120	.00160	.00070	.00049	.00691	.00225
%RSD	161.41	44.114	34.295	351.59	440.13	2411.3	222.68
#1	.00182	.00290	.00650	-.00061	.00032	.00062	.00288
#2	-.00115	.00144	.00398	.00067	-.00045	-.00761	-.00149
#3	.00585	.00382	.00352	.00053	.00047	.00612	.00163
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00080**	**.00012**	F **-.05181**
Stddev	.00107	.00015	.51576
%RSD	134.58	122.06	995.45
#1	.00163	-.00001	-.58816
#2	-.00041	.00009	-.00783
#3	.00117	.00029	.44055
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14152.**	**92610.**	**3333.9**
Stddev	25.	771.	54.5
%RSD	.17734	.83285	1.6352
#1	14181.	93327.	3288.2
#2	14139.	92709.	3394.3
#3	14137.	91794.	3319.3

Approved: March 30, 2017

Sample Name: LLCCV Acquired: 3/29/2017 14:43:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00704**	**.16778**	**.01047**	**.07358**	**.00930**	**.00158**	**.38332**	**.00043**
Stddev	.00019	.00646	.00123	.00113	.00122	.00004	.02425	.00005
%RSD	2.7454	3.8500	11.713	1.5379	13.068	2.7508	6.3251	10.635
#1	.00702	.16269	.00906	.07244	.01032	.00156	.40336	.00042
#2	.00724	.17504	.01128	.07359	.00964	.00163	.39022	.00048
#3	.00685	.16560	.01107	.07471	.00796	.00156	.35637	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00406**	**.00289**	**.00378**	**.10495**	**.68245**	**.07436**	**.30254**	**.00884**
Stddev	.00014	.00032	.00026	.00462	.06482	.00441	.07975	.00037
%RSD	3.3623	10.999	7.0017	4.3994	9.4983	5.9267	26.359	4.2237
#1	.00401	.00298	.00383	.10771	.65945	.06928	.38616	.00917
#2	.00421	.00254	.00402	.10752	.63226	.07678	.22733	.00891
#3	.00395	.00316	.00350	.09962	.75563	.07704	.29413	.00843
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00711**	**.38886**	**.01509**	**.74510**	**.00719**	**.07874**	**.01314**	**.75411**
Stddev	.00043	.00269	.00017	.00512	.00191	.00391	.00641	.00722
%RSD	6.0750	.69201	1.1356	.68728	26.533	4.9626	48.777	.95751
#1	.00740	.38668	.01528	.74514	.00537	.07637	.01490	.76128
#2	.00661	.38803	.01507	.75020	.00918	.07659	.00603	.75422
#3	.00730	.39187	.01494	.73996	.00702	.08325	.01848	.74684
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: LLCCV Acquired: 3/29/2017 14:43:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39309**	**.03858**	**.01935**	**.15407**	**.00724**	**.01778**	**24.325**
Stddev	.00487	.00018	.00592	.00040	.00051	.00014	.382
%RSD	1.2397	.46440	30.602	.25898	7.0467	.76410	1.5722
#1	.39549	.03840	.01316	.15449	.00715	.01793	24.766
#2	.39630	.03859	.01993	.15370	.00779	.01773	24.095
#3	.38748	.03876	.02497	.15401	.00678	.01767	24.113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14092.**	**93026.**	**3433.2**
Stddev	87.	521.	58.6
%RSD	.62043	.56000	1.7061
#1	14073.	93462.	3367.4
#2	14015.	92449.	3452.6
#3	14187.	93168.	3479.6

Approved: March 30, 2017

Sample Name: PBW 1B Acquired: 3/29/2017 15:15:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607688-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00029**	**.01829**	**-.00045**	**-.00117**	**.00070**	**-.00001**	**.01935**
Stddev	.00080	.00396	.00058	.00269	.00060	.00005	.09369
%RSD	276.77	21.653	128.73	229.08	85.414	474.94	484.24
#1	-.00105	.02180	-.00088	-.00082	.00052	.00002	.09794
#2	.00055	.01400	.00021	-.00402	.00022	.00002	-.08433
#3	-.00037	.01907	-.00069	.00132	.00137	-.00007	.04444
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00029**	**-.00060**	**-.00121**	F **-.03102**	**-.20362**	**-.00620**
Stddev	.00014	.00032	.00086	.00123	.00595	.10467	.00242
%RSD	102.13	109.33	144.34	101.87	19.174	51.404	38.967
#1	-.00015	.00011	.00030	.00021	-.03411	-.27743	-.00604
#2	-.00027	.00066	-.00068	-.00181	-.03478	-.08383	-.00387
#3	.00001	.00011	-.00141	-.00202	-.02416	-.24960	-.00869
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					810.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00585**	**-.00096**	**.00006**	**.04869**	**.00085**	**-.00028**	**-.00056**
Stddev	.10505	.00180	.00011	.06213	.00005	.00073	.00337
%RSD	1795.9	187.41	188.83	127.59	5.4786	258.51	602.73
#1	-.11544	-.00165	.00018	.11021	.00087	.00047	-.00438
#2	.06459	.00108	.00003	-.01403	.00080	-.00100	.00203
#3	.06839	-.00231	-.00004	.04990	.00089	-.00032	.00066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

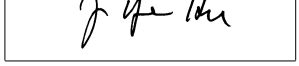
Sample Name: PBW 1B Acquired: 3/29/2017 15:15:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607688-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00070**	**.00180**	**.01701**	**.00020**	**.00029**	**-.00835**	**-.00195**
Stddev	.00096	.00120	.00230	.00019	.00032	.00749	.00009
%RSD	136.79	66.690	13.498	96.116	108.14	89.738	4.5628
#1	.00040	.00087	.01500	-.00002	.00064	-.01177	-.00204
#2	-.00134	.00316	.01951	.00026	.00021	-.01353	-.00187
#3	-.00117	.00138	.01651	.00035	.00002	.00024	-.00192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00057**	**.00128**	**.31680**
Stddev	.00068	.00015	.18140
%RSD	119.72	11.638	57.259
#1	-.00013	.00144	.50797
#2	-.00136	.00126	.14708
#3	-.00022	.00114	.29536
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14113.**	**94360.**	**3401.1**
Stddev	26.	279.	76.0
%RSD	.18297	.29617	2.2340
#1	14118.	94106.	3409.8
#2	14085.	94315.	3472.4
#3	14136.	94660.	3321.2

Approved: March 30, 2017



Sample Name: LCSW 1B Acquired: 3/29/2017 15:19:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607688-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19348**	**4.9232**	**.19314**	**.93304**	**.50487**	**.02400**	**4.9137**
Stddev	.00042	.0267	.00308	.00420	.00265	.00018	.0573
%RSD	.21837	.54318	1.5931	.45030	.52407	.75106	1.1659
#1	.19304	4.9490	.19668	.93462	.50377	.02416	4.8872
#2	.19349	4.9252	.19113	.93622	.50789	.02404	4.9794
#3	.19389	4.8956	.19160	.92827	.50296	.02381	4.8744
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02446**	**.10072**	**.24400**	**.25010**	**1.9953**	**25.072**	**.51038**
Stddev	.00034	.00022	.00180	.00159	.0092	.221	.00211
%RSD	1.3841	.21462	.73650	.63379	.46051	.87963	.41401
#1	.02409	.10068	.24592	.24938	1.9998	24.848	.50866
#2	.02456	.10052	.24372	.24900	2.0013	25.289	.51274
#3	.02474	.10095	.24236	.25191	1.9847	25.078	.50974
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.9754**	**.25128**	**.48882**	**25.385**	**.25104**	**4.8033**	**.25050**
Stddev	.0819	.00567	.00139	.092	.00146	.0195	.00291
%RSD	1.6456	2.2584	.28405	.36293	.58234	.40628	1.1618
#1	4.8884	.24953	.48798	25.336	.25166	4.7970	.25384
#2	4.9870	.25762	.48805	25.491	.24937	4.7877	.24849
#3	5.0509	.24668	.49042	25.327	.25208	4.8252	.24918
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: LCSW 1B Acquired: 3/29/2017 15:19:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607688-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.58825**	**.18870**	**2.5140**	**.50305**	**.50683**	**.49904**	**.25222**
Stddev	.00574	.00169	.0037	.00159	.00205	.00516	.00170
%RSD	.97587	.89822	.14811	.31667	.40449	1.0346	.67568
#1	.59083	.18839	2.5104	.50186	.50488	.50473	.25086
#2	.59225	.19053	2.5139	.50243	.50897	.49774	.25166
#3	.58167	.18718	2.5178	.50486	.50664	.49465	.25413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.49341**	**.49302**	F **-.19748**
Stddev	.00210	.00053	.20638
%RSD	.42585	.10834	104.51
#1	.49528	.49288	-.43465
#2	.49380	.49257	-.09891
#3	.49114	.49361	-.05886
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14073.**	**92859.**	**3450.5**
Stddev	22.	1335.	65.5
%RSD	.15868	1.4373	1.8976
#1	14053.	91530.	3389.8
#2	14097.	92849.	3442.0
#3	14069.	94199.	3519.9

Approved: March 30, 2017

Sample Name: L1703123701 Acquired: 3/29/2017 15:22:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00090**	**.26551**	**.00089**	**.01694**	**.05085**	**.00004**	**41.221**
Stddev	.00127	.00597	.00255	.00174	.00094	.00005	.284
%RSD	141.77	2.2495	287.09	10.270	1.8548	120.79	.69002
#1	-.00157	.25862	.00368	.01773	.05163	.00010	40.963
#2	-.00170	.26925	-.00130	.01815	.05111	.00001	41.526
#3	.00057	.26865	.00028	.01495	.04980	.00002	41.174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.00027**	**.00034**	**.00080**	**.67359**	**.38388**	**-.00505**
Stddev	.00042	.00018	.00087	.00045	.01571	.12392	.00524
%RSD	446.30	66.868	253.73	56.080	2.3328	32.281	103.79
#1	.00021	.00046	.00133	.00132	.66541	.52056	-.00954
#2	-.00057	.00025	-.00002	.00058	.66365	.27885	-.00633
#3	.00008	.00010	-.00028	.00051	.69170	.35224	.00071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.6071**	**.26624**	**.00026**	**6.3974**	**.00034**	**.02398**	**.00148**
Stddev	.0681	.00283	.00024	.0058	.00059	.00348	.00212
%RSD	1.4783	1.0615	92.603	.09060	172.74	14.506	142.98
#1	4.5580	.26352	.00033	6.3923	.00100	.02027	.00268
#2	4.6849	.26916	.00045	6.3961	.00013	.02448	.00273
#3	4.5785	.26605	-.00001	6.4037	-.00011	.02718	-.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703123701 Acquired: 3/29/2017 15:22:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00170**	**2.1983**	**-.00032**	**.10934**	**.00500**	**.00006**
Stddev	.00557	.00123	.0117	.00036	.00066	.00475	.00242
%RSD	23107.	72.146	.53225	112.23	.59950	94.890	4347.0
#1	.00621	.00084	2.2075	-.00073	.10859	.00170	.00014
#2	-.00450	.00115	2.2023	-.00020	.10961	.00286	.00243
#3	-.00178	.00311	2.1852	-.00004	.10982	.01044	-.00241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00023**	**.00272**	F **-.06305**
Stddev	.00030	.00006	.09364
%RSD	129.18	2.1091	148.51
#1	.00043	.00267	-.15673
#2	.00037	.00270	.03055
#3	-.00011	.00278	-.06299
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14092.**	**93780.**	**3453.9**
Stddev	123.	678.	66.0
%RSD	.87550	.72332	1.9113
#1	14111.	93611.	3514.7
#2	14205.	94526.	3383.7
#3	13961.	93202.	3463.3

Approved: March 30, 2017

Sample Name: L1703126801 Acquired: 3/29/2017 15:26:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607688-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.18680**	**.00297**	**.02847**	**.06077**	**.00044**	**20.592**
Stddev	.00132	.00767	.00269	.00237	.00213	.00006	.170
%RSD	353.09	4.1065	90.695	8.3178	3.5090	14.229	.82548
#1	.00106	.18858	.00223	.02763	.06227	.00046	20.711
#2	-.00154	.17840	.00595	.03114	.06172	.00050	20.667
#3	-.00065	.19343	.00072	.02664	.05833	.00037	20.397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**.02392**	**-.00009**	**.00247**	**.26299**	**4.7276**	**-.00870**
Stddev	.00004	.00008	.00051	.00028	.02538	.2453	.00445
%RSD	14.170	.34020	542.70	11.302	9.6518	5.1887	51.086
#1	.00031	.02389	.00030	.00278	.28350	4.5320	-.00434
#2	.00026	.02402	.00008	.00223	.27087	5.0029	-.01323
#3	.00023	.02386	-.00066	.00241	.23460	4.6481	-.00855
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.8750**	**.24538**	**-.00015**	**57.498**	**.01759**	**-.00361**	**.00127**
Stddev	.0900	.00226	.00018	.479	.00069	.00393	.00178
%RSD	.91087	.92091	116.72	.83264	3.8949	108.67	140.03
#1	9.9285	.24280	-.00029	57.689	.01732	-.00784	-.00061
#2	9.9254	.24702	.00005	57.851	.01707	-.00292	.00292
#3	9.7712	.24632	-.00022	56.953	.01837	-.00008	.00150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703126801 Acquired: 3/29/2017 15:26:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607688-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**-.00135**	**3.5774**	**.00036**	**.13055**	**.00001**	**.00028**
Stddev	.00439	.00562	.0151	.00035	.00135	.00340	.00169
%RSD	797.69	417.20	.42093	97.629	1.0355	42955.	595.10
#1	.00192	.00146	3.5944	.00033	.13121	-.00095	.00116
#2	.00410	.00232	3.5718	.00073	.13145	.00378	.00136
#3	-.00436	-.00782	3.5659	.00002	.12900	-.00281	-.00167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00093**	**.03691**	F **-.07003**
Stddev	.00068	.00016	.22820
%RSD	73.035	.42476	325.87
#1	.00018	.03699	.12355
#2	.00113	.03702	-.01199
#3	.00150	.03673	-.32164
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14024.**	**91097.**	**3432.5**
Stddev	21.	1342.	82.5
%RSD	.14649	1.4735	2.4025
#1	14047.	89607.	3472.9
#2	14019.	92213.	3337.6
#3	14007.	91471.	3487.0

Approved: March 30, 2017

Sample Name: L1703126802 Acquired: 3/29/2017 15:30:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.04754**	**.00200**	**.05341**	**.16851**	**.00013**	**21.968**
Stddev	.00096	.00562	.00292	.00080	.00155	.00004	.144
%RSD	1721.1	11.824	146.20	1.4961	.91946	34.397	.65584
#1	-.00102	.05395	-.00076	.05419	.16954	.00010	21.910
#2	.00090	.04345	.00169	.05344	.16672	.00010	21.863
#3	-.00004	.04521	.00506	.05260	.16926	.00018	22.132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.03234**	**.00003**	**.00158**	**23.023**	**5.5036**	**.00001**
Stddev	.00031	.00022	.00016	.00043	.029	.1209	.00571
%RSD	193.00	.68809	609.83	27.349	.12529	2.1962	45278.
#1	-.00003	.03260	.00005	.00142	23.003	5.6413	-.00653
#2	.00006	.03222	-.00014	.00125	23.009	5.4547	.00259
#3	-.00052	.03220	.00017	.00207	23.056	5.4149	.00398
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**12.808**	**1.1335**	**.00035**	**86.834**	**.00479**	**.00422**	**.00076**
Stddev	.029	.0027	.00026	.271	.00107	.00357	.00196
%RSD	.22896	.23535	75.506	.31177	22.320	84.629	259.41
#1	12.811	1.1307	.00050	87.131	.00602	.00265	-.00141
#2	12.777	1.1337	.00004	86.771	.00421	.00832	.00125
#3	12.835	1.1361	.00049	86.600	.00414	.00171	.00242
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703126802 Acquired: 3/29/2017 15:30:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00144**	**-.00054**	**2.8486**	**.00084**	**.15321**	**.00473**	**-.00088**
Stddev	.00320	.00220	.0182	.00057	.00058	.00502	.00324
%RSD	222.08	407.63	.63945	67.727	.37664	106.08	367.99
#1	-.00221	-.00125	2.8585	.00111	.15381	-.00095	.00028
#2	.00378	.00193	2.8596	.00019	.15318	.00857	-.00454
#3	.00276	-.00229	2.8275	.00124	.15265	.00657	.00162
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00020**	**.00728**	F **-.77585**
Stddev	.00012	.00007	.16991
%RSD	57.089	.94445	21.900
#1	-.00031	.00733	-.92451
#2	-.00008	.00731	-.59064
#3	-.00022	.00720	-.81240
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13847.**	**91046.**	**3406.3**
Stddev	105.	871.	50.5
%RSD	.75780	.95632	1.4815
#1	13738.	90167.	3354.4
#2	13857.	91909.	3455.2
#3	13948.	91062.	3409.2

Approved: March 30, 2017

Sample Name: L1703126803S Acquired: 3/29/2017 15:34:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607688-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19214**	**5.0893**	**.19375**	**.97190**	**.55742**	**.02466**	**24.732**	**.02487**
Stddev	.00059	.0301	.00167	.00565	.00768	.00023	.298	.00011
%RSD	.30861	.59219	.86219	.58141	1.3782	.92499	1.2059	.44379
#1	.19268	5.1082	.19466	.96687	.55025	.02476	24.476	.02499
#2	.19150	5.1052	.19182	.97802	.56553	.02482	25.059	.02479
#3	.19224	5.0546	.19476	.97082	.55647	.02440	24.661	.02482
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.12124**	**.24411**	**.24741**	**2.3989**	**29.523**	**.49413**	**14.492**	**.48701**
Stddev	.00078	.00029	.00223	.0607	.396	.00833	.215	.00661
%RSD	.64707	.11719	.90246	2.5311	1.3408	1.6857	1.4867	1.3563
#1	.12194	.24404	.24970	2.3395	29.301	.48636	14.259	.48257
#2	.12039	.24443	.24524	2.4609	29.980	.50293	14.684	.49460
#3	.12138	.24387	.24727	2.3963	29.288	.49311	14.534	.48385
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48665**	**80.611**	**.26251**	**4.8642**	**.24668**	**.58883**	**.19173**	**6.2079**
Stddev	.00151	1.000	.00075	.0132	.00303	.00092	.00174	.0109
%RSD	.31067	1.2399	.28444	.27093	1.2263	.15660	.90592	.17630
#1	.48837	79.638	.26274	4.8792	.25018	.58958	.18979	6.2203
#2	.48556	81.635	.26312	4.8544	.24486	.58911	.19314	6.2038
#3	.48601	80.561	.26168	4.8589	.24502	.58780	.19227	6.1997
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

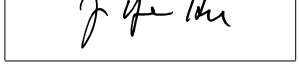
Approved: March 30, 2017

Sample Name: L1703126803S Acquired: 3/29/2017 15:34:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607688-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49903**	**.62747**	**.50468**	**.24815**	**.49702**	**.52192**	**.42579**
Stddev	.00117	.00743	.00173	.00176	.00257	.00125	.30142
%RSD	.23416	1.1844	.34239	.70870	.51782	.23908	70.790
#1	.50037	.62185	.50319	.24916	.49804	.52336	.09222
#2	.49853	.63589	.50427	.24918	.49893	.52112	.67859
#3	.49820	.62465	.50657	.24612	.49409	.52129	.50655
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14008.**	**91645.**	**3468.6**
Stddev	65.	827.	81.6
%RSD	.46206	.90231	2.3513
#1	13945.	90700.	3495.0
#2	14075.	92004.	3377.1
#3	14003.	92233.	3533.7

Approved: March 30, 2017



Sample Name: L1703126804SD Acquired: 3/29/2017 15:37:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607688-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18964**	**5.0050**	**.19160**	**.96698**	**.54747**	**.02439**	**25.323**	**.02434**
Stddev	.00080	.0475	.00422	.00341	.00172	.00020	.049	.00014
%RSD	.42354	.94935	2.2037	.35298	.31381	.80019	.19282	.57873
#1	.19035	5.0557	.19639	.96884	.54605	.02461	25.267	.02431
#2	.18979	4.9615	.18842	.96304	.54938	.02423	25.348	.02449
#3	.18877	4.9979	.18998	.96905	.54698	.02434	25.355	.02422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.12125**	**.24076**	**.24500**	**2.2760**	**28.976**	**.48867**	**14.651**	**.48689**
Stddev	.00053	.00147	.00040	.0359	.078	.00477	.213	.00244
%RSD	.43684	.61174	.16230	1.5763	.26750	.97647	1.4569	.50213
#1	.12074	.24233	.24467	2.2464	29.035	.49417	14.865	.48866
#2	.12121	.23940	.24544	2.2657	28.888	.48594	14.650	.48790
#3	.12180	.24054	.24489	2.3159	29.005	.48589	14.438	.48410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48141**	**81.142**	**.25918**	**4.8178**	**.24105**	**.57979**	**.18455**	**6.2488**
Stddev	.00045	.148	.00036	.0041	.00231	.00737	.00400	.0142
%RSD	.09436	.18268	.13846	.08453	.96016	1.2713	2.1658	.22779
#1	.48118	81.249	.25923	4.8218	.24282	.58074	.18102	6.2412
#2	.48112	80.973	.25880	4.8179	.24191	.57199	.18374	6.2400
#3	.48193	81.204	.25952	4.8136	.23843	.58664	.18889	6.2652
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

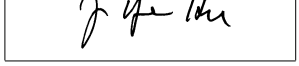
Approved: March 30, 2017

Sample Name: L1703126804SD Acquired: 3/29/2017 15:37:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607688-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49337**	**.62234**	**.49412**	**.24162**	**.48921**	**.51731**	**.32648**
Stddev	.00201	.00048	.00474	.00218	.00364	.00123	.33856
%RSD	.40729	.07708	.95902	.90036	.74401	.23780	103.70
#1	.49172	.62285	.49566	.23913	.49339	.51632	.25575
#2	.49278	.62190	.49789	.24319	.48671	.51693	.69481
#3	.49561	.62227	.48880	.24252	.48754	.51869	.02887
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13879.**	**91528.**	**3497.2**
Stddev	88.	465.	22.0
%RSD	.63175	.50785	.62995
#1	13981.	90991.	3482.6
#2	13828.	91776.	3486.4
#3	13829.	91816.	3522.5

Approved: March 30, 2017



Sample Name: L1703126805 Acquired: 3/29/2017 15:41:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00046**	**.01974**	**.00227**	**.04021**	**.01514**	**.00003**	**1.0209**
Stddev	.00110	.00516	.00292	.00164	.00233	.00005	.0348
%RSD	238.33	26.130	128.25	4.0828	15.405	173.78	3.4133
#1	.00167	.02421	.00075	.03832	.01552	.00005	.98607
#2	.00022	.02092	.00564	.04100	.01265	.00006	1.0208
#3	-.00050	.01409	.00043	.04130	.01727	-.00003	1.0558
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.00155**	**.00028**	**.00033**	**.21176**	**2.0308**	**.00087**
Stddev	.00019	.00026	.00035	.00094	.02431	.1566	.00379
%RSD	655.71	16.890	127.60	284.42	11.479	7.7120	438.23
#1	-.00025	.00177	.00053	.00067	.18929	2.0642	.00301
#2	.00009	.00126	.00043	.00106	.20843	2.1680	-.00351
#3	.00007	.00163	-.00013	-.00073	.23756	1.8602	.00310
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.56870**	**.02153**	**-.00004**	**43.491**	**.00006**	**-.00135**	**-.00034**
Stddev	.05402	.00268	.00030	.277	.00061	.00683	.00015
%RSD	9.4982	12.436	700.68	.63704	1035.5	506.63	43.918
#1	.59232	.02330	-.00035	43.194	-.00038	-.00833	-.00043
#2	.60689	.02284	-.00004	43.742	-.00019	-.00104	-.00041
#3	.50690	.01845	.00026	43.537	.00075	.00532	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703126805 Acquired: 3/29/2017 15:41:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**-.00162**	**4.3497**	**.00124**	**.00738**	**-.00766**	**-.00084**
Stddev	.00291	.00426	.0174	.00029	.00022	.00792	.00050
%RSD	765.46	262.48	.40030	23.250	2.9221	103.51	59.956
#1	.00080	-.00374	4.3373	.00151	.00758	-.00022	-.00141
#2	.00175	-.00442	4.3422	.00127	.00715	-.01600	-.00062
#3	-.00370	.00328	4.3696	.00094	.00740	-.00675	-.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00038**	**.00230**	F **-.23689**
Stddev	.00041	.00013	.04368
%RSD	107.31	5.5772	18.440
#1	.00060	.00244	-.23700
#2	-.00009	.00228	-.19315
#3	.00062	.00219	-.28052
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14075.**	**93497.**	**3392.4**
Stddev	82.	1514.	91.2
%RSD	.58242	1.6195	2.6885
#1	14038.	92153.	3497.5
#2	14169.	95138.	3333.6
#3	14019.	93202.	3346.2

Approved: March 30, 2017

Sample Name: L1703126805PS Acquired: 3/29/2017 15:45:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607776-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18833**	**4.7756**	**.19310**	**.95929**	**.50132**	**.02377**	**5.6863**
Stddev	.00258	.0072	.00191	.00772	.00176	.00010	.0217
%RSD	1.3718	.14984	.99006	.80527	.35090	.41959	.38137
#1	.19026	4.7685	.19530	.95123	.50072	.02366	5.6703
#2	.18935	4.7756	.19207	.96000	.50330	.02384	5.7110
#3	.18540	4.7828	.19192	.96663	.49995	.02382	5.6777
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02401**	**.09998**	**.24035**	**.24506**	**2.1123**	**26.124**	**.48620**
Stddev	.00026	.00020	.00138	.00059	.0317	.158	.00256
%RSD	1.0890	.19512	.57246	.24236	1.5023	.60606	.52632
#1	.02397	.09988	.24150	.24508	2.0763	25.994	.48503
#2	.02377	.09986	.24072	.24564	2.1241	26.078	.48444
#3	.02429	.10021	.23882	.24446	2.1363	26.301	.48914
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.3523**	**.26054**	**.47985**	**62.556**	**.24564**	**4.7615**	**.24658**
Stddev	.0902	.00375	.00088	.126	.00149	.0249	.00154
%RSD	1.6852	1.4379	.18326	.20078	.60548	.52350	.62272
#1	5.2481	.25639	.47920	62.414	.24501	4.7517	.24735
#2	5.4039	.26368	.47949	62.598	.24458	4.7429	.24482
#3	5.4048	.26154	.48085	62.655	.24734	4.7898	.24759
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703126805PS Acquired: 3/29/2017 15:45:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607776-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.58398**	**.19106**	**6.3982**	**.49348**	**.49450**	**.48484**	**.24717**
Stddev	.00328	.00309	.0191	.00097	.00045	.00776	.00169
%RSD	.56114	1.6158	.29878	.19757	.09096	1.6003	.68199
#1	.58022	.19009	6.3906	.49459	.49414	.48323	.24551
#2	.58617	.18857	6.3841	.49303	.49435	.49328	.24888
#3	.58557	.19451	6.4200	.49280	.49500	.47801	.24712
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.48335**	**.49180**	F **-.16442**
Stddev	.00082	.00143	.17875
%RSD	.16953	.29064	108.72
#1	.48257	.49039	.04074
#2	.48421	.49176	-.24737
#3	.48327	.49324	-.28662
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14059.**	**93702.**	**3518.8**
Stddev	78.	1129.	37.3
%RSD	.55626	1.2051	1.0612
#1	14075.	92646.	3476.3
#2	13974.	93568.	3533.7
#3	14128.	94893.	3546.4

Approved: March 30, 2017

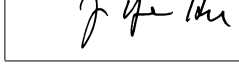
Sample Name: L1703126805SDL Acquired: 3/29/2017 15:48:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG607776-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00118**	**.00939**	**.00074**	**.01074**	**.00435**	**.00008**	**.23397**
Stddev	.00217	.00083	.00076	.00359	.00138	.00001	.03989
%RSD	183.24	8.7999	101.62	33.461	31.617	15.707	17.050
#1	-.00266	.00955	.00158	.00867	.00440	.00009	.23263
#2	.00131	.00850	.00056	.01489	.00570	.00007	.19476
#3	-.00220	.01013	.00010	.00866	.00295	.00007	.27451
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00031**	**-.00013**	**-.00058**	**.03688**	**.33541**	**-.01718**
Stddev	.00033	.00010	.00028	.00065	.01633	.06675	.00474
%RSD	714.83	31.064	218.30	111.90	44.282	19.901	27.566
#1	.00016	.00030	-.00014	-.00125	.01908	.38667	-.02139
#2	.00013	.00023	.00016	.00005	.05118	.35964	-.01205
#3	-.00043	.00042	-.00040	-.00054	.04038	.25993	-.01812
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.11311**	**.00435**	**.00002**	**8.8174**	**.00026**	**-.00188**	**-.00091**
Stddev	.12943	.00178	.00030	.0981	.00130	.00632	.00092
%RSD	114.43	40.994	1697.9	1.1121	491.73	336.62	101.97
#1	.04368	.00551	-.00013	8.8399	-.00101	.00022	.00015
#2	.03320	.00523	-.00019	8.7101	.00159	.00313	-.00154
#3	.26243	.00230	.00037	8.9023	.00021	-.00898	-.00133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: L1703126805SDL Acquired: 3/29/2017 15:48:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG607776-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00122**	**.00158**	**.87619**	**.00055**	**.00095**	**-.00169**	**.00017**
Stddev	.00357	.00213	.00345	.00105	.00025	.00288	.00145
%RSD	293.51	134.72	.39407	191.95	26.581	170.85	826.81
#1	.00282	-.00078	.87984	.00060	.00067	-.00300	.00182
#2	-.00393	.00216	.87298	.00157	.00117	.00162	-.00089
#3	-.00254	.00336	.87576	-.00053	.00100	-.00368	-.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00005**	**.00089**	F **-.05890**
Stddev	.00063	.00018	.25932
%RSD	1234.1	20.634	440.27
#1	-.00054	.00084	-.28466
#2	.00071	.00110	-.11638
#3	-.00001	.00074	.22434
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13786.**	**90685.**	**3237.2**
Stddev	194.	1799.	73.1
%RSD	1.4077	1.9839	2.2584
#1	13733.	92315.	3229.7
#2	14001.	88754.	3313.8
#3	13623.	90985.	3168.2

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 15:52:24 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39011**	**9.9234**	**.40114**	**.49035**	**.98477**	**.04925**	**9.9303**
Stddev	.00202	.0369	.00195	.00100	.00452	.00009	.0430
%RSD	.51833	.37230	.48597	.20491	.45880	.18328	.43348
#1	.39049	9.9643	.40303	.49142	.97975	.04928	9.9165
#2	.39192	9.9136	.39913	.49020	.98606	.04933	9.9785
#3	.38793	9.8924	.40126	.48943	.98850	.04915	9.8957
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05022**	**.20082**	**.49334**	**.50382**	**3.9639**	**49.128**	**.99258**
Stddev	.00033	.00063	.00142	.00185	.0456	.212	.00945
%RSD	.66181	.31491	.28845	.36638	1.1504	.43241	.95207
#1	.04984	.20068	.49439	.50358	3.9130	48.980	.99882
#2	.05036	.20027	.49390	.50210	4.0009	49.372	.99723
#3	.05046	.20152	.49172	.50577	3.9778	49.033	.98171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.8874**	**.49449**	**.98255**	**49.537**	**.50171**	**9.9384**	**.50045**
Stddev	.0821	.00632	.00319	.161	.00152	.0283	.00180
%RSD	.83007	1.2776	.32512	.32460	.30388	.28429	.36045
#1	9.8257	.48721	.98184	49.387	.50273	9.9411	.49917
#2	9.8560	.49855	.97977	49.707	.49996	9.9088	.49966
#3	9.9805	.49770	.98604	49.517	.50246	9.9652	.50251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 15:52:24 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1915**	**.40419**	**4.9819**	**.99798**	**.98173**	**.97499**	**.50639**
Stddev	.0019	.00134	.0073	.00213	.00658	.00821	.00216
%RSD	.15645	.33243	.14726	.21339	.67071	.84227	.42716
#1	1.1923	.40264	4.9770	.99852	.97507	.96651	.50633
#2	1.1928	.40497	4.9783	.99563	.98189	.98291	.50426
#3	1.1894	.40497	4.9903	.99978	.98824	.97555	.50858
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.97755**	**.99907**	F **.16024**
Stddev	.00190	.00277	.15604
%RSD	.19468	.27756	97.378
#1	.97975	.99896	.32388
#2	.97647	.99635	.01312
#3	.97644	1.0019	.14372
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13587.**	**88276.**	**3270.5**
Stddev	27.	666.	130.8
%RSD	.19613	.75484	3.9996
#1	13570.	87984.	3259.1
#2	13574.	89039.	3145.7
#3	13618.	87806.	3406.6

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 15:55:59 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00078**	**.00900**	**.00061**	**.00217**	**.00113**	**.00003**	**.02865**
Stddev	.00213	.00255	.00123	.00216	.00171	.00003	.02814
%RSD	274.24	28.347	201.27	99.572	150.70	86.720	98.216
#1	.00074	.00663	.00107	.00069	-.00051	.00001	.04651
#2	-.00321	.00866	.00155	.00464	.00101	.00006	-.00379
#3	.00014	.01170	-.00078	.00117	.00289	.00002	.04323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.00006**	**.00015**	**-.00025**	**-.02341**	**-.08959**	**-.00730**
Stddev	.00031	.00047	.00100	.00099	.00675	.02638	.00664
%RSD	202.23	819.36	687.61	391.35	28.853	29.443	90.961
#1	-.00009	-.00036	-.00085	.00006	-.03064	-.05947	-.00977
#2	-.00049	.00056	.00014	-.00136	-.02232	-.10077	.00022
#3	.00012	-.00003	.00115	.00054	-.01726	-.10855	-.01234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.06516**	**-.00013**	**.00025**	**.03715**	**-.00019**	**.00139**	**.00119**
Stddev	.05455	.00282	.00010	.05759	.00025	.00421	.00128
%RSD	83.718	2102.7	41.261	155.02	131.38	302.43	107.38
#1	-.00463	.00311	.00023	.08341	-.00047	-.00144	.00010
#2	-.11052	-.00192	.00035	-.02735	-.00009	-.00061	.00261
#3	-.08033	-.00159	.00015	.05538	-.00000	.00623	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 15:55:59 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00123**	**-.00098**	**.00775**	**-.00003**	**-.00009**	**-.00343**	**-.00190**
Stddev	.00323	.00336	.00079	.00071	.00032	.00647	.00162
%RSD	263.10	341.89	10.174	2067.2	351.21	188.95	85.169
#1	-.00014	-.00162	.00724	.00022	.00004	-.00623	-.00105
#2	.00132	-.00399	.00734	-.00084	.00014	-.00802	-.00088
#3	-.00486	.00265	.00865	.00052	-.00045	.00398	-.00376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00038**	**.00022**	F **-.09809**
Stddev	.00063	.00020	.16346
%RSD	165.59	89.950	166.65
#1	-.00027	.00007	.02495
#2	.00098	.00045	-.28357
#3	.00042	.00015	-.03565
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13708.**	**90859.**	**3369.8**
Stddev	41.	1741.	99.3
%RSD	.30066	1.9158	2.9454
#1	13661.	92349.	3294.2
#2	13734.	91282.	3333.0
#3	13730.	88946.	3482.2

Approved: March 30, 2017

Sample Name: L1703126807 Acquired: 3/29/2017 15:59:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**.00481**	**.00049**	**.00274**	**.00043**	**.00002**	**.01373**
Stddev	.00185	.00308	.00101	.00067	.00092	.00003	.06756
%RSD	11418.	64.062	205.13	24.336	212.57	177.87	492.05
#1	-.00024	.00608	.00166	.00283	-.00057	.00003	.06222
#2	.00198	.00705	-.00011	.00204	.00063	.00003	.04240
#3	-.00169	.00130	-.00007	.00337	.00124	-.00002	-.06343
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**-.00004**	**.00048**	**.00091**	**.00138**	**-.19949**	**-.00473**
Stddev	.00012	.00025	.00081	.00060	.01810	.08640	.00211
%RSD	144.33	636.95	167.48	65.754	1315.3	43.308	44.540
#1	.00022	-.00033	.00104	.00036	-.00475	-.11228	-.00501
#2	.00002	.00012	-.00044	.00083	-.01286	-.28505	-.00250
#3	.00001	.00009	.00085	.00155	.02174	-.20116	-.00668
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.06293**	**.00021**	**-.00000**	**.13976**	**.00083**	**-.00463**	**-.00126**
Stddev	.07298	.00157	.00019	.02708	.00041	.00806	.00232
%RSD	115.96	752.40	7507.6	19.375	49.477	174.19	183.84
#1	-.01902	.00186	-.00021	.15394	.00067	-.01271	.00040
#2	-.14718	-.00128	.00006	.15681	.00129	.00341	-.00390
#3	-.02260	.00004	.00015	.10854	.00052	-.00458	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703126807 Acquired: 3/29/2017 15:59:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00183**	**-.00089**	**.01903**	**.00069**	**-.00005**	**-.00692**	**-.00088**
Stddev	.00192	.00294	.00285	.00040	.00039	.00494	.00142
%RSD	105.22	329.10	15.002	57.870	804.16	71.360	161.50
#1	.00188	.00045	.01804	.00090	.00025	-.01103	-.00189
#2	-.00012	.00113	.02225	.00023	-.00049	-.00828	-.00150
#3	.00373	-.00426	.01680	.00094	.00010	-.00144	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00030**	**.00150**	F **-.05891**
Stddev	.00057	.00007	.15758
%RSD	191.62	4.5489	267.48
#1	-.00083	.00144	-.19445
#2	.00030	.00157	-.09627
#3	-.00036	.00149	.11399
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14321.**	**94470.**	**3417.5**
Stddev	82.	312.	42.6
%RSD	.57418	.33058	1.2469
#1	14245.	94772.	3453.5
#2	14310.	94491.	3428.5
#3	14409.	94148.	3370.4

Approved: March 30, 2017

Sample Name: L1703131701 Acquired: 3/29/2017 16:03:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.23682**	**.00354**	**.01052**	**.05261**	**-.00003**	**17.312**
Stddev	.00089	.00422	.00075	.00112	.00208	.00004	.147
%RSD	496.21	1.7835	21.089	10.677	3.9490	129.28	.84701
#1	-.00083	.23208	.00300	.01179	.05058	.00000	17.201
#2	-.00054	.23819	.00322	.01011	.05250	-.00008	17.257
#3	.00083	.24019	.00439	.00966	.05473	-.00002	17.478
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00038**	**.00059**	**.00961**	**.02064**	**45.464**	**.75733**	**-.00656**
Stddev	.00017	.00058	.00044	.00064	.261	.12454	.00410
%RSD	43.795	97.070	4.5337	3.0872	.57342	16.445	62.455
#1	.00047	-.00000	.01011	.01996	45.471	.79996	-.01055
#2	.00019	.00114	.00943	.02122	45.200	.85496	-.00677
#3	.00049	.00064	.00929	.02073	45.721	.61707	-.00236
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.5658**	**.06921**	**.00015**	**4.9539**	**.00395**	**.25336**	**.00514**
Stddev	.1083	.00194	.00005	.0643	.00068	.00499	.00034
%RSD	4.2194	2.8093	35.036	1.2977	17.198	1.9702	6.6320
#1	2.6906	.06941	.00010	4.8897	.00349	.24886	.00515
#2	2.5103	.06718	.00021	4.9536	.00362	.25248	.00480
#3	2.4966	.07105	.00015	5.0183	.00473	.25873	.00548
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703131701 Acquired: 3/29/2017 16:03:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00031**	**-.00309**	**6.7507**	**.00309**	**.07742**	**.01440**	**-.00066**
Stddev	.00365	.00175	.0219	.00023	.00128	.00412	.00052
%RSD	1165.4	56.519	.32454	7.4105	1.6533	28.607	78.993
#1	-.00453	-.00502	6.7434	.00335	.07618	.01873	-.00055
#2	.00172	-.00265	6.7754	.00298	.07735	.01393	-.00122
#3	.00187	-.00161	6.7335	.00293	.07874	.01054	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00055**	**.06189**	F **-1.8050**
Stddev	.00126	.00034	.5379
%RSD	229.86	.55429	29.801
#1	-.00091	.06187	-1.8289
#2	.00132	.06224	-1.2555
#3	.00125	.06156	-2.3306
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14248.**	**95225.**	**3497.0**
Stddev	66.	886.	62.0
%RSD	.46667	.93073	1.7741
#1	14227.	96139.	3485.1
#2	14323.	95165.	3564.1
#3	14195.	94370.	3441.7

Approved: March 30, 2017

Sample Name: L1703131702 Acquired: 3/29/2017 16:07:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**.29594**	**.00240**	**.01681**	**.05119**	**-.00001**	**20.363**	**-.00018**
Stddev	.00076	.00789	.00199	.00204	.00067	.00006	.072	.00022
%RSD	336.70	2.6648	82.983	12.125	1.3047	383.82	.35221	121.78
#1	-.00041	.29668	.00278	.01713	.05042	-.00008	20.311	-.00019
#2	.00002	.28770	.00416	.01867	.05166	-.00000	20.333	-.00039
#3	.00106	.30342	.00024	.01463	.05147	.00004	20.445	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00021**	**.00085**	**.00139**	**.80646**	**2.1667**	**-.00123**	**2.2106**	**.07995**
Stddev	.00022	.00092	.00068	.00728	.0687	.00285	.0175	.00344
%RSD	103.17	108.03	49.013	.90239	3.1686	231.53	.79210	4.2972
#1	.00002	.00141	.00124	.80257	2.2451	-.00452	2.1955	.08267
#2	.00046	-.00021	.00214	.81486	2.1376	.00046	2.2065	.07609
#3	.00017	.00135	.00080	.80196	2.1174	.00037	2.2298	.08110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**1.0934**	**.00089**	**.10284**	**.00074**	**.00095**	**.00540**	**.88956**
Stddev	.00032	.0293	.00052	.00391	.00369	.00185	.00159	.01230
%RSD	1328.5	2.6806	58.200	3.8044	499.31	194.12	29.462	1.3829
#1	.00015	1.1115	.00139	.10691	.00069	-.00070	.00689	.89505
#2	.00026	1.1091	.00036	.09910	-.00292	.00060	.00373	.89817
#3	-.00034	1.0596	.00091	.10251	.00445	.00295	.00559	.87547
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703131702 Acquired: 3/29/2017 16:07:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	TI1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00033**	**.05990**	**.00202**	**-.00062**	**.00061**	**.00718**	**.04633**
Stddev	.00022	.00038	.00615	.00080	.00031	.00004	.49798
%RSD	67.240	.63621	303.65	128.49	50.996	.52801	1074.9
#1	.00007	.05970	-.00396	-.00115	.00091	.00715	.61823
#2	.00044	.05966	.00171	.00030	.00063	.00717	-.29142
#3	.00047	.06034	.00832	-.00101	.00029	.00722	-.18783
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14161.**	**94245.**	**3468.4**
Stddev	34.	1512.	29.9
%RSD	.23766	1.6041	.86348
#1	14198.	94993.	3474.4
#2	14149.	95237.	3495.0
#3	14134.	92505.	3436.0

Approved: March 30, 2017

Sample Name: L1703131703 Acquired: 3/29/2017 16:11:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00162**	**.34230**	**.00111**	**.00707**	**.02831**	**.00004**	**17.112**	**-.00017**
Stddev	.00163	.00409	.00121	.00069	.00081	.00009	.150	.00021
%RSD	100.43	1.1948	108.87	9.7747	2.8628	216.19	.87637	124.45
#1	.00020	.34697	.00116	.00786	.02762	-.00005	16.960	.00007
#2	-.00294	.33938	.00230	.00658	.02809	.00005	17.260	-.00024
#3	-.00213	.34053	-.00012	.00677	.02920	.00013	17.115	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00052**	**.00069**	**-.00005**	**.48415**	**.19119**	**-.00576**	**1.3708**	**.03285**
Stddev	.00065	.00046	.00047	.02103	.08579	.00415	.0911	.00254
%RSD	123.48	67.152	861.80	4.3441	44.870	72.100	6.6420	7.7369
#1	.00121	.00090	-.00034	.46005	.13654	-.00266	1.3319	.03373
#2	.00043	.00016	-.00031	.49880	.29007	-.00414	1.3055	.02998
#3	-.00007	.00101	.00048	.49361	.14696	-.01048	1.4748	.03483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**1.5507**	**.00130**	**.01846**	**.00136**	**.00220**	**.00154**	**3.2769**
Stddev	.00020	.0364	.00047	.00022	.00200	.00200	.00378	.0033
%RSD	186.31	2.3496	36.482	1.1976	146.79	90.893	245.09	.10083
#1	.00010	1.5346	.00092	.01839	.00317	.00386	-.00025	3.2775
#2	-.00009	1.5251	.00183	.01828	-.00079	.00277	.00589	3.2798
#3	.00032	1.5924	.00114	.01871	.00171	-.00002	-.00101	3.2733
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703131703 Acquired: 3/29/2017 16:11:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.04242**	**.00273**	**.00048**	**.00035**	**.00234**	**.10530**
Stddev	.00024	.00034	.00961	.00252	.00077	.00010	.37203
%RSD	124.42	.79413	352.50	523.52	220.89	4.1937	353.32
#1	-.00039	.04203	-.00670	.00305	.00103	.00235	-.26507
#2	.00008	.04266	.01251	.00038	-.00048	.00224	.10201
#3	-.00028	.04255	.00237	-.00198	.00049	.00244	.47896
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14148.**	**94157.**	**3446.2**
Stddev	56.	877.	90.1
%RSD	.39252	.93091	2.6135
#1	14093.	93145.	3356.1
#2	14145.	94652.	3536.2
#3	14204.	94675.	3446.2

Approved: March 30, 2017

Sample Name: L1703131801 Acquired: 3/29/2017 16:14:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00044**	**.04829**	**.00232**	**.01547**	**.05231**	**.00001**	**48.604**	**-.00014**
Stddev	.00119	.00199	.00300	.00098	.00226	.00003	.157	.00022
%RSD	271.19	4.1141	129.34	6.3186	4.3208	311.38	.32272	153.33
#1	-.00173	.04627	-.00109	.01581	.05005	.00004	48.643	.00008
#2	-.00020	.04836	.00350	.01624	.05457	-.00002	48.738	-.00016
#3	.00061	.05024	.00455	.01437	.05233	.00002	48.432	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**.00023**	**.00011**	**.03492**	**.77324**	**-.00356**	**5.4567**	**.00301**
Stddev	.00011	.00129	.00019	.02839	.05428	.00183	.0850	.00050
%RSD	113.50	555.46	180.00	81.304	7.0195	51.540	1.5573	16.639
#1	.00012	-.00125	.00032	.06673	.71333	-.00341	5.4236	.00244
#2	-.00002	.00108	.00001	.02589	.81915	-.00180	5.5532	.00337
#3	.00020	.00087	-.00002	.01214	.78722	-.00546	5.3931	.00322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00109**	**5.8503**	**.00091**	**.00769**	**-.00078**	**-.00365**	**.00075**	**3.6039**
Stddev	.00034	.0695	.00036	.00484	.00177	.00405	.00120	.0061
%RSD	30.981	1.1880	39.328	62.896	228.07	111.12	160.80	.16892
#1	.00143	5.7736	.00050	.01325	-.00256	-.00768	.00213	3.6082
#2	.00075	5.9091	.00108	.00543	-.00074	-.00368	-.00003	3.6065
#3	.00109	5.8681	.00115	.00440	.00098	.00042	.00014	3.5969
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703131801 Acquired: 3/29/2017 16:14:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00067**	**.15255**	**-.00507**	**-.00079**	**.00030**	**.00158**	**.16631**
Stddev	.00017	.00027	.00559	.00142	.00022	.00006	.49029
%RSD	25.974	.17584	110.25	180.72	72.633	3.6556	294.81
#1	.00047	.15225	-.01070	-.00044	.00014	.00156	-.15692
#2	.00079	.15276	-.00499	-.00235	.00021	.00165	-.07460
#3	.00075	.15264	.00048	.00043	.00055	.00155	.73045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13945.**	**92761.**	**3459.9**
Stddev	99.	1382.	139.8
%RSD	.71350	1.4894	4.0406
#1	13853.	91492.	3349.7
#2	13932.	92557.	3412.9
#3	14051.	94233.	3617.2

Approved: March 30, 2017

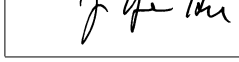
Sample Name: L1703131802 Acquired: 3/29/2017 16:18:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00098**	**.05132**	**.00008**	**.02085**	**.04445**	**.00002**	**41.732**
Stddev	.00101	.00771	.00229	.00303	.00179	.00003	.101
%RSD	102.47	15.027	2696.0	14.532	4.0267	127.52	.24194
#1	-.00151	.05809	-.00184	.02420	.04382	-.00000	41.838
#2	-.00162	.05294	.00261	.01829	.04307	.00005	41.637
#3	.00018	.04293	-.00052	.02007	.04648	.00002	41.720
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**-.00023**	**.00031**	**-.00049**	**.04038**	**.85604**	**-.00284**
Stddev	.00026	.00015	.00136	.00106	.00255	.07723	.00094
%RSD	188.71	65.980	433.60	217.94	6.3201	9.0214	32.917
#1	.00016	-.00021	-.00099	-.00170	.04330	.90569	-.00177
#2	-.00027	-.00040	.00172	.00004	.03928	.76707	-.00350
#3	-.00030	-.00009	.00020	.00021	.03857	.89537	-.00326
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.6911**	**-.00000**	**.00048**	**8.8033**	**.00051**	**.00376**	**-.00055**
Stddev	.0068	.00292	.00014	.0452	.00043	.00542	.00434
%RSD	.08852	66415.	29.567	.51310	83.644	144.41	784.33
#1	7.6882	.00022	.00032	8.7550	.00087	-.00241	-.00505
#2	7.6988	-.00303	.00058	8.8445	.00062	.00587	.00360
#3	7.6862	.00279	.00054	8.8104	.00004	.00780	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: L1703131802 Acquired: 3/29/2017 16:18:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00187**	**.00018**	**3.7436**	**.00009**	**.19882**	**.00674**	**-.00053**
Stddev	.00264	.00718	.0215	.00020	.00080	.00916	.00070
%RSD	141.04	4043.4	.57548	227.60	.40013	136.05	132.63
#1	-.00362	.00367	3.7684	.00021	.19859	.01177	-.00073
#2	.00116	.00495	3.7301	-.00015	.19818	-.00384	-.00111
#3	-.00315	-.00808	3.7323	.00021	.19971	.01228	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00024**	**.00125**	F **-.23504**
Stddev	.00089	.00010	.33074
%RSD	370.86	8.2641	140.72
#1	.00065	.00124	-.27465
#2	-.00113	.00115	-.54419
#3	-.00023	.00136	.11372
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14001.**	**93321.**	**3402.1**
Stddev	26.	1853.	75.8
%RSD	.18849	1.9851	2.2274
#1	14031.	91192.	3389.8
#2	13994.	94566.	3333.2
#3	13980.	94206.	3483.3

Approved: March 30, 2017

Sample Name: L1703131803 Acquired: 3/29/2017 16:22:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00045**	**.05534**	**.00054**	**.01109**	**.04762**	**.00005**	**35.579**
Stddev	.00170	.00594	.00093	.00220	.00123	.00003	.159
%RSD	379.68	10.730	172.73	19.866	2.5895	53.597	.44549
#1	-.00022	.04855	.00049	.01346	.04619	.00007	35.404
#2	-.00081	.05957	-.00037	.01072	.04832	.00006	35.621
#3	.00238	.05789	.00149	.00910	.04834	.00002	35.712
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**-.00006**	**.00052**	**-.00015**	**.05872**	**.33907**	**-.00574**
Stddev	.00010	.00025	.00063	.00006	.01218	.12267	.01023
%RSD	50.277	413.31	120.81	41.216	20.740	36.178	178.26
#1	-.00016	-.00010	.00117	-.00022	.07274	.45462	.00125
#2	-.00033	.00021	.00047	-.00014	.05078	.21035	-.00099
#3	-.00014	-.00029	-.00008	-.00010	.05263	.35225	-.01749
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.1021**	**.01423**	**.00010**	**5.0870**	**-.00006**	**.00593**	**-.00047**
Stddev	.0220	.00061	.00053	.0566	.00129	.00552	.00071
%RSD	.53683	4.2819	554.92	1.1132	2151.4	93.107	152.03
#1	4.1039	.01376	.00069	5.0754	-.00077	.00926	.00033
#2	4.1232	.01401	-.00032	5.0371	-.00084	-.00044	-.00104
#3	4.0793	.01492	-.00008	5.1485	.00143	.00898	-.00069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703131803 Acquired: 3/29/2017 16:22:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00092**	**.00580**	**3.2540**	**.00066**	**.11795**	**-.00712**	**.00199**
Stddev	.00310	.00303	.0167	.00126	.00098	.00653	.00068
%RSD	337.19	52.274	.51195	191.01	.82755	91.732	33.914
#1	.00233	.00861	3.2597	.00095	.11687	.00034	.00121
#2	-.00385	.00621	3.2671	.00174	.11821	-.01180	.00241
#3	-.00124	.00258	3.2352	-.00072	.11877	-.00990	.00235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00003**	**.00140**	F **-.10645**
Stddev	.00029	.00003	.34787
%RSD	893.12	2.2883	326.79
#1	.00031	.00140	.06616
#2	-.00027	.00136	-.50687
#3	.00006	.00142	.12136
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13962.**	**93155.**	**3349.2**
Stddev	86.	855.	86.0
%RSD	.61527	.91793	2.5687
#1	14044.	92172.	3415.2
#2	13873.	93567.	3251.9
#3	13970.	93726.	3380.6

Approved: March 30, 2017

Sample Name: L1703131804 Acquired: 3/29/2017 16:25:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00133**	**1.5092**	**.00285**	**.00681**	**.07504**	**.00027**	**5.7903**	**.00015**
Stddev	.00122	.0037	.00021	.00320	.00208	.00006	.1505	.00015
%RSD	91.449	.24581	7.3863	47.032	2.7701	21.070	2.5983	98.523
#1	-.00069	1.5088	.00271	.00968	.07632	.00026	5.9639	.00029
#2	-.00057	1.5057	.00275	.00738	.07616	.00033	5.7098	-.00001
#3	-.00273	1.5131	.00310	.00336	.07264	.00022	5.6972	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00164**	**.00208**	**.00330**	**2.6603**	**.83367**	**-.00509**	**2.0920**	**.15281**
Stddev	.00047	.00075	.00062	.0523	.04169	.00562	.0144	.00582
%RSD	28.402	35.817	18.728	1.9649	5.0007	110.37	.68930	3.8069
#1	.00202	.00163	.00291	2.6959	.86646	-.00042	2.0912	.15817
#2	.00179	.00168	.00401	2.6847	.78675	-.01132	2.1068	.15363
#3	.00112	.00295	.00298	2.6003	.84779	-.00352	2.0779	.14663
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00023**	**2.8528**	**.00303**	**.07604**	**.01388**	**.00126**	**-.00017**	**5.4110**
Stddev	.00047	.0340	.00070	.00735	.00221	.00341	.00306	.0883
%RSD	201.76	1.1915	23.115	9.6595	15.913	271.97	1827.5	1.6316
#1	.00073	2.8893	.00354	.07623	.01155	-.00234	-.00366	5.4532
#2	-.00021	2.8220	.00223	.06860	.01594	.00166	.00112	5.4702
#3	.00018	2.8471	.00332	.08328	.01415	.00445	.00204	5.3095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703131804 Acquired: 3/29/2017 16:25:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00023**	**.02684**	**.02171**	**.00090**	**.00261**	**.03422**	**.01637**
Stddev	.00029	.00063	.00802	.00121	.00027	.00042	.39382
%RSD	122.84	2.3343	36.939	133.97	10.281	1.2149	2406.2
#1	-.00010	.02728	.03086	.00038	.00290	.03436	.08749
#2	.00038	.02713	.01591	.00229	.00255	.03456	-.40817
#3	.00042	.02613	.01836	.00005	.00238	.03376	.36978
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14499.**	**94644.**	**3433.4**
Stddev	119.	1474.	49.8
%RSD	.82369	1.5576	1.4494
#1	14547.	93371.	3379.2
#2	14363.	96259.	3477.0
#3	14587.	94302.	3443.9

Approved: March 30, 2017

Sample Name: L1703131901 Acquired: 3/29/2017 16:29:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.01788**	**.00046**	**.01488**	**.09749**	**.00003**	**38.422**	**-.00023**
Stddev	.00035	.01206	.00139	.00210	.00204	.00001	.287	.00027
%RSD	183.90	67.444	301.31	14.133	2.0933	46.690	.74634	120.24
#1	-.00056	.02240	-.00088	.01445	.09586	.00004	38.097	.00005
#2	-.00012	.00421	.00037	.01717	.09978	.00004	38.640	-.00023
#3	.00012	.02701	.00190	.01303	.09683	.00002	38.528	-.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.00044**	**.04708**	**.04264**	**.62855**	**-.00086**	**5.3368**	**.00177**
Stddev	.00037	.00068	.00068	.01614	.05940	.00412	.0968	.00072
%RSD	540.44	152.35	1.4382	37.846	9.4506	478.33	1.8136	40.510
#1	.00033	.00089	.04722	.05920	.62491	-.00319	5.3788	.00158
#2	-.00041	.00078	.04767	.04174	.57105	-.00329	5.2261	.00257
#3	-.00013	-.00033	.04634	.02697	.68968	.00389	5.4055	.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**13.755**	**.00019**	**-.00414**	**-.00041**	**-.00121**	**.00152**	**3.3919**
Stddev	.00034	.024	.00037	.00276	.00414	.00103	.00632	.0150
%RSD	92.849	.17779	199.87	66.669	1002.4	85.413	416.42	.44233
#1	.00076	13.728	.00030	-.00295	.00114	-.00196	-.00315	3.4003
#2	.00021	13.761	-.00023	-.00218	.00273	-.00163	.00871	3.4008
#3	.00013	13.775	.00049	-.00729	-.00511	-.00003	-.00100	3.3746
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703131901 Acquired: 3/29/2017 16:29:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**.27658**	**-.00069**	**.00165**	**.00052**	**.08532**	**.06611**
Stddev	.00059	.00195	.00453	.00146	.00051	.00041	.19308
%RSD	93.979	.70350	661.15	88.428	97.666	.47764	292.04
#1	.00131	.27455	-.00134	.00049	.00008	.08547	.26453
#2	.00026	.27843	-.00486	.00329	.00041	.08563	-.12113
#3	.00032	.27676	.00414	.00117	.00108	.08486	.05494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13853.**	**93424.**	**3460.6**
Stddev	110.	965.	59.5
%RSD	.79594	1.0332	1.7193
#1	13857.	92729.	3526.2
#2	13740.	94526.	3445.4
#3	13961.	93017.	3410.1

Approved: March 30, 2017

Sample Name: L1703132001 Acquired: 3/29/2017 16:33:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00063**	**.05056**	**.00016**	**.00783**	**.04814**	**.00005**	**37.369**
Stddev	.00078	.00605	.00232	.00243	.00189	.00004	.085
%RSD	124.60	11.959	1449.5	31.048	3.9202	81.366	.22834
#1	.00016	.04744	.00178	.00770	.05030	.00001	37.298
#2	-.00141	.04671	.00120	.01033	.04681	.00010	37.463
#3	-.00064	.05753	-.00250	.00547	.04732	.00005	37.345
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.00002**	**.00057**	**.00830**	**.00359**	**.25674**	**-.00630**
Stddev	.00025	.00038	.00036	.00122	.03693	.02004	.00489
%RSD	139.72	2196.2	63.360	14.752	1028.7	7.8058	77.644
#1	-.00015	.00041	.00020	.00846	.01749	.27911	-.00195
#2	-.00044	-.00002	.00058	.00944	-.03828	.24043	-.00536
#3	.00006	-.00034	.00093	.00700	.03156	.25067	-.01160
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.8285**	**.00147**	**.00030**	**2.3103**	**-.00025**	**.01327**	**.00037**
Stddev	.0455	.00289	.00032	.0271	.00042	.00308	.00193
%RSD	1.1895	196.86	108.27	1.1734	167.68	23.218	525.39
#1	3.7869	.00344	-.00004	2.2816	.00015	.01182	-.00068
#2	3.8214	-.00185	.00033	2.3355	-.00022	.01119	.00259
#3	3.8772	.00282	.00061	2.3137	-.00068	.01681	-.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703132001 Acquired: 3/29/2017 16:33:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**-.00197**	**3.0459**	**-.00048**	**.10064**	**.00011**	**-.00123**
Stddev	.00246	.00393	.0048	.00025	.00052	.00979	.00220
%RSD	493.63	199.57	.15667	53.046	.51303	8613.0	178.80
#1	-.00147	-.00038	3.0409	-.00073	.10029	-.01105	-.00222
#2	.00325	.00092	3.0464	-.00022	.10123	.00725	-.00276
#3	-.00029	-.00645	3.0504	-.00049	.10040	.00414	.00129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00037**	**.00850**	F **-.04136**
Stddev	.00059	.00014	.11578
%RSD	161.07	1.6128	279.93
#1	.00046	.00834	-.00780
#2	-.00027	.00855	-.17021
#3	.00090	.00860	.05394
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13938.**	**92544.**	**3357.4**
Stddev	55.	252.	43.6
%RSD	.39555	.27180	1.2999
#1	13920.	92600.	3322.2
#2	13894.	92269.	3406.3
#3	14000.	92762.	3343.8

Approved: March 30, 2017

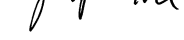
Sample Name: CCV Acquired: 3/29/2017 16:37:08 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39756**	**10.108**	**.40466**	**.48796**	**1.0108**	**.05047**	**10.027**
Stddev	.00134	.031	.00265	.00390	.0025	.00023	.033
%RSD	.33785	.30194	.65491	.79990	.24295	.46017	.32935
#1	.39897	10.134	.40766	.49205	1.0093	.05072	9.9890
#2	.39741	10.115	.40263	.48427	1.0096	.05042	10.042
#3	.39630	10.075	.40369	.48757	1.0137	.05026	10.050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05161**	**.20835**	**.49733**	**.51863**	**4.0080**	**50.797**	**1.0118**
Stddev	.00049	.00097	.00214	.00212	.0236	.365	.0064
%RSD	.95360	.46481	.43000	.40860	.58991	.71817	.62978
#1	.05167	.20880	.49918	.51995	3.9811	50.578	1.0161
#2	.05208	.20900	.49781	.51975	4.0171	50.595	1.0045
#3	.05110	.20724	.49499	.51618	4.0257	51.218	1.0147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.014**	**.50647**	**1.0076**	**50.456**	**.50754**	**9.9979**	**.50897**
Stddev	.055	.00562	.0025	.385	.00112	.0213	.00216
%RSD	.54518	1.1106	.25178	.76297	.22116	.21289	.42391
#1	9.9537	.50207	1.0102	50.078	.50878	10.021	.51141
#2	10.028	.50453	1.0074	50.441	.50661	9.9929	.50817
#3	10.060	.51281	1.0051	50.848	.50723	9.9795	.50732
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 30, 2017



Sample Name: CCV Acquired: 3/29/2017 16:37:08 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2054**	**.39829**	**5.0556**	**1.0324**	**1.0076**	**1.0157**	**.51719**
Stddev	.0058	.00474	.0138	.0041	.0046	.0089	.00071
%RSD	.48448	1.1897	.27370	.39831	.45834	.87563	.13671
#1	1.2106	.39404	5.0680	1.0346	1.0023	1.0079	.51798
#2	1.2066	.40340	5.0406	1.0349	1.0093	1.0138	.51698
#3	1.1991	.39742	5.0581	1.0276	1.0110	1.0254	.51661
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0136**	**1.0123**	F **.16204**
Stddev	.0022	.0023	.13720
%RSD	.21636	.23041	84.672
#1	1.0144	1.0141	.29248
#2	1.0153	1.0132	.17469
#3	1.0111	1.0097	.01895
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13107.**	**87227.**	**3287.2**
Stddev	145.	747.	77.7
%RSD	1.1089	.85687	2.3628
#1	12954.	86494.	3346.3
#2	13123.	87199.	3316.1
#3	13244.	87988.	3199.2

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 16:40:43 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00116**	**.00968**	**.00079**	**-.00001**	**.00195**	**.00016**	**.03060**
Stddev	.00123	.00711	.00328	.00184	.00148	.00006	.06260
%RSD	105.91	73.457	417.23	16650.	76.187	35.437	204.58
#1	-.00216	.01712	-.00297	.00064	.00230	.00022	.10274
#2	.00021	.00897	.00224	-.00209	.00322	.00011	-.00942
#3	-.00152	.00295	.00309	.00141	.00032	.00014	-.00152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00013**	**-.00016**	**-.00044**	**.00143**	**-.08554**	**-.00642**
Stddev	.00026	.00007	.00049	.00095	.01813	.11125	.00249
%RSD	187.23	54.209	304.51	214.59	1265.3	130.05	38.763
#1	-.00035	.00018	-.00062	-.00128	-.01458	-.07861	-.00625
#2	.00015	.00005	.00035	-.00064	-.00224	.02208	-.00899
#3	-.00022	.00016	-.00021	.00059	.02112	-.20010	-.00402
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00269**	**.00058**	**.00039**	**.00975**	**-.00104**	**-.00462**	**-.00060**
Stddev	.03937	.00056	.00031	.03206	.00075	.00114	.00350
%RSD	1465.5	95.159	79.925	328.92	71.675	24.630	582.86
#1	-.02319	.00093	.00004	.01700	-.00189	-.00428	.00233
#2	-.02757	.00088	.00049	-.02532	-.00050	-.00369	.00034
#3	.04270	-.00006	.00063	.03756	-.00074	-.00589	-.00448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 16:40:43 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00170**	**.00067**	**.00651**	**-.00020**	**-.00014**	**.00563**	**-.00170**
Stddev	.00249	.00280	.00107	.00037	.00032	.00507	.00056
%RSD	146.82	414.34	16.396	187.67	228.31	90.180	32.761
#1	.00288	.00247	.00649	-.00025	.00016	.00121	-.00110
#2	-.00117	.00210	.00546	.00019	-.00010	.00450	-.00181
#3	.00337	-.00255	.00759	-.00054	-.00048	.01117	-.00219
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00101**	**.00011**	F **.10057**
Stddev	.00039	.00014	.51127
%RSD	38.887	133.18	508.37
#1	.00138	-.00003	.65026
#2	.00106	.00010	-.36077
#3	.00060	.00025	.01222
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13469.**	**88535.**	**3209.8**
Stddev	88.	638.	32.7
%RSD	.65203	.72069	1.0195
#1	13460.	89078.	3242.1
#2	13385.	88696.	3176.6
#3	13560.	87833.	3210.7

Approved: March 30, 2017

Sample Name: L1703135401 Acquired: 3/29/2017 16:44:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**.20859**	**.00627**	**.01729**	**.03385**	**.00014**	**55.046**	**-.00035**
Stddev	.00104	.00808	.00119	.00188	.00114	.00007	.132	.00015
%RSD	5277.7	3.8758	18.956	10.849	3.3559	48.456	.23920	43.614
#1	.00064	.21352	.00626	.01930	.03408	.00007	55.137	-.00017
#2	-.00119	.19926	.00508	.01696	.03262	.00020	55.106	-.00045
#3	.00061	.21299	.00746	.01559	.03486	.00014	54.895	-.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00135**	**.00348**	**.00118**	**1.0710**	**21.510**	**-.00015**	**22.026**	**.15017**
Stddev	.00009	.00032	.00086	.0348	.114	.00218	.118	.00192
%RSD	7.0010	9.1889	72.775	3.2442	.53027	1408.0	.53503	1.2780
#1	.00129	.00321	.00049	1.0336	21.587	.00070	22.108	.15103
#2	.00146	.00383	.00090	1.1023	21.379	-.00264	21.891	.14797
#3	.00131	.00338	.00214	1.0770	21.564	.00147	22.080	.15151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00504**	**20.702**	**.00180**	**.04501**	**.00083**	**-.00028**	**.00246**	**3.8019**
Stddev	.00028	.180	.00041	.00388	.00220	.00143	.00490	.0102
%RSD	5.6110	.87072	22.732	8.6300	265.59	503.36	198.87	.26904
#1	.00528	20.862	.00195	.04052	.00184	-.00133	.00221	3.8112
#2	.00473	20.507	.00212	.04721	-.00169	.00135	.00748	3.8037
#3	.00510	20.737	.00134	.04729	.00233	-.00087	-.00230	3.7910
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703135401 Acquired: 3/29/2017 16:44:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00149**	**.18122**	**-.00094**	**-.00019**	**.00061**	**.01096**	**.24673**
Stddev	.00107	.00084	.00531	.00283	.00071	.00002	.29760
%RSD	71.644	.46154	562.77	1513.9	116.49	.18231	120.62
#1	.00052	.18168	.00464	.00306	.00039	.01096	.36664
#2	.00264	.18173	-.00155	-.00154	.00004	.01094	-.09212
#3	.00132	.18026	-.00592	-.00208	.00141	.01098	.46568
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13680.**	**92367.**	**3369.9**
Stddev	68.	643.	42.9
%RSD	.49460	.69571	1.2734
#1	13724.	92922.	3329.3
#2	13714.	91663.	3414.8
#3	13602.	92516.	3365.6

Approved: March 30, 2017

Sample Name: L1703135402 Acquired: 3/29/2017 16:47:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00043**	**1.5923**	**.00107**	**-.00038**	**.11377**	**.00003**	**111.69**
Stddev	.00203	.0060	.00154	.00230	.00133	.00006	.56
%RSD	465.85	.37407	143.49	608.55	1.1682	169.28	.50219
#1	.00043	1.5971	.00155	.00104	.11346	.00010	111.05
#2	.00102	1.5857	.00232	.00086	.11522	.00001	111.89
#3	-.00275	1.5943	-.00065	-.00304	.11262	-.00001	112.12
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.00252**	**.35314**	**.00693**	**.45399**	**214.04**	**.00553**
Stddev	.00024	.00042	.00117	.00049	.01820	1.23	.00712
%RSD	279.88	16.730	.33197	7.1343	4.0099	.57585	128.81
#1	.00006	.00215	.35446	.00683	.43318	212.71	.00939
#2	.00035	.00298	.35274	.00650	.46697	215.15	-.00269
#3	-.00014	.00243	.35222	.00747	.46183	214.26	.00989
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21043**	**.00419**	**.07877**	**99.031**	**.00084**	**.00635**	**.00169**
Stddev	.06784	.00046	.00034	.439	.00041	.00084	.00205
%RSD	32.238	10.975	.43765	.44310	48.367	13.290	121.32
#1	.22424	.00457	.07917	98.538	.00119	.00730	.00293
#2	.13675	.00368	.07858	99.378	.00093	.00606	-.00068
#3	.27030	.00432	.07857	99.178	.00039	.00569	.00282
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703135402 Acquired: 3/29/2017 16:47:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**-.00239**	**1.1425**	**.00210**	**6.1228**	**-.00091**	**-.00015**
Stddev	.00155	.00556	.0057	.00069	.0406	.00981	.00099
%RSD	632.29	232.95	.49777	32.859	.66369	1075.2	670.08
#1	-.00203	.00064	1.1487	.00287	6.0759	-.00475	-.00063
#2	.00071	.00100	1.1412	.00192	6.1453	.01024	.00099
#3	.00058	-.00880	1.1375	.00153	6.1472	-.00823	-.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00636**	**.00510**	F **-.14034**
Stddev	.00041	.00005	.18867
%RSD	6.4871	.91510	134.44
#1	.00621	.00515	-.10388
#2	.00683	.00510	-.34459
#3	.00605	.00506	.02743
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13566.**	**88394.**	**3364.2**
Stddev	117.	663.	55.4
%RSD	.86510	.74994	1.6472
#1	13701.	88036.	3343.3
#2	13508.	87987.	3322.3
#3	13489.	89158.	3427.0

Approved: March 30, 2017

Sample Name: L1703136301 Acquired: 3/29/2017 16:51:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00072**	**.08131**	**-.00012**	**.01364**	**.00256**	**.00009**	**.21537**	**-.00001**
Stddev	.00027	.00176	.00090	.00133	.00085	.00003	.03406	.00022
%RSD	37.904	2.1702	780.15	9.7138	33.347	38.023	15.813	3580.8
#1	-.00075	.07960	.00037	.01451	.00168	.00012	.24960	-.00018
#2	-.00044	.08120	.00044	.01430	.00339	.00008	.21503	-.00008
#3	-.00098	.08313	-.00116	.01212	.00262	.00006	.18149	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00021**	**-.00030**	**.01297**	**.02515**	**.44845**	**-.00135**	**-.00454**	**.00299**
Stddev	.00006	.00048	.00093	.02946	.07147	.00202	.10916	.00233
%RSD	29.081	158.73	7.2061	117.16	15.937	148.99	2402.7	77.917
#1	.00026	-.00038	.01399	.05662	.36842	-.00256	-.08856	.00134
#2	.00014	.00021	.01275	.02062	.50590	-.00248	-.04391	.00197
#3	.00022	-.00074	.01216	-.00179	.47104	.00098	.11884	.00566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.16113**	**.00009**	**-.00145**	**.00095**	**-.00162**	**-.00251**	**.06327**
Stddev	.00005	.01794	.00034	.00044	.00113	.00229	.00236	.00247
%RSD	408.14	11.135	383.80	30.255	119.94	141.14	94.129	3.8993
#1	.00002	.16701	.00047	-.00120	.00216	-.00395	-.00138	.06538
#2	-.00007	.14099	.00000	-.00196	.00076	-.00152	-.00092	.06388
#3	.00002	.17540	-.00020	-.00120	-.00009	.00061	-.00522	.06056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703136301 Acquired: 3/29/2017 16:51:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00083**	**.00042**	**-.01065**	**.00004**	**-.00013**	**.00461**	**30.373**
Stddev	.00033	.00037	.00856	.00119	.00106	.00016	1.005
%RSD	39.701	87.336	80.440	2831.2	828.71	3.3631	3.3101
#1	.00113	.00084	-.01001	.00121	-.00134	.00467	31.369
#2	.00048	.00025	-.01951	-.00116	.00035	.00473	30.391
#3	.00089	.00017	-.00242	.00009	.00061	.00443	29.359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13983.**	**93702.**	**3332.9**
Stddev	27.	644.	92.9
%RSD	.18972	.68754	2.7870
#1	14011.	94322.	3227.9
#2	13959.	93748.	3366.7
#3	13980.	93036.	3404.2

Approved: March 30, 2017

Sample Name: L1703136302 Acquired: 3/29/2017 16:55:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00121**	**.03279**	**.00074**	**.00552**	**.00222**	**.00005**	**.22903**	**-.00018**
Stddev	.00038	.00859	.00159	.00143	.00220	.00006	.03708	.00019
%RSD	31.738	26.201	213.77	25.906	99.035	107.70	16.192	106.31
#1	-.00161	.04216	.00182	.00523	-.00027	.00001	.23417	-.00039
#2	-.00084	.03091	-.00108	.00426	.00388	.00012	.18964	-.00006
#3	-.00117	.02529	.00150	.00708	.00305	.00003	.26327	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**-.00025**	**.01615**	**.01803**	**.07709**	**-.00655**	**-.06119**	**.00137**
Stddev	.00047	.00037	.00027	.03614	.08771	.00524	.02888	.00169
%RSD	218.54	144.40	1.6509	200.41	113.78	79.880	47.197	123.70
#1	.00076	-.00020	.01621	.05322	.17791	-.00729	-.07871	.00309
#2	-.00003	.00008	.01639	.01987	.03507	-.00099	-.07700	-.00029
#3	-.00008	-.00065	.01586	-.01899	.01829	-.01138	-.02786	.00131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.16776**	**.00035**	**.00009**	**.00193**	**.00188**	**.00073**	**.05843**
Stddev	.00025	.01333	.00123	.00643	.00067	.00135	.00248	.00250
%RSD	291.46	7.9455	352.52	6971.6	34.519	71.790	338.74	4.2813
#1	-.00019	.16026	.00095	-.00422	.00121	.00165	.00351	.06101
#2	.00029	.18315	.00116	-.00299	.00206	.00066	-.00007	.05602
#3	.00015	.15987	-.00106	.00749	.00252	.00332	-.00124	.05825
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703136302 Acquired: 3/29/2017 16:55:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00070**	**.00049**	**.00225**	**-.00155**	**.00001**	**.00485**	**.01919**
Stddev	.00029	.00008	.01297	.00260	.00077	.00019	.37335
%RSD	41.549	16.347	577.38	167.57	11632.	3.8305	1945.4
#1	.00103	.00040	.01720	-.00248	.00047	.00506	.04220
#2	.00056	.00055	-.00595	.00139	.00043	.00470	-.36513
#3	.00051	.00053	-.00451	-.00357	-.00088	.00480	.38051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14123.**	**94312.**	**3363.5**
Stddev	94.	1103.	44.2
%RSD	.66428	1.1700	1.3128
#1	14048.	94644.	3408.2
#2	14228.	93080.	3362.5
#3	14093.	95210.	3319.9

Approved: March 30, 2017

Sample Name: L1703136303 Acquired: 3/29/2017 16:59:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00060**	**.08312**	**.00055**	**.01057**	**.00333**	**.00009**	**.53880**
Stddev	.00135	.00362	.00071	.00035	.00079	.00006	.09476
%RSD	226.90	4.3541	129.63	3.3427	23.661	71.468	17.587
#1	.00096	.07895	.00137	.01069	.00260	.00002	.44125
#2	-.00133	.08540	.00020	.01017	.00322	.00015	.54464
#3	-.00143	.08502	.00008	.01085	.00417	.00010	.63050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.00031**	**-.00032**	**.01814**	**.05359**	**.14935**	**-.00255**
Stddev	.00021	.00011	.00104	.00083	.03555	.07793	.00388
%RSD	1781.8	35.691	327.79	4.5929	66.339	52.177	152.07
#1	-.00024	.00042	.00086	.01828	.02137	.19555	-.00597
#2	.00016	.00031	-.00109	.01889	.04767	.19312	.00166
#3	.00004	.00020	-.00073	.01724	.09173	.05938	-.00334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09979**	**-.00013**	**-.00005**	**.22667**	**-.00024**	**.00273**	**-.00118**
Stddev	.03829	.00199	.00034	.03909	.00098	.00314	.00207
%RSD	38.368	1570.3	652.51	17.244	410.15	114.87	176.31
#1	.14311	-.00046	-.00044	.26040	-.00092	.00446	-.00255
#2	.07049	-.00192	.00016	.18383	.00088	-.00089	-.00219
#3	.08577	.00201	.00013	.23577	-.00067	.00462	.00121
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703136303 Acquired: 3/29/2017 16:59:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**-.00054**	**.18776**	**.00057**	**.00133**	**.00536**	**-.00147**
Stddev	.00191	.00266	.00301	.00034	.00083	.01125	.00330
%RSD	5349.1	491.31	1.6028	59.212	62.536	209.85	224.22
#1	-.00220	-.00270	.18473	.00084	.00076	.00676	-.00525
#2	.00070	-.00137	.19074	.00019	.00095	.01585	.00087
#3	.00140	.00244	.18780	.00070	.00229	-.00652	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00068**	**.00452**	F **-.06862**
Stddev	.00059	.00002	.17507
%RSD	87.094	.47534	255.12
#1	.00115	.00454	-.19413
#2	.00087	.00452	-.14311
#3	.00002	.00450	.13137
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14151.**	**93761.**	**3399.3**
Stddev	102.	373.	27.2
%RSD	.72380	.39828	.80021
#1	14033.	93983.	3424.4
#2	14223.	93330.	3403.2
#3	14195.	93970.	3370.4

Approved: March 30, 2017

Sample Name: L1703138201 Acquired: 3/29/2017 17:02:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00039**	**.06028**	**-.00098**	**.00751**	**.05338**	**.00002**	**47.588**
Stddev	.00102	.00537	.00038	.00287	.00085	.00007	.189
%RSD	262.33	8.9046	39.022	38.272	1.5969	396.62	.39724
#1	.00117	.06404	-.00084	.00911	.05402	.00007	47.662
#2	-.00076	.06268	-.00141	.00419	.05371	-.00006	47.729
#3	.00075	.05414	-.00069	.00923	.05242	.00003	47.373
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**-.00014**	**-.00023**	**.00044**	**.02656**	**.45279**	**-.00097**
Stddev	.00013	.00024	.00083	.00018	.01142	.04572	.00276
%RSD	74.045	166.18	366.79	41.909	42.987	10.099	285.30
#1	-.00009	.00013	.00069	.00051	.02411	.49938	-.00200
#2	-.00011	-.00032	-.00091	.00058	.03901	.40798	-.00306
#3	-.00032	-.00023	-.00046	.00023	.01657	.45101	.00216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.9829**	**-.00119**	**.00016**	**2.6445**	**-.00088**	**.01795**	**.00006**
Stddev	.1396	.00105	.00052	.0354	.00061	.00318	.00241
%RSD	2.3325	87.905	331.33	1.3393	68.864	17.721	4310.5
#1	5.8223	-.00166	.00076	2.6849	-.00139	.02121	.00012
#2	6.0522	-.00193	-.00016	2.6299	-.00021	.01776	-.00238
#3	6.0743	.00001	-.00013	2.6186	-.00106	.01486	.00243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703138201 Acquired: 3/29/2017 17:02:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00101**	**.00296**	**3.4520**	**.00054**	**.13629**	**-.00545**	**-.00019**
Stddev	.00387	.00215	.0020	.00039	.00102	.00606	.00057
%RSD	381.74	72.630	.05880	72.973	.74928	111.16	293.44
#1	.00537	.00289	3.4538	.00018	.13703	-.00915	.00044
#2	-.00205	.00085	3.4498	.00047	.13672	-.00874	-.00037
#3	-.00028	.00514	3.4524	.00096	.13513	.00154	-.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00036**	**.00440**	F **-.04410**
Stddev	.00081	.00008	.26458
%RSD	223.65	1.9237	599.97
#1	-.00051	.00450	-.23673
#2	.00110	.00438	.25758
#3	.00051	.00433	-.15314
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13890.**	**92024.**	**3341.8**
Stddev	134.	850.	64.6
%RSD	.96689	.92346	1.9335
#1	13956.	91155.	3345.1
#2	13736.	92065.	3275.6
#3	13978.	92853.	3404.7

Approved: March 30, 2017

Sample Name: L1703126801 Acquired: 3/29/2017 17:06:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG607688-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**.01978**	**-.00078**	**.00218**	**.00898**	**.00013**	**2.0287**
Stddev	.00036	.00238	.00181	.00151	.00146	.00003	.0626
%RSD	79.044	12.019	230.80	69.076	16.233	24.219	3.0837
#1	-.00087	.01837	-.00150	.00258	.01055	.00009	1.9608
#2	-.00027	.02253	.00127	.00052	.00873	.00015	2.0841
#3	-.00023	.01845	-.00212	.00345	.00767	.00014	2.0411
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.00247**	**-.00046**	**-.00046**	**.03537**	**.35534**	**-.01001**
Stddev	.00021	.00026	.00024	.00113	.03846	.14530	.00196
%RSD	236.67	10.467	52.007	245.83	108.72	40.891	19.555
#1	-.00008	.00217	-.00074	.00080	-.00545	.27546	-.01223
#2	-.00031	.00260	-.00031	-.00082	.07093	.52305	-.00926
#3	.00012	.00264	-.00035	-.00136	.04063	.26750	-.00854
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0497**	**.02484**	**-.00017**	**5.7436**	**.00216**	**.00087**	**-.00093**
Stddev	.0472	.00457	.00019	.0810	.00038	.00454	.00376
%RSD	4.4960	18.384	107.61	1.4109	17.479	524.16	404.35
#1	1.0956	.02543	-.00021	5.8233	.00204	-.00431	.00126
#2	1.0522	.02001	.00003	5.6613	.00186	.00415	-.00527
#3	1.0013	.02909	-.00034	5.7461	.00259	.00276	.00122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703126801 Acquired: 3/29/2017 17:06:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG607688-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00035**	**.00113**	**.35502**	**.00046**	**.01241**	**-.00019**	**.00060**
Stddev	.00360	.00573	.00475	.00031	.00049	.00576	.00273
%RSD	1019.8	505.97	1.3371	66.895	3.9414	3107.3	455.71
#1	-.00090	-.00529	.35363	.00058	.01285	.00216	-.00255
#2	.00441	.00296	.36030	.00069	.01189	-.00674	.00220
#3	-.00245	.00573	.35112	.00011	.01249	.00403	.00215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00017**	**.00436**	F **-.33887**
Stddev	.00113	.00026	.22815
%RSD	653.09	6.0438	67.326
#1	-.00074	.00432	-.51224
#2	-.00018	.00463	-.08040
#3	.00144	.00411	-.42397
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13574.**	**90215.**	**3174.6**
Stddev	47.	473.	45.9
%RSD	.34880	.52382	1.4445
#1	13583.	90716.	3138.0
#2	13523.	90153.	3159.8
#3	13616.	89777.	3226.0

Approved: March 30, 2017

Sample Name: L1703126802 Acquired: 3/29/2017 17:10:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00096**	**.00700**	**.00252**	**.00519**	**.01957**	**.00011**	**2.1579**
Stddev	.00061	.00718	.00194	.00092	.00156	.00002	.0328
%RSD	63.377	102.62	76.855	17.786	7.9683	20.226	1.5225
#1	-.00026	-.00112	.00075	.00477	.01787	.00012	2.1563
#2	-.00130	.01254	.00459	.00455	.02094	.00008	2.1915
#3	-.00131	.00958	.00222	.00625	.01989	.00012	2.1258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.00336**	**.00034**	**-.00103**	**2.2628**	**.40674**	**-.00374**
Stddev	.00029	.00020	.00045	.00059	.0167	.11370	.00536
%RSD	149.30	5.9104	134.28	57.469	.73842	27.954	143.56
#1	-.00051	.00354	.00015	-.00147	2.2490	.53513	.00136
#2	.00006	.00339	.00000	-.00127	2.2814	.36628	-.00323
#3	-.00013	.00315	.00085	-.00036	2.2580	.31880	-.00934
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2971**	**.11247**	**-.00005**	**8.6496**	**-.00111**	**-.00040**	**.00061**
Stddev	.0537	.00117	.00020	.0378	.00111	.00640	.00220
%RSD	4.1408	1.0407	420.93	.43728	99.661	1609.0	358.85
#1	1.2831	.11186	-.00016	8.6640	.00015	.00698	-.00185
#2	1.3565	.11382	-.00017	8.6067	-.00154	-.00446	.00238
#3	1.2518	.11174	.00018	8.6782	-.00194	-.00371	.00132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703126802 Acquired: 3/29/2017 17:10:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00251**	**.00309**	**.27853**	**.00023**	**.01504**	**-.00050**	**-.00268**
Stddev	.00190	.00121	.00214	.00125	.00071	.00954	.00449
%RSD	75.837	39.071	.76847	541.99	4.7093	1920.5	167.44
#1	-.00288	.00393	.27995	-.00120	.01443	.01049	.00109
#2	-.00045	.00171	.27957	.00081	.01487	-.00671	-.00149
#3	-.00420	.00364	.27607	.00109	.01581	-.00527	-.00764
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00063**	**.00152**	F **-.39021**
Stddev	.00094	.00008	.44220
%RSD	148.58	5.1141	113.32
#1	-.00021	.00148	-.09690
#2	.00165	.00147	-.89884
#3	.00047	.00161	-.17490
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13400.**	**88909.**	**3202.3**
Stddev	86.	1348.	39.7
%RSD	.64133	1.5161	1.2401
#1	13499.	89516.	3236.2
#2	13352.	89847.	3158.6
#3	13349.	87364.	3212.1

Approved: March 30, 2017

Sample Name: L1703126803S Acquired: 3/29/2017 17:14:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG607688-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01994**	**.60894**	**.02534**	**.10614**	**.06034**	**.00284**	**2.5654**
Stddev	.00120	.01208	.00329	.00395	.00206	.00004	.0925
%RSD	6.0142	1.9833	12.990	3.7181	3.4098	1.4746	3.6074
#1	.01996	.59542	.02162	.10175	.05939	.00279	2.4731
#2	.02113	.61277	.02656	.10727	.05893	.00287	2.5650
#3	.01873	.61864	.02785	.10940	.06270	.00286	2.6582
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00274**	**.01463**	**.02643**	**.02869**	**.26500**	**3.0556**	**.04993**
Stddev	.00036	.00034	.00114	.00050	.00833	.0493	.00399
%RSD	13.323	2.3523	4.2988	1.7317	3.1429	1.6140	7.9969
#1	.00304	.01449	.02564	.02811	.26903	2.9993	.04682
#2	.00233	.01438	.02774	.02898	.27056	3.0764	.05443
#3	.00285	.01502	.02593	.02897	.25543	3.0912	.04854
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.5494**	**.05271**	**.05525**	**8.5611**	**.03014**	**.56402**	**.02784**
Stddev	.0432	.00093	.00135	.1745	.00087	.01744	.00158
%RSD	2.7888	1.7705	2.4425	2.0388	2.8915	3.0929	5.6606
#1	1.5640	.05321	.05398	8.3849	.02952	.54412	.02902
#2	1.5834	.05164	.05510	8.5644	.03114	.57133	.02846
#3	1.5008	.05329	.05667	8.7340	.02977	.57663	.02605
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703126803S Acquired: 3/29/2017 17:14:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG607688-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.07022**	**.01922**	**.71673**	**.05938**	**.06531**	**.05323**	**.03104**
Stddev	.00249	.00458	.01411	.00132	.00047	.00881	.00103
%RSD	3.5394	23.836	1.9683	2.2296	.71503	16.556	3.3114
#1	.07292	.02111	.70044	.05798	.06479	.06149	.02999
#2	.06802	.02254	.72493	.06061	.06569	.05425	.03204
#3	.06972	.01399	.72482	.05954	.06546	.04395	.03110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.05439**	**.06309**	F **-.12062**
Stddev	.00095	.00141	.48264
%RSD	1.7447	2.2315	400.12
#1	.05331	.06148	.27624
#2	.05482	.06374	.01980
#3	.05506	.06406	-.65791
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13452.**	**88654.**	**3214.5**
Stddev	59.	1362.	55.4
%RSD	.44204	1.5363	1.7243
#1	13509.	87509.	3219.8
#2	13390.	88293.	3267.0
#3	13455.	90160.	3156.6

Approved: March 30, 2017

Sample Name: L1703126804SD Acquired: 3/29/2017 17:17:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG607688-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01905**	**.55558**	**.01864**	**.09383**	**.05739**	**.00258**	**2.5183**
Stddev	.00117	.01336	.00089	.00143	.00027	.00004	.0890
%RSD	6.1488	2.4049	4.7786	1.5274	.47848	1.6701	3.5331
#1	.01965	.54380	.01866	.09385	.05711	.00253	2.4367
#2	.01770	.55285	.01773	.09525	.05742	.00259	2.5049
#3	.01980	.57010	.01951	.09239	.05765	.00262	2.6132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00237**	**.01348**	**.02417**	**.02639**	**.23614**	**2.7917**	**.04792**
Stddev	.00009	.00026	.00054	.00124	.01522	.1045	.00479
%RSD	3.6782	1.9270	2.2310	4.7105	6.4440	3.7436	9.9917
#1	.00247	.01344	.02448	.02675	.22002	2.8321	.05332
#2	.00231	.01324	.02448	.02500	.23815	2.6730	.04626
#3	.00234	.01376	.02355	.02740	.25025	2.8700	.04419
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.4835**	**.05129**	**.05059**	**8.3047**	**.02779**	**.50711**	**.02555**
Stddev	.0757	.00111	.00110	.1076	.00111	.01418	.00193
%RSD	5.1051	2.1695	2.1725	1.2956	3.9860	2.7969	7.5667
#1	1.5702	.05208	.04944	8.1816	.02901	.49821	.02336
#2	1.4498	.05179	.05072	8.3519	.02751	.49965	.02704
#3	1.4304	.05002	.05163	8.3806	.02685	.52347	.02623
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703126804SD Acquired: 3/29/2017 17:17:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG607688-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.06433**	**.02137**	**.67079**	**.05379**	**.06134**	**.04416**	**.02828**
Stddev	.00191	.00836	.01237	.00084	.00081	.00947	.00334
%RSD	2.9658	39.120	1.8448	1.5566	1.3154	21.437	11.815
#1	.06511	.03086	.65727	.05305	.06050	.03328	.02534
#2	.06216	.01818	.67354	.05362	.06211	.04867	.02760
#3	.06573	.01508	.68155	.05470	.06142	.05052	.03192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.04934**	**.05825**	F **-.51113**
Stddev	.00080	.00099	.10726
%RSD	1.6142	1.7019	20.985
#1	.04855	.05717	-.63430
#2	.04934	.05848	-.46076
#3	.05014	.05911	-.43832
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13527.**	**88800.**	**3166.3**
Stddev	111.	2963.	74.0
%RSD	.82297	3.3362	2.3371
#1	13400.	88135.	3114.9
#2	13606.	92039.	3132.9
#3	13576.	86227.	3251.1

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 17:21:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37954**	**9.6267**	**.38476**	**.46902**	**.97432**	**.04829**	**9.6513**
Stddev	.00161	.0111	.00280	.00363	.00551	.00006	.0478
%RSD	.42327	.11509	.72810	.77399	.56599	.12082	.49517
#1	.37927	9.6281	.38180	.46487	.97245	.04835	9.6891
#2	.37809	9.6150	.38738	.47161	.98053	.04829	9.6671
#3	.38127	9.6370	.38509	.47058	.96999	.04824	9.5976
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04957**	**.19975**	**.47415**	**.49611**	**3.8594**	**48.954**	**.97381**
Stddev	.00018	.00021	.00177	.00049	.0156	.253	.00459
%RSD	.35875	.10275	.37267	.09943	.40415	.51751	.47093
#1	.04937	.19982	.47256	.49641	3.8622	49.145	.97065
#2	.04972	.19952	.47605	.49554	3.8425	49.051	.97907
#3	.04961	.19991	.47385	.49638	3.8733	48.667	.97171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.6215**	**.48560**	**.96201**	**48.464**	**.48730**	**9.5905**	**.49009**
Stddev	.0919	.00480	.00106	.142	.00065	.0027	.00412
%RSD	.95535	.98906	.11000	.29378	.13357	.02825	.84159
#1	9.5915	.48213	.96209	48.336	.48785	9.5928	.49226
#2	9.7247	.49108	.96303	48.618	.48748	9.5912	.49267
#3	9.5483	.48358	.96092	48.439	.48658	9.5875	.48533
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 17:21:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1513**	**.38925**	**4.8453**	**.98906**	**.96306**	**.95747**	**.49434**
Stddev	.0042	.00712	.0277	.00154	.00463	.00649	.00366
%RSD	.36085	1.8286	.57121	.15579	.48053	.67799	.73948
#1	1.1553	.38853	4.8621	.99071	.95983	.96252	.49623
#2	1.1470	.39670	4.8604	.98767	.96836	.95015	.49666
#3	1.1517	.38252	4.8133	.98878	.96099	.95975	.49012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.96794**	**.96953**	F **.53230**
Stddev	.00258	.00244	.13982
%RSD	.26700	.25194	26.267
#1	.96505	.97089	.39859
#2	.97004	.97099	.52079
#3	.96873	.96671	.67752
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13539.**	**89038.**	**3316.7**
Stddev	141.	1229.	62.3
%RSD	1.0405	1.3805	1.8782
#1	13378.	88515.	3271.8
#2	13640.	90442.	3290.5
#3	13598.	88156.	3387.8

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 17:25:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00236**	**.00688**	**-.00062**	**.00175**	**.00183**	**.00007**	**-.01218**
Stddev	.00046	.00257	.00208	.00146	.00176	.00005	.01303
%RSD	19.292	37.425	334.52	83.183	95.811	77.620	106.93
#1	-.00190	.00750	.00075	.00340	.00384	.00013	-.02539
#2	-.00236	.00405	-.00302	.00064	.00055	.00007	-.01181
#3	-.00282	.00909	.00041	.00121	.00111	.00002	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**-.00006**	**-.00007**	**-.00145**	**-.00171**	**-.01646**	**-.00618**
Stddev	.00010	.00025	.00011	.00150	.02410	.14485	.00517
%RSD	53.627	437.74	145.91	103.79	1406.7	880.17	83.676
#1	-.00010	-.00035	.00005	.00028	-.02738	.14323	-.00299
#2	-.00017	.00004	-.00011	-.00214	.02044	-.05321	-.01214
#3	-.00030	.00013	-.00016	-.00248	.00181	-.13939	-.00340
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.00003**	**-.00001**	**.00313**	**-.00051**	**-.00214**	**.00099**
Stddev	.04831	.00316	.00049	.00423	.00061	.00109	.00162
%RSD	373820.	11919.	6215.8	135.30	119.07	51.273	162.36
#1	.02581	.00234	.00014	.00186	.00019	-.00279	.00182
#2	-.05574	.00131	.00039	-.00033	-.00094	-.00087	.00203
#3	.02989	-.00357	-.00055	.00785	-.00078	-.00274	-.00087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 17:25:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00093**	**-.00144**	**.00559**	**-.00015**	**-.00034**	**.00258**	**-.00116**
Stddev	.00283	.00372	.00160	.00056	.00081	.01267	.00253
%RSD	305.59	257.74	28.615	371.04	240.90	491.23	217.32
#1	-.00051	-.00573	.00738	.00018	-.00069	.01525	-.00025
#2	.00418	.00084	.00430	-.00080	.00059	-.01009	-.00402
#3	-.00090	.00056	.00509	.00016	-.00090	.00258	.00078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00007**	**.00001**	F **-.10793**
Stddev	.00078	.00016	.24579
%RSD	1173.3	1626.9	227.72
#1	.00014	.00016	.01747
#2	.00081	.00002	-.39113
#3	-.00075	-.00015	.04985
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13687.**	**91201.**	**3308.6**
Stddev	97.	1248.	46.6
%RSD	.71091	1.3689	1.4085
#1	13788.	89794.	3358.7
#2	13593.	91635.	3300.6
#3	13680.	92175.	3266.6

Approved: March 30, 2017

Sample Name: L1703136301 Acquired: 3/29/2017 17:28:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00157**	**.00961**	**.00205**	**.00096**	**.00241**	**.00011**	**-.00005**	**-.00006**
Stddev	.00229	.00906	.00098	.00356	.00086	.00002	.07269	.00030
%RSD	145.80	94.293	47.947	369.35	35.815	16.291	154270.	480.62
#1	.00003	.00191	.00285	.00474	.00240	.00013	.07120	-.00022
#2	-.00055	.01959	.00236	-.00233	.00155	.00010	.00277	.00028
#3	-.00419	.00733	.00095	.00048	.00328	.00010	-.07411	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**-.00017**	**.00060**	**-.00082**	**-.05883**	**-.01497**	**.00735**	**-.00081**
Stddev	.00011	.00019	.00082	.03060	.08170	.00681	.10462	.00394
%RSD	91.135	111.57	135.58	3731.5	138.88	45.460	1422.6	486.86
#1	-.00024	-.00030	.00096	-.03307	-.08725	-.00983	-.10694	.00312
#2	-.00003	-.00027	.00118	.02782	.03329	-.01239	.03061	-.00475
#3	-.00008	.00005	-.00033	.00279	-.12251	-.02269	.09839	-.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**-.04237**	**-.00026**	**-.00741**	**.00204**	**.00533**	**.00077**	**.01059**
Stddev	.00010	.04588	.00076	.00457	.00233	.00862	.00291	.00046
%RSD	705.75	108.31	287.10	61.684	114.34	161.90	377.34	4.3698
#1	-.00010	-.09534	-.00062	-.00237	.00176	-.00088	.00394	.01019
#2	.00007	-.01517	.00060	-.01129	-.00014	.00168	-.00178	.01048
#3	.00008	-.01658	-.00077	-.00857	.00450	.01517	.00015	.01109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703136301 Acquired: 3/29/2017 17:28:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.00014**	**-.00900**	**-.00091**	**.00004**	**.00092**	**2.3493**
Stddev	.00039	.00060	.00987	.00114	.00026	.00004	.2321
%RSD	1461.7	419.68	109.66	125.57	594.31	4.4692	9.8776
#1	-.00042	-.00044	-.01122	-.00215	.00006	.00088	2.5590
#2	.00036	.00012	.00179	.00007	-.00022	.00094	2.1000
#3	-.00002	.00075	-.01757	-.00064	.00029	.00096	2.3890
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13413.**	**88839.**	**3128.1**
Stddev	127.	87.	73.8
%RSD	.94540	.09811	2.3598
#1	13497.	88892.	3212.5
#2	13267.	88887.	3075.7
#3	13475.	88739.	3096.0

Approved: March 30, 2017

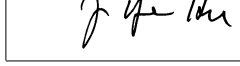
Sample Name: L1703136302 Acquired: 3/29/2017 17:32:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00167**	**.00827**	**.00157**	**-.00110**	**.00293**	**.00011**	**.03926**
Stddev	.00119	.00456	.00145	.00027	.00226	.00010	.07873
%RSD	70.938	55.196	92.596	24.177	77.222	93.055	200.56
#1	-.00177	.01346	-.00000	-.00140	.00392	.00016	.04604
#2	-.00044	.00647	.00184	-.00088	.00034	.00019	.11438
#3	-.00281	.00488	.00286	-.00104	.00453	-.00001	-.04265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**-.00004**	**-.00012**	**.00176**	**-.00391**	**-.05095**	**-.00241**
Stddev	.00026	.00004	.00068	.00193	.01846	.15492	.00360
%RSD	105.74	116.61	584.08	109.73	472.35	304.06	149.34
#1	-.00055	-.00005	-.00091	.00393	.00739	.12750	-.00028
#2	-.00008	-.00007	.00030	.00105	-.02521	-.12933	-.00038
#3	-.00011	.00001	.00026	.00028	.00609	-.15102	-.00657
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01169**	**-.00121**	**-.00009**	**-.02909**	**-.00113**	**-.00191**	**-.00093**
Stddev	.07281	.00124	.00048	.02671	.00026	.00440	.00158
%RSD	622.93	102.20	505.47	91.816	23.300	230.62	169.72
#1	-.01950	-.00134	-.00039	-.00484	-.00114	.00266	.00000
#2	.06471	.00009	.00046	-.05771	-.00086	-.00227	-.00004
#3	-.08027	-.00237	-.00036	-.02470	-.00139	-.00611	-.00276
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: L1703136302 Acquired: 3/29/2017 17:32:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00245**	**-.00048**	**.01206**	**-.00001**	**-.00020**	**-.00331**	**.00036**
Stddev	.00339	.00526	.00263	.00121	.00047	.00785	.00193
%RSD	138.35	1103.7	21.795	12071.	228.99	237.05	530.35
#1	.00181	-.00475	.01233	-.00061	-.00057	-.01222	.00144
#2	-.00057	-.00207	.01454	-.00080	-.00036	.00257	-.00186
#3	.00611	.00539	.00931	.00138	.00032	-.00028	.00151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00061**	**.00115**	F **-.46633**
Stddev	.00098	.00009	.31093
%RSD	160.35	7.7479	66.676
#1	.00149	.00109	-.11281
#2	-.00044	.00125	-.69736
#3	.00078	.00110	-.58884
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13279.**	**88971.**	**3220.7**
Stddev	69.	467.	41.1
%RSD	.51690	.52541	1.2764
#1	13346.	89503.	3178.4
#2	13209.	88629.	3223.2
#3	13283.	88779.	3260.5

Approved: March 30, 2017

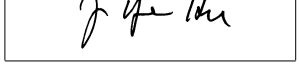
Sample Name: L1703136303 Acquired: 3/29/2017 17:36:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00031**	**.01382**	**-.00002**	**-.00154**	**.00094**	**.00013**	**.08828**
Stddev	.00148	.00239	.00175	.00228	.00154	.00007	.02287
%RSD	471.79	17.281	7799.6	148.64	164.12	52.530	25.907
#1	.00049	.01196	.00183	-.00105	-.00033	.00009	.09227
#2	-.00202	.01300	-.00026	.00046	.00266	.00021	.10889
#3	.00060	.01652	-.00164	-.00402	.00049	.00009	.06367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**.00020**	**-.00091**	**.00078**	**.00484**	**-.20049**	**-.00648**
Stddev	.00047	.00031	.00051	.00068	.03326	.08081	.00939
%RSD	137.68	155.59	56.356	86.938	687.36	40.308	144.94
#1	.00020	.00022	-.00120	.00020	-.01256	-.29344	-.00061
#2	-.00065	-.00012	-.00032	.00061	.04319	-.16112	-.01731
#3	-.00059	.00049	-.00121	.00152	-.01611	-.14690	-.00152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.09309**	**.00055**	**-.00004**	**.03187**	**-.00170**	**.00010**	**-.00091**
Stddev	.05430	.00326	.00033	.00445	.00039	.00761	.00359
%RSD	58.336	589.31	775.92	13.949	22.993	7871.6	392.86
#1	-.05469	.00365	.00016	.03692	-.00203	.00886	-.00135
#2	-.06935	-.00285	.00014	.02854	-.00127	-.00479	.00287
#3	-.15522	.00087	-.00043	.03015	-.00180	-.00378	-.00426
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: L1703136303 Acquired: 3/29/2017 17:36:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00187**	**-.00084**	**.02309**	**.00074**	**-.00036**	**-.00255**	**-.00049**
Stddev	.00389	.00525	.00269	.00092	.00063	.00239	.00264
%RSD	207.59	624.24	11.635	124.44	174.78	93.970	543.68
#1	-.00153	-.00270	.02409	-.00029	-.00097	-.00473	-.00326
#2	.00104	.00509	.02004	.00101	-.00040	-.00292	.00199
#3	.00611	-.00491	.02513	.00149	.00029	.00001	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00031**	**.00145**	F **-.06931**
Stddev	.00068	.00010	.09363
%RSD	216.36	7.0864	135.08
#1	-.00036	.00138	.01659
#2	.00031	.00141	-.16911
#3	.00099	.00157	-.05541
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13419.**	**88417.**	**3197.0**
Stddev	66.	1583.	87.1
%RSD	.49360	1.7908	2.7254
#1	13434.	88085.	3165.0
#2	13477.	87026.	3130.5
#3	13347.	90140.	3295.7

Approved: March 30, 2017

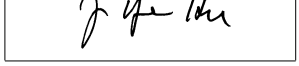
Sample Name: CCV Acquired: 3/29/2017 17:40:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38711**	**9.8498**	**.40715**	**.47420**	**1.0001**	**.04938**	**9.8701**
Stddev	.00279	.0697	.00204	.00247	.0211	.00018	.1733
%RSD	.72139	.70717	.50201	.52128	2.1063	.36549	1.7557
#1	.38976	9.8867	.40628	.47142	.98295	.04955	9.7464
#2	.38419	9.7694	.40948	.47613	1.0236	.04919	10.068
#3	.38738	9.8932	.40568	.47506	.99383	.04939	9.7957
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05175**	**.20723**	**.48537**	**.51676**	**3.9699**	**50.626**	**1.0020**
Stddev	.00036	.00105	.00462	.00207	.0906	.938	.0344
%RSD	.69297	.50565	.95216	.39964	2.2830	1.8537	3.4299
#1	.05139	.20686	.48833	.51594	3.8837	49.939	.97341
#2	.05177	.20642	.48004	.51524	4.0644	51.695	1.0401
#3	.05211	.20842	.48772	.51911	3.9617	50.244	.99244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.9470**	**.49976**	**1.0040**	**50.350**	**.50877**	**10.030**	**.51019**
Stddev	.1762	.00808	.0040	1.050	.00310	.022	.00169
%RSD	1.7715	1.6171	.40300	2.0857	.60908	.22379	.33116
#1	9.7958	.49218	.99990	49.458	.50577	10.004	.51006
#2	10.141	.50826	1.0041	51.507	.50857	10.038	.50857
#3	9.9047	.49884	1.0080	50.085	.51196	10.047	.51194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 30, 2017



Sample Name: CCV Acquired: 3/29/2017 17:40:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2110**	**.40774**	**5.0528**	**1.0308**	**.99409**	**1.0065**	**.51469**
Stddev	.0026	.00318	.0181	.0038	.02219	.0210	.00211
%RSD	.21571	.77974	.35766	.36946	2.2326	2.0832	.40981
#1	1.2114	.41080	5.0321	1.0265	.97359	.98694	.51239
#2	1.2082	.40796	5.0605	1.0322	1.0177	1.0286	.51514
#3	1.2134	.40446	5.0656	1.0337	.99101	1.0039	.51654
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.98681**	**1.0144**	F **.21834**
Stddev	.00415	.0034	.24117
%RSD	.42086	.33473	110.46
#1	.99067	1.0113	.18218
#2	.98242	1.0139	.47555
#3	.98734	1.0180	-.00271
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13141.**	**87189.**	**3189.2**
Stddev	67.	774.	72.9
%RSD	.51115	.88759	2.2868
#1	13063.	86950.	3271.4
#2	13180.	88054.	3163.6
#3	13178.	86563.	3132.5

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 17:43:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00055**	**.00986**	**-.00069**	**.00281**	**.00114**	**.00006**	**-.03772**
Stddev	.00079	.00448	.00154	.00124	.00086	.00006	.05647
%RSD	144.19	45.378	223.82	43.949	75.189	94.920	149.71
#1	.00003	.00520	-.00242	.00370	.00042	.00002	.00306
#2	-.00145	.01026	-.00018	.00333	.00090	.00013	-.10217
#3	-.00022	.01413	.00054	.00140	.00209	.00004	-.01404
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**.00012**	**-.00121**	**-.00034**	**-.00801**	**-.11361**	**-.00322**
Stddev	.00022	.00032	.00130	.00066	.02725	.07882	.00545
%RSD	104.53	264.65	107.13	195.77	340.09	69.378	169.14
#1	-.00001	.00026	.00016	-.00093	-.01278	-.12865	-.00865
#2	-.00045	-.00025	-.00242	.00037	.02130	-.02835	.00226
#3	-.00018	.00034	-.00138	-.00045	-.03256	-.18382	-.00329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.03255**	**-.00034**	**.00013**	**-.01436**	**-.00051**	**-.00300**	**-.00071**
Stddev	.03974	.00114	.00033	.05410	.00018	.00919	.00100
%RSD	122.10	340.15	261.92	376.59	35.743	306.35	140.06
#1	-.06048	-.00162	-.00002	.01652	-.00030	.00493	-.00121
#2	.01295	.00005	-.00011	.01721	-.00058	-.01308	.00044
#3	-.05011	.00056	.00050	-.07683	-.00065	-.00086	-.00136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 17:43:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00483**	**-.00056**	**.00525**	**-.00004**	**.00029**	**-.00766**	**.00007**
Stddev	.00262	.00088	.00407	.00063	.00039	.00134	.00276
%RSD	54.161	157.28	77.456	1464.6	133.61	17.467	3833.3
#1	.00655	-.00028	.00390	.00067	.00060	-.00866	.00312
#2	.00613	.00015	.00203	-.00031	.00041	-.00614	-.00066
#3	.00182	-.00155	.00982	-.00050	-.00014	-.00818	-.00225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00019**	**.00019**	F **-.34750**
Stddev	.00042	.00007	.11419
%RSD	215.03	38.933	32.861
#1	.00064	.00017	-.24907
#2	-.00019	.00012	-.47269
#3	.00013	.00026	-.32074
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13551.**	**90264.**	**3202.9**
Stddev	172.	952.	23.2
%RSD	1.2707	1.0544	.72405
#1	13603.	89574.	3218.1
#2	13691.	91350.	3214.5
#3	13359.	89868.	3176.2

Approved: March 30, 2017

Sample Name: LLCCV Acquired: 3/29/2017 17:47:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00750**	**.18560**	**.00663**	**.07727**	**.00969**	**.00166**	**.39747**	**.00060**
Stddev	.00157	.00089	.00185	.00191	.00078	.00009	.03493	.00018
%RSD	20.899	.48121	27.915	2.4690	8.0258	5.5400	8.7880	29.882
#1	.00860	.18658	.00831	.07571	.00991	.00156	.43248	.00057
#2	.00570	.18539	.00464	.07940	.01033	.00167	.36262	.00044
#3	.00820	.18483	.00694	.07671	.00883	.00174	.39730	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00423**	**.00374**	**.00450**	**.06663**	**.73275**	**.08045**	**.37330**	**.00736**
Stddev	.00012	.00126	.00072	.02148	.16163	.00489	.02274	.00207
%RSD	2.9522	33.734	16.067	32.232	22.059	6.0792	6.0906	28.157
#1	.00436	.00447	.00368	.08444	.67612	.07507	.34775	.00526
#2	.00422	.00445	.00479	.04278	.91507	.08164	.38088	.00743
#3	.00411	.00228	.00503	.07268	.60704	.08463	.39129	.00940
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00789**	**.42085**	**.01645**	**.79382**	**.00851**	**.08337**	**.02182**	**.80894**
Stddev	.00003	.03729	.00120	.00266	.00254	.00095	.00112	.00495
%RSD	.44183	8.8596	7.2896	.33489	29.834	1.1442	5.1237	.61134
#1	.00791	.40598	.01780	.79081	.00643	.08432	.02059	.80599
#2	.00792	.39329	.01604	.79486	.00775	.08337	.02277	.80617
#3	.00785	.46328	.01551	.79581	.01134	.08242	.02211	.81465
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: LLCCV Acquired: 3/29/2017 17:47:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41857**	**.04150**	**.02617**	**.16278**	**.00911**	**.01881**	**26.384**
Stddev	.00141	.00051	.00576	.00080	.00040	.00016	.756
%RSD	.33676	1.2403	22.024	.48942	4.3499	.85817	2.8638
#1	.42012	.04091	.02656	.16298	.00866	.01863	25.925
#2	.41822	.04173	.02022	.16190	.00939	.01891	27.256
#3	.41737	.04186	.03172	.16345	.00930	.01890	25.970
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13271.**	**87881.**	**3210.2**
Stddev	90.	232.	85.4
%RSD	.67813	.26420	2.6605
#1	13287.	87669.	3263.4
#2	13351.	87846.	3111.7
#3	13174.	88129.	3255.5

Approved: March 30, 2017

Sample Name: PBW Z1 Acquired: 3/29/2017 17:51:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607863-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00114**	**.00950**	**.00144**	**.00081**	**.00086**	**-.00001**	**.01543**
Stddev	.00094	.00526	.00101	.00149	.00158	.00000	.00416
%RSD	82.239	55.354	70.185	184.74	184.20	8.2418	26.967
#1	-.00016	.01493	.00260	.00049	.00256	-.00001	.01080
#2	-.00202	.00917	.00091	.00244	.00057	-.00001	.01885
#3	-.00124	.00442	.00080	-.00050	-.00056	-.00002	.01665
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00036**	**.00010**	**-.00100**	**-.00071**	**.00871**	**-.12547**	**-.01066**
Stddev	.00022	.00018	.00059	.00050	.01618	.18733	.00249
%RSD	61.250	183.29	58.598	70.496	185.79	149.30	23.351
#1	-.00043	-.00000	-.00168	-.00093	-.00459	.03712	-.00882
#2	-.00011	.00031	-.00071	-.00107	.00399	-.33033	-.01349
#3	-.00053	-.00001	-.00062	-.00014	.02672	-.08321	-.00966
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.03170**	**-.00037**	**.00042**	**.04029**	**-.00030**	**-.00584**	**.00105**
Stddev	.05679	.00221	.00006	.01272	.00050	.00552	.00336
%RSD	179.14	601.10	14.015	31.576	166.18	94.561	321.43
#1	-.08777	.00079	.00044	.05486	-.00086	.00054	-.00223
#2	-.03311	-.00292	.00047	.03465	.00010	-.00910	.00449
#3	.02578	.00103	.00036	.03137	-.00014	-.00895	.00087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: PBW Z1 Acquired: 3/29/2017 17:51:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607863-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00152**	**-.00256**	**.01137**	**.00050**	**-.00018**	**-.00619**	**.00054**
Stddev	.00400	.00261	.00123	.00032	.00075	.00268	.00226
%RSD	262.35	102.03	10.782	63.967	416.60	43.227	418.55
#1	.00046	-.00289	.01032	.00072	-.00092	-.00836	-.00202
#2	-.00613	.00020	.01108	.00065	.00057	-.00320	.00139
#3	.00110	-.00500	.01272	.00013	-.00019	-.00702	.00226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00015**	**.00228**	F **-.33947**
Stddev	.00024	.00017	.24319
%RSD	159.24	7.5231	71.637
#1	-.00034	.00247	-.34857
#2	-.00022	.00218	-.57799
#3	.00012	.00218	-.09186
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13888.**	**93930.**	**3220.0**
Stddev	97.	1259.	30.3
%RSD	.69869	1.3398	.93981
#1	13889.	94381.	3233.3
#2	13985.	94901.	3185.3
#3	13790.	92508.	3241.3

Approved: March 30, 2017

Sample Name: LCSW Z1 Acquired: 3/29/2017 17:55:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607863-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19309**	**4.9126**	**.18762**	**.92915**	**.49593**	**.02406**	**4.8205**	**.02437**
Stddev	.00038	.0427	.00232	.00809	.00045	.00015	.0999	.00013
%RSD	.19480	.86941	1.2387	.87113	.09058	.62425	2.0730	.52121
#1	.19320	4.8636	.18988	.92049	.49546	.02389	4.7677	.02435
#2	.19340	4.9425	.18775	.93043	.49598	.02418	4.7580	.02426
#3	.19267	4.9316	.18524	.93653	.49635	.02411	4.9357	.02451
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10055**	**.24259**	**.24859**	**1.9843**	**24.539**	**.49151**	**4.9049**	**.24610**
Stddev	.00044	.00088	.00150	.0074	.034	.00261	.0925	.00056
%RSD	.43287	.36376	.60455	.37203	.13840	.53194	1.8859	.22578
#1	.10104	.24174	.24986	1.9840	24.541	.49174	4.7996	.24559
#2	.10043	.24350	.24898	1.9771	24.572	.48879	4.9729	.24669
#3	.10019	.24251	.24693	1.9919	24.504	.49401	4.9422	.24603
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48371**	**24.582**	**.24759**	**4.7144**	**.24773**	**.58072**	**.18995**	**2.4729**
Stddev	.00051	.079	.00103	.0072	.00133	.00576	.00671	.0040
%RSD	.10505	.32311	.41679	.15306	.53491	.99270	3.5303	.16000
#1	.48343	24.630	.24731	4.7207	.24868	.58700	.19626	2.4771
#2	.48430	24.490	.24673	4.7160	.24621	.57947	.19067	2.4693
#3	.48340	24.626	.24874	4.7066	.24829	.57567	.18291	2.4721
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: LCSW Z1 Acquired: 3/29/2017 17:55:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607863-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49942**	**.49732**	**.48742**	**.25171**	**.49228**	**.48509**	**.02454**
Stddev	.00215	.00171	.00685	.00206	.00213	.00049	.47764
%RSD	.43093	.34347	1.4063	.81770	.43365	.10000	1946.5
#1	.50151	.49929	.48768	.25014	.48982	.48548	-.46697
#2	.49953	.49620	.49415	.25404	.49329	.48454	.05360
#3	.49721	.49648	.48045	.25094	.49372	.48523	.48698
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13844.**	**90504.**	**3351.6**
Stddev	97.	883.	69.3
%RSD	.70066	.97601	2.0672
#1	13766.	90446.	3392.3
#2	13953.	89651.	3390.8
#3	13813.	91415.	3271.6

Approved: March 30, 2017

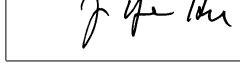
Sample Name: L1703140901 Acquired: 3/29/2017 17:58:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607863-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00090**	**.29773**	**.00047**	**.06920**	**.05687**	**.00005**	**19.479**
Stddev	.00024	.00363	.00256	.00196	.00087	.00016	.344
%RSD	27.052	1.2187	541.05	2.8287	1.5245	333.02	1.7644
#1	-.00064	.29536	-.00237	.06876	.05587	.00018	19.089
#2	-.00094	.29591	.00122	.06750	.05733	-.00012	19.738
#3	-.00112	.30190	.00257	.07134	.05742	.00008	19.610
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01966**	**.00816**	**.00323**	**.40033**	**2.1055**	**.66652**	**.00137**
Stddev	.00027	.00037	.00070	.00112	.0288	.19403	.00816
%RSD	1.3912	4.5924	21.690	.28083	1.3686	29.111	595.44
#1	.01936	.00827	.00287	.40092	2.0821	.86624	.01075
#2	.01973	.00775	.00404	.39903	2.1377	.47874	-.00405
#3	.01989	.00847	.00279	.40103	2.0967	.65457	-.00259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1055**	**.35173**	**-.00009**	**139.81**	**.03869**	**-.01501**	**.29167**
Stddev	.0390	.00493	.00027	1.64	.00055	.00424	.00435
%RSD	3.5296	1.4026	296.39	1.1753	1.4267	28.243	1.4927
#1	1.1426	.34808	-.00023	138.09	.03805	-.01045	.28677
#2	1.0648	.35734	-.00026	141.37	.03896	-.01575	.29315
#3	1.1091	.34977	.00022	139.96	.03905	-.01883	.29509
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: L1703140901 Acquired: 3/29/2017 17:58:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607863-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00284**	**.00194**	**.42060**	**.00073**	**.07627**	**-.00318**	**-.00189**
Stddev	.00458	.00178	.00197	.00087	.00078	.00248	.00223
%RSD	161.16	91.798	.46733	118.92	1.0195	78.042	118.35
#1	.00059	.00152	.41923	.00173	.07617	-.00045	-.00331
#2	-.00805	.00390	.41971	.00030	.07709	-.00530	.00069
#3	-.00107	.00041	.42285	.00016	.07554	-.00380	-.00304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00034**	**10.668**	F **-.18915**
Stddev	.00047	.023	.15421
%RSD	139.20	.21977	81.530
#1	-.00010	10.667	-.22611
#2	-.00003	10.645	-.01981
#3	-.00088	10.692	-.32152
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13734.**	**91243.**	**3415.6**
Stddev	90.	1072.	122.8
%RSD	.65380	1.1746	3.5960
#1	13785.	90119.	3496.8
#2	13787.	92254.	3274.3
#3	13630.	91356.	3475.7

Approved: March 30, 2017

Sample Name: L1703140901S Acquired: 3/29/2017 18:02:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607863-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18637**	**4.8890**	**.18811**	**.97882**	**.53136**	**.02364**	**23.783**
Stddev	.00308	.0120	.00065	.00104	.00463	.00003	.275
%RSD	1.6502	.24576	.34599	.10587	.87198	.10871	1.1563
#1	.18701	4.8817	.18740	.97985	.52604	.02364	23.529
#2	.18907	4.8824	.18823	.97881	.53448	.02366	23.744
#3	.18303	4.9028	.18869	.97778	.53357	.02361	24.075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04359**	**.10382**	**.23839**	**.63011**	**3.9043**	**24.449**	**.47423**
Stddev	.00014	.00047	.00126	.00205	.0502	.143	.00412
%RSD	.32124	.45321	.52832	.32486	1.2863	.58499	.86920
#1	.04344	.10332	.23714	.62774	3.8513	24.297	.46966
#2	.04372	.10424	.23837	.63123	3.9103	24.581	.47536
#3	.04360	.10391	.23966	.63135	3.9512	24.469	.47766
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.6309**	**.57913**	**.47543**	**159.45**	**.27578**	**4.7314**	**.51975**
Stddev	.1175	.00608	.00152	1.32	.00080	.0085	.00029
%RSD	2.0873	1.0502	.32029	.82987	.28937	.18022	.05543
#1	5.7412	.57239	.47368	158.02	.27487	4.7216	.51943
#2	5.5073	.58080	.47637	159.70	.27637	4.7367	.51983
#3	5.6442	.58420	.47626	160.63	.27610	4.7360	.51998
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703140901S Acquired: 3/29/2017 18:02:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607863-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.56601**	**.19079**	**2.8745**	**.48530**	**.55306**	**.47667**	**.23621**
Stddev	.00424	.00659	.0136	.00185	.00645	.00515	.00147
%RSD	.74850	3.4526	.47140	.38216	1.1659	1.0814	.62115
#1	.56799	.19233	2.8589	.48317	.54657	.47074	.23679
#2	.56114	.18356	2.8837	.48657	.55315	.48012	.23731
#3	.56889	.19646	2.8809	.48616	.55946	.47915	.23455
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.48161**	**10.900**	F **-.12791**
Stddev	.00029	.026	.07047
%RSD	.05940	.23621	55.096
#1	.48156	10.870	-.12361
#2	.48136	10.914	-.20043
#3	.48192	10.915	-.05968
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14089.**	**93174.**	**3557.0**
Stddev	116.	1836.	34.3
%RSD	.82327	1.9702	.96314
#1	13959.	95282.	3524.4
#2	14125.	92318.	3553.8
#3	14182.	91924.	3592.7

Approved: March 30, 2017

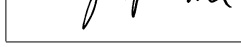
Sample Name: L1703140901SD Acquired: 3/29/2017 18:05:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607863-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18483**	**4.8698**	**.18832**	**.97274**	**.52631**	**.02353**	**23.441**	**.04264**
Stddev	.00229	.0187	.00277	.00411	.00229	.00002	.223	.00007
%RSD	1.2406	.38506	1.4705	.42239	.43479	.10431	.95093	.15779
#1	.18717	4.8914	.18700	.97096	.52532	.02355	23.455	.04272
#2	.18258	4.8582	.19150	.97744	.52892	.02351	23.656	.04261
#3	.18474	4.8598	.18646	.96983	.52468	.02352	23.211	.04259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10355**	**.23704**	**.62430**	**3.9147**	**24.541**	**.48129**	**5.6142**	**.57414**
Stddev	.00027	.00100	.00192	.0341	.160	.00508	.0533	.00478
%RSD	.25784	.42329	.30676	.87162	.65041	1.0546	.94959	.83216
#1	.10335	.23812	.62409	3.8772	24.667	.47759	5.6754	.56942
#2	.10344	.23613	.62250	3.9438	24.362	.48708	5.5783	.57898
#3	.10385	.23687	.62631	3.9231	24.594	.47920	5.5888	.57401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47361**	**158.24**	**.27341**	**4.7007**	**.51680**	**.56019**	**.18809**	**2.8497**
Stddev	.00049	.41	.00025	.0061	.00244	.00193	.00502	.0020
%RSD	.10348	.26059	.09112	.12937	.47188	.34392	2.6695	.07026
#1	.47338	157.95	.27360	4.6942	.51821	.56010	.18247	2.8504
#2	.47328	158.71	.27350	4.7018	.51399	.55831	.18967	2.8512
#3	.47418	158.05	.27313	4.7062	.51821	.56216	.19213	2.8474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017



Sample Name: L1703140901SD Acquired: 3/29/2017 18:05:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607863-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48167**	**.54916**	**.48412**	**.23578**	**.47989**	**10.796**	**.01876**
Stddev	.00098	.00359	.00485	.00140	.00120	.010	.23915
%RSD	.20317	.65444	1.0026	.59186	.24943	.09077	1274.5
#1	.48065	.54577	.48953	.23581	.48117	10.803	.00677
#2	.48260	.55293	.48013	.23438	.47972	10.785	-.21416
#3	.48175	.54877	.48271	.23717	.47879	10.800	.26369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14066.**	**92523.**	**3596.8**
Stddev	42.	573.	3.4
%RSD	.29727	.61944	.09382
#1	14052.	92748.	3595.5
#2	14113.	92950.	3600.7
#3	14033.	91872.	3594.3

Approved: March 30, 2017

Sample Name: L1703138601 Acquired: 3/29/2017 18:09:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00063**	**.13532**	**.00262**	**.01308**	**.02101**	**.00003**	**17.876**	**-.00009**
Stddev	.00185	.00834	.00022	.00182	.00111	.00008	.199	.00008
%RSD	294.33	6.1624	8.2289	13.945	5.2685	294.10	1.1152	81.948
#1	-.00146	.13001	.00268	.01451	.02030	-.00002	17.677	-.00010
#2	-.00192	.13103	.00280	.01371	.02044	.00011	17.877	-.00001
#3	.00149	.14493	.00238	.01103	.02228	-.00002	18.075	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.00022**	**.00027**	**.29380**	**.93972**	**.00059**	**2.7579**	**.03260**
Stddev	.00035	.00022	.00077	.01359	.15266	.00429	.0820	.00293
%RSD	183.81	98.233	282.56	4.6269	16.245	729.44	2.9717	8.9863
#1	.00021	.00035	-.00060	.30905	.89254	.00200	2.6638	.03427
#2	-.00041	.00035	.00085	.28939	1.1104	.00399	2.7967	.03430
#3	-.00037	-.00003	.00057	.28295	.81623	-.00423	2.8133	.02921
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**5.2597**	**.00028**	**.01347**	**.00025**	**-.00288**	**-.00440**	**1.2757**
Stddev	.00035	.0792	.00069	.00595	.00249	.00192	.00386	.0025
%RSD	248.87	1.5059	246.16	44.133	1016.2	66.487	87.768	.19909
#1	.00021	5.1908	.00047	.01456	.00052	-.00480	-.00802	1.2728
#2	.00044	5.2420	-.00049	.01880	.00259	-.00096	-.00033	1.2775
#3	-.00024	5.3462	.00086	.00706	-.00237	-.00289	-.00485	1.2769
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703138601 Acquired: 3/29/2017 18:09:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**.05548**	**-.00184**	**.00020**	**.00041**	**.00849**	**.15370**
Stddev	.00011	.00097	.00311	.00112	.00036	.00010	.20177
%RSD	41.567	1.7470	169.42	551.18	88.874	1.1553	131.27
#1	.00028	.05477	-.00050	-.00090	.00068	.00839	-.03590
#2	.00035	.05510	.00038	.00134	.00054	.00850	.36576
#3	.00014	.05659	-.00540	.00017	-.00000	.00859	.13123
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14082.**	**94385.**	**3490.6**
Stddev	85.	860.	50.4
%RSD	.60481	.91146	1.4440
#1	14167.	94036.	3547.8
#2	13996.	95365.	3452.8
#3	14084.	93753.	3471.2

Approved: March 30, 2017

Sample Name: L1703138601PS Acquired: 3/29/2017 18:13:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607947-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18991**	**4.9246**	**.19227**	**.93468**	**.51294**	**.02375**	**21.459**
Stddev	.00090	.0457	.00261	.00672	.00066	.00016	.104
%RSD	.47504	.92777	1.3590	.71887	.12892	.69079	.48665
#1	.19045	4.9468	.19459	.93619	.51317	.02380	21.477
#2	.19042	4.9548	.18944	.94051	.51220	.02388	21.553
#3	.18887	4.8720	.19279	.92733	.51346	.02357	21.347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02452**	**.09944**	**.23967**	**.24636**	**2.1899**	**25.676**	**.49285**
Stddev	.00007	.00012	.00186	.00149	.0459	.028	.00642
%RSD	.27717	.11722	.77455	.60352	2.0983	.10760	1.3019
#1	.02459	.09945	.24057	.24807	2.2335	25.667	.50008
#2	.02446	.09955	.24091	.24538	2.1941	25.707	.48783
#3	.02450	.09931	.23754	.24562	2.1419	25.654	.49065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.4397**	**.27636**	**.48594**	**29.579**	**.24683**	**4.8095**	**.24718**
Stddev	.0198	.00237	.00138	.162	.00201	.0119	.00170
%RSD	.26621	.85792	.28315	.54726	.81520	.24829	.68816
#1	7.4625	.27796	.48753	29.725	.24601	4.8223	.24895
#2	7.4294	.27363	.48508	29.405	.24913	4.8075	.24703
#3	7.4272	.27748	.48521	29.608	.24536	4.7987	.24556
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703138601PS Acquired: 3/29/2017 18:13:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607947-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.58062**	**.19325**	**3.6538**	**.49863**	**.54671**	**.48995**	**.24971**
Stddev	.00456	.00174	.0100	.00174	.00178	.01250	.00255
%RSD	.78466	.90288	.27444	.34907	.32539	2.5522	1.0205
#1	.58072	.19487	3.6643	.50028	.54840	.48989	.25261
#2	.57601	.19349	3.6529	.49681	.54688	.50248	.24782
#3	.58512	.19140	3.6443	.49881	.54485	.47747	.24871
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.48761**	**.49158**	F **-.06440**
Stddev	.00395	.00162	.31495
%RSD	.80964	.32997	489.05
#1	.48894	.49334	-.24081
#2	.49073	.49124	-.25161
#3	.48318	.49015	.29921
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13786.**	**92215.**	**3361.7**
Stddev	101.	593.	52.3
%RSD	.73009	.64299	1.5559
#1	13673.	91570.	3330.0
#2	13866.	92341.	3422.1
#3	13819.	92736.	3333.2

Approved: March 30, 2017

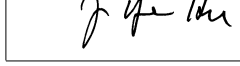
Sample Name: L1703138601SDL Acquired: 3/29/2017 18:16:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG607947-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00200**	**.03828**	**.00106**	**.00578**	**.00365**	**.00003**	**3.7101**
Stddev	.00289	.00171	.00138	.00366	.00226	.00006	.0421
%RSD	145.04	4.4612	130.86	63.254	61.901	236.04	1.1357
#1	.00122	.03673	.00264	.00679	.00623	-.00001	3.6618
#2	-.00280	.03800	.00044	.00883	.00206	.00010	3.7296
#3	-.00440	.04011	.00009	.00173	.00266	-.00001	3.7390
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.00038**	**-.00076**	**-.00125**	**.05066**	**-.11297**	**-.01387**
Stddev	.00040	.00034	.00049	.00050	.02380	.07289	.00319
%RSD	225.26	90.588	64.532	40.032	46.992	64.525	23.010
#1	-.00000	-.00001	-.00132	-.00068	.02338	-.18443	-.01374
#2	-.00063	.00050	-.00039	-.00159	.06723	-.03872	-.01075
#3	.00011	.00064	-.00058	-.00149	.06136	-.11575	-.01713
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55036**	**.00776**	**-.00008**	**1.0098**	**-.00056**	**-.00226**	**-.00177**
Stddev	.15845	.00154	.00035	.0457	.00114	.00284	.00201
%RSD	28.791	19.790	457.53	4.5251	204.82	125.67	113.54
#1	.68027	.00703	-.00036	.96523	-.00135	-.00003	.00032
#2	.37383	.00673	-.00020	1.0075	-.00108	-.00129	-.00369
#3	.59699	.00952	.00032	1.0565	.00075	-.00545	-.00194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: L1703138601SDL Acquired: 3/29/2017 18:16:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG607947-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00032**	**-.00295**	**.27360**	**.00020**	**.01147**	**.00216**	**-.00126**
Stddev	.00388	.00468	.00431	.00062	.00081	.00623	.00113
%RSD	1215.8	158.55	1.5747	301.88	7.0431	288.57	89.781
#1	-.00399	-.00421	.27435	.00089	.01094	.00096	-.00063
#2	.00355	.00223	.27748	-.00030	.01240	.00890	-.00058
#3	.00140	-.00687	.26896	.00002	.01108	-.00339	-.00257
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00026**	**.00219**	F **-.25871**
Stddev	.00058	.00014	.13656
%RSD	219.74	6.1824	52.787
#1	.00051	.00224	-.10499
#2	.00067	.00204	-.30510
#3	-.00040	.00230	-.36603
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13586.**	**90357.**	**3181.2**
Stddev	157.	1407.	14.2
%RSD	1.1585	1.5575	.44676
#1	13454.	91978.	3192.4
#2	13760.	89643.	3186.1
#3	13542.	89449.	3165.2

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 18:20:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37784**	**9.6088**	**.38581**	**.47413**	**.98092**	**.04790**	**9.7921**
Stddev	.00201	.0392	.00356	.00226	.00972	.00008	.1024
%RSD	.53130	.40793	.92208	.47662	.99108	.15983	1.0457
#1	.37645	9.5711	.38183	.47154	.98948	.04785	9.9077
#2	.37692	9.6059	.38690	.47568	.98294	.04787	9.7561
#3	.38014	9.6494	.38870	.47517	.97035	.04799	9.7126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04855**	**.19604**	**.47531**	**.48913**	**3.8715**	**48.907**	**.97892**
Stddev	.00024	.00052	.00156	.00206	.0374	.648	.00332
%RSD	.49369	.26618	.32796	.42104	.96518	1.3244	.33879
#1	.04839	.19555	.47370	.48733	3.8721	49.381	.98267
#2	.04883	.19659	.47542	.49137	3.9085	49.172	.97640
#3	.04843	.19599	.47682	.48868	3.8338	48.169	.97768
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.7505**	**.49148**	**.95420**	**49.033**	**.48306**	**9.5422**	**.48445**
Stddev	.1598	.00668	.00238	.533	.00134	.0259	.00419
%RSD	1.6384	1.3601	.24953	1.0879	.27694	.27131	.86564
#1	9.8808	.49833	.95306	49.530	.48254	9.5129	.47984
#2	9.7986	.49112	.95694	49.100	.48206	9.5513	.48547
#3	9.5723	.48497	.95261	48.470	.48458	9.5622	.48803
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 18:20:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1488**	**.38377**	**4.8204**	**.97038**	**.97709**	**.96448**	**.49346**
Stddev	.0043	.00446	.0264	.00152	.00863	.01054	.00324
%RSD	.37114	1.1633	.54780	.15662	.88312	1.0933	.65662
#1	1.1439	.38163	4.7900	.97094	.98358	.96520	.49206
#2	1.1513	.38079	4.8333	.97153	.98039	.97465	.49115
#3	1.1513	.38891	4.8378	.96865	.96730	.95360	.49716
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.95655**	**.96254**	F **.35465**
Stddev	.00158	.00184	.33913
%RSD	.16569	.19072	95.625
#1	.95583	.96101	.74610
#2	.95545	.96457	.14997
#3	.95836	.96202	.16786
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13773.**	**90091.**	**3287.9**
Stddev	123.	826.	96.0
%RSD	.89557	.91634	2.9202
#1	13633.	90373.	3178.3
#2	13866.	90738.	3328.4
#3	13820.	89161.	3357.1

Approved: March 30, 2017

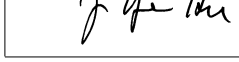
Sample Name: CCB Acquired: 3/29/2017 18:24:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00088**	**.00578**	**-.00012**	**.00460**	**.00218**	**.00004**	**-.03198**
Stddev	.00055	.00680	.00054	.00282	.00094	.00005	.03633
%RSD	63.055	117.51	466.58	61.339	43.171	146.99	113.61
#1	-.00139	-.00105	-.00072	.00705	.00313	-.00003	.00289
#2	-.00029	.00586	.00034	.00151	.00125	.00006	-.02921
#3	-.00096	.01254	.00003	.00524	.00216	.00007	-.06962
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**-.00008**	**.00021**	**.00068**	**-.00485**	**-.05053**	**-.00559**
Stddev	.00028	.00052	.00071	.00033	.00797	.09541	.00183
%RSD	113.81	635.13	335.21	48.793	164.44	188.81	32.803
#1	.00006	-.00067	.00019	.00078	-.01065	.05336	-.00427
#2	-.00048	.00010	-.00049	.00096	-.00813	-.13422	-.00768
#3	-.00032	.00033	.00093	.00031	.00424	-.07074	-.00481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.05760**	**-.00099**	**.00000**	**-.04761**	**.00030**	**.00171**	**.00196**
Stddev	.13498	.00130	.00016	.03838	.00096	.00451	.00220
%RSD	234.34	132.29	7353.0	80.620	321.80	263.31	112.38
#1	-.02796	-.00159	.00013	-.03328	-.00023	.00686	-.00025
#2	-.20494	.00051	.00006	-.01845	-.00028	-.00020	.00415
#3	.06010	-.00187	-.00018	-.09109	.00140	-.00153	.00197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: CCB Acquired: 3/29/2017 18:24:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00328**	**.00242**	**.00583**	**.00043**	**-.00045**	**.00018**	**-.00088**
Stddev	.00274	.00255	.00163	.00081	.00078	.00552	.00414
%RSD	83.346	105.25	27.945	188.75	174.36	3114.4	468.82
#1	.00507	.00002	.00724	-.00010	-.00055	.00654	.00139
#2	.00465	.00509	.00405	.00003	-.00117	-.00336	-.00566
#3	.00013	.00215	.00619	.00137	.00038	-.00265	.00162
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00014**	**.00020**	F **-.34152**
Stddev	.00049	.00011	.12545
%RSD	356.09	55.014	36.733
#1	.00052	.00028	-.46134
#2	.00030	.00008	-.35210
#3	-.00041	.00024	-.21111
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14002.**	**93529.**	**3351.1**
Stddev	31.	2665.	31.1
%RSD	.22295	2.8489	.92856
#1	13967.	96551.	3363.0
#2	14014.	91517.	3374.5
#3	14026.	92518.	3315.8

Approved: March 30, 2017

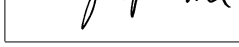
Sample Name: L1703138701 Acquired: 3/29/2017 18:27:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**.11063**	**.00156**	**.02292**	**.18993**	**-.00007**	**126.95**	**.00114**
Stddev	.00165	.00557	.00126	.00464	.00204	.00007	1.10	.00019
%RSD	770.69	5.0388	80.733	20.231	1.0725	94.734	.86449	16.390
#1	-.00155	.10530	.00246	.01793	.18819	-.00003	125.82	.00130
#2	-.00071	.11642	.00209	.02374	.19217	-.00015	128.02	.00093
#3	.00163	.11017	.00012	.02710	.18944	-.00003	127.00	.00119
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00035**	**.00166**	**.00404**	**.13261**	**3.1414**	**.00042**	**40.454**	**.03824**
Stddev	.00031	.00044	.00090	.01696	.1466	.00202	.395	.00064
%RSD	87.496	26.541	22.357	12.788	4.6663	481.57	.97646	1.6792
#1	.00004	.00217	.00300	.14921	3.2417	-.00015	40.009	.03882
#2	.00066	.00140	.00462	.13332	3.2094	-.00126	40.592	.03755
#3	.00035	.00141	.00450	.11532	2.9732	.00267	40.762	.03833
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**30.294**	**-.00019**	**.02125**	**.00209**	**-.00106**	**.00397**	**3.8453**
Stddev	.00026	.272	.00084	.00306	.00133	.00505	.00349	.0191
%RSD	46.596	.89936	444.71	14.410	63.635	477.63	87.822	.49691
#1	.00084	30.005	-.00086	.02115	.00061	-.00688	.00266	3.8499
#2	.00047	30.547	.00076	.02437	.00320	.00220	.00133	3.8616
#3	.00034	30.329	-.00047	.01825	.00247	.00150	.00793	3.8242
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017



Sample Name: L1703138701 Acquired: 3/29/2017 18:27:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00096**	**.57962**	**-.01622**	**-.00211**	**-.00007**	**.44069**	**.03156**
Stddev	.00067	.00514	.00632	.00120	.00056	.00235	.06893
%RSD	70.225	.88701	38.987	56.736	752.16	.53222	218.43
#1	.00035	.57518	-.02234	-.00218	.00039	.44158	-.00521
#2	.00168	.58525	-.01663	-.00328	-.00070	.44246	.11107
#3	.00084	.57843	-.00971	-.00088	.00009	.43803	-.01119
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13400.**	**88348.**	**3266.5**
Stddev	169.	613.	81.2
%RSD	1.2627	.69373	2.4865
#1	13554.	88647.	3338.1
#2	13427.	88754.	3283.2
#3	13219.	87643.	3178.2

Approved: March 30, 2017

Sample Name: L1703138801 Acquired: 3/29/2017 18:31:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00223**	**.09626**	**.00002**	**.01290**	**.02947**	**-.00003**	**28.534**
Stddev	.00055	.00245	.00207	.00211	.00095	.00006	.099
%RSD	24.689	2.5478	10332.	16.340	3.2179	215.56	.34850
#1	-.00243	.09596	-.00198	.01533	.02969	.00000	28.485
#2	-.00161	.09885	.00215	.01160	.03029	-.00010	28.469
#3	-.00265	.09397	-.00010	.01177	.02843	.00001	28.649
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**.00013**	**-.00037**	**-.00043**	**.12484**	**.99086**	**-.00292**
Stddev	.00038	.00036	.00019	.00033	.01121	.07305	.00339
%RSD	158.83	274.52	52.211	77.417	8.9826	7.3720	116.29
#1	.00013	-.00028	-.00037	-.00018	.11248	1.0738	-.00675
#2	-.00021	.00034	-.00056	-.00081	.13437	.96280	-.00168
#3	-.00063	.00033	-.00017	-.00031	.12768	.93601	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.0857**	**.01371**	**.00049**	**4.2339**	**-.00065**	**.01067**	**.00049**
Stddev	.0687	.00129	.00038	.0455	.00065	.00285	.00197
%RSD	1.6808	9.4144	77.826	1.0756	98.605	26.721	402.11
#1	4.0262	.01490	.00050	4.1822	-.00002	.01243	-.00165
#2	4.1608	.01389	.00087	4.2510	-.00131	.00738	.00090
#3	4.0701	.01233	.00011	4.2683	-.00063	.01220	.00223
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703138801 Acquired: 3/29/2017 18:31:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00418**	**.00367**	**2.0570**	**.00080**	**.10201**	**-.00773**	**-.00278**
Stddev	.00293	.00259	.0098	.00044	.00049	.00571	.00046
%RSD	70.157	70.539	.47381	55.269	.48230	73.862	16.572
#1	.00570	.00410	2.0659	.00089	.10169	-.00133	-.00319
#2	.00604	.00601	2.0584	.00032	.10257	-.01230	-.00287
#3	.00080	.00089	2.0466	.00119	.10176	-.00958	-.00228
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00015**	**.00181**	F **-.23154**
Stddev	.00071	.00002	.25118
%RSD	488.25	1.2241	108.48
#1	.00009	.00179	-.10405
#2	.00042	.00184	-.52090
#3	-.00095	.00181	-.06968
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13726.**	**91970.**	**3357.5**
Stddev	108.	470.	111.5
%RSD	.79006	.51050	3.3222
#1	13836.	91491.	3228.8
#2	13721.	92429.	3424.7
#3	13620.	91988.	3419.1

Approved: March 30, 2017

Sample Name: L1703138901 Acquired: 3/29/2017 18:35:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.04955**	**.00316**	**.00839**	**.03184**	**.00002**	**38.056**
Stddev	.00067	.00199	.00168	.00083	.00105	.00001	.091
%RSD	284.43	4.0144	53.053	9.8382	3.3031	24.171	.23863
#1	-.00035	.05063	.00395	.00850	.03135	.00002	38.014
#2	.00009	.05077	.00124	.00916	.03112	.00002	37.993
#3	.00097	.04726	.00430	.00752	.03305	.00003	38.160
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**-.00003**	**.00147**	**.00122**	**.02919**	**.69240**	**-.00915**
Stddev	.00007	.00030	.00105	.00059	.04619	.14212	.01144
%RSD	212.25	989.70	70.917	48.207	158.26	20.526	124.94
#1	.00004	-.00028	.00125	.00059	-.01699	.80015	-.00028
#2	-.00010	-.00012	.00056	.00175	.02916	.53133	-.00512
#3	-.00004	.00031	.00261	.00131	.07539	.74571	-.02206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.4559**	**.00624**	**.00035**	**2.6415**	**.00008**	**.01710**	**-.00161**
Stddev	.1531	.00141	.00039	.0526	.00029	.00603	.00048
%RSD	2.0535	22.610	111.82	1.9904	360.44	35.287	29.654
#1	7.3131	.00652	.00073	2.6646	.00037	.02139	-.00130
#2	7.4372	.00749	.00037	2.5813	.00009	.01020	-.00137
#3	7.6175	.00471	-.00005	2.6786	-.00022	.01970	-.00216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

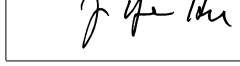
Sample Name: L1703138901 Acquired: 3/29/2017 18:35:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00124**	**-.00246**	**1.7734**	**.00004**	**.09954**	**-.00260**	**-.00034**
Stddev	.00519	.00484	.0072	.00036	.00040	.00380	.00180
%RSD	416.79	196.94	.40721	991.27	.39697	146.21	536.12
#1	.00107	-.00676	1.7816	.00018	.09924	-.00511	-.00226
#2	.00238	.00278	1.7707	-.00037	.09940	-.00447	.00131
#3	-.00718	-.00339	1.7680	.00030	.09999	.00178	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00044**	**.00209**	F **-.30997**
Stddev	.00086	.00015	.09474
%RSD	194.32	7.3032	30.563
#1	.00116	.00200	-.40810
#2	-.00051	.00201	-.30276
#3	.00067	.00227	-.21904
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13764.**	**91626.**	**3329.9**
Stddev	122.	297.	68.6
%RSD	.88960	.32364	2.0591
#1	13905.	91329.	3259.0
#2	13688.	91922.	3395.8
#3	13698.	91627.	3334.9

Approved: March 30, 2017



Sample Name: L1703139601 Acquired: 3/29/2017 18:39:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**.03875**	**.00157**	**.11553**	**.03109**	**.00004**	**.75592**
Stddev	.00199	.00210	.00177	.00128	.00056	.00006	.00689
%RSD	897.08	5.4090	113.13	1.1044	1.7929	142.81	.91097
#1	-.00181	.04115	.00334	.11689	.03045	-.00002	.76190
#2	.00217	.03779	-.00021	.11533	.03136	.00011	.74839
#3	.00031	.03731	.00157	.11436	.03146	.00004	.75747
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.00070**	**-.00015**	**.00853**	**.00932**	**.40625**	**.00116**
Stddev	.00010	.00008	.00033	.00096	.01134	.02109	.00575
%RSD	111.48	11.572	225.20	11.311	121.72	5.1909	494.82
#1	.00021	.00070	-.00042	.00899	.00788	.42969	-.00539
#2	.00001	.00062	-.00024	.00742	.02131	.40028	.00536
#3	.00006	.00078	.00022	.00918	-.00123	.38880	.00351
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.24650**	**.00042**	**.00087**	**157.09**	**.00008**	**.01086**	**-.00043**
Stddev	.04942	.00162	.00026	.28	.00044	.00097	.00420
%RSD	20.048	388.84	29.627	.17961	524.93	8.9716	969.17
#1	.20799	.00158	.00065	157.40	-.00026	.01162	.00338
#2	.30222	.00110	.00115	156.99	-.00006	.01120	-.00494
#3	.22929	-.00143	.00080	156.86	.00057	.00976	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703139601 Acquired: 3/29/2017 18:39:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00119**	**-.00213**	**3.7651**	**.00070**	**.03914**	**.00176**	**.00227**
Stddev	.00298	.00332	.0066	.00068	.00023	.00673	.00176
%RSD	250.03	155.61	.17547	97.426	.59986	383.14	77.762
#1	.00436	-.00460	3.7576	.00021	.03933	-.00345	.00068
#2	-.00157	-.00344	3.7700	.00147	.03888	-.00064	.00196
#3	.00079	.00164	3.7677	.00041	.03922	.00936	.00417
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00026**	**.01422**	F **-.16136**
Stddev	.00062	.00009	.30089
%RSD	235.63	.66424	186.47
#1	.00083	.01421	.08070
#2	.00036	.01433	-.06654
#3	-.00040	.01414	-.49824
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13445.**	**88653.**	**3334.4**
Stddev	89.	1086.	56.9
%RSD	.66329	1.2252	1.7065
#1	13352.	89207.	3284.5
#2	13454.	87402.	3322.4
#3	13529.	89351.	3396.4

Approved: March 30, 2017

Sample Name: L1703139701 Acquired: 3/29/2017 18:42:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**.01846**	**-.00029**	**.01897**	**.05961**	**.00002**	**51.460**
Stddev	.00049	.00325	.00158	.00193	.00184	.00001	.165
%RSD	132.78	17.602	545.24	10.199	3.0867	29.957	.32118
#1	.00083	.01800	-.00052	.01940	.06108	.00003	51.549
#2	-.00014	.02191	-.00174	.01686	.06020	.00003	51.562
#3	.00041	.01546	.00139	.02066	.05754	.00002	51.269
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.00003**	**-.00038**	**.00060**	**.01778**	**.66911**	**.00257**
Stddev	.00018	.00040	.00089	.00224	.04370	.11798	.00187
%RSD	167.92	1345.0	230.98	375.50	245.75	17.633	72.737
#1	-.00031	-.00043	.00064	.00098	.06499	.79214	.00041
#2	-.00006	.00032	-.00095	-.00181	.00963	.55692	.00372
#3	.00004	.00020	-.00084	.00262	-.02127	.65826	.00358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**8.5488**	**.33385**	**.00023**	**11.192**	**.00035**	**-.00197**	**-.00054**
Stddev	.1305	.00413	.00032	.094	.00027	.00504	.00192
%RSD	1.5260	1.2376	138.77	.84432	79.101	255.40	358.76
#1	8.4395	.33382	.00059	11.294	.00066	.00181	-.00083
#2	8.6932	.32974	.00009	11.175	.00022	-.00769	-.00229
#3	8.5136	.33800	.00001	11.107	.00016	-.00003	.00152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703139701 Acquired: 3/29/2017 18:42:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**.00963**	**4.3154**	**.00054**	**.26003**	**-.00396**	**.00026**
Stddev	.00229	.00399	.1518	.00035	.00112	.01069	.00074
%RSD	3222.3	41.424	3.5177	65.080	.42984	270.04	280.73
#1	-.00085	.01101	4.3996	.00050	.25893	-.00581	.00028
#2	-.00162	.00513	4.4064	.00091	.26117	-.01361	.00100
#3	.00268	.01274	4.1401	.00021	.25999	.00754	-.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00022**	**.00227**	F **-.50703**
Stddev	.00021	.00010	.18028
%RSD	94.599	4.2782	35.555
#1	.00007	.00231	-.42731
#2	.00046	.00235	-.71342
#3	.00014	.00216	-.38036
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13809.**	**90837.**	**3339.3**
Stddev	333.	614.	28.0
%RSD	2.4111	.67578	.83784
#1	13712.	90202.	3339.3
#2	13536.	90880.	3367.3
#3	14180.	91428.	3311.4

Approved: March 30, 2017

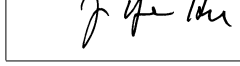
Sample Name: L1703139702 Acquired: 3/29/2017 18:46:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00168**	**.01059**	**.00123**	**.01565**	**.06091**	**-.00003**	**50.367**
Stddev	.00037	.00466	.00159	.00135	.00239	.00004	.385
%RSD	21.828	44.015	129.01	8.6108	3.9175	148.91	.76420
#1	-.00205	.01142	.00021	.01697	.06164	.00002	49.938
#2	-.00166	.00557	.00043	.01571	.05824	-.00005	50.480
#3	-.00132	.01477	.00307	.01427	.06284	-.00006	50.682
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00033**	**.00026**	**.00061**	**.00241**	**-.00089**	**.63102**	**.00176**
Stddev	.00002	.00016	.00069	.00061	.00952	.08737	.00244
%RSD	6.5417	62.370	112.87	25.379	1070.1	13.845	138.34
#1	.00036	.00041	-.00015	.00296	.00170	.64205	.00418
#2	.00031	.00029	.00081	.00250	-.01144	.71235	.00180
#3	.00033	.00009	.00119	.00175	.00707	.53866	-.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**8.3907**	**.30708**	**.00028**	**11.324**	**.00011**	**-.00108**	**.00206**
Stddev	.0296	.00306	.00015	.121	.00049	.00387	.00329
%RSD	.35237	.99520	52.589	1.0650	449.28	357.48	159.64
#1	8.3628	.30369	.00030	11.261	-.00031	.00338	.00319
#2	8.3876	.30963	.00042	11.247	-.00001	-.00305	.00463
#3	8.4217	.30790	.00013	11.463	.00065	-.00357	-.00164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: L1703139702 Acquired: 3/29/2017 18:46:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00201**	**.00396**	**4.2569**	**.00046**	**.26285**	**-.00288**	**.00080**
Stddev	.00358	.00352	.0179	.00048	.00347	.00480	.00021
%RSD	178.22	88.899	.42104	103.43	1.3214	166.23	26.354
#1	.00603	.00023	4.2716	-.00009	.25993	-.00812	.00088
#2	.00082	.00443	4.2622	.00074	.26193	-.00182	.00057
#3	-.00082	.00723	4.2370	.00073	.26669	.00129	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00012**	**.00425**	F **-.22142**
Stddev	.00060	.00017	.39348
%RSD	504.35	3.9310	177.70
#1	.00064	.00440	-.29153
#2	-.00053	.00429	-.57514
#3	.00024	.00407	.20240
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13995.**	**92068.**	**3401.7**
Stddev	45.	1629.	51.2
%RSD	.32158	1.7688	1.5052
#1	13952.	90580.	3362.1
#2	13990.	93808.	3383.4
#3	14042.	91815.	3459.5

Approved: March 30, 2017

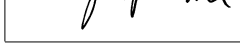
Sample Name: CCV Acquired: 3/29/2017 18:50:14 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38673**	**9.8074**	**.38971**	**.47929**	**.98233**	**.04872**	**9.8611**
Stddev	.00164	.0253	.00194	.00303	.00134	.00009	.0684
%RSD	.42468	.25802	.49869	.63123	.13631	.18906	.69387
#1	.38858	9.8319	.38918	.48253	.98240	.04862	9.9326
#2	.38619	9.7813	.38808	.47881	.98096	.04872	9.8544
#3	.38543	9.8089	.39186	.47653	.98363	.04881	9.7962
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04954**	**.19946**	**.48401**	**.49651**	**3.9005**	**49.264**	**.98809**
Stddev	.00006	.00043	.00070	.00091	.0294	.337	.01170
%RSD	.12974	.21544	.14498	.18349	.75459	.68331	1.1840
#1	.04951	.19980	.48464	.49741	3.9116	49.265	.99562
#2	.04950	.19898	.48415	.49558	3.8671	48.926	.97461
#3	.04961	.19960	.48326	.49653	3.9227	49.599	.99404
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.8588**	**.49122**	**.96956**	**49.215**	**.49151**	**9.6821**	**.49539**
Stddev	.1030	.00362	.00055	.297	.00149	.0146	.00135
%RSD	1.0449	.73684	.05658	.60275	.30332	.15056	.27300
#1	9.9642	.49044	.96989	49.199	.49117	9.6951	.49466
#2	9.8538	.48805	.96893	48.926	.49022	9.6664	.49457
#3	9.7584	.49516	.96987	49.519	.49314	9.6849	.49696
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 30, 2017



Sample Name: CCV Acquired: 3/29/2017 18:50:14 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1592**	**.39272**	**4.8766**	**.98490**	**.98032**	**.97218**	**.50015**
Stddev	.0034	.00605	.0015	.00027	.00392	.00631	.00234
%RSD	.28892	1.5398	.03107	.02741	.39950	.64955	.46844
#1	1.1571	.39890	4.8764	.98465	.98211	.96797	.49757
#2	1.1630	.39244	4.8751	.98519	.97583	.96912	.50074
#3	1.1573	.38682	4.8782	.98487	.98302	.97944	.50215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.97451**	**.97725**	F **.13028**
Stddev	.00218	.00188	.19745
%RSD	.22359	.19204	151.56
#1	.97468	.97757	-.01675
#2	.97225	.97524	.35470
#3	.97660	.97895	.05288
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13492.**	**88775.**	**3304.3**
Stddev	279.	359.	34.8
%RSD	2.0685	.40482	1.0536
#1	13507.	88954.	3265.3
#2	13764.	89010.	3332.2
#3	13206.	88361.	3315.4

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 18:53:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00191**	**.00792**	**.00122**	**.00197**	**.00160**	**.00005**	**-.00067**
Stddev	.00186	.00764	.00174	.00092	.00052	.00004	.06194
%RSD	97.435	96.508	142.24	46.641	32.530	77.294	9294.2
#1	-.00382	.01082	-.00075	.00125	.00120	.00009	-.06726
#2	-.00179	.01369	.00254	.00301	.00141	.00001	.05521
#3	-.00011	-.00075	.00187	.00167	.00219	.00005	.01005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.00020**	**.00012**	**-.00037**	**-.01543**	**-.19721**	**-.01313**
Stddev	.00006	.00037	.00011	.00053	.02226	.09615	.00553
%RSD	29.010	185.29	92.428	142.19	144.23	48.753	42.092
#1	-.00026	.00023	.00021	-.00041	.00393	-.19983	-.01813
#2	-.00026	.00056	.00017	.00017	-.01047	-.09978	-.01407
#3	-.00015	-.00018	-.00001	-.00089	-.03975	-.29202	-.00720
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.03929**	**.00068**	**-.00012**	**-.00464**	**-.00104**	**.00160**	**-.00019**
Stddev	.04501	.00245	.00021	.03485	.00027	.00262	.00052
%RSD	114.57	360.22	175.68	750.92	25.396	163.80	274.39
#1	-.07865	.00010	-.00003	.02792	-.00080	.00286	.00018
#2	.00979	.00336	-.00036	-.04141	-.00100	.00335	.00004
#3	-.04900	-.00143	.00003	-.00043	-.00133	-.00141	-.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 18:53:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00097**	**-.00108**	**.00768**	**.00132**	**-.00028**	**-.00691**	**.00035**
Stddev	.00159	.00667	.00068	.00018	.00045	.00319	.00199
%RSD	162.79	619.25	8.8810	13.797	160.15	46.171	574.49
#1	.00162	-.00449	.00721	.00123	.00004	-.00383	.00060
#2	-.00083	.00660	.00736	.00152	-.00080	-.01021	.00220
#3	.00213	-.00534	.00846	.00119	-.00008	-.00671	-.00176
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

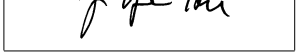
Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00011**	**.00002**	F **-.25344**
Stddev	.00063	.00012	.05807
%RSD	562.16	674.27	22.913
#1	-.00058	.00013	-.29113
#2	-.00037	-.00012	-.18657
#3	.00061	.00005	-.28263
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13932.**	**92272.**	**3262.4**
Stddev	43.	860.	64.0
%RSD	.31181	.93190	1.9607
#1	13956.	91592.	3252.7
#2	13881.	91985.	3330.7
#3	13957.	93239.	3203.8

Approved: March 30, 2017

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	3/30/2017 10:41:20	3/30/2017 10:41:20	Linear	1/Conc	-0.000139	0.063006	0.000000	1.000000
Al 308.215 {109}	3/30/2017 10:41:20	3/30/2017 10:41:20	Linear	1/Conc	0.000955	0.011555	0.000000	1.000000
As 189.042 {478}	3/30/2017 10:41:20	3/30/2017 10:41:20	Linear	1/Conc	0.000052	0.021270	0.000000	1.000000
B 249.678 {135}	3/30/2017 10:41:21	3/30/2017 10:41:21	Linear	1/Conc	-0.000233	0.023255	0.000000	1.000000
Ba 455.403 { 74}	3/30/2017 10:41:21	3/30/2017 10:41:21	Linear	1/Conc	0.012935	1.449822	0.000000	1.000000
Be 313.107 {108}	3/30/2017 10:41:21	3/30/2017 10:41:21	Linear	1/Conc	0.000471	1.180244	0.000000	1.000000
Ca 422.673 { 80}	3/30/2017 10:41:21	3/30/2017 10:41:21	Linear	1/Conc	0.003831	0.029365	0.000000	1.000000
Cd 228.802 {447}	3/30/2017 10:41:21	3/30/2017 10:41:21	Linear	1/Conc	-0.000101	0.457508	0.000000	1.000000
Co 228.616 {447}	3/30/2017 10:41:21	3/30/2017 10:41:21	Linear	1/Conc	-0.000099	0.314834	0.000000	1.000000
Cr 267.716 {126}	3/30/2017 10:41:21	3/30/2017 10:41:21	Linear	1/Conc	0.000163	0.070640	0.000000	1.000000
Cu 224.700 {450}	3/30/2017 10:41:21	3/30/2017 10:41:21	Linear	1/Conc	-0.000119	0.137538	0.000000	1.000000
Fe 261.187 {129}	3/30/2017 10:41:21	3/30/2017 10:41:21	Linear	1/Conc	0.000150	0.025088	0.000000	1.000000
K 766.490 { 44}	3/30/2017 10:41:21	3/30/2017 10:41:21	Linear	1/Conc	-0.017796	0.041036	0.000000	1.000000
Li 670.784 { 50}	3/30/2017 10:41:21	3/30/2017 10:41:21	Linear	1/Conc	-0.035591	0.896669	0.000000	1.000000
Mg 279.079 {121}	3/30/2017 10:41:21	3/30/2017 10:41:21	Linear	1/Conc	-0.000173	0.008063	0.000000	1.000000
Mn 257.610 {131}	3/30/2017 10:41:21	3/30/2017 10:41:21	Linear	1/Conc	-0.000417	0.288384	0.000000	1.000000
Mo 202.030 {467}	3/30/2017 10:41:21	3/30/2017 10:41:21	Linear	1/Conc	0.000029	0.159859	0.000000	1.000000
Na 589.592 { 57}	3/30/2017 10:41:21	3/30/2017 10:41:21	Linear	1/Conc	-0.002769	0.100993	0.000000	1.000000
Ni 231.604 {446}	3/30/2017 10:41:21	3/30/2017 10:41:21	Linear	1/Conc	-0.000782	0.117222	0.000000	1.000000
P 214.914 {457}	3/30/2017 10:41:21	3/30/2017 10:41:21	Linear	1/Conc	-0.000149	0.011436	0.000000	1.000000
Pb 220.353 {453}	3/30/2017 10:41:21	3/30/2017 10:41:21	Linear	1/Conc	-0.000251	0.057245	0.000000	1.000000
Sb 206.833 {463}	3/30/2017 10:41:21	3/30/2017 10:41:21	Linear	1/Conc	0.000707	0.024588	0.000000	1.000000
Se 196.090 {472}	3/30/2017 10:41:21	3/30/2017 10:41:21	Linear	1/Conc	-0.000155	0.014672	0.000000	1.000000
Si 212.412 {459}	3/30/2017 10:41:21	3/30/2017 10:41:21	Linear	1/Conc	0.000439	0.030171	0.000000	1.000000
Sn 189.989 {477}	3/30/2017 10:41:21	3/30/2017 10:41:21	Linear	1/Conc	0.000045	0.065810	0.000000	1.000000
Sr 407.771 { 83}	3/30/2017 10:41:21	3/30/2017 10:41:21	Linear	1/Conc	0.000514	2.275845	0.000000	1.000000
Ti 337.280 {100}	3/30/2017 10:41:21	3/30/2017 10:41:21	Linear	1/Conc	-0.002043	0.110821	0.000000	1.000000
Tl 190.856 {477}	3/30/2017 10:41:21	3/30/2017 10:41:21	Linear	1/Conc	-0.000232	0.025937	0.000000	1.000000
V 292.402 {115}	3/30/2017 10:41:21	3/30/2017 10:41:21	Linear	1/Conc	0.000148	0.084888	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	3/30/2017 10:41:21	3/30/2017 10:41:21	Linear	1/Conc	0.000089	0.402564	0.000000	1.000000
Zr 339.198 { 99}	3/30/2017 10:41:21	3/30/2017 10:41:21	Linear	1/Conc	-0.006451	0.002207	0.000000	1.000000

Approved: March 31, 2017



Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999292	0.000006	0.001681	0.005602	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999881	0.000011	0.006690	0.022301	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999622	0.000002	0.002825	0.009417	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999986	0.000001	0.002705	0.009018	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999972	0.000069	0.001381	0.004602	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999973	0.000003	0.000077	0.000257	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999668	0.000048	0.055609	0.185362	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999840	0.000003	0.000269	0.000896	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999915	0.000005	0.000375	0.001251	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999957	0.000002	0.001010	0.003366	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999734	0.000010	0.001040	0.003467	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999774	0.000014	0.024461	0.081538	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999968	0.000103	0.126234	0.420778	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999749	0.000197	0.005459	0.018196	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999943	0.000008	0.078858	0.262859	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999076	0.000039	0.002465	0.008217	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999980	0.000006	0.000388	0.001294	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999975	0.000227	0.042719	0.142395	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999911	0.000005	0.001057	0.003523	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999984	0.000004	0.006796	0.022652	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.998723	0.000009	0.003168	0.010561	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999849	0.000003	0.004293	0.014311	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999495	0.000002	0.006009	0.020028	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999959	0.000009	0.002397	0.007990	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999937	0.000005	0.000753	0.002511	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999953	0.000140	0.000615	0.002050	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999327	0.000026	0.007638	0.025462	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999830	0.000002	0.002701	0.009004	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999965	0.000004	0.000812	0.002707	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999944	0.000027	0.000168	0.000559	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.157739	0.000088	0.995455	3.318183	OK.	1.000000	0.000000	1	0

Approved: March 31, 2017

Sample Name: S0 Acquired: 3/30/2017 10:22:59 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00014**	**.00095**	**.00005**	**-.00023**	**.01293**	**.00047**	**.00383**
Stddev	.00004	.00003	.00002	.00002	.00092	.00006	.00140
%RSD	30.325	3.4149	33.432	8.7055	7.0968	13.289	36.439
#1	-.00010	.00098	.00004	-.00025	.01201	.00049	.00487
#2	-.00019	.00092	.00004	-.00023	.01385	.00052	.00438
#3	-.00013	.00097	.00007	-.00021	.01294	.00040	.00224

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00010**	**-.00010**	**.00016**	**-.00012**	**.00015**	**-.01780**	**-.03560**
Stddev	.00005	.00010	.00008	.00009	.00034	.00253	.00317
%RSD	49.395	102.98	46.414	74.412	227.26	14.236	8.8948
#1	-.00005	-.00001	.00012	-.00002	.00011	-.01528	-.03879
#2	-.00012	-.00007	.00025	-.00017	-.00017	-.02034	-.03246
#3	-.00014	-.00021	.00012	-.00017	.00051	-.01777	-.03553

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00017**	**-.00042**	**.00003**	**-.00276**	**-.00078**	**-.00015**	**-.00025**
Stddev	.00059	.00044	.00005	.00268	.00010	.00013	.00003
%RSD	342.33	105.99	180.33	96.763	12.336	89.896	10.463
#1	-.00055	.00004	-.00002	-.00001	-.00073	-.00006	-.00023
#2	.00051	-.00084	.00002	-.00293	-.00073	-.00008	-.00028
#3	-.00048	-.00046	.00008	-.00535	-.00089	-.00030	-.00025

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00071**	**-.00016**	**.00044**	**.00004**	**.00051**	**-.00204**	**-.00023**
Stddev	.00010	.00002	.00001	.00002	.00046	.00028	.00008
%RSD	13.769	10.235	2.1213	53.215	90.452	13.805	33.919
#1	.00065	-.00014	.00043	.00006	.00104	-.00180	-.00022
#2	.00065	-.00017	.00045	.00005	.00018	-.00235	-.00031
#3	.00082	-.00015	.00043	.00002	.00031	-.00198	-.00016

Approved: March 31, 2017

Sample Name: S0 Acquired: 3/30/2017 10:22:59 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.00015**	**.00009**	**-.00645**
Stddev	.00008	.00002	.00110
%RSD	52.890	21.898	17.008
#1	.00023	.00010	-.00715
#2	.00015	.00007	-.00518
#3	.00007	.00010	-.00701

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**15520.**	**102420.**	**3885.9**
Stddev	91.	773.	56.6
%RSD	.58679	.75502	1.4568
#1	15605.	101680.	3824.9
#2	15530.	102350.	3896.2
#3	15424.	103230.	3936.7

Approved: March 31, 2017

Sample Name: S1 Acquired: 3/30/2017 10:26:47 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00014**	**.00198**	**.02537**	**.00096**	**.00506**	**.00004**	**.00033**
Stddev	.00006	.00005	.00150	.00008	.00025	.00009	.00012
%RSD	42.395	2.2885	5.9136	8.5529	4.8763	240.83	37.232
#1	.00017	.00199	.02700	.00105	.00478	.00012	.00045
#2	.00017	.00193	.02508	.00089	.00519	.00006	.00033
#3	.00007	.00201	.02404	.00094	.00522	-.00006	.00021

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00045**	**.00057**	**.00075**	**-.00090**	**.00163**	**.00136**	**.03543**
Stddev	.00002	.00011	.00059	.00412	.00095	.00004	.00411
%RSD	5.2101	19.245	78.704	458.44	58.217	3.2134	11.609
#1	.00043	.00068	.00140	-.00267	.00083	.00131	.03806
#2	.00048	.00056	.00023	-.00384	.00139	.00139	.03753
#3	.00045	.00047	.00064	.00381	.00268	.00138	.03069

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00029**	**.00079**	**.00020**	**.00089**	**.00172**	**.00062**	**.02125**
Stddev	.00011	.00004	.00009	.00006	.00002	.00002	.00074
%RSD	38.872	5.5886	46.876	6.2662	1.3459	3.9445	3.5026
#1	-.00031	.00076	.00014	.00086	.00175	.00059	.02098
#2	-.00017	.00077	.00016	.00095	.00170	.00063	.02068
#3	-.00039	.00084	.00031	.00086	.00172	.00063	.02209

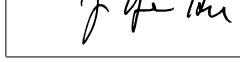
Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00058**	**.00088**	**.00343**	**-.00798**
Stddev	.00081	.00002	.00010	.00236
%RSD	139.81	2.2686	3.0025	29.543
#1	.00035	.00089	.00344	-.00543
#2	-.00099	.00089	.00352	-.00843
#3	-.00111	.00086	.00332	-.01008

Approved: March 31, 2017

Sample Name: S1 Acquired: 3/30/2017 10:26:47 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**15286.**	**102610.**	**3727.0**
Stddev	147.	840.	30.5
%RSD	.95843	.81881	.81854
#1	15453.	103490.	3750.3
#2	15227.	102510.	3738.3
#3	15179.	101820.	3692.5

Approved: March 31, 2017



Sample Name: S2 Acquired: 3/30/2017 10:30:34 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00043**	**.00292**	**.00014**	**-.00006**	**.03777**	**.00149**	**.00884**
Stddev	.00004	.00012	.00003	.00007	.00172	.00007	.00037
%RSD	9.6231	4.2396	20.497	128.91	4.5427	4.9807	4.1627
#1	.00038	.00278	.00011	.00000	.03883	.00147	.00917
#2	.00046	.00303	.00016	-.00004	.03579	.00157	.00890
#3	.00044	.00295	.00014	-.00014	.03870	.00142	.00844

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00037**	**.00087**	**.00073**	**.00118**	**.00139**	**.01817**	**-.01701**
Stddev	.00009	.00003	.00004	.00011	.00052	.00560	.00163
%RSD	24.780	3.3870	5.6916	9.2229	37.367	30.838	9.5565
#1	.00033	.00087	.00078	.00111	.00080	.01176	-.01642
#2	.00048	.00090	.00070	.00131	.00165	.02211	-.01884
#3	.00030	.00084	.00072	.00113	.00174	.02064	-.01576

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00095**	**.00142**	**.00263**	**.07376**	**.00023**	**.00169**	**.00020**
Stddev	.00075	.00088	.00009	.00138	.00004	.00007	.00012
%RSD	78.440	61.924	3.6002	1.8651	19.029	3.9641	57.934
#1	.00027	.00043	.00267	.07468	.00025	.00168	.00019
#2	.00175	.00172	.00271	.07218	.00025	.00176	.00033
#3	.00085	.00212	.00253	.07443	.00018	.00163	.00010

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00109**	**-.00002**	**.00303**	**.00116**	**.03972**	**-.00062**	**-.00002**
Stddev	.00005	.00003	.00003	.00003	.00174	.00065	.00007
%RSD	4.3612	149.61	1.0815	2.7494	4.3759	105.09	402.29
#1	.00108	-.00001	.00305	.00119	.04051	-.00018	.00001
#2	.00114	-.00006	.00306	.00117	.03772	-.00136	-.00010
#3	.00105	.00000	.00300	.00113	.04092	-.00031	.00003

Approved: March 31, 2017

Sample Name: S2 Acquired: 3/30/2017 10:30:34 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.00152**	**.00681**	**-.00848**
Stddev	.00001	.00020	.00143
%RSD	.79133	2.9998	16.891
#1	.00153	.00688	-.00996
#2	.00151	.00697	-.00710
#3	.00153	.00658	-.00839

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**15112.**	**101710.**	**3775.0**
Stddev	33.	804.	93.4
%RSD	.22157	.79097	2.4731
#1	15141.	101930.	3708.9
#2	15119.	100810.	3881.8
#3	15075.	102380.	3734.3

Approved: March 31, 2017

Sample Name: S3 Acquired: 3/30/2017 10:34:22 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.02522**	**.11979**	**.00854**	**.01141**	**1.4700**	**.06114**	**.30039**
Stddev	.00020	.00111	.00002	.00013	.0184	.00055	.00291
%RSD	.79114	.92762	.21004	1.1050	1.2537	.90155	.96763
#1	.02514	.11943	.00856	.01130	1.4602	.06077	.29824
#2	.02545	.12103	.00854	.01155	1.4912	.06178	.30369
#3	.02508	.11890	.00853	.01139	1.4585	.06088	.29922

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.02508**	**.06370**	**.03597**	**.06993**	**.10130**	**2.0429**	**.86722**
Stddev	.00021	.00014	.00021	.00019	.00027	.0145	.00137
%RSD	.84306	.22668	.58300	.26840	.26298	.71166	.15796
#1	.02527	.06376	.03589	.07011	.10100	2.0346	.86878
#2	.02513	.06353	.03621	.06974	.10138	2.0597	.86670
#3	.02485	.06380	.03581	.06995	.10151	2.0345	.86620

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.08095**	**.14486**	**.16115**	**5.0867**	**.05878**	**.11541**	**.02897**
Stddev	.00113	.00156	.00041	.0337	.00018	.00020	.00008
%RSD	1.3914	1.0767	.25438	.66294	.31063	.17386	.28486
#1	.07980	.14428	.16158	5.0771	.05899	.11556	.02891
#2	.08205	.14663	.16076	5.1242	.05864	.11518	.02906
#3	.08100	.14367	.16112	5.0588	.05872	.11548	.02892

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.02993**	**.00575**	**.15323**	**.06654**	**2.2858**	**.10916**	**.01191**
Stddev	.00007	.00004	.00020	.00020	.0244	.00092	.00007
%RSD	.25045	.71728	.12797	.29363	1.0674	.84661	.57660
#1	.02985	.00580	.15346	.06676	2.2711	.10826	.01188
#2	.02994	.00573	.15309	.06639	2.3140	.11011	.01186
#3	.03000	.00573	.15315	.06646	2.2725	.10910	.01199

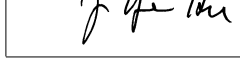
Approved: March 31, 2017

Sample Name: S3 Acquired: 3/30/2017 10:34:22 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.08565**	**.40784**	**-.00490**
Stddev	.00054	.00131	.00103
%RSD	.62626	.32027	21.010
#1	.08546	.40916	-.00413
#2	.08625	.40655	-.00607
#3	.08523	.40783	-.00451

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14864.**	**96810.**	**3802.5**
Stddev	134.	1053.	60.6
%RSD	.89968	1.0877	1.5944
#1	14736.	97006.	3868.7
#2	15002.	95673.	3789.1
#3	14853.	97751.	3749.7

Approved: March 31, 2017



Sample Name: S4 Acquired: 3/30/2017 10:37:56 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.04944**	**.23163**	**.01698**	**.02287**	**2.9029**	**.12026**	**.58902**	**.04959**
Stddev	.00054	.00252	.00008	.00019	.0280	.00106	.00270	.00006
%RSD	1.0937	1.0870	.48551	.81189	.96358	.88021	.45784	.11548
#1	.04919	.23149	.01708	.02280	2.8856	.12005	.58681	.04959
#2	.05006	.23421	.01693	.02308	2.9351	.12140	.59203	.04953
#3	.04906	.22918	.01693	.02273	2.8879	.11932	.58823	.04964

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.12481**	**.07039**	**.13601**	**.20058**	**4.0733**	**1.7474**	**.16009**	**.28657**
Stddev	.00025	.00058	.00023	.00151	.0286	.0159	.00160	.00291
%RSD	.19683	.82466	.16605	.75083	.70347	.91115	.99996	1.0149
#1	.12500	.07006	.13623	.19944	4.0637	1.7438	.15837	.28409
#2	.12453	.07106	.13578	.20229	4.1055	1.7648	.16154	.28977
#3	.12489	.07005	.13600	.20001	4.0507	1.7335	.16035	.28585

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.31833**	**10.063**	**.11539**	**.22825**	**.05678**	**.05853**	**.01151**	**.30165**
Stddev	.00029	.088	.00010	.00018	.00026	.00017	.00014	.00004
%RSD	.08980	.87241	.08385	.07843	.45155	.28655	1.2267	.01409
#1	.31849	10.011	.11548	.22846	.05680	.05866	.01157	.30169
#2	.31800	10.164	.11540	.22815	.05651	.05835	.01135	.30161
#3	.31849	10.014	.11529	.22814	.05702	.05859	.01162	.30166

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.13049**	**4.5377**	**.21853**	**.02324**	**.16858**	**.79862**	**.00224**
Stddev	.00020	.0321	.00227	.00007	.00148	.00045	.00114
%RSD	.15185	.70849	1.0383	.31293	.87980	.05677	50.991
#1	.13058	4.5211	.21654	.02318	.16838	.79909	.00353
#2	.13063	4.5748	.22100	.02321	.17015	.79856	.00135
#3	.13026	4.5173	.21806	.02332	.16720	.79819	.00183

Approved: March 31, 2017

Sample Name: S4 Acquired: 3/30/2017 10:37:56 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14911.**	**97291.**	**3777.2**
Stddev	38.	491.	57.0
%RSD	.25696	.50430	1.5082
#1	14881.	97398.	3712.4
#2	14897.	96756.	3800.2
#3	14954.	97719.	3819.1

Approved: March 31, 2017

Sample Name: ICV Acquired: 3/30/2017 10:41:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39172**	**9.9449**	**.39536**	**.48986**	**1.0041**	**.04929**	**10.081**	**.04971**
Stddev	.00113	.0351	.00259	.00361	.0083	.00017	.149	.00035
%RSD	.28780	.35251	.65448	.73620	.82937	.34417	1.4767	.70794
#1	.39276	9.9763	.39585	.49321	.99718	.04947	9.9796	.04997
#2	.39189	9.9513	.39766	.49032	1.0017	.04913	10.010	.04931
#3	.39052	9.9070	.39256	.48604	1.0133	.04927	10.251	.04984
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19969**	**.49803**	**.50351**	**3.9873**	**49.803**	**1.0087**	**9.9983**	**.50283**
Stddev	.00097	.00073	.00045	.0364	.444	.0060	.0813	.00418
%RSD	.48782	.14615	.08909	.91285	.89108	.59801	.81355	.83070
#1	.20050	.49840	.50349	3.9900	49.516	1.0088	9.9384	.50499
#2	.19861	.49719	.50308	3.9496	49.579	1.0026	9.9655	.49801
#3	.19996	.49850	.50397	4.0222	50.314	1.0147	10.091	.50548
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.97649**	**49.826**	**.50321**	**9.7997**	**.50516**	**1.2146**	**.39244**	**4.9787**
Stddev	.00394	.341	.00240	.0388	.00149	.0032	.00272	.0140
%RSD	.40370	.68473	.47775	.39584	.29558	.26669	.69251	.28014
#1	.97964	49.568	.50597	9.8340	.50630	1.2183	.38934	4.9862
#2	.97207	49.697	.50207	9.7576	.50347	1.2122	.39357	4.9626
#3	.97775	50.212	.50158	9.8076	.50571	1.2134	.39441	4.9873
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: March 31, 2017

Sample Name: ICV Acquired: 3/30/2017 10:41:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0082**	**1.0013**	**1.0042**	**.50524**	**.99196**	**.99693**	**.95007**
Stddev	.0036	.0098	.0171	.00283	.00275	.00298	.27570
%RSD	.35675	.97382	1.6988	.55951	.27709	.29920	29.018
#1	1.0110	.99251	1.0104	.50735	.99480	.99978	.68403
#2	1.0042	.99949	.98497	.50203	.99175	.99383	.93169
#3	1.0095	1.0118	1.0174	.50633	.98932	.99717	1.2345
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**15039.**	**98114.**	**3787.6**
Stddev	76.	349.	36.0
%RSD	.50663	.35589	.95012
#1	14958.	97810.	3753.2
#2	15109.	98036.	3825.0
#3	15052.	98495.	3784.8

Approved: March 31, 2017

Sample Name: ICB Acquired: 3/30/2017 10:44:59 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00147**	**-.00657**	**-.00223**	**.00139**	**.00089**	**-.00005**	**-.01609**
Stddev	.00049	.00697	.00211	.00120	.00115	.00004	.03845
%RSD	33.357	106.16	94.366	86.293	130.03	78.389	239.05
#1	.00204	-.00956	-.00007	.00159	.00123	-.00009	-.05665
#2	.00120	.00140	-.00236	.00010	.00183	-.00001	.01983
#3	.00118	-.01154	-.00428	.00247	-.00040	-.00007	-.01143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**-.00025**	**-.00033**	**.00076**	**-.01656**	**.22106**	**.00806**
Stddev	.00008	.00029	.00104	.00047	.01675	.20471	.00382
%RSD	54.843	119.15	313.83	61.476	101.14	92.603	47.405
#1	.00006	-.00029	-.00046	.00129	-.03569	-.00406	.00484
#2	.00015	.00007	-.00130	.00040	-.00943	.39604	.00706
#3	.00022	-.00052	.00077	.00060	-.00456	.27119	.01229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02553**	**-.00006**	**.00002**	**-.06164**	**-.00054**	**-.00018**	**.00199**
Stddev	.04271	.00073	.00048	.06679	.00043	.00322	.00206
%RSD	167.28	1304.2	2903.4	108.35	80.222	1774.9	103.53
#1	.01118	-.00067	-.00044	-.00229	-.00041	-.00315	.00285
#2	.07356	.00075	-.00003	-.04867	-.00019	.00325	-.00036
#3	-.00815	-.00024	.00052	-.13397	-.00102	-.00064	.00348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: ICB Acquired: 3/30/2017 10:44:59 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00212**	**-.00242**	**.00161**	**.00038**	**.00058**	**.00159**	**-.00149**
Stddev	.00336	.00200	.00097	.00039	.00090	.00713	.00161
%RSD	158.73	82.766	60.057	104.23	153.57	447.21	108.13
#1	.00082	-.00449	.00261	.00056	-.00035	.00509	-.00044
#2	-.00040	-.00227	.00154	-.00007	.00066	-.00661	-.00068
#3	.00593	-.00049	.00068	.00064	.00144	.00630	-.00334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00097**	**.00018**	F **-.96480**
Stddev	.00026	.00011	1.3930
%RSD	26.818	58.342	144.38
#1	-.00068	.00029	.19599
#2	-.00102	.00018	-2.5095
#3	-.00119	.00008	-.58093
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14964.**	**101490.**	**3745.7**
Stddev	79.	832.	88.8
%RSD	.52486	.81939	2.3706
#1	15047.	100550.	3821.8
#2	14956.	102130.	3648.1
#3	14890.	101800.	3767.0

Approved: March 31, 2017

Sample Name: LLICV Acquired: 3/30/2017 10:48:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00944**	**.17242**	**.00952**	**.07967**	**.00837**	**.00156**	**.39467**
Stddev	.00093	.00564	.00379	.00275	.00205	.00009	.07016
%RSD	9.8460	3.2706	39.806	3.4500	24.442	5.5258	17.776
#1	.01017	.17048	.01382	.08111	.01021	.00148	.31413
#2	.00976	.16800	.00667	.07650	.00617	.00157	.42738
#3	.00839	.17877	.00807	.08140	.00874	.00165	.44250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00090**	**.00412**	**.00389**	**.00498**	**.07295**	**.89749**	**.09716**
Stddev	.00030	.00007	.00074	.00044	.01000	.08592	.00518
%RSD	33.821	1.7462	18.914	8.9276	13.713	9.5739	5.3324
#1	.00056	.00419	.00421	.00539	.06243	.87173	.10282
#2	.00116	.00405	.00442	.00451	.08234	.99335	.09265
#3	.00098	.00412	.00305	.00504	.07408	.82740	.09602
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37811**	**.01178**	**.00782**	**.34391**	**.01617**	**.79833**	**.00908**
Stddev	.05895	.00397	.00023	.03167	.00079	.00649	.00194
%RSD	15.590	33.714	2.9451	9.2081	4.8784	.81309	21.399
#1	.36960	.00730	.00795	.35607	.01649	.79111	.01132
#2	.32388	.01486	.00795	.36770	.01675	.80369	.00804
#3	.44085	.01319	.00755	.30797	.01527	.80018	.00787
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: LLICV Acquired: 3/30/2017 10:48:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.08582**	**.01453**	**.80438**	**.41592**	**.04230**	**.02505**	**.16272**
Stddev	.00201	.00616	.00199	.00068	.00070	.00329	.00148
%RSD	2.3402	42.440	.24688	.16338	1.6598	13.118	.90967
#1	.08681	.02150	.80211	.41573	.04311	.02163	.16264
#2	.08351	.01226	.80524	.41535	.04186	.02533	.16424
#3	.08714	.00982	.80579	.41667	.04194	.02818	.16128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00767**	**.01836**	F **90.744**
Stddev	.00052	.00005	1.522
%RSD	6.7294	.27604	1.6777
#1	.00816	.01830	91.520
#2	.00713	.01838	91.723
#3	.00771	.01839	88.990
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**15027.**	**100400.**	**3714.6**
Stddev	76.	809.	77.1
%RSD	.50444	.80549	2.0769
#1	15037.	101310.	3749.4
#2	15097.	99766.	3626.2
#3	14946.	100130.	3768.2

Approved: March 31, 2017

Sample Name: ICSA Acquired: 3/30/2017 10:52:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00212**	**255.42**	**.00060**	**-.00525**	**.00010**	**-.00005**	**240.30**
Stddev	.00066	2.55	.00205	.00128	.00168	.00009	2.09
%RSD	31.073	.99663	341.44	24.458	1683.5	173.03	.86783
#1	.00275	258.36	-.00168	-.00393	.00199	-.00013	242.62
#2	.00217	253.91	.00230	-.00533	-.00050	.00004	239.69
#3	.00144	253.99	.00119	-.00650	-.00119	-.00006	238.58
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00056**	**-.00149**	**-.00192**	**-.00136**	**96.904**	**.06079**	**.00894**
Stddev	.00024	.00051	.00015	.00409	.982	.09238	.00128
%RSD	42.364	34.124	7.5558	300.69	1.0133	151.95	14.306
#1	.00031	-.00112	-.00205	.00072	97.980	.16663	.00916
#2	.00078	-.00207	-.00195	.00127	96.673	.01937	.00756
#3	.00060	-.00128	-.00176	-.00607	96.058	-.00362	.01009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**247.84**	**.00044**	**-.00044**	**-.04633**	**-.00032**	**.00835**	**-.00084**
Stddev	1.95	.00226	.00016	.01521	.00056	.00546	.00624
%RSD	.78685	517.23	35.722	32.836	176.67	65.363	739.72
#1	249.45	-.00037	-.00047	-.06384	-.00053	.00234	.00285
#2	248.40	.00298	-.00059	-.03883	-.00075	.00973	.00267
#3	245.67	-.00131	-.00027	-.03632	.00032	.01300	-.00805
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: ICSA Acquired: 3/30/2017 10:52:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01079**	**.00161**	**.00963**	**.00080**	**.00121**	**.00079**	**-.00029**
Stddev	.00499	.00251	.00080	.00028	.00031	.00231	.00338
%RSD	46.258	156.02	8.2838	34.247	25.865	292.98	1169.9
#1	.00927	.00363	.00925	.00112	.00108	-.00181	-.00125
#2	.00673	-.00120	.00910	.00060	.00098	.00261	.00347
#3	.01636	.00240	.01055	.00069	.00156	.00157	-.00308
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00302**	**.00039**	F **-13.618**
Stddev	.00072	.00022	.389
%RSD	23.970	56.536	2.8542
#1	-.00297	.00038	-14.024
#2	-.00233	.00062	-13.581
#3	-.00377	.00018	-13.249
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02000
Low Limit			-.02000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14297.**	**92158.**	**3689.1**
Stddev	69.	1528.	4.8
%RSD	.47961	1.6584	.13024
#1	14376.	90393.	3686.9
#2	14258.	93069.	3685.7
#3	14258.	93011.	3694.6

Approved: March 31, 2017

Sample Name: ICSAB Acquired: 3/30/2017 10:56:19 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52558**	**256.76**	**.25258**	F **.50577**	**.25299**	**.25306**	**238.75**
Stddev	.00092	10.69	.00350	.00374	.00361	.00064	3.04
%RSD	.17519	4.1632	1.3857	.73949	1.4267	.25113	1.2716
#1	.52511	244.48	.25490	.50153	.24974	.25233	236.23
#2	.52664	261.85	.25429	.50860	.25687	.25340	242.12
#3	.52499	263.96	.24855	.50719	.25235	.25346	237.90
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				.10000			
Low Limit				-.10000			

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48667**	**.23590**	**.25008**	**.24800**	**95.814**	**5.1446**	**.01198**
Stddev	.00306	.00214	.00024	.00169	1.053	.0746	.00368
%RSD	.62943	.90562	.09426	.68253	1.0994	1.4511	30.701
#1	.48853	.23693	.25012	.24859	95.206	5.0695	.00935
#2	.48833	.23733	.25029	.24932	97.030	5.2188	.01619
#3	.48313	.23345	.24982	.24610	95.206	5.1454	.01042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**244.20**	**.24570**	**-.00045**	**5.1529**	**.48075**	**-.01853**	**.49067**
Stddev	2.66	.00330	.00048	.0086	.00427	.00500	.00929
%RSD	1.0912	1.3419	107.12	.16623	.88903	26.959	1.8929
#1	242.61	.24430	-.00085	5.1625	.48249	-.02427	.49725
#2	247.28	.24947	.00008	5.1503	.48389	-.01618	.49471
#3	242.71	.24334	-.00057	5.1459	.47588	-.01514	.48004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: ICSAB Acquired: 3/30/2017 10:56:19 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51232**	**.24868**	**.00730**	**.49243**	**.00110**	**.00343**	**.45460**
Stddev	.00529	.00329	.00211	.00405	.00020	.00447	.00142
%RSD	1.0335	1.3249	28.849	.82339	17.860	130.19	.31304
#1	.51817	.25221	.00924	.49442	.00131	.00669	.45551
#2	.51091	.24816	.00506	.49510	.00092	-.00166	.45533
#3	.50787	.24568	.00761	.48776	.00107	.00528	.45296
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.25230**	**.47684**	F **-12.950**
Stddev	.00107	.00326	1.001
%RSD	.42341	.68330	7.7301
#1	.25109	.47863	-13.762
#2	.25311	.47881	-13.256
#3	.25270	.47308	-11.832
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02500
Low Limit			-.02500

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14274.**	**93276.**	**3724.7**
Stddev	73.	888.	4.7
%RSD	.50966	.95199	.12607
#1	14358.	93171.	3730.0
#2	14236.	94213.	3723.0
#3	14227.	92446.	3721.1

Approved: March 31, 2017

Sample Name: CCV Acquired: 3/30/2017 11:00:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40258**	**10.146**	**.39803**	**.49599**	**1.0152**	**.05032**	**10.026**
Stddev	.00535	.145	.00076	.00333	.0069	.00052	.060
%RSD	1.3282	1.4279	.19094	.67056	.68023	1.0345	.59943
#1	.40365	10.236	.39778	.49733	1.0158	.05056	10.003
#2	.40732	10.224	.39742	.49844	1.0217	.05068	9.9815
#3	.39678	9.9790	.39888	.49220	1.0080	.04973	10.095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05110**	**.20537**	**.50473**	**.51174**	**4.0111**	**50.687**	**1.0217**
Stddev	.00021	.00099	.00749	.00299	.0495	.201	.0034
%RSD	.41316	.48095	1.4848	.58419	1.2327	.39728	.33393
#1	.05125	.20554	.51049	.51096	4.0098	50.463	1.0183
#2	.05119	.20627	.50744	.51504	4.0611	50.853	1.0251
#3	.05086	.20431	.49626	.50922	3.9623	50.744	1.0217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.188**	**.50837**	**1.0120**	**51.018**	**.51566**	**9.9820**	**.51444**
Stddev	.078	.00519	.0064	.171	.00253	.0415	.00365
%RSD	.76681	1.0216	.63612	.33511	.49117	.41626	.70946
#1	10.191	.50608	1.0118	50.895	.51540	9.9702	.51059
#2	10.109	.51432	1.0186	51.213	.51831	10.028	.51488
#3	10.265	.50472	1.0057	50.946	.51326	9.9476	.51785
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 31, 2017

Sample Name: CCV Acquired: 3/30/2017 11:00:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2028**	**.40179**	**5.1042**	**1.0190**	**1.0121**	**1.0102**	**.51620**
Stddev	.0084	.00467	.0136	.0072	.0049	.0073	.00358
%RSD	.70038	1.1614	.26548	.70145	.47930	.72675	.69324
#1	1.2079	.40166	5.1012	1.0210	1.0103	1.0027	.52020
#2	1.2074	.39720	5.1190	1.0249	1.0176	1.0173	.51511
#3	1.1931	.40653	5.0924	1.0111	1.0085	1.0106	.51330
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0123**	**1.0109**	F **1.4599**
Stddev	.0125	.0058	.3054
%RSD	1.2383	.57080	20.920
#1	1.0211	1.0120	1.1185
#2	1.0179	1.0160	1.5539
#3	.99799	1.0046	1.7072
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14657.**	**97954.**	**3665.1**
Stddev	30.	2262.	108.4
%RSD	.20730	2.3093	2.9564
#1	14692.	96187.	3579.9
#2	14639.	97171.	3787.1
#3	14639.	100500.	3628.4

Approved: March 31, 2017

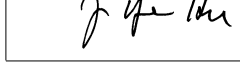
Sample Name: CCB Acquired: 3/30/2017 11:03:36 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00135**	**-.00311**	**-.00275**	**.00059**	**.00012**	**-.00003**	**-.04065**
Stddev	.00051	.00558	.00262	.00274	.00138	.00004	.04886
%RSD	37.864	179.52	95.236	464.34	1136.6	106.46	120.19
#1	.00165	.00210	-.00112	-.00257	-.00142	-.00002	-.08206
#2	.00076	-.00243	-.00578	.00197	.00125	-.00001	-.05312
#3	.00164	-.00899	-.00136	.00236	.00053	-.00008	.01324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**-.00011**	**-.00051**	**.00119**	**-.02833**	**.09172**	**.00978**
Stddev	.00003	.00023	.00136	.00039	.00359	.09769	.00269
%RSD	104.26	216.33	268.93	32.607	12.662	106.51	27.484
#1	-.00001	-.00008	-.00200	.00075	-.03093	.20335	.00945
#2	.00004	-.00035	.00064	.00139	-.02983	.05001	.00727
#3	.00004	.00011	-.00016	.00145	-.02424	.02182	.01261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.12080**	**.00204**	**-.00002**	**-.08773**	**-.00005**	**.00168**	**-.00064**
Stddev	.07328	.00219	.00007	.02880	.00082	.00168	.00312
%RSD	60.663	107.07	447.49	32.829	1742.4	99.565	491.03
#1	-.20189	-.00004	-.00010	-.09957	-.00034	.00163	-.00422
#2	-.05932	.00431	.00002	-.10873	.00088	.00339	.00145
#3	-.10118	.00185	.00003	-.05490	-.00067	.00004	.00087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017



Sample Name: CCB Acquired: 3/30/2017 11:03:36 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00201**	**.00032**	**.00274**	**.00033**	**.00066**	**-.00089**	**-.00097**
Stddev	.00228	.00335	.00069	.00051	.00026	.00447	.00068
%RSD	113.58	1056.4	25.078	153.60	39.700	499.91	69.851
#1	.00052	-.00345	.00290	.00060	.00091	.00169	-.00115
#2	.00088	.00146	.00334	.00065	.00039	.00169	-.00154
#3	.00464	.00294	.00199	-.00025	.00069	-.00606	-.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00048**	**.00001**	F **-.86405**
Stddev	.00037	.00011	.31285
%RSD	78.256	761.58	36.207
#1	-.00022	.00012	-.88907
#2	-.00091	.00002	-.53944
#3	-.00031	-.00010	-1.1636
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14892.**	**100760.**	**3714.0**
Stddev	68.	692.	70.1
%RSD	.45578	.68654	1.8882
#1	14841.	100460.	3646.6
#2	14969.	100260.	3786.6
#3	14865.	101550.	3708.9

Approved: March 31, 2017

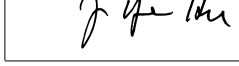
Sample Name: PBW A1 Acquired: 3/30/2017 11:07:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00127**	**.00502**	**-.00103**	**.00152**	**-.00002**	**-.00001**	**-.00699**
Stddev	.00110	.00811	.00372	.00183	.00127	.00003	.03700
%RSD	86.081	161.32	360.70	120.44	5513.9	302.72	529.64
#1	.00232	-.00047	-.00277	.00032	.00144	.00001	-.04340
#2	.00137	.00121	.00324	.00062	-.00082	.00001	.03057
#3	.00013	.01433	-.00356	.00363	-.00069	-.00005	-.00813
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**-.00020**	**.00042**	**.00089**	**-.00735**	**.04201**	**.00046**
Stddev	.00020	.00026	.00036	.00084	.01729	.13455	.00505
%RSD	169.47	131.39	87.283	94.861	235.31	320.24	1108.4
#1	-.00010	.00009	.00012	-.00008	.00417	.08856	-.00139
#2	.00015	-.00042	.00083	.00126	.00101	-.10963	-.00341
#3	.00030	-.00026	.00030	.00147	-.02722	.14711	.00616
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01097**	**.00216**	**.00019**	**-.04040**	**.00048**	**-.00268**	**.00168**
Stddev	.02077	.00136	.00004	.02511	.00033	.00414	.00481
%RSD	189.36	63.078	23.487	62.162	69.776	154.44	286.35
#1	-.02779	.00253	.00015	-.06850	.00045	.00125	-.00288
#2	.01225	.00330	.00024	-.03254	.00082	-.00701	.00670
#3	-.01736	.00065	.00018	-.02015	.00016	-.00229	.00122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017



Sample Name: PBW A1 Acquired: 3/30/2017 11:07:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00489**	**-.00170**	**.00403**	**.00022**	**.00042**	**.00049**	**-.00041**
Stddev	.00452	.00076	.00109	.00074	.00016	.00378	.00134
%RSD	92.525	44.606	27.153	331.77	38.027	776.08	330.16
#1	-.00031	-.00242	.00285	.00016	.00043	-.00032	-.00173
#2	.00790	-.00179	.00501	.00099	.00025	.00461	-.00045
#3	.00708	-.00091	.00422	-.00048	.00057	-.00283	.00096
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00066**	**.00113**	F **-.95161**
Stddev	.00075	.00009	.93970
%RSD	113.33	8.0019	98.749
#1	-.00119	.00103	-.06050
#2	.00020	.00121	-1.9333
#3	-.00099	.00113	-.86098
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**15082.**	**101470.**	**3774.4**
Stddev	95.	857.	36.1
%RSD	.62774	.84456	.95590
#1	15045.	102230.	3735.4
#2	15011.	100540.	3806.5
#3	15189.	101630.	3781.4

Approved: March 31, 2017

Sample Name: LCSW A1 Acquired: 3/30/2017 11:11:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20315**	**5.0771**	**.19633**	**.96717**	**.51453**	**.02474**	**5.1021**
Stddev	.00023	.0161	.00276	.00523	.00586	.00014	.0790
%RSD	.11187	.31779	1.4038	.54054	1.1387	.55865	1.5492
#1	.20341	5.0587	.19801	.96114	.52128	.02460	5.1855
#2	.20309	5.0885	.19784	.96985	.51075	.02487	5.0925
#3	.20296	5.0843	.19315	.97050	.51155	.02474	5.0283
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02510**	**.10314**	**.25532**	**.25719**	**2.0473**	**25.075**	**.51971**
Stddev	.00013	.00044	.00068	.00099	.0098	.160	.00291
%RSD	.50307	.42810	.26760	.38631	.47840	.63670	.56043
#1	.02524	.10324	.25494	.25822	2.0497	25.234	.52255
#2	.02505	.10353	.25611	.25711	2.0556	24.915	.51985
#3	.02500	.10266	.25490	.25624	2.0365	25.076	.51673
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.0760**	**.25935**	**.50004**	**25.517**	**.25942**	**4.9050**	**.25866**
Stddev	.0296	.00314	.00198	.278	.00032	.0176	.00121
%RSD	.58347	1.2092	.39505	1.0909	.12243	.35894	.46836
#1	5.1047	.26297	.50217	25.825	.25927	4.9226	.25865
#2	5.0777	.25744	.49967	25.284	.25978	4.9051	.25987
#3	5.0455	.25763	.49827	25.443	.25919	4.8874	.25745
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: LCSW A1 Acquired: 3/30/2017 11:11:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.61092**	**.19171**	**2.5799**	**.51636**	**.51661**	**.51051**	**.26087**
Stddev	.00392	.00680	.0117	.00208	.00524	.01602	.00335
%RSD	.64143	3.5457	.45186	.40267	1.0151	3.1372	1.2831
#1	.61376	.19053	2.5896	.51861	.52264	.51500	.26420
#2	.60645	.18558	2.5830	.51594	.51309	.49273	.25751
#3	.61253	.19902	2.5669	.51452	.51411	.52380	.26091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.50834**	**.50572**	F **-.05330**
Stddev	.00287	.00179	.34182
%RSD	.56510	.35355	641.29
#1	.50509	.50695	-.41022
#2	.51054	.50654	-.02079
#3	.50938	.50367	.27110
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**15033.**	**99768.**	**3810.4**
Stddev	32.	472.	43.7
%RSD	.20964	.47276	1.1481
#1	15043.	99240.	3766.6
#2	14997.	99917.	3810.6
#3	15057.	100150.	3854.1

Approved: March 31, 2017

Sample Name: L1703138301 Acquired: 3/30/2017 11:14:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00193**	**.00500**	**.00144**	**.02075**	**.07318**	**-.00005**	**54.481**
Stddev	.00170	.00606	.00381	.00148	.00046	.00007	.226
%RSD	88.004	121.28	264.71	7.1484	.63047	156.80	.41426
#1	.00000	.01196	.00574	.02041	.07273	-.00010	54.243
#2	.00322	.00208	-.00153	.02237	.07366	.00004	54.507
#3	.00257	.00094	.00011	.01947	.07315	-.00008	54.692
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**-.00075**	**.00027**	**.05003**	F **-.02096**	**1.0088**	**.00631**
Stddev	.00022	.00011	.00028	.00035	.02246	.0502	.00177
%RSD	123.22	14.276	103.88	.68994	107.20	4.9738	28.001
#1	-.00006	-.00073	.00040	.04970	-.04123	.95733	.00440
#2	.00037	-.00065	-.00005	.05001	.00320	1.0576	.00662
#3	.00022	-.00087	.00046	.05039	-.02483	1.0116	.00789
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					810.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.5914**	**.00733**	**.00057**	**5.2988**	**.00008**	**.00108**	**.00163**
Stddev	.1041	.00142	.00021	.0050	.00097	.00641	.00463
%RSD	1.0854	19.394	36.305	.09538	1277.8	593.88	284.40
#1	9.5691	.00865	.00077	5.3043	-.00051	.00838	-.00361
#2	9.5003	.00582	.00059	5.2978	.00120	-.00362	.00515
#3	9.7049	.00751	.00036	5.2943	-.00046	-.00152	.00334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: L1703138301 Acquired: 3/30/2017 11:14:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**-.00278**	**4.2340**	**.00059**	**.21566**	**-.00775**	**.00056**
Stddev	.00282	.00241	.0076	.00010	.00226	.00281	.00333
%RSD	1478.4	86.713	.18075	17.105	1.0477	36.275	592.04
#1	-.00129	-.00205	4.2427	.00053	.21343	-.00462	.00072
#2	.00345	-.00082	4.2283	.00054	.21560	-.00856	.00381
#3	-.00159	-.00547	4.2309	.00071	.21795	-.01006	-.00285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00057**	**.00467**	F **-.38111**
Stddev	.00071	.00009	.13597
%RSD	123.67	1.9110	35.679
#1	-.00127	.00459	-.49354
#2	.00014	.00465	-.41981
#3	-.00058	.00477	-.22998
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14969.**	**100770.**	**3801.8**
Stddev	52.	839.	45.7
%RSD	.34464	.83258	1.2008
#1	14960.	100490.	3749.2
#2	14923.	100110.	3831.3
#3	15025.	101720.	3825.0

Approved: March 31, 2017

Sample Name: L1703138301S Acquired: 3/30/2017 11:18:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19972**	**4.8994**	**.19494**	**.95788**	**.57076**	**.02429**	**57.441**
Stddev	.00213	.0332	.00021	.00140	.00427	.00013	.422
%RSD	1.0663	.67704	.10622	.14650	.74725	.52852	.73455
#1	.20016	4.8828	.19472	.95948	.56841	.02431	57.315
#2	.20160	4.9376	.19514	.95732	.57569	.02441	57.912
#3	.19741	4.8778	.19496	.95685	.56820	.02416	57.097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02475**	**.09861**	**.24772**	**.29230**	**1.9733**	**25.808**	**.50977**
Stddev	.00037	.00053	.00085	.00102	.0276	.263	.00523
%RSD	1.4811	.53782	.34416	.34911	1.3986	1.0180	1.0268
#1	.02495	.09850	.24718	.29320	1.9913	25.750	.50916
#2	.02498	.09919	.24870	.29119	1.9870	26.095	.51529
#3	.02433	.09815	.24728	.29251	1.9415	25.580	.50487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**14.035**	**.25879**	**.49094**	**30.201**	**.24745**	**4.8619**	**.25344**
Stddev	.132	.00239	.00256	.256	.00133	.0125	.00069
%RSD	.93893	.92391	.52128	.84680	.53875	.25667	.27259
#1	13.989	.25685	.49096	30.280	.24865	4.8565	.25405
#2	14.183	.25807	.49349	30.409	.24767	4.8762	.25358
#3	13.932	.26146	.48838	29.916	.24602	4.8531	.25269
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: L1703138301S Acquired: 3/30/2017 11:18:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.59806**	**.18709**	**6.6341**	**.50542**	**.70290**	**.49416**	**.24996**
Stddev	.00526	.00279	.0151	.00326	.00637	.00890	.00295
%RSD	.88017	1.4886	.22717	.64426	.90671	1.8001	1.1799
#1	.59559	.19013	6.6380	.50742	.70145	.48565	.24859
#2	.60411	.18466	6.6468	.50719	.70987	.50339	.25335
#3	.59449	.18649	6.6175	.50167	.69737	.49343	.24795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.49908**	**.48791**	F **-.10729**
Stddev	.00481	.00125	.44994
%RSD	.96441	.25712	419.37
#1	.49648	.48829	-.19891
#2	.50464	.48892	.38141
#3	.49613	.48650	-.50437
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14893.**	**99255.**	**3853.2**
Stddev	27.	956.	14.8
%RSD	.17895	.96277	.38441
#1	14864.	99553.	3858.6
#2	14900.	98186.	3836.4
#3	14916.	100030.	3864.5

Approved: March 31, 2017

Sample Name: L1703138301SD Acquired: 3/30/2017 11:21:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19843**	**4.9886**	**.19546**	**.97978**	**.58346**	**.02475**	**59.275**	**.02515**
Stddev	.00064	.0178	.00043	.00300	.00317	.00005	.169	.00018
%RSD	.32374	.35753	.22199	.30616	.54402	.21845	.28448	.73126
#1	.19869	4.9682	.19509	.97687	.58596	.02470	59.409	.02517
#2	.19890	5.0013	.19536	.98287	.58453	.02481	59.329	.02496
#3	.19770	4.9963	.19594	.97961	.57989	.02474	59.086	.02533
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10026**	**.25136**	**.29755**	**2.0153**	**26.262**	**.52193**	**14.459**	**.26218**
Stddev	.00021	.00104	.00100	.0414	.355	.00268	.131	.00421
%RSD	.21112	.41385	.33766	2.0522	1.3517	.51350	.90860	1.6075
#1	.10047	.25022	.29871	2.0621	26.424	.51939	14.531	.26581
#2	.10005	.25225	.29690	2.0003	26.508	.52473	14.538	.26318
#3	.10026	.25160	.29704	1.9836	25.855	.52166	14.307	.25756
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49890**	**30.737**	**.25088**	**4.9363**	**.25643**	**.60308**	**.19641**	**6.8169**
Stddev	.00068	.247	.00119	.0089	.00334	.00412	.00650	.0053
%RSD	.13632	.80399	.47497	.18091	1.3007	.68258	3.3101	.07774
#1	.49918	30.984	.25009	4.9294	.25988	.60126	.19992	6.8134
#2	.49939	30.737	.25029	4.9331	.25323	.60780	.20039	6.8143
#3	.49812	30.490	.25225	4.9464	.25618	.60019	.18890	6.8230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 31, 2017

Sample Name: L1703138301SD Acquired: 3/30/2017 11:21:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-05

Elem	Sn1899	Sr4077	Ti3372	TI1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51346**	**.72209**	**.50617**	**.25457**	**.50787**	**.49603**	**.18269**
Stddev	.00110	.00437	.00511	.00082	.00212	.00013	1.3619
%RSD	.21468	.60466	1.0102	.32083	.41648	.02686	745.46
#1	.51370	.72554	.50983	.25363	.50549	.49597	-1.3483
#2	.51442	.72355	.50836	.25511	.50857	.49594	1.2594
#3	.51226	.71718	.50033	.25497	.50954	.49618	.63702
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14839.**	**98754.**	**3864.1**
Stddev	33.	836.	81.8
%RSD	.22539	.84613	2.1170
#1	14830.	98562.	3828.8
#2	14811.	99669.	3957.6
#3	14876.	98031.	3805.8

Approved: March 31, 2017

Sample Name: L1703133902 Acquired: 3/30/2017 11:25:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00206**	**.00913**	**-.00088**	**.00582**	**1.6573**	**.00000**	**52.863**	**.00024**
Stddev	.00296	.00489	.00163	.00174	.0295	.00005	.917	.00011
%RSD	143.52	53.493	186.08	29.879	1.7782	944.40	1.7354	47.046
#1	.00215	.00410	-.00257	.00753	1.6246	-.00002	51.838	.00023
#2	.00498	.00944	.00069	.00586	1.6819	.00006	53.608	.00035
#3	-.00094	.01386	-.00075	.00406	1.6655	-.00003	53.141	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00471**	**.00029**	**.00056**	**.31356**	**.81153**	**.02872**	**41.837**	**.08783**
Stddev	.00018	.00004	.00024	.02765	.03185	.00200	.586	.00126
%RSD	3.8471	14.413	42.567	8.8184	3.9249	6.9473	1.4015	1.4325
#1	.00450	.00027	.00083	.32062	.83367	.03090	41.172	.08925
#2	.00476	.00033	.00048	.28307	.77503	.02828	42.283	.08685
#3	.00485	.00025	.00037	.33700	.82590	.02699	42.055	.08738
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**152.10**	**.00168**	**-.00042**	**.00313**	**-.00283**	**.00060**	**3.5757**
Stddev	.00017	2.84	.00081	.00357	.00053	.00235	.00635	.0389
%RSD	533.04	1.8650	47.870	845.58	17.017	83.315	1055.3	1.0872
#1	.00021	149.04	.00214	.00348	.00373	-.00403	-.00344	3.5354
#2	.00002	154.64	.00216	-.00353	.00294	-.00011	.00792	3.5788
#3	-.00013	152.63	.00075	-.00121	.00271	-.00433	-.00267	3.6129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

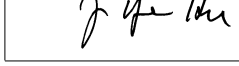
Approved: March 31, 2017

Sample Name: L1703133902 Acquired: 3/30/2017 11:25:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00061**	**1.2615**	**-.00410**	**-.00193**	**-.00148**	**.00760**	**.29099**
Stddev	.00036	.0236	.00833	.00228	.00074	.00024	.22280
%RSD	59.134	1.8670	203.14	118.05	50.062	3.2025	76.568
#1	-.00031	1.2356	.00364	-.00046	-.00219	.00734	.54703
#2	-.00101	1.2816	-.01292	-.00455	-.00071	.00782	.18469
#3	-.00051	1.2674	-.00302	-.00078	-.00156	.00764	.14124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14222.**	**93441.**	**3576.4**
Stddev	133.	2300.	41.6
%RSD	.93188	2.4609	1.1627
#1	14341.	96011.	3605.7
#2	14246.	92733.	3594.8
#3	14079.	91578.	3528.8

Approved: March 31, 2017



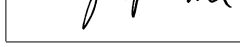
Sample Name: L1703133904 Acquired: 3/30/2017 11:29:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00145**	**.00416**	**.00128**	**.00411**	**1.6458**	**.00002**	**52.797**	**-.00007**
Stddev	.00193	.00166	.00197	.00229	.0522	.00002	1.586	.00011
%RSD	133.01	39.907	153.35	55.902	3.1716	106.67	3.0038	156.74
#1	-.00064	.00347	.00295	.00374	1.6505	.00005	52.747	-.00015
#2	.00183	.00605	-.00089	.00201	1.6955	.00000	54.407	-.00010
#3	.00316	.00296	.00179	.00656	1.5914	.00002	51.237	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00459**	**.00008**	**.00086**	**.28981**	**.65925**	**.02904**	**41.741**	**.08369**
Stddev	.00033	.00085	.00127	.01813	.16958	.00491	1.268	.00467
%RSD	7.2153	1032.6	147.52	6.2558	25.723	16.926	3.0379	5.5739
#1	.00424	-.00052	.00032	.28756	.80271	.02733	41.740	.08493
#2	.00463	-.00029	-.00005	.30895	.70295	.03458	43.010	.08761
#3	.00490	.00106	.00231	.27290	.47210	.02521	40.474	.07853
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00031**	**149.16**	**.00174**	**.00087**	**.00229**	**.00240**	**-.00647**	**3.3879**
Stddev	.00017	4.21	.00031	.00796	.00039	.00293	.00338	.1134
%RSD	53.569	2.8206	17.831	912.09	17.088	122.28	52.235	3.3468
#1	-.00048	149.51	.00161	-.00470	.00233	-.00085	-.00403	3.2622
#2	-.00030	153.19	.00152	.00999	.00266	.00484	-.01033	3.4824
#3	-.00015	144.79	.00210	-.00268	.00188	.00321	-.00505	3.4192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 31, 2017



Sample Name: L1703133904 Acquired: 3/30/2017 11:29:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**1.2614**	**-.00564**	**.00045**	**-.00094**	**.00608**	**.07137**
Stddev	.00096	.0410	.00319	.00059	.00023	.00009	.65155
%RSD	419.12	3.2488	56.676	130.70	24.188	1.5621	912.94
#1	.00088	1.2615	-.00197	.00041	-.00116	.00597	-.67635
#2	-.00076	1.3024	-.00708	.00107	-.00097	.00615	.37305
#3	-.00081	1.2204	-.00785	-.00012	-.00071	.00611	.51740
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14745.**	**96024.**	**3658.1**
Stddev	415.	88.	40.7
%RSD	2.8150	.09142	1.1126
#1	15220.	96122.	3640.2
#2	14450.	95953.	3629.4
#3	14566.	95997.	3704.7

Approved: March 31, 2017

Sample Name: L1703133905 Acquired: 3/30/2017 11:32:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**.00080**	**.00058**	**-.00053**	**.12399**	**.00009**	**3.2337**
Stddev	.00043	.00749	.00209	.00193	.00084	.00009	.0818
%RSD	407.48	938.57	357.67	363.31	.67511	93.201	2.5289
#1	.00003	.00102	.00145	.00095	.12348	.00013	3.2800
#2	-.00028	-.00680	-.00180	-.00272	.12495	-.00001	3.1393
#3	.00057	.00818	.00210	.00017	.12353	.00016	3.2818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.00195**	**.00077**	**.00046**	**.54624**	**-.03761**	**.01059**
Stddev	.00003	.00008	.00045	.00017	.00777	.06059	.00229
%RSD	96.120	3.8732	58.181	37.258	1.4230	161.08	21.604
#1	.00000	.00188	.00076	.00032	.54239	.01518	.00802
#2	-.00003	.00194	.00032	.00040	.55519	-.10377	.01241
#3	-.00006	.00203	.00122	.00065	.54115	-.02426	.01133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.4930**	**.13881**	**-.00015**	**9.9914**	**.00123**	**.00214**	**-.00060**
Stddev	.0981	.00318	.00041	.0423	.00081	.00140	.00148
%RSD	3.9349	2.2890	277.24	.42327	66.131	65.559	249.06
#1	2.5727	.14240	.00011	10.001	.00201	.00119	.00042
#2	2.3834	.13638	.00006	10.028	.00129	.00147	-.00230
#3	2.5228	.13764	-.00063	9.9450	.00039	.00375	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: L1703133905 Acquired: 3/30/2017 11:32:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00043**	**.00146**	**1.4140**	**.00054**	**.07357**	**-.00168**	**.00135**
Stddev	.00206	.00654	.0208	.00043	.00041	.01292	.00249
%RSD	473.30	449.53	1.4731	79.274	.55259	767.18	185.34
#1	-.00077	.00734	1.4158	.00020	.07337	-.01416	.00031
#2	-.00073	.00261	1.4339	.00103	.07404	-.00253	.00419
#3	.00281	-.00559	1.3924	.00040	.07330	.01164	-.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00072**	**.00441**	F **-.35715**
Stddev	.00084	.00010	1.0661
%RSD	117.65	2.2282	298.51
#1	.00010	.00430	.86190
#2	-.00158	.00443	-.81801
#3	-.00066	.00449	-1.1154
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**15119.**	**99374.**	**3752.3**
Stddev	165.	463.	36.3
%RSD	1.0881	.46558	.96627
#1	15060.	99101.	3752.7
#2	14992.	99112.	3788.3
#3	15305.	99908.	3715.8

Approved: March 31, 2017

Sample Name: L1703133905PS Acquired: 3/30/2017 11:36:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG607804-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20002**	**5.0432**	**.19465**	**.97260**	**.61317**	**.02472**	**8.0262**
Stddev	.00133	.0386	.00107	.00287	.00678	.00008	.0959
%RSD	.66612	.76509	.55206	.29489	1.1057	.30731	1.1942
#1	.19850	5.0156	.19388	.96940	.61750	.02466	8.0152
#2	.20057	5.0267	.19588	.97494	.60536	.02469	7.9364
#3	.20098	5.0873	.19420	.97346	.61665	.02481	8.1271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02525**	**.10272**	**.24892**	**.25431**	**2.5058**	**24.843**	**.49261**
Stddev	.00017	.00049	.00084	.00024	.0311	.152	.00472
%RSD	.65891	.47300	.33931	.09552	1.2402	.61094	.95818
#1	.02508	.10293	.24879	.25422	2.5380	24.956	.49806
#2	.02542	.10306	.24982	.25413	2.4760	24.671	.48990
#3	.02525	.10216	.24814	.25459	2.5034	24.904	.48988
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.3667**	**.38560**	**.48138**	**34.691**	**.25740**	**4.9245**	**.26075**
Stddev	.1973	.00655	.00210	.378	.00067	.0067	.00042
%RSD	2.6777	1.6997	.43610	1.0891	.25960	.13606	.16233
#1	7.4667	.38522	.48196	34.775	.25702	4.9318	.26070
#2	7.1395	.37924	.48313	34.278	.25817	4.9186	.26036
#3	7.4939	.39234	.47905	35.019	.25700	4.9231	.26120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: L1703133905PS Acquired: 3/30/2017 11:36:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG607804-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.59942**	**.19884**	**3.9779**	**.50255**	**.56733**	**.48696**	**.25592**
Stddev	.00178	.00307	.0103	.00239	.00535	.00302	.00165
%RSD	.29767	1.5446	.25861	.47509	.94367	.61956	.64335
#1	.59972	.20189	3.9833	.50421	.56992	.49013	.25533
#2	.59751	.19575	3.9844	.50363	.56117	.48663	.25464
#3	.60104	.19887	3.9660	.49981	.57089	.48413	.25778
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.49608**	**.51042**	F **-.38045**
Stddev	.00050	.00106	.53366
%RSD	.10070	.20690	140.27
#1	.49555	.51113	-.09107
#2	.49615	.51093	-.05398
#3	.49654	.50921	-.99630
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**15039.**	**99290.**	**3715.4**
Stddev	94.	558.	13.7
%RSD	.62762	.56149	.36999
#1	15013.	99790.	3700.4
#2	15144.	99390.	3727.5
#3	14961.	98689.	3718.2

Approved: March 31, 2017

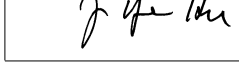
Sample Name: L1703133905SDL Acquired: 3/30/2017 11:40:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG607804-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00219**	**-.00345**	**.00016**	**.00477**	**.02507**	**.00004**	**.64056**
Stddev	.00151	.00659	.00108	.00099	.00130	.00003	.01886
%RSD	68.749	191.23	665.51	20.657	5.1813	91.716	2.9439
#1	.00045	-.00271	.00067	.00576	.02559	.00008	.65160
#2	.00303	.00274	.00090	.00379	.02603	.00001	.61879
#3	.00309	-.01038	-.00108	.00478	.02359	.00003	.65130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**.00004**	**.00031**	**.00050**	**.09799**	**.08919**	**.00375**
Stddev	.00012	.00026	.00018	.00127	.02545	.10136	.00444
%RSD	1296.1	695.77	57.754	251.67	25.968	113.65	118.35
#1	.00015	-.00021	.00012	-.00096	.12096	-.02727	.00306
#2	-.00006	.00031	.00034	.00131	.10237	.13733	-.00030
#3	-.00006	.00001	.00047	.00116	.07064	.15750	.00850
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52025**	**.02899**	**.00002**	**1.9910**	**-.00049**	**-.00563**	**-.00029**
Stddev	.03850	.00083	.00013	.0213	.00077	.00709	.00140
%RSD	7.3998	2.8536	570.46	1.0707	157.36	125.82	478.07
#1	.53390	.02990	-.00003	2.0131	-.00009	.00251	.00025
#2	.47679	.02829	-.00008	1.9892	.00000	-.01042	-.00188
#3	.55007	.02877	.00017	1.9706	-.00137	-.00899	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017



Sample Name: L1703133905SDL Acquired: 3/30/2017 11:40:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG607804-06

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**.00383**	**.28441**	**-.00007**	**.01541**	**.00269**	**-.00205**
Stddev	.00133	.00253	.00561	.00046	.00042	.00165	.00213
%RSD	914.75	66.083	1.9711	664.06	2.7513	61.430	103.75
#1	.00036	.00409	.28780	-.00048	.01492	.00286	-.00114
#2	-.00128	.00118	.28749	-.00014	.01569	.00426	-.00449
#3	.00136	.00622	.27794	.00042	.01561	.00096	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00009**	**.00147**	F **-.53430**
Stddev	.00035	.00012	.32349
%RSD	367.90	8.2924	60.544
#1	.00003	.00137	-.18613
#2	.00047	.00161	-.59124
#3	-.00022	.00143	-.82554
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14985.**	**100480.**	**3761.2**
Stddev	67.	702.	71.8
%RSD	.44750	.69875	1.9076
#1	14947.	101250.	3679.5
#2	15063.	99872.	3814.2
#3	14946.	100310.	3789.9

Approved: March 31, 2017

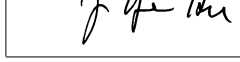
Sample Name: CCV Acquired: 3/30/2017 11:44:02 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39769**	**10.035**	**.39809**	**.49332**	**1.0111**	**.05004**	**9.9490**	**.05096**
Stddev	.00289	.043	.00087	.00087	.0159	.00030	.1199	.00018
%RSD	.72578	.42755	.21871	.17640	1.5748	.60031	1.2050	.36049
#1	.39526	9.9864	.39797	.49295	1.0258	.04978	10.074	.05085
#2	.40088	10.067	.39901	.49271	.99415	.05037	9.8351	.05118
#3	.39693	10.052	.39728	.49432	1.0133	.04996	9.9378	.05087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20552**	**.50313**	**.51161**	**4.0134**	**51.089**	**1.0103**	**10.095**	**.50506**
Stddev	.00116	.00175	.00351	.0532	.961	.0129	.226	.01047
%RSD	.56522	.34779	.68553	1.3267	1.8811	1.2768	2.2409	2.0720
#1	.20454	.50244	.50876	4.0624	52.050	1.0212	10.335	.51566
#2	.20680	.50512	.51552	3.9567	50.128	.99606	9.8848	.49474
#3	.20522	.50183	.51055	4.0210	51.088	1.0137	10.067	.50479
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0108**	**51.494**	**.51831**	**9.9230**	**.51609**	**1.2003**	**.40253**	**5.1381**
Stddev	.0020	.920	.00085	.0290	.00200	.0008	.00436	.0081
%RSD	.19407	1.7874	.16451	.29239	.38674	.06897	1.0834	.15777
#1	1.0108	52.394	.51896	9.9004	.51829	1.1994	.39806	5.1381
#2	1.0128	50.554	.51863	9.9557	.51558	1.2010	.40677	5.1462
#3	1.0088	51.534	.51734	9.9130	.51439	1.2005	.40278	5.1300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: March 31, 2017



Sample Name: CCV Acquired: 3/30/2017 11:44:02 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	TI1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0211**	**1.0046**	**1.0040**	**.51710**	**1.0128**	**1.0030**	**1.0523**
Stddev	.0042	.0148	.0154	.00212	.0038	.0023	.1942
%RSD	.41519	1.4755	1.5335	.40955	.37356	.22669	18.453
#1	1.0186	1.0182	1.0217	.51885	1.0088	1.0026	1.2425
#2	1.0260	.98879	.99508	.51771	1.0163	1.0055	1.0600
#3	1.0186	1.0067	.99504	.51474	1.0133	1.0010	.85436
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14789.**	**98579.**	**3770.4**
Stddev	69.	528.	68.0
%RSD	.46837	.53595	1.8043
#1	14759.	99184.	3780.8
#2	14869.	98349.	3832.6
#3	14740.	98205.	3697.7

Approved: March 31, 2017

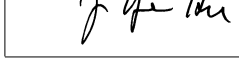
Sample Name: CCB Acquired: 3/30/2017 11:47:36 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00190**	**-.00661**	**.00006**	**.00310**	**.00167**	**.00000**	**.02921**
Stddev	.00158	.00141	.00089	.00166	.00011	.00011	.00811
%RSD	83.169	21.362	1609.6	53.605	6.6984	9824.0	27.762
#1	.00263	-.00814	.00078	.00502	.00179	-.00005	.02067
#2	.00009	-.00631	-.00094	.00218	.00157	.00013	.03680
#3	.00298	-.00537	.00033	.00210	.00165	-.00008	.03016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**-.00013**	**-.00035**	**.00052**	**-.03139**	**.03364**	**.01225**
Stddev	.00015	.00044	.00028	.00101	.02133	.02056	.00182
%RSD	300.41	322.98	80.334	195.90	67.952	61.096	14.889
#1	.00011	.00008	-.00022	.00097	-.05055	.04226	.01198
#2	-.00012	.00015	-.00066	.00123	-.03522	.01018	.01057
#3	.00016	-.00064	-.00016	-.00064	-.00841	.04849	.01419
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02111**	**-.00032**	**.00015**	**-.07065**	**-.00049**	**-.00136**	**.00086**
Stddev	.09193	.00082	.00017	.03229	.00054	.00530	.00132
%RSD	435.48	255.21	115.42	45.706	108.73	388.54	154.16
#1	.11148	-.00112	.00016	-.10635	-.00094	-.00039	.00181
#2	-.07230	.00053	.00032	-.04350	.00010	-.00708	.00141
#3	.02415	-.00037	-.00003	-.06209	-.00064	.00338	-.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017



Sample Name: CCB Acquired: 3/30/2017 11:47:36 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00284**	**-.00211**	**.00113**	**-.00016**	**.00030**	**-.00182**	**.00039**
Stddev	.00292	.00078	.00132	.00044	.00030	.00042	.00089
%RSD	103.13	37.128	116.93	286.33	98.981	23.180	230.17
#1	.00469	-.00234	-.00030	-.00026	-.00004	-.00211	.00083
#2	-.00054	-.00124	.00230	-.00054	.00052	-.00134	.00097
#3	.00435	-.00275	.00138	.00033	.00042	-.00202	-.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00013**	**-.00005**	F **-.78546**
Stddev	.00102	.00004	1.3946
%RSD	783.97	67.521	177.55
#1	-.00060	-.00009	-2.1986
#2	-.00084	-.00002	-.74765
#3	.00104	-.00005	.58986
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14918.**	**100200.**	**3744.4**
Stddev	211.	1680.	84.1
%RSD	1.4152	1.6762	2.2470
#1	15031.	101460.	3650.5
#2	15048.	98295.	3770.0
#3	14674.	100840.	3812.8

Approved: March 31, 2017

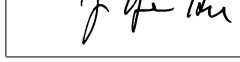
Sample Name: L1703133906 Acquired: 3/30/2017 11:51:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00069**	**.00719**	**.00143**	**.09137**	**.04225**	**.00004**	**3.7102**
Stddev	.00072	.00523	.00059	.00105	.00092	.00004	.0618
%RSD	104.56	72.725	40.930	1.1484	2.1665	113.09	1.6651
#1	.00151	.00186	.00088	.09148	.04226	.00005	3.7241
#2	.00015	.01232	.00136	.09028	.04316	-.00001	3.7639
#3	.00041	.00741	.00205	.09237	.04133	.00007	3.6427
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**-.00013**	**.00362**	**.00030**	**.15172**	**10.278**	**.02856**
Stddev	.00026	.00033	.00056	.00103	.01411	.087	.00335
%RSD	1279.9	254.73	15.599	341.20	9.3013	.84488	11.740
#1	.00024	.00024	.00299	.00030	.14995	10.346	.03039
#2	-.00003	-.00025	.00409	.00134	.16663	10.180	.02469
#3	-.00028	-.00039	.00378	-.00073	.13857	10.309	.03059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.3955**	**.01910**	**.00008**	**47.368**	**-.00056**	**.00585**	**.00200**
Stddev	.0914	.00322	.00015	.409	.00082	.00314	.00385
%RSD	6.5474	16.866	190.49	.86266	146.28	53.639	192.59
#1	1.2988	.01766	.00020	47.797	-.00136	.00665	-.00186
#2	1.4804	.02279	-.00008	47.324	.00029	.00239	.00202
#3	1.4073	.01684	.00011	46.984	-.00062	.00850	.00584
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017



Sample Name: L1703133906 Acquired: 3/30/2017 11:51:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00233**	**-.00036**	**1.5451**	**.00008**	**.20388**	**-.00362**	**-.00047**
Stddev	.00497	.00434	.0005	.00067	.00215	.01010	.00285
%RSD	213.32	1195.3	.03078	892.30	1.0552	279.07	606.01
#1	-.00322	.00382	1.5446	-.00043	.20439	.00388	-.00375
#2	.00383	-.00484	1.5451	.00084	.20573	.00037	.00093
#3	.00638	-.00007	1.5455	-.00018	.20152	-.01510	.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00032**	**.00110**	F **-1.8762**
Stddev	.00118	.00004	.7255
%RSD	366.14	4.0173	38.665
#1	-.00072	.00107	-2.7131
#2	-.00125	.00115	-1.4891
#3	.00100	.00108	-1.4265
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14485.**	**97136.**	**3590.5**
Stddev	72.	1635.	64.3
%RSD	.49416	1.6836	1.7896
#1	14402.	98992.	3561.4
#2	14533.	96515.	3545.9
#3	14519.	95903.	3664.2

Approved: March 31, 2017

Sample Name: L1703133907 Acquired: 3/30/2017 11:55:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00148**	**-.00464**	**.00205**	**.00153**	**.01594**	**.00004**	**.45647**
Stddev	.00063	.00176	.00145	.00176	.00023	.00004	.04067
%RSD	42.703	37.838	70.400	114.74	1.4447	96.613	8.9098
#1	.00090	-.00262	.00040	.00195	.01597	.00007	.47219
#2	.00139	-.00549	.00306	.00304	.01616	.00003	.41029
#3	.00215	-.00581	.00271	-.00040	.01570	.00000	.48694
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**-.00007**	**-.00072**	**.00089**	**.79595**	**-.06633**	**.00629**
Stddev	.00037	.00025	.00052	.00104	.01501	.15366	.00129
%RSD	981.75	341.83	71.255	115.93	1.8860	231.64	20.474
#1	.00039	-.00033	-.00050	.00041	.80090	-.10218	.00775
#2	-.00025	.00017	-.00131	.00209	.77909	.10208	.00574
#3	-.00025	-.00005	-.00036	.00019	.80786	-.19890	.00536
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.29150**	**.00996**	**-.00019**	**1.5793**	**-.00066**	**.00469**	**.00327**
Stddev	.05711	.00201	.00024	.0228	.00042	.00239	.00082
%RSD	19.592	20.196	127.00	1.4428	64.623	50.905	25.003
#1	.24608	.00766	-.00008	1.5937	-.00019	.00706	.00416
#2	.27281	.01085	-.00003	1.5531	-.00101	.00473	.00312
#3	.35562	.01138	-.00047	1.5913	-.00077	.00228	.00255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: L1703133907 Acquired: 3/30/2017 11:55:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00049**	**.00406**	**.33474**	**.00060**	**.01159**	**-.00632**	**-.00011**
Stddev	.00215	.00215	.01336	.00070	.00059	.00512	.00212
%RSD	435.68	53.000	3.9918	116.74	5.0975	80.999	1928.6
#1	.00192	.00651	.32188	.00129	.01212	-.01182	-.00119
#2	-.00222	.00320	.33379	-.00010	.01095	-.00171	.00233
#3	-.00118	.00247	.34856	.00060	.01170	-.00542	-.00147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00019**	**.00118**	F **-.97516**
Stddev	.00011	.00011	1.7375
%RSD	57.161	9.3254	178.17
#1	-.00016	.00107	-2.2947
#2	-.00010	.00129	.99339
#3	-.00031	.00119	-1.6242
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**15062.**	**99729.**	**3673.8**
Stddev	153.	1887.	116.2
%RSD	1.0136	1.8920	3.1625
#1	15077.	100610.	3607.1
#2	14903.	101010.	3808.0
#3	15207.	97563.	3606.4

Approved: March 31, 2017

Sample Name: L1703133908 Acquired: 3/30/2017 11:58:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00152**	**.00278**	**-.00062**	**-.00010**	**.00877**	**-.00002**	**.45193**
Stddev	.00106	.00341	.00161	.00131	.00130	.00001	.05239
%RSD	69.520	122.62	257.17	1367.5	14.806	71.646	11.592
#1	.00212	.00372	-.00204	.00088	.01012	-.00002	.41064
#2	.00214	.00561	.00112	.00042	.00867	-.00000	.51086
#3	.00030	-.00100	-.00096	-.00159	.00753	-.00002	.43429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**-.00019**	**.00062**	**.00027**	**1.4908**	**-.00997**	**-.00195**
Stddev	.00004	.00043	.00081	.00069	.0176	.12484	.00120
%RSD	2836.6	226.25	130.81	260.41	1.1807	1251.7	61.432
#1	-.00004	-.00068	.00088	.00106	1.4952	-.15336	-.00296
#2	-.00000	.00012	.00128	-.00005	1.4714	.07458	-.00226
#3	.00005	-.00001	-.00029	-.00021	1.5058	.04885	-.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22777**	**.02309**	**-.00023**	**1.4767**	**.00103**	**.00805**	**.00040**
Stddev	.04416	.00180	.00032	.0127	.00032	.00670	.00101
%RSD	19.389	7.7782	138.54	.86026	31.449	83.199	251.64
#1	.21734	.02483	-.00033	1.4700	.00078	.01154	.00154
#2	.18976	.02319	.00013	1.4913	.00140	.01228	-.00041
#3	.27622	.02124	-.00049	1.4688	.00092	.00033	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: L1703133908 Acquired: 3/30/2017 11:58:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00173**	**.00105**	**.31829**	**-.00056**	**.00969**	**.00019**	**-.00025**
Stddev	.00125	.00497	.00533	.00033	.00054	.00468	.00329
%RSD	72.559	471.33	1.6735	58.583	5.5316	2454.2	1293.0
#1	-.00168	.00200	.32073	-.00066	.01012	.00001	.00354
#2	-.00301	-.00432	.32196	-.00019	.00909	-.00440	-.00226
#3	-.00050	.00548	.31218	-.00082	.00987	.00496	-.00204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00033**	**.00141**	F **-1.1328**
Stddev	.00057	.00013	.5829
%RSD	175.13	9.5214	51.455
#1	.00032	.00151	-1.1411
#2	-.00051	.00126	-.54584
#3	-.00079	.00147	-1.7116
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14981.**	**99553.**	**3686.6**
Stddev	13.	433.	52.6
%RSD	.08437	.43514	1.4270
#1	14967.	99803.	3652.4
#2	14990.	99803.	3747.2
#3	14987.	99053.	3660.2

Approved: March 31, 2017

Sample Name: L1703133909 Acquired: 3/30/2017 12:02:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00095**	**.00138**	**-.00154**	**-.00115**	**.00943**	**.00009**	**.47376**	**.00006**
Stddev	.00141	.00134	.00285	.00080	.00075	.00004	.02255	.00008
%RSD	148.78	97.257	185.00	70.234	7.9428	49.415	4.7600	141.95
#1	.00228	.00180	-.00347	-.00065	.00932	.00007	.45981	-.00003
#2	-.00053	.00246	-.00289	-.00072	.01024	.00006	.49978	.00013
#3	.00108	-.00012	.00174	-.00207	.00875	.00014	.46170	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00040**	**-.00047**	**.00049**	**1.3987**	**.08656**	**.00614**	**.21692**	**.02130**
Stddev	.00004	.00058	.00082	.0205	.01772	.00255	.06851	.00411
%RSD	9.4649	124.31	167.93	1.4653	20.467	41.519	31.584	19.294
#1	-.00041	-.00107	.00043	1.4169	.10403	.00719	.23741	.02568
#2	-.00042	.00008	.00134	1.4026	.08704	.00323	.27285	.02071
#3	-.00035	-.00040	-.00030	1.3765	.06861	.00798	.14050	.01752
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**1.4076**	**.00068**	**.00530**	**-.00100**	**-.00329**	**-.00078**	**.31214**
Stddev	.00029	.0280	.00060	.00556	.00258	.00490	.00309	.00118
%RSD	516.04	1.9904	87.915	104.96	257.72	148.83	398.20	.37830
#1	.00000	1.4274	.00086	-.00070	.00190	-.00228	.00150	.31257
#2	.00020	1.3755	.00001	.00631	-.00303	.00102	-.00429	.31081
#3	-.00037	1.4198	.00118	.01028	-.00186	-.00862	.00047	.31306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 31, 2017

Sample Name: L1703133909 Acquired: 3/30/2017 12:02:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00029**	**.00985**	**.00151**	**-.00055**	**.00017**	**.00138**	**.12739**
Stddev	.00050	.00052	.00563	.00325	.00014	.00006	.68465
%RSD	173.25	5.2451	372.88	590.90	78.725	4.1322	537.45
#1	-.00026	.00926	-.00315	-.00358	.00024	.00140	.10626
#2	.00041	.01020	.00777	-.00097	.00002	.00141	.82236
#3	.00072	.01009	-.00008	.00289	.00027	.00131	-.54645
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**15020.**	**100240.**	**3755.8**
Stddev	163.	1164.	81.2
%RSD	1.0824	1.1613	2.1607
#1	15205.	101530.	3849.1
#2	14956.	99272.	3701.3
#3	14899.	99915.	3717.0

Approved: March 31, 2017

Sample Name: L1703133911 Acquired: 3/30/2017 12:06:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00315**	**.00046**	**.00032**	**-.00038**	**.06696**	**.00008**	**1.5294**
Stddev	.00106	.00189	.00108	.00239	.00106	.00001	.0331
%RSD	33.558	412.38	335.19	625.42	1.5851	19.122	2.1644
#1	.00256	-.00032	.00032	-.00167	.06626	.00006	1.4913
#2	.00437	-.00092	-.00076	-.00186	.06644	.00008	1.5508
#3	.00252	.00261	.00140	.00238	.06818	.00009	1.5461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**-.00021**	**-.00038**	**.00116**	**.62255**	**.03752**	**.00451**
Stddev	.00015	.00037	.00038	.00050	.02045	.03954	.00499
%RSD	96.645	173.73	101.07	43.378	3.2849	105.40	110.53
#1	.00015	-.00050	-.00011	.00164	.61028	.06029	.00562
#2	.00001	.00020	-.00021	.00119	.61122	-.00814	-.00094
#3	.00031	-.00034	-.00081	.00064	.64616	.06041	.00885
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.96626**	**.10676**	**-.00016**	**5.7792**	**-.00075**	**.00010**	**-.00027**
Stddev	.05019	.00250	.00024	.0311	.00065	.00600	.00228
%RSD	5.1940	2.3376	151.83	.53801	87.210	5941.9	854.04
#1	1.0165	.10620	-.00043	5.7524	.00000	-.00529	-.00140
#2	.91615	.10460	-.00007	5.8133	-.00108	.00657	-.00175
#3	.96612	.10949	.00002	5.7719	-.00117	-.00097	.00236
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: L1703133911 Acquired: 3/30/2017 12:06:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00029**	**-.00138**	**1.1440**	**-.00013**	**.03696**	**.00342**	**-.00124**
Stddev	.00343	.00605	.0069	.00068	.00075	.00304	.00004
%RSD	1193.6	440.02	.59857	514.78	2.0397	88.948	3.2882
#1	.00081	-.00663	1.1451	-.00025	.03613	.00003	-.00125
#2	-.00413	-.00274	1.1503	-.00075	.03760	.00432	-.00127
#3	.00246	.00524	1.1367	.00060	.03714	.00591	-.00119
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00009**	**.00122**	F **-1.9124**
Stddev	.00017	.00006	.8629
%RSD	185.88	4.9907	45.118
#1	-.00008	.00128	-1.7253
#2	-.00026	.00122	-1.1585
#3	.00007	.00116	-2.8535
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14689.**	**98600.**	**3554.4**
Stddev	84.	1296.	57.5
%RSD	.57340	1.3143	1.6188
#1	14657.	99230.	3615.7
#2	14784.	97110.	3501.5
#3	14625.	99461.	3546.1

Approved: March 31, 2017

Sample Name: L1703133913 Acquired: 3/30/2017 12:10:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00143**	**-.00299**	**.00087**	**-.00146**	**.00824**	**.00001**	**.38082**
Stddev	.00101	.00344	.00128	.00166	.00152	.00007	.07234
%RSD	70.504	115.14	147.08	113.19	18.412	1246.4	18.996
#1	.00232	-.00660	.00231	-.00111	.00937	-.00006	.40189
#2	.00033	-.00261	.00040	-.00327	.00883	-.00001	.44030
#3	.00165	.00025	-.00011	-.00001	.00652	.00009	.30029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**-.00038**	**.00015**	**.00126**	**.44829**	**-.08561**	**.00269**
Stddev	.00015	.00012	.00028	.00045	.01161	.15270	.00339
%RSD	131.33	32.594	179.89	35.865	2.5888	178.38	125.85
#1	.00005	-.00035	.00044	.00140	.45801	-.21744	.00396
#2	.00001	-.00027	.00014	.00163	.45141	.08172	.00526
#3	.00028	-.00051	-.00011	.00076	.43544	-.12111	-.00115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.24130**	**.00745**	**-.00032**	**1.6978**	**.00019**	**-.00161**	**.00081**
Stddev	.01115	.00133	.00019	.0314	.00041	.00633	.00159
%RSD	4.6214	17.832	59.770	1.8477	217.16	392.29	196.16
#1	.22853	.00805	-.00037	1.7086	.00066	.00569	-.00054
#2	.24909	.00592	-.00011	1.7222	-.00006	-.00561	.00040
#3	.24629	.00836	-.00048	1.6624	-.00003	-.00492	.00257
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: L1703133913 Acquired: 3/30/2017 12:10:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00107**	**-.00165**	**.18043**	**.00006**	**.00844**	**.00177**	**-.00198**
Stddev	.00197	.00424	.00447	.00036	.00086	.00568	.00164
%RSD	184.68	257.19	2.4760	624.79	10.198	320.60	82.952
#1	.00324	-.00380	.18063	-.00024	.00806	.00564	-.00010
#2	.00056	-.00438	.18480	-.00003	.00943	.00442	-.00272
#3	-.00060	.00324	.17587	.00045	.00784	-.00475	-.00312
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00050**	**.00090**	F **-.35403**
Stddev	.00066	.00013	.37804
%RSD	131.68	14.190	106.78
#1	.00119	.00092	-.67213
#2	.00045	.00077	.06391
#3	-.00013	.00102	-.45385
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**15036.**	**98595.**	**3624.9**
Stddev	33.	1269.	58.6
%RSD	.21709	1.2869	1.6169
#1	15036.	97486.	3674.0
#2	15069.	98320.	3560.0
#3	15003.	99979.	3640.7

Approved: March 31, 2017

Sample Name: L1703133915 Acquired: 3/30/2017 12:14:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00075**	**.59376**	**.00198**	**.00071**	**.01216**	**.00014**	**.39775**
Stddev	.00084	.00575	.00268	.00139	.00150	.00005	.06303
%RSD	112.55	.96804	135.34	194.53	12.340	34.265	15.846
#1	-.00009	.60031	.00259	.00175	.01252	.00020	.32551
#2	.00075	.59143	.00429	-.00086	.01344	.00014	.44149
#3	.00159	.58955	-.00095	.00126	.01051	.00010	.42627
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.00004**	**.00121**	**.00247**	**.94676**	**-.10817**	**.00136**
Stddev	.00029	.00007	.00040	.00023	.01529	.05050	.00342
%RSD	167.29	189.36	33.031	9.3675	1.6145	46.685	250.79
#1	-.00005	.00002	.00082	.00221	.96272	-.04986	.00512
#2	-.00051	-.00002	.00161	.00257	.93225	-.13778	.00057
#3	.00003	.00011	.00118	.00264	.94531	-.13687	-.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19657**	**.02891**	**-.00010**	**1.5530**	**.00035**	**.01269**	**.00065**
Stddev	.05440	.00187	.00033	.0254	.00042	.00529	.00301
%RSD	27.672	6.4795	333.33	1.6375	119.68	41.707	461.20
#1	.15168	.02909	.00028	1.5260	-.00003	.01287	-.00281
#2	.25706	.03069	-.00025	1.5563	.00029	.00732	.00268
#3	.18098	.02696	-.00033	1.5765	.00080	.01790	.00209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: L1703133915 Acquired: 3/30/2017 12:14:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00089**	**-.00424**	**.95689**	**.00017**	**.00665**	**-.00111**	**-.00078**
Stddev	.00278	.00249	.00417	.00069	.00061	.00582	.00107
%RSD	313.53	58.707	.43603	398.41	9.2081	522.88	137.88
#1	-.00401	-.00574	.96169	-.00063	.00723	-.00584	-.00019
#2	.00131	-.00137	.95486	.00055	.00601	.00539	-.00013
#3	.00005	-.00561	.95412	.00060	.00672	-.00289	-.00202
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00130**	**.00369**	F **-1.5051**
Stddev	.00101	.00007	1.3697
%RSD	77.539	1.8269	91.007
#1	.00014	.00362	-.04243
#2	.00185	.00369	-1.7152
#3	.00192	.00375	-2.7576
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14988.**	**98340.**	**3626.6**
Stddev	145.	862.	14.1
%RSD	.96577	.87697	.38831
#1	14837.	99312.	3621.1
#2	15001.	98042.	3616.1
#3	15126.	97666.	3642.6

Approved: March 31, 2017

Sample Name: CCV Acquired: 3/30/2017 12:17:51 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41008**	**10.345**	**.40850**	**.50484**	**1.0393**	**.05173**	**10.315**
Stddev	.00548	.096	.00228	.00443	.0087	.00045	.102
%RSD	1.3371	.92426	.55790	.87841	.83489	.86761	.98494
#1	.41328	10.427	.41026	.50544	1.0297	.05210	10.198
#2	.40375	10.240	.40593	.50013	1.0465	.05123	10.372
#3	.41321	10.368	.40931	.50894	1.0417	.05187	10.377
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05238**	**.21161**	**.52171**	**.52629**	**4.0539**	**51.931**	**1.0290**
Stddev	.00035	.00158	.00560	.00347	.0460	.376	.0058
%RSD	.67176	.74868	1.0740	.65928	1.1344	.72345	.56441
#1	.05275	.21328	.52664	.52942	4.0047	51.499	1.0356
#2	.05235	.21140	.51562	.52690	4.0611	52.185	1.0246
#3	.05204	.21013	.52287	.52256	4.0959	52.109	1.0267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.335**	**.51832**	**1.0347**	**52.622**	**.53458**	**10.160**	**.53281**
Stddev	.094	.00607	.0058	.235	.00292	.046	.00059
%RSD	.91048	1.1711	.55946	.44710	.54662	.44829	.11141
#1	10.227	.51186	1.0396	52.388	.53768	10.209	.53244
#2	10.378	.52390	1.0362	52.859	.53420	10.150	.53250
#3	10.400	.51921	1.0283	52.620	.53187	10.120	.53350
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 31, 2017

Sample Name: CCV Acquired: 3/30/2017 12:17:51 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2269**	**.40483**	**5.3087**	**1.0509**	**1.0329**	**1.0374**	**.52723**
Stddev	.0073	.00657	.0226	.0087	.0077	.0086	.00304
%RSD	.59604	1.6218	.42629	.83093	.75009	.83399	.57674
#1	1.2349	.40807	5.3297	1.0579	1.0245	1.0280	.52389
#2	1.2205	.40913	5.3117	1.0536	1.0398	1.0450	.52983
#3	1.2252	.39727	5.2848	1.0411	1.0342	1.0393	.52797
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0436**	**1.0254**	F **1.1228**
Stddev	.0112	.0051	.7722
%RSD	1.0768	.49421	68.773
#1	1.0518	1.0307	.41324
#2	1.0308	1.0249	1.9452
#3	1.0481	1.0206	1.0100
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14542.**	**96134.**	**3718.4**
Stddev	31.	797.	110.1
%RSD	.21592	.82937	2.9612
#1	14506.	95628.	3632.6
#2	14562.	95721.	3680.1
#3	14559.	97053.	3842.6

Approved: March 31, 2017

Sample Name: CCB Acquired: 3/30/2017 12:21:26 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00083**	**-.00538**	**-.00123**	**.00167**	**.00174**	**.00005**	**.00547**
Stddev	.00024	.00121	.00265	.00253	.00159	.00003	.04946
%RSD	28.601	22.481	214.93	151.10	91.245	70.134	903.96
#1	.00108	-.00613	-.00024	-.00109	.00033	.00002	-.04386
#2	.00061	-.00398	-.00423	.00387	.00143	.00003	.05505
#3	.00079	-.00601	.00078	.00224	.00345	.00008	.00523
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**-.00058**	**-.00041**	**.00149**	**-.01780**	**.06189**	**.00580**
Stddev	.00027	.00021	.00085	.00095	.01757	.13824	.00663
%RSD	138.84	35.954	208.57	63.903	98.753	223.37	114.17
#1	.00012	-.00061	-.00078	.00169	-.00810	-.09625	.01345
#2	.00049	-.00077	.00057	.00233	-.03808	.15977	.00211
#3	-.00003	-.00036	-.00101	.00045	-.00721	.12214	.00185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01833**	**-.00152**	**-.00012**	**-.10846**	**-.00052**	**.00121**	**-.00182**
Stddev	.07130	.00168	.00025	.03447	.00027	.00481	.00416
%RSD	388.89	110.35	212.61	31.784	51.880	396.65	228.25
#1	.09657	.00039	.00009	-.13358	-.00059	.00637	-.00222
#2	.00143	-.00275	-.00040	-.06916	-.00022	-.00317	.00252
#3	-.04300	-.00222	-.00004	-.12265	-.00074	.00044	-.00577
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: CCB Acquired: 3/30/2017 12:21:26 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00047**	**.00157**	**.00027**	**.00020**	**.00021**	**-.00022**	**-.00068**
Stddev	.00228	.00456	.00157	.00045	.00041	.00564	.00328
%RSD	487.61	290.01	579.52	219.89	193.53	2555.2	481.76
#1	.00307	-.00004	.00072	.00001	-.00003	-.00216	-.00147
#2	-.00120	-.00196	-.00147	-.00011	-.00002	-.00464	-.00349
#3	-.00047	.00672	.00156	.00072	.00068	.00613	.00292
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00047**	**-.00006**	F **-1.1076**
Stddev	.00002	.00008	.1725
%RSD	3.2398	135.81	15.577
#1	.00048	.00003	-.93658
#2	.00045	-.00008	-1.1046
#3	.00048	-.00013	-1.2816
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14791.**	**98079.**	**3739.3**
Stddev	110.	2037.	14.6
%RSD	.74279	2.0772	.38981
#1	14664.	99739.	3742.4
#2	14857.	98693.	3723.4
#3	14852.	95805.	3752.1

Approved: March 31, 2017

Sample Name: LLCCV Acquired: 3/30/2017 12:25:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s **-.00047**	s **-.01882**	k **-.00074**	s **-.00179**	F **-3.6859**	s **.00027**
Stddev	.00282	.02492	.00046	.00550	6.3962	.00023
%RSD	597.03	132.42	62.230	307.71	173.53	82.996
#1	s .00166	s -.01362	k -.00026	s -.00237	-11.072	s .00035
#2	s -.00367	s .00309	k -.00118	s -.00698	.0090	s .00045
#3	.00059	-.04592	-.00079	.00398	.0048	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit					45.000	
Low Limit					-.00500	

Elem	Ca4226	Cd2288	Co2286	Cr2677	Cu2247	Fe2611
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **-6.0520**	k **-.00008**	k **-.00008**	s **-.00002**	k **.00040**	k **8.1322**
Stddev	10.384	.00058	.00008	.00064	.00031	14.134
%RSD	171.58	681.93	101.37	2774.5	77.046	173.80
#1	-18.042	k -.00075	k -.00015	s -.00076	k .00010	k 24.452
#2	-.1440	k .00022	k -.00008	s .00036	k .00038	k -.05864
#3	.0297	.00028	.00000	.00033	.00072	.00274
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	270.00					
Low Limit	-.10000					

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**79.726**	**10.584**	k **1.4677**	kF **-.89613**	k **-.00002**	**56.603**
Stddev	138.04	18.348	2.7138	1.5503	.00029	98.294
%RSD	173.14	173.35	184.90	173.00	1545.5	173.65
#1	239.12	31.771	k 4.5991	k -2.6863	k -.00033	170.10
#2	.1106	-.00602	k -.19766	k -.00406	k .00024	-.2469
#3	-.0503	-.01118	.00150	.00196	.00003	-.0466
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit				36.000		
Low Limit				-.00300		

Approved: March 31, 2017

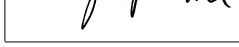
Sample Name: LLCCV Acquired: 3/30/2017 12:25:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k **.00241**	k **.00432**	k **.00245**	k **-.01017**	k **.00322**	k **-.00250**
Stddev	.00054	.00118	.00208	.00252	.00182	.00105
%RSD	22.431	27.425	84.701	24.768	56.672	41.912
#1	k .00264	k .00553	k .00307	k -.01142	k .00206	k -.00137
#2	k .00179	k .00426	k .00416	k -.01183	k .00228	k -.00270
#3	.00279	.00316	.00014	-.00727	.00532	-.00344
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k **-.00013**	F **-.43162**	k **6.1960**	k **.00293**	s **-.00066**	k **-.00011**
Stddev	.00017	.74992	10.748	.00220	.00074	.00005
%RSD	128.77	173.75	173.47	75.232	112.24	51.528
#1	k -.00002	-1.2976	k 18.607	k .00542	s -.00018	k -.00007
#2	k -.00005	.00197	k -.01996	k .00211	s -.00151	k -.00009
#3	-.00032	.00073	.00112	.00125	-.00029	-.00017
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		9.0000				
Low Limit		-.01000				

Elem	Zr3391
Units	ppm
Avg	kF **1630.2**
Stddev	2827.3
%RSD	173.44
#1	k 4894.9
#2	k -3.338
#3	-1.069
Check ?	Chk Fail
High Limit	45.000
Low Limit	-.04000

Approved: March 31, 2017



Sample Name: LLCCV Acquired: 3/30/2017 12:25:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23296.**	^ *****	**1776.6**
Stddev	669.	-----	1559.2
%RSD	2.8711	-----	87.761
#1	24047.	^ -----	-3.613
#2	22764.	^ -----	2434.0
#3	23077.	152000.	2899.3

Approved: March 31, 2017

Sample Name: PBW 3P Acquired: 3/30/2017 12:29:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607998-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00143**	**.00094**	**.00120**	**.00024**	**.00143**	**.00002**	**-.02612**
Stddev	.00245	.00199	.00210	.00122	.00080	.00003	.00619
%RSD	171.48	212.62	174.97	502.12	55.800	128.67	23.689
#1	.00235	.00302	.00104	.00161	.00154	.00004	-.02141
#2	.00329	-.00095	.00337	-.00074	.00058	.00003	-.02382
#3	-.00135	.00073	-.00081	-.00013	.00217	-.00001	-.03312
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**-.00052**	**.00016**	**.00088**	**-.00979**	**-.13500**	**.00109**
Stddev	.00034	.00019	.00035	.00027	.00645	.02373	.00712
%RSD	363.70	37.017	220.07	30.785	65.810	17.576	651.51
#1	.00036	-.00051	.00056	.00066	-.01531	-.15076	.00553
#2	.00022	-.00072	.00002	.00118	-.01137	-.14653	.00486
#3	-.00029	-.00033	-.00010	.00080	-.00271	-.10771	-.00712
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00287**	**.00261**	**-.00009**	**-.06107**	**-.00017**	**.00280**	**-.00007**
Stddev	.07835	.00282	.00026	.02459	.00104	.00581	.00144
%RSD	2729.1	107.86	293.35	40.266	621.77	207.13	1951.0
#1	-.09255	-.00008	.00011	-.07949	-.00134	-.00087	-.00025
#2	.05231	.00238	.00001	-.07057	.00063	.00950	-.00141
#3	.03163	.00554	-.00038	-.03315	.00020	-.00022	.00144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: PBW 3P Acquired: 3/30/2017 12:29:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607998-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00188**	**-.00250**	**.00652**	**-.00001**	**.00064**	**.00177**	**-.00255**
Stddev	.00228	.00369	.00154	.00023	.00019	.01093	.00226
%RSD	121.15	147.79	23.588	3741.4	30.029	617.93	88.603
#1	.00208	-.00636	.00478	-.00009	.00042	-.01086	-.00322
#2	.00405	.00099	.00709	-.00018	.00076	.00810	-.00003
#3	-.00049	-.00213	.00769	.00025	.00074	.00806	-.00439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00102**	**.00107**	F **-.44719**
Stddev	.00030	.00013	.62580
%RSD	29.773	11.893	139.94
#1	-.00077	.00093	-.13551
#2	-.00135	.00109	-.03844
#3	-.00093	.00118	-1.1676
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14529.**	**98700.**	**3661.2**
Stddev	98.	1690.	30.9
%RSD	.67276	1.7124	.84361
#1	14420.	97561.	3627.6
#2	14611.	100640.	3688.3
#3	14554.	97898.	3667.7

Approved: March 31, 2017

Sample Name: LCSW 3P Acquired: 3/30/2017 12:32:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607998-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21069**	**5.2738**	**.20072**	**1.0047**	**.54044**	**.02592**	**5.3057**
Stddev	.00131	.0181	.00367	.0010	.00064	.00011	.0861
%RSD	.62053	.34244	1.8302	.10443	.11887	.40660	1.6236
#1	.21208	5.2531	.20431	1.0056	.54068	.02603	5.2457
#2	.20949	5.2820	.20088	1.0035	.54094	.02591	5.2669
#3	.21050	5.2863	.19697	1.0049	.53972	.02581	5.4044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02619**	**.10746**	**.26797**	**.26776**	**2.1173**	**26.594**	**.53366**
Stddev	.00016	.00101	.00060	.00117	.0124	.083	.00504
%RSD	.59518	.94443	.22332	.43603	.58598	.31307	.94479
#1	.02610	.10781	.26728	.26873	2.1282	26.551	.53643
#2	.02637	.10826	.26836	.26810	2.1199	26.690	.52784
#3	.02609	.10632	.26827	.26647	2.1038	26.541	.53672
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.3605**	**.26834**	**.51842**	**27.038**	**.27404**	**5.0428**	**.27396**
Stddev	.1556	.00109	.00394	.064	.00215	.0390	.00301
%RSD	2.9025	.40611	.76027	.23539	.78446	.77388	1.0978
#1	5.3164	.26835	.52085	26.978	.27613	5.0684	.27738
#2	5.5334	.26943	.52054	27.031	.27417	5.0621	.27174
#3	5.2317	.26725	.51387	27.105	.27183	4.9978	.27275
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: LCSW 3P Acquired: 3/30/2017 12:32:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607998-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.62906**	**.19910**	**2.7119**	**.53954**	**.54218**	**.54057**	**.27085**
Stddev	.00649	.00571	.0160	.00499	.00157	.00353	.00190
%RSD	1.0313	2.8665	.59070	.92405	.29005	.65343	.70323
#1	.62903	.19251	2.7252	.54346	.54120	.53688	.27242
#2	.63556	.20243	2.7164	.54124	.54399	.54090	.26873
#3	.62258	.20236	2.6941	.53393	.54135	.54392	.27141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.53490**	**.51984**	F **-.26348**
Stddev	.00075	.00320	.41754
%RSD	.13940	.61556	158.47
#1	.53405	.52226	.18473
#2	.53522	.52105	-.64142
#3	.53543	.51622	-.33374
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14560.**	**97110.**	**3638.0**
Stddev	163.	676.	66.5
%RSD	1.1214	.69658	1.8281
#1	14697.	96972.	3675.4
#2	14604.	97845.	3561.2
#3	14380.	96513.	3677.4

Approved: March 31, 2017

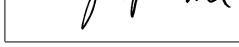
Sample Name: L1703136102 Acquired: 3/30/2017 12:36:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00095**	**.11085**	**-.00225**	**.00433**	**.01520**	**.00004**	**.57674**	**.00016**
Stddev	.00081	.00501	.00299	.00047	.00040	.00006	.04665	.00009
%RSD	84.981	4.5236	133.24	10.913	2.6467	158.80	8.0878	57.135
#1	.00038	.11156	-.00557	.00389	.01474	-.00001	.62369	.00006
#2	.00188	.10552	-.00142	.00426	.01546	.00011	.57612	.00023
#3	.00060	.11548	.00024	.00483	.01541	.00002	.53041	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.00136**	**.00107**	**.18704**	**.50065**	**.00710**	**.30308**	**.02426**
Stddev	.00047	.00036	.00079	.01277	.09248	.00452	.06076	.00145
%RSD	241.97	26.639	74.324	6.8295	18.471	63.633	20.047	5.9915
#1	-.00026	.00103	.00196	.19327	.60736	.00297	.32925	.02324
#2	.00017	.00175	.00046	.19551	.44390	.01193	.23362	.02593
#3	.00067	.00130	.00078	.17235	.45068	.00641	.34637	.02362
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**1.8829**	**.00010**	**-.00427**	**.00325**	**-.00084**	**-.00304**	**3.3710**
Stddev	.00015	.0150	.00050	.00307	.00307	.00183	.00548	.1151
%RSD	711.81	.79742	499.17	71.923	94.656	216.82	180.30	3.4131
#1	.00019	1.8858	.00067	-.00407	-.00029	-.00071	.00072	3.4315
#2	-.00003	1.8962	-.00028	-.00744	.00480	.00091	-.00052	3.4432
#3	-.00010	1.8666	-.00008	-.00131	.00523	-.00274	-.00933	3.2383
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 31, 2017



Sample Name: L1703136102 Acquired: 3/30/2017 12:36:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00058**	**.00449**	**.00476**	**-.00186**	**.00017**	**.00448**	**.40306**
Stddev	.00036	.00069	.00451	.00146	.00028	.00041	.73980
%RSD	62.065	15.356	94.637	78.249	162.52	9.1178	183.54
#1	.00020	.00448	.00798	-.00274	.00019	.00460	-.44470
#2	.00091	.00519	.00670	-.00018	.00045	.00481	.73603
#3	.00063	.00381	-.00039	-.00266	-.00012	.00402	.91787
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14702.**	**97981.**	**3722.7**
Stddev	169.	1053.	65.9
%RSD	1.1505	1.0748	1.7701
#1	14739.	98732.	3647.9
#2	14518.	98435.	3772.1
#3	14850.	96778.	3748.0

Approved: March 31, 2017

Sample Name: L1703136107 Acquired: 3/30/2017 12:40:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607998-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00056**	**.09302**	**-.00185**	**.00215**	**.02423**	**.00005**	**.39180**
Stddev	.00136	.00511	.00264	.00137	.00118	.00005	.06622
%RSD	242.28	5.4908	142.88	63.685	4.8641	109.07	16.902
#1	-.00027	.09322	-.00416	.00072	.02532	.00011	.44660
#2	.00214	.08781	-.00242	.00228	.02298	.00001	.31822
#3	-.00017	.09802	.00103	.00346	.02438	.00003	.41059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**.00005**	**.00124**	**.00150**	**.14937**	**.36194**	**.00513**
Stddev	.00024	.00021	.00089	.00070	.01460	.03952	.00104
%RSD	130.89	416.34	72.040	46.422	9.7737	10.920	20.236
#1	.00013	.00011	.00188	.00087	.15971	.32794	.00428
#2	.00045	.00022	.00161	.00225	.13267	.40530	.00629
#3	-.00002	-.00018	.00022	.00139	.15574	.35259	.00483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.35264**	**.02172**	**.00003**	**1.4955**	**.00113**	**.00711**	**.00157**
Stddev	.06255	.00279	.00034	.0314	.00080	.00286	.00234
%RSD	17.738	12.834	1246.8	2.1024	70.652	40.143	148.74
#1	.29880	.01853	.00035	1.5251	.00152	.00981	.00349
#2	.33786	.02367	-.00033	1.4989	.00021	.00742	-.00104
#3	.42125	.02298	.00006	1.4625	.00165	.00412	.00228
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: L1703136107 Acquired: 3/30/2017 12:40:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607998-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00047**	**-.00116**	**3.4699**	**-.00005**	**.00487**	**.00212**	**-.00057**
Stddev	.00088	.00222	.0324	.00052	.00106	.00278	.00121
%RSD	188.92	191.91	.93336	976.83	21.716	131.23	210.81
#1	.00104	-.00132	3.4910	.00053	.00374	.00311	.00038
#2	-.00055	-.00330	3.4861	-.00046	.00504	-.00102	-.00017
#3	.00090	.00114	3.4326	-.00023	.00584	.00427	-.00193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00011**	**.00506**	F **-.08122**
Stddev	.00038	.00015	.55285
%RSD	350.01	2.8895	680.69
#1	-.00051	.00502	.26528
#2	.00025	.00522	-.71879
#3	-.00006	.00494	.20986
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14567.**	**97965.**	**3641.2**
Stddev	75.	1094.	42.7
%RSD	.51374	1.1171	1.1734
#1	14500.	97208.	3653.0
#2	14648.	97467.	3593.9
#3	14555.	99219.	3676.9

Approved: March 31, 2017

Sample Name: L1703136108S Acquired: 3/30/2017 12:43:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607998-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20469**	**5.1840**	**.19639**	**.96561**	**.54350**	**.02535**	**5.4491**
Stddev	.00051	.0116	.00094	.00603	.00299	.00008	.0909
%RSD	.25129	.22317	.47903	.62442	.55054	.33164	1.6685
#1	.20521	5.1726	.19652	.96179	.54035	.02541	5.3951
#2	.20468	5.1957	.19726	.97257	.54384	.02537	5.5541
#3	.20418	5.1837	.19539	.96249	.54631	.02525	5.3981
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02572**	**.10654**	**.26211**	**.26465**	**2.1420**	**26.234**	**.52483**
Stddev	.00030	.00037	.00068	.00108	.0226	.053	.00457
%RSD	1.1599	.35000	.26014	.40950	1.0551	.20104	.87027
#1	.02549	.10637	.26230	.26500	2.1406	26.211	.52057
#2	.02561	.10629	.26267	.26344	2.1653	26.197	.52965
#3	.02606	.10697	.26135	.26552	2.1202	26.295	.52426
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.5243**	**.27912**	**.51123**	**27.911**	**.27250**	**4.9360**	**.27150**
Stddev	.0466	.00152	.00163	.105	.00112	.0307	.00120
%RSD	.84264	.54429	.31895	.37670	.41110	.62253	.44206
#1	5.4731	.27744	.51209	27.858	.27379	4.9291	.27072
#2	5.5358	.27951	.50935	28.032	.27192	4.9093	.27288
#3	5.5640	.28040	.51225	27.842	.27179	4.9696	.27090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: L1703136108S Acquired: 3/30/2017 12:43:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607998-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.61693**	**.19497**	**6.1778**	**.53446**	**.52394**	**.52270**	**.26516**
Stddev	.00143	.00390	.0244	.00169	.00219	.00723	.00230
%RSD	.23224	2.0027	.39488	.31667	.41818	1.3840	.86927
#1	.61856	.19921	6.2020	.53458	.52141	.52979	.26769
#2	.61637	.19416	6.1532	.53271	.52530	.51533	.26317
#3	.61586	.19153	6.1783	.53609	.52511	.52297	.26463
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.52142**	**.51597**	F **-.09726**
Stddev	.00236	.00164	.82879
%RSD	.45250	.31857	852.10
#1	.51956	.51657	-.22045
#2	.52407	.51411	.78622
#3	.52063	.51722	-.85756
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14439.**	**96339.**	**3662.0**
Stddev	169.	468.	41.5
%RSD	1.1706	.48550	1.1336
#1	14599.	96485.	3709.8
#2	14262.	95815.	3641.2
#3	14457.	96715.	3635.0

Approved: March 31, 2017

Sample Name: L1703136109SD Acquired: 3/30/2017 12:47:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607998-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20786**	**5.2962**	**.20060**	**.98545**	**.55762**	**.02587**	**5.6331**
Stddev	.00171	.0512	.00106	.01069	.00570	.00028	.0960
%RSD	.82043	.96580	.52774	1.0847	1.0227	1.0849	1.7047
#1	.20606	5.2371	.20156	.97328	.55847	.02557	5.6837
#2	.20944	5.3258	.20078	.99333	.56284	.02612	5.6932
#3	.20809	5.3256	.19947	.98974	.55154	.02593	5.5223
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02616**	**.10851**	**.26689**	**.26889**	**2.2226**	**26.923**	**.53904**
Stddev	.00039	.00021	.00329	.00088	.0490	.175	.00532
%RSD	1.4969	.19763	1.2318	.32880	2.2046	.64906	.98679
#1	.02583	.10876	.26312	.26907	2.2784	27.048	.54500
#2	.02608	.10839	.26920	.26793	2.1864	26.999	.53733
#3	.02659	.10839	.26833	.26967	2.2031	26.724	.53478
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.5838**	**.28554**	**.51902**	**28.488**	**.27512**	**5.0113**	**.27411**
Stddev	.0481	.00244	.00067	.334	.00061	.0077	.00181
%RSD	.86089	.85509	.12955	1.1730	.22303	.15343	.66005
#1	5.6391	.28731	.51962	28.707	.27447	5.0202	.27219
#2	5.5602	.28656	.51914	28.653	.27520	5.0065	.27578
#3	5.5521	.28276	.51829	28.103	.27569	5.0073	.27435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: L1703136109SD Acquired: 3/30/2017 12:47:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607998-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.62528**	**.19501**	**6.0982**	**.54232**	**.54043**	**.53630**	**.27099**
Stddev	.00346	.00264	.0104	.00061	.00254	.00434	.00092
%RSD	.55330	1.3560	.16994	.11179	.47000	.80863	.33768
#1	.62891	.19804	6.1076	.54302	.54098	.54111	.27052
#2	.62491	.19316	6.0871	.54201	.54265	.53269	.27040
#3	.62202	.19384	6.1000	.54194	.53766	.53509	.27204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.53240**	**.52324**	F **-.15541**
Stddev	.00556	.00161	.93624
%RSD	1.0438	.30770	602.44
#1	.52598	.52510	.37418
#2	.53550	.52223	-1.2364
#3	.53571	.52240	.39601
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14362.**	**95734.**	**3565.8**
Stddev	121.	415.	96.9
%RSD	.84282	.43302	2.7187
#1	14265.	95260.	3600.6
#2	14322.	95910.	3456.2
#3	14498.	96031.	3640.5

Approved: March 31, 2017

Sample Name: L1703136114 Acquired: 3/30/2017 12:51:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00122**	**9.6186**	**.00503**	**.00054**	**.12223**	**.00039**	**.87442**
Stddev	.00083	.1120	.00112	.00040	.00262	.00007	.03120
%RSD	67.411	1.1648	22.251	74.709	2.1470	17.007	3.5676
#1	.00150	9.5376	.00425	.00089	.12525	.00034	.90996
#2	.00030	9.7465	.00453	.00062	.12096	.00046	.85157
#3	.00188	9.5718	.00631	.00010	.12048	.00037	.86171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**.02114**	**.02547**	**.03058**	**26.425**	**.69550**	**.04993**
Stddev	.00014	.00019	.00097	.00023	.109	.14185	.00357
%RSD	65.892	.88107	3.8034	.76322	.41405	20.395	7.1531
#1	.00005	.02093	.02609	.03072	26.540	.68927	.05366
#2	.00028	.02128	.02597	.03031	26.413	.55686	.04961
#3	.00032	.02121	.02435	.03072	26.322	.84036	.04653
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.7222**	**.91311**	**.00153**	**1.4346**	**.03553**	**.19254**	**.04210**
Stddev	.0838	.00647	.00019	.0155	.00116	.00565	.00251
%RSD	2.2528	.70850	12.563	1.0825	3.2634	2.9337	5.9705
#1	3.7929	.91829	.00172	1.4423	.03570	.19490	.03930
#2	3.7442	.90586	.00153	1.4448	.03430	.18609	.04415
#3	3.6295	.91518	.00134	1.4168	.03660	.19663	.04287
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: L1703136114 Acquired: 3/30/2017 12:51:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00115**	**-.00310**	**10.212**	**.00042**	**.00883**	**.03099**	**-.00070**
Stddev	.00132	.00349	.039	.00021	.00070	.00643	.00165
%RSD	114.87	112.72	.38496	50.639	7.9056	20.757	236.64
#1	-.00197	-.00287	10.246	.00057	.00888	.02769	.00059
#2	.00037	.00027	10.220	.00018	.00951	.03841	-.00013
#3	-.00185	-.00669	10.169	.00051	.00811	.02689	-.00256
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00850**	**.14109**	F **-1.2677**
Stddev	.00109	.00057	.8420
%RSD	12.855	.40182	66.418
#1	.00879	.14164	-2.2379
#2	.00729	.14112	-.83664
#3	.00942	.14050	-.72849
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14557.**	**97646.**	**3560.5**
Stddev	65.	877.	63.8
%RSD	.44451	.89788	1.7915
#1	14621.	98327.	3513.2
#2	14559.	96657.	3633.1
#3	14491.	97955.	3535.3

Approved: March 31, 2017

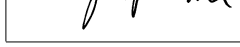
Sample Name: L1703136114PS Acquired: 3/30/2017 12:54:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG608189-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20689**	**13.623**	**.20178**	**.97459**	**.64011**	**.02590**	**5.9956**	**.02598**
Stddev	.00241	.021	.00107	.00252	.00293	.00015	.0424	.00029
%RSD	1.1672	.15447	.53166	.25905	.45840	.57891	.70749	1.1058
#1	.20606	13.607	.20261	.97428	.64156	.02576	5.9606	.02567
#2	.20499	13.614	.20216	.97223	.63673	.02588	6.0428	.02623
#3	.20961	13.647	.20057	.97725	.64204	.02605	5.9833	.02606
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.12551**	**.28658**	**.29009**	**25.603**	**26.999**	**.56834**	**8.5699**	**1.0772**
Stddev	.00047	.00121	.00178	.036	.091	.00622	.1259	.0048
%RSD	.37480	.42271	.61386	.13955	.33705	1.0940	1.4692	.44856
#1	.12551	.28667	.29055	25.574	27.080	.57253	8.4435	1.0801
#2	.12598	.28533	.29159	25.643	27.017	.57129	8.5709	1.0798
#3	.12504	.28775	.28812	25.593	26.900	.56120	8.6953	1.0716
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51250**	**28.221**	**.29994**	**5.1229**	**.31151**	**.62295**	**.19296**	**11.864**
Stddev	.00264	.113	.00213	.0221	.00152	.00472	.00300	.053
%RSD	.51553	.40079	.70953	.43080	.48764	.75722	1.5571	.45056
#1	.51138	28.095	.30180	5.1241	.31326	.61962	.19228	11.830
#2	.51552	28.255	.30040	5.1443	.31051	.62835	.19036	11.926
#3	.51060	28.314	.29762	5.1003	.31076	.62090	.19625	11.837
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 31, 2017



Sample Name: L1703136114PS Acquired: 3/30/2017 12:54:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG608189-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53180**	**.54217**	**.56072**	**.26741**	**.53426**	**.63969**	**.48265**
Stddev	.00342	.00171	.01318	.00211	.00110	.00260	.05131
%RSD	.64233	.31544	2.3508	.78792	.20528	.40683	10.631
#1	.53112	.54310	.56543	.26521	.53455	.63967	.50461
#2	.53551	.54321	.57090	.26941	.53305	.64231	.51933
#3	.52878	.54019	.54583	.26761	.53519	.63710	.42401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14284.**	**95986.**	**3620.9**
Stddev	105.	160.	66.5
%RSD	.73724	.16702	1.8377
#1	14163.	96170.	3629.0
#2	14351.	95913.	3550.7
#3	14338.	95876.	3683.0

Approved: March 31, 2017

Sample Name: L1703136114SDL Acquired: 3/30/2017 12:58:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG608189-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00190**	**1.8838**	**-.00043**	**.00340**	**.02248**	**.00016**	**.16981**
Stddev	.00197	.0048	.00172	.00263	.00200	.00003	.02870
%RSD	103.52	.25509	397.47	77.240	8.9190	17.502	16.898
#1	.00141	1.8893	-.00013	.00405	.02479	.00018	.13808
#2	.00406	1.8811	-.00228	.00051	.02134	.00013	.17740
#3	.00022	1.8809	.00112	.00564	.02130	.00016	.19395
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**.00354**	**.00495**	**.00531**	**4.8695**	**.14701**	**.00869**
Stddev	.00019	.00023	.00029	.00126	.0453	.00755	.00241
%RSD	182.89	6.5524	5.7681	23.765	.92984	5.1329	27.675
#1	.00028	.00330	.00508	.00656	4.8624	.15520	.00632
#2	.00013	.00355	.00515	.00534	4.8281	.14551	.00861
#3	-.00010	.00377	.00463	.00404	4.9178	.14033	.01113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.67188**	**.16858**	**-.00025**	**.17960**	**.00607**	**.03784**	**.00917**
Stddev	.12085	.00224	.00020	.03428	.00040	.00283	.00316
%RSD	17.987	1.3269	81.858	19.087	6.6279	7.4742	34.477
#1	.81140	.16631	-.00001	.16550	.00639	.03834	.01007
#2	.60005	.16865	-.00036	.21868	.00619	.04039	.01177
#3	.60418	.17078	-.00036	.15462	.00562	.03480	.00565
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: L1703136114SDL Acquired: 3/30/2017 12:58:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG608189-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00225**	**-.00488**	**1.9004**	**.00025**	**.00222**	**.01323**	**-.00102**
Stddev	.00095	.00591	.0134	.00046	.00031	.00667	.00196
%RSD	42.324	121.13	.70646	184.05	13.875	50.375	192.69
#1	-.00319	-.01159	1.9088	-.00027	.00189	.00710	-.00325
#2	-.00229	-.00263	1.9075	.00060	.00230	.02032	-.00028
#3	-.00128	-.00042	1.8849	.00040	.00249	.01227	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00157**	**.02714**	F **-1.2882**
Stddev	.00061	.00030	1.0075
%RSD	39.114	1.1072	78.209
#1	.00089	.02742	-1.9377
#2	.00209	.02717	-.12760
#3	.00172	.02682	-1.7993
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14704.**	**97234.**	**3653.2**
Stddev	186.	1453.	83.8
%RSD	1.2656	1.4942	2.2948
#1	14730.	96582.	3595.1
#2	14876.	98899.	3615.3
#3	14506.	96221.	3749.3

Approved: March 31, 2017

Sample Name: CCV Acquired: 3/30/2017 13:02:05 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40147**	**10.153**	**.39681**	**.49201**	**1.0106**	**.05038**	**9.9588**	**.05088**
Stddev	.00178	.019	.00317	.00409	.0087	.00006	.0281	.00029
%RSD	.44369	.18663	.79886	.83073	.86013	.12259	.28217	.57008
#1	.40134	10.138	.39893	.49030	1.0197	.05040	9.9544	.05055
#2	.39976	10.146	.39832	.48906	1.0024	.05043	9.9332	.05099
#3	.40332	10.174	.39316	.49668	1.0097	.05032	9.9889	.05110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20614**	**.50959**	**.51499**	**4.0150**	**50.556**	**1.0077**	**10.083**	**.50305**
Stddev	.00029	.00197	.00180	.0224	.505	.0122	.041	.00286
%RSD	.14011	.38708	.34889	.55739	.99918	1.2148	.40930	.56762
#1	.20585	.51141	.51293	4.0380	51.110	1.0138	10.094	.50516
#2	.20643	.50749	.51623	3.9933	50.121	.99363	10.038	.49980
#3	.20614	.50988	.51582	4.0138	50.437	1.0157	10.118	.50419
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0117**	**51.094**	**.51858**	**9.9227**	**.51652**	**1.1950**	**.39779**	**5.1241**
Stddev	.0017	.456	.00186	.0151	.00310	.0017	.00245	.0029
%RSD	.17105	.89255	.35908	.15179	.60014	.14575	.61588	.05619
#1	1.0097	51.587	.51693	9.9110	.51353	1.1968	.39743	5.1273
#2	1.0130	50.686	.52060	9.9397	.51972	1.1949	.40040	5.1233
#3	1.0124	51.009	.51822	9.9174	.51630	1.1933	.39554	5.1217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: March 31, 2017

Sample Name: CCV Acquired: 3/30/2017 13:02:05 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	TI1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0230**	**1.0085**	**1.0169**	**.51668**	**1.0174**	**1.0069**	**1.0400**
Stddev	.0004	.0086	.0096	.00175	.0013	.0023	1.1381
%RSD	.04354	.85055	.94646	.33964	.12788	.22739	109.43
#1	1.0227	1.0181	1.0250	.51644	1.0177	1.0043	-.25638
#2	1.0235	1.0015	1.0063	.51505	1.0160	1.0087	1.5018
#3	1.0227	1.0060	1.0195	.51854	1.0186	1.0076	1.8746
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14233.**	**94322.**	**3585.8**
Stddev	104.	1087.	50.7
%RSD	.72969	1.1528	1.4127
#1	14320.	93260.	3567.1
#2	14118.	94271.	3643.2
#3	14261.	95433.	3547.2

Approved: March 31, 2017

Sample Name: CCB Acquired: 3/30/2017 13:05:38 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00243**	**-.00324**	**.00015**	**.00259**	**.00145**	**.00001**	**.02372**
Stddev	.00212	.00274	.00174	.00185	.00062	.00012	.02219
%RSD	87.011	84.349	1151.8	71.406	42.625	1414.9	93.538
#1	.00330	-.00105	-.00156	.00470	.00215	.00014	-.00061
#2	.00398	-.00237	.00008	.00180	.00120	-.00002	.04284
#3	.00002	-.00631	.00192	.00126	.00100	-.00010	.02894
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**-.00037**	**-.00017**	**.00002**	**-.01595**	**.02949**	**-.00048**
Stddev	.00000	.00013	.00086	.00044	.00430	.15796	.00334
%RSD	3.7412	35.260	511.02	2873.1	26.987	535.63	699.89
#1	.00004	-.00051	.00063	.00044	-.01144	.02787	.00324
#2	.00004	-.00035	-.00007	.00004	-.02001	-.12765	-.00144
#3	.00004	-.00025	-.00107	-.00043	-.01641	.18826	-.00323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03907**	**-.00253**	**-.00016**	**-.07501**	**-.00034**	**-.00033**	**.00205**
Stddev	.07240	.00041	.00049	.04750	.00093	.00190	.00281
%RSD	185.30	16.428	303.37	63.316	270.40	583.26	136.87
#1	.02676	-.00210	.00039	-.02017	.00060	-.00237	.00300
#2	.11684	-.00293	-.00052	-.10305	-.00125	-.00001	-.00111
#3	-.02638	-.00255	-.00036	-.10182	-.00038	.00140	.00427
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: CCB Acquired: 3/30/2017 13:05:38 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00105**	**-.00238**	**.00321**	**-.00016**	**.00039**	**.00320**	**-.00107**
Stddev	.00170	.00327	.00232	.00031	.00015	.00776	.00191
%RSD	161.54	137.39	72.184	191.68	38.605	242.42	177.67
#1	-.00008	.00139	.00523	-.00041	.00052	.00840	.00048
#2	.00023	-.00412	.00068	.00019	.00023	-.00572	-.00050
#3	.00301	-.00440	.00372	-.00027	.00041	.00692	-.00320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00002**	**.00003**	F **-.35951**
Stddev	.00071	.00001	1.3763
%RSD	3384.6	41.091	382.83
#1	.00080	.00005	.18135
#2	-.00016	.00002	-1.9241
#3	-.00058	.00002	.66419
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14638.**	**96283.**	**3539.7**
Stddev	117.	1243.	50.1
%RSD	.80238	1.2913	1.4143
#1	14560.	95280.	3523.0
#2	14581.	95895.	3596.0
#3	14773.	97674.	3500.2

Approved: March 31, 2017

Sample Name: LLCCV Acquired: 3/30/2017 13:09:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00776**	**.16629**	**.00407**	**.07781**	**.00837**	**.00154**	**.39799**
Stddev	.00066	.00608	.00085	.00081	.00200	.00005	.07017
%RSD	8.5411	3.6558	20.920	1.0455	23.954	3.2114	17.632
#1	.00848	.16367	.00333	.07691	.01029	.00149	.32886
#2	.00762	.17324	.00388	.07805	.00853	.00158	.46917
#3	.00717	.16196	.00500	.07848	.00629	.00156	.39593
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00082**	**.00372**	**.00385**	**.00518**	**.07776**	**.64032**	**.08034**
Stddev	.00017	.00046	.00050	.00116	.01909	.10378	.00928
%RSD	20.419	12.276	12.894	22.399	24.547	16.208	11.553
#1	.00063	.00328	.00418	.00384	.09953	.52948	.08895
#2	.00088	.00420	.00328	.00587	.06389	.65628	.08155
#3	.00095	.00369	.00408	.00583	.06986	.73519	.07051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.43628**	**.00915**	**.00752**	**.35498**	**.01649**	**.76272**	**.01167**
Stddev	.02291	.00251	.00027	.02014	.00047	.01288	.00239
%RSD	5.2509	27.452	3.6063	5.6741	2.8621	1.6885	20.494
#1	.41551	.01042	.00783	.34445	.01598	.77351	.01416
#2	.43247	.00626	.00741	.37821	.01691	.76620	.01148
#3	.46085	.01078	.00733	.34229	.01659	.74846	.00938
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: LLCCV Acquired: 3/30/2017 13:09:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.07935**	**.01453**	**.78524**	**.39915**	**.04043**	**.02444**	**.15609**
Stddev	.00395	.00361	.00929	.00985	.00036	.00115	.00176
%RSD	4.9723	24.819	1.1830	2.4667	.89157	4.6952	1.1278
#1	.08357	.01041	.79165	.40468	.04038	.02516	.15472
#2	.07576	.01606	.78948	.40499	.04011	.02504	.15547
#3	.07872	.01712	.77459	.38779	.04082	.02311	.15808
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00759**	**.01757**	F **88.746**
Stddev	.00062	.00038	.427
%RSD	8.1922	2.1758	.48068
#1	.00702	.01753	88.542
#2	.00825	.01797	88.459
#3	.00750	.01720	89.236
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14950.**	**97812.**	**3628.4**
Stddev	177.	2092.	91.1
%RSD	1.1862	2.1392	2.5107
#1	15152.	100200.	3721.9
#2	14818.	96287.	3623.4
#3	14880.	96951.	3539.9

Approved: March 31, 2017

Sample Name: L1703136117 Acquired: 3/30/2017 13:13:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00160**	**.11627**	**-.00212**	**.00031**	**.00651**	**.00004**	**.90029**
Stddev	.00167	.00265	.00126	.00200	.00185	.00007	.04313
%RSD	104.16	2.2795	59.565	638.80	28.344	198.40	4.7906
#1	.00078	.11331	-.00355	.00036	.00700	-.00001	.86473
#2	.00352	.11842	-.00113	-.00171	.00807	.00012	.94827
#3	.00050	.11708	-.00169	.00228	.00447	.00000	.88788
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**-.00034**	**.00158**	**.00062**	**.05941**	**.20915**	**.00224**
Stddev	.00023	.00015	.00040	.00007	.00560	.05774	.00593
%RSD	374.76	43.065	25.152	11.792	9.4223	27.606	264.30
#1	.00008	-.00017	.00114	.00061	.05765	.26669	-.00446
#2	.00028	-.00044	.00167	.00069	.05491	.15121	.00680
#3	-.00017	-.00042	.00192	.00055	.06568	.20956	.00439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.86961**	**.00686**	**-.00014**	**1.3967**	**.00029**	**-.00071**	**.00090**
Stddev	.05547	.00227	.00034	.0380	.00033	.00767	.00208
%RSD	6.3784	33.163	250.48	2.7226	116.26	1073.5	231.78
#1	.92247	.00456	-.00048	1.4036	.00022	.00416	.00219
#2	.87452	.00911	.00020	1.4307	.00064	.00325	-.00150
#3	.81186	.00691	-.00013	1.3556	-.00001	-.00955	.00201
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: L1703136117 Acquired: 3/30/2017 13:13:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00177**	**-.00172**	**3.7742**	**.00092**	**.00784**	**.00519**	**-.00119**
Stddev	.00384	.00331	.0792	.00060	.00036	.00599	.00228
%RSD	216.70	192.76	2.0975	65.153	4.5423	115.42	192.56
#1	.00264	-.00550	3.8243	.00053	.00744	.01177	.00104
#2	-.00358	.00065	3.8154	.00062	.00793	.00007	-.00352
#3	-.00437	-.00030	3.6829	.00160	.00814	.00373	-.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00039**	**.00496**	F **-.23399**
Stddev	.00086	.00009	1.0397
%RSD	221.11	1.7149	444.32
#1	.00036	.00487	.96619
#2	-.00019	.00504	-.85843
#3	-.00133	.00497	-.80974
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14360.**	**96264.**	**3555.0**
Stddev	39.	891.	34.5
%RSD	.27064	.92539	.96941
#1	14351.	97152.	3519.4
#2	14403.	95371.	3557.3
#3	14327.	96270.	3588.3

Approved: March 31, 2017

Sample Name: L1703136120 Acquired: 3/30/2017 13:16:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00097**	**.18129**	**-.00115**	**.00226**	**.00734**	**.00002**	**.97199**
Stddev	.00110	.01076	.00110	.00113	.00144	.00002	.05212
%RSD	114.31	5.9357	95.267	50.126	19.630	139.43	5.3626
#1	.00058	.19317	-.00183	.00146	.00572	.00000	1.0244
#2	.00221	.17850	-.00174	.00356	.00783	.00000	.92013
#3	.00011	.17220	.00011	.00176	.00848	.00004	.97146
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**-.00015**	**.00034**	**.00065**	**.15088**	**.07226**	**.00087**
Stddev	.00023	.00053	.00126	.00118	.01059	.11950	.00585
%RSD	205.60	360.37	367.37	180.20	7.0222	165.37	669.64
#1	.00019	.00042	.00058	.00068	.14857	.21008	-.00566
#2	-.00015	-.00022	-.00102	-.00054	.16243	-.00261	.00265
#3	.00028	-.00064	.00147	.00182	.14162	.00932	.00563
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.88002**	**.01139**	**-.00008**	**1.4513**	**.00056**	**.00624**	**.00129**
Stddev	.05388	.00136	.00006	.0498	.00128	.00156	.00496
%RSD	6.1231	11.924	70.796	3.4349	227.68	24.961	384.70
#1	.87098	.01000	-.00015	1.4999	-.00082	.00528	.00626
#2	.93785	.01145	-.00005	1.4003	.00080	.00541	.00127
#3	.83122	.01272	-.00005	1.4536	.00171	.00804	-.00366
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: L1703136120 Acquired: 3/30/2017 13:16:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00104**	**-.00398**	**3.9725**	**.00040**	**.00764**	**.00107**	**-.00375**
Stddev	.00268	.00098	.0316	.00052	.00007	.01330	.00131
%RSD	257.08	24.691	.79433	128.43	.88453	1242.4	34.805
#1	-.00147	-.00486	4.0063	.00092	.00762	.00419	-.00470
#2	.00183	-.00416	3.9671	.00042	.00759	-.01351	-.00429
#3	-.00349	-.00292	3.9439	-.00012	.00772	.01254	-.00226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00057**	**.00527**	F **-.61800**
Stddev	.00043	.00005	.49812
%RSD	75.507	.88813	80.601
#1	-.00029	.00523	-.59911
#2	-.00035	.00527	-.12960
#3	-.00106	.00532	-1.1253
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14314.**	**95353.**	**3494.9**
Stddev	126.	1705.	17.9
%RSD	.87898	1.7878	.51238
#1	14389.	94572.	3482.1
#2	14168.	97308.	3487.3
#3	14383.	94179.	3515.4

Approved: March 31, 2017

Sample Name: L1703136123 Acquired: 3/30/2017 13:20:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00122**	**1.3358**	**-.00070**	**.00090**	**.02424**	**.00010**	**.81184**	**.00012**
Stddev	.00071	.0131	.00402	.00031	.00140	.00004	.06196	.00018
%RSD	58.073	.97948	575.31	34.341	5.7687	46.273	7.6318	155.34
#1	.00189	1.3463	.00215	.00113	.02265	.00012	.84182	.00018
#2	.00047	1.3400	.00105	.00102	.02527	.00013	.85311	.00026
#3	.00131	1.3212	-.00529	.00055	.02480	.00005	.74060	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00145**	**.00729**	**.00341**	**3.2282**	**.16239**	**.00408**	**1.0248**	**.07751**
Stddev	.00028	.00015	.00039	.0268	.11929	.01012	.0658	.00109
%RSD	18.984	2.0453	11.455	.83157	73.458	248.06	6.4163	1.4006
#1	.00135	.00712	.00327	3.1975	.27495	.00009	.95293	.07635
#2	.00176	.00740	.00386	3.2398	.03736	.01559	1.0396	.07850
#3	.00124	.00735	.00312	3.2473	.17485	-.00344	1.0819	.07767
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00047**	**1.3691**	**.00602**	**.03696**	**.00107**	**.00024**	**-.00239**	**4.9722**
Stddev	.00017	.0454	.00034	.00229	.00096	.00412	.00468	.0208
%RSD	35.772	3.3150	5.7097	6.1832	89.146	1745.0	195.43	.41876
#1	.00061	1.3957	.00594	.03621	.00031	.00320	.00298	4.9911
#2	.00050	1.3167	.00640	.03952	.00076	-.00446	-.00461	4.9499
#3	.00028	1.3949	.00573	.03514	.00215	.00197	-.00555	4.9757
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 31, 2017

Sample Name: L1703136123 Acquired: 3/30/2017 13:20:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	TI1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.00683**	**.00257**	**-.00197**	**.00061**	**.04515**	**.52459**
Stddev	.00051	.00008	.00463	.00098	.00048	.00017	.69553
%RSD	124.87	1.1396	179.97	49.982	78.151	.37601	132.59
#1	.00020	.00676	-.00171	-.00084	.00082	.04507	1.0449
#2	.00003	.00692	.00194	-.00260	.00095	.04504	-.26538
#3	.00099	.00681	.00749	-.00248	.00007	.04535	.79421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14231.**	**94987.**	**3479.6**
Stddev	85.	797.	55.3
%RSD	.59388	.83898	1.5887
#1	14205.	94416.	3416.2
#2	14162.	94647.	3517.2
#3	14325.	95897.	3505.6

Approved: March 31, 2017

Sample Name: L1703136126 Acquired: 3/30/2017 13:24:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00159**	**.00299**	**.00006**	**.00092**	**.00224**	**.00002**	**-.02273**
Stddev	.00072	.00465	.00271	.00157	.00066	.00006	.04761
%RSD	44.977	155.46	4342.0	170.21	29.411	241.61	209.50
#1	.00148	.00821	-.00023	-.00083	.00162	.00009	-.00047
#2	.00094	-.00072	.00290	.00140	.00293	.00002	-.07739
#3	.00235	.00148	-.00248	.00219	.00218	-.00003	.00968
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**-.00074**	**.00031**	**.00197**	**-.00915**	**-.03932**	**.00050**
Stddev	.00039	.00039	.00096	.00060	.00687	.14106	.00367
%RSD	441.71	52.479	307.54	30.425	75.055	358.77	734.39
#1	-.00034	-.00063	-.00071	.00266	-.01664	-.19678	.00362
#2	.00040	-.00042	.00119	.00162	-.00767	.07549	-.00354
#3	.00021	-.00117	.00045	.00162	-.00315	.00334	.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.03319**	**.00013**	**.00016**	**1.2919**	**.00005**	**.00265**	**-.00161**
Stddev	.08569	.00122	.00007	.0194	.00066	.00376	.00202
%RSD	258.21	957.76	46.957	1.5048	1291.7	141.68	125.53
#1	.02203	-.00106	.00025	1.2902	.00012	.00162	.00072
#2	.01031	.00007	.00011	1.3121	-.00065	.00682	-.00275
#3	-.13190	.00138	.00012	1.2734	.00068	-.00048	-.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: L1703136126 Acquired: 3/30/2017 13:24:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**-.00663**	**.53768**	**.00093**	**.00040**	**.00082**	**-.00185**
Stddev	.00073	.00163	.01049	.00075	.00094	.00617	.00419
%RSD	336.63	24.613	1.9510	80.036	238.36	749.71	226.12
#1	.00089	-.00841	.54276	.00121	.00068	-.00290	.00263
#2	-.00055	-.00627	.54466	.00150	-.00066	.00794	-.00568
#3	.00030	-.00521	.52562	.00009	.00117	-.00258	-.00251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00091**	**.00147**	F **-.78064**
Stddev	.00047	.00020	.41574
%RSD	51.502	13.876	53.256
#1	-.00133	.00148	-.80208
#2	-.00040	.00127	-1.1852
#3	-.00100	.00168	-.35459
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14278.**	**94555.**	**3533.3**
Stddev	273.	997.	15.6
%RSD	1.9137	1.0539	.44227
#1	14165.	95008.	3549.6
#2	14079.	95245.	3518.5
#3	14589.	93413.	3531.7

Approved: March 31, 2017

Sample Name: L1703136129 Acquired: 3/30/2017 13:28:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00133**	**.00646**	**-.00198**	**.00261**	**.00168**	**.00003**	**.03974**
Stddev	.00145	.01099	.00363	.00348	.00016	.00003	.02674
%RSD	108.89	170.17	183.67	133.49	9.4553	100.97	67.275
#1	.00050	.00102	-.00489	.00543	.00185	.00006	.06779
#2	.00301	.01911	.00209	-.00128	.00166	.00003	.01453
#3	.00049	-.00075	-.00313	.00367	.00153	.00000	.03691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**-.00021**	**.00110**	**.00240**	**-.01828**	**-.05853**	**-.00123**
Stddev	.00017	.00034	.00151	.00052	.01260	.04728	.00586
%RSD	182.16	163.94	137.27	21.529	68.908	80.784	475.22
#1	.00001	-.00000	.00136	.00282	-.00762	-.07371	.00260
#2	-.00028	-.00060	-.00052	.00257	-.03218	-.09636	-.00798
#3	-.00000	-.00002	.00248	.00182	-.01505	-.00552	.00168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.02191**	**-.00089**	**-.00012**	**1.2650**	**.00042**	**-.00138**	**.00144**
Stddev	.09224	.00210	.00030	.0566	.00043	.01109	.00109
%RSD	420.91	235.91	250.21	4.4765	102.75	801.10	75.968
#1	-.08520	-.00149	-.00047	1.2409	-.00005	.00904	.00086
#2	.08392	-.00263	.00001	1.3297	.00081	-.00015	.00270
#3	-.06445	.00145	.00009	1.2245	.00051	-.01304	.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: L1703136129 Acquired: 3/30/2017 13:28:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00343**	**-.00303**	**.53932**	**.00076**	**.00054**	**.00380**	**-.00138**
Stddev	.00173	.00242	.01110	.00072	.00068	.00222	.00264
%RSD	50.472	80.017	2.0577	94.605	124.72	58.355	190.76
#1	-.00207	-.00104	.54780	.00125	-.00013	.00321	-.00434
#2	-.00284	-.00232	.54341	-.00007	.00122	.00193	-.00054
#3	-.00538	-.00573	.52676	.00111	.00053	.00625	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00087**	**.00177**	F **-.43174**
Stddev	.00006	.00019	.92862
%RSD	6.9233	10.575	215.09
#1	-.00081	.00164	.15873
#2	-.00088	.00198	-1.5021
#3	-.00093	.00168	.04817
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14739.**	**96663.**	**3594.2**
Stddev	102.	1059.	26.7
%RSD	.69249	1.0953	.74399
#1	14658.	97302.	3624.5
#2	14854.	95441.	3573.9
#3	14705.	97246.	3584.4

Approved: March 31, 2017

Sample Name: L1703139901 Acquired: 3/30/2017 13:31:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00028**	**.01233**	**-.00116**	**.09427**	**.19788**	**-.00002**	**26.402**
Stddev	.00081	.00267	.00108	.00263	.00185	.00004	.127
%RSD	283.81	21.641	92.802	2.7904	.93355	214.03	.47921
#1	-.00016	.01309	-.00060	.09731	.19720	-.00006	26.544
#2	.00122	.01453	-.00241	.09267	.19997	.00002	26.363
#3	-.00020	.00936	-.00048	.09285	.19647	-.00002	26.300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00028**	**-.00034**	**.00062**	**.06653**	**.03251**	**1.2835**	**.01114**
Stddev	.00022	.00018	.00121	.00045	.01208	.1555	.00260
%RSD	79.694	52.004	194.34	.67995	37.148	12.116	23.322
#1	.00044	-.00014	.00048	.06704	.04423	1.4042	.01223
#2	.00003	-.00042	.00190	.06641	.03318	1.1080	.00818
#3	.00037	-.00047	-.00051	.06616	.02011	1.3382	.01302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.3346**	**.02764**	**.00037**	**71.915**	**.00004**	**.02278**	**-.00011**
Stddev	.0407	.00206	.00044	.216	.00034	.00757	.00056
%RSD	.64198	7.4429	119.15	.30040	814.07	33.243	524.83
#1	6.3717	.02830	.00041	72.163	.00039	.01951	-.00040
#2	6.2911	.02533	.00079	71.809	-.00029	.03144	.00054
#3	6.3409	.02928	-.00009	71.772	.00002	.01739	-.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: L1703139901 Acquired: 3/30/2017 13:31:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00224**	**-.00107**	**4.1862**	**.00022**	**.54010**	**-.00087**	**.00012**
Stddev	.00172	.00453	.0131	.00037	.00053	.00789	.00244
%RSD	76.800	425.21	.31173	168.06	.09762	901.96	2041.3
#1	.00422	.00404	4.1827	.00002	.54066	-.00652	.00293
#2	.00137	-.00461	4.2006	.00065	.53961	.00814	-.00108
#3	.00113	-.00263	4.1752	-.00001	.54002	-.00424	-.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00019**	**.00993**	F **-.80165**
Stddev	.00089	.00008	1.2058
%RSD	456.56	.79341	150.41
#1	.00082	.00995	-1.9040
#2	-.00082	.00984	.48607
#3	-.00059	.01000	-.98705
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14308.**	**93117.**	**3621.8**
Stddev	52.	307.	39.7
%RSD	.36483	.32947	1.0961
#1	14268.	93463.	3583.7
#2	14290.	92879.	3618.7
#3	14367.	93009.	3663.0

Approved: March 31, 2017

Sample Name: L1703139902 Acquired: 3/30/2017 13:35:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00160**	**.02718**	**-.00141**	**.17971**	**.14973**	**.00005**	**36.458**
Stddev	.00198	.00788	.00114	.00111	.00081	.00004	.172
%RSD	124.00	28.986	80.661	.61533	.54132	97.210	.47120
#1	.00268	.03348	-.00211	.18061	.14987	.00002	36.310
#2	-.00069	.01835	-.00010	.17848	.14886	.00010	36.417
#3	.00281	.02972	-.00202	.18005	.15046	.00002	36.646
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**-.00003**	**.00065**	**.00860**	**.18634**	**.92836**	**.01041**
Stddev	.00027	.00003	.00058	.00068	.03061	.06231	.00548
%RSD	148.21	122.24	89.537	7.8706	16.427	6.7121	52.646
#1	.00046	-.00004	.00101	.00835	.21625	.94775	.00757
#2	.00014	.00001	-.00002	.00937	.15507	.97867	.00694
#3	-.00006	-.00005	.00097	.00809	.18771	.85866	.01673
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.9012**	**.13827**	**-.00002**	**139.68**	**-.00041**	**.05526**	**.00115**
Stddev	.0774	.00137	.00016	.51	.00055	.00327	.00389
%RSD	1.1209	.99036	679.62	.36689	134.34	5.9107	336.53
#1	6.8161	.13737	.00001	139.72	-.00093	.05861	-.00329
#2	6.9201	.13759	-.00020	139.15	-.00045	.05209	.00283
#3	6.9672	.13984	.00011	140.17	.00016	.05508	.00392
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: L1703139902 Acquired: 3/30/2017 13:35:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00144**	**-.00189**	**4.5964**	**-.00048**	**.40687**	**-.01260**	**-.00252**
Stddev	.00260	.00488	.0469	.00043	.00151	.00495	.00136
%RSD	180.37	257.54	1.0206	88.820	.37044	39.251	54.097
#1	.00442	-.00690	4.6165	-.00004	.40643	-.01043	-.00263
#2	.00021	-.00163	4.6299	-.00090	.40563	-.00911	-.00383
#3	-.00031	.00285	4.5428	-.00051	.40855	-.01826	-.00111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00080**	**.00493**	F **-.45312**
Stddev	.00107	.00007	1.1034
%RSD	133.67	1.4581	243.51
#1	-.00158	.00501	.73742
#2	-.00125	.00491	-.65540
#3	.00042	.00488	-1.4414
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13962.**	**91726.**	**3571.7**
Stddev	87.	1515.	46.6
%RSD	.62551	1.6520	1.3060
#1	14054.	90500.	3611.5
#2	13880.	91258.	3583.2
#3	13954.	93420.	3520.4

Approved: March 31, 2017

Sample Name: L1703145001 Acquired: 3/30/2017 13:39:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00059**	**.00292**	**-.00074**	**.07346**	**1.4799**	**-.00002**	**14.069**
Stddev	.00088	.00851	.00135	.00235	.0075	.00007	.082
%RSD	149.90	291.47	183.41	3.1927	.50576	267.23	.57931
#1	.00118	.01180	-.00131	.07145	1.4729	.00001	14.103
#2	.00102	-.00517	-.00170	.07289	1.4878	.00001	14.128
#3	-.00043	.00213	.00081	.07603	1.4790	-.00010	13.976
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**-.00036**	**.00057**	**.00252**	**.20275**	**1.3044**	**.01416**
Stddev	.00015	.00020	.00095	.00056	.00748	.1199	.00376
%RSD	210.51	55.596	167.06	22.095	3.6900	9.1900	26.589
#1	.00010	-.00022	.00082	.00191	.19411	1.2258	.01803
#2	-.00018	-.00059	.00136	.00300	.20712	1.4424	.01051
#3	-.00015	-.00027	-.00048	.00263	.20702	1.2450	.01393
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.6695**	**.00994**	**.00022**	**101.18**	**-.00108**	**.02244**	**.00118**
Stddev	.0251	.00264	.00023	.30	.00111	.00299	.00401
%RSD	.68322	26.590	107.88	.29210	103.44	13.312	339.05
#1	3.6587	.00768	.00005	100.88	-.00109	.02209	-.00328
#2	3.6518	.01285	.00012	101.48	-.00218	.02559	.00449
#3	3.6982	.00931	.00048	101.16	.00004	.01965	.00234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: L1703145001 Acquired: 3/30/2017 13:39:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**-.00114**	**5.0235**	**.00022**	**.54604**	**-.00737**	**-.00358**
Stddev	.00301	.00381	.0074	.00032	.00460	.00689	.00163
%RSD	663.15	334.77	.14737	142.84	.84295	93.512	45.644
#1	.00178	-.00056	5.0319	-.00001	.54223	-.00056	-.00419
#2	-.00387	.00235	5.0180	.00010	.55115	-.00722	-.00481
#3	.00073	-.00520	5.0205	.00058	.54472	-.01434	-.00173
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00041**	**.00455**	F **-1.4004**
Stddev	.00064	.00024	.5114
%RSD	153.96	5.3602	36.519
#1	-.00070	.00444	-1.9876
#2	-.00085	.00439	-1.1614
#3	.00032	.00484	-1.0523
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14144.**	**93850.**	**3544.9**
Stddev	30.	473.	108.3
%RSD	.20974	.50377	3.0559
#1	14115.	94079.	3449.7
#2	14174.	93306.	3522.2
#3	14143.	94164.	3662.8

Approved: March 31, 2017

Sample Name: L1703145101 Acquired: 3/30/2017 13:43:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00143**	**.21721**	**.00112**	**.01200**	**.05548**	**-.00006**	**38.923**
Stddev	.00076	.00372	.00161	.00161	.00262	.00007	.452
%RSD	52.838	1.7144	144.02	13.410	4.7302	132.49	1.1608
#1	.00230	.21734	.00120	.01142	.05339	-.00008	38.507
#2	.00092	.21342	.00269	.01381	.05842	.00003	39.403
#3	.00108	.22087	-.00053	.01076	.05461	-.00011	38.860
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**.00018**	**.00056**	**.00582**	**.47354**	**1.8024**	**.00314**
Stddev	.00025	.00040	.00029	.00039	.01193	.0616	.00680
%RSD	90.621	226.65	51.423	6.7169	2.5193	3.4186	216.67
#1	.00016	.00010	.00045	.00617	.46555	1.7893	-.00138
#2	.00056	.00061	.00088	.00590	.46782	1.7484	-.00017
#3	.00010	-.00018	.00034	.00540	.48725	1.8695	.01096
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.4379**	**.10407**	**.00046**	**2.5249**	**.00153**	**.63029**	**.00248**
Stddev	.0703	.00016	.00017	.0440	.00066	.01175	.00220
%RSD	2.0436	.15751	37.835	1.7446	42.856	1.8644	88.699
#1	3.4108	.10413	.00054	2.4965	.00183	.63563	.00162
#2	3.5177	.10388	.00026	2.5027	.00078	.63842	.00497
#3	3.3853	.10419	.00058	2.5757	.00199	.61681	.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: L1703145101 Acquired: 3/30/2017 13:43:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00225**	**-.00402**	**4.4536**	**.00000**	**.11602**	**.00527**	**-.00020**
Stddev	.00062	.00920	.0498	.00035	.00168	.00168	.00311
%RSD	27.441	228.66	1.1189	19301.	1.4497	31.893	1557.9
#1	-.00258	.00307	4.4932	-.00021	.11441	.00556	-.00013
#2	-.00264	-.00073	4.4700	-.00019	.11777	.00347	.00288
#3	-.00154	-.01442	4.3977	.00040	.11587	.00679	-.00335
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00017**	**.01431**	F **-.06495**
Stddev	.00029	.00027	.60573
%RSD	168.92	1.8701	932.58
#1	-.00025	.01462	-.21603
#2	.00015	.01422	.60201
#3	-.00041	.01410	-.58084
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14754.**	**99844.**	**3706.1**
Stddev	83.	239.	101.9
%RSD	.55919	.23940	2.7501
#1	14804.	99900.	3823.8
#2	14659.	100050.	3647.1
#3	14800.	99582.	3647.5

Approved: March 31, 2017

Sample Name: L1703145102 Acquired: 3/30/2017 13:46:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00127**	**.25968**	**-.00059**	**.01198**	**.01940**	**-.00005**	**24.986**
Stddev	.00142	.00098	.00041	.00130	.00124	.00004	.379
%RSD	111.58	.37546	69.462	10.836	6.4051	75.910	1.5184
#1	.00134	.26081	-.00093	.01066	.02018	-.00002	24.686
#2	.00266	.25910	-.00014	.01203	.02005	-.00003	24.860
#3	-.00018	.25914	-.00070	.01325	.01796	-.00009	25.413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**-.00020**	**.00060**	**.00131**	**.41698**	**.93318**	**.00071**
Stddev	.00015	.00011	.00033	.00021	.02658	.12779	.00557
%RSD	123.27	55.489	55.887	16.275	6.3741	13.695	784.98
#1	.00024	-.00033	.00098	.00152	.44536	.94218	.00236
#2	-.00004	-.00013	.00045	.00130	.39267	.80112	.00527
#3	.00016	-.00014	.00037	.00110	.41291	1.0562	-.00550
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.8808**	**.34912**	**.00008**	**2.3764**	**-.00021**	**.02384**	**.00140**
Stddev	.1254	.00676	.00024	.0554	.00030	.00789	.00193
%RSD	4.3534	1.9367	311.49	2.3310	140.34	33.107	137.58
#1	2.7613	.34252	.00036	2.3397	-.00022	.02024	-.00082
#2	2.8696	.34882	-.00001	2.3493	.00009	.01838	.00268
#3	3.0114	.35603	-.00011	2.4401	-.00051	.03288	.00234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: L1703145102 Acquired: 3/30/2017 13:46:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00264**	**.00603**	**2.8708**	**.00034**	**.08051**	**-.00609**	**.00105**
Stddev	.00319	.00194	.0579	.00026	.00122	.00437	.00216
%RSD	120.45	32.076	2.0162	76.716	1.5097	71.764	206.69
#1	-.00128	.00440	2.9061	.00006	.07935	-.00891	.00024
#2	-.00037	.00553	2.9022	.00056	.08040	-.00106	.00350
#3	-.00628	.00817	2.8040	.00039	.08177	-.00831	-.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00042**	**.00366**	F **-.27964**
Stddev	.00050	.00006	.40228
%RSD	119.24	1.5950	143.85
#1	.00042	.00368	-.04388
#2	-.00008	.00360	-.74414
#3	.00092	.00371	-.05091
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14707.**	**100580.**	**3649.6**
Stddev	81.	323.	41.4
%RSD	.54854	.32131	1.1343
#1	14614.	100810.	3674.0
#2	14751.	100710.	3673.0
#3	14756.	100210.	3601.8

Approved: March 31, 2017

Sample Name: CCV Acquired: 3/30/2017 13:50:41 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39889**	**10.203**	**.40409**	**.48737**	**1.0324**	**.05132**	**10.244**
Stddev	.00162	.042	.00422	.00450	.0105	.00030	.084
%RSD	.40488	.41618	1.0450	.92376	1.0142	.58898	.81603
#1	.39708	10.156	.40373	.48597	1.0427	.05102	10.334
#2	.40019	10.237	.40847	.48372	1.0218	.05130	10.228
#3	.39938	10.216	.40005	.49240	1.0327	.05163	10.169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05171**	**.20986**	**.51356**	**.52091**	**4.0854**	**53.151**	**1.0353**
Stddev	.00025	.00209	.00239	.00588	.0281	.678	.0170
%RSD	.49145	.99529	.46464	1.1296	.68693	1.2753	1.6447
#1	.05189	.21060	.51083	.52270	4.0938	53.813	1.0519
#2	.05181	.21148	.51522	.52569	4.0541	52.458	1.0179
#3	.05142	.20750	.51464	.51434	4.1083	53.182	1.0360
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.212**	**.51166**	**1.0268**	**53.694**	**.52767**	**10.009**	**.52443**
Stddev	.060	.00751	.0102	.563	.00575	.060	.00488
%RSD	.58906	1.4673	.99353	1.0493	1.0894	.60212	.93123
#1	10.200	.51623	1.0322	54.255	.52883	10.042	.52153
#2	10.159	.50299	1.0333	53.128	.53275	10.045	.53006
#3	10.278	.51575	1.0151	53.699	.52143	9.9393	.52168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 31, 2017

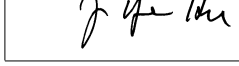
Sample Name: CCV Acquired: 3/30/2017 13:50:41 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2204**	**.39913**	**5.2458**	**1.0365**	**1.0231**	**1.0238**	**.52509**
Stddev	.0090	.00362	.0341	.0116	.0099	.0085	.00295
%RSD	.73589	.90581	.64959	1.1192	.96421	.82808	.56259
#1	1.2254	.39522	5.2717	1.0401	1.0339	1.0317	.52179
#2	1.2257	.40235	5.2586	1.0459	1.0145	1.0148	.52749
#3	1.2100	.39984	5.2072	1.0235	1.0209	1.0248	.52600
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0342**	**1.0201**	F **-.20646**
Stddev	.0061	.0084	1.0086
%RSD	.59050	.82159	488.53
#1	1.0278	1.0224	-1.2433
#2	1.0400	1.0271	-.14745
#3	1.0349	1.0108	.77135
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13979.**	**92838.**	**3497.3**
Stddev	184.	573.	58.9
%RSD	1.3131	.61732	1.6847
#1	14185.	93407.	3429.6
#2	13921.	92848.	3537.4
#3	13832.	92261.	3524.8

Approved: March 31, 2017



Sample Name: CCB Acquired: 3/30/2017 13:54:17 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00211**	**-.00619**	**-.00221**	**.00097**	**.00323**	**.00004**	**.03326**
Stddev	.00117	.00194	.00080	.00219	.00177	.00003	.00482
%RSD	55.561	31.262	36.308	226.86	54.757	81.765	14.494
#1	.00077	-.00425	-.00130	.00142	.00437	.00007	.03459
#2	.00258	-.00621	-.00255	-.00142	.00119	.00000	.02791
#3	.00297	-.00812	-.00280	.00290	.00412	.00004	.03727
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**-.00041**	**.00026**	**.00067**	**-.03216**	**-.00056**	**.00493**
Stddev	.00008	.00042	.00110	.00057	.01093	.03254	.00814
%RSD	30.230	102.82	430.45	86.303	33.974	5838.9	165.04
#1	.00035	-.00041	-.00003	.00041	-.01960	-.00972	-.00427
#2	.00026	-.00084	-.00068	.00132	-.03946	-.02753	.00787
#3	.00019	.00001	.00147	.00026	-.03742	.03558	.01120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.03712**	**.00083**	**.00031**	**-.06904**	**-.00056**	**.00023**	**.00219**
Stddev	.01141	.00209	.00021	.03213	.00078	.00518	.00198
%RSD	30.738	251.62	66.629	46.538	138.31	2297.7	90.637
#1	-.02582	.00043	.00007	-.08521	-.00045	.00049	.00052
#2	-.04864	.00309	.00046	-.08988	-.00139	-.00509	.00438
#3	-.03690	-.00103	.00041	-.03204	.00015	.00527	.00167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: CCB Acquired: 3/30/2017 13:54:17 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00423**	**.00285**	**.00245**	**.00013**	**.00062**	**-.00270**	**.00192**
Stddev	.00053	.00597	.00243	.00020	.00026	.00791	.00110
%RSD	12.438	209.40	99.069	150.75	41.990	293.14	56.978
#1	.00369	.00946	.00389	-.00009	.00062	-.00284	.00154
#2	.00427	-.00216	.00381	.00028	.00036	-.01053	.00316
#3	.00474	.00126	-.00035	.00021	.00087	.00528	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00037**	**.00001**	F **-1.3611**
Stddev	.00037	.00008	.5927
%RSD	101.03	1008.0	43.548
#1	.00006	.00001	-.68996
#2	-.00058	.00009	-1.5804
#3	-.00059	-.00007	-1.8129
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14216.**	**95893.**	**3456.0**
Stddev	203.	608.	47.4
%RSD	1.4269	.63401	1.3708
#1	14061.	95191.	3411.2
#2	14141.	96249.	3451.1
#3	14445.	96239.	3505.6

Approved: March 31, 2017

Sample Name: L1703145501 Acquired: 3/30/2017 13:57:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00160**	**.31734**	**-.00249**	**.02879**	**.02587**	**.00001**	**29.466**	**.00035**
Stddev	.00130	.00547	.00415	.00094	.00152	.00003	.150	.00040
%RSD	81.332	1.7247	166.36	3.2588	5.8935	470.36	.50779	113.70
#1	.00115	.31809	-.00727	.02967	.02430	-.00002	29.299	.00068
#2	.00058	.32241	.00016	.02890	.02734	.00002	29.510	-.00009
#3	.00307	.31154	-.00037	.02781	.02598	.00002	29.588	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00099**	**.00594**	**.31872**	**.98005**	**.00803**	**4.6781**	**.00999**
Stddev	.00021	.00014	.00078	.00867	.07096	.00404	.1164	.00362
%RSD	156.05	13.721	13.152	2.7212	7.2402	50.292	2.4886	36.233
#1	.00011	.00092	.00682	.31219	.94746	.00624	4.5438	.00680
#2	-.00022	.00114	.00568	.31540	1.0615	.01265	4.7505	.01393
#3	-.00029	.00089	.00533	.32856	.93125	.00520	4.7401	.00924
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00363**	**70.924**	**-.00057**	**.03636**	**.00340**	**.00124**	**-.00137**	**3.3765**
Stddev	.00024	.385	.00080	.00254	.00155	.00309	.00269	.0087
%RSD	6.5767	.54338	141.86	6.9862	45.597	249.38	197.25	.25883
#1	.00344	70.505	-.00069	.03918	.00515	.00295	-.00106	3.3734
#2	.00354	71.006	.00029	.03426	.00285	.00309	.00116	3.3864
#3	.00389	71.262	-.00130	.03563	.00220	-.00233	-.00420	3.3697
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

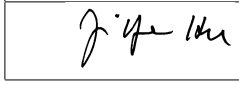
Approved: March 31, 2017

Sample Name: L1703145501 Acquired: 3/30/2017 13:57:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**.24902**	**.00007**	**-.00047**	**-.00027**	**.00515**	**.28101**
Stddev	.00047	.00078	.00492	.00164	.00062	.00010	1.3664
%RSD	226.59	.31147	7149.0	348.39	234.01	1.8688	486.24
#1	-.00003	.24819	.00050	-.00165	.00045	.00506	-.69743
#2	.00015	.24972	.00476	-.00118	-.00061	.00513	1.8421
#3	-.00075	.24914	-.00505	.00141	-.00064	.00525	-.30166
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14317.**	**97177.**	**3667.0**
Stddev	145.	258.	63.5
%RSD	1.0159	.26519	1.7319
#1	14447.	97090.	3721.2
#2	14345.	97467.	3597.1
#3	14160.	96975.	3682.6

Approved: March 31, 2017



Sample Name: L1703145502 Acquired: 3/30/2017 14:01:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00222**	**.22476**	**.00064**	**.03045**	**.06580**	**-.00003**	**36.109**	**.00026**
Stddev	.00099	.00584	.00097	.00092	.00009	.00005	.124	.00017
%RSD	44.633	2.5975	150.95	3.0323	.13120	188.60	.34296	65.145
#1	.00276	.22706	-.00041	.03037	.06572	.00001	36.116	.00032
#2	.00282	.22910	.00085	.03141	.06579	-.00000	35.982	.00007
#3	.00107	.21812	.00149	.02957	.06589	-.00008	36.229	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.00159**	**.01911**	**.45609**	**1.0111**	**.00706**	**5.9736**	**.01553**
Stddev	.00015	.00103	.00112	.03701	.1070	.00287	.1535	.00175
%RSD	83.952	64.970	5.8711	8.1138	10.578	40.682	2.5695	11.281
#1	-.00001	.00040	.02040	.41877	.99644	.01036	6.1440	.01376
#2	-.00023	.00219	.01844	.45673	.91220	.00511	5.8464	.01726
#3	-.00029	.00218	.01848	.49278	1.1246	.00572	5.9303	.01557
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00273**	**57.325**	**.00127**	**.03234**	**.00532**	**-.00317**	**-.00117**	**3.6091**
Stddev	.00014	.295	.00056	.00282	.00152	.00145	.00265	.0052
%RSD	5.2765	.51415	44.023	8.7331	28.636	45.622	226.14	.14269
#1	.00278	57.188	.00191	.03222	.00622	-.00170	.00137	3.6060
#2	.00284	57.125	.00100	.02958	.00619	-.00459	-.00097	3.6151
#3	.00256	57.664	.00090	.03522	.00356	-.00322	-.00391	3.6062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 31, 2017

Sample Name: L1703145502 Acquired: 3/30/2017 14:01:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.37941**	**-.00110**	**-.00323**	**.00016**	**.01813**	**.96616**
Stddev	.00023	.00265	.00704	.00053	.00081	.00005	.68953
%RSD	253.16	.69822	637.31	16.482	496.11	.28888	71.368
#1	.00011	.38036	-.00839	-.00299	.00109	.01811	.36101
#2	-.00033	.37641	.00565	-.00286	-.00042	.01819	1.7168
#3	-.00005	.38144	-.00057	-.00384	-.00018	.01809	.82062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14378.**	**97695.**	**3641.4**
Stddev	8.	890.	4.8
%RSD	.05854	.91093	.13317
#1	14387.	98473.	3642.3
#2	14370.	96725.	3636.1
#3	14376.	97887.	3645.7

Approved: March 31, 2017

Sample Name: L1703146801 Acquired: 3/30/2017 14:05:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00316**	**.50452**	**.01678**	**.08095**	**.85397**	**-.00002**	**187.50**	**.00069**
Stddev	.00082	.00450	.00058	.00197	.00690	.00002	1.40	.00018
%RSD	25.825	.89233	3.4289	2.4363	.80838	108.79	.74659	26.094
#1	.00239	.50482	.01625	.07875	.84706	-.00002	186.01	.00084
#2	.00402	.50887	.01670	.08154	.86086	.00000	188.79	.00075
#3	.00307	.49988	.01740	.08256	.85398	-.00004	187.71	.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04217**	**.00226**	**.00472**	**13.018**	**1.4791**	**.04745**	**35.003**	**11.151**
Stddev	.00046	.00097	.00099	.135	.0730	.00484	.105	.095
%RSD	1.0839	42.755	21.063	1.0333	4.9348	10.191	.29895	.84915
#1	.04249	.00116	.00452	12.921	1.5618	.04517	34.883	11.065
#2	.04237	.00299	.00579	13.172	1.4519	.04419	35.055	11.252
#3	.04165	.00263	.00383	12.962	1.4236	.05301	35.072	11.134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00093**	**68.154**	**.03790**	**.13552**	**.00644**	**.00023**	**.00556**	**22.870**
Stddev	.00018	.391	.00045	.00638	.00226	.00397	.00509	.130
%RSD	19.302	.57383	1.2001	4.7047	35.105	1703.6	91.635	.56719
#1	.00113	67.823	.03818	.14204	.00407	-.00404	.00692	22.946
#2	.00079	68.585	.03738	.13521	.00668	.00381	-.00008	22.944
#3	.00087	68.054	.03814	.12930	.00858	.00093	.00983	22.720
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 31, 2017

Sample Name: L1703146801 Acquired: 3/30/2017 14:05:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00086**	**2.6003**	**-.00603**	**.00231**	**.00192**	**.02931**	**.52855**
Stddev	.00050	.0182	.00864	.00065	.00041	.00039	1.1657
%RSD	58.347	.69899	143.18	28.285	21.205	1.3393	220.56
#1	.00140	2.5812	-.01425	.00156	.00238	.02961	-.00766
#2	.00075	2.6173	-.00681	.00266	.00159	.02944	-.27261
#3	.00042	2.6026	.00297	.00272	.00180	.02886	1.8659
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**15833.**	**106710.**	**4292.4**
Stddev	18.	328.	22.5
%RSD	.11469	.30739	.52304
#1	15824.	106850.	4313.5
#2	15820.	106340.	4268.8
#3	15854.	106940.	4294.8

Approved: March 31, 2017

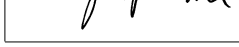
Sample Name: L1703146802 Acquired: 3/30/2017 14:09:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00126**	**.95105**	**-.00076**	**.06351**	**.27245**	**.00016**	**98.366**	**.00038**
Stddev	.00177	.00373	.00202	.00160	.00315	.00005	.903	.00025
%RSD	140.44	.39263	266.67	2.5258	1.1571	30.064	.91843	64.059
#1	.00236	.95059	-.00051	.06459	.27602	.00019	99.332	.00048
#2	.00221	.95499	.00113	.06427	.27126	.00018	98.225	.00057
#3	-.00078	.94756	-.00289	.06166	.27006	.00010	97.541	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00070**	**.00308**	**1.3218**	**2.0268**	**.04522**	**18.627**	**.34113**
Stddev	.00029	.00057	.00154	.0215	.0667	.00168	.182	.00540
%RSD	1864.4	80.857	49.982	1.6252	3.2907	3.7191	.97593	1.5825
#1	.00000	.00068	.00341	1.3010	1.9511	.04367	18.795	.34412
#2	-.00032	.00015	.00442	1.3439	2.0524	.04498	18.651	.34436
#3	.00027	.00128	.00140	1.3205	2.0769	.04701	18.434	.33489
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00185**	**42.967**	**.00073**	**.03950**	**.00459**	**.00256**	**.00044**	**19.387**
Stddev	.00016	.403	.00027	.00120	.00256	.00445	.00687	.182
%RSD	8.9185	.93866	36.458	3.0266	55.723	173.58	1572.9	.93647
#1	.00167	43.365	.00055	.03901	.00200	-.00221	.00559	19.537
#2	.00188	42.978	.00103	.04086	.00465	.00658	-.00736	19.440
#3	.00199	42.559	.00060	.03863	.00711	.00332	.00308	19.185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 31, 2017



Sample Name: L1703146802 Acquired: 3/30/2017 14:09:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**1.5629**	**.00596**	**-.00046**	**.00176**	**.29706**	**1.8057**
Stddev	.00030	.0170	.00097	.00105	.00038	.00386	1.3286
%RSD	112.64	1.0869	16.261	228.99	21.828	1.3001	73.581
#1	.00026	1.5816	.00693	-.00088	.00142	.30001	2.1445
#2	.00056	1.5584	.00500	-.00123	.00169	.29848	.34043
#3	-.00003	1.5485	.00596	.00074	.00218	.29269	2.9321
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13823.**	**91800.**	**3505.7**
Stddev	102.	621.	33.3
%RSD	.74033	.67612	.94935
#1	13713.	92467.	3478.5
#2	13916.	91696.	3495.9
#3	13839.	91239.	3542.8

Approved: March 31, 2017

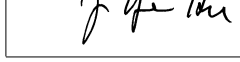
Sample Name: L1703146804 Acquired: 3/30/2017 14:13:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00235**	**-.00806**	**-.00081**	**.00432**	**.00260**	**.00004**	**.05621**
Stddev	.00225	.00549	.00367	.00236	.00025	.00007	.01298
%RSD	95.763	68.099	454.43	54.675	9.5454	185.80	23.090
#1	.00476	-.01345	.00166	.00651	.00240	.00006	.06470
#2	.00198	-.00824	.00094	.00181	.00288	.00009	.06267
#3	.00031	-.00248	-.00502	.00465	.00253	-.00004	.04127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00023**	**-.00072**	**.00114**	**.00091**	**-.01538**	**-.03600**	**.00018**
Stddev	.00008	.00002	.00038	.00025	.01468	.08316	.00636
%RSD	34.250	3.3619	33.131	27.436	95.439	231.02	3464.7
#1	.00024	-.00070	.00131	.00112	-.00037	.05553	-.00716
#2	.00015	-.00075	.00140	.00097	-.02970	-.05660	.00365
#3	.00031	-.00072	.00071	.00063	-.01606	-.10692	.00407
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.07199**	**.00119**	**-.00017**	**-.07540**	**.00131**	**-.00108**	**.00038**
Stddev	.08062	.00202	.00028	.03887	.00051	.00845	.00071
%RSD	111.99	170.15	166.24	51.544	38.985	779.64	186.31
#1	-.01876	.00228	.00009	-.08780	.00190	-.00991	.00029
#2	-.03247	-.00114	-.00013	-.10656	.00106	.00692	.00114
#3	-.16474	.00242	-.00046	-.03185	.00097	-.00026	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017



Sample Name: L1703146804 Acquired: 3/30/2017 14:13:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00082**	**-.00431**	**.01093**	**.00046**	**.00071**	**.00171**	**.00031**
Stddev	.00175	.00226	.00139	.00026	.00063	.00348	.00129
%RSD	214.93	52.546	12.694	57.238	88.639	203.22	417.60
#1	-.00106	-.00651	.01184	.00023	.00017	.00066	.00142
#2	.00109	-.00444	.01161	.00040	.00056	.00559	-.00110
#3	.00242	-.00198	.00933	.00075	.00139	-.00112	.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00011**	**.00123**	F **-1.0127**
Stddev	.00065	.00006	.1875
%RSD	579.14	4.7003	18.511
#1	.00062	.00129	-.79912
#2	-.00035	.00117	-1.0888
#3	-.00061	.00124	-1.1501
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14135.**	**95889.**	**3507.6**
Stddev	157.	1446.	57.1
%RSD	1.1074	1.5080	1.6286
#1	13976.	97399.	3443.4
#2	14140.	94516.	3526.5
#3	14289.	95753.	3552.9

Approved: March 31, 2017

Sample Name: L1703146805 Acquired: 3/30/2017 14:17:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00148**	**-.00970**	**-.00073**	**.00409**	**.00269**	**.00004**	**.06268**	**-.00003**
Stddev	.00177	.00156	.00134	.00112	.00071	.00006	.09203	.00025
%RSD	119.20	16.064	184.37	27.487	26.462	156.51	146.84	953.36
#1	-.00045	-.01143	-.00227	.00513	.00219	.00007	.09457	-.00007
#2	.00187	-.00927	.00013	.00290	.00351	-.00003	.13452	-.00026
#3	.00303	-.00840	-.00004	.00424	.00239	.00007	-.04106	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**.00027**	**.00132**	**-.00690**	**-.13635**	**.00129**	**.01484**	**.00254**
Stddev	.00024	.00038	.00075	.03310	.09437	.00259	.00071	.00373
%RSD	30.556	142.76	57.067	479.83	69.213	200.29	4.7964	146.63
#1	-.00081	-.00015	.00112	-.04036	-.21694	-.00108	.01544	-.00061
#2	-.00101	.00060	.00215	.02582	-.03253	.00405	.01405	.00666
#3	-.00054	.00035	.00068	-.00615	-.15958	.00091	.01503	.00158
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**-.09745**	**-.00023**	**-.00342**	**-.00002**	**-.00133**	**.00162**	**.00650**
Stddev	.00026	.01090	.00081	.00468	.00115	.00213	.00349	.00086
%RSD	343.53	11.190	346.07	136.94	4631.5	160.13	215.72	13.258
#1	.00022	-.10916	-.00116	-.00435	-.00028	-.00379	-.00237	.00739
#2	-.00023	-.09563	.00011	-.00756	.00124	-.00026	.00311	.00567
#3	-.00022	-.08758	.00035	.00166	-.00103	.00006	.00411	.00646
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 31, 2017

Sample Name: L1703146805 Acquired: 3/30/2017 14:17:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00036**	**.00113**	**-.00059**	**.00009**	**-.00024**	**.00200**	**.00845**
Stddev	.00050	.00010	.00388	.00127	.00035	.00006	.29391
%RSD	138.62	8.5166	653.54	1369.1	147.84	2.7992	3479.8
#1	.00092	.00114	-.00014	-.00132	-.00063	.00207	-.04565
#2	.00024	.00123	.00304	.00047	-.00013	.00198	.32564
#3	-.00007	.00103	-.00468	.00113	.00004	.00196	-.25466
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14053.**	**96142.**	**3443.4**
Stddev	148.	508.	102.8
%RSD	1.0519	.52813	2.9863
#1	13934.	96694.	3437.8
#2	14006.	96038.	3343.6
#3	14218.	95694.	3549.0

Approved: March 31, 2017

Sample Name: L1703146806 Acquired: 3/30/2017 14:20:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00183**	**1.2881**	**.00071**	**.03088**	**.29659**	**.00011**	**84.561**	**.00015**
Stddev	.00139	.0051	.00251	.00195	.00221	.00007	.465	.00002
%RSD	75.658	.39662	352.23	6.2995	.74469	62.795	.55013	12.317
#1	.00037	1.2847	.00361	.02965	.29911	.00007	85.095	.00017
#2	.00200	1.2940	-.00073	.03312	.29496	.00006	84.349	.00014
#3	.00313	1.2856	-.00075	.02986	.29572	.00018	84.240	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00853**	**.00254**	**.97824**	**1.6122**	**.03462**	**12.162**	**.02232**
Stddev	.00031	.00052	.00047	.01468	.1065	.00410	.070	.00391
%RSD	605.41	6.0738	18.530	1.5010	6.6077	11.855	.57558	17.541
#1	.00016	.00815	.00281	.96374	1.5797	.03007	12.197	.01864
#2	-.00040	.00912	.00200	.97789	1.5258	.03805	12.207	.02187
#3	.00009	.00831	.00281	.99310	1.7312	.03574	12.081	.02643
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00062**	**31.680**	**.00039**	**.04255**	**.00513**	**-.00165**	**-.00083**	**19.909**
Stddev	.00038	.181	.00049	.00082	.00029	.00496	.00238	.041
%RSD	61.279	.57071	127.08	1.9292	5.6262	300.08	288.09	.20500
#1	.00041	31.888	.00081	.04161	.00522	-.00106	-.00206	19.863
#2	.00039	31.564	-.00015	.04290	.00536	-.00689	-.00234	19.923
#3	.00106	31.587	.00051	.04313	.00481	.00299	.00192	19.941
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 31, 2017

Sample Name: L1703146806 Acquired: 3/30/2017 14:20:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**1.0221**	**.00851**	**-.00194**	**.01136**	**.01082**	**3.9853**
Stddev	.00034	.0085	.00977	.00281	.00082	.00023	.9484
%RSD	2498.0	.83474	114.71	145.39	7.1867	2.1500	23.796
#1	-.00031	1.0312	.00191	.00097	.01169	.01056	4.7465
#2	.00036	1.0207	.01973	-.00214	.01195	.01088	2.9229
#3	-.00000	1.0143	.00390	-.00464	.01043	.01102	4.2866
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14146.**	**93990.**	**3506.9**
Stddev	120.	546.	49.5
%RSD	.84957	.58137	1.4120
#1	14275.	94199.	3451.4
#2	14125.	94401.	3522.3
#3	14037.	93370.	3546.8

Approved: March 31, 2017

Sample Name: CCV Acquired: 3/30/2017 14:24:32 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.36714**	**9.3054**	**.36817**	F **.44054**	**.94141**	**.04691**	**9.2853**
Stddev	.00431	.0441	.00215	.00405	.00246	.00013	.1176
%RSD	1.1752	.47412	.58499	.91956	.26154	.28509	1.2669
#1	.37134	9.3342	.36825	.44388	.94125	.04701	9.4211
#2	.36272	9.2546	.37028	.43603	.94395	.04676	9.2190
#3	.36734	9.3274	.36597	.44171	.93903	.04695	9.2157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value				.50000			
Range				-10.000%			

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04772**	**.19467**	**.47313**	**.48187**	**3.6646**	**48.622**	**.94595**
Stddev	.00012	.00080	.00165	.00032	.0421	.216	.00614
%RSD	.24563	.41311	.34877	.06586	1.1495	.44443	.64936
#1	.04760	.19383	.47502	.48179	3.6541	48.615	.95035
#2	.04772	.19543	.47197	.48223	3.7110	48.410	.93893
#3	.04783	.19474	.47239	.48161	3.6287	48.842	.94858
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.3242**	**.46560**	**.94489**	**49.169**	**.49278**	**9.1351**	**.49128**
Stddev	.0637	.00340	.00221	.149	.00073	.0153	.00422
%RSD	.68332	.73085	.23420	.30279	.14769	.16742	.85863
#1	9.2854	.46602	.94253	49.135	.49268	9.1237	.48960
#2	9.3977	.46877	.94692	49.040	.49211	9.1524	.49608
#3	9.2895	.46201	.94521	49.332	.49356	9.1290	.48817
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 31, 2017

Sample Name: CCV Acquired: 3/30/2017 14:24:32 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1122**	**.36482**	**4.8640**	**.96578**	**.93332**	**.94002**	**.48517**
Stddev	.0014	.00921	.0042	.00139	.00115	.00464	.00159
%RSD	.12509	2.5248	.08617	.14403	.12348	.49332	.32835
#1	1.1134	.37333	4.8622	.96569	.93373	.93529	.48344
#2	1.1107	.36610	4.8688	.96722	.93421	.94456	.48550
#3	1.1125	.35504	4.8611	.96444	.93202	.94023	.48657
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.95266**	**.93475**	F **.14440**
Stddev	.00565	.00280	1.3288
%RSD	.59303	.29921	920.24
#1	.95538	.93234	-.00503
#2	.94617	.93782	1.5416
#3	.95645	.93408	-1.1034
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14555.**	**97899.**	**3620.9**
Stddev	116.	267.	53.2
%RSD	.79787	.27258	1.4691
#1	14540.	98201.	3561.7
#2	14447.	97797.	3636.6
#3	14678.	97697.	3664.6

Approved: March 31, 2017

Sample Name: CCB Acquired: 3/30/2017 14:28:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00032**	**-.00594**	**.00081**	**.00059**	**.00260**	**.00003**	**-.02260**
Stddev	.00108	.00384	.00225	.00244	.00030	.00005	.05967
%RSD	338.32	64.721	278.30	412.27	11.565	165.83	264.07
#1	-.00093	-.00620	-.00015	.00197	.00272	.00002	-.07184
#2	.00102	-.00197	-.00081	.00203	.00226	-.00002	.04376
#3	.00087	-.00964	.00338	-.00222	.00282	.00009	-.03972
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**-.00031**	**-.00047**	**.00137**	**.01453**	**-.01763**	**-.00029**
Stddev	.00027	.00062	.00071	.00077	.02526	.04772	.00172
%RSD	181.52	200.50	150.66	56.582	173.80	270.70	596.89
#1	-.00000	.00030	.00031	.00222	-.00467	.01058	-.00042
#2	-.00001	-.00029	-.00065	.00072	.00512	-.07272	-.00193
#3	.00046	-.00093	-.00107	.00116	.04315	.00926	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.03405**	**.00053**	**-.00027**	**-.05994**	**-.00106**	**.00053**	**.00479**
Stddev	.03665	.00182	.00022	.00480	.00050	.00673	.00355
%RSD	107.64	343.77	82.964	8.0148	46.973	1265.5	74.007
#1	.00818	-.00065	-.00039	-.05748	-.00148	.00617	.00071
#2	-.05282	.00262	-.00041	-.05686	-.00051	-.00692	.00650
#3	-.05751	-.00038	-.00001	-.06547	-.00118	.00235	.00716
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: CCB Acquired: 3/30/2017 14:28:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00418**	**.00529**	**.00423**	**-.00014**	**.00048**	**.00207**	**-.00168**
Stddev	.00339	.00037	.00395	.00047	.00018	.00287	.00125
%RSD	81.000	7.0751	93.282	337.29	37.173	139.04	74.829
#1	.00458	.00519	.00002	.00031	.00067	.00538	-.00239
#2	.00735	.00570	.00483	-.00062	.00032	.00034	-.00023
#3	.00061	.00497	.00784	-.00010	.00045	.00048	-.00240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00038**	**-.00004**	F **-.90190**
Stddev	.00058	.00007	.68818
%RSD	152.96	176.39	76.304
#1	-.00054	.00004	-.72119
#2	.00026	-.00008	-1.6624
#3	-.00085	-.00009	-.32211
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14628.**	**99196.**	**3594.1**
Stddev	52.	2293.	66.1
%RSD	.35334	2.3113	1.8378
#1	14670.	100690.	3582.5
#2	14643.	96557.	3534.6
#3	14570.	100340.	3665.2

Approved: March 31, 2017

Sample Name: CCV Acquired: 3/30/2017 15:11:35 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39149**	**9.9696**	**.38898**	**.47220**	**1.0082**	**.05032**	**9.8761**	**.05090**
Stddev	.00160	.0485	.00047	.00166	.0044	.00024	.0194	.00016
%RSD	.40876	.48631	.12080	.35178	.43763	.48485	.19690	.31893
#1	.39028	9.9640	.38919	.47051	1.0065	.05004	9.8671	.05072
#2	.39088	9.9241	.38930	.47225	1.0048	.05041	9.8628	.05099
#3	.39330	10.021	.38844	.47383	1.0132	.05050	9.8984	.05101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20732**	**.50679**	**.51390**	**3.9519**	**51.639**	**1.0030**	**9.9415**	**.49772**
Stddev	.00075	.00258	.00204	.0375	.197	.0053	.0736	.00135
%RSD	.36303	.50924	.39776	.94999	.38142	.52675	.74075	.27191
#1	.20653	.50500	.51158	3.9505	51.485	.99788	10.027	.49787
#2	.20742	.50561	.51465	3.9151	51.571	1.0084	9.8989	.49630
#3	.20802	.50974	.51545	3.9901	51.861	1.0027	9.8991	.49899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0061**	**52.361**	**.52557**	**9.7514**	**.52314**	**1.1791**	**.39044**	**5.1872**
Stddev	.0023	.217	.00169	.0114	.00347	.0056	.00867	.0215
%RSD	.23004	.41378	.32194	.11661	.66348	.47703	2.2210	.41491
#1	1.0035	52.237	.52366	9.7387	.51991	1.1732	.40021	5.1655
#2	1.0078	52.235	.52690	9.7549	.52269	1.1800	.38744	5.1875
#3	1.0070	52.611	.52613	9.7606	.52681	1.1843	.38367	5.2085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: March 31, 2017

Sample Name: CCV Acquired: 3/30/2017 15:11:35 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0289**	**.99881**	**1.0031**	**.51849**	**1.0174**	**.99549**	**.93533**
Stddev	.0030	.00435	.0076	.00203	.0067	.00327	.78204
%RSD	.29425	.43583	.75845	.39176	.65615	.32817	83.611
#1	1.0256	.99817	.99437	.51615	1.0116	.99220	1.0246
#2	1.0316	.99481	1.0082	.51976	1.0159	.99552	.11250
#3	1.0294	1.0034	1.0067	.51956	1.0247	.99874	1.6689
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13937.**	**93458.**	**3472.8**
Stddev	190.	1673.	10.9
%RSD	1.3615	1.7900	.31366
#1	14074.	92123.	3483.5
#2	14018.	95335.	3473.1
#3	13721.	92916.	3461.7

Approved: March 31, 2017

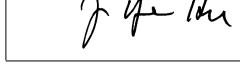
Sample Name: CCB Acquired: 3/30/2017 15:15:16 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00198**	**-.00392**	**-.00015**	**.00103**	**.00402**	**.00009**	**-.00703**
Stddev	.00233	.00133	.00215	.00396	.00128	.00001	.06323
%RSD	117.65	33.977	1461.1	383.30	31.871	8.8089	899.67
#1	.00210	-.00533	-.00218	.00021	.00529	.00009	.05932
#2	-.00041	-.00268	.00210	-.00245	.00404	.00008	-.01380
#3	.00425	-.00377	-.00036	.00534	.00273	.00010	-.06660
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**-.00026**	**-.00005**	**-.00007**	**-.01436**	**-.01092**	**.00099**
Stddev	.00022	.00023	.00112	.00084	.03221	.08681	.00279
%RSD	297.00	89.176	2255.4	1152.0	224.32	794.62	282.98
#1	-.00016	-.00047	-.00045	.00045	.01387	-.06811	.00420
#2	.00011	-.00030	-.00091	.00038	-.04945	-.05363	-.00042
#3	.00027	-.00001	.00121	-.00105	-.00750	.08897	-.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00361**	**-.00068**	**-.00001**	**-.10099**	**-.00024**	**.00088**	**.00125**
Stddev	.10145	.00259	.00014	.05949	.00071	.00432	.00298
%RSD	2810.8	383.23	1314.5	58.907	292.18	491.23	237.93
#1	-.10995	.00148	-.00010	-.11851	.00005	.00525	-.00116
#2	.03551	-.00355	-.00008	-.14976	.00027	.00078	.00034
#3	.08527	.00004	.00015	-.03471	-.00105	-.00339	.00458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017



Sample Name: CCB Acquired: 3/30/2017 15:15:16 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00201**	**-.00187**	**.00220**	**.00076**	**.00081**	**-.00199**	**.00145**
Stddev	.00127	.00553	.00120	.00021	.00036	.00459	.00166
%RSD	63.235	295.40	54.390	28.157	43.972	231.18	113.87
#1	.00105	.00270	.00085	.00098	.00041	-.00505	.00257
#2	.00345	-.00801	.00264	.00075	.00111	-.00420	-.00045
#3	.00153	-.00030	.00312	.00055	.00091	.00330	.00224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00048**	**.00013**	F **-1.4303**
Stddev	.00031	.00012	.9497
%RSD	64.307	88.849	66.401
#1	-.00020	.00025	-2.5193
#2	-.00042	.00013	-.77407
#3	-.00081	.00001	-.99748
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14075.**	**95788.**	**3408.4**
Stddev	107.	1026.	50.3
%RSD	.75784	1.0710	1.4755
#1	14097.	95161.	3382.5
#2	14168.	96972.	3376.4
#3	13958.	95231.	3466.4

Approved: March 31, 2017

Sample Name: PBW C7 Acquired: 3/30/2017 15:19:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG608021-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00238**	**-.00906**	**-.00194**	**-.00215**	**.00378**	**.00005**	**-.00551**
Stddev	.00086	.00493	.00082	.00091	.00101	.00008	.02926
%RSD	36.187	54.482	42.106	42.228	26.659	165.02	530.76
#1	.00273	-.00606	-.00240	-.00146	.00433	-.00003	.02821
#2	.00140	-.01475	-.00243	-.00181	.00440	.00014	-.02058
#3	.00300	-.00636	-.00100	-.00317	.00262	.00004	-.02416
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**-.00055**	**-.00046**	**.00039**	F **-.03730**	**-.13198**	**-.00491**
Stddev	.00025	.00034	.00086	.00142	.00736	.09333	.00370
%RSD	734.19	61.719	188.74	363.47	19.719	70.716	75.319
#1	-.00015	-.00079	.00017	.00195	-.04572	-.23654	-.00687
#2	-.00020	-.00071	-.00011	-.00085	-.03407	-.10231	-.00064
#3	.00025	-.00016	-.00144	.00008	-.03212	-.05709	-.00721
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					810.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04909**	**.00170**	**-.00004**	**-.08599**	**.00033**	**-.00063**	**.00195**
Stddev	.10704	.00230	.00017	.01081	.00024	.00440	.00527
%RSD	218.02	135.47	442.89	12.565	71.213	698.50	270.58
#1	.00532	.00101	.00016	-.09233	.00052	-.00261	-.00357
#2	.17108	.00427	-.00012	-.09213	.00007	.00441	.00247
#3	-.02912	-.00018	-.00016	-.07352	.00041	-.00370	.00694
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: PBW C7 Acquired: 3/30/2017 15:19:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG608021-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**-.00084**	**.00668**	**.00001**	**.00062**	**-.00039**	**-.00483**
Stddev	.00153	.00822	.00236	.00099	.00018	.00272	.00341
%RSD	890.97	976.50	35.391	9748.2	29.177	694.54	70.622
#1	-.00140	.00845	.00403	-.00067	.00062	.00036	-.00818
#2	-.00066	-.00383	.00859	.00115	.00081	-.00341	-.00136
#3	.00154	-.00715	.00742	-.00045	.00045	.00187	-.00496
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00032**	**.00110**	**.47185**
Stddev	.00044	.00011	.80111
%RSD	136.49	10.200	169.78
#1	.00017	.00117	-.33505
#2	-.00068	.00097	.48357
#3	-.00046	.00115	1.2670
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14325.**	**96093.**	**3512.7**
Stddev	74.	522.	49.3
%RSD	.51391	.54271	1.4045
#1	14240.	96614.	3459.0
#2	14363.	96094.	3522.9
#3	14371.	95571.	3556.1

Approved: March 31, 2017

Sample Name: LCSWC7 Acquired: 3/30/2017 15:22:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG608021-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19706**	**4.9713**	**.19291**	**.92238**	**.51943**	**.02490**	**5.0200**
Stddev	.00254	.0098	.00078	.00501	.00240	.00004	.0305
%RSD	1.2883	.19751	.40571	.54292	.46234	.15382	.60703
#1	.19609	4.9625	.19363	.91962	.51822	.02486	5.0481
#2	.19515	4.9696	.19302	.91935	.51787	.02492	4.9876
#3	.19994	4.9819	.19208	.92816	.52219	.02493	5.0242
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02549**	**.10559**	**.25814**	**.26109**	**2.0215**	**26.398**	**.51596**
Stddev	.00036	.00031	.00047	.00096	.0118	.145	.00814
%RSD	1.3999	.29401	.18190	.36720	.58378	.54851	1.5783
#1	.02545	.10588	.25835	.26212	2.0099	26.559	.52120
#2	.02515	.10526	.25761	.26094	2.0335	26.277	.50658
#3	.02586	.10561	.25847	.26022	2.0211	26.359	.52010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.1110**	**.25749**	**.50141**	**27.056**	**.26982**	**4.7930**	**.27136**
Stddev	.0986	.00040	.00067	.282	.00100	.0064	.00142
%RSD	1.9294	.15563	.13367	1.0419	.37036	.13379	.52371
#1	4.9976	.25761	.50197	27.039	.27095	4.8002	.27028
#2	5.1586	.25782	.50067	26.783	.26903	4.7879	.27083
#3	5.1768	.25705	.50159	27.346	.26949	4.7908	.27297
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: LCSWC7 Acquired: 3/30/2017 15:22:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG608021-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.60043**	**.18778**	**2.6725**	**.52869**	**.51752**	**.51781**	**.26392**
Stddev	.00421	.00164	.0052	.00215	.00444	.00900	.00164
%RSD	.70134	.87176	.19497	.40667	.85714	1.7389	.62058
#1	.60482	.18602	2.6755	.53094	.51493	.50832	.26518
#2	.59642	.18925	2.6755	.52665	.51498	.51887	.26207
#3	.60006	.18807	2.6665	.52848	.52264	.52623	.26451
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.51854**	**.49844**	F **-.04989**
Stddev	.00271	.00084	2.0316
%RSD	.52297	.16855	4071.9
#1	.51779	.49939	2.2117
#2	.51628	.49815	-.64086
#3	.52154	.49778	-1.7205
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14241.**	**95828.**	**3567.3**
Stddev	108.	692.	89.7
%RSD	.75558	.72257	2.5134
#1	14212.	96424.	3598.2
#2	14360.	95068.	3466.3
#3	14151.	95990.	3637.4

Approved: March 31, 2017

Sample Name: F BLANK Acquired: 3/30/2017 15:26:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607868-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00203**	**.00105**	**.00111**	**.00129**	**.00269**	**.00005**	**-.01806**
Stddev	.00126	.00436	.00181	.00114	.00109	.00007	.02561
%RSD	61.898	414.21	163.59	88.220	40.534	122.50	141.83
#1	.00301	.00365	.00004	.00016	.00157	-.00001	-.00194
#2	.00061	.00350	.00008	.00243	.00375	.00005	-.04760
#3	.00247	-.00398	.00320	.00128	.00275	.00012	-.00465
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**-.00027**	**.00043**	**.00087**	F **-.03301**	**.08697**	**.00149**
Stddev	.00012	.00008	.00038	.00041	.02876	.05805	.00429
%RSD	77.637	31.056	88.039	46.477	87.133	66.751	289.16
#1	.00025	-.00020	.00079	.00061	-.00671	.09365	-.00162
#2	.00019	-.00036	.00003	.00067	-.02859	.14138	.00639
#3	.00002	-.00026	.00048	.00134	-.06372	.02586	-.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					810.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.03034**	**-.00015**	**-.00018**	**147.44**	**.00054**	**.00160**	**.00169**
Stddev	.13358	.00275	.00034	.41	.00112	.00903	.00200
%RSD	440.27	1870.6	186.24	.27677	210.03	562.85	118.31
#1	-.08905	.00300	-.00056	147.91	-.00059	.00897	.00138
#2	-.12452	-.00136	-.00009	147.15	.00166	.00432	.00383
#3	.12254	-.00208	.00010	147.28	.00054	-.00847	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: F BLANK Acquired: 3/30/2017 15:26:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607868-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00263**	**.00219**	**.00774**	**.00075**	**.00027**	**.00218**	**-.00251**
Stddev	.00528	.00302	.00165	.00081	.00047	.00960	.00140
%RSD	200.64	137.80	21.299	108.15	178.16	440.79	55.743
#1	.00285	.00527	.00963	-.00011	.00020	.00503	-.00272
#2	-.00769	-.00076	.00696	.00086	.00077	.01003	-.00102
#3	-.00306	.00206	.00662	.00149	-.00017	-.00853	-.00380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00034**	**.00308**	**.22141**
Stddev	.00036	.00014	.74078
%RSD	105.35	4.3993	334.57
#1	-.00065	.00301	.82428
#2	-.00044	.00323	-.60553
#3	.00006	.00299	.44549
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14185.**	**95076.**	**3567.7**
Stddev	30.	992.	8.8
%RSD	.21299	1.0438	.24690
#1	14156.	95718.	3559.9
#2	14216.	95577.	3577.2
#3	14184.	93933.	3565.9

Approved: March 31, 2017

Sample Name: L1703146501 Acquired: 3/30/2017 15:30:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG608021-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00247**	**.02880**	**-.00166**	**.02954**	**.02538**	**.00002**	**6.4038**
Stddev	.00191	.00279	.00063	.00185	.00227	.00004	.0924
%RSD	77.004	9.6985	38.219	6.2471	8.9549	210.71	1.4424
#1	.00041	.02628	-.00158	.02812	.02797	.00006	6.4072
#2	.00416	.03180	-.00232	.02889	.02371	-.00002	6.4944
#3	.00286	.02833	-.00107	.03163	.02447	.00002	6.3098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00756**	**.02451**	**.02583**	**-.00491**	**1.2140**	**.39199**	**.00231**
Stddev	.00034	.00082	.00061	.00071	.0103	.06560	.00690
%RSD	4.5260	3.3320	2.3708	14.546	.84974	16.736	298.95
#1	.00760	.02499	.02604	-.00557	1.2231	.39196	.00114
#2	.00788	.02497	.02514	-.00415	1.2028	.32640	-.00394
#3	.00720	.02357	.02631	-.00500	1.2162	.45760	.00972
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1777**	**.08346**	**.00042**	**147.50**	**.00533**	**.21303**	**4.4956**
Stddev	.0716	.00088	.00024	.51	.00112	.00511	.0882
%RSD	6.0772	1.0547	56.668	.34617	21.085	2.3990	1.9627
#1	1.1130	.08427	.00044	148.01	.00515	.21492	4.5359
#2	1.1654	.08252	.00017	147.52	.00653	.21693	4.5565
#3	1.2546	.08358	.00064	146.99	.00431	.20725	4.3944
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: L1703146501 Acquired: 3/30/2017 15:30:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG608021-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00469**	**.00131**	**.19648**	**.00029**	**.02548**	**.00602**	**-.00100**
Stddev	.00598	.00414	.00690	.00075	.00054	.00907	.00051
%RSD	127.34	315.61	3.5128	255.62	2.1364	150.84	50.496
#1	-.01133	.00278	.20248	.00105	.02562	.01612	-.00145
#2	-.00302	-.00336	.19802	-.00044	.02594	.00338	-.00111
#3	.00027	.00452	.18894	.00027	.02488	-.00145	-.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00032**	**10.363**	F **-.76820**
Stddev	.00073	.276	.90510
%RSD	224.19	2.6607	117.82
#1	-.00038	10.506	-.01567
#2	.00029	10.539	-1.7725
#3	.00107	10.045	-.51638
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14347.**	**95825.**	**3637.8**
Stddev	168.	727.	45.6
%RSD	1.1719	.75852	1.2522
#1	14314.	94988.	3656.4
#2	14198.	96190.	3671.1
#3	14529.	96297.	3585.9

Approved: March 31, 2017

Sample Name: L1703146501S Acquired: 3/30/2017 15:34:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG608021-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19339**	**4.7479**	**.18909**	**.93971**	**.52420**	**.02472**	**11.168**	**.03205**
Stddev	.00186	.0109	.00293	.00733	.00430	.00011	.054	.00032
%RSD	.96233	.22964	1.5503	.78052	.82044	.44775	.48299	1.0044
#1	.19124	4.7540	.19227	.93583	.52571	.02465	11.142	.03207
#2	.19440	4.7544	.18852	.94817	.52754	.02485	11.230	.03171
#3	.19453	4.7353	.18649	.93514	.51935	.02467	11.133	.03235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.12497**	**.27547**	**.24490**	**3.1323**	**26.220**	**.50424**	**5.9402**	**.32882**
Stddev	.00017	.00098	.00063	.0249	.120	.00473	.0649	.00280
%RSD	.13854	.35648	.25752	.79447	.45599	.93803	1.0927	.85190
#1	.12517	.27435	.24562	3.1414	26.112	.50276	6.0051	.32733
#2	.12491	.27617	.24444	3.1514	26.348	.50953	5.8752	.33205
#3	.12484	.27589	.24464	3.1042	26.199	.50042	5.9402	.32708
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48985**	**167.92**	**.26213**	**4.9564**	**4.5841**	**.58005**	**.18782**	**2.8192**
Stddev	.00174	.46	.00049	.0114	.0033	.00279	.00344	.0007
%RSD	.35524	.27665	.18713	.23032	.07204	.48099	1.8295	.02578
#1	.49060	168.16	.26258	4.9686	4.5875	.58327	.19129	2.8189
#2	.49109	168.22	.26219	4.9459	4.5838	.57832	.18442	2.8186
#3	.48786	167.39	.26161	4.9548	4.5809	.57857	.18776	2.8200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 31, 2017

Sample Name: L1703146501S Acquired: 3/30/2017 15:34:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG608021-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51004**	**.52376**	**.50255**	**.24695**	**.51055**	**10.453**	**.66175**
Stddev	.00135	.00128	.00322	.00188	.00233	.004	1.0781
%RSD	.26389	.24428	.63999	.76063	.45560	.03705	162.92
#1	.51156	.52505	.49914	.24623	.50892	10.456	-.44073
#2	.50958	.52374	.50297	.24555	.51321	10.455	.71230
#3	.50900	.52249	.50553	.24909	.50951	10.449	1.7137
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14504.**	**97497.**	**3700.9**
Stddev	66.	1101.	85.3
%RSD	.45769	1.1294	2.3041
#1	14577.	96456.	3609.4
#2	14447.	97386.	3715.2
#3	14488.	98650.	3778.1

Approved: March 31, 2017

Sample Name: L1703146501SD Acquired: 3/30/2017 15:37:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG608021-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19364**	**4.7663**	**.19112**	**.93873**	**.52515**	**.02487**	**11.126**	**.03244**
Stddev	.00080	.0197	.00144	.00232	.00279	.00007	.091	.00025
%RSD	.41559	.41425	.75406	.24723	.53038	.28999	.81751	.75849
#1	.19447	4.7692	.19149	.93793	.52642	.02491	11.172	.03260
#2	.19357	4.7453	.19234	.93691	.52195	.02491	11.021	.03256
#3	.19287	4.7845	.18953	.94134	.52707	.02479	11.184	.03216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.12643**	**.27567**	**.24767**	**3.1489**	**26.452**	**.50530**	**5.9685**	**.32999**
Stddev	.00077	.00144	.00127	.0159	.225	.00308	.0934	.00131
%RSD	.60622	.52193	.51210	.50469	.85169	.60908	1.5651	.39569
#1	.12665	.27684	.24720	3.1601	26.289	.50176	6.0307	.33147
#2	.12705	.27406	.24910	3.1558	26.357	.50683	5.8611	.32898
#3	.12557	.27610	.24670	3.1307	26.709	.50732	6.0137	.32952
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49436**	**169.84**	**.26541**	**4.9993**	**4.6508**	**.58292**	**.19233**	**2.8507**
Stddev	.00087	.72	.00141	.0116	.0112	.00785	.00463	.0049
%RSD	.17653	.42208	.53016	.23236	.24093	1.3470	2.4071	.17278
#1	.49408	169.48	.26677	5.0044	4.6505	.58539	.18785	2.8542
#2	.49534	169.37	.26551	5.0074	4.6621	.58924	.19205	2.8528
#3	.49366	170.67	.26396	4.9860	4.6397	.57413	.19710	2.8451
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 31, 2017

Sample Name: L1703146501SD Acquired: 3/30/2017 15:37:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG608021-05

Elem	Sn1899	Sr4077	Ti3372	TI1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51419**	**.52384**	**.50251**	**.24834**	**.51292**	**10.603**	**1.0971**
Stddev	.00239	.00243	.01109	.00314	.00125	.037	.7181
%RSD	.46415	.46442	2.2070	1.2655	.24274	.34636	65.453
#1	.51436	.52336	.50332	.24567	.51434	10.606	.61186
#2	.51648	.52169	.49104	.25180	.51235	10.639	1.9220
#3	.51172	.52648	.51317	.24755	.51205	10.565	.75741
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14394.**	**97247.**	**3698.6**
Stddev	55.	1414.	21.8
%RSD	.38105	1.4540	.58902
#1	14455.	96487.	3722.7
#2	14349.	98878.	3680.3
#3	14377.	96375.	3692.8

Approved: March 31, 2017

Sample Name: L1703144701 Acquired: 3/30/2017 15:41:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00128**	**-.00206**	**-.00117**	**.02177**	**.01634**	**.00005**	**49.762**
Stddev	.00170	.00856	.00138	.00270	.00119	.00010	.130
%RSD	133.18	415.35	117.12	12.419	7.2601	185.02	.26160
#1	.00303	-.01190	-.00102	.02467	.01565	.00001	49.628
#2	.00118	.00205	.00012	.02135	.01771	.00016	49.769
#3	-.00037	.00367	-.00262	.01931	.01566	-.00002	49.888
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00123**	**.00125**	**-.00036**	**.00202**	**-.00496**	**1.0677**	**.00059**
Stddev	.00014	.00030	.00089	.00101	.00685	.0273	.00647
%RSD	11.106	24.153	250.94	50.169	138.14	2.5542	1091.7
#1	.00111	.00140	-.00103	.00310	-.00707	1.0979	.00781
#2	.00121	.00090	.00066	.00110	.00270	1.0448	-.00468
#3	.00138	.00144	-.00069	.00185	-.01050	1.0605	-.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.8755**	**.06014**	**.00169**	**140.32**	**.00599**	**.00836**	**.00500**
Stddev	.0218	.00174	.00009	.85	.00133	.00153	.00089
%RSD	.56281	2.8990	5.5244	.60544	22.223	18.266	17.836
#1	3.8749	.05842	.00167	139.34	.00452	.00803	.00418
#2	3.8976	.06008	.00161	140.88	.00712	.01003	.00486
#3	3.8540	.06191	.00179	140.73	.00632	.00703	.00595
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

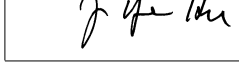
Sample Name: L1703144701 Acquired: 3/30/2017 15:41:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**-.00229**	**.32656**	**.00018**	**.21130**	**-.00817**	**-.00156**
Stddev	.00262	.00481	.00332	.00106	.00176	.00540	.00108
%RSD	1208.1	210.03	1.0179	579.26	.83333	66.101	69.473
#1	.00153	.00271	.32603	.00079	.20975	-.00532	-.00257
#2	.00192	-.00269	.32354	.00081	.21094	-.01440	-.00041
#3	-.00280	-.00689	.33012	-.00104	.21322	-.00480	-.00169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00055**	**.00982**	F **-.32849**
Stddev	.00048	.00012	.81950
%RSD	86.748	1.2702	249.48
#1	-.00077	.00971	-.94896
#2	-.00000	.00978	.60049
#3	-.00087	.00996	-.63699
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14237.**	**95666.**	**3621.0**
Stddev	65.	913.	35.8
%RSD	.45936	.95387	.98947
#1	14210.	96274.	3602.2
#2	14190.	96107.	3598.5
#3	14312.	94617.	3662.3

Approved: March 31, 2017



Sample Name: L1703144701PS Acquired: 3/30/2017 15:44:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG608278-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19299**	**4.7619**	**.19196**	**.93554**	**.50960**	**.02472**	**49.568**	**.02573**
Stddev	.00086	.0137	.00106	.00229	.00366	.00007	.255	.00033
%RSD	.44605	.28858	.55055	.24456	.71724	.27092	.51426	1.2851
#1	.19279	4.7773	.19187	.93802	.50538	.02476	49.329	.02536
#2	.19225	4.7509	.19095	.93351	.51178	.02465	49.539	.02600
#3	.19394	4.7575	.19306	.93510	.51165	.02477	49.836	.02583
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10271**	**.25163**	**.24997**	**1.9556**	**26.543**	**.49786**	**8.2863**	**.29834**
Stddev	.00071	.00103	.00128	.0187	.146	.00285	.0414	.00301
%RSD	.69197	.41049	.51057	.95586	.54921	.57218	.49933	1.0105
#1	.10348	.25175	.25121	1.9340	26.434	.49864	8.3333	.29652
#2	.10257	.25259	.25005	1.9670	26.709	.49471	8.2554	.29668
#3	.10208	.25054	.24866	1.9658	26.487	.50024	8.2702	.30182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49126**	**152.29**	**.26206**	**4.8120**	**.25660**	**.58541**	**.18640**	**2.9298**
Stddev	.00249	.60	.00085	.0198	.00177	.00280	.00123	.0098
%RSD	.50776	.39193	.32581	.41144	.68868	.47872	.65982	.33458
#1	.49299	151.75	.26178	4.8303	.25701	.58809	.18632	2.9405
#2	.49239	152.18	.26302	4.8147	.25467	.58250	.18521	2.9275
#3	.48841	152.93	.26138	4.7910	.25813	.58565	.18766	2.9213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 31, 2017

Sample Name: L1703144701PS Acquired: 3/30/2017 15:44:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG608278-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51040**	**.68604**	**.49858**	**.24974**	**.51053**	**.49280**	**.54117**
Stddev	.00149	.00150	.00684	.00240	.00154	.00102	.48260
%RSD	.29198	.21923	1.3710	.96064	.30176	.20701	89.177
#1	.51051	.68767	.49920	.24726	.51170	.49386	.14401
#2	.51183	.68574	.50509	.25205	.50878	.49271	.40123
#3	.50885	.68471	.49146	.24993	.51110	.49183	1.0783
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14175.**	**95286.**	**3600.3**
Stddev	77.	909.	60.6
%RSD	.54415	.95377	1.6836
#1	14169.	94341.	3669.6
#2	14254.	95365.	3557.6
#3	14100.	96154.	3573.5

Approved: March 31, 2017

Sample Name: L1703144701SDL Acquired: 3/30/2017 15:48:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG608278-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00272**	**-.01271**	**.00088**	**.00531**	**.00722**	**.00006**	**10.123**
Stddev	.00151	.00403	.00026	.00069	.00115	.00003	.111
%RSD	55.579	31.696	29.032	13.047	15.892	45.434	1.0993
#1	.00312	-.01514	.00081	.00547	.00590	.00006	10.041
#2	.00398	-.00806	.00117	.00591	.00788	.00003	10.250
#3	.00105	-.01494	.00067	.00455	.00789	.00009	10.079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**-.00004**	**-.00047**	**.00087**	**.00449**	**.26926**	**.00058**
Stddev	.00019	.00057	.00045	.00028	.01280	.07568	.00206
%RSD	133.54	1592.4	95.717	32.548	285.23	28.107	357.32
#1	.00011	.00008	.00005	.00065	.00177	.35116	.00219
#2	-.00003	-.00065	-.00070	.00078	-.00674	.25472	.00127
#3	.00035	.00047	-.00076	.00119	.01843	.20191	-.00174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.70017**	**.00983**	**.00026**	**28.982**	**.00017**	**-.00370**	**.00152**
Stddev	.11793	.00118	.00033	.182	.00066	.00176	.00253
%RSD	16.844	12.031	129.01	.62795	380.44	47.647	166.07
#1	.82549	.00916	-.00001	28.783	.00084	-.00516	.00441
#2	.68365	.01120	.00015	29.141	-.00048	-.00174	-.00030
#3	.59136	.00914	.00063	29.021	.00016	-.00421	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: L1703144701SDL Acquired: 3/30/2017 15:48:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG608278-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00137**	**-.00312**	**.06767**	**.00075**	**.04345**	**-.00316**	**-.00087**
Stddev	.00103	.00455	.00316	.00034	.00069	.00281	.00329
%RSD	74.926	145.79	4.6626	45.594	1.5924	88.967	379.97
#1	.00223	.00205	.07042	.00056	.04267	-.00113	-.00172
#2	.00023	-.00649	.06422	.00055	.04367	-.00198	.00277
#3	.00165	-.00492	.06836	.00115	.04400	-.00636	-.00365
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00052**	**.00229**	F **-.70145**
Stddev	.00032	.00015	.87063
%RSD	61.511	6.6288	124.12
#1	-.00081	.00232	-1.5717
#2	-.00018	.00242	-.70212
#3	-.00055	.00213	.16952
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13793.**	**93638.**	**3444.7**
Stddev	34.	1806.	67.8
%RSD	.24323	1.9291	1.9696
#1	13763.	94926.	3507.7
#2	13788.	91573.	3453.3
#3	13829.	94415.	3372.9

Approved: March 31, 2017

Sample Name: L1703144701SDL Acquired: 3/30/2017 15:52:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG608278-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00278**	**-.00985**	**-.00016**	**-.00101**	**.00488**	**.00012**	**1.9304**
Stddev	.00081	.01056	.00297	.00218	.00095	.00006	.0224
%RSD	29.097	107.18	1900.2	216.00	19.358	52.314	1.1621
#1	.00313	-.01444	-.00017	.00085	.00468	.00017	1.9495
#2	.00185	.00223	.00282	-.00047	.00591	.00005	1.9057
#3	.00335	-.01735	-.00312	-.00342	.00406	.00013	1.9361
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**-.00049**	**.00021**	**.00086**	**-.01285**	**-.09611**	**-.00388**
Stddev	.00005	.00025	.00091	.00072	.01461	.13423	.00682
%RSD	23.100	51.957	441.26	83.921	113.74	139.66	176.00
#1	.00030	-.00020	.00123	.00016	-.02582	-.05664	-.01174
#2	.00020	-.00061	-.00052	.00082	-.01570	.01396	-.00037
#3	.00021	-.00065	-.00010	.00159	.00298	-.24565	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.12993**	**.00292**	**-.00015**	**5.7392**	**-.00105**	**-.00460**	**.00144**
Stddev	.03931	.00090	.00051	.0236	.00020	.00696	.00100
%RSD	30.254	30.842	335.57	.41079	19.388	151.45	69.430
#1	.09194	.00190	-.00074	5.7647	-.00115	-.01133	.00256
#2	.17044	.00361	.00006	5.7183	-.00118	.00258	.00110
#3	.12740	.00324	.00022	5.7345	-.00081	-.00505	.00066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: L1703144701SDL Acquired: 3/30/2017 15:52:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG608278-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00281**	**.00170**	**.01194**	**-.00048**	**.00908**	**-.00239**	**-.00110**
Stddev	.00300	.00593	.00133	.00042	.00049	.00448	.00272
%RSD	106.73	349.35	11.110	87.434	5.3639	187.33	248.40
#1	.00519	.00734	.01253	-.00000	.00852	-.00461	.00081
#2	.00381	.00225	.01287	-.00064	.00942	-.00532	.00012
#3	-.00056	-.00449	.01042	-.00079	.00930	.00276	-.00422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00038**	**.00073**	F **-.95557**
Stddev	.00043	.00018	.76126
%RSD	112.84	24.932	79.665
#1	.00003	.00080	-.56858
#2	.00025	.00086	-.46555
#3	.00085	.00052	-1.8326
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13838.**	**93360.**	**3458.3**
Stddev	127.	1042.	76.7
%RSD	.91867	1.1162	2.2190
#1	13980.	93651.	3546.9
#2	13798.	92203.	3413.0
#3	13735.	94225.	3415.0

Approved: March 31, 2017

Sample Name: CCV Acquired: 3/30/2017 15:56:05 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39439**	**10.008**	**.39364**	**.47232**	**1.0224**	**.05067**	**10.024**
Stddev	.00350	.091	.00271	.00239	.0063	.00037	.135
%RSD	.88676	.91329	.68818	.50684	.61320	.73125	1.3464
#1	.39296	10.011	.39324	.47453	1.0182	.05082	9.8805
#2	.39837	10.098	.39653	.47264	1.0296	.05093	10.148
#3	.39182	9.9148	.39116	.46978	1.0194	.05024	10.043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05177**	**.21121**	**.51227**	**.52180**	**3.9840**	**52.783**	**1.0248**
Stddev	.00023	.00103	.00292	.00255	.0299	.322	.0052
%RSD	.43968	.48769	.56990	.48864	.74946	.60924	.50308
#1	.05203	.21159	.51006	.52258	3.9558	52.476	1.0298
#2	.05169	.21199	.51558	.52387	4.0153	53.117	1.0195
#3	.05160	.21004	.51118	.51895	3.9809	52.757	1.0251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.052**	**.50461**	**1.0151**	**53.891**	**.53687**	**9.7756**	**.53439**
Stddev	.054	.00652	.0070	.425	.00263	.0382	.00235
%RSD	.53610	1.2924	.69040	.78940	.49076	.39096	.43994
#1	10.023	.49987	1.0178	53.552	.53740	9.8035	.53548
#2	10.114	.51205	1.0203	54.368	.53920	9.7912	.53170
#3	10.019	.50192	1.0071	53.752	.53401	9.7320	.53601
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 31, 2017

Sample Name: CCV Acquired: 3/30/2017 15:56:05 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1940**	**.39527**	**5.2812**	**1.0425**	**1.0113**	**1.0091**	**.52478**
Stddev	.0055	.00397	.0032	.0075	.0068	.0141	.00275
%RSD	.46042	1.0048	.05997	.72025	.66944	1.4008	.52427
#1	1.1961	.39116	5.2829	1.0479	1.0047	1.0050	.52247
#2	1.1980	.39557	5.2831	1.0457	1.0182	1.0249	.52404
#3	1.1877	.39908	5.2775	1.0339	1.0109	.99750	.52782
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0315**	**1.0000**	F **.74153**
Stddev	.0060	.0050	.41653
%RSD	.57653	.49535	56.172
#1	1.0294	1.0012	.36384
#2	1.0382	1.0043	.67248
#3	1.0268	.99462	1.1883
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13718.**	**91791.**	**3397.7**
Stddev	159.	1145.	44.5
%RSD	1.1621	1.2472	1.3084
#1	13879.	90895.	3424.4
#2	13560.	91397.	3346.4
#3	13714.	93080.	3422.3

Approved: March 31, 2017

Sample Name: CCB Acquired: 3/30/2017 15:59:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**-.00970**	**-.00089**	**.00039**	**.00216**	**.00008**	**.01338**
Stddev	.00029	.00107	.00146	.00324	.00056	.00009	.03145
%RSD	52.626	11.068	164.84	821.38	25.852	109.98	235.02
#1	.00052	-.00898	-.00247	-.00113	.00177	.00010	.01158
#2	.00028	-.00918	-.00061	.00411	.00280	-.00002	-.01713
#3	.00086	-.01093	.00042	-.00180	.00190	.00015	.04570
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**-.00025**	**.00007**	**.00063**	**-.00175**	**.03333**	**.00667**
Stddev	.00042	.00020	.00071	.00064	.01342	.07977	.00648
%RSD	800.10	78.102	1006.0	102.55	765.28	239.33	97.217
#1	.00036	-.00031	.00021	-.00006	-.01687	.10757	.00758
#2	-.00004	-.00003	.00070	.00121	.00875	.04342	-.00022
#3	-.00047	-.00042	-.00070	.00072	.00286	-.05100	.01265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.03330**	**.00104**	**-.00003**	**-.10551**	**-.00067**	**-.00278**	**.00308**
Stddev	.04834	.00452	.00020	.00903	.00030	.00434	.00251
%RSD	145.17	435.75	617.16	8.5614	45.362	156.05	81.461
#1	-.07201	-.00418	-.00010	-.11017	-.00062	-.00230	.00523
#2	-.04877	.00384	-.00018	-.11127	-.00100	-.00734	.00032
#3	.02089	.00346	.00019	-.09510	-.00040	.00130	.00368
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: CCB Acquired: 3/30/2017 15:59:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00240**	**-.00083**	**.00351**	**.00030**	**.00061**	**.00389**	**-.00323**
Stddev	.00449	.00373	.00205	.00045	.00008	.00806	.00487
%RSD	187.28	448.43	58.482	151.28	12.476	207.21	150.97
#1	.00729	.00331	.00557	.00034	.00058	.00622	.00089
#2	-.00155	-.00393	.00146	-.00017	.00070	-.00508	-.00860
#3	.00146	-.00188	.00351	.00072	.00056	.01053	-.00196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00022**	**-.00001**	F **-.82487**
Stddev	.00022	.00005	.17652
%RSD	98.798	372.98	21.399
#1	-.00046	-.00000	-.73784
#2	-.00013	.00003	-1.0280
#3	-.00006	-.00006	-.70877
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13901.**	**93735.**	**3414.7**
Stddev	96.	1155.	49.9
%RSD	.69084	1.2321	1.4625
#1	13994.	93327.	3472.4
#2	13802.	95038.	3385.5
#3	13905.	92839.	3386.3

Approved: March 31, 2017

Sample Name: L1703144702 Acquired: 3/30/2017 16:03:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00053**	**.00624**	**.00171**	**.00946**	**.00690**	**.00005**	**68.221**	**.00038**
Stddev	.00019	.00525	.00068	.00113	.00096	.00006	.338	.00010
%RSD	36.224	84.157	40.086	11.996	13.973	110.43	.49492	27.142
#1	.00044	.00158	.00093	.00900	.00768	-.00001	68.600	.00050
#2	.00075	.01193	.00224	.01075	.00719	.00007	67.952	.00033
#3	.00040	.00521	.00195	.00863	.00582	.00009	68.110	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00031**	**.00026**	**.00075**	**-.00851**	**1.2005**	**.00465**	**1.8385**	**.01640**
Stddev	.00039	.00073	.00102	.01324	.1217	.00271	.1000	.00227
%RSD	123.58	277.47	136.77	155.59	10.136	58.279	5.4412	13.861
#1	-.00001	-.00039	.00190	-.02200	1.3124	.00697	1.9403	.01894
#2	.00074	.00106	.00035	.00447	1.2182	.00167	1.7403	.01569
#3	.00020	.00012	-.00002	-.00800	1.0710	.00531	1.8350	.01457
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00463**	**144.41**	**.00419**	**.00005**	**.00076**	**.00236**	**-.00297**	**.46173**
Stddev	.00022	.63	.00019	.00511	.00189	.00370	.00395	.00275
%RSD	4.8521	.43563	4.4744	10598.	246.60	156.94	132.81	.59451
#1	.00459	145.11	.00407	-.00363	.00018	.00550	-.00605	.46048
#2	.00442	144.20	.00409	-.00210	-.00076	-.00172	-.00436	.45982
#3	.00487	143.90	.00440	.00588	.00287	.00329	.00148	.46487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 31, 2017

Sample Name: L1703144702 Acquired: 3/30/2017 16:03:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**.26414**	**-.00731**	**-.00130**	**-.00027**	**.00442**	**.12365**
Stddev	.00056	.00146	.00238	.00158	.00067	.00008	2.0591
%RSD	111.50	.55236	32.585	121.75	250.35	1.7269	1665.3
#1	.00004	.26580	-.00978	-.00100	-.00052	.00441	2.4687
#2	.00113	.26354	-.00503	-.00301	-.00077	.00450	-1.3884
#3	.00034	.26307	-.00712	.00011	.00049	.00435	-.70933
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14102.**	**93516.**	**3546.6**
Stddev	38.	795.	48.3
%RSD	.26726	.84971	1.3605
#1	14103.	93959.	3550.3
#2	14064.	93990.	3496.6
#3	14139.	92599.	3592.9

Approved: March 31, 2017

Sample Name: L1703144801 Acquired: 3/30/2017 16:07:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00104**	**-.00301**	**.00043**	**.02676**	**.01374**	**.00005**	**11.469**
Stddev	.00301	.00033	.00290	.00210	.00165	.00004	.053
%RSD	290.14	10.891	677.75	7.8326	12.031	88.295	.45882
#1	.00125	-.00295	-.00237	.02446	.01192	.00010	11.491
#2	.00393	-.00337	.00023	.02723	.01415	.00002	11.409
#3	-.00207	-.00272	.00342	.02857	.01516	.00003	11.507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**.00044**	**.00000**	**.00112**	**.06334**	**17.070**	**.00279**
Stddev	.00011	.00026	.00059	.00111	.01021	.194	.00286
%RSD	244.16	58.880	44195.	99.205	16.127	1.1336	102.53
#1	-.00008	.00071	-.00008	.00181	.07158	17.227	.00092
#2	.00012	.00041	.00062	-.00016	.05191	16.854	.00137
#3	.00010	.00020	-.00054	.00172	.06652	17.129	.00609
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**36.875**	**.65024**	**.00052**	**241.92**	**.00465**	**.46853**	**.00105**
Stddev	.110	.00366	.00025	1.60	.00036	.00450	.00385
%RSD	.29897	.56348	48.533	.66283	7.7494	.95984	365.83
#1	36.910	.65446	.00031	243.63	.00502	.46594	.00353
#2	36.751	.64781	.00080	240.44	.00465	.47372	.00301
#3	36.963	.64846	.00046	241.70	.00429	.46592	-.00339
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: L1703144801 Acquired: 3/30/2017 16:07:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00067**	**.00049**	**.40498**	**.00012**	**.04397**	**.00335**	**-.00081**
Stddev	.00170	.00700	.00549	.00039	.00037	.01045	.00133
%RSD	253.97	1421.9	1.3553	329.72	.84449	312.24	164.10
#1	.00261	.00858	.40752	-.00025	.04430	-.00448	.00058
#2	.00001	-.00362	.40873	.00053	.04357	-.00069	-.00094
#3	-.00061	-.00348	.39868	.00007	.04405	.01522	-.00206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00022**	**.00495**	F **-.22374**
Stddev	.00053	.00017	.43484
%RSD	247.40	3.3448	194.35
#1	-.00082	.00514	-.60400
#2	.00018	.00483	-.31758
#3	-.00000	.00488	.25036
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14094.**	**94186.**	**3637.2**
Stddev	77.	1261.	94.2
%RSD	.54804	1.3383	2.5902
#1	14183.	92731.	3528.8
#2	14057.	94899.	3683.6
#3	14043.	94929.	3699.3

Approved: March 31, 2017

Sample Name: L1703145401 Acquired: 3/30/2017 16:10:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00134**	**.19168**	**-.00086**	**.01775**	**.02968**	**.00012**	**18.988**	**.00022**
Stddev	.00239	.00460	.00176	.00197	.00128	.00006	.081	.00010
%RSD	178.67	2.3988	206.00	11.086	4.3165	48.052	.42588	45.466
#1	.00201	.18643	-.00147	.01673	.03044	.00007	18.896	.00030
#2	-.00132	.19365	-.00223	.01651	.02820	.00010	19.022	.00025
#3	.00331	.19497	.00113	.02002	.03040	.00018	19.047	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00076**	**-.00003**	**.00313**	**.11150**	**1.3229**	**.00524**	**4.8721**	**.00196**
Stddev	.00043	.00080	.00071	.02613	.0345	.00461	.0901	.00096
%RSD	57.040	2844.9	22.758	23.433	2.6063	87.979	1.8484	49.191
#1	-.00035	-.00096	.00276	.11131	1.2834	.00466	4.9667	.00301
#2	-.00071	.00045	.00269	.13773	1.3471	.01012	4.8623	.00174
#3	-.00122	.00043	.00395	.08548	1.3383	.00095	4.7873	.00113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00021**	**17.355**	**.00150**	**.00696**	**.00329**	**-.00304**	**-.00595**	**2.1336**
Stddev	.00006	.161	.00060	.00714	.00097	.00153	.00861	.0368
%RSD	29.382	.92477	40.238	102.66	29.604	50.183	144.75	1.7242
#1	.00028	17.538	.00107	.01436	.00416	-.00214	.00195	2.1479
#2	.00017	17.293	.00124	.00641	.00224	-.00218	-.00466	2.1610
#3	.00018	17.235	.00219	.00011	.00347	-.00481	-.01514	2.0918
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 31, 2017

Sample Name: L1703145401 Acquired: 3/30/2017 16:10:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00036**	**.11249**	**.00118**	**-.00243**	**.00016**	**.02685**	**.87044**
Stddev	.00052	.00048	.00668	.00228	.00040	.00034	1.5856
%RSD	144.74	.42534	566.80	94.147	247.57	1.2745	182.16
#1	.00020	.11304	-.00339	-.00019	-.00010	.02705	-.74339
#2	-.00083	.11223	-.00192	-.00475	.00063	.02705	.92850
#3	-.00046	.11219	.00885	-.00233	-.00004	.02646	2.4262
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14318.**	**95529.**	**3537.5**
Stddev	156.	440.	127.2
%RSD	1.0887	.46029	3.5966
#1	14178.	95733.	3449.1
#2	14290.	95829.	3480.0
#3	14486.	95024.	3683.3

Approved: March 31, 2017

Sample Name: L1703145601 Acquired: 3/30/2017 16:14:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00131**	**.49441**	**-.00088**	**.01494**	**.06914**	**.00006**	**58.782**
Stddev	.00014	.00522	.00127	.00295	.00031	.00003	.523
%RSD	10.600	1.0563	143.94	19.770	.44945	47.072	.89036
#1	.00144	.49125	-.00051	.01478	.06880	.00004	58.212
#2	.00133	.49154	.00016	.01208	.06921	.00006	58.893
#3	.00116	.50044	-.00229	.01798	.06941	.00009	59.241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00035**	**-.00018**	**.00060**	**.00226**	**.53005**	**1.0295**	**.00970**
Stddev	.00017	.00016	.00051	.00033	.02115	.0744	.00340
%RSD	47.968	88.656	86.377	14.527	3.9899	7.2294	35.015
#1	.00043	-.00009	.00063	.00191	.51507	1.1153	.01319
#2	.00016	-.00009	.00109	.00256	.55424	.99186	.00641
#3	.00046	-.00036	.00007	.00233	.52083	.98148	.00950
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.6222**	**.01573**	**.00087**	**5.4787**	**-.00049**	**.02428**	**.00257**
Stddev	.1392	.00069	.00021	.0670	.00072	.00236	.00275
%RSD	1.4466	4.3636	23.920	1.2232	147.85	9.7227	107.16
#1	9.5844	.01494	.00110	5.4512	.00007	.02447	.00159
#2	9.5058	.01606	.00071	5.4299	-.00023	.02183	.00567
#3	9.7764	.01619	.00080	5.5551	-.00131	.02654	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: L1703145601 Acquired: 3/30/2017 16:14:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00141**	**-.00524**	**5.0854**	**.00001**	**.23332**	**.00635**	**-.00210**
Stddev	.00267	.00437	.0085	.00079	.00264	.00466	.00147
%RSD	190.02	83.542	.16630	5758.6	1.1313	73.491	69.869
#1	-.00114	-.00022	5.0951	-.00085	.23172	.00423	-.00312
#2	.00419	-.00720	5.0810	.00017	.23187	.00311	-.00277
#3	.00118	-.00828	5.0800	.00071	.23636	.01169	-.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00063**	**.00359**	F **-.11499**
Stddev	.00058	.00006	1.0115
%RSD	91.825	1.7326	879.58
#1	-.00001	.00363	-.30979
#2	.00078	.00362	.97970
#3	.00112	.00352	-1.0149
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14061.**	**95945.**	**3477.8**
Stddev	63.	640.	34.8
%RSD	.44991	.66722	.99988
#1	14041.	96438.	3440.0
#2	14132.	96176.	3485.3
#3	14011.	95222.	3508.3

Approved: March 31, 2017

Sample Name: L1703145602 Acquired: 3/30/2017 16:18:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00151**	**-.00402**	**-.00150**	**.01538**	**.06188**	**-.00003**	**55.106**
Stddev	.00125	.00233	.00083	.00251	.00101	.00007	.203
%RSD	82.873	58.071	55.306	16.337	1.6384	234.34	.36890
#1	.00148	-.00626	-.00062	.01560	.06248	.00004	54.965
#2	.00277	-.00418	-.00160	.01277	.06244	-.00003	55.014
#3	.00027	-.00161	-.00227	.01778	.06071	-.00009	55.339
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**-.00064**	**.00023**	**.00165**	**-.00859**	**.72265**	**.00439**
Stddev	.00003	.00020	.00030	.00116	.02725	.11871	.00431
%RSD	12.878	31.812	129.04	70.351	317.21	16.428	97.969
#1	.00019	-.00041	.00045	.00230	-.03208	.59877	.00714
#2	.00024	-.00071	-.00011	.00031	-.01497	.73375	-.00057
#3	.00023	-.00080	.00035	.00234	.02128	.83542	.00662
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**8.9497**	**.00758**	**.00083**	**5.1970**	**-.00091**	**.01110**	**.00252**
Stddev	.2655	.00215	.00040	.0902	.00153	.00551	.00286
%RSD	2.9668	28.328	47.792	1.7350	168.18	49.641	113.61
#1	8.7406	.00912	.00039	5.1744	-.00033	.00494	-.00025
#2	8.8602	.00849	.00095	5.1202	.00025	.01556	.00546
#3	9.2485	.00512	.00116	5.2963	-.00264	.01281	.00235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: L1703145602 Acquired: 3/30/2017 16:18:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.00065**	**4.0440**	**-.00038**	**.21776**	**-.00926**	**-.00046**
Stddev	.00439	.00362	.0088	.00091	.00133	.00564	.00327
%RSD	5108.2	555.04	.21734	235.53	.60883	60.904	714.73
#1	.00386	.00229	4.0485	.00036	.21663	-.00366	-.00188
#2	-.00474	.00316	4.0496	-.00012	.21922	-.00917	-.00278
#3	.00113	-.00350	4.0339	-.00139	.21744	-.01494	.00328
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00058**	**.00163**	F **-.94607**
Stddev	.00030	.00016	.86585
%RSD	52.339	9.5513	91.521
#1	-.00041	.00149	-1.2794
#2	-.00039	.00180	.03690
#3	-.00092	.00159	-1.5957
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13942.**	**94843.**	**3496.1**
Stddev	128.	1225.	56.1
%RSD	.91495	1.2921	1.6052
#1	14013.	94342.	3434.1
#2	14019.	96239.	3543.4
#3	13795.	93947.	3511.0

Approved: March 31, 2017

Sample Name: L1703145603 Acquired: 3/30/2017 16:21:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00270**	**.03954**	**-.00128**	**.02052**	**.05291**	**.00003**	**29.791**
Stddev	.00166	.00470	.00103	.00141	.00101	.00004	.222
%RSD	61.370	11.893	80.435	6.8743	1.9165	152.09	.74626
#1	.00081	.04405	-.00052	.02215	.05322	-.00000	29.686
#2	.00389	.03992	-.00087	.01976	.05177	.00001	30.046
#3	.00341	.03466	-.00246	.01965	.05373	.00007	29.640
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**-.00040**	**.00028**	**.00295**	**-.00836**	**.42152**	**.00249**
Stddev	.00013	.00024	.00073	.00058	.03503	.10770	.00127
%RSD	155.82	60.648	264.09	19.733	419.04	25.551	50.920
#1	-.00005	-.00014	.00084	.00229	-.04016	.31256	.00315
#2	.00010	-.00061	-.00055	.00338	-.01410	.42408	.00329
#3	.00020	-.00045	.00054	.00319	.02919	.52791	.00103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.8448**	**.00442**	**.00022**	**4.2263**	**-.00034**	**.01182**	**.00181**
Stddev	.0298	.00263	.00010	.0454	.00108	.00385	.00114
%RSD	.61439	59.615	45.446	1.0740	314.86	32.532	62.803
#1	4.8243	.00237	.00014	4.2297	-.00104	.00803	.00245
#2	4.8310	.00350	.00033	4.2700	.00090	.01171	.00050
#3	4.8789	.00739	.00019	4.1794	-.00088	.01572	.00248
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: L1703145603 Acquired: 3/30/2017 16:21:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**-.00454**	**2.9611**	**.00024**	**.12168**	**.00368**	**-.00064**
Stddev	.00218	.00500	.0084	.00065	.00142	.00880	.00191
%RSD	2981.7	110.12	.28309	273.68	1.1674	239.32	297.88
#1	.00206	-.00280	2.9706	.00037	.12141	-.00382	.00137
#2	-.00230	-.01019	2.9581	.00081	.12321	.01337	-.00086
#3	.00002	-.00065	2.9547	-.00047	.12040	.00149	-.00244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00068**	**.00195**	F **-.84760**
Stddev	.00070	.00004	.81380
%RSD	102.43	1.8317	96.013
#1	-.00145	.00192	-.19024
#2	-.00047	.00195	-.59473
#3	-.00011	.00199	-1.7578
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14057.**	**96217.**	**3480.1**
Stddev	60.	858.	52.5
%RSD	.42969	.89146	1.5086
#1	14080.	95969.	3477.6
#2	13989.	95512.	3428.9
#3	14103.	97172.	3533.8

Approved: March 31, 2017

Sample Name: L1703145604 Acquired: 3/30/2017 16:25:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00104**	**.00661**	**-.00107**	**.01953**	**.05204**	**.00004**	**29.138**
Stddev	.00105	.00631	.00152	.00207	.00085	.00003	.253
%RSD	101.30	95.419	141.26	10.587	1.6428	88.315	.86864
#1	.00221	.01374	-.00242	.01736	.05115	.00005	29.064
#2	.00072	.00430	-.00138	.01976	.05285	-.00000	29.420
#3	.00018	.00178	.00057	.02148	.05214	.00006	28.931
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**-.00044**	**.00041**	**.00093**	F **-.02795**	**.52358**	**.00214**
Stddev	.00020	.00028	.00077	.00015	.02516	.03303	.00108
%RSD	1282.8	63.520	186.69	15.695	89.999	6.3081	50.387
#1	-.00021	-.00046	.00061	.00078	-.04469	.54495	.00111
#2	.00010	-.00015	.00106	.00108	-.04014	.54024	.00326
#3	.00016	-.00070	-.00044	.00094	.00098	.48553	.00205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					810.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.7450**	**.00408**	**.00004**	**4.1055**	**.00004**	**.00821**	**.00643**
Stddev	.1047	.00282	.00020	.0287	.00126	.00412	.00193
%RSD	2.2057	69.069	543.38	.69828	3314.5	50.163	30.057
#1	4.6517	.00087	.00026	4.1280	.00077	.00854	.00665
#2	4.8581	.00614	-.00013	4.0732	.00076	.00393	.00824
#3	4.7250	.00523	-.00003	4.1152	-.00141	.01215	.00440
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: L1703145604 Acquired: 3/30/2017 16:25:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00082**	**.00392**	**2.8244**	**.00071**	**.12131**	**-.00091**	**.00003**
Stddev	.00461	.00317	.0256	.00074	.00100	.00320	.00151
%RSD	564.41	80.882	.90822	103.85	.82514	349.73	5810.2
#1	-.00349	.00057	2.8423	.00046	.12177	-.00411	.00165
#2	.00568	.00688	2.8359	.00154	.12199	-.00093	-.00133
#3	.00026	.00431	2.7951	.00013	.12016	.00229	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00022**	**.00128**	F **-.85743**
Stddev	.00061	.00012	.51842
%RSD	277.01	9.2989	60.462
#1	.00005	.00141	-1.4347
#2	.00021	.00118	-.70604
#3	-.00092	.00126	-.43156
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14006.**	**94684.**	**3470.6**
Stddev	67.	716.	60.0
%RSD	.48104	.75621	1.7279
#1	14058.	93926.	3430.9
#2	13930.	94778.	3441.3
#3	14030.	95349.	3539.6

Approved: March 31, 2017

Sample Name: L1703145605 Acquired: 3/30/2017 16:29:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00116**	**.08048**	**.00118**	**.01705**	**.03697**	**.00007**	**16.960**
Stddev	.00124	.00416	.00198	.00178	.00111	.00004	.021
%RSD	106.91	5.1668	167.59	10.442	3.0058	52.756	.12288
#1	.00064	.08512	.00333	.01580	.03814	.00012	16.978
#2	.00027	.07709	-.00059	.01908	.03593	.00004	16.965
#3	.00258	.07924	.00081	.01626	.03683	.00006	16.937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00033**	**-.00033**	**.00042**	**.00143**	**.24439**	**.62990**	**.00293**
Stddev	.00032	.00021	.00079	.00077	.00350	.03617	.00468
%RSD	97.597	63.430	187.09	53.643	1.4327	5.7428	159.56
#1	.00000	-.00011	-.00011	.00069	.24738	.63855	.00595
#2	.00064	-.00036	.00132	.00138	.24526	.59018	.00529
#3	.00034	-.00052	.00005	.00223	.24054	.66096	-.00246
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.7218**	**.09273**	**-.00016**	**2.9819**	**-.00071**	**.02333**	**.00262**
Stddev	.0691	.00139	.00014	.0904	.00117	.00905	.00226
%RSD	1.8557	1.4946	84.490	3.0319	165.16	38.786	86.170
#1	3.7500	.09201	-.00002	3.0736	-.00167	.03026	.00495
#2	3.7723	.09433	-.00029	2.9792	.00059	.02664	.00044
#3	3.6431	.09186	-.00016	2.8928	-.00105	.01309	.00247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: L1703145605 Acquired: 3/30/2017 16:29:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00157**	**-.00321**	**.61676**	**.00051**	**.07816**	**-.00137**	**-.00180**
Stddev	.00379	.00046	.00362	.00016	.00037	.00176	.00121
%RSD	241.81	14.277	.58635	32.226	.47976	128.71	66.863
#1	-.00268	-.00303	.61839	.00057	.07829	-.00338	-.00282
#2	.00265	-.00373	.61928	.00032	.07845	-.00060	-.00213
#3	-.00467	-.00287	.61262	.00063	.07773	-.00012	-.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00012**	**.00206**	F **-.15657**
Stddev	.00072	.00013	.47583
%RSD	624.32	6.3546	303.90
#1	-.00084	.00209	.39272
#2	.00060	.00192	-.44230
#3	-.00010	.00218	-.42012
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14120.**	**96354.**	**3518.4**
Stddev	99.	2138.	85.1
%RSD	.70113	2.2188	2.4178
#1	14057.	95186.	3469.1
#2	14234.	95055.	3469.4
#3	14069.	98822.	3616.6

Approved: March 31, 2017

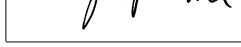
Sample Name: L1703145606 Acquired: 3/30/2017 16:33:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00131**	**.00262**	**.00161**	**.01649**	**.03651**	**.00003**	**16.629**	**.00025**
Stddev	.00143	.00426	.00191	.00141	.00011	.00004	.095	.00014
%RSD	108.73	163.02	118.69	8.5581	.30286	167.65	.56991	55.714
#1	.00296	.00133	.00365	.01568	.03643	.00007	16.738	.00020
#2	.00049	-.00086	.00132	.01812	.03647	.00001	16.572	.00015
#3	.00049	.00738	-.00014	.01568	.03664	-.00001	16.576	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**-.00037**	**.00126**	**.01991**	**.45581**	**.00118**	**3.6266**	**.07271**
Stddev	.00038	.00031	.00102	.00746	.11931	.00500	.1221	.00026
%RSD	156.32	82.488	80.898	37.470	26.176	422.22	3.3669	.35163
#1	-.00027	-.00062	.00237	.01743	.59301	.00232	3.5128	.07244
#2	.00015	-.00003	.00038	.02829	.37641	.00551	3.6115	.07295
#3	-.00062	-.00047	.00102	.01400	.39800	-.00428	3.7556	.07275
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**2.8482**	**.00002**	**.00732**	**.00183**	**-.00084**	**-.00258**	**.50032**
Stddev	.00045	.0290	.00105	.00810	.00176	.00330	.00127	.00103
%RSD	6206.1	1.0199	6935.3	110.76	96.101	391.92	49.142	.20533
#1	.00049	2.8509	-.00102	-.00200	-.00019	-.00238	-.00355	.49974
#2	-.00041	2.8758	-.00002	.01123	.00301	.00294	-.00304	.50150
#3	-.00006	2.8179	.00109	.01272	.00268	-.00309	-.00115	.49971
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 31, 2017



Sample Name: L1703145606 Acquired: 3/30/2017 16:33:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	TI1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.07663**	**-.00299**	**-.00153**	**-.00037**	**.00205**	**1.2676**
Stddev	.00056	.00033	.00709	.00317	.00055	.00020	.7213
%RSD	400.45	.42420	236.85	207.24	149.04	9.9782	56.899
#1	-.00074	.07646	-.00651	-.00279	-.00048	.00189	.75282
#2	-.00007	.07701	-.00765	-.00387	.00023	.00228	.95808
#3	.00038	.07643	.00517	.00208	-.00086	.00199	2.0920
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14059.**	**96786.**	**3493.6**
Stddev	77.	1264.	90.3
%RSD	.54506	1.3060	2.5848
#1	14103.	98041.	3520.1
#2	14103.	96804.	3567.8
#3	13970.	95513.	3393.1

Approved: March 31, 2017

Sample Name: L1703146101 Acquired: 3/30/2017 16:36:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**.02307**	**.00087**	**.02283**	**.46768**	**.00007**	**73.935**	**.00041**
Stddev	.00061	.00228	.00257	.00243	.00343	.00006	.331	.00020
%RSD	329.68	9.8748	295.33	10.662	.73445	83.719	.44765	47.285
#1	.00011	.02294	-.00078	.02318	.46762	.00004	74.116	.00062
#2	.00082	.02540	-.00044	.02024	.47115	.00003	74.135	.00037
#3	-.00038	.02085	.00383	.02506	.46428	.00013	73.553	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00067**	**.00052**	**.00199**	**-.00189**	**.34021**	**.00408**	**1.4633**	**.92797**
Stddev	.00041	.00080	.00090	.01534	.05187	.00176	.0387	.00398
%RSD	61.887	152.95	45.513	811.35	15.245	43.076	2.6426	.42897
#1	.00029	.00139	.00123	-.00216	.28461	.00209	1.4774	.92526
#2	.00061	-.00017	.00174	.01358	.34875	.00541	1.4929	.93254
#3	.00111	.00035	.00299	-.01710	.38728	.00474	1.4195	.92610
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**143.04**	**.00041**	**.00312**	**.00414**	**-.00399**	**-.00201**	**1.9282**
Stddev	.00021	1.31	.00095	.00326	.00452	.00306	.00638	.0024
%RSD	176.90	.91602	233.53	104.37	109.22	76.735	317.22	.12297
#1	-.00012	144.38	-.00029	.00679	.00614	-.00534	.00535	1.9308
#2	.00020	142.95	.00149	.00057	-.00104	-.00049	-.00590	1.9276
#3	.00027	141.77	.00003	.00201	.00731	-.00615	-.00548	1.9262
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 31, 2017

Sample Name: L1703146101 Acquired: 3/30/2017 16:36:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**.17849**	**-.00688**	**-.00024**	**-.00052**	**.00652**	**1.1903**
Stddev	.00040	.00104	.00920	.00239	.00037	.00018	.3592
%RSD	158.92	.58319	133.79	986.57	70.634	2.7875	30.179
#1	-.00066	.17734	-.00185	.00181	-.00025	.00669	1.4874
#2	-.00022	.17936	-.01749	-.00287	-.00094	.00654	1.2923
#3	.00013	.17877	-.00128	.00033	-.00037	.00633	.79109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13817.**	**93736.**	**3514.5**
Stddev	47.	677.	38.2
%RSD	.34258	.72222	1.0868
#1	13838.	94077.	3477.2
#2	13762.	94174.	3553.6
#3	13850.	92956.	3512.8

Approved: March 31, 2017

Sample Name: CCV Acquired: 3/30/2017 16:40:41 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41857**	**10.724**	**.41252**	**.50234**	**1.0839**	**.05393**	**10.551**
Stddev	.00228	.050	.00186	.00659	.0092	.00017	.062
%RSD	.54420	.47057	.45105	1.3109	.84830	.31187	.59222
#1	.41621	10.669	.41423	.49476	1.0907	.05376	10.599
#2	.42076	10.769	.41278	.50664	1.0735	.05410	10.480
#3	.41873	10.733	.41054	.50563	1.0876	.05395	10.574
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05411**	F **.22238**	**.54739**	**.54882**	**4.2219**	**54.563**	**1.0633**
Stddev	.00041	.00188	.00179	.00395	.0266	.148	.0047
%RSD	.75226	.84623	.32732	.71955	.62981	.27118	.44458
#1	.05437	.22342	.54547	.55157	4.2011	54.727	1.0637
#2	.05432	.22351	.54902	.55059	4.2128	54.438	1.0584
#3	.05364	.22021	.54770	.54429	4.2519	54.524	1.0678
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.20000					
Range		10.000%					

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.692**	**.53660**	**1.0682**	F **55.749**	F **.56553**	**10.318**	F **.56320**
Stddev	.023	.00685	.0097	.179	.00384	.062	.00364
%RSD	.21875	1.2757	.90483	.32054	.67889	.60205	.64655
#1	10.703	.54356	1.0745	55.865	.56883	10.353	.56723
#2	10.707	.52987	1.0732	55.543	.56644	10.356	.56224
#3	10.665	.53637	1.0571	55.839	.56131	10.247	.56014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Fail
Value				50.000	.50000		.50000
Range				10.000%	10.000%		10.000%

Approved: March 31, 2017

Sample Name: CCV Acquired: 3/30/2017 16:40:41 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2516**	**.41315**	F **5.5415**	F **1.1006**	**1.0710**	**1.0786**	**.54860**
Stddev	.0013	.00546	.0273	.0118	.0078	.0072	.00147
%RSD	.10691	1.3207	.49345	1.0724	.73233	.66258	.26887
#1	1.2528	.41219	5.5675	1.1083	1.0780	1.0867	.55018
#2	1.2518	.41902	5.5439	1.1065	1.0625	1.0734	.54835
#3	1.2501	.40824	5.5130	1.0870	1.0725	1.0756	.54726
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value			5.0000	1.0000			
Range			10.000%	10.000%			

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0956**	**1.0524**	F **1.2042**
Stddev	.0036	.0084	1.0376
%RSD	.33141	.79603	86.171
#1	1.0918	1.0578	.05085
#2	1.0990	1.0567	2.0621
#3	1.0959	1.0428	1.4996
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13107.**	**86165.**	**3280.0**
Stddev	60.	233.	36.0
%RSD	.46021	.26984	1.0968
#1	13172.	86150.	3321.0
#2	13052.	86404.	3253.8
#3	13098.	85940.	3265.1

Approved: March 31, 2017

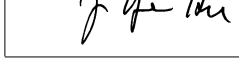
Sample Name: CCB Acquired: 3/30/2017 16:44:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00124**	**.00578**	**-.00008**	**.00123**	**.00590**	**.00018**	**.01613**
Stddev	.00092	.00592	.00095	.00206	.00182	.00009	.04095
%RSD	74.367	102.47	1148.4	167.56	30.817	50.246	253.88
#1	.00028	.00758	-.00090	-.00016	.00410	.00024	-.03112
#2	.00132	.01059	.00097	.00359	.00586	.00022	.03823
#3	.00211	-.00083	-.00032	.00026	.00774	.00008	.04128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**-.00068**	**.00045**	**.00155**	**-.00090**	**-.09896**	**-.00157**
Stddev	.00006	.00021	.00088	.00075	.03675	.23553	.00813
%RSD	61.316	30.749	193.31	48.599	4084.6	238.02	518.79
#1	.00004	-.00045	.00129	.00229	-.02327	-.24398	-.00958
#2	.00015	-.00086	.00053	.00079	-.02095	.17281	.00668
#3	.00008	-.00073	-.00046	.00157	.04152	-.22569	-.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.06552**	**.00052**	**-.00016**	**-.04505**	**-.00171**	**-.00147**	**.00074**
Stddev	.06436	.00196	.00014	.04716	.00074	.00541	.00316
%RSD	98.229	380.26	91.466	104.68	43.163	366.78	426.69
#1	-.13629	.00194	-.00031	-.09616	-.00103	.00472	-.00265
#2	-.04981	-.00173	-.00014	-.03577	-.00160	-.00525	.00361
#3	-.01047	.00134	-.00002	-.00322	-.00249	-.00389	.00126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017



Sample Name: CCB Acquired: 3/30/2017 16:44:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00594**	**-.00146**	**.00459**	**.00044**	**.00062**	**-.00457**	**-.00174**
Stddev	.00330	.00349	.00212	.00025	.00066	.00911	.00235
%RSD	55.492	239.70	46.272	56.751	106.86	199.43	135.11
#1	.00558	-.00419	.00703	.00069	.00042	.00051	-.00437
#2	.00941	.00247	.00361	.00019	.00008	-.01508	-.00103
#3	.00284	-.00265	.00313	.00046	.00136	.00087	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00033**	**.00021**	F **.53193**
Stddev	.00025	.00006	.15539
%RSD	74.254	30.916	29.212
#1	-.00060	.00021	.69382
#2	-.00027	.00027	.51799
#3	-.00012	.00014	.38398
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13434.**	**87605.**	**3294.8**
Stddev	155.	1385.	12.5
%RSD	1.1539	1.5807	.37793
#1	13255.	86624.	3302.4
#2	13522.	89189.	3280.4
#3	13526.	87002.	3301.6

Approved: March 31, 2017

Sample Name: L1703146301 Acquired: 3/30/2017 16:48:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00086**	**-.00047**	**-.00123**	**.04124**	**.10046**	**.00015**	**3.7455**
Stddev	.00055	.00183	.00275	.00073	.00176	.00005	.0631
%RSD	64.314	389.76	224.09	1.7633	1.7488	35.378	1.6845
#1	.00057	-.00243	.00105	.04045	.10082	.00015	3.6736
#2	.00150	-.00017	-.00045	.04188	.09855	.00021	3.7915
#3	.00051	.00119	-.00429	.04140	.10201	.00010	3.7714
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**-.00015**	**.00018**	**.02323**	**.43389**	**.09915**	**.00382**
Stddev	.00025	.00021	.00085	.00090	.01075	.09425	.00497
%RSD	97.358	139.98	481.43	3.8563	2.4768	95.053	130.14
#1	-.00001	-.00038	.00103	.02354	.44600	.19673	.00581
#2	.00047	-.00012	-.00067	.02393	.42549	.09210	.00748
#3	.00030	.00004	.00017	.02222	.43018	.00863	-.00184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.88824**	**.13466**	**-.00001**	**1.3964**	**.00669**	**.00276**	**.00560**
Stddev	.09215	.00070	.00041	.0590	.00046	.00664	.00362
%RSD	10.375	.51826	3614.2	4.2214	6.8995	240.57	64.619
#1	.78816	.13386	.00036	1.3834	.00701	-.00374	.00559
#2	.96959	.13512	.00006	1.4608	.00616	.00953	.00923
#3	.90697	.13500	-.00045	1.3450	.00691	.00249	.00199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: L1703146301 Acquired: 3/30/2017 16:48:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00159**	**-.00275**	**.35035**	**.00031**	**.10818**	**.00262**	**-.00115**
Stddev	.00128	.00729	.00232	.00047	.00105	.00509	.00214
%RSD	80.333	264.79	.66258	152.59	.97132	194.52	186.45
#1	-.00033	.00002	.35302	.00040	.10921	.00053	-.00065
#2	-.00156	.00274	.34880	-.00020	.10711	.00841	-.00349
#3	-.00288	-.01102	.34924	.00073	.10822	-.00109	.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00032**	**.01506**	F **-.18901**
Stddev	.00019	.00011	1.0656
%RSD	57.744	.73620	563.76
#1	-.00015	.01519	-.33250
#2	-.00052	.01500	-1.1756
#3	-.00029	.01500	.94103
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14225.**	**94989.**	**3515.5**
Stddev	59.	612.	97.7
%RSD	.41723	.64418	2.7791
#1	14246.	94835.	3404.2
#2	14157.	94469.	3555.3
#3	14270.	95663.	3587.1

Approved: March 31, 2017

Sample Name: L1703146401 Acquired: 3/30/2017 16:51:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00137**	**.17882**	**-.00067**	**2.4147**	**26.746**	**.00028**	F **854.97**
Stddev	.00127	.01015	.00275	.0051	.104	.00011	9.22
%RSD	92.815	5.6743	412.77	.21189	.38871	37.624	1.0789
#1	-.00284	.17138	-.00384	2.4090	26.653	.00019	847.76
#2	-.00057	.17471	.00081	2.4164	26.726	.00025	851.77
#3	-.00071	.19038	.00104	2.4188	26.858	.00040	865.36
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00052**	**.00528**	**.00781**	**.05084**	**33.518**	**147.35**	**13.976**
Stddev	.00024	.00009	.00078	.00440	.166	1.13	.078
%RSD	46.959	1.7039	9.9695	8.6455	.49615	.76954	.55785
#1	.00076	.00530	.00837	.05327	33.417	146.05	13.886
#2	.00028	.00518	.00692	.05348	33.428	147.94	14.015
#3	.00051	.00536	.00812	.04577	33.710	148.07	14.027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**74.644**	**.23839**	**.00237**	F **3631.1**	**-.00281**	**.02895**	**.02383**
Stddev	.506	.00011	.00029	81.1	.00077	.00834	.00378
%RSD	.67733	.04424	12.128	2.2344	27.530	28.795	15.875
#1	74.253	.23844	.00266	3680.3	-.00370	.03806	.02064
#2	74.463	.23846	.00237	3537.5	-.00227	.02711	.02801
#3	75.215	.23827	.00208	3675.6	-.00247	.02169	.02283
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				360.00			
Low Limit				-.50000			

Approved: March 31, 2017

Sample Name: L1703146401 Acquired: 3/30/2017 16:51:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00926**	F **-.01520**	**2.0712**	**-.00041**	F **170.63**	F **-.08951**	**-.00149**
Stddev	.00267	.00202	.1288	.00068	3.60	.00807	.00438
%RSD	28.857	13.318	6.2205	162.90	2.1109	9.0141	293.70
#1	.01234	-.01735	2.1449	-.00110	166.49	-.08150	-.00616
#2	.00785	-.01490	2.1464	-.00039	173.03	-.08938	.00251
#3	.00759	-.01334	1.9225	.00025	172.38	-.09764	-.00081
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Pass
High Limit		90.000			9.0000	45.000	
Low Limit		-.01000			-.01000	-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00058**	**.06117**	F **-4.7071**
Stddev	.00067	.00369	.5862
%RSD	116.09	6.0365	12.453
#1	.00004	.06314	-4.9881
#2	-.00129	.06346	-5.0998
#3	-.00048	.05691	-4.0333
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10625.**	**68799.**	**3075.1**
Stddev	88.	501.	62.2
%RSD	.82922	.72788	2.0214
#1	10525.	69014.	3130.8
#2	10655.	69156.	3086.4
#3	10693.	68227.	3008.1

Approved: March 31, 2017

Sample Name: L1703146401 Acquired: 3/30/2017 16:55:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**.02074**	**-.00051**	**.21502**	**2.4058**	**.00010**	**91.249**
Stddev	.00068	.00325	.00048	.00363	.0062	.00003	.234
%RSD	646.37	15.679	92.467	1.6900	.25909	26.456	.25596
#1	.00046	.02417	-.00088	.21299	2.3986	.00007	91.069
#2	.00053	.01771	.00002	.21285	2.4100	.00011	91.165
#3	-.00068	.02035	-.00068	.21921	2.4087	.00011	91.513
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00021**	**.00022**	**.00133**	**.00648**	**3.1201**	**13.050**	**1.2123**
Stddev	.00005	.00032	.00088	.00052	.0152	.101	.0095
%RSD	25.890	150.11	66.288	8.0284	.48716	.77652	.78204
#1	.00025	-.00016	.00032	.00670	3.1058	12.987	1.2044
#2	.00015	.00042	.00174	.00685	3.1361	13.167	1.2096
#3	.00024	.00038	.00192	.00588	3.1185	12.996	1.2228
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.1127**	**.02147**	**.00017**	F **460.28**	**-.00041**	**.00134**	**.00450**
Stddev	.1393	.00218	.00079	1.74	.00150	.00277	.00397
%RSD	1.9582	10.150	470.19	.37801	364.60	206.59	88.109
#1	6.9539	.02090	-.00050	461.16	.00013	.00451	.00039
#2	7.1703	.01963	.00103	458.27	-.00210	-.00059	.00481
#3	7.2141	.02387	-.00004	461.39	.00074	.00010	.00831
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				360.00			
Low Limit				-.50000			

Approved: March 31, 2017

Sample Name: L1703146401 Acquired: 3/30/2017 16:55:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00517**	**-.00115**	**.18096**	**-.00018**	F **16.831**	**-.00823**	**-.00247**
Stddev	.00133	.00384	.00050	.00085	.038	.00063	.00057
%RSD	25.785	333.05	.27650	472.12	.22452	7.5963	22.881
#1	.00559	.00078	.18149	.00026	16.794	-.00877	-.00193
#2	.00368	-.00558	.18049	-.00116	16.829	-.00755	-.00306
#3	.00625	.00134	.18090	.00036	16.869	-.00838	-.00242
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00038**	**.00651**	F **-1.7662**
Stddev	.00097	.00012	1.7322
%RSD	254.01	1.8787	98.074
#1	.00125	.00638	-3.6987
#2	.00057	.00663	-.35323
#3	-.00067	.00651	-1.2467
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13054.**	**86455.**	**3382.5**
Stddev	225.	1440.	10.1
%RSD	1.7200	1.6655	.29743
#1	13294.	86069.	3371.8
#2	12849.	85247.	3384.0
#3	13019.	88048.	3391.8

Approved: March 31, 2017

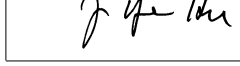
Sample Name: L1703146401 Acquired: 3/30/2017 16:59:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00190**	**-.00648**	**.00087**	**.02019**	**.24574**	**.00017**	**9.0796**
Stddev	.00022	.00653	.00173	.00099	.00292	.00013	.1434
%RSD	11.655	100.85	198.16	4.9279	1.1898	72.659	1.5788
#1	.00171	-.00173	.00013	.02092	.24895	.00011	8.9605
#2	.00184	-.00377	.00285	.02059	.24324	.00010	9.0396
#3	.00214	-.01393	-.00036	.01906	.24502	.00032	9.2387
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**-.00003**	**-.00051**	**.00122**	**.26689**	**1.2199**	**.11630**
Stddev	.00022	.00051	.00026	.00105	.00747	.0698	.00421
%RSD	112.97	1578.0	51.711	85.736	2.7980	5.7182	3.6178
#1	-.00041	.00012	-.00079	.00105	.25914	1.2970	.11403
#2	.00004	.00038	-.00027	.00027	.27404	1.2013	.11371
#3	-.00022	-.00060	-.00047	.00234	.26749	1.1612	.12115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.70065**	**.00274**	**-.00030**	**48.230**	**-.00164**	**.00443**	**-.00095**
Stddev	.01278	.00306	.00022	.339	.00040	.00568	.00131
%RSD	1.8247	111.83	73.621	.70326	24.162	128.17	138.28
#1	.70142	.00560	-.00005	48.118	-.00146	-.00210	-.00039
#2	.71303	.00310	-.00037	47.961	-.00210	.00819	-.00001
#3	.68749	-.00049	-.00047	48.611	-.00137	.00720	-.00244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017



Sample Name: L1703146401 Acquired: 3/30/2017 16:59:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00334**	**.00187**	**.01902**	**.00015**	**1.6613**	**.00289**	**-.00110**
Stddev	.00427	.00155	.00210	.00011	.0113	.00296	.00075
%RSD	127.63	82.686	11.034	75.280	.67841	102.13	68.264
#1	.00483	.00012	.02107	.00003	1.6575	.00361	-.00146
#2	-.00147	.00244	.01688	.00018	1.6524	-.00035	-.00024
#3	.00667	.00305	.01911	.00025	1.6739	.00543	-.00161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00027**	**.00097**	F **-.59253**
Stddev	.00078	.00014	1.7006
%RSD	288.79	14.665	287.00
#1	.00062	.00111	.95825
#2	-.00083	.00082	-2.4111
#3	-.00060	.00097	-.32472
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13589.**	**88894.**	**3276.0**
Stddev	119.	387.	67.6
%RSD	.87447	.43520	2.0630
#1	13453.	89294.	3216.7
#2	13647.	88522.	3261.7
#3	13669.	88866.	3349.6

Approved: March 31, 2017

Sample Name: L1703150201 Acquired: 3/30/2017 17:03:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00256**	**.01694**	**-.00099**	**.03065**	**.00272**	**.00006**	**.16114**	**.00014**
Stddev	.00118	.00814	.00063	.00174	.00099	.00009	.01073	.00011
%RSD	45.996	48.027	64.386	5.6687	36.567	156.61	6.6603	79.621
#1	.00233	.01321	-.00165	.03110	.00355	-.00000	.15062	.00028
#2	.00383	.02627	-.00038	.02873	.00162	.00001	.16073	.00007
#3	.00151	.01134	-.00092	.03212	.00300	.00017	.17207	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**-.00039**	**.00148**	**.07422**	**.33492**	**-.00060**	**.01422**	**.00050**
Stddev	.00008	.00051	.00041	.02771	.10819	.00221	.01821	.00223
%RSD	184.57	129.47	27.597	37.337	32.303	370.80	128.02	441.92
#1	-.00007	-.00072	.00104	.04339	.21210	-.00053	.02328	.00307
#2	-.00011	-.00066	.00185	.08221	.37654	-.00284	.02612	-.00098
#3	.00005	.00019	.00154	.09706	.41612	.00158	-.00674	-.00057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**145.52**	**-.00090**	**.02151**	**.00465**	**-.00047**	**-.00052**	**7.6093**
Stddev	.00021	.15	.00063	.00300	.00226	.00266	.00202	.0696
%RSD	144.05	.10066	70.410	13.956	48.649	561.59	391.49	.91505
#1	-.00019	145.67	-.00096	.01916	.00205	-.00176	.00172	7.6521
#2	.00008	145.51	-.00150	.02489	.00614	.00259	-.00104	7.6469
#3	-.00032	145.38	-.00024	.02047	.00577	-.00224	-.00222	7.5290
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 31, 2017

Sample Name: L1703150201 Acquired: 3/30/2017 17:03:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.00210**	**-.00524**	**-.00225**	**.00006**	**.00760**	**1.2235**
Stddev	.00048	.00042	.00739	.00330	.00091	.00026	.6749
%RSD	679.69	20.022	140.97	146.33	1541.7	3.4012	55.165
#1	-.00028	.00194	.00211	.00019	.00094	.00746	.48019
#2	-.00041	.00178	-.00517	-.00601	.00012	.00790	1.7980
#3	.00048	.00258	-.01267	-.00094	-.00088	.00744	1.3922
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13954.**	**93146.**	**3431.7**
Stddev	96.	1334.	74.8
%RSD	.68956	1.4323	2.1788
#1	14064.	92849.	3413.1
#2	13890.	94603.	3514.0
#3	13907.	91985.	3368.0

Approved: March 31, 2017

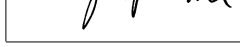
Sample Name: L1703150701 Acquired: 3/30/2017 17:07:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00289**	**.12051**	**-.00244**	**.02164**	**.05562**	**.00002**	**44.994**	**-.00014**
Stddev	.00098	.00389	.00530	.00086	.00164	.00003	.232	.00010
%RSD	33.807	3.2286	216.86	3.9579	2.9520	136.05	.51648	71.414
#1	.00213	.12141	-.00556	.02201	.05467	.00001	44.926	-.00008
#2	.00255	.12386	.00367	.02224	.05751	-.00000	45.252	-.00025
#3	.00399	.11624	-.00544	.02066	.05467	.00005	44.803	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.00095**	**.00106**	**.06834**	**.45958**	**.00637**	**5.6168**	**.00428**
Stddev	.00031	.00055	.00133	.03438	.19413	.00219	.0944	.00199
%RSD	199.85	57.928	125.38	50.299	42.242	34.342	1.6811	46.372
#1	.00018	.00125	-.00038	.06360	.24826	.00805	5.5953	.00296
#2	-.00021	.00031	.00132	.03658	.50046	.00717	5.7201	.00657
#3	-.00043	.00128	.00223	.10484	.63002	.00390	5.5350	.00333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00038**	**20.450**	**-.00061**	**.02531**	**.00107**	**-.00040**	**.00044**	**3.5530**
Stddev	.00006	.151	.00082	.00301	.00064	.00246	.00096	.0033
%RSD	14.672	.73689	134.30	11.874	59.692	615.66	215.22	.09320
#1	.00033	20.329	-.00125	.02816	.00175	.00243	.00100	3.5555
#2	.00044	20.619	-.00091	.02217	.00100	-.00204	.00099	3.5543
#3	.00037	20.402	.00032	.02559	.00048	-.00159	-.00066	3.5493
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 31, 2017



Sample Name: L1703150701 Acquired: 3/30/2017 17:07:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**.17636**	**.00014**	**-.00241**	**-.00073**	**.00171**	**.18202**
Stddev	.00014	.00128	.00470	.00032	.00042	.00011	.61497
%RSD	991.97	.72769	3468.6	13.176	56.858	6.2925	337.87
#1	.00000	.17722	-.00160	-.00217	-.00116	.00159	-.46943
#2	.00016	.17697	.00546	-.00277	-.00070	.00173	.26300
#3	-.00012	.17488	-.00345	-.00229	-.00033	.00180	.75249
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14054.**	**94909.**	**3514.2**
Stddev	14.	1199.	52.0
%RSD	.09971	1.2629	1.4784
#1	14057.	93654.	3549.7
#2	14065.	96042.	3454.6
#3	14038.	95031.	3538.4

Approved: March 31, 2017

Sample Name: L1703150702 Acquired: 3/30/2017 17:10:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00047**	**.04756**	**.01207**	**.02314**	**.31759**	**.00012**	**52.089**
Stddev	.00169	.00114	.00114	.00301	.00277	.00006	.381
%RSD	355.96	2.4011	9.4579	13.012	.87269	45.173	.73070
#1	-.00014	.04834	.01320	.02323	.31512	.00016	51.954
#2	.00102	.04809	.01209	.02610	.31705	.00015	51.793
#3	-.00230	.04625	.01092	.02008	.32059	.00006	52.518
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00023**	**-.00044**	**.00048**	**.03249**	**5.6165**	**.88708**	**.00518**
Stddev	.00019	.00039	.00052	.00058	.0339	.13526	.00349
%RSD	83.128	88.164	108.33	1.7915	.60436	15.247	67.522
#1	.00042	-.00082	.00002	.03213	5.5793	.99516	.00917
#2	.00022	-.00004	.00105	.03317	5.6246	.93069	.00268
#3	.00004	-.00047	.00037	.03219	5.6457	.73540	.00368
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.3261**	**.25459**	**.00068**	**22.332**	**-.00063**	**.19262**	**.00622**
Stddev	.0742	.00335	.00023	.023	.00026	.00202	.00238
%RSD	1.0130	1.3145	33.411	.10078	41.165	1.0483	38.340
#1	7.2673	.25092	.00042	22.339	-.00092	.19430	.00846
#2	7.3015	.25748	.00085	22.307	-.00043	.19318	.00647
#3	7.4095	.25535	.00077	22.351	-.00054	.19038	.00372
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: L1703150702 Acquired: 3/30/2017 17:10:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**-.00219**	**4.7792**	**.00043**	**.37055**	**-.00439**	**-.00234**
Stddev	.00402	.00246	.0165	.00039	.00141	.00710	.00334
%RSD	10660.	112.39	.34497	89.706	.37958	161.96	142.85
#1	-.00168	-.00312	4.7740	.00001	.36956	-.01200	-.00219
#2	-.00297	-.00404	4.7977	.00079	.36993	-.00321	.00093
#3	.00454	.00060	4.7660	.00050	.37216	.00206	-.00576
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00026**	**.00381**	F **-.73183**
Stddev	.00084	.00009	1.1013
%RSD	322.51	2.3459	150.49
#1	-.00008	.00384	-1.0623
#2	.00122	.00371	.49688
#3	-.00036	.00388	-1.6301
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14152.**	**95438.**	**3600.0**
Stddev	60.	1643.	55.9
%RSD	.42542	1.7211	1.5516
#1	14142.	97023.	3544.4
#2	14217.	93744.	3599.5
#3	14098.	95549.	3656.1

Approved: March 31, 2017

Sample Name: L1703150703 Acquired: 3/30/2017 17:14:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00141**	**.19794**	**-.00033**	**.02724**	**.12388**	**.00001**	**47.243**
Stddev	.00244	.00037	.00268	.00128	.00127	.00004	.348
%RSD	172.90	.18809	804.28	4.7048	1.0237	766.64	.73619
#1	.00338	.19778	-.00119	.02847	.12441	-.00004	47.517
#2	-.00132	.19767	-.00248	.02733	.12480	.00003	47.360
#3	.00218	.19836	.00267	.02591	.12243	.00003	46.852
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**-.00029**	**-.00004**	**.00190**	**.13021**	**.82314**	**.01230**
Stddev	.00015	.00037	.00064	.00170	.01531	.10587	.00084
%RSD	204.91	127.30	1485.4	89.439	11.754	12.861	6.8115
#1	.00001	-.00068	-.00002	.00015	.14145	.92135	.01198
#2	.00025	-.00027	.00059	.00200	.11278	.71100	.01167
#3	-.00004	.00007	-.00070	.00354	.13641	.83707	.01325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.2256**	**.02024**	**.00073**	**24.433**	**-.00043**	**.01811**	**.00283**
Stddev	.0723	.00206	.00025	.238	.00027	.00068	.00417
%RSD	1.0006	10.190	34.709	.97212	62.394	3.7395	147.55
#1	7.2503	.02019	.00073	24.643	-.00060	.01841	-.00081
#2	7.2824	.01820	.00048	24.481	-.00012	.01858	.00738
#3	7.1443	.02233	.00098	24.175	-.00058	.01733	.00192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: L1703150703 Acquired: 3/30/2017 17:14:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00263**	**.00381**	**4.8811**	**.00057**	**.33961**	**.00072**	**-.00037**
Stddev	.00222	.00502	.0173	.00015	.00190	.00272	.00112
%RSD	84.273	131.70	.35527	26.928	.55822	376.00	301.17
#1	-.00051	.00943	4.8619	.00044	.33952	.00384	-.00110
#2	-.00245	-.00024	4.8957	.00074	.34155	-.00120	.00092
#3	-.00493	.00225	4.8857	.00054	.33776	-.00046	-.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00056**	**.00144**	F **-.46479**
Stddev	.00052	.00017	.60732
%RSD	93.746	11.815	130.66
#1	-.00110	.00129	-.28065
#2	-.00050	.00142	.02914
#3	-.00006	.00163	-1.1429
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14285.**	**95311.**	**3514.2**
Stddev	63.	1055.	88.5
%RSD	.43757	1.1069	2.5190
#1	14267.	95634.	3415.8
#2	14234.	96166.	3539.2
#3	14355.	94132.	3587.5

Approved: March 31, 2017

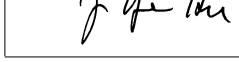
Sample Name: L1703150704 Acquired: 3/30/2017 17:18:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00076**	**.41811**	**.00014**	**.02242**	**.04034**	**.00007**	**44.383**
Stddev	.00077	.00821	.00187	.00182	.00079	.00003	.757
%RSD	102.16	1.9639	1294.6	8.1123	1.9643	40.401	1.7048
#1	.00005	.40976	-.00066	.02059	.04026	.00009	45.218
#2	.00158	.42618	-.00118	.02422	.04117	.00004	43.741
#3	.00064	.41840	.00228	.02246	.03959	.00007	44.191
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00028**	**-.00083**	**.00081**	**.00188**	**.22233**	**.91872**	**.00312**
Stddev	.00021	.00039	.00063	.00150	.00628	.18144	.00144
%RSD	77.090	46.956	77.888	79.327	2.8250	19.750	46.013
#1	.00033	-.00112	.00010	.00176	.22670	.81988	.00321
#2	.00046	-.00039	.00103	.00046	.22516	.80816	.00452
#3	.00004	-.00098	.00130	.00344	.21513	1.1281	.00165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.3145**	**.00404**	**.00019**	**23.049**	**-.00035**	**.02959**	**.00254**
Stddev	.0674	.00288	.00016	.476	.00026	.00125	.00319
%RSD	1.2686	71.273	87.772	2.0670	72.981	4.2167	125.81
#1	5.3764	.00114	.00002	23.579	-.00009	.03046	-.00013
#2	5.2426	.00689	.00035	22.656	-.00061	.03016	.00607
#3	5.3244	.00408	.00019	22.913	-.00036	.02816	.00167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017



Sample Name: L1703150704 Acquired: 3/30/2017 17:18:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00091**	**-.00533**	**4.3783**	**.00059**	**.14809**	**-.00269**	**.00065**
Stddev	.00587	.00287	.0076	.00038	.00257	.01228	.00223
%RSD	643.77	53.807	.17277	64.374	1.7350	456.85	341.65
#1	.00586	-.00421	4.3817	.00032	.15046	-.01634	.00282
#2	-.00433	-.00859	4.3836	.00042	.14536	.00745	-.00164
#3	-.00427	-.00320	4.3697	.00102	.14845	.00083	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00065**	**.00219**	F **-.08821**
Stddev	.00075	.00007	.41269
%RSD	115.49	2.9950	467.85
#1	.00150	.00222	-.27133
#2	.00004	.00223	.38435
#3	.00042	.00211	-.37766
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14077.**	**93649.**	**3601.5**
Stddev	137.	1480.	130.7
%RSD	.97118	1.5808	3.6278
#1	14057.	93960.	3485.2
#2	14222.	94950.	3742.9
#3	13951.	92038.	3576.5

Approved: March 31, 2017

Sample Name: CCV Acquired: 3/30/2017 17:21:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39375**	**10.052**	**.39324**	**.47747**	**1.0270**	**.05080**	**10.096**
Stddev	.00234	.071	.00211	.00216	.0104	.00013	.155
%RSD	.59314	.71083	.53740	.45195	1.0084	.26464	1.5400
#1	.39106	10.066	.39402	.47917	1.0232	.05078	10.009
#2	.39527	10.116	.39085	.47820	1.0387	.05095	10.275
#3	.39493	9.9748	.39485	.47504	1.0190	.05068	10.003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05126**	**.20991**	**.51512**	**.51993**	**4.0069**	**52.523**	**1.0135**
Stddev	.00015	.00051	.00361	.00132	.0303	.297	.0143
%RSD	.28961	.24303	.70121	.25383	.75754	.56461	1.4144
#1	.05115	.21039	.51719	.52145	4.0175	52.555	1.0220
#2	.05143	.20995	.51722	.51927	4.0305	52.802	1.0215
#3	.05120	.20938	.51095	.51907	3.9727	52.211	.99691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.146**	**.51108**	**1.0099**	**53.418**	**.53323**	**9.7359**	**.53048**
Stddev	.128	.00938	.0037	.507	.00144	.0110	.00123
%RSD	1.2649	1.8360	.37151	.94990	.27023	.11297	.23239
#1	10.001	.50713	1.0123	53.471	.53414	9.7432	.52959
#2	10.247	.52180	1.0118	53.896	.53398	9.7414	.52997
#3	10.189	.50432	1.0056	52.885	.53157	9.7233	.53189
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 31, 2017

Sample Name: CCV Acquired: 3/30/2017 17:21:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1847**	**.38876**	**5.2536**	**1.0389**	**1.0174**	**1.0266**	**.52094**
Stddev	.0018	.00276	.0272	.0041	.0079	.0135	.00080
%RSD	.15554	.71004	.51676	.39141	.77220	1.3171	.15366
#1	1.1863	.39150	5.2847	1.0409	1.0162	1.0205	.52172
#2	1.1827	.38598	5.2415	1.0416	1.0258	1.0421	.52012
#3	1.1850	.38881	5.2346	1.0342	1.0103	1.0171	.52096
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0311**	**.99523**	F **.76698**
Stddev	.0042	.00308	.33602
%RSD	.40268	.30990	43.810
#1	1.0313	.99788	1.1473
#2	1.0351	.99596	.64322
#3	1.0269	.99184	.51039
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13779.**	**92913.**	**3417.3**
Stddev	76.	2006.	53.7
%RSD	.55159	2.1589	1.5718
#1	13788.	91894.	3427.5
#2	13850.	91621.	3465.2
#3	13699.	95224.	3359.2

Approved: March 31, 2017

Sample Name: CCB Acquired: 3/30/2017 17:25:33 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00349**	**-.01036**	**-.00252**	**.00030**	**.00371**	**.00001**	**-.02890**
Stddev	.00117	.00522	.00264	.00322	.00194	.00007	.05275
%RSD	33.455	50.344	104.48	1069.0	52.474	727.61	182.53
#1	.00476	-.01555	-.00170	.00258	.00147	-.00000	-.02484
#2	.00246	-.01042	-.00040	-.00338	.00462	-.00006	-.08356
#3	.00326	-.00512	-.00547	.00170	.00502	.00009	.02170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**-.00065**	**-.00015**	**.00082**	**-.01665**	**.01288**	**.00229**
Stddev	.00015	.00017	.00036	.00090	.01952	.10257	.00506
%RSD	54.379	26.380	233.82	109.79	117.24	796.43	220.59
#1	.00010	-.00054	-.00050	.00134	-.03498	.12821	.00338
#2	.00032	-.00085	.00022	-.00022	-.01884	-.06812	.00672
#3	.00038	-.00057	-.00018	.00133	.00387	-.02145	-.00322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.04503**	**.00027**	**-.00002**	**-.10103**	**-.00088**	**-.00166**	**.00091**
Stddev	.06498	.00241	.00017	.03477	.00050	.00701	.00018
%RSD	144.30	890.16	795.62	34.414	57.106	421.12	19.984
#1	-.03225	.00293	.00018	-.12666	-.00030	.00593	.00070
#2	.01261	-.00178	-.00010	-.11497	-.00123	-.00304	.00103
#3	-.11546	-.00033	-.00014	-.06145	-.00111	-.00788	.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 31, 2017

Sample Name: CCB Acquired: 3/30/2017 17:25:33 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1279) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00442**	**.00042**	**.00443**	**.00060**	**.00038**	**-.00420**	**-.00121**
Stddev	.00232	.00258	.00112	.00036	.00038	.00342	.00144
%RSD	52.633	620.12	25.256	59.757	99.924	81.465	118.94
#1	.00608	.00328	.00558	.00031	.00078	-.00722	-.00234
#2	.00176	-.00029	.00439	.00050	.00003	-.00049	-.00169
#3	.00542	-.00174	.00334	.00100	.00032	-.00489	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00029**	**.00013**	F **-1.4029**
Stddev	.00066	.00013	.6295
%RSD	223.12	101.17	44.871
#1	.00074	-.00002	-.98822
#2	.00060	.00021	-1.0932
#3	-.00046	.00019	-2.1272
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14025.**	**95193.**	**3485.3**
Stddev	111.	309.	36.9
%RSD	.79356	.32442	1.0590
#1	14046.	95514.	3503.5
#2	13905.	95167.	3509.5
#3	14125.	94898.	3442.8

Approved: March 31, 2017

2.2.2 Metals ICP-MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	126F-032117	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/27/2017 11:33
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/27/2017 14:31
Collect Date:	03/21/2017 08:15	**Dilution:**	1	**File ID:**	NI.032717.143118
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00938		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000623	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00258	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.0294		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00355	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0229		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000209	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0479	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	126F-032117	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/29/2017 12:57
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/29/2017 16:58
Collect Date:	03/21/2017 08:15	**Dilution:**	100	**File ID:**	NI.032917.165815
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	9.98		0.600	0.300	0.150
Manganese, Total	7439-96-5	0.533		0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	126FDF-032117	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/27/2017 11:33
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/27/2017 14:34
Collect Date:	03/21/2017 08:15	**Dilution:**	1	**File ID:**	NI.032717.143424
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00854		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000447	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00280	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.0281		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00358	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0225		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000110	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0412	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	126FDF-032117	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/29/2017 12:57
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/29/2017 17:01
Collect Date:	03/21/2017 08:15	**Dilution:**	100	**File ID:**	NI.032917.170121
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	9.70		0.600	0.300	0.150
Manganese, Total	7439-96-5	0.505		0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW2-032117	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/27/2017 11:33
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/27/2017 14:37
Collect Date:	03/21/2017 09:35	**Dilution:**	1	**File ID:**	NI.032717.143728
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00860		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000652	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0176		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.0578		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00252	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0467		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0967		0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW2-032117	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/29/2017 12:57
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/29/2017 17:04
Collect Date:	03/21/2017 09:35	**Dilution:**	100	**File ID:**	NI.032917.170426
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	2.98		0.600	0.300	0.150
Manganese, Total	7439-96-5	3.45		0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW01DW-032117	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/27/2017 11:33
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/27/2017 14:40
Collect Date:	03/21/2017 10:35	**Dilution:**	1	**File ID:**	NI.032717.144034
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00576		0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.249		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0184		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00121	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00196	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.122		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00467	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000174	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW01SW-032117	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/27/2017 11:33
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/27/2017 14:43
Collect Date:	03/21/2017 11:35	**Dilution:**	1	**File ID:**	NI.032717.144339
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.0169		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00200	U	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00138	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00110	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00308	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000117	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW01SW-032117	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/29/2017 12:57
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/29/2017 17:07
Collect Date:	03/21/2017 11:35	**Dilution:**	10	**File ID:**	NI.032917.170731
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	1.01		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	0.639		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW13-032117	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/27/2017 11:33
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/27/2017 14:46
Collect Date:	03/21/2017 13:40	**Dilution:**	1	**File ID:**	NI.032717.144644
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00478		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000419	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0478		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00180	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00599		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0665		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000175	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00114	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0232	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW13-032117	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/29/2017 12:57
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/29/2017 17:10
Collect Date:	03/21/2017 13:40	**Dilution:**	10	**File ID:**	NI.032917.171037
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.526		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	1.36		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-09	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW13FD-032117	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/27/2017 11:33
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/27/2017 14:49
Collect Date:	03/21/2017 13:40	**Dilution:**	1	**File ID:**	NI.032717.144950
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00449		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000338	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0519		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00193	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00693		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.000752	J	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0707		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000113	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00174	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0244	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-09	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW13FD-032117	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/29/2017 12:57
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/29/2017 17:13
Collect Date:	03/21/2017 13:40	**Dilution:**	10	**File ID:**	NI.032917.171342
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.512		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	1.35		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-11	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	CO2F-032117	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/27/2017 11:33
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/27/2017 14:52
Collect Date:	03/21/2017 14:40	**Dilution:**	1	**File ID:**	NI.032717.145255
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00137	J	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000345	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00200	U	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.000518	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00171	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00400	U	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000133	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0152	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-11	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	CO2F-032117	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/29/2017 12:57
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/29/2017 17:23
Collect Date:	03/21/2017 14:40	**Dilution:**	10	**File ID:**	NI.032917.172302
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.874		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	1.43		0.0400	0.0200	0.0100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-13	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW16F-032217	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/27/2017 11:33
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/27/2017 14:56
Collect Date:	03/22/2017 08:45	**Dilution:**	1	**File ID:**	NI.032717.145600
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00650		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000689	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00787		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00581		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00135	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0438		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000107	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0206	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-13	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW16F-032217	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/29/2017 12:57
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/29/2017 17:26
Collect Date:	03/22/2017 08:45	**Dilution:**	10	**File ID:**	NI.032917.172608
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.471		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	0.555		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-15	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW19F-032217	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/27/2017 11:33
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/27/2017 14:59
Collect Date:	03/22/2017 10:00	**Dilution:**	1	**File ID:**	NI.032717.145905
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.0186		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.00499		0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.184		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.0315		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.0967		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.0530		0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.128		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.00108		0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.203		0.00200	0.00100	0.000500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-15	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW19F-032217	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/29/2017 12:57
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/29/2017 17:29
Collect Date:	03/22/2017 10:00	**Dilution:**	10	**File ID:**	NI.032917.172913
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.790		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	1.85		0.0400	0.0200	0.0100
Zinc, Total	7440-66-6	0.606		0.500	0.250	0.125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

2.2.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG607689
Analyst: VC
Spike Analyst: VC
Run Date: 03/27/2017 07:19
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 03/27/2017 07:50

SOP: ME407 Revison 19
Spike Solution: STD78216
Spike Witness: ERP
40 & 50 ML. DIGESTION TU COA19487
MS Filters- fisher-Lot#R RGT38288
HNO3 Lot #: COA19483

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG607689-02	BLANK	1	20 mL	50 mL	184.391 g	184.377 g		
2	WG607689-04	FLT_BLK	1	20 mL	50 mL	185.484 g	185.451 g		
3	WG607689-03	LCS	1	20 mL	50 mL	183.423 g	183.409 g	.25 mL	
4	L17031313-01	SAMP	1	20 mL	50 mL	184.479 g	184.453 g		04/03/17
5	L17031313-02	SAMP	1	20 mL	50 mL	183.184 g	183.171 g		04/03/17
6	L17031313-03	SAMP	1	20 mL	50 mL	183.732 g	183.697 g		04/03/17
7	L17031313-04	SAMP	1	20 mL	50 mL	182.772 g	182.73 g		04/03/17
8	L17031339-02	SAMP	1	20 mL	50 mL	186.022 g	185.961 g		04/03/17
9	L17031339-04	SAMP	1	20 mL	50 mL	183.172 g	183.126 g		04/03/17
10	L17031339-05	SAMP	1	20 mL	50 mL	183.174 g	183.162 g		04/03/17
11	L17031339-06	SAMP	1	20 mL	50 mL	184.569 g	184.557 g		04/03/17
12	L17031339-07	SAMP	1	20 mL	50 mL	183.377 g	183.358 g		04/03/17
13	L17031339-08	SAMP	1	20 mL	50 mL	181.477 g	181.459 g		04/03/17
14	L17031339-09	SAMP	1	20 mL	50 mL	183.646 g	183.641 g		04/03/17
15	L17031339-11	SAMP	1	20 mL	50 mL	183.474 g	183.466 g		04/03/17
16	L17031339-13	SAMP	1	20 mL	50 mL	184.816 g	184.802 g		04/03/17
17	L17031339-15	SAMP	1	20 mL	50 mL	181.609 g	181.566 g		04/03/17
18	L17031370-01	SAMP	1	20 mL	50 mL	182.024 g	182.014 g		03/30/17
19	L17031370-02	SAMP	1	20 mL	50 mL	184.156 g	184.149 g		03/30/17
20	L17031370-03	SAMP	1	20 mL	50 mL	183.891 g	183.875 g		03/30/17
21	L17031370-04	SAMP	1	20 mL	50 mL	185.711 g	185.688 g		03/30/17
22	WG607689-01	REF	1	20 mL	50 mL	184.879 g	184.859 g		
23	L17031370-05	SAMP	1	20 mL	50 mL	184.879 g	184.859 g		03/30/17
24	WG607689-05	MS	1	20 mL	50 mL	185.262 g	185.238 g	.25 mL	
25	WG607689-06	MSD	1	20 mL	50 mL	182.656 g	182.646 g	.25 mL	

L17031339-15	FILTERED DIGESTATE

Analyst: Vicki Collins

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 5216924
Report generated: 03/27/2017 08:50

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 032717A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 3
Maintenance Log ID:

Calibration Std: STD80851 ICV Std: STD80849 Post Spike: STD79415
ICSA: STD80854 ICSAB: STD81136 Int. Std: RGT39300
CCV: STD81129 LLCCV: STD80853 Tuning Sol : STD80856
Stannous : Hydroxylamine :

Workgroups: 607752,607753,607276

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.032717.112112	Blank	Blank		1		03/27/17 11:21
2	NI.032717.112417	WG607833-01	Calibration Point		1		03/27/17 11:24
3	NI.032717.112723	WG607833-02	Calibration Point		1		03/27/17 11:27
4	NI.032717.113028	WG607833-03	Calibration Point		1		03/27/17 11:30
5	NI.032717.113333	WG607833-04	Calibration Point		1		03/27/17 11:33
6	NI.032717.113640	WG607833-05	Initial Calibration Verification		1		03/27/17 11:36
7	NI.032717.113947	WG607833-06	Initial Calib Blank		1		03/27/17 11:39
8	NI.032717.114253	WG607833-07	Low Level Initial Calibration V		1		03/27/17 11:42
9	NI.032717.114558	WG607833-08	Interference Check		1		03/27/17 11:45
10	NI.032717.114904	WG607833-09	Interference Check		1		03/27/17 11:49
11	NI.032717.115529	WG607833-10	Interference Check		1		03/27/17 11:55
12	NI.032717.115836	WG607833-11	CCV		1		03/27/17 11:58
13	NI.032717.120141	WG607833-12	CCB		1		03/27/17 12:01
14	NI.032717.120528	WG607550-03	Method/Prep Blank	20/50	1		03/27/17 12:05
15	NI.032717.120834	WG607550-04	Laboratory Control S	20/50	1		03/27/17 12:08
16	NI.032717.121139	WG607550-01	Reference Sample		1	L17031147-13	03/27/17 12:11
17	NI.032717.121445	WG607550-05	Matrix Spike	20/50	1	L17031147-13	03/27/17 12:14
18	NI.032717.121750	WG607550-06	Matrix Spike Duplica	20/50	1	L17031147-13	03/27/17 12:17
19	NI.032717.122056	L17031215-01	17C0685-01	20/50	1		03/27/17 12:20
20	NI.032717.122402	L17031215-02	17C0685-02	20/50	1		03/27/17 12:24
21	NI.032717.122707	WG607752-01	Post Digestion Spike		1	L17031215-02	03/27/17 12:27
22	NI.032717.123013	WG607752-02	Serial Dilution		5	L17031215-02	03/27/17 12:30
23	NI.032717.123318	WG607752-02	Serial Dilution		25	L17031215-02	03/27/17 12:33
24	NI.032717.123625	WG607833-13	CCV		1		03/27/17 12:36
25	NI.032717.123931	WG607833-14	CCB		1		03/27/17 12:39
26	NI.032717.124237	L17031147-02	SW1A-331-14	20/50	1		03/27/17 12:42
27	NI.032717.124542	L17031147-05	SW1B-331-14	20/50	1		03/27/17 12:45
28	NI.032717.124848	L17031147-08	SW2A-331-14	20/50	1		03/27/17 12:48
29	NI.032717.125153	L17031147-20	SW4A-331-14	20/50	1		03/27/17 12:51
30	NI.032717.125459	L17031147-23	SW5A-331-14	20/50	1		03/27/17 12:54
31	NI.032717.125805	L17031266-01	A05-MW10D-Y2S2	20/50	1		03/27/17 12:58
32	NI.032717.130110	L17031266-02	A05-MW11S-Y2S2	20/50	1		03/27/17 13:01
33	NI.032717.130415	WG607550-02	Reference Sample		1	L17031268-01	03/27/17 13:04
34	NI.032717.130721	L17031268-02	A05-MW09S-Y2S2	20/50	1		03/27/17 13:07

Page: 1 Approved: March 28, 2017

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 032717A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 3
Maintenance Log ID:

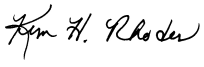
Calibration Std: STD80851 ICV Std: STD80849 Post Spike: STD79415
ICSA: STD80854 ICSAB: STD81136 Int. Std: RGT39300
CCV: STD81129 LLCCV: STD80853 Tuning Sol : STD80856
Stannous : Hydroxylamine :

Workgroups: 607752,607753,607276

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.032717.131026	WG607550-07	Matrix Spike	20/50	1	L17031268-01	03/27/17 13:10
36	NI.032717.131332	WG607833-15	CCV		1		03/27/17 13:13
37	NI.032717.131638	WG607833-16	CCB		1		03/27/17 13:16
38	NI.032717.131944	WG607550-08	Matrix Spike Duplica	20/50	1	L17031268-01	03/27/17 13:19
39	NI.032717.132250	L17031268-05	A05-TM07-Y2S2	20/50	1		03/27/17 13:22
40	NI.032717.132555	L17031268-07	A05-RB01-Y2S2	20/50	1		03/27/17 13:25
41	NI.032717.132900	L17031304-01	MW-1	20/50	1		03/27/17 13:29
42	NI.032717.133205	L17031304-02	WW-2A	20/50	1		03/27/17 13:32
43	NI.032717.133510	L17031304-03	MW-4	20/50	1		03/27/17 13:35
44	NI.032717.133817	WG607833-17	CCV		1		03/27/17 13:38
45	NI.032717.134123	WG607833-18	CCB		1		03/27/17 13:41
46	NI.032717.135411	WG607689-02	Method/Prep Blank	20/50	1		03/27/17 13:54
47	NI.032717.135716	WG607689-03	Laboratory Control S	20/50	1		03/27/17 13:57
48	NI.032717.140022	WG607689-04	Filter Blank		1		03/27/17 14:00
49	NI.032717.140327	WG607689-01	Reference Sample		1	L17031370-05	03/27/17 14:03
50	NI.032717.140633	WG607689-05	Matrix Spike	20/50	1	L17031370-05	03/27/17 14:06
51	NI.032717.140938	WG607689-06	Matrix Spike Duplica	20/50	1	L17031370-05	03/27/17 14:09
52	NI.032717.141243	L17031313-01	103	20/50	1		03/27/17 14:12
53	NI.032717.141549	WG607753-01	Post Digestion Spike		1	L17031313-01	03/27/17 14:15
54	NI.032717.141854	WG607753-02	Serial Dilution		5	L17031313-01	03/27/17 14:18
55	NI.032717.142159	WG607753-02	Serial Dilution		25	L17031313-01	03/27/17 14:21
56	NI.032717.142506	WG607833-19	CCV		1		03/27/17 14:25
57	NI.032717.142811	WG607833-20	CCB		1		03/27/17 14:28
58	NI.032717.143118	L17031339-02	126F-032117	20/50	1		03/27/17 14:31
59	NI.032717.143424	L17031339-04	126FDF-032117	20/50	1		03/27/17 14:34
60	NI.032717.143728	L17031339-05	MW2-032117	20/50	1		03/27/17 14:37
61	NI.032717.144034	L17031339-06	18CPTMW01DW-032117	20/50	1		03/27/17 14:40
62	NI.032717.144339	L17031339-07	18CPTMW01SW-032117	20/50	1		03/27/17 14:43
63	NI.032717.144644	L17031339-08	MW13-032117	20/50	1		03/27/17 14:46
64	NI.032717.144950	L17031339-09	MW13FD-032117	20/50	1		03/27/17 14:49
65	NI.032717.145255	L17031339-11	CO2F-032117	20/50	1		03/27/17 14:52
66	NI.032717.145600	L17031339-13	MW16F-032217	20/50	1		03/27/17 14:56
67	NI.032717.145905	L17031339-15	MW19F-032217	20/50	1		03/27/17 14:59
68	NI.032717.150212	WG607833-21	CCV		1		03/27/17 15:02

Page: 2 Approved: March 28, 2017



Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 032717A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 3
Maintenance Log ID:

Calibration Std: STD80851 ICV Std: STD80849 Post Spike: STD79415
ICSA: STD80854 ICSAB: STD81136 Int. Std: RGT39300
CCV: STD81129 LLCCV: STD80853 Tuning Sol : STD80856
Stannous : Hydroxylamine :

Workgroups: 607752,607753,607276

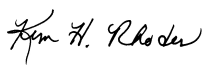
Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.032717.150518	WG607833-22	CCB		1		03/27/17 15:05
70	NI.032717.151452	WG607249-02	Method/Prep Blank	20/50	1		03/27/17 15:14
71	NI.032717.151758	WG607249-03	Laboratory Control S	20/50	1		03/27/17 15:17
72	NI.032717.152103	WG607249-01	Reference Sample		5	L17031161-01	03/27/17 15:21
73	NI.032717.152409	WG607249-04	Matrix Spike	20/50	5	L17031161-01	03/27/17 15:24
74	NI.032717.152715	WG607249-05	Matrix Spike Duplica	20/50	5	L17031161-01	03/27/17 15:27
75	NI.032717.153020	L17031161-04	18CPTMW23SW-032017	20/50	25		03/27/17 15:30
76	NI.032717.153325	L17031161-05	18WW24-032017	20/50	5		03/27/17 15:33
77	NI.032717.153631	WG607276-03	Post Digestion Spike		5	L17031161-05	03/27/17 15:36
78	NI.032717.153936	WG607276-04	Serial Dilution		25	L17031161-05	03/27/17 15:39
79	NI.032717.154244	WG607833-23	CCV		1		03/27/17 15:42
80	NI.032717.154549	WG607833-24	CCB		1		03/27/17 15:45
81	NI.032717.154856	L17031161-07	18WW25F-032017	20/50	25		03/27/17 15:48
82	NI.032717.155202	L17031161-09	MW10F-032017	20/50	50		03/27/17 15:52
83	NI.032717.155510	WG607833-25	CCV		1		03/27/17 15:55
84	NI.032717.155816	WG607833-26	CCB		1		03/27/17 15:58
85	NI.032717.160122	WG607833-27	Low Level Continuing Calibra		1		03/27/17 16:01
86	NI.032717.160428	L17031313-02	103	20/50	1		03/27/17 16:04
87	NI.032717.160734	L17031313-03	107	20/50	1		03/27/17 16:07
88	NI.032717.161039	L17031313-04	107	20/50	1		03/27/17 16:10
89	NI.032717.161345	L17031370-01	T7B0929-01	20/50	1		03/27/17 16:13
90	NI.032717.161650	L17031370-02	T7B0929-02	20/50	1		03/27/17 16:16
91	NI.032717.161956	L17031370-03	T7B0929-03	20/50	1		03/27/17 16:19
92	NI.032717.162301	L17031370-04	T7B0929-04	20/50	1		03/27/17 16:23
93	NI.032717.162608	WG607833-28	CCV		1		03/27/17 16:26
94	NI.032717.162913	WG607833-29	CCB		1		03/27/17 16:29

Comments

Seq.	Rerun	Dil.	Reason	Analytes
10			Rerun to verify. JYH	

Page: 3 Approved: March 28, 2017



Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 032917B.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 3
Maintenance Log ID:

Calibration Std: STD80851 ICV Std: STD80849 Post Spike: STD79415
ICSA: STD80854 ICSAB: STD81136 Int. Std: RGT39300
CCV: STD81129 LLCCV: STD80853 Tuning Sol : STD80856
Stannous : Hydroxylamine :

Workgroups: 608087,608088,607753,608142

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.032917.124527	Blank	Blank		1		03/29/17 12:45
2	NI.032917.124832	WG608225-01	Calibration Point		1		03/29/17 12:48
3	NI.032917.125138	WG608225-02	Calibration Point		1		03/29/17 12:51
4	NI.032917.125443	WG608225-03	Calibration Point		1		03/29/17 12:54
5	NI.032917.125749	WG608225-04	Calibration Point		1		03/29/17 12:57
6	NI.032917.130056	WG608225-05	Initial Calibration Verification		1		03/29/17 13:00
7	NI.032917.130403	WG608225-06	Initial Calib Blank		1		03/29/17 13:04
8	NI.032917.130709	WG608225-07	Low Level Initial Calibration V		1		03/29/17 13:07
9	NI.032917.131015	WG608225-08	Interference Check		1		03/29/17 13:10
10	NI.032917.131320	WG608225-09	Interference Check		1		03/29/17 13:13
11	NI.032917.131627	WG608225-10	CCV		1		03/29/17 13:16
12	NI.032917.131932	WG608225-11	CCB		1		03/29/17 13:19
13	NI.032917.132239	WG608003-02	Method/Prep Blank	20/50	1		03/29/17 13:22
14	NI.032917.132544	WG608003-03	Laboratory Control S	20/50	1		03/29/17 13:25
15	NI.032917.132849	WG608003-04	Filter Blank		1		03/29/17 13:28
16	NI.032917.133154	L17031361-02	MW2B-331-14	20/50	1		03/29/17 13:31
17	NI.032917.133500	WG608003-01	Reference Sample		1	L17031361-07	03/29/17 13:35
18	NI.032917.134326	WG608003-05	Matrix Spike	20/50	1	L17031361-07	03/29/17 13:43
19	NI.032917.134631	WG608003-06	Matrix Spike Duplica	20/50	1	L17031361-07	03/29/17 13:46
20	NI.032917.134937	L17031361-14	MW4B-331-14	20/50	1		03/29/17 13:49
21	NI.032917.135242	WG608087-01	Post Digestion Spike		1	L17031361-14	03/29/17 13:52
22	NI.032917.135547	WG608087-02	Serial Dilution		5	L17031361-14	03/29/17 13:55
23	NI.032917.135855	WG608225-12	CCV		1		03/29/17 13:58
24	NI.032917.140200	WG608225-13	CCB		1		03/29/17 14:02
25	NI.032917.140507	L17031474-01	T7B0930-01	20/50	1		03/29/17 14:05
26	NI.032917.140812	L17031474-02	T7B0930-02	20/50	1		03/29/17 14:08
27	NI.032917.141117	L17031474-03	T7B0930-03	20/50	1		03/29/17 14:11
28	NI.032917.141423	L17031474-04	T7B0930-04	20/50	1		03/29/17 14:14
29	NI.032917.141728	L17031361-17	MW5A-331-14	20/50	1		03/29/17 14:17
30	NI.032917.142034	L17031361-20	MW5A2-331-14	20/50	1		03/29/17 14:20
31	NI.032917.142339	L17031361-23	OW1B-331-14	20/50	1		03/29/17 14:23
32	NI.032917.142644	L17031361-26	OW2A-331-14	20/50	1		03/29/17 14:26
33	NI.032917.142949	L17031361-29	OW3A-331-14	20/50	1		03/29/17 14:29
34	NI.032917.143257	WG608225-14	CCV		1		03/29/17 14:32

Page: 1 Approved: March 30, 2017

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 032917B.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 3
Maintenance Log ID:

Calibration Std: STD80851 ICV Std: STD80849 Post Spike: STD79415
ICSA: STD80854 ICSAB: STD81136 Int. Std: RGT39300
CCV: STD81129 LLCCV: STD80853 Tuning Sol : STD80856
Stannous : Hydroxylamine :

Workgroups: 608087,608088,607753,608142

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.032917.143603	WG608225-15	CCB		1		03/29/17 14:36
36	NI.032917.143910	L17031463-01	941-SOURCE	20/50	1		03/29/17 14:39
37	NI.032917.144216	L17031464-01	4009-SOURCE	20/50	10		03/29/17 14:42
38	NI.032917.144522	L17031468-01	MNA-GMW-518	20/50	1		03/29/17 14:45
39	NI.032917.144827	L17031468-02	MNA-GMW-607	20/50	1		03/29/17 14:48
40	NI.032917.145132	L17031468-04	FB-01-032717	20/50	1		03/29/17 14:51
41	NI.032917.145437	L17031468-05	EB-01-032717	20/50	1		03/29/17 14:54
42	NI.032917.145742	L17031468-06	MNA-GMW-606	20/50	1		03/29/17 14:57
43	NI.032917.150049	WG608225-16	CCV		1		03/29/17 15:00
44	NI.032917.150355	WG608225-17	CCB		1		03/29/17 15:03
45	NI.032917.153205	WG607701-02	Method/Prep Blank	20/50	1		03/29/17 15:32
46	NI.032917.153510	WG607701-03	Laboratory Control S	20/50	1		03/29/17 15:35
47	NI.032917.153816	WG607701-01	Reference Sample		1	L17031360-14	03/29/17 15:38
48	NI.032917.154121	WG607701-04	Matrix Spike	20/50	1	L17031360-14	03/29/17 15:41
49	NI.032917.154426	WG607701-05	Matrix Spike Duplica	20/50	1	L17031360-14	03/29/17 15:44
50	NI.032917.154732	L17031360-01	W1A-D	20/50	1		03/29/17 15:47
51	NI.032917.155037	L17031360-02	GB5-D	20/50	1		03/29/17 15:50
52	NI.032917.155804	WG608088-01	Post Digestion Spike		1	L17031360-02	03/29/17 15:58
53	NI.032917.160233	WG608088-02	Serial Dilution		5	L17031360-02	03/29/17 16:02
54	NI.032917.160539	WG608088-02	Serial Dilution		25	L17031360-02	03/29/17 16:05
55	NI.032917.160846	WG608225-18	CCV		1		03/29/17 16:08
56	NI.032917.161151	WG608225-19	CCB		1		03/29/17 16:11
57	NI.032917.161458	L17031360-03	GB14-S	20/50	1		03/29/17 16:14
58	NI.032917.161803	L17031360-04	GB14-D	20/50	1		03/29/17 16:18
59	NI.032917.162108	L17031360-05	DUP-01	20/50	1		03/29/17 16:21
60	NI.032917.162414	L17031360-06	GB1A-S	20/50	1		03/29/17 16:24
61	NI.032917.162719	L17031360-07	GB1A-D	20/50	1		03/29/17 16:27
62	NI.032917.163025	L17031360-08	GB8-S	20/50	1		03/29/17 16:30
63	NI.032917.163330	L17031360-09	GB8-D	20/50	1		03/29/17 16:33
64	NI.032917.163635	L17031360-10	GB7A-S	20/50	1		03/29/17 16:36
65	NI.032917.163940	L17031360-11	GB7A-D	20/50	1		03/29/17 16:39
66	NI.032917.164245	L17031360-12	GB5-S	20/50	1		03/29/17 16:42
67	NI.032917.164552	WG608225-20	CCV		1		03/29/17 16:45
68	NI.032917.164858	WG608225-21	CCB		1		03/29/17 16:48

Page: 2 Approved: March 30, 2017

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 032917B.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 3
Maintenance Log ID:

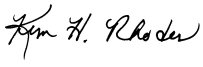
Calibration Std: STD80851 ICV Std: STD80849 Post Spike: STD79415
ICSA: STD80854 ICSAB: STD81136 Int. Std: RGT39300
CCV: STD81129 LLCCV: STD80853 Tuning Sol : STD80856
Stannous : Hydroxylamine :

Workgroups: 608087,608088,607753,608142

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.032917.165204	L17031360-13	FB-01	20/50	1		03/29/17 16:52
70	NI.032917.165509	L17031360-15	FB-02	20/50	1		03/29/17 16:55
71	NI.032917.165815	L17031339-02	126F-032117	20/50	100		03/29/17 16:58
72	NI.032917.170121	L17031339-04	126FDF-032117	20/50	100		03/29/17 17:01
73	NI.032917.170426	L17031339-05	MW2-032117	20/50	100		03/29/17 17:04
74	NI.032917.170731	L17031339-07	18CPTMW01SW-032117	20/50	10		03/29/17 17:07
75	NI.032917.171037	L17031339-08	MW13-032117	20/50	10		03/29/17 17:10
76	NI.032917.171342	L17031339-09	MW13FD-032117	20/50	10		03/29/17 17:13
77	NI.032917.171650	WG608225-22	CCV		1		03/29/17 17:16
78	NI.032917.171955	WG608225-23	CCB		1		03/29/17 17:19
79	NI.032917.172302	L17031339-11	CO2F-032117	20/50	10		03/29/17 17:23
80	NI.032917.172608	L17031339-13	MW16F-032217	20/50	10		03/29/17 17:26
81	NI.032917.172913	L17031339-15	MW19F-032217	20/50	10		03/29/17 17:29
82	NI.032917.173220	WG608225-24	CCV		1		03/29/17 17:32
83	NI.032917.173526	WG608225-25	CCB		1		03/29/17 17:35
84	NI.032917.173832	WG608225-26	Low Level Continuing Calibra		1		03/29/17 17:38
85	NI.032917.174139	WG607872-02	Method/Prep Blank	.25/100	1		03/29/17 17:41
86	NI.032917.174445	WG607872-03	Laboratory Control S	.25/100	1		03/29/17 17:44
87	NI.032917.174749	L17031356-01	INS-WS01-032317		1	WG607872-01	03/29/17 17:47
88	NI.032917.175055	WG607872-04	Matrix Spike	.25/100	1	L17031356-01	03/29/17 17:50
89	NI.032917.175400	WG607872-05	Matrix Spike Duplica	.256/100	1	L17031356-01	03/29/17 17:54
90	NI.032917.175705	WG608142-01	Post Digestion Spike		1	L17031356-01	03/29/17 17:57
91	NI.032917.180011	WG608142-02	Serial Dilution		5	L17031356-01	03/29/17 18:00
92	NI.032917.180317	WG608142-02	Serial Dilution		25	L17031356-01	03/29/17 18:03
93	NI.032917.180622	WG608225-27	Interference Check		1		03/29/17 18:06
94	NI.032917.180928	WG608225-28	Interference Check		1		03/29/17 18:09
95	NI.032917.181235	WG608225-29	CCV		1		03/29/17 18:12
96	NI.032917.181541	WG608225-30	CCB		1		03/29/17 18:15
97	NI.032917.181848	40 PPB SE	40 PPB SE		10		03/29/17 18:18

Page: 3 Approved: March 30, 2017



Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 27-MAR-2017
Analyst: JYH
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 607833
Runlog ID: 81186
Analytical Workgroups: 607752,607753,607276

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	1339
Client Forms	X
Level X	
Level 3	
Level 4	1339,1161
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer:

Secondary Reviewer:
28-MAR-2017

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-28-2017 14:56:58

Microbac Laboratories Inc.

Data Checklist

Date: 29-MAR-2017
Analyst: JYH
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 608225
Runlog ID: 81255
Analytical Workgroups: 608087,608088,607753,608142

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	1464,1468,,1360,
Client Forms	X
Level X	
Level 3	1356
Level 4	1339
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer:

Secondary Reviewer:
30-MAR-2017

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-30-2017 12:42:48

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A AAB#: WG607753

Login Number: L17031339

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
126F-032117	02	03/21/17					03/27/2017	6	180		03/29/17	8.4	180	
126F-032117	02	03/21/17					03/27/2017	6	180		03/27/17	6.3	180	
126FDF-032117	04	03/21/17					03/27/2017	6	180		03/27/17	6.3	180	
126FDF-032117	04	03/21/17					03/27/2017	6	180		03/29/17	8.4	180	
MW2-032117	05	03/21/17					03/27/2017	5.9	180		03/29/17	8.3	180	
MW2-032117	05	03/21/17					03/27/2017	5.9	180		03/27/17	6.2	180	
18CPTMW01DW-032117	06	03/21/17					03/27/2017	5.9	180		03/27/17	6.2	180	
18CPTMW01SW-032117	07	03/21/17					03/27/2017	5.8	180		03/29/17	8.2	180	
18CPTMW01SW-032117	07	03/21/17					03/27/2017	5.8	180		03/27/17	6.1	180	
MW13-032117	08	03/21/17					03/27/2017	5.7	180		03/27/17	6	180	
MW13-032117	08	03/21/17					03/27/2017	5.7	180		03/29/17	8.1	180	
MW13FD-032117	09	03/21/17					03/27/2017	5.7	180		03/29/17	8.1	180	
MW13FD-032117	09	03/21/17					03/27/2017	5.7	180		03/27/17	6	180	
CO2F-032117	11	03/21/17					03/27/2017	5.7	180		03/29/17	8.1	180	
CO2F-032117	11	03/21/17					03/27/2017	5.7	180		03/27/17	6	180	
MW16F-032217	13	03/22/17					03/27/2017	4.9	180		03/27/17	5.3	180	
MW16F-032217	13	03/22/17					03/27/2017	4.9	180		03/29/17	7.4	180	
MW19F-032217	15	03/22/17					03/27/2017	4.9	180		03/29/17	7.3	180	
MW19F-032217	15	03/22/17					03/27/2017	4.9	180		03/27/17	5.2	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 5220556
Report generated 03/30/2017 10:47

METHOD BLANK SUMMARY

Login Number: L17031339
Blank File ID: NI.032717.135411
Prep Date: 03/27/17 07:19
Analyzed Date: 03/27/17 13:54
Analyst: JYH

Work Group: WG607753
Blank Sample ID: WG607689-02
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG607689-03	NI.032717.135716	03/27/17 13:57	01
FLT_BLK	WG607689-04	NI.032717.140022	03/27/17 14:00	01
126F-032117	L17031339-02	NI.032717.143118	03/27/17 14:31	01
126FDF-032117	L17031339-04	NI.032717.143424	03/27/17 14:34	01
MW2-032117	L17031339-05	NI.032717.143728	03/27/17 14:37	01
18CPTMW01DW-032117	L17031339-06	NI.032717.144034	03/27/17 14:40	01
18CPTMW01SW-032117	L17031339-07	NI.032717.144339	03/27/17 14:43	01
MW13-032117	L17031339-08	NI.032717.144644	03/27/17 14:46	01
MW13FD-032117	L17031339-09	NI.032717.144950	03/27/17 14:49	01
CO2F-032117	L17031339-11	NI.032717.145255	03/27/17 14:52	01
MW16F-032217	L17031339-13	NI.032717.145600	03/27/17 14:56	01
MW19F-032217	L17031339-15	NI.032717.145905	03/27/17 14:59	01
126F-032117	L17031339-02	NI.032917.165815	03/29/17 16:58	DL01
126FDF-032117	L17031339-04	NI.032917.170121	03/29/17 17:01	DL01
MW2-032117	L17031339-05	NI.032917.170426	03/29/17 17:04	DL01
18CPTMW01SW-032117	L17031339-07	NI.032917.170731	03/29/17 17:07	DL01
MW13-032117	L17031339-08	NI.032917.171037	03/29/17 17:10	DL01
MW13FD-032117	L17031339-09	NI.032917.171342	03/29/17 17:13	DL01
CO2F-032117	L17031339-11	NI.032917.172302	03/29/17 17:23	DL01
MW16F-032217	L17031339-13	NI.032917.172608	03/29/17 17:26	DL01
MW19F-032217	L17031339-15	NI.032917.172913	03/29/17 17:29	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 5220557
Report generated 03/30/2017 10:47

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L17031339 Prep Date: 03/27/17 07:19 Sample ID: WG607689-02
Instrument ID: ICP-MS2 Run Date: 03/27/17 13:54 Prep Method: 3015
File ID: NI.032717.135411 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG607753 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-27-MAR-17

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Antimony, Total	0.000500	0.00200	0.000500	1	U
Arsenic, Total	0.000500	0.00200	0.000500	1	U
Barium, Total	0.00150	0.00600	0.00150	1	U
Cadmium, Total	0.000300	0.00120	0.000300	1	U
Chromium, Total	0.00100	0.00400	0.00100	1	U
Cobalt, Total	0.000500	0.00200	0.000500	1	U
Copper, Total	0.00100	0.00400	0.00100	1	U
Lead, Total	0.000500	0.00200	0.000500	1	U
Manganese, Total	0.00100	0.00400	0.00100	1	U
Nickel, Total	0.00200	0.00800	0.00200	1	U
Silver, Total	0.000500	0.00200	0.000500	1	U
Thallium, Total	0.000100	0.000400	0.000100	1	U
Vanadium, Total	0.000500	0.00200	0.000500	1	U
Zinc, Total	0.0125	0.0500	0.0125	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 5220558
30-MAR-2017 10:47

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L17031339 Run Date: 03/27/2017 Sample ID: WG607689-03
Instrument ID: ICP-MS2 Run Time: 13:57 Prep Method: 3015
File ID: NI.032717.135716 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG607753 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD78216 Cal ID: ICP-MS-27-MAR-17

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.125	0.125	100	80 - 120	
Arsenic, Total	0.125	0.127	101	80 - 120	
Barium, Total	0.125	0.122	97.8	80 - 120	
Cadmium, Total	0.125	0.128	102	80 - 120	
Chromium, Total	0.125	0.125	100	80 - 120	
Cobalt, Total	0.125	0.126	101	80 - 120	
Copper, Total	0.125	0.128	102	80 - 120	
Lead, Total	0.125	0.125	100	80 - 120	
Manganese, Total	0.125	0.127	101	80 - 120	
Nickel, Total	0.125	0.128	102	80 - 120	
Silver, Total	0.125	0.128	102	80 - 120	
Thallium, Total	0.125	0.129	103	80 - 120	
Vanadium, Total	0.125	0.124	99.5	80 - 120	
Zinc, Total	0.125	0.128	102	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 5220559
Report generated: 03/30/2017 10:47

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L17031339 Cal ID: ICP-MS2- Worknum: WG607753
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG607689-01 File ID: NI.032717.140327 Dil: 1 Matrix: WATER
Sample ID: WG607689-05 MS File ID: NI.032717.140633 Dil: 1 Units: mg/L
Sample ID: WG607689-06 MSD File ID: NI.032717.140938 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony	ND	0.125	0.129	103	0.125	0.126	101	1.82	80 - 120	20	
Arsenic	ND	0.125	0.130	104	0.125	0.128	103	0.997	80 - 120	20	
Barium	0.0951	0.125	0.220	100	0.125	0.215	95.8	2.47	80 - 120	20	
Cadmium	ND	0.125	0.129	103	0.125	0.128	103	0.222	80 - 120	20	
Chromium	0.00193	0.125	0.126	99.1	0.125	0.125	98.4	0.693	80 - 120	20	
Cobalt	ND	0.125	0.124	98.8	0.125	0.121	96.5	2.36	80 - 120	20	
Copper	0.00226	0.125	0.124	97.2	0.125	0.122	95.9	1.34	80 - 120	20	
Lead	ND	0.125	0.126	101	0.125	0.124	99.0	1.51	80 - 120	20	
Manganese	0.00115	0.125	0.125	99.0	0.125	0.144	114	14.3	80 - 120	20	
Nickel	0.00219	0.125	0.125	98.4	0.125	0.123	96.4	1.96	80 - 120	20	
Silver	ND	0.125	0.126	101	0.125	0.124	99.3	1.28	80 - 120	20	
Thallium	0.000210	0.125	0.131	104	0.125	0.128	102	2.17	80 - 120	20	
Vanadium	ND	0.125	0.125	100	0.125	0.124	99.6	0.545	80 - 120	20	
Zinc	ND	0.125	0.134	107	0.125	0.140	112	4.55	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 5220560
Report generated 03/30/2017 10:47

Microbac Laboratories Inc.
Serial Dilution Report

Login: L17031339 **Worknum:** WG607753
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG607753-02 **File ID:** NI.032717.141854 **Dil:** 5 **Units:** ug/L
Sample: L17031313-01 **File ID:** NI.032717.141243 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	ND	U		
Arsenic	32.0		34.3		7.34	
Barium	240		248		3.34	
Cadmium	ND	U	ND	U		
Chromium	ND	U	ND	U		
Cobalt	ND	U	ND	U		
Copper	0.708	F	ND	U		
Lead	ND	U	ND	U		
Manganese	1860		1910		2.56	
Nickel	1.33	F	ND	U		
Silver	ND	U	ND	U		
Thallium	0.0798	F	0.330	F	314.00	
Vanadium	ND	U	ND	U		
Zinc	ND	U	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 5220554
03/30/2017 10:47

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L17031339 **Worknum:** WG607753
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG607753-01 **File ID:** NI.032717.141549 **Dil:** 1 **Units:** ug/L
Sample ID: L17031313-01 **File ID:** NI.032717.141243 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	52.4		0	U	50	104.8	75 - 125	
ARSENIC	84.4		32.0		50	104.9	75 - 125	
BARIUM	288		240		50	96.0	75 - 125	
CADMIUM	52.0		0	U	50	104.0	75 - 125	
CHROMIUM	49.0		0	U	50	98.1	75 - 125	
COBALT	49.6		0	U	50	99.1	75 - 125	
COPPER	49.7		0.708	F	50	98.1	75 - 125	
LEAD	51.5		0	U	50	103.1	75 - 125	
MANGANESE	1910		1860		50	93.9	75 - 125	
NICKEL	50.0		1.33	F	50	97.4	75 - 125	
SILVER	46.0		0	U	50	92.1	75 - 125	
THALLIUM	51.6		0.0798	F	50	103.0	75 - 125	
VANADIUM	49.1		0	U	50	98.2	75 - 125	
ZINC	58.5		0	U	50	117.0	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 5220555
Report generated: 03/30/2017 10:47

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	**L17031339**	Workgroup (AAB#):	**WG607753**
Analytical Method:	**6020A**	Instrument ID:	**ICP-MS2**
ICAL Worknum:	**WG607833**	Initial Calibration Date:	**27-MAR-2017 11:33**

	WG607833-01		WG607833-02		WG607833-03		WG607833-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	203	.4	439	50	265000	100	528000	.999992	
ARSENIC	0	-10.9	.4	2.00	50	66300	100	134000	.999987	
BARIUM	0	54.0	.4	147	50	104000	100	206000	.999998	
CADMIUM	0	6.60	.4	119	50	101000	100	196000	.999949	
CHROMIUM	0	8080	.4	8480	50	402000	100	772000	.999892	
COBALT	0	598	.4	1110	50	509000	100	998000	.99996	
COPPER	0	639	.4	814	50	112000	100	220000	.999973	
LEAD	0	475	.4	830	50	336000	100	670000	.999998	
MANGANESE	0	2630	.4	3140	50	670000	100	1320000	.999983	
NICKEL	0	247	.4	352	50	110000	100	212000	.999898	
SILVER	0	119	.4	487	50	352000	100	684000	.999978	
THALLIUM	0	223	.4	625	50	394000	100	778000	.999979	
VANADIUM	0	1800	.4	2240	50	423000	100	824000	.999935	
ZINC	0	562	.4	683	50	67400	100	134000	1	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 5220563
Report generated: 30-MAR-2017 10:47

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	**L17031339**	Workgroup (AAB#):	**WG607753**
Analytical Method:	**6020A**	Instrument ID:	**ICP-MS2**
ICAL Worknum:	**WG608225**	Initial Calibration Date:	**29-MAR-2017 12:57**

	WG608225-01		WG608225-02		WG608225-03		WG608225-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	148	.4	354	50	222000	100	448000	.999894	
ARSENIC	0	-34.4	.4	55.6	50	56200	100	113000	.999805	
BARIUM	0	30.0	.4	124	50	82100	100	162000	.999993	
CADMIUM	0	4.60	.4	94.1	50	83800	100	165000	.999997	
CHROMIUM	0	5510	.4	5840	50	298000	100	583000	.999941	
COBALT	0	419	.4	813	50	383000	100	759000	.999915	
COPPER	0	483	.4	598	50	87300	100	170000	.999988	
LEAD	0	451	.4	762	50	296000	100	588000	.99992	
MANGANESE	0	1430	.4	2030	50	497000	100	986000	.999908	
NICKEL	0	145	.4	232	50	82200	100	162000	.999955	
SILVER	0	104	.4	436	50	299000	100	587000	.999998	
THALLIUM	0	175	.4	565	50	369000	100	732000	.999937	
VANADIUM	0	1300	.4	1710	50	325000	100	643000	.999929	
ZINC	0	292	.4	521	50	53100	100	106000	.999866	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 5220563
Report generated: 30-MAR-2017 10:47

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L17031339 Run Date: 03/27/2017 Sample ID: WG607833-06
Instrument ID: ICP-MS2 Run Time: 11:39 Method: 6020A
File ID: NI.032717.113947 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG607753 Cal ID: ICP-MS2 - 27-MAR-17
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.362	F
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 5220565
Report generated 03/30/2017 10:47

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L17031339 Run Date: 03/29/2017 Sample ID: WG608225-06
Instrument ID: ICP-MS2 Run Time: 13:04 Method: 6020A
File ID: NI.032917.130403 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG607753 Cal ID: ICP-MS2 - 29-MAR-17
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.303	F
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 5220565
Report generated 03/30/2017 10:47

Login Number: L17031339 Run Date: 03/27/2017 Sample ID: WG607833-12
Instrument ID: ICP-MS2 Run Time: 12:01 Method: 6020A
File ID: NI.032717.120141 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG607753 Cal ID: ICP-MS - 27-MAR-17
Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5220568
Report generated 03/30/2017 10:47

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031339 | Run Date: 03/27/2017 | Sample ID: WG607833-18
Instrument ID: ICP-MS2 | Run Time: 13:41 | Method: 6020A
File ID: NI.032717.134123 | Analyst: JYH | Units: ug/L
Workgroup (AAB#): WG607753 | Cal ID: ICP-MS - 27-MAR-17
Matrix: WATER | QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5220568
Report generated 03/30/2017 10:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031339 Run Date: 03/27/2017 Sample ID: WG607833-20
Instrument ID: ICP-MS2 Run Time: 14:28 Method: 6020A
File ID: NI.032717.142811 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG607753 Cal ID: ICP-MS - 27-MAR-17
Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5220568
Report generated 03/30/2017 10:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031339 Run Date: 03/27/2017 Sample ID: WG607833-22
Instrument ID: ICP-MS2 Run Time: 15:05 Method: 6020A
File ID: NI.032717.150518 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG607753 Cal ID: ICP-MS - 27-MAR-17
Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5220568
Report generated 03/30/2017 10:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031339 Run Date: 03/29/2017 Sample ID: WG608225-11
Instrument ID: ICP-MS2 Run Time: 13:19 Method: 6020A
File ID: NI.032917.131932 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG607753 Cal ID: ICP-MS - 29-MAR-17
Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5220568
Report generated 03/30/2017 10:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031339 Run Date: 03/29/2017 Sample ID: WG608225-21
Instrument ID: ICP-MS2 Run Time: 16:48 Method: 6020A
File ID: NI.032917.164858 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG607753 Cal ID: ICP-MS - 29-MAR-17
Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5220568
Report generated 03/30/2017 10:47

Login Number: L17031339 Run Date: 03/29/2017 Sample ID: WG608225-23
Instrument ID: ICP-MS2 Run Time: 17:19 Method: 6020A
File ID: NI.032917.171955 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG607753 Cal ID: ICP-MS - 29-MAR-17
Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5220568
Report generated 03/30/2017 10:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031339 Run Date: 03/29/2017 Sample ID: WG608225-25
Instrument ID: ICP-MS2 Run Time: 17:35 Method: 6020A
File ID: NI.032917.173526 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG607753 Cal ID: ICP-MS - 29-MAR-17
Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5220568
Report generated 03/30/2017 10:47

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L17031339 Run Date: 03/29/2017 Sample ID: WG608225-05
Instrument ID: ICP-MS2 Run Time: 13:00 Method: 6020A
File ID: NI.032917.130056 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG607753 Cal ID: ICP-MS - 29-MAR-17
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	51.1	102	90 - 110	
Arsenic		50	50.9	102	90 - 110	
Barium		50	50.9	102	90 - 110	
Cadmium		50	50.8	102	90 - 110	
Chromium		50	50.4	101	90 - 110	
Cobalt		50	50.7	101	90 - 110	
Copper		50	51.1	102	90 - 110	
Lead		50	50.7	101	90 - 110	
Manganese		50	50.8	102	90 - 110	
Nickel		50	50.6	101	90 - 110	
Silver		50	51.0	102	90 - 110	
Thallium		50	50.9	102	90 - 110	
Vanadium		50	50.4	101	90 - 110	
Zinc		50	50.9	102	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 5220564
Report generated 03/30/2017 10:47

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L17031339 Run Date: 03/27/2017 Sample ID: WG607833-05
Instrument ID: ICP-MS2 Run Time: 11:36 Method: 6020A
File ID: NI.032717.113640 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG607753 Cal ID: ICP-MS - 27-MAR-17
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	51.0	102	90 - 110	
Arsenic		50	50.6	101	90 - 110	
Barium		50	50.4	101	90 - 110	
Cadmium		50	50.6	101	90 - 110	
Chromium		50	50.0	99.9	90 - 110	
Cobalt		50	50.2	100	90 - 110	
Copper		50	50.4	101	90 - 110	
Lead		50	50.5	101	90 - 110	
Manganese		50	50.3	101	90 - 110	
Nickel		50	50.4	101	90 - 110	
Silver		50	50.5	101	90 - 110	
Thallium		50	50.7	101	90 - 110	
Vanadium		50	49.9	99.8	90 - 110	
Zinc		50	50.6	101	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 5220564
Report generated 03/30/2017 10:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031339 Run Date: 03/27/2017 Sample ID: WG607833-11

Instrument ID: ICP-MS2 Run Time: 11:58 Method: 6020A

File ID: NI.032717.115836 Analyst: JYH QC Key: DOD4

Workgroup (AAB#): WG607753 Cal ID: ICP-MS - 27-MAR-17

Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0505	mg/L	101	90 - 110		
Arsenic		0.0500	0.0494	mg/L	98.8	90 - 110		
Barium		0.0500	0.0495	mg/L	99.0	90 - 110		
Cadmium		0.0500	0.0508	mg/L	102	90 - 110		
Chromium		0.0500	0.0487	mg/L	97.5	90 - 110		
Cobalt		0.0500	0.0490	mg/L	97.9	90 - 110		
Copper		0.0500	0.0490	mg/L	98.0	90 - 110		
Lead		0.0500	0.0504	mg/L	101	90 - 110		
Manganese		0.0500	0.0494	mg/L	98.8	90 - 110		
Nickel		0.0500	0.0492	mg/L	98.5	90 - 110		
Silver		0.0500	0.0506	mg/L	101	90 - 110		
Thallium		0.0500	0.0500	mg/L	100	90 - 110		
Vanadium		0.0500	0.0487	mg/L	97.3	90 - 110		
Zinc		0.0500	0.0493	mg/L	98.5	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008

PDF File ID: 5220567

Report generated 03/30/2017 10:47

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031339 Run Date: 03/27/2017 Sample ID: WG607833-17
Instrument ID: ICP-MS2 Run Time: 13:38 Method: 6020A
File ID: NI.032717.133817 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG607753 Cal ID: ICP-MS - 27-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0494	mg/L	98.7	90 - 110		
Arsenic		0.0500	0.0496	mg/L	99.1	90 - 110		
Barium		0.0500	0.0490	mg/L	98.1	90 - 110		
Cadmium		0.0500	0.0512	mg/L	102	90 - 110		
Chromium		0.0500	0.0490	mg/L	98.0	90 - 110		
Cobalt		0.0500	0.0492	mg/L	98.5	90 - 110		
Copper		0.0500	0.0492	mg/L	98.5	90 - 110		
Lead		0.0500	0.0498	mg/L	99.5	90 - 110		
Manganese		0.0500	0.0494	mg/L	98.8	90 - 110		
Nickel		0.0500	0.0490	mg/L	97.9	90 - 110		
Silver		0.0500	0.0506	mg/L	101	90 - 110		
Thallium		0.0500	0.0498	mg/L	99.6	90 - 110		
Vanadium		0.0500	0.0488	mg/L	97.7	90 - 110		
Zinc		0.0500	0.0497	mg/L	99.4	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 5220567
Report generated 03/30/2017 10:47

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031339 Run Date: 03/27/2017 Sample ID: WG607833-19
Instrument ID: ICP-MS2 Run Time: 14:25 Method: 6020A
File ID: NI.032717.142506 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG607753 Cal ID: ICP-MS - 27-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0505	mg/L	101	90 - 110		
Arsenic		0.0500	0.0500	mg/L	100	90 - 110		
Barium		0.0500	0.0493	mg/L	98.7	90 - 110		
Cadmium		0.0500	0.0510	mg/L	102	90 - 110		
Chromium		0.0500	0.0495	mg/L	99.1	90 - 110		
Cobalt		0.0500	0.0497	mg/L	99.4	90 - 110		
Copper		0.0500	0.0500	mg/L	99.9	90 - 110		
Lead		0.0500	0.0492	mg/L	98.4	90 - 110		
Manganese		0.0500	0.0498	mg/L	99.6	90 - 110		
Nickel		0.0500	0.0498	mg/L	99.5	90 - 110		
Silver		0.0500	0.0504	mg/L	101	90 - 110		
Thallium		0.0500	0.0501	mg/L	100	90 - 110		
Vanadium		0.0500	0.0491	mg/L	98.2	90 - 110		
Zinc		0.0500	0.0498	mg/L	99.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 5220567
Report generated 03/30/2017 10:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031339 Run Date: 03/27/2017 Sample ID: WG607833-21

Instrument ID: ICP-MS2 Run Time: 15:02 Method: 6020A

File ID: NI.032717.150212 Analyst: JYH QC Key: DOD4

Workgroup (AAB#): WG607753 Cal ID: ICP-MS - 27-MAR-17

Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0505	mg/L	101	90 - 110		
Arsenic		0.0500	0.0501	mg/L	100	90 - 110		
Barium		0.0500	0.0497	mg/L	99.5	90 - 110		
Cadmium		0.0500	0.0519	mg/L	104	90 - 110		
Chromium		0.0500	0.0491	mg/L	98.1	90 - 110		
Cobalt		0.0500	0.0494	mg/L	98.7	90 - 110		
Copper		0.0500	0.0499	mg/L	99.8	90 - 110		
Lead		0.0500	0.0506	mg/L	101	90 - 110		
Manganese		0.0500	0.0494	mg/L	98.8	90 - 110		
Nickel		0.0500	0.0494	mg/L	98.8	90 - 110		
Silver		0.0500	0.0523	mg/L	105	90 - 110		
Thallium		0.0500	0.0505	mg/L	101	90 - 110		
Vanadium		0.0500	0.0490	mg/L	98.0	90 - 110		
Zinc		0.0500	0.0497	mg/L	99.4	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008

PDF File ID: 5220567

Report generated 03/30/2017 10:47

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031339 Run Date: 03/29/2017 Sample ID: WG608225-10
Instrument ID: ICP-MS2 Run Time: 13:16 Method: 6020A
File ID: NI.032917.131627 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG607753 Cal ID: ICP-MS - 29-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0500	mg/L	100	90 - 110		
Arsenic		0.0500	0.0495	mg/L	99.0	90 - 110		
Barium		0.0500	0.0491	mg/L	98.2	90 - 110		
Cadmium		0.0500	0.0501	mg/L	100	90 - 110		
Chromium		0.0500	0.0498	mg/L	99.6	90 - 110		
Cobalt		0.0500	0.0499	mg/L	99.9	90 - 110		
Copper		0.0500	0.0498	mg/L	99.6	90 - 110		
Lead		0.0500	0.0499	mg/L	99.9	90 - 110		
Manganese		0.0500	0.0504	mg/L	101	90 - 110		
Nickel		0.0500	0.0496	mg/L	99.3	90 - 110		
Silver		0.0500	0.0499	mg/L	99.7	90 - 110		
Thallium		0.0500	0.0497	mg/L	99.3	90 - 110		
Vanadium		0.0500	0.0494	mg/L	98.8	90 - 110		
Zinc		0.0500	0.0497	mg/L	99.4	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 5220567
Report generated 03/30/2017 10:47

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031339 Run Date: 03/29/2017 Sample ID: WG608225-20
Instrument ID: ICP-MS2 Run Time: 16:45 Method: 6020A
File ID: NI.032917.164552 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG607753 Cal ID: ICP-MS - 29-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0486	mg/L	97.3	90 - 110		
Arsenic		0.0500	0.0489	mg/L	97.8	90 - 110		
Barium		0.0500	0.0501	mg/L	100	90 - 110		
Cadmium		0.0500	0.0498	mg/L	99.5	90 - 110		
Chromium		0.0500	0.0512	mg/L	102	90 - 110		
Cobalt		0.0500	0.0500	mg/L	100	90 - 110		
Copper		0.0500	0.0501	mg/L	100	90 - 110		
Lead		0.0500	0.0518	mg/L	104	90 - 110		
Manganese		0.0500	0.0510	mg/L	102	90 - 110		
Nickel		0.0500	0.0505	mg/L	101	90 - 110		
Silver		0.0500	0.0491	mg/L	98.2	90 - 110		
Thallium		0.0500	0.0500	mg/L	100	90 - 110		
Vanadium		0.0500	0.0511	mg/L	102	90 - 110		
Zinc		0.0500	0.0500	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 5220567
Report generated 03/30/2017 10:47

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031339 Run Date: 03/29/2017 Sample ID: WG608225-22
Instrument ID: ICP-MS2 Run Time: 17:16 Method: 6020A
File ID: NI.032917.171650 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG607753 Cal ID: ICP-MS - 29-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0494	mg/L	98.7	90 - 110		
Arsenic		0.0500	0.0494	mg/L	98.9	90 - 110		
Barium		0.0500	0.0511	mg/L	102	90 - 110		
Cadmium		0.0500	0.0506	mg/L	101	90 - 110		
Chromium		0.0500	0.0526	mg/L	105	90 - 110		
Cobalt		0.0500	0.0520	mg/L	104	90 - 110		
Copper		0.0500	0.0516	mg/L	103	90 - 110		
Lead		0.0500	0.0515	mg/L	103	90 - 110		
Manganese		0.0500	0.0520	mg/L	104	90 - 110		
Nickel		0.0500	0.0515	mg/L	103	90 - 110		
Silver		0.0500	0.0494	mg/L	98.7	90 - 110		
Thallium		0.0500	0.0504	mg/L	101	90 - 110		
Vanadium		0.0500	0.0522	mg/L	104	90 - 110		
Zinc		0.0500	0.0506	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 5220567
Report generated 03/30/2017 10:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031339 Run Date: 03/29/2017 Sample ID: WG608225-24

Instrument ID: ICP-MS2 Run Time: 17:32 Method: 6020A

File ID: NI.032917.173220 Analyst: JYH QC Key: DOD4

Workgroup (AAB#): WG607753 Cal ID: ICP-MS - 29-MAR-17

Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0490	mg/L	98.1	90 - 110		
Arsenic		0.0500	0.0490	mg/L	98.1	90 - 110		
Barium		0.0500	0.0501	mg/L	100	90 - 110		
Cadmium		0.0500	0.0504	mg/L	101	90 - 110		
Chromium		0.0500	0.0511	mg/L	102	90 - 110		
Cobalt		0.0500	0.0506	mg/L	101	90 - 110		
Copper		0.0500	0.0505	mg/L	101	90 - 110		
Lead		0.0500	0.0509	mg/L	102	90 - 110		
Manganese		0.0500	0.0509	mg/L	102	90 - 110		
Nickel		0.0500	0.0503	mg/L	101	90 - 110		
Silver		0.0500	0.0495	mg/L	99.0	90 - 110		
Thallium		0.0500	0.0497	mg/L	99.3	90 - 110		
Vanadium		0.0500	0.0512	mg/L	102	90 - 110		
Zinc		0.0500	0.0502	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008

PDF File ID: 5220567

Report generated 03/30/2017 10:47

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L17031339 Run Date: 03/27/2017 Sample ID: WG607833-07
Instrument ID: ICP-MS2 Run Time: 11:42 Method: 6020A
File ID: NI.032717.114253 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG607753 Cal ID: ICP-MS - 27-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.434	ug/L	109	70 - 130		
Arsenic		0.400	0.383	ug/L	95.8	70 - 130		
Barium		0.750	0.699	ug/L	93.2	70 - 130		
Cadmium		0.240	0.222	ug/L	92.5	70 - 130		
Chromium		0.800	0.722	ug/L	90.3	70 - 130		
Cobalt		0.400	0.360	ug/L	90.0	70 - 130		
Copper		0.800	0.789	ug/L	98.7	70 - 130		
Lead		0.200	0.182	ug/L	91.1	70 - 130		
Manganese		0.500	0.448	ug/L	89.7	70 - 130		
Nickel		1.60	1.49	ug/L	93.1	70 - 130		
Silver		0.400	0.372	ug/L	92.9	70 - 130		
Thallium		0.0800	0.0790	ug/L	98.8	70 - 130		
Vanadium		0.400	0.304	ug/L	75.9	70 - 130		
Zinc		6.25	5.92	ug/L	94.7	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 5220588
Report generated 03/30/2017 10:47

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L17031339 Run Date: 03/27/2017 Sample ID: WG607833-27
Instrument ID: ICP-MS2 Run Time: 16:01 Method: 6020A
File ID: NI.032717.160122 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG607753 Cal ID: ICP-MS - 27-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.386	ug/L	96.4	70 - 130		
Arsenic		0.400	0.407	ug/L	102	70 - 130		
Barium		0.750	0.689	ug/L	91.8	70 - 130		
Cadmium		0.240	0.236	ug/L	98.4	70 - 130		
Chromium		0.800	0.841	ug/L	105	70 - 130		
Cobalt		0.400	0.359	ug/L	89.7	70 - 130		
Copper		0.800	0.788	ug/L	98.5	70 - 130		
Lead		0.200	0.187	ug/L	93.7	70 - 130		
Manganese		0.500	0.453	ug/L	90.7	70 - 130		
Nickel		1.60	1.52	ug/L	95.1	70 - 130		
Silver		0.400	0.384	ug/L	96.0	70 - 130		
Thallium		0.0800	0.0570	ug/L	71.3	70 - 130		
Vanadium		0.400	0.355	ug/L	88.8	70 - 130		
Zinc		6.25	6.19	ug/L	99.0	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 5220588
Report generated 03/30/2017 10:47

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L17031339 Run Date: 03/29/2017 Sample ID: WG608225-07
Instrument ID: ICP-MS2 Run Time: 13:07 Method: 6020A
File ID: NI.032917.130709 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG607753 Cal ID: ICP-MS - 29-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.434	ug/L	108	70 - 130		
Arsenic		0.400	0.381	ug/L	95.4	70 - 130		
Barium		0.750	0.668	ug/L	89.1	70 - 130		
Cadmium		0.240	0.239	ug/L	99.7	70 - 130		
Chromium		0.800	0.753	ug/L	94.1	70 - 130		
Cobalt		0.400	0.361	ug/L	90.2	70 - 130		
Copper		0.800	0.796	ug/L	99.4	70 - 130		
Lead		0.200	0.182	ug/L	91.1	70 - 130		
Manganese		0.500	0.438	ug/L	87.6	70 - 130		
Nickel		1.60	1.49	ug/L	93.4	70 - 130		
Silver		0.400	0.377	ug/L	94.2	70 - 130		
Thallium		0.0800	0.0734	ug/L	91.8	70 - 130		
Vanadium		0.400	0.291	ug/L	72.7	70 - 130		
Zinc		6.25	5.78	ug/L	92.4	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 5220588
Report generated 03/30/2017 10:47

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L17031339 Run Date: 03/29/2017 Sample ID: WG608225-26
Instrument ID: ICP-MS2 Run Time: 17:38 Method: 6020A
File ID: NI.032917.173832 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG607753 Cal ID: ICP-MS - 29-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.351	ug/L	87.8	70 - 130		
Arsenic		0.400	0.370	ug/L	92.4	70 - 130		
Barium		0.750	0.686	ug/L	91.5	70 - 130		
Cadmium		0.240	0.217	ug/L	90.5	70 - 130		
Chromium		0.800	0.942	ug/L	118	70 - 130		
Cobalt		0.400	0.363	ug/L	90.8	70 - 130		
Copper		0.800	0.796	ug/L	99.6	70 - 130		
Lead		0.200	0.186	ug/L	93.0	70 - 130		
Manganese		0.500	0.465	ug/L	93.0	70 - 130		
Nickel		1.60	1.53	ug/L	95.6	70 - 130		
Silver		0.400	0.362	ug/L	90.5	70 - 130		
Thallium		0.0800	0.0496	ug/L	62.0	70 - 130		*
Vanadium		0.400	0.356	ug/L	88.9	70 - 130		
Zinc		6.25	6.02	ug/L	96.3	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 5220588
Report generated 03/30/2017 10:47

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L17031339 **Workgroup (AAB#):** WG607753
Instrument ID: ICP-MS2 **Method:** 6020A
Sol. A : WG607833-08 **File ID:** NI.032717.114558 **Units:** ug/L
Sol. AB : WG607833-10 **File ID:** NI.032717.115529 **Matrix:** Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0902	NS	100	100	100	
Arsenic	NS	0.0534	NS	100	99.7	99.7	
Barium	NS	0.0192	NS	100	97.3	97.3	
Cadmium	NS	-0.0858	NS	100	98.8	98.8	
Chromium	NS	0.103	NS	100	95.5	95.5	
Cobalt	NS	0.0633	NS	100	95.9	95.9	
Copper	NS	0.158	NS	100	97.4	97.4	
Lead	NS	0.0177	NS	100	99.1	99.1	
Manganese	NS	0.221	NS	100	96.5	96.5	
Nickel	NS	0.234	NS	100	95.9	95.9	
Silver	NS	0.0180	NS	100	98.6	98.6	
Thallium	NS	0.00290	NS	100	97.7	97.7	
Vanadium	NS	-0.0379	NS	100	94.8	94.8	
Zinc	NS	0.540	NS	100	101	101	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 5220566
Report generated 03/30/2017 10:47

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L17031339 **Workgroup (AAB#):** WG607753
Instrument ID: ICP-MS2 **Method:** 6020A
Sol. A : WG608225-08 **File ID:** NI.032917.131015 **Units:** ug/L
Sol. AB : WG608225-09 **File ID:** NI.032917.131320 **Matrix:** Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0841	NS	100	100	100	
Arsenic	NS	0.0220	NS	100	100	100	
Barium	NS	0.00410	NS	100	98.6	98.6	
Cadmium	NS	-0.104	NS	100	98.4	98.4	
Chromium	NS	0.145	NS	100	97.6	97.6	
Cobalt	NS	0.0436	NS	100	98.6	98.6	
Copper	NS	0.166	NS	100	99.0	99.0	
Lead	NS	0.0130	NS	100	100	100	
Manganese	NS	0.219	NS	100	97.9	97.9	
Nickel	NS	0.190	NS	100	98.4	98.4	
Silver	NS	-0.00100	NS	100	92.8	92.8	
Thallium	NS	-0.00560	NS	100	98.6	98.6	
Vanadium	NS	-0.0373	NS	100	97.3	97.3	
Zinc	NS	0.293	NS	100	102	102	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 5220566
Report generated 03/30/2017 10:47

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L17031339 **Analytical Method:** 6020
Analytical Workgroup: WG607753 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 27-MAR-2017 11:24

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L17031313-01	SAMP	27-MAR-2017 14:12	103.119	98.651	96.633
L17031339-02	SAMP	27-MAR-2017 14:31	93.003	97.137	94.142
L17031339-04	SAMP	27-MAR-2017 14:34	96.148	100.452	97.145
L17031339-05	SAMP	27-MAR-2017 14:37	106.781	105.76	103.099
L17031339-06	SAMP	27-MAR-2017 14:40	102.123	101.682	98.854
L17031339-07	SAMP	27-MAR-2017 14:43	105.725	103.713	100.917
L17031339-08	SAMP	27-MAR-2017 14:46	105.011	103.284	100.564
L17031339-09	SAMP	27-MAR-2017 14:49	105.576	103.862	100.277
L17031339-11	SAMP	27-MAR-2017 14:52	107.233	103.596	101.154
L17031339-13	SAMP	27-MAR-2017 14:56	105.833	103.938	100.478
L17031339-15	SAMP	27-MAR-2017 14:59	109.135	105.717	100.984
WG607689-02	BLANK	27-MAR-2017 13:54	100.034	97.09	95.097
WG607689-03	LCS	27-MAR-2017 13:57	104.981	101.698	101.746
WG607689-04	FLT_BLK	27-MAR-2017 14:00	105.524	101.905	101.377
WG607753-01	PSPK	27-MAR-2017 14:15	105.051	99.571	98.303
WG607753-02	SERIAL	27-MAR-2017 14:18	102.185	94.416	94.154
WG607833-05	ICV	27-MAR-2017 11:36	99.492	96.781	96.749
WG607833-06	ICB	27-MAR-2017 11:39	101.269	97.979	98.522
WG607833-07	LLICV	27-MAR-2017 11:42	99.108	94.964	95.408
WG607833-08	ICS	27-MAR-2017 11:45	97.413	95.723	94.346
WG607833-10	ICS	27-MAR-2017 11:55	105.485	101.255	99.708
WG607833-11	CCV	27-MAR-2017 11:58	103.252	99.401	98.417
WG607833-12	CCB	27-MAR-2017 12:01	101.67	97.822	96.011
WG607833-17	CCV	27-MAR-2017 13:38	104.417	100.672	100.102
WG607833-18	CCB	27-MAR-2017 13:41	104.719	99.787	99.918
WG607833-19	CCV	27-MAR-2017 14:25	103.568	99.582	100.107
WG607833-20	CCB	27-MAR-2017 14:28	104.412	99.238	99.454
WG607833-21	CCV	27-MAR-2017 15:02	109.594	105.89	103.703
WG607833-22	CCB	27-MAR-2017 15:05	107.076	103.688	101.561
WG607833-27	LLCCV	27-MAR-2017 16:01	102.212	96.525	96.814

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 5220562
Report generated: 03/30/2017 10:47

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L17031339 **Analytical Method:** 6020
Analytical Workgroup: WG607753 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 29-MAR-2017 12:48

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L17031339-02	SAMP	29-MAR-2017 16:58	89.679	91.32	91.769
L17031339-04	SAMP	29-MAR-2017 17:01	93.014	95.262	95.376
L17031339-05	SAMP	29-MAR-2017 17:04	89.108	90.373	91.543
L17031339-07	SAMP	29-MAR-2017 17:07	90.247	91.804	92.084
L17031339-08	SAMP	29-MAR-2017 17:10	90.765	92.053	93.003
L17031339-09	SAMP	29-MAR-2017 17:13	90.592	91.965	93.956
L17031339-11	SAMP	29-MAR-2017 17:23	90.695	91.927	93.153
L17031339-13	SAMP	29-MAR-2017 17:26	90.677	92.272	93.358
L17031339-15	SAMP	29-MAR-2017 17:29	91.746	92.86	93.31
WG608225-05	ICV	29-MAR-2017 13:00	95.534	94.124	94.62
WG608225-06	ICB	29-MAR-2017 13:04	95.5	92.097	93.28
WG608225-07	LLICV	29-MAR-2017 13:07	95.555	93.796	95.071
WG608225-08	ICS	29-MAR-2017 13:10	94.321	92.405	93.346
WG608225-09	ICS	29-MAR-2017 13:13	95.567	94.806	95.109
WG608225-10	CCV	29-MAR-2017 13:16	97.305	95.36	96.744
WG608225-11	CCB	29-MAR-2017 13:19	97.184	94.435	94.864
WG608225-20	CCV	29-MAR-2017 16:45	95.153	97.222	97.695
WG608225-21	CCB	29-MAR-2017 16:48	93.692	95.421	96.201
WG608225-22	CCV	29-MAR-2017 17:16	92.158	95.901	96.132
WG608225-23	CCB	29-MAR-2017 17:19	94.106	96.882	98.676
WG608225-24	CCV	29-MAR-2017 17:32	94.514	97.507	98.48
WG608225-25	CCB	29-MAR-2017 17:35	94.013	97.034	98.07
WG608225-26	LLCCV	29-MAR-2017 17:38	94.151	95.817	97.205
WG608225-27	ICS	29-MAR-2017 18:06	93.921	99.491	99.988
WG608225-28	ICS	29-MAR-2017 18:09	94.049	98.344	98.265
WG608225-29	CCV	29-MAR-2017 18:12	93.792	98.23	98.881
WG608225-30	CCB	29-MAR-2017 18:15	93.672	96.242	98.017

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 5220562
Report generated: 03/30/2017 10:47

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L17031339 **Date:** 01/24/2017
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 5220561
Report generated: 03/30/2017 10:47

2.2.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexION Data\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Monday, March 27, 2017 10:50:47

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1319	2026	0.705	
Mg	23.985	23.975	4499	2021	0.708	
Co	58.933	58.925	11692	2023	0.689	
In	114.904	114.925	22859	2029	0.691	
U	238.050	238.075	47456	2046	0.679	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	10.511
5.575	4.521
5.625	3.060
5.675	1.407
5.725	1.702
5.775	1.110
5.825	1.128
5.875	2.348
5.925	1.774
5.975	1.676
6.025	0.221
6.075	1.806
6.125	1.951
6.175	1.704
6.225	0.769
6.275	2.685
6.325	9.565
6.375	44.605
6.425	71.261
6.475	10.648
6.525	15.215
6.575	12.539
6.625	5.091
6.675	2.360
6.725	0.818
6.775	1.227
6.825	1.668

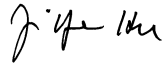
Report Date/Time: Monday, March 27, 2017 10:53:58
Page 1

Approved: March 28, 2017

6.875	0.785
6.925	1.056
6.975	0.789
7.025	1.132
7.075	1.390
7.125	1.838
7.175	0.873
7.225	1.423
7.275	2.100
7.325	1.082
7.375	5.275
7.425	45.913
7.475	49.793
7.525	71.261
7.575	70.613
7.625	106.066
7.675	129.603
7.725	64.438
7.775	20.328
7.825	43.853
7.875	43.241
7.925	69.869
7.975	61.237
8.025	51.602
8.075	70.711
8.125	37.268
8.175	47.140
8.225	51.349
8.275	72.436
8.325	46.481
8.375	69.722
8.425	46.481
8.475	61.237
22.525	91.287
22.575	31.044
22.625	38.030
22.675	14.425
22.725	68.316
22.775	46.967
22.825	22.588
22.875	24.601
22.925	19.457
22.975	33.503
23.025	39.123
23.075	45.913
23.125	21.114
23.175	36.444

Report Date/Time: Monday, March 27, 2017 10:53:58
Page 2

Approved: March 28, 2017



23.225	31.186
23.275	37.171
23.325	32.407
23.375	39.316
23.425	15.385
23.475	5.257
23.525	2.750
23.575	2.313
23.625	1.457
23.675	0.323
23.725	1.135
23.775	0.794
23.825	0.918
23.875	0.934
23.925	0.705
23.975	0.935
24.025	0.610
24.075	0.512
24.125	0.589
24.175	1.653
24.225	1.196
24.275	2.211
24.325	2.171
24.375	49.155
24.425	23.234
24.475	18.378
24.525	4.129
24.575	1.802
24.625	1.807
24.675	1.662
24.725	2.141
24.775	0.779
24.825	2.031
24.875	1.640
24.925	1.796
24.975	1.889
25.025	1.662
25.075	1.203
25.125	1.827
25.175	1.574
25.225	1.845
25.275	8.440
25.325	16.110
25.375	63.246
25.425	30.322
25.475	21.597
57.525	6.298

Report Date/Time: Monday, March 27, 2017 10:53:58
Page 3

Approved: March 28, 2017

57.575	2.207
57.625	1.422
57.675	2.303
57.725	2.064
57.775	1.649
57.825	2.065
57.875	1.368
57.925	0.692
57.975	1.466
58.025	0.607
58.075	0.999
58.125	1.067
58.175	2.113
58.225	3.515
58.275	23.406
58.325	26.769
58.375	22.720
58.425	10.137
58.475	8.304
58.525	4.604
58.575	2.725
58.625	1.743
58.675	1.254
58.725	2.187
58.775	1.228
58.825	1.240
58.875	0.890
58.925	0.560
58.975	2.861
59.025	0.884
59.075	2.233
59.125	1.028
59.175	0.654
59.225	7.188
59.275	16.347
59.325	67.748
59.375	82.402
59.425	43.026
59.475	11.874
59.525	6.059
59.575	4.243
59.625	4.834
59.675	2.293
59.725	1.524
59.775	3.661
59.825	3.166
59.875	3.193

Approved: March 28, 2017

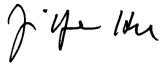
59.925	4.026
59.975	3.539
60.025	2.292
60.075	2.157
60.125	4.383
60.175	3.131
60.225	8.442
60.275	31.780
60.325	84.735
60.375	43.853
60.425	74.154
60.475	47.380
113.525	6.249
113.575	5.265
113.625	3.047
113.675	0.745
113.725	1.516
113.775	2.901
113.825	1.585
113.875	0.583
113.925	1.681
113.975	1.439
114.025	1.531
114.075	1.631
114.125	1.651
114.175	1.411
114.225	3.040
114.275	5.952
114.325	14.048
114.375	26.702
114.425	29.821
114.475	8.937
114.525	6.846
114.575	2.739
114.625	1.801
114.675	0.993
114.725	2.667
114.775	0.934
114.825	1.744
114.875	1.108
114.925	1.509
114.975	1.058
115.025	1.801
115.075	1.194
115.125	1.326
115.175	1.156
115.225	1.426

Report Date/Time: Monday, March 27, 2017 10:53:58
Page 5

Approved: March 28, 2017

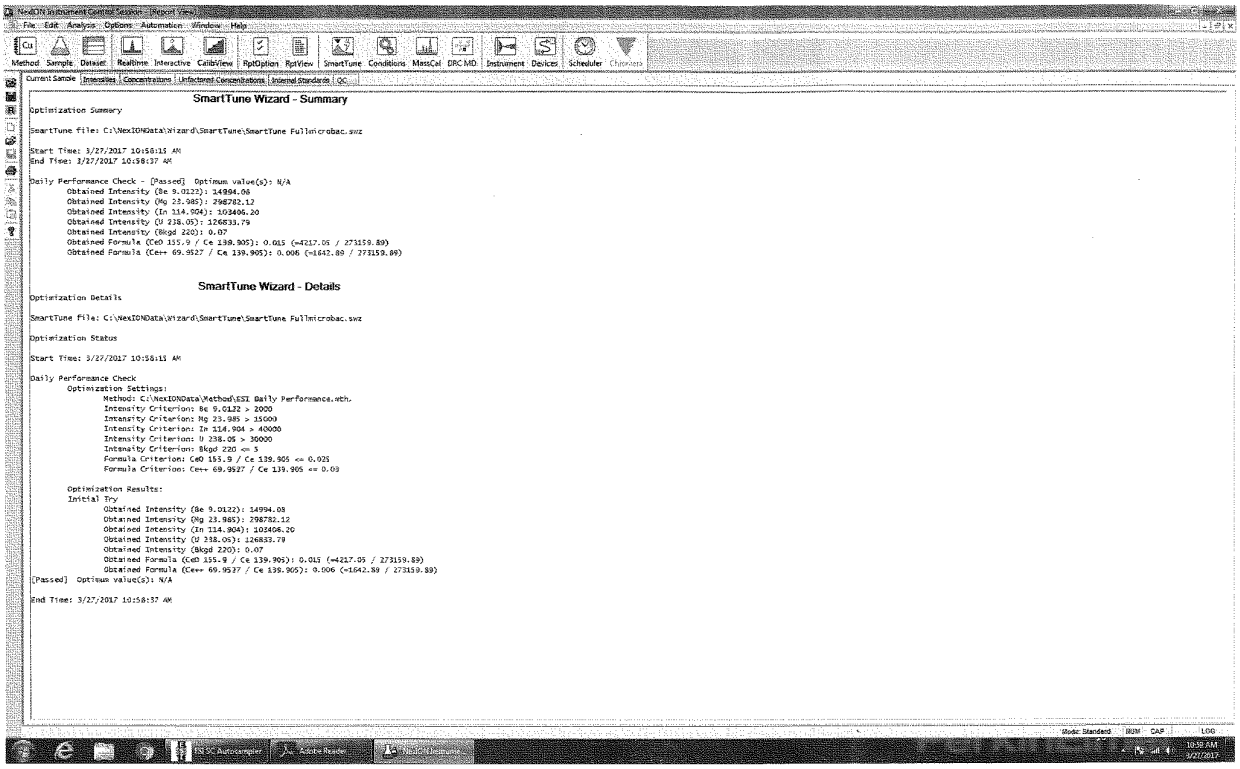
115.275	3.397
115.325	2.987
115.375	44.628
115.425	45.644
115.475	22.222
115.525	10.159
115.575	11.135
115.625	5.514
115.675	9.236
115.725	2.131
115.775	3.300
115.825	3.001
115.875	5.646
115.925	3.523
115.975	4.536
116.025	2.773
116.075	2.031
116.125	1.314
116.175	3.810
116.225	3.865
116.275	10.860
116.325	18.133
116.375	19.444
116.425	41.691
116.475	39.033
236.525	
236.575	21.812
236.625	33.048
236.675	12.163
236.725	21.317
236.775	15.901
236.825	27.082
236.875	20.242
236.925	18.088
236.975	15.710
237.025	36.647
237.075	23.044
237.125	25.529
237.175	14.650
237.225	10.012
237.275	25.408
237.325	31.367
237.375	6.858
237.425	24.594
237.475	29.954
237.525	27.288
237.575	22.794

Approved: March 28, 2017



237.625	9.892
237.675	3.250
237.725	5.678
237.775	1.873
237.825	3.181
237.875	2.129
237.925	1.836
237.975	1.890
238.025	0.969
238.075	1.255
238.125	0.511
238.175	1.423
238.225	1.154
238.275	1.049
238.325	1.508
238.375	2.275
238.425	2.119
238.475	1.112
238.525	7.757
238.575	13.324
238.625	18.222
238.675	19.518
238.725	17.255
238.775	16.564
238.825	18.442
238.875	21.221
238.925	21.706
238.975	21.520
239.025	20.787
239.075	29.433
239.125	29.691
239.175	24.341
239.225	31.276
239.275	21.195
239.325	17.320
239.375	38.379
239.425	22.482
239.475	14.038

Approved: March 28, 2017



Approved: March 28, 2017

Method 6020 - Summary Report

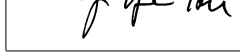
Sample ID: Blank
Sample Date/Time: Monday, March 27, 2017 11:21:12
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	262784.6	1.5				ug/L		Standard
	Be	9	28.3	56.7				ug/L		Standard
	Al	27	2186.8	5.0				ug/L		Standard
	Sc	45	39299.2	1.4				ug/L		Standard
	Ti	47	82.3	18.3				ug/L		Standard
	V	51	1875.5	1.9				ug/L		Standard
	Cr	52	8220.6	1.7				ug/L		Standard
	Cr	53	1083.4	3.3				ug/L		Standard
	Mn	55	2737.9	3.0				ug/L		Standard
	Co	59	635.0	1.8				ug/L		Standard
	Ni	60	260.7	7.7				ug/L		Standard
	Cu	65	659.7	2.4				ug/L		Standard
	Zn	66	558.0	6.5				ug/L		Standard
>	**Ge**	72	807250.9	1.2				ug/L		Standard
	As	75	-42.8	56.3				ug/L		Standard
	Se	82	17.8	39.9				ug/L		Standard
	Se-1	77	126.7	9.4				ug/L		Standard
>	**Ga**	71	31.7	32.9				mg/L		Standard
	Rb	85	26.7	39.0				ug/L		Standard
	Y	89	534993.9	1.2				ug/L		Standard
>	**Rh**	103	20.0	25.0				ug/L		Standard
	Mo	98	285.5	29.8				ug/L		Standard
	Ag	107	129.3	12.5				ug/L		Standard
	Cd	111	5.6	34.6				mg/L		Standard
	Cd	114	45.7	69.2				ug/L		Standard
>	**In**	115	679215.2	1.4				ug/L		Standard
	Sn	118	410.7	16.8				ug/L		Standard
	Sb	123	497.0	29.2				ug/L		Standard
	Ba	135	43.3	19.6				ug/L		Standard
	Ce	140	21.7	13.3				ug/L		Standard
>	**Tb**	159	983965.4	0.1				ug/L		Standard
	Ho	165	10.0	50.0				ug/L		Standard
	Tl	203	248.0	17.7				ug/L		Standard
	Tl	205	620.0	25.4				ug/L		Standard
	Pb	206	502.7	2.0				ug/L		Standard
	Pb	207	406.3	1.5				ug/L		Standard
	Pb	208	497.0	2.3				ug/L		Standard
	U	238	17.0	58.8				ug/L		Standard
>	**Bi**	209	559220.7	0.2				ug/L		Standard

Sample ID: Blank
Report Date/Time: Monday, March 27, 2017 11:23:23
Page 1

Approved: March 28, 2017



	Na	23	1.7	173.2	mg/L	Standard
	Mg	24	33.3	17.3	mg/L	Standard
	K	39	18.3	15.7	mg/L	Standard
	Ca	43	71.7	24.5	mg/L	Standard
	Fe	54	29.2	17.1	mg/L	Standard
	Fe	57	381.7	11.3	mg/L	Standard
>	**Sc-1**	45	39299.2	1.4	mg/L	Standard
	Cl	35	4.0	50.0	ug/L	Standard
	Kr	83	3.3	91.7	ug/L	Standard
	Br	81	2286.8	11.2	ug/L	Standard
	P	31	80.0	21.7	ug/L	Standard
	S	34	45.0	40.1	ug/L	Standard
	Sr	88	178.3	14.1	ug/L	Standard
	C	12	33.3	75.5	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	3.3	173.2	mg/L	Standard
	Dy	164	15.9	34.8	mg/L	Standard
	Ho-1	165	10.0	50.0	mg/L	Standard
	Er	166	16.7	69.3	mg/L	Standard
	I	127	5887.8	2.2	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Blank
Report Date/Time: Monday, March 27, 2017 11:23:23
Page 2

Approved: March 28, 2017

Rb	85
Y	89
Rh	103
Mo	98
Ag	107
Cd	111
Cd	114
In	115
Sn	118
Sb	123
Ba	135
Ce	140
Tb	159
Ho	165
Tl	203
Tl	205
Pb	206
Pb	207
Pb	208
U	238
Bi	209
Na	23
Mg	24
K	39
Ca	43
Fe	54
Fe	57
Sc-1	45
Cl	35
Kr	83
Br	81
P	31
S	34
Sr	88
C	12
N	14
Hg	202
Dy	164
Ho-1	165
Er	166
I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
Report Date/Time: Monday, March 27, 2017 11:23:23
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

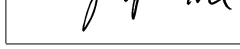
Sample ID: Standard 1
Sample Date/Time: Monday, March 27, 2017 11:24:17
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	266166.5	2.1				ug/L	262785	Standard
	Be	9	13.3	21.7				ug/L	28	Standard
	Al	27	2211.8	1.5				ug/L	2187	Standard
	Sc	45	39342.7	1.8				ug/L	39299	Standard
	Ti	47	66.7	14.7				ug/L	82	Standard
	V	51	1795.7	7.8				ug/L	1876	Standard
	Cr	52	8083.8	2.3				ug/L	8221	Standard
	Cr	53	1090.0	11.3				ug/L	1083	Standard
	Mn	55	2625.2	1.3				ug/L	2738	Standard
	Co	59	598.0	4.8				ug/L	635	Standard
	Ni	60	247.3	2.4				ug/L	261	Standard
	Cu	65	639.3	2.1				ug/L	660	Standard
	Zn	66	562.3	5.3				ug/L	558	Standard
>	Ge	72	798567.4	0.5				ug/L	807251	Standard
	As	75	-10.9	322.0				ug/L	-43	Standard
	Se	82	21.5	26.7				ug/L	18	Standard
	Se-1	77	121.7	9.5				ug/L	127	Standard
>	Ga	71	33.3	8.7				mg/L	32	Standard
	Rb	85	26.7	28.6				ug/L	27	Standard
	Y	89	543593.1	0.7				ug/L	534994	Standard
>	Rh	103	18.3	41.7				ug/L	20	Standard
	Mo	98	86.2	30.7				ug/L	285	Standard
	Ag	107	118.7	10.2				ug/L	129	Standard
	Cd	111	6.6	38.8				mg/L	6	Standard
	Cd	114	55.6	21.0				ug/L	46	Standard
>	In	115	677898.2	0.5				ug/L	679215	Standard
	Sn	118	287.7	4.2				ug/L	411	Standard
	Sb	123	203.4	41.2				ug/L	497	Standard
	Ba	135	54.0	9.8				ug/L	43	Standard
	Ce	140	33.3	45.8				ug/L	22	Standard
>	Tb	159	988371.4	2.0				ug/L	983965	Standard
	Ho	165	13.3	57.3				ug/L	10	Standard
	Tl	203	223.3	5.2				ug/L	248	Standard
	Tl	205	480.0	29.0				ug/L	620	Standard
	Pb	206	478.0	2.7				ug/L	503	Standard
	Pb	207	398.0	4.5				ug/L	406	Standard
	Pb	208	474.7	9.3				ug/L	497	Standard
	U	238	4.3	66.6				ug/L	17	Standard
>	Bi	209	560936.1	0.1				ug/L	559221	Standard

Sample ID: Standard 1
Report Date/Time: Monday, March 27, 2017 11:26:28
Page 1

Approved: March 28, 2017



Na	23	0.0		mg/L	2	Standard
Mg	24	43.3	13.3	mg/L	33	Standard
K	39	18.3	63.0	mg/L	18	Standard
Ca	43	65.0	13.3	mg/L	72	Standard
Fe	54	41.1	6.7	mg/L	29	Standard
Fe	57	376.7	9.6	mg/L	382	Standard
Sc-1	45	39342.7	1.8	mg/L	39299	Standard
Cl	35	0.7	173.2	ug/L	4	Standard
Kr	83	3.3	45.8	ug/L	3	Standard
Br	81	2330.2	4.5	ug/L	2287	Standard
P	31	85.0	21.2	ug/L	80	Standard
S	34	33.3	22.9	ug/L	45	Standard
Sr	88	175.0	20.6	ug/L	178	Standard
C	12	23.3	99.0	mg/L	33	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	0.0		mg/L	3	Standard
Dy	164	9.7	2.9	mg/L	16	Standard
Ho-1	165	13.3	57.3	mg/L	10	Standard
Er	166	6.7	86.6	mg/L	17	Standard
I	127	5747.8	5.8	mg/L	5888	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: Standard 1
Report Date/Time: Monday, March 27, 2017 11:26:28
Page 2

Approved: March 28, 2017

Rb	85
Y	89
Rh	103
Mo	98
Ag	107
Cd	111
Cd	114
In	115
Sn	118
Sb	123
Ba	135
Ce	140
Tb	159
Ho	165
Tl	203
Tl	205
Pb	206
Pb	207
Pb	208
U	238
Bi	209
Na	23
Mg	24
K	39
Ca	43
Fe	54
Fe	57
Sc-1	45
Cl	35
Kr	83
Br	81
P	31
S	34
Sr	88
C	12
N	14
Hg	202
Dy	164
Ho-1	165
Er	166
I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
Report Date/Time: Monday, March 27, 2017 11:26:28
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

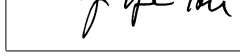
Sample ID: Standard 2
Sample Date/Time: Monday, March 27, 2017 11:27:23
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	270604.8	3.0				ug/L	262785	Standard
	Be	9	131.7	2.2				ug/L	28	Standard
	Al	27	9996.6	3.3				ug/L	2187	Standard
	Sc	45	39289.2	1.5				ug/L	39299	Standard
	Ti	47	105.0	9.9				ug/L	82	Standard
	V	51	2237.4	5.3				ug/L	1876	Standard
	Cr	52	8481.7	1.2				ug/L	8221	Standard
	Cr	53	1081.7	7.1				ug/L	1083	Standard
	Mn	55	3141.7	1.8				ug/L	2738	Standard
	Co	59	1106.7	0.7				ug/L	635	Standard
	Ni	60	352.0	6.6				ug/L	261	Standard
	Cu	65	813.7	3.1				ug/L	660	Standard
	Zn	66	683.0	3.4				ug/L	558	Standard
>	Ge	72	812254.8	1.5				ug/L	807251	Standard
	As	75	2.0	2438.3				ug/L	-43	Standard
	Se	82	15.5	10.5				ug/L	18	Standard
	Se-1	77	128.3	13.3				ug/L	127	Standard
>	Ga	71	40.0	43.3				mg/L	32	Standard
	Rb	85	35.0	14.3				ug/L	27	Standard
	Y	89	544193.2	1.3				ug/L	534994	Standard
>	Rh	103	15.0	66.7				ug/L	20	Standard
	Mo	98	547.3	2.0				ug/L	285	Standard
	Ag	107	487.3	1.7				ug/L	129	Standard
	Cd	111	119.3	8.8				mg/L	6	Standard
	Cd	114	324.3	7.0				ug/L	46	Standard
>	In	115	676608.5	1.6				ug/L	679215	Standard
	Sn	118	336.3	1.2				ug/L	411	Standard
	Sb	123	438.7	13.5				ug/L	497	Standard
	Ba	135	147.3	6.6				ug/L	43	Standard
	Ce	140	31.7	9.1				ug/L	22	Standard
>	Tb	159	991376.8	1.2				ug/L	983965	Standard
	Ho	165	11.7	49.5				ug/L	10	Standard
	Tl	203	625.0	2.0				ug/L	248	Standard
	Tl	205	1568.4	8.9				ug/L	620	Standard
	Pb	206	819.0	3.8				ug/L	503	Standard
	Pb	207	703.3	4.5				ug/L	406	Standard
	Pb	208	830.3	2.5				ug/L	497	Standard
	U	238	259.7	7.7				ug/L	17	Standard
>	Bi	209	560503.7	1.5				ug/L	559221	Standard

Sample ID: Standard 2
Report Date/Time: Monday, March 27, 2017 11:29:34
Page 1

Approved: March 28, 2017



Na	23	1.7	173.2	mg/L	2	Standard
Mg	24	43.3	13.3	mg/L	33	Standard
K	39	23.3	12.4	mg/L	18	Standard
Ca	43	80.0	45.1	mg/L	72	Standard
Fe	54	35.8	57.3	mg/L	29	Standard
Fe	57	396.7	12.4	mg/L	382	Standard
Sc-1	45	39289.2	1.5	mg/L	39299	Standard
Cl	35	0.7	173.2	ug/L	4	Standard
Kr	83	2.0	100.0	ug/L	3	Standard
Br	81	2133.5	18.4	ug/L	2287	Standard
P	31	78.3	20.5	ug/L	80	Standard
S	34	41.7	25.0	ug/L	45	Standard
Sr	88	138.3	30.3	ug/L	178	Standard
C	12	20.0	86.6	mg/L	33	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	3.3	173.2	mg/L	3	Standard
Dy	164	12.9	120.1	mg/L	16	Standard
Ho-1	165	11.7	49.5	mg/L	10	Standard
Er	166	10.0	100.0	mg/L	17	Standard
I	127	5484.3	1.7	mg/L	5888	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: Standard 2
Report Date/Time: Monday, March 27, 2017 11:29:34
Page 2

Approved: March 28, 2017

Rb	85
Y	89
Rh	103
Mo	98
Ag	107
Cd	111
Cd	114
In	115
Sn	118
Sb	123
Ba	135
Ce	140
Tb	159
Ho	165
Tl	203
Tl	205
Pb	206
Pb	207
Pb	208
U	238
Bi	209
Na	23
Mg	24
K	39
Ca	43
Fe	54
Fe	57
Sc-1	45
Cl	35
Kr	83
Br	81
P	31
S	34
Sr	88
C	12
N	14
Hg	202
Dy	164
Ho-1	165
Er	166
I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
Report Date/Time: Monday, March 27, 2017 11:29:34
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Monday, March 27, 2017 11:30:28
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	255180.3	2.8				ug/L	262785	Standard
	Be	9	120660.5	2.9	**50.0000**	2.174	4.3	ug/L	28	Standard
	Al	27	8492704.4	0.6	**50.0000**	1.394	2.8	ug/L	2187	Standard
	Sc	45	39123.8	3.1				ug/L	39299	Standard
	Ti	47	26346.2	0.7	**100.0000**	2.000	2.0	ug/L	82	Standard
	V	51	423181.6	0.8	**50.0000**	1.109	2.2	ug/L	1876	Standard
	Cr	52	401997.0	0.1	**50.0000**	0.815	1.6	ug/L	8221	Standard
	Cr	53	50116.1	1.4	**50.0000**	1.054	2.1	ug/L	1083	Standard
	Mn	55	669560.8	1.5	**50.0000**	1.548	3.1	ug/L	2738	Standard
	Co	59	509002.9	1.6	**50.0000**	1.537	3.1	ug/L	635	Standard
	Ni	60	109605.4	0.7	**50.0000**	1.115	2.2	ug/L	261	Standard
	Cu	65	112221.1	1.8	**50.0000**	1.443	2.9	ug/L	660	Standard
	Zn	66	67392.6	1.1	**50.0000**	1.345	2.7	ug/L	558	Standard
>	Ge	72	782555.2	1.6				ug/L	807251	Standard
	As	75	66312.4	0.8	**50.0000**	1.159	2.3	ug/L	-43	Standard
	Se	82	5977.3	1.2	**50.0000**	1.287	2.6	ug/L	18	Standard
	Se-1	77	4442.3	1.5	**50.0000**	1.260	2.5	ug/L	127	Standard
>	Ga	71	85.0	17.6				mg/L	32	Standard
	Rb	85	398.3	5.1				ug/L	27	Standard
	Y	89	534593.5	2.1				ug/L	534994	Standard
>	Rh	103	40.0	25.0				ug/L	20	Standard
	Mo	98	435460.7	0.5	**100.0000**	2.511	2.5	ug/L	285	Standard
	Ag	107	351605.6	0.3	**50.0000**	1.045	2.1	ug/L	129	Standard
	Cd	111	101480.7	0.2	**50.0000**	1.006	2.0	mg/L	6	Standard
	Cd	114	264152.9	0.5	**50.0000**	1.108	2.2	ug/L	46	Standard
>	In	115	665212.6	2.0				ug/L	679215	Standard
	Sn	118	59043.5	1.4	**50.0000**	0.573	1.1	ug/L	411	Standard
	Sb	123	265466.8	0.5	**50.0000**	1.217	2.4	ug/L	497	Standard
	Ba	135	104132.4	1.8	**50.0000**	1.828	3.7	ug/L	43	Standard
	Ce	140	310.0	11.3				ug/L	22	Standard
>	Tb	159	977512.5	1.4				ug/L	983965	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	393959.8	1.1	**50.0000**	1.022	2.0	ug/L	248	Standard
	Tl	205	940794.0	1.5	**50.0000**	1.140	2.3	ug/L	620	Standard
	Pb	206	319422.5	1.1	**50.0000**	0.984	2.0	ug/L	503	Standard
	Pb	207	289270.7	0.8	**50.0000**	0.893	1.8	ug/L	406	Standard
	Pb	208	336347.1	0.6	**50.0000**	0.672	1.3	ug/L	497	Standard
	U	238	248110.7	0.8	**50.0000**	0.876	1.8	ug/L	17	Standard
>	Bi	209	548110.5	1.0				ug/L	559221	Standard

Sample ID: Standard 3
Report Date/Time: Monday, March 27, 2017 11:32:39
Page 1

Approved: March 28, 2017

	Na	23	10.0	50.0	**5.0000**	3.052	61.0	mg/L	2	Standard
	Mg	24	441.7	9.6	**5.0000**	0.361	7.2	mg/L	33	Standard
	K	39	790.0	9.3	**5.0000**	0.318	6.4	mg/L	18	Standard
	Ca	43	75.0	29.1	**5.0000**	20.041	400.8	mg/L	72	Standard
	Fe	54	871.3	5.4	**5.0000**	0.184	3.7	mg/L	29	Standard
	Fe	57	658.3	3.7	**5.0000**	0.831	16.6	mg/L	382	Standard
>	**Sc-1**	45	39123.8	3.1				mg/L	39299	Standard
	Cl	35	2.0	0.0				ug/L	4	Standard
	Kr	83	3.7	15.7				ug/L	3	Standard
	Br	81	2146.8	3.1				ug/L	2287	Standard
	P	31	55.0	24.1				ug/L	80	Standard
	S	34	51.7	47.7				ug/L	45	Standard
	Sr	88	148.3	17.0				ug/L	178	Standard
	C	12	13.3	43.3				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	13.2	116.4				mg/L	16	Standard
	Ho-1	165	8.3	91.7				mg/L	10	Standard
	Er	166	3.3	173.2				mg/L	17	Standard
	I	127	3218.7	3.7				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Standard 3
Report Date/Time: Monday, March 27, 2017 11:32:39
Page 2

Approved: March 28, 2017

Rb	85
Y	89
Rh	103
Mo	98
Ag	107
Cd	111
Cd	114
In	115
Sn	118
Sb	123
Ba	135
Ce	140
Tb	159
Ho	165
Tl	203
Tl	205
Pb	206
Pb	207
Pb	208
U	238
Bi	209
Na	23
Mg	24
K	39
Ca	43
Fe	54
Fe	57
Sc-1	45
Cl	35
Kr	83
Br	81
P	31
S	34
Sr	88
C	12
N	14
Hg	202
Dy	164
Ho-1	165
Er	166
I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 3
Report Date/Time: Monday, March 27, 2017 11:32:39
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Monday, March 27, 2017 11:33:33
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	250131.3	1.2				ug/L	262785	Standard
	Be	9	238621.4	1.7	**100.4139**	2.463	2.5	ug/L	28	Standard
	Al	27	16267518.9	3.1	**98.8349**	4.223	4.3	ug/L	2187	Standard
	Sc	45	38057.7	1.8				ug/L	39299	Standard
	Ti	47	50958.2	0.3	**196.9929**	3.255	1.7	ug/L	82	Standard
	V	51	823918.6	0.6	**98.8572**	1.937	2.0	ug/L	1876	Standard
	Cr	52	771841.0	0.5	**98.5339**	1.823	1.8	ug/L	8221	Standard
	Cr	53	96516.5	1.9	**98.7014**	2.836	2.9	ug/L	1083	Standard
	Mn	55	1318862.8	1.2	**99.4222**	2.470	2.5	ug/L	2738	Standard
	Co	59	997525.7	1.2	**99.1094**	2.543	2.6	ug/L	635	Standard
	Ni	60	212400.7	0.2	**98.5716**	1.539	1.6	ug/L	261	Standard
	Cu	65	220061.3	0.8	**99.2621**	2.111	2.1	ug/L	660	Standard
	Zn	66	133769.3	0.7	**99.9389**	2.049	2.1	ug/L	558	Standard
>	Ge	72	780951.0	1.4				ug/L	807251	Standard
	As	75	133780.2	0.8	**100.5088**	2.144	2.1	ug/L	-43	Standard
	Se	82	12004.7	0.2	**100.3430**	1.449	1.4	ug/L	18	Standard
	Se-1	77	8800.2	2.2	**100.2908**	1.171	1.2	ug/L	127	Standard
>	Ga	71	128.3	12.5				mg/L	32	Standard
	Rb	85	705.0	5.6				ug/L	27	Standard
	Y	89	520475.3	1.8				ug/L	534994	Standard
>	Rh	103	45.0	19.2				ug/L	20	Standard
	Mo	98	844901.3	1.3	**198.3581**	4.605	2.3	ug/L	285	Standard
	Ag	107	684218.6	1.0	**99.3313**	1.962	2.0	ug/L	129	Standard
	Cd	111	196161.8	0.8	**98.9916**	1.817	1.8	mg/L	6	Standard
	Cd	114	514467.0	0.3	**99.3644**	0.700	0.7	ug/L	46	Standard
>	In	115	655986.2	1.0				ug/L	679215	Standard
	Sn	118	111682.8	0.7	**98.0206**	1.353	1.4	ug/L	411	Standard
	Sb	123	527769.8	1.3	**100.4068**	2.326	2.3	ug/L	497	Standard
	Ba	135	206200.1	1.2	**100.1926**	2.043	2.0	ug/L	43	Standard
	Ce	140	551.7	13.6				ug/L	22	Standard
>	Tb	159	966580.1	1.4				ug/L	983965	Standard
	Ho	165	41.7	27.7				ug/L	10	Standard
	Tl	203	778302.7	0.8	**99.3453**	2.287	2.3	ug/L	248	Standard
	Tl	205	1851882.7	0.9	**99.1660**	2.402	2.4	ug/L	620	Standard
	Pb	206	637692.1	1.0	**99.8947**	2.559	2.6	ug/L	503	Standard
	Pb	207	572683.5	1.0	**99.4725**	2.493	2.5	ug/L	406	Standard
	Pb	208	670022.4	0.5	**99.7830**	2.085	2.1	ug/L	497	Standard
	U	238	492552.3	0.8	**99.5760**	2.321	2.3	ug/L	17	Standard
>	Bi	209	548769.3	1.6				ug/L	559221	Standard

Sample ID: Standard 4
Report Date/Time: Monday, March 27, 2017 11:35:44
Page 1

Approved: March 28, 2017

	Na	23	16.7	75.5	**9.5889**	7.871	82.1	mg/L	2	Standard
	Mg	24	823.4	1.3	**10.0443**	0.056	0.6	mg/L	33	Standard
	K	39	1416.7	4.8	**9.6692**	0.609	6.3	mg/L	18	Standard
	Ca	43	100.0	15.0	**33.9275**	20.047	59.1	mg/L	72	Standard
	Fe	54	1731.3	3.6	**10.2128**	0.416	4.1	mg/L	29	Standard
	Fe	57	863.4	6.4	**9.6511**	1.263	13.1	mg/L	382	Standard
>	**Sc-1**	45	38057.7	1.8				mg/L	39299	Standard
	Cl	35	0.7	173.2				ug/L	4	Standard
	Kr	83	4.0	43.3				ug/L	3	Standard
	Br	81	2076.8	5.3				ug/L	2287	Standard
	P	31	75.0	34.6				ug/L	80	Standard
	S	34	46.7	6.2				ug/L	45	Standard
	Sr	88	181.7	22.1				ug/L	178	Standard
	C	12	16.7	91.7				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	10.0	173.2				mg/L	3	Standard
	Dy	164	28.7	115.8				mg/L	16	Standard
	Ho-1	165	41.7	27.7				mg/L	10	Standard
	Er	166	26.7	114.6				mg/L	17	Standard
	I	127	4875.8	4.5				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Standard 4
Report Date/Time: Monday, March 27, 2017 11:35:44
Page 2

Approved: March 28, 2017

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
| >	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

Sample ID: Standard 4
Report Date/Time: Monday, March 27, 2017 11:35:44
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Monday, March 27, 2017 11:36:40
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	256239.0	1.8				ug/L	262785	Standard
	Be	9	120809.9	2.3	**49.6395**	1.933	3.9	ug/L	28	Standard
	Al	27	8316174.5	1.9	**49.3130**	1.316	2.7	ug/L	2187	Standard
	Sc	45	38056.1	0.3				ug/L	39299	Standard
	Ti	47	25304.4	1.1	**97.6360**	1.906	2.0	ug/L	82	Standard
	V	51	416793.0	1.2	**49.8809**	0.769	1.5	ug/L	1876	Standard
	Cr	52	395345.5	1.1	**49.9604**	1.002	2.0	ug/L	8221	Standard
	Cr	53	48938.9	0.7	**49.5204**	1.015	2.0	ug/L	1083	Standard
	Mn	55	668619.9	1.3	**50.2926**	1.094	2.2	ug/L	2738	Standard
	Co	59	505986.1	1.5	**50.2195**	1.007	2.0	ug/L	635	Standard
	Ni	60	108679.7	1.1	**50.3622**	0.813	1.6	ug/L	261	Standard
	Cu	65	112022.7	2.0	**50.3563**	1.218	2.4	ug/L	660	Standard
	Zn	66	68015.4	1.9	**50.5723**	1.139	2.3	ug/L	558	Standard
>	Ge	72	781263.1	1.4				ug/L	807251	Standard
	As	75	67297.4	1.6	**50.5651**	1.343	2.7	ug/L	-43	Standard
	Se	82	6068.0	0.6	**50.6620**	0.646	1.3	ug/L	18	Standard
	Se-1	77	4461.0	1.8	**50.1495**	1.097	2.2	ug/L	127	Standard
>	Ga	71	56.7	5.1				mg/L	32	Standard
	Rb	85	971.7	5.1				ug/L	27	Standard
	Y	89	524310.4	2.3				ug/L	534994	Standard
>	Rh	103	31.7	39.7				ug/L	20	Standard
	Mo	98	424096.3	0.8	**99.3773**	1.740	1.8	ug/L	285	Standard
	Ag	107	348392.1	0.7	**50.4813**	0.931	1.8	ug/L	129	Standard
	Cd	111	100422.9	0.8	**50.5865**	0.940	1.9	mg/L	6	Standard
	Cd	114	261903.3	0.3	**50.4951**	0.792	1.6	ug/L	46	Standard
>	In	115	657134.6	1.3				ug/L	679215	Standard
	Sn	118	57237.9	1.3	**50.0310**	0.607	1.2	ug/L	411	Standard
	Sb	123	268854.0	0.9	**51.0425**	0.847	1.7	ug/L	497	Standard
	Ba	135	103923.5	1.1	**50.4018**	1.141	2.3	ug/L	43	Standard
	Ce	140	70.0	28.6				ug/L	22	Standard
>	Tb	159	972572.3	1.3				ug/L	983965	Standard
	Ho	165	33.3	90.4				ug/L	10	Standard
	Tl	203	402746.2	0.9	**50.6844**	0.833	1.6	ug/L	248	Standard
	Tl	205	960067.4	0.8	**50.6830**	0.667	1.3	ug/L	620	Standard
	Pb	206	326078.6	1.5	**50.3372**	1.098	2.2	ug/L	503	Standard
	Pb	207	294256.5	1.2	**50.3697**	0.888	1.8	ug/L	406	Standard
	Pb	208	343916.1	1.2	**50.4796**	1.139	2.3	ug/L	497	Standard
	U	238	252251.8	1.5	**50.2939**	1.195	2.4	ug/L	17	Standard
>	Bi	209	556377.4	1.2				ug/L	559221	Standard

Sample ID: QC Std 1
Report Date/Time: Monday, March 27, 2017 11:38:51
Page 1

Approved: March 28, 2017

	Na	23	8.3	69.3	**4.3132**	3.725	86.4	mg/L	2	Standard
	Mg	24	448.3	4.6	**5.2261**	0.282	5.4	mg/L	33	Standard
	K	39	848.4	5.9	**5.7252**	0.336	5.9	mg/L	18	Standard
	Ca	43	90.0	5.6	**19.1409**	7.155	37.4	mg/L	72	Standard
	Fe	54	922.9	7.6	**5.3485**	0.424	7.9	mg/L	29	Standard
	Fe	57	596.7	5.1	**4.2777**	0.603	14.1	mg/L	382	Standard
>	**Sc-1**	45	38056.1	0.3				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	2.3	49.5				ug/L	3	Standard
	Br	81	2183.5	9.5				ug/L	2287	Standard
	P	31	70.0	25.8				ug/L	80	Standard
	S	34	45.0	11.1				ug/L	45	Standard
	Sr	88	156.7	20.8				ug/L	178	Standard
	C	12	26.7	43.3				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	16.2	38.3				mg/L	16	Standard
	Ho-1	165	33.3	90.4				mg/L	10	Standard
	Er	166	10.0	100.0				mg/L	17	Standard
	I	127	4434.0	6.9				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	99.279		
	Al	27	98.626		
	Sc	45			
	Ti	47	97.636		
	V	51	99.762		
	Cr	52	99.921		
	Cr	53			
	Mn	55	100.585		
	Co	59	100.439		
	Ni	60	100.724		
	Cu	65	100.713		
	Zn	66	101.145		
>	Ge	72		96.781	
	As	75	101.130		
	Se	82	101.324		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 1
Report Date/Time: Monday, March 27, 2017 11:38:51
Page 2

Approved: March 28, 2017

⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	99.377	
|	Ag	107	100.963	
|	Cd	111	101.173	
|	Cd	114		
|>	In	115		96.749
|	Sn	118	100.062	
|	Sb	123	102.085	
⌊	Ba	135	100.804	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	101.369	
|	Tl	205		
|	Pb	206	100.674	
|	Pb	207	100.739	
|	Pb	208	100.959	
|	U	238	100.588	
⌊>	Bi	209		99.492
⌈	Na	23	86.265	
|	Mg	24	104.522	
|	K	39	114.504	
|	Ca	43	382.819	
|	Fe	54	106.970	
|	Fe	57	85.554	
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	K	39	
QC Std 1	Ca	43	

Sample ID: QC Std 1
Report Date/Time: Monday, March 27, 2017 11:38:51
Page 3

Approved: March 28, 2017

QC Std 1	Fe	57

Sample ID: QC Std 1
Report Date/Time: Monday, March 27, 2017 11:38:51
Page 4

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Monday, March 27, 2017 11:39:47
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	254424.2	2.4				ug/L	262785	Standard
	Be	9	75.0	50.3	**0.0296**	0.015	50.5	ug/L	28	Standard
	Al	27	3085.3	29.3	**0.0122**	0.005	40.5	ug/L	2187	Standard
	Sc	45	39329.4	3.5				ug/L	39299	Standard
	Ti	47	65.3	20.6	**-0.0409**	0.050	121.7	ug/L	82	Standard
	V	51	1181.2	3.1	**-0.0685**	0.005	7.2	ug/L	1876	Standard
	Cr	52	5874.1	2.5	**-0.2537**	0.009	3.7	ug/L	8221	Standard
	Cr	53	958.4	1.8	**-0.0460**	0.022	46.9	ug/L	1083	Standard
	Mn	55	2685.6	13.2	**0.0218**	0.022	100.9	ug/L	2738	Standard
	Co	59	701.7	49.6	**0.0126**	0.032	255.9	ug/L	635	Standard
	Ni	60	278.0	22.6	**0.0199**	0.026	130.2	ug/L	261	Standard
	Cu	65	762.0	16.7	**0.0356**	0.049	138.3	ug/L	660	Standard
	Zn	66	751.0	5.2	**0.1134**	0.027	23.4	ug/L	558	Standard
>	Ge	72	790938.6	2.2				ug/L	807251	Standard
	As	75	4.4	1132.7	**0.0513**	0.037	71.6	ug/L	-43	Standard
	Se	82	20.6	23.7	**0.0953**	0.038	39.5	ug/L	18	Standard
	Se-1	77	121.3	11.2	**0.0094**	0.142	1511.9	ug/L	127	Standard
>	Ga	71	23.3	12.4				mg/L	32	Standard
	Rb	85	36.7	15.7				ug/L	27	Standard
	Y	89	525210.2	3.1				ug/L	534994	Standard
>	Rh	103	13.3	57.3				ug/L	20	Standard
	Mo	98	747.7	48.6	**0.1463**	0.079	54.2	ug/L	285	Standard
	Ag	107	354.3	60.8	**0.0314**	0.029	93.7	ug/L	129	Standard
	Cd	111	68.4	95.3	**0.0249**	0.031	125.7	mg/L	6	Standard
	Cd	114	202.5	77.4	**0.0272**	0.029	105.1	ug/L	46	Standard
>	In	115	669177.2	2.3				ug/L	679215	Standard
	Sn	118	341.7	17.0	**0.0571**	0.043	75.6	ug/L	411	Standard
	Sb	123	2103.9	3.7	**0.3616**	0.020	5.6	ug/L	497	Standard
	Ba	135	106.7	44.3	**0.0311**	0.021	68.0	ug/L	43	Standard
	Ce	140	31.7	36.5				ug/L	22	Standard
>	Tb	159	968100.9	1.0				ug/L	983965	Standard
	Ho	165	18.3	31.5				ug/L	10	Standard
	Tl	203	356.3	58.9	**0.0158**	0.026	161.6	ug/L	248	Standard
	Tl	205	756.7	54.5	**0.0069**	0.021	302.0	ug/L	620	Standard
	Pb	206	672.3	21.7	**0.0263**	0.021	80.4	ug/L	503	Standard
	Pb	207	573.3	19.9	**0.0267**	0.018	68.1	ug/L	406	Standard
	Pb	208	641.0	8.4	**0.0214**	0.007	33.0	ug/L	497	Standard
	U	238	99.0	60.3	**0.0179**	0.012	64.3	ug/L	17	Standard
>	Bi	209	566319.7	1.1				ug/L	559221	Standard

Sample ID: QC Std 2
Report Date/Time: Monday, March 27, 2017 11:41:58
Page 1

Approved: March 28, 2017

	Na	23	1.7	173.2	**0.0152**	1.845	12123.2	mg/L	2	Standard
	Mg	24	26.7	10.8	**-0.2027**	0.045	22.0	mg/L	33	Standard
	K	39	18.3	63.0	**-0.0292**	0.077	263.1	mg/L	18	Standard
	Ca	43	50.0	17.3	**-42.8956**	14.763	34.4	mg/L	72	Standard
	Fe	54	21.2	27.6	**-0.0800**	0.033	41.6	mg/L	29	Standard
	Fe	57	395.0	3.3	**-0.0368**	0.009	24.1	mg/L	382	Standard
>	**Sc-1**	45	39329.4	3.5				mg/L	39299	Standard
	Cl	35	0.7	173.2				ug/L	4	Standard
	Kr	83	2.7	108.3				ug/L	3	Standard
	Br	81	2160.2	10.0				ug/L	2287	Standard
	P	31	73.3	38.8				ug/L	80	Standard
	S	34	45.0	29.4				ug/L	45	Standard
	Sr	88	146.7	8.6				ug/L	178	Standard
	C	12	16.7	91.7				mg/L	33	Standard
	N	14	6.7	86.6				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	2.7	235.5				mg/L	16	Standard
	Ho-1	165	18.3	31.5				mg/L	10	Standard
	Er	166	13.3	114.6				mg/L	17	Standard
	I	127	5484.3	4.4				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.979	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 2
Report Date/Time: Monday, March 27, 2017 11:41:58
Page 2

Approved: March 28, 2017

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.522
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.269
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Mg	24	
QC Std 2	Ca	43	

Sample ID: QC Std 2
Report Date/Time: Monday, March 27, 2017 11:41:58
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Monday, March 27, 2017 11:42:53
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	250519.3	1.1				ug/L	262785	Standard
	Be	9	446.7	5.0	**0.1865**	0.011	5.9	ug/L	28	Standard
	Al	27	2053.5	36.7	**0.0063**	0.005	73.5	ug/L	2187	Standard
	Sc	45	37396.1	0.7				ug/L	39299	Standard
	Ti	47	62.0	12.8	**-0.0462**	0.028	60.8	ug/L	82	Standard
	V	51	4181.3	2.8	**0.3035**	0.020	6.5	ug/L	1876	Standard
	Cr	52	13119.0	1.5	**0.7223**	0.053	7.3	ug/L	8221	Standard
	Cr	53	1781.8	5.9	**0.8510**	0.100	11.7	ug/L	1083	Standard
	Mn	55	8142.5	1.0	**0.4484**	0.016	3.5	ug/L	2738	Standard
	Co	59	4102.9	2.0	**0.3598**	0.015	4.1	ug/L	635	Standard
	Ni	60	3373.4	1.2	**1.4894**	0.034	2.3	ug/L	261	Standard
	Cu	65	2372.2	1.4	**0.7892**	0.013	1.6	ug/L	660	Standard
	Zn	66	8317.3	0.9	**5.9157**	0.157	2.7	ug/L	558	Standard
>	Ge	72	766596.9	1.6				ug/L	807251	Standard
	As	75	437.4	11.0	**0.3830**	0.039	10.1	ug/L	-43	Standard
	Se	82	60.6	15.0	**0.4428**	0.082	18.6	ug/L	18	Standard
	Se-1	77	136.0	18.0	**0.2246**	0.264	117.7	ug/L	127	Standard
>	Ga	71	38.3	27.2				mg/L	32	Standard
	Rb	85	20.0	66.1				ug/L	27	Standard
	Y	89	518352.8	0.5				ug/L	534994	Standard
>	Rh	103	15.0	0.0				ug/L	20	Standard
	Mo	98	148.0	5.7	**0.0106**	0.002	23.1	ug/L	285	Standard
	Ag	107	2655.2	1.1	**0.3717**	0.011	2.8	ug/L	129	Standard
	Cd	111	450.8	3.9	**0.2220**	0.012	5.4	mg/L	6	Standard
	Cd	114	1114.3	5.9	**0.2073**	0.016	7.6	ug/L	46	Standard
>	In	115	648025.5	1.7				ug/L	679215	Standard
	Sn	118	214.0	2.4	**-0.0463**	0.004	9.2	ug/L	411	Standard
	Sb	123	2413.1	6.2	**0.4341**	0.036	8.3	ug/L	497	Standard
	Ba	135	1458.7	4.8	**0.6987**	0.046	6.6	ug/L	43	Standard
	Ce	140	16.7	34.6				ug/L	22	Standard
>	Tb	159	947114.6	0.9				ug/L	983965	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	847.0	11.0	**0.0790**	0.013	16.7	ug/L	248	Standard
	Tl	205	2020.1	4.6	**0.0750**	0.006	7.7	ug/L	620	Standard
	Pb	206	1699.4	3.1	**0.1882**	0.011	6.0	ug/L	503	Standard
	Pb	207	1442.4	6.7	**0.1786**	0.020	11.2	ug/L	406	Standard
	Pb	208	1716.7	1.9	**0.1822**	0.008	4.3	ug/L	497	Standard
	U	238	1826.4	2.4	**0.3642**	0.013	3.5	ug/L	17	Standard
>	Bi	209	554229.7	1.3				ug/L	559221	Standard

Sample ID: QC Std 3
Report Date/Time: Monday, March 27, 2017 11:45:04
Page 1

Approved: March 28, 2017

⌈	**Na**	23	5.0	100.0	**2.2333**	3.298	147.7	mg/L	2	Standard
|	**Mg**	24	28.3	10.2	**-0.1644**	0.040	24.1	mg/L	33	Standard
|	**K**	39	11.7	24.7	**-0.0694**	0.020	29.1	mg/L	18	Standard
|	**Ca**	43	81.7	30.8	**8.9358**	39.022	436.7	mg/L	72	Standard
|	**Fe**	54	25.9	30.4	**-0.0447**	0.049	110.0	mg/L	29	Standard
|	**Fe**	57	370.0	8.4	**-0.1497**	0.667	445.5	mg/L	382	Standard
⌊>	**Sc-1**	45	37396.1	0.7				mg/L	39299	Standard
	Cl	35	1.3	173.2				ug/L	4	Standard
	Kr	83	2.3	65.5				ug/L	3	Standard
	Br	81	1983.5	8.3				ug/L	2287	Standard
	P	31	73.3	44.4				ug/L	80	Standard
	S	34	35.0	42.9				ug/L	45	Standard
	Sr	88	158.3	24.1				ug/L	178	Standard
	C	12	3.3	173.2				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	3	Standard
	Dy	164	6.2	100.1				mg/L	16	Standard
	Ho-1	165	6.7	43.3				mg/L	10	Standard
	Er	166	10.0	100.0				mg/L	17	Standard
	I	127	3768.8	3.7				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9	93.248		
⌊	Al	27	0.627		
⌈	Sc	45			
|	Ti	47			
|	V	51	75.879		
|	Cr	52	90.282		
|	Cr	53			
|	Mn	55	89.680		
|	Co	59	89.947		
|	Ni	60	93.088		
|	Cu	65	98.648		
|	Zn	66	94.652		
|>	Ge	72		94.964	
|	As	75	95.742		
|	Se	82	110.690		
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: QC Std 3
Report Date/Time: Monday, March 27, 2017 11:45:04
Page 2

Approved: March 28, 2017

⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98		
|	Ag	107	92.933	
|	Cd	111	92.494	
|	Cd	114		
|>	In	115		95.408
|	Sn	118		
|	Sb	123	108.535	
⌊	Ba	135	93.160	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	98.812	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	91.104	
|	U	238	91.046	
⌊>	Bi	209		99.108
⌈	Na	23		
|	Mg	24		
|	K	39		
|	Ca	43		
|	Fe	54		
|	Fe	57		
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

Sample ID: QC Std 3
Report Date/Time: Monday, March 27, 2017 11:45:04
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Monday, March 27, 2017 11:45:58
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	251846.4	2.1				ug/L	262785	Standard
	Be	9	38.3	45.8	**0.0149**	0.008	51.4	ug/L	28	Standard
	Al	27	7818489.4	1.1	**47.1661**	0.513	1.1	ug/L	2187	Standard
	Sc	45	38196.4	1.8				ug/L	39299	Standard
	Ti	47	23991.6	1.3	**93.5681**	0.469	0.5	ug/L	82	Standard
	V	51	1404.9	8.8	**-0.0379**	0.017	44.6	ug/L	1876	Standard
	Cr	52	8477.4	2.2	**0.1033**	0.026	25.3	ug/L	8221	Standard
	Cr	53	1246.7	6.3	**0.2785**	0.095	34.0	ug/L	1083	Standard
	Mn	55	5231.2	6.5	**0.2209**	0.021	9.5	ug/L	2738	Standard
	Co	59	1188.0	27.4	**0.0633**	0.031	49.0	ug/L	635	Standard
	Ni	60	728.0	13.3	**0.2342**	0.041	17.5	ug/L	261	Standard
	Cu	65	1011.0	13.4	**0.1577**	0.056	35.3	ug/L	660	Standard
	Zn	66	1296.1	3.7	**0.5396**	0.026	4.9	ug/L	558	Standard
>	Ge	72	772721.2	1.3				ug/L	807251	Standard
	As	75	7.5	1353.8	**0.0534**	0.077	144.3	ug/L	-43	Standard
	Se	82	26.6	38.6	**0.1497**	0.084	56.2	ug/L	18	Standard
	Se-1	77	110.0	2.4	**-0.0895**	0.025	28.4	ug/L	127	Standard
>	Ga	71	50.0	26.5				mg/L	32	Standard
	Rb	85	920.0	10.8				ug/L	27	Standard
	Y	89	519041.2	1.1				ug/L	534994	Standard
>	Rh	103	16.7	17.3				ug/L	20	Standard
	Mo	98	396558.0	0.8	**95.2766**	0.151	0.2	ug/L	285	Standard
	Ag	107	247.0	80.4	**0.0180**	0.029	162.2	ug/L	129	Standard
	Cd	111	-149.6	40.8	**-0.0858**	0.032	37.2	mg/L	6	Standard
	Cd	114	792.8	17.0	**0.1459**	0.025	17.4	ug/L	46	Standard
>	In	115	640812.0	0.7				ug/L	679215	Standard
	Sn	118	270.7	19.6	**0.0066**	0.046	694.6	ug/L	411	Standard
	Sb	123	623.6	34.7	**0.0902**	0.041	45.6	ug/L	497	Standard
	Ba	135	77.7	41.1	**0.0192**	0.016	81.1	ug/L	43	Standard
	Ce	140	1228.4	2.7				ug/L	22	Standard
>	Tb	159	954679.1	1.8				ug/L	983965	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	242.3	42.4	**0.0029**	0.013	433.6	ug/L	248	Standard
	Tl	205	621.7	25.6	**0.0013**	0.008	625.5	ug/L	620	Standard
	Pb	206	619.3	11.9	**0.0220**	0.010	44.6	ug/L	503	Standard
	Pb	207	482.0	14.6	**0.0145**	0.011	74.4	ug/L	406	Standard
	Pb	208	592.7	10.3	**0.0177**	0.008	43.0	ug/L	497	Standard
	U	238	37.7	154.8	**0.0061**	0.012	190.6	ug/L	17	Standard
>	Bi	209	544754.3	1.7				ug/L	559221	Standard

Sample ID: QC Std 4
Report Date/Time: Monday, March 27, 2017 11:48:09
Page 1

Approved: March 28, 2017

	Na	23	26.7	103.3	**16.1842**	17.752	109.7	mg/L	2	Standard
	Mg	24	983.4	7.4	**12.0549**	0.941	7.8	mg/L	33	Standard
	K	39	711.7	6.4	**4.7650**	0.392	8.2	mg/L	18	Standard
	Ca	43	83.3	12.5	**8.5452**	13.258	155.2	mg/L	72	Standard
	Fe	54	2036.2	1.8	**12.0004**	0.061	0.5	mg/L	29	Standard
	Fe	57	940.0	4.7	**11.1117**	0.653	5.9	mg/L	382	Standard
>	**Sc-1**	45	38196.4	1.8				mg/L	39299	Standard
	Cl	35	2.0	100.0				ug/L	4	Standard
	Kr	83	4.3	35.3				ug/L	3	Standard
	Br	81	1973.5	9.4				ug/L	2287	Standard
	P	31	53.3	27.1				ug/L	80	Standard
	S	34	48.3	29.9				ug/L	45	Standard
	Sr	88	160.0	6.3				ug/L	178	Standard
	C	12	16.7	91.7				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	2.5	238.7				mg/L	16	Standard
	Ho-1	165	6.7	43.3				mg/L	10	Standard
	Er	166	16.7	34.6				mg/L	17	Standard
	I	127	2751.9	1.4				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27	0.943		
	Sc	45			
	Ti	47	93.568		
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.723	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 4
Report Date/Time: Monday, March 27, 2017 11:48:09
Page 2

Approved: March 28, 2017

⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	95.277	
|	Ag	107		
|	Cd	111		
|	Cd	114		
|>	In	115		94.346
|	Sn	118		
|	Sb	123		
⌊	Ba	135		
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203		
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208		
|	U	238		
⌊>	Bi	209		97.413
⌈	Na	23	129.474	
|	Mg	24	241.099	
|	K	39	95.300	
|	Ca	43	56.968	
|	Fe	54	96.004	
|	Fe	57	88.893	
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

Sample ID: QC Std 4
Report Date/Time: Monday, March 27, 2017 11:48:09
Page 3

Approved: March 28, 2017

QC Std 4	Ca	43

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Monday, March 27, 2017 11:49:04
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	274071.7	1.0				ug/L	262785	Standard
	Be	9	213176.4	2.4	**81.8505**	1.162	1.4	ug/L	28	Standard
	Al	27	7878701.2	3.1	**43.6628**	0.979	2.2	ug/L	2187	Standard
	Sc	45	38179.7	1.1				ug/L	39299	Standard
	Ti	47	26165.9	3.0	**99.4465**	3.709	3.7	ug/L	82	Standard
	V	51	694261.5	1.3	**81.9715**	1.705	2.1	ug/L	1876	Standard
	Cr	52	661463.2	0.6	**82.9732**	1.147	1.4	ug/L	8221	Standard
	Cr	53	83097.3	1.3	**83.4956**	1.350	1.6	ug/L	1083	Standard
	Mn	55	1114346.4	0.6	**82.6624**	0.964	1.2	ug/L	2738	Standard
	Co	59	838694.4	0.5	**82.0164**	0.928	1.1	ug/L	635	Standard
	Ni	60	179755.7	0.5	**82.1060**	0.792	1.0	ug/L	261	Standard
	Cu	65	187086.6	0.1	**83.0213**	0.582	0.7	ug/L	660	Standard
	Zn	66	116947.9	0.6	**85.9480**	1.021	1.2	ug/L	558	Standard
>	Ge	72	793210.2	0.8				ug/L	807251	Standard
	As	75	114553.5	1.3	**84.7301**	1.464	1.7	ug/L	-43	Standard
	Se	82	10363.2	1.8	**85.2670**	1.857	2.2	ug/L	18	Standard
	Se-1	77	7791.0	0.8	**87.2523**	1.384	1.6	ug/L	127	Standard
>	Ga	71	153.3	19.9				mg/L	32	Standard
	Rb	85	1475.1	3.4				ug/L	27	Standard
	Y	89	544458.5	0.9				ug/L	534994	Standard
>	Rh	103	35.0	51.5				ug/L	20	Standard
	Mo	98	410675.7	1.5	**94.9446**	1.743	1.8	ug/L	285	Standard
	Ag	107	552896.1	0.6	**79.0499**	0.788	1.0	ug/L	129	Standard
	Cd	111	169640.9	0.7	**84.3131**	0.773	0.9	mg/L	6	Standard
	Cd	114	431261.3	0.4	**82.0402**	0.646	0.8	ug/L	46	Standard
>	In	115	665985.9	0.7				ug/L	679215	Standard
	Sn	118	263.7	2.8	**-0.0084**	0.008	95.0	ug/L	411	Standard
	Sb	123	459037.3	1.2	**86.0077**	1.518	1.8	ug/L	497	Standard
	Ba	135	176173.4	1.2	**84.3101**	1.514	1.8	ug/L	43	Standard
	Ce	140	525.0	9.7				ug/L	22	Standard
>	Tb	159	998288.0	0.8				ug/L	983965	Standard
	Ho	165	53.3	47.2				ug/L	10	Standard
	Tl	203	686838.3	1.9	**84.0113**	1.191	1.4	ug/L	248	Standard
	Tl	205	1643085.1	2.6	**84.3008**	0.945	1.1	ug/L	620	Standard
	Pb	206	559187.5	2.1	**83.9285**	1.167	1.4	ug/L	503	Standard
	Pb	207	501941.6	2.2	**83.5379**	1.489	1.8	ug/L	406	Standard
	Pb	208	596484.1	2.4	**85.1117**	0.882	1.0	ug/L	497	Standard
	U	238	450753.5	3.4	**87.3149**	2.079	2.4	ug/L	17	Standard
>	Bi	209	572511.7	1.5				ug/L	559221	Standard

Sample ID: QC Std 5
Report Date/Time: Monday, March 27, 2017 11:51:14
Page 1

Approved: March 28, 2017

	Na	23	30.0	0.0	**18.1824**	0.213	1.2	mg/L	2	Standard
	Mg	24	971.7	2.6	**11.9092**	0.253	2.1	mg/L	33	Standard
	K	39	591.7	7.9	**3.9359**	0.351	8.9	mg/L	18	Standard
	Ca	43	100.0	21.8	**33.9083**	34.024	100.3	mg/L	72	Standard
	Fe	54	1976.1	3.0	**11.6452**	0.318	2.7	mg/L	29	Standard
	Fe	57	941.7	2.0	**11.1623**	0.586	5.2	mg/L	382	Standard
>	**Sc-1**	45	38179.7	1.1				mg/L	39299	Standard
	Cl	35	0.0					ug/L	4	Standard
	Kr	83	3.3	17.3				ug/L	3	Standard
	Br	81	2150.2	6.2				ug/L	2287	Standard
	P	31	78.3	19.5				ug/L	80	Standard
	S	34	38.3	32.8				ug/L	45	Standard
	Sr	88	156.7	18.4				ug/L	178	Standard
	C	12	56.7	53.9				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	26.7	21.7				mg/L	3	Standard
	Dy	164	18.4	58.2				mg/L	16	Standard
	Ho-1	165	53.3	47.2				mg/L	10	Standard
	Er	166	33.3	45.8				mg/L	17	Standard
	I	127	2546.9	2.5				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	81.851		
	Al	27	0.873		
	Sc	45			
	Ti	47	99.446		
	V	51	81.971		
	Cr	52	82.973		
	Cr	53			
	Mn	55	82.662		
	Co	59	82.016		
	Ni	60	82.106		
	Cu	65	83.021		
	Zn	66	85.948		
>	Ge	72		98.261	
	As	75	84.730		
	Se	82	85.267		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 5
Report Date/Time: Monday, March 27, 2017 11:51:14
Page 2

Approved: March 28, 2017

	Rb	85		
	Y	89		
>	Rh	103		
	Mo	98	94.945	
	Ag	107	79.050	
	Cd	111	84.313	
	Cd	114		
>	In	115		98.052
	Sn	118		
	Sb	123	86.008	
	Ba	135	84.310	
	Ce	140		
>	Tb	159		
	Ho	165		
	Tl	203	84.011	
	Tl	205		
	Pb	206		
	Pb	207		
	Pb	208	85.112	
	U	238	87.315	
>	Bi	209		102.377
	Na	23	145.459	
	Mg	24	238.183	
	K	39	78.718	
	Ca	43	226.055	
	Fe	54	93.162	
	Fe	57	89.299	
>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Ag	107	
QC Std 5	Na	23	

Sample ID: QC Std 5
Report Date/Time: Monday, March 27, 2017 11:51:14
Page 3

Approved: March 28, 2017

QC Std 5	Mg	24
QC Std 5	K	39
QC Std 5	Ca	43

Sample ID: QC Std 5
Report Date/Time: Monday, March 27, 2017 11:51:14
Page 4

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Monday, March 27, 2017 11:55:29
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	278252.0	1.2				ug/L	262785	Standard
	Be	9	258115.4	1.7	**97.6322**	1.878	1.9	ug/L	28	Standard
	Al	27	8067980.2	0.9	**44.0528**	0.900	2.0	ug/L	2187	Standard
	Sc	45	39539.9	3.0				ug/L	39299	Standard
	Ti	47	26412.0	0.9	**97.4167**	1.661	1.7	ug/L	82	Standard
	V	51	826487.4	0.4	**94.7594**	2.481	2.6	ug/L	1876	Standard
	Cr	52	782663.7	0.3	**95.4551**	2.506	2.6	ug/L	8221	Standard
	Cr	53	98846.4	1.4	**96.5532**	1.116	1.2	ug/L	1083	Standard
	Mn	55	1339104.7	0.6	**96.4531**	1.969	2.0	ug/L	2738	Standard
	Co	59	1009997.3	0.4	**95.8835**	1.972	2.1	ug/L	635	Standard
	Ni	60	216273.4	1.0	**95.9003**	1.361	1.4	ug/L	261	Standard
	Cu	65	225907.0	0.6	**97.3616**	1.816	1.9	ug/L	660	Standard
	Zn	66	141521.2	0.3	**101.0458**	2.625	2.6	ug/L	558	Standard
>	Ge	72	817382.7	2.4				ug/L	807251	Standard
	As	75	138945.8	1.1	**99.7400**	1.363	1.4	ug/L	-43	Standard
	Se	82	12680.3	0.7	**101.2822**	1.814	1.8	ug/L	18	Standard
	Se-1	77	9436.9	1.2	**102.8178**	1.769	1.7	ug/L	127	Standard
>	Ga	71	156.7	20.3				mg/L	32	Standard
	Rb	85	1485.1	12.9				ug/L	27	Standard
	Y	89	560908.0	1.2				ug/L	534994	Standard
>	Rh	103	43.3	29.0				ug/L	20	Standard
	Mo	98	414932.4	1.1	**94.3366**	1.026	1.1	ug/L	285	Standard
	Ag	107	701236.4	1.1	**98.5997**	0.729	0.7	ug/L	129	Standard
	Cd	111	202119.5	1.5	**98.7870**	0.516	0.5	mg/L	6	Standard
	Cd	114	510500.5	1.4	**95.5120**	1.782	1.9	ug/L	46	Standard
>	In	115	677228.8	1.4				ug/L	679215	Standard
	Sn	118	252.3	4.0	**-0.0219**	0.008	35.8	ug/L	411	Standard
	Sb	123	543427.5	0.4	**100.1372**	1.127	1.1	ug/L	497	Standard
	Ba	135	206817.4	1.0	**97.3324**	0.734	0.8	ug/L	43	Standard
	Ce	140	475.0	6.9				ug/L	22	Standard
>	Tb	159	1021902.1	2.2				ug/L	983965	Standard
	Ho	165	73.3	35.0				ug/L	10	Standard
	Tl	203	823195.2	1.4	**97.7419**	1.594	1.6	ug/L	248	Standard
	Tl	205	1958045.0	1.1	**97.5288**	0.998	1.0	ug/L	620	Standard
	Pb	206	666761.5	1.1	**97.1533**	1.213	1.2	ug/L	503	Standard
	Pb	207	599328.3	1.4	**96.8338**	1.705	1.8	ug/L	406	Standard
	Pb	208	715013.4	1.1	**99.0593**	1.863	1.9	ug/L	497	Standard
	U	238	541547.9	1.7	**101.8330**	1.174	1.2	ug/L	17	Standard
>	Bi	209	589892.5	2.0				ug/L	559221	Standard

Sample ID: QC Std 5
Report Date/Time: Monday, March 27, 2017 11:57:39
Page 1

Approved: March 28, 2017

⌈	**Na**	23	26.7	10.8	**15.4569**	1.714	11.1	mg/L	2	Standard
|	**Mg**	24	998.4	11.9	**11.8157**	1.463	12.4	mg/L	33	Standard
|	**K**	39	608.3	7.8	**3.9015**	0.218	5.6	mg/L	18	Standard
|	**Ca**	43	93.3	21.7	**18.6289**	27.126	145.6	mg/L	72	Standard
|	**Fe**	54	2020.8	3.3	**11.5037**	0.531	4.6	mg/L	29	Standard
|	**Fe**	57	908.4	9.3	**9.8474**	1.234	12.5	mg/L	382	Standard
⌊>	**Sc-1**	45	39539.9	3.0				mg/L	39299	Standard
	Cl	35	2.7	86.6				ug/L	4	Standard
	Kr	83	4.3	13.3				ug/L	3	Standard
	Br	81	2396.9	7.8				ug/L	2287	Standard
	P	31	58.3	42.3				ug/L	80	Standard
	S	34	46.7	16.4				ug/L	45	Standard
	Sr	88	143.3	12.3				ug/L	178	Standard
	C	12	56.7	40.8				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	23.3	24.7				mg/L	3	Standard
	Dy	164	29.4	2.5				mg/L	16	Standard
	Ho-1	165	73.3	35.0				mg/L	10	Standard
	Er	166	13.3	114.6				mg/L	17	Standard
	I	127	2823.6	1.6				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9	97.632		
⌊	Al	27	0.881		
⌈	Sc	45			
|	Ti	47	97.417		
|	V	51	94.759		
|	Cr	52	95.455		
|	Cr	53			
|	Mn	55	96.453		
|	Co	59	95.883		
|	Ni	60	95.900		
|	Cu	65	97.362		
|	Zn	66	101.046		
|>	Ge	72		101.255	
|	As	75	99.740		
|	Se	82	101.282		
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: QC Std 5
Report Date/Time: Monday, March 27, 2017 11:57:39
Page 2

Approved: March 28, 2017

⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	94.337	
|	Ag	107	98.600	
|	Cd	111	98.787	
|	Cd	114		
|>	In	115		99.708
|	Sn	118		
|	Sb	123	100.137	
⌊	Ba	135	97.332	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	97.742	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	99.059	
|	U	238	101.833	
⌊>	Bi	209		105.485
⌈	Na	23	123.655	
|	Mg	24	236.315	
|	K	39	78.031	
|	Ca	43	124.193	
|	Fe	54	92.030	
|	Fe	57	78.779	
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

Sample ID: QC Std 5
Report Date/Time: Monday, March 27, 2017 11:57:39
Page 3

Approved: March 28, 2017

QC Std 5	K	39
QC Std 5	Ca	43
QC Std 5	Fe	57

Sample ID: QC Std 5
Report Date/Time: Monday, March 27, 2017 11:57:39
Page 4

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, March 27, 2017 11:58:36
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	267437.1	2.3				ug/L	262785	Standard
	Be	9	125633.9	2.1	**49.4409**	0.272	0.6	ug/L	28	Standard
	Al	27	8486145.6	1.4	**48.2106**	0.563	1.2	ug/L	2187	Standard
	Sc	45	38955.0	2.4				ug/L	39299	Standard
	Ti	47	26194.0	1.3	**98.4072**	2.316	2.4	ug/L	82	Standard
	V	51	417561.7	0.1	**48.6504**	0.602	1.2	ug/L	1876	Standard
	Cr	52	396419.3	0.1	**48.7486**	0.598	1.2	ug/L	8221	Standard
	Cr	53	49887.0	0.9	**49.1360**	0.683	1.4	ug/L	1083	Standard
	Mn	55	674356.5	0.5	**49.3812**	0.756	1.5	ug/L	2738	Standard
	Co	59	506781.2	1.1	**48.9681**	0.676	1.4	ug/L	635	Standard
	Ni	60	109125.9	0.4	**49.2307**	0.367	0.7	ug/L	261	Standard
	Cu	65	111967.5	0.9	**48.9954**	0.794	1.6	ug/L	660	Standard
	Zn	66	68052.5	1.3	**49.2516**	0.745	1.5	ug/L	558	Standard
>	**Ge**	72	802416.6	1.1				ug/L	807251	Standard
	As	75	67514.3	0.2	**49.3849**	0.469	0.9	ug/L	-43	Standard
	Se	82	6126.4	0.9	**49.7980**	0.680	1.4	ug/L	18	Standard
	Se-1	77	4550.7	1.3	**49.7949**	0.502	1.0	ug/L	127	Standard
>	**Ga**	71	70.0	32.7				mg/L	32	Standard
	Rb	85	361.7	7.1				ug/L	27	Standard
	Y	89	542429.2	0.8				ug/L	534994	Standard
>	**Rh**	103	50.0	36.1				ug/L	20	Standard
	Mo	98	441340.9	0.9	**101.6515**	0.794	0.8	ug/L	285	Standard
	Ag	107	355294.0	1.0	**50.6018**	0.553	1.1	ug/L	129	Standard
	Cd	111	102531.6	0.9	**50.7662**	0.487	1.0	mg/L	6	Standard
	Cd	114	264352.9	0.6	**50.0981**	0.519	1.0	ug/L	46	Standard
>	**In**	115	668465.3	0.6				ug/L	679215	Standard
	Sn	118	59427.7	2.6	**51.0630**	1.060	2.1	ug/L	411	Standard
	Sb	123	270471.6	0.8	**50.4721**	0.120	0.2	ug/L	497	Standard
	Ba	135	103799.0	0.9	**49.4776**	0.224	0.5	ug/L	43	Standard
	Ce	140	301.7	16.4				ug/L	22	Standard
>	**Tb**	159	988298.5	0.7				ug/L	983965	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	412644.6	0.9	**50.0332**	0.418	0.8	ug/L	248	Standard
	Tl	205	980899.5	0.4	**49.8924**	0.201	0.4	ug/L	620	Standard
	Pb	206	334187.5	1.5	**49.7026**	0.695	1.4	ug/L	503	Standard
	Pb	207	303141.7	1.1	**49.9951**	0.494	1.0	ug/L	406	Standard
	Pb	208	356238.0	0.8	**50.3754**	0.346	0.7	ug/L	497	Standard
	U	238	272322.2	0.6	**52.3096**	0.237	0.5	ug/L	17	Standard
>	**Bi**	209	577404.4	0.2				ug/L	559221	Standard

Sample ID: QC Std 6
Report Date/Time: Monday, March 27, 2017 12:00:47
Page 1

Approved: March 28, 2017

Na	23	10.0		**5.2352**	0.151	2.9	mg/L	2	Standard
Mg	24	423.3	5.3	**4.7779**	0.219	4.6	mg/L	33	Standard
K	39	698.3	7.3	**4.5796**	0.417	9.1	mg/L	18	Standard
Ca	43	68.3	47.6	**-15.8737**	47.654	300.2	mg/L	72	Standard
Fe	54	910.8	6.6	**5.1459**	0.231	4.5	mg/L	29	Standard
Fe	57	593.3	1.3	**3.9418**	0.411	10.4	mg/L	382	Standard
Sc-1	45	38955.0	2.4				mg/L	39299	Standard
Cl	35	2.7	86.6				ug/L	4	Standard
Kr	83	3.0	57.7				ug/L	3	Standard
Br	81	2366.9	3.3				ug/L	2287	Standard
P	31	80.0	25.0				ug/L	80	Standard
S	34	41.7	45.4				ug/L	45	Standard
Sr	88	178.3	14.4				ug/L	178	Standard
C	12	20.0	50.0				mg/L	33	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	19.5	2.5				mg/L	16	Standard
Ho-1	165	6.7	86.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	17	Standard
I	127	2943.6	1.7				mg/L	5888	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	98.882		
Al	27	96.421		
Sc	45			
Ti	47	98.407		
V	51	97.301		
Cr	52	97.497		
Cr	53			
Mn	55	98.762		
Co	59	97.936		
Ni	60	98.461		
Cu	65	97.991		
Zn	66	98.503		
Ge	72		99.401	
As	75	98.770		
Se	82	99.596		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
Report Date/Time: Monday, March 27, 2017 12:00:47
Page 2

Approved: March 28, 2017

Rb	85			
Y	89			
Rh	103			
Mo	98	101.652		
Ag	107	101.204		
Cd	111	101.532		
Cd	114			
In	115			98.417
Sn	118	102.126		
Sb	123	100.944		
Ba	135	98.955		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.066		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.751		
U	238	104.619		
Bi	209			103.252
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Monday, March 27, 2017 12:00:47
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

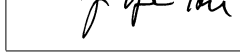
Sample ID: QC Std 7
Sample Date/Time: Monday, March 27, 2017 12:01:41
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	268310.5	2.1				ug/L	262785	Standard
	Be	9	65.0	33.5	**0.0243**	0.009	36.2	ug/L	28	Standard
	Al	27	2625.2	29.2	**0.0087**	0.004	47.9	ug/L	2187	Standard
	Sc	45	38697.7	3.5				ug/L	39299	Standard
	Ti	47	55.7	12.7	**-0.0772**	0.028	36.8	ug/L	82	Standard
	V	51	1171.3	15.1	**-0.0693**	0.022	31.9	ug/L	1876	Standard
	Cr	52	5981.2	1.8	**-0.2388**	0.011	4.5	ug/L	8221	Standard
	Cr	53	861.7	1.7	**-0.1433**	0.020	13.7	ug/L	1083	Standard
	Mn	55	2483.9	4.0	**0.0074**	0.005	70.4	ug/L	2738	Standard
	Co	59	440.3	10.1	**-0.0125**	0.004	30.2	ug/L	635	Standard
	Ni	60	239.7	10.3	**0.0028**	0.010	344.2	ug/L	261	Standard
	Cu	65	718.7	11.1	**0.0172**	0.031	181.1	ug/L	660	Standard
	Zn	66	707.0	6.5	**0.0814**	0.026	31.7	ug/L	558	Standard
>	**Ge**	72	789669.0	1.7				ug/L	807251	Standard
	As	75	-21.2	184.9	**0.0326**	0.029	90.0	ug/L	-43	Standard
	Se	82	22.1	33.5	**0.1090**	0.063	57.8	ug/L	18	Standard
	Se-1	77	122.7	3.1	**0.0280**	0.049	175.7	ug/L	127	Standard
>	**Ga**	71	30.0	0.0				mg/L	32	Standard
	Rb	85	23.3	12.4				ug/L	27	Standard
	Y	89	536079.3	2.5				ug/L	534994	Standard
>	**Rh**	103	21.7	35.3				ug/L	20	Standard
	Mo	98	533.8	23.3	**0.1017**	0.030	29.7	ug/L	285	Standard
	Ag	107	228.7	20.9	**0.0149**	0.008	53.1	ug/L	129	Standard
	Cd	111	21.3	74.9	**0.0025**	0.008	333.8	mg/L	6	Standard
	Cd	114	103.8	53.6	**0.0097**	0.012	119.2	ug/L	46	Standard
>	**In**	115	652121.3	3.8				ug/L	679215	Standard
	Sn	118	291.7	11.1	**0.0207**	0.019	93.4	ug/L	411	Standard
	Sb	123	1056.4	17.5	**0.1715**	0.037	21.5	ug/L	497	Standard
	Ba	135	66.0	23.3	**0.0130**	0.008	63.9	ug/L	43	Standard
	Ce	140	21.7	58.1				ug/L	22	Standard
>	**Tb**	159	962165.2	4.3				ug/L	983965	Standard
	Ho	165	11.7	49.5				ug/L	10	Standard
	Tl	203	223.3	26.5	**-0.0006**	0.007	1214.5	ug/L	248	Standard
	Tl	205	510.0	23.8	**-0.0057**	0.007	116.9	ug/L	620	Standard
	Pb	206	613.0	9.2	**0.0172**	0.009	54.9	ug/L	503	Standard
	Pb	207	520.3	2.7	**0.0176**	0.003	18.7	ug/L	406	Standard
	Pb	208	673.0	12.1	**0.0255**	0.009	35.7	ug/L	497	Standard
	U	238	75.3	28.8	**0.0132**	0.004	29.6	ug/L	17	Standard
>	**Bi**	209	568559.1	2.8				ug/L	559221	Standard

Sample ID: QC Std 7
Report Date/Time: Monday, March 27, 2017 12:03:52
Page 1

Approved: March 28, 2017



	Na	23	3.3	86.6	**1.0986**	1.861	169.4	mg/L	2	Standard
	Mg	24	43.3	35.3	**0.0156**	0.209	1337.8	mg/L	33	Standard
	K	39	15.0	100.0	**-0.0507**	0.099	194.5	mg/L	18	Standard
	Ca	43	65.0	13.3	**-20.1038**	10.432	51.9	mg/L	72	Standard
	Fe	54	26.1	72.4	**-0.0508**	0.109	214.6	mg/L	29	Standard
	Fe	57	310.0	11.6	**-1.5916**	0.709	44.5	mg/L	382	Standard
>	**Sc-1**	45	38697.7	3.5				mg/L	39299	Standard
	Cl	35	2.7	114.6				ug/L	4	Standard
	Kr	83	3.7	31.5				ug/L	3	Standard
	Br	81	2156.8	5.6				ug/L	2287	Standard
	P	31	75.0	17.6				ug/L	80	Standard
	S	34	38.3	61.6				ug/L	45	Standard
	Sr	88	160.0	14.3				ug/L	178	Standard
	C	12	26.7	57.3				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	6.7	173.2				mg/L	3	Standard
	Dy	164	9.4	186.5				mg/L	16	Standard
	Ho-1	165	11.7	49.5				mg/L	10	Standard
	Er	166	13.3	43.3				mg/L	17	Standard
	I	127	5229.2	3.5				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.822	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Monday, March 27, 2017 12:03:52
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	96.011
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	101.670
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Monday, March 27, 2017 12:03:52
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: PBW 75 WG607550-03
Sample Date/Time: Monday, March 27, 2017 12:05:28
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	259900.4	1.4				ug/L	262785	Standard
	Be	9	53.3	37.9	**0.0203**	0.008	38.7	ug/L	28	Standard
	Al	27	3952.2	4.8	**0.0169**	0.001	7.0	ug/L	2187	Standard
	Sc	45	37065.3	2.6				ug/L	39299	Standard
	Ti	47	56.3	7.2	**-0.0670**	0.017	25.7	ug/L	82	Standard
	V	51	1275.7	4.5	**-0.0516**	0.006	12.5	ug/L	1876	Standard
	Cr	52	6435.4	1.5	**-0.1513**	0.017	11.5	ug/L	8221	Standard
	Cr	53	980.0	6.0	**0.0137**	0.068	497.9	ug/L	1083	Standard
	Mn	55	2999.6	0.8	**0.0540**	0.003	5.9	ug/L	2738	Standard
	Co	59	364.7	5.3	**-0.0186**	0.002	9.9	ug/L	635	Standard
	Ni	60	302.3	7.7	**0.0366**	0.011	29.0	ug/L	261	Standard
	Cu	65	827.4	3.6	**0.0794**	0.015	18.7	ug/L	660	Standard
	Zn	66	1063.4	4.9	**0.3743**	0.036	9.7	ug/L	558	Standard
>	Ge	72	762249.7	0.6				ug/L	807251	Standard
	As	75	-24.3	44.1	**0.0295**	0.008	28.3	ug/L	-43	Standard
	Se	82	23.5	8.9	**0.1274**	0.018	14.4	ug/L	18	Standard
	Se-1	77	124.7	3.0	**0.1018**	0.042	41.5	ug/L	127	Standard
>	Ga	71	31.7	9.1				mg/L	32	Standard
	Rb	85	73.3	51.2				ug/L	27	Standard
	Y	89	518054.6	0.6				ug/L	534994	Standard
>	Rh	103	11.7	24.7				ug/L	20	Standard
	Mo	98	124.3	17.7	**0.0050**	0.005	102.7	ug/L	285	Standard
	Ag	107	129.0	5.4	**0.0004**	0.001	276.6	ug/L	129	Standard
	Cd	111	3.2	37.3	**-0.0068**	0.001	9.0	mg/L	6	Standard
	Cd	114	40.0	38.5	**-0.0029**	0.003	105.6	ug/L	46	Standard
>	In	115	647508.1	0.3				ug/L	679215	Standard
	Sn	118	248.7	6.9	**-0.0153**	0.015	96.5	ug/L	411	Standard
	Sb	123	332.4	22.5	**0.0330**	0.014	43.0	ug/L	497	Standard
	Ba	135	65.0	11.1	**0.0126**	0.004	28.9	ug/L	43	Standard
	Ce	140	65.0	23.1				ug/L	22	Standard
>	Tb	159	944212.4	0.6				ug/L	983965	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	274.3	9.7	**0.0061**	0.003	51.4	ug/L	248	Standard
	Tl	205	560.0	8.5	**-0.0029**	0.002	81.6	ug/L	620	Standard
	Pb	206	611.3	2.3	**0.0180**	0.002	12.5	ug/L	503	Standard
	Pb	207	510.3	3.6	**0.0170**	0.004	21.0	ug/L	406	Standard
	Pb	208	634.7	5.7	**0.0213**	0.005	23.6	ug/L	497	Standard
	U	238	6.0	33.3	**-0.0002**	0.000	160.3	ug/L	17	Standard
>	Bi	209	561392.7	0.5				ug/L	559221	Standard

Sample ID: PBW 75 WG607550-03
Report Date/Time: Monday, March 27, 2017 12:07:39
Page 1

Approved: March 28, 2017

⌈	**Na**	23	0.0		**-1.0498**	0.000	0.0	mg/L	2	Standard
|	**Mg**	24	31.7	55.5	**-0.1206**	0.223	185.3	mg/L	33	Standard
|	**K**	39	23.3	44.6	**0.0135**	0.071	525.5	mg/L	18	Standard
|	**Ca**	43	63.3	58.2	**-17.2475**	60.124	348.6	mg/L	72	Standard
|	**Fe**	54	31.3	17.9	**-0.0094**	0.037	396.4	mg/L	29	Standard
|	**Fe**	57	351.7	7.3	**-0.4498**	0.728	161.8	mg/L	382	Standard
⌊>	**Sc-1**	45	37065.3	2.6				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	2.7	57.3				ug/L	3	Standard
	Br	81	2420.2	8.6				ug/L	2287	Standard
	P	31	56.7	51.7				ug/L	80	Standard
	S	34	45.0	0.0				ug/L	45	Standard
	Sr	88	146.7	20.8				ug/L	178	Standard
	C	12	6.7	86.6				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	12.9	45.1				mg/L	16	Standard
	Ho-1	165	8.3	34.6				mg/L	10	Standard
	Er	166	10.0	100.0				mg/L	17	Standard
	I	127	2300.2	10.8				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		98.902	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		94.425	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: PBW 75 WG607550-03
Report Date/Time: Monday, March 27, 2017 12:07:39
Page 2

Approved: March 28, 2017

Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	95.332
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	100.388
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 75 WG607550-03
Report Date/Time: Monday, March 27, 2017 12:07:39
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: LCSW 75 WG607550-04
Sample Date/Time: Monday, March 27, 2017 12:08:34
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	267462.8	2.7				ug/L	262785	Standard
	Be	9	132108.7	2.5	**51.9980**	1.499	2.9	ug/L	28	Standard
	Al	27	10413.6	4.5	**0.0530**	0.003	5.2	ug/L	2187	Standard
	Sc	45	38961.7	2.4				ug/L	39299	Standard
	Ti	47	85.0	15.0	**0.0280**	0.048	171.2	ug/L	82	Standard
	V	51	434738.1	0.8	**50.3644**	0.396	0.8	ug/L	1876	Standard
	Cr	52	417993.6	0.2	**51.1520**	0.372	0.7	ug/L	8221	Standard
	Cr	53	51251.5	1.3	**50.2073**	0.369	0.7	ug/L	1083	Standard
	Mn	55	706697.5	1.1	**51.4537**	0.332	0.6	ug/L	2738	Standard
	Co	59	535406.0	0.4	**51.4370**	0.128	0.2	ug/L	635	Standard
	Ni	60	115396.1	0.5	**51.7647**	0.401	0.8	ug/L	261	Standard
	Cu	65	120570.2	0.7	**52.4750**	0.513	1.0	ug/L	660	Standard
	Zn	66	72416.0	0.5	**52.1323**	0.199	0.4	ug/L	558	Standard
>	Ge	72	807044.1	0.6				ug/L	807251	Standard
	As	75	71062.1	0.9	**51.6761**	0.331	0.6	ug/L	-43	Standard
	Se	82	6335.8	0.7	**51.2055**	0.626	1.2	ug/L	18	Standard
	Se-1	77	4699.7	1.1	**51.1697**	0.817	1.6	ug/L	127	Standard
>	Ga	71	30.0	33.3				mg/L	32	Standard
	Rb	85	135.0	31.6				ug/L	27	Standard
	Y	89	557202.6	0.6				ug/L	534994	Standard
>	Rh	103	40.0	45.1				ug/L	20	Standard
	Mo	98	160.6	7.6	**0.0119**	0.003	22.4	ug/L	285	Standard
	Ag	107	371078.4	0.2	**52.1112**	0.346	0.7	ug/L	129	Standard
	Cd	111	106388.7	0.6	**51.9395**	0.457	0.9	mg/L	6	Standard
	Cd	114	271644.6	1.3	**50.7584**	0.645	1.3	ug/L	46	Standard
>	In	115	677955.0	0.7				ug/L	679215	Standard
	Sn	118	473.0	1.8	**0.1657**	0.007	3.9	ug/L	411	Standard
	Sb	123	278432.5	0.4	**51.2318**	0.173	0.3	ug/L	497	Standard
	Ba	135	108341.0	0.9	**50.9207**	0.271	0.5	ug/L	43	Standard
	Ce	140	201.7	22.5				ug/L	22	Standard
>	Tb	159	992598.8	1.6				ug/L	983965	Standard
	Ho	165	50.0	26.5				ug/L	10	Standard
	Tl	203	440121.1	0.9	**52.9604**	0.518	1.0	ug/L	248	Standard
	Tl	205	1053842.6	1.5	**53.1951**	0.663	1.2	ug/L	620	Standard
	Pb	206	355738.8	0.7	**52.5098**	0.371	0.7	ug/L	503	Standard
	Pb	207	308467.8	0.6	**50.4876**	0.409	0.8	ug/L	406	Standard
	Pb	208	368759.7	1.1	**51.7494**	0.294	0.6	ug/L	497	Standard
	U	238	271210.9	1.0	**51.6995**	0.469	0.9	ug/L	17	Standard
>	Bi	209	581846.9	0.8				ug/L	559221	Standard

Sample ID: LCSW 75 WG607550-04
Report Date/Time: Monday, March 27, 2017 12:10:45
Page 1

Approved: March 28, 2017

	Na	23	3.3	86.6	**1.0366**	1.808	174.4	mg/L	2	Standard
	Mg	24	58.3	38.7	**0.1942**	0.269	138.6	mg/L	33	Standard
	K	39	15.0	33.3	**-0.0506**	0.031	62.0	mg/L	18	Standard
	Ca	43	63.3	29.9	**-22.7262**	29.427	129.5	mg/L	72	Standard
	Fe	54	31.0	16.0	**-0.0207**	0.030	146.8	mg/L	29	Standard
	Fe	57	345.0	13.8	**-0.9592**	0.772	80.5	mg/L	382	Standard
>	**Sc-1**	45	38961.7	2.4				mg/L	39299	Standard
	Cl	35	1.3	173.2				ug/L	4	Standard
	Kr	83	3.0	57.7				ug/L	3	Standard
	Br	81	3913.8	1.2				ug/L	2287	Standard
	P	31	66.7	34.6				ug/L	80	Standard
	S	34	36.7	56.8				ug/L	45	Standard
	Sr	88	176.7	26.1				ug/L	178	Standard
	C	12	30.0	66.7				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	173.2				mg/L	3	Standard
	Dy	164	15.9	130.0				mg/L	16	Standard
	Ho-1	165	50.0	26.5				mg/L	10	Standard
	Er	166	16.7	34.6				mg/L	17	Standard
	I	127	1338.4	7.8				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		101.780	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.974	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: LCSW 75 WG607550-04
Report Date/Time: Monday, March 27, 2017 12:10:45
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	99.814
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	104.046
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 75 WG607550-04
Report Date/Time: Monday, March 27, 2017 12:10:45
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: L1703114713 WG607550-01
Sample Date/Time: Monday, March 27, 2017 12:11:39
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	267782.5	1.3				ug/L	262785	Standard
	Be	9	103.3	68.5	**0.0395**	0.028	71.2	ug/L	28	Standard
	Al	27	620902.7	2.3	**3.5162**	0.036	1.0	ug/L	2187	Standard
	Sc	45	39561.6	1.4				ug/L	39299	Standard
	Ti	47	309.0	11.5	**0.8711**	0.131	15.1	ug/L	82	Standard
	V	51	2448.4	13.2	**0.0772**	0.038	49.5	ug/L	1876	Standard
	Cr	52	9240.8	2.0	**0.1558**	0.025	16.4	ug/L	8221	Standard
	Cr	53	1463.4	2.1	**0.4445**	0.025	5.7	ug/L	1083	Standard
	Mn	55	62901.0	0.3	**4.4349**	0.023	0.5	ug/L	2738	Standard
	Co	59	1099.0	22.0	**0.0503**	0.023	46.4	ug/L	635	Standard
	Ni	60	688.0	1.8	**0.2032**	0.005	2.4	ug/L	261	Standard
	Cu	65	1565.7	4.9	**0.3839**	0.034	8.9	ug/L	660	Standard
	Zn	66	2481.2	2.0	**1.3653**	0.041	3.0	ug/L	558	Standard
>	Ge	72	804022.0	0.3				ug/L	807251	Standard
	As	75	23.3	90.8	**0.0652**	0.015	23.7	ug/L	-43	Standard
	Se	82	26.9	12.1	**0.1444**	0.027	18.8	ug/L	18	Standard
	Se-1	77	141.3	6.9	**0.2124**	0.114	53.7	ug/L	127	Standard
>	Ga	71	121.7	22.6				mg/L	32	Standard
	Rb	85	2791.9	0.9				ug/L	27	Standard
	Y	89	546957.1	1.5				ug/L	534994	Standard
>	Rh	103	16.7	17.3				ug/L	20	Standard
	Mo	98	174.0	33.9	**0.0156**	0.014	90.6	ug/L	285	Standard
	Ag	107	382.0	111.1	**0.0363**	0.062	169.6	ug/L	129	Standard
	Cd	111	91.4	139.5	**0.0374**	0.064	171.7	mg/L	6	Standard
	Cd	114	257.4	125.4	**0.0386**	0.062	161.2	ug/L	46	Standard
>	In	115	668812.3	1.3				ug/L	679215	Standard
	Sn	118	346.3	9.1	**0.0621**	0.031	49.5	ug/L	411	Standard
	Sb	123	589.6	48.1	**0.0795**	0.055	68.9	ug/L	497	Standard
	Ba	135	8161.2	1.6	**3.8703**	0.038	1.0	ug/L	43	Standard
	Ce	140	4143.9	2.9				ug/L	22	Standard
>	Tb	159	992343.5	1.7				ug/L	983965	Standard
	Ho	165	85.0	31.1				ug/L	10	Standard
	Tl	203	688.0	84.2	**0.0563**	0.073	128.9	ug/L	248	Standard
	Tl	205	1691.8	85.0	**0.0550**	0.076	137.4	ug/L	620	Standard
	Pb	206	1003.0	33.9	**0.0747**	0.054	72.2	ug/L	503	Standard
	Pb	207	853.0	39.4	**0.0721**	0.059	81.4	ug/L	406	Standard
	Pb	208	991.3	28.0	**0.0700**	0.042	60.4	ug/L	497	Standard
	U	238	184.0	120.7	**0.0345**	0.044	127.1	ug/L	17	Standard
>	Bi	209	576279.1	1.9				ug/L	559221	Standard

Sample ID: L1703114713 WG607550-01
Report Date/Time: Monday, March 27, 2017 12:13:50
Page 1

Approved: March 28, 2017

	Na	23	1.7	173.2	**-0.0356**	1.757	4930.6	mg/L	2	Standard
	Mg	24	138.3	15.0	**1.1734**	0.242	20.7	mg/L	33	Standard
	K	39	36.7	39.4	**0.0924**	0.095	103.0	mg/L	18	Standard
	Ca	43	78.3	28.8	**-3.0338**	31.139	1026.4	mg/L	72	Standard
	Fe	54	43.0	52.5	**0.0443**	0.127	287.0	mg/L	29	Standard
	Fe	57	375.0	16.2	**-0.4590**	1.258	274.2	mg/L	382	Standard
>	**Sc-1**	45	39561.6	1.4				mg/L	39299	Standard
	Cl	35	1.3	173.2				ug/L	4	Standard
	Kr	83	4.3	35.3				ug/L	3	Standard
	Br	81	5194.2	8.0				ug/L	2287	Standard
	P	31	86.7	20.3				ug/L	80	Standard
	S	34	51.7	31.1				ug/L	45	Standard
	Sr	88	161.7	17.6				ug/L	178	Standard
	C	12	20.0	100.0				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	173.2				mg/L	3	Standard
	Dy	164	110.9	31.4				mg/L	16	Standard
	Ho-1	165	85.0	31.1				mg/L	10	Standard
	Er	166	50.0	20.0				mg/L	17	Standard
	I	127	10777.2	6.6				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		101.902	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.600	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	98.468
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	103.050
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703114713 WG607550-01
Report Date/Time: Monday, March 27, 2017 12:13:50
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: L1703114714S WG607550-05
Sample Date/Time: Monday, March 27, 2017 12:14:45
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	278173.0	2.5				ug/L	262785	Standard
	Be	9	132555.8	1.8	**50.1636**	1.197	2.4	ug/L	28	Standard
	Al	27	656563.9	0.3	**3.5811**	0.082	2.3	ug/L	2187	Standard
	Sc	45	39718.7	2.6				ug/L	39299	Standard
	Ti	47	361.0	6.1	**1.0373**	0.094	9.0	ug/L	82	Standard
	V	51	441795.6	0.5	**50.2335**	0.778	1.5	ug/L	1876	Standard
	Cr	52	422557.2	1.3	**50.7476**	1.254	2.5	ug/L	8221	Standard
	Cr	53	51485.7	0.6	**49.4905**	0.854	1.7	ug/L	1083	Standard
	Mn	55	770539.9	0.7	**55.0724**	0.311	0.6	ug/L	2738	Standard
	Co	59	534234.3	1.1	**50.3725**	0.899	1.8	ug/L	635	Standard
	Ni	60	116047.4	0.2	**51.0906**	0.750	1.5	ug/L	261	Standard
	Cu	65	122146.4	0.7	**52.1708**	0.504	1.0	ug/L	660	Standard
	Zn	66	73538.4	0.8	**51.9538**	0.232	0.4	ug/L	558	Standard
>	Ge	72	822368.1	1.3				ug/L	807251	Standard
	As	75	72628.3	0.9	**51.8395**	1.076	2.1	ug/L	-43	Standard
	Se	82	6416.3	1.6	**50.8985**	1.386	2.7	ug/L	18	Standard
	Se-1	77	4798.8	2.0	**51.2880**	1.661	3.2	ug/L	127	Standard
>	Ga	71	131.7	15.3				mg/L	32	Standard
	Rb	85	3140.3	2.7				ug/L	27	Standard
	Y	89	559413.8	0.8				ug/L	534994	Standard
>	Rh	103	36.7	15.7				ug/L	20	Standard
	Mo	98	138.1	11.1	**0.0066**	0.003	50.2	ug/L	285	Standard
	Ag	107	373549.8	1.2	**52.1527**	0.491	0.9	ug/L	129	Standard
	Cd	111	107750.7	1.5	**52.2982**	0.714	1.4	mg/L	6	Standard
	Cd	114	270117.7	1.9	**50.1782**	0.729	1.5	ug/L	46	Standard
>	In	115	681902.1	0.5				ug/L	679215	Standard
	Sn	118	357.7	0.6	**0.0658**	0.001	2.0	ug/L	411	Standard
	Sb	123	274141.5	2.0	**50.1466**	0.748	1.5	ug/L	497	Standard
	Ba	135	116777.1	2.1	**54.5671**	0.905	1.7	ug/L	43	Standard
	Ce	140	4539.0	5.2				ug/L	22	Standard
>	Tb	159	1011202.7	0.5				ug/L	983965	Standard
	Ho	165	85.0	21.2				ug/L	10	Standard
	Tl	203	438111.3	1.4	**52.6423**	0.253	0.5	ug/L	248	Standard
	Tl	205	1042071.2	0.6	**52.5321**	0.737	1.4	ug/L	620	Standard
	Pb	206	353213.8	1.4	**52.0614**	0.179	0.3	ug/L	503	Standard
	Pb	207	306914.2	1.7	**50.1593**	0.362	0.7	ug/L	406	Standard
	Pb	208	370941.3	1.1	**51.9836**	0.127	0.2	ug/L	497	Standard
	U	238	270196.5	1.3	**51.4328**	0.303	0.6	ug/L	17	Standard
>	Bi	209	582660.3	1.0				ug/L	559221	Standard

Sample ID: L1703114714S WG607550-05
Report Date/Time: Monday, March 27, 2017 12:16:56
Page 1

Approved: March 28, 2017

⌈	**Na**	23	0.0		**-1.0498**	0.000	0.0	mg/L	2	Standard
|	**Mg**	24	115.0	7.5	**0.8800**	0.082	9.3	mg/L	33	Standard
|	**K**	39	48.3	33.3	**0.1705**	0.111	64.9	mg/L	18	Standard
|	**Ca**	43	80.0	12.5	**-0.8780**	13.602	1549.2	mg/L	72	Standard
|	**Fe**	54	50.2	25.6	**0.0860**	0.075	86.7	mg/L	29	Standard
|	**Fe**	57	336.7	12.8	**-1.2206**	0.990	81.1	mg/L	382	Standard
⌊>	**Sc-1**	45	39718.7	2.6				mg/L	39299	Standard
	Cl	35	2.7	86.6				ug/L	4	Standard
	Kr	83	2.0	0.0				ug/L	3	Standard
	Br	81	3260.4	3.6				ug/L	2287	Standard
	P	31	335.0	138.3				ug/L	80	Standard
	S	34	23.3	32.7				ug/L	45	Standard
	Sr	88	153.3	10.5				ug/L	178	Standard
	C	12	26.7	57.3				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	118.7	49.7				mg/L	16	Standard
	Ho-1	165	85.0	21.2				mg/L	10	Standard
	Er	166	96.7	39.2				mg/L	17	Standard
	I	127	11646.2	8.1				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		105.856	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		101.873	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703114714S WG607550-05
Report Date/Time: Monday, March 27, 2017 12:16:56
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.396
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	104.191
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703114714S WG607550-05
Report Date/Time: Monday, March 27, 2017 12:16:56
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: L1703114715SD WG607550-06
Sample Date/Time: Monday, March 27, 2017 12:17:50
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	272919.9	1.7				ug/L	262785	Standard
	Be	9	133470.3	1.0	**51.4781**	1.041	2.0	ug/L	28	Standard
	Al	27	656434.7	1.8	**3.6481**	0.034	0.9	ug/L	2187	Standard
	Sc	45	39867.4	1.3				ug/L	39299	Standard
	Ti	47	371.0	9.9	**1.0761**	0.132	12.3	ug/L	82	Standard
	V	51	439904.5	1.9	**50.1198**	0.723	1.4	ug/L	1876	Standard
	Cr	52	421359.6	1.9	**50.7025**	0.727	1.4	ug/L	8221	Standard
	Cr	53	52326.9	2.6	**50.4226**	1.359	2.7	ug/L	1083	Standard
	Mn	55	767387.2	0.9	**54.9645**	0.308	0.6	ug/L	2738	Standard
	Co	59	537363.1	0.8	**50.7733**	0.218	0.4	ug/L	635	Standard
	Ni	60	115229.9	0.9	**50.8351**	0.247	0.5	ug/L	261	Standard
	Cu	65	121189.1	0.5	**51.8707**	0.066	0.1	ug/L	660	Standard
	Zn	66	73191.7	1.1	**51.8193**	0.452	0.9	ug/L	558	Standard
>	Ge	72	820558.6	0.5				ug/L	807251	Standard
	As	75	72177.7	1.7	**51.6210**	0.638	1.2	ug/L	-43	Standard
	Se	82	6460.6	0.6	**51.3519**	0.208	0.4	ug/L	18	Standard
	Se-1	77	4722.7	1.9	**50.5542**	0.943	1.9	ug/L	127	Standard
>	Ga	71	165.0	16.0				mg/L	32	Standard
	Rb	85	3338.7	2.8				ug/L	27	Standard
	Y	89	554318.1	0.8				ug/L	534994	Standard
>	Rh	103	40.0	33.1				ug/L	20	Standard
	Mo	98	130.3	15.0	**0.0049**	0.004	85.7	ug/L	285	Standard
	Ag	107	371606.3	1.3	**51.9967**	0.390	0.8	ug/L	129	Standard
	Cd	111	106278.3	1.1	**51.6987**	0.431	0.8	mg/L	6	Standard
	Cd	114	270573.2	2.1	**50.3735**	0.657	1.3	ug/L	46	Standard
>	In	115	680385.9	0.8				ug/L	679215	Standard
	Sn	118	330.7	6.2	**0.0435**	0.017	38.9	ug/L	411	Standard
	Sb	123	278751.2	1.0	**51.1063**	0.270	0.5	ug/L	497	Standard
	Ba	135	116402.2	2.1	**54.5168**	1.145	2.1	ug/L	43	Standard
	Ce	140	4519.0	2.2				ug/L	22	Standard
>	Tb	159	1010613.2	0.9				ug/L	983965	Standard
	Ho	165	120.0	22.0				ug/L	10	Standard
	Tl	203	432329.5	1.5	**51.9191**	0.463	0.9	ug/L	248	Standard
	Tl	205	1037750.2	0.2	**52.2841**	0.463	0.9	ug/L	620	Standard
	Pb	206	351799.2	1.5	**51.8248**	0.447	0.9	ug/L	503	Standard
	Pb	207	304874.5	1.5	**49.7996**	0.390	0.8	ug/L	406	Standard
	Pb	208	367345.6	1.9	**51.4493**	0.605	1.2	ug/L	497	Standard
	U	238	269573.5	2.3	**51.2841**	0.868	1.7	ug/L	17	Standard
>	Bi	209	582967.1	0.7				ug/L	559221	Standard

Approved: March 28, 2017

	Na	23	1.7	173.2	**-0.0106**	1.800	16937.1	mg/L	2	Standard
	Mg	24	118.3	20.8	**0.9138**	0.285	31.2	mg/L	33	Standard
	K	39	76.7	29.4	**0.3567**	0.156	43.8	mg/L	18	Standard
	Ca	43	61.7	23.4	**-27.6932**	19.625	70.9	mg/L	72	Standard
	Fe	54	50.0	19.9	**0.0833**	0.054	65.0	mg/L	29	Standard
	Fe	57	393.3	11.5	**-0.1729**	0.853	493.4	mg/L	382	Standard
>	**Sc-1**	45	39867.4	1.3				mg/L	39299	Standard
	Cl	35	1.3	173.2				ug/L	4	Standard
	Kr	83	3.3	62.4				ug/L	3	Standard
	Br	81	26469.9	8.9				ug/L	2287	Standard
	P	31	76.7	10.0				ug/L	80	Standard
	S	34	35.0	37.8				ug/L	45	Standard
	Sr	88	160.0	26.7				ug/L	178	Standard
	C	12	46.7	44.6				mg/L	33	Standard
	N	14	6.7	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	85.7	40.4				mg/L	16	Standard
	Ho-1	165	120.0	22.0				mg/L	10	Standard
	Er	166	90.0	11.1				mg/L	17	Standard
	I	127	10567.0	8.1				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		103.857	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.649	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703114715SD WG607550-06
Report Date/Time: Monday, March 27, 2017 12:20:01
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.172
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	104.246
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703114715SD WG607550-06
Report Date/Time: Monday, March 27, 2017 12:20:01
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: L1703121501
Sample Date/Time: Monday, March 27, 2017 12:20:56
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	282375.6	1.3				ug/L	262785	Standard
	Be	9	220.0	96.5	**0.0812**	0.080	98.7	ug/L	28	Standard
	Al	27	15320971.5	2.9	**82.4161**	1.404	1.7	ug/L	2187	Standard
	Sc	45	41284.5	3.3				ug/L	39299	Standard
	Ti	47	1053.7	25.5	**3.6421**	1.079	29.6	ug/L	82	Standard
	V	51	11679.5	4.6	**1.1419**	0.089	7.8	ug/L	1876	Standard
	Cr	52	24728.2	2.2	**2.0646**	0.129	6.3	ug/L	8221	Standard
	Cr	53	8474.0	9.2	**7.3835**	0.636	8.6	ug/L	1083	Standard
	Mn	55	682460.5	2.0	**49.3490**	0.701	1.4	ug/L	2738	Standard
	Co	59	5529.0	9.1	**0.4732**	0.059	12.5	ug/L	635	Standard
	Ni	60	5971.2	1.2	**2.5595**	0.072	2.8	ug/L	261	Standard
	Cu	65	22458.0	2.2	**9.4598**	0.072	0.8	ug/L	660	Standard
	Zn	66	35654.6	2.1	**25.2669**	0.080	0.3	ug/L	558	Standard
>	Ge	72	812553.6	2.0				ug/L	807251	Standard
	As	75	28620.7	1.8	**20.7028**	0.288	1.4	ug/L	-43	Standard
	Se	82	2704.2	3.8	**21.6593**	0.503	2.3	ug/L	18	Standard
	Se-1	77	629.3	7.0	**5.6106**	0.379	6.8	ug/L	127	Standard
>	Ga	71	821.7	2.9				mg/L	32	Standard
	Rb	85	103594.8	2.9				ug/L	27	Standard
	Y	89	565079.8	3.2				ug/L	534994	Standard
>	Rh	103	73.3	34.3				ug/L	20	Standard
	Mo	98	6250.7	1.0	**1.3903**	0.016	1.2	ug/L	285	Standard
	Ag	107	305.3	37.7	**0.0242**	0.017	68.5	ug/L	129	Standard
	Cd	111	76.3	42.7	**0.0288**	0.016	56.4	mg/L	6	Standard
	Cd	114	38033.4	3.2	**7.0721**	0.225	3.2	ug/L	46	Standard
>	In	115	680402.3	1.1				ug/L	679215	Standard
	Sn	118	298025.4	1.7	**252.5320**	3.136	1.2	ug/L	411	Standard
	Sb	123	2425.6	4.5	**0.4138**	0.015	3.7	ug/L	497	Standard
	Ba	135	131252.1	1.6	**61.4693**	0.340	0.6	ug/L	43	Standard
	Ce	140	4834.1	4.5				ug/L	22	Standard
>	Tb	159	1016923.9	2.4				ug/L	983965	Standard
	Ho	165	273.3	5.3				ug/L	10	Standard
	Tl	203	981.7	17.8	**0.0935**	0.025	27.3	ug/L	248	Standard
	Tl	205	2291.8	13.9	**0.0869**	0.020	23.3	ug/L	620	Standard
	Pb	206	3047.3	2.1	**0.3862**	0.013	3.4	ug/L	503	Standard
	Pb	207	2569.9	0.6	**0.3622**	0.013	3.5	ug/L	406	Standard
	Pb	208	3294.5	6.4	**0.4042**	0.044	10.8	ug/L	497	Standard
	U	238	528.7	6.0	**0.1020**	0.009	9.0	ug/L	17	Standard
>	Bi	209	567693.1	3.0				ug/L	559221	Standard

Sample ID: L1703121501
Report Date/Time: Monday, March 27, 2017 12:23:07
Page 1

Approved: March 28, 2017

⌈	**Na**	23	101.7	30.0	**58.8715**	15.952	27.1	mg/L	2	Standard
|	**Mg**	24	6988.3	3.0	**82.3066**	4.107	5.0	mg/L	33	Standard
|	**K**	39	760.0	14.2	**4.7032**	0.693	14.7	mg/L	18	Standard
|	**Ca**	43	125.0	14.4	**56.8601**	23.583	41.5	mg/L	72	Standard
|	**Fe**	54	119.3	19.2	**0.4590**	0.132	28.7	mg/L	29	Standard
|	**Fe**	57	581.7	10.6	**3.0465**	0.830	27.2	mg/L	382	Standard
⌊>	**Sc-1**	45	41284.5	3.3				mg/L	39299	Standard
	Cl	35	5.3	114.6				ug/L	4	Standard
	Kr	83	3.7	56.8				ug/L	3	Standard
	Br	81	1334689.1	4.0				ug/L	2287	Standard
	P	31	68.3	37.5				ug/L	80	Standard
	S	34	33.3	37.7				ug/L	45	Standard
	Sr	88	211.7	1.4				ug/L	178	Standard
	C	12	80.0	33.1				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	33.3	17.3				mg/L	3	Standard
	Dy	164	286.5	5.7				mg/L	16	Standard
	Ho-1	165	273.3	5.3				mg/L	10	Standard
	Er	166	213.3	11.8				mg/L	17	Standard
	I	127	97088.7	3.5				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		107.455	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
| >	Ge	72		100.657	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703121501
Report Date/Time: Monday, March 27, 2017 12:23:07
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.175
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	101.515
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Sn 118 Upper, S, EEE	Sn	118	

Sample ID: L1703121501
Report Date/Time: Monday, March 27, 2017 12:23:07
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: L1703121502
Sample Date/Time: Monday, March 27, 2017 12:24:02
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	287487.4	1.8				ug/L	262785	Standard
	Be	9	88.3	11.8	**0.0311**	0.004	12.6	ug/L	28	Standard
	Al	27	15971709.4	1.6	**84.4177**	2.027	2.4	ug/L	2187	Standard
	Sc	45	40071.3	1.8				ug/L	39299	Standard
	Ti	47	681.7	37.0	**2.2365**	0.931	41.6	ug/L	82	Standard
	V	51	4847.4	6.8	**0.3496**	0.039	11.1	ug/L	1876	Standard
	Cr	52	19174.8	0.7	**1.3671**	0.014	1.0	ug/L	8221	Standard
	Cr	53	8911.0	2.7	**7.7955**	0.251	3.2	ug/L	1083	Standard
	Mn	55	471941.2	0.7	**33.9596**	0.212	0.6	ug/L	2738	Standard
	Co	59	4240.3	1.6	**0.3480**	0.007	2.1	ug/L	635	Standard
	Ni	60	4935.5	2.6	**2.0893**	0.062	3.0	ug/L	261	Standard
	Cu	65	13597.4	0.5	**5.5888**	0.027	0.5	ug/L	660	Standard
	Zn	66	25284.4	2.4	**17.7316**	0.456	2.6	ug/L	558	Standard
>	**Ge**	72	815155.8	0.2				ug/L	807251	Standard
	As	75	18253.5	1.1	**13.1778**	0.151	1.1	ug/L	-43	Standard
	Se	82	2186.0	1.3	**17.4416**	0.210	1.2	ug/L	18	Standard
	Se-1	77	684.7	2.8	**6.2042**	0.196	3.2	ug/L	127	Standard
>	**Ga**	71	415.0	10.5				mg/L	32	Standard
	Rb	85	106904.4	3.0				ug/L	27	Standard
	Y	89	563477.6	1.3				ug/L	534994	Standard
>	**Rh**	103	95.0	5.3				ug/L	20	Standard
	Mo	98	6140.1	1.3	**1.3732**	0.003	0.3	ug/L	285	Standard
	Ag	107	148.0	7.6	**0.0022**	0.002	69.2	ug/L	129	Standard
	Cd	111	32.7	20.2	**0.0076**	0.003	40.9	mg/L	6	Standard
	Cd	114	31952.1	2.8	**5.9737**	0.141	2.4	ug/L	46	Standard
>	**In**	115	676516.2	1.5				ug/L	679215	Standard
	Sn	118	255630.8	1.6	**217.8637**	5.344	2.5	ug/L	411	Standard
	Sb	123	1495.9	8.7	**0.2452**	0.028	11.2	ug/L	497	Standard
	Ba	135	27620.8	1.0	**12.9978**	0.283	2.2	ug/L	43	Standard
	Ce	140	3733.8	16.1				ug/L	22	Standard
>	**Tb**	159	1013067.7	0.4				ug/L	983965	Standard
	Ho	165	185.0	14.3				ug/L	10	Standard
	Tl	203	798.4	10.7	**0.0692**	0.012	16.7	ug/L	248	Standard
	Tl	205	2038.5	7.7	**0.0720**	0.009	12.8	ug/L	620	Standard
	Pb	206	1968.8	3.0	**0.2187**	0.006	3.0	ug/L	503	Standard
	Pb	207	1610.8	1.9	**0.1974**	0.007	3.7	ug/L	406	Standard
	Pb	208	1977.7	2.4	**0.2100**	0.004	2.1	ug/L	497	Standard
	U	238	308.0	9.4	**0.0580**	0.005	9.2	ug/L	17	Standard
>	**Bi**	209	575138.3	1.3				ug/L	559221	Standard

Sample ID: L1703121502
Report Date/Time: Monday, March 27, 2017 12:26:13
Page 1

Approved: March 28, 2017

	Na	23	68.3	48.7	**40.4652**	19.470	48.1	mg/L	2	Standard
	Mg	24	7206.7	3.7	**87.3981**	2.458	2.8	mg/L	33	Standard
	K	39	766.7	4.7	**4.8927**	0.220	4.5	mg/L	18	Standard
	Ca	43	143.3	31.5	**87.6514**	60.603	69.1	mg/L	72	Standard
	Fe	54	131.1	22.5	**0.5462**	0.174	31.8	mg/L	29	Standard
	Fe	57	556.7	8.2	**2.9025**	0.690	23.8	mg/L	382	Standard
>	**Sc-1**	45	40071.3	1.8				mg/L	39299	Standard
	Cl	35	2.7	43.3				ug/L	4	Standard
	Kr	83	4.0	75.0				ug/L	3	Standard
	Br	81	1081655.8	3.0				ug/L	2287	Standard
	P	31	86.7	12.0				ug/L	80	Standard
	S	34	35.0	28.6				ug/L	45	Standard
	Sr	88	168.3	4.5				ug/L	178	Standard
	C	12	93.3	27.0				mg/L	33	Standard
	N	14	10.0					mg/L	0	Standard
	Hg	202	23.3	24.7				mg/L	3	Standard
	Dy	164	181.1	28.6				mg/L	16	Standard
	Ho-1	165	185.0	14.3				mg/L	10	Standard
	Er	166	186.7	11.2				mg/L	17	Standard
	I	127	89879.2	1.8				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		109.400	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.979	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703121502
Report Date/Time: Monday, March 27, 2017 12:26:13
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	99.603
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	102.846
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Sn 118 Upper, S, EEE	Sn	118	

Sample ID: L1703121502
Report Date/Time: Monday, March 27, 2017 12:26:13
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: L1703121502PS WG607752-01
Sample Date/Time: Monday, March 27, 2017 12:27:07
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	292700.6	1.6				ug/L	262785	Standard
	Be	9	142421.4	2.0	**51.2095**	0.838	1.6	ug/L	28	Standard
	Al	27	15770062.6	2.0	**81.8505**	1.174	1.4	ug/L	2187	Standard
	Sc	45	39986.0	1.0				ug/L	39299	Standard
	Ti	47	452.3	11.9	**1.3884**	0.184	13.2	ug/L	82	Standard
	V	51	446882.9	0.7	**51.3446**	0.560	1.1	ug/L	1876	Standard
	Cr	52	430422.2	0.5	**52.2551**	0.536	1.0	ug/L	8221	Standard
	Cr	53	60421.9	1.4	**58.8691**	0.404	0.7	ug/L	1083	Standard
	Mn	55	1163909.9	0.5	**84.1566**	1.341	1.6	ug/L	2738	Standard
	Co	59	541285.6	0.7	**51.5693**	0.541	1.0	ug/L	635	Standard
	Ni	60	118023.6	0.3	**52.5037**	0.492	0.9	ug/L	261	Standard
	Cu	65	132152.9	1.1	**57.0612**	0.565	1.0	ug/L	660	Standard
	Zn	66	97973.7	0.6	**70.0965**	0.818	1.2	ug/L	558	Standard
>	**Ge**	72	813857.1	1.0				ug/L	807251	Standard
	As	75	93384.4	0.6	**67.3300**	0.721	1.1	ug/L	-43	Standard
	Se	82	8865.4	1.0	**71.0782**	0.677	1.0	ug/L	18	Standard
	Se-1	77	5572.4	0.5	**60.4049**	0.632	1.0	ug/L	127	Standard
>	**Ga**	71	525.0	2.5				mg/L	32	Standard
	Rb	85	105623.5	0.3				ug/L	27	Standard
	Y	89	560362.7	1.7				ug/L	534994	Standard
>	**Rh**	103	106.7	33.3				ug/L	20	Standard
	Mo	98	6040.8	1.7	**1.3388**	0.013	1.0	ug/L	285	Standard
	Ag	107	358564.2	1.2	**50.0290**	0.165	0.3	ug/L	129	Standard
	Cd	111	106716.1	0.6	**51.7662**	0.261	0.5	mg/L	6	Standard
	Cd	114	303200.7	0.8	**56.2987**	0.917	1.6	ug/L	46	Standard
>	**In**	115	682316.3	1.0				ug/L	679215	Standard
	Sn	118	248361.4	0.5	**209.8334**	2.375	1.1	ug/L	411	Standard
	Sb	123	291829.9	0.6	**53.3565**	0.424	0.8	ug/L	497	Standard
	Ba	135	138300.0	0.3	**64.5952**	0.588	0.9	ug/L	43	Standard
	Ce	140	3342.0	1.9				ug/L	22	Standard
>	**Tb**	159	1029101.4	0.6				ug/L	983965	Standard
	Ho	165	213.3	16.5				ug/L	10	Standard
	Tl	203	439776.4	0.5	**52.8497**	0.447	0.8	ug/L	248	Standard
	Tl	205	1049124.7	0.9	**52.8912**	0.810	1.5	ug/L	620	Standard
	Pb	206	359097.9	1.1	**52.9344**	0.066	0.1	ug/L	503	Standard
	Pb	207	323427.5	0.3	**52.8704**	0.467	0.9	ug/L	406	Standard
	Pb	208	387890.1	0.8	**54.3666**	0.214	0.4	ug/L	497	Standard
	U	238	302451.4	1.0	**57.5775**	0.257	0.4	ug/L	17	Standard
>	**Bi**	209	582630.5	1.2				ug/L	559221	Standard

Sample ID: L1703121502PS WG607752-01
Report Date/Time: Monday, March 27, 2017 12:29:18
Page 1

Approved: March 28, 2017

	Na	23	60.0	30.0	**35.7256**	11.348	31.8	mg/L	2	Standard
	Mg	24	7016.6	2.4	**85.2652**	1.586	1.9	mg/L	33	Standard
	K	39	778.4	6.3	**4.9807**	0.328	6.6	mg/L	18	Standard
	Ca	43	150.0	6.7	**98.3086**	15.522	15.8	mg/L	72	Standard
	Fe	54	104.5	17.1	**0.3946**	0.096	24.4	mg/L	29	Standard
	Fe	57	590.0	6.6	**3.5763**	0.853	23.8	mg/L	382	Standard
>	**Sc-1**	45	39986.0	1.0				mg/L	39299	Standard
	Cl	35	5.3	57.3				ug/L	4	Standard
	Kr	83	4.7	75.3				ug/L	3	Standard
	Br	81	1078939.9	1.5				ug/L	2287	Standard
	P	31	86.7	18.5				ug/L	80	Standard
	S	34	31.7	9.1				ug/L	45	Standard
	Sr	88	185.0	16.2				ug/L	178	Standard
	C	12	60.0	44.1				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	23.3	65.5				mg/L	3	Standard
	Dy	164	235.0	21.6				mg/L	16	Standard
	Ho-1	165	213.3	16.5				mg/L	10	Standard
	Er	166	173.3	29.6				mg/L	17	Standard
	I	127	87842.3	2.2				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		111.384	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.818	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703121502PS WG607752-01
Report Date/Time: Monday, March 27, 2017 12:29:18
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.457
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	104.186
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Sn 118 Upper, S, EEE	Sn	118	

Sample ID: L1703121502PS WG607752-01
Report Date/Time: Monday, March 27, 2017 12:29:18
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: L1703121502SDL WG607752-02
Sample Date/Time: Monday, March 27, 2017 12:30:13
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	268246.8	3.1				ug/L	262785	Standard
	Be	9	101.7	57.0	**0.0383**	0.022	57.6	ug/L	28	Standard
	Al	27	3059084.5	1.1	**17.3265**	0.336	1.9	ug/L	2187	Standard
	Sc	45	37725.2	0.7				ug/L	39299	Standard
	Ti	47	255.0	78.2	**0.6995**	0.764	109.3	ug/L	82	Standard
	V	51	2980.4	5.4	**0.1521**	0.017	10.9	ug/L	1876	Standard
	Cr	52	9866.9	1.6	**0.2798**	0.007	2.4	ug/L	8221	Standard
	Cr	53	3672.1	2.8	**2.7968**	0.096	3.4	ug/L	1083	Standard
	Mn	55	90495.5	1.3	**6.7039**	0.096	1.4	ug/L	2738	Standard
	Co	59	1134.4	8.0	**0.0578**	0.009	15.9	ug/L	635	Standard
	Ni	60	1223.7	6.7	**0.4650**	0.032	6.9	ug/L	261	Standard
	Cu	65	3349.0	2.3	**1.2217**	0.025	2.0	ug/L	660	Standard
	Zn	66	6221.9	2.3	**4.2586**	0.091	2.1	ug/L	558	Standard
>	Ge	72	775394.1	1.2				ug/L	807251	Standard
	As	75	3463.0	2.7	**2.6666**	0.043	1.6	ug/L	-43	Standard
	Se	82	433.9	5.2	**3.5800**	0.157	4.4	ug/L	18	Standard
	Se-1	77	258.3	4.8	**1.6334**	0.176	10.8	ug/L	127	Standard
>	Ga	71	121.7	9.5				mg/L	32	Standard
	Rb	85	20026.6	1.3				ug/L	27	Standard
	Y	89	519701.4	0.8				ug/L	534994	Standard
>	Rh	103	36.7	7.9				ug/L	20	Standard
	Mo	98	1166.9	2.9	**0.2565**	0.010	3.8	ug/L	285	Standard
	Ag	107	279.7	19.3	**0.0231**	0.008	35.6	ug/L	129	Standard
	Cd	111	27.8	68.2	**0.0060**	0.010	163.7	mg/L	6	Standard
	Cd	114	6051.0	4.5	**1.1882**	0.053	4.4	ug/L	46	Standard
>	In	115	639469.0	0.6				ug/L	679215	Standard
	Sn	118	49110.8	0.3	**44.0838**	0.267	0.6	ug/L	411	Standard
	Sb	123	1286.4	14.2	**0.2200**	0.036	16.2	ug/L	497	Standard
	Ba	135	5354.3	0.9	**2.6498**	0.041	1.5	ug/L	43	Standard
	Ce	140	686.7	16.0				ug/L	22	Standard
>	Tb	159	957926.2	1.2				ug/L	983965	Standard
	Ho	165	56.7	41.7				ug/L	10	Standard
	Tl	203	912.4	10.2	**0.0854**	0.011	12.5	ug/L	248	Standard
	Tl	205	2190.2	5.0	**0.0822**	0.005	5.9	ug/L	620	Standard
	Pb	206	1391.1	4.7	**0.1370**	0.008	6.1	ug/L	503	Standard
	Pb	207	1222.0	7.4	**0.1374**	0.014	10.2	ug/L	406	Standard
	Pb	208	1477.7	3.3	**0.1436**	0.005	3.7	ug/L	497	Standard
	U	238	130.3	50.9	**0.0242**	0.013	53.2	ug/L	17	Standard
>	Bi	209	562489.2	0.8				ug/L	559221	Standard

Sample ID: L1703121502SDL WG607752-02
Report Date/Time: Monday, March 27, 2017 12:32:24
Page 1

Approved: March 28, 2017

⌈	**Na**	23	13.3	43.3	**7.6085**	3.781	49.7	mg/L	2	Standard
|	**Mg**	24	1471.7	3.9	**18.5448**	0.875	4.7	mg/L	33	Standard
|	**K**	39	201.7	10.0	**1.2577**	0.141	11.2	mg/L	18	Standard
|	**Ca**	43	73.3	14.2	**-4.8138**	16.268	338.0	mg/L	72	Standard
|	**Fe**	54	31.2	19.6	**-0.0140**	0.036	259.6	mg/L	29	Standard
|	**Fe**	57	426.7	11.7	**0.9299**	0.979	105.3	mg/L	382	Standard
⌊>	**Sc-1**	45	37725.2	0.7				mg/L	39299	Standard
	Cl	35	0.0					ug/L	4	Standard
	Kr	83	3.0	66.7				ug/L	3	Standard
	Br	81	203551.5	0.6				ug/L	2287	Standard
	P	31	55.0	39.6				ug/L	80	Standard
	S	34	25.0	34.6				ug/L	45	Standard
	Sr	88	156.7	14.4				ug/L	178	Standard
	C	12	33.3	34.6				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	3	Standard
	Dy	164	73.8	28.8				mg/L	16	Standard
	Ho-1	165	56.7	41.7				mg/L	10	Standard
	Er	166	60.0	72.6				mg/L	17	Standard
	I	127	22767.1	3.9				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		102.079	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		96.054	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703121502SDL WG607752-02
Report Date/Time: Monday, March 27, 2017 12:32:24
Page 2

Approved: March 28, 2017

Rb	85	
Y	89	
> Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
> In	115	94.148
Sn	118	
Sb	123	
Ba	135	
Ce	140	
> Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
> Bi	209	100.584
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
> Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703121502SDL WG607752-02
Report Date/Time: Monday, March 27, 2017 12:32:24
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: L1703121502SDL WG607752-02
Sample Date/Time: Monday, March 27, 2017 12:33:18
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	264968.6	0.9				ug/L	262785	Standard
	Be	9	46.7	86.6	**0.0172**	0.016	91.9	ug/L	28	Standard
	Al	27	549263.8	0.7	**3.1434**	0.039	1.2	ug/L	2187	Standard
	Sc	45	37245.7	2.1				ug/L	39299	Standard
	Ti	47	60.3	24.0	**-0.0515**	0.057	110.1	ug/L	82	Standard
	V	51	2194.2	5.3	**0.0613**	0.014	23.2	ug/L	1876	Standard
	Cr	52	8117.5	2.0	**0.0699**	0.018	26.0	ug/L	8221	Standard
	Cr	53	1540.1	4.5	**0.6047**	0.067	11.1	ug/L	1083	Standard
	Mn	55	20636.4	1.9	**1.4170**	0.035	2.5	ug/L	2738	Standard
	Co	59	447.7	4.6	**-0.0102**	0.002	21.8	ug/L	635	Standard
	Ni	60	452.0	4.0	**0.1077**	0.008	7.3	ug/L	261	Standard
	Cu	65	1177.4	1.5	**0.2412**	0.010	4.0	ug/L	660	Standard
	Zn	66	2295.5	2.1	**1.3200**	0.032	2.4	ug/L	558	Standard
>	Ge	72	762900.0	0.3				ug/L	807251	Standard
	As	75	693.5	11.1	**0.5812**	0.059	10.1	ug/L	-43	Standard
	Se	82	99.2	21.0	**0.7750**	0.179	23.1	ug/L	18	Standard
	Se-1	77	145.0	10.6	**0.3414**	0.188	55.1	ug/L	127	Standard
>	Ga	71	50.0	70.0				mg/L	32	Standard
	Rb	85	4037.2	2.1				ug/L	27	Standard
	Y	89	508488.6	0.6				ug/L	534994	Standard
>	Rh	103	13.3	78.1				ug/L	20	Standard
	Mo	98	274.9	7.0	**0.0422**	0.004	10.1	ug/L	285	Standard
	Ag	107	126.0	7.6	**0.0003**	0.002	497.3	ug/L	129	Standard
	Cd	111	3.3	16.7	**-0.0067**	0.000	4.2	mg/L	6	Standard
	Cd	114	1248.4	3.3	**0.2386**	0.008	3.3	ug/L	46	Standard
>	In	115	634486.2	0.8				ug/L	679215	Standard
	Sn	118	10498.6	1.3	**9.3117**	0.051	0.6	ug/L	411	Standard
	Sb	123	266.0	23.7	**0.0213**	0.013	58.9	ug/L	497	Standard
	Ba	135	1174.4	4.5	**0.5706**	0.024	4.1	ug/L	43	Standard
	Ce	140	143.3	16.1				ug/L	22	Standard
>	Tb	159	942485.6	0.9				ug/L	983965	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	553.0	2.4	**0.0414**	0.001	3.5	ug/L	248	Standard
	Tl	205	1288.4	8.9	**0.0358**	0.006	17.1	ug/L	620	Standard
	Pb	206	725.7	4.1	**0.0364**	0.005	12.8	ug/L	503	Standard
	Pb	207	655.3	5.8	**0.0425**	0.007	16.1	ug/L	406	Standard
	Pb	208	767.3	1.5	**0.0415**	0.002	3.9	ug/L	497	Standard
	U	238	16.0	10.8	**0.0018**	0.000	19.1	ug/L	17	Standard
>	Bi	209	556998.4	0.3				ug/L	559221	Standard

Sample ID: L1703121502SDL WG607752-02
Report Date/Time: Monday, March 27, 2017 12:35:29
Page 1

Approved: March 28, 2017

	Na	23	6.7	43.3	**3.3583**	2.011	59.9	mg/L	2	Standard
	Mg	24	350.0	17.4	**4.0532**	0.726	17.9	mg/L	33	Standard
	K	39	90.0	14.7	**0.4854**	0.092	18.9	mg/L	18	Standard
	Ca	43	61.7	30.7	**-20.9722**	30.391	144.9	mg/L	72	Standard
	Fe	54	14.5	102.8	**-0.1149**	0.091	79.3	mg/L	29	Standard
	Fe	57	360.0	11.4	**-0.3195**	0.905	283.4	mg/L	382	Standard
>	**Sc-1**	45	37245.7	2.1				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	3.7	15.7				ug/L	3	Standard
	Br	81	46166.9	1.5				ug/L	2287	Standard
	P	31	85.0	11.8				ug/L	80	Standard
	S	34	40.0	54.5				ug/L	45	Standard
	Sr	88	146.7	11.0				ug/L	178	Standard
	C	12	6.7	86.6				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	3	Standard
	Dy	164	28.9	72.6				mg/L	16	Standard
	Ho-1	165	11.7	24.7				mg/L	10	Standard
	Er	166	23.3	89.2				mg/L	17	Standard
	I	127	10011.6	1.4				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		100.831	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		94.506	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703121502SDL WG607752-02
Report Date/Time: Monday, March 27, 2017 12:35:29
Page 2

Approved: March 28, 2017

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	93.415
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.603
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703121502SDL WG607752-02
Report Date/Time: Monday, March 27, 2017 12:35:29
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, March 27, 2017 12:36:25
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	269141.4	1.6				ug/L	262785	Standard
	Be	9	128643.8	1.0	**50.3061**	0.320	0.6	ug/L	28	Standard
	Al	27	8787026.8	1.9	**49.5943**	0.197	0.4	ug/L	2187	Standard
	Sc	45	40474.0	2.1				ug/L	39299	Standard
	Ti	47	27263.5	1.9	**100.9836**	1.247	1.2	ug/L	82	Standard
	V	51	429211.3	1.1	**49.3088**	0.390	0.8	ug/L	1876	Standard
	Cr	52	407654.0	1.5	**49.4381**	0.092	0.2	ug/L	8221	Standard
	Cr	53	49788.3	0.7	**48.3378**	0.573	1.2	ug/L	1083	Standard
	Mn	55	692525.6	1.4	**49.9993**	0.165	0.3	ug/L	2738	Standard
	Co	59	524885.6	0.4	**50.0123**	0.700	1.4	ug/L	635	Standard
	Ni	60	111027.7	1.0	**49.3884**	0.361	0.7	ug/L	261	Standard
	Cu	65	115018.6	1.2	**49.6282**	0.502	1.0	ug/L	660	Standard
	Zn	66	69675.5	0.7	**49.7279**	0.655	1.3	ug/L	558	Standard
>	Ge	72	813820.6	1.7				ug/L	807251	Standard
	As	75	68732.9	1.2	**49.5744**	0.759	1.5	ug/L	-43	Standard
	Se	82	6246.5	0.7	**50.0723**	1.152	2.3	ug/L	18	Standard
	Se-1	77	4650.7	0.5	**50.1965**	0.952	1.9	ug/L	127	Standard
>	Ga	71	65.0	38.5				mg/L	32	Standard
	Rb	85	415.0	6.4				ug/L	27	Standard
	Y	89	547397.9	1.7				ug/L	534994	Standard
>	Rh	103	53.3	14.3				ug/L	20	Standard
	Mo	98	449020.0	1.2	**101.9722**	0.770	0.8	ug/L	285	Standard
	Ag	107	361562.2	1.2	**50.7721**	0.315	0.6	ug/L	129	Standard
	Cd	111	104592.3	1.8	**51.0592**	0.606	1.2	mg/L	6	Standard
	Cd	114	273104.1	1.0	**51.0302**	0.207	0.4	ug/L	46	Standard
>	In	115	677949.2	0.7				ug/L	679215	Standard
	Sn	118	60679.6	0.3	**51.4156**	0.209	0.4	ug/L	411	Standard
	Sb	123	272278.7	0.7	**50.0996**	0.400	0.8	ug/L	497	Standard
	Ba	135	105426.9	0.7	**49.5523**	0.419	0.8	ug/L	43	Standard
	Ce	140	320.0	21.5				ug/L	22	Standard
>	Tb	159	998736.2	1.6				ug/L	983965	Standard
	Ho	165	16.7	75.5				ug/L	10	Standard
	Tl	203	412211.1	0.3	**49.9094**	0.247	0.5	ug/L	248	Standard
	Tl	205	990891.4	0.7	**50.3289**	0.363	0.7	ug/L	620	Standard
	Pb	206	335484.2	0.6	**49.8244**	0.154	0.3	ug/L	503	Standard
	Pb	207	304608.2	1.4	**50.1646**	0.577	1.2	ug/L	406	Standard
	Pb	208	353904.5	0.6	**49.9728**	0.081	0.2	ug/L	497	Standard
	U	238	270338.5	0.6	**51.8569**	0.688	1.3	ug/L	17	Standard
>	Bi	209	578242.1	0.7				ug/L	559221	Standard

Sample ID: QC Std 6
Report Date/Time: Monday, March 27, 2017 12:38:36
Page 1

Approved: March 28, 2017

	Na	23	11.7	65.5	**6.0349**	4.655	77.1	mg/L	2	Standard
	Mg	24	470.0	13.6	**5.1553**	0.889	17.2	mg/L	33	Standard
	K	39	666.7	11.8	**4.1971**	0.581	13.9	mg/L	18	Standard
	Ca	43	56.7	35.7	**-36.0757**	27.976	77.5	mg/L	72	Standard
	Fe	54	925.9	4.5	**5.0336**	0.196	3.9	mg/L	29	Standard
	Fe	57	596.7	7.8	**3.5763**	1.110	31.0	mg/L	382	Standard
>	**Sc-1**	45	40474.0	2.1				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	2.3	24.7				ug/L	3	Standard
	Br	81	6548.1	10.6				ug/L	2287	Standard
	P	31	66.7	8.7				ug/L	80	Standard
	S	34	35.0	14.3				ug/L	45	Standard
	Sr	88	153.3	21.7				ug/L	178	Standard
	C	12	23.3	99.0				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	9.5	107.6				mg/L	16	Standard
	Ho-1	165	16.7	75.5				mg/L	10	Standard
	Er	166	10.0	100.0				mg/L	17	Standard
	I	127	3373.7	4.7				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	100.612		
	Al	27	99.189		
	Sc	45			
	Ti	47	100.984		
	V	51	98.618		
	Cr	52	98.876		
	Cr	53			
	Mn	55	99.999		
	Co	59	100.025		
	Ni	60	98.777		
	Cu	65	99.256		
	Zn	66	99.456		
>	Ge	72		100.814	
	As	75	99.149		
	Se	82	100.145		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Monday, March 27, 2017 12:38:36
Page 2

Approved: March 28, 2017

Rb	85			
Y	89			
Rh	103			
Mo	98	101.972		
Ag	107	101.544		
Cd	111	102.118		
Cd	114			
In	115			99.814
Sn	118	102.831		
Sb	123	100.199		
Ba	135	99.105		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.819		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.946		
U	238	103.714		
Bi	209			103.401
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Monday, March 27, 2017 12:38:36
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, March 27, 2017 12:39:31
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	259658.2	3.8				ug/L	262785	Standard
	Be	9	58.3	13.1	**0.0224**	0.002	10.2	ug/L	28	Standard
	Al	27	2126.8	8.0	**0.0063**	0.001	23.8	ug/L	2187	Standard
	Sc	45	39292.6	4.7				ug/L	39299	Standard
	Ti	47	47.3	8.5	**-0.1076**	0.012	11.1	ug/L	82	Standard
	V	51	1424.1	6.3	**-0.0375**	0.015	40.0	ug/L	1876	Standard
	Cr	52	6396.7	1.4	**-0.1777**	0.019	10.9	ug/L	8221	Standard
	Cr	53	833.4	4.4	**-0.1627**	0.070	42.8	ug/L	1083	Standard
	Mn	55	2583.6	3.9	**0.0170**	0.015	85.5	ug/L	2738	Standard
	Co	59	410.0	2.0	**-0.0151**	0.002	11.5	ug/L	635	Standard
	Ni	60	229.0	12.8	**-0.0010**	0.014	1383.8	ug/L	261	Standard
	Cu	65	712.7	3.6	**0.0178**	0.004	23.7	ug/L	660	Standard
	Zn	66	683.0	3.2	**0.0687**	0.005	7.9	ug/L	558	Standard
>	Ge	72	782301.2	3.7				ug/L	807251	Standard
	As	75	-18.4	128.5	**0.0341**	0.018	52.4	ug/L	-43	Standard
	Se	82	25.7	14.0	**0.1401**	0.029	20.5	ug/L	18	Standard
	Se-1	77	107.7	18.3	**-0.1294**	0.242	187.3	ug/L	127	Standard
>	Ga	71	26.7	28.6				mg/L	32	Standard
	Rb	85	36.7	28.4				ug/L	27	Standard
	Y	89	532065.9	5.3				ug/L	534994	Standard
>	Rh	103	8.3	69.3				ug/L	20	Standard
	Mo	98	380.7	28.6	**0.0663**	0.031	46.2	ug/L	285	Standard
	Ag	107	171.7	16.4	**0.0066**	0.005	81.3	ug/L	129	Standard
	Cd	111	13.5	101.5	**-0.0013**	0.007	561.9	mg/L	6	Standard
	Cd	114	49.8	20.7	**-0.0010**	0.002	229.0	ug/L	46	Standard
>	In	115	651745.7	4.5				ug/L	679215	Standard
	Sn	118	381.0	16.9	**0.0996**	0.046	46.7	ug/L	411	Standard
	Sb	123	599.4	18.8	**0.0836**	0.019	22.7	ug/L	497	Standard
	Ba	135	60.0	20.5	**0.0102**	0.008	73.7	ug/L	43	Standard
	Ce	140	25.0	20.0				ug/L	22	Standard
>	Tb	159	948601.4	3.7				ug/L	983965	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	114.7	17.0	**-0.0137**	0.003	22.0	ug/L	248	Standard
	Tl	205	248.3	23.3	**-0.0190**	0.004	19.4	ug/L	620	Standard
	Pb	206	579.7	7.1	**0.0138**	0.009	61.8	ug/L	503	Standard
	Pb	207	479.3	6.5	**0.0121**	0.004	30.0	ug/L	406	Standard
	Pb	208	580.0	2.2	**0.0139**	0.004	27.3	ug/L	497	Standard
	U	238	41.0	16.9	**0.0067**	0.001	18.8	ug/L	17	Standard
>	Bi	209	558669.4	4.2				ug/L	559221	Standard

Sample ID: QC Std 7
Report Date/Time: Monday, March 27, 2017 12:41:41
Page 1

Approved: March 28, 2017

⌈	**Na**	23	0.0		**-1.0498**	0.000	0.0	mg/L	2	Standard
|	**Mg**	24	36.7	39.4	**-0.0737**	0.193	262.2	mg/L	33	Standard
|	**K**	39	20.0	43.3	**-0.0190**	0.054	283.6	mg/L	18	Standard
|	**Ca**	43	66.7	11.5	**-18.5527**	15.257	82.2	mg/L	72	Standard
|	**Fe**	54	43.1	18.1	**0.0477**	0.044	93.1	mg/L	29	Standard
|	**Fe**	57	323.3	9.8	**-1.4206**	0.628	44.2	mg/L	382	Standard
⌊>	**Sc-1**	45	39292.6	4.7				mg/L	39299	Standard
	Cl	35	0.0					ug/L	4	Standard
	Kr	83	3.7	83.3				ug/L	3	Standard
	Br	81	4384.0	5.9				ug/L	2287	Standard
	P	31	78.3	26.6				ug/L	80	Standard
	S	34	50.0	17.3				ug/L	45	Standard
	Sr	88	156.7	8.0				ug/L	178	Standard
	C	12	26.7	114.6				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	3	Standard
	Dy	164	19.5	51.4				mg/L	16	Standard
	Ho-1	165	3.3	86.6				mg/L	10	Standard
	Er	166	10.0	173.2				mg/L	17	Standard
	I	127	5697.7	3.6				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		96.909	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Monday, March 27, 2017 12:41:41
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	95.956
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	99.901
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Monday, March 27, 2017 12:41:41
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: L1703114702
Sample Date/Time: Monday, March 27, 2017 12:42:37
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	277150.4	1.1				ug/L	262785	Standard
	Be	9	100.0	18.0	**0.0368**	0.007	18.8	ug/L	28	Standard
	Al	27	521448.5	1.0	**2.8523**	0.007	0.2	ug/L	2187	Standard
	Sc	45	41157.5	1.6				ug/L	39299	Standard
	Ti	47	443.7	3.8	**1.3558**	0.051	3.7	ug/L	82	Standard
	V	51	3093.3	6.2	**0.1477**	0.020	13.8	ug/L	1876	Standard
	Cr	52	10841.2	2.4	**0.3387**	0.035	10.3	ug/L	8221	Standard
	Cr	53	1656.8	4.6	**0.6171**	0.074	12.0	ug/L	1083	Standard
	Mn	55	44626.6	1.2	**3.0522**	0.014	0.4	ug/L	2738	Standard
	Co	59	1286.1	6.8	**0.0667**	0.007	10.5	ug/L	635	Standard
	Ni	60	917.4	3.9	**0.3012**	0.013	4.3	ug/L	261	Standard
	Cu	65	1816.1	2.7	**0.4835**	0.016	3.4	ug/L	660	Standard
	Zn	66	3269.4	2.9	**1.9084**	0.046	2.4	ug/L	558	Standard
>	Ge	72	814592.6	1.1				ug/L	807251	Standard
	As	75	73.2	49.4	**0.1010**	0.026	25.9	ug/L	-43	Standard
	Se	82	22.2	7.8	**0.1034**	0.015	15.0	ug/L	18	Standard
	Se-1	77	136.7	9.3	**0.1407**	0.153	108.5	ug/L	127	Standard
>	Ga	71	175.0	24.7				mg/L	32	Standard
	Rb	85	3882.2	2.7				ug/L	27	Standard
	Y	89	553624.4	1.5				ug/L	534994	Standard
>	Rh	103	8.3	124.9				ug/L	20	Standard
	Mo	98	191.9	21.5	**0.0193**	0.009	46.1	ug/L	285	Standard
	Ag	107	174.3	26.2	**0.0060**	0.006	102.2	ug/L	129	Standard
	Cd	111	45.1	28.8	**0.0137**	0.006	44.8	mg/L	6	Standard
	Cd	114	197.4	24.1	**0.0264**	0.009	32.6	ug/L	46	Standard
>	In	115	672725.1	1.1				ug/L	679215	Standard
	Sn	118	406.7	4.2	**0.1120**	0.018	15.9	ug/L	411	Standard
	Sb	123	418.2	14.1	**0.0466**	0.011	24.0	ug/L	497	Standard
	Ba	135	7986.8	0.4	**3.7655**	0.054	1.4	ug/L	43	Standard
	Ce	140	7275.1	3.0				ug/L	22	Standard
>	Tb	159	1004713.1	0.4				ug/L	983965	Standard
	Ho	165	98.3	17.9				ug/L	10	Standard
	Tl	203	399.0	18.7	**0.0196**	0.009	44.4	ug/L	248	Standard
	Tl	205	955.0	9.9	**0.0158**	0.005	28.8	ug/L	620	Standard
	Pb	206	1339.4	4.5	**0.1213**	0.008	6.6	ug/L	503	Standard
	Pb	207	1123.7	5.4	**0.1135**	0.009	8.0	ug/L	406	Standard
	Pb	208	1320.7	5.3	**0.1135**	0.010	8.7	ug/L	497	Standard
	U	238	148.3	25.1	**0.0267**	0.007	26.0	ug/L	17	Standard
>	Bi	209	584849.4	0.5				ug/L	559221	Standard

Sample ID: L1703114702
Report Date/Time: Monday, March 27, 2017 12:44:48
Page 1

Approved: March 28, 2017

	Na	23	3.3	173.2	**0.9668**	3.493	361.3	mg/L	2	Standard
	Mg	24	100.0	22.9	**0.6548**	0.280	42.8	mg/L	33	Standard
	K	39	40.0	45.1	**0.1059**	0.120	113.6	mg/L	18	Standard
	Ca	43	50.0	26.5	**-46.6079**	17.579	37.7	mg/L	72	Standard
	Fe	54	66.1	4.4	**0.1646**	0.022	13.2	mg/L	29	Standard
	Fe	57	343.3	28.6	**-1.3282**	1.893	142.5	mg/L	382	Standard
>	**Sc-1**	45	41157.5	1.6				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	3.7	41.7				ug/L	3	Standard
	Br	81	7942.1	1.0				ug/L	2287	Standard
	P	31	93.3	27.5				ug/L	80	Standard
	S	34	41.7	34.6				ug/L	45	Standard
	Sr	88	185.0	16.4				ug/L	178	Standard
	C	12	20.0	100.0				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	13.3	173.2				mg/L	3	Standard
	Dy	164	148.4	33.3				mg/L	16	Standard
	Ho-1	165	98.3	17.9				mg/L	10	Standard
	Er	166	103.3	14.8				mg/L	17	Standard
	I	127	8382.3	7.3				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		105.467	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.909	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703114702
Report Date/Time: Monday, March 27, 2017 12:44:48
Page 2

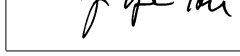
Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	99.044
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	104.583
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: March 28, 2017



Method 6020 - Summary Report

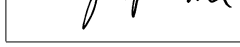
Sample ID: L1703114705
Sample Date/Time: Monday, March 27, 2017 12:45:42
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	278098.5	2.7				ug/L	262785	Standard
	Be	9	46.7	22.3	**0.0165**	0.004	24.6	ug/L	28	Standard
	Al	27	502225.0	0.9	**2.7385**	0.056	2.0	ug/L	2187	Standard
	Sc	45	40883.4	2.7				ug/L	39299	Standard
	Ti	47	363.7	12.8	**1.0529**	0.153	14.5	ug/L	82	Standard
	V	51	2684.2	6.0	**0.0998**	0.023	23.5	ug/L	1876	Standard
	Cr	52	10032.7	1.5	**0.2346**	0.028	11.9	ug/L	8221	Standard
	Cr	53	1816.8	2.1	**0.7700**	0.066	8.5	ug/L	1083	Standard
	Mn	55	31686.1	0.9	**2.1079**	0.026	1.2	ug/L	2738	Standard
	Co	59	770.0	2.7	**0.0174**	0.003	17.7	ug/L	635	Standard
	Ni	60	848.0	3.0	**0.2691**	0.005	1.9	ug/L	261	Standard
	Cu	65	1554.7	1.4	**0.3681**	0.020	5.5	ug/L	660	Standard
	Zn	66	3517.4	2.8	**2.0782**	0.045	2.2	ug/L	558	Standard
>	Ge	72	817398.6	1.7				ug/L	807251	Standard
	As	75	50.5	35.4	**0.0846**	0.013	15.7	ug/L	-43	Standard
	Se	82	24.1	26.6	**0.1186**	0.054	45.3	ug/L	18	Standard
	Se-1	77	131.7	9.2	**0.0812**	0.157	192.9	ug/L	127	Standard
>	Ga	71	123.3	16.4				mg/L	32	Standard
	Rb	85	3423.7	2.5				ug/L	27	Standard
	Y	89	555721.2	1.7				ug/L	534994	Standard
>	Rh	103	8.3	91.7				ug/L	20	Standard
	Mo	98	124.6	12.2	**0.0037**	0.003	92.0	ug/L	285	Standard
	Ag	107	128.0	5.5	**-0.0007**	0.001	145.1	ug/L	129	Standard
	Cd	111	11.2	36.2	**-0.0030**	0.002	67.0	mg/L	6	Standard
	Cd	114	84.6	28.1	**0.0051**	0.004	88.4	ug/L	46	Standard
>	In	115	679247.2	0.3				ug/L	679215	Standard
	Sn	118	512.3	5.6	**0.1983**	0.024	12.1	ug/L	411	Standard
	Sb	123	246.9	34.9	**0.0143**	0.016	110.6	ug/L	497	Standard
	Ba	135	7765.7	1.5	**3.6250**	0.054	1.5	ug/L	43	Standard
	Ce	140	5379.3	7.0				ug/L	22	Standard
>	Tb	159	996331.5	0.7				ug/L	983965	Standard
	Ho	165	86.7	13.3				ug/L	10	Standard
	Tl	203	233.7	10.2	**-0.0002**	0.003	1428.9	ug/L	248	Standard
	Tl	205	520.0	15.3	**-0.0061**	0.004	65.3	ug/L	620	Standard
	Pb	206	929.7	2.3	**0.0607**	0.003	5.4	ug/L	503	Standard
	Pb	207	791.0	3.5	**0.0589**	0.005	7.9	ug/L	406	Standard
	Pb	208	904.7	2.1	**0.0550**	0.002	4.5	ug/L	497	Standard
	U	238	40.3	22.4	**0.0062**	0.002	27.6	ug/L	17	Standard
>	Bi	209	586277.5	0.1				ug/L	559221	Standard

Sample ID: L1703114705
Report Date/Time: Monday, March 27, 2017 12:47:53
Page 1

Approved: March 28, 2017



	Na	23	1.7	173.2	**-0.0769**	1.685	2192.4	mg/L	2	Standard
	Mg	24	80.0	18.8	**0.4209**	0.168	40.0	mg/L	33	Standard
	K	39	48.3	53.1	**0.1579**	0.162	102.4	mg/L	18	Standard
	Ca	43	43.3	46.6	**-54.7512**	30.025	54.8	mg/L	72	Standard
	Fe	54	44.6	40.4	**0.0458**	0.099	216.4	mg/L	29	Standard
	Fe	57	351.7	15.7	**-1.1199**	1.216	108.6	mg/L	382	Standard
>	**Sc-1**	45	40883.4	2.7				mg/L	39299	Standard
	Cl	35	2.7	114.6				ug/L	4	Standard
	Kr	83	2.7	57.3				ug/L	3	Standard
	Br	81	6147.9	4.0				ug/L	2287	Standard
	P	31	78.3	14.7				ug/L	80	Standard
	S	34	35.0	24.7				ug/L	45	Standard
	Sr	88	178.3	15.9				ug/L	178	Standard
	C	12	16.7	124.9				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	10.0	100.0				mg/L	3	Standard
	Dy	164	107.1	16.6				mg/L	16	Standard
	Ho-1	165	86.7	13.3				mg/L	10	Standard
	Er	166	60.0	16.7				mg/L	17	Standard
	I	127	8906.0	8.8				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		105.828	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.257	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703114705
Report Date/Time: Monday, March 27, 2017 12:47:53
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.005
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	104.838
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703114705
Report Date/Time: Monday, March 27, 2017 12:47:53
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: L1703114708
Sample Date/Time: Monday, March 27, 2017 12:48:48
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	276182.8	0.3				ug/L	262785	Standard
	Be	9	50.0	17.3	**0.0178**	0.003	18.7	ug/L	28	Standard
	Al	27	559188.6	1.6	**3.0699**	0.044	1.4	ug/L	2187	Standard
	Sc	45	40987.1	4.6				ug/L	39299	Standard
	Ti	47	779.4	4.5	**2.5613**	0.127	5.0	ug/L	82	Standard
	V	51	4006.8	4.7	**0.2467**	0.025	10.0	ug/L	1876	Standard
	Cr	52	10940.3	1.2	**0.3319**	0.011	3.4	ug/L	8221	Standard
	Cr	53	1538.4	2.8	**0.4790**	0.060	12.5	ug/L	1083	Standard
	Mn	55	43935.3	1.5	**2.9578**	0.053	1.8	ug/L	2738	Standard
	Co	59	1193.0	2.9	**0.0563**	0.003	6.1	ug/L	635	Standard
	Ni	60	930.7	6.8	**0.3015**	0.028	9.3	ug/L	261	Standard
	Cu	65	1692.1	6.7	**0.4196**	0.051	12.1	ug/L	660	Standard
	Zn	66	3427.1	3.0	**1.9880**	0.089	4.5	ug/L	558	Standard
>	Ge	72	826196.5	1.6				ug/L	807251	Standard
	As	75	88.8	23.6	**0.1112**	0.014	12.8	ug/L	-43	Standard
	Se	82	29.2	21.5	**0.1562**	0.048	30.5	ug/L	18	Standard
	Se-1	77	116.0	2.3	**-0.1066**	0.045	41.9	ug/L	127	Standard
>	Ga	71	313.3	6.4				mg/L	32	Standard
	Rb	85	4835.8	2.6				ug/L	27	Standard
	Y	89	561641.0	1.2				ug/L	534994	Standard
>	Rh	103	11.7	24.7				ug/L	20	Standard
	Mo	98	102.7	13.7	**-0.0014**	0.003	231.2	ug/L	285	Standard
	Ag	107	166.0	8.3	**0.0045**	0.002	44.1	ug/L	129	Standard
	Cd	111	11.9	22.2	**-0.0027**	0.001	48.8	mg/L	6	Standard
	Cd	114	92.4	12.5	**0.0064**	0.002	31.9	ug/L	46	Standard
>	In	115	683626.0	0.6				ug/L	679215	Standard
	Sn	118	407.7	10.8	**0.1073**	0.039	36.3	ug/L	411	Standard
	Sb	123	255.1	21.5	**0.0156**	0.010	65.7	ug/L	497	Standard
	Ba	135	8091.5	3.0	**3.7536**	0.115	3.1	ug/L	43	Standard
	Ce	140	9536.3	3.6				ug/L	22	Standard
>	Tb	159	1012507.1	0.4				ug/L	983965	Standard
	Ho	165	88.3	3.3				ug/L	10	Standard
	Tl	203	135.0	12.9	**-0.0120**	0.002	17.7	ug/L	248	Standard
	Tl	205	308.3	6.8	**-0.0167**	0.001	6.5	ug/L	620	Standard
	Pb	206	1335.7	3.5	**0.1203**	0.006	5.3	ug/L	503	Standard
	Pb	207	1088.7	3.8	**0.1073**	0.007	6.2	ug/L	406	Standard
	Pb	208	1301.4	1.1	**0.1103**	0.002	2.1	ug/L	497	Standard
	U	238	71.7	6.4	**0.0121**	0.001	7.7	ug/L	17	Standard
>	Bi	209	586362.8	0.4				ug/L	559221	Standard

Sample ID: L1703114708
Report Date/Time: Monday, March 27, 2017 12:50:59
Page 1

Approved: March 28, 2017

	Na	23	6.7	43.3	**2.9614**	1.838	62.1	mg/L	2	Standard
	Mg	24	96.7	20.9	**0.6264**	0.285	45.5	mg/L	33	Standard
	K	39	33.3	56.8	**0.0653**	0.129	197.1	mg/L	18	Standard
	Ca	43	58.3	24.7	**-35.0540**	15.986	45.6	mg/L	72	Standard
	Fe	54	56.2	25.8	**0.1134**	0.093	82.1	mg/L	29	Standard
	Fe	57	343.3	7.3	**-1.3174**	0.232	17.6	mg/L	382	Standard
>	**Sc-1**	45	40987.1	4.6				mg/L	39299	Standard
	Cl	35	0.0					ug/L	4	Standard
	Kr	83	1.7	34.6				ug/L	3	Standard
	Br	81	7551.9	7.2				ug/L	2287	Standard
	P	31	73.3	33.6				ug/L	80	Standard
	S	34	46.7	16.4				ug/L	45	Standard
	Sr	88	155.0	6.5				ug/L	178	Standard
	C	12	40.0	25.0				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	216.0	11.9				mg/L	16	Standard
	Ho-1	165	88.3	3.3				mg/L	10	Standard
	Er	166	83.3	18.3				mg/L	17	Standard
	I	127	8138.9	5.9				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		105.099	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.347	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703114708
Report Date/Time: Monday, March 27, 2017 12:50:59
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.649
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	104.854
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703114708
Report Date/Time: Monday, March 27, 2017 12:50:59
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

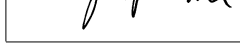
Sample ID: L1703114720
Sample Date/Time: Monday, March 27, 2017 12:51:53
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	277215.4	2.1				ug/L	262785	Standard
	Be	9	45.0	33.3	**0.0158**	0.005	34.5	ug/L	28	Standard
	Al	27	11105.7	6.5	**0.0547**	0.004	7.3	ug/L	2187	Standard
	Sc	45	40804.9	1.9				ug/L	39299	Standard
	Ti	47	51.7	4.9	**-0.1007**	0.009	8.5	ug/L	82	Standard
	V	51	1646.1	0.6	**-0.0209**	0.001	4.5	ug/L	1876	Standard
	Cr	52	9341.5	2.2	**0.1418**	0.031	21.7	ug/L	8221	Standard
	Cr	53	1581.7	4.0	**0.5273**	0.067	12.7	ug/L	1083	Standard
	Mn	55	4405.3	5.2	**0.1377**	0.018	13.0	ug/L	2738	Standard
	Co	59	494.3	23.3	**-0.0091**	0.011	121.9	ug/L	635	Standard
	Ni	60	417.3	9.5	**0.0768**	0.018	23.9	ug/L	261	Standard
	Cu	65	3314.7	1.7	**1.1192**	0.031	2.8	ug/L	660	Standard
	Zn	66	2200.8	4.0	**1.1245**	0.071	6.3	ug/L	558	Standard
>	Ge	72	822806.1	0.5				ug/L	807251	Standard
	As	75	-0.4	7909.1	**0.0480**	0.021	43.7	ug/L	-43	Standard
	Se	82	25.3	35.0	**0.1268**	0.072	56.4	ug/L	18	Standard
	Se-1	77	130.0	11.3	**0.0513**	0.156	303.3	ug/L	127	Standard
>	Ga	71	33.3	43.3				mg/L	32	Standard
	Rb	85	106.7	25.8				ug/L	27	Standard
	Y	89	552927.0	0.8				ug/L	534994	Standard
>	Rh	103	16.7	45.8				ug/L	20	Standard
	Mo	98	108.9	45.2	**-0.0002**	0.011	7128.7	ug/L	285	Standard
	Ag	107	197.0	40.9	**0.0087**	0.011	124.6	ug/L	129	Standard
	Cd	111	25.9	96.9	**0.0040**	0.012	297.8	mg/L	6	Standard
	Cd	114	136.2	30.5	**0.0144**	0.007	51.0	ug/L	46	Standard
>	In	115	684865.1	1.1				ug/L	679215	Standard
	Sn	118	450.7	13.4	**0.1425**	0.046	32.5	ug/L	411	Standard
	Sb	123	233.8	9.0	**0.0115**	0.004	30.6	ug/L	497	Standard
	Ba	135	895.7	4.3	**0.3974**	0.013	3.4	ug/L	43	Standard
	Ce	140	85.0	27.0				ug/L	22	Standard
>	Tb	159	1011121.8	0.8				ug/L	983965	Standard
	Ho	165	13.3	43.3				ug/L	10	Standard
	Tl	203	261.3	21.5	**0.0031**	0.007	220.9	ug/L	248	Standard
	Tl	205	633.3	6.8	**-0.0005**	0.002	454.7	ug/L	620	Standard
	Pb	206	585.0	9.7	**0.0100**	0.009	84.7	ug/L	503	Standard
	Pb	207	518.3	7.2	**0.0145**	0.006	42.9	ug/L	406	Standard
	Pb	208	598.0	6.1	**0.0121**	0.005	42.7	ug/L	497	Standard
	U	238	38.3	51.2	**0.0058**	0.004	64.1	ug/L	17	Standard
>	Bi	209	587223.5	0.3				ug/L	559221	Standard

Sample ID: L1703114720
Report Date/Time: Monday, March 27, 2017 12:54:04
Page 1

Approved: March 28, 2017



⌈	**Na**	23	3.3	173.2	**0.9382**	3.443	367.0	mg/L	2	Standard
|	**Mg**	24	83.3	21.1	**0.4664**	0.229	49.2	mg/L	33	Standard
|	**K**	39	16.7	62.4	**-0.0432**	0.069	159.6	mg/L	18	Standard
|	**Ca**	43	61.7	54.0	**-29.2431**	46.841	160.2	mg/L	72	Standard
|	**Fe**	54	32.8	57.9	**-0.0197**	0.105	535.7	mg/L	29	Standard
|	**Fe**	57	345.0	19.2	**-1.2588**	1.192	94.7	mg/L	382	Standard
⌊>	**Sc-1**	45	40804.9	1.9				mg/L	39299	Standard
	Cl	35	2.0	0.0				ug/L	4	Standard
	Kr	83	5.0	40.0				ug/L	3	Standard
	Br	81	3473.7	7.6				ug/L	2287	Standard
	P	31	91.7	20.7				ug/L	80	Standard
	S	34	36.7	28.4				ug/L	45	Standard
	Sr	88	146.7	7.1				ug/L	178	Standard
	C	12	33.3	124.9				mg/L	33	Standard
	N	14	6.7	86.6				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	9.7	5.7				mg/L	16	Standard
	Ho-1	165	13.3	43.3				mg/L	10	Standard
	Er	166	6.7	173.2				mg/L	17	Standard
	I	127	3158.7	5.6				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		105.491	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		101.927	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703114720
Report Date/Time: Monday, March 27, 2017 12:54:04
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.832
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	105.007
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: L1703114723
Sample Date/Time: Monday, March 27, 2017 12:54:59
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	273917.6	1.6				ug/L	262785	Standard
	Be	9	53.3	44.3	**0.0192**	0.009	46.2	ug/L	28	Standard
	Al	27	13140.7	1.5	**0.0667**	0.002	3.4	ug/L	2187	Standard
	Sc	45	40871.7	1.7				ug/L	39299	Standard
	Ti	47	55.0	3.6	**-0.0859**	0.005	5.7	ug/L	82	Standard
	V	51	1771.8	8.2	**-0.0039**	0.019	490.8	ug/L	1876	Standard
	Cr	52	9170.1	1.3	**0.1346**	0.015	10.8	ug/L	8221	Standard
	Cr	53	1291.7	5.8	**0.2584**	0.075	29.0	ug/L	1083	Standard
	Mn	55	5590.0	2.1	**0.2275**	0.010	4.4	ug/L	2738	Standard
	Co	59	454.0	7.4	**-0.0124**	0.003	23.7	ug/L	635	Standard
	Ni	60	416.7	3.6	**0.0787**	0.005	5.9	ug/L	261	Standard
	Cu	65	3404.0	1.2	**1.1757**	0.032	2.8	ug/L	660	Standard
	Zn	66	3351.7	3.9	**1.9728**	0.068	3.4	ug/L	558	Standard
>	Ge	72	812782.3	1.3				ug/L	807251	Standard
	As	75	-41.5	145.0	**0.0186**	0.043	230.4	ug/L	-43	Standard
	Se	82	19.9	21.0	**0.0857**	0.034	39.4	ug/L	18	Standard
	Se-1	77	129.0	7.9	**0.0574**	0.096	167.4	ug/L	127	Standard
>	Ga	71	25.0	20.0				mg/L	32	Standard
	Rb	85	91.7	8.3				ug/L	27	Standard
	Y	89	554909.0	1.7				ug/L	534994	Standard
>	Rh	103	6.7	43.3				ug/L	20	Standard
	Mo	98	76.1	15.8	**-0.0074**	0.003	37.8	ug/L	285	Standard
	Ag	107	142.7	8.7	**0.0013**	0.002	144.3	ug/L	129	Standard
	Cd	111	20.6	18.4	**0.0015**	0.002	114.0	mg/L	6	Standard
	Cd	114	117.2	8.6	**0.0110**	0.002	15.3	ug/L	46	Standard
>	In	115	684184.5	0.9				ug/L	679215	Standard
	Sn	118	479.0	0.8	**0.1671**	0.005	3.3	ug/L	411	Standard
	Sb	123	174.5	17.4	**0.0008**	0.006	712.5	ug/L	497	Standard
	Ba	135	886.0	3.1	**0.3935**	0.015	3.8	ug/L	43	Standard
	Ce	140	126.7	17.8				ug/L	22	Standard
>	Tb	159	1002778.6	1.2				ug/L	983965	Standard
	Ho	165	13.3	57.3				ug/L	10	Standard
	Tl	203	159.7	3.4	**-0.0090**	0.001	6.9	ug/L	248	Standard
	Tl	205	403.3	6.2	**-0.0119**	0.002	12.9	ug/L	620	Standard
	Pb	206	569.3	1.8	**0.0080**	0.001	13.2	ug/L	503	Standard
	Pb	207	492.7	2.2	**0.0106**	0.001	11.4	ug/L	406	Standard
	Pb	208	601.0	1.9	**0.0129**	0.003	19.5	ug/L	497	Standard
	U	238	24.0	18.2	**0.0031**	0.001	25.4	ug/L	17	Standard
>	Bi	209	585067.1	1.4				ug/L	559221	Standard

Sample ID: L1703114723
Report Date/Time: Monday, March 27, 2017 12:57:10
Page 1

Approved: March 28, 2017

	Na	23	1.7	173.2	**-0.0711**	1.695	2383.2	mg/L	2	Standard
	Mg	24	98.3	5.9	**0.6422**	0.085	13.2	mg/L	33	Standard
	K	39	13.3	57.3	**-0.0659**	0.048	73.2	mg/L	18	Standard
	Ca	43	53.3	75.2	**-41.4010**	56.321	136.0	mg/L	72	Standard
	Fe	54	31.1	52.1	**-0.0282**	0.094	331.7	mg/L	29	Standard
	Fe	57	346.7	19.9	**-1.2245**	1.347	110.0	mg/L	382	Standard
>	**Sc-1**	45	40871.7	1.7				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	3.3	17.3				ug/L	3	Standard
	Br	81	4724.1	5.5				ug/L	2287	Standard
	P	31	83.3	30.2				ug/L	80	Standard
	S	34	40.0	21.7				ug/L	45	Standard
	Sr	88	156.7	28.8				ug/L	178	Standard
	C	12	30.0	33.3				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	12.7	118.3				mg/L	16	Standard
	Ho-1	165	13.3	57.3				mg/L	10	Standard
	Er	166	13.3	43.3				mg/L	17	Standard
	I	127	2583.6	1.8				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		104.237	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.685	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703114723
Report Date/Time: Monday, March 27, 2017 12:57:10
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.732
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	104.622
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703114723
Report Date/Time: Monday, March 27, 2017 12:57:10
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: L1703126601
Sample Date/Time: Monday, March 27, 2017 12:58:05
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	273937.7	1.0				ug/L	262785	Standard
	Be	9	111.7	9.3	**0.0417**	0.004	9.2	ug/L	28	Standard
	Al	27	479866.8	1.6	**2.6553**	0.042	1.6	ug/L	2187	Standard
	Sc	45	40719.6	1.1				ug/L	39299	Standard
	Ti	47	147.7	9.1	**0.2603**	0.052	19.9	ug/L	82	Standard
	V	51	1398.7	13.4	**-0.0467**	0.022	47.8	ug/L	1876	Standard
	Cr	52	10052.7	5.7	**0.2475**	0.078	31.5	ug/L	8221	Standard
	Cr	53	5821.1	3.6	**4.7698**	0.206	4.3	ug/L	1083	Standard
	Mn	55	157940.9	0.4	**11.3115**	0.119	1.1	ug/L	2738	Standard
	Co	59	7717.0	2.2	**0.6831**	0.013	2.0	ug/L	635	Standard
	Ni	60	894.4	1.9	**0.2931**	0.010	3.5	ug/L	261	Standard
	Cu	65	2046.1	0.9	**0.5877**	0.012	2.1	ug/L	660	Standard
	Zn	66	3448.4	1.1	**2.0496**	0.011	0.5	ug/L	558	Standard
>	Ge	72	810585.4	0.7				ug/L	807251	Standard
	As	75	45.2	111.9	**0.0811**	0.037	45.2	ug/L	-43	Standard
	Se	82	45.5	13.9	**0.2921**	0.052	17.8	ug/L	18	Standard
	Se-1	77	336.3	7.2	**2.3710**	0.291	12.3	ug/L	127	Standard
>	Ga	71	41.7	25.0				mg/L	32	Standard
	Rb	85	17954.0	2.2				ug/L	27	Standard
	Y	89	546978.2	2.9				ug/L	534994	Standard
>	Rh	103	10.0	50.0				ug/L	20	Standard
	Mo	98	92.7	13.0	**-0.0032**	0.003	79.4	ug/L	285	Standard
	Ag	107	140.7	8.9	**0.0014**	0.002	142.9	ug/L	129	Standard
	Cd	111	25.5	35.3	**0.0043**	0.005	108.8	mg/L	6	Standard
	Cd	114	95.0	18.4	**0.0073**	0.003	43.1	ug/L	46	Standard
>	In	115	669208.4	1.3				ug/L	679215	Standard
	Sn	118	372.7	2.9	**0.0845**	0.013	15.9	ug/L	411	Standard
	Sb	123	190.1	14.5	**0.0044**	0.005	121.0	ug/L	497	Standard
	Ba	135	18616.8	1.7	**8.8486**	0.123	1.4	ug/L	43	Standard
	Ce	140	3213.7	0.2				ug/L	22	Standard
>	Tb	159	1008596.9	0.2				ug/L	983965	Standard
	Ho	165	131.7	11.0				ug/L	10	Standard
	Tl	203	991.0	6.4	**0.0912**	0.008	8.4	ug/L	248	Standard
	Tl	205	2436.9	2.5	**0.0909**	0.003	3.3	ug/L	620	Standard
	Pb	206	890.0	4.4	**0.0559**	0.006	10.3	ug/L	503	Standard
	Pb	207	736.0	3.1	**0.0509**	0.004	7.1	ug/L	406	Standard
	Pb	208	936.0	6.5	**0.0604**	0.008	14.0	ug/L	497	Standard
	U	238	86.7	7.9	**0.0151**	0.001	8.5	ug/L	17	Standard
>	Bi	209	581803.3	0.1				ug/L	559221	Standard

Sample ID: L1703126601
Report Date/Time: Monday, March 27, 2017 13:00:16
Page 1

Approved: March 28, 2017

⌈	**Na**	23	3.3	173.2	**0.9556**	3.474	363.5	mg/L	2	Standard
|	**Mg**	24	1948.5	4.4	**22.8596**	0.880	3.8	mg/L	33	Standard
|	**K**	39	200.0	9.0	**1.1436**	0.121	10.6	mg/L	18	Standard
|	**Ca**	43	56.7	25.5	**-36.2362**	20.866	57.6	mg/L	72	Standard
|	**Fe**	54	49.7	26.4	**0.0767**	0.076	98.7	mg/L	29	Standard
|	**Fe**	57	348.3	14.4	**-1.1744**	0.976	83.1	mg/L	382	Standard
⌊>	**Sc-1**	45	40719.6	1.1				mg/L	39299	Standard
	Cl	35	4.7	24.7				ug/L	4	Standard
	Kr	83	5.3	65.8				ug/L	3	Standard
	Br	81	15134.3	9.2				ug/L	2287	Standard
	P	31	58.3	27.6				ug/L	80	Standard
	S	34	31.7	77.9				ug/L	45	Standard
	Sr	88	166.7	10.5				ug/L	178	Standard
	C	12	30.0	33.3				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	3	Standard
	Dy	164	191.6	17.8				mg/L	16	Standard
	Ho-1	165	131.7	11.0				mg/L	10	Standard
	Er	166	106.7	19.5				mg/L	17	Standard
	I	127	62135.8	6.3				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		104.244	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		100.413	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703126601
Report Date/Time: Monday, March 27, 2017 13:00:16
Page 2

Approved: March 28, 2017

Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	98.527
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	104.038
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703126601
Report Date/Time: Monday, March 27, 2017 13:00:16
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: L1703126602
Sample Date/Time: Monday, March 27, 2017 13:01:10
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	278598.5	1.7				ug/L	262785	Standard
	Be	9	268.3	20.6	**0.1001**	0.021	20.6	ug/L	28	Standard
	Al	27	9363291.2	1.1	**51.0583**	0.367	0.7	ug/L	2187	Standard
	Sc	45	40490.7	1.0				ug/L	39299	Standard
	Ti	47	215.3	4.7	**0.5124**	0.036	7.1	ug/L	82	Standard
	V	51	1773.4	27.8	**-0.0033**	0.057	1703.8	ug/L	1876	Standard
	Cr	52	10894.9	0.5	**0.3516**	0.004	1.0	ug/L	8221	Standard
	Cr	53	8307.3	11.2	**7.2415**	0.908	12.5	ug/L	1083	Standard
	Mn	55	5513131.0	0.5	**400.7898**	2.963	0.7	ug/L	2738	Standard
	Co	59	38478.5	0.8	**3.6280**	0.029	0.8	ug/L	635	Standard
	Ni	60	13557.1	1.2	**5.9591**	0.088	1.5	ug/L	261	Standard
	Cu	65	1968.5	3.2	**0.5537**	0.026	4.7	ug/L	660	Standard
	Zn	66	14431.9	1.5	**9.9868**	0.132	1.3	ug/L	558	Standard
>	**Ge**	72	810737.6	0.2				ug/L	807251	Standard
	As	75	379.5	9.4	**0.3227**	0.026	8.0	ug/L	-43	Standard
	Se	82	128.2	8.8	**0.9582**	0.092	9.6	ug/L	18	Standard
	Se-1	77	546.3	6.8	**4.7058**	0.407	8.6	ug/L	127	Standard
>	**Ga**	71	235.0	4.3				mg/L	32	Standard
	Rb	85	44284.6	2.1				ug/L	27	Standard
	Y	89	606533.8	0.5				ug/L	534994	Standard
>	**Rh**	103	30.0	50.0				ug/L	20	Standard
	Mo	98	87.7	20.9	**-0.0044**	0.004	96.0	ug/L	285	Standard
	Ag	107	123.7	8.7	**-0.0010**	0.002	150.4	ug/L	129	Standard
	Cd	111	118.2	5.7	**0.0500**	0.003	6.6	mg/L	6	Standard
	Cd	114	393.9	14.3	**0.0638**	0.011	16.8	ug/L	46	Standard
>	**In**	115	669947.3	0.2				ug/L	679215	Standard
	Sn	118	350.7	6.3	**0.0651**	0.019	29.0	ug/L	411	Standard
	Sb	123	170.7	12.9	**0.0008**	0.004	533.4	ug/L	497	Standard
	Ba	135	116569.1	1.0	**55.4446**	0.529	1.0	ug/L	43	Standard
	Ce	140	43112.9	0.4				ug/L	22	Standard
>	**Tb**	159	1022700.1	0.1				ug/L	983965	Standard
	Ho	165	3902.2	3.4				ug/L	10	Standard
	Tl	203	1047.0	13.2	**0.0981**	0.017	16.9	ug/L	248	Standard
	Tl	205	2531.9	7.6	**0.0959**	0.010	10.4	ug/L	620	Standard
	Pb	206	2184.2	4.4	**0.2476**	0.013	5.2	ug/L	503	Standard
	Pb	207	1827.8	5.7	**0.2303**	0.017	7.5	ug/L	406	Standard
	Pb	208	2217.4	6.8	**0.2409**	0.021	8.5	ug/L	497	Standard
	U	238	216.3	52.7	**0.0398**	0.022	54.2	ug/L	17	Standard
>	**Bi**	209	581011.4	1.0				ug/L	559221	Standard

Sample ID: L1703126602
Report Date/Time: Monday, March 27, 2017 13:03:21
Page 1

Approved: March 28, 2017

⌈	**Na**	23	33.3	31.2	**19.0605**	6.089	31.9	mg/L	2	Standard
|	**Mg**	24	2716.9	2.5	**32.2786**	0.949	2.9	mg/L	33	Standard
|	**K**	39	296.7	19.4	**1.7817**	0.388	21.8	mg/L	18	Standard
|	**Ca**	43	73.3	33.6	**-12.6326**	34.060	269.6	mg/L	72	Standard
|	**Fe**	54	315.9	3.7	**1.5831**	0.083	5.3	mg/L	29	Standard
|	**Fe**	57	493.3	5.6	**1.5999**	0.452	28.2	mg/L	382	Standard
⌊>	**Sc-1**	45	40490.7	1.0				mg/L	39299	Standard
	Cl	35	3.3	34.6				ug/L	4	Standard
	Kr	83	3.7	68.6				ug/L	3	Standard
	Br	81	57606.1	4.2				ug/L	2287	Standard
	P	31	86.7	24.0				ug/L	80	Standard
	S	34	30.0	60.1				ug/L	45	Standard
	Sr	88	143.3	5.3				ug/L	178	Standard
	C	12	63.3	32.9				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	16.7	34.6				mg/L	3	Standard
	Dy	164	5500.5	1.7				mg/L	16	Standard
	Ho-1	165	3902.2	3.4				mg/L	10	Standard
	Er	166	3560.4	4.2				mg/L	17	Standard
	I	127	204617.6	1.4				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		106.018	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
| >	Ge	72		100.432	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703126602
Report Date/Time: Monday, March 27, 2017 13:03:21
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	98.635
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	103.897
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1703126602
Report Date/Time: Monday, March 27, 2017 13:03:21
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: L1703126801 WG607550-02
Sample Date/Time: Monday, March 27, 2017 13:04:15
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	279480.9	1.0				ug/L	262785	Standard
	Be	9	736.7	8.4	**0.2763**	0.026	9.3	ug/L	28	Standard
	Al	27	8790433.4	0.2	**47.7819**	0.399	0.8	ug/L	2187	Standard
	Sc	45	40686.2	1.3				ug/L	39299	Standard
	Ti	47	432.0	15.1	**1.3201**	0.240	18.2	ug/L	82	Standard
	V	51	2518.1	16.2	**0.0828**	0.047	56.6	ug/L	1876	Standard
	Cr	52	11518.4	0.6	**0.4291**	0.013	3.1	ug/L	8221	Standard
	Cr	53	8485.7	4.8	**7.4195**	0.389	5.2	ug/L	1083	Standard
	Mn	55	1654048.1	0.5	**120.1152**	0.415	0.3	ug/L	2738	Standard
	Co	59	126754.7	0.8	**12.0787**	0.047	0.4	ug/L	635	Standard
	Ni	60	20008.9	1.3	**8.8453**	0.078	0.9	ug/L	261	Standard
	Cu	65	4003.9	0.8	**1.4406**	0.020	1.4	ug/L	660	Standard
	Zn	66	28224.6	0.4	**19.9545**	0.038	0.2	ug/L	558	Standard
>	Ge	72	810765.0	0.5				ug/L	807251	Standard
	As	75	203.7	6.6	**0.1956**	0.010	5.3	ug/L	-43	Standard
	Se	82	93.4	7.2	**0.6782**	0.053	7.7	ug/L	18	Standard
	Se-1	77	558.0	6.8	**4.8360**	0.425	8.8	ug/L	127	Standard
>	Ga	71	241.7	14.1				mg/L	32	Standard
	Rb	85	49087.7	0.9				ug/L	27	Standard
	Y	89	621633.0	0.9				ug/L	534994	Standard
>	Rh	103	43.3	24.0				ug/L	20	Standard
	Mo	98	82.5	4.3	**-0.0055**	0.001	15.2	ug/L	285	Standard
	Ag	107	145.3	16.9	**0.0021**	0.004	168.3	ug/L	129	Standard
	Cd	111	344.6	2.3	**0.1625**	0.005	3.4	mg/L	6	Standard
	Cd	114	899.2	7.5	**0.1600**	0.014	9.0	ug/L	46	Standard
>	In	115	667657.8	0.9				ug/L	679215	Standard
	Sn	118	405.3	5.2	**0.1134**	0.017	15.3	ug/L	411	Standard
	Sb	123	159.7	4.8	**-0.0012**	0.001	126.2	ug/L	497	Standard
	Ba	135	62334.0	0.5	**29.7418**	0.134	0.5	ug/L	43	Standard
	Ce	140	101089.5	1.6				ug/L	22	Standard
>	Tb	159	1006480.8	0.8				ug/L	983965	Standard
	Ho	165	5646.1	2.8				ug/L	10	Standard
	Tl	203	1343.1	2.5	**0.1343**	0.005	3.5	ug/L	248	Standard
	Tl	205	3198.7	1.5	**0.1300**	0.002	1.4	ug/L	620	Standard
	Pb	206	952.4	4.7	**0.0658**	0.008	12.4	ug/L	503	Standard
	Pb	207	816.7	3.9	**0.0647**	0.005	7.6	ug/L	406	Standard
	Pb	208	952.7	2.6	**0.0633**	0.003	4.3	ug/L	497	Standard
	U	238	193.3	8.5	**0.0356**	0.003	8.1	ug/L	17	Standard
>	Bi	209	579481.2	1.0				ug/L	559221	Standard

Sample ID: L1703126801 WG607550-02
Report Date/Time: Monday, March 27, 2017 13:06:26
Page 1

Approved: March 28, 2017

	Na	23	13.3	43.3	**6.9976**	3.587	51.3	mg/L	2	Standard
	Mg	24	2370.2	3.5	**27.9461**	0.702	2.5	mg/L	33	Standard
	K	39	323.3	13.2	**1.9455**	0.294	15.1	mg/L	18	Standard
	Ca	43	88.3	8.6	**8.1423**	11.449	140.6	mg/L	72	Standard
	Fe	54	71.2	8.1	**0.1971**	0.028	14.3	mg/L	29	Standard
	Fe	57	446.7	6.7	**0.6768**	0.511	75.5	mg/L	382	Standard
>	**Sc-1**	45	40686.2	1.3				mg/L	39299	Standard
	Cl	35	2.0	0.0				ug/L	4	Standard
	Kr	83	1.7	34.6				ug/L	3	Standard
	Br	81	26226.0	3.5				ug/L	2287	Standard
	P	31	70.0	42.9				ug/L	80	Standard
	S	34	31.7	50.8				ug/L	45	Standard
	Sr	88	191.7	4.0				ug/L	178	Standard
	C	12	80.0	21.7				mg/L	33	Standard
	N	14	6.7	86.6				mg/L	0	Standard
	Hg	202	390.0	21.0				mg/L	3	Standard
	Dy	164	8804.1	4.0				mg/L	16	Standard
	Ho-1	165	5646.1	2.8				mg/L	10	Standard
	Er	166	5050.8	2.9				mg/L	17	Standard
	I	127	402244.3	5.8				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		106.354	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.435	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703126801 WG607550-02
Report Date/Time: Monday, March 27, 2017 13:06:26
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	98.298
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	103.623
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1703126801 WG607550-02
Report Date/Time: Monday, March 27, 2017 13:06:26
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

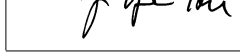
Sample ID: L1703126802
Sample Date/Time: Monday, March 27, 2017 13:07:21
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	277515.4	1.4				ug/L	262785	Standard
	Be	9	205.0	8.8	**0.0765**	0.007	9.2	ug/L	28	Standard
	Al	27	10480902.8	0.4	**57.3828**	1.082	1.9	ug/L	2187	Standard
	Sc	45	39976.0	0.5				ug/L	39299	Standard
	Ti	47	160.3	56.5	**0.3094**	0.333	107.5	ug/L	82	Standard
	V	51	1341.1	9.0	**-0.0522**	0.016	29.8	ug/L	1876	Standard
	Cr	52	8141.9	5.6	**0.0174**	0.067	387.3	ug/L	8221	Standard
	Cr	53	5882.8	21.7	**4.8805**	1.341	27.5	ug/L	1083	Standard
	Mn	55	8356655.1	0.9	**612.0088**	11.388	1.9	ug/L	2738	Standard
	Co	59	157719.0	0.6	**15.1533**	0.253	1.7	ug/L	635	Standard
	Ni	60	5736.8	0.6	**2.4781**	0.016	0.7	ug/L	261	Standard
	Cu	65	1976.5	1.7	**0.5633**	0.014	2.4	ug/L	660	Standard
	Zn	66	5497.3	1.6	**3.5582**	0.023	0.6	ug/L	558	Standard
>	Ge	72	804989.5	1.1				ug/L	807251	Standard
	As	75	451.9	13.3	**0.3775**	0.045	11.8	ug/L	-43	Standard
	Se	82	70.4	1.2	**0.4967**	0.002	0.5	ug/L	18	Standard
	Se-1	77	517.3	10.1	**4.4284**	0.640	14.5	ug/L	127	Standard
>	Ga	71	198.3	23.4				mg/L	32	Standard
	Rb	85	36594.1	2.0				ug/L	27	Standard
	Y	89	602001.5	0.3				ug/L	534994	Standard
>	Rh	103	41.7	36.7				ug/L	20	Standard
	Mo	98	189.3	3.6	**0.0191**	0.002	8.9	ug/L	285	Standard
	Ag	107	130.0	4.8	**-0.0001**	0.001	1421.9	ug/L	129	Standard
	Cd	111	60.1	7.9	**0.0214**	0.002	10.6	mg/L	6	Standard
	Cd	114	189.1	22.8	**0.0252**	0.008	31.8	ug/L	46	Standard
>	In	115	667447.3	0.6				ug/L	679215	Standard
	Sn	118	343.0	8.9	**0.0595**	0.025	41.5	ug/L	411	Standard
	Sb	123	167.9	21.6	**0.0004**	0.007	1878.8	ug/L	497	Standard
	Ba	135	166169.7	1.2	**79.3395**	0.453	0.6	ug/L	43	Standard
	Ce	140	192223.6	1.9				ug/L	22	Standard
>	Tb	159	1012681.7	0.5				ug/L	983965	Standard
	Ho	165	3340.4	3.6				ug/L	10	Standard
	Tl	203	1106.7	4.4	**0.1069**	0.006	6.0	ug/L	248	Standard
	Tl	205	2603.6	4.7	**0.1011**	0.007	6.7	ug/L	620	Standard
	Pb	206	665.7	6.2	**0.0241**	0.006	25.2	ug/L	503	Standard
	Pb	207	577.7	2.6	**0.0262**	0.003	10.1	ug/L	406	Standard
	Pb	208	680.7	3.1	**0.0258**	0.003	12.9	ug/L	497	Standard
	U	238	174.7	12.3	**0.0323**	0.004	13.0	ug/L	17	Standard
>	Bi	209	574007.3	0.4				ug/L	559221	Standard

Sample ID: L1703126802
Report Date/Time: Monday, March 27, 2017 13:09:32
Page 1

Approved: March 28, 2017



	Na	23	13.3	21.7	**7.1084**	1.738	24.5	mg/L	2	Standard
	Mg	24	3473.7	0.2	**41.9554**	0.196	0.5	mg/L	33	Standard
	K	39	315.0	12.7	**1.9253**	0.256	13.3	mg/L	18	Standard
	Ca	43	98.3	48.9	**24.6948**	68.838	278.8	mg/L	72	Standard
	Fe	54	1886.1	3.0	**10.5968**	0.270	2.5	mg/L	29	Standard
	Fe	57	886.7	10.5	**9.2519**	1.723	18.6	mg/L	382	Standard
>	**Sc-1**	45	39976.0	0.5				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	4.7	44.6				ug/L	3	Standard
	Br	81	25872.1	5.7				ug/L	2287	Standard
	P	31	96.7	35.2				ug/L	80	Standard
	S	34	43.3	46.6				ug/L	45	Standard
	Sr	88	170.0	10.6				ug/L	178	Standard
	C	12	43.3	35.3				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	20.0	132.3				mg/L	3	Standard
	Dy	164	4960.9	2.9				mg/L	16	Standard
	Ho-1	165	3340.4	3.6				mg/L	10	Standard
	Er	166	3270.4	3.8				mg/L	17	Standard
	I	127	256400.0	5.2				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		105.606	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.720	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703126802
Report Date/Time: Monday, March 27, 2017 13:09:32
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	98.267
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	102.644
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1703126802
Report Date/Time: Monday, March 27, 2017 13:09:32
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

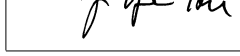
Sample ID: L1703126803S WG607550-07
Sample Date/Time: Monday, March 27, 2017 13:10:26
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	277690.4	1.7				ug/L	262785	Standard
	Be	9	135962.4	1.7	**51.5300**	0.626	1.2	ug/L	28	Standard
	Al	27	8289443.4	1.7	**45.3476**	0.387	0.9	ug/L	2187	Standard
	Sc	45	40642.8	1.0				ug/L	39299	Standard
	Ti	47	584.3	15.2	**1.8909**	0.321	17.0	ug/L	82	Standard
	V	51	433206.2	0.7	**50.0392**	0.333	0.7	ug/L	1876	Standard
	Cr	52	408153.1	0.5	**49.7752**	0.330	0.7	ug/L	8221	Standard
	Cr	53	55807.6	0.6	**54.6018**	0.531	1.0	ug/L	1083	Standard
	Mn	55	2683041.2	0.9	**195.2858**	2.587	1.3	ug/L	2738	Standard
	Co	59	631797.0	0.8	**60.5301**	0.433	0.7	ug/L	635	Standard
	Ni	60	129461.7	0.4	**57.9179**	0.469	0.8	ug/L	261	Standard
	Cu	65	117727.6	0.3	**51.0795**	0.142	0.3	ug/L	660	Standard
	Zn	66	96935.8	0.4	**69.7293**	0.378	0.5	ug/L	558	Standard
>	Ge	72	809404.4	0.5				ug/L	807251	Standard
	As	75	71799.2	0.4	**52.0599**	0.186	0.4	ug/L	-43	Standard
	Se	82	6384.7	1.1	**51.4487**	0.559	1.1	ug/L	18	Standard
	Se-1	77	4988.5	2.2	**54.2327**	1.200	2.2	ug/L	127	Standard
>	Ga	71	273.3	29.4				mg/L	32	Standard
	Rb	85	48158.1	1.0				ug/L	27	Standard
	Y	89	618397.5	1.5				ug/L	534994	Standard
>	Rh	103	48.3	15.8				ug/L	20	Standard
	Mo	98	106.4	8.1	**0.0001**	0.002	1897.3	ug/L	285	Standard
	Ag	107	356028.8	0.6	**51.0383**	0.351	0.7	ug/L	129	Standard
	Cd	111	104454.0	0.7	**52.0566**	0.404	0.8	mg/L	6	Standard
	Cd	114	262771.6	1.3	**50.1233**	0.645	1.3	ug/L	46	Standard
>	In	115	664111.7	0.0				ug/L	679215	Standard
	Sn	118	416.3	10.6	**0.1248**	0.038	30.7	ug/L	411	Standard
	Sb	123	274482.4	0.3	**51.5574**	0.192	0.4	ug/L	497	Standard
	Ba	135	165642.2	0.7	**79.4868**	0.561	0.7	ug/L	43	Standard
	Ce	140	100713.6	0.5				ug/L	22	Standard
>	Tb	159	1015581.9	0.6				ug/L	983965	Standard
	Ho	165	5654.4	5.3				ug/L	10	Standard
	Tl	203	434549.0	0.8	**52.1389**	0.520	1.0	ug/L	248	Standard
	Tl	205	1038424.5	1.0	**52.2685**	0.780	1.5	ug/L	620	Standard
	Pb	206	350819.1	0.6	**51.6326**	0.254	0.5	ug/L	503	Standard
	Pb	207	306025.0	0.6	**49.9427**	0.432	0.9	ug/L	406	Standard
	Pb	208	368472.9	0.4	**51.5621**	0.420	0.8	ug/L	497	Standard
	U	238	281125.9	1.0	**53.4365**	0.707	1.3	ug/L	17	Standard
>	Bi	209	583524.8	0.5				ug/L	559221	Standard

Sample ID: L1703126803S WG607550-07
Report Date/Time: Monday, March 27, 2017 13:12:36
Page 1

Approved: March 28, 2017



⌈	**Na**	23	33.3	34.6	**18.9769**	6.790	35.8	mg/L	2	Standard
|	**Mg**	24	2350.2	4.2	**27.7486**	1.430	5.2	mg/L	33	Standard
|	**K**	39	353.3	12.7	**2.1398**	0.281	13.1	mg/L	18	Standard
|	**Ca**	43	43.3	46.6	**-54.8272**	28.612	52.2	mg/L	72	Standard
|	**Fe**	54	74.4	12.2	**0.2157**	0.047	22.0	mg/L	29	Standard
|	**Fe**	57	398.3	4.8	**-0.2238**	0.313	139.7	mg/L	382	Standard
⌊>	**Sc-1**	45	40642.8	1.0				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	2.3	24.7				ug/L	3	Standard
	Br	81	26813.7	3.2				ug/L	2287	Standard
	P	31	83.3	29.6				ug/L	80	Standard
	S	34	51.7	22.3				ug/L	45	Standard
	Sr	88	176.7	17.1				ug/L	178	Standard
	C	12	36.7	68.6				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	356.7	11.3				mg/L	3	Standard
	Dy	164	8605.1	0.4				mg/L	16	Standard
	Ho-1	165	5654.4	5.3				mg/L	10	Standard
	Er	166	4817.4	5.9				mg/L	17	Standard
	I	127	450966.7	5.3				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		105.672	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
| >	Ge	72		100.267	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703126803S WG607550-07
Report Date/Time: Monday, March 27, 2017 13:12:36
Page 2

Approved: March 28, 2017

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.776
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.346
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1703126803S WG607550-07
Report Date/Time: Monday, March 27, 2017 13:12:36
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, March 27, 2017 13:13:32
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	268832.6	1.4				ug/L	262785	Standard
	Be	9	126129.6	2.2	**49.3748**	0.731	1.5	ug/L	28	Standard
	Al	27	8491369.8	1.6	**47.9868**	0.924	1.9	ug/L	2187	Standard
	Sc	45	39245.8	2.2				ug/L	39299	Standard
	Ti	47	26758.6	1.6	**101.1515**	0.968	1.0	ug/L	82	Standard
	V	51	412827.7	0.5	**48.3978**	0.184	0.4	ug/L	1876	Standard
	Cr	52	394588.9	0.6	**48.8277**	0.160	0.3	ug/L	8221	Standard
	Cr	53	48602.8	0.2	**48.1513**	0.310	0.6	ug/L	1083	Standard
	Mn	55	671301.9	1.1	**49.4621**	0.286	0.6	ug/L	2738	Standard
	Co	59	502724.2	1.0	**48.8790**	0.202	0.4	ug/L	635	Standard
	Ni	60	106900.2	1.3	**48.5263**	0.414	0.9	ug/L	261	Standard
	Cu	65	110099.7	2.2	**48.4708**	0.674	1.4	ug/L	660	Standard
	Zn	66	67176.6	2.0	**48.9159**	0.578	1.2	ug/L	558	Standard
>	Ge	72	797382.2	0.8				ug/L	807251	Standard
	As	75	67645.9	0.8	**49.7910**	0.412	0.8	ug/L	-43	Standard
	Se	82	6200.6	1.3	**50.7170**	0.492	1.0	ug/L	18	Standard
	Se-1	77	4608.7	1.3	**50.7757**	0.785	1.5	ug/L	127	Standard
>	Ga	71	43.3	13.3				mg/L	32	Standard
	Rb	85	395.0	12.1				ug/L	27	Standard
	Y	89	542167.6	1.4				ug/L	534994	Standard
>	Rh	103	10.0	86.6				ug/L	20	Standard
	Mo	98	439065.9	0.4	**100.4647**	1.120	1.1	ug/L	285	Standard
	Ag	107	355367.2	1.6	**50.2746**	0.417	0.8	ug/L	129	Standard
	Cd	111	102091.2	0.7	**50.2137**	0.130	0.3	mg/L	6	Standard
	Cd	114	267540.8	1.1	**50.3653**	0.323	0.6	ug/L	46	Standard
>	In	115	672913.4	0.9				ug/L	679215	Standard
	Sn	118	59218.2	0.8	**50.5510**	0.638	1.3	ug/L	411	Standard
	Sb	123	266500.9	0.8	**49.4038**	0.480	1.0	ug/L	497	Standard
	Ba	135	103069.4	0.2	**48.8082**	0.476	1.0	ug/L	43	Standard
	Ce	140	306.7	21.7				ug/L	22	Standard
>	Tb	159	992921.5	0.7				ug/L	983965	Standard
	Ho	165	10.0	132.3				ug/L	10	Standard
	Tl	203	409404.0	0.8	**49.5901**	0.420	0.8	ug/L	248	Standard
	Tl	205	989109.8	0.3	**50.2607**	0.485	1.0	ug/L	620	Standard
	Pb	206	331026.7	0.2	**49.1839**	0.485	1.0	ug/L	503	Standard
	Pb	207	301817.8	0.5	**49.7268**	0.362	0.7	ug/L	406	Standard
	Pb	208	352511.8	0.9	**49.7976**	0.505	1.0	ug/L	497	Standard
	U	238	273303.3	0.5	**52.4460**	0.443	0.8	ug/L	17	Standard
>	Bi	209	578001.2	0.8				ug/L	559221	Standard

Sample ID: QC Std 6
Report Date/Time: Monday, March 27, 2017 13:15:43
Page 1

Approved: March 28, 2017

	Na	23	10.0	50.0	**5.1497**	2.986	58.0	mg/L	2	Standard
	Mg	24	506.7	17.8	**5.7639**	0.975	16.9	mg/L	33	Standard
	K	39	645.0	8.6	**4.1869**	0.448	10.7	mg/L	18	Standard
	Ca	43	45.0	11.1	**-50.2367**	8.453	16.8	mg/L	72	Standard
	Fe	54	862.5	10.1	**4.8363**	0.607	12.6	mg/L	29	Standard
	Fe	57	601.7	10.0	**4.0286**	1.381	34.3	mg/L	382	Standard
>	**Sc-1**	45	39245.8	2.2				mg/L	39299	Standard
	Cl	35	4.7	99.0				ug/L	4	Standard
	Kr	83	2.3	89.2				ug/L	3	Standard
	Br	81	3120.3	13.9				ug/L	2287	Standard
	P	31	81.7	25.5				ug/L	80	Standard
	S	34	46.7	40.6				ug/L	45	Standard
	Sr	88	158.3	12.8				ug/L	178	Standard
	C	12	16.7	91.7				mg/L	33	Standard
	N	14	6.7	86.6				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	15.7	134.1				mg/L	16	Standard
	Ho-1	165	10.0	132.3				mg/L	10	Standard
	Er	166	20.0	100.0				mg/L	17	Standard
	I	127	10085.5	48.0				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	98.750		
	Al	27	95.974		
	Sc	45			
	Ti	47	101.152		
	V	51	96.796		
	Cr	52	97.655		
	Cr	53			
	Mn	55	98.924		
	Co	59	97.758		
	Ni	60	97.053		
	Cu	65	96.942		
	Zn	66	97.832		
>	Ge	72		98.777	
	As	75	99.582		
	Se	82	101.434		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Monday, March 27, 2017 13:15:43
Page 2

Approved: March 28, 2017

Rb	85			
Y	89			
Rh	103			
Mo	98	100.465		
Ag	107	100.549		
Cd	111	100.427		
Cd	114			
In	115			99.072
Sn	118	101.102		
Sb	123	98.808		
Ba	135	97.616		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.180		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.595		
U	238	104.892		
Bi	209			103.358
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Monday, March 27, 2017 13:15:43
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, March 27, 2017 13:16:38
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	264373.5	1.3				ug/L	262785	Standard
	Be	9	65.0	27.7	**0.0246**	0.007	28.1	ug/L	28	Standard
	Al	27	2543.6	34.1	**0.0084**	0.005	57.1	ug/L	2187	Standard
	Sc	45	39810.6	2.1				ug/L	39299	Standard
	Ti	47	47.3	18.9	**-0.1097**	0.034	30.8	ug/L	82	Standard
	V	51	1313.9	7.5	**-0.0529**	0.011	20.4	ug/L	1876	Standard
	Cr	52	6153.9	0.8	**-0.2187**	0.003	1.5	ug/L	8221	Standard
	Cr	53	743.4	6.5	**-0.2662**	0.049	18.5	ug/L	1083	Standard
	Mn	55	2615.6	5.5	**0.0168**	0.012	69.3	ug/L	2738	Standard
	Co	59	353.7	4.1	**-0.0211**	0.001	6.2	ug/L	635	Standard
	Ni	60	264.0	9.8	**0.0138**	0.012	87.2	ug/L	261	Standard
	Cu	65	661.0	3.0	**-0.0090**	0.010	115.8	ug/L	660	Standard
	Zn	66	660.7	2.6	**0.0461**	0.012	25.5	ug/L	558	Standard
>	Ge	72	791578.3	0.5				ug/L	807251	Standard
	As	75	-22.7	110.3	**0.0314**	0.019	59.1	ug/L	-43	Standard
	Se	82	24.6	15.6	**0.1285**	0.030	23.7	ug/L	18	Standard
	Se-1	77	96.3	4.2	**-0.2757**	0.050	18.0	ug/L	127	Standard
>	Ga	71	28.3	44.4				mg/L	32	Standard
	Rb	85	46.7	44.6				ug/L	27	Standard
	Y	89	534652.0	2.6				ug/L	534994	Standard
>	Rh	103	10.0	86.6				ug/L	20	Standard
	Mo	98	408.1	13.5	**0.0699**	0.013	19.3	ug/L	285	Standard
	Ag	107	206.3	38.5	**0.0109**	0.011	103.2	ug/L	129	Standard
	Cd	111	19.8	92.5	**0.0014**	0.009	637.4	mg/L	6	Standard
	Cd	114	97.9	61.6	**0.0079**	0.011	143.8	ug/L	46	Standard
>	In	115	665618.3	0.8				ug/L	679215	Standard
	Sn	118	325.0	2.6	**0.0448**	0.006	12.7	ug/L	411	Standard
	Sb	123	362.7	17.3	**0.0369**	0.011	30.8	ug/L	497	Standard
	Ba	135	95.3	37.7	**0.0262**	0.017	64.6	ug/L	43	Standard
	Ce	140	41.7	70.3				ug/L	22	Standard
>	Tb	159	973159.1	1.2				ug/L	983965	Standard
	Ho	165	25.0	60.0				ug/L	10	Standard
	Tl	203	159.7	49.6	**-0.0088**	0.010	108.7	ug/L	248	Standard
	Tl	205	300.0	46.8	**-0.0169**	0.007	42.0	ug/L	620	Standard
	Pb	206	603.0	12.9	**0.0139**	0.011	82.1	ug/L	503	Standard
	Pb	207	485.0	8.4	**0.0102**	0.007	66.6	ug/L	406	Standard
	Pb	208	625.0	10.1	**0.0171**	0.009	51.2	ug/L	497	Standard
	U	238	60.7	66.8	**0.0102**	0.008	75.8	ug/L	17	Standard
>	Bi	209	579012.1	1.0				ug/L	559221	Standard

Sample ID: QC Std 7
Report Date/Time: Monday, March 27, 2017 13:18:49
Page 1

Approved: March 28, 2017

	Na	23	0.0		**-1.0498**	0.000	0.0	mg/L	2	Standard
	Mg	24	28.3	27.0	**-0.1876**	0.090	47.9	mg/L	33	Standard
	K	39	13.3	78.1	**-0.0643**	0.067	103.5	mg/L	18	Standard
	Ca	43	45.0	40.1	**-51.4226**	25.146	48.9	mg/L	72	Standard
	Fe	54	43.1	13.6	**0.0447**	0.035	78.7	mg/L	29	Standard
	Fe	57	366.7	9.6	**-0.6706**	0.733	109.3	mg/L	382	Standard
>	**Sc-1**	45	39810.6	2.1				mg/L	39299	Standard
	Cl	35	2.7	114.6				ug/L	4	Standard
	Kr	83	2.7	21.7				ug/L	3	Standard
	Br	81	2916.9	4.5				ug/L	2287	Standard
	P	31	96.7	25.5				ug/L	80	Standard
	S	34	41.7	30.2				ug/L	45	Standard
	Sr	88	170.0	11.8				ug/L	178	Standard
	C	12	23.3	24.7				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	16.0	35.2				mg/L	16	Standard
	Ho-1	165	25.0	60.0				mg/L	10	Standard
	Er	166	13.3	43.3				mg/L	17	Standard
	I	127	7230.1	2.6				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.059	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Monday, March 27, 2017 13:18:49
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	97.998
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	103.539
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Monday, March 27, 2017 13:18:49
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

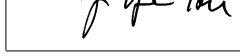
Sample ID: L1703126804SD WG607550-08
Sample Date/Time: Monday, March 27, 2017 13:19:44
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	279078.5	0.7				ug/L	262785	Standard
	Be	9	137751.8	1.7	**51.9459**	0.756	1.5	ug/L	28	Standard
	Al	27	8770756.8	0.6	**47.7418**	0.246	0.5	ug/L	2187	Standard
	Sc	45	42061.6	0.9				ug/L	39299	Standard
	Ti	47	473.3	14.2	**1.4673**	0.253	17.2	ug/L	82	Standard
	V	51	439208.9	1.1	**50.4400**	0.863	1.7	ug/L	1876	Standard
	Cr	52	417051.5	0.9	**50.5817**	0.887	1.8	ug/L	8221	Standard
	Cr	53	55019.7	1.1	**53.4975**	0.958	1.8	ug/L	1083	Standard
	Mn	55	2781837.6	1.2	**201.2862**	1.982	1.0	ug/L	2738	Standard
	Co	59	645396.6	1.2	**61.4730**	0.861	1.4	ug/L	635	Standard
	Ni	60	131661.0	1.2	**58.5594**	0.949	1.6	ug/L	261	Standard
	Cu	65	118690.8	0.7	**51.1987**	0.716	1.4	ug/L	660	Standard
	Zn	66	98376.3	0.3	**70.3579**	0.871	1.2	ug/L	558	Standard
>	Ge	72	814193.3	1.0				ug/L	807251	Standard
	As	75	72382.5	0.6	**52.1754**	0.320	0.6	ug/L	-43	Standard
	Se	82	6559.8	1.4	**52.5560**	1.106	2.1	ug/L	18	Standard
	Se-1	77	5107.9	0.9	**55.2354**	1.077	1.9	ug/L	127	Standard
>	Ga	71	260.0	17.3				mg/L	32	Standard
	Rb	85	49062.7	1.9				ug/L	27	Standard
	Y	89	627277.3	1.0				ug/L	534994	Standard
>	Rh	103	45.0	33.3				ug/L	20	Standard
	Mo	98	178.3	12.8	**0.0162**	0.005	33.1	ug/L	285	Standard
	Ag	107	358624.1	0.9	**50.6999**	0.207	0.4	ug/L	129	Standard
	Cd	111	106090.9	0.7	**52.1428**	0.330	0.6	mg/L	6	Standard
	Cd	114	267214.0	3.0	**50.2625**	1.247	2.5	ug/L	46	Standard
>	In	115	673406.9	0.6				ug/L	679215	Standard
	Sn	118	433.3	6.8	**0.1344**	0.023	17.5	ug/L	411	Standard
	Sb	123	276515.8	1.5	**51.2208**	0.510	1.0	ug/L	497	Standard
	Ba	135	167369.7	0.2	**79.2086**	0.486	0.6	ug/L	43	Standard
	Ce	140	103718.9	1.7				ug/L	22	Standard
>	Tb	159	1010230.2	0.8				ug/L	983965	Standard
	Ho	165	5729.4	2.5				ug/L	10	Standard
	Tl	203	434625.3	0.6	**52.1752**	0.397	0.8	ug/L	248	Standard
	Tl	205	1040998.6	2.1	**52.4245**	1.192	2.3	ug/L	620	Standard
	Pb	206	352043.2	1.1	**51.8409**	0.623	1.2	ug/L	503	Standard
	Pb	207	304061.7	0.5	**49.6476**	0.324	0.7	ug/L	406	Standard
	Pb	208	363377.4	1.3	**50.8748**	0.737	1.4	ug/L	497	Standard
	U	238	280432.7	1.9	**53.3324**	1.110	2.1	ug/L	17	Standard
>	Bi	209	583213.6	0.2				ug/L	559221	Standard

Sample ID: L1703126804SD WG607550-08
Report Date/Time: Monday, March 27, 2017 13:21:55
Page 1

Approved: March 28, 2017



⌈	**Na**	23	21.7	13.3	**11.5653**	1.772	15.3	mg/L	2	Standard
|	**Mg**	24	2433.5	3.5	**27.7625**	1.229	4.4	mg/L	33	Standard
|	**K**	39	346.7	9.3	**2.0211**	0.196	9.7	mg/L	18	Standard
|	**Ca**	43	65.0	68.4	**-27.6120**	60.423	218.8	mg/L	72	Standard
|	**Fe**	54	55.7	18.4	**0.1000**	0.057	57.4	mg/L	29	Standard
|	**Fe**	57	463.3	15.6	**0.7059**	1.301	184.3	mg/L	382	Standard
⌊>	**Sc-1**	45	42061.6	0.9				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	4.3	48.0				ug/L	3	Standard
	Br	81	26546.6	3.2				ug/L	2287	Standard
	P	31	76.7	30.8				ug/L	80	Standard
	S	34	43.3	43.7				ug/L	45	Standard
	Sr	88	138.3	16.3				ug/L	178	Standard
	C	12	43.3	26.6				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	340.0	10.6				mg/L	3	Standard
	Dy	164	8759.3	3.7				mg/L	16	Standard
	Ho-1	165	5729.4	2.5				mg/L	10	Standard
	Er	166	5010.8	7.7				mg/L	17	Standard
	I	127	470401.5	6.7				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		106.200	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		100.860	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703126804SD WG607550-08
Report Date/Time: Monday, March 27, 2017 13:21:55
Page 2

Approved: March 28, 2017

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.145
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.290
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1703126804SD WG607550-08
Report Date/Time: Monday, March 27, 2017 13:21:55
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: L1703126805
Sample Date/Time: Monday, March 27, 2017 13:22:50
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	277401.4	0.3				ug/L	262785	Standard
	Be	9	113.3	14.2	**0.0418**	0.006	14.4	ug/L	28	Standard
	Al	27	462117.6	1.6	**2.5247**	0.035	1.4	ug/L	2187	Standard
	Sc	45	41104.0	1.5				ug/L	39299	Standard
	Ti	47	157.3	18.4	**0.2906**	0.110	37.8	ug/L	82	Standard
	V	51	1272.4	2.4	**-0.0629**	0.002	3.1	ug/L	1876	Standard
	Cr	52	10255.5	3.5	**0.2585**	0.018	7.0	ug/L	8221	Standard
	Cr	53	6174.6	6.3	**5.0612**	0.480	9.5	ug/L	1083	Standard
	Mn	55	147608.2	0.9	**10.4472**	0.265	2.5	ug/L	2738	Standard
	Co	59	7335.8	0.1	**0.6393**	0.015	2.4	ug/L	635	Standard
	Ni	60	928.7	3.7	**0.3041**	0.019	6.2	ug/L	261	Standard
	Cu	65	2072.1	0.4	**0.5895**	0.016	2.7	ug/L	660	Standard
	Zn	66	2967.0	0.9	**1.6794**	0.059	3.5	ug/L	558	Standard
>	**Ge**	72	819415.1	2.2				ug/L	807251	Standard
	As	75	47.7	106.6	**0.0828**	0.037	44.1	ug/L	-43	Standard
	Se	82	44.4	10.0	**0.2798**	0.043	15.3	ug/L	18	Standard
	Se-1	77	346.0	3.6	**2.4379**	0.184	7.6	ug/L	127	Standard
>	**Ga**	71	43.3	24.0				mg/L	32	Standard
	Rb	85	17017.9	2.8				ug/L	27	Standard
	Y	89	561774.0	1.1				ug/L	534994	Standard
>	**Rh**	103	8.3	69.3				ug/L	20	Standard
	Mo	98	104.8	17.2	**-0.0008**	0.004	512.8	ug/L	285	Standard
	Ag	107	166.0	9.5	**0.0046**	0.002	47.6	ug/L	129	Standard
	Cd	111	25.2	20.4	**0.0038**	0.002	63.4	mg/L	6	Standard
	Cd	114	132.1	16.0	**0.0139**	0.004	27.5	ug/L	46	Standard
>	**In**	115	679968.5	0.6				ug/L	679215	Standard
	Sn	118	357.0	9.1	**0.0661**	0.029	43.9	ug/L	411	Standard
	Sb	123	176.7	13.1	**0.0014**	0.004	314.4	ug/L	497	Standard
	Ba	135	17519.8	1.6	**8.1938**	0.129	1.6	ug/L	43	Standard
	Ce	140	2791.9	7.6				ug/L	22	Standard
>	**Tb**	159	1011624.8	0.6				ug/L	983965	Standard
	Ho	165	131.7	26.7				ug/L	10	Standard
	Tl	203	945.4	1.7	**0.0834**	0.002	1.8	ug/L	248	Standard
	Tl	205	2286.8	6.4	**0.0810**	0.007	8.6	ug/L	620	Standard
	Pb	206	845.0	6.2	**0.0468**	0.007	14.9	ug/L	503	Standard
	Pb	207	709.0	3.1	**0.0442**	0.003	6.8	ug/L	406	Standard
	Pb	208	831.0	2.1	**0.0434**	0.003	6.7	ug/L	497	Standard
	U	238	128.3	2.0	**0.0226**	0.001	2.4	ug/L	17	Standard
>	**Bi**	209	593547.3	0.5				ug/L	559221	Standard

Sample ID: L1703126805
Report Date/Time: Monday, March 27, 2017 13:25:01
Page 1

Approved: March 28, 2017

⌈	**Na**	23	0.0		**-1.0498**	0.000	0.0	mg/L	2	Standard
|	**Mg**	24	1696.8	2.4	**19.6531**	0.581	3.0	mg/L	33	Standard
|	**K**	39	150.0	21.9	**0.8087**	0.199	24.6	mg/L	18	Standard
|	**Ca**	43	55.0	15.7	**-39.4713**	11.458	29.0	mg/L	72	Standard
|	**Fe**	54	56.3	26.1	**0.1107**	0.084	75.9	mg/L	29	Standard
|	**Fe**	57	376.7	9.4	**-0.7035**	0.763	108.4	mg/L	382	Standard
⌊>	**Sc-1**	45	41104.0	1.5				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	3.3	62.4				ug/L	3	Standard
	Br	81	13245.8	1.1				ug/L	2287	Standard
	P	31	68.3	22.4				ug/L	80	Standard
	S	34	40.0	33.1				ug/L	45	Standard
	Sr	88	180.0	12.7				ug/L	178	Standard
	C	12	23.3	24.7				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	10.0	100.0				mg/L	3	Standard
	Dy	164	174.1	23.9				mg/L	16	Standard
	Ho-1	165	131.7	26.7				mg/L	10	Standard
	Er	166	123.3	32.8				mg/L	17	Standard
	I	127	59720.9	3.1				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		105.562	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		101.507	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703126805
Report Date/Time: Monday, March 27, 2017 13:25:01
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.111
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	106.138
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703126805
Report Date/Time: Monday, March 27, 2017 13:25:01
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

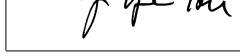
Sample ID: L1703126807
Sample Date/Time: Monday, March 27, 2017 13:25:55
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	274477.2	0.7				ug/L	262785	Standard
	Be	9	66.7	17.3	**0.0243**	0.004	18.2	ug/L	28	Standard
	Al	27	10760.5	2.7	**0.0534**	0.001	2.7	ug/L	2187	Standard
	Sc	45	40238.4	0.9				ug/L	39299	Standard
	Ti	47	49.7	6.2	**-0.1046**	0.013	12.5	ug/L	82	Standard
	V	51	1597.4	10.5	**-0.0230**	0.022	95.7	ug/L	1876	Standard
	Cr	52	9535.3	0.9	**0.1866**	0.028	15.0	ug/L	8221	Standard
	Cr	53	1851.8	8.6	**0.8251**	0.170	20.6	ug/L	1083	Standard
	Mn	55	6066.5	0.8	**0.2646**	0.010	3.7	ug/L	2738	Standard
	Co	59	427.7	2.6	**-0.0147**	0.002	11.2	ug/L	635	Standard
	Ni	60	429.0	5.5	**0.0853**	0.009	10.7	ug/L	261	Standard
	Cu	65	2912.3	1.8	**0.9691**	0.039	4.0	ug/L	660	Standard
	Zn	66	2709.9	3.0	**1.5222**	0.087	5.7	ug/L	558	Standard
>	**Ge**	72	808319.4	1.4				ug/L	807251	Standard
	As	75	-94.1	64.7	**-0.0196**	0.043	218.9	ug/L	-43	Standard
	Se	82	13.2	23.8	**0.0324**	0.027	82.6	ug/L	18	Standard
	Se-1	77	139.3	6.0	**0.1812**	0.085	46.9	ug/L	127	Standard
>	**Ga**	71	41.7	30.2				mg/L	32	Standard
	Rb	85	106.7	38.2				ug/L	27	Standard
	Y	89	551264.5	1.7				ug/L	534994	Standard
>	**Rh**	103	3.3	86.6				ug/L	20	Standard
	Mo	98	67.2	11.2	**-0.0094**	0.002	19.4	ug/L	285	Standard
	Ag	107	165.3	10.3	**0.0045**	0.003	56.2	ug/L	129	Standard
	Cd	111	18.2	19.3	**0.0004**	0.002	363.4	mg/L	6	Standard
	Cd	114	125.8	10.5	**0.0127**	0.003	20.7	ug/L	46	Standard
>	**In**	115	680676.6	1.0				ug/L	679215	Standard
	Sn	118	467.0	5.5	**0.1589**	0.019	12.2	ug/L	411	Standard
	Sb	123	151.3	24.7	**-0.0032**	0.007	218.8	ug/L	497	Standard
	Ba	135	230.7	9.3	**0.0887**	0.011	12.2	ug/L	43	Standard
	Ce	140	105.0	12.6				ug/L	22	Standard
>	**Tb**	159	1013580.9	0.6				ug/L	983965	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	315.0	15.5	**0.0090**	0.006	60.9	ug/L	248	Standard
	Tl	205	780.0	12.8	**0.0064**	0.005	72.2	ug/L	620	Standard
	Pb	206	586.3	7.4	**0.0093**	0.006	66.3	ug/L	503	Standard
	Pb	207	516.3	1.4	**0.0133**	0.001	3.8	ug/L	406	Standard
	Pb	208	626.0	2.7	**0.0151**	0.002	13.9	ug/L	497	Standard
	U	238	35.3	65.4	**0.0052**	0.004	83.6	ug/L	17	Standard
>	**Bi**	209	593305.7	0.8				ug/L	559221	Standard

Sample ID: L1703126807
Report Date/Time: Monday, March 27, 2017 13:28:06
Page 1

Approved: March 28, 2017



	Na	23	3.3	173.2	**0.9893**	3.532	357.0	mg/L	2	Standard
	Mg	24	31.7	39.7	**-0.1501**	0.154	102.5	mg/L	33	Standard
	K	39	23.3	32.7	**0.0010**	0.049	4704.3	mg/L	18	Standard
	Ca	43	53.3	28.6	**-40.2636**	20.925	52.0	mg/L	72	Standard
	Fe	54	26.1	44.7	**-0.0552**	0.065	117.3	mg/L	29	Standard
	Fe	57	321.7	19.7	**-1.5999**	1.249	78.1	mg/L	382	Standard
>	**Sc-1**	45	40238.4	0.9				mg/L	39299	Standard
	Cl	35	4.0	86.6				ug/L	4	Standard
	Kr	83	1.3	114.6				ug/L	3	Standard
	Br	81	3120.3	16.2				ug/L	2287	Standard
	P	31	81.7	25.5				ug/L	80	Standard
	S	34	51.7	39.1				ug/L	45	Standard
	Sr	88	133.3	31.9				ug/L	178	Standard
	C	12	40.0	43.3				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	15.5	41.6				mg/L	16	Standard
	Ho-1	165	6.7	114.6				mg/L	10	Standard
	Er	166	23.3	65.5				mg/L	17	Standard
	I	127	4754.1	17.2				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		104.450	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.132	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703126807
Report Date/Time: Monday, March 27, 2017 13:28:06
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.215
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	106.095
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703126807
Report Date/Time: Monday, March 27, 2017 13:28:06
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

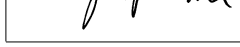
Sample ID: L1703130401
Sample Date/Time: Monday, March 27, 2017 13:29:00
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	270410.0	0.5				ug/L	262785	Standard
	Be	9	66.7	24.1	**0.0247**	0.006	25.0	ug/L	28	Standard
	Al	27	19062139.1	0.2	**107.0942**	0.298	0.3	ug/L	2187	Standard
	Sc	45	40898.5	1.6				ug/L	39299	Standard
	Ti	47	967.4	16.3	**3.3310**	0.613	18.4	ug/L	82	Standard
	V	51	4662.0	4.8	**0.3330**	0.028	8.3	ug/L	1876	Standard
	Cr	52	12738.0	3.1	**0.5860**	0.060	10.2	ug/L	8221	Standard
	Cr	53	1678.4	1.5	**0.6519**	0.035	5.4	ug/L	1083	Standard
	Mn	55	92253.4	1.2	**6.5530**	0.043	0.7	ug/L	2738	Standard
	Co	59	1615.1	4.0	**0.0993**	0.005	5.2	ug/L	635	Standard
	Ni	60	1684.8	2.7	**0.6490**	0.017	2.6	ug/L	261	Standard
	Cu	65	5343.9	0.9	**2.0321**	0.026	1.3	ug/L	660	Standard
	Zn	66	3834.5	1.9	**2.3373**	0.053	2.3	ug/L	558	Standard
>	Ge	72	808121.2	0.7				ug/L	807251	Standard
	As	75	168.9	26.2	**0.1706**	0.031	18.3	ug/L	-43	Standard
	Se	82	89.2	3.4	**0.6467**	0.028	4.4	ug/L	18	Standard
	Se-1	77	162.7	5.6	**0.4428**	0.113	25.5	ug/L	127	Standard
>	Ga	71	335.0	2.6				mg/L	32	Standard
	Rb	85	6024.5	2.5				ug/L	27	Standard
	Y	89	546199.4	0.8				ug/L	534994	Standard
>	Rh	103	31.7	39.7				ug/L	20	Standard
	Mo	98	523.8	2.2	**0.0969**	0.002	2.6	ug/L	285	Standard
	Ag	107	174.7	38.0	**0.0065**	0.010	149.3	ug/L	129	Standard
	Cd	111	35.3	41.7	**0.0092**	0.007	80.8	mg/L	6	Standard
	Cd	114	118.1	11.0	**0.0118**	0.003	21.1	ug/L	46	Standard
>	In	115	663819.1	1.0				ug/L	679215	Standard
	Sn	118	380.0	11.2	**0.0932**	0.034	36.4	ug/L	411	Standard
	Sb	123	380.5	1.6	**0.0405**	0.002	4.5	ug/L	497	Standard
	Ba	135	19766.6	0.8	**9.4735**	0.163	1.7	ug/L	43	Standard
	Ce	140	8809.2	4.3				ug/L	22	Standard
>	Tb	159	990391.5	0.4				ug/L	983965	Standard
	Ho	165	186.7	19.4				ug/L	10	Standard
	Tl	203	198.3	10.0	**-0.0040**	0.003	62.4	ug/L	248	Standard
	Tl	205	481.7	1.2	**-0.0077**	0.000	6.0	ug/L	620	Standard
	Pb	206	1928.5	2.2	**0.2116**	0.005	2.2	ug/L	503	Standard
	Pb	207	1602.8	2.4	**0.1950**	0.005	2.4	ug/L	406	Standard
	Pb	208	1957.7	3.2	**0.2061**	0.007	3.4	ug/L	497	Standard
	U	238	1694.8	3.6	**0.3242**	0.014	4.3	ug/L	17	Standard
>	Bi	209	577292.5	0.7				ug/L	559221	Standard

Sample ID: L1703130401
Report Date/Time: Monday, March 27, 2017 13:31:11
Page 1

Approved: March 28, 2017



	Na	23	30.0	44.1	**16.8632**	7.712	45.7	mg/L	2	Standard
	Mg	24	1623.4	3.6	**18.8723**	0.512	2.7	mg/L	33	Standard
	K	39	73.3	14.2	**0.3208**	0.063	19.8	mg/L	18	Standard
	Ca	43	71.7	26.4	**-15.5675**	27.525	176.8	mg/L	72	Standard
	Fe	54	63.1	43.5	**0.1513**	0.160	105.9	mg/L	29	Standard
	Fe	57	433.3	12.3	**0.3840**	0.968	252.1	mg/L	382	Standard
>	**Sc-1**	45	40898.5	1.6				mg/L	39299	Standard
	Cl	35	0.0					ug/L	4	Standard
	Kr	83	1.7	124.9				ug/L	3	Standard
	Br	81	8765.9	4.5				ug/L	2287	Standard
	P	31	75.0	6.7				ug/L	80	Standard
	S	34	46.7	34.4				ug/L	45	Standard
	Sr	88	168.3	14.0				ug/L	178	Standard
	C	12	60.0	28.9				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	173.2				mg/L	3	Standard
	Dy	164	291.7	2.3				mg/L	16	Standard
	Ho-1	165	186.7	19.4				mg/L	10	Standard
	Er	166	243.3	13.2				mg/L	17	Standard
	I	127	13616.1	4.4				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		102.902	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.108	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	97.733
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	103.232
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1703130401
Report Date/Time: Monday, March 27, 2017 13:31:11
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: L1703130402
Sample Date/Time: Monday, March 27, 2017 13:32:05
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	273934.5	1.5				ug/L	262785	Standard
	Be	9	55.0	9.1	**0.0199**	0.002	8.3	ug/L	28	Standard
	Al	27	9278458.2	1.7	**51.4526**	0.244	0.5	ug/L	2187	Standard
	Sc	45	40913.5	0.3				ug/L	39299	Standard
	Ti	47	767.0	34.1	**2.6017**	0.963	37.0	ug/L	82	Standard
	V	51	5691.5	2.6	**0.4588**	0.019	4.1	ug/L	1876	Standard
	Cr	52	11598.1	3.2	**0.4572**	0.035	7.6	ug/L	8221	Standard
	Cr	53	1633.4	7.9	**0.6221**	0.123	19.8	ug/L	1083	Standard
	Mn	55	41792.2	1.5	**2.9003**	0.042	1.5	ug/L	2738	Standard
	Co	59	1948.5	3.8	**0.1331**	0.006	4.7	ug/L	635	Standard
	Ni	60	1573.1	4.0	**0.6056**	0.024	4.0	ug/L	261	Standard
	Cu	65	4346.6	1.7	**1.6141**	0.021	1.3	ug/L	660	Standard
	Zn	66	3600.1	1.0	**2.1922**	0.027	1.2	ug/L	558	Standard
>	Ge	72	800510.9	0.8				ug/L	807251	Standard
	As	75	1397.7	1.4	**1.0720**	0.014	1.3	ug/L	-43	Standard
	Se	82	78.2	5.1	**0.5639**	0.030	5.4	ug/L	18	Standard
	Se-1	77	160.0	8.4	**0.4288**	0.138	32.3	ug/L	127	Standard
>	Ga	71	250.0	9.2				mg/L	32	Standard
	Rb	85	6923.3	4.7				ug/L	27	Standard
	Y	89	542358.3	0.6				ug/L	534994	Standard
>	Rh	103	138.3	30.3				ug/L	20	Standard
	Mo	98	7975.9	2.1	**1.8275**	0.020	1.1	ug/L	285	Standard
	Ag	107	121.0	10.3	**-0.0012**	0.002	159.9	ug/L	129	Standard
	Cd	111	50.7	22.0	**0.0169**	0.006	33.2	mg/L	6	Standard
	Cd	114	198.6	7.2	**0.0272**	0.003	11.4	ug/L	46	Standard
>	In	115	663172.2	1.0				ug/L	679215	Standard
	Sn	118	489.0	2.5	**0.1886**	0.012	6.6	ug/L	411	Standard
	Sb	123	548.3	6.7	**0.0722**	0.008	10.9	ug/L	497	Standard
	Ba	135	211774.5	0.9	**101.7845**	1.800	1.8	ug/L	43	Standard
	Ce	140	9928.3	13.0				ug/L	22	Standard
>	Tb	159	976791.9	0.6				ug/L	983965	Standard
	Ho	165	115.0	34.5				ug/L	10	Standard
	Tl	203	231.7	3.6	**0.0004**	0.001	281.7	ug/L	248	Standard
	Tl	205	555.0	10.4	**-0.0035**	0.003	91.3	ug/L	620	Standard
	Pb	206	2074.5	3.1	**0.2383**	0.012	5.0	ug/L	503	Standard
	Pb	207	1709.4	2.6	**0.2171**	0.007	3.1	ug/L	406	Standard
	Pb	208	2036.7	2.2	**0.2218**	0.005	2.1	ug/L	497	Standard
	U	238	2872.9	1.1	**0.5592**	0.007	1.3	ug/L	17	Standard
>	Bi	209	568400.0	0.7				ug/L	559221	Standard

Sample ID: L1703130402
Report Date/Time: Monday, March 27, 2017 13:34:16
Page 1

Approved: March 28, 2017

⌈	**Na**	23	33.3	17.3	**18.8821**	3.379	17.9	mg/L	2	Standard
|	**Mg**	24	2238.5	4.6	**26.2157**	1.127	4.3	mg/L	33	Standard
|	**K**	39	90.0	9.6	**0.4283**	0.055	12.8	mg/L	18	Standard
|	**Ca**	43	100.0	26.5	**23.5928**	36.357	154.1	mg/L	72	Standard
|	**Fe**	54	47.7	46.8	**0.0640**	0.126	196.4	mg/L	29	Standard
|	**Fe**	57	433.3	11.1	**0.3808**	0.873	229.1	mg/L	382	Standard
⌊>	**Sc-1**	45	40913.5	0.3				mg/L	39299	Standard
	Cl	35	2.0	100.0				ug/L	4	Standard
	Kr	83	4.0	43.3				ug/L	3	Standard
	Br	81	18381.2	4.8				ug/L	2287	Standard
	P	31	61.7	16.9				ug/L	80	Standard
	S	34	60.0	22.0				ug/L	45	Standard
	Sr	88	195.0	19.4				ug/L	178	Standard
	C	12	50.0	52.9				mg/L	33	Standard
	N	14	6.7	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	167.1	14.6				mg/L	16	Standard
	Ho-1	165	115.0	34.5				mg/L	10	Standard
	Er	166	130.0	27.7				mg/L	17	Standard
	I	127	35144.1	5.1				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		104.243	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		99.165	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703130402
Report Date/Time: Monday, March 27, 2017 13:34:16
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	97.638
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	101.641
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1703130402
Report Date/Time: Monday, March 27, 2017 13:34:16
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

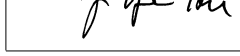
Sample ID: L1703130403
Sample Date/Time: Monday, March 27, 2017 13:35:10
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	280304.3	1.1				ug/L	262785	Standard
	Be	9	776.7	3.5	**0.2904**	0.012	4.0	ug/L	28	Standard
	Al	27	8571423.4	1.5	**46.4513**	0.360	0.8	ug/L	2187	Standard
	Sc	45	44165.9	1.0				ug/L	39299	Standard
	Ti	47	17254.5	0.8	**63.0859**	0.986	1.6	ug/L	82	Standard
	V	51	62208.1	0.6	**6.8871**	0.056	0.8	ug/L	1876	Standard
	Cr	52	54392.8	0.4	**5.6530**	0.046	0.8	ug/L	8221	Standard
	Cr	53	7877.0	2.2	**6.6967**	0.145	2.2	ug/L	1083	Standard
	Mn	55	853189.3	0.1	**60.9456**	0.524	0.9	ug/L	2738	Standard
	Co	59	26471.8	0.2	**2.4406**	0.018	0.8	ug/L	635	Standard
	Ni	60	14342.1	0.9	**6.2144**	0.093	1.5	ug/L	261	Standard
	Cu	65	17251.5	0.6	**7.1008**	0.094	1.3	ug/L	660	Standard
	Zn	66	39749.4	0.6	**27.8552**	0.367	1.3	ug/L	558	Standard
>	Ge	72	823080.2	0.8				ug/L	807251	Standard
	As	75	1464.1	4.0	**1.0911**	0.038	3.5	ug/L	-43	Standard
	Se	82	338.9	6.4	**2.6146**	0.158	6.0	ug/L	18	Standard
	Se-1	77	386.0	5.4	**2.8566**	0.200	7.0	ug/L	127	Standard
>	Ga	71	8637.5	1.4				mg/L	32	Standard
	Rb	85	111680.1	0.4				ug/L	27	Standard
	Y	89	610759.3	1.1				ug/L	534994	Standard
>	Rh	103	41.7	30.2				ug/L	20	Standard
	Mo	98	1149.6	0.8	**0.2356**	0.002	0.9	ug/L	285	Standard
	Ag	107	285.7	6.4	**0.0214**	0.003	12.8	ug/L	129	Standard
	Cd	111	184.9	8.4	**0.0815**	0.007	9.1	mg/L	6	Standard
	Cd	114	500.0	11.2	**0.0824**	0.011	12.8	ug/L	46	Standard
>	In	115	680561.9	0.5				ug/L	679215	Standard
	Sn	118	498.7	7.8	**0.1859**	0.033	17.6	ug/L	411	Standard
	Sb	123	1099.6	3.6	**0.1707**	0.008	4.8	ug/L	497	Standard
	Ba	135	102979.4	0.5	**48.2146**	0.102	0.2	ug/L	43	Standard
	Ce	140	206540.0	1.3				ug/L	22	Standard
>	Tb	159	1019959.9	1.4				ug/L	983965	Standard
	Ho	165	3567.1	5.2				ug/L	10	Standard
	Tl	203	914.7	4.1	**0.0811**	0.004	4.4	ug/L	248	Standard
	Tl	205	2215.2	2.5	**0.0788**	0.004	5.0	ug/L	620	Standard
	Pb	206	20753.2	1.1	**2.9673**	0.054	1.8	ug/L	503	Standard
	Pb	207	17249.8	1.1	**2.7345**	0.042	1.6	ug/L	406	Standard
	Pb	208	21018.7	1.7	**2.8587**	0.060	2.1	ug/L	497	Standard
	U	238	906.0	3.8	**0.1698**	0.005	3.1	ug/L	17	Standard
>	Bi	209	586652.2	1.3				ug/L	559221	Standard

Sample ID: L1703130403
Report Date/Time: Monday, March 27, 2017 13:37:21
Page 1

Approved: March 28, 2017



	Na	23	18.3	87.7	**9.0568**	8.866	97.9	mg/L	2	Standard
	Mg	24	935.0	8.8	**9.8221**	0.990	10.1	mg/L	33	Standard
	K	39	188.3	10.7	**0.9719**	0.111	11.4	mg/L	18	Standard
	Ca	43	70.0	32.7	**-25.4980**	29.011	113.8	mg/L	72	Standard
	Fe	54	778.9	4.3	**3.8338**	0.161	4.2	mg/L	29	Standard
	Fe	57	566.7	6.6	**2.1008**	0.728	34.6	mg/L	382	Standard
>	**Sc-1**	45	44165.9	1.0				mg/L	39299	Standard
	Cl	35	2.7	114.6				ug/L	4	Standard
	Kr	83	3.0	88.2				ug/L	3	Standard
	Br	81	22516.8	8.1				ug/L	2287	Standard
	P	31	73.3	17.2				ug/L	80	Standard
	S	34	28.3	71.3				ug/L	45	Standard
	Sr	88	193.3	5.4				ug/L	178	Standard
	C	12	53.3	28.6				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	10.0	100.0				mg/L	3	Standard
	Dy	164	5840.6	0.8				mg/L	16	Standard
	Ho-1	165	3567.1	5.2				mg/L	10	Standard
	Er	166	3003.6	2.7				mg/L	17	Standard
	I	127	12875.5	2.3				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		106.667	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.961	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703130403
Report Date/Time: Monday, March 27, 2017 13:37:21
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.198
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	104.905
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, March 27, 2017 13:38:17
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	270751.5	1.8				ug/L	262785	Standard
	Be	9	128907.8	1.1	**50.1103**	0.357	0.7	ug/L	28	Standard
	Al	27	8596667.4	0.9	**48.2402**	0.724	1.5	ug/L	2187	Standard
	Sc	45	40642.8	2.2				ug/L	39299	Standard
	Ti	47	27397.1	1.1	**101.6318**	1.271	1.3	ug/L	82	Standard
	V	51	424578.7	1.0	**48.8442**	0.425	0.9	ug/L	1876	Standard
	Cr	52	403385.2	1.0	**48.9834**	0.360	0.7	ug/L	8221	Standard
	Cr	53	50372.0	2.6	**48.9779**	0.711	1.5	ug/L	1083	Standard
	Mn	55	682968.2	1.1	**49.3786**	0.318	0.6	ug/L	2738	Standard
	Co	59	516199.8	1.6	**49.2460**	0.087	0.2	ug/L	635	Standard
	Ni	60	109903.2	1.2	**48.9556**	0.410	0.8	ug/L	261	Standard
	Cu	65	113942.8	0.7	**49.2342**	0.680	1.4	ug/L	660	Standard
	Zn	66	69563.7	1.0	**49.7157**	0.464	0.9	ug/L	558	Standard
>	Ge	72	812676.0	1.7				ug/L	807251	Standard
	As	75	68609.2	0.6	**49.5556**	0.631	1.3	ug/L	-43	Standard
	Se	82	6360.3	2.5	**51.0489**	1.226	2.4	ug/L	18	Standard
	Se-1	77	4648.4	0.9	**50.2426**	0.954	1.9	ug/L	127	Standard
>	Ga	71	85.0	21.2				mg/L	32	Standard
	Rb	85	440.0	5.2				ug/L	27	Standard
	Y	89	556104.2	1.3				ug/L	534994	Standard
>	Rh	103	30.0	33.3				ug/L	20	Standard
	Mo	98	452077.2	0.5	**102.3733**	0.512	0.5	ug/L	285	Standard
	Ag	107	361508.2	0.3	**50.6202**	0.194	0.4	ug/L	129	Standard
	Cd	111	105077.0	0.7	**51.1521**	0.580	1.1	mg/L	6	Standard
	Cd	114	271982.1	0.1	**50.6763**	0.357	0.7	ug/L	46	Standard
>	In	115	679907.2	0.6				ug/L	679215	Standard
	Sn	118	59799.8	1.4	**50.5211**	0.848	1.7	ug/L	411	Standard
	Sb	123	269068.9	0.1	**49.3662**	0.311	0.6	ug/L	497	Standard
	Ba	135	104646.5	0.2	**49.0439**	0.344	0.7	ug/L	43	Standard
	Ce	140	341.7	10.4				ug/L	22	Standard
>	Tb	159	1003610.8	1.1				ug/L	983965	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	415281.3	0.4	**49.7913**	0.169	0.3	ug/L	248	Standard
	Tl	205	993400.6	0.2	**49.9652**	0.233	0.5	ug/L	620	Standard
	Pb	206	338002.2	0.2	**49.7102**	0.216	0.4	ug/L	503	Standard
	Pb	207	306874.9	0.3	**50.0474**	0.279	0.6	ug/L	406	Standard
	Pb	208	355811.5	0.6	**49.7528**	0.136	0.3	ug/L	497	Standard
	U	238	276151.2	0.6	**52.4536**	0.189	0.4	ug/L	17	Standard
>	Bi	209	583921.0	0.6				ug/L	559221	Standard

Sample ID: QC Std 6
Report Date/Time: Monday, March 27, 2017 13:40:28
Page 1

Approved: March 28, 2017

	Na	23	11.7	65.5	**5.9946**	4.696	78.3	mg/L	2	Standard
	Mg	24	476.7	1.6	**5.2004**	0.046	0.9	mg/L	33	Standard
	K	39	698.3	6.0	**4.3826**	0.343	7.8	mg/L	18	Standard
	Ca	43	58.3	30.1	**-33.5173**	26.147	78.0	mg/L	72	Standard
	Fe	54	870.2	8.8	**4.6952**	0.353	7.5	mg/L	29	Standard
	Fe	57	610.0	8.2	**3.7696**	1.002	26.6	mg/L	382	Standard
>	**Sc-1**	45	40642.8	2.2				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	3.0	115.5				ug/L	3	Standard
	Br	81	2840.3	8.6				ug/L	2287	Standard
	P	31	71.7	4.0				ug/L	80	Standard
	S	34	35.0	62.3				ug/L	45	Standard
	Sr	88	136.7	17.3				ug/L	178	Standard
	C	12	16.7	69.3				mg/L	33	Standard
	N	14	6.7	86.6				mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	3	Standard
	Dy	164	25.9	80.2				mg/L	16	Standard
	Ho-1	165	6.7	114.6				mg/L	10	Standard
	Er	166	16.7	34.6				mg/L	17	Standard
	I	127	3428.7	6.9				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	100.221		
	Al	27	96.480		
	Sc	45			
	Ti	47	101.632		
	V	51	97.688		
	Cr	52	97.967		
	Cr	53			
	Mn	55	98.757		
	Co	59	98.492		
	Ni	60	97.911		
	Cu	65	98.468		
	Zn	66	99.431		
>	Ge	72		100.672	
	As	75	99.111		
	Se	82	102.098		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Monday, March 27, 2017 13:40:28
Page 2

Approved: March 28, 2017

Rb	85			
Y	89			
Rh	103			
Mo	98	102.373		
Ag	107	101.240		
Cd	111	102.304		
Cd	114			
In	115			100.102
Sn	118	101.042		
Sb	123	98.732		
Ba	135	98.088		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.583		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.506		
U	238	104.907		
Bi	209			104.417
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Monday, March 27, 2017 13:40:28
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, March 27, 2017 13:41:23
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	269188.7	0.9				ug/L	262785	Standard
	Be	9	95.0	65.7	**0.0358**	0.024	67.0	ug/L	28	Standard
	Al	27	9620.1	100.4	**0.0478**	0.054	112.6	ug/L	2187	Standard
	Sc	45	40828.3	2.0				ug/L	39299	Standard
	Ti	47	48.3	15.7	**-0.1092**	0.027	24.5	ug/L	82	Standard
	V	51	1737.0	10.2	**-0.0064**	0.019	298.1	ug/L	1876	Standard
	Cr	52	6795.5	1.9	**-0.1521**	0.011	7.1	ug/L	8221	Standard
	Cr	53	733.4	9.1	**-0.2895**	0.064	22.0	ug/L	1083	Standard
	Mn	55	3506.1	48.1	**0.0779**	0.121	155.0	ug/L	2738	Standard
	Co	59	508.3	41.2	**-0.0069**	0.020	285.3	ug/L	635	Standard
	Ni	60	282.0	6.4	**0.0197**	0.007	36.2	ug/L	261	Standard
	Cu	65	745.7	7.7	**0.0228**	0.022	97.2	ug/L	660	Standard
	Zn	66	723.7	7.9	**0.0832**	0.037	44.7	ug/L	558	Standard
>	Ge	72	805531.9	0.8				ug/L	807251	Standard
	As	75	-8.6	340.4	**0.0420**	0.021	50.8	ug/L	-43	Standard
	Se	82	22.7	36.6	**0.1099**	0.068	61.9	ug/L	18	Standard
	Se-1	77	103.3	11.9	**-0.2160**	0.143	66.3	ug/L	127	Standard
>	Ga	71	33.3	45.8				mg/L	32	Standard
	Rb	85	51.7	34.0				ug/L	27	Standard
	Y	89	542619.7	1.2				ug/L	534994	Standard
>	Rh	103	16.7	45.8				ug/L	20	Standard
	Mo	98	386.3	21.0	**0.0630**	0.018	28.1	ug/L	285	Standard
	Ag	107	207.3	10.6	**0.0105**	0.003	29.7	ug/L	129	Standard
	Cd	111	12.2	80.8	**-0.0025**	0.005	196.5	mg/L	6	Standard
	Cd	114	92.0	38.2	**0.0065**	0.007	102.1	ug/L	46	Standard
>	In	115	678660.9	1.2				ug/L	679215	Standard
	Sn	118	297.0	8.5	**0.0158**	0.024	153.1	ug/L	411	Standard
	Sb	123	356.6	9.8	**0.0346**	0.007	20.4	ug/L	497	Standard
	Ba	135	92.3	46.3	**0.0240**	0.020	84.6	ug/L	43	Standard
	Ce	140	45.0	58.8				ug/L	22	Standard
>	Tb	159	990487.2	1.3				ug/L	983965	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	98.3	52.9	**-0.0164**	0.006	37.7	ug/L	248	Standard
	Tl	205	245.0	48.0	**-0.0199**	0.006	29.4	ug/L	620	Standard
	Pb	206	630.3	12.3	**0.0169**	0.011	64.7	ug/L	503	Standard
	Pb	207	513.3	7.5	**0.0138**	0.006	40.5	ug/L	406	Standard
	Pb	208	732.7	28.9	**0.0310**	0.029	92.3	ug/L	497	Standard
	U	238	86.0	45.6	**0.0148**	0.007	49.4	ug/L	17	Standard
>	Bi	209	585611.5	1.0				ug/L	559221	Standard

Sample ID: QC Std 7
Report Date/Time: Monday, March 27, 2017 13:43:33
Page 1

Approved: March 28, 2017

	Na	23	0.0		**-1.0498**	0.000	0.0	mg/L	2	Standard
	Mg	24	35.0	24.7	**-0.1147**	0.111	96.9	mg/L	33	Standard
	K	39	20.0	25.0	**-0.0229**	0.030	130.1	mg/L	18	Standard
	Ca	43	28.3	36.7	**-76.0859**	14.795	19.4	mg/L	72	Standard
	Fe	54	42.9	24.5	**0.0377**	0.061	160.9	mg/L	29	Standard
	Fe	57	298.3	11.9	**-2.1289**	0.703	33.0	mg/L	382	Standard
>	**Sc-1**	45	40828.3	2.0				mg/L	39299	Standard
	Cl	35	2.0	100.0				ug/L	4	Standard
	Kr	83	2.3	24.7				ug/L	3	Standard
	Br	81	2730.2	1.6				ug/L	2287	Standard
	P	31	105.0	45.4				ug/L	80	Standard
	S	34	63.3	19.9				ug/L	45	Standard
	Sr	88	160.0	13.6				ug/L	178	Standard
	C	12	26.7	43.3				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	12.4	50.0				mg/L	16	Standard
	Ho-1	165	8.3	91.7				mg/L	10	Standard
	Er	166	20.0	50.0				mg/L	17	Standard
	I	127	5922.8	5.7				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.787	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Monday, March 27, 2017 13:43:33
Page 2

Approved: March 28, 2017

Rb	85	
Y	89	
> Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
> In	115	99.918
Sn	118	
Sb	123	
Ba	135	
Ce	140	
> Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
> Bi	209	104.719
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
> Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Monday, March 27, 2017 13:43:33
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: PBW 23 WG607689-02
Sample Date/Time: Monday, March 27, 2017 13:54:11
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	255634.0	1.9				ug/L	262785	Standard
	Be	9	51.7	77.6	**0.0199**	0.016	81.1	ug/L	28	Standard
	Al	27	6497.0	82.6	**0.0320**	0.031	96.2	ug/L	2187	Standard
	Sc	45	38562.3	1.1				ug/L	39299	Standard
	Ti	47	45.7	16.4	**-0.1141**	0.031	26.7	ug/L	82	Standard
	V	51	1865.1	13.5	**0.0148**	0.031	209.2	ug/L	1876	Standard
	Cr	52	7507.2	2.1	**-0.0370**	0.021	56.6	ug/L	8221	Standard
	Cr	53	740.0	11.8	**-0.2616**	0.095	36.2	ug/L	1083	Standard
	Mn	55	2582.6	28.2	**0.0164**	0.056	340.7	ug/L	2738	Standard
	Co	59	420.3	28.2	**-0.0141**	0.012	85.1	ug/L	635	Standard
	Ni	60	311.0	7.9	**0.0368**	0.013	34.3	ug/L	261	Standard
	Cu	65	847.7	3.0	**0.0781**	0.013	16.7	ug/L	660	Standard
	Zn	66	985.4	1.6	**0.2938**	0.020	6.8	ug/L	558	Standard
>	Ge	72	783761.1	1.1				ug/L	807251	Standard
	As	75	-9.2	91.4	**0.0413**	0.006	15.4	ug/L	-43	Standard
	Se	82	21.9	23.3	**0.1085**	0.044	40.2	ug/L	18	Standard
	Se-1	77	117.0	5.9	**-0.0274**	0.064	234.7	ug/L	127	Standard
>	Ga	71	33.3	17.3				mg/L	32	Standard
	Rb	85	55.0	48.1				ug/L	27	Standard
	Y	89	520731.3	1.2				ug/L	534994	Standard
>	Rh	103	20.0	25.0				ug/L	20	Standard
	Mo	98	91.7	42.5	**-0.0026**	0.010	361.0	ug/L	285	Standard
	Ag	107	145.0	27.4	**0.0028**	0.006	216.3	ug/L	129	Standard
	Cd	111	12.2	103.6	**-0.0021**	0.007	310.0	mg/L	6	Standard
	Cd	114	47.0	63.0	**-0.0015**	0.006	404.7	ug/L	46	Standard
>	In	115	645911.4	0.8				ug/L	679215	Standard
	Sn	118	236.3	8.4	**-0.0257**	0.020	76.3	ug/L	411	Standard
	Sb	123	128.0	11.5	**-0.0063**	0.003	47.8	ug/L	497	Standard
	Ba	135	76.3	33.7	**0.0184**	0.013	71.2	ug/L	43	Standard
	Ce	140	38.3	94.4				ug/L	22	Standard
>	Tb	159	941174.7	0.4				ug/L	983965	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	79.3	51.9	**-0.0182**	0.005	28.6	ug/L	248	Standard
	Tl	205	208.3	52.9	**-0.0212**	0.006	27.5	ug/L	620	Standard
	Pb	206	464.3	9.9	**-0.0042**	0.007	171.9	ug/L	503	Standard
	Pb	207	415.3	6.6	**0.0011**	0.005	453.9	ug/L	406	Standard
	Pb	208	504.3	11.6	**0.0026**	0.009	338.6	ug/L	497	Standard
	U	238	47.7	147.8	**0.0080**	0.014	174.2	ug/L	17	Standard
>	Bi	209	559410.9	0.3				ug/L	559221	Standard

Sample ID: PBW 23 WG607689-02
Report Date/Time: Monday, March 27, 2017 13:56:21
Page 1

Approved: March 28, 2017

	Na	23	1.7	173.2	**-0.0037**	1.812	49244.4	mg/L	2	Standard
	Mg	24	28.3	56.7	**-0.1771**	0.201	113.6	mg/L	33	Standard
	K	39	15.0	66.7	**-0.0493**	0.067	136.7	mg/L	18	Standard
	Ca	43	43.3	35.3	**-51.5461**	23.175	45.0	mg/L	72	Standard
	Fe	54	11.3	52.6	**-0.1365**	0.035	25.5	mg/L	29	Standard
	Fe	57	351.7	18.9	**-0.7355**	1.378	187.4	mg/L	382	Standard
>	**Sc-1**	45	38562.3	1.1				mg/L	39299	Standard
	Cl	35	3.3	91.7				ug/L	4	Standard
	Kr	83	3.7	31.5				ug/L	3	Standard
	Br	81	2510.2	0.8				ug/L	2287	Standard
	P	31	80.0	16.5				ug/L	80	Standard
	S	34	31.7	63.8				ug/L	45	Standard
	Sr	88	173.3	8.3				ug/L	178	Standard
	C	12	0.0					mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	19.7	88.7				mg/L	16	Standard
	Ho-1	165	8.3	34.6				mg/L	10	Standard
	Er	166	6.7	86.6				mg/L	17	Standard
	I	127	2825.3	4.1				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		97.279	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.090	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: PBW 23 WG607689-02
Report Date/Time: Monday, March 27, 2017 13:56:21
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	95.097
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	100.034
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 23 WG607689-02
Report Date/Time: Monday, March 27, 2017 13:56:21
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: LCSW 23 WG607689-03
Sample Date/Time: Monday, March 27, 2017 13:57:16
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	270930.3	2.6				ug/L	262785	Standard
	Be	9	128748.0	0.5	**50.0334**	1.304	2.6	ug/L	28	Standard
	Al	27	11160.8	6.6	**0.0564**	0.003	5.7	ug/L	2187	Standard
	Sc	45	40848.3	2.3				ug/L	39299	Standard
	Ti	47	41.3	29.6	**-0.1384**	0.044	32.1	ug/L	82	Standard
	V	51	436706.7	0.6	**49.7340**	0.347	0.7	ug/L	1876	Standard
	Cr	52	416226.8	0.8	**50.0554**	0.826	1.7	ug/L	8221	Standard
	Cr	53	51156.2	1.3	**49.2467**	0.389	0.8	ug/L	1083	Standard
	Mn	55	708409.3	0.3	**50.7054**	0.474	0.9	ug/L	2738	Standard
	Co	59	534704.9	0.5	**50.5016**	0.607	1.2	ug/L	635	Standard
	Ni	60	115894.2	0.4	**51.1078**	0.518	1.0	ug/L	261	Standard
	Cu	65	119702.7	0.6	**51.2118**	0.867	1.7	ug/L	660	Standard
	Zn	66	72219.4	0.5	**51.1041**	0.589	1.2	ug/L	558	Standard
>	Ge	72	820959.4	1.1				ug/L	807251	Standard
	As	75	70824.7	0.6	**50.6340**	0.429	0.8	ug/L	-43	Standard
	Se	82	6468.2	1.6	**51.3856**	0.288	0.6	ug/L	18	Standard
	Se-1	77	4618.4	1.8	**49.3925**	1.458	3.0	ug/L	127	Standard
>	Ga	71	30.0	44.1				mg/L	32	Standard
	Rb	85	60.0	14.4				ug/L	27	Standard
	Y	89	562397.9	1.8				ug/L	534994	Standard
>	Rh	103	41.7	34.6				ug/L	20	Standard
	Mo	98	96.4	9.6	**-0.0031**	0.002	69.6	ug/L	285	Standard
	Ag	107	370285.3	1.0	**51.0121**	0.613	1.2	ug/L	129	Standard
	Cd	111	106788.6	0.7	**51.1448**	0.551	1.1	mg/L	6	Standard
	Cd	114	271418.6	1.5	**49.7545**	0.902	1.8	ug/L	46	Standard
>	In	115	691071.7	0.4				ug/L	679215	Standard
	Sn	118	681.0	0.9	**0.3317**	0.004	1.3	ug/L	411	Standard
	Sb	123	277404.8	0.5	**50.0729**	0.267	0.5	ug/L	497	Standard
	Ba	135	106079.0	0.4	**48.9115**	0.327	0.7	ug/L	43	Standard
	Ce	140	136.7	18.4				ug/L	22	Standard
>	Tb	159	995030.3	0.8				ug/L	983965	Standard
	Ho	165	36.7	20.8				ug/L	10	Standard
	Tl	203	432766.9	0.4	**51.6136**	0.621	1.2	ug/L	248	Standard
	Tl	205	1028932.1	1.0	**51.4792**	0.869	1.7	ug/L	620	Standard
	Pb	206	349785.2	1.3	**51.1749**	1.090	2.1	ug/L	503	Standard
	Pb	207	303062.7	0.6	**49.1619**	0.655	1.3	ug/L	406	Standard
	Pb	208	360810.8	1.1	**50.1870**	0.937	1.9	ug/L	497	Standard
	U	238	270430.2	1.1	**51.0972**	1.017	2.0	ug/L	17	Standard
>	Bi	209	587074.2	1.0				ug/L	559221	Standard

Sample ID: LCSW 23 WG607689-03
Report Date/Time: Monday, March 27, 2017 13:59:27
Page 1

Approved: March 28, 2017

⌈	**Na**	23	1.7	173.2	**-0.0425**	1.745	4101.9	mg/L	2	Standard
|	**Mg**	24	25.0	20.0	**-0.2364**	0.055	23.1	mg/L	33	Standard
|	**K**	39	21.7	35.3	**-0.0125**	0.046	367.4	mg/L	18	Standard
|	**Ca**	43	55.0	9.1	**-38.8424**	8.292	21.3	mg/L	72	Standard
|	**Fe**	54	27.2	32.2	**-0.0501**	0.051	102.3	mg/L	29	Standard
|	**Fe**	57	370.0	19.6	**-0.7866**	1.408	179.0	mg/L	382	Standard
⌊>	**Sc-1**	45	40848.3	2.3				mg/L	39299	Standard
	Cl	35	0.7	173.2				ug/L	4	Standard
	Kr	83	3.0	66.7				ug/L	3	Standard
	Br	81	4250.6	10.6				ug/L	2287	Standard
	P	31	60.0	14.4				ug/L	80	Standard
	S	34	58.3	47.2				ug/L	45	Standard
	Sr	88	151.7	23.8				ug/L	178	Standard
	C	12	20.0	100.0				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	3	Standard
	Dy	164	13.2	41.7				mg/L	16	Standard
	Ho-1	165	36.7	20.8				mg/L	10	Standard
	Er	166	3.3	173.2				mg/L	17	Standard
	I	127	2758.6	4.6				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		103.100	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		101.698	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: LCSW 23 WG607689-03
Report Date/Time: Monday, March 27, 2017 13:59:27
Page 2

Approved: March 28, 2017

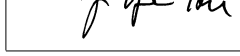
⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	101.746
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	104.981
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 23 WG607689-03
Report Date/Time: Monday, March 27, 2017 13:59:27
Page 3

Approved: March 28, 2017



Method 6020 - Summary Report

Sample ID: F BLANK WG607689-04
Sample Date/Time: Monday, March 27, 2017 14:00:22
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	270405.3	1.6				ug/L	262785	Standard
	Be	9	70.0	35.7	**0.0260**	0.010	37.6	ug/L	28	Standard
	Al	27	11834.6	0.7	**0.0603**	0.001	1.0	ug/L	2187	Standard
	Sc	45	42375.9	1.5				ug/L	39299	Standard
	Ti	47	51.0	7.8	**-0.1030**	0.015	14.1	ug/L	82	Standard
	V	51	1887.2	5.1	**0.0066**	0.009	141.1	ug/L	1876	Standard
	Cr	52	9376.2	2.6	**0.1461**	0.020	13.4	ug/L	8221	Standard
	Cr	53	1046.7	3.6	**0.0026**	0.029	1136.2	ug/L	1083	Standard
	Mn	55	4361.6	1.9	**0.1346**	0.003	2.4	ug/L	2738	Standard
	Co	59	473.3	9.7	**-0.0111**	0.004	35.6	ug/L	635	Standard
	Ni	60	404.7	6.4	**0.0712**	0.010	13.7	ug/L	261	Standard
	Cu	65	1554.7	1.8	**0.3636**	0.007	1.8	ug/L	660	Standard
	Zn	66	4923.1	2.7	**3.0633**	0.074	2.4	ug/L	558	Standard
>	Ge	72	822628.3	0.9				ug/L	807251	Standard
	As	75	-16.6	390.2	**0.0365**	0.046	125.9	ug/L	-43	Standard
	Se	82	16.4	63.6	**0.0552**	0.082	147.8	ug/L	18	Standard
	Se-1	77	108.0	4.0	**-0.1895**	0.037	19.8	ug/L	127	Standard
>	Ga	71	35.0	28.6				mg/L	32	Standard
	Rb	85	65.0	30.8				ug/L	27	Standard
	Y	89	562377.4	1.9				ug/L	534994	Standard
>	Rh	103	26.7	43.3				ug/L	20	Standard
	Mo	98	55.8	13.7	**-0.0121**	0.002	15.1	ug/L	285	Standard
	Ag	107	203.0	25.6	**0.0095**	0.008	79.0	ug/L	129	Standard
	Cd	111	23.6	42.5	**0.0030**	0.005	167.5	mg/L	6	Standard
	Cd	114	131.0	33.5	**0.0134**	0.008	61.9	ug/L	46	Standard
>	In	115	688569.7	1.5				ug/L	679215	Standard
	Sn	118	397.0	4.2	**0.0959**	0.017	17.5	ug/L	411	Standard
	Sb	123	912.9	8.8	**0.1345**	0.016	11.9	ug/L	497	Standard
	Ba	135	242.3	8.0	**0.0928**	0.009	10.0	ug/L	43	Standard
	Ce	140	96.7	24.4				ug/L	22	Standard
>	Tb	159	1001023.2	1.2				ug/L	983965	Standard
	Ho	165	21.7	35.3				ug/L	10	Standard
	Tl	203	160.0	21.7	**-0.0091**	0.004	45.6	ug/L	248	Standard
	Tl	205	440.0	22.4	**-0.0103**	0.005	47.3	ug/L	620	Standard
	Pb	206	637.3	8.6	**0.0173**	0.008	48.5	ug/L	503	Standard
	Pb	207	545.7	7.1	**0.0184**	0.006	31.2	ug/L	406	Standard
	Pb	208	631.0	8.4	**0.0163**	0.008	47.0	ug/L	497	Standard
	U	238	80.3	38.6	**0.0137**	0.006	42.9	ug/L	17	Standard
>	Bi	209	590111.5	0.7				ug/L	559221	Standard

Sample ID: F BLANK WG607689-04
Report Date/Time: Monday, March 27, 2017 14:02:33
Page 1

Approved: March 28, 2017

⌈	**Na**	23	3.3	173.2	**0.8515**	3.293	386.7	mg/L	2	Standard
|	**Mg**	24	41.7	27.7	**-0.0529**	0.142	267.7	mg/L	33	Standard
|	**K**	39	21.7	13.3	**-0.0169**	0.017	103.7	mg/L	18	Standard
|	**Ca**	43	38.3	19.9	**-64.2486**	9.549	14.9	mg/L	72	Standard
|	**Fe**	54	34.2	14.0	**-0.0180**	0.029	159.5	mg/L	29	Standard
|	**Fe**	57	348.3	11.6	**-1.4374**	0.661	46.0	mg/L	382	Standard
⌊>	**Sc-1**	45	42375.9	1.5				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	1.7	124.9				ug/L	3	Standard
	Br	81	3680.4	6.9				ug/L	2287	Standard
	P	31	78.3	55.0				ug/L	80	Standard
	S	34	45.0	29.4				ug/L	45	Standard
	Sr	88	138.3	2.1				ug/L	178	Standard
	C	12	20.0	50.0				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	5.4	109.8				mg/L	16	Standard
	Ho-1	165	21.7	35.3				mg/L	10	Standard
	Er	166	26.7	21.7				mg/L	17	Standard
	I	127	2406.9	3.7				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		102.900	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		101.905	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: F BLANK WG607689-04
Report Date/Time: Monday, March 27, 2017 14:02:33
Page 2

Approved: March 28, 2017

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.377
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.524
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: F BLANK WG607689-04
Report Date/Time: Monday, March 27, 2017 14:02:33
Page 3

Approved: March 28, 2017

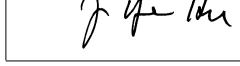
Method 6020 - Summary Report

Sample ID: L1703137005 WG607689-01
Sample Date/Time: Monday, March 27, 2017 14:03:27
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	277668.7	2.3				ug/L	262785	Standard
	Be	9	70.0	32.7	**0.0254**	0.009	36.7	ug/L	28	Standard
	Al	27	30020707.2	1.8	**164.2945**	3.831	2.3	ug/L	2187	Standard
	Sc	45	41867.8	2.1				ug/L	39299	Standard
	Ti	47	146.3	16.7	**0.2568**	0.094	36.5	ug/L	82	Standard
	V	51	2041.7	23.8	**0.0279**	0.054	193.2	ug/L	1876	Standard
	Cr	52	14226.7	2.3	**0.7701**	0.058	7.5	ug/L	8221	Standard
	Cr	53	7753.7	10.6	**6.7153**	0.885	13.2	ug/L	1083	Standard
	Mn	55	8744.9	0.8	**0.4595**	0.011	2.4	ug/L	2738	Standard
	Co	59	972.7	4.2	**0.0376**	0.004	10.9	ug/L	635	Standard
	Ni	60	2188.5	4.2	**0.8747**	0.050	5.7	ug/L	261	Standard
	Cu	65	2764.9	3.1	**0.9039**	0.048	5.3	ug/L	660	Standard
	Zn	66	5162.5	1.9	**3.2976**	0.104	3.1	ug/L	558	Standard
>	Ge	72	808797.4	0.9				ug/L	807251	Standard
	As	75	49.6	239.0	**0.0839**	0.086	102.1	ug/L	-43	Standard
	Se	82	123.2	8.0	**0.9211**	0.085	9.2	ug/L	18	Standard
	Se-1	77	679.7	10.4	**6.2128**	0.842	13.6	ug/L	127	Standard
>	Ga	71	48.3	76.3				mg/L	32	Standard
	Rb	85	29443.6	2.6				ug/L	27	Standard
	Y	89	545895.5	0.9				ug/L	534994	Standard
>	Rh	103	43.3	53.3				ug/L	20	Standard
	Mo	98	231.8	5.2	**0.0291**	0.003	10.2	ug/L	285	Standard
	Ag	107	836.4	2.2	**0.1012**	0.002	2.0	ug/L	129	Standard
	Cd	111	31.7	17.6	**0.0074**	0.003	38.1	mg/L	6	Standard
	Cd	114	143.3	15.7	**0.0166**	0.004	26.4	ug/L	46	Standard
>	In	115	664690.5	0.6				ug/L	679215	Standard
	Sn	118	373.7	3.2	**0.0875**	0.009	10.4	ug/L	411	Standard
	Sb	123	276.8	20.6	**0.0210**	0.011	51.8	ug/L	497	Standard
	Ba	135	79385.1	1.0	**38.0517**	0.372	1.0	ug/L	43	Standard
	Ce	140	1113.4	3.2				ug/L	22	Standard
>	Tb	159	993863.6	2.0				ug/L	983965	Standard
	Ho	165	131.7	15.3				ug/L	10	Standard
	Tl	203	907.4	6.1	**0.0838**	0.008	9.3	ug/L	248	Standard
	Tl	205	2135.2	12.8	**0.0784**	0.015	19.6	ug/L	620	Standard
	Pb	206	957.7	7.2	**0.0693**	0.010	13.8	ug/L	503	Standard
	Pb	207	829.0	8.4	**0.0694**	0.011	16.1	ug/L	406	Standard
	Pb	208	947.0	1.8	**0.0652**	0.003	4.8	ug/L	497	Standard
	U	238	3877.5	2.3	**0.7555**	0.010	1.4	ug/L	17	Standard
>	Bi	209	568144.1	1.1				ug/L	559221	Standard

Approved: March 28, 2017



⌈	**Na**	23	58.3	9.9	**33.0421**	3.166	9.6	mg/L	2	Standard
|	**Mg**	24	4277.3	1.4	**49.4404**	1.591	3.2	mg/L	33	Standard
|	**K**	39	233.3	6.9	**1.3167**	0.072	5.4	mg/L	18	Standard
|	**Ca**	43	78.3	14.7	**-8.8570**	17.123	193.3	mg/L	72	Standard
|	**Fe**	54	47.6	21.8	**0.0565**	0.054	95.4	mg/L	29	Standard
|	**Fe**	57	541.7	12.5	**2.1673**	1.084	50.0	mg/L	382	Standard
⌊>	**Sc-1**	45	41867.8	2.1				mg/L	39299	Standard
	Cl	35	4.0	132.3				ug/L	4	Standard
	Kr	83	3.0	33.3				ug/L	3	Standard
	Br	81	12451.8	3.7				ug/L	2287	Standard
	P	31	81.7	40.8				ug/L	80	Standard
	S	34	43.3	48.0				ug/L	45	Standard
	Sr	88	186.7	15.2				ug/L	178	Standard
	C	12	63.3	50.8				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	202.5	17.3				mg/L	16	Standard
	Ho-1	165	131.7	15.3				mg/L	10	Standard
	Er	166	156.7	30.2				mg/L	17	Standard
	I	127	17710.3	1.2				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		105.664	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		100.192	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703137005 WG607689-01
Report Date/Time: Monday, March 27, 2017 14:05:38
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	97.862
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	101.596
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1703137005 WG607689-01
Report Date/Time: Monday, March 27, 2017 14:05:38
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: L1703137005S WG607689-05
Sample Date/Time: Monday, March 27, 2017 14:06:33
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	283650.7	1.0				ug/L	262785	Standard
	Be	9	136682.1	0.9	**50.7144**	0.544	1.1	ug/L	28	Standard
	Al	27	30273655.5	1.3	**162.1621**	3.215	2.0	ug/L	2187	Standard
	Sc	45	41989.8	1.9				ug/L	39299	Standard
	Ti	47	206.7	42.4	**0.4855**	0.319	65.7	ug/L	82	Standard
	V	51	429788.8	0.4	**50.0525**	0.750	1.5	ug/L	1876	Standard
	Cr	52	409346.7	0.4	**50.3393**	0.458	0.9	ug/L	8221	Standard
	Cr	53	58564.6	1.3	**57.8344**	1.539	2.7	ug/L	1083	Standard
	Mn	55	682896.0	0.9	**49.9767**	0.583	1.2	ug/L	2738	Standard
	Co	59	511615.7	0.7	**49.4079**	0.718	1.5	ug/L	635	Standard
	Ni	60	111038.7	0.2	**50.0691**	0.769	1.5	ug/L	261	Standard
	Cu	65	113173.8	0.8	**49.4982**	0.858	1.7	ug/L	660	Standard
	Zn	66	74175.5	0.8	**53.6919**	0.701	1.3	ug/L	558	Standard
>	Ge	72	802900.9	1.3				ug/L	807251	Standard
	As	75	70959.9	0.3	**51.8729**	0.585	1.1	ug/L	-43	Standard
	Se	82	6474.2	0.6	**52.5998**	0.801	1.5	ug/L	18	Standard
	Se-1	77	5334.9	1.2	**58.5767**	0.125	0.2	ug/L	127	Standard
>	Ga	71	46.7	76.0				mg/L	32	Standard
	Rb	85	30039.8	2.9				ug/L	27	Standard
	Y	89	548845.4	2.3				ug/L	534994	Standard
>	Rh	103	55.0	9.1				ug/L	20	Standard
	Mo	98	238.8	2.4	**0.0311**	0.001	2.6	ug/L	285	Standard
	Ag	107	349295.1	1.3	**50.3010**	0.931	1.9	ug/L	129	Standard
	Cd	111	102864.0	0.9	**51.4983**	0.875	1.7	mg/L	6	Standard
	Cd	114	262048.1	1.2	**50.2079**	0.116	0.2	ug/L	46	Standard
>	In	115	661157.8	1.0				ug/L	679215	Standard
	Sn	118	396.3	6.4	**0.1091**	0.025	22.7	ug/L	411	Standard
	Sb	123	272535.1	1.6	**51.4265**	1.179	2.3	ug/L	497	Standard
	Ba	135	182760.0	0.8	**88.1025**	1.324	1.5	ug/L	43	Standard
	Ce	140	1215.0	5.2				ug/L	22	Standard
>	Tb	159	1002307.2	0.8				ug/L	983965	Standard
	Ho	165	121.7	37.1				ug/L	10	Standard
	Tl	203	426272.4	1.8	**52.2270**	1.075	2.1	ug/L	248	Standard
	Tl	205	1013064.6	0.6	**52.0687**	0.676	1.3	ug/L	620	Standard
	Pb	206	340117.1	0.6	**51.1147**	0.474	0.9	ug/L	503	Standard
	Pb	207	296189.7	0.5	**49.3579**	0.476	1.0	ug/L	406	Standard
	Pb	208	351742.7	0.4	**50.2597**	0.596	1.2	ug/L	497	Standard
	U	238	280246.4	0.4	**54.3946**	0.619	1.1	ug/L	17	Standard
>	Bi	209	571467.6	0.8				ug/L	559221	Standard

Sample ID: L1703137005S WG607689-05
Report Date/Time: Monday, March 27, 2017 14:08:43
Page 1

Approved: March 28, 2017

	Na	23	71.7	33.0	**40.6165**	13.288	32.7	mg/L	2	Standard
	Mg	24	4349.0	1.4	**50.1273**	1.540	3.1	mg/L	33	Standard
	K	39	205.0	9.8	**1.1372**	0.146	12.8	mg/L	18	Standard
	Ca	43	100.0	18.0	**20.3491**	26.347	129.5	mg/L	72	Standard
	Fe	54	35.4	13.5	**-0.0103**	0.023	224.9	mg/L	29	Standard
	Fe	57	496.7	4.8	**1.3282**	0.346	26.0	mg/L	382	Standard
>	**Sc-1**	45	41989.8	1.9				mg/L	39299	Standard
	Cl	35	4.7	65.5				ug/L	4	Standard
	Kr	83	2.7	21.7				ug/L	3	Standard
	Br	81	14890.6	2.0				ug/L	2287	Standard
	P	31	106.7	2.7				ug/L	80	Standard
	S	34	41.7	13.9				ug/L	45	Standard
	Sr	88	143.3	25.7				ug/L	178	Standard
	C	12	60.0	44.1				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	10.0	173.2				mg/L	3	Standard
	Dy	164	174.4	24.8				mg/L	16	Standard
	Ho-1	165	121.7	37.1				mg/L	10	Standard
	Er	166	116.7	21.6				mg/L	17	Standard
	I	127	23575.1	7.2				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		107.940	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.461	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703137005S WG607689-05
Report Date/Time: Monday, March 27, 2017 14:08:43
Page 2

Approved: March 28, 2017

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.341
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.190
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1703137005S WG607689-05
Report Date/Time: Monday, March 27, 2017 14:08:43
Page 3

Approved: March 28, 2017

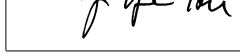
Method 6020 - Summary Report

Sample ID: L1703137005SD WG607689-06
Sample Date/Time: Monday, March 27, 2017 14:09:38
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	284528.4	0.6				ug/L	262785	Standard
	Be	9	134460.7	1.0	**49.7369**	0.787	1.6	ug/L	28	Standard
	Al	27	29656817.7	0.7	**158.3507**	0.743	0.5	ug/L	2187	Standard
	Sc	45	40657.8	2.4				ug/L	39299	Standard
	Ti	47	137.0	10.9	**0.2245**	0.056	25.0	ug/L	82	Standard
	V	51	428245.1	0.8	**49.7805**	0.403	0.8	ug/L	1876	Standard
	Cr	52	407299.2	0.4	**49.9917**	0.179	0.4	ug/L	8221	Standard
	Cr	53	59647.2	1.0	**58.8070**	0.585	1.0	ug/L	1083	Standard
	Mn	55	789086.6	0.6	**57.6729**	0.336	0.6	ug/L	2738	Standard
	Co	59	500586.3	1.4	**48.2541**	0.677	1.4	ug/L	635	Standard
	Ni	60	109089.7	0.8	**49.0980**	0.380	0.8	ug/L	261	Standard
	Cu	65	111886.3	0.4	**48.8413**	0.170	0.3	ug/L	660	Standard
	Zn	66	77736.6	1.0	**56.1895**	0.591	1.1	ug/L	558	Standard
>	**Ge**	72	804268.4	0.0				ug/L	807251	Standard
	As	75	70381.7	0.8	**51.3582**	0.416	0.8	ug/L	-43	Standard
	Se	82	6458.0	1.4	**52.3728**	0.747	1.4	ug/L	18	Standard
	Se-1	77	5458.0	1.7	**59.8544**	1.048	1.8	ug/L	127	Standard
>	**Ga**	71	55.0	9.1				mg/L	32	Standard
	Rb	85	29814.3	2.0				ug/L	27	Standard
	Y	89	553996.1	1.5				ug/L	534994	Standard
>	**Rh**	103	46.7	16.4				ug/L	20	Standard
	Mo	98	308.8	10.3	**0.0473**	0.008	15.9	ug/L	285	Standard
	Ag	107	345241.7	0.4	**49.6628**	0.314	0.6	ug/L	129	Standard
	Cd	111	102749.2	0.4	**51.3839**	0.255	0.5	mg/L	6	Standard
	Cd	114	257721.9	1.2	**49.3297**	0.575	1.2	ug/L	46	Standard
>	**In**	115	661824.4	0.3				ug/L	679215	Standard
	Sn	118	379.0	8.9	**0.0936**	0.030	31.9	ug/L	411	Standard
	Sb	123	267920.2	0.2	**50.4981**	0.062	0.1	ug/L	497	Standard
	Ba	135	178502.3	0.4	**85.9553**	0.230	0.3	ug/L	43	Standard
	Ce	140	1158.4	0.2				ug/L	22	Standard
>	**Tb**	159	998219.6	1.1				ug/L	983965	Standard
	Ho	165	130.0	32.9				ug/L	10	Standard
	Tl	203	418564.7	0.2	**51.1073**	0.149	0.3	ug/L	248	Standard
	Tl	205	995968.3	1.4	**51.0133**	0.570	1.1	ug/L	620	Standard
	Pb	206	336349.0	0.3	**50.3765**	0.280	0.6	ug/L	503	Standard
	Pb	207	291479.6	1.2	**48.4065**	0.544	1.1	ug/L	406	Standard
	Pb	208	347654.7	0.1	**49.5051**	0.174	0.4	ug/L	497	Standard
	U	238	278910.4	0.5	**53.9507**	0.270	0.5	ug/L	17	Standard
>	**Bi**	209	573389.2	0.3				ug/L	559221	Standard

Approved: March 28, 2017



	Na	23	58.3	35.7	**34.1135**	12.812	37.6	mg/L	2	Standard
	Mg	24	4375.6	3.1	**52.0946**	1.400	2.7	mg/L	33	Standard
	K	39	261.7	19.9	**1.5508**	0.378	24.4	mg/L	18	Standard
	Ca	43	91.7	8.3	**12.8601**	10.377	80.7	mg/L	72	Standard
	Fe	54	31.1	32.8	**-0.0286**	0.055	191.7	mg/L	29	Standard
	Fe	57	526.7	11.0	**2.1799**	0.905	41.5	mg/L	382	Standard
>	**Sc-1**	45	40657.8	2.4				mg/L	39299	Standard
	Cl	35	4.7	89.2				ug/L	4	Standard
	Kr	83	2.7	21.7				ug/L	3	Standard
	Br	81	12188.2	1.7				ug/L	2287	Standard
	P	31	68.3	25.7				ug/L	80	Standard
	S	34	56.7	20.4				ug/L	45	Standard
	Sr	88	198.3	12.9				ug/L	178	Standard
	C	12	56.7	71.3				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	173.2				mg/L	3	Standard
	Dy	164	160.8	22.6				mg/L	16	Standard
	Ho-1	165	130.0	32.9				mg/L	10	Standard
	Er	166	123.3	20.4				mg/L	17	Standard
	I	127	20562.3	2.2				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		108.274	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.631	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703137005SD WG607689-06
Report Date/Time: Monday, March 27, 2017 14:11:49
Page 2

Approved: March 28, 2017

Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	97.440
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	102.534
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1703137005SD WG607689-06
Report Date/Time: Monday, March 27, 2017 14:11:49
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

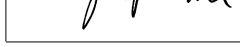
Sample ID: L1703131301
Sample Date/Time: Monday, March 27, 2017 14:12:43
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	273086.1	1.7				ug/L	262785	Standard
	Be	9	103.3	22.9	**0.0386**	0.009	23.1	ug/L	28	Standard
	Al	27	10251609.7	0.6	**57.0359**	0.812	1.4	ug/L	2187	Standard
	Sc	45	40457.3	3.3				ug/L	39299	Standard
	Ti	47	1146.4	19.5	**4.0620**	0.851	20.9	ug/L	82	Standard
	V	51	3087.0	10.8	**0.1551**	0.038	24.6	ug/L	1876	Standard
	Cr	52	8617.1	4.1	**0.0880**	0.042	47.5	ug/L	8221	Standard
	Cr	53	4527.4	18.7	**3.5613**	0.844	23.7	ug/L	1083	Standard
	Mn	55	25187471.6	0.6	**1864.8068**	19.411	1.0	ug/L	2738	Standard
	Co	59	1983.8	2.9	**0.1376**	0.005	4.0	ug/L	635	Standard
	Ni	60	3145.0	2.7	**1.3254**	0.036	2.7	ug/L	261	Standard
	Cu	65	2281.8	0.3	**0.7082**	0.007	1.1	ug/L	660	Standard
	Zn	66	4199.2	2.7	**2.6469**	0.095	3.6	ug/L	558	Standard
>	**Ge**	72	796359.6	0.5				ug/L	807251	Standard
	As	75	43336.9	0.9	**31.9569**	0.422	1.3	ug/L	-43	Standard
	Se	82	481.7	1.8	**3.8764**	0.090	2.3	ug/L	18	Standard
	Se-1	77	432.3	12.1	**3.5237**	0.583	16.6	ug/L	127	Standard
>	**Ga**	71	311.7	12.9				mg/L	32	Standard
	Rb	85	4840.8	2.9				ug/L	27	Standard
	Y	89	542563.4	1.6				ug/L	534994	Standard
>	**Rh**	103	60.0	16.7				ug/L	20	Standard
	Mo	98	2800.5	3.0	**0.6325**	0.017	2.8	ug/L	285	Standard
	Ag	107	167.0	13.2	**0.0056**	0.003	57.0	ug/L	129	Standard
	Cd	111	27.4	31.5	**0.0054**	0.004	81.8	mg/L	6	Standard
	Cd	114	124.2	22.1	**0.0133**	0.005	40.1	ug/L	46	Standard
>	**In**	115	656342.9	0.5				ug/L	679215	Standard
	Sn	118	340.7	1.6	**0.0626**	0.006	9.0	ug/L	411	Standard
	Sb	123	264.9	10.6	**0.0193**	0.005	26.6	ug/L	497	Standard
	Ba	135	494099.8	1.1	**239.9444**	1.290	0.5	ug/L	43	Standard
	Ce	140	5557.7	3.6				ug/L	22	Standard
>	**Tb**	159	995098.5	1.0				ug/L	983965	Standard
	Ho	165	270.0	14.7				ug/L	10	Standard
	Tl	203	887.7	15.2	**0.0798**	0.017	21.5	ug/L	248	Standard
	Tl	205	2178.5	15.7	**0.0789**	0.018	23.0	ug/L	620	Standard
	Pb	206	1581.1	0.2	**0.1602**	0.001	0.8	ug/L	503	Standard
	Pb	207	1342.4	1.1	**0.1523**	0.002	1.4	ug/L	406	Standard
	Pb	208	1657.0	4.0	**0.1639**	0.011	6.5	ug/L	497	Standard
	U	238	114.0	8.6	**0.0205**	0.002	9.8	ug/L	17	Standard
>	**Bi**	209	576664.6	0.7				ug/L	559221	Standard

Sample ID: L1703131301
Report Date/Time: Monday, March 27, 2017 14:14:54
Page 1

Approved: March 28, 2017



	Na	23	71.7	33.0	**42.5227**	14.948	35.2	mg/L	2	Standard
	Mg	24	2573.6	3.7	**30.6056**	1.941	6.3	mg/L	33	Standard
	K	39	121.7	10.3	**0.6436**	0.109	16.9	mg/L	18	Standard
	Ca	43	143.3	17.2	**85.7454**	28.927	33.7	mg/L	72	Standard
	Fe	54	4398.0	4.2	**24.6786**	0.375	1.5	mg/L	29	Standard
	Fe	57	1703.4	5.1	**24.5283**	1.793	7.3	mg/L	382	Standard
>	**Sc-1**	45	40457.3	3.3				mg/L	39299	Standard
	Cl	35	2.7	114.6				ug/L	4	Standard
	Kr	83	3.3	17.3				ug/L	3	Standard
	Br	81	246410.1	4.4				ug/L	2287	Standard
	P	31	88.3	27.9				ug/L	80	Standard
	S	34	51.7	11.2				ug/L	45	Standard
	Sr	88	130.0	16.8				ug/L	178	Standard
	C	12	40.0	43.3				mg/L	33	Standard
	N	14	6.7	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	348.5	12.1				mg/L	16	Standard
	Ho-1	165	270.0	14.7				mg/L	10	Standard
	Er	166	240.0	33.3				mg/L	17	Standard
	I	127	413965.7	10.5				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		103.920	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.651	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703131301
Report Date/Time: Monday, March 27, 2017 14:14:54
Page 2

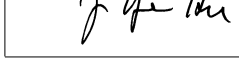
Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	96.633
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	103.119
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: March 28, 2017



Method 6020 - Summary Report

Sample ID: L1703131301PS WG607753-01
Sample Date/Time: Monday, March 27, 2017 14:15:49
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	270888.1	2.9				ug/L	262785	Standard
	Be	9	132633.0	1.1	**51.5677**	2.053	4.0	ug/L	28	Standard
	Al	27	10103387.1	1.6	**56.7066**	2.511	4.4	ug/L	2187	Standard
	Sc	45	40806.6	2.4				ug/L	39299	Standard
	Ti	47	1249.7	34.9	**4.4173**	1.682	38.1	ug/L	82	Standard
	V	51	421909.5	1.4	**49.0821**	1.306	2.7	ug/L	1876	Standard
	Cr	52	399457.5	1.0	**49.0483**	1.008	2.1	ug/L	8221	Standard
	Cr	53	51298.4	0.7	**50.4727**	1.030	2.0	ug/L	1083	Standard
	Mn	55	26057054.8	1.1	**1911.7411**	47.396	2.5	ug/L	2738	Standard
	Co	59	513657.5	1.2	**49.5551**	1.162	2.3	ug/L	635	Standard
	Ni	60	111016.6	0.9	**50.0064**	1.061	2.1	ug/L	261	Standard
	Cu	65	113838.8	1.5	**49.7417**	1.404	2.8	ug/L	660	Standard
	Zn	66	80854.2	1.3	**58.5103**	1.572	2.7	ug/L	558	Standard
>	Ge	72	803785.5	1.4				ug/L	807251	Standard
	As	75	115623.4	1.6	**84.4123**	2.390	2.8	ug/L	-43	Standard
	Se	82	7093.5	1.3	**57.5820**	1.490	2.6	ug/L	18	Standard
	Se-1	77	5076.9	1.1	**55.6257**	1.391	2.5	ug/L	127	Standard
>	Ga	71	298.3	12.1				mg/L	32	Standard
	Rb	85	4954.1	5.2				ug/L	27	Standard
	Y	89	556304.0	0.8				ug/L	534994	Standard
>	Rh	103	78.3	22.4				ug/L	20	Standard
	Mo	98	2913.3	3.4	**0.6477**	0.031	4.7	ug/L	285	Standard
	Ag	107	322754.9	2.3	**46.0360**	1.724	3.7	ug/L	129	Standard
	Cd	111	104828.4	1.2	**51.9748**	1.249	2.4	mg/L	6	Standard
	Cd	114	264435.3	1.9	**50.1836**	1.509	3.0	ug/L	46	Standard
>	In	115	667687.1	1.5				ug/L	679215	Standard
	Sn	118	360.7	6.5	**0.0750**	0.024	32.6	ug/L	411	Standard
	Sb	123	280295.7	1.1	**52.3817**	1.373	2.6	ug/L	497	Standard
	Ba	135	602983.5	1.0	**287.9284**	7.238	2.5	ug/L	43	Standard
	Ce	140	6062.9	7.4				ug/L	22	Standard
>	Tb	159	1022845.2	0.6				ug/L	983965	Standard
	Ho	165	330.0	7.6				ug/L	10	Standard
	Tl	203	432897.4	1.6	**51.5941**	1.054	2.0	ug/L	248	Standard
	Tl	205	1037845.9	1.9	**51.8903**	1.262	2.4	ug/L	620	Standard
	Pb	206	352367.7	1.3	**51.5148**	0.888	1.7	ug/L	503	Standard
	Pb	207	316793.2	1.2	**51.3569**	0.890	1.7	ug/L	406	Standard
	Pb	208	370733.7	2.2	**51.5331**	1.372	2.7	ug/L	497	Standard
	U	238	298285.4	1.7	**56.3191**	1.192	2.1	ug/L	17	Standard
>	Bi	209	587469.0	0.6				ug/L	559221	Standard

Sample ID: L1703131301PS WG607753-01
Report Date/Time: Monday, March 27, 2017 14:18:00
Page 1

Approved: March 28, 2017

	Na	23	70.0	18.9	**40.9958**	8.393	20.5	mg/L	2	Standard
	Mg	24	2441.9	1.3	**28.7407**	1.015	3.5	mg/L	33	Standard
	K	39	103.3	14.8	**0.5148**	0.084	16.3	mg/L	18	Standard
	Ca	43	130.0	6.7	**66.2293**	16.443	24.8	mg/L	72	Standard
	Fe	54	4304.3	3.3	**23.9655**	1.370	5.7	mg/L	29	Standard
	Fe	57	1760.1	5.1	**25.2913**	1.266	5.0	mg/L	382	Standard
>	**Sc-1**	45	40806.6	2.4				mg/L	39299	Standard
	Cl	35	2.7	114.6				ug/L	4	Standard
	Kr	83	2.0	50.0				ug/L	3	Standard
	Br	81	260326.6	4.2				ug/L	2287	Standard
	P	31	80.0	22.5				ug/L	80	Standard
	S	34	56.7	39.8				ug/L	45	Standard
	Sr	88	141.7	10.2				ug/L	178	Standard
	C	12	63.3	39.7				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	13.3	114.6				mg/L	3	Standard
	Dy	164	357.2	21.1				mg/L	16	Standard
	Ho-1	165	330.0	7.6				mg/L	10	Standard
	Er	166	336.7	12.4				mg/L	17	Standard
	I	127	431285.5	9.5				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		103.084	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.571	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703131301PS WG607753-01
Report Date/Time: Monday, March 27, 2017 14:18:00
Page 2

Approved: March 28, 2017

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.303
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.051
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1703131301PS WG607753-01
Report Date/Time: Monday, March 27, 2017 14:18:00
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: L1703131301SDL WG607753-02
Sample Date/Time: Monday, March 27, 2017 14:18:54
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	256347.2	1.0				ug/L	262785	Standard
	Be	9	85.0	20.4	**0.0336**	0.007	20.1	ug/L	28	Standard
	Al	27	1721951.0	1.1	**10.2004**	0.200	2.0	ug/L	2187	Standard
	Sc	45	37103.7	0.4				ug/L	39299	Standard
	Ti	47	191.3	11.9	**0.4679**	0.083	17.8	ug/L	82	Standard
	V	51	1483.9	1.6	**-0.0259**	0.004	16.7	ug/L	1876	Standard
	Cr	52	5160.9	1.2	**-0.3196**	0.014	4.4	ug/L	8221	Standard
	Cr	53	1368.4	5.2	**0.4251**	0.086	20.2	ug/L	1083	Standard
	Mn	55	4946454.9	0.5	**382.5154**	3.963	1.0	ug/L	2738	Standard
	Co	59	645.7	5.9	**0.0100**	0.003	33.6	ug/L	635	Standard
	Ni	60	787.7	2.2	**0.2676**	0.005	1.8	ug/L	261	Standard
	Cu	65	1070.4	4.6	**0.1921**	0.024	12.5	ug/L	660	Standard
	Zn	66	1879.1	3.2	**1.0014**	0.033	3.3	ug/L	558	Standard
>	Ge	72	762175.5	1.0				ug/L	807251	Standard
	As	75	8854.6	0.8	**6.8604**	0.085	1.2	ug/L	-43	Standard
	Se	82	111.6	1.9	**0.8823**	0.014	1.6	ug/L	18	Standard
	Se-1	77	169.3	7.3	**0.6299**	0.129	20.4	ug/L	127	Standard
>	Ga	71	91.7	33.3				mg/L	32	Standard
	Rb	85	968.4	9.0				ug/L	27	Standard
	Y	89	511218.1	1.8				ug/L	534994	Standard
>	Rh	103	26.7	54.1				ug/L	20	Standard
	Mo	98	552.6	2.5	**0.1085**	0.003	3.1	ug/L	285	Standard
	Ag	107	491.3	8.2	**0.0545**	0.005	9.4	ug/L	129	Standard
	Cd	111	16.3	79.8	**-0.0000**	0.007	18774.2	mg/L	6	Standard
	Cd	114	53.2	68.1	**-0.0002**	0.007	3330.9	ug/L	46	Standard
>	In	115	639507.9	1.1				ug/L	679215	Standard
	Sn	118	190.0	3.3	**-0.0655**	0.006	9.5	ug/L	411	Standard
	Sb	123	1075.1	8.6	**0.1789**	0.020	11.0	ug/L	497	Standard
	Ba	135	99526.5	1.0	**49.5914**	0.397	0.8	ug/L	43	Standard
	Ce	140	1163.4	3.4				ug/L	22	Standard
>	Tb	159	952656.1	1.6				ug/L	983965	Standard
	Ho	165	48.3	39.2				ug/L	10	Standard
	Tl	203	767.7	2.6	**0.0660**	0.002	2.5	ug/L	248	Standard
	Tl	205	1786.8	6.5	**0.0597**	0.006	9.4	ug/L	620	Standard
	Pb	206	1195.4	7.5	**0.1042**	0.012	11.5	ug/L	503	Standard
	Pb	207	1022.0	6.5	**0.1008**	0.010	9.6	ug/L	406	Standard
	Pb	208	1187.4	4.8	**0.0987**	0.007	6.8	ug/L	497	Standard
	U	238	41.0	59.1	**0.0065**	0.005	71.3	ug/L	17	Standard
>	Bi	209	571441.1	0.9				ug/L	559221	Standard

Sample ID: L1703131301SDL WG607753-02
Report Date/Time: Monday, March 27, 2017 14:21:05
Page 1

Approved: March 28, 2017

⌈	**Na**	23	16.7	62.4	**9.9535**	6.893	69.3	mg/L	2	Standard
|	**Mg**	24	510.0	12.7	**6.1880**	0.876	14.2	mg/L	33	Standard
|	**K**	39	41.7	6.9	**0.1444**	0.020	13.5	mg/L	18	Standard
|	**Ca**	43	51.7	11.2	**-36.3445**	8.558	23.5	mg/L	72	Standard
|	**Fe**	54	899.8	7.5	**5.3493**	0.428	8.0	mg/L	29	Standard
|	**Fe**	57	610.0	2.2	**4.8620**	0.321	6.6	mg/L	382	Standard
⌊>	**Sc-1**	45	37103.7	0.4				mg/L	39299	Standard
	Cl	35	0.0					ug/L	4	Standard
	Kr	83	4.3	26.6				ug/L	3	Standard
	Br	81	51540.9	1.6				ug/L	2287	Standard
	P	31	58.3	30.1				ug/L	80	Standard
	S	34	40.0	12.5				ug/L	45	Standard
	Sr	88	170.0	15.6				ug/L	178	Standard
	C	12	46.7	65.5				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	46.6	42.9				mg/L	16	Standard
	Ho-1	165	48.3	39.2				mg/L	10	Standard
	Er	166	70.0	0.0				mg/L	17	Standard
	I	127	101692.0	2.9				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		97.550	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		94.416	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703131301SDL WG607753-02
Report Date/Time: Monday, March 27, 2017 14:21:05
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	94.154
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	102.185
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1703131301SDL WG607753-02
Report Date/Time: Monday, March 27, 2017 14:21:05
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: L1703131301SDL WG607753-02
Sample Date/Time: Monday, March 27, 2017 14:21:59
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	249109.6	1.1				ug/L	262785	Standard
	Be	9	55.0	71.0	**0.0219**	0.016	73.8	ug/L	28	Standard
	Al	27	341280.9	0.6	**2.0754**	0.023	1.1	ug/L	2187	Standard
	Sc	45	37107.1	1.4				ug/L	39299	Standard
	Ti	47	71.0	17.3	**-0.0040**	0.049	1222.9	ug/L	82	Standard
	V	51	1052.7	10.9	**-0.0767**	0.015	19.2	ug/L	1876	Standard
	Cr	52	4650.7	1.5	**-0.3762**	0.009	2.4	ug/L	8221	Standard
	Cr	53	781.7	8.7	**-0.1816**	0.076	42.0	ug/L	1083	Standard
	Mn	55	847502.7	0.8	**66.5463**	0.316	0.5	ug/L	2738	Standard
	Co	59	409.3	6.1	**-0.0133**	0.003	20.6	ug/L	635	Standard
	Ni	60	329.3	5.7	**0.0523**	0.009	17.4	ug/L	261	Standard
	Cu	65	707.7	3.5	**0.0298**	0.013	42.7	ug/L	660	Standard
	Zn	66	2084.5	0.3	**1.1879**	0.003	0.3	ug/L	558	Standard
>	Ge	72	748925.8	0.4				ug/L	807251	Standard
	As	75	1719.5	2.4	**1.3944**	0.030	2.1	ug/L	-43	Standard
	Se	82	37.2	21.8	**0.2499**	0.070	28.0	ug/L	18	Standard
	Se-1	77	114.7	7.3	**0.0075**	0.099	1315.2	ug/L	127	Standard
>	Ga	71	55.0	15.7				mg/L	32	Standard
	Rb	85	231.7	32.5				ug/L	27	Standard
	Y	89	496427.4	1.3				ug/L	534994	Standard
>	Rh	103	10.0	50.0				ug/L	20	Standard
	Mo	98	132.1	7.7	**0.0077**	0.002	31.3	ug/L	285	Standard
	Ag	107	239.3	28.0	**0.0176**	0.010	57.7	ug/L	129	Standard
	Cd	111	24.2	117.2	**0.0043**	0.015	348.0	mg/L	6	Standard
	Cd	114	54.1	66.2	**0.0002**	0.007	4302.2	ug/L	46	Standard
>	In	115	630240.2	0.2				ug/L	679215	Standard
	Sn	118	158.3	12.9	**-0.0920**	0.018	20.1	ug/L	411	Standard
	Sb	123	262.1	11.5	**0.0209**	0.006	28.8	ug/L	497	Standard
	Ba	135	19527.9	1.2	**9.8576**	0.132	1.3	ug/L	43	Standard
	Ce	140	235.0	14.0				ug/L	22	Standard
>	Tb	159	923639.3	1.3				ug/L	983965	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	589.3	12.1	**0.0452**	0.009	19.2	ug/L	248	Standard
	Tl	205	1430.1	6.7	**0.0425**	0.005	11.2	ug/L	620	Standard
	Pb	206	637.7	6.8	**0.0218**	0.006	28.9	ug/L	503	Standard
	Pb	207	544.0	10.5	**0.0224**	0.009	42.0	ug/L	406	Standard
	Pb	208	650.0	3.6	**0.0233**	0.003	13.7	ug/L	497	Standard
	U	238	23.0	128.7	**0.0031**	0.006	188.1	ug/L	17	Standard
>	Bi	209	563011.7	0.4				ug/L	559221	Standard

Approved: March 28, 2017

	Na	23	1.7	173.2	**0.0634**	1.928	3039.3	mg/L	2	Standard
	Mg	24	128.3	35.1	**1.1545**	0.591	51.2	mg/L	33	Standard
	K	39	18.3	41.7	**-0.0209**	0.056	267.7	mg/L	18	Standard
	Ca	43	40.0	37.5	**-54.0466**	23.875	44.2	mg/L	72	Standard
	Fe	54	187.8	8.6	**0.9563**	0.112	11.7	mg/L	29	Standard
	Fe	57	405.0	13.4	**0.6231**	1.022	164.0	mg/L	382	Standard
>	**Sc-1**	45	37107.1	1.4				mg/L	39299	Standard
	Cl	35	0.7	173.2				ug/L	4	Standard
	Kr	83	4.7	44.6				ug/L	3	Standard
	Br	81	12565.2	0.6				ug/L	2287	Standard
	P	31	51.7	14.8				ug/L	80	Standard
	S	34	46.7	37.6				ug/L	45	Standard
	Sr	88	156.7	24.0				ug/L	178	Standard
	C	12	23.3	24.7				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	32.7	45.9				mg/L	16	Standard
	Ho-1	165	10.0	50.0				mg/L	10	Standard
	Er	166	13.3	43.3				mg/L	17	Standard
	I	127	28054.3	2.1				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		94.796	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		92.775	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703131301SDL WG607753-02
Report Date/Time: Monday, March 27, 2017 14:24:10
Page 2

Approved: March 28, 2017

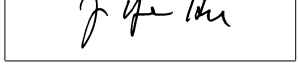
⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	92.789
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	100.678
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703131301SDL WG607753-02
Report Date/Time: Monday, March 27, 2017 14:24:10
Page 3

Approved: March 28, 2017



Method 6020 - Summary Report

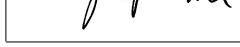
Sample ID: QC Std 6
Sample Date/Time: Monday, March 27, 2017 14:25:06
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	264675.0	4.7				ug/L	262785	Standard
	Be	9	125778.3	1.7	**50.0982**	2.855	5.7	ug/L	28	Standard
	Al	27	8590286.5	0.6	**49.3643**	1.957	4.0	ug/L	2187	Standard
	Sc	45	40611.0	2.7				ug/L	39299	Standard
	Ti	47	27297.6	0.5	**102.4141**	2.618	2.6	ug/L	82	Standard
	V	51	422019.9	0.7	**49.1003**	1.120	2.3	ug/L	1876	Standard
	Cr	52	403215.0	0.8	**49.5291**	1.222	2.5	ug/L	8221	Standard
	Cr	53	49490.7	0.8	**48.6777**	1.735	3.6	ug/L	1083	Standard
	Mn	55	681004.0	0.3	**49.8060**	1.630	3.3	ug/L	2738	Standard
	Co	59	515287.5	1.6	**49.7178**	1.238	2.5	ug/L	635	Standard
	Ni	60	110464.2	0.9	**49.7661**	1.230	2.5	ug/L	261	Standard
	Cu	65	114347.6	1.0	**49.9724**	1.341	2.7	ug/L	660	Standard
	Zn	66	68943.8	0.3	**49.8357**	1.365	2.7	ug/L	558	Standard
>	Ge	72	803878.6	3.0				ug/L	807251	Standard
	As	75	68445.3	1.1	**49.9920**	1.106	2.2	ug/L	-43	Standard
	Se	82	6283.7	1.1	**51.0103**	1.516	3.0	ug/L	18	Standard
	Se-1	77	4647.0	1.7	**50.7970**	0.728	1.4	ug/L	127	Standard
>	Ga	71	70.0	14.3				mg/L	32	Standard
	Rb	85	426.7	2.4				ug/L	27	Standard
	Y	89	539333.3	1.9				ug/L	534994	Standard
>	Rh	103	41.7	48.5				ug/L	20	Standard
	Mo	98	445048.4	0.5	**100.7796**	0.614	0.6	ug/L	285	Standard
	Ag	107	359655.3	0.4	**50.3606**	0.459	0.9	ug/L	129	Standard
	Cd	111	104760.1	0.4	**50.9977**	0.611	1.2	mg/L	6	Standard
	Cd	114	271440.5	0.6	**50.5743**	0.434	0.9	ug/L	46	Standard
>	In	115	679939.5	1.1				ug/L	679215	Standard
	Sn	118	60191.3	0.5	**50.8525**	0.517	1.0	ug/L	411	Standard
	Sb	123	275235.5	0.8	**50.5010**	0.896	1.8	ug/L	497	Standard
	Ba	135	105271.5	0.9	**49.3402**	0.962	1.9	ug/L	43	Standard
	Ce	140	301.7	21.9				ug/L	22	Standard
>	Tb	159	987405.0	1.5				ug/L	983965	Standard
	Ho	165	11.7	107.9				ug/L	10	Standard
	Tl	203	414227.3	1.0	**50.0788**	0.928	1.9	ug/L	248	Standard
	Tl	205	991601.3	1.3	**50.2933**	1.222	2.4	ug/L	620	Standard
	Pb	206	338664.8	1.2	**50.2260**	1.190	2.4	ug/L	503	Standard
	Pb	207	306637.0	1.0	**50.4268**	1.034	2.1	ug/L	406	Standard
	Pb	208	349103.7	0.5	**49.2213**	0.822	1.7	ug/L	497	Standard
	U	238	276666.6	0.8	**52.9908**	1.026	1.9	ug/L	17	Standard
>	Bi	209	579176.5	1.4				ug/L	559221	Standard

Sample ID: QC Std 6
Report Date/Time: Monday, March 27, 2017 14:27:17
Page 1

Approved: March 28, 2017



	Na	23	13.3	21.7	**6.9763**	1.676	24.0	mg/L	2	Standard
	Mg	24	401.7	7.3	**4.3051**	0.408	9.5	mg/L	33	Standard
	K	39	676.7	8.0	**4.2416**	0.340	8.0	mg/L	18	Standard
	Ca	43	55.0	55.3	**-39.2083**	40.092	102.3	mg/L	72	Standard
	Fe	54	890.2	9.6	**4.8238**	0.589	12.2	mg/L	29	Standard
	Fe	57	571.7	4.5	**3.0484**	0.242	7.9	mg/L	382	Standard
>	**Sc-1**	45	40611.0	2.7				mg/L	39299	Standard
	Cl	35	2.0	0.0				ug/L	4	Standard
	Kr	83	2.0	100.0				ug/L	3	Standard
	Br	81	3290.4	8.2				ug/L	2287	Standard
	P	31	80.0	25.0				ug/L	80	Standard
	S	34	55.0	39.6				ug/L	45	Standard
	Sr	88	138.3	19.9				ug/L	178	Standard
	C	12	16.7	34.6				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	173.2				mg/L	3	Standard
	Dy	164	23.2	49.2				mg/L	16	Standard
	Ho-1	165	11.7	107.9				mg/L	10	Standard
	Er	166	3.3	173.2				mg/L	17	Standard
	I	127	4510.7	8.5				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	100.196		
	Al	27	98.729		
	Sc	45			
	Ti	47	102.414		
	V	51	98.201		
	Cr	52	99.058		
	Cr	53			
	Mn	55	99.612		
	Co	59	99.436		
	Ni	60	99.532		
	Cu	65	99.945		
	Zn	66	99.671		
>	Ge	72		99.582	
	As	75	99.984		
	Se	82	102.021		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Monday, March 27, 2017 14:27:17
Page 2

Approved: March 28, 2017

Rb	85			
Y	89			
Rh	103			
Mo	98	100.780		
Ag	107	100.721		
Cd	111	101.995		
Cd	114			
In	115			100.107
Sn	118	101.705		
Sb	123	101.002		
Ba	135	98.680		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.158		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.443		
U	238	105.982		
Bi	209			103.568
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Monday, March 27, 2017 14:27:17
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, March 27, 2017 14:28:11
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	263730.5	0.7				ug/L	262785	Standard
	Be	9	63.3	57.1	**0.0241**	0.015	60.2	ug/L	28	Standard
	Al	27	4948.1	108.5	**0.0224**	0.031	138.7	ug/L	2187	Standard
	Sc	45	40577.6	0.2				ug/L	39299	Standard
	Ti	47	41.3	23.0	**-0.1345**	0.036	26.9	ug/L	82	Standard
	V	51	1466.7	12.6	**-0.0367**	0.023	61.3	ug/L	1876	Standard
	Cr	52	6226.3	3.3	**-0.2187**	0.031	14.1	ug/L	8221	Standard
	Cr	53	688.3	15.9	**-0.3310**	0.105	31.8	ug/L	1083	Standard
	Mn	55	5518.2	91.8	**0.2293**	0.376	163.8	ug/L	2738	Standard
	Co	59	446.3	37.4	**-0.0125**	0.016	131.7	ug/L	635	Standard
	Ni	60	264.3	13.9	**0.0125**	0.017	137.2	ug/L	261	Standard
	Cu	65	710.0	5.5	**0.0091**	0.019	206.0	ug/L	660	Standard
	Zn	66	609.3	7.2	**0.0028**	0.034	1199.3	ug/L	558	Standard
>	Ge	72	801096.2	0.9				ug/L	807251	Standard
	As	75	-3.5	466.6	**0.0458**	0.012	25.8	ug/L	-43	Standard
	Se	82	23.8	18.8	**0.1202**	0.038	31.7	ug/L	18	Standard
	Se-1	77	108.7	6.1	**-0.1503**	0.064	42.8	ug/L	127	Standard
>	Ga	71	38.3	7.5				mg/L	32	Standard
	Rb	85	33.3	17.3				ug/L	27	Standard
	Y	89	546630.6	1.5				ug/L	534994	Standard
>	Rh	103	16.7	75.5				ug/L	20	Standard
	Mo	98	376.8	16.9	**0.0613**	0.014	23.6	ug/L	285	Standard
	Ag	107	323.7	32.5	**0.0270**	0.015	55.1	ug/L	129	Standard
	Cd	111	31.8	110.2	**0.0072**	0.017	239.0	mg/L	6	Standard
	Cd	114	149.6	84.8	**0.0174**	0.024	137.1	ug/L	46	Standard
>	In	115	675509.4	0.3				ug/L	679215	Standard
	Sn	118	324.0	3.1	**0.0398**	0.008	20.3	ug/L	411	Standard
	Sb	123	580.3	22.8	**0.0762**	0.025	32.4	ug/L	497	Standard
	Ba	135	168.3	104.4	**0.0601**	0.083	138.2	ug/L	43	Standard
	Ce	140	16.7	91.7				ug/L	22	Standard
>	Tb	159	973287.9	0.3				ug/L	983965	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	232.0	72.8	**-0.0003**	0.020	7166.8	ug/L	248	Standard
	Tl	205	530.0	81.0	**-0.0055**	0.022	392.7	ug/L	620	Standard
	Pb	206	619.0	17.2	**0.0155**	0.016	101.2	ug/L	503	Standard
	Pb	207	543.3	19.9	**0.0190**	0.018	92.9	ug/L	406	Standard
	Pb	208	641.3	18.8	**0.0187**	0.017	90.6	ug/L	497	Standard
	U	238	103.0	109.5	**0.0181**	0.021	118.2	ug/L	17	Standard
>	Bi	209	583893.6	0.6				ug/L	559221	Standard

Sample ID: QC Std 7
Report Date/Time: Monday, March 27, 2017 14:30:22
Page 1

Approved: March 28, 2017

⌈	**Na**	23	0.0		**-1.0498**	0.000	0.0	mg/L	2	Standard
|	**Mg**	24	25.0	20.0	**-0.2338**	0.060	25.8	mg/L	33	Standard
|	**K**	39	21.7	13.3	**-0.0108**	0.019	174.1	mg/L	18	Standard
|	**Ca**	43	35.0	14.3	**-66.5587**	6.942	10.4	mg/L	72	Standard
|	**Fe**	54	29.5	43.3	**-0.0366**	0.072	197.4	mg/L	29	Standard
|	**Fe**	57	371.7	12.5	**-0.7130**	0.887	124.4	mg/L	382	Standard
⌊>	**Sc-1**	45	40577.6	0.2				mg/L	39299	Standard
	Cl	35	4.0	86.6				ug/L	4	Standard
	Kr	83	3.0	33.3				ug/L	3	Standard
	Br	81	2953.6	8.0				ug/L	2287	Standard
	P	31	88.3	11.8				ug/L	80	Standard
	S	34	46.7	24.7				ug/L	45	Standard
	Sr	88	150.0	17.3				ug/L	178	Standard
	C	12	20.0	100.0				mg/L	33	Standard
	N	14	6.7	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	31.9	75.0				mg/L	16	Standard
	Ho-1	165	6.7	86.6				mg/L	10	Standard
	Er	166	30.0	66.7				mg/L	17	Standard
	I	127	6156.3	7.2				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		99.238	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Monday, March 27, 2017 14:30:22
Page 2

Approved: March 28, 2017

Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	99.454
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	104.412
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Monday, March 27, 2017 14:30:22
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

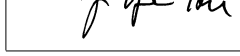
Sample ID: L1703133902
Sample Date/Time: Monday, March 27, 2017 14:31:18
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	360024.9	1.9				ug/L	262785	Standard
	Be	9	213.3	5.9	**0.0612**	0.004	6.6	ug/L	28	Standard
	Al	27	183162520.1	4.0	**772.7342**	16.590	2.1	ug/L	2187	Standard
	Sc	45	43928.6	1.1				ug/L	39299	Standard
	Ti	47	354.7	3.1	**1.0768**	0.035	3.3	ug/L	82	Standard
	V	51	-3964.4	36.7	**-0.6835**	0.174	25.5	ug/L	1876	Standard
	Cr	52	15839.3	7.2	**1.0327**	0.150	14.6	ug/L	8221	Standard
	Cr	53	45507.4	23.6	**45.7962**	11.022	24.1	ug/L	1083	Standard
	Mn	55	3309668.1	2.0	**248.7156**	5.581	2.2	ug/L	2738	Standard
	Co	59	119377.8	1.0	**11.7615**	0.163	1.4	ug/L	635	Standard
	Ni	60	20002.5	1.2	**9.1468**	0.092	1.0	ug/L	261	Standard
	Cu	65	3827.2	2.8	**1.4202**	0.048	3.3	ug/L	660	Standard
	Zn	66	26235.4	2.0	**19.1618**	0.418	2.2	ug/L	558	Standard
>	**Ge**	72	784135.6	1.1				ug/L	807251	Standard
	As	75	4953.9	7.4	**3.7510**	0.238	6.3	ug/L	-43	Standard
	Se	82	1927.9	3.4	**15.9840**	0.487	3.0	ug/L	18	Standard
	Se-1	77	6744.2	22.4	**76.2146**	17.194	22.6	ug/L	127	Standard
>	**Ga**	71	276.7	16.3				mg/L	32	Standard
	Rb	85	16705.9	3.4				ug/L	27	Standard
	Y	89	564311.6	1.5				ug/L	534994	Standard
>	**Rh**	103	1193.4	1.3				ug/L	20	Standard
	Mo	98	449.5	3.1	**0.0837**	0.004	4.7	ug/L	285	Standard
	Ag	107	206.3	7.4	**0.0121**	0.002	18.3	ug/L	129	Standard
	Cd	111	497.4	4.9	**0.2491**	0.013	5.4	mg/L	6	Standard
	Cd	114	1244.4	7.3	**0.2358**	0.016	6.8	ug/L	46	Standard
>	**In**	115	639429.9	1.2				ug/L	679215	Standard
	Sn	118	333.3	3.2	**0.0639**	0.008	12.5	ug/L	411	Standard
	Sb	123	474.0	16.2	**0.0614**	0.014	22.6	ug/L	497	Standard
	Ba	135	9565037.0	1.5	**4768.4144**	60.224	1.3	ug/L	43	Standard
	Ce	140	1720.1	5.1				ug/L	22	Standard
>	**Tb**	159	1013536.4	1.7				ug/L	983965	Standard
	Ho	165	118.3	19.1				ug/L	10	Standard
	Tl	203	830.0	25.5	**0.0837**	0.029	34.5	ug/L	248	Standard
	Tl	205	1900.1	21.0	**0.0752**	0.023	30.5	ug/L	620	Standard
	Pb	206	870.4	6.7	**0.0683**	0.010	14.8	ug/L	503	Standard
	Pb	207	725.7	3.9	**0.0633**	0.006	9.0	ug/L	406	Standard
	Pb	208	870.0	2.6	**0.0657**	0.004	6.2	ug/L	497	Standard
	U	238	2780.9	0.6	**0.5916**	0.004	0.7	ug/L	17	Standard
>	**Bi**	209	520091.1	0.4				ug/L	559221	Standard

Sample ID: L1703133902
Report Date/Time: Monday, March 27, 2017 14:33:29
Page 1

Approved: March 28, 2017



⌈	**Na**	23	291.7	2.0	**161.4810**	4.807	3.0	mg/L	2	Standard
|	**Mg**	24	37638.5	7.0	**418.2713**	25.459	6.1	mg/L	33	Standard
|	**K**	39	210.0	28.1	**1.1064**	0.340	30.7	mg/L	18	Standard
|	**Ca**	43	318.3	15.3	**297.3956**	60.933	20.5	mg/L	72	Standard
|	**Fe**	54	159.1	19.5	**0.6255**	0.161	25.7	mg/L	29	Standard
|	**Fe**	57	1143.4	12.3	**12.1944**	2.367	19.4	mg/L	382	Standard
⌊>	**Sc-1**	45	43928.6	1.1				mg/L	39299	Standard
	Cl	35	3.3	34.6				ug/L	4	Standard
	Kr	83	3.3	45.8				ug/L	3	Standard
	Br	81	1025055.2	2.4				ug/L	2287	Standard
	P	31	115.0	37.1				ug/L	80	Standard
	S	34	48.3	31.6				ug/L	45	Standard
	Sr	88	611.7	7.6				ug/L	178	Standard
	C	12	130.0	7.7				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	115.7	10.7				mg/L	16	Standard
	Ho-1	165	118.3	19.1				mg/L	10	Standard
	Er	166	160.0	12.5				mg/L	17	Standard
	I	127	456779.0	12.4				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		137.004	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		97.137	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703133902
Report Date/Time: Monday, March 27, 2017 14:33:29
Page 2

Approved: March 28, 2017

Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		94.142
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		93.003
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

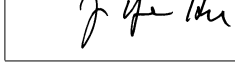
Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
V 51 Lower	V	51	

Sample ID: L1703133902
Report Date/Time: Monday, March 27, 2017 14:33:29
Page 3

Approved: March 28, 2017

Mn 55 Upper, S, EEE	Mn	55
Ba 135 Upper, S, EEE	Ba	135

Approved: March 28, 2017



Method 6020 - Summary Report

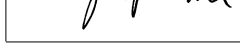
Sample ID: L1703133904
Sample Date/Time: Monday, March 27, 2017 14:34:24
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	377049.2	2.6				ug/L	262785	Standard
	Be	9	140.0	9.4	**0.0379**	0.005	12.0	ug/L	28	Standard
	Al	27	186960582.0	3.1	**754.0326**	41.616	5.5	ug/L	2187	Standard
	Sc	45	46133.5	3.1				ug/L	39299	Standard
	Ti	47	397.0	5.2	**1.1892**	0.040	3.3	ug/L	82	Standard
	V	51	-4638.0	10.3	**-0.7474**	0.075	10.1	ug/L	1876	Standard
	Cr	52	17068.6	2.7	**1.1197**	0.089	7.9	ug/L	8221	Standard
	Cr	53	55459.7	2.5	**54.2088**	2.674	4.9	ug/L	1083	Standard
	Mn	55	3319918.1	2.8	**241.4627**	11.598	4.8	ug/L	2738	Standard
	Co	59	117913.4	3.6	**11.2425**	0.626	5.6	ug/L	635	Standard
	Ni	60	20327.6	2.4	**8.9935**	0.347	3.9	ug/L	261	Standard
	Cu	65	3975.9	5.3	**1.4306**	0.130	9.1	ug/L	660	Standard
	Zn	66	23385.4	2.3	**16.4660**	0.590	3.6	ug/L	558	Standard
>	**Ge**	72	810898.0	3.7				ug/L	807251	Standard
	As	75	4652.2	0.9	**3.4148**	0.114	3.4	ug/L	-43	Standard
	Se	82	1812.2	1.5	**14.5340**	0.489	3.4	ug/L	18	Standard
	Se-1	77	8631.8	5.1	**94.8232**	7.445	7.9	ug/L	127	Standard
>	**Ga**	71	491.7	12.7				mg/L	32	Standard
	Rb	85	16472.3	2.1				ug/L	27	Standard
	Y	89	565432.8	0.9				ug/L	534994	Standard
>	**Rh**	103	1208.4	10.6				ug/L	20	Standard
	Mo	98	421.3	15.9	**0.0738**	0.016	21.1	ug/L	285	Standard
	Ag	107	231.3	66.9	**0.0147**	0.022	150.8	ug/L	129	Standard
	Cd	111	373.1	16.2	**0.1789**	0.031	17.4	mg/L	6	Standard
	Cd	114	1048.7	4.9	**0.1908**	0.012	6.1	ug/L	46	Standard
>	**In**	115	659825.1	1.3				ug/L	679215	Standard
	Sn	118	359.0	12.7	**0.0771**	0.040	51.8	ug/L	411	Standard
	Sb	123	380.0	43.4	**0.0408**	0.031	76.2	ug/L	497	Standard
	Ba	135	9552337.6	2.4	**4615.8101**	150.750	3.3	ug/L	43	Standard
	Ce	140	2151.8	1.9				ug/L	22	Standard
>	**Tb**	159	1045744.7	2.2				ug/L	983965	Standard
	Ho	165	128.3	25.0				ug/L	10	Standard
	Tl	203	553.0	17.5	**0.0440**	0.013	29.4	ug/L	248	Standard
	Tl	205	1336.7	19.3	**0.0410**	0.015	36.2	ug/L	620	Standard
	Pb	206	912.7	9.7	**0.0703**	0.013	19.1	ug/L	503	Standard
	Pb	207	749.7	12.6	**0.0634**	0.018	28.5	ug/L	406	Standard
	Pb	208	874.3	4.4	**0.0619**	0.005	8.6	ug/L	497	Standard
	U	238	2976.3	4.5	**0.6130**	0.036	5.9	ug/L	17	Standard
>	**Bi**	209	537677.2	3.0				ug/L	559221	Standard

Sample ID: L1703133904
Report Date/Time: Monday, March 27, 2017 14:36:34
Page 1

Approved: March 28, 2017



⌈	**Na**	23	255.0	7.1	**134.5134**	13.655	10.2	mg/L	2	Standard
|	**Mg**	24	40009.5	3.8	**424.1346**	29.050	6.8	mg/L	33	Standard
|	**K**	39	250.0	10.0	**1.2798**	0.171	13.3	mg/L	18	Standard
|	**Ca**	43	261.7	2.2	**207.8928**	6.055	2.9	mg/L	72	Standard
|	**Fe**	54	127.4	12.5	**0.4281**	0.063	14.8	mg/L	29	Standard
|	**Fe**	57	1216.7	4.3	**12.4873**	1.290	10.3	mg/L	382	Standard
⌊>	**Sc-1**	45	46133.5	3.1				mg/L	39299	Standard
	Cl	35	4.7	89.2				ug/L	4	Standard
	Kr	83	5.3	54.1				ug/L	3	Standard
	Br	81	941974.4	3.3				ug/L	2287	Standard
	P	31	101.7	66.8				ug/L	80	Standard
	S	34	63.3	16.4				ug/L	45	Standard
	Sr	88	613.3	1.7				ug/L	178	Standard
	C	12	100.0	26.5				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	173.2				mg/L	3	Standard
	Dy	164	88.8	18.1				mg/L	16	Standard
	Ho-1	165	128.3	25.0				mg/L	10	Standard
	Er	166	163.3	18.7				mg/L	17	Standard
	I	127	549301.1	7.4				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		143.482	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		100.452	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703133904
Report Date/Time: Monday, March 27, 2017 14:36:34
Page 2

Approved: March 28, 2017

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.145
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.148
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
V 51 Lower	V	51	

Sample ID: L1703133904
Report Date/Time: Monday, March 27, 2017 14:36:34
Page 3

Approved: March 28, 2017

Mn 55 Upper, S, EEE	Mn	55
Ba 135 Upper, S, EEE	Ba	135

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: L1703133905
Sample Date/Time: Monday, March 27, 2017 14:37:28
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	336003.3	1.0				ug/L	262785	Standard
	Be	9	646.7	4.7	**0.2013**	0.010	4.8	ug/L	28	Standard
	Al	27	44146886.1	0.6	**199.6254**	2.659	1.3	ug/L	2187	Standard
	Sc	45	47494.3	0.9				ug/L	39299	Standard
	Ti	47	551.0	6.4	**1.6599**	0.106	6.4	ug/L	82	Standard
	V	51	38.4	4164.9	**-0.2042**	0.177	86.6	ug/L	1876	Standard
	Cr	52	68119.1	0.5	**7.0332**	0.087	1.2	ug/L	8221	Standard
	Cr	53	39917.9	10.6	**36.7036**	4.103	11.2	ug/L	1083	Standard
	Mn	55	22383504.5	0.3	**1545.8215**	13.225	0.9	ug/L	2738	Standard
	Co	59	255071.2	0.7	**23.1351**	0.274	1.2	ug/L	635	Standard
	Ni	60	44202.4	1.1	**18.6763**	0.296	1.6	ug/L	261	Standard
	Cu	65	3166.3	1.9	**1.0061**	0.016	1.6	ug/L	660	Standard
	Zn	66	56979.6	1.2	**38.6649**	0.659	1.7	ug/L	558	Standard
>	**Ge**	72	853745.3	1.0				ug/L	807251	Standard
	As	75	4939.6	7.2	**3.4408**	0.247	7.2	ug/L	-43	Standard
	Se	82	365.9	6.9	**2.7255**	0.203	7.4	ug/L	18	Standard
	Se-1	77	3259.0	8.5	**33.0741**	3.032	9.2	ug/L	127	Standard
>	**Ga**	71	216.7	14.1				mg/L	32	Standard
	Rb	85	18775.0	3.1				ug/L	27	Standard
	Y	89	601301.2	1.5				ug/L	534994	Standard
>	**Rh**	103	306.7	13.9				ug/L	20	Standard
	Mo	98	709.9	2.3	**0.1316**	0.002	1.4	ug/L	285	Standard
	Ag	107	154.7	8.1	**0.0024**	0.001	61.5	ug/L	129	Standard
	Cd	111	569.4	1.3	**0.2608**	0.001	0.6	mg/L	6	Standard
	Cd	114	1335.6	7.8	**0.2311**	0.020	8.8	ug/L	46	Standard
>	**In**	115	700266.4	1.1				ug/L	679215	Standard
	Sn	118	538.7	3.9	**0.2071**	0.020	9.8	ug/L	411	Standard
	Sb	123	669.7	6.5	**0.0883**	0.007	7.8	ug/L	497	Standard
	Ba	135	3050276.8	1.1	**1388.4797**	3.392	0.2	ug/L	43	Standard
	Ce	140	41221.0	3.1				ug/L	22	Standard
>	**Tb**	159	1066359.7	0.3				ug/L	983965	Standard
	Ho	165	473.3	12.2				ug/L	10	Standard
	Tl	203	488.7	6.5	**0.0292**	0.004	13.6	ug/L	248	Standard
	Tl	205	1163.4	9.6	**0.0251**	0.006	23.6	ug/L	620	Standard
	Pb	206	1053.0	1.5	**0.0760**	0.003	4.3	ug/L	503	Standard
	Pb	207	920.0	1.6	**0.0772**	0.003	4.0	ug/L	406	Standard
	Pb	208	1071.7	3.2	**0.0756**	0.005	6.8	ug/L	497	Standard
	U	238	203.7	5.4	**0.0364**	0.002	4.9	ug/L	17	Standard
>	**Bi**	209	597143.1	0.7				ug/L	559221	Standard

Sample ID: L1703133905
Report Date/Time: Monday, March 27, 2017 14:39:39
Page 1

Approved: March 28, 2017

⌈	**Na**	23	81.7	23.2	**41.0220**	9.668	23.6	mg/L	2	Standard
|	**Mg**	24	9764.8	0.1	**100.0037**	0.965	1.0	mg/L	33	Standard
|	**K**	39	200.0	16.4	**0.9597**	0.191	19.9	mg/L	18	Standard
|	**Ca**	43	105.0	8.2	**10.4203**	11.353	108.9	mg/L	72	Standard
|	**Fe**	54	940.9	5.9	**4.3321**	0.267	6.2	mg/L	29	Standard
|	**Fe**	57	746.7	6.1	**4.3082**	0.661	15.3	mg/L	382	Standard
⌊>	**Sc-1**	45	47494.3	0.9				mg/L	39299	Standard
	Cl	35	0.7	173.2				ug/L	4	Standard
	Kr	83	4.7	44.6				ug/L	3	Standard
	Br	81	163491.0	2.3				ug/L	2287	Standard
	P	31	140.0	32.7				ug/L	80	Standard
	S	34	63.3	19.9				ug/L	45	Standard
	Sr	88	303.3	1.9				ug/L	178	Standard
	C	12	313.3	27.9				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	50.0	69.3				mg/L	3	Standard
	Dy	164	548.3	18.5				mg/L	16	Standard
	Ho-1	165	473.3	12.2				mg/L	10	Standard
	Er	166	383.3	10.9				mg/L	17	Standard
	I	127	1275698.8	7.0				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		127.863	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		105.760	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703133905
Report Date/Time: Monday, March 27, 2017 14:39:39
Page 2

Approved: March 28, 2017

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.099	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	106.781	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1703133905
Report Date/Time: Monday, March 27, 2017 14:39:39
Page 3

Approved: March 28, 2017

Ba 135 Upper, S, EEE	Ba	135

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: L1703133906
Sample Date/Time: Monday, March 27, 2017 14:40:34
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	338010.5	0.7				ug/L	262785	Standard
	Be	9	76.7	26.4	**0.0226**	0.006	27.3	ug/L	28	Standard
	Al	27	5917984.0	2.3	**26.5932**	0.548	2.1	ug/L	2187	Standard
	Sc	45	43184.8	2.0				ug/L	39299	Standard
	Ti	47	581.0	5.3	**1.8493**	0.114	6.2	ug/L	82	Standard
	V	51	3149.3	12.9	**0.1516**	0.047	31.2	ug/L	1876	Standard
	Cr	52	68128.2	0.4	**7.3560**	0.039	0.5	ug/L	8221	Standard
	Cr	53	16564.1	1.9	**15.2559**	0.292	1.9	ug/L	1083	Standard
	Mn	55	682881.4	1.0	**48.8772**	0.580	1.2	ug/L	2738	Standard
	Co	59	5691.4	4.7	**0.4824**	0.026	5.3	ug/L	635	Standard
	Ni	60	4472.0	2.2	**1.8692**	0.044	2.4	ug/L	261	Standard
	Cu	65	2526.9	3.2	**0.7835**	0.034	4.3	ug/L	660	Standard
	Zn	66	4779.4	0.4	**2.9687**	0.013	0.4	ug/L	558	Standard
>	Ge	72	820826.3	0.2				ug/L	807251	Standard
	As	75	3158.9	1.8	**2.3046**	0.036	1.5	ug/L	-43	Standard
	Se	82	450.4	4.7	**3.5097**	0.165	4.7	ug/L	18	Standard
	Se-1	77	637.0	4.3	**5.6278**	0.286	5.1	ug/L	127	Standard
>	Ga	71	276.7	14.6				mg/L	32	Standard
	Rb	85	1202544.5	1.4				ug/L	27	Standard
	Y	89	567215.6	0.4				ug/L	534994	Standard
>	Rh	103	180.0	2.8				ug/L	20	Standard
	Mo	98	4175.4	1.3	**0.9331**	0.012	1.3	ug/L	285	Standard
	Ag	107	224.3	39.7	**0.0132**	0.012	94.7	ug/L	129	Standard
	Cd	111	123.9	24.7	**0.0526**	0.015	28.0	mg/L	6	Standard
	Cd	114	355.1	20.0	**0.0563**	0.013	23.4	ug/L	46	Standard
>	In	115	671433.2	0.6				ug/L	679215	Standard
	Sn	118	555.3	2.6	**0.2404**	0.012	5.0	ug/L	411	Standard
	Sb	123	846.5	7.4	**0.1263**	0.011	8.5	ug/L	497	Standard
	Ba	135	209860.9	1.6	**99.6139**	1.563	1.6	ug/L	43	Standard
	Ce	140	7295.1	1.2				ug/L	22	Standard
>	Tb	159	1006203.2	0.8				ug/L	983965	Standard
	Ho	165	118.3	25.5				ug/L	10	Standard
	Tl	203	795.7	5.5	**0.0695**	0.005	6.6	ug/L	248	Standard
	Tl	205	2056.8	7.3	**0.0736**	0.007	9.5	ug/L	620	Standard
	Pb	206	1639.1	4.9	**0.1712**	0.010	6.0	ug/L	503	Standard
	Pb	207	1388.4	3.1	**0.1621**	0.006	3.4	ug/L	406	Standard
	Pb	208	1601.7	7.2	**0.1581**	0.015	9.3	ug/L	497	Standard
	U	238	1367.1	6.0	**0.2640**	0.014	5.2	ug/L	17	Standard
>	Bi	209	571090.8	0.8				ug/L	559221	Standard

Sample ID: L1703133906
Report Date/Time: Monday, March 27, 2017 14:42:45
Page 1

Approved: March 28, 2017

⌈	**Na**	23	13.3	57.3	**6.4529**	4.220	65.4	mg/L	2	Standard
|	**Mg**	24	10276.8	2.2	**115.8524**	3.136	2.7	mg/L	33	Standard
|	**K**	39	3422.1	5.2	**20.7484**	1.224	5.9	mg/L	18	Standard
|	**Ca**	43	73.3	25.8	**-19.0866**	23.622	123.8	mg/L	72	Standard
|	**Fe**	54	130.5	21.6	**0.4902**	0.159	32.5	mg/L	29	Standard
|	**Fe**	57	486.7	10.7	**0.8994**	0.864	96.0	mg/L	382	Standard
⌊>	**Sc-1**	45	43184.8	2.0				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	2.3	49.5				ug/L	3	Standard
	Br	81	215766.9	3.8				ug/L	2287	Standard
	P	31	76.7	30.8				ug/L	80	Standard
	S	34	56.7	10.2				ug/L	45	Standard
	Sr	88	216.7	13.1				ug/L	178	Standard
	C	12	120.0	43.3				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	30.0	33.3				mg/L	3	Standard
	Dy	164	153.6	20.7				mg/L	16	Standard
	Ho-1	165	118.3	25.5				mg/L	10	Standard
	Er	166	133.3	38.5				mg/L	17	Standard
	I	127	294016.5	2.6				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		128.626	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		101.682	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703133906
Report Date/Time: Monday, March 27, 2017 14:42:45
Page 2

Approved: March 28, 2017

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.854
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.123
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: L1703133906
Report Date/Time: Monday, March 27, 2017 14:42:45
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

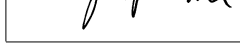
Sample ID: L1703133907
Sample Date/Time: Monday, March 27, 2017 14:43:39
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	303493.0	1.1				ug/L	262785	Standard
	Be	9	101.7	22.2	**0.0341**	0.008	23.4	ug/L	28	Standard
	Al	27	14801855.7	1.9	**74.0897**	0.891	1.2	ug/L	2187	Standard
	Sc	45	44645.7	0.7				ug/L	39299	Standard
	Ti	47	387.3	4.7	**1.1081**	0.065	5.9	ug/L	82	Standard
	V	51	-57.0	790.8	**-0.2151**	0.050	23.5	ug/L	1876	Standard
	Cr	52	10664.1	0.5	**0.2811**	0.006	2.0	ug/L	8221	Standard
	Cr	53	11132.4	9.4	**9.7052**	1.040	10.7	ug/L	1083	Standard
	Mn	55	3858144.9	0.3	**271.5456**	1.542	0.6	ug/L	2738	Standard
	Co	59	6565.4	0.5	**0.5529**	0.004	0.7	ug/L	635	Standard
	Ni	60	3089.6	2.4	**1.2315**	0.030	2.5	ug/L	261	Standard
	Cu	65	1765.1	0.7	**0.4407**	0.004	1.0	ug/L	660	Standard
	Zn	66	6110.9	0.7	**3.8337**	0.024	0.6	ug/L	558	Standard
>	Ge	72	837225.4	0.3				ug/L	807251	Standard
	As	75	9565.6	0.3	**6.7473**	0.033	0.5	ug/L	-43	Standard
	Se	82	442.7	4.8	**3.3798**	0.166	4.9	ug/L	18	Standard
	Se-1	77	803.4	7.5	**7.2844**	0.664	9.1	ug/L	127	Standard
>	Ga	71	81.7	36.9				mg/L	32	Standard
	Rb	85	75645.0	1.2				ug/L	27	Standard
	Y	89	576868.3	0.5				ug/L	534994	Standard
>	Rh	103	115.0	11.5				ug/L	20	Standard
	Mo	98	576.5	0.9	**0.1050**	0.002	1.5	ug/L	285	Standard
	Ag	107	132.0	7.2	**-0.0003**	0.001	488.3	ug/L	129	Standard
	Cd	111	79.9	10.5	**0.0302**	0.004	12.9	mg/L	6	Standard
	Cd	114	244.3	18.7	**0.0345**	0.009	25.0	ug/L	46	Standard
>	In	115	685441.6	0.4				ug/L	679215	Standard
	Sn	118	398.7	2.9	**0.0987**	0.010	9.8	ug/L	411	Standard
	Sb	123	206.7	10.4	**0.0066**	0.004	61.0	ug/L	497	Standard
	Ba	135	814877.3	1.0	**378.9484**	4.607	1.2	ug/L	43	Standard
	Ce	140	3108.7	3.2				ug/L	22	Standard
>	Tb	159	1045970.0	1.1				ug/L	983965	Standard
	Ho	165	65.0	20.4				ug/L	10	Standard
	Tl	203	630.7	4.0	**0.0466**	0.004	7.6	ug/L	248	Standard
	Tl	205	1495.1	6.0	**0.0421**	0.005	11.0	ug/L	620	Standard
	Pb	206	809.4	4.3	**0.0421**	0.004	9.4	ug/L	503	Standard
	Pb	207	663.0	6.1	**0.0372**	0.007	18.1	ug/L	406	Standard
	Pb	208	828.7	1.2	**0.0435**	0.002	5.2	ug/L	497	Standard
	U	238	99.7	12.9	**0.0173**	0.002	13.3	ug/L	17	Standard
>	Bi	209	591237.4	0.9				ug/L	559221	Standard

Sample ID: L1703133907
Report Date/Time: Monday, March 27, 2017 14:45:50
Page 1

Approved: March 28, 2017



	Na	23	26.7	47.2	**13.5620**	6.850	50.5	mg/L	2	Standard
	Mg	24	3587.1	1.9	**38.7525**	0.738	1.9	mg/L	33	Standard
	K	39	335.0	13.7	**1.8255**	0.258	14.2	mg/L	18	Standard
	Ca	43	65.0	15.4	**-32.6939**	12.800	39.2	mg/L	72	Standard
	Fe	54	3750.0	5.1	**19.0217**	0.871	4.6	mg/L	29	Standard
	Fe	57	1656.8	2.4	**20.6843**	0.540	2.6	mg/L	382	Standard
>	**Sc-1**	45	44645.7	0.7				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	3.7	68.6				ug/L	3	Standard
	Br	81	225894.8	5.5				ug/L	2287	Standard
	P	31	81.7	43.4				ug/L	80	Standard
	S	34	66.7	8.7				ug/L	45	Standard
	Sr	88	236.7	10.0				ug/L	178	Standard
	C	12	30.0	0.0				mg/L	33	Standard
	N	14	10.0	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	83.3	73.5				mg/L	16	Standard
	Ho-1	165	65.0	20.4				mg/L	10	Standard
	Er	166	70.0	65.5				mg/L	17	Standard
	I	127	197648.3	7.0				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		115.491	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		103.713	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703133907
Report Date/Time: Monday, March 27, 2017 14:45:50
Page 2

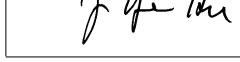
Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.917
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	105.725
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: March 28, 2017



Method 6020 - Summary Report

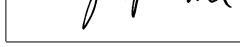
Sample ID: L1703133908
Sample Date/Time: Monday, March 27, 2017 14:46:44
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	297385.1	0.5				ug/L	262785	Standard
	Be	9	158.3	10.2	**0.0548**	0.006	10.8	ug/L	28	Standard
	Al	27	10597017.5	0.8	**54.1333**	0.617	1.1	ug/L	2187	Standard
	Sc	45	44171.0	1.6				ug/L	39299	Standard
	Ti	47	2818.3	4.3	**9.9313**	0.537	5.4	ug/L	82	Standard
	V	51	5880.8	8.9	**0.4541**	0.068	14.9	ug/L	1876	Standard
	Cr	52	166469.2	0.5	**19.1052**	0.266	1.4	ug/L	8221	Standard
	Cr	53	25940.5	1.0	**24.0775**	0.224	0.9	ug/L	1083	Standard
	Mn	55	8804754.7	0.4	**622.5518**	5.934	1.0	ug/L	2738	Standard
	Co	59	8331.6	2.2	**0.7200**	0.024	3.4	ug/L	635	Standard
	Ni	60	61377.4	1.0	**26.5990**	0.183	0.7	ug/L	261	Standard
	Cu	65	6371.3	2.6	**2.3953**	0.039	1.6	ug/L	660	Standard
	Zn	66	13806.3	0.8	**9.2601**	0.109	1.2	ug/L	558	Standard
>	**Ge**	72	833758.2	1.3				ug/L	807251	Standard
	As	75	2652.3	3.4	**1.9132**	0.040	2.1	ug/L	-43	Standard
	Se	82	761.5	5.9	**5.8888**	0.280	4.8	ug/L	18	Standard
	Se-1	77	617.0	2.8	**5.3024**	0.116	2.2	ug/L	127	Standard
>	**Ga**	71	653.3	4.5				mg/L	32	Standard
	Rb	85	25244.4	2.6				ug/L	27	Standard
	Y	89	569550.8	0.4				ug/L	534994	Standard
>	**Rh**	103	100.0	26.5				ug/L	20	Standard
	Mo	98	2266.3	2.7	**0.4864**	0.013	2.7	ug/L	285	Standard
	Ag	107	160.3	3.7	**0.0037**	0.001	20.7	ug/L	129	Standard
	Cd	111	362.7	5.6	**0.1674**	0.010	5.8	mg/L	6	Standard
	Cd	114	1053.6	10.8	**0.1847**	0.021	11.4	ug/L	46	Standard
>	**In**	115	683044.7	0.2				ug/L	679215	Standard
	Sn	118	427.3	3.2	**0.1241**	0.011	9.1	ug/L	411	Standard
	Sb	123	377.8	0.4	**0.0380**	0.000	1.1	ug/L	497	Standard
	Ba	135	449075.7	0.5	**209.5573**	1.267	0.6	ug/L	43	Standard
	Ce	140	11517.7	5.3				ug/L	22	Standard
>	**Tb**	159	1045028.0	1.0				ug/L	983965	Standard
	Ho	165	225.0	33.6				ug/L	10	Standard
	Tl	203	823.4	7.7	**0.0701**	0.008	11.6	ug/L	248	Standard
	Tl	205	1825.1	4.3	**0.0592**	0.005	7.8	ug/L	620	Standard
	Pb	206	1866.4	3.4	**0.1977**	0.007	3.5	ug/L	503	Standard
	Pb	207	1557.1	2.1	**0.1831**	0.004	2.2	ug/L	406	Standard
	Pb	208	1874.0	0.6	**0.1898**	0.004	1.9	ug/L	497	Standard
	U	238	169.0	18.1	**0.0305**	0.006	19.5	ug/L	17	Standard
>	**Bi**	209	587241.0	0.8				ug/L	559221	Standard

Sample ID: L1703133908
Report Date/Time: Monday, March 27, 2017 14:48:55
Page 1

Approved: March 28, 2017



⌈	**Na**	23	21.7	26.6	**10.9275**	3.060	28.0	mg/L	2	Standard
|	**Mg**	24	3388.7	4.1	**37.0018**	2.164	5.8	mg/L	33	Standard
|	**K**	39	211.7	13.4	**1.1133**	0.184	16.5	mg/L	18	Standard
|	**Ca**	43	66.7	31.2	**-29.4358**	28.151	95.6	mg/L	72	Standard
|	**Fe**	54	6791.6	1.6	**35.0016**	0.778	2.2	mg/L	29	Standard
|	**Fe**	57	2136.8	8.9	**29.3277**	3.492	11.9	mg/L	382	Standard
⌊>	**Sc-1**	45	44171.0	1.6				mg/L	39299	Standard
	Cl	35	3.3	91.7				ug/L	4	Standard
	Kr	83	4.3	58.1				ug/L	3	Standard
	Br	81	375535.6	6.3				ug/L	2287	Standard
	P	31	83.3	35.2				ug/L	80	Standard
	S	34	41.7	50.0				ug/L	45	Standard
	Sr	88	198.3	20.2				ug/L	178	Standard
	C	12	30.0	57.7				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	13.3	114.6				mg/L	3	Standard
	Dy	164	354.2	13.5				mg/L	16	Standard
	Ho-1	165	225.0	33.6				mg/L	10	Standard
	Er	166	190.0	32.0				mg/L	17	Standard
	I	127	427142.5	8.9				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		113.167	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		103.284	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703133908
Report Date/Time: Monday, March 27, 2017 14:48:55
Page 2

Approved: March 28, 2017

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.564
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.011
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1703133908
Report Date/Time: Monday, March 27, 2017 14:48:55
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

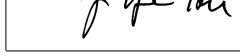
Sample ID: L1703133909
Sample Date/Time: Monday, March 27, 2017 14:49:50
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	300085.0	2.0				ug/L	262785	Standard
	Be	9	130.0	10.2	**0.0444**	0.005	12.2	ug/L	28	Standard
	Al	27	10425228.8	1.0	**52.7845**	0.845	1.6	ug/L	2187	Standard
	Sc	45	44278.0	2.3				ug/L	39299	Standard
	Ti	47	3145.0	12.7	**11.0565**	1.524	13.8	ug/L	82	Standard
	V	51	8093.7	9.8	**0.6973**	0.085	12.2	ug/L	1876	Standard
	Cr	52	181343.1	0.7	**20.7787**	0.275	1.3	ug/L	8221	Standard
	Cr	53	27202.7	1.1	**25.1535**	0.483	1.9	ug/L	1083	Standard
	Mn	55	8774394.9	0.1	**616.9303**	5.812	0.9	ug/L	2738	Standard
	Co	59	8931.3	0.4	**0.7711**	0.008	1.0	ug/L	635	Standard
	Ni	60	65618.5	0.9	**28.2867**	0.456	1.6	ug/L	261	Standard
	Cu	65	7295.8	0.8	**2.7702**	0.040	1.4	ug/L	660	Standard
	Zn	66	14608.4	1.1	**9.7664**	0.142	1.5	ug/L	558	Standard
>	**Ge**	72	838427.9	0.9				ug/L	807251	Standard
	As	75	2501.7	3.1	**1.7979**	0.062	3.4	ug/L	-43	Standard
	Se	82	722.7	4.1	**5.5555**	0.213	3.8	ug/L	18	Standard
	Se-1	77	607.7	4.3	**5.1643**	0.232	4.5	ug/L	127	Standard
>	**Ga**	71	816.7	5.7				mg/L	32	Standard
	Rb	85	27015.7	1.7				ug/L	27	Standard
	Y	89	579076.9	0.5				ug/L	534994	Standard
>	**Rh**	103	113.3	11.1				ug/L	20	Standard
	Mo	98	2204.3	1.1	**0.4739**	0.007	1.5	ug/L	285	Standard
	Ag	107	169.7	7.5	**0.0051**	0.002	33.2	ug/L	129	Standard
	Cd	111	295.5	6.6	**0.1352**	0.009	6.6	mg/L	6	Standard
	Cd	114	850.5	3.3	**0.1475**	0.005	3.4	ug/L	46	Standard
>	**In**	115	681100.0	0.4				ug/L	679215	Standard
	Sn	118	416.0	10.8	**0.1156**	0.039	34.0	ug/L	411	Standard
	Sb	123	417.5	5.6	**0.0455**	0.005	10.0	ug/L	497	Standard
	Ba	135	445826.1	1.0	**208.6381**	2.493	1.2	ug/L	43	Standard
	Ce	140	13646.1	1.7				ug/L	22	Standard
>	**Tb**	159	1046033.3	2.1				ug/L	983965	Standard
	Ho	165	258.3	12.9				ug/L	10	Standard
	Tl	203	617.0	0.7	**0.0451**	0.001	1.8	ug/L	248	Standard
	Tl	205	1476.7	4.2	**0.0413**	0.003	7.4	ug/L	620	Standard
	Pb	206	2629.6	1.6	**0.3074**	0.005	1.5	ug/L	503	Standard
	Pb	207	2210.2	0.7	**0.2873**	0.004	1.5	ug/L	406	Standard
	Pb	208	2684.8	1.3	**0.3007**	0.006	2.2	ug/L	497	Standard
	U	238	132.3	5.7	**0.0234**	0.002	6.5	ug/L	17	Standard
>	**Bi**	209	590400.6	0.5				ug/L	559221	Standard

Sample ID: L1703133909
Report Date/Time: Monday, March 27, 2017 14:52:01
Page 1

Approved: March 28, 2017



⌈	**Na**	23	31.7	9.1	**16.4369**	1.213	7.4	mg/L	2	Standard
|	**Mg**	24	3230.3	4.1	**35.1292**	0.663	1.9	mg/L	33	Standard
|	**K**	39	245.0	10.8	**1.3056**	0.131	10.0	mg/L	18	Standard
|	**Ca**	43	75.0	43.7	**-18.4888**	44.393	240.1	mg/L	72	Standard
|	**Fe**	54	6447.6	6.1	**33.1191**	1.493	4.5	mg/L	29	Standard
|	**Fe**	57	2068.5	4.0	**28.0661**	1.990	7.1	mg/L	382	Standard
⌊>	**Sc-1**	45	44278.0	2.3				mg/L	39299	Standard
	Cl	35	3.3	91.7				ug/L	4	Standard
	Kr	83	4.7	81.1				ug/L	3	Standard
	Br	81	364159.6	2.7				ug/L	2287	Standard
	P	31	98.3	32.7				ug/L	80	Standard
	S	34	46.7	34.4				ug/L	45	Standard
	Sr	88	190.0	4.6				ug/L	178	Standard
	C	12	46.7	44.6				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	16.7	124.9				mg/L	3	Standard
	Dy	164	396.0	8.9				mg/L	16	Standard
	Ho-1	165	258.3	12.9				mg/L	10	Standard
	Er	166	293.3	7.9				mg/L	17	Standard
	I	127	378677.0	7.4				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		114.194	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		103.862	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703133909
Report Date/Time: Monday, March 27, 2017 14:52:01
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.277
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	105.576
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1703133909
Report Date/Time: Monday, March 27, 2017 14:52:01
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

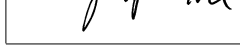
Sample ID: L1703133911
Sample Date/Time: Monday, March 27, 2017 14:52:55
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	296114.4	1.6				ug/L	262785	Standard
	Be	9	670.0	2.7	**0.2369**	0.006	2.7	ug/L	28	Standard
	Al	27	8265953.5	0.9	**42.4078**	0.378	0.9	ug/L	2187	Standard
	Sc	45	43557.5	2.5				ug/L	39299	Standard
	Ti	47	215.3	1.8	**0.4879**	0.012	2.4	ug/L	82	Standard
	V	51	1000.1	31.0	**-0.0964**	0.035	36.5	ug/L	1876	Standard
	Cr	52	10377.9	0.9	**0.2481**	0.019	7.5	ug/L	8221	Standard
	Cr	53	5976.2	7.6	**4.7434**	0.473	10.0	ug/L	1083	Standard
	Mn	55	8553427.5	1.6	**602.8884**	7.195	1.2	ug/L	2738	Standard
	Co	59	2833.3	1.1	**0.2072**	0.003	1.6	ug/L	635	Standard
	Ni	60	1739.4	1.1	**0.6473**	0.008	1.2	ug/L	261	Standard
	Cu	65	2335.8	0.9	**0.6827**	0.013	2.0	ug/L	660	Standard
	Zn	66	9302.5	1.3	**6.0747**	0.074	1.2	ug/L	558	Standard
>	Ge	72	836280.1	0.6				ug/L	807251	Standard
	As	75	714.3	2.7	**0.5491**	0.013	2.3	ug/L	-43	Standard
	Se	82	301.3	5.5	**2.2786**	0.116	5.1	ug/L	18	Standard
	Se-1	77	485.0	4.9	**3.8591**	0.264	6.8	ug/L	127	Standard
>	Ga	71	65.0	20.4				mg/L	32	Standard
	Rb	85	13881.4	1.8				ug/L	27	Standard
	Y	89	607537.7	0.4				ug/L	534994	Standard
>	Rh	103	45.0	50.9				ug/L	20	Standard
	Mo	98	49.4	19.6	**-0.0135**	0.002	16.3	ug/L	285	Standard
	Ag	107	170.3	10.0	**0.0050**	0.002	46.1	ug/L	129	Standard
	Cd	111	303.9	8.3	**0.1381**	0.013	9.6	mg/L	6	Standard
	Cd	114	751.0	9.5	**0.1279**	0.014	11.3	ug/L	46	Standard
>	In	115	687054.0	0.9				ug/L	679215	Standard
	Sn	118	336.7	10.2	**0.0460**	0.030	65.3	ug/L	411	Standard
	Sb	123	165.4	19.5	**-0.0010**	0.006	553.1	ug/L	497	Standard
	Ba	135	689271.3	1.2	**319.8037**	5.985	1.9	ug/L	43	Standard
	Ce	140	25598.3	0.7				ug/L	22	Standard
>	Tb	159	1032218.4	1.1				ug/L	983965	Standard
	Ho	165	1471.7	2.1				ug/L	10	Standard
	Tl	203	695.7	1.8	**0.0532**	0.002	3.9	ug/L	248	Standard
	Tl	205	1695.1	12.0	**0.0509**	0.010	19.4	ug/L	620	Standard
	Pb	206	770.0	2.7	**0.0348**	0.002	6.3	ug/L	503	Standard
	Pb	207	661.7	2.6	**0.0355**	0.004	11.2	ug/L	406	Standard
	Pb	208	799.0	2.2	**0.0378**	0.004	9.3	ug/L	497	Standard
	U	238	70.3	29.1	**0.0116**	0.004	31.8	ug/L	17	Standard
>	Bi	209	599666.9	1.2				ug/L	559221	Standard

Sample ID: L1703133911
Report Date/Time: Monday, March 27, 2017 14:55:06
Page 1

Approved: March 28, 2017



	Na	23	18.3	41.7	**9.2380**	4.297	46.5	mg/L	2	Standard
	Mg	24	2366.9	3.8	**26.0407**	1.032	4.0	mg/L	33	Standard
	K	39	176.7	4.3	**0.9174**	0.022	2.4	mg/L	18	Standard
	Ca	43	83.3	15.1	**-6.3302**	18.753	296.2	mg/L	72	Standard
	Fe	54	611.0	5.6	**3.0113**	0.242	8.0	mg/L	29	Standard
	Fe	57	580.0	11.3	**2.4814**	1.293	52.1	mg/L	382	Standard
>	**Sc-1**	45	43557.5	2.5				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	3.3	96.4				ug/L	3	Standard
	Br	81	146761.3	3.5				ug/L	2287	Standard
	P	31	86.7	24.0				ug/L	80	Standard
	S	34	43.3	17.6				ug/L	45	Standard
	Sr	88	175.0	20.0				ug/L	178	Standard
	C	12	50.0	20.0				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	1741.1	4.9				mg/L	16	Standard
	Ho-1	165	1471.7	2.1				mg/L	10	Standard
	Er	166	1510.1	6.3				mg/L	17	Standard
	I	127	55324.3	4.4				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		112.683	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		103.596	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703133911
Report Date/Time: Monday, March 27, 2017 14:55:06
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	101.154
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	107.233
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1703133911
Report Date/Time: Monday, March 27, 2017 14:55:06
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

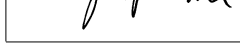
Sample ID: L1703133913
Sample Date/Time: Monday, March 27, 2017 14:56:00
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	294379.2	1.4				ug/L	262785	Standard
	Be	9	185.0	18.9	**0.0648**	0.012	18.1	ug/L	28	Standard
	Al	27	10001915.5	0.8	**51.6162**	0.318	0.6	ug/L	2187	Standard
	Sc	45	43122.9	0.9				ug/L	39299	Standard
	Ti	47	752.7	20.0	**2.4155**	0.489	20.2	ug/L	82	Standard
	V	51	3055.7	6.3	**0.1334**	0.024	18.2	ug/L	1876	Standard
	Cr	52	34567.1	1.6	**3.1471**	0.038	1.2	ug/L	8221	Standard
	Cr	53	9144.4	2.3	**7.7692**	0.177	2.3	ug/L	1083	Standard
	Mn	55	3404680.7	0.7	**239.1240**	3.308	1.4	ug/L	2738	Standard
	Co	59	25736.8	0.4	**2.3256**	0.049	2.1	ug/L	635	Standard
	Ni	60	40786.8	1.4	**17.5296**	0.288	1.6	ug/L	261	Standard
	Cu	65	2000.1	2.2	**0.5381**	0.006	1.1	ug/L	660	Standard
	Zn	66	12408.4	1.2	**8.2245**	0.215	2.6	ug/L	558	Standard
>	Ge	72	839043.2	1.8				ug/L	807251	Standard
	As	75	3651.7	0.7	**2.6004**	0.028	1.1	ug/L	-43	Standard
	Se	82	367.3	1.6	**2.7855**	0.040	1.4	ug/L	18	Standard
	Se-1	77	476.0	3.5	**3.7439**	0.097	2.6	ug/L	127	Standard
>	Ga	71	188.3	6.1				mg/L	32	Standard
	Rb	85	25960.6	1.3				ug/L	27	Standard
	Y	89	573204.4	1.4				ug/L	534994	Standard
>	Rh	103	81.7	19.7				ug/L	20	Standard
	Mo	98	278.6	8.3	**0.0383**	0.006	15.0	ug/L	285	Standard
	Ag	107	119.3	6.5	**-0.0020**	0.001	63.0	ug/L	129	Standard
	Cd	111	585.3	2.4	**0.2755**	0.003	0.9	mg/L	6	Standard
	Cd	114	1535.9	2.2	**0.2744**	0.004	1.5	ug/L	46	Standard
>	In	115	682461.8	1.7				ug/L	679215	Standard
	Sn	118	343.7	4.2	**0.0537**	0.013	24.6	ug/L	411	Standard
	Sb	123	205.5	7.8	**0.0066**	0.004	54.0	ug/L	497	Standard
	Ba	135	390771.2	0.8	**182.5457**	4.049	2.2	ug/L	43	Standard
	Ce	140	10201.8	4.4				ug/L	22	Standard
>	Tb	159	1043775.8	0.5				ug/L	983965	Standard
	Ho	165	243.3	6.3				ug/L	10	Standard
	Tl	203	598.3	10.0	**0.0427**	0.007	16.2	ug/L	248	Standard
	Tl	205	1480.1	6.8	**0.0413**	0.005	12.5	ug/L	620	Standard
	Pb	206	979.4	2.8	**0.0667**	0.004	5.6	ug/L	503	Standard
	Pb	207	832.4	3.0	**0.0644**	0.004	5.9	ug/L	406	Standard
	Pb	208	965.0	1.0	**0.0622**	0.001	2.0	ug/L	497	Standard
	U	238	43.0	17.6	**0.0066**	0.001	21.4	ug/L	17	Standard
>	Bi	209	591839.7	0.2				ug/L	559221	Standard

Sample ID: L1703133913
Report Date/Time: Monday, March 27, 2017 14:58:11
Page 1

Approved: March 28, 2017



⌈	**Na**	23	16.7	34.6	**8.4293**	3.345	39.7	mg/L	2	Standard
|	**Mg**	24	3797.1	1.2	**42.5205**	0.203	0.5	mg/L	33	Standard
|	**K**	39	231.7	12.5	**1.2655**	0.185	14.6	mg/L	18	Standard
|	**Ca**	43	56.7	25.5	**-40.8370**	18.870	46.2	mg/L	72	Standard
|	**Fe**	54	2175.6	3.5	**11.3490**	0.489	4.3	mg/L	29	Standard
|	**Fe**	57	965.0	5.6	**9.4104**	1.027	10.9	mg/L	382	Standard
⌊>	**Sc-1**	45	43122.9	0.9				mg/L	39299	Standard
	Cl	35	0.7	173.2				ug/L	4	Standard
	Kr	83	2.0	50.0				ug/L	3	Standard
	Br	81	185394.8	3.2				ug/L	2287	Standard
	P	31	100.0	10.0				ug/L	80	Standard
	S	34	43.3	24.0				ug/L	45	Standard
	Sr	88	178.3	10.6				ug/L	178	Standard
	C	12	86.7	24.0				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	310.2	21.2				mg/L	16	Standard
	Ho-1	165	243.3	6.3				mg/L	10	Standard
	Er	166	273.3	5.6				mg/L	17	Standard
	I	127	436790.4	9.2				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		112.023	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		103.938	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703133913
Report Date/Time: Monday, March 27, 2017 14:58:11
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.478
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	105.833
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1703133913
Report Date/Time: Monday, March 27, 2017 14:58:11
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: L1703133915
Sample Date/Time: Monday, March 27, 2017 14:59:05
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	331715.2	0.2				ug/L	262785	Standard
	Be	9	6903.2	2.8	**2.1890**	0.066	3.0	ug/L	28	Standard
	Al	27	12770668.8	1.0	**58.4852**	0.656	1.1	ug/L	2187	Standard
	Sc	45	77675.3	1.8				ug/L	39299	Standard
	Ti	47	113168.9	2.1	**400.6135**	10.144	2.5	ug/L	82	Standard
	V	51	739289.5	0.9	**81.1255**	1.230	1.5	ug/L	1876	Standard
	Cr	52	632295.5	1.0	**73.6078**	1.142	1.6	ug/L	8221	Standard
	Cr	53	79920.2	0.5	**74.5301**	0.796	1.1	ug/L	1083	Standard
	Mn	55	11528686.9	1.2	**796.4199**	13.454	1.7	ug/L	2738	Standard
	Co	59	139068.1	1.6	**12.5936**	0.274	2.2	ug/L	635	Standard
	Ni	60	120778.5	1.4	**51.2377**	1.002	2.0	ug/L	261	Standard
	Cu	65	94130.2	1.3	**38.6635**	0.645	1.7	ug/L	660	Standard
	Zn	66	307592.7	1.5	**210.7548**	4.074	1.9	ug/L	558	Standard
>	**Ge**	72	853398.8	0.6				ug/L	807251	Standard
	As	75	10783.3	2.2	**7.4577**	0.202	2.7	ug/L	-43	Standard
	Se	82	430.3	3.7	**3.2194**	0.142	4.4	ug/L	18	Standard
	Se-1	77	520.0	1.0	**4.1242**	0.088	2.1	ug/L	127	Standard
>	**Ga**	71	99170.3	2.3				mg/L	32	Standard
	Rb	85	676370.9	2.0				ug/L	27	Standard
	Y	89	854024.2	0.4				ug/L	534994	Standard
>	**Rh**	103	78.3	9.8				ug/L	20	Standard
	Mo	98	3509.2	3.0	**0.7632**	0.015	2.0	ug/L	285	Standard
	Ag	107	945.7	3.7	**0.1127**	0.003	3.1	ug/L	129	Standard
	Cd	111	4150.0	2.6	**1.9943**	0.037	1.8	mg/L	6	Standard
	Cd	114	10667.4	3.0	**1.9596**	0.039	2.0	ug/L	46	Standard
>	**In**	115	685901.4	1.1				ug/L	679215	Standard
	Sn	118	423.0	10.2	**0.1192**	0.039	32.6	ug/L	411	Standard
	Sb	123	1126.4	6.4	**0.1739**	0.011	6.4	ug/L	497	Standard
	Ba	135	641214.8	2.2	**297.9542**	3.338	1.1	ug/L	43	Standard
	Ce	140	973245.4	2.1				ug/L	22	Standard
>	**Tb**	159	1080865.5	1.9				ug/L	983965	Standard
	Ho	165	19272.3	4.3				ug/L	10	Standard
	Tl	203	4004.5	0.9	**0.4316**	0.007	1.7	ug/L	248	Standard
	Tl	205	9854.9	4.1	**0.4423**	0.011	2.5	ug/L	620	Standard
	Pb	206	158228.1	3.2	**22.2197**	0.242	1.1	ug/L	503	Standard
	Pb	207	128168.5	3.2	**19.9539**	0.190	0.9	ug/L	406	Standard
	Pb	208	158766.5	3.4	**21.1961**	0.253	1.2	ug/L	497	Standard
	U	238	12108.8	5.3	**2.1983**	0.070	3.2	ug/L	17	Standard
>	**Bi**	209	610305.0	2.3				ug/L	559221	Standard

Sample ID: L1703133915
Report Date/Time: Monday, March 27, 2017 15:01:16
Page 1

Approved: March 28, 2017

	Na	23	13.3	21.7	**3.1414**	0.845	26.9	mg/L	2	Standard
	Mg	24	3687.1	1.6	**22.6781**	0.356	1.6	mg/L	33	Standard
	K	39	541.7	13.4	**1.6900**	0.277	16.4	mg/L	18	Standard
	Ca	43	75.0	23.1	**-60.8136**	11.876	19.5	mg/L	72	Standard
	Fe	54	7792.5	0.7	**22.7664**	0.305	1.3	mg/L	29	Standard
	Fe	57	2478.5	6.8	**16.7043**	1.591	9.5	mg/L	382	Standard
>	**Sc-1**	45	77675.3	1.8				mg/L	39299	Standard
	Cl	35	5.3	43.3				ug/L	4	Standard
	Kr	83	3.0	88.2				ug/L	3	Standard
	Br	81	128908.2	7.7				ug/L	2287	Standard
	P	31	170.0	11.8				ug/L	80	Standard
	S	34	35.0	37.8				ug/L	45	Standard
	Sr	88	181.7	18.3				ug/L	178	Standard
	C	12	140.0	7.1				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	260.0	23.4				mg/L	3	Standard
	Dy	164	28789.2	4.6				mg/L	16	Standard
	Ho-1	165	19272.3	4.3				mg/L	10	Standard
	Er	166	18227.6	2.4				mg/L	17	Standard
	I	127	178841.3	7.3				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		126.231	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		105.717	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703133915
Report Date/Time: Monday, March 27, 2017 15:01:16
Page 2

Approved: March 28, 2017

Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		100.984
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		109.135
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1703133915
Report Date/Time: Monday, March 27, 2017 15:01:16
Page 3

Approved: March 28, 2017

Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, March 27, 2017 15:02:12
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	297901.6	2.8				ug/L	262785	Standard
	Be	9	141316.0	0.7	**49.9438**	1.118	2.2	ug/L	28	Standard
	Al	27	8961192.5	1.0	**45.7115**	0.869	1.9	ug/L	2187	Standard
	Sc	45	41996.5	1.5				ug/L	39299	Standard
	Ti	47	29416.9	1.1	**103.7400**	0.521	0.5	ug/L	82	Standard
	V	51	448126.3	0.7	**49.0091**	0.051	0.1	ug/L	1876	Standard
	Cr	52	424915.4	1.2	**49.0523**	0.420	0.9	ug/L	8221	Standard
	Cr	53	53235.0	1.3	**49.2180**	0.475	1.0	ug/L	1083	Standard
	Mn	55	718842.3	0.4	**49.4094**	0.427	0.9	ug/L	2738	Standard
	Co	59	544197.4	0.9	**49.3579**	0.124	0.3	ug/L	635	Standard
	Ni	60	116616.8	1.3	**49.3825**	0.345	0.7	ug/L	261	Standard
	Cu	65	121445.5	1.6	**49.8855**	0.542	1.1	ug/L	660	Standard
	Zn	66	73179.6	1.0	**49.7177**	0.235	0.5	ug/L	558	Standard
>	Ge	72	854795.4	0.6				ug/L	807251	Standard
	As	75	72973.0	0.6	**50.1028**	0.014	0.0	ug/L	-43	Standard
	Se	82	6776.5	0.7	**51.7094**	0.684	1.3	ug/L	18	Standard
	Se-1	77	4990.5	3.6	**51.2966**	1.686	3.3	ug/L	127	Standard
>	Ga	71	93.3	12.4				mg/L	32	Standard
	Rb	85	538.3	21.4				ug/L	27	Standard
	Y	89	581815.0	1.4				ug/L	534994	Standard
>	Rh	103	38.3	19.9				ug/L	20	Standard
	Mo	98	477389.3	0.7	**104.3574**	1.370	1.3	ug/L	285	Standard
	Ag	107	387202.2	0.5	**52.3387**	0.637	1.2	ug/L	129	Standard
	Cd	111	110447.4	0.3	**51.9000**	0.454	0.9	mg/L	6	Standard
	Cd	114	285539.7	0.8	**51.3558**	0.565	1.1	ug/L	46	Standard
>	In	115	704365.0	0.8				ug/L	679215	Standard
	Sn	118	63721.7	0.2	**51.9720**	0.372	0.7	ug/L	411	Standard
	Sb	123	284945.7	0.1	**50.4658**	0.469	0.9	ug/L	497	Standard
	Ba	135	109947.2	1.0	**49.7417**	0.824	1.7	ug/L	43	Standard
	Ce	140	341.7	22.9				ug/L	22	Standard
>	Tb	159	1059609.7	1.2				ug/L	983965	Standard
	Ho	165	11.7	89.2				ug/L	10	Standard
	Tl	203	441703.3	0.5	**50.4630**	0.768	1.5	ug/L	248	Standard
	Tl	205	1046544.9	0.8	**50.1526**	0.336	0.7	ug/L	620	Standard
	Pb	206	356717.7	0.2	**49.9883**	0.588	1.2	ug/L	503	Standard
	Pb	207	323034.0	0.6	**50.1953**	0.318	0.6	ug/L	406	Standard
	Pb	208	379565.0	0.4	**50.5726**	0.631	1.2	ug/L	497	Standard
	U	238	300644.7	1.0	**54.4100**	0.496	0.9	ug/L	17	Standard
>	Bi	209	612872.8	1.1				ug/L	559221	Standard

Sample ID: QC Std 6
Report Date/Time: Monday, March 27, 2017 15:04:23
Page 1

Approved: March 28, 2017

⌈	**Na**	23	6.7	114.6	**2.8488**	4.444	156.0	mg/L	2	Standard
|	**Mg**	24	438.3	13.3	**4.5673**	0.657	14.4	mg/L	33	Standard
|	**K**	39	688.3	13.7	**4.1714**	0.605	14.5	mg/L	18	Standard
|	**Ca**	43	43.3	17.6	**-56.9859**	9.559	16.8	mg/L	72	Standard
|	**Fe**	54	979.2	9.9	**5.1345**	0.526	10.2	mg/L	29	Standard
|	**Fe**	57	611.7	11.2	**3.4193**	1.144	33.5	mg/L	382	Standard
⌊>	**Sc-1**	45	41996.5	1.5				mg/L	39299	Standard
	Cl	35	2.7	114.6				ug/L	4	Standard
	Kr	83	4.3	35.3				ug/L	3	Standard
	Br	81	5234.3	21.5				ug/L	2287	Standard
	P	31	96.7	7.9				ug/L	80	Standard
	S	34	48.3	11.9				ug/L	45	Standard
	Sr	88	163.3	9.8				ug/L	178	Standard
	C	12	30.0	88.2				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	15.7	36.9				mg/L	16	Standard
	Ho-1	165	11.7	89.2				mg/L	10	Standard
	Er	166	20.0	50.0				mg/L	17	Standard
	I	127	10133.6	30.6				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9	99.888		
⌊	Al	27	91.423		
⌈	Sc	45			
|	Ti	47	103.740		
|	V	51	98.018		
|	Cr	52	98.105		
|	Cr	53			
|	Mn	55	98.819		
|	Co	59	98.716		
|	Ni	60	98.765		
|	Cu	65	99.771		
|	Zn	66	99.435		
|>	Ge	72		105.890	
|	As	75	100.206		
|	Se	82	103.419		
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Monday, March 27, 2017 15:04:23
Page 2

Approved: March 28, 2017

⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	104.357	
|	Ag	107	104.677	
|	Cd	111	103.800	
|	Cd	114		
|>	In	115		103.703
|	Sn	118	103.944	
|	Sb	123	100.932	
⌊	Ba	135	99.483	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	100.926	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	101.145	
|	U	238	108.820	
⌊>	Bi	209		109.594
⌈	Na	23		
|	Mg	24		
|	K	39		
|	Ca	43		
|	Fe	54		
|	Fe	57		
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Monday, March 27, 2017 15:04:23
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, March 27, 2017 15:05:18
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	291166.3	1.1				ug/L	262785	Standard
	Be	9	70.0	35.7	**0.0241**	0.009	37.3	ug/L	28	Standard
	Al	27	3802.3	75.8	**0.0137**	0.015	110.3	ug/L	2187	Standard
	Sc	45	40943.6	2.1				ug/L	39299	Standard
	Ti	47	49.7	45.9	**-0.1107**	0.084	75.8	ug/L	82	Standard
	V	51	1501.8	11.0	**-0.0401**	0.020	50.1	ug/L	1876	Standard
	Cr	52	6798.2	1.6	**-0.1837**	0.011	5.9	ug/L	8221	Standard
	Cr	53	1071.7	6.7	**0.0092**	0.068	743.9	ug/L	1083	Standard
	Mn	55	3626.8	40.2	**0.0779**	0.105	134.6	ug/L	2738	Standard
	Co	59	404.3	28.0	**-0.0182**	0.011	58.9	ug/L	635	Standard
	Ni	60	287.3	8.4	**0.0174**	0.012	67.1	ug/L	261	Standard
	Cu	65	764.7	2.1	**0.0188**	0.010	53.5	ug/L	660	Standard
	Zn	66	626.3	5.9	**-0.0044**	0.028	628.5	ug/L	558	Standard
>	Ge	72	837021.9	1.1				ug/L	807251	Standard
	As	75	-32.1	87.8	**0.0256**	0.020	77.7	ug/L	-43	Standard
	Se	82	22.4	13.9	**0.1006**	0.024	23.6	ug/L	18	Standard
	Se-1	77	116.7	5.7	**-0.1156**	0.085	73.2	ug/L	127	Standard
>	Ga	71	40.0	37.5				mg/L	32	Standard
	Rb	85	95.0	67.2				ug/L	27	Standard
	Y	89	575486.1	1.9				ug/L	534994	Standard
>	Rh	103	21.7	13.3				ug/L	20	Standard
	Mo	98	372.1	22.0	**0.0585**	0.018	31.3	ug/L	285	Standard
	Ag	107	190.3	27.2	**0.0077**	0.007	93.3	ug/L	129	Standard
	Cd	111	12.5	125.0	**-0.0024**	0.008	311.8	mg/L	6	Standard
	Cd	114	64.3	62.5	**0.0011**	0.007	670.9	ug/L	46	Standard
>	In	115	689820.4	0.0				ug/L	679215	Standard
	Sn	118	337.7	4.1	**0.0455**	0.012	25.6	ug/L	411	Standard
	Sb	123	355.9	16.1	**0.0334**	0.010	31.0	ug/L	497	Standard
	Ba	135	144.0	88.6	**0.0472**	0.059	125.0	ug/L	43	Standard
	Ce	140	105.0	112.0				ug/L	22	Standard
>	Tb	159	1028385.3	0.6				ug/L	983965	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	170.0	27.7	**-0.0082**	0.005	66.6	ug/L	248	Standard
	Tl	205	406.7	35.6	**-0.0122**	0.007	57.6	ug/L	620	Standard
	Pb	206	620.0	10.2	**0.0134**	0.009	64.9	ug/L	503	Standard
	Pb	207	518.7	13.5	**0.0128**	0.011	84.0	ug/L	406	Standard
	Pb	208	625.3	7.7	**0.0143**	0.007	45.7	ug/L	497	Standard
	U	238	66.0	71.9	**0.0108**	0.009	81.1	ug/L	17	Standard
>	Bi	209	598791.0	1.0				ug/L	559221	Standard

Sample ID: QC Std 7
Report Date/Time: Monday, March 27, 2017 15:07:28
Page 1

Approved: March 28, 2017

	Na	23	1.7	173.2	**-0.0757**	1.687	2228.8	mg/L	2	Standard
	Mg	24	35.0	42.9	**-0.1194**	0.170	142.7	mg/L	33	Standard
	K	39	13.3	43.3	**-0.0654**	0.039	59.5	mg/L	18	Standard
	Ca	43	35.0	37.8	**-66.8843**	18.775	28.1	mg/L	72	Standard
	Fe	54	36.4	57.4	**0.0011**	0.121	10616.2	mg/L	29	Standard
	Fe	57	336.7	17.2	**-1.4261**	1.131	79.3	mg/L	382	Standard
>	**Sc-1**	45	40943.6	2.1				mg/L	39299	Standard
	Cl	35	4.0	100.0				ug/L	4	Standard
	Kr	83	4.7	44.6				ug/L	3	Standard
	Br	81	4010.5	3.5				ug/L	2287	Standard
	P	31	83.3	27.1				ug/L	80	Standard
	S	34	55.0	9.1				ug/L	45	Standard
	Sr	88	141.7	10.2				ug/L	178	Standard
	C	12	30.0	33.3				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	19.4	3.8				mg/L	16	Standard
	Ho-1	165	5.0	100.0				mg/L	10	Standard
	Er	166	13.3	114.6				mg/L	17	Standard
	I	127	9733.1	3.9				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		103.688	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Monday, March 27, 2017 15:07:28
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	101.561
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	107.076
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Monday, March 27, 2017 15:07:28
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: PBW JH WG607249-02
Sample Date/Time: Monday, March 27, 2017 15:14:52
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	282116.3	3.7				ug/L	262785	Standard
	Be	9	55.0	24.1	**0.0194**	0.006	28.5	ug/L	28	Standard
	Al	27	3875.5	15.6	**0.0146**	0.003	18.6	ug/L	2187	Standard
	Sc	45	41695.6	1.4				ug/L	39299	Standard
	Ti	47	40.7	14.4	**-0.1399**	0.023	16.5	ug/L	82	Standard
	V	51	1571.1	10.9	**-0.0280**	0.023	83.1	ug/L	1876	Standard
	Cr	52	7723.6	3.1	**-0.0497**	0.043	87.0	ug/L	8221	Standard
	Cr	53	906.7	3.8	**-0.1288**	0.036	28.1	ug/L	1083	Standard
	Mn	55	3235.4	31.3	**0.0547**	0.070	127.2	ug/L	2738	Standard
	Co	59	404.0	12.9	**-0.0175**	0.004	25.6	ug/L	635	Standard
	Ni	60	307.3	4.4	**0.0291**	0.004	12.2	ug/L	261	Standard
	Cu	65	886.4	2.9	**0.0789**	0.006	7.9	ug/L	660	Standard
	Zn	66	1482.7	2.5	**0.6197**	0.008	1.2	ug/L	558	Standard
>	Ge	72	817508.9	1.9				ug/L	807251	Standard
	As	75	-23.0	60.2	**0.0317**	0.010	31.1	ug/L	-43	Standard
	Se	82	18.1	12.8	**0.0704**	0.017	23.5	ug/L	18	Standard
	Se-1	77	95.0	9.6	**-0.3244**	0.114	35.2	ug/L	127	Standard
>	Ga	71	40.0	12.5				mg/L	32	Standard
	Rb	85	73.3	23.9				ug/L	27	Standard
	Y	89	548481.1	2.9				ug/L	534994	Standard
>	Rh	103	13.3	43.3				ug/L	20	Standard
	Mo	98	94.5	30.3	**-0.0031**	0.006	200.1	ug/L	285	Standard
	Ag	107	126.7	14.9	**-0.0008**	0.002	294.9	ug/L	129	Standard
	Cd	111	8.9	69.9	**-0.0041**	0.003	72.4	mg/L	6	Standard
	Cd	114	64.1	45.5	**0.0012**	0.005	417.4	ug/L	46	Standard
>	In	115	675336.8	2.5				ug/L	679215	Standard
	Sn	118	283.3	3.2	**0.0052**	0.002	35.9	ug/L	411	Standard
	Sb	123	139.6	25.7	**-0.0053**	0.006	120.6	ug/L	497	Standard
	Ba	135	94.3	53.9	**0.0249**	0.023	92.6	ug/L	43	Standard
	Ce	140	53.3	56.5				ug/L	22	Standard
>	Tb	159	1000247.7	3.5				ug/L	983965	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	74.0	6.8	**-0.0192**	0.001	3.9	ug/L	248	Standard
	Tl	205	191.7	20.9	**-0.0225**	0.002	9.7	ug/L	620	Standard
	Pb	206	492.0	6.7	**-0.0029**	0.004	125.3	ug/L	503	Standard
	Pb	207	415.7	1.7	**-0.0015**	0.003	168.4	ug/L	406	Standard
	Pb	208	501.0	3.2	**-0.0006**	0.004	666.8	ug/L	497	Standard
	U	238	10.3	84.6	**0.0005**	0.002	313.9	ug/L	17	Standard
>	Bi	209	581522.5	2.6				ug/L	559221	Standard

Sample ID: PBW JH WG607249-02
Report Date/Time: Monday, March 27, 2017 15:17:03
Page 1

Approved: March 28, 2017

⌈	**Na**	23	1.7	173.2	**-0.0601**	1.714	2854.5	mg/L	2	Standard
|	**Mg**	24	31.7	24.1	**-0.1633**	0.093	56.8	mg/L	33	Standard
|	**K**	39	11.7	49.5	**-0.0775**	0.037	48.0	mg/L	18	Standard
|	**Ca**	43	45.0	72.9	**-54.6015**	43.816	80.2	mg/L	72	Standard
|	**Fe**	54	41.2	68.2	**0.0217**	0.152	700.8	mg/L	29	Standard
|	**Fe**	57	296.7	3.5	**-2.2794**	0.166	7.3	mg/L	382	Standard
⌊>	**Sc-1**	45	41695.6	1.4				mg/L	39299	Standard
	Cl	35	3.3	69.3				ug/L	4	Standard
	Kr	83	4.0	0.0				ug/L	3	Standard
	Br	81	3337.0	7.4				ug/L	2287	Standard
	P	31	76.7	10.0				ug/L	80	Standard
	S	34	66.7	11.5				ug/L	45	Standard
	Sr	88	181.7	15.2				ug/L	178	Standard
	C	12	26.7	21.7				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	15.7	37.3				mg/L	16	Standard
	Ho-1	165	5.0	100.0				mg/L	10	Standard
	Er	166	20.0	100.0				mg/L	17	Standard
	I	127	7138.4	5.0				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		107.356	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		101.271	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: PBW JH WG607249-02
Report Date/Time: Monday, March 27, 2017 15:17:03
Page 2

Approved: March 28, 2017

Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	99.429
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	103.988
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW JH WG607249-02
Report Date/Time: Monday, March 27, 2017 15:17:03
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: LCSW JH WG607249-03
Sample Date/Time: Monday, March 27, 2017 15:17:58
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	283639.5	2.3				ug/L	262785	Standard
	Be	9	135441.0	0.2	**50.2695**	1.051	2.1	ug/L	28	Standard
	Al	27	8550.7	3.6	**0.0396**	0.002	5.8	ug/L	2187	Standard
	Sc	45	41622.1	1.5				ug/L	39299	Standard
	Ti	47	56.3	5.1	**-0.0879**	0.010	11.7	ug/L	82	Standard
	V	51	449038.7	1.0	**49.9317**	0.520	1.0	ug/L	1876	Standard
	Cr	52	427545.4	0.4	**50.2018**	0.079	0.2	ug/L	8221	Standard
	Cr	53	52865.4	0.6	**49.7010**	0.076	0.2	ug/L	1083	Standard
	Mn	55	717415.0	0.4	**50.1342**	0.152	0.3	ug/L	2738	Standard
	Co	59	544453.7	0.6	**50.2058**	0.288	0.6	ug/L	635	Standard
	Ni	60	118997.8	0.7	**51.2373**	0.520	1.0	ug/L	261	Standard
	Cu	65	123473.1	0.7	**51.5755**	0.340	0.7	ug/L	660	Standard
	Zn	66	73618.8	1.1	**50.8592**	0.359	0.7	ug/L	558	Standard
>	Ge	72	840785.2	0.4				ug/L	807251	Standard
	As	75	69786.7	0.4	**48.7158**	0.356	0.7	ug/L	-43	Standard
	Se	82	6662.9	0.3	**51.6871**	0.292	0.6	ug/L	18	Standard
	Se-1	77	4866.1	2.3	**50.8435**	1.152	2.3	ug/L	127	Standard
>	Ga	71	81.7	9.4				mg/L	32	Standard
	Rb	85	145.0	18.2				ug/L	27	Standard
	Y	89	570652.2	1.3				ug/L	534994	Standard
>	Rh	103	18.3	31.5				ug/L	20	Standard
	Mo	98	101.9	8.5	**-0.0020**	0.002	99.8	ug/L	285	Standard
	Ag	107	377093.0	0.7	**51.7238**	0.215	0.4	ug/L	129	Standard
	Cd	111	109156.0	0.8	**52.0510**	0.365	0.7	mg/L	6	Standard
	Cd	114	276891.7	0.3	**50.5367**	0.256	0.5	ug/L	46	Standard
>	In	115	694082.9	0.5				ug/L	679215	Standard
	Sn	118	334.3	4.4	**0.0411**	0.013	32.4	ug/L	411	Standard
	Sb	123	276749.6	0.6	**49.7376**	0.211	0.4	ug/L	497	Standard
	Ba	135	108785.8	0.8	**49.9435**	0.624	1.2	ug/L	43	Standard
	Ce	140	161.7	18.1				ug/L	22	Standard
>	Tb	159	1035101.4	0.3				ug/L	983965	Standard
	Ho	165	26.7	43.3				ug/L	10	Standard
	Tl	203	447710.0	0.1	**52.2991**	0.278	0.5	ug/L	248	Standard
	Tl	205	1062542.0	0.5	**52.0677**	0.308	0.6	ug/L	620	Standard
	Pb	206	362413.3	0.7	**51.9327**	0.652	1.3	ug/L	503	Standard
	Pb	207	313381.7	0.4	**49.7925**	0.417	0.8	ug/L	406	Standard
	Pb	208	369385.4	0.7	**50.3223**	0.394	0.8	ug/L	497	Standard
	U	238	281060.4	0.9	**52.0125**	0.608	1.2	ug/L	17	Standard
>	Bi	209	599354.4	0.5				ug/L	559221	Standard

Sample ID: LCSW JH WG607249-03
Report Date/Time: Monday, March 27, 2017 15:20:09
Page 1

Approved: March 28, 2017

⌈	**Na**	23	1.7	173.2	**-0.0569**	1.720	3021.6	mg/L	2	Standard
|	**Mg**	24	31.7	9.1	**-0.1627**	0.038	23.7	mg/L	33	Standard
|	**K**	39	20.0	75.0	**-0.0255**	0.093	365.4	mg/L	18	Standard
|	**Ca**	43	43.3	24.0	**-56.4948**	13.319	23.6	mg/L	72	Standard
|	**Fe**	54	26.8	40.7	**-0.0565**	0.057	101.7	mg/L	29	Standard
|	**Fe**	57	356.7	12.7	**-1.1578**	0.913	78.8	mg/L	382	Standard
⌊>	**Sc-1**	45	41622.1	1.5				mg/L	39299	Standard
	Cl	35	0.7	173.2				ug/L	4	Standard
	Kr	83	3.3	45.8				ug/L	3	Standard
	Br	81	3207.0	3.4				ug/L	2287	Standard
	P	31	73.3	35.0				ug/L	80	Standard
	S	34	43.3	6.7				ug/L	45	Standard
	Sr	88	136.7	21.4				ug/L	178	Standard
	C	12	26.7	21.7				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	10.0	100.0				mg/L	3	Standard
	Dy	164	19.0	52.7				mg/L	16	Standard
	Ho-1	165	26.7	43.3				mg/L	10	Standard
	Er	166	20.0	86.6				mg/L	17	Standard
	I	127	4534.0	1.5				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		107.936	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		104.154	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: LCSW JH WG607249-03
Report Date/Time: Monday, March 27, 2017 15:20:09
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	102.189
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	107.177
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW JH WG607249-03
Report Date/Time: Monday, March 27, 2017 15:20:09
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: L1703116101 WG607249-01
Sample Date/Time: Monday, March 27, 2017 15:21:03
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	266117.1	1.7				ug/L	262785	Standard
	Be	9	133.3	47.5	**0.0514**	0.024	47.6	ug/L	28	Standard
	Al	27	701512.1	1.7	**3.9988**	0.006	0.2	ug/L	2187	Standard
	Sc	45	39516.5	3.1				ug/L	39299	Standard
	Ti	47	268.7	6.1	**0.7505**	0.053	7.0	ug/L	82	Standard
	V	51	4984.8	1.9	**0.3914**	0.016	4.1	ug/L	1876	Standard
	Cr	52	37619.3	0.6	**3.8556**	0.050	1.3	ug/L	8221	Standard
	Cr	53	5496.0	2.6	**4.6605**	0.085	1.8	ug/L	1083	Standard
	Mn	55	175818.6	1.2	**13.1143**	0.134	1.0	ug/L	2738	Standard
	Co	59	4198.2	2.0	**0.3620**	0.005	1.3	ug/L	635	Standard
	Ni	60	1942.5	3.6	**0.7964**	0.037	4.7	ug/L	261	Standard
	Cu	65	1198.4	2.5	**0.2387**	0.008	3.2	ug/L	660	Standard
	Zn	66	3560.1	0.2	**2.2318**	0.034	1.5	ug/L	558	Standard
>	Ge	72	779942.1	1.1				ug/L	807251	Standard
	As	75	355.3	8.0	**0.3153**	0.020	6.2	ug/L	-43	Standard
	Se	82	73.9	5.5	**0.5444**	0.036	6.6	ug/L	18	Standard
	Se-1	77	156.7	3.6	**0.4382**	0.045	10.3	ug/L	127	Standard
>	Ga	71	170.0	14.7				mg/L	32	Standard
	Rb	85	2205.2	3.1				ug/L	27	Standard
	Y	89	519687.0	2.4				ug/L	534994	Standard
>	Rh	103	21.7	35.3				ug/L	20	Standard
	Mo	98	1566.1	2.6	**0.3514**	0.006	1.8	ug/L	285	Standard
	Ag	107	203.7	26.0	**0.0116**	0.008	67.2	ug/L	129	Standard
	Cd	111	89.0	12.7	**0.0375**	0.006	15.0	mg/L	6	Standard
	Cd	114	266.0	12.2	**0.0418**	0.006	14.1	ug/L	46	Standard
>	In	115	641369.2	1.1				ug/L	679215	Standard
	Sn	118	211.3	6.4	**-0.0469**	0.010	22.1	ug/L	411	Standard
	Sb	123	1088.0	10.9	**0.1807**	0.022	12.3	ug/L	497	Standard
	Ba	135	11793.6	1.9	**5.8420**	0.075	1.3	ug/L	43	Standard
	Ce	140	10403.6	2.5				ug/L	22	Standard
>	Tb	159	962492.4	1.2				ug/L	983965	Standard
	Ho	165	200.0	11.5				ug/L	10	Standard
	Tl	203	569.7	16.8	**0.0433**	0.012	27.1	ug/L	248	Standard
	Tl	205	1341.7	17.4	**0.0384**	0.012	31.4	ug/L	620	Standard
	Pb	206	1075.7	5.0	**0.0900**	0.008	8.5	ug/L	503	Standard
	Pb	207	932.4	5.3	**0.0895**	0.008	8.9	ug/L	406	Standard
	Pb	208	1092.7	7.9	**0.0888**	0.012	13.5	ug/L	497	Standard
	U	238	171.3	26.7	**0.0326**	0.009	27.5	ug/L	17	Standard
>	Bi	209	558433.9	0.4				ug/L	559221	Standard

Sample ID: L1703116101 WG607249-01
Report Date/Time: Monday, March 27, 2017 15:23:14
Page 1

Approved: March 28, 2017

⌈	**Na**	23	5.0	100.0	**2.0425**	3.035	148.6	mg/L	2	Standard
|	**Mg**	24	921.7	12.4	**10.8865**	1.558	14.3	mg/L	33	Standard
|	**K**	39	21.7	58.1	**-0.0055**	0.089	1635.4	mg/L	18	Standard
|	**Ca**	43	33.3	45.8	**-67.6472**	21.614	32.0	mg/L	72	Standard
|	**Fe**	54	99.3	13.4	**0.3712**	0.065	17.5	mg/L	29	Standard
|	**Fe**	57	326.7	7.1	**-1.4027**	0.260	18.5	mg/L	382	Standard
⌊>	**Sc-1**	45	39516.5	3.1				mg/L	39299	Standard
	Cl	35	2.7	114.6				ug/L	4	Standard
	Kr	83	5.7	27.0				ug/L	3	Standard
	Br	81	27528.3	3.0				ug/L	2287	Standard
	P	31	63.3	18.2				ug/L	80	Standard
	S	34	40.0	33.1				ug/L	45	Standard
	Sr	88	148.3	13.6				ug/L	178	Standard
	C	12	16.7	34.6				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	383.6	10.9				mg/L	16	Standard
	Ho-1	165	200.0	11.5				mg/L	10	Standard
	Er	166	203.3	20.5				mg/L	17	Standard
	I	127	39421.4	7.1				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		101.268	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		96.617	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703116101 WG607249-01
Report Date/Time: Monday, March 27, 2017 15:23:14
Page 2

Approved: March 28, 2017

Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		94.428
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		99.859
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703116101 WG607249-01
Report Date/Time: Monday, March 27, 2017 15:23:14
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: L1703116102S WG607249-04
Sample Date/Time: Monday, March 27, 2017 15:24:09
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	268344.1	1.6				ug/L	262785	Standard
	Be	9	26643.4	1.2	**10.4497**	0.189	1.8	ug/L	28	Standard
	Al	27	730728.0	1.4	**4.1317**	0.088	2.1	ug/L	2187	Standard
	Sc	45	38498.9	0.7				ug/L	39299	Standard
	Ti	47	226.0	7.2	**0.5743**	0.062	10.8	ug/L	82	Standard
	V	51	88148.6	0.8	**10.2674**	0.138	1.3	ug/L	1876	Standard
	Cr	52	113787.3	0.3	**13.5025**	0.126	0.9	ug/L	8221	Standard
	Cr	53	14755.5	2.0	**14.0441**	0.243	1.7	ug/L	1083	Standard
	Mn	55	318958.6	0.2	**23.6293**	0.173	0.7	ug/L	2738	Standard
	Co	59	104750.9	0.5	**10.2363**	0.084	0.8	ug/L	635	Standard
	Ni	60	23561.3	1.7	**10.7131**	0.238	2.2	ug/L	261	Standard
	Cu	65	24238.4	0.3	**10.5352**	0.074	0.7	ug/L	660	Standard
	Zn	66	17497.4	0.2	**12.5348**	0.041	0.3	ug/L	558	Standard
>	Ge	72	789987.4	0.5				ug/L	807251	Standard
	As	75	14511.2	1.1	**10.8188**	0.135	1.2	ug/L	-43	Standard
	Se	82	1406.8	2.5	**11.5569**	0.289	2.5	ug/L	18	Standard
	Se-1	77	1108.4	3.4	**11.2840**	0.386	3.4	ug/L	127	Standard
>	Ga	71	143.3	8.1				mg/L	32	Standard
	Rb	85	2171.8	3.8				ug/L	27	Standard
	Y	89	531208.3	0.4				ug/L	534994	Standard
>	Rh	103	25.0	20.0				ug/L	20	Standard
	Mo	98	1537.8	1.8	**0.3435**	0.008	2.3	ug/L	285	Standard
	Ag	107	70722.7	0.2	**10.4479**	0.031	0.3	ug/L	129	Standard
	Cd	111	21231.6	0.4	**10.9130**	0.057	0.5	mg/L	6	Standard
	Cd	114	54636.5	1.9	**10.7465**	0.170	1.6	ug/L	46	Standard
>	In	115	643528.6	0.5				ug/L	679215	Standard
	Sn	118	193.7	8.0	**-0.0633**	0.013	20.9	ug/L	411	Standard
	Sb	123	53046.3	0.3	**10.2580**	0.066	0.6	ug/L	497	Standard
	Ba	135	31968.7	1.1	**15.8167**	0.243	1.5	ug/L	43	Standard
	Ce	140	11160.8	1.8				ug/L	22	Standard
>	Tb	159	961330.0	0.6				ug/L	983965	Standard
	Ho	165	268.3	2.2				ug/L	10	Standard
	Tl	203	83289.6	1.0	**10.2439**	0.070	0.7	ug/L	248	Standard
	Tl	205	198495.1	0.8	**10.2382**	0.087	0.9	ug/L	620	Standard
	Pb	206	67401.9	1.2	**10.1306**	0.091	0.9	ug/L	503	Standard
	Pb	207	58969.5	1.2	**9.8306**	0.068	0.7	ug/L	406	Standard
	Pb	208	69673.0	1.3	**9.9586**	0.085	0.9	ug/L	497	Standard
	U	238	52681.1	0.8	**10.2860**	0.043	0.4	ug/L	17	Standard
>	Bi	209	567985.7	0.5				ug/L	559221	Standard

Sample ID: L1703116102S WG607249-04
Report Date/Time: Monday, March 27, 2017 15:26:20
Page 1

Approved: March 28, 2017

	Na	23	1.7	173.2	**0.0015**	1.82´125014.8		mg/L	2	Standard
	Mg	24	970.0	6.4	**11.7875**	0.836	7.1	mg/L	33	Standard
	K	39	15.0	57.7	**-0.0487**	0.060	123.2	mg/L	18	Standard
	Ca	43	46.7	16.4	**-46.5764**	11.567	24.8	mg/L	72	Standard
	Fe	54	68.4	19.9	**0.2039**	0.082	40.2	mg/L	29	Standard
	Fe	57	361.7	14.0	**-0.5384**	0.953	177.0	mg/L	382	Standard
>	**Sc-1**	45	38498.9	0.7				mg/L	39299	Standard
	Cl	35	2.0	100.0				ug/L	4	Standard
	Kr	83	2.7	21.7				ug/L	3	Standard
	Br	81	25337.8	2.5				ug/L	2287	Standard
	P	31	66.7	21.7				ug/L	80	Standard
	S	34	43.3	29.0				ug/L	45	Standard
	Sr	88	163.3	22.1				ug/L	178	Standard
	C	12	30.0	33.3				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	368.5	12.0				mg/L	16	Standard
	Ho-1	165	268.3	2.2				mg/L	10	Standard
	Er	166	240.0	14.4				mg/L	17	Standard
	I	127	43161.6	6.6				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		102.116	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.861	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703116102S WG607249-04
Report Date/Time: Monday, March 27, 2017 15:26:20
Page 2

Approved: March 28, 2017

Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	94.746
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	101.567
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703116102S WG607249-04
Report Date/Time: Monday, March 27, 2017 15:26:20
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: L1703116103SD WG607249-05
Sample Date/Time: Monday, March 27, 2017 15:27:15
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	271827.1	1.5				ug/L	262785	Standard
	Be	9	27022.4	2.0	**10.4607**	0.101	1.0	ug/L	28	Standard
	Al	27	815665.0	0.4	**4.5534**	0.074	1.6	ug/L	2187	Standard
	Sc	45	39508.1	2.0				ug/L	39299	Standard
	Ti	47	260.7	7.6	**0.7102**	0.073	10.3	ug/L	82	Standard
	V	51	89567.4	0.2	**10.4707**	0.026	0.3	ug/L	1876	Standard
	Cr	52	121330.5	0.2	**14.5146**	0.069	0.5	ug/L	8221	Standard
	Cr	53	16015.1	1.7	**15.3844**	0.207	1.3	ug/L	1083	Standard
	Mn	55	352333.9	0.5	**26.2066**	0.105	0.4	ug/L	2738	Standard
	Co	59	106873.9	0.4	**10.4795**	0.077	0.7	ug/L	635	Standard
	Ni	60	23938.6	1.6	**10.9218**	0.168	1.5	ug/L	261	Standard
	Cu	65	24182.3	1.0	**10.5458**	0.134	1.3	ug/L	660	Standard
	Zn	66	17711.0	0.6	**12.7368**	0.140	1.1	ug/L	558	Standard
>	Ge	72	787394.5	0.5				ug/L	807251	Standard
	As	75	14777.6	0.4	**11.0525**	0.053	0.5	ug/L	-43	Standard
	Se	82	1451.4	1.8	**11.9661**	0.273	2.3	ug/L	18	Standard
	Se-1	77	1173.4	1.5	**12.0722**	0.267	2.2	ug/L	127	Standard
>	Ga	71	178.3	18.2				mg/L	32	Standard
	Rb	85	2525.2	3.7				ug/L	27	Standard
	Y	89	520496.1	0.6				ug/L	534994	Standard
>	Rh	103	21.7	35.3				ug/L	20	Standard
	Mo	98	1694.2	1.7	**0.3795**	0.007	1.9	ug/L	285	Standard
	Ag	107	70973.5	1.6	**10.4494**	0.110	1.1	ug/L	129	Standard
	Cd	111	21267.7	1.1	**10.8961**	0.224	2.1	mg/L	6	Standard
	Cd	114	53900.2	1.6	**10.5659**	0.121	1.1	ug/L	46	Standard
>	In	115	645711.4	1.2				ug/L	679215	Standard
	Sn	118	204.7	3.4	**-0.0540**	0.007	12.6	ug/L	411	Standard
	Sb	123	53206.7	1.0	**10.2543**	0.063	0.6	ug/L	497	Standard
	Ba	135	34385.7	2.9	**16.9575**	0.545	3.2	ug/L	43	Standard
	Ce	140	13297.5	0.3				ug/L	22	Standard
>	Tb	159	961049.5	0.5				ug/L	983965	Standard
	Ho	165	260.0	8.8				ug/L	10	Standard
	Tl	203	84529.5	1.3	**10.3796**	0.118	1.1	ug/L	248	Standard
	Tl	205	202997.6	0.9	**10.4537**	0.092	0.9	ug/L	620	Standard
	Pb	206	68864.8	0.8	**10.3349**	0.077	0.7	ug/L	503	Standard
	Pb	207	59710.8	0.9	**9.9386**	0.064	0.6	ug/L	406	Standard
	Pb	208	70697.9	0.9	**10.0894**	0.075	0.7	ug/L	497	Standard
	U	238	53572.2	1.2	**10.4427**	0.110	1.1	ug/L	17	Standard
>	Bi	209	568929.7	0.3				ug/L	559221	Standard

Sample ID: L1703116103SD WG607249-05
Report Date/Time: Monday, March 27, 2017 15:29:25
Page 1

Approved: March 28, 2017

	Na	23	0.0		**-1.0498**	0.000	0.0	mg/L	2	Standard
	Mg	24	1096.7	5.4	**13.0486**	0.942	7.2	mg/L	33	Standard
	K	39	35.0	14.3	**0.0824**	0.037	45.4	mg/L	18	Standard
	Ca	43	53.3	35.5	**-38.5358**	28.219	73.2	mg/L	72	Standard
	Fe	54	84.9	28.8	**0.2907**	0.150	51.6	mg/L	29	Standard
	Fe	57	333.3	8.3	**-1.2723**	0.401	31.5	mg/L	382	Standard
>	**Sc-1**	45	39508.1	2.0				mg/L	39299	Standard
	Cl	35	2.0	100.0				ug/L	4	Standard
	Kr	83	2.7	57.3				ug/L	3	Standard
	Br	81	28366.5	2.9				ug/L	2287	Standard
	P	31	76.7	22.9				ug/L	80	Standard
	S	34	38.3	32.8				ug/L	45	Standard
	Sr	88	168.3	31.8				ug/L	178	Standard
	C	12	30.0	57.7				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	460.7	8.2				mg/L	16	Standard
	Ho-1	165	260.0	8.8				mg/L	10	Standard
	Er	166	263.3	31.8				mg/L	17	Standard
	I	127	42304.1	5.6				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		103.441	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.540	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703116103SD WG607249-05
Report Date/Time: Monday, March 27, 2017 15:29:25
Page 2

Approved: March 28, 2017

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.067
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.736
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703116103SD WG607249-05
Report Date/Time: Monday, March 27, 2017 15:29:25
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

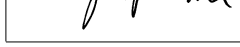
Sample ID: L1703116104
Sample Date/Time: Monday, March 27, 2017 15:30:20
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	265686.1	1.3				ug/L	262785	Standard
	Be	9	45.0	11.1	**0.0166**	0.002	10.6	ug/L	28	Standard
	Al	27	265672.4	1.0	**1.5133**	0.030	2.0	ug/L	2187	Standard
	Sc	45	38219.8	0.2				ug/L	39299	Standard
	Ti	47	71.7	10.5	**-0.0097**	0.028	284.9	ug/L	82	Standard
	V	51	1509.1	9.1	**-0.0250**	0.017	67.4	ug/L	1876	Standard
	Cr	52	5957.5	3.7	**-0.2237**	0.033	14.8	ug/L	8221	Standard
	Cr	53	935.0	6.8	**-0.0455**	0.073	160.1	ug/L	1083	Standard
	Mn	55	168028.6	0.8	**12.6670**	0.159	1.3	ug/L	2738	Standard
	Co	59	392.7	13.1	**-0.0163**	0.005	33.0	ug/L	635	Standard
	Ni	60	306.3	3.6	**0.0369**	0.006	16.4	ug/L	261	Standard
	Cu	65	769.4	3.4	**0.0484**	0.014	28.6	ug/L	660	Standard
	Zn	66	1928.8	0.6	**1.0222**	0.016	1.5	ug/L	558	Standard
>	Ge	72	771354.7	0.6				ug/L	807251	Standard
	As	75	57.2	17.8	**0.0918**	0.008	8.7	ug/L	-43	Standard
	Se	82	33.4	15.9	**0.2085**	0.044	20.9	ug/L	18	Standard
	Se-1	77	118.3	7.1	**0.0107**	0.106	989.5	ug/L	127	Standard
>	Ga	71	38.3	15.1				mg/L	32	Standard
	Rb	85	805.0	11.3				ug/L	27	Standard
	Y	89	514219.0	0.8				ug/L	534994	Standard
>	Rh	103	13.3	21.7				ug/L	20	Standard
	Mo	98	83.4	9.4	**-0.0043**	0.002	45.0	ug/L	285	Standard
	Ag	107	122.7	10.1	**-0.0002**	0.002	914.8	ug/L	129	Standard
	Cd	111	7.6	40.5	**-0.0045**	0.002	35.7	mg/L	6	Standard
	Cd	114	41.3	42.3	**-0.0025**	0.003	140.0	ug/L	46	Standard
>	In	115	634498.3	0.4				ug/L	679215	Standard
	Sn	118	201.0	2.8	**-0.0541**	0.005	8.5	ug/L	411	Standard
	Sb	123	160.2	3.9	**0.0005**	0.001	247.6	ug/L	497	Standard
	Ba	135	9654.1	2.1	**4.8309**	0.113	2.3	ug/L	43	Standard
	Ce	140	511.7	14.7				ug/L	22	Standard
>	Tb	159	923871.5	0.9				ug/L	983965	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	546.3	6.3	**0.0408**	0.004	9.1	ug/L	248	Standard
	Tl	205	1376.7	9.2	**0.0407**	0.006	15.0	ug/L	620	Standard
	Pb	206	556.3	1.3	**0.0106**	0.000	3.2	ug/L	503	Standard
	Pb	207	465.3	3.6	**0.0102**	0.003	32.2	ug/L	406	Standard
	Pb	208	613.7	7.5	**0.0193**	0.007	35.4	ug/L	497	Standard
	U	238	21.0	17.2	**0.0028**	0.001	25.2	ug/L	17	Standard
>	Bi	209	555012.6	0.9				ug/L	559221	Standard

Sample ID: L1703116104
Report Date/Time: Monday, March 27, 2017 15:32:31
Page 1

Approved: March 28, 2017



	Na	23	3.3	86.6	**1.0820**	1.846	170.6	mg/L	2	Standard
	Mg	24	128.3	19.2	**1.1070**	0.317	28.6	mg/L	33	Standard
	K	39	25.0	52.9	**0.0209**	0.091	437.0	mg/L	18	Standard
	Ca	43	26.7	108.3	**-75.8902**	43.229	57.0	mg/L	72	Standard
	Fe	54	186.3	13.7	**0.9125**	0.151	16.6	mg/L	29	Standard
	Fe	57	390.0	18.2	**0.0860**	1.419	1649.1	mg/L	382	Standard
>	**Sc-1**	45	38219.8	0.2				mg/L	39299	Standard
	Cl	35	3.3	69.3				ug/L	4	Standard
	Kr	83	3.0	0.0				ug/L	3	Standard
	Br	81	9066.1	6.3				ug/L	2287	Standard
	P	31	55.0	27.3				ug/L	80	Standard
	S	34	40.0	33.1				ug/L	45	Standard
	Sr	88	156.7	19.5				ug/L	178	Standard
	C	12	26.7	43.3				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	5.9	201.6				mg/L	16	Standard
	Ho-1	165	10.0	86.6				mg/L	10	Standard
	Er	166	16.7	69.3				mg/L	17	Standard
	I	127	15828.3	2.7				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		101.104	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.553	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703116104
Report Date/Time: Monday, March 27, 2017 15:32:31
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	93.416
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	99.248
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: March 28, 2017

Method 6020 - Summary Report

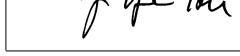
Sample ID: L1703116105
Sample Date/Time: Monday, March 27, 2017 15:33:25
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	278041.6	1.4				ug/L	262785	Standard
	Be	9	110.0	31.8	**0.0403**	0.013	31.4	ug/L	28	Standard
	Al	27	3693336.2	2.9	**20.1729**	0.377	1.9	ug/L	2187	Standard
	Sc	45	39115.5	4.5				ug/L	39299	Standard
	Ti	47	148.3	15.5	**0.2834**	0.095	33.6	ug/L	82	Standard
	V	51	682.6	28.9	**-0.1268**	0.023	18.5	ug/L	1876	Standard
	Cr	52	7695.6	4.0	**-0.0110**	0.032	288.3	ug/L	8221	Standard
	Cr	53	5994.5	8.2	**5.1548**	0.433	8.4	ug/L	1083	Standard
	Mn	55	295153.9	0.8	**22.0721**	0.340	1.5	ug/L	2738	Standard
	Co	59	2652.2	2.4	**0.2075**	0.009	4.4	ug/L	635	Standard
	Ni	60	2653.2	2.8	**1.1230**	0.020	1.8	ug/L	261	Standard
	Cu	65	1094.4	1.6	**0.1902**	0.011	6.0	ug/L	660	Standard
	Zn	66	3687.8	1.3	**2.3195**	0.040	1.7	ug/L	558	Standard
>	Ge	72	782262.8	1.3				ug/L	807251	Standard
	As	75	402.5	11.3	**0.3500**	0.035	10.0	ug/L	-43	Standard
	Se	82	175.3	4.7	**1.3897**	0.079	5.7	ug/L	18	Standard
	Se-1	77	454.0	6.7	**3.8601**	0.284	7.4	ug/L	127	Standard
>	Ga	71	78.3	25.8				mg/L	32	Standard
	Rb	85	1970.1	4.8				ug/L	27	Standard
	Y	89	531986.3	1.5				ug/L	534994	Standard
>	Rh	103	33.3	22.9				ug/L	20	Standard
	Mo	98	56.0	7.2	**-0.0111**	0.001	7.8	ug/L	285	Standard
	Ag	107	128.7	14.3	**0.0005**	0.003	546.1	ug/L	129	Standard
	Cd	111	28.6	17.3	**0.0064**	0.003	43.1	mg/L	6	Standard
	Cd	114	79.8	10.9	**0.0051**	0.002	38.5	ug/L	46	Standard
>	In	115	641700.8	1.6				ug/L	679215	Standard
	Sn	118	194.3	2.5	**-0.0622**	0.003	4.2	ug/L	411	Standard
	Sb	123	206.3	19.5	**0.0091**	0.008	84.5	ug/L	497	Standard
	Ba	135	13513.4	0.7	**6.6941**	0.072	1.1	ug/L	43	Standard
	Ce	140	2151.8	0.7				ug/L	22	Standard
>	Tb	159	959890.7	1.9				ug/L	983965	Standard
	Ho	165	75.0	30.6				ug/L	10	Standard
	Tl	203	598.7	7.6	**0.0469**	0.007	14.3	ug/L	248	Standard
	Tl	205	1385.1	11.7	**0.0406**	0.009	23.2	ug/L	620	Standard
	Pb	206	665.0	6.1	**0.0266**	0.007	26.6	ug/L	503	Standard
	Pb	207	567.7	1.5	**0.0270**	0.000	1.8	ug/L	406	Standard
	Pb	208	676.3	4.7	**0.0277**	0.004	15.2	ug/L	497	Standard
	U	238	32.3	33.9	**0.0050**	0.002	43.0	ug/L	17	Standard
>	Bi	209	559501.1	1.2				ug/L	559221	Standard

Sample ID: L1703116105
Report Date/Time: Monday, March 27, 2017 15:35:36
Page 1

Approved: March 28, 2017



⌈	**Na**	23	10.0	50.0	**5.1745**	3.090	59.7	mg/L	2	Standard
|	**Mg**	24	3750.5	2.5	**46.4306**	2.937	6.3	mg/L	33	Standard
|	**K**	39	16.7	17.3	**-0.0397**	0.015	36.9	mg/L	18	Standard
|	**Ca**	43	43.3	46.6	**-52.7419**	29.292	55.5	mg/L	72	Standard
|	**Fe**	54	22.6	25.0	**-0.0716**	0.027	37.8	mg/L	29	Standard
|	**Fe**	57	346.7	12.6	**-0.9157**	1.097	119.8	mg/L	382	Standard
⌊>	**Sc-1**	45	39115.5	4.5				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	4.0	66.1				ug/L	3	Standard
	Br	81	79461.3	3.0				ug/L	2287	Standard
	P	31	91.7	19.2				ug/L	80	Standard
	S	34	31.7	50.8				ug/L	45	Standard
	Sr	88	168.3	16.4				ug/L	178	Standard
	C	12	33.3	45.8				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	105.8	8.6				mg/L	16	Standard
	Ho-1	165	75.0	30.6				mg/L	10	Standard
	Er	166	86.7	40.5				mg/L	17	Standard
	I	127	76865.6	9.2				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		105.806	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		96.905	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703116105
Report Date/Time: Monday, March 27, 2017 15:35:36
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	94.477
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	100.050
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: L1703116105PS WG607276-03
Sample Date/Time: Monday, March 27, 2017 15:36:31
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	284117.4	0.2				ug/L	262785	Standard
	Be	9	141665.9	0.6	**52.4748**	0.279	0.5	ug/L	28	Standard
	Al	27	3700784.9	2.1	**19.7828**	0.387	2.0	ug/L	2187	Standard
	Sc	45	39357.7	1.9				ug/L	39299	Standard
	Ti	47	128.0	7.5	**0.2007**	0.039	19.5	ug/L	82	Standard
	V	51	432422.6	0.7	**51.3088**	0.575	1.1	ug/L	1876	Standard
	Cr	52	408171.7	0.7	**51.1535**	0.404	0.8	ug/L	8221	Standard
	Cr	53	56234.2	1.0	**56.5460**	0.712	1.3	ug/L	1083	Standard
	Mn	55	975562.2	0.8	**72.8160**	0.444	0.6	ug/L	2738	Standard
	Co	59	532717.9	0.1	**52.4139**	0.258	0.5	ug/L	635	Standard
	Ni	60	115508.6	0.8	**53.0672**	0.587	1.1	ug/L	261	Standard
	Cu	65	120236.9	0.1	**53.5971**	0.264	0.5	ug/L	660	Standard
	Zn	66	80764.7	0.9	**59.6069**	0.533	0.9	ug/L	558	Standard
>	**Ge**	72	788047.0	0.4				ug/L	807251	Standard
	As	75	75870.2	1.6	**56.4985**	0.905	1.6	ug/L	-43	Standard
	Se	82	7324.4	0.8	**60.6344**	0.601	1.0	ug/L	18	Standard
	Se-1	77	5580.0	1.2	**62.5107**	0.525	0.8	ug/L	127	Standard
>	**Ga**	71	110.0	13.6				mg/L	32	Standard
	Rb	85	2130.1	2.5				ug/L	27	Standard
	Y	89	533422.8	0.9				ug/L	534994	Standard
>	**Rh**	103	36.7	28.4				ug/L	20	Standard
	Mo	98	62.2	14.0	**-0.0097**	0.002	21.8	ug/L	285	Standard
	Ag	107	304637.0	1.8	**45.1533**	0.975	2.2	ug/L	129	Standard
	Cd	111	108258.3	0.7	**55.7838**	0.228	0.4	mg/L	6	Standard
	Cd	114	274147.7	0.4	**54.0701**	0.477	0.9	ug/L	46	Standard
>	**In**	115	642317.2	0.6				ug/L	679215	Standard
	Sn	118	199.7	3.2	**-0.0576**	0.005	8.4	ug/L	411	Standard
	Sb	123	281230.9	0.2	**54.6205**	0.365	0.7	ug/L	497	Standard
	Ba	135	119944.9	0.3	**59.5079**	0.499	0.8	ug/L	43	Standard
	Ce	140	2048.5	3.6				ug/L	22	Standard
>	**Tb**	159	969123.2	1.4				ug/L	983965	Standard
	Ho	165	125.0	26.2				ug/L	10	Standard
	Tl	203	425203.2	0.6	**52.8338**	0.151	0.3	ug/L	248	Standard
	Tl	205	1006485.8	1.1	**52.4615**	0.333	0.6	ug/L	620	Standard
	Pb	206	345344.7	1.2	**52.6375**	0.483	0.9	ug/L	503	Standard
	Pb	207	311351.2	1.5	**52.6232**	0.607	1.2	ug/L	406	Standard
	Pb	208	364776.5	1.2	**52.8624**	0.488	0.9	ug/L	497	Standard
	U	238	286938.7	1.6	**56.4796**	0.630	1.1	ug/L	17	Standard
>	**Bi**	209	563464.8	0.8				ug/L	559221	Standard

Sample ID: L1703116105PS WG607276-03
Report Date/Time: Monday, March 27, 2017 15:38:41
Page 1

Approved: March 28, 2017

⌈	**Na**	23	6.7	86.6	**3.1424**	3.631	115.5	mg/L	2	Standard
|	**Mg**	24	3820.5	1.0	**46.9387**	0.779	1.7	mg/L	33	Standard
|	**K**	39	36.7	20.8	**0.0946**	0.055	58.2	mg/L	18	Standard
|	**Ca**	43	56.7	20.4	**-33.8148**	14.991	44.3	mg/L	72	Standard
|	**Fe**	54	26.1	69.3	**-0.0527**	0.102	192.7	mg/L	29	Standard
|	**Fe**	57	351.7	11.9	**-0.8790**	0.887	101.0	mg/L	382	Standard
⌊>	**Sc-1**	45	39357.7	1.9				mg/L	39299	Standard
	Cl	35	0.0					ug/L	4	Standard
	Kr	83	2.3	65.5				ug/L	3	Standard
	Br	81	79297.1	3.4				ug/L	2287	Standard
	P	31	75.0	29.1				ug/L	80	Standard
	S	34	45.0	44.4				ug/L	45	Standard
	Sr	88	170.0	10.2				ug/L	178	Standard
	C	12	46.7	68.9				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	132.7	17.1				mg/L	16	Standard
	Ho-1	165	125.0	26.2				mg/L	10	Standard
	Er	166	83.3	59.2				mg/L	17	Standard
	I	127	78609.0	6.5				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		108.118	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		97.621	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703116105PS WG607276-03
Report Date/Time: Monday, March 27, 2017 15:38:41
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	94.568
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	100.759
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703116105PS WG607276-03
Report Date/Time: Monday, March 27, 2017 15:38:41
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: L1703116105SDL WG607276-04
Sample Date/Time: Monday, March 27, 2017 15:39:36
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	274633.4	0.9				ug/L	262785	Standard
	Be	9	68.3	27.7	**0.0249**	0.007	28.0	ug/L	28	Standard
	Al	27	626249.0	1.6	**3.4584**	0.065	1.9	ug/L	2187	Standard
	Sc	45	37960.8	0.9				ug/L	39299	Standard
	Ti	47	53.0	19.1	**-0.0855**	0.039	45.3	ug/L	82	Standard
	V	51	1696.4	7.0	**-0.0049**	0.015	304.0	ug/L	1876	Standard
	Cr	52	7525.2	0.6	**-0.0318**	0.006	19.0	ug/L	8221	Standard
	Cr	53	2285.2	2.9	**1.3356**	0.075	5.6	ug/L	1083	Standard
	Mn	55	59778.4	0.1	**4.3326**	0.010	0.2	ug/L	2738	Standard
	Co	59	811.4	3.3	**0.0248**	0.003	11.8	ug/L	635	Standard
	Ni	60	744.0	1.6	**0.2382**	0.005	2.2	ug/L	261	Standard
	Cu	65	700.7	3.1	**0.0127**	0.011	85.1	ug/L	660	Standard
	Zn	66	2227.2	2.5	**1.2271**	0.048	3.9	ug/L	558	Standard
>	Ge	72	781431.2	0.3				ug/L	807251	Standard
	As	75	80.3	43.4	**0.1085**	0.026	24.0	ug/L	-43	Standard
	Se	82	45.5	15.4	**0.3064**	0.059	19.2	ug/L	18	Standard
	Se-1	77	178.3	10.8	**0.6855**	0.227	33.1	ug/L	127	Standard
>	Ga	71	40.0	25.0				mg/L	32	Standard
	Rb	85	431.7	11.1				ug/L	27	Standard
	Y	89	512800.7	2.0				ug/L	534994	Standard
>	Rh	103	18.3	68.6				ug/L	20	Standard
	Mo	98	31.5	11.1	**-0.0169**	0.001	4.9	ug/L	285	Standard
	Ag	107	318.3	8.3	**0.0291**	0.004	12.8	ug/L	129	Standard
	Cd	111	11.0	15.8	**-0.0027**	0.001	32.4	mg/L	6	Standard
	Cd	114	30.8	48.9	**-0.0046**	0.003	66.3	ug/L	46	Standard
>	In	115	635741.6	0.5				ug/L	679215	Standard
	Sn	118	156.0	10.1	**-0.0954**	0.014	14.2	ug/L	411	Standard
	Sb	123	1743.6	19.3	**0.3111**	0.064	20.7	ug/L	497	Standard
	Ba	135	2664.6	3.1	**1.3166**	0.037	2.8	ug/L	43	Standard
	Ce	140	431.7	5.7				ug/L	22	Standard
>	Tb	159	946521.2	1.0				ug/L	983965	Standard
	Ho	165	33.3	22.9				ug/L	10	Standard
	Tl	203	595.7	2.4	**0.0451**	0.002	4.5	ug/L	248	Standard
	Tl	205	1550.1	3.0	**0.0477**	0.003	5.7	ug/L	620	Standard
	Pb	206	631.7	5.7	**0.0197**	0.005	27.0	ug/L	503	Standard
	Pb	207	543.7	8.7	**0.0212**	0.008	35.8	ug/L	406	Standard
	Pb	208	614.0	2.4	**0.0170**	0.002	12.4	ug/L	497	Standard
	U	238	73.3	23.9	**0.0128**	0.003	27.1	ug/L	17	Standard
>	Bi	209	569987.9	0.6				ug/L	559221	Standard

Sample ID: L1703116105SDL WG607276-04
Report Date/Time: Monday, March 27, 2017 15:41:47
Page 1

Approved: March 28, 2017

⌈	**Na**	23	3.3	86.6	**1.0959**	1.858	169.6	mg/L	2	Standard
|	**Mg**	24	748.4	7.7	**9.1066**	0.784	8.6	mg/L	33	Standard
|	**K**	39	10.0		**-0.0822**	0.001	0.8	mg/L	18	Standard
|	**Ca**	43	43.3	35.3	**-50.7714**	22.290	43.9	mg/L	72	Standard
|	**Fe**	54	17.6	64.8	**-0.0974**	0.069	70.4	mg/L	29	Standard
|	**Fe**	57	321.7	23.3	**-1.2315**	1.554	126.2	mg/L	382	Standard
⌊>	**Sc-1**	45	37960.8	0.9				mg/L	39299	Standard
	Cl	35	0.7	173.2				ug/L	4	Standard
	Kr	83	0.7	173.2				ug/L	3	Standard
	Br	81	18080.8	2.9				ug/L	2287	Standard
	P	31	101.7	10.2				ug/L	80	Standard
	S	34	41.7	30.2				ug/L	45	Standard
	Sr	88	161.7	4.7				ug/L	178	Standard
	C	12	20.0	50.0				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	32.7	71.1				mg/L	16	Standard
	Ho-1	165	33.3	22.9				mg/L	10	Standard
	Er	166	13.3	43.3				mg/L	17	Standard
	I	127	22376.5	2.2				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		104.509	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		96.802	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703116105SDL WG607276-04
Report Date/Time: Monday, March 27, 2017 15:41:47
Page 2

Approved: March 28, 2017

Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	93.599
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	101.925
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703116105SDL WG607276-04
Report Date/Time: Monday, March 27, 2017 15:41:47
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, March 27, 2017 15:42:44
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	285930.1	3.7				ug/L	262785	Standard
	Be	9	132898.7	1.4	**48.9521**	1.642	3.4	ug/L	28	Standard
	Al	27	8846628.5	1.0	**47.0303**	1.234	2.6	ug/L	2187	Standard
	Sc	45	41364.7	2.5				ug/L	39299	Standard
	Ti	47	28371.5	0.6	**103.8595**	1.562	1.5	ug/L	82	Standard
	V	51	433083.4	0.5	**49.1682**	0.975	2.0	ug/L	1876	Standard
	Cr	52	413894.9	0.7	**49.6085**	0.822	1.7	ug/L	8221	Standard
	Cr	53	50666.3	1.6	**48.6095**	0.837	1.7	ug/L	1083	Standard
	Mn	55	698146.0	0.6	**49.8109**	0.744	1.5	ug/L	2738	Standard
	Co	59	527082.8	0.7	**49.6233**	0.701	1.4	ug/L	635	Standard
	Ni	60	113414.3	1.1	**49.8515**	0.535	1.1	ug/L	261	Standard
	Cu	65	117531.1	1.1	**50.1146**	0.778	1.6	ug/L	660	Standard
	Zn	66	71167.8	0.4	**50.1991**	1.155	2.3	ug/L	558	Standard
>	Ge	72	823658.1	2.1				ug/L	807251	Standard
	As	75	70521.9	0.5	**50.2680**	1.294	2.6	ug/L	-43	Standard
	Se	82	6531.3	1.4	**51.7435**	1.776	3.4	ug/L	18	Standard
	Se-1	77	4730.4	0.0	**50.4582**	1.084	2.1	ug/L	127	Standard
>	Ga	71	65.0	7.7				mg/L	32	Standard
	Rb	85	460.0	18.0				ug/L	27	Standard
	Y	89	555822.0	1.0				ug/L	534994	Standard
>	Rh	103	28.3	10.2				ug/L	20	Standard
	Mo	98	458439.2	0.5	**102.8322**	1.005	1.0	ug/L	285	Standard
	Ag	107	374648.4	1.1	**51.9617**	0.262	0.5	ug/L	129	Standard
	Cd	111	107587.1	1.4	**51.8747**	0.511	1.0	mg/L	6	Standard
	Cd	114	277347.7	1.6	**51.1810**	0.190	0.4	ug/L	46	Standard
>	In	115	686443.9	1.3				ug/L	679215	Standard
	Sn	118	61242.5	0.6	**51.2539**	0.660	1.3	ug/L	411	Standard
	Sb	123	278574.3	0.6	**50.6259**	0.331	0.7	ug/L	497	Standard
	Ba	135	106305.3	0.5	**49.3490**	0.385	0.8	ug/L	43	Standard
	Ce	140	318.3	3.3				ug/L	22	Standard
>	Tb	159	997875.9	0.3				ug/L	983965	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	425572.5	0.8	**50.5126**	0.822	1.6	ug/L	248	Standard
	Tl	205	1012377.0	0.2	**50.4052**	0.394	0.8	ug/L	620	Standard
	Pb	206	345448.4	0.4	**50.2930**	0.494	1.0	ug/L	503	Standard
	Pb	207	313991.1	0.3	**50.6921**	0.577	1.1	ug/L	406	Standard
	Pb	208	359002.0	0.5	**49.6939**	0.691	1.4	ug/L	497	Standard
	U	238	284160.2	0.2	**53.4301**	0.459	0.9	ug/L	17	Standard
>	Bi	209	589900.3	0.9				ug/L	559221	Standard

Sample ID: QC Std 6
Report Date/Time: Monday, March 27, 2017 15:44:55
Page 1

Approved: March 28, 2017

	Na	23	13.3	86.6	**6.9375**	6.919	99.7	mg/L	2	Standard
	Mg	24	420.0	6.0	**4.4270**	0.171	3.9	mg/L	33	Standard
	K	39	663.3	12.3	**4.0695**	0.416	10.2	mg/L	18	Standard
	Ca	43	55.0	15.7	**-40.0404**	10.265	25.6	mg/L	72	Standard
	Fe	54	950.7	2.6	**5.0594**	0.129	2.5	mg/L	29	Standard
	Fe	57	605.0	5.8	**3.4676**	0.455	13.1	mg/L	382	Standard
>	**Sc-1**	45	41364.7	2.5				mg/L	39299	Standard
	Cl	35	3.3	91.7				ug/L	4	Standard
	Kr	83	5.3	21.7				ug/L	3	Standard
	Br	81	3673.8	10.2				ug/L	2287	Standard
	P	31	81.7	12.7				ug/L	80	Standard
	S	34	65.0	26.6				ug/L	45	Standard
	Sr	88	143.3	5.3				ug/L	178	Standard
	C	12	26.7	78.1				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	8.7	112.2				mg/L	16	Standard
	Ho-1	165	8.3	69.3				mg/L	10	Standard
	Er	166	26.7	57.3				mg/L	17	Standard
	I	127	3983.9	8.7				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	97.904		
	Al	27	94.061		
	Sc	45			
	Ti	47	103.860		
	V	51	98.336		
	Cr	52	99.217		
	Cr	53			
	Mn	55	99.622		
	Co	59	99.247		
	Ni	60	99.703		
	Cu	65	100.229		
	Zn	66	100.398		
>	Ge	72		102.032	
	As	75	100.536		
	Se	82	103.487		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Monday, March 27, 2017 15:44:55
Page 2

Approved: March 28, 2017

Rb	85			
Y	89			
Rh	103			
Mo	98	102.832		
Ag	107	103.923		
Cd	111	103.749		
Cd	114			
In	115			101.064
Sn	118	102.508		
Sb	123	101.252		
Ba	135	98.698		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.025		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.388		
U	238	106.860		
Bi	209			105.486
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Monday, March 27, 2017 15:44:55
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, March 27, 2017 15:45:49
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	269224.2	0.7				ug/L	262785	Standard
	Be	9	78.3	26.6	**0.0294**	0.008	27.4	ug/L	28	Standard
	Al	27	2561.9	23.8	**0.0083**	0.003	40.3	ug/L	2187	Standard
	Sc	45	40148.2	2.9				ug/L	39299	Standard
	Ti	47	27.7	11.0	**-0.1861**	0.012	6.3	ug/L	82	Standard
	V	51	1714.8	3.6	**-0.0078**	0.008	97.3	ug/L	1876	Standard
	Cr	52	6898.2	2.3	**-0.1347**	0.018	13.5	ug/L	8221	Standard
	Cr	53	830.0	1.6	**-0.1881**	0.014	7.5	ug/L	1083	Standard
	Mn	55	2584.9	3.4	**0.0121**	0.007	55.1	ug/L	2738	Standard
	Co	59	396.0	12.6	**-0.0174**	0.005	27.8	ug/L	635	Standard
	Ni	60	259.0	10.4	**0.0100**	0.012	120.2	ug/L	261	Standard
	Cu	65	702.7	2.2	**0.0057**	0.006	112.2	ug/L	660	Standard
	Zn	66	605.3	2.3	**-0.0003**	0.010	3012.4	ug/L	558	Standard
>	Ge	72	801349.0	0.2				ug/L	807251	Standard
	As	75	-21.1	112.2	**0.0328**	0.017	53.0	ug/L	-43	Standard
	Se	82	21.2	14.8	**0.0980**	0.025	25.7	ug/L	18	Standard
	Se-1	77	106.7	4.8	**-0.1729**	0.058	33.4	ug/L	127	Standard
>	Ga	71	38.3	7.5				mg/L	32	Standard
	Rb	85	38.3	15.1				ug/L	27	Standard
	Y	89	551896.2	2.1				ug/L	534994	Standard
>	Rh	103	18.3	41.7				ug/L	20	Standard
	Mo	98	341.3	17.6	**0.0542**	0.014	26.3	ug/L	285	Standard
	Ag	107	174.0	15.4	**0.0062**	0.004	63.9	ug/L	129	Standard
	Cd	111	14.9	51.0	**-0.0010**	0.004	355.1	mg/L	6	Standard
	Cd	114	84.6	73.6	**0.0053**	0.012	220.5	ug/L	46	Standard
>	In	115	667658.5	0.6				ug/L	679215	Standard
	Sn	118	326.0	4.3	**0.0449**	0.012	27.6	ug/L	411	Standard
	Sb	123	801.1	12.9	**0.1187**	0.019	16.0	ug/L	497	Standard
	Ba	135	108.0	38.7	**0.0321**	0.020	61.0	ug/L	43	Standard
	Ce	140	25.0	52.9				ug/L	22	Standard
>	Tb	159	976665.1	0.2				ug/L	983965	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	209.0	66.8	**-0.0032**	0.016	513.8	ug/L	248	Standard
	Tl	205	468.3	46.1	**-0.0087**	0.010	120.7	ug/L	620	Standard
	Pb	206	634.7	15.9	**0.0177**	0.014	76.6	ug/L	503	Standard
	Pb	207	561.0	17.6	**0.0218**	0.015	68.6	ug/L	406	Standard
	Pb	208	648.0	5.4	**0.0196**	0.004	18.9	ug/L	497	Standard
	U	238	88.3	76.6	**0.0152**	0.013	82.4	ug/L	17	Standard
>	Bi	209	583885.2	1.3				ug/L	559221	Standard

Approved: March 28, 2017

⌈	**Na**	23	1.7	173.2	**-0.0598**	1.715	2866.7	mg/L	2	Standard
|	**Mg**	24	35.0	14.3	**-0.1093**	0.054	49.7	mg/L	33	Standard
|	**K**	39	11.7	65.5	**-0.0755**	0.049	65.6	mg/L	18	Standard
|	**Ca**	43	43.3	17.6	**-54.0391**	11.711	21.7	mg/L	72	Standard
|	**Fe**	54	24.8	60.0	**-0.0609**	0.089	145.5	mg/L	29	Standard
|	**Fe**	57	316.7	10.2	**-1.6840**	0.641	38.0	mg/L	382	Standard
⌊>	**Sc-1**	45	40148.2	2.9				mg/L	39299	Standard
	Cl	35	1.3	173.2				ug/L	4	Standard
	Kr	83	2.0	50.0				ug/L	3	Standard
	Br	81	3290.4	9.6				ug/L	2287	Standard
	P	31	78.3	14.7				ug/L	80	Standard
	S	34	40.0	62.5				ug/L	45	Standard
	Sr	88	130.0	13.9				ug/L	178	Standard
	C	12	16.7	124.9				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	6.2	193.4				mg/L	16	Standard
	Ho-1	165	11.7	24.7				mg/L	10	Standard
	Er	166	10.0	100.0				mg/L	17	Standard
	I	127	6553.1	2.1				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		99.269	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Monday, March 27, 2017 15:48:00
Page 2

Approved: March 28, 2017

Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	98.299
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	104.411
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Monday, March 27, 2017 15:48:00
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

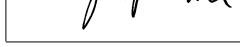
Sample ID: L1703116107
Sample Date/Time: Monday, March 27, 2017 15:48:56
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	251939.2	1.1				ug/L	262785	Standard
	Be	9	73.3	25.8	**0.0294**	0.008	26.3	ug/L	28	Standard
	Al	27	296221.3	1.4	**1.7804**	0.044	2.5	ug/L	2187	Standard
	Sc	45	37406.1	0.4				ug/L	39299	Standard
	Ti	47	36.7	11.4	**-0.1436**	0.016	10.9	ug/L	82	Standard
	V	51	1618.2	9.0	**-0.0072**	0.020	276.2	ug/L	1876	Standard
	Cr	52	6286.3	1.5	**-0.1621**	0.022	13.5	ug/L	8221	Standard
	Cr	53	845.0	4.3	**-0.1197**	0.046	38.4	ug/L	1083	Standard
	Mn	55	619732.3	0.9	**48.2751**	0.810	1.7	ug/L	2738	Standard
	Co	59	1057.7	13.4	**0.0531**	0.015	29.0	ug/L	635	Standard
	Ni	60	363.3	8.7	**0.0676**	0.017	24.6	ug/L	261	Standard
	Cu	65	607.3	6.7	**-0.0195**	0.021	106.6	ug/L	660	Standard
	Zn	66	1750.1	1.8	**0.9165**	0.011	1.2	ug/L	558	Standard
>	Ge	72	754249.0	1.1				ug/L	807251	Standard
	As	75	2.1	712.7	**0.0500**	0.012	23.8	ug/L	-43	Standard
	Se	82	18.4	34.8	**0.0856**	0.057	66.5	ug/L	18	Standard
	Se-1	77	114.7	4.1	**-0.0017**	0.068	3911.1	ug/L	127	Standard
>	Ga	71	31.7	50.8				mg/L	32	Standard
	Rb	85	491.7	6.0				ug/L	27	Standard
	Y	89	505904.0	0.3				ug/L	534994	Standard
>	Rh	103	15.0	66.7				ug/L	20	Standard
	Mo	98	112.0	49.3	**0.0032**	0.014	440.0	ug/L	285	Standard
	Ag	107	177.3	54.1	**0.0086**	0.015	175.3	ug/L	129	Standard
	Cd	111	18.9	128.3	**0.0017**	0.013	773.4	mg/L	6	Standard
	Cd	114	57.1	58.0	**0.0009**	0.007	727.1	ug/L	46	Standard
>	In	115	623781.8	1.1				ug/L	679215	Standard
	Sn	118	169.0	8.7	**-0.0805**	0.014	17.7	ug/L	411	Standard
	Sb	123	160.9	21.6	**0.0012**	0.007	604.0	ug/L	497	Standard
	Ba	135	9647.7	1.7	**4.9108**	0.060	1.2	ug/L	43	Standard
	Ce	140	45.0	50.9				ug/L	22	Standard
>	Tb	159	923941.1	1.1				ug/L	983965	Standard
	Ho	165	15.0	66.7				ug/L	10	Standard
	Tl	203	250.7	12.7	**0.0034**	0.004	121.6	ug/L	248	Standard
	Tl	205	641.7	9.9	**0.0017**	0.003	197.4	ug/L	620	Standard
	Pb	206	489.0	9.8	**-0.0001**	0.007	5207.2	ug/L	503	Standard
	Pb	207	411.3	15.3	**0.0007**	0.011	1530.1	ug/L	406	Standard
	Pb	208	481.3	7.5	**-0.0005**	0.005	1188.4	ug/L	497	Standard
	U	238	24.7	148.6	**0.0035**	0.007	209.8	ug/L	17	Standard
>	Bi	209	557013.6	0.7				ug/L	559221	Standard

Sample ID: L1703116107
Report Date/Time: Monday, March 27, 2017 15:51:07
Page 1

Approved: March 28, 2017



	Na	23	3.3	86.6	**1.1257**	1.884	167.4	mg/L	2	Standard
	Mg	24	101.7	15.0	**0.7942**	0.202	25.4	mg/L	33	Standard
	K	39	31.7	32.9	**0.0714**	0.073	101.8	mg/L	18	Standard
	Ca	43	36.7	28.4	**-59.8357**	15.854	26.5	mg/L	72	Standard
	Fe	54	41.1	25.4	**0.0480**	0.064	132.8	mg/L	29	Standard
	Fe	57	356.7	8.6	**-0.4279**	0.596	139.3	mg/L	382	Standard
>	**Sc-1**	45	37406.1	0.4				mg/L	39299	Standard
	Cl	35	2.7	43.3				ug/L	4	Standard
	Kr	83	3.0	66.7				ug/L	3	Standard
	Br	81	4900.8	2.1				ug/L	2287	Standard
	P	31	88.3	25.5				ug/L	80	Standard
	S	34	38.3	30.1				ug/L	45	Standard
	Sr	88	153.3	1.9				ug/L	178	Standard
	C	12	20.0	50.0				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	-0.8	34.6				mg/L	16	Standard
	Ho-1	165	15.0	66.7				mg/L	10	Standard
	Er	166	16.7	34.6				mg/L	17	Standard
	I	127	15172.6	4.2				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		95.873	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		93.434	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703116107
Report Date/Time: Monday, March 27, 2017 15:51:07
Page 2

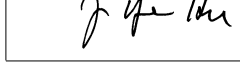
Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	91.839
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	99.605
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: March 28, 2017



Method 6020 - Summary Report

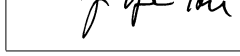
Sample ID: L1703116109
Sample Date/Time: Monday, March 27, 2017 15:52:02
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	250417.8	1.6				ug/L	262785	Standard
	Be	9	35.0	24.7	**0.0135**	0.004	27.8	ug/L	28	Standard
	Al	27	77005.5	5.1	**0.4609**	0.018	3.9	ug/L	2187	Standard
	Sc	45	37259.1	1.1				ug/L	39299	Standard
	Ti	47	29.3	17.5	**-0.1709**	0.021	12.1	ug/L	82	Standard
	V	51	1579.6	4.6	**-0.0088**	0.008	95.1	ug/L	1876	Standard
	Cr	52	6546.4	1.9	**-0.1128**	0.012	10.6	ug/L	8221	Standard
	Cr	53	791.7	5.4	**-0.1628**	0.042	26.0	ug/L	1083	Standard
	Mn	55	55989.4	3.7	**4.2728**	0.164	3.8	ug/L	2738	Standard
	Co	59	490.7	7.1	**-0.0044**	0.004	84.4	ug/L	635	Standard
	Ni	60	457.0	4.6	**0.1163**	0.010	8.2	ug/L	261	Standard
	Cu	65	699.3	1.7	**0.0291**	0.007	25.5	ug/L	660	Standard
	Zn	66	1365.1	2.5	**0.6354**	0.028	4.4	ug/L	558	Standard
>	Ge	72	741738.4	0.6				ug/L	807251	Standard
	As	75	-40.3	29.3	**0.0164**	0.009	56.7	ug/L	-43	Standard
	Se	82	16.8	55.8	**0.0734**	0.083	113.3	ug/L	18	Standard
	Se-1	77	104.3	4.5	**-0.1046**	0.060	57.0	ug/L	127	Standard
>	Ga	71	30.0	28.9				mg/L	32	Standard
	Rb	85	348.3	3.6				ug/L	27	Standard
	Y	89	493111.1	0.8				ug/L	534994	Standard
>	Rh	103	15.0	57.7				ug/L	20	Standard
	Mo	98	39.2	7.8	**-0.0147**	0.001	5.3	ug/L	285	Standard
	Ag	107	102.7	13.2	**-0.0027**	0.002	71.9	ug/L	129	Standard
	Cd	111	15.6	31.6	**-0.0000**	0.003	28716.3	mg/L	6	Standard
	Cd	114	44.3	16.9	**-0.0016**	0.001	94.2	ug/L	46	Standard
>	In	115	614213.6	1.0				ug/L	679215	Standard
	Sn	118	148.7	10.1	**-0.0973**	0.013	13.3	ug/L	411	Standard
	Sb	123	88.9	20.8	**-0.0130**	0.004	27.5	ug/L	497	Standard
	Ba	135	7076.7	3.0	**3.6529**	0.079	2.2	ug/L	43	Standard
	Ce	140	30.0	33.3				ug/L	22	Standard
>	Tb	159	912609.3	1.1				ug/L	983965	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	213.7	3.1	**-0.0010**	0.001	57.4	ug/L	248	Standard
	Tl	205	585.0	22.4	**-0.0010**	0.007	643.5	ug/L	620	Standard
	Pb	206	427.0	7.0	**-0.0090**	0.004	41.2	ug/L	503	Standard
	Pb	207	354.7	7.4	**-0.0084**	0.004	43.6	ug/L	406	Standard
	Pb	208	407.0	2.1	**-0.0107**	0.002	17.7	ug/L	497	Standard
	U	238	3.7	31.5	**-0.0007**	0.000	33.5	ug/L	17	Standard
>	Bi	209	550971.1	1.6				ug/L	559221	Standard

Sample ID: L1703116109
Report Date/Time: Monday, March 27, 2017 15:54:13
Page 1

Approved: March 28, 2017



	Na	23	1.7	173.2	**0.0514**	1.907	3711.4	mg/L	2	Standard
	Mg	24	73.3	27.6	**0.4290**	0.274	63.8	mg/L	33	Standard
	K	39	26.7	39.0	**0.0367**	0.072	196.9	mg/L	18	Standard
	Ca	43	36.7	28.4	**-59.6393**	15.891	26.6	mg/L	72	Standard
	Fe	54	67.6	18.6	**0.2118**	0.073	34.7	mg/L	29	Standard
	Fe	57	318.3	14.2	**-1.1910**	0.858	72.0	mg/L	382	Standard
>	**Sc-1**	45	37259.1	1.1				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	2.7	21.7				ug/L	3	Standard
	Br	81	4297.3	1.6				ug/L	2287	Standard
	P	31	83.3	35.2				ug/L	80	Standard
	S	34	58.3	17.8				ug/L	45	Standard
	Sr	88	150.0	35.3				ug/L	178	Standard
	C	12	13.3	43.3				mg/L	33	Standard
	N	14	6.7	86.6				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	6.0	201.4				mg/L	16	Standard
	Ho-1	165	11.7	65.5				mg/L	10	Standard
	Er	166	13.3	173.2				mg/L	17	Standard
	I	127	9913.3	6.2				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		95.294	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		91.884	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703116109
Report Date/Time: Monday, March 27, 2017 15:54:13
Page 2

Approved: March 28, 2017

Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	90.430
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	98.525
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703116109
Report Date/Time: Monday, March 27, 2017 15:54:13
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, March 27, 2017 15:55:10
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	269950.3	0.5				ug/L	262785	Standard
	Be	9	129085.9	0.9	**50.3239**	0.294	0.6	ug/L	28	Standard
	Al	27	8632690.3	0.4	**48.5803**	0.464	1.0	ug/L	2187	Standard
	Sc	45	40654.5	2.2				ug/L	39299	Standard
	Ti	47	27861.6	1.1	**104.6918**	0.880	0.8	ug/L	82	Standard
	V	51	427096.8	0.7	**49.7739**	0.742	1.5	ug/L	1876	Standard
	Cr	52	407473.3	0.7	**50.1437**	0.756	1.5	ug/L	8221	Standard
	Cr	53	49984.0	0.6	**49.2419**	0.705	1.4	ug/L	1083	Standard
	Mn	55	687422.0	0.6	**50.3466**	0.551	1.1	ug/L	2738	Standard
	Co	59	520915.9	0.7	**50.3434**	0.623	1.2	ug/L	635	Standard
	Ni	60	111010.5	0.4	**50.0906**	0.451	0.9	ug/L	261	Standard
	Cu	65	115884.8	0.7	**50.7262**	0.580	1.1	ug/L	660	Standard
	Zn	66	69899.5	0.4	**50.6074**	0.269	0.5	ug/L	558	Standard
>	Ge	72	802283.5	0.8				ug/L	807251	Standard
	As	75	69371.8	1.0	**50.7472**	0.265	0.5	ug/L	-43	Standard
	Se	82	6481.5	0.5	**52.6962**	0.544	1.0	ug/L	18	Standard
	Se-1	77	4650.4	0.5	**50.9275**	0.676	1.3	ug/L	127	Standard
>	Ga	71	81.7	19.7				mg/L	32	Standard
	Rb	85	480.0	4.8				ug/L	27	Standard
	Y	89	542874.9	1.9				ug/L	534994	Standard
>	Rh	103	21.7	26.6				ug/L	20	Standard
	Mo	98	450659.9	0.4	**103.6022**	0.567	0.5	ug/L	285	Standard
	Ag	107	364764.6	0.5	**51.8515**	0.164	0.3	ug/L	129	Standard
	Cd	111	105527.2	0.3	**52.1507**	0.377	0.7	mg/L	6	Standard
	Cd	114	273314.9	0.4	**51.6973**	0.290	0.6	ug/L	46	Standard
>	In	115	669749.0	0.8				ug/L	679215	Standard
	Sn	118	60914.9	0.6	**52.2526**	0.569	1.1	ug/L	411	Standard
	Sb	123	273713.5	0.6	**50.9808**	0.217	0.4	ug/L	497	Standard
	Ba	135	104718.6	0.7	**49.8251**	0.744	1.5	ug/L	43	Standard
	Ce	140	305.0	16.1				ug/L	22	Standard
>	Tb	159	976617.1	0.0				ug/L	983965	Standard
	Ho	165	5.0	0.0				ug/L	10	Standard
	Tl	203	414029.7	0.3	**50.4565**	0.137	0.3	ug/L	248	Standard
	Tl	205	988905.7	0.5	**50.5555**	0.184	0.4	ug/L	620	Standard
	Pb	206	337981.6	0.8	**50.5240**	0.400	0.8	ug/L	503	Standard
	Pb	207	306067.8	0.3	**50.7355**	0.099	0.2	ug/L	406	Standard
	Pb	208	350540.1	0.4	**49.8209**	0.206	0.4	ug/L	497	Standard
	U	238	279063.2	0.3	**53.8770**	0.126	0.2	ug/L	17	Standard
>	Bi	209	574485.8	0.1				ug/L	559221	Standard

Sample ID: QC Std 6
Report Date/Time: Monday, March 27, 2017 15:57:21
Page 1

Approved: March 28, 2017

	Na	23	8.3	91.7	**4.0366**	4.676	115.8	mg/L	2	Standard
	Mg	24	503.3	4.0	**5.5231**	0.338	6.1	mg/L	33	Standard
	K	39	678.3	1.5	**4.2490**	0.119	2.8	mg/L	18	Standard
	Ca	43	40.0	45.1	**-59.7998**	24.610	41.2	mg/L	72	Standard
	Fe	54	903.9	2.8	**4.8904**	0.246	5.0	mg/L	29	Standard
	Fe	57	595.0	2.9	**3.4817**	0.362	10.4	mg/L	382	Standard
>	**Sc-1**	45	40654.5	2.2				mg/L	39299	Standard
	Cl	35	0.0					ug/L	4	Standard
	Kr	83	2.7	57.3				ug/L	3	Standard
	Br	81	2910.3	8.1				ug/L	2287	Standard
	P	31	105.0	46.9				ug/L	80	Standard
	S	34	53.3	21.7				ug/L	45	Standard
	Sr	88	136.7	11.2				ug/L	178	Standard
	C	12	33.3	17.3				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	26.0	44.9				mg/L	16	Standard
	Ho-1	165	5.0	0.0				mg/L	10	Standard
	Er	166	13.3	43.3				mg/L	17	Standard
	I	127	3202.0	3.3				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	100.648		
	Al	27	97.161		
	Sc	45			
	Ti	47	104.692		
	V	51	99.548		
	Cr	52	100.287		
	Cr	53			
	Mn	55	100.693		
	Co	59	100.687		
	Ni	60	100.181		
	Cu	65	101.452		
	Zn	66	101.215		
>	Ge	72		99.385	
	As	75	101.494		
	Se	82	105.392		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Monday, March 27, 2017 15:57:21
Page 2

Approved: March 28, 2017

⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	103.602	
|	Ag	107	103.703	
|	Cd	111	104.301	
|	Cd	114		
|>	In	115		98.606
|	Sn	118	104.505	
|	Sb	123	101.962	
⌊	Ba	135	99.650	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	100.913	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	99.642	
|	U	238	107.754	
⌊>	Bi	209		102.730
⌈	Na	23		
|	Mg	24		
|	K	39		
|	Ca	43		
|	Fe	54		
|	Fe	57		
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Monday, March 27, 2017 15:57:21
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

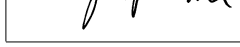
Sample ID: QC Std 7
Sample Date/Time: Monday, March 27, 2017 15:58:16
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	266409.0	2.0				ug/L	262785	Standard
	Be	9	66.7	26.3	**0.0251**	0.007	28.4	ug/L	28	Standard
	Al	27	2588.6	21.1	**0.0086**	0.003	36.8	ug/L	2187	Standard
	Sc	45	39255.8	2.3				ug/L	39299	Standard
	Ti	47	39.3	14.5	**-0.1367**	0.022	15.9	ug/L	82	Standard
	V	51	1415.8	5.5	**-0.0367**	0.010	27.5	ug/L	1876	Standard
	Cr	52	6356.0	2.7	**-0.1733**	0.024	13.9	ug/L	8221	Standard
	Cr	53	745.0	11.9	**-0.2458**	0.096	38.9	ug/L	1083	Standard
	Mn	55	2590.2	3.6	**0.0196**	0.007	37.7	ug/L	2738	Standard
	Co	59	413.0	3.7	**-0.0143**	0.002	11.6	ug/L	635	Standard
	Ni	60	264.0	3.7	**0.0167**	0.004	26.5	ug/L	261	Standard
	Cu	65	657.3	1.7	**-0.0036**	0.006	161.9	ug/L	660	Standard
	Zn	66	521.3	1.8	**-0.0477**	0.009	18.0	ug/L	558	Standard
>	Ge	72	772861.7	0.4				ug/L	807251	Standard
	As	75	-44.0	47.7	**0.0149**	0.016	108.2	ug/L	-43	Standard
	Se	82	15.4	53.3	**0.0557**	0.069	124.5	ug/L	18	Standard
	Se-1	77	101.7	2.5	**-0.1870**	0.026	14.1	ug/L	127	Standard
>	Ga	71	26.7	10.8				mg/L	32	Standard
	Rb	85	51.7	20.1				ug/L	27	Standard
	Y	89	526439.7	1.9				ug/L	534994	Standard
>	Rh	103	11.7	89.2				ug/L	20	Standard
	Mo	98	392.3	24.8	**0.0681**	0.024	35.2	ug/L	285	Standard
	Ag	107	200.7	15.8	**0.0106**	0.004	40.9	ug/L	129	Standard
	Cd	111	20.2	51.0	**0.0018**	0.005	287.6	mg/L	6	Standard
	Cd	114	124.6	46.0	**0.0134**	0.011	81.1	ug/L	46	Standard
>	In	115	653235.0	1.2				ug/L	679215	Standard
	Sn	118	325.3	7.3	**0.0504**	0.020	39.4	ug/L	411	Standard
	Sb	123	498.2	19.3	**0.0640**	0.017	27.0	ug/L	497	Standard
	Ba	135	90.0	9.7	**0.0245**	0.004	17.2	ug/L	43	Standard
	Ce	140	16.7	62.4				ug/L	22	Standard
>	Tb	159	946371.8	2.3				ug/L	983965	Standard
	Ho	165	21.7	26.6				ug/L	10	Standard
	Tl	203	126.3	40.5	**-0.0126**	0.006	48.4	ug/L	248	Standard
	Tl	205	336.7	51.2	**-0.0149**	0.009	57.9	ug/L	620	Standard
	Pb	206	574.7	5.2	**0.0112**	0.004	32.9	ug/L	503	Standard
	Pb	207	491.3	8.4	**0.0126**	0.006	49.0	ug/L	406	Standard
	Pb	208	588.0	5.2	**0.0134**	0.005	36.4	ug/L	497	Standard
	U	238	80.3	38.3	**0.0142**	0.006	40.8	ug/L	17	Standard
>	Bi	209	569093.4	1.3				ug/L	559221	Standard

Sample ID: QC Std 7
Report Date/Time: Monday, March 27, 2017 16:00:26
Page 1

Approved: March 28, 2017



⌈	**Na**	23	0.0		**-1.0498**	0.000	0.0	mg/L	2	Standard
|	**Mg**	24	33.3	34.6	**-0.1219**	0.136	111.9	mg/L	33	Standard
|	**K**	39	13.3	78.1	**-0.0611**	0.073	119.0	mg/L	18	Standard
|	**Ca**	43	25.0	20.0	**-79.3326**	7.967	10.0	mg/L	72	Standard
|	**Fe**	54	36.2	15.6	**0.0083**	0.035	416.9	mg/L	29	Standard
|	**Fe**	57	346.7	4.6	**-0.9658**	0.250	25.9	mg/L	382	Standard
⌊>	**Sc-1**	45	39255.8	2.3				mg/L	39299	Standard
	Cl	35	2.0	173.2				ug/L	4	Standard
	Kr	83	2.3	107.9				ug/L	3	Standard
	Br	81	2890.3	2.7				ug/L	2287	Standard
	P	31	96.7	23.3				ug/L	80	Standard
	S	34	56.7	35.7				ug/L	45	Standard
	Sr	88	130.0	26.9				ug/L	178	Standard
	C	12	40.0	90.1				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	19.5	102.5				mg/L	16	Standard
	Ho-1	165	21.7	26.6				mg/L	10	Standard
	Er	166	10.0					mg/L	17	Standard
	I	127	6061.2	6.0				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		95.740	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Monday, March 27, 2017 16:00:26
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	96.175
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	101.765
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Monday, March 27, 2017 16:00:26
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Monday, March 27, 2017 16:01:22
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	263245.7	1.1				ug/L	262785	Standard
	Be	9	550.0	2.4	**0.2187**	0.007	3.3	ug/L	28	Standard
	Al	27	1601.8	5.3	**0.0031**	0.001	17.2	ug/L	2187	Standard
	Sc	45	39581.7	3.0				ug/L	39299	Standard
	Ti	47	34.0	14.7	**-0.1585**	0.020	12.6	ug/L	82	Standard
	V	51	4678.0	2.2	**0.3550**	0.014	3.8	ug/L	1876	Standard
	Cr	52	14253.7	1.0	**0.8405**	0.013	1.5	ug/L	8221	Standard
	Cr	53	1608.4	9.2	**0.6421**	0.162	25.3	ug/L	1083	Standard
	Mn	55	8344.3	1.3	**0.4534**	0.004	0.9	ug/L	2738	Standard
	Co	59	4161.9	1.6	**0.3588**	0.005	1.5	ug/L	635	Standard
	Ni	60	3497.7	3.5	**1.5210**	0.047	3.1	ug/L	261	Standard
	Cu	65	2408.5	2.3	**0.7880**	0.029	3.7	ug/L	660	Standard
	Zn	66	8815.9	1.3	**6.1861**	0.053	0.9	ug/L	558	Standard
>	Ge	72	779199.7	0.7				ug/L	807251	Standard
	As	75	476.9	6.5	**0.4071**	0.023	5.7	ug/L	-43	Standard
	Se	82	61.5	10.8	**0.4412**	0.056	12.7	ug/L	18	Standard
	Se-1	77	130.3	3.9	**0.1357**	0.070	51.7	ug/L	127	Standard
>	Ga	71	25.0	20.0				mg/L	32	Standard
	Rb	85	45.0	57.7				ug/L	27	Standard
	Y	89	525049.1	2.4				ug/L	534994	Standard
>	Rh	103	11.7	107.9				ug/L	20	Standard
	Mo	98	92.9	15.6	**-0.0028**	0.003	121.9	ug/L	285	Standard
	Ag	107	2778.3	1.4	**0.3838**	0.002	0.5	ug/L	129	Standard
	Cd	111	485.6	9.6	**0.2361**	0.024	10.3	mg/L	6	Standard
	Cd	114	1306.5	3.4	**0.2410**	0.007	2.7	ug/L	46	Standard
>	In	115	657572.7	0.9				ug/L	679215	Standard
	Sn	118	195.0	5.6	**-0.0658**	0.009	13.5	ug/L	411	Standard
	Sb	123	2194.7	1.2	**0.3855**	0.004	0.9	ug/L	497	Standard
	Ba	135	1460.4	1.6	**0.6886**	0.015	2.2	ug/L	43	Standard
	Ce	140	20.0	50.0				ug/L	22	Standard
>	Tb	159	957421.5	1.0				ug/L	983965	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	694.0	1.3	**0.0570**	0.003	4.7	ug/L	248	Standard
	Tl	205	1605.1	7.9	**0.0503**	0.006	12.0	ug/L	620	Standard
	Pb	206	1759.8	2.4	**0.1891**	0.002	0.9	ug/L	503	Standard
	Pb	207	1464.7	3.0	**0.1747**	0.008	4.8	ug/L	406	Standard
	Pb	208	1807.0	2.9	**0.1873**	0.003	1.5	ug/L	497	Standard
	U	238	2077.8	4.0	**0.4019**	0.020	5.0	ug/L	17	Standard
>	Bi	209	571590.7	1.9				ug/L	559221	Standard

Sample ID: QC Std 8
Report Date/Time: Monday, March 27, 2017 16:03:33
Page 1

Approved: March 28, 2017

	Na	23	1.7	173.2	**-0.0501**	1.732	3457.4	mg/L	2	Standard
	Mg	24	30.0	57.7	**-0.1643**	0.214	130.5	mg/L	33	Standard
	K	39	13.3	78.1	**-0.0631**	0.069	110.1	mg/L	18	Standard
	Ca	43	46.7	24.7	**-48.1748**	18.640	38.7	mg/L	72	Standard
	Fe	54	42.9	44.3	**0.0471**	0.118	251.3	mg/L	29	Standard
	Fe	57	373.3	8.2	**-0.4892**	0.802	164.0	mg/L	382	Standard
>	**Sc-1**	45	39581.7	3.0				mg/L	39299	Standard
	Cl	35	2.7	86.6				ug/L	4	Standard
	Kr	83	2.0	86.6				ug/L	3	Standard
	Br	81	2710.2	2.6				ug/L	2287	Standard
	P	31	96.7	10.8				ug/L	80	Standard
	S	34	56.7	25.5				ug/L	45	Standard
	Sr	88	146.7	11.0				ug/L	178	Standard
	C	12	26.7	21.7				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	26.3	22.5				mg/L	16	Standard
	Ho-1	165	6.7	43.3				mg/L	10	Standard
	Er	166	6.7	86.6				mg/L	17	Standard
	I	127	3998.9	2.8				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	109.359		
	Al	27			
	Sc	45			
	Ti	47			
	V	51	88.739		
	Cr	52	105.059		
	Cr	53			
	Mn	55	90.672		
	Co	59	89.697		
	Ni	60	95.063		
	Cu	65	98.498		
	Zn	66	98.977		
>	Ge	72		96.525	
	As	75	101.787		
	Se	82	110.303		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 8
Report Date/Time: Monday, March 27, 2017 16:03:33
Page 2

Approved: March 28, 2017

Rb	85			
Y	89			
Rh	103			
Mo	98			
Ag	107	95.939		
Cd	111	98.371		
Cd	114			
In	115		96.814	
Sn	118			
Sb	123	96.385		
Ba	135	91.818		
Ce	140			
Tb	159			
Ho	165			
Tl	203	71.207		
Tl	205			
Pb	206			
Pb	207			
Pb	208	93.670		
U	238	100.479		
Bi	209		102.212	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
Report Date/Time: Monday, March 27, 2017 16:03:33
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

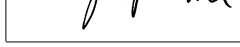
Sample ID: L1703131302
Sample Date/Time: Monday, March 27, 2017 16:04:28
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	272171.8	2.1				ug/L	262785	Standard
	Be	9	103.3	58.5	**0.0390**	0.024	60.8	ug/L	28	Standard
	Al	27	9941741.8	1.4	**55.5137**	1.832	3.3	ug/L	2187	Standard
	Sc	45	40310.2	0.8				ug/L	39299	Standard
	Ti	47	272.3	6.5	**0.7506**	0.077	10.2	ug/L	82	Standard
	V	51	1001.9	22.0	**-0.0899**	0.025	28.1	ug/L	1876	Standard
	Cr	52	7686.3	3.6	**-0.0230**	0.042	182.4	ug/L	8221	Standard
	Cr	53	5009.2	23.0	**4.0862**	1.193	29.2	ug/L	1083	Standard
	Mn	55	23955176.8	0.2	**1785.3110**	14.554	0.8	ug/L	2738	Standard
	Co	59	1820.4	6.0	**0.1229**	0.011	9.3	ug/L	635	Standard
	Ni	60	2983.3	2.3	**1.2609**	0.040	3.2	ug/L	261	Standard
	Cu	65	1763.4	2.5	**0.4835**	0.023	4.8	ug/L	660	Standard
	Zn	66	4722.7	2.3	**3.0546**	0.065	2.1	ug/L	558	Standard
>	Ge	72	791132.6	0.9				ug/L	807251	Standard
	As	75	32599.9	0.9	**24.2093**	0.152	0.6	ug/L	-43	Standard
	Se	82	605.3	3.3	**4.9220**	0.125	2.5	ug/L	18	Standard
	Se-1	77	365.0	5.6	**2.7890**	0.235	8.4	ug/L	127	Standard
>	Ga	71	95.0	34.5				mg/L	32	Standard
	Rb	85	2496.9	4.2				ug/L	27	Standard
	Y	89	537130.5	1.9				ug/L	534994	Standard
>	Rh	103	55.0	9.1				ug/L	20	Standard
	Mo	98	2657.5	8.8	**0.6061**	0.057	9.4	ug/L	285	Standard
	Ag	107	232.0	72.8	**0.0154**	0.025	160.6	ug/L	129	Standard
	Cd	111	78.9	60.7	**0.0318**	0.024	76.8	mg/L	6	Standard
	Cd	114	216.1	35.2	**0.0315**	0.015	47.1	ug/L	46	Standard
>	In	115	649120.2	1.9				ug/L	679215	Standard
	Sn	118	395.3	6.0	**0.1147**	0.024	21.2	ug/L	411	Standard
	Sb	123	502.3	26.7	**0.0656**	0.026	39.4	ug/L	497	Standard
	Ba	135	419655.9	0.9	**206.0878**	2.199	1.1	ug/L	43	Standard
	Ce	140	253.3	13.1				ug/L	22	Standard
>	Tb	159	992143.3	1.5				ug/L	983965	Standard
	Ho	165	50.0	30.0				ug/L	10	Standard
	Tl	203	952.0	9.2	**0.0881**	0.011	12.6	ug/L	248	Standard
	Tl	205	2301.8	7.8	**0.0857**	0.009	10.6	ug/L	620	Standard
	Pb	206	1026.4	13.1	**0.0780**	0.018	23.1	ug/L	503	Standard
	Pb	207	909.7	8.0	**0.0813**	0.010	12.0	ug/L	406	Standard
	Pb	208	1061.3	6.6	**0.0800**	0.008	9.6	ug/L	497	Standard
	U	238	98.7	56.7	**0.0175**	0.011	59.9	ug/L	17	Standard
>	Bi	209	573960.3	1.7				ug/L	559221	Standard

Sample ID: L1703131302
Report Date/Time: Monday, March 27, 2017 16:06:39
Page 1

Approved: March 28, 2017



⌈	**Na**	23	70.0	7.1	**41.4665**	3.351	8.1	mg/L	2	Standard
|	**Mg**	24	2341.8	2.0	**27.8765**	0.794	2.8	mg/L	33	Standard
|	**K**	39	155.0	12.9	**0.8628**	0.138	16.0	mg/L	18	Standard
|	**Ca**	43	101.7	33.5	**27.9280**	47.250	169.2	mg/L	72	Standard
|	**Fe**	54	3721.7	2.2	**20.9313**	0.307	1.5	mg/L	29	Standard
|	**Fe**	57	1455.1	5.9	**19.9205**	1.840	9.2	mg/L	382	Standard
⌊>	**Sc-1**	45	40310.2	0.8				mg/L	39299	Standard
	Cl	35	2.7	86.6				ug/L	4	Standard
	Kr	83	2.0	50.0				ug/L	3	Standard
	Br	81	297340.4	4.9				ug/L	2287	Standard
	P	31	98.3	2.9				ug/L	80	Standard
	S	34	48.3	33.3				ug/L	45	Standard
	Sr	88	190.0	9.5				ug/L	178	Standard
	C	12	36.7	15.7				mg/L	33	Standard
	N	14	6.7	86.6				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	64.4	8.6				mg/L	16	Standard
	Ho-1	165	50.0	30.0				mg/L	10	Standard
	Er	166	46.7	24.7				mg/L	17	Standard
	I	127	327258.7	8.7				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		103.572	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		98.003	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703131302
Report Date/Time: Monday, March 27, 2017 16:06:39
Page 2

Approved: March 28, 2017

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.569
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.636
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1703131302
Report Date/Time: Monday, March 27, 2017 16:06:39
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: L1703131303
Sample Date/Time: Monday, March 27, 2017 16:07:34
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	273685.2	1.8				ug/L	262785	Standard
	Be	9	186.7	13.2	**0.0706**	0.010	13.9	ug/L	28	Standard
	Al	27	2698766.8	1.2	**14.9791**	0.366	2.4	ug/L	2187	Standard
	Sc	45	39688.6	0.3				ug/L	39299	Standard
	Ti	47	945.4	6.2	**3.2781**	0.231	7.0	ug/L	82	Standard
	V	51	6692.9	4.2	**0.5758**	0.032	5.6	ug/L	1876	Standard
	Cr	52	11740.2	1.1	**0.4745**	0.012	2.6	ug/L	8221	Standard
	Cr	53	2001.8	4.3	**0.9924**	0.081	8.1	ug/L	1083	Standard
	Mn	55	7149415.8	0.4	**526.1563**	1.863	0.4	ug/L	2738	Standard
	Co	59	22734.0	1.0	**2.1473**	0.020	0.9	ug/L	635	Standard
	Ni	60	14940.4	1.5	**6.6599**	0.112	1.7	ug/L	261	Standard
	Cu	65	3800.5	0.9	**1.3722**	0.014	1.0	ug/L	660	Standard
	Zn	66	9974.6	0.5	**6.8540**	0.036	0.5	ug/L	558	Standard
>	**Ge**	72	800932.6	0.3				ug/L	807251	Standard
	As	75	1089.9	3.3	**0.8462**	0.028	3.3	ug/L	-43	Standard
	Se	82	99.4	9.9	**0.7362**	0.081	11.0	ug/L	18	Standard
	Se-1	77	130.7	8.2	**0.0979**	0.117	119.4	ug/L	127	Standard
>	**Ga**	71	360.0	2.4				mg/L	32	Standard
	Rb	85	9409.6	1.9				ug/L	27	Standard
	Y	89	556575.6	1.0				ug/L	534994	Standard
>	**Rh**	103	28.3	27.0				ug/L	20	Standard
	Mo	98	290.7	9.4	**0.0427**	0.006	15.0	ug/L	285	Standard
	Ag	107	201.7	11.0	**0.0103**	0.003	31.4	ug/L	129	Standard
	Cd	111	297.0	10.6	**0.1394**	0.016	11.4	mg/L	6	Standard
	Cd	114	842.3	5.5	**0.1497**	0.009	6.0	ug/L	46	Standard
>	**In**	115	665254.3	0.2				ug/L	679215	Standard
	Sn	118	413.0	2.6	**0.1213**	0.009	7.3	ug/L	411	Standard
	Sb	123	263.0	8.5	**0.0183**	0.004	23.0	ug/L	497	Standard
	Ba	135	42812.7	1.0	**20.4947**	0.181	0.9	ug/L	43	Standard
	Ce	140	15457.9	2.3				ug/L	22	Standard
>	**Tb**	159	993052.2	0.3				ug/L	983965	Standard
	Ho	165	1013.4	7.0				ug/L	10	Standard
	Tl	203	365.7	15.7	**0.0146**	0.007	45.5	ug/L	248	Standard
	Tl	205	863.4	20.2	**0.0101**	0.008	83.8	ug/L	620	Standard
	Pb	206	4006.2	0.5	**0.4993**	0.002	0.4	ug/L	503	Standard
	Pb	207	3283.4	0.7	**0.4527**	0.003	0.7	ug/L	406	Standard
	Pb	208	3934.2	1.2	**0.4656**	0.007	1.4	ug/L	497	Standard
	U	238	158.0	12.1	**0.0278**	0.004	12.8	ug/L	17	Standard
>	**Bi**	209	599334.8	0.2				ug/L	559221	Standard

Sample ID: L1703131303
Report Date/Time: Monday, March 27, 2017 16:09:45
Page 1

Approved: March 28, 2017

	Na	23	18.3	41.7	**10.2624**	4.728	46.1	mg/L	2	Standard
	Mg	24	323.3	10.3	**3.4493**	0.420	12.2	mg/L	33	Standard
	K	39	31.7	36.5	**0.0588**	0.077	130.8	mg/L	18	Standard
	Ca	43	51.7	5.6	**-41.4914**	4.206	10.1	mg/L	72	Standard
	Fe	54	381.0	11.4	**1.9947**	0.254	12.7	mg/L	29	Standard
	Fe	57	475.0	13.1	**1.4390**	1.228	85.3	mg/L	382	Standard
>	**Sc-1**	45	39688.6	0.3				mg/L	39299	Standard
	Cl	35	2.0	100.0				ug/L	4	Standard
	Kr	83	2.3	65.5				ug/L	3	Standard
	Br	81	44736.1	5.3				ug/L	2287	Standard
	P	31	93.3	48.6				ug/L	80	Standard
	S	34	48.3	66.5				ug/L	45	Standard
	Sr	88	143.3	8.1				ug/L	178	Standard
	C	12	56.7	27.0				mg/L	33	Standard
	N	14	6.7	173.2				mg/L	0	Standard
	Hg	202	50.0	0.0				mg/L	3	Standard
	Dy	164	1674.7	8.7				mg/L	16	Standard
	Ho-1	165	1013.4	7.0				mg/L	10	Standard
	Er	166	946.7	7.0				mg/L	17	Standard
	I	127	99680.3	2.6				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		104.148	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.217	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703131303
Report Date/Time: Monday, March 27, 2017 16:09:45
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	97.945
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	107.173
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1703131303
Report Date/Time: Monday, March 27, 2017 16:09:45
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

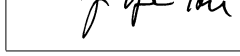
Sample ID: L1703131304
Sample Date/Time: Monday, March 27, 2017 16:10:39
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	269087.8	2.5				ug/L	262785	Standard
	Be	9	148.3	15.2	**0.0567**	0.007	13.0	ug/L	28	Standard
	Al	27	2680374.0	0.9	**15.1354**	0.488	3.2	ug/L	2187	Standard
	Sc	45	39690.3	2.2				ug/L	39299	Standard
	Ti	47	295.3	34.1	**0.8299**	0.388	46.7	ug/L	82	Standard
	V	51	1811.5	12.6	**0.0044**	0.026	589.6	ug/L	1876	Standard
	Cr	52	8824.6	0.8	**0.1123**	0.010	8.7	ug/L	8221	Standard
	Cr	53	1530.1	7.5	**0.5231**	0.108	20.7	ug/L	1083	Standard
	Mn	55	6990091.8	0.6	**516.4514**	5.382	1.0	ug/L	2738	Standard
	Co	59	21991.9	0.5	**2.0838**	0.013	0.6	ug/L	635	Standard
	Ni	60	14563.3	1.3	**6.5149**	0.096	1.5	ug/L	261	Standard
	Cu	65	2280.5	4.4	**0.7058**	0.048	6.7	ug/L	660	Standard
	Zn	66	8483.4	1.1	**5.7875**	0.090	1.6	ug/L	558	Standard
>	Ge	72	797819.9	0.5				ug/L	807251	Standard
	As	75	351.8	7.7	**0.3068**	0.020	6.5	ug/L	-43	Standard
	Se	82	95.1	11.2	**0.7041**	0.087	12.4	ug/L	18	Standard
	Se-1	77	136.3	6.8	**0.1679**	0.103	61.4	ug/L	127	Standard
>	Ga	71	48.3	39.2				mg/L	32	Standard
	Rb	85	5421.0	3.2				ug/L	27	Standard
	Y	89	552506.7	0.3				ug/L	534994	Standard
>	Rh	103	23.3	65.5				ug/L	20	Standard
	Mo	98	103.6	12.1	**-0.0004**	0.003	652.5	ug/L	285	Standard
	Ag	107	139.3	8.8	**0.0014**	0.002	127.6	ug/L	129	Standard
	Cd	111	288.5	4.2	**0.1359**	0.005	3.9	mg/L	6	Standard
	Cd	114	781.5	3.7	**0.1389**	0.005	3.7	ug/L	46	Standard
>	In	115	661634.2	0.5				ug/L	679215	Standard
	Sn	118	379.0	7.4	**0.0936**	0.024	25.2	ug/L	411	Standard
	Sb	123	206.4	19.6	**0.0079**	0.008	98.5	ug/L	497	Standard
	Ba	135	40075.3	0.8	**19.2880**	0.075	0.4	ug/L	43	Standard
	Ce	140	3995.5	3.5				ug/L	22	Standard
>	Tb	159	997233.0	1.5				ug/L	983965	Standard
	Ho	165	341.7	1.7				ug/L	10	Standard
	Tl	203	321.3	5.1	**0.0098**	0.002	16.0	ug/L	248	Standard
	Tl	205	895.0	3.9	**0.0121**	0.002	17.5	ug/L	620	Standard
	Pb	206	675.3	2.2	**0.0222**	0.002	7.9	ug/L	503	Standard
	Pb	207	577.0	4.2	**0.0230**	0.003	14.6	ug/L	406	Standard
	Pb	208	695.7	0.4	**0.0247**	0.001	5.7	ug/L	497	Standard
	U	238	81.3	0.7	**0.0138**	0.000	0.9	ug/L	17	Standard
>	Bi	209	593609.6	1.0				ug/L	559221	Standard

Sample ID: L1703131304
Report Date/Time: Monday, March 27, 2017 16:12:50
Page 1

Approved: March 28, 2017



	Na	23	18.3	83.3	**10.2652**	9.339	91.0	mg/L	2	Standard
	Mg	24	331.7	7.1	**3.5481**	0.205	5.8	mg/L	33	Standard
	K	39	30.0	16.7	**0.0481**	0.037	76.6	mg/L	18	Standard
	Ca	43	55.0	24.1	**-36.7072**	18.768	51.1	mg/L	72	Standard
	Fe	54	122.6	4.9	**0.5045**	0.050	10.0	mg/L	29	Standard
	Fe	57	420.0	13.5	**0.3874**	1.198	309.3	mg/L	382	Standard
>	**Sc-1**	45	39690.3	2.2				mg/L	39299	Standard
	Cl	35	2.0	0.0				ug/L	4	Standard
	Kr	83	3.7	56.8				ug/L	3	Standard
	Br	81	41092.4	4.9				ug/L	2287	Standard
	P	31	80.0	28.6				ug/L	80	Standard
	S	34	63.3	39.7				ug/L	45	Standard
	Sr	88	133.3	15.2				ug/L	178	Standard
	C	12	26.7	86.6				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	484.4	31.1				mg/L	16	Standard
	Ho-1	165	341.7	1.7				mg/L	10	Standard
	Er	166	326.7	15.7				mg/L	17	Standard
	I	127	86863.3	1.6				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		102.399	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.832	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703131304
Report Date/Time: Monday, March 27, 2017 16:12:50
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	97.412
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	106.149
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1703131304
Report Date/Time: Monday, March 27, 2017 16:12:50
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

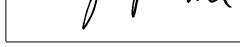
Sample ID: L1703137001
Sample Date/Time: Monday, March 27, 2017 16:13:45
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	271217.6	0.6				ug/L	262785	Standard
	Be	9	83.3	21.1	**0.0311**	0.007	22.4	ug/L	28	Standard
	Al	27	7402154.4	0.4	**41.4598**	0.356	0.9	ug/L	2187	Standard
	Sc	45	40062.9	0.5				ug/L	39299	Standard
	Ti	47	124.3	10.5	**0.1737**	0.047	27.3	ug/L	82	Standard
	V	51	2083.3	15.1	**0.0329**	0.036	110.0	ug/L	1876	Standard
	Cr	52	10183.8	3.2	**0.2652**	0.040	15.2	ug/L	8221	Standard
	Cr	53	1916.8	7.1	**0.8865**	0.140	15.7	ug/L	1083	Standard
	Mn	55	19816.9	17.4	**1.2648**	0.247	19.6	ug/L	2738	Standard
	Co	59	703.7	3.5	**0.0117**	0.003	23.1	ug/L	635	Standard
	Ni	60	1303.4	1.8	**0.4768**	0.008	1.8	ug/L	261	Standard
	Cu	65	2690.2	2.5	**0.8698**	0.025	2.9	ug/L	660	Standard
	Zn	66	5521.7	1.1	**3.5535**	0.066	1.8	ug/L	558	Standard
>	Ge	72	809579.0	0.5				ug/L	807251	Standard
	As	75	59.0	54.1	**0.0909**	0.023	25.3	ug/L	-43	Standard
	Se	82	116.1	3.1	**0.8628**	0.034	3.9	ug/L	18	Standard
	Se-1	77	214.7	2.6	**1.0184**	0.050	4.9	ug/L	127	Standard
>	Ga	71	41.7	45.4				mg/L	32	Standard
	Rb	85	6789.9	1.5				ug/L	27	Standard
	Y	89	558507.0	1.4				ug/L	534994	Standard
>	Rh	103	31.7	50.8				ug/L	20	Standard
	Mo	98	213.4	7.7	**0.0241**	0.004	15.7	ug/L	285	Standard
	Ag	107	148.7	8.2	**0.0024**	0.002	73.8	ug/L	129	Standard
	Cd	111	75.1	4.1	**0.0284**	0.002	5.8	mg/L	6	Standard
	Cd	114	219.4	9.9	**0.0305**	0.004	13.9	ug/L	46	Standard
>	In	115	674851.3	0.6				ug/L	679215	Standard
	Sn	118	395.3	8.4	**0.1011**	0.027	26.9	ug/L	411	Standard
	Sb	123	279.6	8.2	**0.0207**	0.004	19.6	ug/L	497	Standard
	Ba	135	62558.5	0.4	**29.5312**	0.289	1.0	ug/L	43	Standard
	Ce	140	800.0	6.0				ug/L	22	Standard
>	Tb	159	1001402.8	0.5				ug/L	983965	Standard
	Ho	165	248.3	5.1				ug/L	10	Standard
	Tl	203	440.0	5.1	**0.0240**	0.003	10.6	ug/L	248	Standard
	Tl	205	1035.0	10.5	**0.0193**	0.005	25.8	ug/L	620	Standard
	Pb	206	686.7	3.6	**0.0243**	0.003	11.3	ug/L	503	Standard
	Pb	207	589.0	4.8	**0.0253**	0.005	21.1	ug/L	406	Standard
	Pb	208	681.3	5.2	**0.0231**	0.005	21.4	ug/L	497	Standard
	U	238	136.7	13.0	**0.0242**	0.004	14.7	ug/L	17	Standard
>	Bi	209	590975.4	0.9				ug/L	559221	Standard

Sample ID: L1703137001
Report Date/Time: Monday, March 27, 2017 16:15:56
Page 1

Approved: March 28, 2017



⌈	**Na**	23	25.0	20.0	**14.2332**	3.137	22.0	mg/L	2	Standard
|	**Mg**	24	120.0	27.3	**0.9286**	0.395	42.6	mg/L	33	Standard
|	**K**	39	160.0	3.1	**0.9013**	0.032	3.6	mg/L	18	Standard
|	**Ca**	43	55.0	24.1	**-37.3746**	19.301	51.6	mg/L	72	Standard
|	**Fe**	54	37.9	30.5	**0.0134**	0.066	493.7	mg/L	29	Standard
|	**Fe**	57	396.7	11.7	**-0.1488**	0.853	573.2	mg/L	382	Standard
⌊>	**Sc-1**	45	40062.9	0.5				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	1.0	100.0				ug/L	3	Standard
	Br	81	5574.4	6.2				ug/L	2287	Standard
	P	31	61.7	18.7				ug/L	80	Standard
	S	34	31.7	18.2				ug/L	45	Standard
	Sr	88	158.3	24.5				ug/L	178	Standard
	C	12	36.7	56.8				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	259.9	16.4				mg/L	16	Standard
	Ho-1	165	248.3	5.1				mg/L	10	Standard
	Er	166	280.0	30.9				mg/L	17	Standard
	I	127	5902.8	14.5				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		103.209	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		100.288	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703137001
Report Date/Time: Monday, March 27, 2017 16:15:56
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	99.358
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	105.678
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703137001
Report Date/Time: Monday, March 27, 2017 16:15:56
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

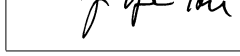
Sample ID: L1703137002
Sample Date/Time: Monday, March 27, 2017 16:16:50
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	274447.9	4.3				ug/L	262785	Standard
	Be	9	41.7	42.1	**0.0146**	0.006	41.7	ug/L	28	Standard
	Al	27	5236549.1	1.1	**29.0255**	1.514	5.2	ug/L	2187	Standard
	Sc	45	40587.6	0.3				ug/L	39299	Standard
	Ti	47	138.0	5.1	**0.2196**	0.041	18.8	ug/L	82	Standard
	V	51	2182.6	6.3	**0.0412**	0.007	17.3	ug/L	1876	Standard
	Cr	52	9553.3	2.4	**0.1728**	0.012	6.9	ug/L	8221	Standard
	Cr	53	1396.7	4.6	**0.3523**	0.073	20.6	ug/L	1083	Standard
	Mn	55	7100.7	1.3	**0.3333**	0.016	4.9	ug/L	2738	Standard
	Co	59	722.0	5.8	**0.0127**	0.005	37.3	ug/L	635	Standard
	Ni	60	1166.7	3.9	**0.4095**	0.019	4.7	ug/L	261	Standard
	Cu	65	1947.8	3.2	**0.5367**	0.048	9.0	ug/L	660	Standard
	Zn	66	4755.1	1.4	**2.9609**	0.156	5.3	ug/L	558	Standard
>	Ge	72	819349.5	3.4				ug/L	807251	Standard
	As	75	42.0	47.5	**0.0781**	0.014	17.7	ug/L	-43	Standard
	Se	82	121.0	2.4	**0.8908**	0.012	1.3	ug/L	18	Standard
	Se-1	77	195.7	3.4	**0.7835**	0.132	16.8	ug/L	127	Standard
>	Ga	71	51.7	14.8				mg/L	32	Standard
	Rb	85	4315.6	1.5				ug/L	27	Standard
	Y	89	554518.0	1.5				ug/L	534994	Standard
>	Rh	103	30.0	16.7				ug/L	20	Standard
	Mo	98	272.2	18.8	**0.0377**	0.013	33.2	ug/L	285	Standard
	Ag	107	113.3	6.6	**-0.0026**	0.001	41.5	ug/L	129	Standard
	Cd	111	26.0	18.9	**0.0043**	0.003	59.3	mg/L	6	Standard
	Cd	114	136.9	23.8	**0.0150**	0.006	42.9	ug/L	46	Standard
>	In	115	675040.9	1.8				ug/L	679215	Standard
	Sn	118	364.7	3.2	**0.0748**	0.006	8.4	ug/L	411	Standard
	Sb	123	229.6	19.7	**0.0115**	0.009	78.1	ug/L	497	Standard
	Ba	135	37865.9	1.5	**17.8665**	0.488	2.7	ug/L	43	Standard
	Ce	140	961.7	13.2				ug/L	22	Standard
>	Tb	159	997239.4	1.0				ug/L	983965	Standard
	Ho	165	136.7	18.0				ug/L	10	Standard
	Tl	203	282.0	9.8	**0.0056**	0.003	53.6	ug/L	248	Standard
	Tl	205	661.7	12.6	**0.0011**	0.005	419.6	ug/L	620	Standard
	Pb	206	738.0	7.4	**0.0329**	0.009	26.7	ug/L	503	Standard
	Pb	207	571.7	1.9	**0.0234**	0.001	3.1	ug/L	406	Standard
	Pb	208	710.0	1.4	**0.0281**	0.002	7.7	ug/L	497	Standard
	U	238	1599.1	4.6	**0.3018**	0.018	6.1	ug/L	17	Standard
>	Bi	209	585277.6	1.7				ug/L	559221	Standard

Sample ID: L1703137002
Report Date/Time: Monday, March 27, 2017 16:19:01
Page 1

Approved: March 28, 2017



	Na	23	23.3	32.7	**13.0303**	4.650	35.7	mg/L	2	Standard
	Mg	24	100.0	13.2	**0.6700**	0.163	24.4	mg/L	33	Standard
	K	39	190.0	15.8	**1.0821**	0.191	17.6	mg/L	18	Standard
	Ca	43	56.7	33.4	**-36.0960**	26.681	73.9	mg/L	72	Standard
	Fe	54	34.2	14.6	**-0.0101**	0.028	282.4	mg/L	29	Standard
	Fe	57	416.7	15.2	**0.1359**	1.218	896.2	mg/L	382	Standard
>	**Sc-1**	45	40587.6	0.3				mg/L	39299	Standard
	Cl	35	0.0					ug/L	4	Standard
	Kr	83	3.0	88.2				ug/L	3	Standard
	Br	81	11104.1	7.3				ug/L	2287	Standard
	P	31	91.7	27.5				ug/L	80	Standard
	S	34	36.7	7.9				ug/L	45	Standard
	Sr	88	183.3	11.0				ug/L	178	Standard
	C	12	26.7	21.7				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	194.3	15.9				mg/L	16	Standard
	Ho-1	165	136.7	18.0				mg/L	10	Standard
	Er	166	120.0	16.7				mg/L	17	Standard
	I	127	10315.2	3.7				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		104.438	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.499	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703137002
Report Date/Time: Monday, March 27, 2017 16:19:01
Page 2

Approved: March 28, 2017

Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	99.385
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	104.659
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703137002
Report Date/Time: Monday, March 27, 2017 16:19:01
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: L1703137003
Sample Date/Time: Monday, March 27, 2017 16:19:56
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	277165.3	3.0				ug/L	262785	Standard
	Be	9	91.7	16.7	**0.0336**	0.005	16.0	ug/L	28	Standard
	Al	27	8635461.3	3.8	**47.3475**	1.942	4.1	ug/L	2187	Standard
	Sc	45	41954.7	1.4				ug/L	39299	Standard
	Ti	47	112.7	6.7	**0.1219**	0.031	25.4	ug/L	82	Standard
	V	51	2400.8	5.4	**0.0642**	0.018	27.5	ug/L	1876	Standard
	Cr	52	12881.8	2.3	**0.5686**	0.053	9.4	ug/L	8221	Standard
	Cr	53	1741.8	8.6	**0.6776**	0.160	23.6	ug/L	1083	Standard
	Mn	55	195526.0	1.2	**13.7760**	0.325	2.4	ug/L	2738	Standard
	Co	59	1401.4	2.3	**0.0758**	0.002	2.7	ug/L	635	Standard
	Ni	60	1249.4	1.8	**0.4414**	0.016	3.6	ug/L	261	Standard
	Cu	65	4351.6	1.2	**1.5566**	0.043	2.7	ug/L	660	Standard
	Zn	66	26165.6	1.1	**18.1126**	0.417	2.3	ug/L	558	Standard
>	Ge	72	826361.1	1.2				ug/L	807251	Standard
	As	75	60.7	83.4	**0.0915**	0.036	39.4	ug/L	-43	Standard
	Se	82	236.5	5.6	**1.7957**	0.120	6.7	ug/L	18	Standard
	Se-1	77	277.7	5.5	**1.6586**	0.183	11.0	ug/L	127	Standard
>	Ga	71	40.0	43.3				mg/L	32	Standard
	Rb	85	10226.8	1.7				ug/L	27	Standard
	Y	89	558852.0	1.8				ug/L	534994	Standard
>	Rh	103	48.3	57.0				ug/L	20	Standard
	Mo	98	133.7	11.7	**0.0057**	0.004	68.0	ug/L	285	Standard
	Ag	107	131.0	8.0	**-0.0003**	0.002	660.2	ug/L	129	Standard
	Cd	111	237.8	9.2	**0.1074**	0.011	10.7	mg/L	6	Standard
	Cd	114	611.8	11.1	**0.1033**	0.014	13.3	ug/L	46	Standard
>	In	115	680415.1	1.5				ug/L	679215	Standard
	Sn	118	366.7	6.0	**0.0742**	0.022	29.9	ug/L	411	Standard
	Sb	123	187.7	14.7	**0.0034**	0.005	160.1	ug/L	497	Standard
	Ba	135	41816.0	1.2	**19.5734**	0.355	1.8	ug/L	43	Standard
	Ce	140	466.7	7.1				ug/L	22	Standard
>	Tb	159	1005113.2	1.0				ug/L	983965	Standard
	Ho	165	23.3	32.7				ug/L	10	Standard
	Tl	203	234.3	14.4	**-0.0004**	0.004	868.9	ug/L	248	Standard
	Tl	205	593.3	4.2	**-0.0028**	0.001	34.0	ug/L	620	Standard
	Pb	206	712.0	3.5	**0.0278**	0.004	14.7	ug/L	503	Standard
	Pb	207	596.3	3.3	**0.0263**	0.003	12.9	ug/L	406	Standard
	Pb	208	720.7	4.4	**0.0284**	0.005	18.9	ug/L	497	Standard
	U	238	79.7	10.1	**0.0135**	0.002	12.2	ug/L	17	Standard
>	Bi	209	592329.9	1.2				ug/L	559221	Standard

Sample ID: L1703137003
Report Date/Time: Monday, March 27, 2017 16:22:07
Page 1

Approved: March 28, 2017

	Na	23	8.3	34.6	**3.8268**	1.736	45.4	mg/L	2	Standard
	Mg	24	171.7	24.8	**1.4687**	0.509	34.7	mg/L	33	Standard
	K	39	90.0	14.7	**0.4143**	0.086	20.7	mg/L	18	Standard
	Ca	43	43.3	43.7	**-56.6499**	26.555	46.9	mg/L	72	Standard
	Fe	54	32.8	74.9	**-0.0232**	0.135	583.0	mg/L	29	Standard
	Fe	57	365.0	17.2	**-1.0707**	1.089	101.7	mg/L	382	Standard
>	**Sc-1**	45	41954.7	1.4				mg/L	39299	Standard
	Cl	35	2.0	100.0				ug/L	4	Standard
	Kr	83	2.7	21.7				ug/L	3	Standard
	Br	81	7091.7	5.1				ug/L	2287	Standard
	P	31	83.3	34.1				ug/L	80	Standard
	S	34	41.7	25.0				ug/L	45	Standard
	Sr	88	131.7	28.8				ug/L	178	Standard
	C	12	53.3	10.8				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	39.2	75.9				mg/L	16	Standard
	Ho-1	165	23.3	32.7				mg/L	10	Standard
	Er	166	16.7	91.7				mg/L	17	Standard
	I	127	14278.4	0.8				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		105.472	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.367	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703137003
Report Date/Time: Monday, March 27, 2017 16:22:07
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.177
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	105.921
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703137003
Report Date/Time: Monday, March 27, 2017 16:22:07
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

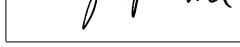
Sample ID: L1703137004
Sample Date/Time: Monday, March 27, 2017 16:23:01
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	280139.6	3.3				ug/L	262785	Standard
	Be	9	51.7	34.0	**0.0182**	0.007	36.1	ug/L	28	Standard
	Al	27	13077625.9	0.9	**70.9563**	1.745	2.5	ug/L	2187	Standard
	Sc	45	42160.3	4.6				ug/L	39299	Standard
	Ti	47	105.3	7.1	**0.0958**	0.020	20.8	ug/L	82	Standard
	V	51	2508.7	6.6	**0.0775**	0.024	31.5	ug/L	1876	Standard
	Cr	52	12201.2	0.9	**0.4899**	0.023	4.7	ug/L	8221	Standard
	Cr	53	1881.8	3.4	**0.8190**	0.060	7.4	ug/L	1083	Standard
	Mn	55	11440.4	21.1	**0.6424**	0.185	28.8	ug/L	2738	Standard
	Co	59	662.0	6.2	**0.0066**	0.005	72.6	ug/L	635	Standard
	Ni	60	1477.1	2.7	**0.5432**	0.018	3.4	ug/L	261	Standard
	Cu	65	2409.9	0.9	**0.7295**	0.025	3.4	ug/L	660	Standard
	Zn	66	9198.5	1.4	**6.1003**	0.168	2.7	ug/L	558	Standard
>	Ge	72	823925.3	2.1				ug/L	807251	Standard
	As	75	15.5	440.5	**0.0598**	0.049	82.1	ug/L	-43	Standard
	Se	82	119.3	9.6	**0.8726**	0.109	12.5	ug/L	18	Standard
	Se-1	77	215.0	3.7	**0.9819**	0.120	12.2	ug/L	127	Standard
>	Ga	71	40.0	12.5				mg/L	32	Standard
	Rb	85	20100.0	4.7				ug/L	27	Standard
	Y	89	562542.7	2.8				ug/L	534994	Standard
>	Rh	103	36.7	28.4				ug/L	20	Standard
	Mo	98	130.2	3.1	**0.0049**	0.001	17.8	ug/L	285	Standard
	Ag	107	152.3	8.2	**0.0027**	0.002	56.7	ug/L	129	Standard
	Cd	111	53.8	5.6	**0.0178**	0.001	8.2	mg/L	6	Standard
	Cd	114	165.2	14.1	**0.0201**	0.005	23.7	ug/L	46	Standard
>	In	115	679869.7	1.6				ug/L	679215	Standard
	Sn	118	427.3	3.8	**0.1258**	0.012	9.8	ug/L	411	Standard
	Sb	123	166.0	17.8	**-0.0005**	0.006	1129.0	ug/L	497	Standard
	Ba	135	68568.8	1.0	**32.1386**	0.821	2.6	ug/L	43	Standard
	Ce	140	556.7	9.1				ug/L	22	Standard
>	Tb	159	1010658.1	0.5				ug/L	983965	Standard
	Ho	165	56.7	13.5				ug/L	10	Standard
	Tl	203	315.0	12.9	**0.0091**	0.005	54.9	ug/L	248	Standard
	Tl	205	773.4	7.4	**0.0061**	0.003	46.2	ug/L	620	Standard
	Pb	206	647.3	2.3	**0.0182**	0.003	15.3	ug/L	503	Standard
	Pb	207	568.7	5.5	**0.0217**	0.006	25.8	ug/L	406	Standard
	Pb	208	703.7	2.6	**0.0259**	0.003	12.3	ug/L	497	Standard
	U	238	388.7	2.4	**0.0713**	0.002	2.7	ug/L	17	Standard
>	Bi	209	593126.9	0.7				ug/L	559221	Standard

Sample ID: L1703137004
Report Date/Time: Monday, March 27, 2017 16:25:12
Page 1

Approved: March 28, 2017



	Na	23	30.0	33.3	**16.5003**	6.217	37.7	mg/L	2	Standard
	Mg	24	288.3	11.5	**2.8045**	0.275	9.8	mg/L	33	Standard
	K	39	138.3	29.2	**0.7109**	0.243	34.2	mg/L	18	Standard
	Ca	43	65.0	13.3	**-27.9585**	9.299	33.3	mg/L	72	Standard
	Fe	54	41.1	67.1	**0.0155**	0.139	897.2	mg/L	29	Standard
	Fe	57	390.0	5.9	**-0.6278**	0.655	104.3	mg/L	382	Standard
>	**Sc-1**	45	42160.3	4.6				mg/L	39299	Standard
	Cl	35	2.0	0.0				ug/L	4	Standard
	Kr	83	2.0	50.0				ug/L	3	Standard
	Br	81	6858.2	3.5				ug/L	2287	Standard
	P	31	91.7	25.8				ug/L	80	Standard
	S	34	40.0	33.1				ug/L	45	Standard
	Sr	88	153.3	13.6				ug/L	178	Standard
	C	12	30.0	57.7				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	50.8	30.2				mg/L	16	Standard
	Ho-1	165	56.7	13.5				mg/L	10	Standard
	Er	166	53.3	39.0				mg/L	17	Standard
	I	127	11766.2	4.5				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		106.604	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.066	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703137004
Report Date/Time: Monday, March 27, 2017 16:25:12
Page 2

Approved: March 28, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.096
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	106.063
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703137004
Report Date/Time: Monday, March 27, 2017 16:25:12
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, March 27, 2017 16:26:08
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	269077.8	2.8				ug/L	262785	Standard
	Be	9	129122.9	1.2	**50.5218**	1.154	2.3	ug/L	28	Standard
	Al	27	8244726.2	1.1	**46.5779**	1.752	3.8	ug/L	2187	Standard
	Sc	45	40430.6	2.8				ug/L	39299	Standard
	Ti	47	27127.3	0.3	**102.0268**	2.296	2.2	ug/L	82	Standard
	V	51	415255.1	1.1	**48.4266**	0.720	1.5	ug/L	1876	Standard
	Cr	52	397068.0	1.1	**48.8778**	0.783	1.6	ug/L	8221	Standard
	Cr	53	48760.0	2.1	**48.0496**	1.102	2.3	ug/L	1083	Standard
	Mn	55	673070.8	1.3	**49.3308**	0.612	1.2	ug/L	2738	Standard
	Co	59	509405.7	1.1	**49.2699**	0.728	1.5	ug/L	635	Standard
	Ni	60	108298.0	0.9	**48.9059**	0.796	1.6	ug/L	261	Standard
	Cu	65	113061.6	0.5	**49.5287**	1.008	2.0	ug/L	660	Standard
	Zn	66	68289.9	0.9	**49.4769**	0.934	1.9	ug/L	558	Standard
>	Ge	72	801780.3	2.5				ug/L	807251	Standard
	As	75	68143.8	0.7	**49.8993**	1.134	2.3	ug/L	-43	Standard
	Se	82	6386.7	1.4	**51.9649**	0.611	1.2	ug/L	18	Standard
	Se-1	77	4561.0	0.8	**49.9719**	1.299	2.6	ug/L	127	Standard
>	Ga	71	53.3	43.3				mg/L	32	Standard
	Rb	85	440.0	17.0				ug/L	27	Standard
	Y	89	541643.7	3.8				ug/L	534994	Standard
>	Rh	103	31.7	39.7				ug/L	20	Standard
	Mo	98	446544.9	0.4	**102.9908**	1.362	1.3	ug/L	285	Standard
	Ag	107	362539.5	0.5	**51.7046**	0.790	1.5	ug/L	129	Standard
	Cd	111	104353.4	0.3	**51.7387**	0.719	1.4	mg/L	6	Standard
	Cd	114	273570.7	0.6	**51.9171**	0.959	1.8	ug/L	46	Standard
>	In	115	667648.8	1.7				ug/L	679215	Standard
	Sn	118	59792.1	1.4	**51.4538**	1.092	2.1	ug/L	411	Standard
	Sb	123	271770.8	0.4	**50.7878**	0.985	1.9	ug/L	497	Standard
	Ba	135	103774.8	0.1	**49.5358**	0.776	1.6	ug/L	43	Standard
	Ce	140	361.7	18.6				ug/L	22	Standard
>	Tb	159	993359.4	2.0				ug/L	983965	Standard
	Ho	165	11.7	107.9				ug/L	10	Standard
	Tl	203	416533.6	0.3	**50.3665**	1.153	2.3	ug/L	248	Standard
	Tl	205	998451.6	0.8	**50.6528**	1.564	3.1	ug/L	620	Standard
	Pb	206	337398.8	0.7	**50.0492**	1.499	3.0	ug/L	503	Standard
	Pb	207	306655.5	0.3	**50.4393**	1.297	2.6	ug/L	406	Standard
	Pb	208	355087.3	1.1	**50.0798**	1.529	3.1	ug/L	497	Standard
	U	238	282519.1	0.7	**54.1202**	1.307	2.4	ug/L	17	Standard
>	Bi	209	579193.4	2.3				ug/L	559221	Standard

Sample ID: QC Std 6
Report Date/Time: Monday, March 27, 2017 16:28:19
Page 1

Approved: March 28, 2017

	Na	23	18.3	83.3	**9.9004**	8.851	89.4	mg/L	2	Standard
	Mg	24	406.7	7.5	**4.3916**	0.489	11.1	mg/L	33	Standard
	K	39	600.0	5.2	**3.7646**	0.269	7.1	mg/L	18	Standard
	Ca	43	33.3	37.7	**-68.7787**	17.778	25.8	mg/L	72	Standard
	Fe	54	829.6	4.2	**4.4963**	0.227	5.0	mg/L	29	Standard
	Fe	57	663.3	3.4	**4.8348**	0.196	4.1	mg/L	382	Standard
>	**Sc-1**	45	40430.6	2.8				mg/L	39299	Standard
	Cl	35	3.3	69.3				ug/L	4	Standard
	Kr	83	2.7	43.3				ug/L	3	Standard
	Br	81	2957.0	3.7				ug/L	2287	Standard
	P	31	66.7	30.3				ug/L	80	Standard
	S	34	55.0	9.1				ug/L	45	Standard
	Sr	88	138.3	4.2				ug/L	178	Standard
	C	12	33.3	45.8				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	5.1	94.9				mg/L	16	Standard
	Ho-1	165	11.7	107.9				mg/L	10	Standard
	Er	166	33.3	62.5				mg/L	17	Standard
	I	127	2985.3	2.0				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	101.044		
	Al	27	93.156		
	Sc	45			
	Ti	47	102.027		
	V	51	96.853		
	Cr	52	97.756		
	Cr	53			
	Mn	55	98.662		
	Co	59	98.540		
	Ni	60	97.812		
	Cu	65	99.057		
	Zn	66	98.954		
>	Ge	72		99.322	
	As	75	99.799		
	Se	82	103.930		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Monday, March 27, 2017 16:28:19
Page 2

Approved: March 28, 2017

Rb	85			
Y	89			
Rh	103			
Mo	98	102.991		
Ag	107	103.409		
Cd	111	103.477		
Cd	114			
In	115			98.297
Sn	118	102.908		
Sb	123	101.576		
Ba	135	99.072		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.733		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.160		
U	238	108.240		
Bi	209			103.572
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Monday, March 27, 2017 16:28:19
Page 3

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, March 27, 2017 16:29:13
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	266152.7	1.6				ug/L	262785	Standard
	Be	9	61.7	49.5	**0.0231**	0.012	52.2	ug/L	28	Standard
	Al	27	3780.7	82.3	**0.0154**	0.018	115.5	ug/L	2187	Standard
	Sc	45	40163.2	2.5				ug/L	39299	Standard
	Ti	47	29.3	13.8	**-0.1787**	0.016	9.2	ug/L	82	Standard
	V	51	1455.9	10.3	**-0.0364**	0.020	54.8	ug/L	1876	Standard
	Cr	52	6184.9	1.4	**-0.2172**	0.022	10.2	ug/L	8221	Standard
	Cr	53	673.3	9.1	**-0.3396**	0.065	19.3	ug/L	1083	Standard
	Mn	55	2715.6	7.2	**0.0237**	0.017	71.7	ug/L	2738	Standard
	Co	59	355.0	16.1	**-0.0210**	0.006	28.1	ug/L	635	Standard
	Ni	60	279.0	6.8	**0.0202**	0.009	45.5	ug/L	261	Standard
	Cu	65	644.0	2.9	**-0.0177**	0.004	23.1	ug/L	660	Standard
	Zn	66	564.7	4.3	**-0.0265**	0.014	52.3	ug/L	558	Standard
>	Ge	72	794298.0	1.5				ug/L	807251	Standard
	As	75	-49.8	43.4	**0.0115**	0.016	142.0	ug/L	-43	Standard
	Se	82	18.5	18.2	**0.0784**	0.030	37.9	ug/L	18	Standard
	Se-1	77	98.3	2.6	**-0.2566**	0.035	13.7	ug/L	127	Standard
>	Ga	71	26.7	39.0				mg/L	32	Standard
	Rb	85	38.3	39.8				ug/L	27	Standard
	Y	89	534954.7	2.2				ug/L	534994	Standard
>	Rh	103	8.3	124.9				ug/L	20	Standard
	Mo	98	357.6	15.8	**0.0589**	0.012	21.0	ug/L	285	Standard
	Ag	107	172.3	18.5	**0.0063**	0.004	69.9	ug/L	129	Standard
	Cd	111	15.5	63.4	**-0.0006**	0.005	771.9	mg/L	6	Standard
	Cd	114	72.6	79.3	**0.0033**	0.011	339.0	ug/L	46	Standard
>	In	115	659405.9	1.3				ug/L	679215	Standard
	Sn	118	338.7	4.3	**0.0596**	0.016	26.3	ug/L	411	Standard
	Sb	123	358.5	13.5	**0.0369**	0.010	26.1	ug/L	497	Standard
	Ba	135	102.7	28.4	**0.0302**	0.014	45.4	ug/L	43	Standard
	Ce	140	25.0	40.0				ug/L	22	Standard
>	Tb	159	974616.4	0.5				ug/L	983965	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	126.7	43.9	**-0.0128**	0.007	53.0	ug/L	248	Standard
	Tl	205	303.3	61.9	**-0.0168**	0.010	57.1	ug/L	620	Standard
	Pb	206	582.0	12.4	**0.0109**	0.011	98.9	ug/L	503	Standard
	Pb	207	499.3	6.2	**0.0126**	0.005	39.6	ug/L	406	Standard
	Pb	208	611.0	4.6	**0.0153**	0.004	26.5	ug/L	497	Standard
	U	238	68.0	58.1	**0.0116**	0.008	65.5	ug/L	17	Standard
>	Bi	209	578415.5	0.6				ug/L	559221	Standard

Sample ID: QC Std 7
Report Date/Time: Monday, March 27, 2017 16:31:24
Page 1

Approved: March 28, 2017

	Na	23	1.7	173.2	**-0.0369**	1.754	4755.9	mg/L	2	Standard
	Mg	24	33.3	22.9	**-0.1284**	0.099	76.8	mg/L	33	Standard
	K	39	20.0	43.3	**-0.0194**	0.061	312.0	mg/L	18	Standard
	Ca	43	51.7	39.1	**-42.7258**	26.917	63.0	mg/L	72	Standard
	Fe	54	29.5	16.7	**-0.0351**	0.027	76.0	mg/L	29	Standard
	Fe	57	325.0	9.4	**-1.5288**	0.593	38.8	mg/L	382	Standard
>	**Sc-1**	45	40163.2	2.5				mg/L	39299	Standard
	Cl	35	2.0	100.0				ug/L	4	Standard
	Kr	83	2.7	21.7				ug/L	3	Standard
	Br	81	2806.9	4.0				ug/L	2287	Standard
	P	31	291.7	113.8				ug/L	80	Standard
	S	34	50.0	20.0				ug/L	45	Standard
	Sr	88	160.0	3.1				ug/L	178	Standard
	C	12	30.0	88.2				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	9.7	108.3				mg/L	16	Standard
	Ho-1	165	8.3	69.3				mg/L	10	Standard
	Er	166	6.7	173.2				mg/L	17	Standard
	I	127	5917.8	6.5				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.395	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Monday, March 27, 2017 16:31:24
Page 2

Approved: March 28, 2017

Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	97.083
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	103.432
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Monday, March 27, 2017 16:31:24
Page 3

Approved: March 28, 2017

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexION Data\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Wednesday, March 29, 2017 12:20:25

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1323	2026	0.702	
Mg	23.985	23.975	4509	2021	0.697	
Co	58.933	58.925	11694	2023	0.699	
In	114.904	114.875	22855	2029	0.694	
U	238.050	238.025	47454	2046	0.689	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	6.767
5.575	2.707
5.625	3.062
5.675	3.220
5.725	1.801
5.775	2.551
5.825	1.739
5.875	0.778
5.925	2.078
5.975	0.948
6.025	1.256
6.075	1.605
6.125	1.271
6.175	2.148
6.225	1.144
6.275	2.739
6.325	24.686
6.375	13.975
6.425	127.476
6.475	104.583
6.525	31.688
6.575	5.808
6.625	3.048
6.675	3.605
6.725	1.811
6.775	0.880
6.825	1.294

Report Date/Time: Wednesday, March 29, 2017 12:23:36
Page 1

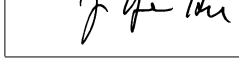
Approved: March 30, 2017

6.875	0.703
6.925	1.283
6.975	1.857
7.025	1.747
7.075	0.547
7.125	1.966
7.175	2.503
7.225	1.628
7.275	1.869
7.325	3.941
7.375	36.070
7.425	37.268
7.475	77.427
7.525	83.853
7.575	61.237
7.625	37.268
7.675	38.030
7.725	40.745
7.775	88.545
7.825	99.103
7.875	59.266
7.925	49.793
7.975	71.261
8.025	49.793
8.075	72.436
8.125	39.033
8.175	59.266
8.225	79.057
8.275	108.327
8.325	49.793
8.375	63.949
8.425	26.146
8.475	81.441
22.525	
22.575	42.696
22.625	60.111
22.675	33.333
22.725	25.573
22.775	47.650
22.825	59.285
22.875	37.318
22.925	44.605
22.975	30.138
23.025	58.685
23.075	22.667
23.125	26.702
23.175	28.770

Approved: March 30, 2017

23.225	50.034
23.275	28.853
23.325	44.628
23.375	34.993
23.425	23.759
23.475	10.531
23.525	1.341
23.575	2.170
23.625	1.097
23.675	1.391
23.725	1.604
23.775	1.441
23.825	0.926
23.875	1.124
23.925	0.592
23.975	1.236
24.025	0.887
24.075	0.781
24.125	0.932
24.175	0.913
24.225	2.318
24.275	6.745
24.325	36.712
24.375	24.786
24.425	14.724
24.475	5.610
24.525	4.137
24.575	1.211
24.625	2.664
24.675	1.883
24.725	2.690
24.775	1.174
24.825	2.058
24.875	1.404
24.925	1.447
24.975	1.486
25.025	1.227
25.075	1.511
25.125	2.295
25.175	3.113
25.225	7.587
25.275	52.390
25.325	52.705
25.375	44.231
25.425	22.895
25.475	11.899
57.525	5.493

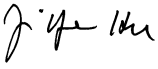
Approved: March 30, 2017



57.575	3.312
57.625	5.114
57.675	2.554
57.725	1.607
57.775	1.354
57.825	2.399
57.875	1.087
57.925	1.617
57.975	0.998
58.025	1.366
58.075	1.915
58.125	2.192
58.175	3.301
58.225	3.639
58.275	12.377
58.325	69.748
58.375	13.243
58.425	12.700
58.475	2.088
58.525	1.053
58.575	2.993
58.625	2.544
58.675	0.504
58.725	1.341
58.775	1.904
58.825	1.524
58.875	1.021
58.925	1.656
58.975	0.795
59.025	2.064
59.075	0.663
59.125	1.380
59.175	2.160
59.225	5.500
59.275	25.087
59.325	50.000
59.375	36.991
59.425	16.110
59.475	13.520
59.525	5.527
59.575	5.878
59.625	3.471
59.675	3.372
59.725	2.466
59.775	1.755
59.825	4.230
59.875	3.078

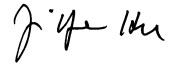
Report Date/Time: Wednesday, March 29, 2017 12:23:36
Page 4

Approved: March 30, 2017



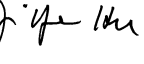
59.925	2.314
59.975	1.894
60.025	3.401
60.075	2.965
60.125	0.647
60.175	3.162
60.225	9.518
60.275	34.810
60.325	50.000
60.375	72.887
60.425	42.127
60.475	45.015
113.525	10.958
113.575	2.176
113.625	2.736
113.675	2.053
113.725	2.032
113.775	2.414
113.825	2.057
113.875	1.871
113.925	1.865
113.975	2.245
114.025	1.353
114.075	2.812
114.125	0.830
114.175	2.111
114.225	4.504
114.275	9.404
114.325	21.651
114.375	23.177
114.425	9.533
114.475	4.655
114.525	4.742
114.575	2.081
114.625	2.332
114.675	1.702
114.725	1.128
114.775	0.594
114.825	1.039
114.875	1.475
114.925	1.548
114.975	1.607
115.025	2.002
115.075	2.054
115.125	3.065
115.175	1.670
115.225	2.639

Approved: March 30, 2017



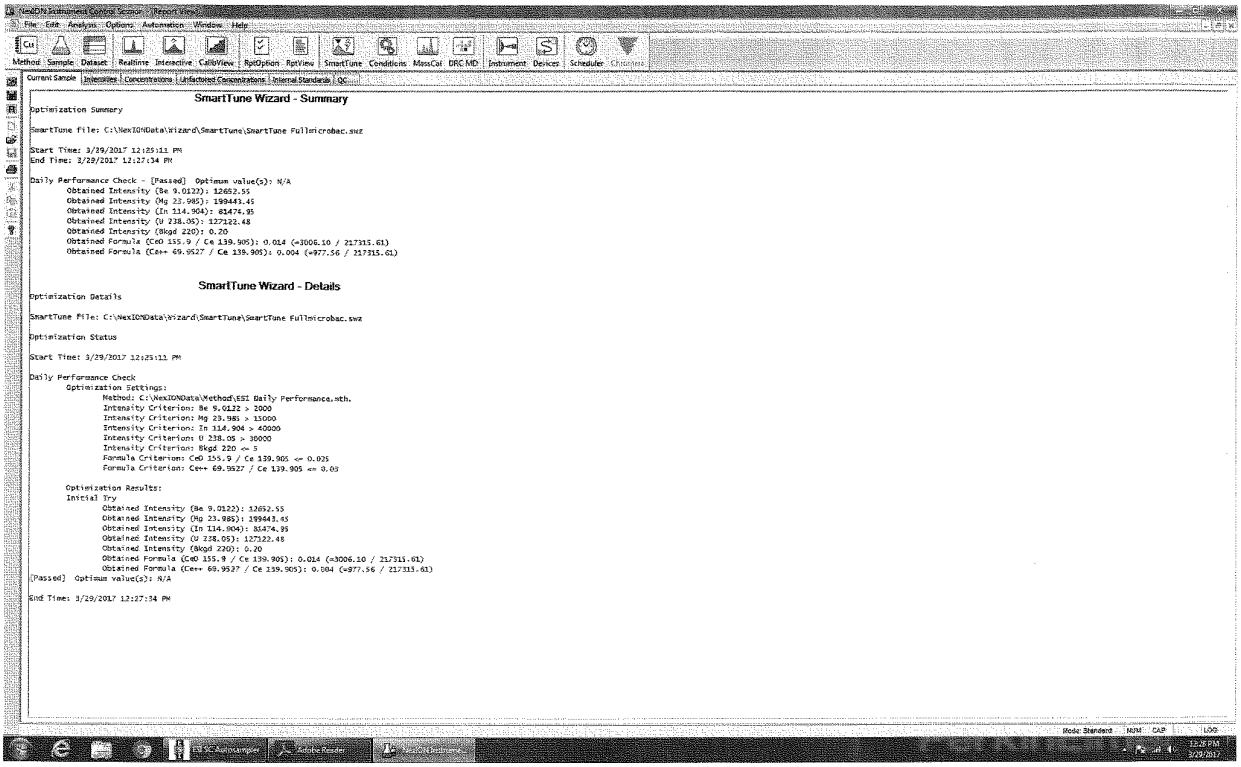
115.275	7.962
115.325	23.681
115.375	28.853
115.425	43.853
115.475	16.445
115.525	5.133
115.575	2.910
115.625	3.769
115.675	7.105
115.725	5.945
115.775	3.422
115.825	2.889
115.875	1.590
115.925	3.046
115.975	4.287
116.025	3.362
116.075	2.929
116.125	2.974
116.175	6.695
116.225	6.730
116.275	18.869
116.325	38.508
116.375	19.920
116.425	57.051
116.475	51.446
236.525	
236.575	17.275
236.625	26.245
236.675	35.000
236.725	20.252
236.775	15.438
236.825	24.066
236.875	35.545
236.925	26.998
236.975	26.307
237.025	31.181
237.075	21.694
237.125	30.492
237.175	27.951
237.225	48.663
237.275	14.038
237.325	16.752
237.375	20.195
237.425	18.211
237.475	15.152
237.525	8.686
237.575	7.016

Approved: March 30, 2017



237.625	1.491
237.675	3.121
237.725	1.997
237.775	1.794
237.825	1.122
237.875	1.291
237.925	1.262
237.975	1.389
238.025	0.683
238.075	1.134
238.125	0.999
238.175	1.357
238.225	1.084
238.275	1.514
238.325	2.623
238.375	5.361
238.425	6.953
238.475	10.914
238.525	19.632
238.575	13.795
238.625	8.696
238.675	26.077
238.725	15.660
238.775	25.410
238.825	19.493
238.875	15.528
238.925	18.694
238.975	31.017
239.025	20.790
239.075	20.031
239.125	16.383
239.175	29.786
239.225	26.571
239.275	25.083
239.325	30.079
239.375	25.600
239.425	16.396
239.475	19.319

Approved: March 30, 2017



SmartTune Wizard - Summary

Optimization Summary

SmartTune file: C:\NexION\Data\Wizard\SmartTune\SmartTune Fullmicrobac.swz

Start Time: 3/29/2017 12:25:11 PM
End Time: 3/29/2017 12:27:34 PM

Daily Performance Check - [Passed] Optimum value(s): N/A
Obtained Intensity (Be 9.0122): 12652.55
Obtained Intensity (Mg 23.985): 199443.45
Obtained Intensity (In 114.904): 81474.95
Obtained Intensity (U 238.05): 127122.48
Obtained Intensity (Bkgd 220): 0.20
Obtained Formula (CeO 155.9 / Ce 139.905): 0.014 (=3006.10 / 217315.61)
Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=977.56 / 217315.61)

SmartTune Wizard - Details

Optimization Details

SmartTune file: C:\NexION\Data\Wizard\SmartTune\SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 3/29/2017 12:25:11 PM

Daily Performance Check
Optimization Settings:
Method: C:\NexION\Data\Method\ESI Daily Performance.mth.
Intensity Criterion: Be 9.0122 > 2000
Intensity Criterion: Mg 23.985 > 15000
Intensity Criterion: In 114.904 > 40000
Intensity Criterion: U 238.05 > 30000
Intensity Criterion: Bkgd 220 <= 5
Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.05

Optimization Results:
Initial Try
Obtained Intensity (Be 9.0122): 12652.55
Obtained Intensity (Mg 23.985): 199443.45
Obtained Intensity (In 114.904): 81474.95
Obtained Intensity (U 238.05): 127122.48
Obtained Intensity (Bkgd 220): 0.20
Obtained Formula (CeO 155.9 / Ce 139.905): 0.014 (=3006.10 / 217315.61)
Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=977.56 / 217313.61)
[Passed] Optimum value(s): N/A

End Time: 3/29/2017 12:27:34 PM

Approved: March 30, 2017

Method 6020 - Summary Report

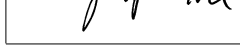
Sample ID: Blank
Sample Date/Time: Wednesday, March 29, 2017 12:45:27
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	221697.3	2.2				ug/L		Standard
	Be	9	18.3	41.7				ug/L		Standard
	Al	27	548.3	7.6				ug/L		Standard
	Sc	45	48373.8	3.6				ug/L		Standard
	Ti	47	37.3	3.1				ug/L		Standard
	V	51	1312.4	10.4				ug/L		Standard
	Cr	52	5560.0	4.6				ug/L		Standard
	Cr	53	495.0	13.2				ug/L		Standard
	Mn	55	1473.7	3.3				ug/L		Standard
	Co	59	431.7	2.9				ug/L		Standard
	Ni	60	135.0	4.5				ug/L		Standard
	Cu	65	523.0	0.4				ug/L		Standard
	Zn	66	311.3	5.3				ug/L		Standard
>	Ge	72	688741.8	1.5				ug/L		Standard
	As	75	-33.2	78.0				ug/L		Standard
	Se	82	12.0	61.7				ug/L		Standard
	Se-1	77	93.7	4.3				ug/L		Standard
>	Ga	71	28.3	40.8				mg/L		Standard
	Rb	85	25.0	34.6				ug/L		Standard
	Y	89	487927.0	0.4				ug/L		Standard
>	Rh	103	15.0	33.3				ug/L		Standard
	Mo	98	46.3	24.6				ug/L		Standard
	Ag	107	103.3	5.3				ug/L		Standard
	Cd	111	4.3	13.4				mg/L		Standard
	Cd	114	24.6	18.3				ug/L		Standard
>	In	115	577818.1	0.9				ug/L		Standard
	Sn	118	202.7	11.9				ug/L		Standard
	Sb	123	269.5	28.0				ug/L		Standard
	Ba	135	35.3	21.2				ug/L		Standard
	Ce	140	25.0	80.0				ug/L		Standard
>	Tb	159	866990.6	1.1				ug/L		Standard
	Ho	165	3.3	86.6				ug/L		Standard
	Tl	203	242.7	14.2				ug/L		Standard
	Tl	205	563.3	13.4				ug/L		Standard
	Pb	206	471.0	2.8				ug/L		Standard
	Pb	207	407.0	9.5				ug/L		Standard
	Pb	208	462.0	4.1				ug/L		Standard
	U	238	8.7	40.5				ug/L		Standard
>	Bi	209	583181.6	1.5				ug/L		Standard

Sample ID: Blank
Report Date/Time: Wednesday, March 29, 2017 12:47:37
Page 1

Approved: March 30, 2017



Na	23	0.0		mg/L	Standard
Mg	24	33.3	52.7	mg/L	Standard
K	39	20.0	86.6	mg/L	Standard
Ca	43	31.7	24.1	mg/L	Standard
Fe	54	18.0	69.3	mg/L	Standard
Fe	57	245.0	11.4	mg/L	Standard
Sc-1	45	48373.8	3.6	mg/L	Standard
Cl	35	1.3	86.6	ug/L	Standard
Kr	83	2.0	132.3	ug/L	Standard
Br	81	1940.1	11.8	ug/L	Standard
P	31	41.7	34.6	ug/L	Standard
S	34	3.3	86.6	ug/L	Standard
Sr	88	115.0	15.7	ug/L	Standard
C	12	36.7	56.8	mg/L	Standard
N	14	0.0		mg/L	Standard
Hg	202	3.3	173.2	mg/L	Standard
Dy	164	29.5	89.3	mg/L	Standard
Ho-1	165	3.3	86.6	mg/L	Standard
Er	166	10.0	100.0	mg/L	Standard
I	127	2448.5	1.7	mg/L	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: Blank
Report Date/Time: Wednesday, March 29, 2017 12:47:37
Page 2

Approved: March 30, 2017

Rb	85
Y	89
Rh	103
Mo	98
Ag	107
Cd	111
Cd	114
In	115
Sn	118
Sb	123
Ba	135
Ce	140
Tb	159
Ho	165
Tl	203
Tl	205
Pb	206
Pb	207
Pb	208
U	238
Bi	209
Na	23
Mg	24
K	39
Ca	43
Fe	54
Fe	57
Sc-1	45
Cl	35
Kr	83
Br	81
P	31
S	34
Sr	88
C	12
N	14
Hg	202
Dy	164
Ho-1	165
Er	166
I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
Report Date/Time: Wednesday, March 29, 2017 12:47:37
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Wednesday, March 29, 2017 12:48:32
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	217138.2	0.8				ug/L	221697	Standard
	Be	9	15.0	57.7				ug/L	18	Standard
	Al	27	555.0	1.8				ug/L	548	Standard
	Sc	45	48592.8	0.1				ug/L	48374	Standard
	Ti	47	36.0	2.8				ug/L	37	Standard
	V	51	1304.3	4.4				ug/L	1312	Standard
	Cr	52	5509.0	0.3				ug/L	5560	Standard
	Cr	53	506.7	1.5				ug/L	495	Standard
	Mn	55	1427.1	4.3				ug/L	1474	Standard
	Co	59	419.0	3.9				ug/L	432	Standard
	Ni	60	145.0	2.8				ug/L	135	Standard
	Cu	65	483.3	6.2				ug/L	523	Standard
	Zn	66	292.3	6.0				ug/L	311	Standard
>	Ge	72	675907.2	0.7				ug/L	688742	Standard
	As	75	-34.4	38.9				ug/L	-33	Standard
	Se	82	15.1	38.6				ug/L	12	Standard
	Se-1	77	87.0	4.1				ug/L	94	Standard
>	Ga	71	23.3	49.5				mg/L	28	Standard
	Rb	85	23.3	53.9				ug/L	25	Standard
	Y	89	481569.1	1.3				ug/L	487927	Standard
>	Rh	103	13.3	21.7				ug/L	15	Standard
	Mo	98	30.8	25.1				ug/L	46	Standard
	Ag	107	104.0	7.9				ug/L	103	Standard
	Cd	111	4.6	33.2				mg/L	4	Standard
	Cd	114	28.9	52.1				ug/L	25	Standard
>	In	115	580892.6	1.9				ug/L	577818	Standard
	Sn	118	167.0	13.6				ug/L	203	Standard
	Sb	123	148.1	26.6				ug/L	270	Standard
	Ba	135	30.0	17.3				ug/L	35	Standard
	Ce	140	26.7	75.8				ug/L	25	Standard
>	Tb	159	864617.5	0.7				ug/L	866991	Standard
	Ho	165	6.7	43.3				ug/L	3	Standard
	Tl	203	175.3	7.4				ug/L	243	Standard
	Tl	205	408.3	13.2				ug/L	563	Standard
	Pb	206	453.7	1.8				ug/L	471	Standard
	Pb	207	387.7	3.5				ug/L	407	Standard
	Pb	208	450.7	1.7				ug/L	462	Standard
	U	238	3.7	83.3				ug/L	9	Standard
>	Bi	209	577157.6	0.8				ug/L	583182	Standard

Sample ID: Standard 1
Report Date/Time: Wednesday, March 29, 2017 12:50:43
Page 1

Approved: March 30, 2017

	Na	23	0.0		mg/L	0	Standard
	Mg	24	33.3	8.7	mg/L	33	Standard
	K	39	15.0	66.7	mg/L	20	Standard
	Ca	43	36.7	7.9	mg/L	32	Standard
	Fe	54	26.1	29.4	mg/L	18	Standard
	Fe	57	221.7	21.3	mg/L	245	Standard
>	**Sc-1**	45	48592.8	0.1	mg/L	48374	Standard
	Cl	35	0.7	173.2	ug/L	1	Standard
	Kr	83	2.0	50.0	ug/L	2	Standard
	Br	81	2113.5	3.1	ug/L	1940	Standard
	P	31	26.7	10.8	ug/L	42	Standard
	S	34	1.7	173.2	ug/L	3	Standard
	Sr	88	126.7	16.0	ug/L	115	Standard
	C	12	76.7	96.1	mg/L	37	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	3	Standard
	Dy	164	6.3	86.9	mg/L	30	Standard
	Ho-1	165	6.7	43.3	mg/L	3	Standard
	Er	166	6.7	173.2	mg/L	10	Standard
	I	127	2410.2	4.5	mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Standard 1
Report Date/Time: Wednesday, March 29, 2017 12:50:43
Page 2

Approved: March 30, 2017

Rb	85
Y	89
Rh	103
Mo	98
Ag	107
Cd	111
Cd	114
In	115
Sn	118
Sb	123
Ba	135
Ce	140
Tb	159
Ho	165
Tl	203
Tl	205
Pb	206
Pb	207
Pb	208
U	238
Bi	209
Na	23
Mg	24
K	39
Ca	43
Fe	54
Fe	57
Sc-1	45
Cl	35
Kr	83
Br	81
P	31
S	34
Sr	88
C	12
N	14
Hg	202
Dy	164
Ho-1	165
Er	166
I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
Report Date/Time: Wednesday, March 29, 2017 12:50:43
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Wednesday, March 29, 2017 12:51:38
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	217096.6	2.6				ug/L	221697	Standard
	Be	9	138.3	14.6				ug/L	18	Standard
	Al	27	5929.5	3.8				ug/L	548	Standard
	Sc	45	48007.7	3.3				ug/L	48374	Standard
	Ti	47	63.7	8.7				ug/L	37	Standard
	V	51	1706.4	2.8				ug/L	1312	Standard
	Cr	52	5841.8	0.8				ug/L	5560	Standard
	Cr	53	526.7	7.0				ug/L	495	Standard
	Mn	55	2034.1	0.7				ug/L	1474	Standard
	Co	59	813.0	2.7				ug/L	432	Standard
	Ni	60	231.7	3.6				ug/L	135	Standard
	Cu	65	598.0	4.4				ug/L	523	Standard
	Zn	66	521.3	4.7				ug/L	311	Standard
>	Ge	72	678112.2	0.9				ug/L	688742	Standard
	As	75	55.6	48.1				ug/L	-33	Standard
	Se	82	21.8	19.3				ug/L	12	Standard
	Se-1	77	82.0	17.7				ug/L	94	Standard
>	Ga	71	18.3	41.7				mg/L	28	Standard
	Rb	85	20.0	25.0				ug/L	25	Standard
	Y	89	483662.8	1.5				ug/L	487927	Standard
>	Rh	103	11.7	65.5				ug/L	15	Standard
	Mo	98	434.5	4.0				ug/L	46	Standard
	Ag	107	436.0	4.4				ug/L	103	Standard
	Cd	111	94.1	9.5				mg/L	4	Standard
	Cd	114	257.3	15.8				ug/L	25	Standard
>	In	115	576385.9	1.4				ug/L	577818	Standard
	Sn	118	226.0	5.0				ug/L	203	Standard
	Sb	123	353.5	12.2				ug/L	270	Standard
	Ba	135	123.7	11.3				ug/L	35	Standard
	Ce	140	33.3	134.4				ug/L	25	Standard
>	Tb	159	860819.7	0.3				ug/L	866991	Standard
	Ho	165	10.0	50.0				ug/L	3	Standard
	Tl	203	565.0	2.6				ug/L	243	Standard
	Tl	205	1313.4	5.3				ug/L	563	Standard
	Pb	206	768.7	5.6				ug/L	471	Standard
	Pb	207	673.0	1.4				ug/L	407	Standard
	Pb	208	762.3	0.6				ug/L	462	Standard
	U	238	271.3	3.5				ug/L	9	Standard
>	Bi	209	575194.9	0.6				ug/L	583182	Standard

Sample ID: Standard 2
Report Date/Time: Wednesday, March 29, 2017 12:53:49
Page 1

Approved: March 30, 2017

Na	23	0.0		mg/L	0	Standard
Mg	24	38.3	15.1	mg/L	33	Standard
K	39	26.7	21.7	mg/L	20	Standard
Ca	43	60.0	22.0	mg/L	32	Standard
Fe	54	33.0	45.7	mg/L	18	Standard
Fe	57	211.7	9.8	mg/L	245	Standard
Sc-1	45	48007.7	3.3	mg/L	48374	Standard
Cl	35	2.0	0.0	ug/L	1	Standard
Kr	83	2.0	50.0	ug/L	2	Standard
Br	81	2063.5	7.3	ug/L	1940	Standard
P	31	45.0	57.7	ug/L	42	Standard
S	34	3.3	86.6	ug/L	3	Standard
Sr	88	113.3	35.9	ug/L	115	Standard
C	12	36.7	68.6	mg/L	37	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	6.7	86.6	mg/L	3	Standard
Dy	164	2.7	221.0	mg/L	30	Standard
Ho-1	165	10.0	50.0	mg/L	3	Standard
Er	166	13.3	114.6	mg/L	10	Standard
I	127	2240.2	7.0	mg/L	2449	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: Standard 2
Report Date/Time: Wednesday, March 29, 2017 12:53:49
Page 2

Approved: March 30, 2017

Rb	85
Y	89
Rh	103
Mo	98
Ag	107
Cd	111
Cd	114
In	115
Sn	118
Sb	123
Ba	135
Ce	140
Tb	159
Ho	165
Tl	203
Tl	205
Pb	206
Pb	207
Pb	208
U	238
Bi	209
Na	23
Mg	24
K	39
Ca	43
Fe	54
Fe	57
Sc-1	45
Cl	35
Kr	83
Br	81
P	31
S	34
Sr	88
C	12
N	14
Hg	202
Dy	164
Ho-1	165
Er	166
I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
Report Date/Time: Wednesday, March 29, 2017 12:53:49
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Wednesday, March 29, 2017 12:54:43
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	215144.4	3.2				ug/L	221697	Standard
	Be	9	98656.8	0.6	**50.0000**	1.409	2.8	ug/L	18	Standard
	Al	27	5880232.4	1.2	**50.0000**	0.998	2.0	ug/L	548	Standard
	Sc	45	47644.8	2.9				ug/L	48374	Standard
	Ti	47	26815.4	1.7	**100.0000**	1.706	1.7	ug/L	37	Standard
	V	51	325292.2	0.3	**50.0000**	0.555	1.1	ug/L	1312	Standard
	Cr	52	297639.7	0.5	**50.0000**	0.632	1.3	ug/L	5560	Standard
	Cr	53	37312.6	1.6	**50.0000**	1.307	2.6	ug/L	495	Standard
	Mn	55	496683.2	0.7	**50.0000**	0.456	0.9	ug/L	1474	Standard
	Co	59	382619.0	0.6	**50.0000**	0.686	1.4	ug/L	432	Standard
	Ni	60	82233.9	0.6	**50.0000**	0.256	0.5	ug/L	135	Standard
	Cu	65	87308.9	1.1	**50.0000**	0.219	0.4	ug/L	523	Standard
	Zn	66	53064.8	0.4	**50.0000**	0.296	0.6	ug/L	311	Standard
>	Ge	72	670620.1	1.0				ug/L	688742	Standard
	As	75	56154.5	0.9	**50.0000**	0.511	1.0	ug/L	-33	Standard
	Se	82	5233.2	0.2	**50.0000**	0.452	0.9	ug/L	12	Standard
	Se-1	77	3608.4	0.6	**50.0000**	0.423	0.8	ug/L	94	Standard
>	Ga	71	55.0	9.1				mg/L	28	Standard
	Rb	85	276.7	27.7				ug/L	25	Standard
	Y	89	480085.3	1.7				ug/L	487927	Standard
>	Rh	103	33.3	22.9				ug/L	15	Standard
	Mo	98	362131.3	0.9	**100.0000**	2.327	2.3	ug/L	46	Standard
	Ag	107	298566.0	0.2	**50.0000**	0.711	1.4	ug/L	103	Standard
	Cd	111	83799.9	0.3	**50.0000**	0.615	1.2	mg/L	4	Standard
	Cd	114	212375.2	1.1	**50.0000**	0.597	1.2	ug/L	25	Standard
>	In	115	566888.7	1.4				ug/L	577818	Standard
	Sn	118	46419.7	0.3	**50.0000**	0.796	1.6	ug/L	203	Standard
	Sb	123	222256.4	0.7	**50.0000**	0.364	0.7	ug/L	270	Standard
	Ba	135	82142.7	0.6	**50.0000**	0.828	1.7	ug/L	35	Standard
	Ce	140	265.0	1.9				ug/L	25	Standard
>	Tb	159	860324.0	1.4				ug/L	866991	Standard
	Ho	165	15.0	33.3				ug/L	3	Standard
	Tl	203	368529.0	0.4	**50.0000**	0.422	0.8	ug/L	243	Standard
	Tl	205	892483.1	0.9	**50.0000**	0.532	1.1	ug/L	563	Standard
	Pb	206	298165.6	0.6	**50.0000**	0.831	1.7	ug/L	471	Standard
	Pb	207	271217.6	0.6	**50.0000**	0.793	1.6	ug/L	407	Standard
	Pb	208	295540.3	0.7	**50.0000**	0.349	0.7	ug/L	462	Standard
	U	238	248524.2	1.2	**50.0000**	0.901	1.8	ug/L	9	Standard
>	Bi	209	571391.4	1.2				ug/L	583182	Standard

Sample ID: Standard 3
Report Date/Time: Wednesday, March 29, 2017 12:56:54
Page 1

Approved: March 30, 2017

	Na	23	5.0	0.0	**5.0000**	0.143	2.9	mg/L	0	Standard
	Mg	24	196.7	17.3	**5.0000**	1.237	24.7	mg/L	33	Standard
	K	39	860.0	2.3	**5.0000**	0.151	3.0	mg/L	20	Standard
	Ca	43	53.3	14.3	**5.0000**	6.811	136.2	mg/L	32	Standard
	Fe	54	746.4	13.4	**5.0000**	0.559	11.2	mg/L	18	Standard
	Fe	57	420.0	5.2	**5.0000**	0.791	15.8	mg/L	245	Standard
>	**Sc-1**	45	47644.8	2.9				mg/L	48374	Standard
	Cl	35	0.0					ug/L	1	Standard
	Kr	83	2.7	21.7				ug/L	2	Standard
	Br	81	1763.4	8.3				ug/L	1940	Standard
	P	31	43.3	6.7				ug/L	42	Standard
	S	34	8.3	91.7				ug/L	3	Standard
	Sr	88	125.0	17.4				ug/L	115	Standard
	C	12	50.0	40.0				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	10.0	173.2				mg/L	30	Standard
	Ho-1	165	15.0	33.3				mg/L	3	Standard
	Er	166	0.0					mg/L	10	Standard
	I	127	2711.9	4.0				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Standard 3
Report Date/Time: Wednesday, March 29, 2017 12:56:54
Page 2

Approved: March 30, 2017

Rb	85
Y	89
Rh	103
Mo	98
Ag	107
Cd	111
Cd	114
In	115
Sn	118
Sb	123
Ba	135
Ce	140
Tb	159
Ho	165
Tl	203
Tl	205
Pb	206
Pb	207
Pb	208
U	238
Bi	209
Na	23
Mg	24
K	39
Ca	43
Fe	54
Fe	57
Sc-1	45
Cl	35
Kr	83
Br	81
P	31
S	34
Sr	88
C	12
N	14
Hg	202
Dy	164
Ho-1	165
Er	166
I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 3
Report Date/Time: Wednesday, March 29, 2017 12:56:54
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Wednesday, March 29, 2017 12:57:49
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	207753.2	1.4				ug/L	221697	Standard
	Be	9	195288.8	0.6	**101.2172**	1.128	1.1	ug/L	18	Standard
	Al	27	11696172.8	0.9	**101.4558**	1.066	1.1	ug/L	548	Standard
	Sc	45	46536.4	3.5				ug/L	48374	Standard
	Ti	47	52697.2	1.1	**201.6367**	1.458	0.7	ug/L	37	Standard
	V	51	643129.2	1.9	**101.1893**	1.397	1.4	ug/L	1312	Standard
	Cr	52	582930.7	1.2	**101.0840**	0.656	0.6	ug/L	5560	Standard
	Cr	53	73854.6	0.8	**101.4711**	0.362	0.4	ug/L	495	Standard
	Mn	55	985688.1	0.4	**101.3535**	0.757	0.7	ug/L	1474	Standard
	Co	59	759276.5	0.5	**101.2991**	1.093	1.1	ug/L	432	Standard
	Ni	60	161975.2	0.8	**100.9460**	1.067	1.1	ug/L	135	Standard
	Cu	65	170053.3	0.4	**100.4868**	0.204	0.2	ug/L	523	Standard
	Zn	66	105596.7	0.5	**101.6372**	0.811	0.8	ug/L	311	Standard
>	Ge	72	648656.5	0.5				ug/L	688742	Standard
	As	75	113009.0	0.1	**101.9724**	0.426	0.4	ug/L	-33	Standard
	Se	82	10408.0	0.7	**101.4619**	0.673	0.7	ug/L	12	Standard
	Se-1	77	7255.1	1.2	**102.4917**	0.911	0.9	ug/L	94	Standard
>	Ga	71	98.3	5.9				mg/L	28	Standard
	Rb	85	585.0	4.4				ug/L	25	Standard
	Y	89	468910.9	1.1				ug/L	487927	Standard
>	Rh	103	31.7	91.2				ug/L	15	Standard
	Mo	98	706865.5	0.9	**199.7258**	1.172	0.6	ug/L	46	Standard
	Ag	107	586518.8	0.9	**100.1923**	0.398	0.4	ug/L	103	Standard
	Cd	111	164829.4	0.5	**100.2495**	0.642	0.6	mg/L	4	Standard
	Cd	114	416889.4	1.0	**100.1545**	1.409	1.4	ug/L	25	Standard
>	In	115	554731.7	1.1				ug/L	577818	Standard
	Sn	118	90229.9	0.8	**99.7493**	1.319	1.3	ug/L	203	Standard
	Sb	123	447734.0	1.4	**101.4547**	0.660	0.7	ug/L	270	Standard
	Ba	135	161986.4	1.2	**100.3835**	0.114	0.1	ug/L	35	Standard
	Ce	140	453.3	15.1				ug/L	25	Standard
>	Tb	159	836762.3	0.8				ug/L	866991	Standard
	Ho	165	30.0	0.0				ug/L	3	Standard
	Tl	203	732004.8	0.3	**101.1222**	0.527	0.5	ug/L	243	Standard
	Tl	205	1745139.6	1.2	**100.3389**	1.684	1.7	ug/L	563	Standard
	Pb	206	594627.0	0.3	**101.3467**	0.655	0.6	ug/L	471	Standard
	Pb	207	535609.4	0.6	**100.8555**	1.132	1.1	ug/L	407	Standard
	Pb	208	588371.1	0.8	**101.2631**	0.571	0.6	ug/L	462	Standard
	U	238	495672.9	1.0	**101.3132**	0.772	0.8	ug/L	9	Standard
>	Bi	209	554993.7	0.6				ug/L	583182	Standard

Sample ID: Standard 4
Report Date/Time: Wednesday, March 29, 2017 13:00:00
Page 1

Approved: March 30, 2017

	Na	23	15.0	66.7	**12.1159**	8.271	68.3	mg/L	0	Standard
	Mg	24	473.3	8.8	**11.6823**	1.468	12.6	mg/L	33	Standard
	K	39	1680.1	3.8	**10.0777**	0.501	5.0	mg/L	20	Standard
	Ca	43	70.0	18.9	**-210.3307**	222.346	105.7	mg/L	32	Standard
	Fe	54	1546.2	8.0	**10.4134**	0.546	5.2	mg/L	18	Standard
	Fe	57	673.3	2.4	**10.6539**	0.452	4.2	mg/L	245	Standard
>	**Sc-1**	45	46536.4	3.5				mg/L	48374	Standard
	Cl	35	1.3	173.2				ug/L	1	Standard
	Kr	83	2.3	24.7				ug/L	2	Standard
	Br	81	1846.8	13.8				ug/L	1940	Standard
	P	31	53.3	28.6				ug/L	42	Standard
	S	34	5.0	100.0				ug/L	3	Standard
	Sr	88	103.3	19.6				ug/L	115	Standard
	C	12	70.0	57.1				mg/L	37	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	32.9	45.1				mg/L	30	Standard
	Ho-1	165	30.0	0.0				mg/L	3	Standard
	Er	166	10.0	100.0				mg/L	10	Standard
	I	127	4372.3	0.7				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Standard 4
Report Date/Time: Wednesday, March 29, 2017 13:00:00
Page 2

Approved: March 30, 2017

⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Mg	24	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

Sample ID: Standard 4
Report Date/Time: Wednesday, March 29, 2017 13:00:00
Page 3

Approved: March 30, 2017

Corr. Coef.	Fe	57	Correlation coefficient < 0.998

Sample ID: Standard 4
Report Date/Time: Wednesday, March 29, 2017 13:00:00
Page 4

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Wednesday, March 29, 2017 13:00:56
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	206268.2	2.0				ug/L	221697	Standard
	Be	9	98353.2	1.5	**51.3509**	1.734	3.4	ug/L	18	Standard
	Al	27	5850526.9	0.3	**51.1255**	1.117	2.2	ug/L	548	Standard
	Sc	45	46757.0	0.7				ug/L	48374	Standard
	Ti	47	26026.3	0.5	**99.5877**	1.400	1.4	ug/L	37	Standard
	V	51	320655.6	0.6	**50.3821**	0.310	0.6	ug/L	1312	Standard
	Cr	52	293384.6	0.6	**50.4469**	0.211	0.4	ug/L	5560	Standard
	Cr	53	36930.0	1.0	**50.4525**	0.942	1.9	ug/L	495	Standard
	Mn	55	494824.5	0.6	**50.8402**	0.826	1.6	ug/L	1474	Standard
	Co	59	379815.7	0.4	**50.6775**	0.490	1.0	ug/L	432	Standard
	Ni	60	81258.0	0.6	**50.6309**	0.702	1.4	ug/L	135	Standard
	Cu	65	86663.8	0.1	**51.1026**	0.503	1.0	ug/L	523	Standard
	Zn	66	53042.7	0.6	**50.8719**	0.640	1.3	ug/L	311	Standard
>	Ge	72	648271.9	1.0				ug/L	688742	Standard
	As	75	56341.8	0.1	**50.8735**	0.547	1.1	ug/L	-33	Standard
	Se	82	5196.1	1.5	**50.6121**	1.105	2.2	ug/L	12	Standard
	Se-1	77	3670.1	0.3	**51.3543**	0.657	1.3	ug/L	94	Standard
>	Ga	71	35.0	49.5				mg/L	28	Standard
	Rb	85	790.0	9.9				ug/L	25	Standard
	Y	89	459002.3	0.7				ug/L	487927	Standard
>	Rh	103	18.3	87.7				ug/L	15	Standard
	Mo	98	349332.7	0.6	**100.1398**	0.548	0.5	ug/L	46	Standard
	Ag	107	294490.1	0.8	**51.0317**	0.175	0.3	ug/L	103	Standard
	Cd	111	82242.7	0.3	**50.7515**	0.661	1.3	mg/L	4	Standard
	Cd	114	208483.5	1.1	**50.8142**	0.769	1.5	ug/L	25	Standard
>	In	115	546731.7	1.0				ug/L	577818	Standard
	Sn	118	45083.3	0.2	**50.4741**	0.501	1.0	ug/L	203	Standard
	Sb	123	222405.1	0.6	**51.1240**	0.614	1.2	ug/L	270	Standard
	Ba	135	80901.1	0.1	**50.8602**	0.527	1.0	ug/L	35	Standard
	Ce	140	40.0	25.0				ug/L	25	Standard
>	Tb	159	822993.5	1.0				ug/L	866991	Standard
	Ho	165	16.7	62.4				ug/L	3	Standard
	Tl	203	369700.4	0.5	**50.8638**	0.321	0.6	ug/L	243	Standard
	Tl	205	890791.6	0.4	**51.0081**	0.306	0.6	ug/L	563	Standard
	Pb	206	300204.2	0.3	**50.9333**	0.512	1.0	ug/L	471	Standard
	Pb	207	269209.3	0.5	**50.4630**	0.649	1.3	ug/L	407	Standard
	Pb	208	296176.5	0.6	**50.7418**	0.358	0.7	ug/L	462	Standard
	U	238	249132.2	0.4	**50.7264**	0.399	0.8	ug/L	9	Standard
>	Bi	209	557135.5	0.9				ug/L	583182	Standard

Sample ID: QC Std 1
Report Date/Time: Wednesday, March 29, 2017 13:03:07
Page 1

Approved: March 30, 2017

	Na	23	10.0	100.0	**7.9961**	7.954	99.5	mg/L	0	Standard
	Mg	24	220.0	14.2	**4.8603**	0.855	17.6	mg/L	33	Standard
	K	39	928.4	1.2	**5.4706**	0.109	2.0	mg/L	20	Standard
	Ca	43	80.0	12.5	**-390.7026**	190.678	48.8	mg/L	32	Standard
	Fe	54	828.8	4.1	**5.4613**	0.237	4.3	mg/L	18	Standard
	Fe	57	430.0	2.3	**5.0627**	0.221	4.4	mg/L	245	Standard
>	**Sc-1**	45	46757.0	0.7				mg/L	48374	Standard
	Cl	35	0.0					ug/L	1	Standard
	Kr	83	2.7	57.3				ug/L	2	Standard
	Br	81	1806.8	6.1				ug/L	1940	Standard
	P	31	46.7	22.3				ug/L	42	Standard
	S	34	11.7	99.0				ug/L	3	Standard
	Sr	88	143.3	12.3				ug/L	115	Standard
	C	12	60.0	60.1				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	15.5	132.2				mg/L	30	Standard
	Ho-1	165	16.7	62.4				mg/L	3	Standard
	Er	166	23.3	24.7				mg/L	10	Standard
	I	127	3968.9	6.2				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	102.702		
	Al	27	102.251		
	Sc	45			
	Ti	47	99.588		
	V	51	100.764		
	Cr	52	100.894		
	Cr	53			
	Mn	55	101.680		
	Co	59	101.355		
	Ni	60	101.262		
	Cu	65	102.205		
	Zn	66	101.744		
>	Ge	72		94.124	
	As	75	101.747		
	Se	82	101.224		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 1
Report Date/Time: Wednesday, March 29, 2017 13:03:07
Page 2

Approved: March 30, 2017

⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	100.140	
|	Ag	107	102.063	
|	Cd	111	101.503	
|	Cd	114		
|>	In	115		94.620
|	Sn	118	100.948	
|	Sb	123	102.248	
⌊	Ba	135	101.720	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	101.728	
|	Tl	205		
|	Pb	206	101.867	
|	Pb	207	100.926	
|	Pb	208	101.484	
|	U	238	101.453	
⌊>	Bi	209		95.534
⌈	Na	23	159.922	
|	Mg	24	97.206	
|	K	39	109.411	
|	Ca	43	-7814.051	
|	Fe	54	109.226	
|	Fe	57	101.254	
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

Sample ID: QC Std 1
Report Date/Time: Wednesday, March 29, 2017 13:03:07
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Wednesday, March 29, 2017 13:04:03
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	208524.4	3.1				ug/L	221697	Standard
	Be	9	31.7	24.1	**-0.0024**	0.004	169.8	ug/L	18	Standard
	Al	27	830.0	18.1	**0.0080**	0.002	18.9	ug/L	548	Standard
	Sc	45	45140.5	3.8				ug/L	48374	Standard
	Ti	47	37.3	11.2	**0.0133**	0.021	154.6	ug/L	37	Standard
	V	51	873.1	5.9	**-0.0664**	0.012	18.2	ug/L	1312	Standard
	Cr	52	3984.5	2.6	**-0.2148**	0.003	1.2	ug/L	5560	Standard
	Cr	53	385.0	14.8	**-0.1009**	0.090	89.5	ug/L	495	Standard
	Mn	55	1655.1	1.4	**0.0240**	0.005	19.8	ug/L	1474	Standard
	Co	59	352.7	11.0	**-0.0055**	0.007	122.1	ug/L	432	Standard
	Ni	60	137.7	6.9	**-0.0004**	0.007	1731.0	ug/L	135	Standard
	Cu	65	562.7	5.6	**0.0519**	0.013	24.8	ug/L	523	Standard
	Zn	66	537.0	4.6	**0.0987**	0.014	14.6	ug/L	311	Standard
>	Ge	72	634313.8	2.8				ug/L	688742	Standard
	As	75	-14.6	289.7	**-0.0108**	0.039	365.7	ug/L	-33	Standard
	Se	82	14.1	52.0	**-0.0113**	0.076	678.9	ug/L	12	Standard
	Se-1	77	78.0	11.8	**0.0665**	0.112	168.5	ug/L	94	Standard
>	Ga	71	23.3	49.5				mg/L	28	Standard
	Rb	85	18.3	31.5				ug/L	25	Standard
	Y	89	451411.2	3.5				ug/L	487927	Standard
>	Rh	103	13.3	21.7				ug/L	15	Standard
	Mo	98	281.0	3.2	**0.0636**	0.001	0.8	ug/L	46	Standard
	Ag	107	144.3	10.1	**0.0037**	0.002	62.8	ug/L	103	Standard
	Cd	111	7.6	47.1	**-0.0003**	0.002	677.3	mg/L	4	Standard
	Cd	114	33.0	23.6	**-0.0015**	0.002	113.4	ug/L	25	Standard
>	In	115	538986.0	3.8				ug/L	577818	Standard
	Sn	118	200.3	9.3	**0.0376**	0.022	57.6	ug/L	203	Standard
	Sb	123	1415.0	11.7	**0.3029**	0.035	11.6	ug/L	270	Standard
	Ba	135	41.7	8.4	**0.0029**	0.003	109.6	ug/L	35	Standard
	Ce	140	28.3	40.8				ug/L	25	Standard
>	Tb	159	821943.3	3.4				ug/L	866991	Standard
	Ho	165	11.7	65.5				ug/L	3	Standard
	Tl	203	146.7	3.4	**-0.0051**	0.001	21.4	ug/L	243	Standard
	Tl	205	408.3	14.3	**0.0006**	0.004	645.3	ug/L	563	Standard
	Pb	206	498.7	4.4	**0.0083**	0.003	39.4	ug/L	471	Standard
	Pb	207	416.7	4.5	**0.0060**	0.005	89.3	ug/L	407	Standard
	Pb	208	468.0	12.6	**0.0039**	0.012	323.1	ug/L	462	Standard
	U	238	31.7	36.9	**0.0029**	0.002	81.3	ug/L	9	Standard
>	Bi	209	556937.5	3.2				ug/L	583182	Standard

Sample ID: QC Std 2
Report Date/Time: Wednesday, March 29, 2017 13:06:14
Page 1

Approved: March 30, 2017

⌈	**Na**	23	1.7	173.2	**1.3328**	2.300	172.6	mg/L	0	Standard
|	**Mg**	24	35.0	37.8	**-0.0179**	0.389	2175.3	mg/L	33	Standard
|	**K**	39	25.0	60.0	**0.0074**	0.099	1338.8	mg/L	20	Standard
|	**Ca**	43	38.3	45.8	**356.7942**	308.208	86.4	mg/L	32	Standard
|	**Fe**	54	31.3	34.2	**0.0097**	0.078	803.6	mg/L	18	Standard
|	**Fe**	57	188.3	7.7	**-0.2518**	0.412	163.6	mg/L	245	Standard
⌊>	**Sc-1**	45	45140.5	3.8				mg/L	48374	Standard
	Cl	35	2.0	0.0				ug/L	1	Standard
	Kr	83	2.3	24.7				ug/L	2	Standard
	Br	81	1783.4	9.5				ug/L	1940	Standard
	P	31	36.7	20.8				ug/L	42	Standard
	S	34	3.3	86.6				ug/L	3	Standard
	Sr	88	120.0	7.2				ug/L	115	Standard
	C	12	56.7	87.1				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	9.7	103.3				mg/L	30	Standard
	Ho-1	165	11.7	65.5				mg/L	3	Standard
	Er	166	6.7	86.6				mg/L	10	Standard
	I	127	2190.2	3.6				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		92.097	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: QC Std 2
Report Date/Time: Wednesday, March 29, 2017 13:06:14
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	93.280
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	95.500
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Na	23	
QC Std 2	Ca	43	

Sample ID: QC Std 2
Report Date/Time: Wednesday, March 29, 2017 13:06:14
Page 3

Approved: March 30, 2017

QC Std 2	Fe	57

Sample ID: QC Std 2
Report Date/Time: Wednesday, March 29, 2017 13:06:14
Page 4

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Wednesday, March 29, 2017 13:07:09
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	207937.3	1.4				ug/L	221697	Standard
	Be	9	380.0	3.5	**0.1781**	0.007	3.7	ug/L	18	Standard
	Al	27	1070.0	46.7	**0.0100**	0.004	41.9	ug/L	548	Standard
	Sc	45	46110.1	2.5				ug/L	48374	Standard
	Ti	47	34.3	19.8	**-0.0014**	0.024	1727.2	ug/L	37	Standard
	V	51	3146.0	3.8	**0.2906**	0.013	4.6	ug/L	1312	Standard
	Cr	52	9562.3	0.6	**0.7525**	0.014	1.8	ug/L	5560	Standard
	Cr	53	1051.7	11.2	**0.8133**	0.159	19.5	ug/L	495	Standard
	Mn	55	5692.7	3.1	**0.4382**	0.013	2.9	ug/L	1474	Standard
	Co	59	3092.6	2.0	**0.3607**	0.004	1.1	ug/L	432	Standard
	Ni	60	2526.9	0.7	**1.4946**	0.031	2.1	ug/L	135	Standard
	Cu	65	1822.8	3.3	**0.7955**	0.024	3.0	ug/L	523	Standard
	Zn	66	6397.4	0.6	**5.7773**	0.072	1.2	ug/L	311	Standard
>	Ge	72	646013.2	1.3				ug/L	688742	Standard
	As	75	418.8	13.2	**0.3814**	0.049	12.9	ug/L	-33	Standard
	Se	82	47.4	24.7	**0.3119**	0.117	37.5	ug/L	12	Standard
	Se-1	77	95.0	5.6	**0.2908**	0.076	26.1	ug/L	94	Standard
>	Ga	71	26.7	10.8				mg/L	28	Standard
	Rb	85	33.3	17.3				ug/L	25	Standard
	Y	89	458222.7	0.8				ug/L	487927	Standard
>	Rh	103	18.3	31.5				ug/L	15	Standard
	Mo	98	130.6	13.4	**0.0191**	0.004	22.7	ug/L	46	Standard
	Ag	107	2308.8	1.6	**0.3768**	0.006	1.6	ug/L	103	Standard
	Cd	111	397.8	11.0	**0.2393**	0.026	11.1	mg/L	4	Standard
	Cd	114	1000.4	8.2	**0.2336**	0.027	11.4	ug/L	25	Standard
>	In	115	549336.9	2.7				ug/L	577818	Standard
	Sn	118	173.3	8.4	**0.0033**	0.021	640.2	ug/L	203	Standard
	Sb	123	2010.7	4.9	**0.4336**	0.035	8.1	ug/L	270	Standard
	Ba	135	1105.7	4.1	**0.6682**	0.013	1.9	ug/L	35	Standard
	Ce	140	20.0	75.0				ug/L	25	Standard
>	Tb	159	816021.0	2.9				ug/L	866991	Standard
	Ho	165	1.7	173.2				ug/L	3	Standard
	Tl	203	717.7	9.4	**0.0734**	0.008	11.2	ug/L	243	Standard
	Tl	205	1728.4	2.7	**0.0761**	0.004	4.7	ug/L	563	Standard
	Pb	206	1617.8	6.7	**0.1982**	0.015	7.8	ug/L	471	Standard
	Pb	207	1332.4	2.5	**0.1777**	0.004	2.3	ug/L	407	Standard
	Pb	208	1509.7	3.7	**0.1822**	0.007	3.7	ug/L	462	Standard
	U	238	1866.4	3.0	**0.3765**	0.013	3.4	ug/L	9	Standard
>	Bi	209	557260.5	1.1				ug/L	583182	Standard

Sample ID: QC Std 3
Report Date/Time: Wednesday, March 29, 2017 13:09:20
Page 1

Approved: March 30, 2017

⌈	**Na**	23	1.7	173.2	**1.3980**	2.413	172.6	mg/L	0	Standard
|	**Mg**	24	28.3	20.4	**-0.2242**	0.176	78.6	mg/L	33	Standard
|	**K**	39	13.3	57.3	**-0.0695**	0.047	68.1	mg/L	20	Standard
|	**Ca**	43	43.3	35.3	**276.0400**	264.428	95.8	mg/L	32	Standard
|	**Fe**	54	34.4	29.2	**0.0253**	0.064	253.8	mg/L	18	Standard
|	**Fe**	57	190.0	9.1	**-0.3172**	0.302	95.2	mg/L	245	Standard
⌊>	**Sc-1**	45	46110.1	2.5				mg/L	48374	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	3.3	69.3				ug/L	2	Standard
	Br	81	1580.1	8.9				ug/L	1940	Standard
	P	31	50.0	60.0				ug/L	42	Standard
	S	34	5.0	100.0				ug/L	3	Standard
	Sr	88	123.3	6.2				ug/L	115	Standard
	C	12	83.3	36.7				mg/L	37	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	9.8	2.8				mg/L	30	Standard
	Ho-1	165	1.7	173.2				mg/L	3	Standard
	Er	166	3.3	173.2				mg/L	10	Standard
	I	127	3113.7	3.2				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9	89.035		
⌊	Al	27	1.003		
⌈	Sc	45			
|	Ti	47			
|	V	51	72.656		
|	Cr	52	94.058		
|	Cr	53			
|	Mn	55	87.635		
|	Co	59	90.166		
|	Ni	60	93.412		
|	Cu	65	99.432		
|	Zn	66	92.437		
|>	Ge	72		93.796	
|	As	75	95.345		
|	Se	82	77.968		
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: QC Std 3
Report Date/Time: Wednesday, March 29, 2017 13:09:20
Page 2

Approved: March 30, 2017

⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98		
|	Ag	107	94.194	
|	Cd	111	99.712	
|	Cd	114		
|>	In	115		95.071
|	Sn	118		
|	Sb	123	108.412	
⌊	Ba	135	89.095	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	91.713	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	91.111	
|	U	238	94.120	
⌊>	Bi	209		95.555
⌈	Na	23		
|	Mg	24		
|	K	39		
|	Ca	43		
|	Fe	54		
|	Fe	57		
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

Sample ID: QC Std 3
Report Date/Time: Wednesday, March 29, 2017 13:09:20
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Wednesday, March 29, 2017 13:10:15
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	208748.9	2.9				ug/L	221697	Standard
	Be	9	28.3	27.0	**-0.0041**	0.004	100.7	ug/L	18	Standard
	Al	27	5358040.5	0.4	**46.2807**	1.489	3.2	ug/L	548	Standard
	Sc	45	46088.3	2.4				ug/L	48374	Standard
	Ti	47	23830.7	1.5	**92.8756**	1.555	1.7	ug/L	37	Standard
	V	51	1058.6	7.0	**-0.0373**	0.010	26.8	ug/L	1312	Standard
	Cr	52	6013.9	2.3	**0.1447**	0.014	9.7	ug/L	5560	Standard
	Cr	53	570.0	4.0	**0.1573**	0.046	29.1	ug/L	495	Standard
	Mn	55	3520.7	0.5	**0.2192**	0.006	2.9	ug/L	1474	Standard
	Co	59	716.0	9.7	**0.0436**	0.010	22.0	ug/L	432	Standard
	Ni	60	438.0	2.1	**0.1902**	0.004	2.0	ug/L	135	Standard
	Cu	65	752.7	4.6	**0.1655**	0.016	9.6	ug/L	523	Standard
	Zn	66	735.7	3.3	**0.2927**	0.017	6.0	ug/L	311	Standard
>	Ge	72	636431.0	1.7				ug/L	688742	Standard
	As	75	21.9	106.6	**0.0220**	0.021	96.5	ug/L	-33	Standard
	Se	82	18.8	22.8	**0.0334**	0.041	122.9	ug/L	12	Standard
	Se-1	77	68.0	24.3	**-0.0840**	0.222	264.7	ug/L	94	Standard
>	Ga	71	41.7	45.4				mg/L	28	Standard
	Rb	85	793.4	9.2				ug/L	25	Standard
	Y	89	459354.3	0.3				ug/L	487927	Standard
>	Rh	103	16.7	45.8				ug/L	15	Standard
	Mo	98	320660.1	0.9	**93.1714**	0.239	0.3	ug/L	46	Standard
	Ag	107	117.3	23.6	**-0.0010**	0.005	483.4	ug/L	103	Standard
	Cd	111	-158.0	4.7	**-0.1039**	0.005	5.2	mg/L	4	Standard
	Cd	114	486.8	7.2	**0.1107**	0.010	8.6	ug/L	25	Standard
>	In	115	539367.9	0.8				ug/L	577818	Standard
	Sn	118	183.0	12.9	**0.0176**	0.028	158.1	ug/L	203	Standard
	Sb	123	477.1	19.9	**0.0841**	0.023	27.2	ug/L	270	Standard
	Ba	135	43.7	20.0	**0.0041**	0.006	138.6	ug/L	35	Standard
	Ce	140	851.7	5.0				ug/L	25	Standard
>	Tb	159	827419.0	1.2				ug/L	866991	Standard
	Ho	165	6.7	43.3				ug/L	3	Standard
	Tl	203	141.7	16.2	**-0.0056**	0.003	55.8	ug/L	243	Standard
	Tl	205	365.0	28.3	**-0.0017**	0.006	342.8	ug/L	563	Standard
	Pb	206	554.3	6.5	**0.0189**	0.006	30.9	ug/L	471	Standard
	Pb	207	448.0	5.3	**0.0128**	0.004	33.4	ug/L	407	Standard
	Pb	208	516.3	6.1	**0.0130**	0.005	39.4	ug/L	462	Standard
	U	238	26.0	93.3	**0.0018**	0.005	272.2	ug/L	9	Standard
>	Bi	209	550060.8	0.5				ug/L	583182	Standard

Sample ID: QC Std 4
Report Date/Time: Wednesday, March 29, 2017 13:12:26
Page 1

Approved: March 30, 2017

	Na	23	11.7	24.7	**9.4677**	2.136	22.6	mg/L	0	Standard
	Mg	24	496.7	12.8	**12.3875**	1.437	11.6	mg/L	33	Standard
	K	39	860.0	8.6	**5.1339**	0.474	9.2	mg/L	20	Standard
	Ca	43	76.7	18.8	**-353.3577**	294.929	83.5	mg/L	32	Standard
	Fe	54	1739.7	5.5	**11.8819**	0.893	7.5	mg/L	18	Standard
	Fe	57	760.0	7.3	**12.7734**	0.872	6.8	mg/L	245	Standard
>	**Sc-1**	45	46088.3	2.4				mg/L	48374	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	1.0	100.0				ug/L	2	Standard
	Br	81	1760.1	5.9				ug/L	1940	Standard
	P	31	31.7	24.1				ug/L	42	Standard
	S	34	3.3	86.6				ug/L	3	Standard
	Sr	88	108.3	16.2				ug/L	115	Standard
	C	12	90.0	11.1				mg/L	37	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	-0.8	34.6				mg/L	30	Standard
	Ho-1	165	6.7	43.3				mg/L	3	Standard
	Er	166	16.7	34.6				mg/L	10	Standard
	I	127	2436.9	2.9				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27	0.926		
	Sc	45			
	Ti	47	92.876		
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		92.405	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 4
Report Date/Time: Wednesday, March 29, 2017 13:12:26
Page 2

Approved: March 30, 2017

⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	93.171	
|	Ag	107		
|	Cd	111		
|	Cd	114		
|>	In	115		93.346
|	Sn	118		
|	Sb	123		
⌊	Ba	135		
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203		
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208		
|	U	238		
⌊>	Bi	209		94.321
⌈	Na	23	75.742	
|	Mg	24	247.750	
|	K	39	102.679	
|	Ca	43	-2355.718	
|	Fe	54	95.055	
|	Fe	57	102.187	
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

Approved: March 30, 2017

QC Std 4	Ca	43

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Wednesday, March 29, 2017 13:13:20
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	210813.4	1.6				ug/L	221697	Standard
	Be	9	194973.1	0.4	**99.5938**	1.713	1.7	ug/L	18	Standard
	Al	27	5421824.2	0.7	**46.3540**	0.944	2.0	ug/L	548	Standard
	Sc	45	46783.8	1.5				ug/L	48374	Standard
	Ti	47	26170.6	1.1	**99.4250**	1.493	1.5	ug/L	37	Standard
	V	51	622413.9	1.2	**97.2885**	0.652	0.7	ug/L	1312	Standard
	Cr	52	566826.5	0.6	**97.6301**	1.429	1.5	ug/L	5560	Standard
	Cr	53	71987.3	1.9	**98.2506**	2.371	2.4	ug/L	495	Standard
	Mn	55	958794.3	0.6	**97.9451**	1.222	1.2	ug/L	1474	Standard
	Co	59	743894.6	0.1	**98.6081**	1.754	1.8	ug/L	432	Standard
	Ni	60	158878.0	0.9	**98.3756**	1.673	1.7	ug/L	135	Standard
	Cu	65	168550.0	0.5	**98.9551**	1.634	1.7	ug/L	523	Standard
	Zn	66	106391.2	0.3	**101.7434**	1.585	1.6	ug/L	311	Standard
>	Ge	72	652965.5	1.8				ug/L	688742	Standard
	As	75	111967.3	0.5	**100.3802**	1.315	1.3	ug/L	-33	Standard
	Se	82	10286.4	1.9	**99.6160**	1.304	1.3	ug/L	12	Standard
	Se-1	77	7189.4	1.9	**100.8799**	0.991	1.0	ug/L	94	Standard
>	Ga	71	115.0	19.0				mg/L	28	Standard
	Rb	85	1306.7	4.9				ug/L	25	Standard
	Y	89	471185.6	1.6				ug/L	487927	Standard
>	Rh	103	26.7	39.0				ug/L	15	Standard
	Mo	98	330514.5	1.1	**94.2629**	1.680	1.8	ug/L	46	Standard
	Ag	107	538155.6	2.9	**92.7969**	2.834	3.1	ug/L	103	Standard
	Cd	111	160345.5	0.6	**98.4424**	1.302	1.3	mg/L	4	Standard
	Cd	114	396868.5	0.5	**96.2400**	1.073	1.1	ug/L	25	Standard
>	In	115	549555.8	0.7				ug/L	577818	Standard
	Sn	118	204.7	10.9	**0.0380**	0.026	69.4	ug/L	203	Standard
	Sb	123	439078.0	0.9	**100.4387**	1.611	1.6	ug/L	270	Standard
	Ba	135	157699.5	0.7	**98.6496**	0.802	0.8	ug/L	35	Standard
	Ce	140	468.3	7.1				ug/L	25	Standard
>	Tb	159	841950.0	0.8				ug/L	866991	Standard
	Ho	165	40.0	54.5				ug/L	3	Standard
	Tl	203	716463.7	0.6	**98.5648**	1.125	1.1	ug/L	243	Standard
	Tl	205	1718881.1	1.4	**98.4099**	1.045	1.1	ug/L	563	Standard
	Pb	206	587020.7	1.1	**99.6387**	1.854	1.9	ug/L	471	Standard
	Pb	207	530210.9	1.0	**99.4274**	1.872	1.9	ug/L	407	Standard
	Pb	208	584487.2	1.3	**100.1798**	1.719	1.7	ug/L	462	Standard
	U	238	496993.9	1.1	**101.1689**	1.855	1.8	ug/L	9	Standard
>	Bi	209	557328.5	1.0				ug/L	583182	Standard

Sample ID: QC Std 5
Report Date/Time: Wednesday, March 29, 2017 13:15:31
Page 1

Approved: March 30, 2017

	Na	23	8.3	91.7	**6.6925**	6.089	91.0	mg/L	0	Standard
	Mg	24	471.7	8.0	**11.5350**	0.845	7.3	mg/L	33	Standard
	K	39	793.4	9.2	**4.6468**	0.385	8.3	mg/L	20	Standard
	Ca	43	105.0	33.3	**-842.5324**	619.662	73.5	mg/L	32	Standard
	Fe	54	1754.4	3.5	**11.7942**	0.527	4.5	mg/L	18	Standard
	Fe	57	730.0	11.9	**11.8409**	1.845	15.6	mg/L	245	Standard
>	**Sc-1**	45	46783.8	1.5				mg/L	48374	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	1.0	0.0				ug/L	2	Standard
	Br	81	1803.4	2.6				ug/L	1940	Standard
	P	31	33.3	56.8				ug/L	42	Standard
	S	34	10.0					ug/L	3	Standard
	Sr	88	123.3	6.2				ug/L	115	Standard
	C	12	116.7	19.8				mg/L	37	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	16.7	69.3				mg/L	3	Standard
	Dy	164	17.9	102.8				mg/L	30	Standard
	Ho-1	165	40.0	54.5				mg/L	3	Standard
	Er	166	43.3	58.1				mg/L	10	Standard
	I	127	2111.8	3.9				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	99.594		
	Al	27	0.927		
	Sc	45			
	Ti	47	99.425		
	V	51	97.289		
	Cr	52	97.630		
	Cr	53			
	Mn	55	97.945		
	Co	59	98.608		
	Ni	60	98.376		
	Cu	65	98.955		
	Zn	66	101.743		
>	Ge	72		94.806	
	As	75	100.380		
	Se	82	99.616		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 5
Report Date/Time: Wednesday, March 29, 2017 13:15:31
Page 2

Approved: March 30, 2017

	Rb	85		
	Y	89		
>	Rh	103		
	Mo	98	94.263	
	Ag	107	92.797	
	Cd	111	98.442	
	Cd	114		
>	In	115		95.109
	Sn	118		
	Sb	123	100.439	
	Ba	135	98.650	
	Ce	140		
>	Tb	159		
	Ho	165		
	Tl	203	98.565	
	Tl	205		
	Pb	206		
	Pb	207		
	Pb	208	100.180	
	U	238	101.169	
>	Bi	209		95.567
	Na	23	53.540	
	Mg	24	230.701	
	K	39	92.936	
	Ca	43	-5616.883	
	Fe	54	94.354	
	Fe	57	94.727	
>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

Sample ID: QC Std 5
Report Date/Time: Wednesday, March 29, 2017 13:15:31
Page 3

Approved: March 30, 2017

QC Std 5	Ca	43

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, March 29, 2017 13:16:27
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	213909.8	2.1				ug/L	221697	Standard
	Be	9	99198.7	1.4	**49.9262**	0.569	1.1	ug/L	18	Standard
	Al	27	5940762.0	1.6	**50.0545**	0.960	1.9	ug/L	548	Standard
	Sc	45	47604.7	1.6				ug/L	48374	Standard
	Ti	47	26431.4	2.0	**99.8170**	1.894	1.9	ug/L	37	Standard
	V	51	318525.3	0.6	**49.3954**	0.634	1.3	ug/L	1312	Standard
	Cr	52	293477.7	0.4	**49.7964**	0.193	0.4	ug/L	5560	Standard
	Cr	53	36460.5	1.4	**49.1428**	0.543	1.1	ug/L	495	Standard
	Mn	55	496805.9	0.3	**50.3760**	0.193	0.4	ug/L	1474	Standard
	Co	59	379220.0	1.5	**49.9370**	0.500	1.0	ug/L	432	Standard
	Ni	60	80704.0	0.6	**49.6283**	0.227	0.5	ug/L	135	Standard
	Cu	65	85623.3	1.4	**49.8226**	0.454	0.9	ug/L	523	Standard
	Zn	66	52533.9	0.6	**49.7174**	0.128	0.3	ug/L	311	Standard
>	Ge	72	656785.9	0.7				ug/L	688742	Standard
	As	75	55526.7	0.7	**49.4841**	0.204	0.4	ug/L	-33	Standard
	Se	82	5235.8	1.3	**50.3299**	0.342	0.7	ug/L	12	Standard
	Se-1	77	3628.1	1.9	**50.0753**	0.624	1.2	ug/L	94	Standard
>	Ga	71	46.7	43.3				mg/L	28	Standard
	Rb	85	300.0	16.4				ug/L	25	Standard
	Y	89	473032.2	1.9				ug/L	487927	Standard
>	Rh	103	36.7	47.9				ug/L	15	Standard
	Mo	98	357299.8	0.3	**100.1740**	0.526	0.5	ug/L	46	Standard
	Ag	107	294249.1	0.6	**49.8709**	0.516	1.0	ug/L	103	Standard
	Cd	111	83013.1	0.2	**50.0991**	0.292	0.6	mg/L	4	Standard
	Cd	114	210583.8	0.7	**50.1959**	0.122	0.2	ug/L	25	Standard
>	In	115	559002.3	0.5				ug/L	577818	Standard
	Sn	118	46285.3	1.6	**50.6803**	0.781	1.5	ug/L	203	Standard
	Sb	123	222394.8	0.3	**49.9960**	0.180	0.4	ug/L	270	Standard
	Ba	135	79865.6	1.1	**49.1052**	0.739	1.5	ug/L	35	Standard
	Ce	140	235.0	31.3				ug/L	25	Standard
>	Tb	159	844358.2	0.6				ug/L	866991	Standard
	Ho	165	13.3	43.3				ug/L	3	Standard
	Tl	203	367597.7	0.9	**49.6519**	0.293	0.6	ug/L	243	Standard
	Tl	205	891394.8	1.7	**50.1105**	0.634	1.3	ug/L	563	Standard
	Pb	206	299652.5	0.5	**49.9107**	0.207	0.4	ug/L	471	Standard
	Pb	207	270187.9	0.9	**49.7201**	0.325	0.7	ug/L	407	Standard
	Pb	208	296918.5	0.6	**49.9422**	0.508	1.0	ug/L	462	Standard
	U	238	255126.1	0.8	**51.0022**	0.700	1.4	ug/L	9	Standard
>	Bi	209	567464.3	0.8				ug/L	583182	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, March 29, 2017 13:18:38
Page 1

Approved: March 30, 2017

⌈	**Na**	23	3.3	86.6	**2.6468**	2.288	86.5	mg/L	0	Standard
|	**Mg**	24	230.0	7.8	**5.0118**	0.392	7.8	mg/L	33	Standard
|	**K**	39	951.7	5.8	**5.5120**	0.397	7.2	mg/L	20	Standard
|	**Ca**	43	51.7	34.0	**149.8788**	303.463	202.5	mg/L	32	Standard
|	**Fe**	54	793.8	6.4	**5.1221**	0.264	5.2	mg/L	18	Standard
|	**Fe**	57	431.7	4.7	**4.9265**	0.428	8.7	mg/L	245	Standard
⌊>	**Sc-1**	45	47604.7	1.6				mg/L	48374	Standard
	Cl	35	1.3	173.2				ug/L	1	Standard
	Kr	83	2.3	24.7				ug/L	2	Standard
	Br	81	1673.4	8.3				ug/L	1940	Standard
	P	31	41.7	48.5				ug/L	42	Standard
	S	34	1.7	173.2				ug/L	3	Standard
	Sr	88	126.7	24.1				ug/L	115	Standard
	C	12	56.7	27.0				mg/L	37	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	9.4	3.0				mg/L	30	Standard
	Ho-1	165	13.3	43.3				mg/L	3	Standard
	Er	166	13.3	43.3				mg/L	10	Standard
	I	127	2620.2	2.2				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9	99.852		
⌊	Al	27	100.109		
⌈	Sc	45			
|	Ti	47	99.817		
|	V	51	98.791		
|	Cr	52	99.593		
|	Cr	53			
|	Mn	55	100.752		
|	Co	59	99.874		
|	Ni	60	99.257		
|	Cu	65	99.645		
|	Zn	66	99.435		
|>	Ge	72		95.360	
|	As	75	98.968		
|	Se	82	100.660		
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, March 29, 2017 13:18:38
Page 2

Approved: March 30, 2017

Rb	85			
Y	89			
Rh	103			
Mo	98	100.174		
Ag	107	99.742		
Cd	111	100.198		
Cd	114			
In	115			96.744
Sn	118	101.361		
Sb	123	99.992		
Ba	135	98.210		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.304		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.884		
U	238	102.004		
Bi	209			97.305
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Wednesday, March 29, 2017 13:18:38
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, March 29, 2017 13:19:32
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	211221.1	2.7				ug/L	221697	Standard
	Be	9	28.3	27.0	**-0.0042**	0.004	101.0	ug/L	18	Standard
	Al	27	1018.4	51.9	**0.0095**	0.004	47.3	ug/L	548	Standard
	Sc	45	46243.8	0.9				ug/L	48374	Standard
	Ti	47	31.7	9.6	**-0.0124**	0.009	75.7	ug/L	37	Standard
	V	51	1018.8	5.7	**-0.0472**	0.008	17.8	ug/L	1312	Standard
	Cr	52	4242.3	1.1	**-0.1874**	0.014	7.3	ug/L	5560	Standard
	Cr	53	316.7	8.1	**-0.2096**	0.037	17.5	ug/L	495	Standard
	Mn	55	1682.8	3.5	**0.0224**	0.004	18.3	ug/L	1474	Standard
	Co	59	351.7	23.8	**-0.0070**	0.011	154.4	ug/L	432	Standard
	Ni	60	144.7	8.3	**0.0017**	0.006	379.2	ug/L	135	Standard
	Cu	65	516.0	4.2	**0.0159**	0.010	62.1	ug/L	523	Standard
	Zn	66	516.3	3.1	**0.0656**	0.005	8.2	ug/L	311	Standard
>	Ge	72	650415.0	2.1				ug/L	688742	Standard
	As	75	9.6	438.3	**0.0103**	0.038	368.0	ug/L	-33	Standard
	Se	82	19.8	26.9	**0.0394**	0.052	130.8	ug/L	12	Standard
	Se-1	77	64.0	24.6	**-0.1626**	0.207	127.6	ug/L	94	Standard
>	Ga	71	11.7	49.5				mg/L	28	Standard
	Rb	85	31.7	32.9				ug/L	25	Standard
	Y	89	468543.6	1.5				ug/L	487927	Standard
>	Rh	103	5.0	173.2				ug/L	15	Standard
	Mo	98	269.2	4.8	**0.0588**	0.003	5.1	ug/L	46	Standard
	Ag	107	163.7	27.7	**0.0066**	0.008	117.1	ug/L	103	Standard
	Cd	111	9.3	134.1	**0.0007**	0.008	1144.0	mg/L	4	Standard
	Cd	114	58.4	79.5	**0.0046**	0.011	244.9	ug/L	25	Standard
>	In	115	548140.7	0.9				ug/L	577818	Standard
	Sn	118	184.0	6.7	**0.0154**	0.015	99.2	ug/L	203	Standard
	Sb	123	634.2	20.1	**0.1185**	0.031	25.9	ug/L	270	Standard
	Ba	135	45.7	8.8	**0.0049**	0.002	47.1	ug/L	35	Standard
	Ce	140	30.0	28.9				ug/L	25	Standard
>	Tb	159	836996.0	2.2				ug/L	866991	Standard
	Ho	165	3.3	86.6				ug/L	3	Standard
	Tl	203	165.3	38.4	**-0.0030**	0.008	278.1	ug/L	243	Standard
	Tl	205	418.3	38.7	**0.0006**	0.009	1405.2	ug/L	563	Standard
	Pb	206	535.7	9.5	**0.0129**	0.008	59.9	ug/L	471	Standard
	Pb	207	450.7	12.3	**0.0108**	0.010	89.0	ug/L	407	Standard
	Pb	208	486.7	16.8	**0.0053**	0.013	246.0	ug/L	462	Standard
	U	238	48.7	105.8	**0.0062**	0.010	165.0	ug/L	9	Standard
>	Bi	209	566758.2	1.3				ug/L	583182	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, March 29, 2017 13:21:43
Page 1

Approved: March 30, 2017

	Na	23	1.7	173.2	**1.3442**	2.320	172.6	mg/L	0	Standard
	Mg	24	20.0	66.1	**-0.4527**	0.356	78.7	mg/L	33	Standard
	K	39	18.3	63.0	**-0.0392**	0.071	181.8	mg/L	20	Standard
	Ca	43	41.7	18.3	**305.9142**	134.847	44.1	mg/L	32	Standard
	Fe	54	28.0	37.4	**-0.0193**	0.072	374.5	mg/L	18	Standard
	Fe	57	193.3	10.5	**-0.2465**	0.495	200.9	mg/L	245	Standard
>	**Sc-1**	45	46243.8	0.9				mg/L	48374	Standard
	Cl	35	2.7	114.6				ug/L	1	Standard
	Kr	83	1.0	173.2				ug/L	2	Standard
	Br	81	1963.5	11.9				ug/L	1940	Standard
	P	31	31.7	18.2				ug/L	42	Standard
	S	34	1.7	173.2				ug/L	3	Standard
	Sr	88	120.0	36.1				ug/L	115	Standard
	C	12	63.3	24.1				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	2.5	239.4				mg/L	30	Standard
	Ho-1	165	3.3	86.6				mg/L	3	Standard
	Er	166	16.7	69.3				mg/L	10	Standard
	I	127	2201.8	3.5				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		94.435	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, March 29, 2017 13:21:43
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	94.864
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	97.184
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Wednesday, March 29, 2017 13:21:43
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: PBW 46 WG608003-02
Sample Date/Time: Wednesday, March 29, 2017 13:22:39
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	211004.3	1.3				ug/L	221697	Standard
	Be	9	53.3	14.3	**0.0085**	0.004	42.4	ug/L	18	Standard
	Al	27	6583.1	4.3	**0.0570**	0.002	4.0	ug/L	548	Standard
	Sc	45	46444.4	1.6				ug/L	48374	Standard
	Ti	47	50.0	4.0	**0.0570**	0.009	16.5	ug/L	37	Standard
	V	51	1077.5	7.3	**-0.0386**	0.012	30.9	ug/L	1312	Standard
	Cr	52	6234.9	0.6	**0.1560**	0.019	12.2	ug/L	5560	Standard
	Cr	53	585.0	10.4	**0.1577**	0.092	58.3	ug/L	495	Standard
	Mn	55	4272.9	1.2	**0.2868**	0.010	3.6	ug/L	1474	Standard
	Co	59	358.7	19.9	**-0.0062**	0.010	157.3	ug/L	432	Standard
	Ni	60	251.0	8.2	**0.0673**	0.014	20.9	ug/L	135	Standard
	Cu	65	900.7	2.9	**0.2412**	0.013	5.5	ug/L	523	Standard
	Zn	66	2076.8	0.7	**1.5620**	0.026	1.7	ug/L	311	Standard
>	Ge	72	653050.3	1.2				ug/L	688742	Standard
	As	75	7.2	369.4	**0.0087**	0.024	275.7	ug/L	-33	Standard
	Se	82	19.7	5.6	**0.0377**	0.013	33.5	ug/L	12	Standard
	Se-1	77	79.3	13.9	**0.0551**	0.168	304.8	ug/L	94	Standard
>	Ga	71	21.7	35.3				mg/L	28	Standard
	Rb	85	63.3	43.5				ug/L	25	Standard
	Y	89	470789.6	1.2				ug/L	487927	Standard
>	Rh	103	6.7	43.3				ug/L	15	Standard
	Mo	98	123.4	16.4	**0.0168**	0.006	35.1	ug/L	46	Standard
	Ag	107	138.0	12.1	**0.0019**	0.003	155.7	ug/L	103	Standard
	Cd	111	12.5	27.9	**0.0026**	0.002	84.4	mg/L	4	Standard
	Cd	114	72.4	27.1	**0.0079**	0.005	61.6	ug/L	25	Standard
>	In	115	554231.4	0.7				ug/L	577818	Standard
	Sn	118	283.0	7.0	**0.1229**	0.024	19.4	ug/L	203	Standard
	Sb	123	379.4	20.5	**0.0590**	0.018	30.9	ug/L	270	Standard
	Ba	135	169.3	9.7	**0.0813**	0.010	12.4	ug/L	35	Standard
	Ce	140	111.7	18.6				ug/L	25	Standard
>	Tb	159	830627.3	0.1				ug/L	866991	Standard
	Ho	165	15.0	33.3				ug/L	3	Standard
	Tl	203	183.0	11.6	**-0.0004**	0.003	697.2	ug/L	243	Standard
	Tl	205	476.7	10.6	**0.0041**	0.003	67.8	ug/L	563	Standard
	Pb	206	573.0	7.0	**0.0197**	0.008	38.2	ug/L	471	Standard
	Pb	207	491.3	6.5	**0.0187**	0.005	27.8	ug/L	407	Standard
	Pb	208	545.3	5.0	**0.0157**	0.004	24.5	ug/L	462	Standard
	U	238	25.0	47.2	**0.0015**	0.002	159.1	ug/L	9	Standard
>	Bi	209	564107.7	0.8				ug/L	583182	Standard

Approved: March 30, 2017

	Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
	Mg	24	23.3	32.7	**-0.3683**	0.196	53.1	mg/L	33	Standard
	K	39	26.7	57.3	**0.0101**	0.092	912.1	mg/L	20	Standard
	Ca	43	31.7	72.9	**492.9772**	427.293	86.7	mg/L	32	Standard
	Fe	54	34.9	43.0	**0.0285**	0.106	373.4	mg/L	18	Standard
	Fe	57	213.3	17.6	**0.1891**	0.863	456.5	mg/L	245	Standard
>	**Sc-1**	45	46444.4	1.6				mg/L	48374	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	1.3	86.6				ug/L	2	Standard
	Br	81	4640.7	5.7				ug/L	1940	Standard
	P	31	31.7	24.1				ug/L	42	Standard
	S	34	6.7	43.3				ug/L	3	Standard
	Sr	88	133.3	18.5				ug/L	115	Standard
	C	12	53.3	21.7				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	3	Standard
	Dy	164	12.2	96.9				mg/L	30	Standard
	Ho-1	165	15.0	33.3				mg/L	3	Standard
	Er	166	23.3	49.5				mg/L	10	Standard
	I	127	9894.9	3.2				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		95.177	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		94.818	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: PBW 46 WG608003-02
Report Date/Time: Wednesday, March 29, 2017 13:24:50
Page 2

Approved: March 30, 2017

Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	95.918
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	96.729
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 46 WG608003-02
Report Date/Time: Wednesday, March 29, 2017 13:24:50
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

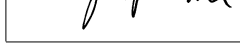
Sample ID: LCSW 46 WG608003-03
Sample Date/Time: Wednesday, March 29, 2017 13:25:44
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	211122.7	1.8				ug/L	221697	Standard
	Be	9	98440.4	0.2	**50.2033**	0.907	1.8	ug/L	18	Standard
	Al	27	8787.6	10.9	**0.0759**	0.009	12.1	ug/L	548	Standard
	Sc	45	46920.9	0.1				ug/L	48374	Standard
	Ti	47	70.7	47.6	**0.1370**	0.131	95.7	ug/L	37	Standard
	V	51	321294.6	1.0	**50.2679**	0.186	0.4	ug/L	1312	Standard
	Cr	52	297598.0	0.7	**50.9686**	0.748	1.5	ug/L	5560	Standard
	Cr	53	38328.4	1.2	**52.1582**	0.315	0.6	ug/L	495	Standard
	Mn	55	513905.6	0.8	**52.5816**	0.693	1.3	ug/L	1474	Standard
	Co	59	380650.8	1.3	**50.5773**	0.990	2.0	ug/L	432	Standard
	Ni	60	82663.6	1.1	**51.2927**	0.975	1.9	ug/L	135	Standard
	Cu	65	87144.6	0.7	**51.1712**	0.726	1.4	ug/L	523	Standard
	Zn	66	55272.3	0.8	**52.8022**	0.587	1.1	ug/L	311	Standard
>	Ge	72	651019.4	1.2				ug/L	688742	Standard
	As	75	55979.1	0.7	**50.3325**	0.549	1.1	ug/L	-33	Standard
	Se	82	5063.5	1.5	**49.1091**	1.052	2.1	ug/L	12	Standard
	Se-1	77	3521.1	2.2	**49.0133**	1.243	2.5	ug/L	94	Standard
>	Ga	71	18.3	56.8				mg/L	28	Standard
	Rb	85	98.3	41.1				ug/L	25	Standard
	Y	89	465974.1	1.1				ug/L	487927	Standard
>	Rh	103	23.3	24.7				ug/L	15	Standard
	Mo	98	147.2	32.8	**0.0235**	0.014	58.6	ug/L	46	Standard
	Ag	107	294077.3	1.0	**50.1905**	0.490	1.0	ug/L	103	Standard
	Cd	111	83396.0	0.8	**50.6856**	0.762	1.5	mg/L	4	Standard
	Cd	114	204908.8	1.1	**49.1900**	0.923	1.9	ug/L	25	Standard
>	In	115	555141.9	1.5				ug/L	577818	Standard
	Sn	118	286.0	3.3	**0.1256**	0.007	5.4	ug/L	203	Standard
	Sb	123	219103.6	0.7	**49.6016**	0.382	0.8	ug/L	270	Standard
	Ba	135	80488.2	0.4	**49.8364**	0.655	1.3	ug/L	35	Standard
	Ce	140	378.3	9.0				ug/L	25	Standard
>	Tb	159	838145.0	1.6				ug/L	866991	Standard
	Ho	165	28.3	50.9				ug/L	3	Standard
	Tl	203	377419.6	0.4	**51.0745**	0.655	1.3	ug/L	243	Standard
	Tl	205	900769.7	0.4	**50.7335**	0.656	1.3	ug/L	563	Standard
	Pb	206	305517.6	0.5	**50.9826**	0.552	1.1	ug/L	471	Standard
	Pb	207	266079.5	0.9	**49.0521**	0.467	1.0	ug/L	407	Standard
	Pb	208	296185.3	0.7	**49.9085**	0.534	1.1	ug/L	462	Standard
	U	238	245652.7	0.5	**49.1968**	0.593	1.2	ug/L	9	Standard
>	Bi	209	566480.1	1.6				ug/L	583182	Standard

Sample ID: LCSW 46 WG608003-03
Report Date/Time: Wednesday, March 29, 2017 13:27:55
Page 1

Approved: March 30, 2017



	Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
	Mg	24	26.7	54.1	**-0.2845**	0.382	134.3	mg/L	33	Standard
	K	39	13.3	21.7	**-0.0714**	0.017	24.4	mg/L	20	Standard
	Ca	43	40.0	12.5	**346.7836**	91.499	26.4	mg/L	32	Standard
	Fe	54	27.2	23.2	**-0.0272**	0.043	158.6	mg/L	18	Standard
	Fe	57	181.7	21.4	**-0.5764**	0.875	151.8	mg/L	245	Standard
>	**Sc-1**	45	46920.9	0.1				mg/L	48374	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	1.3	86.6				ug/L	2	Standard
	Br	81	2856.9	6.8				ug/L	1940	Standard
	P	31	33.3	60.6				ug/L	42	Standard
	S	34	1.7	173.2				ug/L	3	Standard
	Sr	88	125.0	13.9				ug/L	115	Standard
	C	12	73.3	7.9				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	22.5	25.0				mg/L	30	Standard
	Ho-1	165	28.3	50.9				mg/L	3	Standard
	Er	166	16.7	34.6				mg/L	10	Standard
	I	127	2288.5	4.1				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		95.230	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		94.523	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: LCSW 46 WG608003-03
Report Date/Time: Wednesday, March 29, 2017 13:27:55
Page 2

Approved: March 30, 2017

Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	96.076
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	97.136
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 46 WG608003-03
Report Date/Time: Wednesday, March 29, 2017 13:27:55
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: F BLANK WG608003-04
Sample Date/Time: Wednesday, March 29, 2017 13:28:49
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	215946.1	3.8				ug/L	221697	Standard
	Be	9	41.7	56.7	**0.0023**	0.012	525.6	ug/L	18	Standard
	Al	27	9041.0	1.0	**0.0763**	0.002	3.0	ug/L	548	Standard
	Sc	45	47108.1	2.0				ug/L	48374	Standard
	Ti	47	53.7	73.2	**0.0687**	0.144	209.0	ug/L	37	Standard
	V	51	1156.6	3.4	**-0.0264**	0.010	36.3	ug/L	1312	Standard
	Cr	52	6374.7	1.3	**0.1784**	0.020	11.4	ug/L	5560	Standard
	Cr	53	543.3	8.4	**0.0991**	0.072	72.7	ug/L	495	Standard
	Mn	55	3083.6	2.1	**0.1645**	0.003	1.6	ug/L	1474	Standard
	Co	59	369.0	1.4	**-0.0050**	0.001	17.3	ug/L	432	Standard
	Ni	60	279.3	8.4	**0.0847**	0.017	20.5	ug/L	135	Standard
	Cu	65	895.7	0.8	**0.2375**	0.012	5.2	ug/L	523	Standard
	Zn	66	1931.1	1.3	**1.4191**	0.031	2.2	ug/L	311	Standard
>	Ge	72	654179.3	1.9				ug/L	688742	Standard
	As	75	-27.7	33.3	**-0.0227**	0.008	34.2	ug/L	-33	Standard
	Se	82	13.1	38.2	**-0.0263**	0.050	191.2	ug/L	12	Standard
	Se-1	77	76.3	18.2	**0.0080**	0.182	2277.0	ug/L	94	Standard
>	Ga	71	36.7	39.4				mg/L	28	Standard
	Rb	85	73.3	3.9				ug/L	25	Standard
	Y	89	470125.0	1.6				ug/L	487927	Standard
>	Rh	103	6.7	43.3				ug/L	15	Standard
	Mo	98	64.4	17.3	**-0.0000**	0.003	6838.3	ug/L	46	Standard
	Ag	107	126.0	9.0	**-0.0002**	0.002	1009.1	ug/L	103	Standard
	Cd	111	5.6	20.6	**-0.0017**	0.001	34.7	mg/L	4	Standard
	Cd	114	29.1	84.8	**-0.0027**	0.006	206.4	ug/L	25	Standard
>	In	115	557649.5	3.0				ug/L	577818	Standard
	Sn	118	280.3	5.1	**0.1182**	0.020	17.3	ug/L	203	Standard
	Sb	123	664.3	13.3	**0.1231**	0.024	19.4	ug/L	270	Standard
	Ba	135	160.7	6.8	**0.0752**	0.004	5.1	ug/L	35	Standard
	Ce	140	116.7	22.0				ug/L	25	Standard
>	Tb	159	833317.9	2.2				ug/L	866991	Standard
	Ho	165	8.3	69.3				ug/L	3	Standard
	Tl	203	148.0	8.2	**-0.0053**	0.002	28.3	ug/L	243	Standard
	Tl	205	303.3	2.5	**-0.0058**	0.000	7.6	ug/L	563	Standard
	Pb	206	526.0	7.4	**0.0114**	0.007	58.1	ug/L	471	Standard
	Pb	207	453.3	4.7	**0.0114**	0.004	34.0	ug/L	407	Standard
	Pb	208	495.7	1.2	**0.0070**	0.001	13.1	ug/L	462	Standard
	U	238	30.3	23.8	**0.0026**	0.001	57.9	ug/L	9	Standard
>	Bi	209	566349.6	0.7				ug/L	583182	Standard

Sample ID: F BLANK WG608003-04
Report Date/Time: Wednesday, March 29, 2017 13:31:00
Page 1

Approved: March 30, 2017

⌈	**Na**	23	3.3	173.2	**2.6071**	4.507	172.9	mg/L	0	Standard
|	**Mg**	24	18.3	15.7	**-0.5068**	0.078	15.3	mg/L	33	Standard
|	**K**	39	8.3	124.9	**-0.1016**	0.062	61.4	mg/L	20	Standard
|	**Ca**	43	41.7	48.5	**314.6537**	386.002	122.7	mg/L	32	Standard
|	**Fe**	54	19.8	26.0	**-0.0786**	0.034	43.1	mg/L	18	Standard
|	**Fe**	57	228.3	14.1	**0.4587**	0.735	160.2	mg/L	245	Standard
⌊>	**Sc-1**	45	47108.1	2.0				mg/L	48374	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	2.0	100.0				ug/L	2	Standard
	Br	81	2076.8	11.4				ug/L	1940	Standard
	P	31	38.3	37.7				ug/L	42	Standard
	S	34	6.7	86.6				ug/L	3	Standard
	Sr	88	113.3	9.2				ug/L	115	Standard
	C	12	86.7	17.6				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	12.7	46.6				mg/L	30	Standard
	Ho-1	165	8.3	69.3				mg/L	3	Standard
	Er	166	13.3	43.3				mg/L	10	Standard
	I	127	1531.7	2.5				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		97.406	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		94.982	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: F BLANK WG608003-04
Report Date/Time: Wednesday, March 29, 2017 13:31:00
Page 2

Approved: March 30, 2017

Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	96.510
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	97.114
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: F BLANK WG608003-04
Report Date/Time: Wednesday, March 29, 2017 13:31:00
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703136102
Sample Date/Time: Wednesday, March 29, 2017 13:31:54
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	216894.8	0.6				ug/L	221697	Standard
	Be	9	58.3	44.0	**0.0102**	0.013	123.6	ug/L	18	Standard
	Al	27	177945.5	0.4	**1.4792**	0.011	0.8	ug/L	548	Standard
	Sc	45	48464.1	1.2				ug/L	48374	Standard
	Ti	47	824.7	0.8	**2.8810**	0.025	0.9	ug/L	37	Standard
	V	51	2824.5	3.5	**0.2177**	0.012	5.3	ug/L	1312	Standard
	Cr	52	10596.0	0.8	**0.8422**	0.017	2.1	ug/L	5560	Standard
	Cr	53	1165.0	8.8	**0.8903**	0.119	13.4	ug/L	495	Standard
	Mn	55	121184.1	0.9	**11.7627**	0.208	1.8	ug/L	1474	Standard
	Co	59	2765.9	0.9	**0.2986**	0.006	1.9	ug/L	432	Standard
	Ni	60	1325.4	0.4	**0.7009**	0.007	1.0	ug/L	135	Standard
	Cu	65	1398.1	6.3	**0.5016**	0.043	8.6	ug/L	523	Standard
	Zn	66	2452.2	2.8	**1.8301**	0.035	1.9	ug/L	311	Standard
>	Ge	72	679556.0	1.3				ug/L	688742	Standard
	As	75	38.4	86.5	**0.0353**	0.029	82.2	ug/L	-33	Standard
	Se	82	17.2	43.5	**0.0065**	0.070	1069.6	ug/L	12	Standard
	Se-1	77	84.0	16.4	**0.0754**	0.203	269.1	ug/L	94	Standard
>	Ga	71	371.7	8.6				mg/L	28	Standard
	Rb	85	7528.5	2.8				ug/L	25	Standard
	Y	89	486181.5	1.5				ug/L	487927	Standard
>	Rh	103	20.0	43.3				ug/L	15	Standard
	Mo	98	297.1	6.0	**0.0635**	0.005	7.7	ug/L	46	Standard
	Ag	107	154.0	24.7	**0.0039**	0.006	161.8	ug/L	103	Standard
	Cd	111	19.9	50.4	**0.0068**	0.006	88.0	mg/L	4	Standard
	Cd	114	69.5	30.7	**0.0067**	0.005	74.8	ug/L	25	Standard
>	In	115	570479.5	0.9				ug/L	577818	Standard
	Sn	118	267.0	7.5	**0.0967**	0.022	22.7	ug/L	203	Standard
	Sb	123	300.5	22.0	**0.0390**	0.014	36.3	ug/L	270	Standard
	Ba	135	12848.4	1.3	**7.7209**	0.111	1.4	ug/L	35	Standard
	Ce	140	18047.4	6.3				ug/L	25	Standard
>	Tb	159	856373.4	1.2				ug/L	866991	Standard
	Ho	165	183.3	13.5				ug/L	3	Standard
	Tl	203	200.7	6.2	**0.0013**	0.002	120.2	ug/L	243	Standard
	Tl	205	461.7	11.6	**0.0026**	0.003	107.4	ug/L	563	Standard
	Pb	206	1199.7	3.3	**0.1198**	0.005	3.9	ug/L	471	Standard
	Pb	207	1007.7	3.9	**0.1098**	0.006	5.1	ug/L	407	Standard
	Pb	208	1120.7	5.3	**0.1084**	0.009	8.0	ug/L	462	Standard
	U	238	94.3	23.9	**0.0150**	0.004	28.5	ug/L	9	Standard
>	Bi	209	578506.8	0.9				ug/L	583182	Standard

Sample ID: L1703136102
Report Date/Time: Wednesday, March 29, 2017 13:34:05
Page 1

Approved: March 30, 2017

⌈	**Na**	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
|	**Mg**	24	50.0	30.0	**0.2922**	0.390	133.4	mg/L	33	Standard
|	**K**	39	58.3	30.1	**0.1891**	0.104	54.8	mg/L	20	Standard
|	**Ca**	43	31.7	18.2	**518.1163**	98.744	19.1	mg/L	32	Standard
|	**Fe**	54	81.3	3.7	**0.3243**	0.023	7.1	mg/L	18	Standard
|	**Fe**	57	245.0	22.1	**0.6787**	1.197	176.4	mg/L	245	Standard
⌊>	**Sc-1**	45	48464.1	1.2				mg/L	48374	Standard
	Cl	35	2.7	43.3				ug/L	1	Standard
	Kr	83	3.3	62.4				ug/L	2	Standard
	Br	81	5050.8	7.0				ug/L	1940	Standard
	P	31	38.3	27.2				ug/L	42	Standard
	S	34	3.3	86.6				ug/L	3	Standard
	Sr	88	110.0	4.5				ug/L	115	Standard
	C	12	120.0	30.0				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	3	Standard
	Dy	164	401.1	17.9				mg/L	30	Standard
	Ho-1	165	183.3	13.5				mg/L	3	Standard
	Er	166	186.7	24.2				mg/L	10	Standard
	I	127	13949.8	7.6				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		97.834	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		98.666	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703136102
Report Date/Time: Wednesday, March 29, 2017 13:34:05
Page 2

Approved: March 30, 2017

Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	98.730
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	99.198
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703136102
Report Date/Time: Wednesday, March 29, 2017 13:34:05
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703136107 WG608003-01
Sample Date/Time: Wednesday, March 29, 2017 13:35:00
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	220934.2	0.9				ug/L	221697	Standard
	Be	9	105.0	16.5	**0.0325**	0.009	27.5	ug/L	18	Standard
	Al	27	218842.6	1.2	**1.7857**	0.019	1.1	ug/L	548	Standard
	Sc	45	48711.5	1.8				ug/L	48374	Standard
	Ti	47	488.0	44.0	**1.6451**	0.788	47.9	ug/L	37	Standard
	V	51	1926.1	7.6	**0.0811**	0.019	24.0	ug/L	1312	Standard
	Cr	52	10867.9	0.7	**0.8790**	0.007	0.7	ug/L	5560	Standard
	Cr	53	1118.4	7.8	**0.8235**	0.130	15.8	ug/L	495	Standard
	Mn	55	108856.0	0.9	**10.4991**	0.015	0.1	ug/L	1474	Standard
	Co	59	1713.4	2.1	**0.1635**	0.003	1.7	ug/L	432	Standard
	Ni	60	1634.1	2.0	**0.8801**	0.018	2.1	ug/L	135	Standard
	Cu	65	1399.1	4.6	**0.4986**	0.033	6.7	ug/L	523	Standard
	Zn	66	3887.8	2.3	**3.1379**	0.056	1.8	ug/L	311	Standard
>	Ge	72	682771.2	1.0				ug/L	688742	Standard
	As	75	34.8	52.6	**0.0319**	0.016	49.4	ug/L	-33	Standard
	Se	82	22.9	23.4	**0.0584**	0.049	84.5	ug/L	12	Standard
	Se-1	77	82.0	12.2	**0.0418**	0.142	339.8	ug/L	94	Standard
>	Ga	71	196.7	18.4				mg/L	28	Standard
	Rb	85	6284.6	8.8				ug/L	25	Standard
	Y	89	493210.8	0.6				ug/L	487927	Standard
>	Rh	103	10.0	50.0				ug/L	15	Standard
	Mo	98	221.0	7.7	**0.0421**	0.006	13.1	ug/L	46	Standard
	Ag	107	125.7	2.0	**-0.0010**	0.001	62.1	ug/L	103	Standard
	Cd	111	24.0	6.4	**0.0090**	0.001	8.5	mg/L	4	Standard
	Cd	114	77.7	6.3	**0.0084**	0.001	11.8	ug/L	25	Standard
>	In	115	575666.7	1.5				ug/L	577818	Standard
	Sn	118	271.3	3.3	**0.0988**	0.012	12.4	ug/L	203	Standard
	Sb	123	207.9	20.0	**0.0183**	0.009	50.6	ug/L	270	Standard
	Ba	135	19968.5	1.1	**11.9060**	0.264	2.2	ug/L	35	Standard
	Ce	140	11674.5	1.6				ug/L	25	Standard
>	Tb	159	865419.7	1.6				ug/L	866991	Standard
	Ho	165	165.0	36.9				ug/L	3	Standard
	Tl	203	169.7	1.9	**-0.0029**	0.000	10.1	ug/L	243	Standard
	Tl	205	356.7	9.3	**-0.0033**	0.002	56.1	ug/L	563	Standard
	Pb	206	1173.7	3.3	**0.1148**	0.004	3.5	ug/L	471	Standard
	Pb	207	975.4	7.4	**0.1033**	0.011	10.6	ug/L	407	Standard
	Pb	208	1157.0	1.7	**0.1138**	0.002	2.0	ug/L	462	Standard
	U	238	106.3	5.5	**0.0173**	0.001	7.8	ug/L	9	Standard
>	Bi	209	580522.2	1.2				ug/L	583182	Standard

Sample ID: L1703136107 WG608003-01
Report Date/Time: Wednesday, March 29, 2017 13:37:11
Page 1

Approved: March 30, 2017

⌈	**Na**	23	5.0	0.0	**3.8541**	0.069	1.8	mg/L	0	Standard
|	**Mg**	24	53.3	43.3	**0.3720**	0.596	160.3	mg/L	33	Standard
|	**K**	39	48.3	15.8	**0.1289**	0.043	33.1	mg/L	20	Standard
|	**Ca**	43	40.0	66.1	**378.4589**	450.319	119.0	mg/L	32	Standard
|	**Fe**	54	31.4	75.3	**-0.0075**	0.155	2056.5	mg/L	18	Standard
|	**Fe**	57	235.0	0.0	**0.4336**	0.092	21.2	mg/L	245	Standard
⌊>	**Sc-1**	45	48711.5	1.8				mg/L	48374	Standard
	Cl	35	1.3	173.2				ug/L	1	Standard
	Kr	83	2.0	86.6				ug/L	2	Standard
	Br	81	5844.5	6.6				ug/L	1940	Standard
	P	31	41.7	6.9				ug/L	42	Standard
	S	34	3.3	173.2				ug/L	3	Standard
	Sr	88	111.7	18.1				ug/L	115	Standard
	C	12	73.3	39.4				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	275.4	18.6				mg/L	30	Standard
	Ho-1	165	165.0	36.9				mg/L	3	Standard
	Er	166	166.7	13.9				mg/L	10	Standard
	I	127	8484.0	2.1				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		99.656	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		99.133	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703136107 WG608003-01
Report Date/Time: Wednesday, March 29, 2017 13:37:11
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	99.628
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	99.544
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703136107 WG608003-01
Report Date/Time: Wednesday, March 29, 2017 13:37:11
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703136108S WG608003-05
Sample Date/Time: Wednesday, March 29, 2017 13:43:26
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	221655.2	2.4				ug/L	221697	Standard
	Be	9	100673.4	1.4	**48.9059**	1.085	2.2	ug/L	18	Standard
	Al	27	196097.7	1.5	**1.5956**	0.047	3.0	ug/L	548	Standard
	Sc	45	48955.6	1.5				ug/L	48374	Standard
	Ti	47	259.7	9.3	**0.8039**	0.088	11.0	ug/L	37	Standard
	V	51	327156.1	0.8	**48.4043**	0.280	0.6	ug/L	1312	Standard
	Cr	52	306208.3	1.3	**49.5726**	0.550	1.1	ug/L	5560	Standard
	Cr	53	39267.5	1.1	**50.5213**	0.412	0.8	ug/L	495	Standard
	Mn	55	592301.8	1.1	**57.3291**	0.512	0.9	ug/L	1474	Standard
	Co	59	393365.6	0.3	**49.4295**	0.097	0.2	ug/L	432	Standard
	Ni	60	86005.1	0.3	**50.4688**	0.306	0.6	ug/L	135	Standard
	Cu	65	91095.4	0.1	**50.5866**	0.154	0.3	ug/L	523	Standard
	Zn	66	61655.5	0.3	**55.7310**	0.195	0.3	ug/L	311	Standard
>	Ge	72	688290.4	0.3				ug/L	688742	Standard
	As	75	58399.4	1.1	**49.6612**	0.410	0.8	ug/L	-33	Standard
	Se	82	5340.6	0.7	**48.9859**	0.494	1.0	ug/L	12	Standard
	Se-1	77	3705.5	2.6	**48.7759**	1.180	2.4	ug/L	94	Standard
>	Ga	71	138.3	12.7				mg/L	28	Standard
	Rb	85	5015.8	4.3				ug/L	25	Standard
	Y	89	489266.9	1.5				ug/L	487927	Standard
>	Rh	103	23.3	24.7				ug/L	15	Standard
	Mo	98	175.1	2.0	**0.0288**	0.002	6.3	ug/L	46	Standard
	Ag	107	304636.7	0.2	**49.3221**	0.811	1.6	ug/L	103	Standard
	Cd	111	85865.7	0.3	**49.5032**	0.770	1.6	mg/L	4	Standard
	Cd	114	212262.3	1.9	**48.3436**	1.655	3.4	ug/L	25	Standard
>	In	115	585272.2	1.8				ug/L	577818	Standard
	Sn	118	296.3	9.2	**0.1205**	0.033	27.7	ug/L	203	Standard
	Sb	123	220397.5	0.5	**47.3306**	0.793	1.7	ug/L	270	Standard
	Ba	135	99155.7	0.5	**58.2408**	0.797	1.4	ug/L	35	Standard
	Ce	140	5559.4	1.3				ug/L	25	Standard
>	Tb	159	866023.9	0.1				ug/L	866991	Standard
	Ho	165	128.3	8.1				ug/L	3	Standard
	Tl	203	378754.2	0.9	**49.9666**	1.165	2.3	ug/L	243	Standard
	Tl	205	908170.2	1.3	**49.8645**	1.257	2.5	ug/L	563	Standard
	Pb	206	306038.9	0.3	**49.7822**	0.823	1.7	ug/L	471	Standard
	Pb	207	267125.5	0.5	**48.0046**	0.771	1.6	ug/L	407	Standard
	Pb	208	301761.1	0.7	**49.5704**	1.063	2.1	ug/L	462	Standard
	U	238	243596.6	0.7	**47.5582**	0.984	2.1	ug/L	9	Standard
>	Bi	209	581134.1	1.5				ug/L	583182	Standard

Sample ID: L1703136108S WG608003-05
Report Date/Time: Wednesday, March 29, 2017 13:45:37
Page 1

Approved: March 30, 2017

⌈	**Na**	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
|	**Mg**	24	50.0	10.0	**0.2785**	0.123	44.1	mg/L	33	Standard
|	**K**	39	46.7	44.6	**0.1188**	0.124	104.2	mg/L	20	Standard
|	**Ca**	43	31.7	24.1	**522.0142**	141.687	27.1	mg/L	32	Standard
|	**Fe**	54	25.7	109.2	**-0.0440**	0.184	418.1	mg/L	18	Standard
|	**Fe**	57	238.3	17.1	**0.4870**	0.949	194.8	mg/L	245	Standard
⌊>	**Sc-1**	45	48955.6	1.5				mg/L	48374	Standard
	Cl	35	0.0					ug/L	1	Standard
	Kr	83	1.3	173.2				ug/L	2	Standard
	Br	81	5164.2	4.3				ug/L	1940	Standard
	P	31	51.7	20.1				ug/L	42	Standard
	S	34	1.7	173.2				ug/L	3	Standard
	Sr	88	128.3	12.5				ug/L	115	Standard
	C	12	66.7	22.9				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	163.3	14.0				mg/L	30	Standard
	Ho-1	165	128.3	8.1				mg/L	3	Standard
	Er	166	70.0	65.5				mg/L	10	Standard
	I	127	7380.1	5.2				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		99.981	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		99.934	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703136108S WG608003-05
Report Date/Time: Wednesday, March 29, 2017 13:45:37
Page 2

Approved: March 30, 2017

Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	101.290
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	99.649
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703136108S WG608003-05
Report Date/Time: Wednesday, March 29, 2017 13:45:37
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703136109SD WG608003-06
Sample Date/Time: Wednesday, March 29, 2017 13:46:31
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	220077.1	1.8				ug/L	221697	Standard
	Be	9	103202.0	1.4	**50.4981**	1.584	3.1	ug/L	18	Standard
	Al	27	214709.0	0.9	**1.7590**	0.020	1.1	ug/L	548	Standard
	Sc	45	48191.5	0.8				ug/L	48374	Standard
	Ti	47	572.0	5.9	**1.9215**	0.140	7.3	ug/L	37	Standard
	V	51	333069.0	1.3	**49.0416**	0.620	1.3	ug/L	1312	Standard
	Cr	52	311544.6	1.0	**50.2041**	0.659	1.3	ug/L	5560	Standard
	Cr	53	39411.2	1.5	**50.4562**	0.434	0.9	ug/L	495	Standard
	Mn	55	604798.9	0.9	**58.2574**	0.677	1.2	ug/L	1474	Standard
	Co	59	400877.9	1.4	**50.1322**	1.012	2.0	ug/L	432	Standard
	Ni	60	87874.8	1.1	**51.3176**	0.830	1.6	ug/L	135	Standard
	Cu	65	93737.4	0.3	**51.8077**	0.479	0.9	ug/L	523	Standard
	Zn	66	58397.3	0.7	**52.5027**	0.267	0.5	ug/L	311	Standard
>	Ge	72	691684.6	0.9				ug/L	688742	Standard
	As	75	59360.3	1.2	**50.2324**	0.584	1.2	ug/L	-33	Standard
	Se	82	5398.4	0.8	**49.2755**	0.549	1.1	ug/L	12	Standard
	Se-1	77	3701.1	1.1	**48.4767**	0.615	1.3	ug/L	94	Standard
>	Ga	71	283.3	12.8				mg/L	28	Standard
	Rb	85	6506.4	1.2				ug/L	25	Standard
	Y	89	498587.4	0.4				ug/L	487927	Standard
>	Rh	103	33.3	67.6				ug/L	15	Standard
	Mo	98	206.9	1.0	**0.0373**	0.001	1.5	ug/L	46	Standard
	Ag	107	310014.5	0.3	**50.1645**	0.434	0.9	ug/L	103	Standard
	Cd	111	86727.2	0.5	**49.9714**	0.396	0.8	mg/L	4	Standard
	Cd	114	211658.4	0.4	**48.1701**	0.537	1.1	ug/L	25	Standard
>	In	115	585525.0	1.1				ug/L	577818	Standard
	Sn	118	304.3	1.2	**0.1285**	0.007	5.7	ug/L	203	Standard
	Sb	123	229461.4	0.9	**49.2533**	0.920	1.9	ug/L	270	Standard
	Ba	135	103027.4	0.8	**60.4872**	1.082	1.8	ug/L	35	Standard
	Ce	140	5816.1	0.5				ug/L	25	Standard
>	Tb	159	878175.0	0.7				ug/L	866991	Standard
	Ho	165	121.7	14.4				ug/L	3	Standard
	Tl	203	387333.5	0.6	**50.6792**	0.643	1.3	ug/L	243	Standard
	Tl	205	926663.0	1.0	**50.4616**	0.644	1.3	ug/L	563	Standard
	Pb	206	313283.1	0.6	**50.5455**	0.499	1.0	ug/L	471	Standard
	Pb	207	272588.4	1.1	**48.5855**	0.299	0.6	ug/L	407	Standard
	Pb	208	307117.7	1.3	**50.0361**	0.710	1.4	ug/L	462	Standard
	U	238	250679.5	0.8	**48.5379**	0.230	0.5	ug/L	9	Standard
>	Bi	209	585856.0	1.0				ug/L	583182	Standard

Sample ID: L1703136109SD WG608003-06
Report Date/Time: Wednesday, March 29, 2017 13:48:42
Page 1

Approved: March 30, 2017

⌈	**Na**	23	1.7	173.2	**1.2905**	2.227	172.5	mg/L	0	Standard
|	**Mg**	24	50.0	10.0	**0.2997**	0.139	46.4	mg/L	33	Standard
|	**K**	39	71.7	4.0	**0.2693**	0.020	7.3	mg/L	20	Standard
|	**Ca**	43	35.0	24.7	**454.4554**	158.768	34.9	mg/L	32	Standard
|	**Fe**	54	40.8	44.0	**0.0579**	0.117	202.1	mg/L	18	Standard
|	**Fe**	57	240.0	12.7	**0.6003**	0.703	117.0	mg/L	245	Standard
⌊>	**Sc-1**	45	48191.5	0.8				mg/L	48374	Standard
	Cl	35	0.0					ug/L	1	Standard
	Kr	83	1.3	43.3				ug/L	2	Standard
	Br	81	11898.0	4.0				ug/L	1940	Standard
	P	31	46.7	48.3				ug/L	42	Standard
	S	34	3.3	86.6				ug/L	3	Standard
	Sr	88	125.0	14.4				ug/L	115	Standard
	C	12	86.7	17.6				mg/L	37	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	175.1	15.8				mg/L	30	Standard
	Ho-1	165	121.7	14.4				mg/L	3	Standard
	Er	166	103.3	45.7				mg/L	10	Standard
	I	127	6122.9	2.9				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		99.269	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		100.427	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703136109SD WG608003-06
Report Date/Time: Wednesday, March 29, 2017 13:48:42
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	101.334
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	100.459
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703136109SD WG608003-06
Report Date/Time: Wednesday, March 29, 2017 13:48:42
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703136114
Sample Date/Time: Wednesday, March 29, 2017 13:49:37
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	226600.1	3.8				ug/L	221697	Standard
	Be	9	240.0	7.5	**0.0956**	0.012	12.8	ug/L	18	Standard
	Al	27	1062398.6	2.1	**8.4548**	0.276	3.3	ug/L	548	Standard
	Sc	45	49056.0	3.0				ug/L	48374	Standard
	Ti	47	1933.5	2.4	**6.8601**	0.392	5.7	ug/L	37	Standard
	V	51	13574.0	4.2	**1.8154**	0.154	8.5	ug/L	1312	Standard
	Cr	52	46271.2	0.6	**6.7175**	0.253	3.8	ug/L	5560	Standard
	Cr	53	5891.1	2.4	**7.0404**	0.083	1.2	ug/L	495	Standard
	Mn	55	1737602.2	0.5	**168.7824**	5.280	3.1	ug/L	1474	Standard
	Co	59	33982.7	1.1	**4.2280**	0.101	2.4	ug/L	432	Standard
	Ni	60	13405.9	2.1	**7.8038**	0.155	2.0	ug/L	135	Standard
	Cu	65	10351.2	1.3	**5.5018**	0.161	2.9	ug/L	523	Standard
	Zn	66	41175.5	1.4	**37.1342**	0.776	2.1	ug/L	311	Standard
>	Ge	72	687540.2	3.5				ug/L	688742	Standard
	As	75	388.1	4.3	**0.3329**	0.025	7.4	ug/L	-33	Standard
	Se	82	20.1	3.7	**0.0323**	0.013	40.2	ug/L	12	Standard
	Se-1	77	111.7	7.6	**0.4316**	0.064	14.8	ug/L	94	Standard
>	Ga	71	3908.8	3.3				mg/L	28	Standard
	Rb	85	22571.8	0.8				ug/L	25	Standard
	Y	89	587241.9	1.4				ug/L	487927	Standard
>	Rh	103	10.0	86.6				ug/L	15	Standard
	Mo	98	1784.8	2.5	**0.4638**	0.022	4.8	ug/L	46	Standard
	Ag	107	228.3	3.6	**0.0156**	0.001	5.9	ug/L	103	Standard
	Cd	111	38.4	15.2	**0.0172**	0.003	19.6	mg/L	4	Standard
	Cd	114	127.3	17.4	**0.0196**	0.005	25.5	ug/L	25	Standard
>	In	115	580859.4	2.5				ug/L	577818	Standard
	Sn	118	285.7	4.7	**0.1113**	0.015	13.4	ug/L	203	Standard
	Sb	123	436.5	19.1	**0.0676**	0.020	29.8	ug/L	270	Standard
	Ba	135	58680.8	1.1	**34.7232**	0.652	1.9	ug/L	35	Standard
	Ce	140	405835.1	0.6				ug/L	25	Standard
>	Tb	159	886912.8	2.4				ug/L	866991	Standard
	Ho	165	6136.2	0.9				ug/L	3	Standard
	Tl	203	249.0	29.3	**0.0076**	0.010	134.6	ug/L	243	Standard
	Tl	205	630.0	40.6	**0.0119**	0.015	124.4	ug/L	563	Standard
	Pb	206	63543.6	0.8	**10.2710**	0.257	2.5	ug/L	471	Standard
	Pb	207	52717.6	1.0	**9.4128**	0.309	3.3	ug/L	407	Standard
	Pb	208	61020.9	0.9	**9.9596**	0.348	3.5	ug/L	462	Standard
	U	238	608.3	10.6	**0.1153**	0.014	12.3	ug/L	9	Standard
>	Bi	209	581550.0	2.6				ug/L	583182	Standard

Sample ID: L1703136114
Report Date/Time: Wednesday, March 29, 2017 13:51:48
Page 1

Approved: March 30, 2017

	Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
	Mg	24	55.0	47.2	**0.4136**	0.699	169.0	mg/L	33	Standard
	K	39	71.7	10.7	**0.2619**	0.044	16.9	mg/L	20	Standard
	Ca	43	38.3	27.2	**410.3997**	162.956	39.7	mg/L	32	Standard
	Fe	54	907.4	10.8	**5.7055**	0.582	10.2	mg/L	18	Standard
	Fe	57	436.7	8.0	**4.7596**	0.886	18.6	mg/L	245	Standard
>	**Sc-1**	45	49056.0	3.0				mg/L	48374	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	3.7	41.7				ug/L	2	Standard
	Br	81	4270.6	2.5				ug/L	1940	Standard
	P	31	25.0	72.1				ug/L	42	Standard
	S	34	0.0					ug/L	3	Standard
	Sr	88	121.7	21.1				ug/L	115	Standard
	C	12	60.0	60.1				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	10873.1	1.9				mg/L	30	Standard
	Ho-1	165	6136.2	0.9				mg/L	3	Standard
	Er	166	5030.8	3.5				mg/L	10	Standard
	I	127	6668.1	3.8				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		102.211	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.826	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703136114
Report Date/Time: Wednesday, March 29, 2017 13:51:48
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.526
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	99.720
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1703136114
Report Date/Time: Wednesday, March 29, 2017 13:51:48
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703136114PS WG608087-01
Sample Date/Time: Wednesday, March 29, 2017 13:52:42
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	225921.0	2.7				ug/L	221697	Standard
	Be	9	102210.3	1.5	**48.7110**	0.583	1.2	ug/L	18	Standard
	Al	27	1068310.6	0.5	**8.5250**	0.183	2.1	ug/L	548	Standard
	Sc	45	48954.0	3.7				ug/L	48374	Standard
	Ti	47	1889.5	1.8	**6.7256**	0.045	0.7	ug/L	37	Standard
	V	51	344828.2	1.1	**51.3442**	0.809	1.6	ug/L	1312	Standard
	Cr	52	349504.9	0.8	**57.0677**	0.889	1.6	ug/L	5560	Standard
	Cr	53	44301.4	2.5	**57.4454**	2.107	3.7	ug/L	495	Standard
	Mn	55	2640919.5	0.9	**257.7174**	4.628	1.8	ug/L	1474	Standard
	Co	59	437205.3	1.1	**55.2827**	1.033	1.9	ug/L	432	Standard
	Ni	60	99355.4	0.9	**58.6737**	0.898	1.5	ug/L	135	Standard
	Cu	65	102114.0	1.2	**57.0897**	1.018	1.8	ug/L	523	Standard
	Zn	66	95773.4	1.3	**87.3410**	1.280	1.5	ug/L	311	Standard
>	Ge	72	684221.2	2.0				ug/L	688742	Standard
	As	75	59539.4	1.5	**50.9418**	0.997	2.0	ug/L	-33	Standard
	Se	82	5512.0	2.0	**50.8638**	0.282	0.6	ug/L	12	Standard
	Se-1	77	3735.5	0.9	**49.4980**	1.398	2.8	ug/L	94	Standard
>	Ga	71	3927.2	4.8				mg/L	28	Standard
	Rb	85	21850.7	1.9				ug/L	25	Standard
	Y	89	579842.0	0.5				ug/L	487927	Standard
>	Rh	103	15.0	33.3				ug/L	15	Standard
	Mo	98	1774.9	4.9	**0.4658**	0.020	4.2	ug/L	46	Standard
	Ag	107	320379.6	0.8	**52.8075**	0.162	0.3	ug/L	103	Standard
	Cd	111	86181.1	0.7	**50.5821**	0.311	0.6	mg/L	4	Standard
	Cd	114	213514.4	0.4	**49.4998**	0.635	1.3	ug/L	25	Standard
>	In	115	574804.7	1.1				ug/L	577818	Standard
	Sn	118	297.7	1.9	**0.1273**	0.009	7.3	ug/L	203	Standard
	Sb	123	231785.7	0.3	**50.6774**	0.418	0.8	ug/L	270	Standard
	Ba	135	141084.8	0.5	**84.3789**	0.741	0.9	ug/L	35	Standard
	Ce	140	402380.2	1.2				ug/L	25	Standard
>	Tb	159	883723.5	1.1				ug/L	866991	Standard
	Ho	165	5717.7	2.6				ug/L	3	Standard
	Tl	203	384761.4	0.9	**50.2791**	0.450	0.9	ug/L	243	Standard
	Tl	205	931613.0	0.9	**50.6679**	0.405	0.8	ug/L	563	Standard
	Pb	206	376868.1	1.1	**60.7457**	0.792	1.3	ug/L	471	Standard
	Pb	207	334746.9	0.7	**59.6092**	0.327	0.5	ug/L	407	Standard
	Pb	208	373528.7	0.6	**60.7996**	0.705	1.2	ug/L	462	Standard
	U	238	262707.0	0.7	**50.8068**	0.582	1.1	ug/L	9	Standard
>	Bi	209	586561.2	0.7				ug/L	583182	Standard

Sample ID: L1703136114PS WG608087-01
Report Date/Time: Wednesday, March 29, 2017 13:54:53
Page 1

Approved: March 30, 2017

⌈	**Na**	23	1.7	173.2	**1.2319**	2.125	172.5	mg/L	0	Standard
|	**Mg**	24	53.3	67.8	**0.3670**	0.931	253.6	mg/L	33	Standard
|	**K**	39	85.0	46.7	**0.3402**	0.232	68.3	mg/L	20	Standard
|	**Ca**	43	41.7	6.9	**347.0880**	60.888	17.5	mg/L	32	Standard
|	**Fe**	54	911.3	12.3	**5.7411**	0.631	11.0	mg/L	18	Standard
|	**Fe**	57	416.7	6.6	**4.3441**	0.668	15.4	mg/L	245	Standard
⌊>	**Sc-1**	45	48954.0	3.7				mg/L	48374	Standard
	Cl	35	4.7	65.5				ug/L	1	Standard
	Kr	83	1.3	43.3				ug/L	2	Standard
	Br	81	4137.2	5.2				ug/L	1940	Standard
	P	31	43.3	17.6				ug/L	42	Standard
	S	34	3.3	173.2				ug/L	3	Standard
	Sr	88	111.7	6.8				ug/L	115	Standard
	C	12	70.0	24.7				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	173.2				mg/L	3	Standard
	Dy	164	10890.6	4.3				mg/L	30	Standard
	Ho-1	165	5717.7	2.6				mg/L	3	Standard
	Er	166	5014.2	2.8				mg/L	10	Standard
	I	127	6546.4	6.5				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		101.905	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		99.344	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703136114PS WG608087-01
Report Date/Time: Wednesday, March 29, 2017 13:54:53
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	99.478
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	100.580
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1703136114PS WG608087-01
Report Date/Time: Wednesday, March 29, 2017 13:54:53
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703136114SDL WG608087-02
Sample Date/Time: Wednesday, March 29, 2017 13:55:47
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	208180.5	0.5				ug/L	221697	Standard
	Be	9	55.0	24.1	**0.0097**	0.007	71.9	ug/L	18	Standard
	Al	27	210071.3	0.5	**1.8191**	0.010	0.6	ug/L	548	Standard
	Sc	45	44864.7	0.9				ug/L	48374	Standard
	Ti	47	396.0	7.2	**1.3890**	0.101	7.3	ug/L	37	Standard
	V	51	3467.9	8.6	**0.3418**	0.049	14.3	ug/L	1312	Standard
	Cr	52	11900.3	2.3	**1.1635**	0.054	4.6	ug/L	5560	Standard
	Cr	53	1413.4	2.7	**1.3159**	0.046	3.5	ug/L	495	Standard
	Mn	55	341477.6	0.8	**35.1605**	0.298	0.8	ug/L	1474	Standard
	Co	59	6784.9	0.8	**0.8557**	0.013	1.6	ug/L	432	Standard
	Ni	60	2767.6	3.8	**1.6453**	0.067	4.1	ug/L	135	Standard
	Cu	65	2387.9	1.6	**1.1321**	0.031	2.7	ug/L	523	Standard
	Zn	66	9444.3	2.2	**8.7346**	0.198	2.3	ug/L	311	Standard
>	Ge	72	645965.9	0.7				ug/L	688742	Standard
	As	75	54.8	24.2	**0.0517**	0.012	23.2	ug/L	-33	Standard
	Se	82	12.0	29.6	**-0.0355**	0.035	99.9	ug/L	12	Standard
	Se-1	77	78.3	10.7	**0.0523**	0.124	237.9	ug/L	94	Standard
>	Ga	71	816.7	4.1				mg/L	28	Standard
	Rb	85	4349.0	3.6				ug/L	25	Standard
	Y	89	470630.0	1.3				ug/L	487927	Standard
>	Rh	103	8.3	34.6				ug/L	15	Standard
	Mo	98	361.2	4.5	**0.0853**	0.005	5.4	ug/L	46	Standard
	Ag	107	184.3	22.0	**0.0103**	0.007	69.7	ug/L	103	Standard
	Cd	111	18.2	76.3	**0.0062**	0.009	139.4	mg/L	4	Standard
	Cd	114	68.6	34.8	**0.0072**	0.006	82.4	ug/L	25	Standard
>	In	115	547029.3	0.4				ug/L	577818	Standard
	Sn	118	176.0	5.2	**0.0067**	0.010	143.2	ug/L	203	Standard
	Sb	123	709.2	16.1	**0.1359**	0.027	19.8	ug/L	270	Standard
	Ba	135	11446.3	1.2	**7.1715**	0.120	1.7	ug/L	35	Standard
	Ce	140	81145.1	1.6				ug/L	25	Standard
>	Tb	159	819933.0	0.5				ug/L	866991	Standard
	Ho	165	1060.0	8.7				ug/L	3	Standard
	Tl	203	157.7	32.6	**-0.0034**	0.007	212.0	ug/L	243	Standard
	Tl	205	381.7	32.9	**-0.0008**	0.007	922.3	ug/L	563	Standard
	Pb	206	12938.2	0.2	**2.1434**	0.015	0.7	ug/L	471	Standard
	Pb	207	10653.7	1.2	**1.9472**	0.039	2.0	ug/L	407	Standard
	Pb	208	12276.9	0.5	**2.0505**	0.024	1.2	ug/L	462	Standard
	U	238	157.7	32.1	**0.0289**	0.011	36.3	ug/L	9	Standard
>	Bi	209	551725.2	0.7				ug/L	583182	Standard

Sample ID: L1703136114SDL WG608087-02
Report Date/Time: Wednesday, March 29, 2017 13:57:58
Page 1

Approved: March 30, 2017

	Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
	Mg	24	40.0	12.5	**0.1168**	0.129	110.8	mg/L	33	Standard
	K	39	26.7	54.1	**0.0160**	0.090	563.8	mg/L	20	Standard
	Ca	43	40.0	12.5	**313.7575**	89.291	28.5	mg/L	32	Standard
	Fe	54	184.5	27.4	**1.1022**	0.353	32.0	mg/L	18	Standard
	Fe	57	246.7	5.9	**1.1477**	0.378	33.0	mg/L	245	Standard
>	**Sc-1**	45	44864.7	0.9				mg/L	48374	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	2.7	57.3				ug/L	2	Standard
	Br	81	2086.8	11.0				ug/L	1940	Standard
	P	31	33.3	22.9				ug/L	42	Standard
	S	34	1.7	173.2				ug/L	3	Standard
	Sr	88	100.0	26.5				ug/L	115	Standard
	C	12	66.7	74.0				mg/L	37	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	2143.3	7.2				mg/L	30	Standard
	Ho-1	165	1060.0	8.7				mg/L	3	Standard
	Er	166	1116.7	6.3				mg/L	10	Standard
	I	127	4072.2	4.0				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		93.903	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		93.789	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703136114SDL WG608087-02
Report Date/Time: Wednesday, March 29, 2017 13:57:58
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	94.672
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	94.606
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703136114SDL WG608087-02
Report Date/Time: Wednesday, March 29, 2017 13:57:58
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, March 29, 2017 13:58:55
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	217896.8	3.4				ug/L	221697	Standard
	Be	9	98957.1	0.7	**48.9177**	1.351	2.8	ug/L	18	Standard
	Al	27	5956930.4	0.5	**49.2979**	1.519	3.1	ug/L	548	Standard
	Sc	45	47185.0	1.4				ug/L	48374	Standard
	Ti	47	26348.2	0.4	**97.6788**	1.756	1.8	ug/L	37	Standard
	V	51	321070.0	0.5	**48.8735**	0.882	1.8	ug/L	1312	Standard
	Cr	52	297940.6	0.8	**49.6225**	0.835	1.7	ug/L	5560	Standard
	Cr	53	38047.7	0.4	**50.3571**	0.690	1.4	ug/L	495	Standard
	Mn	55	498054.9	1.1	**49.5697**	0.543	1.1	ug/L	1474	Standard
	Co	59	385482.8	1.1	**49.8319**	0.890	1.8	ug/L	432	Standard
	Ni	60	82192.3	0.3	**49.6189**	0.990	2.0	ug/L	135	Standard
	Cu	65	86485.1	0.2	**49.4021**	0.912	1.8	ug/L	523	Standard
	Zn	66	53215.3	0.4	**49.4362**	0.771	1.6	ug/L	311	Standard
>	Ge	72	669165.4	1.7				ug/L	688742	Standard
	As	75	56112.0	0.5	**49.0892**	0.826	1.7	ug/L	-33	Standard
	Se	82	5257.6	0.6	**49.6099**	0.522	1.1	ug/L	12	Standard
	Se-1	77	3578.1	0.0	**48.4491**	0.842	1.7	ug/L	94	Standard
>	Ga	71	45.0	19.2				mg/L	28	Standard
	Rb	85	393.3	1.9				ug/L	25	Standard
	Y	89	480133.5	2.5				ug/L	487927	Standard
>	Rh	103	23.3	68.9				ug/L	15	Standard
	Mo	98	360381.5	0.8	**99.0507**	0.638	0.6	ug/L	46	Standard
	Ag	107	295562.7	0.8	**49.1072**	0.374	0.8	ug/L	103	Standard
	Cd	111	83366.7	0.6	**49.3239**	0.473	1.0	mg/L	4	Standard
	Cd	114	213451.6	0.7	**49.8803**	0.407	0.8	ug/L	25	Standard
>	In	115	570242.7	1.4				ug/L	577818	Standard
	Sn	118	47123.2	1.3	**50.5890**	1.151	2.3	ug/L	203	Standard
	Sb	123	221841.0	0.8	**48.8967**	1.025	2.1	ug/L	270	Standard
	Ba	135	80723.1	0.8	**48.6610**	1.026	2.1	ug/L	35	Standard
	Ce	140	250.0	15.6				ug/L	25	Standard
>	Tb	159	859726.7	1.1				ug/L	866991	Standard
	Ho	165	11.7	99.0				ug/L	3	Standard
	Tl	203	365798.8	0.6	**49.0822**	0.698	1.4	ug/L	243	Standard
	Tl	205	877133.2	1.1	**48.9798**	0.351	0.7	ug/L	563	Standard
	Pb	206	297848.0	1.2	**49.2807**	0.872	1.8	ug/L	471	Standard
	Pb	207	269393.5	0.6	**49.2471**	0.849	1.7	ug/L	407	Standard
	Pb	208	300886.9	0.9	**50.2750**	0.898	1.8	ug/L	462	Standard
	U	238	254194.5	1.3	**50.4810**	1.186	2.3	ug/L	9	Standard
>	Bi	209	571291.6	1.1				ug/L	583182	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, March 29, 2017 14:01:05
Page 1

Approved: March 30, 2017

	Na	23	8.3	34.6	**6.6068**	2.224	33.7	mg/L	0	Standard
	Mg	24	240.0	5.5	**5.3360**	0.439	8.2	mg/L	33	Standard
	K	39	890.0	3.9	**5.1896**	0.219	4.2	mg/L	20	Standard
	Ca	43	61.7	9.4	**-43.5527**	108.990	250.2	mg/L	32	Standard
	Fe	54	847.5	9.9	**5.5349**	0.543	9.8	mg/L	18	Standard
	Fe	57	423.3	15.0	**4.8361**	1.522	31.5	mg/L	245	Standard
>	**Sc-1**	45	47185.0	1.4				mg/L	48374	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	1.0	173.2				ug/L	2	Standard
	Br	81	1853.4	9.1				ug/L	1940	Standard
	P	31	38.3	15.1				ug/L	42	Standard
	S	34	1.7	173.2				ug/L	3	Standard
	Sr	88	101.7	15.8				ug/L	115	Standard
	C	12	83.3	18.3				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	9.4	101.9				mg/L	30	Standard
	Ho-1	165	11.7	99.0				mg/L	3	Standard
	Er	166	13.3	114.6				mg/L	10	Standard
	I	127	2448.5	1.9				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	97.835		
	Al	27	98.596		
	Sc	45			
	Ti	47	97.679		
	V	51	97.747		
	Cr	52	99.245		
	Cr	53			
	Mn	55	99.139		
	Co	59	99.664		
	Ni	60	99.238		
	Cu	65	98.804		
	Zn	66	98.872		
>	Ge	72		97.158	
	As	75	98.178		
	Se	82	99.220		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, March 29, 2017 14:01:05
Page 2

Approved: March 30, 2017

Rb	85			
Y	89			
Rh	103			
Mo	98	99.051		
Ag	107	98.214		
Cd	111	98.648		
Cd	114			
In	115			98.689
Sn	118	101.178		
Sb	123	97.793		
Ba	135	97.322		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.164		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.550		
U	238	100.962		
Bi	209			97.961
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Wednesday, March 29, 2017 14:01:05
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, March 29, 2017 14:02:00
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	219087.9	1.7				ug/L	221697	Standard
	Be	9	60.0	72.2	**0.0106**	0.021	196.2	ug/L	18	Standard
	Al	27	1536.8	104.2	**0.0133**	0.013	97.1	ug/L	548	Standard
	Sc	45	46927.6	1.6				ug/L	48374	Standard
	Ti	47	34.7	23.3	**-0.0039**	0.030	772.5	ug/L	37	Standard
	V	51	1210.5	18.3	**-0.0215**	0.032	150.9	ug/L	1312	Standard
	Cr	52	4766.8	4.3	**-0.1152**	0.030	26.4	ug/L	5560	Standard
	Cr	53	445.0	8.8	**-0.0473**	0.046	97.9	ug/L	495	Standard
	Mn	55	2143.5	39.7	**0.0643**	0.083	129.7	ug/L	1474	Standard
	Co	59	410.0	53.3	**-0.0006**	0.028	4508.8	ug/L	432	Standard
	Ni	60	190.3	30.6	**0.0273**	0.035	126.5	ug/L	135	Standard
	Cu	65	543.0	12.3	**0.0243**	0.036	146.1	ug/L	523	Standard
	Zn	66	540.3	6.8	**0.0767**	0.029	38.4	ug/L	311	Standard
>	Ge	72	665737.6	1.1				ug/L	688742	Standard
	As	75	8.2	684.2	**0.0091**	0.049	541.3	ug/L	-33	Standard
	Se	82	18.5	33.7	**0.0221**	0.058	260.9	ug/L	12	Standard
	Se-1	77	78.0	12.4	**0.0133**	0.125	936.2	ug/L	94	Standard
>	Ga	71	18.3	68.6				mg/L	28	Standard
	Rb	85	28.3	50.9				ug/L	25	Standard
	Y	89	476045.2	1.3				ug/L	487927	Standard
>	Rh	103	5.0	173.2				ug/L	15	Standard
	Mo	98	272.2	48.9	**0.0571**	0.036	63.3	ug/L	46	Standard
	Ag	107	243.7	92.5	**0.0190**	0.037	196.6	ug/L	103	Standard
	Cd	111	44.0	162.4	**0.0210**	0.042	201.5	mg/L	4	Standard
	Cd	114	133.3	147.5	**0.0216**	0.046	212.6	ug/L	25	Standard
>	In	115	565560.4	1.7				ug/L	577818	Standard
	Sn	118	189.0	3.8	**0.0145**	0.011	78.3	ug/L	203	Standard
	Sb	123	539.6	22.8	**0.0928**	0.027	29.1	ug/L	270	Standard
	Ba	135	88.7	92.2	**0.0299**	0.049	164.1	ug/L	35	Standard
	Ce	140	90.0	144.4				ug/L	25	Standard
>	Tb	159	844517.3	2.3				ug/L	866991	Standard
	Ho	165	5.0	100.0				ug/L	3	Standard
	Tl	203	217.0	122.9	**0.0038**	0.036	947.4	ug/L	243	Standard
	Tl	205	535.0	128.7	**0.0070**	0.038	550.9	ug/L	563	Standard
	Pb	206	630.0	41.5	**0.0281**	0.043	152.1	ug/L	471	Standard
	Pb	207	529.7	39.0	**0.0248**	0.037	150.0	ug/L	407	Standard
	Pb	208	568.7	38.7	**0.0187**	0.036	194.2	ug/L	462	Standard
	U	238	114.7	137.7	**0.0192**	0.031	162.6	ug/L	9	Standard
>	Bi	209	569245.2	1.6				ug/L	583182	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, March 29, 2017 14:04:11
Page 1

Approved: March 30, 2017

⌈	**Na**	23	1.7	173.2	**1.3210**	2.279	172.5	mg/L	0	Standard
|	**Mg**	24	30.0	44.1	**-0.1942**	0.354	182.3	mg/L	33	Standard
|	**K**	39	6.7	43.3	**-0.1117**	0.017	15.1	mg/L	20	Standard
|	**Ca**	43	50.0	45.8	**168.2183**	407.377	242.2	mg/L	32	Standard
|	**Fe**	54	34.4	57.9	**0.0211**	0.134	634.6	mg/L	18	Standard
|	**Fe**	57	231.7	8.7	**0.5476**	0.378	69.0	mg/L	245	Standard
⌊>	**Sc-1**	45	46927.6	1.6				mg/L	48374	Standard
	Cl	35	2.0	173.2				ug/L	1	Standard
	Kr	83	1.7	91.7				ug/L	2	Standard
	Br	81	1946.8	7.3				ug/L	1940	Standard
	P	31	31.7	45.6				ug/L	42	Standard
	S	34	1.7	173.2				ug/L	3	Standard
	Sr	88	115.0	17.4				ug/L	115	Standard
	C	12	26.7	21.7				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	3	Standard
	Dy	164	12.7	118.3				mg/L	30	Standard
	Ho-1	165	5.0	100.0				mg/L	3	Standard
	Er	166	13.3	43.3				mg/L	10	Standard
	I	127	2116.8	4.2				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		96.660	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, March 29, 2017 14:04:11
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	97.879
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	97.610
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Wednesday, March 29, 2017 14:04:11
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703147401
Sample Date/Time: Wednesday, March 29, 2017 14:05:07
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	224257.9	2.1				ug/L	221697	Standard
	Be	9	51.7	34.0	**0.0061**	0.009	141.8	ug/L	18	Standard
	Al	27	21589638.3	2.1	**173.4935**	2.862	1.6	ug/L	548	Standard
	Sc	45	51159.6	2.0				ug/L	48374	Standard
	Ti	47	160.0	13.5	**0.4459**	0.080	18.0	ug/L	37	Standard
	V	51	1360.6	3.5	**-0.0046**	0.008	166.9	ug/L	1312	Standard
	Cr	52	9138.8	5.6	**0.5834**	0.080	13.8	ug/L	5560	Standard
	Cr	53	2381.9	37.8	**2.4647**	1.172	47.6	ug/L	495	Standard
	Mn	55	32655853.7	1.2	**3177.7564**	29.200	0.9	ug/L	1474	Standard
	Co	59	25906.8	1.5	**3.2142**	0.043	1.3	ug/L	432	Standard
	Ni	60	25644.4	1.5	**15.0281**	0.190	1.3	ug/L	135	Standard
	Cu	65	1840.1	2.7	**0.7415**	0.027	3.6	ug/L	523	Standard
	Zn	66	8969.0	1.6	**7.7607**	0.124	1.6	ug/L	311	Standard
>	Ge	72	686376.1	0.3				ug/L	688742	Standard
	As	75	422.3	5.4	**0.3622**	0.021	5.7	ug/L	-33	Standard
	Se	82	68.0	10.0	**0.4735**	0.061	12.9	ug/L	12	Standard
	Se-1	77	384.3	24.6	**4.1133**	1.270	30.9	ug/L	94	Standard
>	Ga	71	156.7	18.7				mg/L	28	Standard
	Rb	85	16839.4	1.8				ug/L	25	Standard
	Y	89	492942.7	1.1				ug/L	487927	Standard
>	Rh	103	26.7	57.3				ug/L	15	Standard
	Mo	98	1879.6	4.8	**0.4915**	0.024	4.8	ug/L	46	Standard
	Ag	107	122.7	9.0	**-0.0015**	0.002	132.9	ug/L	103	Standard
	Cd	111	72.2	14.4	**0.0371**	0.006	16.6	mg/L	4	Standard
	Cd	114	179.6	38.1	**0.0320**	0.016	50.6	ug/L	25	Standard
>	In	115	578062.1	1.3				ug/L	577818	Standard
	Sn	118	327.0	8.7	**0.1566**	0.029	18.2	ug/L	203	Standard
	Sb	123	342.9	25.8	**0.0475**	0.020	41.6	ug/L	270	Standard
	Ba	135	468958.0	0.7	**278.9717**	5.109	1.8	ug/L	35	Standard
	Ce	140	511.7	8.3				ug/L	25	Standard
>	Tb	159	884475.4	0.3				ug/L	866991	Standard
	Ho	165	40.0	25.0				ug/L	3	Standard
	Tl	203	814.7	18.4	**0.0846**	0.020	24.2	ug/L	243	Standard
	Tl	205	1975.1	21.7	**0.0881**	0.024	27.7	ug/L	563	Standard
	Pb	206	772.0	1.7	**0.0521**	0.002	3.4	ug/L	471	Standard
	Pb	207	614.0	3.3	**0.0406**	0.004	9.7	ug/L	407	Standard
	Pb	208	743.3	2.7	**0.0483**	0.004	7.4	ug/L	462	Standard
	U	238	1205.7	2.0	**0.2372**	0.005	2.1	ug/L	9	Standard
>	Bi	209	568327.0	0.3				ug/L	583182	Standard

Sample ID: L1703147401
Report Date/Time: Wednesday, March 29, 2017 14:07:18
Page 1

Approved: March 30, 2017

⌈	**Na**	23	31.7	48.2	**23.1067**	10.843	46.9	mg/L	0	Standard
|	**Mg**	24	2168.5	6.0	**51.7073**	3.262	6.3	mg/L	33	Standard
|	**K**	39	308.3	2.5	**1.5547**	0.028	1.8	mg/L	20	Standard
|	**Ca**	43	131.7	9.6	**-1128.4765**	170.536	15.1	mg/L	32	Standard
|	**Fe**	54	291.1	11.2	**1.6113**	0.233	14.5	mg/L	18	Standard
|	**Fe**	57	428.3	14.0	**4.1778**	1.084	25.9	mg/L	245	Standard
⌊>	**Sc-1**	45	51159.6	2.0				mg/L	48374	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	1.0	100.0				ug/L	2	Standard
	Br	81	10510.3	9.3				ug/L	1940	Standard
	P	31	43.3	29.0				ug/L	42	Standard
	S	34	3.3	86.6				ug/L	3	Standard
	Sr	88	138.3	18.2				ug/L	115	Standard
	C	12	270.0	17.0				mg/L	37	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	34.9	32.7				mg/L	30	Standard
	Ho-1	165	40.0	25.0				mg/L	3	Standard
	Er	166	36.7	15.7				mg/L	10	Standard
	I	127	176270.4	6.2				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		101.155	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
| >	Ge	72		99.657	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703147401
Report Date/Time: Wednesday, March 29, 2017 14:07:18
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.042
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	97.453
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1703147401
Report Date/Time: Wednesday, March 29, 2017 14:07:18
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703147402
Sample Date/Time: Wednesday, March 29, 2017 14:08:12
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	230301.2	2.6				ug/L	221697	Standard
	Be	9	43.3	6.7	**0.0016**	0.002	115.7	ug/L	18	Standard
	Al	27	8891854.2	1.4	**69.6037**	1.938	2.8	ug/L	548	Standard
	Sc	45	50627.8	3.4				ug/L	48374	Standard
	Ti	47	124.7	8.1	**0.3103**	0.046	14.7	ug/L	37	Standard
	V	51	1986.3	6.8	**0.0832**	0.018	21.7	ug/L	1312	Standard
	Cr	52	9250.2	1.4	**0.5746**	0.051	8.9	ug/L	5560	Standard
	Cr	53	1426.7	10.2	**1.1833**	0.178	15.1	ug/L	495	Standard
	Mn	55	16439.3	6.1	**1.4219**	0.128	9.0	ug/L	1474	Standard
	Co	59	486.0	1.1	**0.0064**	0.002	23.8	ug/L	432	Standard
	Ni	60	823.7	5.5	**0.3887**	0.032	8.2	ug/L	135	Standard
	Cu	65	1163.0	1.9	**0.3505**	0.006	1.6	ug/L	523	Standard
	Zn	66	3662.8	3.3	**2.8551**	0.182	6.4	ug/L	311	Standard
>	Ge	72	699244.1	2.6				ug/L	688742	Standard
	As	75	35.2	139.5	**0.0316**	0.042	132.2	ug/L	-33	Standard
	Se	82	40.5	8.1	**0.2133**	0.033	15.6	ug/L	12	Standard
	Se-1	77	164.7	1.9	**1.1099**	0.020	1.8	ug/L	94	Standard
>	Ga	71	33.3	37.7				mg/L	28	Standard
	Rb	85	16205.3	3.8				ug/L	25	Standard
	Y	89	508018.1	3.1				ug/L	487927	Standard
>	Rh	103	18.3	56.8				ug/L	15	Standard
	Mo	98	187.8	6.2	**0.0318**	0.004	14.0	ug/L	46	Standard
	Ag	107	126.7	3.2	**-0.0013**	0.000	11.1	ug/L	103	Standard
	Cd	111	27.8	13.0	**0.0108**	0.002	19.5	mg/L	4	Standard
	Cd	114	104.6	12.7	**0.0141**	0.004	25.8	ug/L	25	Standard
>	In	115	590511.3	2.9				ug/L	577818	Standard
	Sn	118	326.3	8.8	**0.1484**	0.023	15.6	ug/L	203	Standard
	Sb	123	340.9	8.1	**0.0453**	0.004	8.2	ug/L	270	Standard
	Ba	135	48407.5	1.3	**28.1863**	1.165	4.1	ug/L	35	Standard
	Ce	140	263.3	7.7				ug/L	25	Standard
>	Tb	159	886157.0	3.0				ug/L	866991	Standard
	Ho	165	216.7	19.6				ug/L	3	Standard
	Tl	203	837.4	3.0	**0.0852**	0.006	7.3	ug/L	243	Standard
	Tl	205	2118.5	3.9	**0.0936**	0.008	8.2	ug/L	563	Standard
	Pb	206	644.0	0.9	**0.0284**	0.004	13.8	ug/L	471	Standard
	Pb	207	567.3	3.5	**0.0297**	0.001	2.7	ug/L	407	Standard
	Pb	208	635.3	5.4	**0.0279**	0.008	29.5	ug/L	462	Standard
	U	238	345.7	8.4	**0.0641**	0.007	11.7	ug/L	9	Standard
>	Bi	209	581359.1	2.9				ug/L	583182	Standard

Sample ID: L1703147402
Report Date/Time: Wednesday, March 29, 2017 14:10:23
Page 1

Approved: March 30, 2017

⌈	**Na**	23	20.0	25.0	**14.8621**	3.874	26.1	mg/L	0	Standard
|	**Mg**	24	458.3	19.9	**10.2946**	2.469	24.0	mg/L	33	Standard
|	**K**	39	258.3	6.8	**1.2919**	0.049	3.8	mg/L	20	Standard
|	**Ca**	43	70.0	7.1	**-110.2913**	115.244	104.5	mg/L	32	Standard
|	**Fe**	54	26.1	29.9	**-0.0489**	0.044	89.2	mg/L	18	Standard
|	**Fe**	57	303.3	6.2	**1.6822**	0.615	36.5	mg/L	245	Standard
⌊>	**Sc-1**	45	50627.8	3.4				mg/L	48374	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	1.0	0.0				ug/L	2	Standard
	Br	81	7105.0	2.6				ug/L	1940	Standard
	P	31	41.7	25.0				ug/L	42	Standard
	S	34	3.3	86.6				ug/L	3	Standard
	Sr	88	103.3	23.9				ug/L	115	Standard
	C	12	173.3	41.7				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	173.2				mg/L	3	Standard
	Dy	164	191.7	26.5				mg/L	30	Standard
	Ho-1	165	216.7	19.6				mg/L	3	Standard
	Er	166	243.3	17.1				mg/L	10	Standard
	I	127	15725.0	17.3				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		103.881	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		101.525	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703147402
Report Date/Time: Wednesday, March 29, 2017 14:10:23
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	102.197
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	99.687
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703147402
Report Date/Time: Wednesday, March 29, 2017 14:10:23
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703147403
Sample Date/Time: Wednesday, March 29, 2017 14:11:17
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	225474.3	2.6				ug/L	221697	Standard
	Be	9	921.7	7.5	**0.4217**	0.036	8.6	ug/L	18	Standard
	Al	27	6615663.5	1.3	**52.8849**	0.801	1.5	ug/L	548	Standard
	Sc	45	49019.2	1.4				ug/L	48374	Standard
	Ti	47	112.7	14.6	**0.2765**	0.060	21.5	ug/L	37	Standard
	V	51	1393.3	7.9	**0.0013**	0.015	1200.1	ug/L	1312	Standard
	Cr	52	8335.6	2.0	**0.4576**	0.020	4.4	ug/L	5560	Standard
	Cr	53	2815.3	1.4	**3.0511**	0.059	1.9	ug/L	495	Standard
	Mn	55	19577.1	14.0	**1.7656**	0.279	15.8	ug/L	1474	Standard
	Co	59	402.3	8.8	**-0.0028**	0.004	156.6	ug/L	432	Standard
	Ni	60	4234.9	0.7	**2.4209**	0.026	1.1	ug/L	135	Standard
	Cu	65	1039.4	1.7	**0.2961**	0.014	4.7	ug/L	523	Standard
	Zn	66	21258.2	2.0	**19.0844**	0.290	1.5	ug/L	311	Standard
>	Ge	72	682895.7	0.7				ug/L	688742	Standard
	As	75	44.4	60.1	**0.0401**	0.023	57.1	ug/L	-33	Standard
	Se	82	64.9	1.1	**0.4482**	0.010	2.3	ug/L	12	Standard
	Se-1	77	283.7	8.9	**2.7770**	0.368	13.2	ug/L	94	Standard
>	Ga	71	33.3	31.2				mg/L	28	Standard
	Rb	85	35625.2	2.9				ug/L	25	Standard
	Y	89	501542.6	1.8				ug/L	487927	Standard
>	Rh	103	28.3	40.8				ug/L	15	Standard
	Mo	98	49.9	3.3	**-0.0045**	0.001	13.0	ug/L	46	Standard
	Ag	107	993.7	2.4	**0.1429**	0.005	3.4	ug/L	103	Standard
	Cd	111	493.9	4.5	**0.2861**	0.012	4.3	mg/L	4	Standard
	Cd	114	1246.9	3.1	**0.2807**	0.007	2.4	ug/L	25	Standard
>	In	115	572396.5	1.0				ug/L	577818	Standard
	Sn	118	304.3	2.6	**0.1357**	0.007	5.1	ug/L	203	Standard
	Sb	123	153.3	17.7	**0.0065**	0.006	96.6	ug/L	270	Standard
	Ba	135	155310.3	0.4	**93.2784**	0.563	0.6	ug/L	35	Standard
	Ce	140	178.3	18.7				ug/L	25	Standard
>	Tb	159	868937.3	1.8				ug/L	866991	Standard
	Ho	165	376.7	6.7				ug/L	3	Standard
	Tl	203	707.7	3.5	**0.0713**	0.003	4.2	ug/L	243	Standard
	Tl	205	1721.8	3.2	**0.0750**	0.003	3.7	ug/L	563	Standard
	Pb	206	638.7	2.4	**0.0311**	0.002	6.9	ug/L	471	Standard
	Pb	207	529.7	5.3	**0.0263**	0.006	21.5	ug/L	407	Standard
	Pb	208	624.7	1.9	**0.0296**	0.002	5.3	ug/L	462	Standard
	U	238	12.3	4.7	**-0.0010**	0.000	11.1	ug/L	9	Standard
>	Bi	209	561622.2	0.5				ug/L	583182	Standard

Approved: March 30, 2017

	Na	23	13.3	78.1	**10.2729**	8.123	79.1	mg/L	0	Standard
	Mg	24	901.7	1.9	**21.8820**	0.763	3.5	mg/L	33	Standard
	K	39	440.0	9.3	**2.3917**	0.262	11.0	mg/L	20	Standard
	Ca	43	51.7	14.8	**172.9984**	142.513	82.4	mg/L	32	Standard
	Fe	54	32.9	32.1	**0.0018**	0.069	3788.7	mg/L	18	Standard
	Fe	57	260.0	5.1	**0.9431**	0.347	36.8	mg/L	245	Standard
>	**Sc-1**	45	49019.2	1.4				mg/L	48374	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	3.3	34.6				ug/L	2	Standard
	Br	81	7535.2	3.5				ug/L	1940	Standard
	P	31	56.7	35.7				ug/L	42	Standard
	S	34	3.3	173.2				ug/L	3	Standard
	Sr	88	130.0	27.7				ug/L	115	Standard
	C	12	106.7	44.3				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	243.3	27.4				mg/L	3	Standard
	Dy	164	370.5	4.2				mg/L	30	Standard
	Ho-1	165	376.7	6.7				mg/L	3	Standard
	Er	166	336.7	9.1				mg/L	10	Standard
	I	127	7558.6	3.0				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		101.704	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.151	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703147403
Report Date/Time: Wednesday, March 29, 2017 14:13:28
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	99.062
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	96.303
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703147403
Report Date/Time: Wednesday, March 29, 2017 14:13:28
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703147404
Sample Date/Time: Wednesday, March 29, 2017 14:14:23
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	220130.1	2.8				ug/L	221697	Standard
	Be	9	45.0	22.2	**0.0034**	0.005	160.5	ug/L	18	Standard
	Al	27	17603212.6	0.5	**144.1605**	3.300	2.3	ug/L	548	Standard
	Sc	45	48955.6	1.0				ug/L	48374	Standard
	Ti	47	145.0	15.4	**0.4101**	0.087	21.3	ug/L	37	Standard
	V	51	1079.7	6.5	**-0.0409**	0.012	28.5	ug/L	1312	Standard
	Cr	52	7956.1	4.0	**0.4332**	0.045	10.3	ug/L	5560	Standard
	Cr	53	2473.6	39.0	**2.6918**	1.277	47.4	ug/L	495	Standard
	Mn	55	63636215.6	0.7	**6407.0608**	36.613	0.6	ug/L	1474	Standard
	Co	59	320060.1	1.1	**41.7166**	0.151	0.4	ug/L	432	Standard
	Ni	60	11013.7	1.2	**6.6285**	0.030	0.5	ug/L	135	Standard
	Cu	65	1363.7	3.9	**0.5014**	0.037	7.4	ug/L	523	Standard
	Zn	66	4606.7	0.6	**3.9219**	0.057	1.5	ug/L	311	Standard
>	Ge	72	663420.9	0.8				ug/L	688742	Standard
	As	75	-3.5	1227.0	**-0.0012**	0.038	3100.5	ug/L	-33	Standard
	Se	82	31.8	34.1	**0.1497**	0.101	67.7	ug/L	12	Standard
	Se-1	77	488.7	12.4	**5.7456**	0.796	13.8	ug/L	94	Standard
>	Ga	71	208.3	12.3				mg/L	28	Standard
	Rb	85	23119.3	2.1				ug/L	25	Standard
	Y	89	475976.0	0.9				ug/L	487927	Standard
>	Rh	103	28.3	27.0				ug/L	15	Standard
	Mo	98	3096.2	1.5	**0.8480**	0.017	2.0	ug/L	46	Standard
	Ag	107	151.0	42.3	**0.0039**	0.011	281.0	ug/L	103	Standard
	Cd	111	15.3	89.6	**0.0042**	0.008	198.0	mg/L	4	Standard
	Cd	114	65.4	19.3	**0.0060**	0.003	51.4	ug/L	25	Standard
>	In	115	560347.2	0.7				ug/L	577818	Standard
	Sn	118	295.3	8.2	**0.1330**	0.028	20.9	ug/L	203	Standard
	Sb	123	207.1	18.6	**0.0193**	0.009	46.2	ug/L	270	Standard
	Ba	135	418111.9	0.4	**256.5578**	2.464	1.0	ug/L	35	Standard
	Ce	140	186.7	6.2				ug/L	25	Standard
>	Tb	159	845586.1	1.8				ug/L	866991	Standard
	Ho	165	28.3	87.1				ug/L	3	Standard
	Tl	203	2509.2	4.1	**0.3315**	0.015	4.5	ug/L	243	Standard
	Tl	205	6046.2	4.6	**0.3349**	0.014	4.1	ug/L	563	Standard
	Pb	206	649.3	10.0	**0.0375**	0.011	29.8	ug/L	471	Standard
	Pb	207	543.7	3.9	**0.0331**	0.005	14.7	ug/L	407	Standard
	Pb	208	612.0	10.4	**0.0318**	0.011	35.5	ug/L	462	Standard
	U	238	3408.7	0.4	**0.7136**	0.004	0.5	ug/L	9	Standard
>	Bi	209	539212.6	1.0				ug/L	583182	Standard

Sample ID: L1703147404
Report Date/Time: Wednesday, March 29, 2017 14:16:34
Page 1

Approved: March 30, 2017

⌈	**Na**	23	48.3	31.6	**36.9475**	11.319	30.6	mg/L	0	Standard
|	**Mg**	24	3735.5	6.7	**93.8737**	6.604	7.0	mg/L	33	Standard
|	**K**	39	301.7	38.0	**1.5924**	0.662	41.6	mg/L	20	Standard
|	**Ca**	43	130.0	10.2	**-1199.6173**	213.435	17.8	mg/L	32	Standard
|	**Fe**	54	51.1	20.3	**0.1214**	0.066	54.6	mg/L	18	Standard
|	**Fe**	57	355.0	7.5	**3.0068**	0.641	21.3	mg/L	245	Standard
⌊>	**Sc-1**	45	48955.6	1.0				mg/L	48374	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	2.7	43.3				ug/L	2	Standard
	Br	81	14697.2	7.5				ug/L	1940	Standard
	P	31	78.3	73.7				ug/L	42	Standard
	S	34	3.3	86.6				ug/L	3	Standard
	Sr	88	116.7	19.8				ug/L	115	Standard
	C	12	200.0	21.8				mg/L	37	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	11.6	130.7				mg/L	30	Standard
	Ho-1	165	28.3	87.1				mg/L	3	Standard
	Er	166	36.7	83.3				mg/L	10	Standard
	I	127	62713.2	6.4				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		99.293	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		96.324	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703147404
Report Date/Time: Wednesday, March 29, 2017 14:16:34
Page 2

Approved: March 30, 2017

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.976
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.460
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1703147404
Report Date/Time: Wednesday, March 29, 2017 14:16:34
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703136117
Sample Date/Time: Wednesday, March 29, 2017 14:17:28
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	224550.4	1.8				ug/L	221697	Standard
	Be	9	30.0	60.1	**-0.0044**	0.008	187.8	ug/L	18	Standard
	Al	27	432279.9	0.3	**3.4705**	0.070	2.0	ug/L	548	Standard
	Sc	45	49818.4	0.2				ug/L	48374	Standard
	Ti	47	322.0	9.1	**1.0359**	0.121	11.7	ug/L	37	Standard
	V	51	1309.8	9.5	**-0.0114**	0.022	190.3	ug/L	1312	Standard
	Cr	52	8796.9	1.6	**0.5311**	0.047	8.8	ug/L	5560	Standard
	Cr	53	981.7	4.6	**0.6404**	0.081	12.6	ug/L	495	Standard
	Mn	55	33487.3	11.1	**3.1190**	0.392	12.6	ug/L	1474	Standard
	Co	59	762.4	4.3	**0.0426**	0.004	10.2	ug/L	432	Standard
	Ni	60	1055.4	1.9	**0.5354**	0.005	1.0	ug/L	135	Standard
	Cu	65	1027.0	3.6	**0.2875**	0.011	3.9	ug/L	523	Standard
	Zn	66	3567.8	1.2	**2.8355**	0.044	1.6	ug/L	311	Standard
>	Ge	72	684662.5	1.7				ug/L	688742	Standard
	As	75	0.1	9061.6	**0.0022**	0.010	456.1	ug/L	-33	Standard
	Se	82	12.9	24.4	**-0.0347**	0.029	83.2	ug/L	12	Standard
	Se-1	77	96.3	7.8	**0.2327**	0.113	48.5	ug/L	94	Standard
>	Ga	71	221.7	13.0				mg/L	28	Standard
	Rb	85	2393.5	8.1				ug/L	25	Standard
	Y	89	494580.5	2.4				ug/L	487927	Standard
>	Rh	103	11.7	49.5				ug/L	15	Standard
	Mo	98	166.4	21.6	**0.0262**	0.010	38.8	ug/L	46	Standard
	Ag	107	138.3	8.4	**0.0006**	0.002	315.7	ug/L	103	Standard
	Cd	111	10.5	24.0	**0.0009**	0.001	157.7	mg/L	4	Standard
	Cd	114	59.3	25.7	**0.0039**	0.004	91.7	ug/L	25	Standard
>	In	115	589232.0	1.4				ug/L	577818	Standard
	Sn	118	273.0	4.2	**0.0939**	0.015	16.3	ug/L	203	Standard
	Sb	123	126.1	18.8	**-0.0002**	0.005	2232.8	ug/L	270	Standard
	Ba	135	4783.4	1.5	**2.7683**	0.073	2.6	ug/L	35	Standard
	Ce	140	5926.2	3.0				ug/L	25	Standard
>	Tb	159	872080.1	1.0				ug/L	866991	Standard
	Ho	165	473.3	7.0				ug/L	3	Standard
	Tl	203	231.3	30.4	**0.0054**	0.009	164.1	ug/L	243	Standard
	Tl	205	515.0	28.9	**0.0056**	0.008	138.2	ug/L	563	Standard
	Pb	206	741.7	5.1	**0.0455**	0.008	17.2	ug/L	471	Standard
	Pb	207	642.0	1.2	**0.0442**	0.001	2.4	ug/L	407	Standard
	Pb	208	727.3	6.1	**0.0440**	0.006	14.6	ug/L	462	Standard
	U	238	105.7	9.9	**0.0173**	0.002	10.3	ug/L	9	Standard
>	Bi	209	575857.6	1.6				ug/L	583182	Standard

Sample ID: L1703136117
Report Date/Time: Wednesday, March 29, 2017 14:19:39
Page 1

Approved: March 30, 2017

⌈	**Na**	23	3.3	86.6	**2.5163**	2.175	86.4	mg/L	0	Standard
|	**Mg**	24	65.0	15.4	**0.6310**	0.249	39.4	mg/L	33	Standard
|	**K**	39	35.0	0.0	**0.0471**	0.000	0.9	mg/L	20	Standard
|	**Ca**	43	55.0	18.2	**130.6891**	174.145	133.3	mg/L	32	Standard
|	**Fe**	54	41.2	19.1	**0.0523**	0.051	97.6	mg/L	18	Standard
|	**Fe**	57	288.3	10.5	**1.4535**	0.653	44.9	mg/L	245	Standard
⌊>	**Sc-1**	45	49818.4	0.2				mg/L	48374	Standard
	Cl	35	3.3	34.6				ug/L	1	Standard
	Kr	83	2.3	99.0				ug/L	2	Standard
	Br	81	4193.9	4.0				ug/L	1940	Standard
	P	31	46.7	43.3				ug/L	42	Standard
	S	34	5.0	100.0				ug/L	3	Standard
	Sr	88	116.7	27.6				ug/L	115	Standard
	C	12	80.0	12.5				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	3	Standard
	Dy	164	808.3	0.3				mg/L	30	Standard
	Ho-1	165	473.3	7.0				mg/L	3	Standard
	Er	166	453.3	10.4				mg/L	10	Standard
	I	127	8447.4	4.7				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		101.287	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		99.408	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703136117
Report Date/Time: Wednesday, March 29, 2017 14:19:39
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	101.975
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	98.744
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703136117
Report Date/Time: Wednesday, March 29, 2017 14:19:39
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703136120
Sample Date/Time: Wednesday, March 29, 2017 14:20:34
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	226668.2	1.6				ug/L	221697	Standard
	Be	9	50.0	26.5	**0.0051**	0.007	129.9	ug/L	18	Standard
	Al	27	449850.7	2.9	**3.5787**	0.160	4.5	ug/L	548	Standard
	Sc	45	48484.2	3.4				ug/L	48374	Standard
	Ti	47	424.7	7.4	**1.4166**	0.139	9.8	ug/L	37	Standard
	V	51	1941.2	43.6	**0.0852**	0.132	154.5	ug/L	1312	Standard
	Cr	52	11078.5	21.6	**0.9218**	0.425	46.1	ug/L	5560	Standard
	Cr	53	1243.4	5.1	**0.9902**	0.066	6.7	ug/L	495	Standard
	Mn	55	51689.1	8.4	**4.9228**	0.500	10.2	ug/L	1474	Standard
	Co	59	1562.1	8.1	**0.1449**	0.018	12.7	ug/L	432	Standard
	Ni	60	1204.7	1.4	**0.6274**	0.012	1.9	ug/L	135	Standard
	Cu	65	1050.7	2.6	**0.3042**	0.024	8.0	ug/L	523	Standard
	Zn	66	3265.4	1.8	**2.5742**	0.086	3.4	ug/L	311	Standard
>	Ge	72	681198.4	1.6				ug/L	688742	Standard
	As	75	18.7	97.3	**0.0180**	0.015	85.9	ug/L	-33	Standard
	Se	82	17.7	11.8	**0.0114**	0.022	192.6	ug/L	12	Standard
	Se-1	77	84.7	16.0	**0.0782**	0.166	212.1	ug/L	94	Standard
>	Ga	71	293.3	11.3				mg/L	28	Standard
	Rb	85	2558.5	2.2				ug/L	25	Standard
	Y	89	494035.6	3.3				ug/L	487927	Standard
>	Rh	103	11.7	49.5				ug/L	15	Standard
	Mo	98	203.4	1.7	**0.0368**	0.001	4.0	ug/L	46	Standard
	Ag	107	149.7	8.1	**0.0028**	0.002	72.7	ug/L	103	Standard
	Cd	111	12.4	44.4	**0.0022**	0.003	151.5	mg/L	4	Standard
	Cd	114	42.6	41.4	**0.0002**	0.004	1835.9	ug/L	25	Standard
>	In	115	580118.6	2.7				ug/L	577818	Standard
	Sn	118	277.3	6.3	**0.1029**	0.019	18.4	ug/L	203	Standard
	Sb	123	121.7	29.7	**-0.0007**	0.008	1252.5	ug/L	270	Standard
	Ba	135	4991.2	0.9	**2.9359**	0.076	2.6	ug/L	35	Standard
	Ce	140	11397.6	3.1				ug/L	25	Standard
>	Tb	159	870316.7	1.6				ug/L	866991	Standard
	Ho	165	636.7	13.8				ug/L	3	Standard
	Tl	203	188.7	10.9	**-0.0003**	0.003	985.9	ug/L	243	Standard
	Tl	205	430.0	5.1	**0.0009**	0.001	139.0	ug/L	563	Standard
	Pb	206	1040.0	2.7	**0.0942**	0.002	2.3	ug/L	471	Standard
	Pb	207	865.4	5.4	**0.0845**	0.007	8.1	ug/L	407	Standard
	Pb	208	1055.0	3.4	**0.0982**	0.007	6.7	ug/L	462	Standard
	U	238	134.7	20.9	**0.0230**	0.006	26.4	ug/L	9	Standard
>	Bi	209	576711.1	2.0				ug/L	583182	Standard

Sample ID: L1703136120
Report Date/Time: Wednesday, March 29, 2017 14:22:45
Page 1

Approved: March 30, 2017

⌈	**Na**	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
|	**Mg**	24	50.0	10.0	**0.2937**	0.154	52.5	mg/L	33	Standard
|	**K**	39	38.3	37.7	**0.0738**	0.092	124.9	mg/L	20	Standard
|	**Ca**	43	38.3	39.8	**405.4722**	245.334	60.5	mg/L	32	Standard
|	**Fe**	54	57.6	35.6	**0.1659**	0.124	75.0	mg/L	18	Standard
|	**Fe**	57	265.0	18.2	**1.0943**	0.892	81.5	mg/L	245	Standard
⌊>	**Sc-1**	45	48484.2	3.4				mg/L	48374	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	0.7	86.6				ug/L	2	Standard
	Br	81	4043.9	4.3				ug/L	1940	Standard
	P	31	26.7	47.2				ug/L	42	Standard
	S	34	5.0	100.0				ug/L	3	Standard
	Sr	88	116.7	6.5				ug/L	115	Standard
	C	12	73.3	15.7				mg/L	37	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	1255.6	3.7				mg/L	30	Standard
	Ho-1	165	636.7	13.8				mg/L	3	Standard
	Er	166	580.0	7.9				mg/L	10	Standard
	I	127	10568.7	4.9				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		102.242	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		98.905	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703136120
Report Date/Time: Wednesday, March 29, 2017 14:22:45
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.398
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	98.890
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703136120
Report Date/Time: Wednesday, March 29, 2017 14:22:45
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703136123
Sample Date/Time: Wednesday, March 29, 2017 14:23:39
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	231018.5	2.4				ug/L	221697	Standard
	Be	9	86.7	20.3	**0.0216**	0.007	33.5	ug/L	18	Standard
	Al	27	533869.4	0.3	**4.1667**	0.110	2.6	ug/L	548	Standard
	Sc	45	49537.6	3.5				ug/L	48374	Standard
	Ti	47	617.7	2.2	**2.0829**	0.025	1.2	ug/L	37	Standard
	V	51	4338.4	3.6	**0.4335**	0.013	2.9	ug/L	1312	Standard
	Cr	52	25694.1	1.6	**3.2858**	0.053	1.6	ug/L	5560	Standard
	Cr	53	3163.7	1.8	**3.4543**	0.152	4.4	ug/L	495	Standard
	Mn	55	304772.6	1.0	**29.2656**	0.717	2.5	ug/L	1474	Standard
	Co	59	5533.7	3.4	**0.6382**	0.014	2.2	ug/L	432	Standard
	Ni	60	4668.1	1.6	**2.6410**	0.080	3.0	ug/L	135	Standard
	Cu	65	2740.2	2.7	**1.2330**	0.049	4.0	ug/L	523	Standard
	Zn	66	22325.4	0.6	**19.7939**	0.464	2.3	ug/L	311	Standard
>	Ge	72	692338.2	2.7				ug/L	688742	Standard
	As	75	61.5	61.6	**0.0544**	0.033	59.9	ug/L	-33	Standard
	Se	82	16.6	56.2	**-0.0004**	0.087	19890.1	ug/L	12	Standard
	Se-1	77	97.7	5.3	**0.2353**	0.059	25.0	ug/L	94	Standard
>	Ga	71	1066.7	0.5				mg/L	28	Standard
	Rb	85	4955.8	4.2				ug/L	25	Standard
	Y	89	504116.8	2.2				ug/L	487927	Standard
>	Rh	103	15.0	33.3				ug/L	15	Standard
	Mo	98	1116.7	4.1	**0.2816**	0.015	5.3	ug/L	46	Standard
	Ag	107	198.0	6.6	**0.0104**	0.002	16.0	ug/L	103	Standard
	Cd	111	9.6	18.4	**0.0005**	0.001	199.9	mg/L	4	Standard
	Cd	114	62.8	13.7	**0.0048**	0.002	44.5	ug/L	25	Standard
>	In	115	584146.2	1.8				ug/L	577818	Standard
	Sn	118	267.0	5.7	**0.0901**	0.020	22.5	ug/L	203	Standard
	Sb	123	107.3	18.9	**-0.0040**	0.005	115.2	ug/L	270	Standard
	Ba	135	12761.7	1.9	**7.4886**	0.102	1.4	ug/L	35	Standard
	Ce	140	65002.5	0.3				ug/L	25	Standard
>	Tb	159	873167.2	2.4				ug/L	866991	Standard
	Ho	165	576.7	8.1				ug/L	3	Standard
	Tl	203	113.0	12.3	**-0.0104**	0.002	16.2	ug/L	243	Standard
	Tl	205	355.0	14.1	**-0.0034**	0.003	77.3	ug/L	563	Standard
	Pb	206	2696.6	2.5	**0.3628**	0.012	3.3	ug/L	471	Standard
	Pb	207	2189.8	2.8	**0.3217**	0.007	2.2	ug/L	407	Standard
	Pb	208	2534.7	2.3	**0.3402**	0.005	1.4	ug/L	462	Standard
	U	238	298.7	6.4	**0.0548**	0.004	7.5	ug/L	9	Standard
>	Bi	209	581102.8	1.2				ug/L	583182	Standard

Sample ID: L1703136123
Report Date/Time: Wednesday, March 29, 2017 14:25:50
Page 1

Approved: March 30, 2017

⌈	**Na**	23	1.7	173.2	**1.2856**	2.218	172.5	mg/L	0	Standard
|	**Mg**	24	78.3	19.5	**0.9795**	0.419	42.8	mg/L	33	Standard
|	**K**	39	41.7	25.0	**0.0860**	0.058	67.1	mg/L	20	Standard
|	**Ca**	43	35.0	14.3	**473.4483**	66.998	14.2	mg/L	32	Standard
|	**Fe**	54	216.2	13.3	**1.1872**	0.210	17.7	mg/L	18	Standard
|	**Fe**	57	306.7	9.3	**1.8988**	0.826	43.5	mg/L	245	Standard
⌊>	**Sc-1**	45	49537.6	3.5				mg/L	48374	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	0.7	86.6				ug/L	2	Standard
	Br	81	3283.7	6.6				ug/L	1940	Standard
	P	31	43.3	17.6				ug/L	42	Standard
	S	34	3.3	86.6				ug/L	3	Standard
	Sr	88	116.7	2.5				ug/L	115	Standard
	C	12	43.3	35.3				mg/L	37	Standard
	N	14	10.0	100.0				mg/L	0	Standard
	Hg	202	13.3	43.3				mg/L	3	Standard
	Dy	164	1162.8	5.9				mg/L	30	Standard
	Ho-1	165	576.7	8.1				mg/L	3	Standard
	Er	166	500.0	11.1				mg/L	10	Standard
	I	127	5979.5	3.7				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		104.204	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
| >	Ge	72		100.522	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703136123
Report Date/Time: Wednesday, March 29, 2017 14:25:50
Page 2

Approved: March 30, 2017

Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	101.095
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	99.644
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703136123
Report Date/Time: Wednesday, March 29, 2017 14:25:50
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703136126
Sample Date/Time: Wednesday, March 29, 2017 14:26:44
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	223748.5	1.4				ug/L	221697	Standard
	Be	9	26.7	39.0	**-0.0059**	0.005	88.1	ug/L	18	Standard
	Al	27	9111.1	4.1	**0.0742**	0.003	4.1	ug/L	548	Standard
	Sc	45	47763.5	0.8				ug/L	48374	Standard
	Ti	47	60.0	55.5	**0.0882**	0.125	142.0	ug/L	37	Standard
	V	51	1315.9	5.9	**-0.0085**	0.007	79.7	ug/L	1312	Standard
	Cr	52	7316.8	1.4	**0.3002**	0.014	4.8	ug/L	5560	Standard
	Cr	53	735.0	5.6	**0.3294**	0.076	23.1	ug/L	495	Standard
	Mn	55	3620.4	19.1	**0.2074**	0.071	34.0	ug/L	1474	Standard
	Co	59	278.7	0.9	**-0.0181**	0.001	6.6	ug/L	432	Standard
	Ni	60	305.0	4.7	**0.0943**	0.011	11.8	ug/L	135	Standard
	Cu	65	1565.7	4.1	**0.6009**	0.032	5.4	ug/L	523	Standard
	Zn	66	1476.7	2.4	**0.9369**	0.020	2.1	ug/L	311	Standard
>	Ge	72	676403.4	2.5				ug/L	688742	Standard
	As	75	5.4	825.6	**0.0073**	0.038	523.8	ug/L	-33	Standard
	Se	82	14.4	40.0	**-0.0179**	0.057	316.8	ug/L	12	Standard
	Se-1	77	75.7	18.3	**-0.0375**	0.164	438.7	ug/L	94	Standard
>	Ga	71	41.7	38.6				mg/L	28	Standard
	Rb	85	65.0	7.7				ug/L	25	Standard
	Y	89	483305.1	1.5				ug/L	487927	Standard
>	Rh	103	8.3	91.7				ug/L	15	Standard
	Mo	98	35.7	2.6	**-0.0084**	0.000	4.5	ug/L	46	Standard
	Ag	107	110.3	10.1	**-0.0034**	0.002	45.3	ug/L	103	Standard
	Cd	111	7.3	15.9	**-0.0008**	0.001	87.5	mg/L	4	Standard
	Cd	114	38.1	11.6	**-0.0007**	0.001	130.9	ug/L	25	Standard
>	In	115	572675.0	1.5				ug/L	577818	Standard
	Sn	118	256.3	8.6	**0.0840**	0.021	25.3	ug/L	203	Standard
	Sb	123	86.2	18.4	**-0.0082**	0.004	45.9	ug/L	270	Standard
	Ba	135	679.3	5.9	**0.3844**	0.029	7.5	ug/L	35	Standard
	Ce	140	65.0	23.1				ug/L	25	Standard
>	Tb	159	851963.9	0.9				ug/L	866991	Standard
	Ho	165	5.0	100.0				ug/L	3	Standard
	Tl	203	71.3	3.5	**-0.0157**	0.000	1.5	ug/L	243	Standard
	Tl	205	145.0	18.2	**-0.0147**	0.001	9.6	ug/L	563	Standard
	Pb	206	515.7	8.2	**0.0096**	0.006	65.2	ug/L	471	Standard
	Pb	207	429.0	5.6	**0.0068**	0.004	55.5	ug/L	407	Standard
	Pb	208	496.7	5.1	**0.0071**	0.003	47.3	ug/L	462	Standard
	U	238	11.0	9.1	**-0.0013**	0.000	15.6	ug/L	9	Standard
>	Bi	209	566649.4	1.2				ug/L	583182	Standard

Sample ID: L1703136126
Report Date/Time: Wednesday, March 29, 2017 14:28:55
Page 1

Approved: March 30, 2017

	Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
	Mg	24	60.0	25.0	**0.5721**	0.397	69.4	mg/L	33	Standard
	K	39	16.7	45.8	**-0.0529**	0.046	86.7	mg/L	20	Standard
	Ca	43	21.7	13.3	**689.0715**	52.571	7.6	mg/L	32	Standard
	Fe	54	26.3	47.5	**-0.0360**	0.084	234.7	mg/L	18	Standard
	Fe	57	230.0	17.8	**0.4255**	0.926	217.5	mg/L	245	Standard
>	**Sc-1**	45	47763.5	0.8				mg/L	48374	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	2.7	21.7				ug/L	2	Standard
	Br	81	2593.6	4.5				ug/L	1940	Standard
	P	31	45.0	19.2				ug/L	42	Standard
	S	34	5.0	100.0				ug/L	3	Standard
	Sr	88	105.0	25.2				ug/L	115	Standard
	C	12	66.7	22.9				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	16.0	96.9				mg/L	30	Standard
	Ho-1	165	5.0	100.0				mg/L	3	Standard
	Er	166	13.3	43.3				mg/L	10	Standard
	I	127	2281.8	1.2				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		100.925	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.209	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703136126
Report Date/Time: Wednesday, March 29, 2017 14:28:55
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	99.110
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	97.165
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703136126
Report Date/Time: Wednesday, March 29, 2017 14:28:55
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703136129
Sample Date/Time: Wednesday, March 29, 2017 14:29:49
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	221765.0	2.2				ug/L	221697	Standard
	Be	9	30.0	28.9	**-0.0041**	0.004	104.6	ug/L	18	Standard
	Al	27	9166.1	2.6	**0.0753**	0.001	1.3	ug/L	548	Standard
	Sc	45	48126.3	2.5				ug/L	48374	Standard
	Ti	47	47.7	13.5	**0.0416**	0.024	56.7	ug/L	37	Standard
	V	51	1188.3	7.5	**-0.0280**	0.011	39.0	ug/L	1312	Standard
	Cr	52	7022.6	2.2	**0.2493**	0.008	3.2	ug/L	5560	Standard
	Cr	53	638.3	4.7	**0.1994**	0.049	24.5	ug/L	495	Standard
	Mn	55	5383.0	2.1	**0.3807**	0.012	3.0	ug/L	1474	Standard
	Co	59	274.7	1.5	**-0.0187**	0.001	5.2	ug/L	432	Standard
	Ni	60	270.7	5.9	**0.0735**	0.009	11.8	ug/L	135	Standard
	Cu	65	1635.1	2.3	**0.6392**	0.006	1.0	ug/L	523	Standard
	Zn	66	1434.4	2.8	**0.8964**	0.044	4.9	ug/L	311	Standard
>	Ge	72	677115.5	1.6				ug/L	688742	Standard
	As	75	-14.8	63.0	**-0.0108**	0.008	74.8	ug/L	-33	Standard
	Se	82	16.1	3.2	**-0.0027**	0.007	241.8	ug/L	12	Standard
	Se-1	77	77.7	17.1	**-0.0070**	0.197	2827.2	ug/L	94	Standard
>	Ga	71	48.3	15.8				mg/L	28	Standard
	Rb	85	93.3	32.3				ug/L	25	Standard
	Y	89	482992.7	0.6				ug/L	487927	Standard
>	Rh	103	10.0	100.0				ug/L	15	Standard
	Mo	98	42.3	3.2	**-0.0066**	0.001	9.6	ug/L	46	Standard
	Ag	107	110.3	10.9	**-0.0034**	0.002	71.1	ug/L	103	Standard
	Cd	111	8.6	58.4	**0.0000**	0.003	7015.9	mg/L	4	Standard
	Cd	114	43.3	46.0	**0.0004**	0.004	1037.7	ug/L	25	Standard
>	In	115	573109.4	2.3				ug/L	577818	Standard
	Sn	118	312.0	4.3	**0.1435**	0.010	7.1	ug/L	203	Standard
	Sb	123	78.5	24.3	**-0.0099**	0.005	46.1	ug/L	270	Standard
	Ba	135	777.0	2.6	**0.4425**	0.007	1.5	ug/L	35	Standard
	Ce	140	116.7	8.9				ug/L	25	Standard
>	Tb	159	848269.3	1.2				ug/L	866991	Standard
	Ho	165	10.0					ug/L	3	Standard
	Tl	203	47.0	14.0	**-0.0190**	0.001	4.5	ug/L	243	Standard
	Tl	205	131.7	9.6	**-0.0154**	0.001	4.2	ug/L	563	Standard
	Pb	206	483.0	1.8	**0.0045**	0.001	23.0	ug/L	471	Standard
	Pb	207	400.3	1.5	**0.0019**	0.001	40.9	ug/L	407	Standard
	Pb	208	488.3	1.4	**0.0060**	0.001	17.0	ug/L	462	Standard
	U	238	5.7	27.0	**-0.0024**	0.000	13.3	ug/L	9	Standard
>	Bi	209	564185.9	1.3				ug/L	583182	Standard

Sample ID: L1703136129
Report Date/Time: Wednesday, March 29, 2017 14:32:00
Page 1

Approved: March 30, 2017

⌈	**Na**	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
|	**Mg**	24	66.7	8.7	**0.7334**	0.178	24.3	mg/L	33	Standard
|	**K**	39	16.7	17.3	**-0.0539**	0.015	28.7	mg/L	20	Standard
|	**Ca**	43	31.7	9.1	**513.8357**	47.290	9.2	mg/L	32	Standard
|	**Fe**	54	36.3	8.9	**0.0285**	0.018	62.2	mg/L	18	Standard
|	**Fe**	57	220.0	29.7	**0.1546**	1.378	891.3	mg/L	245	Standard
⌊>	**Sc-1**	45	48126.3	2.5				mg/L	48374	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	1.3	43.3				ug/L	2	Standard
	Br	81	2566.9	1.8				ug/L	1940	Standard
	P	31	36.7	34.3				ug/L	42	Standard
	S	34	5.0	100.0				ug/L	3	Standard
	Sr	88	91.7	19.2				ug/L	115	Standard
	C	12	33.3	45.8				mg/L	37	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	26.3	22.5				mg/L	30	Standard
	Ho-1	165	10.0					mg/L	3	Standard
	Er	166	6.7	86.6				mg/L	10	Standard
	I	127	2030.1	1.1				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		100.031	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		98.312	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703136129
Report Date/Time: Wednesday, March 29, 2017 14:32:00
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	99.185
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	96.743
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703136129
Report Date/Time: Wednesday, March 29, 2017 14:32:00
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, March 29, 2017 14:32:57
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	223829.6	0.7				ug/L	221697	Standard
	Be	9	101433.4	0.4	**48.7840**	0.466	1.0	ug/L	18	Standard
	Al	27	6104441.1	0.8	**49.1480**	0.674	1.4	ug/L	548	Standard
	Sc	45	48587.8	1.0				ug/L	48374	Standard
	Ti	47	26644.7	1.8	**97.8662**	2.066	2.1	ug/L	37	Standard
	V	51	329221.7	0.9	**49.6534**	0.514	1.0	ug/L	1312	Standard
	Cr	52	301719.9	1.4	**49.7924**	0.883	1.8	ug/L	5560	Standard
	Cr	53	37386.1	2.7	**49.0123**	1.560	3.2	ug/L	495	Standard
	Mn	55	503891.6	2.4	**49.6934**	1.354	2.7	ug/L	1474	Standard
	Co	59	384327.0	1.1	**49.2241**	0.742	1.5	ug/L	432	Standard
	Ni	60	82317.3	0.8	**49.2324**	0.546	1.1	ug/L	135	Standard
	Cu	65	87338.3	0.8	**49.4272**	0.536	1.1	ug/L	523	Standard
	Zn	66	53433.4	1.3	**49.1785**	0.769	1.6	ug/L	311	Standard
>	Ge	72	675306.9	0.6				ug/L	688742	Standard
	As	75	55872.6	1.8	**48.4290**	1.007	2.1	ug/L	-33	Standard
	Se	82	5184.3	1.6	**48.4671**	0.998	2.1	ug/L	12	Standard
	Se-1	77	3589.8	2.5	**48.1549**	1.500	3.1	ug/L	94	Standard
>	Ga	71	58.3	27.6				mg/L	28	Standard
	Rb	85	293.3	15.3				ug/L	25	Standard
	Y	89	476482.4	2.5				ug/L	487927	Standard
>	Rh	103	36.7	41.7				ug/L	15	Standard
	Mo	98	358768.1	1.6	**98.0142**	0.939	1.0	ug/L	46	Standard
	Ag	107	295942.1	1.7	**48.8744**	0.497	1.0	ug/L	103	Standard
	Cd	111	83459.7	1.4	**49.0813**	0.376	0.8	mg/L	4	Standard
	Cd	114	214792.5	1.8	**49.8915**	0.647	1.3	ug/L	25	Standard
>	In	115	573632.9	0.7				ug/L	577818	Standard
	Sn	118	46930.2	1.2	**50.0742**	0.597	1.2	ug/L	203	Standard
	Sb	123	218878.5	1.7	**47.9468**	0.501	1.0	ug/L	270	Standard
	Ba	135	81442.0	1.8	**48.7931**	0.630	1.3	ug/L	35	Standard
	Ce	140	270.0	15.2				ug/L	25	Standard
>	Tb	159	868637.7	0.4				ug/L	866991	Standard
	Ho	165	3.3	173.2				ug/L	3	Standard
	Tl	203	358797.5	1.4	**48.7921**	0.437	0.9	ug/L	243	Standard
	Tl	205	866069.8	1.5	**49.0172**	0.286	0.6	ug/L	563	Standard
	Pb	206	291270.0	1.9	**48.8398**	0.489	1.0	ug/L	471	Standard
	Pb	207	264963.6	2.0	**49.0872**	0.600	1.2	ug/L	407	Standard
	Pb	208	293905.9	1.3	**49.7688**	0.266	0.5	ug/L	462	Standard
	U	238	246188.1	2.0	**49.5449**	0.577	1.2	ug/L	9	Standard
>	Bi	209	563624.3	0.9				ug/L	583182	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, March 29, 2017 14:35:08
Page 1

Approved: March 30, 2017

⌈	**Na**	23	5.0	100.0	**3.8512**	3.821	99.2	mg/L	0	Standard
|	**Mg**	24	223.3	13.5	**4.7265**	0.811	17.2	mg/L	33	Standard
|	**K**	39	1080.0	6.9	**6.1404**	0.388	6.3	mg/L	20	Standard
|	**Ca**	43	68.3	21.1	**-127.2464**	243.580	191.4	mg/L	32	Standard
|	**Fe**	54	812.4	7.3	**5.1396**	0.403	7.8	mg/L	18	Standard
|	**Fe**	57	483.3	12.9	**5.8506**	1.263	21.6	mg/L	245	Standard
⌊>	**Sc-1**	45	48587.8	1.0				mg/L	48374	Standard
	Cl	35	1.3	173.2				ug/L	1	Standard
	Kr	83	2.7	21.7				ug/L	2	Standard
	Br	81	1776.8	1.6				ug/L	1940	Standard
	P	31	50.0	26.5				ug/L	42	Standard
	S	34	1.7	173.2				ug/L	3	Standard
	Sr	88	116.7	21.1				ug/L	115	Standard
	C	12	76.7	27.2				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	12.7	86.7				mg/L	30	Standard
	Ho-1	165	3.3	173.2				mg/L	3	Standard
	Er	166	13.3	114.6				mg/L	10	Standard
	I	127	2395.2	3.8				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9	97.568		
⌊	Al	27	98.296		
⌈	Sc	45			
|	Ti	47	97.866		
|	V	51	99.307		
|	Cr	52	99.585		
|	Cr	53			
|	Mn	55	99.387		
|	Co	59	98.448		
|	Ni	60	98.465		
|	Cu	65	98.854		
|	Zn	66	98.357		
|>	Ge	72		98.049	
|	As	75	96.858		
|	Se	82	96.934		
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, March 29, 2017 14:35:08
Page 2

Approved: March 30, 2017

Rb	85			
Y	89			
Rh	103			
Mo	98	98.014		
Ag	107	97.749		
Cd	111	98.163		
Cd	114			
In	115			99.276
Sn	118	100.148		
Sb	123	95.894		
Ba	135	97.586		
Ce	140			
Tb	159			
Ho	165			
Tl	203	97.584		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.538		
U	238	99.090		
Bi	209			96.646
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Wednesday, March 29, 2017 14:35:08
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, March 29, 2017 14:36:03
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	225377.5	1.6				ug/L	221697	Standard
	Be	9	35.0	65.5	**-0.0021**	0.011	518.6	ug/L	18	Standard
	Al	27	1275.1	72.5	**0.0109**	0.007	65.7	ug/L	548	Standard
	Sc	45	47965.8	1.6				ug/L	48374	Standard
	Ti	47	36.0	16.7	**-0.0006**	0.021	3288.5	ug/L	37	Standard
	V	51	1254.4	7.7	**-0.0171**	0.012	71.7	ug/L	1312	Standard
	Cr	52	4997.8	0.1	**-0.0862**	0.010	11.7	ug/L	5560	Standard
	Cr	53	338.3	3.4	**-0.1964**	0.011	5.4	ug/L	495	Standard
	Mn	55	2250.2	30.0	**0.0721**	0.064	88.7	ug/L	1474	Standard
	Co	59	302.7	18.5	**-0.0150**	0.007	45.5	ug/L	432	Standard
	Ni	60	153.3	5.7	**0.0038**	0.006	162.4	ug/L	135	Standard
	Cu	65	509.3	2.5	**0.0015**	0.011	711.3	ug/L	523	Standard
	Zn	66	539.7	5.8	**0.0701**	0.034	49.1	ug/L	311	Standard
>	Ge	72	674119.6	1.3				ug/L	688742	Standard
	As	75	-11.7	354.4	**-0.0079**	0.036	458.4	ug/L	-33	Standard
	Se	82	14.1	49.3	**-0.0201**	0.067	333.8	ug/L	12	Standard
	Se-1	77	66.0	5.2	**-0.1643**	0.048	29.2	ug/L	94	Standard
>	Ga	71	30.0	44.1				mg/L	28	Standard
	Rb	85	35.0	37.8				ug/L	25	Standard
	Y	89	484532.6	0.9				ug/L	487927	Standard
>	Rh	103	8.3	91.7				ug/L	15	Standard
	Mo	98	269.6	38.7	**0.0554**	0.027	48.7	ug/L	46	Standard
	Ag	107	207.7	72.0	**0.0124**	0.024	191.9	ug/L	103	Standard
	Cd	111	31.3	125.1	**0.0131**	0.023	171.4	mg/L	4	Standard
	Cd	114	104.3	101.3	**0.0144**	0.024	165.5	ug/L	25	Standard
>	In	115	572080.5	2.1				ug/L	577818	Standard
	Sn	118	213.7	6.1	**0.0384**	0.010	25.3	ug/L	203	Standard
	Sb	123	323.6	30.7	**0.0437**	0.020	46.8	ug/L	270	Standard
	Ba	135	84.7	90.7	**0.0265**	0.045	168.4	ug/L	35	Standard
	Ce	140	33.3	99.9				ug/L	25	Standard
>	Tb	159	844888.9	2.1				ug/L	866991	Standard
	Ho	165	10.0	86.6				ug/L	3	Standard
	Tl	203	110.7	81.7	**-0.0104**	0.012	116.5	ug/L	243	Standard
	Tl	205	275.0	82.2	**-0.0074**	0.013	169.6	ug/L	563	Standard
	Pb	206	553.7	7.9	**0.0163**	0.006	39.4	ug/L	471	Standard
	Pb	207	467.3	15.5	**0.0142**	0.013	89.6	ug/L	407	Standard
	Pb	208	499.0	12.9	**0.0078**	0.010	129.2	ug/L	462	Standard
	U	238	53.0	72.5	**0.0071**	0.008	107.0	ug/L	9	Standard
>	Bi	209	564393.0	1.0				ug/L	583182	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, March 29, 2017 14:38:14
Page 1

Approved: March 30, 2017

⌈	**Na**	23	5.0	0.0	**3.9137**	0.064	1.6	mg/L	0	Standard
|	**Mg**	24	31.7	65.7	**-0.1660**	0.554	333.6	mg/L	33	Standard
|	**K**	39	15.0	33.3	**-0.0634**	0.029	45.0	mg/L	20	Standard
|	**Ca**	43	33.3	62.5	**484.6706**	369.505	76.2	mg/L	32	Standard
|	**Fe**	54	33.1	31.5	**0.0073**	0.066	905.7	mg/L	18	Standard
|	**Fe**	57	218.3	5.3	**0.1473**	0.325	220.8	mg/L	245	Standard
⌊>	**Sc-1**	45	47965.8	1.6				mg/L	48374	Standard
	Cl	35	2.7	114.6				ug/L	1	Standard
	Kr	83	2.7	57.3				ug/L	2	Standard
	Br	81	1826.8	5.5				ug/L	1940	Standard
	P	31	38.3	7.5				ug/L	42	Standard
	S	34	6.7	114.6				ug/L	3	Standard
	Sr	88	98.3	42.6				ug/L	115	Standard
	C	12	46.7	12.4				mg/L	37	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	16.0	125.3				mg/L	30	Standard
	Ho-1	165	10.0	86.6				mg/L	3	Standard
	Er	166	13.3	114.6				mg/L	10	Standard
	I	127	2070.1	5.4				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		97.877	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, March 29, 2017 14:38:14
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	99.007
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	96.778
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Wednesday, March 29, 2017 14:38:14
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703146301
Sample Date/Time: Wednesday, March 29, 2017 14:39:10
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	226256.3	3.2				ug/L	221697	Standard
	Be	9	28.3	10.2	**-0.0052**	0.002	33.5	ug/L	18	Standard
	Al	27	486939.8	2.8	**3.8809**	0.143	3.7	ug/L	548	Standard
	Sc	45	48378.8	3.4				ug/L	48374	Standard
	Ti	47	54.0	19.5	**0.0664**	0.039	58.8	ug/L	37	Standard
	V	51	1309.5	3.4	**-0.0080**	0.011	133.0	ug/L	1312	Standard
	Cr	52	7299.8	2.1	**0.3046**	0.022	7.2	ug/L	5560	Standard
	Cr	53	798.4	3.2	**0.4182**	0.006	1.3	ug/L	495	Standard
	Mn	55	637735.2	1.6	**63.2131**	1.241	2.0	ug/L	1474	Standard
	Co	59	2287.2	1.6	**0.2408**	0.007	2.7	ug/L	432	Standard
	Ni	60	5317.3	1.9	**3.1132**	0.133	4.3	ug/L	135	Standard
	Cu	65	20267.2	1.6	**11.3013**	0.335	3.0	ug/L	523	Standard
	Zn	66	5707.1	1.5	**4.8915**	0.166	3.4	ug/L	311	Standard
>	Ge	72	672528.5	3.1				ug/L	688742	Standard
	As	75	240.9	1.2	**0.2119**	0.008	3.6	ug/L	-33	Standard
	Se	82	40.7	4.2	**0.2300**	0.028	12.4	ug/L	12	Standard
	Se-1	77	100.7	7.7	**0.3139**	0.070	22.2	ug/L	94	Standard
>	Ga	71	60.0	8.3				mg/L	28	Standard
	Rb	85	3652.1	7.3				ug/L	25	Standard
	Y	89	479710.8	1.9				ug/L	487927	Standard
>	Rh	103	51.7	14.8				ug/L	15	Standard
	Mo	98	247.9	5.5	**0.0498**	0.003	6.3	ug/L	46	Standard
	Ag	107	119.3	2.7	**-0.0019**	0.001	44.6	ug/L	103	Standard
	Cd	111	53.7	11.4	**0.0266**	0.004	14.3	mg/L	4	Standard
	Cd	114	156.8	30.6	**0.0268**	0.011	39.7	ug/L	25	Standard
>	In	115	572127.3	1.6				ug/L	577818	Standard
	Sn	118	305.3	4.4	**0.1372**	0.020	14.4	ug/L	203	Standard
	Sb	123	151.7	18.3	**0.0062**	0.007	106.9	ug/L	270	Standard
	Ba	135	101144.5	1.4	**60.7666**	0.418	0.7	ug/L	35	Standard
	Ce	140	628.3	3.2				ug/L	25	Standard
>	Tb	159	854316.9	1.9				ug/L	866991	Standard
	Ho	165	35.0	65.5				ug/L	3	Standard
	Tl	203	475.7	2.7	**0.0397**	0.002	4.5	ug/L	243	Standard
	Tl	205	1115.0	2.2	**0.0406**	0.002	5.8	ug/L	563	Standard
	Pb	206	976.7	5.2	**0.0883**	0.006	7.0	ug/L	471	Standard
	Pb	207	823.0	7.6	**0.0810**	0.009	10.5	ug/L	407	Standard
	Pb	208	954.3	4.0	**0.0859**	0.003	3.6	ug/L	462	Standard
	U	238	17.0	27.0	**-0.0001**	0.001	962.9	ug/L	9	Standard
>	Bi	209	560868.1	2.3				ug/L	583182	Standard

Sample ID: L1703146301
Report Date/Time: Wednesday, March 29, 2017 14:41:21
Page 1

Approved: March 30, 2017

	Na	23	5.0	100.0	**3.9081**	3.990	102.1	mg/L	0	Standard
	Mg	24	283.3	18.0	**6.2926**	1.334	21.2	mg/L	33	Standard
	K	39	60.0	22.0	**0.2011**	0.088	43.9	mg/L	20	Standard
	Ca	43	61.7	26.1	**-10.6379**	247.319	2324.9	mg/L	32	Standard
	Fe	54	51.2	5.9	**0.1269**	0.029	23.0	mg/L	18	Standard
	Fe	57	223.3	8.5	**0.2192**	0.494	225.3	mg/L	245	Standard
>	**Sc-1**	45	48378.8	3.4				mg/L	48374	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	4.3	48.0				ug/L	2	Standard
	Br	81	13309.2	3.3				ug/L	1940	Standard
	P	31	46.7	43.3				ug/L	42	Standard
	S	34	6.7	114.6				ug/L	3	Standard
	Sr	88	158.3	26.9				ug/L	115	Standard
	C	12	73.3	75.1				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	49.2	53.2				mg/L	30	Standard
	Ho-1	165	35.0	65.5				mg/L	3	Standard
	Er	166	16.7	34.6				mg/L	10	Standard
	I	127	24521.6	7.4				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		102.056	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.646	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703146301
Report Date/Time: Wednesday, March 29, 2017 14:41:21
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	99.015
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	96.174
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703146401
Sample Date/Time: Wednesday, March 29, 2017 14:42:16
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	3268550.9	2.2				ug/L	221697	Standard
	Be	9	243.3	21.6	**-0.0107**	0.002	15.2	ug/L	18	Standard
	Al	27	36069194.7	1.9	**19.8875**	0.235	1.2	ug/L	548	Standard
	Sc	45	42509.6	1.6				ug/L	48374	Standard
	Ti	47	2507.9	27.0	**12.6025**	3.443	27.3	ug/L	37	Standard
	V	51	277.4	48.9	**-0.1494**	0.028	18.8	ug/L	1312	Standard
	Cr	52	17026.9	2.3	**3.0240**	0.089	2.9	ug/L	5560	Standard
	Cr	53	18222.7	7.7	**32.7718**	2.582	7.9	ug/L	495	Standard
	Mn	55	869684.3	1.3	**118.6261**	1.510	1.3	ug/L	1474	Standard
	Co	59	6068.5	4.2	**1.0205**	0.045	4.4	ug/L	432	Standard
	Ni	60	16562.4	8.3	**13.6135**	1.144	8.4	ug/L	135	Standard
	Cu	65	33297.2	3.3	**25.8819**	0.863	3.3	ug/L	523	Standard
	Zn	66	29456.3	0.5	**37.3293**	0.055	0.1	ug/L	311	Standard
>	Ge	72	489079.3	0.4				ug/L	688742	Standard
	As	75	-10510.1	85.2	**-12.5799**	10.742	85.4	ug/L	-33	Standard
	Se	82	-1419.6	221.0	**-18.5466**	40.722	219.6	ug/L	12	Standard
	Se-1	77	10112.4	7.9	**190.3901**	15.310	8.0	ug/L	94	Standard
>	Ga	71	338.3	21.5				mg/L	28	Standard
	Rb	85	1115678.7	1.0				ug/L	25	Standard
	Y	89	370976.7	0.4				ug/L	487927	Standard
>	Rh	103	16193.7	4.2				ug/L	15	Standard
	Mo	98	3770.1	1.8	**1.4497**	0.030	2.1	ug/L	46	Standard
	Ag	107	318.7	15.2	**0.0534**	0.012	22.0	ug/L	103	Standard
	Cd	111	282.0	4.5	**0.2313**	0.010	4.3	mg/L	4	Standard
	Cd	114	378.9	26.5	**0.1159**	0.034	29.2	ug/L	25	Standard
>	In	115	402624.3	0.5				ug/L	577818	Standard
	Sn	118	228.0	4.8	**0.1570**	0.018	11.3	ug/L	203	Standard
	Sb	123	2205.3	5.4	**0.6615**	0.036	5.5	ug/L	270	Standard
	Ba	135	15515323.6	1.1	**13250.3697**	121.337	0.9	ug/L	35	Standard
	Ce	140	1773.4	6.5				ug/L	25	Standard
>	Tb	159	609521.4	1.4				ug/L	866991	Standard
	Ho	165	58.3	13.1				ug/L	3	Standard
	Tl	203	1468.4	7.7	**0.3528**	0.018	5.2	ug/L	243	Standard
	Tl	205	3323.7	7.9	**0.3333**	0.019	5.8	ug/L	563	Standard
	Pb	206	28925.9	0.8	**9.1325**	0.347	3.8	ug/L	471	Standard
	Pb	207	23081.2	0.5	**8.0448**	0.269	3.3	ug/L	407	Standard
	Pb	208	43200.7	1.7	**13.8055**	0.215	1.6	ug/L	462	Standard
	U	238	56.3	45.7	**0.0178**	0.009	51.3	ug/L	9	Standard
>	Bi	209	297554.7	2.9				ug/L	583182	Standard

Sample ID: L1703146401
Report Date/Time: Wednesday, March 29, 2017 14:44:27
Page 1

Approved: March 30, 2017

⌈	**Na**	23	466.7	7.1	**411.5111**	26.972	6.6	mg/L	0	Standard
|	**Mg**	24	120095.3	6.2	**3509.3481**	170.590	4.9	mg/L	33	Standard
|	**K**	39	8405.7	4.2	**55.8204**	1.485	2.7	mg/L	20	Standard
|	**Ca**	43	970.0	6.3	**-18497.2798**	934.201	5.1	mg/L	32	Standard
|	**Fe**	54	1254.9	5.7	**9.2433**	0.689	7.5	mg/L	18	Standard
|	**Fe**	57	2430.2	3.6	**55.8565**	1.592	2.8	mg/L	245	Standard
⌊>	**Sc-1**	45	42509.6	1.6				mg/L	48374	Standard
	Cl	35	2.7	114.6				ug/L	1	Standard
	Kr	83	3.0	33.3				ug/L	2	Standard
	Br	81	14821469.4	1.5				ug/L	1940	Standard
	P	31	35.0	37.8				ug/L	42	Standard
	S	34	6.7	43.3				ug/L	3	Standard
	Sr	88	13486.1	12.6				ug/L	115	Standard
	C	12	46.7	53.9				mg/L	37	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	13.3	86.6				mg/L	3	Standard
	Dy	164	61.1	8.6				mg/L	30	Standard
	Ho-1	165	58.3	13.1				mg/L	3	Standard
	Er	166	46.7	32.7				mg/L	10	Standard
	I	127	1687878.6	0.7				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		1474.330	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		71.011	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703146401
Report Date/Time: Wednesday, March 29, 2017 14:44:27
Page 2

Approved: March 30, 2017

Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		69.680
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		51.023
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
As 75 Lower	As	75	

Sample ID: L1703146401
Report Date/Time: Wednesday, March 29, 2017 14:44:27
Page 3

Approved: March 30, 2017

Se 82 Lower	Se	82
Se-1 77 Upper, S, EEE	Se-1	77
Ba 135 Upper, S, EEE	Ba	135

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703146801
Sample Date/Time: Wednesday, March 29, 2017 14:45:22
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	240225.8	3.4				ug/L	221697	Standard
	Be	9	163.3	7.1	**0.0545**	0.006	10.5	ug/L	18	Standard
	Al	27	21278168.8	3.5	**159.6218**	2.497	1.6	ug/L	548	Standard
	Sc	45	59123.5	0.8				ug/L	48374	Standard
	Ti	47	2169.2	4.3	**7.4951**	0.197	2.6	ug/L	37	Standard
	V	51	10556.5	3.7	**1.3226**	0.077	5.8	ug/L	1312	Standard
	Cr	52	14054.9	2.1	**1.3330**	0.091	6.9	ug/L	5560	Standard
	Cr	53	3502.1	21.9	**3.7903**	0.878	23.2	ug/L	495	Standard
	Mn	55	61644606.1	1.0	**5832.5004**	71.046	1.2	ug/L	1474	Standard
	Co	59	155626.2	0.7	**19.0337**	0.245	1.3	ug/L	432	Standard
	Ni	60	30747.8	1.0	**17.5349**	0.302	1.7	ug/L	135	Standard
	Cu	65	2913.9	3.5	**1.2974**	0.044	3.4	ug/L	523	Standard
	Zn	66	22144.5	1.9	**19.2333**	0.242	1.3	ug/L	311	Standard
>	Ge	72	706062.2	2.0				ug/L	688742	Standard
	As	75	11333.3	2.7	**9.3959**	0.067	0.7	ug/L	-33	Standard
	Se	82	40.1	18.6	**0.2073**	0.073	35.4	ug/L	12	Standard
	Se-1	77	511.0	25.2	**5.6100**	1.552	27.7	ug/L	94	Standard
>	Ga	71	600.0	14.2				mg/L	28	Standard
	Rb	85	8782.5	0.8				ug/L	25	Standard
	Y	89	490673.5	0.3				ug/L	487927	Standard
>	Rh	103	288.3	2.6				ug/L	15	Standard
	Mo	98	2901.3	2.0	**0.7299**	0.009	1.2	ug/L	46	Standard
	Ag	107	144.3	5.8	**0.0008**	0.001	178.3	ug/L	103	Standard
	Cd	111	31.6	16.0	**0.0125**	0.003	21.2	mg/L	4	Standard
	Cd	114	128.2	2.2	**0.0185**	0.001	2.8	ug/L	25	Standard
>	In	115	607905.4	0.9				ug/L	577818	Standard
	Sn	118	379.3	1.3	**0.1925**	0.003	1.5	ug/L	203	Standard
	Sb	123	739.5	1.3	**0.1258**	0.002	1.8	ug/L	270	Standard
	Ba	135	642463.8	0.8	**363.3956**	4.376	1.2	ug/L	35	Standard
	Ce	140	22877.3	2.5				ug/L	25	Standard
>	Tb	159	886115.6	1.1				ug/L	866991	Standard
	Ho	165	216.7	14.1				ug/L	3	Standard
	Tl	203	215.0	22.6	**0.0053**	0.006	119.6	ug/L	243	Standard
	Tl	205	528.3	15.2	**0.0085**	0.004	49.0	ug/L	563	Standard
	Pb	206	2211.5	1.5	**0.3133**	0.004	1.2	ug/L	471	Standard
	Pb	207	1838.4	2.5	**0.2856**	0.004	1.4	ug/L	407	Standard
	Pb	208	2071.7	1.3	**0.2921**	0.004	1.3	ug/L	462	Standard
	U	238	735.7	3.2	**0.1520**	0.008	5.1	ug/L	9	Standard
>	Bi	209	537123.0	2.2				ug/L	583182	Standard

Sample ID: L1703146801
Report Date/Time: Wednesday, March 29, 2017 14:47:33
Page 1

Approved: March 30, 2017

⌈	**Na**	23	131.7	23.2	**83.5559**	19.711	23.6	mg/L	0	Standard
|	**Mg**	24	1786.8	0.7	**36.5785**	0.541	1.5	mg/L	33	Standard
|	**K**	39	181.7	15.9	**0.7184**	0.140	19.5	mg/L	20	Standard
|	**Ca**	43	506.7	10.9	**-6273.2620**	743.186	11.8	mg/L	32	Standard
|	**Fe**	54	1015.9	7.7	**5.2896**	0.462	8.7	mg/L	18	Standard
|	**Fe**	57	998.4	4.1	**13.2093**	0.842	6.4	mg/L	245	Standard
⌊>	**Sc-1**	45	59123.5	0.8				mg/L	48374	Standard
	Cl	35	2.0	173.2				ug/L	1	Standard
	Kr	83	2.7	21.7				ug/L	2	Standard
	Br	81	38819.9	7.8				ug/L	1940	Standard
	P	31	51.7	20.1				ug/L	42	Standard
	S	34	3.3	173.2				ug/L	3	Standard
	Sr	88	301.7	12.6				ug/L	115	Standard
	C	12	466.7	10.6				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	10.0	100.0				mg/L	3	Standard
	Dy	164	366.4	31.3				mg/L	30	Standard
	Ho-1	165	216.7	14.1				mg/L	3	Standard
	Er	166	283.3	16.3				mg/L	10	Standard
	I	127	297374.6	5.0				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		108.358	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		102.515	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703146801
Report Date/Time: Wednesday, March 29, 2017 14:47:33
Page 2

Approved: March 30, 2017

Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115	105.207	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209	92.102	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1703146801
Report Date/Time: Wednesday, March 29, 2017 14:47:33
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703146802
Sample Date/Time: Wednesday, March 29, 2017 14:48:27
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	224827.5	0.9				ug/L	221697	Standard
	Be	9	116.7	6.5	**0.0372**	0.004	10.7	ug/L	18	Standard
	Al	27	11082373.0	1.0	**88.8250**	0.519	0.6	ug/L	548	Standard
	Sc	45	54489.5	0.7				ug/L	48374	Standard
	Ti	47	4416.6	10.4	**16.3972**	1.863	11.4	ug/L	37	Standard
	V	51	9091.1	1.3	**1.1929**	0.002	0.1	ug/L	1312	Standard
	Cr	52	10705.4	1.1	**0.9023**	0.025	2.8	ug/L	5560	Standard
	Cr	53	2526.9	1.8	**2.7674**	0.100	3.6	ug/L	495	Standard
	Mn	55	1630866.1	0.7	**163.9167**	1.951	1.2	ug/L	1474	Standard
	Co	59	3907.2	3.5	**0.4556**	0.012	2.6	ug/L	432	Standard
	Ni	60	2493.2	1.2	**1.4311**	0.031	2.2	ug/L	135	Standard
	Cu	65	2113.5	2.9	**0.9343**	0.022	2.4	ug/L	523	Standard
	Zn	66	154659.4	0.6	**145.6168**	2.340	1.6	ug/L	311	Standard
>	Ge	72	664016.2	1.2				ug/L	688742	Standard
	As	75	1109.1	7.0	**0.9802**	0.079	8.1	ug/L	-33	Standard
	Se	82	53.3	3.4	**0.3550**	0.014	3.8	ug/L	12	Standard
	Se-1	77	293.3	5.2	**3.0187**	0.179	5.9	ug/L	94	Standard
>	Ga	71	806.7	2.3				mg/L	28	Standard
	Rb	85	17702.0	1.3				ug/L	25	Standard
	Y	89	464924.2	1.1				ug/L	487927	Standard
>	Rh	103	195.0	36.4				ug/L	15	Standard
	Mo	98	3616.9	0.9	**0.9778**	0.011	1.1	ug/L	46	Standard
	Ag	107	124.3	7.0	**-0.0010**	0.001	143.3	ug/L	103	Standard
	Cd	111	15.3	29.7	**0.0040**	0.003	66.6	mg/L	4	Standard
	Cd	114	72.3	12.3	**0.0073**	0.002	27.4	ug/L	25	Standard
>	In	115	569247.9	0.5				ug/L	577818	Standard
	Sn	118	287.7	4.6	**0.1196**	0.015	12.8	ug/L	203	Standard
	Sb	123	127.2	19.6	**0.0009**	0.006	602.9	ug/L	270	Standard
	Ba	135	213615.5	1.4	**129.0068**	1.292	1.0	ug/L	35	Standard
	Ce	140	36087.9	2.3				ug/L	25	Standard
>	Tb	159	839920.0	0.8				ug/L	866991	Standard
	Ho	165	531.7	5.2				ug/L	3	Standard
	Tl	203	762.0	4.0	**0.0893**	0.004	4.2	ug/L	243	Standard
	Tl	205	1803.4	5.6	**0.0901**	0.006	6.1	ug/L	563	Standard
	Pb	206	2253.2	1.9	**0.3422**	0.010	2.9	ug/L	471	Standard
	Pb	207	1877.8	3.0	**0.3131**	0.012	3.9	ug/L	407	Standard
	Pb	208	2054.4	1.4	**0.3088**	0.006	1.9	ug/L	462	Standard
	U	238	5587.0	1.8	**1.2405**	0.015	1.2	ug/L	9	Standard
>	Bi	209	509464.6	0.7				ug/L	583182	Standard

Sample ID: L1703146802
Report Date/Time: Wednesday, March 29, 2017 14:50:37
Page 1

Approved: March 30, 2017

⌈	**Na**	23	73.3	21.9	**50.4852**	11.220	22.2	mg/L	0	Standard
|	**Mg**	24	1211.7	3.0	**26.6491**	0.648	2.4	mg/L	33	Standard
|	**K**	39	340.0	8.2	**1.6150**	0.144	8.9	mg/L	20	Standard
|	**Ca**	43	295.0	19.3	**-3572.4765**	929.734	26.0	mg/L	32	Standard
|	**Fe**	54	144.3	5.7	**0.6351**	0.047	7.4	mg/L	18	Standard
|	**Fe**	57	540.0	10.2	**5.8224**	1.127	19.3	mg/L	245	Standard
⌊>	**Sc-1**	45	54489.5	0.7				mg/L	48374	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	2.0	86.6				ug/L	2	Standard
	Br	81	25180.9	0.9				ug/L	1940	Standard
	P	31	63.3	12.1				ug/L	42	Standard
	S	34	3.3	173.2				ug/L	3	Standard
	Sr	88	223.3	13.7				ug/L	115	Standard
	C	12	96.7	33.3				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	13.3	43.3				mg/L	3	Standard
	Dy	164	842.1	4.0				mg/L	30	Standard
	Ho-1	165	531.7	5.2				mg/L	3	Standard
	Er	166	443.3	9.1				mg/L	10	Standard
	I	127	403563.9	3.1				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		101.412	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		96.410	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703146802
Report Date/Time: Wednesday, March 29, 2017 14:50:37
Page 2

Approved: March 30, 2017

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.517
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	87.360
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1703146802
Report Date/Time: Wednesday, March 29, 2017 14:50:37
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703146804
Sample Date/Time: Wednesday, March 29, 2017 14:51:32
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	210163.4	5.1				ug/L	221697	Standard
	Be	9	73.3	126.0	**0.0206**	0.051	247.2	ug/L	18	Standard
	Al	27	13924.4	84.3	**0.1239**	0.110	88.8	ug/L	548	Standard
	Sc	45	50542.6	4.1				ug/L	48374	Standard
	Ti	47	71.7	3.5	**0.1431**	0.019	13.5	ug/L	37	Standard
	V	51	1613.3	6.2	**0.0488**	0.022	45.7	ug/L	1312	Standard
	Cr	52	8414.7	1.8	**0.5539**	0.063	11.4	ug/L	5560	Standard
	Cr	53	1761.8	2.7	**1.8038**	0.082	4.5	ug/L	495	Standard
	Mn	55	8125.3	87.5	**0.7110**	0.786	110.6	ug/L	1474	Standard
	Co	59	599.0	25.8	**0.0272**	0.024	89.9	ug/L	432	Standard
	Ni	60	413.3	10.3	**0.1719**	0.037	21.7	ug/L	135	Standard
	Cu	65	971.4	2.4	**0.2902**	0.024	8.3	ug/L	523	Standard
	Zn	66	1467.4	1.6	**0.9955**	0.070	7.0	ug/L	311	Standard
>	Ge	72	645288.8	3.9				ug/L	688742	Standard
	As	75	31.1	169.7	**0.0312**	0.049	158.0	ug/L	-33	Standard
	Se	82	15.9	56.4	**0.0046**	0.096	2071.6	ug/L	12	Standard
	Se-1	77	170.7	12.5	**1.3765**	0.269	19.5	ug/L	94	Standard
>	Ga	71	31.7	24.1				mg/L	28	Standard
	Rb	85	85.0	31.1				ug/L	25	Standard
	Y	89	449518.5	3.8				ug/L	487927	Standard
>	Rh	103	23.3	32.7				ug/L	15	Standard
	Mo	98	86.9	24.6	**0.0063**	0.007	109.8	ug/L	46	Standard
	Ag	107	123.7	25.4	**-0.0006**	0.006	969.0	ug/L	103	Standard
	Cd	111	7.9	109.5	**-0.0002**	0.005	2895.2	mg/L	4	Standard
	Cd	114	54.1	47.8	**0.0034**	0.007	194.7	ug/L	25	Standard
>	In	115	560593.1	3.3				ug/L	577818	Standard
	Sn	118	282.7	5.3	**0.1190**	0.016	13.8	ug/L	203	Standard
	Sb	123	92.4	23.6	**-0.0063**	0.006	88.5	ug/L	270	Standard
	Ba	135	304.0	50.7	**0.1650**	0.103	62.2	ug/L	35	Standard
	Ce	140	50.0	17.3				ug/L	25	Standard
>	Tb	159	811404.6	3.1				ug/L	866991	Standard
	Ho	165	20.0	66.1				ug/L	3	Standard
	Tl	203	287.7	11.0	**0.0190**	0.005	27.8	ug/L	243	Standard
	Tl	205	681.7	1.7	**0.0208**	0.002	9.6	ug/L	563	Standard
	Pb	206	444.0	3.9	**0.0078**	0.004	48.6	ug/L	471	Standard
	Pb	207	362.7	7.0	**0.0038**	0.007	177.5	ug/L	407	Standard
	Pb	208	483.0	25.8	**0.0164**	0.027	162.9	ug/L	462	Standard
	U	238	35.3	156.1	**0.0048**	0.013	272.8	ug/L	9	Standard
>	Bi	209	498399.9	2.9				ug/L	583182	Standard

Sample ID: L1703146804
Report Date/Time: Wednesday, March 29, 2017 14:53:42
Page 1

Approved: March 30, 2017

⌈	**Na**	23	1.7	173.2	**1.3020**	2.246	172.5	mg/L	0	Standard
|	**Mg**	24	35.0	28.6	**-0.1355**	0.214	157.8	mg/L	33	Standard
|	**K**	39	40.0	21.7	**0.0739**	0.059	79.9	mg/L	20	Standard
|	**Ca**	43	51.7	14.8	**202.3343**	111.150	54.9	mg/L	32	Standard
|	**Fe**	54	28.2	27.6	**-0.0352**	0.044	125.0	mg/L	18	Standard
|	**Fe**	57	295.0	14.5	**1.5095**	0.894	59.2	mg/L	245	Standard
⌊>	**Sc-1**	45	50542.6	4.1				mg/L	48374	Standard
	Cl	35	0.0					ug/L	1	Standard
	Kr	83	3.7	31.5				ug/L	2	Standard
	Br	81	3530.4	10.5				ug/L	1940	Standard
	P	31	46.7	27.0				ug/L	42	Standard
	S	34	5.0	100.0				ug/L	3	Standard
	Sr	88	121.7	6.3				ug/L	115	Standard
	C	12	30.0	88.2				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	16.2	38.3				mg/L	30	Standard
	Ho-1	165	20.0	66.1				mg/L	3	Standard
	Er	166	10.0	100.0				mg/L	10	Standard
	I	127	10077.4	56.1				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		94.797	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		93.691	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703146804
Report Date/Time: Wednesday, March 29, 2017 14:53:42
Page 2

Approved: March 30, 2017

Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	97.019
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	85.462
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703146804
Report Date/Time: Wednesday, March 29, 2017 14:53:42
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703146805
Sample Date/Time: Wednesday, March 29, 2017 14:54:37
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	204205.9	2.7				ug/L	221697	Standard
	Be	9	78.3	97.7	**0.0228**	0.041	177.7	ug/L	18	Standard
	Al	27	15004.8	90.3	**0.1335**	0.120	90.0	ug/L	548	Standard
	Sc	45	49286.8	3.1				ug/L	48374	Standard
	Ti	47	70.7	22.1	**0.1437**	0.057	39.8	ug/L	37	Standard
	V	51	1449.1	18.9	**0.0267**	0.042	155.5	ug/L	1312	Standard
	Cr	52	8065.8	4.1	**0.5205**	0.056	10.7	ug/L	5560	Standard
	Cr	53	1445.1	8.2	**1.4013**	0.108	7.7	ug/L	495	Standard
	Mn	55	13691.6	121.6	**1.2940**	1.754	135.6	ug/L	1474	Standard
	Co	59	738.0	57.4	**0.0472**	0.058	122.4	ug/L	432	Standard
	Ni	60	427.7	23.4	**0.1855**	0.064	34.4	ug/L	135	Standard
	Cu	65	1010.7	11.4	**0.3250**	0.062	19.1	ug/L	523	Standard
	Zn	66	1957.1	3.0	**1.5089**	0.039	2.6	ug/L	311	Standard
>	Ge	72	632281.2	2.9				ug/L	688742	Standard
	As	75	24.0	107.8	**0.0243**	0.024	98.1	ug/L	-33	Standard
	Se	82	16.9	12.3	**0.0156**	0.017	107.2	ug/L	12	Standard
	Se-1	77	156.3	3.9	**1.2208**	0.135	11.0	ug/L	94	Standard
>	Ga	71	43.3	54.5				mg/L	28	Standard
	Rb	85	133.3	69.4				ug/L	25	Standard
	Y	89	427526.1	2.1				ug/L	487927	Standard
>	Rh	103	18.3	31.5				ug/L	15	Standard
	Mo	98	98.1	48.2	**0.0100**	0.014	134.6	ug/L	46	Standard
	Ag	107	139.7	38.6	**0.0026**	0.009	359.3	ug/L	103	Standard
	Cd	111	14.9	75.4	**0.0041**	0.007	166.9	mg/L	4	Standard
	Cd	114	99.5	51.1	**0.0147**	0.012	84.0	ug/L	25	Standard
>	In	115	545607.8	2.6				ug/L	577818	Standard
	Sn	118	391.3	11.3	**0.2497**	0.048	19.1	ug/L	203	Standard
	Sb	123	74.8	45.2	**-0.0100**	0.008	77.8	ug/L	270	Standard
	Ba	135	702.7	89.6	**0.4188**	0.396	94.5	ug/L	35	Standard
	Ce	140	76.7	15.1				ug/L	25	Standard
>	Tb	159	796940.0	1.6				ug/L	866991	Standard
	Ho	165	11.7	24.7				ug/L	3	Standard
	Tl	203	253.3	12.9	**0.0142**	0.005	37.1	ug/L	243	Standard
	Tl	205	606.7	24.1	**0.0164**	0.009	55.5	ug/L	563	Standard
	Pb	206	510.7	7.6	**0.0217**	0.007	31.5	ug/L	471	Standard
	Pb	207	457.7	10.2	**0.0249**	0.009	36.0	ug/L	407	Standard
	Pb	208	466.3	11.8	**0.0139**	0.010	70.6	ug/L	462	Standard
	U	238	16.7	95.7	**0.0003**	0.004	1151.6	ug/L	9	Standard
>	Bi	209	491917.1	1.8				ug/L	583182	Standard

Sample ID: L1703146805
Report Date/Time: Wednesday, March 29, 2017 14:56:48
Page 1

Approved: March 30, 2017

	Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
	Mg	24	21.7	35.3	**-0.4404**	0.211	48.0	mg/L	33	Standard
	K	39	35.0	62.3	**0.0468**	0.121	258.9	mg/L	20	Standard
	Ca	43	36.7	43.8	**433.9480**	304.353	70.1	mg/L	32	Standard
	Fe	54	15.9	19.7	**-0.1092**	0.024	21.9	mg/L	18	Standard
	Fe	57	276.7	20.3	**1.2813**	1.268	99.0	mg/L	245	Standard
>	**Sc-1**	45	49286.8	3.1				mg/L	48374	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	2.0	50.0				ug/L	2	Standard
	Br	81	2736.9	4.6				ug/L	1940	Standard
	P	31	48.3	57.0				ug/L	42	Standard
	S	34	10.0	50.0				ug/L	3	Standard
	Sr	88	116.7	30.4				ug/L	115	Standard
	C	12	36.7	31.5				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	16.0	70.4				mg/L	30	Standard
	Ho-1	165	11.7	24.7				mg/L	3	Standard
	Er	166	13.3	86.6				mg/L	10	Standard
	I	127	4143.9	10.1				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		92.110	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		91.802	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703146805
Report Date/Time: Wednesday, March 29, 2017 14:56:48
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	94.426
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	84.351
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703146805
Report Date/Time: Wednesday, March 29, 2017 14:56:48
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703146806
Sample Date/Time: Wednesday, March 29, 2017 14:57:42
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	209802.8	1.6				ug/L	221697	Standard
	Be	9	118.3	6.5	**0.0421**	0.005	11.6	ug/L	18	Standard
	Al	27	6877852.5	0.5	**59.0872**	1.261	2.1	ug/L	548	Standard
	Sc	45	52733.3	0.6				ug/L	48374	Standard
	Ti	47	8528.7	0.4	**33.5604**	0.322	1.0	ug/L	37	Standard
	V	51	43586.1	0.4	**6.8833**	0.074	1.1	ug/L	1312	Standard
	Cr	52	30599.2	0.9	**4.5970**	0.045	1.0	ug/L	5560	Standard
	Cr	53	4329.0	6.4	**5.5328**	0.469	8.5	ug/L	495	Standard
	Mn	55	113566.7	0.8	**11.9157**	0.113	0.9	ug/L	1474	Standard
	Co	59	2293.8	3.1	**0.2622**	0.014	5.2	ug/L	432	Standard
	Ni	60	1918.1	2.2	**1.1465**	0.043	3.7	ug/L	135	Standard
	Cu	65	2144.5	1.4	**1.0221**	0.002	0.2	ug/L	523	Standard
	Zn	66	6389.3	1.5	**5.9411**	0.180	3.0	ug/L	311	Standard
>	Ge	72	628727.1	1.3				ug/L	688742	Standard
	As	75	1258.8	0.3	**1.1740**	0.018	1.6	ug/L	-33	Standard
	Se	82	137.2	3.6	**1.2287**	0.048	3.9	ug/L	12	Standard
	Se-1	77	267.3	5.2	**2.8665**	0.206	7.2	ug/L	94	Standard
>	Ga	71	1296.7	2.8				mg/L	28	Standard
	Rb	85	22625.2	1.9				ug/L	25	Standard
	Y	89	439441.9	1.0				ug/L	487927	Standard
>	Rh	103	126.7	8.2				ug/L	15	Standard
	Mo	98	1343.1	1.0	**0.3772**	0.009	2.4	ug/L	46	Standard
	Ag	107	127.0	13.0	**0.0009**	0.003	336.6	ug/L	103	Standard
	Cd	111	17.6	23.7	**0.0061**	0.002	41.0	mg/L	4	Standard
	Cd	114	78.9	31.2	**0.0102**	0.006	62.3	ug/L	25	Standard
>	In	115	532617.3	1.4				ug/L	577818	Standard
	Sn	118	288.0	4.0	**0.1412**	0.010	7.0	ug/L	203	Standard
	Sb	123	217.2	8.2	**0.0241**	0.004	16.1	ug/L	270	Standard
	Ba	135	223804.8	0.5	**144.4849**	2.513	1.7	ug/L	35	Standard
	Ce	140	43868.4	2.1				ug/L	25	Standard
>	Tb	159	801050.4	1.2				ug/L	866991	Standard
	Ho	165	605.0	10.9				ug/L	3	Standard
	Tl	203	679.3	8.7	**0.0818**	0.009	10.8	ug/L	243	Standard
	Tl	205	1658.4	4.4	**0.0860**	0.004	5.2	ug/L	563	Standard
	Pb	206	2679.6	2.3	**0.4452**	0.014	3.0	ug/L	471	Standard
	Pb	207	2218.5	0.9	**0.4048**	0.005	1.3	ug/L	407	Standard
	Pb	208	2489.1	2.1	**0.4127**	0.011	2.7	ug/L	462	Standard
	U	238	5232.2	0.7	**1.2173**	0.014	1.2	ug/L	9	Standard
>	Bi	209	486197.4	0.5				ug/L	583182	Standard

Sample ID: L1703146806
Report Date/Time: Wednesday, March 29, 2017 14:59:53
Page 1

Approved: March 30, 2017

⌈	**Na**	23	60.0	50.7	**42.6466**	21.574	50.6	mg/L	0	Standard
|	**Mg**	24	870.0	5.3	**19.5225**	1.195	6.1	mg/L	33	Standard
|	**K**	39	271.7	2.1	**1.3070**	0.039	3.0	mg/L	20	Standard
|	**Ca**	43	193.3	9.1	**-2067.7820**	278.747	13.5	mg/L	32	Standard
|	**Fe**	54	96.1	13.1	**0.3701**	0.074	19.9	mg/L	18	Standard
|	**Fe**	57	483.3	6.1	**5.0303**	0.595	11.8	mg/L	245	Standard
⌊>	**Sc-1**	45	52733.3	0.6				mg/L	48374	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	2.3	24.7				ug/L	2	Standard
	Br	81	42245.5	3.1				ug/L	1940	Standard
	P	31	46.7	6.2				ug/L	42	Standard
	S	34	3.3	173.2				ug/L	3	Standard
	Sr	88	195.0	19.4				ug/L	115	Standard
	C	12	70.0	42.9				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	1038.9	10.6				mg/L	30	Standard
	Ho-1	165	605.0	10.9				mg/L	3	Standard
	Er	166	720.0	22.4				mg/L	10	Standard
	I	127	38401.9	0.3				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		94.635	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		91.286	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703146806
Report Date/Time: Wednesday, March 29, 2017 14:59:53
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	92.177
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	83.370
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1703146806
Report Date/Time: Wednesday, March 29, 2017 14:59:53
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, March 29, 2017 15:00:49
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	201189.0	2.2				ug/L	221697	Standard
	Be	9	95530.2	1.1	**51.1223**	0.575	1.1	ug/L	18	Standard
	Al	27	5767054.0	0.7	**51.6736**	1.390	2.7	ug/L	548	Standard
	Sc	45	49275.0	2.3				ug/L	48374	Standard
	Ti	47	27175.0	0.1	**107.7669**	0.992	0.9	ug/L	37	Standard
	V	51	331385.8	0.5	**53.9736**	0.295	0.5	ug/L	1312	Standard
	Cr	52	300782.2	0.5	**53.6576**	0.643	1.2	ug/L	5560	Standard
	Cr	53	37499.7	2.4	**53.1218**	1.324	2.5	ug/L	495	Standard
	Mn	55	489379.1	1.0	**52.1051**	0.204	0.4	ug/L	1474	Standard
	Co	59	374640.8	1.0	**51.8012**	0.313	0.6	ug/L	432	Standard
	Ni	60	80405.5	0.6	**51.9192**	0.440	0.8	ug/L	135	Standard
	Cu	65	84516.4	0.3	**51.6494**	0.543	1.1	ug/L	523	Standard
	Zn	66	50601.0	0.5	**50.2885**	0.715	1.4	ug/L	311	Standard
>	Ge	72	625550.9	1.0				ug/L	688742	Standard
	As	75	52322.0	0.8	**48.9569**	0.101	0.2	ug/L	-33	Standard
	Se	82	4561.9	0.8	**46.0315**	0.463	1.0	ug/L	12	Standard
	Se-1	77	3355.4	2.2	**48.5942**	0.893	1.8	ug/L	94	Standard
>	Ga	71	61.7	12.4				mg/L	28	Standard
	Rb	85	308.3	16.9				ug/L	25	Standard
	Y	89	433284.8	0.7				ug/L	487927	Standard
>	Rh	103	41.7	38.6				ug/L	15	Standard
	Mo	98	331187.9	0.8	**96.2891**	1.370	1.4	ug/L	46	Standard
	Ag	107	269917.8	0.8	**47.4383**	0.681	1.4	ug/L	103	Standard
	Cd	111	78524.6	0.6	**49.1439**	0.644	1.3	mg/L	4	Standard
	Cd	114	201530.6	1.0	**49.8167**	0.769	1.5	ug/L	25	Standard
>	In	115	539080.0	0.8				ug/L	577818	Standard
	Sn	118	44356.8	0.9	**50.3662**	0.837	1.7	ug/L	203	Standard
	Sb	123	205999.7	0.5	**48.0228**	0.561	1.2	ug/L	270	Standard
	Ba	135	79916.6	1.0	**50.9554**	0.882	1.7	ug/L	35	Standard
	Ce	140	246.7	7.7				ug/L	25	Standard
>	Tb	159	797197.9	1.1				ug/L	866991	Standard
	Ho	165	8.3	69.3				ug/L	3	Standard
	Tl	203	318760.2	0.6	**49.9015**	0.811	1.6	ug/L	243	Standard
	Tl	205	769671.7	0.4	**50.1457**	0.437	0.9	ug/L	563	Standard
	Pb	206	255952.8	0.4	**49.4079**	0.639	1.3	ug/L	471	Standard
	Pb	207	230861.9	0.5	**49.2351**	0.490	1.0	ug/L	407	Standard
	Pb	208	252140.8	0.4	**49.1490**	0.561	1.1	ug/L	462	Standard
	U	238	202042.9	0.6	**46.8068**	0.444	0.9	ug/L	9	Standard
>	Bi	209	489666.2	1.0				ug/L	583182	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, March 29, 2017 15:03:00
Page 1

Approved: March 30, 2017

	Na	23	6.7	86.6	**5.1431**	4.450	86.5	mg/L	0	Standard
	Mg	24	348.3	12.0	**7.7892**	0.951	12.2	mg/L	33	Standard
	K	39	1505.1	5.8	**8.4922**	0.300	3.5	mg/L	20	Standard
	Ca	43	76.7	21.0	**-257.8403**	286.594	111.2	mg/L	32	Standard
	Fe	54	719.1	5.3	**4.4563**	0.142	3.2	mg/L	18	Standard
	Fe	57	546.7	12.8	**7.0931**	1.696	23.9	mg/L	245	Standard
>	**Sc-1**	45	49275.0	2.3				mg/L	48374	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	3.0	88.2				ug/L	2	Standard
	Br	81	2313.5	11.9				ug/L	1940	Standard
	P	31	61.7	46.1				ug/L	42	Standard
	S	34	3.3	173.2				ug/L	3	Standard
	Sr	88	136.7	29.6				ug/L	115	Standard
	C	12	36.7	56.8				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	9.7	103.3				mg/L	30	Standard
	Ho-1	165	8.3	69.3				mg/L	3	Standard
	Er	166	6.7	86.6				mg/L	10	Standard
	I	127	2905.3	4.7				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	102.245		
	Al	27	103.347		
	Sc	45			
	Ti	47	107.767		
	V	51	107.947		
	Cr	52	107.315		
	Cr	53			
	Mn	55	104.210		
	Co	59	103.602		
	Ni	60	103.838		
	Cu	65	103.299		
	Zn	66	100.577		
>	Ge	72		90.825	
	As	75	97.914		
	Se	82	92.063		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, March 29, 2017 15:03:00
Page 2

Approved: March 30, 2017

Rb	85			
Y	89			
Rh	103			
Mo	98	96.289		
Ag	107	94.877		
Cd	111	98.288		
Cd	114			
In	115		93.296	
Sn	118	100.732		
Sb	123	96.046		
Ba	135	101.911		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.803		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.298		
U	238	93.614		
Bi	209		83.965	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Wednesday, March 29, 2017 15:03:00
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, March 29, 2017 15:03:55
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	208519.9	5.8				ug/L	221697	Standard
	Be	9	36.7	7.9	**0.0002**	0.000	211.2	ug/L	18	Standard
	Al	27	3382.4	122.0	**0.0308**	0.037	121.5	ug/L	548	Standard
	Sc	45	50644.6	4.3				ug/L	48374	Standard
	Ti	47	47.3	20.3	**0.0511**	0.033	64.2	ug/L	37	Standard
	V	51	1233.5	4.7	**-0.0087**	0.016	179.4	ug/L	1312	Standard
	Cr	52	4881.1	1.0	**-0.0559**	0.038	68.1	ug/L	5560	Standard
	Cr	53	776.7	15.1	**0.4499**	0.176	39.0	ug/L	495	Standard
	Mn	55	3811.6	65.9	**0.2547**	0.278	109.3	ug/L	1474	Standard
	Co	59	358.0	16.5	**-0.0049**	0.010	195.8	ug/L	432	Standard
	Ni	60	171.3	10.8	**0.0209**	0.013	63.7	ug/L	135	Standard
	Cu	65	543.0	4.3	**0.0392**	0.012	31.5	ug/L	523	Standard
	Zn	66	570.7	3.1	**0.1308**	0.020	15.1	ug/L	311	Standard
>	Ge	72	636191.9	4.2				ug/L	688742	Standard
	As	75	-18.7	350.2	**-0.0142**	0.061	428.6	ug/L	-33	Standard
	Se	82	17.6	31.4	**0.0222**	0.060	270.7	ug/L	12	Standard
	Se-1	77	113.7	2.8	**0.5844**	0.046	7.9	ug/L	94	Standard
>	Ga	71	35.0	24.7				mg/L	28	Standard
	Rb	85	105.0	90.7				ug/L	25	Standard
	Y	89	432591.5	4.9				ug/L	487927	Standard
>	Rh	103	23.3	32.7				ug/L	15	Standard
	Mo	98	207.7	20.4	**0.0413**	0.012	29.1	ug/L	46	Standard
	Ag	107	134.7	19.9	**0.0017**	0.005	306.3	ug/L	103	Standard
	Cd	111	14.4	92.2	**0.0039**	0.009	216.3	mg/L	4	Standard
	Cd	114	56.5	33.2	**0.0041**	0.005	108.9	ug/L	25	Standard
>	In	115	547847.1	4.6				ug/L	577818	Standard
	Sn	118	193.3	3.6	**0.0260**	0.006	23.9	ug/L	203	Standard
	Sb	123	222.2	23.2	**0.0241**	0.013	55.4	ug/L	270	Standard
	Ba	135	636.0	160.8	**0.3866**	0.662	171.2	ug/L	35	Standard
	Ce	140	28.3	83.4				ug/L	25	Standard
>	Tb	159	797693.9	4.3				ug/L	866991	Standard
	Ho	165	8.3	91.7				ug/L	3	Standard
	Tl	203	146.0	25.8	**-0.0029**	0.006	225.3	ug/L	243	Standard
	Tl	205	358.3	39.2	**0.0001**	0.010	12030.1	ug/L	563	Standard
	Pb	206	461.3	3.3	**0.0108**	0.004	33.6	ug/L	471	Standard
	Pb	207	399.0	10.1	**0.0111**	0.009	84.8	ug/L	407	Standard
	Pb	208	440.0	6.1	**0.0075**	0.007	97.4	ug/L	462	Standard
	U	238	32.7	91.3	**0.0040**	0.007	177.0	ug/L	9	Standard
>	Bi	209	500602.5	4.1				ug/L	583182	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, March 29, 2017 15:06:06
Page 1

Approved: March 30, 2017

⌈	**Na**	23	1.7	173.2	**1.2903**	2.226	172.5	mg/L	0	Standard
|	**Mg**	24	33.3	31.2	**-0.1648**	0.291	176.8	mg/L	33	Standard
|	**K**	39	25.0	60.0	**-0.0095**	0.090	944.5	mg/L	20	Standard
|	**Ca**	43	40.0	45.1	**393.3108**	320.452	81.5	mg/L	32	Standard
|	**Fe**	54	18.0	70.1	**-0.0984**	0.083	84.3	mg/L	18	Standard
|	**Fe**	57	325.0	18.1	**2.1355**	1.353	63.4	mg/L	245	Standard
⌊>	**Sc-1**	45	50644.6	4.3				mg/L	48374	Standard
	Cl	35	1.3	173.2				ug/L	1	Standard
	Kr	83	3.3	45.8				ug/L	2	Standard
	Br	81	2223.5	6.9				ug/L	1940	Standard
	P	31	36.7	28.4				ug/L	42	Standard
	S	34	6.7	43.3				ug/L	3	Standard
	Sr	88	126.7	18.7				ug/L	115	Standard
	C	12	43.3	58.1				mg/L	37	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	9.5	5.0				mg/L	30	Standard
	Ho-1	165	8.3	91.7				mg/L	3	Standard
	Er	166	10.0	100.0				mg/L	10	Standard
	I	127	2495.2	2.4				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		92.370	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, March 29, 2017 15:06:06
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	94.813
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	85.840
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Wednesday, March 29, 2017 15:06:06
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: PBW 66 WG607701-02
Sample Date/Time: Wednesday, March 29, 2017 15:32:05
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	207547.1	1.6				ug/L	221697	Standard
	Be	9	28.3	10.2	**-0.0040**	0.002	39.9	ug/L	18	Standard
	Al	27	2816.9	4.5	**0.0252**	0.001	4.3	ug/L	548	Standard
	Sc	45	48572.8	3.1				ug/L	48374	Standard
	Ti	47	54.0	12.1	**0.0802**	0.029	36.4	ug/L	37	Standard
	V	51	1278.1	8.0	**0.0006**	0.021	3343.6	ug/L	1312	Standard
	Cr	52	6047.5	1.0	**0.1633**	0.029	17.9	ug/L	5560	Standard
	Cr	53	593.3	2.4	**0.1996**	0.036	18.2	ug/L	495	Standard
	Mn	55	2215.8	2.2	**0.0848**	0.004	4.4	ug/L	1474	Standard
	Co	59	321.7	4.1	**-0.0095**	0.002	22.6	ug/L	432	Standard
	Ni	60	187.7	4.0	**0.0324**	0.004	11.9	ug/L	135	Standard
	Cu	65	780.0	4.7	**0.1878**	0.029	15.7	ug/L	523	Standard
	Zn	66	942.4	2.9	**0.5072**	0.038	7.5	ug/L	311	Standard
>	Ge	72	629342.8	1.9				ug/L	688742	Standard
	As	75	-19.9	76.2	**-0.0163**	0.014	84.6	ug/L	-33	Standard
	Se	82	14.2	6.0	**-0.0109**	0.010	89.7	ug/L	12	Standard
	Se-1	77	95.7	5.4	**0.3368**	0.075	22.4	ug/L	94	Standard
>	Ga	71	25.0	20.0				mg/L	28	Standard
	Rb	85	33.3	45.8				ug/L	25	Standard
	Y	89	431792.2	2.6				ug/L	487927	Standard
>	Rh	103	15.0	33.3				ug/L	15	Standard
	Mo	98	69.1	12.7	**0.0021**	0.003	137.7	ug/L	46	Standard
	Ag	107	102.0	5.1	**-0.0036**	0.001	32.0	ug/L	103	Standard
	Cd	111	11.6	20.0	**0.0022**	0.002	69.3	mg/L	4	Standard
	Cd	114	66.0	21.2	**0.0069**	0.004	56.9	ug/L	25	Standard
>	In	115	536505.1	2.4				ug/L	577818	Standard
	Sn	118	273.0	6.7	**0.1221**	0.028	23.2	ug/L	203	Standard
	Sb	123	120.6	21.7	**0.0012**	0.007	573.2	ug/L	270	Standard
	Ba	135	69.3	1.7	**0.0207**	0.002	7.8	ug/L	35	Standard
	Ce	140	55.0	24.1				ug/L	25	Standard
>	Tb	159	797265.2	2.0				ug/L	866991	Standard
	Ho	165	8.3	34.6				ug/L	3	Standard
	Tl	203	64.0	11.3	**-0.0155**	0.001	8.0	ug/L	243	Standard
	Tl	205	146.7	12.9	**-0.0135**	0.001	10.3	ug/L	563	Standard
	Pb	206	420.3	5.3	**0.0033**	0.004	111.6	ug/L	471	Standard
	Pb	207	354.3	2.0	**0.0020**	0.003	155.6	ug/L	407	Standard
	Pb	208	409.3	3.8	**0.0018**	0.002	127.5	ug/L	462	Standard
	U	238	20.3	27.1	**0.0011**	0.001	113.8	ug/L	9	Standard
>	Bi	209	498443.1	2.3				ug/L	583182	Standard

Sample ID: PBW 66 WG607701-02
Report Date/Time: Wednesday, March 29, 2017 15:34:16
Page 1

Approved: March 30, 2017

⌈	**Na**	23	1.7	173.2	**1.3337**	2.301	172.6	mg/L	0	Standard
|	**Mg**	24	28.3	20.4	**-0.2655**	0.147	55.5	mg/L	33	Standard
|	**K**	39	23.3	12.4	**-0.0157**	0.018	112.9	mg/L	20	Standard
|	**Ca**	43	41.7	18.3	**339.7790**	154.467	45.5	mg/L	32	Standard
|	**Fe**	54	32.9	37.2	**0.0034**	0.078	2258.6	mg/L	18	Standard
|	**Fe**	57	253.3	9.3	**0.8518**	0.558	65.6	mg/L	245	Standard
⌊>	**Sc-1**	45	48572.8	3.1				mg/L	48374	Standard
	Cl	35	1.3	173.2				ug/L	1	Standard
	Kr	83	2.0	50.0				ug/L	2	Standard
	Br	81	1723.4	3.5				ug/L	1940	Standard
	P	31	60.0	8.3				ug/L	42	Standard
	S	34	5.0	100.0				ug/L	3	Standard
	Sr	88	160.0	41.3				ug/L	115	Standard
	C	12	36.7	15.7				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	3.2	186.4				mg/L	30	Standard
	Ho-1	165	8.3	34.6				mg/L	3	Standard
	Er	166	3.3	173.2				mg/L	10	Standard
	I	127	2296.8	6.4				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		93.617	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		91.376	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: PBW 66 WG607701-02
Report Date/Time: Wednesday, March 29, 2017 15:34:16
Page 2

Approved: March 30, 2017

⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98		
|	Ag	107		
|	Cd	111		
|	Cd	114		
|>	In	115		92.850
|	Sn	118		
|	Sb	123		
⌊	Ba	135		
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203		
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208		
|	U	238		
⌊>	Bi	209		85.470
⌈	Na	23		
|	Mg	24		
|	K	39		
|	Ca	43		
|	Fe	54		
|	Fe	57		
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 66 WG607701-02
Report Date/Time: Wednesday, March 29, 2017 15:34:16
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: LCSW 66 WG607701-03
Sample Date/Time: Wednesday, March 29, 2017 15:35:10
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	207687.8	2.7				ug/L	221697	Standard
	Be	9	98267.8	2.6	**50.9396**	0.882	1.7	ug/L	18	Standard
	Al	27	8369.0	3.3	**0.0734**	0.003	4.3	ug/L	548	Standard
	Sc	45	49423.9	3.8				ug/L	48374	Standard
	Ti	47	53.3	9.6	**0.0769**	0.025	32.3	ug/L	37	Standard
	V	51	334236.9	2.0	**53.9146**	0.416	0.8	ug/L	1312	Standard
	Cr	52	306498.5	1.5	**54.1622**	0.548	1.0	ug/L	5560	Standard
	Cr	53	38567.4	2.2	**54.1217**	0.853	1.6	ug/L	495	Standard
	Mn	55	494343.4	2.2	**52.1284**	0.507	1.0	ug/L	1474	Standard
	Co	59	381220.7	2.4	**52.2066**	0.843	1.6	ug/L	432	Standard
	Ni	60	82884.5	2.1	**53.0050**	0.098	0.2	ug/L	135	Standard
	Cu	65	87545.0	2.7	**52.9871**	0.570	1.1	ug/L	523	Standard
	Zn	66	51928.5	1.8	**51.1169**	0.292	0.6	ug/L	311	Standard
>	Ge	72	631626.3	2.1				ug/L	688742	Standard
	As	75	52555.8	2.0	**48.7037**	0.378	0.8	ug/L	-33	Standard
	Se	82	4647.5	2.0	**46.4460**	0.503	1.1	ug/L	12	Standard
	Se-1	77	3395.4	2.3	**48.7025**	0.113	0.2	ug/L	94	Standard
>	Ga	71	25.0	20.0				mg/L	28	Standard
	Rb	85	66.7	37.0				ug/L	25	Standard
	Y	89	438179.5	1.1				ug/L	487927	Standard
>	Rh	103	30.0	28.9				ug/L	15	Standard
	Mo	98	51.5	7.8	**-0.0033**	0.001	27.9	ug/L	46	Standard
	Ag	107	272493.1	1.4	**47.4233**	0.205	0.4	ug/L	103	Standard
	Cd	111	78895.5	2.1	**48.8900**	0.235	0.5	mg/L	4	Standard
	Cd	114	198162.3	1.9	**48.5034**	0.362	0.7	ug/L	25	Standard
>	In	115	544377.2	1.6				ug/L	577818	Standard
	Sn	118	269.3	5.3	**0.1132**	0.019	16.7	ug/L	203	Standard
	Sb	123	205162.6	0.8	**47.3639**	0.449	0.9	ug/L	270	Standard
	Ba	135	79683.3	1.3	**50.3103**	0.406	0.8	ug/L	35	Standard
	Ce	140	100.0	18.0				ug/L	25	Standard
>	Tb	159	806639.4	0.8				ug/L	866991	Standard
	Ho	165	31.7	45.6				ug/L	3	Standard
	Tl	203	336205.3	0.7	**51.2549**	0.194	0.4	ug/L	243	Standard
	Tl	205	807508.0	1.1	**51.2352**	0.141	0.3	ug/L	563	Standard
	Pb	206	268918.3	0.9	**50.5545**	0.368	0.7	ug/L	471	Standard
	Pb	207	233576.5	1.4	**48.5086**	0.156	0.3	ug/L	407	Standard
	Pb	208	262440.3	1.1	**49.8192**	0.288	0.6	ug/L	462	Standard
	U	238	203929.4	1.5	**46.0109**	0.766	1.7	ug/L	9	Standard
>	Bi	209	502790.4	1.1				ug/L	583182	Standard

Sample ID: LCSW 66 WG607701-03
Report Date/Time: Wednesday, March 29, 2017 15:37:21
Page 1

Approved: March 30, 2017

⌈	**Na**	23	1.7	173.2	**1.3213**	2.280	172.5	mg/L	0	Standard
|	**Mg**	24	15.0	57.7	**-0.6178**	0.202	32.7	mg/L	33	Standard
|	**K**	39	36.7	20.8	**0.0574**	0.036	62.2	mg/L	20	Standard
|	**Ca**	43	33.3	37.7	**496.4355**	233.579	47.1	mg/L	32	Standard
|	**Fe**	54	24.6	41.5	**-0.0522**	0.072	138.5	mg/L	18	Standard
|	**Fe**	57	290.0	10.5	**1.5409**	0.656	42.5	mg/L	245	Standard
⌊>	**Sc-1**	45	49423.9	3.8				mg/L	48374	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	1.3	43.3				ug/L	2	Standard
	Br	81	1976.8	9.2				ug/L	1940	Standard
	P	31	46.7	22.3				ug/L	42	Standard
	S	34	5.0	100.0				ug/L	3	Standard
	Sr	88	156.7	26.6				ug/L	115	Standard
	C	12	36.7	41.7				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	5.9	115.0				mg/L	30	Standard
	Ho-1	165	31.7	45.6				mg/L	3	Standard
	Er	166	16.7	124.9				mg/L	10	Standard
	I	127	2138.5	6.1				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		93.681	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		91.707	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: LCSW 66 WG607701-03
Report Date/Time: Wednesday, March 29, 2017 15:37:21
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	94.213
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	86.215
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 66 WG607701-03
Report Date/Time: Wednesday, March 29, 2017 15:37:21
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703136014 WG607701-01
Sample Date/Time: Wednesday, March 29, 2017 15:38:16
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	225067.8	1.0				ug/L	221697	Standard
	Be	9	461.7	7.0	**0.2023**	0.017	8.6	ug/L	18	Standard
	Al	27	3804735.1	1.4	**30.4639**	0.457	1.5	ug/L	548	Standard
	Sc	45	51957.3	1.0				ug/L	48374	Standard
	Ti	47	469.3	5.9	**1.7067**	0.105	6.1	ug/L	37	Standard
	V	51	4217.3	2.2	**0.4735**	0.015	3.3	ug/L	1312	Standard
	Cr	52	8735.9	1.5	**0.6374**	0.019	3.0	ug/L	5560	Standard
	Cr	53	9519.8	25.1	**12.8383**	3.419	26.6	ug/L	495	Standard
	Mn	55	410136.3	0.4	**43.0947**	0.293	0.7	ug/L	1474	Standard
	Co	59	13813.6	1.1	**1.8342**	0.027	1.5	ug/L	432	Standard
	Ni	60	4011.5	3.6	**2.4740**	0.099	4.0	ug/L	135	Standard
	Cu	65	3193.3	1.4	**1.6487**	0.031	1.9	ug/L	523	Standard
	Zn	66	20245.2	0.9	**19.6051**	0.228	1.2	ug/L	311	Standard
>	Ge	72	633496.7	0.3				ug/L	688742	Standard
	As	75	1010.7	5.4	**0.9359**	0.053	5.6	ug/L	-33	Standard
	Se	82	274.2	6.5	**2.5875**	0.184	7.1	ug/L	12	Standard
	Se-1	77	840.0	21.0	**11.2124**	2.610	23.3	ug/L	94	Standard
>	Ga	71	71.7	38.4				mg/L	28	Standard
	Rb	85	14416.9	1.9				ug/L	25	Standard
	Y	89	449747.7	0.9				ug/L	487927	Standard
>	Rh	103	25.0	69.3				ug/L	15	Standard
	Mo	98	2116.1	4.3	**0.6049**	0.030	4.9	ug/L	46	Standard
	Ag	107	123.7	13.6	**0.0003**	0.003	879.7	ug/L	103	Standard
	Cd	111	216.3	11.6	**0.1319**	0.014	11.0	mg/L	4	Standard
	Cd	114	531.5	7.6	**0.1234**	0.009	7.1	ug/L	25	Standard
>	In	115	532464.2	1.2				ug/L	577818	Standard
	Sn	118	255.0	4.2	**0.1034**	0.016	15.4	ug/L	203	Standard
	Sb	123	1566.8	5.4	**0.3428**	0.019	5.4	ug/L	270	Standard
	Ba	135	42748.9	0.8	**27.5840**	0.288	1.0	ug/L	35	Standard
	Ce	140	26174.3	0.9				ug/L	25	Standard
>	Tb	159	812800.9	0.7				ug/L	866991	Standard
	Ho	165	948.4	11.1				ug/L	3	Standard
	Tl	203	702.3	15.9	**0.0827**	0.018	22.0	ug/L	243	Standard
	Tl	205	1695.1	12.4	**0.0856**	0.014	16.9	ug/L	563	Standard
	Pb	206	1663.4	4.6	**0.2391**	0.013	5.5	ug/L	471	Standard
	Pb	207	1397.7	2.9	**0.2207**	0.010	4.3	ug/L	407	Standard
	Pb	208	1556.7	2.1	**0.2216**	0.007	3.2	ug/L	462	Standard
	U	238	776.0	7.2	**0.1729**	0.011	6.4	ug/L	9	Standard
>	Bi	209	498881.6	1.0				ug/L	583182	Standard

Sample ID: L1703136014 WG607701-01
Report Date/Time: Wednesday, March 29, 2017 15:40:26
Page 1

Approved: March 30, 2017

⌈	**Na**	23	18.3	31.5	**13.2242**	4.109	31.1	mg/L	0	Standard
|	**Mg**	24	4755.7	5.4	**112.8208**	6.879	6.1	mg/L	33	Standard
|	**K**	39	161.7	15.6	**0.7299**	0.144	19.7	mg/L	20	Standard
|	**Ca**	43	85.0	32.8	**-322.7807**	448.068	138.8	mg/L	32	Standard
|	**Fe**	54	47.8	5.6	**0.0816**	0.018	22.3	mg/L	18	Standard
|	**Fe**	57	371.7	12.8	**2.9001**	0.974	33.6	mg/L	245	Standard
⌊>	**Sc-1**	45	51957.3	1.0				mg/L	48374	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	4.7	49.5				ug/L	2	Standard
	Br	81	151743.3	3.4				ug/L	1940	Standard
	P	31	98.3	48.9				ug/L	42	Standard
	S	34	5.0	100.0				ug/L	3	Standard
	Sr	88	146.7	20.5				ug/L	115	Standard
	C	12	50.0	103.9				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	80.0	45.1				mg/L	3	Standard
	Dy	164	1266.4	10.7				mg/L	30	Standard
	Ho-1	165	948.4	11.1				mg/L	3	Standard
	Er	166	1260.1	15.9				mg/L	10	Standard
	I	127	4078408.9	6.2				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		101.520	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		91.979	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703136014 WG607701-01
Report Date/Time: Wednesday, March 29, 2017 15:40:26
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	92.151
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	85.545
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703136014 WG607701-01
Report Date/Time: Wednesday, March 29, 2017 15:40:26
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703136014S WG607701-04
Sample Date/Time: Wednesday, March 29, 2017 15:41:21
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	231033.5	1.9				ug/L	221697	Standard
	Be	9	103106.3	0.5	**48.0484**	0.679	1.4	ug/L	18	Standard
	Al	27	3796142.5	0.2	**29.6151**	0.491	1.7	ug/L	548	Standard
	Sc	45	52367.1	3.9				ug/L	48374	Standard
	Ti	47	447.3	4.2	**1.5827**	0.034	2.1	ug/L	37	Standard
	V	51	334173.4	0.4	**52.6110**	1.313	2.5	ug/L	1312	Standard
	Cr	52	301069.9	0.6	**51.8900**	1.367	2.6	ug/L	5560	Standard
	Cr	53	47878.9	1.3	**65.7271**	2.261	3.4	ug/L	495	Standard
	Mn	55	886477.7	1.2	**91.3457**	1.588	1.7	ug/L	1474	Standard
	Co	59	379212.1	1.4	**50.6813**	1.007	2.0	ug/L	432	Standard
	Ni	60	83199.2	0.9	**51.9362**	1.443	2.8	ug/L	135	Standard
	Cu	65	86242.8	0.8	**50.9456**	1.360	2.7	ug/L	523	Standard
	Zn	66	71575.3	1.3	**68.9163**	1.675	2.4	ug/L	311	Standard
>	Ge	72	647331.8	2.5				ug/L	688742	Standard
	As	75	55698.6	1.3	**50.3835**	1.444	2.9	ug/L	-33	Standard
	Se	82	4924.5	1.6	**48.0451**	1.483	3.1	ug/L	12	Standard
	Se-1	77	4250.3	2.5	**59.7561**	2.392	4.0	ug/L	94	Standard
>	Ga	71	68.3	18.4				mg/L	28	Standard
	Rb	85	14119.9	0.6				ug/L	25	Standard
	Y	89	453366.0	1.8				ug/L	487927	Standard
>	Rh	103	41.7	18.3				ug/L	15	Standard
	Mo	98	2102.5	0.9	**0.5932**	0.010	1.7	ug/L	46	Standard
	Ag	107	260973.2	1.2	**45.8701**	1.188	2.6	ug/L	103	Standard
	Cd	111	78654.0	1.6	**49.2327**	1.546	3.1	mg/L	4	Standard
	Cd	114	195421.6	1.1	**48.3092**	1.124	2.3	ug/L	25	Standard
>	In	115	539133.4	1.6				ug/L	577818	Standard
	Sn	118	277.0	2.5	**0.1249**	0.013	10.1	ug/L	203	Standard
	Sb	123	207969.3	0.7	**48.4847**	0.992	2.0	ug/L	270	Standard
	Ba	135	120539.9	0.5	**76.8709**	1.517	2.0	ug/L	35	Standard
	Ce	140	25700.1	0.5				ug/L	25	Standard
>	Tb	159	835268.2	1.4				ug/L	866991	Standard
	Ho	165	976.7	7.3				ug/L	3	Standard
	Tl	203	339292.1	0.9	**51.1172**	0.978	1.9	ug/L	243	Standard
	Tl	205	817769.7	0.8	**51.2750**	0.731	1.4	ug/L	563	Standard
	Pb	206	272094.7	1.3	**50.5527**	1.239	2.5	ug/L	471	Standard
	Pb	207	233951.0	0.5	**48.0154**	0.728	1.5	ug/L	407	Standard
	Pb	208	267711.9	0.9	**50.2230**	0.890	1.8	ug/L	462	Standard
	U	238	219899.7	1.1	**49.0290**	0.953	1.9	ug/L	9	Standard
>	Bi	209	508831.3	1.2				ug/L	583182	Standard

Sample ID: L1703136014S WG607701-04
Report Date/Time: Wednesday, March 29, 2017 15:43:31
Page 1

Approved: March 30, 2017

⌈	**Na**	23	18.3	56.8	**13.3336**	8.055	60.4	mg/L	0	Standard
|	**Mg**	24	4697.4	1.7	**110.6731**	6.188	5.6	mg/L	33	Standard
|	**K**	39	128.3	2.2	**0.5428**	0.032	5.9	mg/L	20	Standard
|	**Ca**	43	98.3	41.1	**-534.3627**	662.624	124.0	mg/L	32	Standard
|	**Fe**	54	29.9	45.2	**-0.0293**	0.087	296.2	mg/L	18	Standard
|	**Fe**	57	328.3	13.8	**1.9801**	1.071	54.1	mg/L	245	Standard
⌊>	**Sc-1**	45	52367.1	3.9				mg/L	48374	Standard
	Cl	35	2.0	0.0				ug/L	1	Standard
	Kr	83	2.3	99.0				ug/L	2	Standard
	Br	81	161085.4	2.3				ug/L	1940	Standard
	P	31	60.0	22.0				ug/L	42	Standard
	S	34	6.7	43.3				ug/L	3	Standard
	Sr	88	151.7	18.2				ug/L	115	Standard
	C	12	116.7	4.9				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	90.0	58.8				mg/L	3	Standard
	Dy	164	1384.0	6.4				mg/L	30	Standard
	Ho-1	165	976.7	7.3				mg/L	3	Standard
	Er	166	1240.1	9.8				mg/L	10	Standard
	I	127	5061021.0	4.6				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		104.211	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		93.988	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703136014S WG607701-04
Report Date/Time: Wednesday, March 29, 2017 15:43:31
Page 2

Approved: March 30, 2017

Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	93.305
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	87.251
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703136014S WG607701-04
Report Date/Time: Wednesday, March 29, 2017 15:43:31
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703136014SD WG607701-05
Sample Date/Time: Wednesday, March 29, 2017 15:44:26
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	237369.0	2.5				ug/L	221697	Standard
	Be	9	106439.5	3.0	**48.3137**	2.634	5.5	ug/L	18	Standard
	Al	27	4653802.2	1.6	**35.3531**	1.417	4.0	ug/L	548	Standard
	Sc	45	52385.4	2.7				ug/L	48374	Standard
	Ti	47	526.7	1.3	**1.9012**	0.055	2.9	ug/L	37	Standard
	V	51	334884.9	1.1	**53.0625**	1.442	2.7	ug/L	1312	Standard
	Cr	52	297424.9	1.4	**51.5865**	1.617	3.1	ug/L	5560	Standard
	Cr	53	49930.5	1.4	**69.0068**	2.097	3.0	ug/L	495	Standard
	Mn	55	971974.7	0.9	**100.8250**	2.490	2.5	ug/L	1474	Standard
	Co	59	380954.8	0.5	**51.2440**	1.049	2.0	ug/L	432	Standard
	Ni	60	82856.3	0.7	**52.0496**	1.179	2.3	ug/L	135	Standard
	Cu	65	86015.8	1.2	**51.1375**	1.428	2.8	ug/L	523	Standard
	Zn	66	76033.0	0.7	**73.7077**	1.652	2.2	ug/L	311	Standard
>	Ge	72	643139.4	1.7				ug/L	688742	Standard
	As	75	56552.1	0.4	**51.4749**	0.719	1.4	ug/L	-33	Standard
	Se	82	5165.3	0.7	**50.7151**	0.691	1.4	ug/L	12	Standard
	Se-1	77	4466.7	1.6	**63.2543**	1.874	3.0	ug/L	94	Standard
>	Ga	71	98.3	31.1				mg/L	28	Standard
	Rb	85	17999.0	2.6				ug/L	25	Standard
	Y	89	464497.6	0.3				ug/L	487927	Standard
>	Rh	103	50.0	75.5				ug/L	15	Standard
	Mo	98	2621.1	1.4	**0.7525**	0.006	0.8	ug/L	46	Standard
	Ag	107	263574.5	0.1	**46.8405**	0.786	1.7	ug/L	103	Standard
	Cd	111	79487.9	0.9	**50.3048**	1.130	2.2	mg/L	4	Standard
	Cd	114	197009.2	1.3	**49.2373**	0.550	1.1	ug/L	25	Standard
>	In	115	533187.4	1.6				ug/L	577818	Standard
	Sn	118	256.7	9.7	**0.1050**	0.030	28.9	ug/L	203	Standard
	Sb	123	209897.1	0.5	**49.4806**	0.987	2.0	ug/L	270	Standard
	Ba	135	130461.9	0.5	**84.1270**	1.523	1.8	ug/L	35	Standard
	Ce	140	31875.2	2.3				ug/L	25	Standard
>	Tb	159	830706.7	0.4				ug/L	866991	Standard
	Ho	165	1291.7	5.4				ug/L	3	Standard
	Tl	203	340184.3	1.3	**50.9943**	0.639	1.3	ug/L	243	Standard
	Tl	205	816615.6	1.1	**50.9488**	0.642	1.3	ug/L	563	Standard
	Pb	206	274566.8	1.4	**50.7528**	0.621	1.2	ug/L	471	Standard
	Pb	207	237936.3	1.5	**48.5899**	0.675	1.4	ug/L	407	Standard
	Pb	208	273688.9	1.5	**51.0885**	0.735	1.4	ug/L	462	Standard
	U	238	227029.0	2.7	**50.3623**	1.178	2.3	ug/L	9	Standard
>	Bi	209	511342.3	1.0				ug/L	583182	Standard

Sample ID: L1703136014SD WG607701-05
Report Date/Time: Wednesday, March 29, 2017 15:46:37
Page 1

Approved: March 30, 2017

⌈	**Na**	23	20.0	129.9	**14.4818**	18.919	130.6	mg/L	0	Standard
|	**Mg**	24	5837.8	2.3	**137.6345**	6.123	4.4	mg/L	33	Standard
|	**K**	39	173.3	6.0	**0.7858**	0.067	8.6	mg/L	20	Standard
|	**Ca**	43	85.0	32.8	**-313.7232**	459.455	146.5	mg/L	32	Standard
|	**Fe**	54	27.7	48.1	**-0.0446**	0.077	172.0	mg/L	18	Standard
|	**Fe**	57	380.0	7.9	**3.0088**	0.644	21.4	mg/L	245	Standard
⌊>	**Sc-1**	45	52385.4	2.7				mg/L	48374	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	2.3	24.7				ug/L	2	Standard
	Br	81	181079.4	2.5				ug/L	1940	Standard
	P	31	76.7	10.0				ug/L	42	Standard
	S	34	5.0	100.0				ug/L	3	Standard
	Sr	88	135.0	12.8				ug/L	115	Standard
	C	12	120.0	43.3				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	60.0	50.0				mg/L	3	Standard
	Dy	164	1609.5	7.2				mg/L	30	Standard
	Ho-1	165	1291.7	5.4				mg/L	3	Standard
	Er	166	1613.4	11.2				mg/L	10	Standard
	I	127	5419264.0	4.1				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		107.069	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		93.379	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703136014SD WG607701-05
Report Date/Time: Wednesday, March 29, 2017 15:46:37
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	92.276
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	87.681
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1703136014SD WG607701-05
Report Date/Time: Wednesday, March 29, 2017 15:46:37
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703136001
Sample Date/Time: Wednesday, March 29, 2017 15:47:32
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	228865.9	1.7				ug/L	221697	Standard
	Be	9	83.3	74.5	**0.0207**	0.030	144.2	ug/L	18	Standard
	Al	27	2787591.0	2.4	**21.9474**	0.256	1.2	ug/L	548	Standard
	Sc	45	51254.9	0.5				ug/L	48374	Standard
	Ti	47	251.0	9.7	**0.8229**	0.090	11.0	ug/L	37	Standard
	V	51	5461.7	7.3	**0.6499**	0.071	10.9	ug/L	1312	Standard
	Cr	52	7648.3	0.3	**0.4038**	0.010	2.6	ug/L	5560	Standard
	Cr	53	3527.1	8.8	**4.2069**	0.445	10.6	ug/L	495	Standard
	Mn	55	107771.6	0.9	**10.8920**	0.158	1.5	ug/L	1474	Standard
	Co	59	2031.1	7.6	**0.2160**	0.022	10.3	ug/L	432	Standard
	Ni	60	2413.5	0.2	**1.4097**	0.016	1.1	ug/L	135	Standard
	Cu	65	3157.7	1.7	**1.5727**	0.018	1.1	ug/L	523	Standard
	Zn	66	3538.7	2.1	**2.9711**	0.059	2.0	ug/L	311	Standard
>	Ge	72	651964.9	1.1				ug/L	688742	Standard
	As	75	632.6	9.0	**0.5702**	0.056	9.8	ug/L	-33	Standard
	Se	82	112.2	11.7	**0.9376**	0.139	14.8	ug/L	12	Standard
	Se-1	77	336.3	10.9	**3.7099**	0.569	15.3	ug/L	94	Standard
>	Ga	71	61.7	52.1				mg/L	28	Standard
	Rb	85	4975.8	2.2				ug/L	25	Standard
	Y	89	462894.0	1.5				ug/L	487927	Standard
>	Rh	103	41.7	36.7				ug/L	15	Standard
	Mo	98	8723.4	1.1	**2.4416**	0.018	0.7	ug/L	46	Standard
	Ag	107	269.7	85.3	**0.0242**	0.039	161.0	ug/L	103	Standard
	Cd	111	79.4	96.7	**0.0431**	0.046	107.7	mg/L	4	Standard
	Cd	114	272.5	62.0	**0.0557**	0.040	72.4	ug/L	25	Standard
>	In	115	555908.9	0.6				ug/L	577818	Standard
	Sn	118	280.0	3.7	**0.1185**	0.011	9.1	ug/L	203	Standard
	Sb	123	1237.7	14.5	**0.2527**	0.040	15.9	ug/L	270	Standard
	Ba	135	88904.8	1.6	**54.9687**	0.950	1.7	ug/L	35	Standard
	Ce	140	16335.5	0.8				ug/L	25	Standard
>	Tb	159	841831.1	0.3				ug/L	866991	Standard
	Ho	165	256.7	20.8				ug/L	3	Standard
	Tl	203	674.3	29.4	**0.0726**	0.030	41.1	ug/L	243	Standard
	Tl	205	1651.8	35.4	**0.0770**	0.036	47.3	ug/L	563	Standard
	Pb	206	767.0	18.2	**0.0609**	0.026	43.5	ug/L	471	Standard
	Pb	207	636.0	16.0	**0.0535**	0.021	39.9	ug/L	407	Standard
	Pb	208	706.3	13.5	**0.0511**	0.019	36.4	ug/L	462	Standard
	U	238	1187.4	8.0	**0.2513**	0.023	9.1	ug/L	9	Standard
>	Bi	209	529001.6	1.0				ug/L	583182	Standard

Sample ID: L1703136001
Report Date/Time: Wednesday, March 29, 2017 15:49:43
Page 1

Approved: March 30, 2017

⌈	**Na**	23	60.0	8.3	**43.8970**	3.745	8.5	mg/L	0	Standard
|	**Mg**	24	663.3	1.7	**15.0982**	0.357	2.4	mg/L	33	Standard
|	**K**	39	71.7	28.2	**0.2444**	0.113	46.2	mg/L	20	Standard
|	**Ca**	43	190.0	9.5	**-2104.0519**	314.294	14.9	mg/L	32	Standard
|	**Fe**	54	27.9	72.4	**-0.0382**	0.126	331.2	mg/L	18	Standard
|	**Fe**	57	456.7	7.1	**4.7599**	0.693	14.6	mg/L	245	Standard
⌊>	**Sc-1**	45	51254.9	0.5				mg/L	48374	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	2.7	21.7				ug/L	2	Standard
	Br	81	45274.3	4.9				ug/L	1940	Standard
	P	31	35.0	28.6				ug/L	42	Standard
	S	34	8.3	69.3				ug/L	3	Standard
	Sr	88	151.7	28.4				ug/L	115	Standard
	C	12	103.3	5.6				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	13.3	43.3				mg/L	3	Standard
	Dy	164	327.4	21.8				mg/L	30	Standard
	Ho-1	165	256.7	20.8				mg/L	3	Standard
	Er	166	193.3	13.0				mg/L	10	Standard
	I	127	293799.3	7.9				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		103.233	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		94.660	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703136001
Report Date/Time: Wednesday, March 29, 2017 15:49:43
Page 2

Approved: March 30, 2017

Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	96.208
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	90.710
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703136001
Report Date/Time: Wednesday, March 29, 2017 15:49:43
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703136002
Sample Date/Time: Wednesday, March 29, 2017 15:50:37
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	229274.6	3.3				ug/L	221697	Standard
	Be	9	28.3	27.0	**-0.0054**	0.004	69.0	ug/L	18	Standard
	Al	27	1174675.2	0.9	**9.2406**	0.352	3.8	ug/L	548	Standard
	Sc	45	49964.0	2.9				ug/L	48374	Standard
	Ti	47	812.7	4.5	**2.9056**	0.133	4.6	ug/L	37	Standard
	V	51	2603.5	1.8	**0.1936**	0.012	6.1	ug/L	1312	Standard
	Cr	52	7137.7	3.8	**0.2914**	0.010	3.3	ug/L	5560	Standard
	Cr	53	3135.3	1.0	**3.5898**	0.182	5.1	ug/L	495	Standard
	Mn	55	1860730.0	0.7	**187.0754**	7.479	4.0	ug/L	1474	Standard
	Co	59	9272.5	2.0	**1.1556**	0.055	4.7	ug/L	432	Standard
	Ni	60	1668.1	2.9	**0.9278**	0.028	3.0	ug/L	135	Standard
	Cu	65	1577.1	1.6	**0.6238**	0.017	2.8	ug/L	523	Standard
	Zn	66	3503.7	1.6	**2.8778**	0.165	5.7	ug/L	311	Standard
>	Ge	72	664459.2	3.5				ug/L	688742	Standard
	As	75	206.6	16.7	**0.1848**	0.036	19.2	ug/L	-33	Standard
	Se	82	63.3	4.5	**0.4507**	0.048	10.6	ug/L	12	Standard
	Se-1	77	267.0	10.8	**2.6530**	0.424	16.0	ug/L	94	Standard
>	Ga	71	96.7	7.9				mg/L	28	Standard
	Rb	85	7945.4	1.4				ug/L	25	Standard
	Y	89	466394.1	2.6				ug/L	487927	Standard
>	Rh	103	20.0	25.0				ug/L	15	Standard
	Mo	98	291281.8	2.3	**81.1281**	3.969	4.9	ug/L	46	Standard
	Ag	107	117.7	15.0	**-0.0018**	0.003	172.5	ug/L	103	Standard
	Cd	111	-165.4	5.3	**-0.1043**	0.007	6.8	mg/L	4	Standard
	Cd	114	459.6	8.1	**0.0993**	0.010	10.5	ug/L	25	Standard
>	In	115	563234.5	3.3				ug/L	577818	Standard
	Sn	118	265.0	4.4	**0.0981**	0.007	7.2	ug/L	203	Standard
	Sb	123	444.0	5.4	**0.0721**	0.008	11.5	ug/L	270	Standard
	Ba	135	68505.9	1.7	**41.8268**	1.438	3.4	ug/L	35	Standard
	Ce	140	6616.4	5.7				ug/L	25	Standard
>	Tb	159	854825.6	3.2				ug/L	866991	Standard
	Ho	165	305.0	10.8				ug/L	3	Standard
	Tl	203	548.0	4.4	**0.0526**	0.004	7.4	ug/L	243	Standard
	Tl	205	1363.4	3.5	**0.0578**	0.004	6.8	ug/L	563	Standard
	Pb	206	887.4	1.6	**0.0792**	0.004	5.6	ug/L	471	Standard
	Pb	207	759.7	2.2	**0.0750**	0.005	7.0	ug/L	407	Standard
	Pb	208	880.7	2.9	**0.0793**	0.004	4.6	ug/L	462	Standard
	U	238	198.7	4.1	**0.0383**	0.002	5.5	ug/L	9	Standard
>	Bi	209	539588.8	3.0				ug/L	583182	Standard

Sample ID: L1703136002
Report Date/Time: Wednesday, March 29, 2017 15:52:48
Page 1

Approved: March 30, 2017

⌈	**Na**	23	11.7	99.0	**8.8030**	8.762	99.5	mg/L	0	Standard
|	**Mg**	24	1063.4	7.5	**25.5088**	2.623	10.3	mg/L	33	Standard
|	**K**	39	210.0	9.5	**1.0374**	0.092	8.9	mg/L	20	Standard
|	**Ca**	43	68.3	25.7	**-92.3724**	279.089	302.1	mg/L	32	Standard
|	**Fe**	54	37.6	34.9	**0.0301**	0.090	300.4	mg/L	18	Standard
|	**Fe**	57	323.3	14.6	**2.1639**	0.846	39.1	mg/L	245	Standard
⌊>	**Sc-1**	45	49964.0	2.9				mg/L	48374	Standard
	Cl	35	1.3	173.2				ug/L	1	Standard
	Kr	83	1.3	114.6				ug/L	2	Standard
	Br	81	29675.7	1.0				ug/L	1940	Standard
	P	31	43.3	13.3				ug/L	42	Standard
	S	34	6.7	114.6				ug/L	3	Standard
	Sr	88	123.3	13.0				ug/L	115	Standard
	C	12	36.7	83.3				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	290.4	19.4				mg/L	30	Standard
	Ho-1	165	305.0	10.8				mg/L	3	Standard
	Er	166	340.0	10.2				mg/L	10	Standard
	I	127	499662.4	4.1				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		103.418	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		96.474	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703136002
Report Date/Time: Wednesday, March 29, 2017 15:52:48
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	97.476
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	92.525
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1703136002
Report Date/Time: Wednesday, March 29, 2017 15:52:48
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703136002PS WG608088-01
Sample Date/Time: Wednesday, March 29, 2017 15:58:04
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	226006.6	1.1				ug/L	221697	Standard
	Be	9	106474.5	1.2	**50.7178**	0.782	1.5	ug/L	18	Standard
	Al	27	1185381.4	2.9	**9.4507**	0.174	1.8	ug/L	548	Standard
	Sc	45	49360.3	2.5				ug/L	48374	Standard
	Ti	47	845.7	6.4	**3.0631**	0.231	7.5	ug/L	37	Standard
	V	51	338868.8	1.4	**52.5175**	1.180	2.2	ug/L	1312	Standard
	Cr	52	307443.7	1.0	**52.1623**	0.713	1.4	ug/L	5560	Standard
	Cr	53	40980.4	1.6	**55.2602**	0.399	0.7	ug/L	495	Standard
	Mn	55	2761406.5	1.8	**280.4062**	2.619	0.9	ug/L	1474	Standard
	Co	59	397958.8	1.3	**52.3605**	0.709	1.4	ug/L	432	Standard
	Ni	60	83570.5	1.6	**51.3469**	0.864	1.7	ug/L	135	Standard
	Cu	65	89522.1	2.0	**52.0555**	0.897	1.7	ug/L	523	Standard
	Zn	66	55723.3	1.2	**52.7154**	0.876	1.7	ug/L	311	Standard
>	Ge	72	657432.7	1.4				ug/L	688742	Standard
	As	75	56580.2	1.5	**50.3800**	1.046	2.1	ug/L	-33	Standard
	Se	82	5052.9	1.1	**48.5229**	0.559	1.2	ug/L	12	Standard
	Se-1	77	3703.5	1.4	**51.1007**	1.347	2.6	ug/L	94	Standard
>	Ga	71	123.3	16.4				mg/L	28	Standard
	Rb	85	8008.8	2.0				ug/L	25	Standard
	Y	89	458136.8	0.8				ug/L	487927	Standard
>	Rh	103	31.7	39.7				ug/L	15	Standard
	Mo	98	288612.0	0.5	**82.1024**	0.645	0.8	ug/L	46	Standard
	Ag	107	257602.4	0.4	**44.2980**	0.234	0.5	ug/L	103	Standard
	Cd	111	81722.2	1.4	**50.0418**	0.432	0.9	mg/L	4	Standard
	Cd	114	205179.5	0.7	**49.6261**	0.096	0.2	ug/L	25	Standard
>	In	115	550917.1	0.8				ug/L	577818	Standard
	Sn	118	269.3	12.8	**0.1094**	0.038	34.4	ug/L	203	Standard
	Sb	123	218279.0	1.2	**49.7916**	0.611	1.2	ug/L	270	Standard
	Ba	135	149701.7	1.7	**93.4090**	0.999	1.1	ug/L	35	Standard
	Ce	140	6268.0	5.9				ug/L	25	Standard
>	Tb	159	838062.7	0.7				ug/L	866991	Standard
	Ho	165	281.7	2.7				ug/L	3	Standard
	Tl	203	346231.1	1.0	**50.4940**	0.687	1.4	ug/L	243	Standard
	Tl	205	827301.1	1.6	**50.2119**	0.554	1.1	ug/L	563	Standard
	Pb	206	280412.9	0.9	**50.4287**	0.622	1.2	ug/L	471	Standard
	Pb	207	252049.3	1.0	**50.0776**	0.417	0.8	ug/L	407	Standard
	Pb	208	283279.0	1.1	**51.4447**	0.547	1.1	ug/L	462	Standard
	U	238	232624.4	1.6	**50.2064**	0.787	1.6	ug/L	9	Standard
>	Bi	209	525598.4	0.9				ug/L	583182	Standard

Sample ID: L1703136002PS WG608088-01
Report Date/Time: Wednesday, March 29, 2017 16:00:15
Page 1

Approved: March 30, 2017

	Na	23	10.0	50.0	**7.5410**	3.620	48.0	mg/L	0	Standard
	Mg	24	1128.4	4.5	**27.4173**	0.675	2.5	mg/L	33	Standard
	K	39	183.3	25.9	**0.8958**	0.248	27.6	mg/L	20	Standard
	Ca	43	66.7	18.9	**-77.7022**	190.804	245.6	mg/L	32	Standard
	Fe	54	29.9	58.8	**-0.0209**	0.110	522.8	mg/L	18	Standard
	Fe	57	328.3	15.6	**2.3864**	1.243	52.1	mg/L	245	Standard
>	**Sc-1**	45	49360.3	2.5				mg/L	48374	Standard
	Cl	35	0.0					ug/L	1	Standard
	Kr	83	3.0	66.7				ug/L	2	Standard
	Br	81	30093.4	9.0				ug/L	1940	Standard
	P	31	61.7	26.1				ug/L	42	Standard
	S	34	3.3	86.6				ug/L	3	Standard
	Sr	88	161.7	17.0				ug/L	115	Standard
	C	12	93.3	27.0				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	336.6	11.8				mg/L	30	Standard
	Ho-1	165	281.7	2.7				mg/L	3	Standard
	Er	166	350.0	22.7				mg/L	10	Standard
	I	127	486412.7	4.8				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		101.944	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.454	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703136002PS WG608088-01
Report Date/Time: Wednesday, March 29, 2017 16:00:15
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	95.344
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	90.126
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1703136002PS WG608088-01
Report Date/Time: Wednesday, March 29, 2017 16:00:15
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703136002SDL WG608088-02
Sample Date/Time: Wednesday, March 29, 2017 16:02:33
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	216533.6	2.4				ug/L	221697	Standard
	Be	9	46.7	52.9	**0.0043**	0.012	270.1	ug/L	18	Standard
	Al	27	227014.8	0.8	**1.8909**	0.059	3.1	ug/L	548	Standard
	Sc	45	46785.5	2.3				ug/L	48374	Standard
	Ti	47	193.0	11.4	**0.6290**	0.077	12.3	ug/L	37	Standard
	V	51	1623.1	7.0	**0.0570**	0.021	37.3	ug/L	1312	Standard
	Cr	52	5542.7	1.0	**0.0735**	0.006	8.4	ug/L	5560	Standard
	Cr	53	1086.7	3.4	**0.9046**	0.044	4.9	ug/L	495	Standard
	Mn	55	360674.4	1.2	**38.1971**	0.821	2.1	ug/L	1474	Standard
	Co	59	2036.5	0.6	**0.2268**	0.005	2.2	ug/L	432	Standard
	Ni	60	402.7	1.6	**0.1710**	0.003	1.6	ug/L	135	Standard
	Cu	65	692.0	3.2	**0.1345**	0.017	12.4	ug/L	523	Standard
	Zn	66	1492.1	5.7	**1.0572**	0.093	8.8	ug/L	311	Standard
>	Ge	72	628345.1	1.3				ug/L	688742	Standard
	As	75	35.5	5.5	**0.0351**	0.002	5.7	ug/L	-33	Standard
	Se	82	23.2	12.0	**0.0808**	0.031	38.3	ug/L	12	Standard
	Se-1	77	132.7	9.0	**0.8849**	0.188	21.3	ug/L	94	Standard
>	Ga	71	55.0	18.2				mg/L	28	Standard
	Rb	85	1538.4	3.6				ug/L	25	Standard
	Y	89	424065.7	2.0				ug/L	487927	Standard
>	Rh	103	18.3	56.8				ug/L	15	Standard
	Mo	98	55166.6	0.7	**16.2956**	0.148	0.9	ug/L	46	Standard
	Ag	107	202.0	9.0	**0.0144**	0.003	19.7	ug/L	103	Standard
	Cd	111	-28.2	15.5	**-0.0230**	0.003	12.9	mg/L	4	Standard
	Cd	114	119.0	23.5	**0.0203**	0.007	32.4	ug/L	25	Standard
>	In	115	530118.0	1.6				ug/L	577818	Standard
	Sn	118	160.0	10.7	**-0.0053**	0.021	395.6	ug/L	203	Standard
	Sb	123	679.1	19.4	**0.1342**	0.034	25.1	ug/L	270	Standard
	Ba	135	13178.4	0.5	**8.5257**	0.153	1.8	ug/L	35	Standard
	Ce	140	1260.1	3.4				ug/L	25	Standard
>	Tb	159	802589.4	1.4				ug/L	866991	Standard
	Ho	165	78.3	28.8				ug/L	3	Standard
	Tl	203	331.3	14.3	**0.0239**	0.008	32.0	ug/L	243	Standard
	Tl	205	845.0	10.8	**0.0294**	0.006	21.2	ug/L	563	Standard
	Pb	206	538.3	0.5	**0.0221**	0.002	9.9	ug/L	471	Standard
	Pb	207	461.3	6.8	**0.0211**	0.008	37.2	ug/L	407	Standard
	Pb	208	539.7	8.8	**0.0231**	0.007	31.4	ug/L	462	Standard
	U	238	46.7	9.7	**0.0067**	0.001	12.4	ug/L	9	Standard
>	Bi	209	516647.1	1.7				ug/L	583182	Standard

Sample ID: L1703136002SDL WG608088-02
Report Date/Time: Wednesday, March 29, 2017 16:04:44
Page 1

Approved: March 30, 2017

	Na	23	3.3	86.6	**2.6432**	2.285	86.4	mg/L	0	Standard
	Mg	24	260.0	20.3	**5.9358**	1.539	25.9	mg/L	33	Standard
	K	39	65.0	23.1	**0.2413**	0.088	36.4	mg/L	20	Standard
	Ca	43	53.3	21.7	**98.9216**	218.193	220.6	mg/L	32	Standard
	Fe	54	22.7	33.8	**-0.0576**	0.052	89.5	mg/L	18	Standard
	Fe	57	250.0	7.2	**0.9897**	0.524	53.0	mg/L	245	Standard
>	**Sc-1**	45	46785.5	2.3				mg/L	48374	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	2.0	50.0				ug/L	2	Standard
	Br	81	6924.9	6.7				ug/L	1940	Standard
	P	31	51.7	5.6				ug/L	42	Standard
	S	34	8.3	91.7				ug/L	3	Standard
	Sr	88	136.7	30.7				ug/L	115	Standard
	C	12	30.0	88.2				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	76.8	26.0				mg/L	30	Standard
	Ho-1	165	78.3	28.8				mg/L	3	Standard
	Er	166	66.7	8.7				mg/L	10	Standard
	I	127	103872.0	4.6				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		97.671	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		91.231	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703136002SDL WG608088-02
Report Date/Time: Wednesday, March 29, 2017 16:04:44
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	91.745
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	88.591
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703136002SDL WG608088-02
Report Date/Time: Wednesday, March 29, 2017 16:04:44
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703136002SDL WG608088-02
Sample Date/Time: Wednesday, March 29, 2017 16:05:39
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	212454.2	0.8				ug/L	221697	Standard
	Be	9	35.0	86.9	**-0.0011**	0.015	1423.5	ug/L	18	Standard
	Al	27	45904.4	1.7	**0.3901**	0.006	1.4	ug/L	548	Standard
	Sc	45	45426.3	1.3				ug/L	48374	Standard
	Ti	47	68.3	14.7	**0.1405**	0.041	29.1	ug/L	37	Standard
	V	51	1463.6	17.8	**0.0338**	0.041	120.9	ug/L	1312	Standard
	Cr	52	5297.3	2.1	**0.0417**	0.013	32.3	ug/L	5560	Standard
	Cr	53	640.0	9.0	**0.2790**	0.080	28.6	ug/L	495	Standard
	Mn	55	76235.4	2.0	**8.0607**	0.099	1.2	ug/L	1474	Standard
	Co	59	668.7	12.9	**0.0395**	0.011	29.0	ug/L	432	Standard
	Ni	60	203.0	14.5	**0.0441**	0.018	41.1	ug/L	135	Standard
	Cu	65	494.7	9.0	**0.0176**	0.026	147.4	ug/L	523	Standard
	Zn	66	1220.7	3.2	**0.8020**	0.029	3.6	ug/L	311	Standard
>	Ge	72	620126.5	0.9				ug/L	688742	Standard
	As	75	-22.6	242.1	**-0.0194**	0.052	265.8	ug/L	-33	Standard
	Se	82	13.7	37.8	**-0.0140**	0.052	373.6	ug/L	12	Standard
	Se-1	77	111.7	6.1	**0.5968**	0.108	18.1	ug/L	94	Standard
>	Ga	71	23.3	32.7				mg/L	28	Standard
	Rb	85	331.7	3.8				ug/L	25	Standard
	Y	89	419433.9	1.6				ug/L	487927	Standard
>	Rh	103	13.3	21.7				ug/L	15	Standard
	Mo	98	10874.0	1.5	**3.2370**	0.070	2.2	ug/L	46	Standard
	Ag	107	224.7	20.6	**0.0190**	0.008	43.6	ug/L	103	Standard
	Cd	111	3.3	332.8	**-0.0029**	0.007	241.6	mg/L	4	Standard
	Cd	114	57.8	58.8	**0.0051**	0.009	168.6	ug/L	25	Standard
>	In	115	523695.3	1.0				ug/L	577818	Standard
	Sn	118	144.7	25.2	**-0.0210**	0.044	211.5	ug/L	203	Standard
	Sb	123	182.0	7.1	**0.0166**	0.004	21.4	ug/L	270	Standard
	Ba	135	2615.6	2.4	**1.6938**	0.051	3.0	ug/L	35	Standard
	Ce	140	276.7	11.8				ug/L	25	Standard
>	Tb	159	785847.0	1.0				ug/L	866991	Standard
	Ho	165	20.0	25.0				ug/L	3	Standard
	Tl	203	182.3	32.6	**0.0020**	0.009	437.5	ug/L	243	Standard
	Tl	205	390.0	41.9	**0.0014**	0.010	703.7	ug/L	563	Standard
	Pb	206	449.0	14.0	**0.0066**	0.011	165.0	ug/L	471	Standard
	Pb	207	377.7	12.5	**0.0049**	0.009	183.5	ug/L	407	Standard
	Pb	208	427.3	8.7	**0.0032**	0.006	196.3	ug/L	462	Standard
	U	238	34.0	117.5	**0.0040**	0.009	220.3	ug/L	9	Standard
>	Bi	209	511031.2	0.9				ug/L	583182	Standard

Approved: March 30, 2017

⌈	**Na**	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
|	**Mg**	24	80.0	16.5	**1.2011**	0.388	32.3	mg/L	33	Standard
|	**K**	39	30.0	16.7	**0.0351**	0.030	85.9	mg/L	20	Standard
|	**Ca**	43	46.7	22.3	**198.0040**	189.200	95.6	mg/L	32	Standard
|	**Fe**	54	11.1	69.2	**-0.1341**	0.054	40.5	mg/L	18	Standard
|	**Fe**	57	298.3	13.4	**2.2816**	0.960	42.1	mg/L	245	Standard
⌊>	**Sc-1**	45	45426.3	1.3				mg/L	48374	Standard
	Cl	35	1.3	173.2				ug/L	1	Standard
	Kr	83	4.0	0.0				ug/L	2	Standard
	Br	81	3017.0	7.6				ug/L	1940	Standard
	P	31	53.3	35.5				ug/L	42	Standard
	S	34	5.0	100.0				ug/L	3	Standard
	Sr	88	151.7	10.1				ug/L	115	Standard
	C	12	30.0	33.3				mg/L	37	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	16.0	35.2				mg/L	30	Standard
	Ho-1	165	20.0	25.0				mg/L	3	Standard
	Er	166	13.3	43.3				mg/L	10	Standard
	I	127	28066.0	0.6				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		95.831	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		90.038	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703136002SDL WG608088-02
Report Date/Time: Wednesday, March 29, 2017 16:07:50
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	90.633
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	87.628
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703136002SDL WG608088-02
Report Date/Time: Wednesday, March 29, 2017 16:07:50
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, March 29, 2017 16:08:46
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	225661.9	2.2				ug/L	221697	Standard
	Be	9	105232.5	0.9	**50.2203**	1.481	2.9	ug/L	18	Standard
	Al	27	6265514.5	1.0	**50.0535**	1.468	2.9	ug/L	548	Standard
	Sc	45	49729.8	1.5				ug/L	48374	Standard
	Ti	47	28012.9	1.3	**104.3791**	1.094	1.0	ug/L	37	Standard
	V	51	343870.2	0.6	**52.6257**	0.690	1.3	ug/L	1312	Standard
	Cr	52	312790.3	0.3	**52.4124**	0.540	1.0	ug/L	5560	Standard
	Cr	53	39277.5	2.2	**52.2830**	1.707	3.3	ug/L	495	Standard
	Mn	55	512143.0	0.7	**51.2383**	0.333	0.6	ug/L	1474	Standard
	Co	59	394493.5	0.8	**51.2573**	0.549	1.1	ug/L	432	Standard
	Ni	60	84368.9	0.8	**51.1908**	0.460	0.9	ug/L	135	Standard
	Cu	65	88604.3	1.0	**50.8748**	0.396	0.8	ug/L	523	Standard
	Zn	66	53743.8	1.5	**50.1841**	0.462	0.9	ug/L	311	Standard
>	Ge	72	665724.0	1.3				ug/L	688742	Standard
	As	75	56239.3	0.9	**49.4492**	0.486	1.0	ug/L	-33	Standard
	Se	82	5094.5	1.5	**48.3114**	0.674	1.4	ug/L	12	Standard
	Se-1	77	3602.4	0.4	**49.0416**	0.869	1.8	ug/L	94	Standard
>	Ga	71	68.3	15.2				mg/L	28	Standard
	Rb	85	276.7	18.2				ug/L	25	Standard
	Y	89	453072.7	0.5				ug/L	487927	Standard
>	Rh	103	35.0	14.3				ug/L	15	Standard
	Mo	98	350326.9	0.7	**97.1840**	0.840	0.9	ug/L	46	Standard
	Ag	107	290573.5	0.3	**48.7275**	0.180	0.4	ug/L	103	Standard
	Cd	111	84264.9	0.3	**50.3186**	0.257	0.5	mg/L	4	Standard
	Cd	114	216524.5	1.4	**51.0667**	0.402	0.8	ug/L	25	Standard
>	In	115	564957.4	0.6				ug/L	577818	Standard
	Sn	118	47273.6	1.4	**51.2190**	0.693	1.4	ug/L	203	Standard
	Sb	123	219193.2	0.5	**48.7560**	0.150	0.3	ug/L	270	Standard
	Ba	135	82614.6	0.8	**50.2588**	0.386	0.8	ug/L	35	Standard
	Ce	140	258.3	11.3				ug/L	25	Standard
>	Tb	159	841438.6	1.1				ug/L	866991	Standard
	Ho	165	11.7	24.7				ug/L	3	Standard
	Tl	203	348753.1	1.1	**49.7384**	0.453	0.9	ug/L	243	Standard
	Tl	205	843978.1	2.0	**50.0946**	0.779	1.6	ug/L	563	Standard
	Pb	206	282371.6	1.4	**49.6581**	0.545	1.1	ug/L	471	Standard
	Pb	207	257576.7	1.6	**50.0469**	0.629	1.3	ug/L	407	Standard
	Pb	208	286415.9	1.2	**50.8659**	0.385	0.8	ug/L	462	Standard
	U	238	236548.6	0.8	**49.9273**	0.180	0.4	ug/L	9	Standard
>	Bi	209	537433.2	0.5				ug/L	583182	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, March 29, 2017 16:10:57
Page 1

Approved: March 30, 2017

	Na	23	5.0	0.0	**3.7750**	0.058	1.5	mg/L	0	Standard
	Mg	24	336.7	5.6	**7.4213**	0.351	4.7	mg/L	33	Standard
	K	39	1176.7	8.2	**6.5439**	0.465	7.1	mg/L	20	Standard
	Ca	43	61.7	16.9	**12.3358**	194.085	1573.3	mg/L	32	Standard
	Fe	54	721.4	2.7	**4.4302**	0.057	1.3	mg/L	18	Standard
	Fe	57	448.3	10.1	**4.8650**	0.871	17.9	mg/L	245	Standard
>	**Sc-1**	45	49729.8	1.5				mg/L	48374	Standard
	Cl	35	2.0	100.0				ug/L	1	Standard
	Kr	83	2.7	142.0				ug/L	2	Standard
	Br	81	1720.1	9.0				ug/L	1940	Standard
	P	31	51.7	45.7				ug/L	42	Standard
	S	34	6.7	86.6				ug/L	3	Standard
	Sr	88	125.0	14.4				ug/L	115	Standard
	C	12	40.0	66.1				mg/L	37	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	12.5	117.7				mg/L	30	Standard
	Ho-1	165	11.7	24.7				mg/L	3	Standard
	Er	166	16.7	69.3				mg/L	10	Standard
	I	127	7415.2	4.8				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	100.441		
	Al	27	100.107		
	Sc	45			
	Ti	47	104.379		
	V	51	105.251		
	Cr	52	104.825		
	Cr	53			
	Mn	55	102.477		
	Co	59	102.515		
	Ni	60	102.382		
	Cu	65	101.750		
	Zn	66	100.368		
>	Ge	72		96.658	
	As	75	98.898		
	Se	82	96.623		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, March 29, 2017 16:10:57
Page 2

Approved: March 30, 2017

Rb	85			
Y	89			
Rh	103			
Mo	98	97.184		
Ag	107	97.455		
Cd	111	100.637		
Cd	114			
In	115			97.774
Sn	118	102.438		
Sb	123	97.512		
Ba	135	100.518		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.477		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.732		
U	238	99.855		
Bi	209			92.155
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Wednesday, March 29, 2017 16:10:57
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, March 29, 2017 16:11:51
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	226830.3	0.6				ug/L	221697	Standard
	Be	9	81.7	47.6	**0.0201**	0.019	93.1	ug/L	18	Standard
	Al	27	2898.7	50.1	**0.0239**	0.012	49.1	ug/L	548	Standard
	Sc	45	49331.9	1.2				ug/L	48374	Standard
	Ti	47	47.0	10.6	**0.0441**	0.020	46.4	ug/L	37	Standard
	V	51	1185.8	11.9	**-0.0231**	0.023	101.6	ug/L	1312	Standard
	Cr	52	4993.8	2.8	**-0.0672**	0.032	46.9	ug/L	5560	Standard
	Cr	53	538.3	20.1	**0.0869**	0.150	173.0	ug/L	495	Standard
	Mn	55	2500.9	28.4	**0.1037**	0.074	71.6	ug/L	1474	Standard
	Co	59	498.7	25.0	**0.0118**	0.017	143.6	ug/L	432	Standard
	Ni	60	203.0	6.2	**0.0365**	0.009	24.2	ug/L	135	Standard
	Cu	65	568.7	6.1	**0.0430**	0.023	53.9	ug/L	523	Standard
	Zn	66	403.3	4.7	**-0.0480**	0.021	43.3	ug/L	311	Standard
>	Ge	72	658733.1	0.9				ug/L	688742	Standard
	As	75	20.7	245.1	**0.0206**	0.045	220.4	ug/L	-33	Standard
	Se	82	18.4	46.7	**0.0231**	0.082	356.4	ug/L	12	Standard
	Se-1	77	88.0	6.8	**0.1659**	0.079	47.4	ug/L	94	Standard
>	Ga	71	21.7	74.2				mg/L	28	Standard
	Rb	85	30.0	57.7				ug/L	25	Standard
	Y	89	458042.2	0.5				ug/L	487927	Standard
>	Rh	103	10.0	100.0				ug/L	15	Standard
	Mo	98	338.4	25.8	**0.0766**	0.025	32.8	ug/L	46	Standard
	Ag	107	252.3	34.7	**0.0211**	0.015	72.7	ug/L	103	Standard
	Cd	111	29.6	85.4	**0.0128**	0.015	120.5	mg/L	4	Standard
	Cd	114	67.5	91.2	**0.0066**	0.015	226.6	ug/L	25	Standard
>	In	115	560411.7	1.1				ug/L	577818	Standard
	Sn	118	217.7	16.8	**0.0480**	0.042	88.1	ug/L	203	Standard
	Sb	123	402.8	26.1	**0.0634**	0.025	39.0	ug/L	270	Standard
	Ba	135	88.7	54.3	**0.0309**	0.030	98.2	ug/L	35	Standard
	Ce	140	15.0	88.2				ug/L	25	Standard
>	Tb	159	835060.5	1.3				ug/L	866991	Standard
	Ho	165	8.3	69.3				ug/L	3	Standard
	Tl	203	138.0	68.9	**-0.0056**	0.014	243.2	ug/L	243	Standard
	Tl	205	280.0	52.2	**-0.0062**	0.009	140.2	ug/L	563	Standard
	Pb	206	506.0	13.1	**0.0127**	0.012	93.3	ug/L	471	Standard
	Pb	207	466.0	10.0	**0.0184**	0.009	49.7	ug/L	407	Standard
	Pb	208	540.0	19.0	**0.0195**	0.018	94.9	ug/L	462	Standard
	U	238	93.3	89.9	**0.0162**	0.018	109.9	ug/L	9	Standard
>	Bi	209	536915.4	0.6				ug/L	583182	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, March 29, 2017 16:14:02
Page 1

Approved: March 30, 2017

	Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
	Mg	24	38.3	27.2	**-0.0245**	0.265	1080.3	mg/L	33	Standard
	K	39	13.3	57.3	**-0.0750**	0.044	59.2	mg/L	20	Standard
	Ca	43	38.3	39.8	**411.4446**	267.613	65.0	mg/L	32	Standard
	Fe	54	33.0	38.3	**0.0015**	0.083	5536.0	mg/L	18	Standard
	Fe	57	285.0	10.7	**1.4371**	0.576	40.1	mg/L	245	Standard
>	**Sc-1**	45	49331.9	1.2				mg/L	48374	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	3.7	56.8				ug/L	2	Standard
	Br	81	1836.8	1.9				ug/L	1940	Standard
	P	31	40.0	43.3				ug/L	42	Standard
	S	34	1.7	173.2				ug/L	3	Standard
	Sr	88	141.7	19.4				ug/L	115	Standard
	C	12	33.3	45.8				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	13.0	40.1				mg/L	30	Standard
	Ho-1	165	8.3	69.3				mg/L	3	Standard
	Er	166	6.7	173.2				mg/L	10	Standard
	I	127	5521.0	2.8				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.643	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, March 29, 2017 16:14:02
Page 2

Approved: March 30, 2017

Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	96.988
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	92.067
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Wednesday, March 29, 2017 16:14:02
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703136003
Sample Date/Time: Wednesday, March 29, 2017 16:14:58
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	227155.5	1.8				ug/L	221697	Standard
	Be	9	190.0	38.0	**0.0713**	0.034	48.1	ug/L	18	Standard
	Al	27	13251461.1	0.9	**105.1439**	2.181	2.1	ug/L	548	Standard
	Sc	45	51632.8	1.5				ug/L	48374	Standard
	Ti	47	3254.7	6.9	**12.1768**	0.928	7.6	ug/L	37	Standard
	V	51	14699.0	0.6	**2.0814**	0.027	1.3	ug/L	1312	Standard
	Cr	52	11815.9	1.2	**1.1140**	0.005	0.5	ug/L	5560	Standard
	Cr	53	6606.4	6.7	**8.3695**	0.486	5.8	ug/L	495	Standard
	Mn	55	8658549.5	0.4	**880.4296**	14.529	1.7	ug/L	1474	Standard
	Co	59	47094.4	0.5	**6.1541**	0.053	0.9	ug/L	432	Standard
	Ni	60	5411.6	1.7	**3.2449**	0.027	0.8	ug/L	135	Standard
	Cu	65	2614.2	2.4	**1.2412**	0.054	4.4	ug/L	523	Standard
	Zn	66	6983.6	1.5	**6.2343**	0.128	2.0	ug/L	311	Standard
>	Ge	72	656881.8	1.3				ug/L	688742	Standard
	As	75	17421.6	2.0	**15.5264**	0.360	2.3	ug/L	-33	Standard
	Se	82	1650.1	3.2	**15.7577**	0.605	3.8	ug/L	12	Standard
	Se-1	77	598.0	2.2	**7.3580**	0.082	1.1	ug/L	94	Standard
>	Ga	71	1473.4	6.9				mg/L	28	Standard
	Rb	85	240751.0	0.6				ug/L	25	Standard
	Y	89	523565.8	0.4				ug/L	487927	Standard
>	Rh	103	83.3	9.2				ug/L	15	Standard
	Mo	98	15671.7	1.2	**4.4274**	0.049	1.1	ug/L	46	Standard
	Ag	107	133.3	9.8	**0.0012**	0.002	192.4	ug/L	103	Standard
	Cd	111	24.4	23.4	**0.0099**	0.003	35.3	mg/L	4	Standard
	Cd	114	133.3	55.3	**0.0225**	0.018	78.6	ug/L	25	Standard
>	In	115	552581.1	0.3				ug/L	577818	Standard
	Sn	118	312.7	4.5	**0.1568**	0.017	10.6	ug/L	203	Standard
	Sb	123	510.1	12.3	**0.0889**	0.015	16.3	ug/L	270	Standard
	Ba	135	640895.3	0.2	**398.7840**	0.563	0.1	ug/L	35	Standard
	Ce	140	118486.5	1.2				ug/L	25	Standard
>	Tb	159	852971.4	0.8				ug/L	866991	Standard
	Ho	165	3990.5	5.1				ug/L	3	Standard
	Tl	203	930.4	11.2	**0.1104**	0.015	13.8	ug/L	243	Standard
	Tl	205	2251.8	11.1	**0.1138**	0.016	13.6	ug/L	563	Standard
	Pb	206	5197.2	1.4	**0.8591**	0.007	0.8	ug/L	471	Standard
	Pb	207	4308.6	3.2	**0.7846**	0.029	3.7	ug/L	407	Standard
	Pb	208	4976.3	2.0	**0.8281**	0.023	2.8	ug/L	462	Standard
	U	238	4553.4	2.8	**0.9789**	0.026	2.7	ug/L	9	Standard
>	Bi	209	525790.4	0.8				ug/L	583182	Standard

Sample ID: L1703136003
Report Date/Time: Wednesday, March 29, 2017 16:17:09
Page 1

Approved: March 30, 2017

⌈	**Na**	23	36.7	20.8	**26.5871**	5.179	19.5	mg/L	0	Standard
|	**Mg**	24	4208.9	3.3	**100.3218**	1.935	1.9	mg/L	33	Standard
|	**K**	39	14568.7	4.1	**79.7661**	3.977	5.0	mg/L	20	Standard
|	**Ca**	43	133.3	28.1	**-1134.0454**	598.686	52.8	mg/L	32	Standard
|	**Fe**	54	1096.0	4.5	**6.5855**	0.402	6.1	mg/L	18	Standard
|	**Fe**	57	671.7	4.3	**9.1032**	0.674	7.4	mg/L	245	Standard
⌊>	**Sc-1**	45	51632.8	1.5				mg/L	48374	Standard
	Cl	35	2.0	100.0				ug/L	1	Standard
	Kr	83	1.7	34.6				ug/L	2	Standard
	Br	81	1036811.1	2.5				ug/L	1940	Standard
	P	31	63.3	9.1				ug/L	42	Standard
	S	34	3.3	173.2				ug/L	3	Standard
	Sr	88	176.7	14.0				ug/L	115	Standard
	C	12	160.0	10.8				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	13.3	114.6				mg/L	3	Standard
	Dy	164	5090.5	7.4				mg/L	30	Standard
	Ho-1	165	3990.5	5.1				mg/L	3	Standard
	Er	166	4394.0	2.4				mg/L	10	Standard
	I	127	1594198.8	9.5				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		102.462	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		95.374	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703136003
Report Date/Time: Wednesday, March 29, 2017 16:17:09
Page 2

Approved: March 30, 2017

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.632
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	90.159
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1703136003
Report Date/Time: Wednesday, March 29, 2017 16:17:09
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703136004
Sample Date/Time: Wednesday, March 29, 2017 16:18:03
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	230603.5	1.4				ug/L	221697	Standard
	Be	9	123.3	8.4	**0.0389**	0.006	14.3	ug/L	18	Standard
	Al	27	4139084.4	1.4	**32.3457**	0.406	1.3	ug/L	548	Standard
	Sc	45	51199.7	2.0				ug/L	48374	Standard
	Ti	47	242.3	15.1	**0.7658**	0.134	17.5	ug/L	37	Standard
	V	51	1869.2	10.4	**0.0783**	0.031	39.3	ug/L	1312	Standard
	Cr	52	6539.1	1.0	**0.1811**	0.013	7.0	ug/L	5560	Standard
	Cr	53	3760.5	6.5	**4.3933**	0.343	7.8	ug/L	495	Standard
	Mn	55	9381557.4	0.3	**936.0887**	2.915	0.3	ug/L	1474	Standard
	Co	59	54955.8	0.8	**7.0551**	0.031	0.4	ug/L	432	Standard
	Ni	60	2503.5	2.1	**1.4250**	0.025	1.8	ug/L	135	Standard
	Cu	65	1419.7	1.3	**0.5264**	0.008	1.6	ug/L	523	Standard
	Zn	66	3500.7	2.0	**2.8471**	0.053	1.9	ug/L	311	Standard
>	Ge	72	669326.6	0.4				ug/L	688742	Standard
	As	75	5122.5	2.2	**4.4812**	0.088	2.0	ug/L	-33	Standard
	Se	82	173.9	9.5	**1.4917**	0.157	10.5	ug/L	12	Standard
	Se-1	77	296.0	6.4	**3.0247**	0.281	9.3	ug/L	94	Standard
>	Ga	71	58.3	4.9				mg/L	28	Standard
	Rb	85	182860.2	1.1				ug/L	25	Standard
	Y	89	476644.9	0.9				ug/L	487927	Standard
>	Rh	103	43.3	24.0				ug/L	15	Standard
	Mo	98	1838.1	1.4	**0.4889**	0.010	2.1	ug/L	46	Standard
	Ag	107	115.3	5.1	**-0.0024**	0.001	36.8	ug/L	103	Standard
	Cd	111	48.6	17.9	**0.0238**	0.005	22.6	mg/L	4	Standard
	Cd	114	194.3	14.6	**0.0360**	0.007	18.1	ug/L	25	Standard
>	In	115	568331.0	1.0				ug/L	577818	Standard
	Sn	118	276.3	5.9	**0.1078**	0.018	16.5	ug/L	203	Standard
	Sb	123	259.7	6.8	**0.0303**	0.004	14.0	ug/L	270	Standard
	Ba	135	124085.0	0.4	**75.0553**	0.838	1.1	ug/L	35	Standard
	Ce	140	2381.9	1.7				ug/L	25	Standard
>	Tb	159	866703.5	1.6				ug/L	866991	Standard
	Ho	165	268.3	3.9				ug/L	3	Standard
	Tl	203	835.7	5.6	**0.0906**	0.006	6.1	ug/L	243	Standard
	Tl	205	2101.8	3.7	**0.0985**	0.003	3.5	ug/L	563	Standard
	Pb	206	566.0	6.2	**0.0205**	0.007	32.6	ug/L	471	Standard
	Pb	207	491.7	3.6	**0.0207**	0.003	12.1	ug/L	407	Standard
	Pb	208	537.3	5.4	**0.0163**	0.006	34.7	ug/L	462	Standard
	U	238	99.0	17.2	**0.0168**	0.004	21.6	ug/L	9	Standard
>	Bi	209	552440.9	1.0				ug/L	583182	Standard

Sample ID: L1703136004
Report Date/Time: Wednesday, March 29, 2017 16:20:14
Page 1

Approved: March 30, 2017

⌈	**Na**	23	8.3	34.6	**6.1360**	2.209	36.0	mg/L	0	Standard
|	**Mg**	24	1510.1	7.2	**35.7106**	3.262	9.1	mg/L	33	Standard
|	**K**	39	3153.7	6.5	**17.3080**	1.470	8.5	mg/L	20	Standard
|	**Ca**	43	88.3	17.3	**-405.6203**	281.958	69.5	mg/L	32	Standard
|	**Fe**	54	269.5	17.9	**1.4758**	0.329	22.3	mg/L	18	Standard
|	**Fe**	57	391.7	11.2	**3.4162**	0.756	22.1	mg/L	245	Standard
⌊>	**Sc-1**	45	51199.7	2.0				mg/L	48374	Standard
	Cl	35	2.0	100.0				ug/L	1	Standard
	Kr	83	1.0	173.2				ug/L	2	Standard
	Br	81	105902.7	4.7				ug/L	1940	Standard
	P	31	51.7	39.1				ug/L	42	Standard
	S	34	6.7	114.6				ug/L	3	Standard
	Sr	88	161.7	10.9				ug/L	115	Standard
	C	12	66.7	17.3				mg/L	37	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	258.4	17.3				mg/L	30	Standard
	Ho-1	165	268.3	3.9				mg/L	3	Standard
	Er	166	450.0	9.7				mg/L	10	Standard
	I	127	561571.0	1.6				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		104.017	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		97.181	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703136004
Report Date/Time: Wednesday, March 29, 2017 16:20:14
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	98.358
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	94.729
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1703136004
Report Date/Time: Wednesday, March 29, 2017 16:20:14
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703136005
Sample Date/Time: Wednesday, March 29, 2017 16:21:08
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	235785.8	1.6				ug/L	221697	Standard
	Be	9	120.0	27.3	**0.0360**	0.015	40.8	ug/L	18	Standard
	Al	27	4056399.5	0.2	**31.0058**	0.436	1.4	ug/L	548	Standard
	Sc	45	51358.6	2.0				ug/L	48374	Standard
	Ti	47	258.7	9.5	**0.8137**	0.088	10.8	ug/L	37	Standard
	V	51	1890.0	12.8	**0.0777**	0.037	47.6	ug/L	1312	Standard
	Cr	52	6567.1	0.5	**0.1710**	0.008	4.8	ug/L	5560	Standard
	Cr	53	3507.1	2.7	**3.9905**	0.133	3.3	ug/L	495	Standard
	Mn	55	9258236.1	0.8	**911.4792**	8.938	1.0	ug/L	1474	Standard
	Co	59	53672.9	1.0	**6.7968**	0.076	1.1	ug/L	432	Standard
	Ni	60	2467.2	1.5	**1.3833**	0.024	1.7	ug/L	135	Standard
	Cu	65	1399.7	3.3	**0.5042**	0.027	5.3	ug/L	523	Standard
	Zn	66	3812.5	2.0	**3.0916**	0.071	2.3	ug/L	311	Standard
>	Ge	72	678364.1	0.2				ug/L	688742	Standard
	As	75	5062.6	0.7	**4.3700**	0.030	0.7	ug/L	-33	Standard
	Se	82	175.2	4.0	**1.4818**	0.065	4.4	ug/L	12	Standard
	Se-1	77	290.3	2.9	**2.8920**	0.114	3.9	ug/L	94	Standard
>	Ga	71	58.3	17.8				mg/L	28	Standard
	Rb	85	182099.7	1.9				ug/L	25	Standard
	Y	89	474636.7	1.0				ug/L	487927	Standard
>	Rh	103	38.3	58.8				ug/L	15	Standard
	Mo	98	1864.7	0.8	**0.4961**	0.006	1.3	ug/L	46	Standard
	Ag	107	136.0	12.4	**0.0010**	0.003	276.6	ug/L	103	Standard
	Cd	111	61.9	18.5	**0.0317**	0.007	21.9	mg/L	4	Standard
	Cd	114	258.7	3.0	**0.0511**	0.001	2.7	ug/L	25	Standard
>	In	115	568394.4	0.7				ug/L	577818	Standard
	Sn	118	298.3	5.6	**0.1316**	0.019	14.4	ug/L	203	Standard
	Sb	123	266.7	18.2	**0.0319**	0.011	34.9	ug/L	270	Standard
	Ba	135	121290.9	0.4	**73.3553**	0.797	1.1	ug/L	35	Standard
	Ce	140	2513.5	3.0				ug/L	25	Standard
>	Tb	159	870361.5	0.8				ug/L	866991	Standard
	Ho	165	301.7	17.0				ug/L	3	Standard
	Tl	203	851.4	4.9	**0.0931**	0.006	6.0	ug/L	243	Standard
	Tl	205	2086.8	5.5	**0.0979**	0.007	7.2	ug/L	563	Standard
	Pb	206	611.7	4.6	**0.0285**	0.004	14.4	ug/L	471	Standard
	Pb	207	532.7	2.1	**0.0287**	0.001	5.0	ug/L	407	Standard
	Pb	208	613.3	3.2	**0.0296**	0.004	12.7	ug/L	462	Standard
	U	238	114.7	11.9	**0.0201**	0.003	13.2	ug/L	9	Standard
>	Bi	209	551357.6	0.7				ug/L	583182	Standard

Sample ID: L1703136005
Report Date/Time: Wednesday, March 29, 2017 16:23:19
Page 1

Approved: March 30, 2017

⌈	**Na**	23	18.3	15.7	**13.4065**	2.252	16.8	mg/L	0	Standard
|	**Mg**	24	1541.7	5.3	**36.3089**	1.251	3.4	mg/L	33	Standard
|	**K**	39	3237.0	1.7	**17.6975**	0.378	2.1	mg/L	20	Standard
|	**Ca**	43	70.0	31.1	**-96.5399**	392.067	406.1	mg/L	32	Standard
|	**Fe**	54	296.0	6.2	**1.6311**	0.079	4.9	mg/L	18	Standard
|	**Fe**	57	418.3	13.2	**3.9610**	1.246	31.4	mg/L	245	Standard
⌊>	**Sc-1**	45	51358.6	2.0				mg/L	48374	Standard
	Cl	35	3.3	34.6				ug/L	1	Standard
	Kr	83	4.7	32.7				ug/L	2	Standard
	Br	81	99690.3	1.8				ug/L	1940	Standard
	P	31	48.3	21.5				ug/L	42	Standard
	S	34	0.0					ug/L	3	Standard
	Sr	88	163.3	18.5				ug/L	115	Standard
	C	12	86.7	35.3				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	215.9	21.0				mg/L	30	Standard
	Ho-1	165	301.7	17.0				mg/L	3	Standard
	Er	166	433.3	17.5				mg/L	10	Standard
	I	127	489274.7	4.5				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		106.355	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
| >	Ge	72		98.493	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703136005
Report Date/Time: Wednesday, March 29, 2017 16:23:19
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	98.369
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	94.543
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1703136005
Report Date/Time: Wednesday, March 29, 2017 16:23:19
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703136006
Sample Date/Time: Wednesday, March 29, 2017 16:24:14
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	232634.2	1.5				ug/L	221697	Standard
	Be	9	43.3	46.6	**0.0012**	0.009	728.0	ug/L	18	Standard
	Al	27	1249771.8	2.2	**9.6817**	0.190	2.0	ug/L	548	Standard
	Sc	45	50905.4	0.7				ug/L	48374	Standard
	Ti	47	246.7	3.1	**0.7680**	0.028	3.7	ug/L	37	Standard
	V	51	2033.2	8.9	**0.0986**	0.028	28.4	ug/L	1312	Standard
	Cr	52	9387.6	1.8	**0.6398**	0.029	4.6	ug/L	5560	Standard
	Cr	53	1078.4	15.2	**0.7760**	0.212	27.3	ug/L	495	Standard
	Mn	55	5463286.7	0.8	**536.6798**	2.053	0.4	ug/L	1474	Standard
	Co	59	1630.1	1.1	**0.1538**	0.002	1.0	ug/L	432	Standard
	Ni	60	2407.5	0.5	**1.3448**	0.014	1.0	ug/L	135	Standard
	Cu	65	1151.0	1.6	**0.3619**	0.013	3.6	ug/L	523	Standard
	Zn	66	2270.8	2.3	**1.6624**	0.043	2.6	ug/L	311	Standard
>	Ge	72	679767.0	0.4				ug/L	688742	Standard
	As	75	881.8	1.5	**0.7613**	0.013	1.7	ug/L	-33	Standard
	Se	82	36.8	6.9	**0.1897**	0.025	13.3	ug/L	12	Standard
	Se-1	77	110.7	7.8	**0.4369**	0.123	28.2	ug/L	94	Standard
>	Ga	71	56.7	27.0				mg/L	28	Standard
	Rb	85	60276.3	0.3				ug/L	25	Standard
	Y	89	481393.3	1.0				ug/L	487927	Standard
>	Rh	103	35.0	51.5				ug/L	15	Standard
	Mo	98	2869.3	3.3	**0.7600**	0.025	3.3	ug/L	46	Standard
	Ag	107	119.0	0.0	**-0.0022**	0.000	1.2	ug/L	103	Standard
	Cd	111	15.3	17.0	**0.0039**	0.002	38.9	mg/L	4	Standard
	Cd	114	84.6	8.8	**0.0099**	0.002	17.3	ug/L	25	Standard
>	In	115	577970.1	0.1				ug/L	577818	Standard
	Sn	118	262.3	2.9	**0.0880**	0.008	9.1	ug/L	203	Standard
	Sb	123	303.5	8.5	**0.0388**	0.006	14.4	ug/L	270	Standard
	Ba	135	122505.6	0.6	**72.8586**	0.462	0.6	ug/L	35	Standard
	Ce	140	925.0	5.2				ug/L	25	Standard
>	Tb	159	875499.6	0.5				ug/L	866991	Standard
	Ho	165	33.3	45.8				ug/L	3	Standard
	Tl	203	206.7	4.8	**0.0029**	0.001	49.7	ug/L	243	Standard
	Tl	205	498.3	20.1	**0.0054**	0.006	103.4	ug/L	563	Standard
	Pb	206	626.3	2.7	**0.0291**	0.003	11.7	ug/L	471	Standard
	Pb	207	533.0	2.4	**0.0269**	0.002	6.9	ug/L	407	Standard
	Pb	208	629.3	2.0	**0.0305**	0.002	5.2	ug/L	462	Standard
	U	238	40.7	5.1	**0.0047**	0.000	9.2	ug/L	9	Standard
>	Bi	209	561370.2	0.6				ug/L	583182	Standard

Sample ID: L1703136006
Report Date/Time: Wednesday, March 29, 2017 16:26:25
Page 1

Approved: March 30, 2017

⌈	**Na**	23	48.3	59.7	**35.5276**	21.139	59.5	mg/L	0	Standard
|	**Mg**	24	130.0	7.7	**2.1846**	0.260	11.9	mg/L	33	Standard
|	**K**	39	360.0	3.7	**1.8510**	0.086	4.7	mg/L	20	Standard
|	**Ca**	43	206.7	24.5	**-2402.2451**	825.449	34.4	mg/L	32	Standard
|	**Fe**	54	971.2	2.6	**5.8933**	0.112	1.9	mg/L	18	Standard
|	**Fe**	57	663.3	3.8	**9.1260**	0.619	6.8	mg/L	245	Standard
⌊>	**Sc-1**	45	50905.4	0.7				mg/L	48374	Standard
	Cl	35	0.0					ug/L	1	Standard
	Kr	83	5.7	10.2				ug/L	2	Standard
	Br	81	9152.8	8.5				ug/L	1940	Standard
	P	31	41.7	48.5				ug/L	42	Standard
	S	34	5.0	100.0				ug/L	3	Standard
	Sr	88	141.7	17.4				ug/L	115	Standard
	C	12	96.7	11.9				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	34.4	57.6				mg/L	30	Standard
	Ho-1	165	33.3	45.8				mg/L	3	Standard
	Er	166	46.7	44.6				mg/L	10	Standard
	I	127	48308.8	7.2				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		104.933	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
| >	Ge	72		98.697	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703136006
Report Date/Time: Wednesday, March 29, 2017 16:26:25
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.026
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	96.260
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1703136006
Report Date/Time: Wednesday, March 29, 2017 16:26:25
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703136007
Sample Date/Time: Wednesday, March 29, 2017 16:27:19
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	233248.6	1.5				ug/L	221697	Standard
	Be	9	53.3	27.1	**0.0059**	0.007	115.5	ug/L	18	Standard
	Al	27	1713928.1	1.7	**13.2441**	0.332	2.5	ug/L	548	Standard
	Sc	45	51734.8	0.5				ug/L	48374	Standard
	Ti	47	313.0	3.9	**1.0028**	0.034	3.4	ug/L	37	Standard
	V	51	1463.6	9.7	**0.0116**	0.023	199.8	ug/L	1312	Standard
	Cr	52	6299.0	2.2	**0.1171**	0.022	19.1	ug/L	5560	Standard
	Cr	53	630.0	15.2	**0.1792**	0.123	68.8	ug/L	495	Standard
	Mn	55	8521570.2	1.0	**831.7505**	1.218	0.1	ug/L	1474	Standard
	Co	59	1417.7	1.1	**0.1256**	0.000	0.2	ug/L	432	Standard
	Ni	60	989.4	1.5	**0.4969**	0.014	2.9	ug/L	135	Standard
	Cu	65	1222.4	3.2	**0.3977**	0.018	4.5	ug/L	523	Standard
	Zn	66	2834.3	1.6	**2.1650**	0.018	0.8	ug/L	311	Standard
>	Ge	72	684220.3	1.0				ug/L	688742	Standard
	As	75	3651.1	1.7	**3.1251**	0.033	1.1	ug/L	-33	Standard
	Se	82	31.3	7.5	**0.1363**	0.019	14.2	ug/L	12	Standard
	Se-1	77	106.7	11.9	**0.3718**	0.159	42.7	ug/L	94	Standard
>	Ga	71	78.3	30.2				mg/L	28	Standard
	Rb	85	17096.3	1.1				ug/L	25	Standard
	Y	89	474748.4	2.8				ug/L	487927	Standard
>	Rh	103	40.0	37.5				ug/L	15	Standard
	Mo	98	871.9	1.5	**0.2186**	0.006	2.9	ug/L	46	Standard
	Ag	107	128.7	1.2	**-0.0006**	0.001	90.7	ug/L	103	Standard
	Cd	111	34.9	7.5	**0.0153**	0.002	11.8	mg/L	4	Standard
	Cd	114	106.9	13.8	**0.0151**	0.003	22.9	ug/L	25	Standard
>	In	115	577414.4	1.3				ug/L	577818	Standard
	Sn	118	302.0	6.6	**0.1303**	0.018	14.2	ug/L	203	Standard
	Sb	123	155.0	15.3	**0.0066**	0.006	84.3	ug/L	270	Standard
	Ba	135	100402.6	0.7	**59.7694**	0.397	0.7	ug/L	35	Standard
	Ce	140	1208.4	2.4				ug/L	25	Standard
>	Tb	159	875651.1	0.3				ug/L	866991	Standard
	Ho	165	50.0	52.9				ug/L	3	Standard
	Tl	203	163.3	16.0	**-0.0029**	0.004	128.0	ug/L	243	Standard
	Tl	205	365.0	27.0	**-0.0020**	0.006	292.1	ug/L	563	Standard
	Pb	206	817.7	6.2	**0.0622**	0.010	15.3	ug/L	471	Standard
	Pb	207	707.7	4.6	**0.0603**	0.007	11.1	ug/L	407	Standard
	Pb	208	810.3	3.6	**0.0621**	0.006	9.5	ug/L	462	Standard
	U	238	48.7	68.2	**0.0064**	0.007	106.8	ug/L	9	Standard
>	Bi	209	558097.0	0.7				ug/L	583182	Standard

Sample ID: L1703136007
Report Date/Time: Wednesday, March 29, 2017 16:29:30
Page 1

Approved: March 30, 2017

⌈	**Na**	23	38.3	7.5	**27.7797**	2.005	7.2	mg/L	0	Standard
|	**Mg**	24	168.3	37.6	**3.0492**	1.498	49.1	mg/L	33	Standard
|	**K**	39	330.0	1.5	**1.6543**	0.021	1.3	mg/L	20	Standard
|	**Ca**	43	136.7	28.4	**-1186.9178**	632.203	53.3	mg/L	32	Standard
|	**Fe**	54	432.8	12.7	**2.4661**	0.352	14.3	mg/L	18	Standard
|	**Fe**	57	480.0	9.0	**5.1522**	0.933	18.1	mg/L	245	Standard
⌊>	**Sc-1**	45	51734.8	0.5				mg/L	48374	Standard
	Cl	35	1.3	173.2				ug/L	1	Standard
	Kr	83	5.0	52.9				ug/L	2	Standard
	Br	81	7718.6	4.0				ug/L	1940	Standard
	P	31	38.3	15.1				ug/L	42	Standard
	S	34	5.0	100.0				ug/L	3	Standard
	Sr	88	160.0	25.0				ug/L	115	Standard
	C	12	80.0	33.1				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	63.6	71.3				mg/L	30	Standard
	Ho-1	165	50.0	52.9				mg/L	3	Standard
	Er	166	63.3	9.1				mg/L	10	Standard
	I	127	42740.2	3.2				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		105.210	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		99.344	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703136007
Report Date/Time: Wednesday, March 29, 2017 16:29:30
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	99.930
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	95.699
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1703136007
Report Date/Time: Wednesday, March 29, 2017 16:29:30
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703136008
Sample Date/Time: Wednesday, March 29, 2017 16:30:25
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	233295.9	1.2				ug/L	221697	Standard
	Be	9	76.7	13.6	**0.0167**	0.005	28.8	ug/L	18	Standard
	Al	27	4634977.3	1.2	**35.8010**	0.050	0.1	ug/L	548	Standard
	Sc	45	52917.2	0.6				ug/L	48374	Standard
	Ti	47	1071.7	0.5	**3.7717**	0.072	1.9	ug/L	37	Standard
	V	51	5139.8	2.4	**0.5637**	0.014	2.4	ug/L	1312	Standard
	Cr	52	7051.3	2.3	**0.2462**	0.024	9.9	ug/L	5560	Standard
	Cr	53	1191.7	11.3	**0.9214**	0.177	19.2	ug/L	495	Standard
	Mn	55	1484222.5	0.6	**145.2812**	1.610	1.1	ug/L	1474	Standard
	Co	59	19793.6	1.1	**2.4601**	0.020	0.8	ug/L	432	Standard
	Ni	60	1871.1	2.3	**1.0223**	0.025	2.5	ug/L	135	Standard
	Cu	65	1815.1	3.9	**0.7346**	0.044	6.0	ug/L	523	Standard
	Zn	66	2111.5	1.1	**1.5099**	0.015	1.0	ug/L	311	Standard
>	Ge	72	681751.1	1.3				ug/L	688742	Standard
	As	75	9219.2	1.2	**7.9173**	0.106	1.3	ug/L	-33	Standard
	Se	82	51.0	8.2	**0.3199**	0.034	10.8	ug/L	12	Standard
	Se-1	77	132.3	4.4	**0.7271**	0.095	13.1	ug/L	94	Standard
>	Ga	71	311.7	8.1				mg/L	28	Standard
	Rb	85	20734.2	1.8				ug/L	25	Standard
	Y	89	501853.4	2.2				ug/L	487927	Standard
>	Rh	103	21.7	53.3				ug/L	15	Standard
	Mo	98	54510.5	1.1	**14.9414**	0.064	0.4	ug/L	46	Standard
	Ag	107	119.0	3.4	**-0.0019**	0.001	27.0	ug/L	103	Standard
	Cd	111	-31.3	22.6	**-0.0235**	0.004	17.5	mg/L	4	Standard
	Cd	114	131.0	2.1	**0.0210**	0.000	1.9	ug/L	25	Standard
>	In	115	571188.7	1.3				ug/L	577818	Standard
	Sn	118	274.0	5.7	**0.1039**	0.018	17.5	ug/L	203	Standard
	Sb	123	584.0	1.5	**0.1014**	0.002	2.1	ug/L	270	Standard
	Ba	135	75833.3	1.7	**45.6286**	0.670	1.5	ug/L	35	Standard
	Ce	140	73236.6	0.8				ug/L	25	Standard
>	Tb	159	871352.7	1.3				ug/L	866991	Standard
	Ho	165	1373.4	6.8				ug/L	3	Standard
	Tl	203	293.0	1.9	**0.0155**	0.001	8.8	ug/L	243	Standard
	Tl	205	745.0	8.8	**0.0203**	0.004	17.5	ug/L	563	Standard
	Pb	206	856.7	1.2	**0.0708**	0.003	4.0	ug/L	471	Standard
	Pb	207	711.0	2.2	**0.0627**	0.003	4.5	ug/L	407	Standard
	Pb	208	793.3	0.7	**0.0611**	0.001	2.3	ug/L	462	Standard
	U	238	5156.9	2.2	**1.0593**	0.007	0.7	ug/L	9	Standard
>	Bi	209	550407.2	1.6				ug/L	583182	Standard

Sample ID: L1703136008
Report Date/Time: Wednesday, March 29, 2017 16:32:36
Page 1

Approved: March 30, 2017

⌈	**Na**	23	25.0	20.0	**17.7267**	3.623	20.4	mg/L	0	Standard
|	**Mg**	24	1053.4	8.2	**23.7468**	1.885	7.9	mg/L	33	Standard
|	**K**	39	186.7	14.8	**0.8464**	0.142	16.8	mg/L	20	Standard
|	**Ca**	43	111.7	26.2	**-731.0616**	464.805	63.6	mg/L	32	Standard
|	**Fe**	54	84.7	29.2	**0.2990**	0.148	49.5	mg/L	18	Standard
|	**Fe**	57	341.7	10.8	**2.1587**	0.705	32.7	mg/L	245	Standard
⌊>	**Sc-1**	45	52917.2	0.6				mg/L	48374	Standard
	Cl	35	2.0	100.0				ug/L	1	Standard
	Kr	83	1.3	114.6				ug/L	2	Standard
	Br	81	14583.7	3.3				ug/L	1940	Standard
	P	31	48.3	11.9				ug/L	42	Standard
	S	34	3.3	173.2				ug/L	3	Standard
	Sr	88	116.7	20.3				ug/L	115	Standard
	C	12	100.0	26.5				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	3	Standard
	Dy	164	1661.5	4.7				mg/L	30	Standard
	Ho-1	165	1373.4	6.8				mg/L	3	Standard
	Er	166	1293.4	5.3				mg/L	10	Standard
	I	127	313088.0	7.9				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		105.232	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		98.985	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703136008
Report Date/Time: Wednesday, March 29, 2017 16:32:36
Page 2

Approved: March 30, 2017

Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		98.853
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		94.380
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1703136008
Report Date/Time: Wednesday, March 29, 2017 16:32:36
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703136009
Sample Date/Time: Wednesday, March 29, 2017 16:33:30
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	235713.3	2.2				ug/L	221697	Standard
	Be	9	213.3	8.2	**0.0788**	0.008	10.7	ug/L	18	Standard
	Al	27	293730.4	1.8	**2.2473**	0.078	3.5	ug/L	548	Standard
	Sc	45	52994.2	1.7				ug/L	48374	Standard
	Ti	47	2710.9	1.6	**9.7854**	0.069	0.7	ug/L	37	Standard
	V	51	17994.6	1.8	**2.5044**	0.077	3.1	ug/L	1312	Standard
	Cr	52	12353.0	1.5	**1.1378**	0.007	0.6	ug/L	5560	Standard
	Cr	53	1706.8	2.1	**1.6085**	0.024	1.5	ug/L	495	Standard
	Mn	55	129295.0	0.8	**12.5746**	0.258	2.1	ug/L	1474	Standard
	Co	59	4719.4	1.4	**0.5483**	0.014	2.5	ug/L	432	Standard
	Ni	60	1596.4	3.2	**0.8636**	0.040	4.7	ug/L	135	Standard
	Cu	65	2143.5	0.1	**0.9249**	0.013	1.4	ug/L	523	Standard
	Zn	66	3579.8	1.4	**2.8745**	0.044	1.5	ug/L	311	Standard
>	Ge	72	678802.7	1.2				ug/L	688742	Standard
	As	75	273.3	11.3	**0.2375**	0.024	10.2	ug/L	-33	Standard
	Se	82	21.5	44.2	**0.0464**	0.087	187.4	ug/L	12	Standard
	Se-1	77	105.7	6.2	**0.3712**	0.102	27.5	ug/L	94	Standard
>	Ga	71	1378.4	7.7				mg/L	28	Standard
	Rb	85	25499.8	0.8				ug/L	25	Standard
	Y	89	483388.8	1.1				ug/L	487927	Standard
>	Rh	103	15.0	88.2				ug/L	15	Standard
	Mo	98	841.2	2.2	**0.2112**	0.008	3.7	ug/L	46	Standard
	Ag	107	120.3	7.1	**-0.0018**	0.002	83.9	ug/L	103	Standard
	Cd	111	19.9	15.0	**0.0066**	0.002	27.0	mg/L	4	Standard
	Cd	114	84.1	27.4	**0.0099**	0.005	53.2	ug/L	25	Standard
>	In	115	575112.9	1.3				ug/L	577818	Standard
	Sn	118	283.3	1.7	**0.1118**	0.002	1.6	ug/L	203	Standard
	Sb	123	409.1	9.0	**0.0623**	0.008	13.5	ug/L	270	Standard
	Ba	135	6442.4	1.4	**3.8284**	0.071	1.8	ug/L	35	Standard
	Ce	140	28326.5	2.6				ug/L	25	Standard
>	Tb	159	872479.5	1.9				ug/L	866991	Standard
	Ho	165	653.3	5.4				ug/L	3	Standard
	Tl	203	242.7	8.4	**0.0080**	0.002	26.3	ug/L	243	Standard
	Tl	205	598.3	4.6	**0.0114**	0.001	7.4	ug/L	563	Standard
	Pb	206	2466.5	3.5	**0.3423**	0.006	1.7	ug/L	471	Standard
	Pb	207	1990.1	1.9	**0.3012**	0.015	4.9	ug/L	407	Standard
	Pb	208	2372.1	2.7	**0.3303**	0.015	4.7	ug/L	462	Standard
	U	238	491.3	3.6	**0.0965**	0.005	5.4	ug/L	9	Standard
>	Bi	209	557373.5	2.2				ug/L	583182	Standard

Sample ID: L1703136009
Report Date/Time: Wednesday, March 29, 2017 16:35:41
Page 1

Approved: March 30, 2017

⌈	**Na**	23	3.3	86.6	**2.3536**	2.035	86.4	mg/L	0	Standard
|	**Mg**	24	686.7	8.6	**15.1255**	1.522	10.1	mg/L	33	Standard
|	**K**	39	153.3	10.0	**0.6682**	0.092	13.7	mg/L	20	Standard
|	**Ca**	43	36.7	34.3	**486.6316**	193.433	39.7	mg/L	32	Standard
|	**Fe**	54	126.4	5.9	**0.5503**	0.033	6.0	mg/L	18	Standard
|	**Fe**	57	291.7	9.4	**1.1479**	0.467	40.7	mg/L	245	Standard
⌊>	**Sc-1**	45	52994.2	1.7				mg/L	48374	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	2.0	100.0				ug/L	2	Standard
	Br	81	5437.6	8.0				ug/L	1940	Standard
	P	31	45.0	29.4				ug/L	42	Standard
	S	34	3.3	86.6				ug/L	3	Standard
	Sr	88	111.7	9.3				ug/L	115	Standard
	C	12	50.0	0.0				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	978.8	13.5				mg/L	30	Standard
	Ho-1	165	653.3	5.4				mg/L	3	Standard
	Er	166	583.3	9.4				mg/L	10	Standard
	I	127	174512.3	6.8				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		106.322	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		98.557	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703136009
Report Date/Time: Wednesday, March 29, 2017 16:35:41
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	99.532
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	95.575
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703136009
Report Date/Time: Wednesday, March 29, 2017 16:35:41
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703136010
Sample Date/Time: Wednesday, March 29, 2017 16:36:35
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	236060.7	3.0				ug/L	221697	Standard
	Be	9	346.7	3.3	**0.1395**	0.008	5.7	ug/L	18	Standard
	Al	27	1122499.5	1.4	**8.5734**	0.233	2.7	ug/L	548	Standard
	Sc	45	51462.3	2.2				ug/L	48374	Standard
	Ti	47	247.0	4.5	**0.7760**	0.034	4.4	ug/L	37	Standard
	V	51	8400.0	3.2	**1.0659**	0.021	1.9	ug/L	1312	Standard
	Cr	52	6313.6	3.0	**0.1343**	0.017	12.6	ug/L	5560	Standard
	Cr	53	2431.9	8.2	**2.5890**	0.300	11.6	ug/L	495	Standard
	Mn	55	106882.1	2.2	**10.4316**	0.083	0.8	ug/L	1474	Standard
	Co	59	8745.9	2.4	**1.0686**	0.012	1.1	ug/L	432	Standard
	Ni	60	1884.8	4.1	**1.0418**	0.028	2.7	ug/L	135	Standard
	Cu	65	1669.1	2.9	**0.6624**	0.040	6.1	ug/L	523	Standard
	Zn	66	2742.2	1.2	**2.1167**	0.026	1.2	ug/L	311	Standard
>	Ge	72	674627.4	1.6				ug/L	688742	Standard
	As	75	581.5	5.4	**0.5067**	0.032	6.3	ug/L	-33	Standard
	Se	82	123.8	11.6	**1.0094**	0.148	14.7	ug/L	12	Standard
	Se-1	77	225.7	18.4	**2.0330**	0.613	30.2	ug/L	94	Standard
>	Ga	71	81.7	15.4				mg/L	28	Standard
	Rb	85	18417.9	1.7				ug/L	25	Standard
	Y	89	480936.3	2.3				ug/L	487927	Standard
>	Rh	103	25.0	72.1				ug/L	15	Standard
	Mo	98	164050.0	0.7	**45.5035**	0.400	0.9	ug/L	46	Standard
	Ag	107	118.7	16.4	**-0.0018**	0.003	170.0	ug/L	103	Standard
	Cd	111	-85.6	12.8	**-0.0562**	0.007	12.7	mg/L	4	Standard
	Cd	114	260.7	25.4	**0.0518**	0.015	28.9	ug/L	25	Standard
>	In	115	564922.5	1.1				ug/L	577818	Standard
	Sn	118	284.3	6.7	**0.1182**	0.017	14.8	ug/L	203	Standard
	Sb	123	3777.9	0.5	**0.8137**	0.005	0.7	ug/L	270	Standard
	Ba	135	25890.8	2.1	**15.7363**	0.359	2.3	ug/L	35	Standard
	Ce	140	31683.1	0.4				ug/L	25	Standard
>	Tb	159	854712.5	1.4				ug/L	866991	Standard
	Ho	165	1501.7	8.0				ug/L	3	Standard
	Tl	203	631.3	5.8	**0.0637**	0.005	7.6	ug/L	243	Standard
	Tl	205	1458.4	6.9	**0.0627**	0.004	6.6	ug/L	563	Standard
	Pb	206	659.7	12.9	**0.0381**	0.012	31.9	ug/L	471	Standard
	Pb	207	577.3	19.7	**0.0384**	0.019	50.4	ug/L	407	Standard
	Pb	208	706.0	29.9	**0.0469**	0.034	72.0	ug/L	462	Standard
	U	238	1259.7	11.0	**0.2589**	0.022	8.7	ug/L	9	Standard
>	Bi	209	543782.7	2.3				ug/L	583182	Standard

Sample ID: L1703136010
Report Date/Time: Wednesday, March 29, 2017 16:38:46
Page 1

Approved: March 30, 2017

⌈	**Na**	23	5.0	0.0	**3.6487**	0.079	2.2	mg/L	0	Standard
|	**Mg**	24	1428.4	3.5	**33.5281**	1.592	4.7	mg/L	33	Standard
|	**K**	39	1290.1	8.0	**6.9471**	0.569	8.2	mg/L	20	Standard
|	**Ca**	43	51.7	55.0	**209.7165**	488.090	232.7	mg/L	32	Standard
|	**Fe**	54	38.0	7.4	**0.0233**	0.015	66.2	mg/L	18	Standard
|	**Fe**	57	306.7	4.1	**1.6389**	0.369	22.5	mg/L	245	Standard
⌊>	**Sc-1**	45	51462.3	2.2				mg/L	48374	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	2.3	89.2				ug/L	2	Standard
	Br	81	72262.0	2.2				ug/L	1940	Standard
	P	31	51.7	24.4				ug/L	42	Standard
	S	34	1.7	173.2				ug/L	3	Standard
	Sr	88	180.0	23.7				ug/L	115	Standard
	C	12	76.7	45.8				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	2102.1	5.8				mg/L	30	Standard
	Ho-1	165	1501.7	8.0				mg/L	3	Standard
	Er	166	1560.1	10.1				mg/L	10	Standard
	I	127	795987.5	6.3				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		106.479	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		97.951	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703136010
Report Date/Time: Wednesday, March 29, 2017 16:38:46
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	97.768
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	93.244
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703136010
Report Date/Time: Wednesday, March 29, 2017 16:38:46
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703136011
Sample Date/Time: Wednesday, March 29, 2017 16:39:40
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	232683.2	1.0				ug/L	221697	Standard
	Be	9	48.3	23.9	**0.0037**	0.005	148.6	ug/L	18	Standard
	Al	27	3586043.0	0.9	**27.7748**	0.473	1.7	ug/L	548	Standard
	Sc	45	50141.2	0.7				ug/L	48374	Standard
	Ti	47	200.3	4.2	**0.6112**	0.018	3.0	ug/L	37	Standard
	V	51	1311.7	5.1	**-0.0064**	0.014	216.5	ug/L	1312	Standard
	Cr	52	6612.4	1.5	**0.1955**	0.005	2.5	ug/L	5560	Standard
	Cr	53	2625.2	4.7	**2.8804**	0.231	8.0	ug/L	495	Standard
	Mn	55	3201467.9	0.9	**319.9973**	8.170	2.6	ug/L	1474	Standard
	Co	59	1983.1	3.3	**0.2031**	0.004	1.9	ug/L	432	Standard
	Ni	60	1637.8	0.5	**0.9037**	0.022	2.4	ug/L	135	Standard
	Cu	65	1876.8	3.5	**0.7909**	0.041	5.2	ug/L	523	Standard
	Zn	66	2691.9	0.5	**2.0946**	0.056	2.7	ug/L	311	Standard
>	Ge	72	668167.0	1.9				ug/L	688742	Standard
	As	75	972.4	2.5	**0.8538**	0.006	0.7	ug/L	-33	Standard
	Se	82	73.7	9.6	**0.5445**	0.063	11.6	ug/L	12	Standard
	Se-1	77	251.7	3.7	**2.4191**	0.192	7.9	ug/L	94	Standard
>	Ga	71	70.0	7.1				mg/L	28	Standard
	Rb	85	8870.9	1.7				ug/L	25	Standard
	Y	89	469157.4	1.6				ug/L	487927	Standard
>	Rh	103	26.7	28.6				ug/L	15	Standard
	Mo	98	591.0	3.0	**0.1466**	0.005	3.7	ug/L	46	Standard
	Ag	107	125.0	8.9	**-0.0006**	0.002	314.0	ug/L	103	Standard
	Cd	111	76.9	10.9	**0.0411**	0.005	12.4	mg/L	4	Standard
	Cd	114	253.2	19.0	**0.0504**	0.011	22.6	ug/L	25	Standard
>	In	115	562415.3	0.3				ug/L	577818	Standard
	Sn	118	254.3	5.7	**0.0869**	0.015	17.6	ug/L	203	Standard
	Sb	123	232.8	7.1	**0.0249**	0.004	14.6	ug/L	270	Standard
	Ba	135	72521.5	0.6	**44.3153**	0.351	0.8	ug/L	35	Standard
	Ce	140	211.7	4.9				ug/L	25	Standard
>	Tb	159	854379.4	0.9				ug/L	866991	Standard
	Ho	165	33.3	22.9				ug/L	3	Standard
	Tl	203	458.7	1.1	**0.0397**	0.001	3.0	ug/L	243	Standard
	Tl	205	1076.7	9.2	**0.0407**	0.006	15.2	ug/L	563	Standard
	Pb	206	859.7	3.5	**0.0740**	0.004	6.0	ug/L	471	Standard
	Pb	207	729.0	5.1	**0.0687**	0.007	10.0	ug/L	407	Standard
	Pb	208	821.7	1.9	**0.0686**	0.002	3.2	ug/L	462	Standard
	U	238	56.3	13.4	**0.0083**	0.002	18.9	ug/L	9	Standard
>	Bi	209	540609.5	0.8				ug/L	583182	Standard

Sample ID: L1703136011
Report Date/Time: Wednesday, March 29, 2017 16:41:51
Page 1

Approved: March 30, 2017

⌈	**Na**	23	16.7	45.8	**12.4792**	5.739	46.0	mg/L	0	Standard
|	**Mg**	24	806.7	9.4	**19.0044**	1.814	9.5	mg/L	33	Standard
|	**K**	39	141.7	8.9	**0.6484**	0.074	11.4	mg/L	20	Standard
|	**Ca**	43	115.0	24.2	**-888.8956**	471.245	53.0	mg/L	32	Standard
|	**Fe**	54	46.4	16.7	**0.0832**	0.048	57.2	mg/L	18	Standard
|	**Fe**	57	375.0	2.7	**3.2449**	0.267	8.2	mg/L	245	Standard
⌊>	**Sc-1**	45	50141.2	0.7				mg/L	48374	Standard
	Cl	35	0.0					ug/L	1	Standard
	Kr	83	4.3	13.3				ug/L	2	Standard
	Br	81	37894.0	4.1				ug/L	1940	Standard
	P	31	40.0	50.0				ug/L	42	Standard
	S	34	3.3	86.6				ug/L	3	Standard
	Sr	88	148.3	8.5				ug/L	115	Standard
	C	12	70.0	14.3				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	27.0	2.7				mg/L	30	Standard
	Ho-1	165	33.3	22.9				mg/L	3	Standard
	Er	166	63.3	24.1				mg/L	10	Standard
	I	127	439370.5	3.9				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		104.955	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		97.013	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703136011
Report Date/Time: Wednesday, March 29, 2017 16:41:51
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	97.334
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	92.700
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1703136011
Report Date/Time: Wednesday, March 29, 2017 16:41:51
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703136012
Sample Date/Time: Wednesday, March 29, 2017 16:42:45
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	234023.5	0.3				ug/L	221697	Standard
	Be	9	115.0	15.7	**0.0342**	0.008	24.4	ug/L	18	Standard
	Al	27	5724332.4	1.1	**44.0773**	0.437	1.0	ug/L	548	Standard
	Sc	45	48887.1	1.4				ug/L	48374	Standard
	Ti	47	157.3	2.2	**0.4705**	0.018	3.7	ug/L	37	Standard
	V	51	1918.7	9.4	**0.0959**	0.030	31.6	ug/L	1312	Standard
	Cr	52	7162.4	1.0	**0.3281**	0.001	0.2	ug/L	5560	Standard
	Cr	53	4077.2	5.7	**5.0036**	0.344	6.9	ug/L	495	Standard
	Mn	55	1921705.8	0.6	**198.1612**	2.792	1.4	ug/L	1474	Standard
	Co	59	103672.1	0.5	**13.8139**	0.168	1.2	ug/L	432	Standard
	Ni	60	6634.5	2.0	**4.0592**	0.118	2.9	ug/L	135	Standard
	Cu	65	2771.6	2.4	**1.3569**	0.041	3.0	ug/L	523	Standard
	Zn	66	4966.5	1.8	**4.3784**	0.085	1.9	ug/L	311	Standard
>	Ge	72	647328.8	1.0				ug/L	688742	Standard
	As	75	80539.9	0.3	**72.8259**	0.478	0.7	ug/L	-33	Standard
	Se	82	539.1	4.3	**5.1204**	0.210	4.1	ug/L	12	Standard
	Se-1	77	449.7	8.8	**5.3651**	0.622	11.6	ug/L	94	Standard
>	Ga	71	208.3	21.0				mg/L	28	Standard
	Rb	85	36275.0	1.6				ug/L	25	Standard
	Y	89	569812.6	1.9				ug/L	487927	Standard
>	Rh	103	223.3	13.7				ug/L	15	Standard
	Mo	98	3338098.2	1.5	**970.8327**	20.145	2.1	ug/L	46	Standard
	Ag	107	102.0	18.6	**-0.0038**	0.003	87.7	ug/L	103	Standard
	Cd	111	-2752.1	2.3	**-1.7279**	0.051	2.9	mg/L	4	Standard
	Cd	114	2755.0	2.4	**0.6716**	0.016	2.4	ug/L	25	Standard
>	In	115	539014.5	1.0				ug/L	577818	Standard
	Sn	118	259.7	6.6	**0.1050**	0.018	16.7	ug/L	203	Standard
	Sb	123	3719.0	2.7	**0.8405**	0.027	3.2	ug/L	270	Standard
	Ba	135	37735.9	0.3	**24.0505**	0.242	1.0	ug/L	35	Standard
	Ce	140	279039.7	1.3				ug/L	25	Standard
>	Tb	159	846170.1	0.6				ug/L	866991	Standard
	Ho	165	6269.6	3.6				ug/L	3	Standard
	Tl	203	1034.0	3.3	**0.1251**	0.005	3.9	ug/L	243	Standard
	Tl	205	2441.9	6.1	**0.1250**	0.010	7.6	ug/L	563	Standard
	Pb	206	701.7	4.6	**0.0494**	0.005	9.6	ug/L	471	Standard
	Pb	207	615.0	0.5	**0.0496**	0.001	1.4	ug/L	407	Standard
	Pb	208	728.3	4.9	**0.0554**	0.008	13.8	ug/L	462	Standard
	U	238	1901.5	2.8	**0.4057**	0.013	3.2	ug/L	9	Standard
>	Bi	209	527194.8	0.9				ug/L	583182	Standard

Sample ID: L1703136012
Report Date/Time: Wednesday, March 29, 2017 16:44:56
Page 1

Approved: March 30, 2017

⌈	**Na**	23	116.7	23.6	**89.5704**	21.667	24.2	mg/L	0	Standard
|	**Mg**	24	4627.4	1.7	**116.6859**	2.589	2.2	mg/L	33	Standard
|	**K**	39	6496.4	3.6	**37.4663**	0.819	2.2	mg/L	20	Standard
|	**Ca**	43	351.7	40.3	**-5090.3902**	2458.835	48.3	mg/L	32	Standard
|	**Fe**	54	109.3	20.4	**0.5016**	0.137	27.3	mg/L	18	Standard
|	**Fe**	57	623.3	7.8	**8.8181**	0.863	9.8	mg/L	245	Standard
⌊>	**Sc-1**	45	48887.1	1.4				mg/L	48374	Standard
	Cl	35	2.7	114.6				ug/L	1	Standard
	Kr	83	1.7	69.3				ug/L	2	Standard
	Br	81	331000.0	3.9				ug/L	1940	Standard
	P	31	55.0	9.1				ug/L	42	Standard
	S	34	1.7	173.2				ug/L	3	Standard
	Sr	88	246.7	23.7				ug/L	115	Standard
	C	12	120.0	30.0				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	7177.9	2.7				mg/L	30	Standard
	Ho-1	165	6269.6	3.6				mg/L	3	Standard
	Er	166	6484.7	0.7				mg/L	10	Standard
	I	127	2742429.6	7.2				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		105.560	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		93.987	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703136012
Report Date/Time: Wednesday, March 29, 2017 16:44:56
Page 2

Approved: March 30, 2017

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	93.284
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	90.400
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

Sample ID: L1703136012
Report Date/Time: Wednesday, March 29, 2017 16:44:56
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, March 29, 2017 16:45:52
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	232748.4	2.9				ug/L	221697	Standard
	Be	9	107448.1	2.3	**49.7038**	0.718	1.4	ug/L	18	Standard
	Al	27	6150607.4	0.6	**47.6515**	1.655	3.5	ug/L	548	Standard
	Sc	45	48949.0	1.9				ug/L	48374	Standard
	Ti	47	27537.7	0.9	**102.0234**	1.793	1.8	ug/L	37	Standard
	V	51	336041.5	1.1	**51.1251**	0.857	1.7	ug/L	1312	Standard
	Cr	52	307210.2	1.2	**51.1582**	0.803	1.6	ug/L	5560	Standard
	Cr	53	38066.1	1.5	**50.3424**	0.483	1.0	ug/L	495	Standard
	Mn	55	512953.4	0.7	**51.0231**	0.457	0.9	ug/L	1474	Standard
	Co	59	387212.0	0.9	**50.0206**	0.700	1.4	ug/L	432	Standard
	Ni	60	83634.9	1.2	**50.4611**	1.383	2.7	ug/L	135	Standard
	Cu	65	87812.1	0.7	**50.1290**	0.842	1.7	ug/L	523	Standard
	Zn	66	53834.1	0.7	**49.9803**	0.620	1.2	ug/L	311	Standard
>	Ge	72	669611.8	1.6				ug/L	688742	Standard
	As	75	55908.9	0.4	**48.8776**	0.680	1.4	ug/L	-33	Standard
	Se	82	5128.5	0.9	**48.3566**	0.774	1.6	ug/L	12	Standard
	Se-1	77	3657.4	1.1	**49.5154**	1.156	2.3	ug/L	94	Standard
>	Ga	71	58.3	27.6				mg/L	28	Standard
	Rb	85	375.0	22.8				ug/L	25	Standard
	Y	89	467073.4	0.5				ug/L	487927	Standard
>	Rh	103	28.3	27.0				ug/L	15	Standard
	Mo	98	356358.5	0.2	**98.9440**	1.173	1.2	ug/L	46	Standard
	Ag	107	292661.9	0.9	**49.1189**	0.442	0.9	ug/L	103	Standard
	Cd	111	83260.6	0.5	**49.7637**	0.766	1.5	mg/L	4	Standard
	Cd	114	212176.1	0.5	**50.0854**	0.311	0.6	ug/L	25	Standard
>	In	115	564501.0	1.1				ug/L	577818	Standard
	Sn	118	46277.2	0.3	**50.1798**	0.564	1.1	ug/L	203	Standard
	Sb	123	218449.0	1.0	**48.6306**	0.319	0.7	ug/L	270	Standard
	Ba	135	82330.4	1.1	**50.1298**	0.751	1.5	ug/L	35	Standard
	Ce	140	308.3	20.0				ug/L	25	Standard
>	Tb	159	862896.5	0.5				ug/L	866991	Standard
	Ho	165	20.0	43.3				ug/L	3	Standard
	Tl	203	362159.4	1.0	**50.0252**	0.594	1.2	ug/L	243	Standard
	Tl	205	862384.4	1.4	**49.5787**	0.790	1.6	ug/L	563	Standard
	Pb	206	293411.0	1.1	**49.9772**	0.659	1.3	ug/L	471	Standard
	Pb	207	264633.8	0.9	**49.8010**	0.568	1.1	ug/L	407	Standard
	Pb	208	301414.7	1.3	**51.8457**	0.518	1.0	ug/L	462	Standard
	U	238	251121.5	1.2	**51.3349**	0.615	1.2	ug/L	9	Standard
>	Bi	209	554912.5	0.7				ug/L	583182	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, March 29, 2017 16:48:03
Page 1

Approved: March 30, 2017

	Na	23	8.3	34.6	**6.4160**	2.305	35.9	mg/L	0	Standard
	Mg	24	290.0	9.6	**6.3759**	0.732	11.5	mg/L	33	Standard
	K	39	1183.4	6.8	**6.6928**	0.438	6.5	mg/L	20	Standard
	Ca	43	88.3	27.9	**-468.4959**	422.198	90.1	mg/L	32	Standard
	Fe	54	780.5	9.3	**4.8966**	0.551	11.2	mg/L	18	Standard
	Fe	57	498.3	12.9	**6.1084**	1.431	23.4	mg/L	245	Standard
>	**Sc-1**	45	48949.0	1.9				mg/L	48374	Standard
	Cl	35	2.0	0.0				ug/L	1	Standard
	Kr	83	1.3	86.6				ug/L	2	Standard
	Br	81	5461.0	28.7				ug/L	1940	Standard
	P	31	56.7	50.2				ug/L	42	Standard
	S	34	8.3	124.9				ug/L	3	Standard
	Sr	88	131.7	22.9				ug/L	115	Standard
	C	12	40.0	66.1				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	29.7	33.7				mg/L	30	Standard
	Ho-1	165	20.0	43.3				mg/L	3	Standard
	Er	166	6.7	86.6				mg/L	10	Standard
	I	127	48286.7	53.9				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	99.408		
	Al	27	95.303		
	Sc	45			
	Ti	47	102.023		
	V	51	102.250		
	Cr	52	102.316		
	Cr	53			
	Mn	55	102.046		
	Co	59	100.041		
	Ni	60	100.922		
	Cu	65	100.258		
	Zn	66	99.961		
>	Ge	72		97.222	
	As	75	97.755		
	Se	82	96.713		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, March 29, 2017 16:48:03
Page 2

Approved: March 30, 2017

Rb	85			
Y	89			
Rh	103			
Mo	98	98.944		
Ag	107	98.238		
Cd	111	99.527		
Cd	114			
In	115			97.695
Sn	118	100.360		
Sb	123	97.261		
Ba	135	100.260		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.050		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.691		
U	238	102.670		
Bi	209			95.153
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Wednesday, March 29, 2017 16:48:03
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, March 29, 2017 16:48:58
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	229683.3	2.1				ug/L	221697	Standard
	Be	9	35.0	99.0	**-0.0025**	0.016	625.0	ug/L	18	Standard
	Al	27	1045.1	88.3	**0.0089**	0.007	78.8	ug/L	548	Standard
	Sc	45	48706.5	1.5				ug/L	48374	Standard
	Ti	47	32.0	6.3	**-0.0123**	0.007	53.3	ug/L	37	Standard
	V	51	1032.0	11.7	**-0.0469**	0.017	35.2	ug/L	1312	Standard
	Cr	52	4620.4	0.6	**-0.1298**	0.011	8.7	ug/L	5560	Standard
	Cr	53	458.3	13.2	**-0.0213**	0.078	367.1	ug/L	495	Standard
	Mn	55	1877.1	15.9	**0.0402**	0.028	69.0	ug/L	1474	Standard
	Co	59	301.3	10.9	**-0.0141**	0.004	26.5	ug/L	432	Standard
	Ni	60	153.3	26.4	**0.0060**	0.024	399.3	ug/L	135	Standard
	Cu	65	556.0	4.9	**0.0361**	0.011	31.8	ug/L	523	Standard
	Zn	66	389.3	5.2	**-0.0606**	0.018	29.3	ug/L	311	Standard
>	Ge	72	657204.4	1.4				ug/L	688742	Standard
	As	75	-1.3	1876.5	**0.0008**	0.021	2491.2	ug/L	-33	Standard
	Se	82	20.0	15.6	**0.0393**	0.030	76.1	ug/L	12	Standard
	Se-1	77	89.7	5.7	**0.1927**	0.077	39.7	ug/L	94	Standard
>	Ga	71	25.0	52.9				mg/L	28	Standard
	Rb	85	40.0	43.3				ug/L	25	Standard
	Y	89	458829.4	2.3				ug/L	487927	Standard
>	Rh	103	15.0	57.7				ug/L	15	Standard
	Mo	98	476.3	22.0	**0.1160**	0.028	24.1	ug/L	46	Standard
	Ag	107	125.3	16.4	**-0.0003**	0.003	964.6	ug/L	103	Standard
	Cd	111	7.1	100.7	**-0.0008**	0.004	525.8	mg/L	4	Standard
	Cd	114	39.7	37.6	**-0.0001**	0.004	4456.7	ug/L	25	Standard
>	In	115	555864.2	1.3				ug/L	577818	Standard
	Sn	118	199.0	4.6	**0.0290**	0.007	25.3	ug/L	203	Standard
	Sb	123	267.3	6.9	**0.0333**	0.004	11.5	ug/L	270	Standard
	Ba	135	68.0	47.3	**0.0182**	0.019	106.2	ug/L	35	Standard
	Ce	140	55.0	63.6				ug/L	25	Standard
>	Tb	159	840585.5	1.4				ug/L	866991	Standard
	Ho	165	15.0	33.3				ug/L	3	Standard
	Tl	203	79.7	80.9	**-0.0142**	0.009	63.0	ug/L	243	Standard
	Tl	205	191.7	94.1	**-0.0117**	0.010	88.9	ug/L	563	Standard
	Pb	206	486.3	16.6	**0.0077**	0.013	173.0	ug/L	471	Standard
	Pb	207	429.3	14.0	**0.0098**	0.011	115.7	ug/L	407	Standard
	Pb	208	490.0	16.0	**0.0090**	0.013	147.8	ug/L	462	Standard
	U	238	46.3	68.3	**0.0061**	0.007	106.8	ug/L	9	Standard
>	Bi	209	546393.0	1.2				ug/L	583182	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, March 29, 2017 16:51:09
Page 1

Approved: March 30, 2017

	Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
	Mg	24	41.7	48.5	**0.0750**	0.519	691.0	mg/L	33	Standard
	K	39	35.0	14.3	**0.0520**	0.032	61.8	mg/L	20	Standard
	Ca	43	45.0	44.4	**281.9264**	364.855	129.4	mg/L	32	Standard
	Fe	54	37.9	27.2	**0.0361**	0.065	180.7	mg/L	18	Standard
	Fe	57	271.7	12.5	**1.2247**	0.661	54.0	mg/L	245	Standard
>	**Sc-1**	45	48706.5	1.5				mg/L	48374	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	3.0	57.7				ug/L	2	Standard
	Br	81	2947.0	8.5				ug/L	1940	Standard
	P	31	51.7	29.6				ug/L	42	Standard
	S	34	6.7	43.3				ug/L	3	Standard
	Sr	88	145.0	31.6				ug/L	115	Standard
	C	12	70.0	28.6				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	26.3	22.5				mg/L	30	Standard
	Ho-1	165	15.0	33.3				mg/L	3	Standard
	Er	166	6.7	86.6				mg/L	10	Standard
	I	127	14031.6	13.1				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.421	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, March 29, 2017 16:51:09
Page 2

Approved: March 30, 2017

Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	96.201
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	93.692
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Wednesday, March 29, 2017 16:51:09
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703136013
Sample Date/Time: Wednesday, March 29, 2017 16:52:04
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	233142.3	2.2				ug/L	221697	Standard
	Be	9	38.3	49.4	**-0.0009**	0.009	1032.1	ug/L	18	Standard
	Al	27	9601.4	5.6	**0.0750**	0.003	3.6	ug/L	548	Standard
	Sc	45	49415.5	1.3				ug/L	48374	Standard
	Ti	47	61.3	7.4	**0.0959**	0.013	13.3	ug/L	37	Standard
	V	51	1246.3	2.9	**-0.0155**	0.003	19.4	ug/L	1312	Standard
	Cr	52	6306.6	1.2	**0.1496**	0.008	5.5	ug/L	5560	Standard
	Cr	53	645.0	6.9	**0.2248**	0.071	31.4	ug/L	495	Standard
	Mn	55	3567.8	1.2	**0.2084**	0.009	4.2	ug/L	1474	Standard
	Co	59	291.0	5.0	**-0.0159**	0.002	10.7	ug/L	432	Standard
	Ni	60	218.7	6.5	**0.0448**	0.006	14.1	ug/L	135	Standard
	Cu	65	1542.4	3.6	**0.6039**	0.048	8.0	ug/L	523	Standard
	Zn	66	1449.4	4.7	**0.9353**	0.048	5.1	ug/L	311	Standard
>	Ge	72	664465.0	1.8				ug/L	688742	Standard
	As	75	-7.3	526.5	**-0.0043**	0.034	790.6	ug/L	-33	Standard
	Se	82	16.3	6.2	**0.0021**	0.008	386.2	ug/L	12	Standard
	Se-1	77	82.0	4.4	**0.0725**	0.069	94.4	ug/L	94	Standard
>	Ga	71	35.0	65.5				mg/L	28	Standard
	Rb	85	143.3	14.5				ug/L	25	Standard
	Y	89	470052.1	1.1				ug/L	487927	Standard
>	Rh	103	11.7	49.5				ug/L	15	Standard
	Mo	98	216.3	1.1	**0.0417**	0.001	2.6	ug/L	46	Standard
	Ag	107	116.3	12.5	**-0.0022**	0.003	119.4	ug/L	103	Standard
	Cd	111	10.4	38.9	**0.0011**	0.002	215.3	mg/L	4	Standard
	Cd	114	72.9	17.6	**0.0075**	0.003	36.4	ug/L	25	Standard
>	In	115	566912.4	1.5				ug/L	577818	Standard
	Sn	118	511.7	4.7	**0.3638**	0.031	8.6	ug/L	203	Standard
	Sb	123	148.7	17.8	**0.0059**	0.006	107.4	ug/L	270	Standard
	Ba	135	288.7	8.6	**0.1512**	0.013	8.5	ug/L	35	Standard
	Ce	140	208.3	3.7				ug/L	25	Standard
>	Tb	159	851877.3	0.7				ug/L	866991	Standard
	Ho	165	18.3	31.5				ug/L	3	Standard
	Tl	203	56.0	33.9	**-0.0176**	0.003	14.7	ug/L	243	Standard
	Tl	205	140.0	28.3	**-0.0148**	0.002	14.9	ug/L	563	Standard
	Pb	206	473.7	5.8	**0.0043**	0.004	88.5	ug/L	471	Standard
	Pb	207	415.3	6.7	**0.0060**	0.005	85.4	ug/L	407	Standard
	Pb	208	457.7	3.3	**0.0022**	0.002	83.0	ug/L	462	Standard
	U	238	20.0	13.2	**0.0006**	0.001	89.8	ug/L	9	Standard
>	Bi	209	554573.6	1.1				ug/L	583182	Standard

Sample ID: L1703136013
Report Date/Time: Wednesday, March 29, 2017 16:54:15
Page 1

Approved: March 30, 2017

	Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
	Mg	24	31.7	24.1	**-0.1935**	0.198	102.1	mg/L	33	Standard
	K	39	25.0	20.0	**-0.0087**	0.027	309.9	mg/L	20	Standard
	Ca	43	30.0	50.0	**555.5902**	264.602	47.6	mg/L	32	Standard
	Fe	54	36.3	75.7	**0.0223**	0.178	799.6	mg/L	18	Standard
	Fe	57	291.7	13.1	**1.5687**	0.750	47.8	mg/L	245	Standard
>	**Sc-1**	45	49415.5	1.3				mg/L	48374	Standard
	Cl	35	3.3	69.3				ug/L	1	Standard
	Kr	83	3.0	57.7				ug/L	2	Standard
	Br	81	2433.5	5.3				ug/L	1940	Standard
	P	31	46.7	32.7				ug/L	42	Standard
	S	34	8.3	34.6				ug/L	3	Standard
	Sr	88	153.3	33.5				ug/L	115	Standard
	C	12	70.0	24.7				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	19.5	52.5				mg/L	30	Standard
	Ho-1	165	18.3	31.5				mg/L	3	Standard
	Er	166	10.0	100.0				mg/L	10	Standard
	I	127	9721.5	9.4				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		105.162	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.475	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703136013
Report Date/Time: Wednesday, March 29, 2017 16:54:15
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	98.113
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	95.095
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703136013
Report Date/Time: Wednesday, March 29, 2017 16:54:15
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703136015
Sample Date/Time: Wednesday, March 29, 2017 16:55:09
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	233680.3	1.8				ug/L	221697	Standard
	Be	9	40.0	33.1	**-0.0004**	0.006	1565.3	ug/L	18	Standard
	Al	27	10648.8	8.4	**0.0829**	0.007	8.2	ug/L	548	Standard
	Sc	45	49069.4	2.0				ug/L	48374	Standard
	Ti	47	51.7	16.5	**0.0591**	0.032	53.5	ug/L	37	Standard
	V	51	1226.8	7.3	**-0.0193**	0.013	69.1	ug/L	1312	Standard
	Cr	52	6861.9	1.7	**0.2395**	0.020	8.2	ug/L	5560	Standard
	Cr	53	711.7	7.2	**0.3094**	0.051	16.5	ug/L	495	Standard
	Mn	55	12538.9	6.6	**1.1042**	0.065	5.9	ug/L	1474	Standard
	Co	59	495.0	64.9	**0.0101**	0.041	402.6	ug/L	432	Standard
	Ni	60	459.3	21.7	**0.1899**	0.057	30.0	ug/L	135	Standard
	Cu	65	3529.7	5.8	**1.7438**	0.097	5.6	ug/L	523	Standard
	Zn	66	2099.8	7.9	**1.5393**	0.119	7.7	ug/L	311	Standard
>	Ge	72	667331.8	2.1				ug/L	688742	Standard
	As	75	67.8	123.6	**0.0608**	0.073	119.4	ug/L	-33	Standard
	Se	82	17.4	53.9	**0.0115**	0.088	759.8	ug/L	12	Standard
	Se-1	77	91.3	19.3	**0.1944**	0.226	116.5	ug/L	94	Standard
>	Ga	71	35.0	14.3				mg/L	28	Standard
	Rb	85	193.3	55.7				ug/L	25	Standard
	Y	89	467510.5	1.2				ug/L	487927	Standard
>	Rh	103	6.7	114.6				ug/L	15	Standard
	Mo	98	348.9	80.4	**0.0785**	0.078	99.0	ug/L	46	Standard
	Ag	107	198.3	82.2	**0.0115**	0.027	236.8	ug/L	103	Standard
	Cd	111	35.2	108.2	**0.0160**	0.023	142.3	mg/L	4	Standard
	Cd	114	166.8	69.0	**0.0296**	0.027	91.4	ug/L	25	Standard
>	In	115	565796.4	1.8				ug/L	577818	Standard
	Sn	118	369.7	6.7	**0.2105**	0.027	12.8	ug/L	203	Standard
	Sb	123	170.5	55.7	**0.0108**	0.021	196.5	ug/L	270	Standard
	Ba	135	472.0	27.2	**0.2631**	0.078	29.6	ug/L	35	Standard
	Ce	140	78.3	24.2				ug/L	25	Standard
>	Tb	159	845764.2	2.1				ug/L	866991	Standard
	Ho	165	16.7	69.3				ug/L	3	Standard
	Tl	203	130.7	99.1	**-0.0071**	0.018	252.8	ug/L	243	Standard
	Tl	205	266.7	82.5	**-0.0074**	0.013	171.4	ug/L	563	Standard
	Pb	206	566.3	16.6	**0.0209**	0.016	75.5	ug/L	471	Standard
	Pb	207	460.7	10.9	**0.0153**	0.010	62.4	ug/L	407	Standard
	Pb	208	540.3	9.0	**0.0173**	0.009	49.5	ug/L	462	Standard
	U	238	48.7	119.8	**0.0065**	0.012	184.5	ug/L	9	Standard
>	Bi	209	549781.7	0.9				ug/L	583182	Standard

Sample ID: L1703136015
Report Date/Time: Wednesday, March 29, 2017 16:57:20
Page 1

Approved: March 30, 2017

⌈	**Na**	23	1.7	173.2	**1.2742**	2.198	172.5	mg/L	0	Standard
|	**Mg**	24	36.7	39.4	**-0.0609**	0.369	605.2	mg/L	33	Standard
|	**K**	39	28.3	27.0	**0.0116**	0.043	372.4	mg/L	20	Standard
|	**Ca**	43	31.7	32.9	**522.9241**	187.121	35.8	mg/L	32	Standard
|	**Fe**	54	36.3	7.9	**0.0243**	0.023	96.5	mg/L	18	Standard
|	**Fe**	57	278.3	21.0	**1.3192**	1.185	89.8	mg/L	245	Standard
⌊>	**Sc-1**	45	49069.4	2.0				mg/L	48374	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	0.7	173.2				ug/L	2	Standard
	Br	81	2196.8	2.3				ug/L	1940	Standard
	P	31	31.7	9.1				ug/L	42	Standard
	S	34	0.0					ug/L	3	Standard
	Sr	88	133.3	9.4				ug/L	115	Standard
	C	12	30.0	57.7				mg/L	37	Standard
	N	14	6.7	86.6				mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	3	Standard
	Dy	164	15.7	186.4				mg/L	30	Standard
	Ho-1	165	16.7	69.3				mg/L	3	Standard
	Er	166	20.0	50.0				mg/L	10	Standard
	I	127	7545.2	3.1				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		105.405	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		96.891	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703136015
Report Date/Time: Wednesday, March 29, 2017 16:57:20
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	97.919
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	94.273
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703136015
Report Date/Time: Wednesday, March 29, 2017 16:57:20
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703133902
Sample Date/Time: Wednesday, March 29, 2017 16:58:15
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	217216.0	0.5				ug/L	221697	Standard
	Be	9	35.0	24.7	**-0.0014**	0.004	316.0	ug/L	18	Standard
	Al	27	1027204.6	1.7	**8.5228**	0.191	2.2	ug/L	548	Standard
	Sc	45	46110.1	1.4				ug/L	48374	Standard
	Ti	47	31.0	11.2	**-0.0109**	0.012	114.1	ug/L	37	Standard
	V	51	1042.3	14.8	**-0.0378**	0.026	67.4	ug/L	1312	Standard
	Cr	52	4450.7	2.8	**-0.1245**	0.028	22.5	ug/L	5560	Standard
	Cr	53	986.7	6.0	**0.7601**	0.071	9.3	ug/L	495	Standard
	Mn	55	21490.2	1.2	**2.1322**	0.048	2.2	ug/L	1474	Standard
	Co	59	1079.7	2.8	**0.0948**	0.005	5.2	ug/L	432	Standard
	Ni	60	265.7	3.5	**0.0827**	0.007	8.3	ug/L	135	Standard
	Cu	65	482.3	4.6	**0.0057**	0.011	187.9	ug/L	523	Standard
	Zn	66	1187.0	0.2	**0.7514**	0.012	1.6	ug/L	311	Standard
>	Ge	72	628961.4	1.1				ug/L	688742	Standard
	As	75	46.8	39.2	**0.0457**	0.017	37.9	ug/L	-33	Standard
	Se	82	27.8	16.0	**0.1261**	0.045	35.6	ug/L	12	Standard
	Se-1	77	127.3	10.1	**0.8049**	0.205	25.4	ug/L	94	Standard
>	Ga	71	25.0	34.6				mg/L	28	Standard
	Rb	85	151.7	10.1				ug/L	25	Standard
	Y	89	432518.4	0.8				ug/L	487927	Standard
>	Rh	103	21.7	35.3				ug/L	15	Standard
	Mo	98	77.8	48.7	**0.0049**	0.011	230.5	ug/L	46	Standard
	Ag	107	102.3	6.9	**-0.0034**	0.001	32.1	ug/L	103	Standard
	Cd	111	11.2	41.9	**0.0021**	0.003	143.0	mg/L	4	Standard
	Cd	114	30.1	39.6	**-0.0020**	0.003	146.4	ug/L	25	Standard
>	In	115	530259.5	1.0				ug/L	577818	Standard
	Sn	118	122.3	24.4	**-0.0489**	0.036	73.1	ug/L	203	Standard
	Sb	123	43.5	27.6	**-0.0169**	0.003	16.9	ug/L	270	Standard
	Ba	135	61574.2	0.2	**39.9074**	0.427	1.1	ug/L	35	Standard
	Ce	140	35.0	62.3				ug/L	25	Standard
>	Tb	159	800783.0	1.6				ug/L	866991	Standard
	Ho	165	10.0	50.0				ug/L	3	Standard
	Tl	203	332.3	11.9	**0.0234**	0.006	26.0	ug/L	243	Standard
	Tl	205	700.0	15.7	**0.0199**	0.007	35.8	ug/L	563	Standard
	Pb	206	558.0	4.3	**0.0245**	0.005	21.5	ug/L	471	Standard
	Pb	207	450.3	4.7	**0.0177**	0.005	28.8	ug/L	407	Standard
	Pb	208	526.3	5.5	**0.0195**	0.006	32.0	ug/L	462	Standard
	U	238	26.3	40.6	**0.0022**	0.002	106.5	ug/L	9	Standard
>	Bi	209	522991.9	0.9				ug/L	583182	Standard

Sample ID: L1703133902
Report Date/Time: Wednesday, March 29, 2017 17:00:26
Page 1

Approved: March 30, 2017

⌈	**Na**	23	1.7	173.2	**1.3431**	2.318	172.6	mg/L	0	Standard
|	**Mg**	24	185.0	2.7	**3.9964**	0.106	2.7	mg/L	33	Standard
|	**K**	39	23.3	12.4	**-0.0087**	0.016	184.5	mg/L	20	Standard
|	**Ca**	43	25.0	20.0	**612.7543**	94.923	15.5	mg/L	32	Standard
|	**Fe**	54	24.5	55.1	**-0.0422**	0.095	224.2	mg/L	18	Standard
|	**Fe**	57	281.7	6.7	**1.7898**	0.361	20.2	mg/L	245	Standard
⌊>	**Sc-1**	45	46110.1	1.4				mg/L	48374	Standard
	Cl	35	2.0	100.0				ug/L	1	Standard
	Kr	83	2.0	50.0				ug/L	2	Standard
	Br	81	9446.3	1.1				ug/L	1940	Standard
	P	31	50.0	45.8				ug/L	42	Standard
	S	34	3.3	86.6				ug/L	3	Standard
	Sr	88	151.7	16.9				ug/L	115	Standard
	C	12	33.3	91.7				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	3	Standard
	Dy	164	16.3	126.9				mg/L	30	Standard
	Ho-1	165	10.0	50.0				mg/L	3	Standard
	Er	166	6.7	86.6				mg/L	10	Standard
	I	127	10380.2	4.6				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		97.979	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		91.320	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703133902
Report Date/Time: Wednesday, March 29, 2017 17:00:26
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	91.769
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	89.679
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703133902
Report Date/Time: Wednesday, March 29, 2017 17:00:26
Page 3

Approved: March 30, 2017

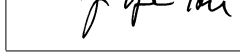
Method 6020 - Summary Report

Sample ID: L1703133904
Sample Date/Time: Wednesday, March 29, 2017 17:01:21
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	225384.9	7.4				ug/L	221697	Standard
	Be	9	15.0	33.3	**-0.0116**	0.002	21.3	ug/L	18	Standard
	Al	27	1033672.7	1.7	**8.3004**	0.721	8.7	ug/L	548	Standard
	Sc	45	48322.2	7.5				ug/L	48374	Standard
	Ti	47	33.7	20.2	**-0.0056**	0.026	471.0	ug/L	37	Standard
	V	51	1425.6	15.8	**0.0159**	0.041	259.9	ug/L	1312	Standard
	Cr	52	5226.9	3.3	**-0.0208**	0.056	271.0	ug/L	5560	Standard
	Cr	53	1106.7	10.7	**0.8646**	0.053	6.1	ug/L	495	Standard
	Mn	55	21225.2	1.7	**2.0212**	0.200	9.9	ug/L	1474	Standard
	Co	59	1086.7	1.7	**0.0903**	0.013	14.2	ug/L	432	Standard
	Ni	60	252.3	4.1	**0.0677**	0.006	9.4	ug/L	135	Standard
	Cu	65	497.7	5.9	**0.0033**	0.020	603.3	ug/L	523	Standard
	Zn	66	1267.1	4.9	**0.7811**	0.054	6.9	ug/L	311	Standard
>	Ge	72	656107.6	8.1				ug/L	688742	Standard
	As	75	27.1	46.3	**0.0268**	0.013	46.9	ug/L	-33	Standard
	Se	82	27.2	26.1	**0.1073**	0.057	53.0	ug/L	12	Standard
	Se-1	77	125.3	11.1	**0.7148**	0.321	44.9	ug/L	94	Standard
>	Ga	71	28.3	27.0				mg/L	28	Standard
	Rb	85	178.3	19.9				ug/L	25	Standard
	Y	89	448621.8	7.7				ug/L	487927	Standard
>	Rh	103	15.0	57.7				ug/L	15	Standard
	Mo	98	64.8	5.5	**0.0004**	0.002	454.0	ug/L	46	Standard
	Ag	107	103.7	9.0	**-0.0037**	0.003	77.3	ug/L	103	Standard
	Cd	111	3.9	92.1	**-0.0028**	0.002	71.4	mg/L	4	Standard
	Cd	114	29.8	17.3	**-0.0024**	0.001	28.5	ug/L	25	Standard
>	In	115	551101.6	7.7				ug/L	577818	Standard
	Sn	118	131.7	17.7	**-0.0448**	0.014	31.7	ug/L	203	Standard
	Sb	123	41.6	16.5	**-0.0176**	0.002	10.9	ug/L	270	Standard
	Ba	135	61950.8	2.0	**38.8133**	3.595	9.3	ug/L	35	Standard
	Ce	140	28.3	88.8				ug/L	25	Standard
>	Tb	159	822549.2	8.1				ug/L	866991	Standard
	Ho	165	8.3	91.7				ug/L	3	Standard
	Tl	203	357.7	6.4	**0.0254**	0.005	20.4	ug/L	243	Standard
	Tl	205	738.4	8.4	**0.0205**	0.001	3.8	ug/L	563	Standard
	Pb	206	573.3	7.6	**0.0236**	0.007	27.9	ug/L	471	Standard
	Pb	207	483.7	1.8	**0.0211**	0.006	26.2	ug/L	407	Standard
	Pb	208	542.7	2.6	**0.0192**	0.007	35.2	ug/L	462	Standard
	U	238	26.3	15.8	**0.0020**	0.001	58.2	ug/L	9	Standard
>	Bi	209	542438.9	6.8				ug/L	583182	Standard

Approved: March 30, 2017



⌈	**Na**	23	3.3	173.2	**2.6803**	4.634	172.9	mg/L	0	Standard
|	**Mg**	24	251.7	4.1	**5.4991**	0.392	7.1	mg/L	33	Standard
|	**K**	39	33.3	75.5	**0.0373**	0.131	351.1	mg/L	20	Standard
|	**Ca**	43	35.0	51.5	**467.1352**	288.905	61.8	mg/L	32	Standard
|	**Fe**	54	31.1	24.9	**-0.0035**	0.064	1824.5	mg/L	18	Standard
|	**Fe**	57	306.7	14.6	**2.0371**	0.793	38.9	mg/L	245	Standard
⌊>	**Sc-1**	45	48322.2	7.5				mg/L	48374	Standard
	Cl	35	2.0	100.0				ug/L	1	Standard
	Kr	83	2.7	86.6				ug/L	2	Standard
	Br	81	9052.7	2.7				ug/L	1940	Standard
	P	31	158.3	118.9				ug/L	42	Standard
	S	34	5.0	0.0				ug/L	3	Standard
	Sr	88	143.3	14.1				ug/L	115	Standard
	C	12	20.0	100.0				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	6.3	93.2				mg/L	30	Standard
	Ho-1	165	8.3	91.7				mg/L	3	Standard
	Er	166	6.7	86.6				mg/L	10	Standard
	I	127	10420.3	4.8				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		101.663	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		95.262	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703133904
Report Date/Time: Wednesday, March 29, 2017 17:03:31
Page 2

Approved: March 30, 2017

Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	95.376
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	93.014
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703133904
Report Date/Time: Wednesday, March 29, 2017 17:03:31
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

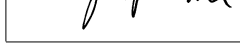
Sample ID: L1703133905
Sample Date/Time: Wednesday, March 29, 2017 17:04:26
Number of Replicates: 3
Autosampler Position: 255
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	218901.7	0.6				ug/L	221697	Standard
	Be	9	13.3	21.7	**-0.0122**	0.001	11.4	ug/L	18	Standard
	Al	27	243905.9	0.8	**2.0087**	0.024	1.2	ug/L	548	Standard
	Sc	45	45489.9	1.7				ug/L	48374	Standard
	Ti	47	30.3	11.6	**-0.0122**	0.014	113.5	ug/L	37	Standard
	V	51	1441.0	5.2	**0.0294**	0.012	41.8	ug/L	1312	Standard
	Cr	52	5815.8	1.3	**0.1328**	0.016	12.0	ug/L	5560	Standard
	Cr	53	796.7	4.5	**0.5016**	0.056	11.1	ug/L	495	Standard
	Mn	55	129934.4	0.8	**13.7937**	0.159	1.2	ug/L	1474	Standard
	Co	59	1950.5	1.0	**0.2175**	0.002	0.8	ug/L	432	Standard
	Ni	60	440.7	6.9	**0.1982**	0.020	10.0	ug/L	135	Standard
	Cu	65	486.3	1.5	**0.0114**	0.004	31.1	ug/L	523	Standard
	Zn	66	1456.1	2.5	**1.0348**	0.042	4.0	ug/L	311	Standard
>	Ge	72	622435.9	0.4				ug/L	688742	Standard
	As	75	36.1	40.6	**0.0359**	0.014	38.2	ug/L	-33	Standard
	Se	82	17.0	43.8	**0.0188**	0.075	398.6	ug/L	12	Standard
	Se-1	77	107.3	3.5	**0.5257**	0.051	9.7	ug/L	94	Standard
>	Ga	71	35.0	14.3				mg/L	28	Standard
	Rb	85	196.7	25.0				ug/L	25	Standard
	Y	89	430624.3	1.3				ug/L	487927	Standard
>	Rh	103	5.0	100.0				ug/L	15	Standard
	Mo	98	126.7	113.7	**0.0191**	0.042	219.9	ug/L	46	Standard
	Ag	107	108.0	20.3	**-0.0023**	0.004	159.3	ug/L	103	Standard
	Cd	111	10.2	58.3	**0.0014**	0.004	263.1	mg/L	4	Standard
	Cd	114	26.6	57.6	**-0.0029**	0.004	130.8	ug/L	25	Standard
>	In	115	528954.0	1.1				ug/L	577818	Standard
	Sn	118	128.3	12.3	**-0.0417**	0.020	47.7	ug/L	203	Standard
	Sb	123	56.7	15.9	**-0.0137**	0.002	16.4	ug/L	270	Standard
	Ba	135	18347.1	1.0	**11.9030**	0.040	0.3	ug/L	35	Standard
	Ce	140	293.3	14.5				ug/L	25	Standard
>	Tb	159	790523.6	1.3				ug/L	866991	Standard
	Ho	165	8.3	34.6				ug/L	3	Standard
	Tl	203	258.0	3.4	**0.0127**	0.001	9.1	ug/L	243	Standard
	Tl	205	680.0	17.4	**0.0189**	0.007	38.9	ug/L	563	Standard
	Pb	206	458.3	2.5	**0.0070**	0.002	31.6	ug/L	471	Standard
	Pb	207	370.7	2.5	**0.0022**	0.001	63.1	ug/L	407	Standard
	Pb	208	442.3	4.1	**0.0047**	0.004	75.2	ug/L	462	Standard
	U	238	4.0	90.1	**-0.0026**	0.001	29.5	ug/L	9	Standard
>	Bi	209	519660.6	0.7				ug/L	583182	Standard

Sample ID: L1703133905
Report Date/Time: Wednesday, March 29, 2017 17:06:37
Page 1

Approved: March 30, 2017



⌈	**Na**	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
|	**Mg**	24	76.7	32.2	**1.0999**	0.647	58.8	mg/L	33	Standard
|	**K**	39	31.7	48.2	**0.0453**	0.094	208.2	mg/L	20	Standard
|	**Ca**	43	43.3	40.5	**261.3379**	326.438	124.9	mg/L	32	Standard
|	**Fe**	54	19.6	25.5	**-0.0746**	0.038	50.4	mg/L	18	Standard
|	**Fe**	57	296.7	2.6	**2.2329**	0.286	12.8	mg/L	245	Standard
⌊>	**Sc-1**	45	45489.9	1.7				mg/L	48374	Standard
	Cl	35	2.7	86.6				ug/L	1	Standard
	Kr	83	4.7	53.9				ug/L	2	Standard
	Br	81	3007.0	6.0				ug/L	1940	Standard
	P	31	33.3	17.3				ug/L	42	Standard
	S	34	1.7	173.2				ug/L	3	Standard
	Sr	88	150.0	8.8				ug/L	115	Standard
	C	12	40.0	50.0				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	12.7	89.9				mg/L	30	Standard
	Ho-1	165	8.3	34.6				mg/L	3	Standard
	Er	166	13.3	43.3				mg/L	10	Standard
	I	127	14772.2	6.7				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		98.739	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		90.373	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703133905
Report Date/Time: Wednesday, March 29, 2017 17:06:37
Page 2

Approved: March 30, 2017

Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	91.543
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	89.108
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703133905
Report Date/Time: Wednesday, March 29, 2017 17:06:37
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703133907
Sample Date/Time: Wednesday, March 29, 2017 17:07:31
Number of Replicates: 3
Autosampler Position: 256
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	218511.2	1.4				ug/L	221697	Standard
	Be	9	31.7	59.8	**-0.0032**	0.009	287.2	ug/L	18	Standard
	Al	27	882346.8	1.5	**7.2778**	0.136	1.9	ug/L	548	Standard
	Sc	45	46451.1	1.1				ug/L	48374	Standard
	Ti	47	57.7	12.5	**0.0933**	0.028	30.0	ug/L	37	Standard
	V	51	990.9	5.0	**-0.0470**	0.008	17.5	ug/L	1312	Standard
	Cr	52	4528.0	8.3	**-0.1148**	0.071	62.2	ug/L	5560	Standard
	Cr	53	1376.7	4.8	**1.3067**	0.104	7.9	ug/L	495	Standard
	Mn	55	243191.6	0.7	**25.5402**	0.091	0.4	ug/L	1474	Standard
	Co	59	708.7	5.1	**0.0432**	0.005	11.1	ug/L	432	Standard
	Ni	60	333.7	5.8	**0.1253**	0.014	10.8	ug/L	135	Standard
	Cu	65	621.3	2.5	**0.0888**	0.010	11.2	ug/L	523	Standard
	Zn	66	1378.4	0.7	**0.9348**	0.003	0.3	ug/L	311	Standard
>	Ge	72	632295.5	0.5				ug/L	688742	Standard
	As	75	781.9	2.2	**0.7258**	0.013	1.8	ug/L	-33	Standard
	Se	82	42.6	14.0	**0.2733**	0.059	21.6	ug/L	12	Standard
	Se-1	77	147.7	9.3	**1.0910**	0.193	17.7	ug/L	94	Standard
>	Ga	71	33.3	37.7				mg/L	28	Standard
	Rb	85	5584.4	3.5				ug/L	25	Standard
	Y	89	433221.7	1.2				ug/L	487927	Standard
>	Rh	103	15.0	33.3				ug/L	15	Standard
	Mo	98	112.0	26.9	**0.0149**	0.009	59.8	ug/L	46	Standard
	Ag	107	106.7	6.8	**-0.0027**	0.001	48.2	ug/L	103	Standard
	Cd	111	12.2	38.8	**0.0027**	0.003	112.3	mg/L	4	Standard
	Cd	114	35.5	42.0	**-0.0007**	0.004	544.7	ug/L	25	Standard
>	In	115	532078.1	0.1				ug/L	577818	Standard
	Sn	118	167.7	8.3	**0.0027**	0.016	596.4	ug/L	203	Standard
	Sb	123	49.3	20.1	**-0.0155**	0.002	15.1	ug/L	270	Standard
	Ba	135	62838.4	1.2	**40.5853**	0.488	1.2	ug/L	35	Standard
	Ce	140	268.3	23.0				ug/L	25	Standard
>	Tb	159	798219.3	0.9				ug/L	866991	Standard
	Ho	165	10.0					ug/L	3	Standard
	Tl	203	400.3	5.0	**0.0330**	0.003	7.8	ug/L	243	Standard
	Tl	205	923.4	7.2	**0.0331**	0.004	12.4	ug/L	563	Standard
	Pb	206	529.7	4.2	**0.0187**	0.003	18.2	ug/L	471	Standard
	Pb	207	453.7	2.1	**0.0178**	0.001	8.0	ug/L	407	Standard
	Pb	208	526.3	5.1	**0.0189**	0.005	28.0	ug/L	462	Standard
	U	238	12.7	31.9	**-0.0008**	0.001	107.5	ug/L	9	Standard
>	Bi	209	526304.4	0.7				ug/L	583182	Standard

Sample ID: L1703133907
Report Date/Time: Wednesday, March 29, 2017 17:09:42
Page 1

Approved: March 30, 2017

⌈	**Na**	23	1.7	173.2	**1.3606**	2.348	172.6	mg/L	0	Standard
|	**Mg**	24	290.0	20.3	**6.7785**	1.636	24.1	mg/L	33	Standard
|	**K**	39	76.7	33.5	**0.3145**	0.151	47.9	mg/L	20	Standard
|	**Ca**	43	36.7	28.4	**399.5453**	198.451	49.7	mg/L	32	Standard
|	**Fe**	54	341.2	11.9	**2.1383**	0.275	12.9	mg/L	18	Standard
|	**Fe**	57	375.0	9.3	**3.8778**	0.869	22.4	mg/L	245	Standard
⌊>	**Sc-1**	45	46451.1	1.1				mg/L	48374	Standard
	Cl	35	1.3	173.2				ug/L	1	Standard
	Kr	83	3.3	45.8				ug/L	2	Standard
	Br	81	18237.6	3.4				ug/L	1940	Standard
	P	31	35.0	49.5				ug/L	42	Standard
	S	34	8.3	34.6				ug/L	3	Standard
	Sr	88	128.3	6.0				ug/L	115	Standard
	C	12	30.0	88.2				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	9.2	100.9				mg/L	30	Standard
	Ho-1	165	10.0					mg/L	3	Standard
	Er	166	16.7	91.7				mg/L	10	Standard
	I	127	21263.3	8.1				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		98.563	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		91.804	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703133907
Report Date/Time: Wednesday, March 29, 2017 17:09:42
Page 2

Approved: March 30, 2017

Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	92.084
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	90.247
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703133907
Report Date/Time: Wednesday, March 29, 2017 17:09:42
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703133908
Sample Date/Time: Wednesday, March 29, 2017 17:10:37
Number of Replicates: 3
Autosampler Position: 257
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	218507.8	1.3				ug/L	221697	Standard
	Be	9	36.7	15.7	**-0.0007**	0.003	386.6	ug/L	18	Standard
	Al	27	593783.6	0.8	**4.8979**	0.060	1.2	ug/L	548	Standard
	Sc	45	46900.8	1.0				ug/L	48374	Standard
	Ti	47	128.7	4.7	**0.3709**	0.026	7.1	ug/L	37	Standard
	V	51	941.9	20.2	**-0.0552**	0.032	58.3	ug/L	1312	Standard
	Cr	52	14737.5	0.9	**1.7112**	0.053	3.1	ug/L	5560	Standard
	Cr	53	2503.5	8.5	**2.8959**	0.309	10.7	ug/L	495	Standard
	Mn	55	519126.3	0.9	**54.5510**	1.155	2.1	ug/L	1474	Standard
	Co	59	771.4	2.5	**0.0516**	0.004	7.3	ug/L	432	Standard
	Ni	60	4439.0	0.5	**2.7448**	0.037	1.3	ug/L	135	Standard
	Cu	65	894.4	2.8	**0.2534**	0.022	8.6	ug/L	523	Standard
	Zn	66	1336.7	2.8	**0.8897**	0.023	2.5	ug/L	311	Standard
>	Ge	72	634009.0	1.2				ug/L	688742	Standard
	As	75	120.6	23.5	**0.1131**	0.025	22.1	ug/L	-33	Standard
	Se	82	50.2	10.7	**0.3477**	0.049	14.1	ug/L	12	Standard
	Se-1	77	134.0	13.6	**0.8884**	0.292	32.8	ug/L	94	Standard
>	Ga	71	61.7	12.4				mg/L	28	Standard
	Rb	85	1645.1	1.6				ug/L	25	Standard
	Y	89	439263.3	0.6				ug/L	487927	Standard
>	Rh	103	20.0	25.0				ug/L	15	Standard
	Mo	98	195.7	8.0	**0.0390**	0.005	11.7	ug/L	46	Standard
	Ag	107	96.7	5.9	**-0.0046**	0.001	21.5	ug/L	103	Standard
	Cd	111	30.1	20.3	**0.0138**	0.004	27.9	mg/L	4	Standard
	Cd	114	97.4	38.3	**0.0146**	0.009	63.8	ug/L	25	Standard
>	In	115	537389.8	0.2				ug/L	577818	Standard
	Sn	118	157.3	12.7	**-0.0110**	0.023	210.0	ug/L	203	Standard
	Sb	123	44.1	14.6	**-0.0169**	0.002	9.0	ug/L	270	Standard
	Ba	135	32931.1	0.9	**21.0473**	0.175	0.8	ug/L	35	Standard
	Ce	140	835.0	9.9				ug/L	25	Standard
>	Tb	159	799459.7	0.5				ug/L	866991	Standard
	Ho	165	18.3	31.5				ug/L	3	Standard
	Tl	203	406.0	8.3	**0.0335**	0.005	14.4	ug/L	243	Standard
	Tl	205	1061.7	7.6	**0.0411**	0.005	11.5	ug/L	563	Standard
	Pb	206	618.0	7.1	**0.0340**	0.007	21.8	ug/L	471	Standard
	Pb	207	525.3	2.9	**0.0314**	0.003	11.0	ug/L	407	Standard
	Pb	208	614.7	2.1	**0.0343**	0.002	7.1	ug/L	462	Standard
	U	238	17.7	21.4	**0.0003**	0.001	302.0	ug/L	9	Standard
>	Bi	209	529327.5	0.4				ug/L	583182	Standard

Sample ID: L1703133908
Report Date/Time: Wednesday, March 29, 2017 17:12:48
Page 1

Approved: March 30, 2017

⌈	**Na**	23	1.7	173.2	**1.3262**	2.288	172.6	mg/L	0	Standard
|	**Mg**	24	230.0	5.8	**5.1075**	0.402	7.9	mg/L	33	Standard
|	**K**	39	53.3	10.8	**0.1701**	0.034	20.2	mg/L	20	Standard
|	**Ca**	43	41.7	18.3	**316.3895**	136.485	43.1	mg/L	32	Standard
|	**Fe**	54	512.6	14.1	**3.2839**	0.474	14.4	mg/L	18	Standard
|	**Fe**	57	420.0	3.1	**4.8068**	0.277	5.8	mg/L	245	Standard
⌊>	**Sc-1**	45	46900.8	1.0				mg/L	48374	Standard
	Cl	35	2.0	100.0				ug/L	1	Standard
	Kr	83	3.0	0.0				ug/L	2	Standard
	Br	81	28303.1	3.2				ug/L	1940	Standard
	P	31	51.7	14.8				ug/L	42	Standard
	S	34	8.3	91.7				ug/L	3	Standard
	Sr	88	133.3	7.8				ug/L	115	Standard
	C	12	40.0	25.0				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	25.9	79.7				mg/L	30	Standard
	Ho-1	165	18.3	31.5				mg/L	3	Standard
	Er	166	16.7	34.6				mg/L	10	Standard
	I	127	37683.8	9.7				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		98.561	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		92.053	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703133908
Report Date/Time: Wednesday, March 29, 2017 17:12:48
Page 2

Approved: March 30, 2017

Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	93.003
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	90.765
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703133908
Report Date/Time: Wednesday, March 29, 2017 17:12:48
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703133909
Sample Date/Time: Wednesday, March 29, 2017 17:13:42
Number of Replicates: 3
Autosampler Position: 258
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	218763.4	2.1				ug/L	221697	Standard
	Be	9	23.3	24.7	**-0.0072**	0.003	42.9	ug/L	18	Standard
	Al	27	594796.8	2.1	**4.9031**	0.207	4.2	ug/L	548	Standard
	Sc	45	46722.0	3.0				ug/L	48374	Standard
	Ti	47	158.7	5.4	**0.4890**	0.035	7.1	ug/L	37	Standard
	V	51	1194.3	3.4	**-0.0145**	0.006	42.1	ug/L	1312	Standard
	Cr	52	15478.6	1.1	**1.8461**	0.020	1.1	ug/L	5560	Standard
	Cr	53	2566.9	4.6	**2.9883**	0.171	5.7	ug/L	495	Standard
	Mn	55	515029.0	0.7	**54.1626**	0.170	0.3	ug/L	1474	Standard
	Co	59	830.0	3.2	**0.0596**	0.003	5.4	ug/L	432	Standard
	Ni	60	4728.4	3.0	**2.9323**	0.096	3.3	ug/L	135	Standard
	Cu	65	955.4	5.5	**0.2908**	0.031	10.6	ug/L	523	Standard
	Zn	66	2028.5	1.6	**1.5761**	0.045	2.9	ug/L	311	Standard
>	Ge	72	633398.7	0.6				ug/L	688742	Standard
	As	75	152.3	14.7	**0.1428**	0.021	15.0	ug/L	-33	Standard
	Se	82	54.0	9.9	**0.3863**	0.056	14.5	ug/L	12	Standard
	Se-1	77	133.0	11.4	**0.8739**	0.228	26.1	ug/L	94	Standard
>	Ga	71	76.7	29.4				mg/L	28	Standard
	Rb	85	1753.4	6.1				ug/L	25	Standard
	Y	89	435510.4	0.1				ug/L	487927	Standard
>	Rh	103	8.3	69.3				ug/L	15	Standard
	Mo	98	201.2	3.4	**0.0400**	0.003	6.5	ug/L	46	Standard
	Ag	107	108.3	4.4	**-0.0028**	0.001	31.0	ug/L	103	Standard
	Cd	111	26.7	22.4	**0.0116**	0.004	33.0	mg/L	4	Standard
	Cd	114	87.3	8.8	**0.0118**	0.002	13.7	ug/L	25	Standard
>	In	115	542896.2	1.2				ug/L	577818	Standard
	Sn	118	161.7	4.6	**-0.0079**	0.010	120.4	ug/L	203	Standard
	Sb	123	59.4	12.9	**-0.0134**	0.002	14.4	ug/L	270	Standard
	Ba	135	32394.6	0.5	**20.4951**	0.150	0.7	ug/L	35	Standard
	Ce	140	1088.4	0.3				ug/L	25	Standard
>	Tb	159	803008.9	0.8				ug/L	866991	Standard
	Ho	165	28.3	66.8				ug/L	3	Standard
	Tl	203	390.7	1.6	**0.0314**	0.001	2.0	ug/L	243	Standard
	Tl	205	921.7	9.8	**0.0328**	0.006	17.3	ug/L	563	Standard
	Pb	206	670.0	2.3	**0.0435**	0.002	5.1	ug/L	471	Standard
	Pb	207	577.3	2.2	**0.0419**	0.003	7.2	ug/L	407	Standard
	Pb	208	662.7	2.4	**0.0432**	0.003	7.5	ug/L	462	Standard
	U	238	9.0	58.8	**-0.0016**	0.001	70.6	ug/L	9	Standard
>	Bi	209	528318.0	0.6				ug/L	583182	Standard

Sample ID: L1703133909
Report Date/Time: Wednesday, March 29, 2017 17:15:53
Page 1

Approved: March 30, 2017

⌈	**Na**	23	1.7	173.2	**1.3906**	2.400	172.6	mg/L	0	Standard
|	**Mg**	24	200.0	4.3	**4.3361**	0.345	8.0	mg/L	33	Standard
|	**K**	39	56.7	31.0	**0.1916**	0.104	54.2	mg/L	20	Standard
|	**Ca**	43	48.3	11.9	**191.0650**	95.095	49.8	mg/L	32	Standard
|	**Fe**	54	482.9	10.2	**3.0941**	0.299	9.7	mg/L	18	Standard
|	**Fe**	57	406.7	6.8	**4.5579**	0.891	19.5	mg/L	245	Standard
⌊>	**Sc-1**	45	46722.0	3.0				mg/L	48374	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	2.0	50.0				ug/L	2	Standard
	Br	81	26636.7	2.4				ug/L	1940	Standard
	P	31	55.0	39.6				ug/L	42	Standard
	S	34	3.3	86.6				ug/L	3	Standard
	Sr	88	153.3	14.7				ug/L	115	Standard
	C	12	33.3	45.8				mg/L	37	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	38.7	43.4				mg/L	30	Standard
	Ho-1	165	28.3	66.8				mg/L	3	Standard
	Er	166	26.7	86.6				mg/L	10	Standard
	I	127	33948.3	10.7				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		98.677	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		91.965	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703133909
Report Date/Time: Wednesday, March 29, 2017 17:15:53
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	93.956
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	90.592
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703133909
Report Date/Time: Wednesday, March 29, 2017 17:15:53
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, March 29, 2017 17:16:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	227832.9	3.1				ug/L	221697	Standard
	Be	9	107859.2	0.8	**50.9968**	1.743	3.4	ug/L	18	Standard
	Al	27	6221038.8	1.2	**49.2399**	1.826	3.7	ug/L	548	Standard
	Sc	45	48158.1	1.0				ug/L	48374	Standard
	Ti	47	27862.3	1.0	**104.6720**	3.021	2.9	ug/L	37	Standard
	V	51	338424.6	0.8	**52.2117**	1.407	2.7	ug/L	1312	Standard
	Cr	52	311269.4	1.1	**52.5835**	1.399	2.7	ug/L	5560	Standard
	Cr	53	38996.8	0.3	**52.3169**	0.845	1.6	ug/L	495	Standard
	Mn	55	515359.9	0.5	**51.9820**	1.241	2.4	ug/L	1474	Standard
	Co	59	397146.7	0.5	**52.0212**	1.203	2.3	ug/L	432	Standard
	Ni	60	84136.0	0.8	**51.4671**	1.397	2.7	ug/L	135	Standard
	Cu	65	89071.4	0.7	**51.5649**	1.344	2.6	ug/L	523	Standard
	Zn	66	53725.1	0.6	**50.5740**	0.734	1.5	ug/L	311	Standard
>	Ge	72	660512.9	1.9				ug/L	688742	Standard
	As	75	55775.8	0.7	**49.4378**	1.027	2.1	ug/L	-33	Standard
	Se	82	5050.1	1.3	**48.2784**	1.151	2.4	ug/L	12	Standard
	Se-1	77	3524.4	1.4	**48.3395**	0.362	0.7	ug/L	94	Standard
>	Ga	71	53.3	5.4				mg/L	28	Standard
	Rb	85	323.3	12.5				ug/L	25	Standard
	Y	89	461343.6	2.1				ug/L	487927	Standard
>	Rh	103	26.7	10.8				ug/L	15	Standard
	Mo	98	352839.5	0.5	**99.5628**	1.115	1.1	ug/L	46	Standard
	Ag	107	289383.9	1.0	**49.3598**	0.327	0.7	ug/L	103	Standard
	Cd	111	83326.8	0.4	**50.6139**	0.623	1.2	mg/L	4	Standard
	Cd	114	213171.9	1.8	**51.1470**	1.335	2.6	ug/L	25	Standard
>	In	115	555470.2	1.6				ug/L	577818	Standard
	Sn	118	46532.0	1.9	**51.2756**	0.393	0.8	ug/L	203	Standard
	Sb	123	218203.4	0.6	**49.3700**	0.499	1.0	ug/L	270	Standard
	Ba	135	82569.4	0.6	**51.0953**	0.618	1.2	ug/L	35	Standard
	Ce	140	236.7	10.6				ug/L	25	Standard
>	Tb	159	832811.8	1.4				ug/L	866991	Standard
	Ho	165	13.3	43.3				ug/L	3	Standard
	Tl	203	353388.0	0.4	**50.4011**	0.345	0.7	ug/L	243	Standard
	Tl	205	842046.0	0.4	**49.9840**	0.470	0.9	ug/L	563	Standard
	Pb	206	285158.1	0.6	**50.1508**	0.363	0.7	ug/L	471	Standard
	Pb	207	260204.7	0.5	**50.5636**	0.772	1.5	ug/L	407	Standard
	Pb	208	289824.6	0.6	**51.4778**	0.859	1.7	ug/L	462	Standard
	U	238	241870.4	1.2	**51.0569**	1.078	2.1	ug/L	9	Standard
>	Bi	209	537446.2	1.0				ug/L	583182	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, March 29, 2017 17:19:01
Page 1

Approved: March 30, 2017

	Na	23	8.3	124.9	**6.5483**	8.205	125.3	mg/L	0	Standard
	Mg	24	278.3	9.9	**6.1974**	0.765	12.3	mg/L	33	Standard
	K	39	1078.4	10.3	**6.1933**	0.717	11.6	mg/L	20	Standard
	Ca	43	65.0	23.1	**-80.5270**	269.152	334.2	mg/L	32	Standard
	Fe	54	793.1	12.2	**5.0633**	0.695	13.7	mg/L	18	Standard
	Fe	57	483.3	12.0	**5.9541**	1.287	21.6	mg/L	245	Standard
>	**Sc-1**	45	48158.1	1.0				mg/L	48374	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	2.0	50.0				ug/L	2	Standard
	Br	81	2126.8	5.3				ug/L	1940	Standard
	P	31	70.0	28.6				ug/L	42	Standard
	S	34	10.0	100.0				ug/L	3	Standard
	Sr	88	123.3	6.2				ug/L	115	Standard
	C	12	33.3	45.8				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	16.2	35.8				mg/L	30	Standard
	Ho-1	165	13.3	43.3				mg/L	3	Standard
	Er	166	10.0	100.0				mg/L	10	Standard
	I	127	4422.3	16.1				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	101.994		
	Al	27	98.480		
	Sc	45			
	Ti	47	104.672		
	V	51	104.423		
	Cr	52	105.167		
	Cr	53			
	Mn	55	103.964		
	Co	59	104.042		
	Ni	60	102.934		
	Cu	65	103.130		
	Zn	66	101.148		
>	Ge	72		95.901	
	As	75	98.876		
	Se	82	96.557		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, March 29, 2017 17:19:01
Page 2

Approved: March 30, 2017

⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	99.563	
|	Ag	107	98.720	
|	Cd	111	101.228	
|	Cd	114		
|>	In	115		96.132
|	Sn	118	102.551	
|	Sb	123	98.740	
⌊	Ba	135	102.191	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	100.802	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	102.956	
|	U	238	102.114	
⌊>	Bi	209		92.158
⌈	Na	23		
|	Mg	24		
|	K	39		
|	Ca	43		
|	Fe	54		
|	Fe	57		
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Wednesday, March 29, 2017 17:19:01
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, March 29, 2017 17:19:55
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	230634.4	2.4				ug/L	221697	Standard
	Be	9	23.3	53.9	-0.0078	0.006	77.8	ug/L	18	Standard
	Al	27	621.7	14.9	0.0056	0.001	11.2	ug/L	548	Standard
	Sc	45	48902.2	3.4				ug/L	48374	Standard
	Ti	47	32.3	9.4	-0.0129	0.011	81.3	ug/L	37	Standard
	V	51	985.9	4.8	-0.0563	0.005	9.6	ug/L	1312	Standard
	Cr	52	4543.7	0.6	-0.1549	0.011	7.3	ug/L	5560	Standard
	Cr	53	341.7	14.7	-0.1877	0.062	33.1	ug/L	495	Standard
	Mn	55	1628.8	6.2	0.0126	0.008	63.9	ug/L	1474	Standard
	Co	59	271.0	11.0	-0.0186	0.004	23.0	ug/L	432	Standard
	Ni	60	158.0	3.8	0.0076	0.004	50.3	ug/L	135	Standard
	Cu	65	522.3	4.4	0.0120	0.015	122.6	ug/L	523	Standard
	Zn	66	390.0	3.6	-0.0656	0.009	13.8	ug/L	311	Standard
>	Ge	72	667265.6	1.3				ug/L	688742	Standard
	As	75	-3.1	300.3	-0.0006	0.008	1327.0	ug/L	-33	Standard
	Se	82	18.7	18.2	0.0245	0.034	140.2	ug/L	12	Standard
	Se-1	77	69.0	16.3	-0.1144	0.145	126.6	ug/L	94	Standard
>	Ga	71	26.7	10.8				mg/L	28	Standard
	Rb	85	41.7	6.9				ug/L	25	Standard
	Y	89	472355.1	2.7				ug/L	487927	Standard
>	Rh	103	16.7	17.3				ug/L	15	Standard
	Mo	98	228.8	18.3	0.0447	0.011	24.2	ug/L	46	Standard
	Ag	107	118.7	10.1	-0.0020	0.002	87.9	ug/L	103	Standard
	Cd	111	4.4	46.4	-0.0025	0.001	47.1	mg/L	4	Standard
	Cd	114	13.3	90.0	-0.0064	0.003	44.0	ug/L	25	Standard
>	In	115	570170.0	1.5				ug/L	577818	Standard
	Sn	118	189.0	13.0	0.0130	0.030	226.9	ug/L	203	Standard
	Sb	123	231.0	5.5	0.0238	0.003	14.3	ug/L	270	Standard
	Ba	135	61.0	14.8	0.0130	0.005	39.2	ug/L	35	Standard
	Ce	140	30.0	16.7				ug/L	25	Standard
>	Tb	159	844168.4	0.8				ug/L	866991	Standard
	Ho	165	6.7	86.6				ug/L	3	Standard
	Tl	203	40.3	6.2	-0.0197	0.000	1.8	ug/L	243	Standard
	Tl	205	106.7	21.1	-0.0167	0.001	7.9	ug/L	563	Standard
	Pb	206	468.3	9.9	0.0043	0.008	185.4	ug/L	471	Standard
	Pb	207	416.0	8.8	0.0069	0.007	98.2	ug/L	407	Standard
	Pb	208	466.0	9.3	0.0045	0.007	165.3	ug/L	462	Standard
	U	238	22.3	17.0	0.0011	0.001	72.1	ug/L	9	Standard
>	Bi	209	548811.3	0.2				ug/L	583182	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, March 29, 2017 17:22:06
Page 1

Approved: March 30, 2017

⌈	**Na**	23	1.7	173.2	**1.3318**	2.298	172.6	mg/L	0	Standard
|	**Mg**	24	28.3	10.2	**-0.2697**	0.082	30.3	mg/L	33	Standard
|	**K**	39	15.0	66.7	**-0.0658**	0.057	86.6	mg/L	20	Standard
|	**Ca**	43	36.7	20.8	**436.0201**	121.514	27.9	mg/L	32	Standard
|	**Fe**	54	36.2	29.5	**0.0231**	0.063	271.7	mg/L	18	Standard
|	**Fe**	57	285.0	13.7	**1.4981**	0.841	56.1	mg/L	245	Standard
⌊>	**Sc-1**	45	48902.2	3.4				mg/L	48374	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	3.0	33.3				ug/L	2	Standard
	Br	81	2063.5	0.7				ug/L	1940	Standard
	P	31	48.3	43.1				ug/L	42	Standard
	S	34	10.0	86.6				ug/L	3	Standard
	Sr	88	163.3	56.9				ug/L	115	Standard
	C	12	40.0	43.3				mg/L	37	Standard
	N	14	6.7	86.6				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	12.4	43.3				mg/L	30	Standard
	Ho-1	165	6.7	86.6				mg/L	3	Standard
	Er	166	20.0	50.0				mg/L	10	Standard
	I	127	3353.7	7.4				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		96.882	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, March 29, 2017 17:22:06
Page 2

Approved: March 30, 2017

Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	98.676
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	94.106
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Wednesday, March 29, 2017 17:22:06
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703133911
Sample Date/Time: Wednesday, March 29, 2017 17:23:02
Number of Replicates: 3
Autosampler Position: 259
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	220895.4	1.3				ug/L	221697	Standard
	Be	9	53.3	10.8	**0.0073**	0.003	43.1	ug/L	18	Standard
	Al	27	516372.4	1.1	**4.2139**	0.101	2.4	ug/L	548	Standard
	Sc	45	46454.4	1.0				ug/L	48374	Standard
	Ti	47	52.3	14.6	**0.0719**	0.029	39.8	ug/L	37	Standard
	V	51	944.7	10.0	**-0.0548**	0.014	25.9	ug/L	1312	Standard
	Cr	52	4304.9	0.9	**-0.1561**	0.009	5.5	ug/L	5560	Standard
	Cr	53	818.4	15.4	**0.5136**	0.186	36.2	ug/L	495	Standard
	Mn	55	544394.7	0.6	**57.2840**	0.453	0.8	ug/L	1474	Standard
	Co	59	439.0	5.5	**0.0062**	0.004	56.2	ug/L	432	Standard
	Ni	60	221.7	1.8	**0.0534**	0.002	3.9	ug/L	135	Standard
	Cu	65	578.7	5.5	**0.0624**	0.022	34.8	ug/L	523	Standard
	Zn	66	1320.4	2.0	**0.8756**	0.029	3.3	ug/L	311	Standard
>	Ge	72	633140.9	0.7				ug/L	688742	Standard
	As	75	39.8	91.9	**0.0387**	0.034	86.9	ug/L	-33	Standard
	Se	82	30.6	14.0	**0.1524**	0.041	26.9	ug/L	12	Standard
	Se-1	77	103.7	7.4	**0.4450**	0.107	24.2	ug/L	94	Standard
>	Ga	71	28.3	36.7				mg/L	28	Standard
	Rb	85	1131.7	5.2				ug/L	25	Standard
	Y	89	436810.8	1.0				ug/L	487927	Standard
>	Rh	103	11.7	24.7				ug/L	15	Standard
	Mo	98	56.6	9.1	**-0.0017**	0.001	84.6	ug/L	46	Standard
	Ag	107	91.7	9.5	**-0.0055**	0.002	28.0	ug/L	103	Standard
	Cd	111	32.3	1.8	**0.0152**	0.000	2.7	mg/L	4	Standard
	Cd	114	66.2	64.6	**0.0068**	0.010	154.9	ug/L	25	Standard
>	In	115	538252.7	0.6				ug/L	577818	Standard
	Sn	118	142.7	10.1	**-0.0281**	0.016	57.9	ug/L	203	Standard
	Sb	123	61.1	38.8	**-0.0129**	0.006	43.1	ug/L	270	Standard
	Ba	135	54738.4	1.3	**34.9447**	0.401	1.1	ug/L	35	Standard
	Ce	140	2106.8	6.2				ug/L	25	Standard
>	Tb	159	797786.8	0.7				ug/L	866991	Standard
	Ho	165	115.0	17.4				ug/L	3	Standard
	Tl	203	372.0	2.4	**0.0286**	0.002	5.3	ug/L	243	Standard
	Tl	205	868.4	7.3	**0.0295**	0.004	13.8	ug/L	563	Standard
	Pb	206	496.7	3.9	**0.0124**	0.004	29.6	ug/L	471	Standard
	Pb	207	426.0	7.5	**0.0119**	0.006	53.3	ug/L	407	Standard
	Pb	208	483.0	4.7	**0.0106**	0.004	42.3	ug/L	462	Standard
	U	238	5.7	66.8	**-0.0023**	0.001	34.9	ug/L	9	Standard
>	Bi	209	528915.9	0.5				ug/L	583182	Standard

Sample ID: L1703133911
Report Date/Time: Wednesday, March 29, 2017 17:25:13
Page 1

Approved: March 30, 2017

⌈	**Na**	23	1.7	173.2	**1.3457**	2.322	172.6	mg/L	0	Standard
|	**Mg**	24	196.7	14.0	**4.2767**	0.788	18.4	mg/L	33	Standard
|	**K**	39	61.7	32.8	**0.2240**	0.122	54.6	mg/L	20	Standard
|	**Ca**	43	45.0	40.1	**246.0475**	335.000	136.2	mg/L	32	Standard
|	**Fe**	54	56.2	22.2	**0.1745**	0.084	48.1	mg/L	18	Standard
|	**Fe**	57	325.0	9.6	**2.7367**	0.772	28.2	mg/L	245	Standard
⌊>	**Sc-1**	45	46454.4	1.0				mg/L	48374	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	2.3	65.5				ug/L	2	Standard
	Br	81	12695.3	4.5				ug/L	1940	Standard
	P	31	41.7	27.7				ug/L	42	Standard
	S	34	1.7	173.2				ug/L	3	Standard
	Sr	88	130.0	10.2				ug/L	115	Standard
	C	12	40.0	109.0				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	118.2	56.1				mg/L	30	Standard
	Ho-1	165	115.0	17.4				mg/L	3	Standard
	Er	166	106.7	32.9				mg/L	10	Standard
	I	127	7653.6	5.6				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		99.638	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		91.927	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703133911
Report Date/Time: Wednesday, March 29, 2017 17:25:13
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	93.153
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	90.695
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703133911
Report Date/Time: Wednesday, March 29, 2017 17:25:13
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703133913
Sample Date/Time: Wednesday, March 29, 2017 17:26:08
Number of Replicates: 3
Autosampler Position: 260
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	221783.3	1.4				ug/L	221697	Standard
	Be	9	40.0	45.1	**0.0006**	0.009	1348.2	ug/L	18	Standard
	Al	27	599999.8	1.7	**4.8771**	0.149	3.0	ug/L	548	Standard
	Sc	45	46292.3	0.7				ug/L	48374	Standard
	Ti	47	68.3	6.6	**0.1339**	0.018	13.7	ug/L	37	Standard
	V	51	1128.2	12.5	**-0.0257**	0.023	91.3	ug/L	1312	Standard
	Cr	52	5952.5	2.9	**0.1354**	0.036	26.4	ug/L	5560	Standard
	Cr	53	1241.7	2.8	**1.1058**	0.042	3.8	ug/L	495	Standard
	Mn	55	212648.9	0.7	**22.1999**	0.097	0.4	ug/L	1474	Standard
	Co	59	2099.5	1.4	**0.2322**	0.005	2.0	ug/L	432	Standard
	Ni	60	3129.3	1.5	**1.9040**	0.027	1.4	ug/L	135	Standard
	Cu	65	561.7	5.3	**0.0508**	0.019	38.3	ug/L	523	Standard
	Zn	66	1843.4	1.9	**1.3867**	0.040	2.9	ug/L	311	Standard
>	Ge	72	635515.8	0.4				ug/L	688742	Standard
	As	75	259.1	15.8	**0.2406**	0.037	15.5	ug/L	-33	Standard
	Se	82	35.1	22.6	**0.1958**	0.079	40.3	ug/L	12	Standard
	Se-1	77	128.3	10.6	**0.7984**	0.191	23.9	ug/L	94	Standard
>	Ga	71	35.0	37.8				mg/L	28	Standard
	Rb	85	1898.5	1.5				ug/L	25	Standard
	Y	89	436287.9	1.2				ug/L	487927	Standard
>	Rh	103	16.7	62.4				ug/L	15	Standard
	Mo	98	72.4	27.4	**0.0029**	0.006	197.5	ug/L	46	Standard
	Ag	107	105.0	11.2	**-0.0032**	0.002	63.8	ug/L	103	Standard
	Cd	111	49.9	10.6	**0.0261**	0.003	11.9	mg/L	4	Standard
	Cd	114	152.7	9.2	**0.0282**	0.004	13.0	ug/L	25	Standard
>	In	115	539439.5	0.7				ug/L	577818	Standard
	Sn	118	148.0	8.3	**-0.0223**	0.015	65.4	ug/L	203	Standard
	Sb	123	65.0	22.8	**-0.0120**	0.003	28.6	ug/L	270	Standard
	Ba	135	29560.8	1.4	**18.8208**	0.393	2.1	ug/L	35	Standard
	Ce	140	861.7	8.9				ug/L	25	Standard
>	Tb	159	802952.1	0.3				ug/L	866991	Standard
	Ho	165	36.7	15.7				ug/L	3	Standard
	Tl	203	405.7	3.5	**0.0335**	0.002	6.6	ug/L	243	Standard
	Tl	205	1048.4	8.6	**0.0404**	0.006	13.8	ug/L	563	Standard
	Pb	206	559.3	2.3	**0.0236**	0.002	9.5	ug/L	471	Standard
	Pb	207	479.3	2.6	**0.0224**	0.002	10.4	ug/L	407	Standard
	Pb	208	537.7	2.3	**0.0205**	0.002	11.8	ug/L	462	Standard
	U	238	15.3	100.3	**-0.0002**	0.003	1471.7	ug/L	9	Standard
>	Bi	209	528814.0	0.3				ug/L	583182	Standard

Sample ID: L1703133913
Report Date/Time: Wednesday, March 29, 2017 17:28:19
Page 1

Approved: March 30, 2017

	Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
	Mg	24	305.0	10.0	**7.1969**	0.776	10.8	mg/L	33	Standard
	K	39	63.3	4.6	**0.2356**	0.019	8.3	mg/L	20	Standard
	Ca	43	45.0	11.1	**244.4275**	88.970	36.4	mg/L	32	Standard
	Fe	54	194.5	7.0	**1.1325**	0.104	9.2	mg/L	18	Standard
	Fe	57	315.0	6.9	**2.5285**	0.470	18.6	mg/L	245	Standard
>	**Sc-1**	45	46292.3	0.7				mg/L	48374	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	3.3	96.4				ug/L	2	Standard
	Br	81	15247.7	5.0				ug/L	1940	Standard
	P	31	43.3	17.6				ug/L	42	Standard
	S	34	8.3	91.7				ug/L	3	Standard
	Sr	88	148.3	12.8				ug/L	115	Standard
	C	12	33.3	45.8				mg/L	37	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	37.9	56.0				mg/L	30	Standard
	Ho-1	165	36.7	15.7				mg/L	3	Standard
	Er	166	43.3	74.2				mg/L	10	Standard
	I	127	40606.2	8.0				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		100.039	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		92.272	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703133913
Report Date/Time: Wednesday, March 29, 2017 17:28:19
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	93.358
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	90.677
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703133913
Report Date/Time: Wednesday, March 29, 2017 17:28:19
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703133915
Sample Date/Time: Wednesday, March 29, 2017 17:29:13
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	222814.7	0.1				ug/L	221697	Standard
	Be	9	560.0	4.1	**0.2519**	0.011	4.5	ug/L	18	Standard
	Al	27	777820.4	1.1	**6.2913**	0.079	1.3	ug/L	548	Standard
	Sc	45	50423.8	2.2				ug/L	48374	Standard
	Ti	47	10870.6	0.9	**42.0826**	0.585	1.4	ug/L	37	Standard
	V	51	57169.2	1.2	**8.9344**	0.077	0.9	ug/L	1312	Standard
	Cr	52	49737.2	1.2	**7.9000**	0.106	1.3	ug/L	5560	Standard
	Cr	53	6643.1	3.5	**8.6689**	0.291	3.4	ug/L	495	Standard
	Mn	55	711575.5	1.9	**74.1637**	1.162	1.6	ug/L	1474	Standard
	Co	59	10187.1	2.1	**1.3252**	0.024	1.8	ug/L	432	Standard
	Ni	60	9038.7	1.9	**5.6296**	0.091	1.6	ug/L	135	Standard
	Cu	65	7549.5	0.3	**4.2486**	0.022	0.5	ug/L	523	Standard
	Zn	66	25162.9	1.1	**24.2350**	0.152	0.6	ug/L	311	Standard
>	Ge	72	639566.0	0.5				ug/L	688742	Standard
	As	75	893.2	4.8	**0.8193**	0.036	4.4	ug/L	-33	Standard
	Se	82	53.9	15.1	**0.3795**	0.078	20.7	ug/L	12	Standard
	Se-1	77	136.7	7.0	**0.9077**	0.138	15.2	ug/L	94	Standard
>	Ga	71	7276.7	3.1				mg/L	28	Standard
	Rb	85	50164.6	2.1				ug/L	25	Standard
	Y	89	466798.7	0.9				ug/L	487927	Standard
>	Rh	103	13.3	21.7				ug/L	15	Standard
	Mo	98	271.4	9.2	**0.0608**	0.007	11.9	ug/L	46	Standard
	Ag	107	153.7	8.8	**0.0053**	0.002	43.2	ug/L	103	Standard
	Cd	111	332.7	1.7	**0.2031**	0.004	2.1	mg/L	4	Standard
	Cd	114	811.1	1.2	**0.1909**	0.003	1.7	ug/L	25	Standard
>	In	115	539159.3	0.4				ug/L	577818	Standard
	Sn	118	145.0	6.3	**-0.0257**	0.011	42.7	ug/L	203	Standard
	Sb	123	120.9	14.2	**0.0010**	0.004	394.7	ug/L	270	Standard
	Ba	135	49563.6	2.2	**31.5875**	0.791	2.5	ug/L	35	Standard
	Ce	140	76914.7	0.6				ug/L	25	Standard
>	Tb	159	816816.4	0.5				ug/L	866991	Standard
	Ho	165	1433.4	7.7				ug/L	3	Standard
	Tl	203	600.0	8.6	**0.0607**	0.007	12.1	ug/L	243	Standard
	Tl	205	1421.7	4.5	**0.0619**	0.004	6.8	ug/L	563	Standard
	Pb	206	13421.3	2.0	**2.2980**	0.046	2.0	ug/L	471	Standard
	Pb	207	10726.5	2.9	**2.0241**	0.056	2.8	ug/L	407	Standard
	Pb	208	12558.4	1.3	**2.1670**	0.030	1.4	ug/L	462	Standard
	U	238	955.4	7.7	**0.1991**	0.016	8.2	ug/L	9	Standard
>	Bi	209	535047.7	0.5				ug/L	583182	Standard

Sample ID: L1703133915
Report Date/Time: Wednesday, March 29, 2017 17:31:24
Page 1

Approved: March 30, 2017

⌈	**Na**	23	5.0	0.0	**3.7237**	0.081	2.2	mg/L	0	Standard
|	**Mg**	24	253.3	1.1	**5.2570**	0.185	3.5	mg/L	33	Standard
|	**K**	39	113.3	33.4	**0.4861**	0.217	44.7	mg/L	20	Standard
|	**Ca**	43	26.7	47.2	**626.8024**	207.690	33.1	mg/L	32	Standard
|	**Fe**	54	627.7	5.4	**3.7739**	0.250	6.6	mg/L	18	Standard
|	**Fe**	57	460.0	4.3	**4.9824**	0.272	5.5	mg/L	245	Standard
⌊>	**Sc-1**	45	50423.8	2.2				mg/L	48374	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	3.7	128.9				ug/L	2	Standard
	Br	81	10220.1	9.2				ug/L	1940	Standard
	P	31	48.3	23.9				ug/L	42	Standard
	S	34	3.3	86.6				ug/L	3	Standard
	Sr	88	140.0	19.9				ug/L	115	Standard
	C	12	36.7	63.0				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	30.0	66.7				mg/L	3	Standard
	Dy	164	2160.9	5.5				mg/L	30	Standard
	Ho-1	165	1433.4	7.7				mg/L	3	Standard
	Er	166	1306.7	4.7				mg/L	10	Standard
	I	127	17919.0	7.2				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		100.504	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		92.860	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703133915
Report Date/Time: Wednesday, March 29, 2017 17:31:24
Page 2

Approved: March 30, 2017

Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	93.310
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	91.746
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703133915
Report Date/Time: Wednesday, March 29, 2017 17:31:24
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, March 29, 2017 17:32:20
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	230275.1	0.9				ug/L	221697	Standard
	Be	9	107223.1	0.6	**50.1247**	0.219	0.4	ug/L	18	Standard
	Al	27	6268171.1	1.9	**49.0521**	0.934	1.9	ug/L	548	Standard
	Sc	45	49149.6	1.5				ug/L	48374	Standard
	Ti	47	27999.8	0.9	**103.4194**	1.146	1.1	ug/L	37	Standard
	V	51	337296.1	0.6	**51.1601**	0.460	0.9	ug/L	1312	Standard
	Cr	52	307882.3	0.3	**51.1140**	0.220	0.4	ug/L	5560	Standard
	Cr	53	38806.3	0.6	**51.1801**	0.336	0.7	ug/L	495	Standard
	Mn	55	513301.6	0.8	**50.9043**	0.509	1.0	ug/L	1474	Standard
	Co	59	393232.8	0.3	**50.6448**	0.278	0.5	ug/L	432	Standard
	Ni	60	83634.2	0.9	**50.2990**	0.507	1.0	ug/L	135	Standard
	Cu	65	88816.2	1.2	**50.5488**	0.665	1.3	ug/L	523	Standard
	Zn	66	54276.4	1.4	**50.2402**	0.739	1.5	ug/L	311	Standard
>	Ge	72	671571.7	0.3				ug/L	688742	Standard
	As	75	56253.1	0.8	**49.0282**	0.456	0.9	ug/L	-33	Standard
	Se	82	5168.2	1.2	**48.5817**	0.523	1.1	ug/L	12	Standard
	Se-1	77	3682.8	1.2	**49.7059**	0.594	1.2	ug/L	94	Standard
>	Ga	71	80.0	10.8				mg/L	28	Standard
	Rb	85	318.3	11.8				ug/L	25	Standard
	Y	89	471523.5	1.1				ug/L	487927	Standard
>	Rh	103	28.3	44.4				ug/L	15	Standard
	Mo	98	357630.6	0.7	**98.5030**	1.255	1.3	ug/L	46	Standard
	Ag	107	297351.9	0.7	**49.5074**	0.329	0.7	ug/L	103	Standard
	Cd	111	85035.9	0.6	**50.4174**	0.648	1.3	mg/L	4	Standard
	Cd	114	216503.3	1.5	**50.6956**	0.402	0.8	ug/L	25	Standard
>	In	115	569034.6	0.8				ug/L	577818	Standard
	Sn	118	46995.2	3.2	**50.5575**	1.921	3.8	ug/L	203	Standard
	Sb	123	222048.3	1.2	**49.0413**	0.924	1.9	ug/L	270	Standard
	Ba	135	82902.2	1.2	**50.0761**	0.914	1.8	ug/L	35	Standard
	Ce	140	226.7	9.9				ug/L	25	Standard
>	Tb	159	857197.0	0.8				ug/L	866991	Standard
	Ho	165	15.0	0.0				ug/L	3	Standard
	Tl	203	357170.3	0.8	**49.6713**	0.673	1.4	ug/L	243	Standard
	Tl	205	855883.2	1.1	**49.5363**	0.453	0.9	ug/L	563	Standard
	Pb	206	289537.4	0.7	**49.6519**	0.608	1.2	ug/L	471	Standard
	Pb	207	262839.8	1.3	**49.7978**	0.665	1.3	ug/L	407	Standard
	Pb	208	293826.8	0.9	**50.8826**	0.500	1.0	ug/L	462	Standard
	U	238	246835.0	0.1	**50.8017**	0.470	0.9	ug/L	9	Standard
>	Bi	209	551190.6	1.0				ug/L	583182	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, March 29, 2017 17:34:31
Page 1

Approved: March 30, 2017

	Na	23	8.3	91.7	**6.3057**	5.761	91.4	mg/L	0	Standard
	Mg	24	325.0	18.1	**7.2227**	1.421	19.7	mg/L	33	Standard
	K	39	1035.0	6.8	**5.8083**	0.334	5.7	mg/L	20	Standard
	Ca	43	66.7	34.6	**-88.7880**	413.681	465.9	mg/L	32	Standard
	Fe	54	721.6	14.4	**4.4916**	0.722	16.1	mg/L	18	Standard
	Fe	57	516.7	10.9	**6.4562**	1.198	18.6	mg/L	245	Standard
>	**Sc-1**	45	49149.6	1.5				mg/L	48374	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	1.3	43.3				ug/L	2	Standard
	Br	81	1810.1	16.9				ug/L	1940	Standard
	P	31	55.0	24.1				ug/L	42	Standard
	S	34	8.3	91.7				ug/L	3	Standard
	Sr	88	121.7	20.3				ug/L	115	Standard
	C	12	36.7	15.7				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	19.5	93.0				mg/L	30	Standard
	Ho-1	165	15.0	0.0				mg/L	3	Standard
	Er	166	10.0	173.2				mg/L	10	Standard
	I	127	3508.7	0.7				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	100.249		
	Al	27	98.104		
	Sc	45			
	Ti	47	103.419		
	V	51	102.320		
	Cr	52	102.228		
	Cr	53			
	Mn	55	101.809		
	Co	59	101.290		
	Ni	60	100.598		
	Cu	65	101.098		
	Zn	66	100.480		
>	Ge	72		97.507	
	As	75	98.056		
	Se	82	97.163		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, March 29, 2017 17:34:31
Page 2

Approved: March 30, 2017

⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	98.503	
|	Ag	107	99.015	
|	Cd	111	100.835	
|	Cd	114		
|>	In	115		98.480
|	Sn	118	101.115	
|	Sb	123	98.083	
⌊	Ba	135	100.152	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	99.343	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	101.765	
|	U	238	101.603	
⌊>	Bi	209		94.514
⌈	Na	23		
|	Mg	24		
|	K	39		
|	Ca	43		
|	Fe	54		
|	Fe	57		
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Wednesday, March 29, 2017 17:34:31
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, March 29, 2017 17:35:26
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	227518.1	2.9				ug/L	221697	Standard
	Be	9	28.3	27.0	**-0.0053**	0.004	74.4	ug/L	18	Standard
	Al	27	616.7	21.6	**0.0057**	0.001	19.1	ug/L	548	Standard
	Sc	45	49826.8	2.6				ug/L	48374	Standard
	Ti	47	38.0	13.9	**0.0077**	0.016	211.3	ug/L	37	Standard
	V	51	1139.1	8.2	**-0.0328**	0.018	54.3	ug/L	1312	Standard
	Cr	52	4908.5	1.5	**-0.0936**	0.034	36.4	ug/L	5560	Standard
	Cr	53	396.7	12.9	**-0.1129**	0.082	72.2	ug/L	495	Standard
	Mn	55	1649.4	3.5	**0.0146**	0.008	56.5	ug/L	1474	Standard
	Co	59	284.0	6.5	**-0.0170**	0.002	12.5	ug/L	432	Standard
	Ni	60	149.7	8.7	**0.0025**	0.009	362.8	ug/L	135	Standard
	Cu	65	523.0	6.1	**0.0121**	0.022	183.3	ug/L	523	Standard
	Zn	66	373.7	5.3	**-0.0815**	0.017	20.4	ug/L	311	Standard
>	**Ge**	72	668313.3	2.6				ug/L	688742	Standard
	As	75	-10.0	433.9	**-0.0066**	0.038	569.6	ug/L	-33	Standard
	Se	82	15.3	44.5	**-0.0072**	0.067	931.5	ug/L	12	Standard
	Se-1	77	64.0	4.1	**-0.1843**	0.018	9.9	ug/L	94	Standard
>	**Ga**	71	30.0	16.7				mg/L	28	Standard
	Rb	85	25.0	20.0				ug/L	25	Standard
	Y	89	467628.3	1.9				ug/L	487927	Standard
>	**Rh**	103	13.3	43.3				ug/L	15	Standard
	Mo	98	207.9	24.0	**0.0392**	0.012	31.4	ug/L	46	Standard
	Ag	107	128.0	14.8	**-0.0003**	0.003	816.6	ug/L	103	Standard
	Cd	111	3.7	25.2	**-0.0028**	0.001	18.4	mg/L	4	Standard
	Cd	114	32.3	39.9	**-0.0020**	0.003	150.7	ug/L	25	Standard
>	**In**	115	566669.0	2.7				ug/L	577818	Standard
	Sn	118	162.7	12.8	**-0.0141**	0.027	193.9	ug/L	203	Standard
	Sb	123	255.1	7.8	**0.0295**	0.006	19.3	ug/L	270	Standard
	Ba	135	60.0	2.9	**0.0127**	0.001	5.0	ug/L	35	Standard
	Ce	140	28.3	27.0				ug/L	25	Standard
>	**Tb**	159	847030.6	3.4				ug/L	866991	Standard
	Ho	165	8.3	91.7				ug/L	3	Standard
	Tl	203	34.3	28.0	**-0.0205**	0.001	7.0	ug/L	243	Standard
	Tl	205	100.0	30.4	**-0.0171**	0.002	10.7	ug/L	563	Standard
	Pb	206	480.0	6.5	**0.0064**	0.006	89.6	ug/L	471	Standard
	Pb	207	392.7	6.9	**0.0025**	0.003	124.7	ug/L	407	Standard
	Pb	208	454.7	7.5	**0.0027**	0.008	288.3	ug/L	462	Standard
	U	238	28.3	84.6	**0.0024**	0.005	213.4	ug/L	9	Standard
>	**Bi**	209	548263.8	2.8				ug/L	583182	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, March 29, 2017 17:37:36
Page 1

Approved: March 30, 2017

	Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
	Mg	24	25.0	60.0	**-0.3602**	0.390	108.4	mg/L	33	Standard
	K	39	23.3	24.7	**-0.0191**	0.033	173.7	mg/L	20	Standard
	Ca	43	30.0	16.7	**562.3166**	78.447	14.0	mg/L	32	Standard
	Fe	54	26.0	44.9	**-0.0470**	0.070	148.9	mg/L	18	Standard
	Fe	57	303.3	5.0	**1.7678**	0.155	8.8	mg/L	245	Standard
>	**Sc-1**	45	49826.8	2.6				mg/L	48374	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	4.7	44.6				ug/L	2	Standard
	Br	81	1806.8	13.2				ug/L	1940	Standard
	P	31	41.7	25.0				ug/L	42	Standard
	S	34	5.0	0.0				ug/L	3	Standard
	Sr	88	123.3	20.8				ug/L	115	Standard
	C	12	43.3	35.3				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	13.0	120.6				mg/L	30	Standard
	Ho-1	165	8.3	91.7				mg/L	3	Standard
	Er	166	6.7	173.2				mg/L	10	Standard
	I	127	2858.6	4.3				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.034	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, March 29, 2017 17:37:36
Page 2

Approved: March 30, 2017

Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	98.070
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	94.013
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Wednesday, March 29, 2017 17:37:36
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Wednesday, March 29, 2017 17:38:32
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	228639.5	6.0				ug/L	221697	Standard
	Be	9	386.7	15.3	**0.1628**	0.017	10.4	ug/L	18	Standard
	Al	27	576.7	12.5	**0.0054**	0.001	14.8	ug/L	548	Standard
	Sc	45	49544.3	4.5				ug/L	48374	Standard
	Ti	47	35.3	5.9	**0.0001**	0.013	13595.4	ug/L	37	Standard
	V	51	3626.6	3.3	**0.3557**	0.040	11.2	ug/L	1312	Standard
	Cr	52	10859.6	0.3	**0.9419**	0.073	7.8	ug/L	5560	Standard
	Cr	53	1131.7	9.3	**0.8943**	0.174	19.5	ug/L	495	Standard
	Mn	55	6075.9	1.7	**0.4650**	0.019	4.0	ug/L	1474	Standard
	Co	59	3178.0	3.1	**0.3632**	0.003	0.9	ug/L	432	Standard
	Ni	60	2635.9	2.0	**1.5292**	0.063	4.1	ug/L	135	Standard
	Cu	65	1861.8	1.5	**0.7964**	0.039	5.0	ug/L	523	Standard
	Zn	66	6784.2	1.7	**6.0177**	0.183	3.0	ug/L	311	Standard
>	Ge	72	659934.5	3.9				ug/L	688742	Standard
	As	75	414.1	5.9	**0.3697**	0.027	7.3	ug/L	-33	Standard
	Se	82	45.3	9.4	**0.2828**	0.057	20.1	ug/L	12	Standard
	Se-1	77	94.3	22.9	**0.2564**	0.321	125.1	ug/L	94	Standard
>	Ga	71	25.0	0.0				mg/L	28	Standard
	Rb	85	20.0	25.0				ug/L	25	Standard
	Y	89	463108.0	2.1				ug/L	487927	Standard
>	Rh	103	8.3	34.6				ug/L	15	Standard
	Mo	98	73.0	20.7	**0.0022**	0.004	166.9	ug/L	46	Standard
	Ag	107	2271.5	1.2	**0.3618**	0.009	2.5	ug/L	103	Standard
	Cd	111	369.9	5.2	**0.2172**	0.011	4.9	mg/L	4	Standard
	Cd	114	982.5	9.3	**0.2240**	0.027	12.2	ug/L	25	Standard
>	In	115	561669.2	3.0				ug/L	577818	Standard
	Sn	118	157.7	4.8	**-0.0182**	0.013	71.1	ug/L	203	Standard
	Sb	123	1689.9	2.5	**0.3512**	0.006	1.8	ug/L	270	Standard
	Ba	135	1159.4	2.0	**0.6864**	0.026	3.8	ug/L	35	Standard
	Ce	140	18.3	41.7				ug/L	25	Standard
>	Tb	159	841734.9	2.5				ug/L	866991	Standard
	Ho	165	8.3	34.6				ug/L	3	Standard
	Tl	203	536.0	3.1	**0.0496**	0.003	5.1	ug/L	243	Standard
	Tl	205	1341.7	7.0	**0.0551**	0.005	9.2	ug/L	563	Standard
	Pb	206	1501.7	4.2	**0.1824**	0.008	4.4	ug/L	471	Standard
	Pb	207	1281.7	1.6	**0.1719**	0.009	5.3	ug/L	407	Standard
	Pb	208	1507.0	2.0	**0.1860**	0.014	7.3	ug/L	462	Standard
	U	238	1756.4	2.9	**0.3595**	0.008	2.3	ug/L	9	Standard
>	Bi	209	549074.0	3.4				ug/L	583182	Standard

Sample ID: QC Std 8
Report Date/Time: Wednesday, March 29, 2017 17:40:43
Page 1

Approved: March 30, 2017

⌈	**Na**	23	1.7	173.2	**1.3115**	2.263	172.5	mg/L	0	Standard
|	**Mg**	24	31.7	36.5	**-0.2036**	0.249	122.1	mg/L	33	Standard
|	**K**	39	16.7	91.7	**-0.0575**	0.088	153.2	mg/L	20	Standard
|	**Ca**	43	35.0	0.0	**471.3437**	26.857	5.7	mg/L	32	Standard
|	**Fe**	54	25.9	40.5	**-0.0455**	0.069	151.8	mg/L	18	Standard
|	**Fe**	57	285.0	3.5	**1.4281**	0.446	31.2	mg/L	245	Standard
⌊>	**Sc-1**	45	49544.3	4.5				mg/L	48374	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	4.0	0.0				ug/L	2	Standard
	Br	81	1820.1	1.0				ug/L	1940	Standard
	P	31	46.7	34.4				ug/L	42	Standard
	S	34	3.3	86.6				ug/L	3	Standard
	Sr	88	143.3	21.0				ug/L	115	Standard
	C	12	56.7	44.4				mg/L	37	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	2.9	203.0				mg/L	30	Standard
	Ho-1	165	8.3	34.6				mg/L	3	Standard
	Er	166	10.0	100.0				mg/L	10	Standard
	I	127	3653.8	3.8				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9	81.375		
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51	88.928		
|	Cr	52	117.743		
|	Cr	53			
|	Mn	55	93.008		
|	Co	59	90.805		
|	Ni	60	95.576		
|	Cu	65	99.551		
|	Zn	66	96.283		
|>	Ge	72		95.817	
|	As	75	92.415		
|	Se	82	70.704		
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: QC Std 8
Report Date/Time: Wednesday, March 29, 2017 17:40:43
Page 2

Approved: March 30, 2017

⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98		
|	Ag	107	90.450	
|	Cd	111	90.490	
|	Cd	114		
|>	In	115		97.205
|	Sn	118		
|	Sb	123	87.799	
⌊	Ba	135	91.527	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	61.950	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	92.985	
|	U	238	89.868	
⌊>	Bi	209		94.151
⌈	Na	23		
|	Mg	24		
|	K	39		
|	Ca	43		
|	Fe	54		
|	Fe	57		
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 8	Tl	203	

Sample ID: QC Std 8
Report Date/Time: Wednesday, March 29, 2017 17:40:43
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: PBS M4 WG607872-02
Sample Date/Time: Wednesday, March 29, 2017 17:41:39
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	232377.9	3.1				ug/L	221697	Standard
	Be	9	20.0	66.1	**-0.0094**	0.006	68.4	ug/L	18	Standard
	Al	27	6076.2	1.6	**0.0479**	0.001	3.1	ug/L	548	Standard
	Sc	45	49507.5	4.2				ug/L	48374	Standard
	Ti	47	48.3	26.0	**0.0459**	0.046	100.1	ug/L	37	Standard
	V	51	1279.1	6.9	**-0.0121**	0.008	70.1	ug/L	1312	Standard
	Cr	52	7039.0	2.5	**0.2655**	0.007	2.7	ug/L	5560	Standard
	Cr	53	580.0	6.0	**0.1302**	0.036	27.4	ug/L	495	Standard
	Mn	55	2666.9	1.6	**0.1157**	0.003	2.8	ug/L	1474	Standard
	Co	59	297.3	7.7	**-0.0154**	0.002	12.1	ug/L	432	Standard
	Ni	60	233.3	5.0	**0.0529**	0.009	17.9	ug/L	135	Standard
	Cu	65	846.4	3.2	**0.1974**	0.028	14.2	ug/L	523	Standard
	Zn	66	1418.7	0.7	**0.8971**	0.037	4.1	ug/L	311	Standard
>	Ge	72	669595.4	2.8				ug/L	688742	Standard
	As	75	-10.9	209.9	**-0.0078**	0.020	260.3	ug/L	-33	Standard
	Se	82	15.2	5.5	**-0.0093**	0.011	121.1	ug/L	12	Standard
	Se-1	77	75.0	9.6	**-0.0348**	0.077	221.0	ug/L	94	Standard
>	Ga	71	30.0	16.7				mg/L	28	Standard
	Rb	85	50.0	26.5				ug/L	25	Standard
	Y	89	472486.0	0.9				ug/L	487927	Standard
>	Rh	103	6.7	114.6				ug/L	15	Standard
	Mo	98	70.0	10.7	**0.0011**	0.002	159.2	ug/L	46	Standard
	Ag	107	115.7	18.5	**-0.0024**	0.003	138.9	ug/L	103	Standard
	Cd	111	2.9	0.3	**-0.0033**	0.000	1.0	mg/L	4	Standard
	Cd	114	37.8	47.8	**-0.0007**	0.004	655.5	ug/L	25	Standard
>	In	115	568766.4	1.6				ug/L	577818	Standard
	Sn	118	267.0	2.9	**0.0975**	0.008	8.6	ug/L	203	Standard
	Sb	123	84.5	31.6	**-0.0084**	0.006	72.4	ug/L	270	Standard
	Ba	135	93.3	18.0	**0.0326**	0.010	29.5	ug/L	35	Standard
	Ce	140	45.0	29.4				ug/L	25	Standard
>	Tb	159	851462.4	0.1				ug/L	866991	Standard
	Ho	165	11.7	24.7				ug/L	3	Standard
	Tl	203	22.7	28.7	**-0.0222**	0.001	3.9	ug/L	243	Standard
	Tl	205	60.0	16.7	**-0.0194**	0.001	3.2	ug/L	563	Standard
	Pb	206	455.0	6.9	**0.0014**	0.005	370.0	ug/L	471	Standard
	Pb	207	394.3	4.7	**0.0023**	0.003	125.3	ug/L	407	Standard
	Pb	208	469.7	3.8	**0.0046**	0.004	80.4	ug/L	462	Standard
	U	238	8.0	12.5	**-0.0019**	0.000	10.1	ug/L	9	Standard
>	Bi	209	552487.9	1.0				ug/L	583182	Standard

Sample ID: PBS M4 WG607872-02
Report Date/Time: Wednesday, March 29, 2017 17:43:50
Page 1

Approved: March 30, 2017

	Na	23	3.3	86.6	**2.4915**	2.157	86.6	mg/L	0	Standard
	Mg	24	21.7	48.0	**-0.4396**	0.276	62.8	mg/L	33	Standard
	K	39	16.7	45.8	**-0.0574**	0.039	68.8	mg/L	20	Standard
	Ca	43	50.0	86.6	**204.2580**	768.333	376.2	mg/L	32	Standard
	Fe	54	36.0	29.1	**0.0188**	0.060	321.6	mg/L	18	Standard
	Fe	57	261.7	4.0	**0.9329**	0.439	47.0	mg/L	245	Standard
>	**Sc-1**	45	49507.5	4.2				mg/L	48374	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	1.7	69.3				ug/L	2	Standard
	Br	81	1873.4	6.9				ug/L	1940	Standard
	P	31	48.3	6.0				ug/L	42	Standard
	S	34	6.7	114.6				ug/L	3	Standard
	Sr	88	145.0	6.9				ug/L	115	Standard
	C	12	40.0	66.1				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	13.0	115.8				mg/L	30	Standard
	Ho-1	165	11.7	24.7				mg/L	3	Standard
	Er	166	6.7	86.6				mg/L	10	Standard
	I	127	3280.4	4.0				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		104.818	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.220	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: PBS M4 WG607872-02
Report Date/Time: Wednesday, March 29, 2017 17:43:50
Page 2

Approved: March 30, 2017

Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	98.433
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	94.737
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBS M4 WG607872-02
Report Date/Time: Wednesday, March 29, 2017 17:43:50
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: LCSS M4 WG607872-03
Sample Date/Time: Wednesday, March 29, 2017 17:44:45
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	228320.8	3.9				ug/L	221697	Standard
	Be	9	52942.4	2.3	**24.9625**	0.435	1.7	ug/L	18	Standard
	Al	27	6506.4	0.9	**0.0522**	0.002	3.1	ug/L	548	Standard
	Sc	45	48745.0	2.9				ug/L	48374	Standard
	Ti	47	34.7	11.7	**-0.0040**	0.013	334.0	ug/L	37	Standard
	V	51	168305.0	1.7	**25.6544**	0.389	1.5	ug/L	1312	Standard
	Cr	52	157649.1	1.9	**25.9580**	0.290	1.1	ug/L	5560	Standard
	Cr	53	20044.9	2.2	**26.3622**	0.304	1.2	ug/L	495	Standard
	Mn	55	262542.0	1.3	**26.1979**	0.295	1.1	ug/L	1474	Standard
	Co	59	196968.1	1.1	**25.5723**	0.517	2.0	ug/L	432	Standard
	Ni	60	42793.3	0.8	**25.9267**	0.324	1.3	ug/L	135	Standard
	Cu	65	45455.8	0.8	**25.9648**	0.302	1.2	ug/L	523	Standard
	Zn	66	28098.7	1.0	**26.0402**	0.537	2.1	ug/L	311	Standard
>	**Ge**	72	665644.8	1.9				ug/L	688742	Standard
	As	75	28115.9	2.2	**24.7229**	0.127	0.5	ug/L	-33	Standard
	Se	82	2518.4	4.4	**23.7996**	0.658	2.8	ug/L	12	Standard
	Se-1	77	1843.1	2.1	**24.5787**	0.945	3.8	ug/L	94	Standard
>	**Ga**	71	35.0	42.9				mg/L	28	Standard
	Rb	85	48.3	53.1				ug/L	25	Standard
	Y	89	471417.1	2.2				ug/L	487927	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	71.1	8.3	**0.0016**	0.001	84.8	ug/L	46	Standard
	Ag	107	147126.4	2.0	**24.6444**	0.090	0.4	ug/L	103	Standard
	Cd	111	42188.6	1.7	**25.1735**	0.072	0.3	mg/L	4	Standard
	Cd	114	104314.6	2.5	**24.5804**	0.263	1.1	ug/L	25	Standard
>	**In**	115	565324.6	1.7				ug/L	577818	Standard
	Sn	118	251.7	2.3	**0.0827**	0.009	10.7	ug/L	203	Standard
	Sb	123	108867.5	2.2	**24.1855**	0.239	1.0	ug/L	270	Standard
	Ba	135	41025.8	1.4	**24.9306**	0.087	0.3	ug/L	35	Standard
	Ce	140	65.0	23.1				ug/L	25	Standard
>	**Tb**	159	844526.1	1.4				ug/L	866991	Standard
	Ho	165	6.7	43.3				ug/L	3	Standard
	Tl	203	183060.4	1.3	**25.5646**	0.415	1.6	ug/L	243	Standard
	Tl	205	441306.4	0.7	**25.6529**	0.461	1.8	ug/L	563	Standard
	Pb	206	147750.6	0.8	**25.4185**	0.310	1.2	ug/L	471	Standard
	Pb	207	128879.5	1.2	**24.4944**	0.209	0.9	ug/L	407	Standard
	Pb	208	147334.4	1.4	**25.5945**	0.228	0.9	ug/L	462	Standard
	U	238	118905.5	1.8	**24.5835**	0.370	1.5	ug/L	9	Standard
>	**Bi**	209	548643.0	1.5				ug/L	583182	Standard

Sample ID: LCSS M4 WG607872-03
Report Date/Time: Wednesday, March 29, 2017 17:46:55
Page 1

Approved: March 30, 2017

⌈	**Na**	23	1.7	173.2	**1.2872**	2.221	172.5	mg/L	0	Standard
|	**Mg**	24	36.7	20.8	**-0.0565**	0.189	335.0	mg/L	33	Standard
|	**K**	39	35.0	51.5	**0.0497**	0.098	198.0	mg/L	20	Standard
|	**Ca**	43	18.3	31.5	**757.1723**	92.338	12.2	mg/L	32	Standard
|	**Fe**	54	17.2	60.0	**-0.0986**	0.071	72.2	mg/L	18	Standard
|	**Fe**	57	276.7	6.3	**1.3302**	0.209	15.7	mg/L	245	Standard
⌊>	**Sc-1**	45	48745.0	2.9				mg/L	48374	Standard
	Cl	35	2.0	0.0				ug/L	1	Standard
	Kr	83	2.7	43.3				ug/L	2	Standard
	Br	81	1790.1	4.2				ug/L	1940	Standard
	P	31	50.0	43.6				ug/L	42	Standard
	S	34	1.7	173.2				ug/L	3	Standard
	Sr	88	136.7	17.3				ug/L	115	Standard
	C	12	66.7	37.7				mg/L	37	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	13.0	40.1				mg/L	30	Standard
	Ho-1	165	6.7	43.3				mg/L	3	Standard
	Er	166	6.7	173.2				mg/L	10	Standard
	I	127	2973.6	1.3				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		102.988	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		96.646	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: LCSS M4 WG607872-03
Report Date/Time: Wednesday, March 29, 2017 17:46:55
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	97.838
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	94.078
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS M4 WG607872-03
Report Date/Time: Wednesday, March 29, 2017 17:46:55
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703135601 WG607872-01
Sample Date/Time: Wednesday, March 29, 2017 17:47:49
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	248435.9	2.3				ug/L	221697	Standard
	Be	9	5791.1	1.5	**2.4928**	0.090	3.6	ug/L	18	Standard
	Al	27	29604270.6	0.5	**214.7924**	4.241	2.0	ug/L	548	Standard
	Sc	45	62299.5	2.3				ug/L	48374	Standard
	Ti	47	43784.2	0.2	**165.4192**	0.738	0.4	ug/L	37	Standard
	V	51	307203.8	0.6	**47.6237**	0.148	0.3	ug/L	1312	Standard
	Cr	52	274816.9	0.3	**46.5653**	0.271	0.6	ug/L	5560	Standard
	Cr	53	34828.3	2.7	**46.9042**	0.986	2.1	ug/L	495	Standard
	Mn	55	11920140.5	0.4	**1211.9951**	4.342	0.4	ug/L	1474	Standard
	Co	59	153339.4	0.4	**20.1586**	0.125	0.6	ug/L	432	Standard
	Ni	60	84251.3	0.3	**51.8075**	0.298	0.6	ug/L	135	Standard
	Cu	65	122457.2	0.8	**71.3732**	0.464	0.6	ug/L	523	Standard
	Zn	66	195070.4	0.8	**185.7620**	1.351	0.7	ug/L	311	Standard
>	Ge	72	656870.0	0.6				ug/L	688742	Standard
	As	75	10673.7	0.5	**9.5129**	0.090	0.9	ug/L	-33	Standard
	Se	82	174.0	7.3	**1.5236**	0.123	8.1	ug/L	12	Standard
	Se-1	77	221.3	2.3	**2.0495**	0.090	4.4	ug/L	94	Standard
>	Ga	71	31068.5	3.8				mg/L	28	Standard
	Rb	85	338586.4	0.6				ug/L	25	Standard
	Y	89	934693.3	0.5				ug/L	487927	Standard
>	Rh	103	61.7	24.8				ug/L	15	Standard
	Mo	98	3049.2	1.2	**0.8447**	0.007	0.8	ug/L	46	Standard
	Ag	107	20305.3	1.2	**3.4528**	0.011	0.3	ug/L	103	Standard
	Cd	111	4506.4	2.3	**2.7397**	0.045	1.7	mg/L	4	Standard
	Cd	114	11287.4	2.0	**2.7067**	0.076	2.8	ug/L	25	Standard
>	In	115	553907.3	0.9				ug/L	577818	Standard
	Sn	118	314.7	6.3	**0.1583**	0.025	15.6	ug/L	203	Standard
	Sb	123	514.7	8.9	**0.0897**	0.011	11.9	ug/L	270	Standard
	Ba	135	570037.6	0.4	**353.8599**	3.440	1.0	ug/L	35	Standard
	Ce	140	1489563.0	1.8				ug/L	25	Standard
>	Tb	159	894575.3	0.5				ug/L	866991	Standard
	Ho	165	33411.8	1.4				ug/L	3	Standard
	Tl	203	2312.8	2.1	**0.3056**	0.005	1.6	ug/L	243	Standard
	Tl	205	5647.7	2.6	**0.3135**	0.010	3.3	ug/L	563	Standard
	Pb	206	420050.4	0.5	**74.1202**	0.831	1.1	ug/L	471	Standard
	Pb	207	343870.9	0.8	**67.0317**	0.992	1.5	ug/L	407	Standard
	Pb	208	405211.6	0.3	**72.2021**	0.785	1.1	ug/L	462	Standard
	U	238	14922.0	2.2	**3.1555**	0.090	2.9	ug/L	9	Standard
>	Bi	209	535935.5	0.8				ug/L	583182	Standard

Approved: March 30, 2017

⌈	**Na**	23	70.0	18.9	**42.2246**	8.643	20.5	mg/L	0	Standard
|	**Mg**	24	86.7	12.0	**0.7420**	0.243	32.7	mg/L	33	Standard
|	**K**	39	571.7	12.7	**2.4493**	0.359	14.6	mg/L	20	Standard
|	**Ca**	43	393.3	7.4	**-4348.1682**	518.093	11.9	mg/L	32	Standard
|	**Fe**	54	6449.6	3.3	**32.9457**	1.681	5.1	mg/L	18	Standard
|	**Fe**	57	2270.2	4.1	**33.9050**	0.920	2.7	mg/L	245	Standard
⌊>	**Sc-1**	45	62299.5	2.3				mg/L	48374	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	3.0	33.3				ug/L	2	Standard
	Br	81	3567.1	1.4				ug/L	1940	Standard
	P	31	55.0	39.6				ug/L	42	Standard
	S	34	3.3	86.6				ug/L	3	Standard
	Sr	88	148.3	5.1				ug/L	115	Standard
	C	12	133.3	28.4				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6821.5	2.9				mg/L	3	Standard
	Dy	164	50101.1	1.1				mg/L	30	Standard
	Ho-1	165	33411.8	1.4				mg/L	3	Standard
	Er	166	30965.0	2.8				mg/L	10	Standard
	I	127	14253.4	2.3				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		112.061	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		95.372	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703135601 WG607872-01
Report Date/Time: Wednesday, March 29, 2017 17:50:00
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	95.862
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	91.899
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

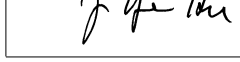
Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1703135601 WG607872-01
Report Date/Time: Wednesday, March 29, 2017 17:50:00
Page 3

Approved: March 30, 2017

Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

Approved: March 30, 2017



Method 6020 - Summary Report

Sample ID: L1703135601S WG607872-04
Sample Date/Time: Wednesday, March 29, 2017 17:50:55
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	247260.0	1.9				ug/L	221697	Standard
	Be	9	60701.4	1.0	**26.4258**	0.652	2.5	ug/L	18	Standard
	Al	27	20569621.4	1.8	**149.9229**	2.520	1.7	ug/L	548	Standard
	Sc	45	64277.7	0.7				ug/L	48374	Standard
	Ti	47	38438.0	1.3	**143.2277**	1.333	0.9	ug/L	37	Standard
	V	51	464990.2	0.9	**71.2083**	0.457	0.6	ug/L	1312	Standard
	Cr	52	357687.9	0.7	**60.0478**	0.421	0.7	ug/L	5560	Standard
	Cr	53	44988.4	1.0	**59.9484**	0.598	1.0	ug/L	495	Standard
	Mn	55	14803858.5	0.7	**1484.8066**	8.708	0.6	ug/L	1474	Standard
	Co	59	347261.1	0.2	**45.0995**	0.287	0.6	ug/L	432	Standard
	Ni	60	107226.4	0.2	**65.0635**	0.412	0.6	ug/L	135	Standard
	Cu	65	137116.3	0.3	**78.8655**	0.714	0.9	ug/L	523	Standard
	Zn	66	179722.7	0.7	**168.7899**	1.876	1.1	ug/L	311	Standard
>	Ge	72	665902.7	0.6				ug/L	688742	Standard
	As	75	37500.1	1.3	**32.9629**	0.459	1.4	ug/L	-33	Standard
	Se	82	2519.3	0.1	**23.8059**	0.104	0.4	ug/L	12	Standard
	Se-1	77	1837.8	1.6	**24.4824**	0.263	1.1	ug/L	94	Standard
>	Ga	71	30739.5	1.0				mg/L	28	Standard
	Rb	85	355037.3	1.7				ug/L	25	Standard
	Y	89	1006420.0	1.1				ug/L	487927	Standard
>	Rh	103	50.0	45.8				ug/L	15	Standard
	Mo	98	4679.9	1.4	**1.2894**	0.021	1.7	ug/L	46	Standard
	Ag	107	190586.2	0.5	**32.1755**	0.125	0.4	ug/L	103	Standard
	Cd	111	42771.9	0.9	**25.7166**	0.249	1.0	mg/L	4	Standard
	Cd	114	106358.2	0.9	**25.2551**	0.140	0.6	ug/L	25	Standard
>	In	115	561040.1	0.3				ug/L	577818	Standard
	Sn	118	204.7	9.6	**0.0332**	0.022	66.0	ug/L	203	Standard
	Sb	123	1485.2	3.6	**0.3057**	0.013	4.3	ug/L	270	Standard
	Ba	135	533081.4	0.4	**326.6970**	2.070	0.6	ug/L	35	Standard
	Ce	140	1615813.7	0.6				ug/L	25	Standard
>	Tb	159	906216.2	1.6				ug/L	866991	Standard
	Ho	165	37621.7	3.2				ug/L	3	Standard
	Tl	203	180638.4	0.6	**25.3401**	0.202	0.8	ug/L	243	Standard
	Tl	205	438302.7	0.5	**25.5912**	0.073	0.3	ug/L	563	Standard
	Pb	206	392647.3	0.2	**67.9820**	0.335	0.5	ug/L	471	Standard
	Pb	207	332443.6	0.5	**63.5859**	0.147	0.2	ug/L	407	Standard
	Pb	208	384626.9	0.1	**67.2463**	0.278	0.4	ug/L	462	Standard
	U	238	137400.9	0.1	**28.5376**	0.067	0.2	ug/L	9	Standard
>	Bi	209	546129.6	0.3				ug/L	583182	Standard

Sample ID: L1703135601S WG607872-04
Report Date/Time: Wednesday, March 29, 2017 17:53:06
Page 1

Approved: March 30, 2017

⌈	**Na**	23	53.3	48.1	**31.0499**	14.814	47.7	mg/L	0	Standard
|	**Mg**	24	80.0	28.6	**0.5582**	0.454	81.4	mg/L	33	Standard
|	**K**	39	561.7	8.1	**2.3227**	0.205	8.8	mg/L	20	Standard
|	**Ca**	43	285.0	12.3	**-2727.1110**	465.240	17.1	mg/L	32	Standard
|	**Fe**	54	7718.2	1.3	**38.2199**	0.252	0.7	mg/L	18	Standard
|	**Fe**	57	2423.5	4.6	**35.2585**	2.031	5.8	mg/L	245	Standard
⌊>	**Sc-1**	45	64277.7	0.7				mg/L	48374	Standard
	Cl	35	4.0	132.3				ug/L	1	Standard
	Kr	83	1.7	91.7				ug/L	2	Standard
	Br	81	4607.4	6.1				ug/L	1940	Standard
	P	31	61.7	28.5				ug/L	42	Standard
	S	34	10.0	86.6				ug/L	3	Standard
	Sr	88	178.3	9.0				ug/L	115	Standard
	C	12	133.3	30.3				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3317.0	8.2				mg/L	3	Standard
	Dy	164	57075.5	0.1				mg/L	30	Standard
	Ho-1	165	37621.7	3.2				mg/L	3	Standard
	Er	166	34405.7	1.0				mg/L	10	Standard
	I	127	16635.8	3.0				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		111.530	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		96.684	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703135601S WG607872-04
Report Date/Time: Wednesday, March 29, 2017 17:53:06
Page 2

Approved: March 30, 2017

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.096
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.647
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1703135601S WG607872-04
Report Date/Time: Wednesday, March 29, 2017 17:53:06
Page 3

Approved: March 30, 2017

Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703135601SD WG607872-05
Sample Date/Time: Wednesday, March 29, 2017 17:54:00
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	249207.0	2.6				ug/L	221697	Standard
	Be	9	59598.7	0.8	**25.7496**	0.848	3.3	ug/L	18	Standard
	Al	27	40840687.7	0.6	**295.4389**	7.609	2.6	ug/L	548	Standard
	Sc	45	65479.5	1.2				ug/L	48374	Standard
	Ti	47	34749.5	1.1	**127.9737**	4.025	3.1	ug/L	37	Standard
	V	51	459297.7	1.3	**69.5187**	2.271	3.3	ug/L	1312	Standard
	Cr	52	379918.6	0.4	**63.0840**	1.703	2.7	ug/L	5560	Standard
	Cr	53	47979.2	0.7	**63.2216**	1.554	2.5	ug/L	495	Standard
	Mn	55	12328287.2	0.1	**1222.0572**	29.329	2.4	ug/L	1474	Standard
	Co	59	333909.3	0.6	**42.8544**	0.958	2.2	ug/L	432	Standard
	Ni	60	106502.0	0.9	**63.8667**	1.611	2.5	ug/L	135	Standard
	Cu	65	151995.3	0.5	**86.4338**	2.423	2.8	ug/L	523	Standard
	Zn	66	177901.0	0.5	**165.1017**	3.125	1.9	ug/L	311	Standard
>	Ge	72	674014.4	2.4				ug/L	688742	Standard
	As	75	37093.8	0.5	**32.2251**	0.803	2.5	ug/L	-33	Standard
	Se	82	2499.0	0.7	**23.3375**	0.712	3.1	ug/L	12	Standard
	Se-1	77	1870.8	1.2	**24.6348**	0.393	1.6	ug/L	94	Standard
>	Ga	71	31818.4	1.5				mg/L	28	Standard
	Rb	85	359807.3	0.9				ug/L	25	Standard
	Y	89	1041437.5	1.5				ug/L	487927	Standard
>	Rh	103	66.7	17.3				ug/L	15	Standard
	Mo	98	4804.5	1.0	**1.3157**	0.034	2.6	ug/L	46	Standard
	Ag	107	161863.0	1.0	**27.1486**	0.554	2.0	ug/L	103	Standard
	Cd	111	42139.0	0.7	**25.1757**	0.596	2.4	mg/L	4	Standard
	Cd	114	104582.7	0.6	**24.6754**	0.490	2.0	ug/L	25	Standard
>	In	115	564771.3	1.9				ug/L	577818	Standard
	Sn	118	201.7	5.5	**0.0284**	0.008	29.2	ug/L	203	Standard
	Sb	123	1619.4	2.0	**0.3334**	0.008	2.3	ug/L	270	Standard
	Ba	135	604450.2	0.4	**368.0593**	5.892	1.6	ug/L	35	Standard
	Ce	140	1622511.6	1.4				ug/L	25	Standard
>	Tb	159	899595.5	0.8				ug/L	866991	Standard
	Ho	165	39155.5	1.8				ug/L	3	Standard
	Tl	203	179628.2	0.4	**25.4230**	0.372	1.5	ug/L	243	Standard
	Tl	205	430726.8	0.8	**25.3713**	0.106	0.4	ug/L	563	Standard
	Pb	206	402663.8	0.4	**70.3401**	0.981	1.4	ug/L	471	Standard
	Pb	207	338706.4	0.4	**65.3640**	0.937	1.4	ug/L	407	Standard
	Pb	208	393739.6	0.2	**69.4533**	0.632	0.9	ug/L	462	Standard
	U	238	132987.1	0.4	**27.8659**	0.221	0.8	ug/L	9	Standard
>	Bi	209	541354.4	1.1				ug/L	583182	Standard

Sample ID: L1703135601SD WG607872-05
Report Date/Time: Wednesday, March 29, 2017 17:56:11
Page 1

Approved: March 30, 2017

	Na	23	95.0	19.0	**54.4691**	10.923	20.1	mg/L	0	Standard
	Mg	24	78.3	25.8	**0.4995**	0.403	80.6	mg/L	33	Standard
	K	39	531.7	6.8	**2.1476**	0.161	7.5	mg/L	20	Standard
	Ca	43	458.3	8.5	**-4931.5018**	543.766	11.0	mg/L	32	Standard
	Fe	54	5633.9	2.3	**27.3301**	0.724	2.7	mg/L	18	Standard
	Fe	57	2201.8	3.0	**30.9390**	1.242	4.0	mg/L	245	Standard
>	**Sc-1**	45	65479.5	1.2				mg/L	48374	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	2.7	57.3				ug/L	2	Standard
	Br	81	4160.6	0.7				ug/L	1940	Standard
	P	31	55.0	39.6				ug/L	42	Standard
	S	34	6.7	43.3				ug/L	3	Standard
	Sr	88	160.0	24.4				ug/L	115	Standard
	C	12	150.0	17.6				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3823.8	5.1				mg/L	3	Standard
	Dy	164	59065.6	2.0				mg/L	30	Standard
	Ho-1	165	39155.5	1.8				mg/L	3	Standard
	Er	166	35825.7	3.2				mg/L	10	Standard
	I	127	15564.7	5.4				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		112.409	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.862	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703135601SD WG607872-05
Report Date/Time: Wednesday, March 29, 2017 17:56:11
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	97.742
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	92.828
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1703135601SD WG607872-05
Report Date/Time: Wednesday, March 29, 2017 17:56:11
Page 3

Approved: March 30, 2017

Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

Sample ID: L1703135601SD WG607872-05
Report Date/Time: Wednesday, March 29, 2017 17:56:11
Page 4

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703135601PS WG608142-01
Sample Date/Time: Wednesday, March 29, 2017 17:57:05
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	251233.4	2.6				ug/L	221697	Standard
	Be	9	116076.4	1.8	**49.7461**	0.862	1.7	ug/L	18	Standard
	Al	27	30302789.0	0.3	**217.4550**	6.304	2.9	ug/L	548	Standard
	Sc	45	63687.0	2.3				ug/L	48374	Standard
	Ti	47	44833.6	0.1	**165.4413**	1.927	1.2	ug/L	37	Standard
	V	51	658772.8	0.8	**99.9710**	0.567	0.6	ug/L	1312	Standard
	Cr	52	588416.1	0.1	**98.3948**	1.297	1.3	ug/L	5560	Standard
	Cr	53	73658.6	0.2	**97.5887**	1.202	1.2	ug/L	495	Standard
	Mn	55	12865116.9	0.5	**1277.7041**	21.866	1.7	ug/L	1474	Standard
	Co	59	554954.8	0.3	**71.3961**	1.034	1.4	ug/L	432	Standard
	Ni	60	169939.4	0.4	**102.1525**	1.376	1.3	ug/L	135	Standard
	Cu	65	213447.6	0.4	**121.7120**	1.040	0.9	ug/L	523	Standard
	Zn	66	253238.5	1.0	**235.6430**	1.215	0.5	ug/L	311	Standard
>	Ge	72	672574.0	1.2				ug/L	688742	Standard
	As	75	70284.8	1.1	**61.1656**	0.089	0.1	ug/L	-33	Standard
	Se	82	5543.1	2.6	**52.0392**	1.150	2.2	ug/L	12	Standard
	Se-1	77	3920.8	0.9	**52.9119**	0.726	1.4	ug/L	94	Standard
>	Ga	71	31494.4	4.5				mg/L	28	Standard
	Rb	85	349133.6	1.0				ug/L	25	Standard
	Y	89	956739.9	0.8				ug/L	487927	Standard
>	Rh	103	60.0	36.3				ug/L	15	Standard
	Mo	98	3152.4	0.8	**0.8568**	0.010	1.1	ug/L	46	Standard
	Ag	107	322655.2	1.0	**54.1224**	0.152	0.3	ug/L	103	Standard
	Cd	111	88974.8	1.1	**53.1432**	0.081	0.2	mg/L	4	Standard
	Cd	114	222621.5	0.9	**52.5258**	0.942	1.8	ug/L	25	Standard
>	In	115	564815.4	1.0				ug/L	577818	Standard
	Sn	118	331.7	2.8	**0.1699**	0.011	6.6	ug/L	203	Standard
	Sb	123	225248.7	1.3	**50.1150**	0.259	0.5	ug/L	270	Standard
	Ba	135	669474.1	0.9	**407.5466**	1.429	0.4	ug/L	35	Standard
	Ce	140	1524273.7	0.6				ug/L	25	Standard
>	Tb	159	899394.6	1.0				ug/L	866991	Standard
	Ho	165	33622.3	0.4				ug/L	3	Standard
	Tl	203	365599.4	0.6	**51.6582**	0.314	0.6	ug/L	243	Standard
	Tl	205	880697.3	0.8	**51.7968**	0.962	1.9	ug/L	563	Standard
	Pb	206	714710.4	0.3	**124.6440**	1.106	0.9	ug/L	471	Standard
	Pb	207	609776.7	1.0	**117.4790**	1.112	0.9	ug/L	407	Standard
	Pb	208	708221.8	0.3	**124.7256**	1.172	0.9	ug/L	462	Standard
	U	238	263867.0	1.1	**55.1774**	0.653	1.2	ug/L	9	Standard
>	Bi	209	542490.0	1.1				ug/L	583182	Standard

Sample ID: L1703135601PS WG608142-01
Report Date/Time: Wednesday, March 29, 2017 17:59:16
Page 1

Approved: March 30, 2017

⌈	**Na**	23	96.7	25.5	**57.0941**	15.683	27.5	mg/L	0	Standard
|	**Mg**	24	86.7	12.0	**0.7040**	0.233	33.2	mg/L	33	Standard
|	**K**	39	603.3	14.7	**2.5263**	0.338	13.4	mg/L	20	Standard
|	**Ca**	43	316.7	5.1	**-3193.0129**	296.343	9.3	mg/L	32	Standard
|	**Fe**	54	6521.5	3.2	**32.5832**	1.585	4.9	mg/L	18	Standard
|	**Fe**	57	2278.5	1.9	**33.2195**	0.889	2.7	mg/L	245	Standard
⌊>	**Sc-1**	45	63687.0	2.3				mg/L	48374	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	2.3	89.2				ug/L	2	Standard
	Br	81	3113.7	6.9				ug/L	1940	Standard
	P	31	41.7	45.4				ug/L	42	Standard
	S	34	5.0	100.0				ug/L	3	Standard
	Sr	88	166.7	1.7				ug/L	115	Standard
	C	12	146.7	17.2				mg/L	37	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	7215.1	1.6				mg/L	3	Standard
	Dy	164	51458.2	2.0				mg/L	30	Standard
	Ho-1	165	33622.3	0.4				mg/L	3	Standard
	Er	166	31192.1	2.5				mg/L	10	Standard
	I	127	14093.2	1.7				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		113.323	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		97.653	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703135601PS WG608142-01
Report Date/Time: Wednesday, March 29, 2017 17:59:16
Page 2

Approved: March 30, 2017

	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.750
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.022
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

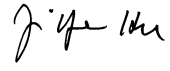
Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1703135601PS WG608142-01
Report Date/Time: Wednesday, March 29, 2017 17:59:16
Page 3

Approved: March 30, 2017

Ni 60 Upper, S, EEE	Ni	60
Cu 65 Upper, S, EEE	Cu	65
Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135
Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

Approved: March 30, 2017



Method 6020 - Summary Report

Sample ID: L1703135601SDL WG608142-02
Sample Date/Time: Wednesday, March 29, 2017 18:00:11
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	223227.7	1.6				ug/L	221697	Standard
	Be	9	1221.7	4.1	**0.5708**	0.029	5.0	ug/L	18	Standard
	Al	27	5954655.1	1.4	**48.0765**	1.027	2.1	ug/L	548	Standard
	Sc	45	51050.9	2.9				ug/L	48374	Standard
	Ti	47	8711.5	2.1	**33.1545**	0.421	1.3	ug/L	37	Standard
	V	51	62157.7	1.6	**9.5752**	0.245	2.6	ug/L	1312	Standard
	Cr	52	57547.8	1.7	**9.1248**	0.259	2.8	ug/L	5560	Standard
	Cr	53	7060.0	5.0	**9.0978**	0.528	5.8	ug/L	495	Standard
	Mn	55	2397888.7	0.6	**246.3092**	3.598	1.5	ug/L	1474	Standard
	Co	59	30905.5	0.6	**4.0636**	0.039	1.0	ug/L	432	Standard
	Ni	60	17279.2	1.7	**10.6680**	0.080	0.8	ug/L	135	Standard
	Cu	65	25373.9	0.5	**14.7193**	0.187	1.3	ug/L	523	Standard
	Zn	66	41518.1	0.9	**39.6237**	0.711	1.8	ug/L	311	Standard
>	Ge	72	649935.5	0.9				ug/L	688742	Standard
	As	75	2182.0	1.1	**1.9673**	0.038	1.9	ug/L	-33	Standard
	Se	82	47.1	15.1	**0.3058**	0.069	22.5	ug/L	12	Standard
	Se-1	77	103.0	1.7	**0.3968**	0.037	9.4	ug/L	94	Standard
>	Ga	71	6026.2	5.7				mg/L	28	Standard
	Rb	85	67572.0	1.0				ug/L	25	Standard
	Y	89	545277.9	1.4				ug/L	487927	Standard
>	Rh	103	10.0					ug/L	15	Standard
	Mo	98	612.9	4.8	**0.1551**	0.010	6.2	ug/L	46	Standard
	Ag	107	4124.2	3.2	**0.6832**	0.026	3.8	ug/L	103	Standard
	Cd	111	937.2	1.3	**0.5651**	0.005	0.9	mg/L	4	Standard
	Cd	114	2409.0	3.0	**0.5693**	0.017	2.9	ug/L	25	Standard
>	In	115	554645.8	1.3				ug/L	577818	Standard
	Sn	118	169.0	12.3	**-0.0039**	0.021	541.3	ug/L	203	Standard
	Sb	123	866.8	8.3	**0.1693**	0.016	9.6	ug/L	270	Standard
	Ba	135	114063.4	0.8	**70.6964**	0.992	1.4	ug/L	35	Standard
	Ce	140	304040.3	0.3				ug/L	25	Standard
>	Tb	159	834042.1	1.5				ug/L	866991	Standard
	Ho	165	6227.9	4.5				ug/L	3	Standard
	Tl	203	465.3	2.4	**0.0413**	0.001	2.9	ug/L	243	Standard
	Tl	205	1201.7	1.3	**0.0488**	0.001	1.9	ug/L	563	Standard
	Pb	206	83851.1	1.4	**14.7562**	0.277	1.9	ug/L	471	Standard
	Pb	207	68454.3	1.0	**13.3045**	0.127	1.0	ug/L	407	Standard
	Pb	208	79761.5	1.8	**14.1713**	0.322	2.3	ug/L	462	Standard
	U	238	2853.3	1.1	**0.6013**	0.004	0.7	ug/L	9	Standard
>	Bi	209	535164.9	0.8				ug/L	583182	Standard

Sample ID: L1703135601SDL WG608142-02
Report Date/Time: Wednesday, March 29, 2017 18:02:22
Page 1

Approved: March 30, 2017

⌈	**Na**	23	23.3	53.9	**17.0464**	8.889	52.1	mg/L	0	Standard
|	**Mg**	24	33.3	74.0	**-0.1801**	0.603	334.8	mg/L	33	Standard
|	**K**	39	125.0	14.4	**0.5409**	0.093	17.2	mg/L	20	Standard
|	**Ca**	43	86.7	16.7	**-383.7695**	278.826	72.7	mg/L	32	Standard
|	**Fe**	54	1308.9	11.5	**8.0163**	1.172	14.6	mg/L	18	Standard
|	**Fe**	57	670.0	5.9	**9.2159**	0.498	5.4	mg/L	245	Standard
⌊>	**Sc-1**	45	51050.9	2.9				mg/L	48374	Standard
	Cl	35	2.7	114.6				ug/L	1	Standard
	Kr	83	6.0	28.9				ug/L	2	Standard
	Br	81	1976.8	6.7				ug/L	1940	Standard
	P	31	51.7	43.6				ug/L	42	Standard
	S	34	8.3	124.9				ug/L	3	Standard
	Sr	88	145.0	21.0				ug/L	115	Standard
	C	12	63.3	32.9				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	1456.7	0.4				mg/L	3	Standard
	Dy	164	9787.2	2.5				mg/L	30	Standard
	Ho-1	165	6227.9	4.5				mg/L	3	Standard
	Er	166	5694.4	2.2				mg/L	10	Standard
	I	127	5561.0	2.8				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		100.690	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		94.366	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703135601SDL WG608142-02
Report Date/Time: Wednesday, March 29, 2017 18:02:22
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	95.990
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	91.766
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1703135601SDL WG608142-02
Report Date/Time: Wednesday, March 29, 2017 18:02:22
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: L1703135601SDL WG608142-02
Sample Date/Time: Wednesday, March 29, 2017 18:03:17
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	218751.3	1.2				ug/L	221697	Standard
	Be	9	281.7	10.4	**0.1198**	0.013	10.7	ug/L	18	Standard
	Al	27	1037333.5	2.0	**8.5464**	0.185	2.2	ug/L	548	Standard
	Sc	45	47847.1	0.9				ug/L	48374	Standard
	Ti	47	1736.4	2.0	**6.5256**	0.144	2.2	ug/L	37	Standard
	V	51	12798.8	2.0	**1.8138**	0.047	2.6	ug/L	1312	Standard
	Cr	52	14393.5	1.1	**1.5948**	0.031	1.9	ug/L	5560	Standard
	Cr	53	1506.7	4.1	**1.4400**	0.086	6.0	ug/L	495	Standard
	Mn	55	410896.4	0.4	**42.2262**	0.323	0.8	ug/L	1474	Standard
	Co	59	6503.4	1.5	**0.8156**	0.014	1.7	ug/L	432	Standard
	Ni	60	3509.1	1.0	**2.1038**	0.014	0.7	ug/L	135	Standard
	Cu	65	5577.0	1.4	**3.0209**	0.041	1.4	ug/L	523	Standard
	Zn	66	9265.8	0.4	**8.5376**	0.045	0.5	ug/L	311	Standard
>	Ge	72	647683.7	0.4				ug/L	688742	Standard
	As	75	375.8	1.2	**0.3416**	0.005	1.5	ug/L	-33	Standard
	Se	82	22.4	27.9	**0.0660**	0.062	93.8	ug/L	12	Standard
	Se-1	77	78.3	13.4	**0.0487**	0.147	301.0	ug/L	94	Standard
>	Ga	71	1171.7	5.8				mg/L	28	Standard
	Rb	85	13564.4	3.0				ug/L	25	Standard
	Y	89	464688.3	0.4				ug/L	487927	Standard
>	Rh	103	11.7	24.7				ug/L	15	Standard
	Mo	98	120.0	9.5	**0.0161**	0.003	20.2	ug/L	46	Standard
	Ag	107	902.0	3.5	**0.1338**	0.005	4.0	ug/L	103	Standard
	Cd	111	180.8	3.6	**0.1059**	0.004	3.8	mg/L	4	Standard
	Cd	114	442.9	2.8	**0.0978**	0.003	3.1	ug/L	25	Standard
>	In	115	549908.4	0.1				ug/L	577818	Standard
	Sn	118	139.3	10.3	**-0.0352**	0.016	45.5	ug/L	203	Standard
	Sb	123	205.5	17.0	**0.0198**	0.008	40.4	ug/L	270	Standard
	Ba	135	22861.2	1.4	**14.2712**	0.208	1.5	ug/L	35	Standard
	Ce	140	61062.8	0.5				ug/L	25	Standard
>	Tb	159	815299.6	1.7				ug/L	866991	Standard
	Ho	165	1296.7	7.9				ug/L	3	Standard
	Tl	203	115.7	3.3	**-0.0085**	0.001	7.5	ug/L	243	Standard
	Tl	205	298.3	13.5	**-0.0049**	0.002	49.0	ug/L	563	Standard
	Pb	206	16790.6	0.6	**2.9326**	0.021	0.7	ug/L	471	Standard
	Pb	207	13575.7	1.4	**2.6153**	0.020	0.8	ug/L	407	Standard
	Pb	208	16004.3	1.0	**2.8196**	0.021	0.7	ug/L	462	Standard
	U	238	568.7	2.4	**0.1186**	0.003	2.3	ug/L	9	Standard
>	Bi	209	528227.8	1.1				ug/L	583182	Standard

Approved: March 30, 2017

⌈	**Na**	23	3.3	86.6	**2.6041**	2.251	86.4	mg/L	0	Standard
|	**Mg**	24	40.0		**0.0485**	0.009	18.8	mg/L	33	Standard
|	**K**	39	36.7	28.4	**0.0655**	0.063	96.4	mg/L	20	Standard
|	**Ca**	43	45.0	29.4	**271.3375**	236.072	87.0	mg/L	32	Standard
|	**Fe**	54	257.9	16.5	**1.5131**	0.292	19.3	mg/L	18	Standard
|	**Fe**	57	360.0	12.7	**3.2922**	1.017	30.9	mg/L	245	Standard
⌊>	**Sc-1**	45	47847.1	0.9				mg/L	48374	Standard
	Cl	35	2.7	43.3				ug/L	1	Standard
	Kr	83	2.3	24.7				ug/L	2	Standard
	Br	81	1550.1	2.6				ug/L	1940	Standard
	P	31	45.0	29.4				ug/L	42	Standard
	S	34	11.7	99.0				ug/L	3	Standard
	Sr	88	133.3	37.0				ug/L	115	Standard
	C	12	50.0	60.0				mg/L	37	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	280.0	23.4				mg/L	3	Standard
	Dy	164	2024.9	10.7				mg/L	30	Standard
	Ho-1	165	1296.7	7.9				mg/L	3	Standard
	Er	166	1153.4	8.6				mg/L	10	Standard
	I	127	3877.2	2.8				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		98.671	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		94.039	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703135601SDL WG608142-02
Report Date/Time: Wednesday, March 29, 2017 18:05:27
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	95.170
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	90.577
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703135601SDL WG608142-02
Report Date/Time: Wednesday, March 29, 2017 18:05:27
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Wednesday, March 29, 2017 18:06:22
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	231676.6	1.9				ug/L	221697	Standard
	Be	9	40.0	21.7	**-0.0001**	0.004	4631.9	ug/L	18	Standard
	Al	27	5996817.4	0.1	**46.6545**	0.876	1.9	ug/L	548	Standard
	Sc	45	51341.9	2.2				ug/L	48374	Standard
	Ti	47	26789.3	0.9	**96.9928**	2.478	2.6	ug/L	37	Standard
	V	51	1166.9	1.8	**-0.0332**	0.000	0.5	ug/L	1312	Standard
	Cr	52	6535.4	1.8	**0.1547**	0.007	4.2	ug/L	5560	Standard
	Cr	53	568.3	8.3	**0.0970**	0.052	53.4	ug/L	495	Standard
	Mn	55	6593.1	2.2	**0.4924**	0.013	2.7	ug/L	1474	Standard
	Co	59	795.0	3.5	**0.0466**	0.003	7.3	ug/L	432	Standard
	Ni	60	533.0	3.7	**0.2264**	0.008	3.3	ug/L	135	Standard
	Cu	65	938.7	1.3	**0.2376**	0.002	1.0	ug/L	523	Standard
	Zn	66	1118.0	1.0	**0.5912**	0.025	4.2	ug/L	311	Standard
>	Ge	72	685238.1	1.7				ug/L	688742	Standard
	As	75	11.1	253.4	**0.0115**	0.024	210.3	ug/L	-33	Standard
	Se	82	17.8	43.7	**0.0116**	0.074	637.9	ug/L	12	Standard
	Se-1	77	74.0	7.5	**-0.0700**	0.089	126.9	ug/L	94	Standard
>	Ga	71	41.7	30.2				mg/L	28	Standard
	Rb	85	1068.4	16.4				ug/L	25	Standard
	Y	89	478853.2	1.1				ug/L	487927	Standard
>	Rh	103	13.3	57.3				ug/L	15	Standard
	Mo	98	332246.2	0.6	**90.1255**	0.497	0.6	ug/L	46	Standard
	Ag	107	234.0	53.4	**0.0166**	0.020	121.7	ug/L	103	Standard
	Cd	111	-105.6	40.6	**-0.0668**	0.025	38.0	mg/L	4	Standard
	Cd	114	597.1	15.9	**0.1281**	0.021	16.4	ug/L	25	Standard
>	In	115	577750.4	0.7				ug/L	577818	Standard
	Sn	118	231.7	5.6	**0.0555**	0.015	27.4	ug/L	203	Standard
	Sb	123	752.8	22.8	**0.1366**	0.037	26.9	ug/L	270	Standard
	Ba	135	281.0	59.5	**0.1431**	0.098	68.8	ug/L	35	Standard
	Ce	140	1475.1	23.4				ug/L	25	Standard
>	Tb	159	865265.3	0.9				ug/L	866991	Standard
	Ho	165	20.0	43.3				ug/L	3	Standard
	Tl	203	94.7	56.1	**-0.0121**	0.007	61.8	ug/L	243	Standard
	Tl	205	246.7	67.5	**-0.0085**	0.010	114.6	ug/L	563	Standard
	Pb	206	753.7	13.2	**0.0537**	0.016	30.7	ug/L	471	Standard
	Pb	207	613.3	11.0	**0.0447**	0.013	28.0	ug/L	407	Standard
	Pb	208	697.0	3.3	**0.0449**	0.003	6.1	ug/L	462	Standard
	U	238	58.3	59.2	**0.0086**	0.007	83.6	ug/L	9	Standard
>	Bi	209	547727.8	1.1				ug/L	583182	Standard

Sample ID: QC Std 4
Report Date/Time: Wednesday, March 29, 2017 18:08:33
Page 1

Approved: March 30, 2017

⌈	**Na**	23	13.3	21.7	**9.7211**	1.974	20.3	mg/L	0	Standard
|	**Mg**	24	708.3	1.8	**16.1605**	0.121	0.7	mg/L	33	Standard
|	**K**	39	1093.4	1.8	**5.8814**	0.238	4.1	mg/L	20	Standard
|	**Ca**	43	101.7	39.4	**-624.2269**	689.013	110.4	mg/L	32	Standard
|	**Fe**	54	1729.4	6.8	**10.5829**	0.955	9.0	mg/L	18	Standard
|	**Fe**	57	843.4	11.8	**12.7536**	2.410	18.9	mg/L	245	Standard
⌊>	**Sc-1**	45	51341.9	2.2				mg/L	48374	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	1.3	43.3				ug/L	2	Standard
	Br	81	1916.8	14.8				ug/L	1940	Standard
	P	31	55.0	32.8				ug/L	42	Standard
	S	34	5.0	100.0				ug/L	3	Standard
	Sr	88	130.0	16.8				ug/L	115	Standard
	C	12	53.3	43.3				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	33.3	45.8				mg/L	3	Standard
	Dy	164	32.2	44.7				mg/L	30	Standard
	Ho-1	165	20.0	43.3				mg/L	3	Standard
	Er	166	23.3	107.9				mg/L	10	Standard
	I	127	3110.3	5.9				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9			
⌊	Al	27	0.933		
⌈	Sc	45			
|	Ti	47	96.993		
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		99.491	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: QC Std 4
Report Date/Time: Wednesday, March 29, 2017 18:08:33
Page 2

Approved: March 30, 2017

	Rb	85		
	Y	89		
>	Rh	103		
	Mo	98	90.125	
	Ag	107		
	Cd	111		
	Cd	114		
>	In	115		99.988
	Sn	118		
	Sb	123		
	Ba	135		
	Ce	140		
>	Tb	159		
	Ho	165		
	Tl	203		
	Tl	205		
	Pb	206		
	Pb	207		
	Pb	208		
	U	238		
>	Bi	209		93.921
	Na	23	77.769	
	Mg	24	323.210	
	K	39	117.629	
	Ca	43	-4161.513	
	Fe	54	84.663	
	Fe	57	102.029	
>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Mn	55	
QC Std 4	Na	23	

Sample ID: QC Std 4
Report Date/Time: Wednesday, March 29, 2017 18:08:33
Page 3

Approved: March 30, 2017

QC Std 4	Mg	24
QC Std 4	Ca	43

Sample ID: QC Std 4
Report Date/Time: Wednesday, March 29, 2017 18:08:33
Page 4

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Wednesday, March 29, 2017 18:09:28
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	231001.8	2.7				ug/L	221697	Standard
	Be	9	214573.9	1.4	**100.0394**	1.898	1.9	ug/L	18	Standard
	Al	27	6144734.9	1.9	**47.9406**	0.457	1.0	ug/L	548	Standard
	Sc	45	49356.9	2.0				ug/L	48374	Standard
	Ti	47	30331.7	1.3	**111.0919**	1.430	1.3	ug/L	37	Standard
	V	51	682511.5	0.6	**102.8572**	1.367	1.3	ug/L	1312	Standard
	Cr	52	613885.4	1.2	**101.9569**	0.760	0.7	ug/L	5560	Standard
	Cr	53	77909.8	1.3	**102.5170**	0.304	0.3	ug/L	495	Standard
	Mn	55	1022816.1	1.2	**100.7191**	1.151	1.1	ug/L	1474	Standard
	Co	59	787354.1	1.2	**100.6007**	1.536	1.5	ug/L	432	Standard
	Ni	60	167580.4	1.0	**100.0213**	1.323	1.3	ug/L	135	Standard
	Cu	65	179891.3	0.6	**101.8083**	0.789	0.8	ug/L	523	Standard
	Zn	66	111432.0	0.9	**102.7222**	1.296	1.3	ug/L	311	Standard
>	Ge	72	677337.1	1.3				ug/L	688742	Standard
	As	75	115995.5	0.7	**100.2387**	0.677	0.7	ug/L	-33	Standard
	Se	82	10333.7	1.0	**96.4675**	0.780	0.8	ug/L	12	Standard
	Se-1	77	7491.2	1.5	**101.3341**	0.599	0.6	ug/L	94	Standard
>	Ga	71	133.3	36.8				mg/L	28	Standard
	Rb	85	1113.4	9.7				ug/L	25	Standard
	Y	89	471896.7	1.3				ug/L	487927	Standard
>	Rh	103	28.3	36.7				ug/L	15	Standard
	Mo	98	349541.1	0.6	**96.4918**	1.268	1.3	ug/L	46	Standard
	Ag	107	341832.9	3.4	**57.0317**	1.219	2.1	ug/L	103	Standard
	Cd	111	167186.8	1.5	**99.3407**	0.270	0.3	mg/L	4	Standard
	Cd	114	412880.0	1.6	**96.9018**	0.260	0.3	ug/L	25	Standard
>	In	115	567790.6	1.5				ug/L	577818	Standard
	Sn	118	221.7	5.5	**0.0489**	0.011	22.5	ug/L	203	Standard
	Sb	123	444919.3	1.2	**98.5027**	0.648	0.7	ug/L	270	Standard
	Ba	135	164512.7	1.0	**99.6128**	1.110	1.1	ug/L	35	Standard
	Ce	140	243.3	12.6				ug/L	25	Standard
>	Tb	159	861674.9	1.2				ug/L	866991	Standard
	Ho	165	40.0	33.1				ug/L	3	Standard
	Tl	203	707890.9	1.0	**98.9530**	1.319	1.3	ug/L	243	Standard
	Tl	205	1685263.1	1.3	**98.0433**	1.427	1.5	ug/L	563	Standard
	Pb	206	574119.3	0.7	**99.0115**	0.905	0.9	ug/L	471	Standard
	Pb	207	517900.1	0.6	**98.6756**	0.907	0.9	ug/L	407	Standard
	Pb	208	584974.6	0.6	**101.8750**	0.499	0.5	ug/L	462	Standard
	U	238	484561.6	1.0	**100.2201**	1.072	1.1	ug/L	9	Standard
>	Bi	209	548478.2	0.3				ug/L	583182	Standard

Sample ID: QC Std 5
Report Date/Time: Wednesday, March 29, 2017 18:11:39
Page 1

Approved: March 30, 2017

⌈	**Na**	23	15.0	57.7	**11.4741**	6.831	59.5	mg/L	0	Standard
|	**Mg**	24	688.3	6.6	**16.3352**	0.798	4.9	mg/L	33	Standard
|	**K**	39	1066.7	5.7	**5.9706**	0.400	6.7	mg/L	20	Standard
|	**Ca**	43	101.7	12.4	**-692.8192**	254.296	36.7	mg/L	32	Standard
|	**Fe**	54	1698.5	6.5	**10.7958**	0.495	4.6	mg/L	18	Standard
|	**Fe**	57	731.7	7.9	**11.0360**	1.425	12.9	mg/L	245	Standard
⌊>	**Sc-1**	45	49356.9	2.0				mg/L	48374	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	3.3	34.6				ug/L	2	Standard
	Br	81	2050.1	7.3				ug/L	1940	Standard
	P	31	51.7	29.6				ug/L	42	Standard
	S	34	5.0	100.0				ug/L	3	Standard
	Sr	88	135.0	38.7				ug/L	115	Standard
	C	12	100.0	30.0				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	13.3	114.6				mg/L	3	Standard
	Dy	164	12.1	113.5				mg/L	30	Standard
	Ho-1	165	40.0	33.1				mg/L	3	Standard
	Er	166	26.7	142.0				mg/L	10	Standard
	I	127	2798.6	4.6				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9	100.039		
⌊	Al	27	0.959		
⌈	Sc	45			
|	Ti	47	111.092		
|	V	51	102.857		
|	Cr	52	101.957		
|	Cr	53			
|	Mn	55	100.719		
|	Co	59	100.601		
|	Ni	60	100.021		
|	Cu	65	101.808		
|	Zn	66	102.722		
|>	Ge	72		98.344	
|	As	75	100.239		
|	Se	82	96.468		
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: QC Std 5
Report Date/Time: Wednesday, March 29, 2017 18:11:39
Page 2

Approved: March 30, 2017

⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	96.492	
|	Ag	107	57.032	
|	Cd	111	99.341	
|	Cd	114		
|>	In	115		98.265
|	Sn	118		
|	Sb	123	98.503	
⌊	Ba	135	99.613	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	98.953	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	101.875	
|	U	238	100.220	
⌊>	Bi	209		94.049
⌈	Na	23	91.793	
|	Mg	24	326.704	
|	K	39	119.413	
|	Ca	43	-4618.795	
|	Fe	54	86.366	
|	Fe	57	88.288	
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Ag	107	
QC Std 5	Na	23	

Sample ID: QC Std 5
Report Date/Time: Wednesday, March 29, 2017 18:11:39
Page 3

Approved: March 30, 2017

QC Std 5	Mg	24
QC Std 5	Ca	43

Sample ID: QC Std 5
Report Date/Time: Wednesday, March 29, 2017 18:11:39
Page 4

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, March 29, 2017 18:12:35
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	227278.8	1.3				ug/L	221697	Standard
	Be	9	108522.3	1.5	**51.4054**	1.003	2.0	ug/L	18	Standard
	Al	27	6301931.4	0.8	**49.9671**	0.259	0.5	ug/L	548	Standard
	Sc	45	49681.4	2.5				ug/L	48374	Standard
	Ti	47	28855.8	1.0	**105.7976**	0.775	0.7	ug/L	37	Standard
	V	51	345607.1	0.7	**52.0377**	0.145	0.3	ug/L	1312	Standard
	Cr	52	315294.2	0.8	**51.9748**	0.330	0.6	ug/L	5560	Standard
	Cr	53	39947.6	1.0	**52.3108**	0.261	0.5	ug/L	495	Standard
	Mn	55	524981.7	0.7	**51.6823**	0.472	0.9	ug/L	1474	Standard
	Co	59	403873.0	0.4	**51.6348**	0.461	0.9	ug/L	432	Standard
	Ni	60	86011.8	0.1	**51.3510**	0.304	0.6	ug/L	135	Standard
	Cu	65	91564.2	0.7	**51.7387**	0.712	1.4	ug/L	523	Standard
	Zn	66	55736.7	1.0	**51.2234**	0.774	1.5	ug/L	311	Standard
>	Ge	72	676550.0	0.7				ug/L	688742	Standard
	As	75	57583.4	0.2	**49.8188**	0.232	0.5	ug/L	-33	Standard
	Se	82	5274.4	1.2	**49.2167**	0.348	0.7	ug/L	12	Standard
	Se-1	77	3762.1	1.2	**50.4179**	0.471	0.9	ug/L	94	Standard
>	Ga	71	66.7	30.3				mg/L	28	Standard
	Rb	85	321.7	1.8				ug/L	25	Standard
	Y	89	478479.5	0.6				ug/L	487927	Standard
>	Rh	103	26.7	57.3				ug/L	15	Standard
	Mo	98	364548.2	0.2	**100.0030**	1.025	1.0	ug/L	46	Standard
	Ag	107	298838.4	0.8	**49.5543**	0.432	0.9	ug/L	103	Standard
	Cd	111	85699.1	0.7	**50.6034**	0.358	0.7	mg/L	4	Standard
	Cd	114	219208.6	0.5	**51.1277**	0.699	1.4	ug/L	25	Standard
>	In	115	571355.1	1.2				ug/L	577818	Standard
	Sn	118	48627.9	1.4	**52.1076**	1.223	2.3	ug/L	203	Standard
	Sb	123	227985.5	0.4	**50.1475**	0.420	0.8	ug/L	270	Standard
	Ba	135	84580.8	0.1	**50.8835**	0.648	1.3	ug/L	35	Standard
	Ce	140	241.7	18.8				ug/L	25	Standard
>	Tb	159	857906.0	1.0				ug/L	866991	Standard
	Ho	165	13.3	21.7				ug/L	3	Standard
	Tl	203	362381.1	0.6	**50.7822**	0.282	0.6	ug/L	243	Standard
	Tl	205	867595.2	1.1	**50.6001**	0.233	0.5	ug/L	563	Standard
	Pb	206	294075.4	0.0	**50.8194**	0.443	0.9	ug/L	471	Standard
	Pb	207	265970.1	0.4	**50.7822**	0.663	1.3	ug/L	407	Standard
	Pb	208	297186.7	0.5	**51.8633**	0.577	1.1	ug/L	462	Standard
	U	238	249230.4	0.3	**51.6896**	0.532	1.0	ug/L	9	Standard
>	Bi	209	546977.9	0.9				ug/L	583182	Standard

Sample ID: QC Std 6
Report Date/Time: Wednesday, March 29, 2017 18:14:46
Page 1

Approved: March 30, 2017

⌈	**Na**	23	13.3	78.1	**9.9629**	7.541	75.7	mg/L	0	Standard
|	**Mg**	24	303.3	4.1	**6.6058**	0.465	7.0	mg/L	33	Standard
|	**K**	39	1155.0	8.0	**6.4251**	0.366	5.7	mg/L	20	Standard
|	**Ca**	43	58.3	19.8	**70.9065**	197.453	278.5	mg/L	32	Standard
|	**Fe**	54	757.8	8.9	**4.6788**	0.551	11.8	mg/L	18	Standard
|	**Fe**	57	525.0	6.2	**6.5242**	0.871	13.3	mg/L	245	Standard
⌊>	**Sc-1**	45	49681.4	2.5				mg/L	48374	Standard
	Cl	35	2.0	0.0				ug/L	1	Standard
	Kr	83	2.3	49.5				ug/L	2	Standard
	Br	81	1743.4	5.8				ug/L	1940	Standard
	P	31	60.0	43.3				ug/L	42	Standard
	S	34	3.3	173.2				ug/L	3	Standard
	Sr	88	138.3	24.6				ug/L	115	Standard
	C	12	36.7	15.7				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	173.2				mg/L	3	Standard
	Dy	164	16.5	94.1				mg/L	30	Standard
	Ho-1	165	13.3	21.7				mg/L	3	Standard
	Er	166	3.3	173.2				mg/L	10	Standard
	I	127	2533.5	2.8				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9	102.811		
⌊	Al	27	99.934		
⌈	Sc	45			
|	Ti	47	105.798		
|	V	51	104.075		
|	Cr	52	103.950		
|	Cr	53			
|	Mn	55	103.365		
|	Co	59	103.270		
|	Ni	60	102.702		
|	Cu	65	103.477		
|	Zn	66	102.447		
|>	Ge	72		98.230	
|	As	75	99.638		
|	Se	82	98.433		
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: QC Std 6
Report Date/Time: Wednesday, March 29, 2017 18:14:46
Page 2

Approved: March 30, 2017

⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	100.003	
|	Ag	107	99.109	
|	Cd	111	101.207	
|	Cd	114		
|>	In	115		98.881
|	Sn	118	104.215	
|	Sb	123	100.295	
⌊	Ba	135	101.767	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	101.564	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	103.727	
|	U	238	103.379	
⌊>	Bi	209		93.792
⌈	Na	23		
|	Mg	24		
|	K	39		
|	Ca	43		
|	Fe	54		
|	Fe	57		
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Wednesday, March 29, 2017 18:14:46
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, March 29, 2017 18:15:41
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	227054.6	3.0				ug/L	221697	Standard
	Be	9	28.3	20.4	**-0.0053**	0.003	56.6	ug/L	18	Standard
	Al	27	715.0	18.8	**0.0065**	0.001	18.5	ug/L	548	Standard
	Sc	45	48228.3	3.0				ug/L	48374	Standard
	Ti	47	34.7	16.9	**-0.0031**	0.023	744.8	ug/L	37	Standard
	V	51	1078.9	1.4	**-0.0408**	0.006	14.7	ug/L	1312	Standard
	Cr	52	4668.1	0.3	**-0.1283**	0.016	12.4	ug/L	5560	Standard
	Cr	53	238.3	22.0	**-0.3249**	0.065	20.0	ug/L	495	Standard
	Mn	55	1722.1	3.9	**0.0231**	0.004	17.4	ug/L	1474	Standard
	Co	59	302.3	9.8	**-0.0143**	0.005	32.4	ug/L	432	Standard
	Ni	60	166.7	7.5	**0.0135**	0.007	51.0	ug/L	135	Standard
	Cu	65	594.7	2.8	**0.0558**	0.003	5.3	ug/L	523	Standard
	Zn	66	375.0	2.7	**-0.0773**	0.003	4.5	ug/L	311	Standard
>	Ge	72	662859.8	2.1				ug/L	688742	Standard
	As	75	20.2	116.9	**0.0196**	0.021	105.9	ug/L	-33	Standard
	Se	82	15.8	34.9	**-0.0034**	0.050	1466.7	ug/L	12	Standard
	Se-1	77	67.0	2.6	**-0.1344**	0.040	29.9	ug/L	94	Standard
>	Ga	71	11.7	89.2				mg/L	28	Standard
	Rb	85	55.0	41.7				ug/L	25	Standard
	Y	89	468361.1	2.3				ug/L	487927	Standard
>	Rh	103	8.3	34.6				ug/L	15	Standard
	Mo	98	251.7	8.3	**0.0515**	0.005	10.3	ug/L	46	Standard
	Ag	107	137.0	13.3	**0.0013**	0.004	271.3	ug/L	103	Standard
	Cd	111	4.3	127.1	**-0.0024**	0.003	138.6	mg/L	4	Standard
	Cd	114	34.9	55.5	**-0.0013**	0.005	360.6	ug/L	25	Standard
>	In	115	566361.0	1.8				ug/L	577818	Standard
	Sn	118	189.3	13.2	**0.0147**	0.030	201.0	ug/L	203	Standard
	Sb	123	762.1	11.8	**0.1422**	0.023	16.0	ug/L	270	Standard
	Ba	135	56.0	10.9	**0.0102**	0.003	33.7	ug/L	35	Standard
	Ce	140	18.3	83.3				ug/L	25	Standard
>	Tb	159	848396.1	1.9				ug/L	866991	Standard
	Ho	165	10.0	86.6				ug/L	3	Standard
	Tl	203	58.7	22.5	**-0.0171**	0.002	11.6	ug/L	243	Standard
	Tl	205	116.7	16.2	**-0.0161**	0.001	6.9	ug/L	563	Standard
	Pb	206	488.3	6.2	**0.0081**	0.004	49.5	ug/L	471	Standard
	Pb	207	411.7	8.5	**0.0064**	0.006	91.4	ug/L	407	Standard
	Pb	208	451.7	3.6	**0.0024**	0.004	154.0	ug/L	462	Standard
	U	238	23.0	39.8	**0.0013**	0.002	155.0	ug/L	9	Standard
>	Bi	209	546279.1	1.6				ug/L	583182	Standard

Sample ID: QC Std 7
Report Date/Time: Wednesday, March 29, 2017 18:17:52
Page 1

Approved: March 30, 2017

	Na	23	3.3	86.6	**2.6269**	2.273	86.5	mg/L	0	Standard
	Mg	24	31.7	39.7	**-0.1738**	0.321	184.8	mg/L	33	Standard
	K	39	30.0	44.1	**0.0256**	0.082	318.2	mg/L	20	Standard
	Ca	43	31.7	24.1	**516.9529**	121.381	23.5	mg/L	32	Standard
	Fe	54	27.8	9.7	**-0.0278**	0.021	77.1	mg/L	18	Standard
	Fe	57	295.0	5.9	**1.8003**	0.292	16.2	mg/L	245	Standard
>	**Sc-1**	45	48228.3	3.0				mg/L	48374	Standard
	Cl	35	2.7	86.6				ug/L	1	Standard
	Kr	83	2.7	57.3				ug/L	2	Standard
	Br	81	1800.1	1.0				ug/L	1940	Standard
	P	31	48.3	6.0				ug/L	42	Standard
	S	34	6.7	43.3				ug/L	3	Standard
	Sr	88	135.0	11.1				ug/L	115	Standard
	C	12	46.7	81.1				mg/L	37	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	3	Standard
	Dy	164	22.9	109.3				mg/L	30	Standard
	Ho-1	165	10.0	86.6				mg/L	3	Standard
	Er	166	10.0	100.0				mg/L	10	Standard
	I	127	2228.5	8.3				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.242	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, March 29, 2017 18:17:52
Page 2

Approved: March 30, 2017

⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	98.017
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	93.672
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Wednesday, March 29, 2017 18:17:52
Page 3

Approved: March 30, 2017

Method 6020 - Summary Report

Sample ID: 40 PPB SE
Sample Date/Time: Wednesday, March 29, 2017 18:18:48
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	228917.9	3.7				ug/L	221697	Standard
	Be	9	76.7	116.9	**0.0164**	0.040	244.7	ug/L	18	Standard
	Al	27	9386.8	141.9	**0.0722**	0.100	138.6	ug/L	548	Standard
	Sc	45	49452.3	2.6				ug/L	48374	Standard
	Ti	47	75.3	47.7	**0.1482**	0.130	87.9	ug/L	37	Standard
	V	51	1292.1	31.5	**-0.0083**	0.060	716.9	ug/L	1312	Standard
	Cr	52	4918.1	7.5	**-0.0854**	0.052	60.9	ug/L	5560	Standard
	Cr	53	321.7	11.2	**-0.2111**	0.046	21.8	ug/L	495	Standard
	Mn	55	7202.8	82.7	**0.5708**	0.587	102.8	ug/L	1474	Standard
	Co	59	488.7	71.0	**0.0097**	0.044	456.0	ug/L	432	Standard
	Ni	60	227.7	32.4	**0.0505**	0.043	85.1	ug/L	135	Standard
	Cu	65	611.7	15.8	**0.0656**	0.051	77.6	ug/L	523	Standard
	Zn	66	2406.2	4.5	**1.8452**	0.072	3.9	ug/L	311	Standard
>	Ge	72	662301.6	1.3				ug/L	688742	Standard
	As	75	1191.4	17.4	**1.0560**	0.192	18.2	ug/L	-33	Standard
	Se	82	3963.5	1.8	**37.7442**	0.357	0.9	ug/L	12	Standard
	Se-1	77	2801.9	4.9	**38.0928**	1.537	4.0	ug/L	94	Standard
>	Ga	71	21.7	53.3				mg/L	28	Standard
	Rb	85	273.3	117.8				ug/L	25	Standard
	Y	89	473584.4	2.8				ug/L	487927	Standard
>	Rh	103	6.7	86.6				ug/L	15	Standard
	Mo	98	486.5	133.8	**0.1137**	0.174	153.1	ug/L	46	Standard
	Ag	107	383.7	119.8	**0.0414**	0.074	179.2	ug/L	103	Standard
	Cd	111	90.7	161.1	**0.0476**	0.084	177.5	mg/L	4	Standard
	Cd	114	262.8	138.8	**0.0509**	0.083	162.9	ug/L	25	Standard
>	In	115	563621.4	3.1				ug/L	577818	Standard
	Sn	118	204.7	9.9	**0.0319**	0.015	47.6	ug/L	203	Standard
	Sb	123	551.7	47.2	**0.0949**	0.054	56.7	ug/L	270	Standard
	Ba	135	699.4	160.5	**0.3898**	0.661	169.6	ug/L	35	Standard
	Ce	140	430.0	156.1				ug/L	25	Standard
>	Tb	159	846002.3	2.6				ug/L	866991	Standard
	Ho	165	26.7	65.8				ug/L	3	Standard
	Tl	203	312.0	155.4	**0.0176**	0.067	377.8	ug/L	243	Standard
	Tl	205	706.7	157.3	**0.0176**	0.063	361.0	ug/L	563	Standard
	Pb	206	858.4	58.3	**0.0711**	0.083	116.7	ug/L	471	Standard
	Pb	207	732.7	58.0	**0.0669**	0.078	116.4	ug/L	407	Standard
	Pb	208	818.0	49.0	**0.0655**	0.067	101.8	ug/L	462	Standard
	U	238	180.7	166.0	**0.0332**	0.061	183.4	ug/L	9	Standard
>	Bi	209	546520.7	2.4				ug/L	583182	Standard

Sample ID: 40 PPB SE
Report Date/Time: Wednesday, March 29, 2017 18:20:59
Page 1

Approved: March 30, 2017

⌈	**Na**	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
|	**Mg**	24	35.0	14.3	**-0.1100**	0.136	124.0	mg/L	33	Standard
|	**K**	39	21.7	74.2	**-0.0292**	0.088	300.4	mg/L	20	Standard
|	**Ca**	43	40.0	12.5	**384.4064**	84.063	21.9	mg/L	32	Standard
|	**Fe**	54	29.5	50.3	**-0.0231**	0.091	394.6	mg/L	18	Standard
|	**Fe**	57	296.7	21.2	**1.6964**	1.455	85.7	mg/L	245	Standard
⌊>	**Sc-1**	45	49452.3	2.6				mg/L	48374	Standard
	Cl	35	2.7	43.3				ug/L	1	Standard
	Kr	83	2.0	0.0				ug/L	2	Standard
	Br	81	1963.5	6.7				ug/L	1940	Standard
	P	31	41.7	36.7				ug/L	42	Standard
	S	34	3.3	86.6				ug/L	3	Standard
	Sr	88	123.3	2.3				ug/L	115	Standard
	C	12	33.3	69.3				mg/L	37	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	19.4	88.1				mg/L	30	Standard
	Ho-1	165	26.7	65.8				mg/L	3	Standard
	Er	166	13.3	86.6				mg/L	10	Standard
	I	127	2581.9	12.4				mg/L	2449	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		103.257	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		96.161	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: 40 PPB SE
Report Date/Time: Wednesday, March 29, 2017 18:20:59
Page 2

Approved: March 30, 2017

Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	97.543
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	93.714
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: 40 PPB SE
Report Date/Time: Wednesday, March 29, 2017 18:20:59
Page 3

Approved: March 30, 2017

2.2.3 Metals CVAA Data (Mercury)

2.2.3.1 Summary Data

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-02	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	126F-032117	**Prep Method:**	7470A	**Prep Date:**	03/27/2017 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	03/27/2017 14:28
Workgroup #:	WG607805	**Analyst:**	LSJ	**Run Date:**	03/27/2017 14:55
Collect Date:	03/21/2017 08:15	**Dilution:**	1	**File ID:**	M7.032717.145555
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-04	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	126FDF-032117	**Prep Method:**	7470A	**Prep Date:**	03/27/2017 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	03/27/2017 14:28
Workgroup #:	WG607805	**Analyst:**	LSJ	**Run Date:**	03/27/2017 14:58
Collect Date:	03/21/2017 08:15	**Dilution:**	1	**File ID:**	M7.032717.145828
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-05	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW2-032117	**Prep Method:**	7470A	**Prep Date:**	03/27/2017 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	03/27/2017 14:28
Workgroup #:	WG607805	**Analyst:**	LSJ	**Run Date:**	03/27/2017 15:01
Collect Date:	03/21/2017 09:35	**Dilution:**	1	**File ID:**	M7.032717.150101
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-06	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18CPTMW01DW-032117	**Prep Method:**	7470A	**Prep Date:**	03/27/2017 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	03/27/2017 14:28
Workgroup #:	WG607805	**Analyst:**	LSJ	**Run Date:**	03/27/2017 15:03
Collect Date:	03/21/2017 10:35	**Dilution:**	1	**File ID:**	M7.032717.150335
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000100	J	0.000400	0.000200	0.000100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-07	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18CPTMW01SW-032117	**Prep Method:**	7470A	**Prep Date:**	03/27/2017 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	03/27/2017 14:28
Workgroup #:	WG607805	**Analyst:**	LSJ	**Run Date:**	03/27/2017 15:11
Collect Date:	03/21/2017 11:35	**Dilution:**	1	**File ID:**	M7.032717.151111
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-08	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW13-032117	**Prep Method:**	7470A	**Prep Date:**	03/27/2017 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	03/27/2017 14:28
Workgroup #:	WG607805	**Analyst:**	LSJ	**Run Date:**	03/27/2017 15:13
Collect Date:	03/21/2017 13:40	**Dilution:**	1	**File ID:**	M7.032717.151345
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-09	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW13FD-032117	**Prep Method:**	7470A	**Prep Date:**	03/27/2017 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	03/27/2017 14:28
Workgroup #:	WG607805	**Analyst:**	LSJ	**Run Date:**	03/27/2017 15:16
Collect Date:	03/21/2017 13:40	**Dilution:**	1	**File ID:**	M7.032717.151616
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-11	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	CO2F-032117	**Prep Method:**	7470A	**Prep Date:**	03/27/2017 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	03/27/2017 14:28
Workgroup #:	WG607805	**Analyst:**	LSJ	**Run Date:**	03/27/2017 15:18
Collect Date:	03/21/2017 14:40	**Dilution:**	1	**File ID:**	M7.032717.151846
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-13	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW16F-032217	**Prep Method:**	7470A	**Prep Date:**	03/27/2017 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	03/27/2017 14:28
Workgroup #:	WG607805	**Analyst:**	LSJ	**Run Date:**	03/27/2017 15:21
Collect Date:	03/22/2017 08:45	**Dilution:**	1	**File ID:**	M7.032717.152117
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-15	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW19F-032217	**Prep Method:**	7470A	**Prep Date:**	03/27/2017 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	03/27/2017 14:28
Workgroup #:	WG607805	**Analyst:**	LSJ	**Run Date:**	03/27/2017 15:23
Collect Date:	03/22/2017 10:00	**Dilution:**	1	**File ID:**	M7.032717.152348
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000196	J	0.000400	0.000200	0.000100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

2.2.3.2 QC Summary

Example Cold Vapor Mercury Calculations
Hydra AA Mercury Analyzer / CETAC M-7600 Quick Trace Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to Volume (mL)	40
Vi = Aliquot Volume (mL)	40
D = Manual dilution factor, if required (10X = 10)	1
Cx = Concentration of element in ppb (ug/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to volume (mL)	40
Ws = Aliquot weight (g)	0.6
D = Manual dilution factor	1
Cx = Concentration of element in ug/kg	6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

1 Cx = Concentration calculated as received (wet basis)	6.67
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	8.33

8.33 ug/kg = 0.00833 mg/kg

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG607691
Analyst: REK
Spike Analyst: REK
Method: 7470A
Run Date: 03/27/2017 07:27
Hotblock Start Temp: 95 @ 07:10
Hotblock End Temp: 95.5 @ 09:10
Instrument: HB6

SOP: ME404 Revison 17
Spike Solution: STD81115
Spike Witness: VC
H2SO4 Lot #: COA19447
40 & 50 ML. DIGESTION TU COA19487
HNO3 Lot #: COA19483
K2S2O8 1:1 Lot #: RGT39467
KMnO4 1:1 Lot #: RGT39613
Mercury Water ICV Lot #: STD81117
HG H2O STDS 10PPM Lot #: STD81123

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG607691-03	BLANK	1	40 mL	40 mL		
2	WG607691-04	LCS	1	40 mL	40 mL	4 mL	
3	WG607691-01	REF	2	40 mL	40 mL		
4	L17031330-01	SAMP	2	40 mL	40 mL		03/31/17
5	L17031330-02	SAMP	2	40 mL	40 mL		03/31/17
6	L17031339-02	SAMP	1	40 mL	40 mL		04/03/17
7	L17031339-04	SAMP	1	40 mL	40 mL		04/03/17
8	L17031339-05	SAMP	1	40 mL	40 mL		04/03/17
9	L17031339-06	SAMP	1	40 mL	40 mL		04/03/17
10	L17031339-07	SAMP	1	40 mL	40 mL		04/03/17
11	L17031339-08	SAMP	1	40 mL	40 mL		04/03/17
12	L17031339-09	SAMP	1	40 mL	40 mL		04/03/17
13	L17031339-11	SAMP	1	40 mL	40 mL		04/03/17
14	L17031339-13	SAMP	1	40 mL	40 mL		04/03/17
15	L17031339-15	SAMP	1	40 mL	40 mL		04/03/17
16	WG607691-02	REF	1	40 mL	40 mL		
17	L17031354-01	SAMP	1	40 mL	40 mL		03/30/17
18	L17031354-02	SAMP	1	40 mL	40 mL		03/30/17
19	L17031378-01	SAMP	2	40 mL	40 mL		04/04/17
20	WG607691-05	DUP	1	40 mL	40 mL		
21	WG607691-06	MS	1	36 mL	40 mL	4 mL	
22	WG607691-07	MSD	1	36 mL	40 mL	4 mL	

Analyst: 

Reviewer: 

* All calibration and check standards are prepared and digested with sample batch following the procedures in section 7.0 of SOP ME404/ME405.

HB_DIG - Modified 07/26/2012
PDF ID: 5217164
Report generated: 03/27/2017 10:02

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 032717C.CSV
Analyst1: LSJ Analyst2: N/A
Method: 7470A/245.1 SOP: 404 Rev: 17
Maintenance Log ID:

Calibration Std: STD81123 ICV Std: STD81117 Post Spike: STD81123
ICSA: N/A ICSAB: N/A Int. Std:
CCV: LLCCV: Tuning Sol :
Stannous : RGT39471 Hydroxylamine : RGT39469

Workgroups: 607691

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	M7.032717.141523	WG607859-01	Calibration Point		1		03/27/17 14:15
2	M7.032717.141754	WG607859-02	Calibration Point		1		03/27/17 14:17
3	M7.032717.142026	WG607859-03	Calibration Point		1		03/27/17 14:20
4	M7.032717.142259	WG607859-04	Calibration Point		1		03/27/17 14:22
5	M7.032717.142532	WG607859-05	Calibration Point		1		03/27/17 14:25
6	M7.032717.142806	WG607859-06	Calibration Point		1		03/27/17 14:28
7	M7.032717.143040	WG607859-07	Initial Calibration Verification		1		03/27/17 14:30
8	M7.032717.143310	WG607859-08	Initial Calib Blank		1		03/27/17 14:33
9	M7.032717.143543	WG607859-09	CCV		1		03/27/17 14:35
10	M7.032717.143814	WG607859-10	CCB		1		03/27/17 14:38
11	M7.032717.144044	WG607691-03	Method/Prep Blank	40/40	1		03/27/17 14:40
12	M7.032717.144316	WG607691-04	Laboratory Control S	40/40	1		03/27/17 14:43
13	M7.032717.144547	WG607691-01	Reference Sample	40/40	1	L17031330-01	03/27/17 14:45
14	M7.032717.144819	WG607691-05	Duplicate	40/40	1	L17031330-01	03/27/17 14:48
15	M7.032717.145051	L17031330-02	BPB05	40/40	1		03/27/17 14:50
16	M7.032717.145323	WG607805-01	Post Digestion Spike		1	L17031330-02	03/27/17 14:53
17	M7.032717.145555	L17031339-02	126F-032117	40/40	1		03/27/17 14:55
18	M7.032717.145828	L17031339-04	126FDF-032117	40/40	1		03/27/17 14:58
19	M7.032717.150101	L17031339-05	MW2-032117	40/40	1		03/27/17 15:01
20	M7.032717.150335	L17031339-06	18CPTMW01DW-032117	40/40	1		03/27/17 15:03
21	M7.032717.150607	WG607859-11	CCV		1		03/27/17 15:06
22	M7.032717.150838	WG607859-12	CCB		1		03/27/17 15:08
23	M7.032717.151111	L17031339-07	18CPTMW01SW-032117	40/40	1		03/27/17 15:11
24	M7.032717.151345	L17031339-08	MW13-032117	40/40	1		03/27/17 15:13
25	M7.032717.151616	L17031339-09	MW13FD-032117	40/40	1		03/27/17 15:16
26	M7.032717.151846	L17031339-11	CO2F-032117	40/40	1		03/27/17 15:18
27	M7.032717.152117	L17031339-13	MW16F-032217	40/40	1		03/27/17 15:21
28	M7.032717.152348	L17031339-15	MW19F-032217	40/40	1		03/27/17 15:23
29	M7.032717.152620	WG607691-02	Reference Sample	40/40	1	L17031354-01	03/27/17 15:26
30	M7.032717.152851	WG607691-06	Matrix Spike	36/40	1	L17031354-01	03/27/17 15:28
31	M7.032717.153123	WG607691-07	Matrix Spike Duplica	36/40	1	L17031354-01	03/27/17 15:31
32	M7.032717.153356	L17031354-02	T7C0981-02	40/40	1		03/27/17 15:33
33	M7.032717.153628	WG607859-13	CCV		1		03/27/17 15:36
34	M7.032717.153859	WG607859-14	CCB		1		03/27/17 15:38

Page: 1 Approved: March 28, 2017

Kristi K Buck

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 032717C.CSV

Analyst1: LSJ Analyst2: N/A

Method: 7470A/245.1 SOP: 404 Rev: 17

Maintenance Log ID:

Calibration Std: STD81123 ICV Std: STD81117 Post Spike: STD81123

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT39471 Hydroxylamine : RGT39469

Workgroups: 607691

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	M7.032717.154131	L17031378-01	TEST SAMPLE 2 (032417)	40/40	1		03/27/17 15:41
36	M7.032717.154404	WG607859-15	CCV		1		03/27/17 15:44
37	M7.032717.154634	WG607859-16	CCB		1		03/27/17 15:46

 Approved: March 28, 2017

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 27-MAR-2017
Analyst: LSJ
Analyst: NA
Method: 7470A/245.1
Instrument: CVAA1
Curve Workgroup: 607859
Runlog ID: 81190
Analytical Workgroups: 607805

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	1339
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	LSJ
Secondary Reviewer	KKB
Comments	

Primary Reviewer:
28-MAR-2017

Secondary Reviewer:
28-MAR-2017

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-28-2017 10:45:10

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 7470A AAB#: WG607805

Login Number: L17031339

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
126F-032117	02	03/21/17					03/27/2017	6	28		03/27/17	6.3	28	
126FDF-032117	04	03/21/17					03/27/2017	6	28		03/27/17	6.3	28	
MW2-032117	05	03/21/17					03/27/2017	5.9	28		03/27/17	6.2	28	
18CPTMW01DW-032117	06	03/21/17					03/27/2017	5.9	28		03/27/17	6.2	28	
18CPTMW01SW-032117	07	03/21/17					03/27/2017	5.8	28		03/27/17	6.2	28	
MW13-032117	08	03/21/17					03/27/2017	5.7	28		03/27/17	6.1	28	
MW13FD-032117	09	03/21/17					03/27/2017	5.7	28		03/27/17	6.1	28	
CO2F-032117	11	03/21/17					03/27/2017	5.7	28		03/27/17	6	28	
MW16F-032217	13	03/22/17					03/27/2017	4.9	28		03/27/17	5.3	28	
MW19F-032217	15	03/22/17					03/27/2017	4.9	28		03/27/17	5.2	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 5218853
Report generated 03/28/2017 08:40

METHOD BLANK SUMMARY

Login Number: L17031339
Blank File ID: M7.032717.144044
Prep Date: 03/27/17 07:27
Analyzed Date: 03/27/17 14:40
Analyst: LSJ

Work Group: WG607805
Blank Sample ID: WG607691-03
Instrument ID: CVAA1
Method: 7470A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG607691-04	M7.032717.144316	03/27/17 14:43	01
DUP	WG607691-05	M7.032717.144819	03/27/17 14:48	01
126F-032117	L17031339-02	M7.032717.145555	03/27/17 14:55	01
126FDF-032117	L17031339-04	M7.032717.145828	03/27/17 14:58	01
MW2-032117	L17031339-05	M7.032717.150101	03/27/17 15:01	01
18CPTMW01DW-032117	L17031339-06	M7.032717.150335	03/27/17 15:03	01
18CPTMW01SW-032117	L17031339-07	M7.032717.151111	03/27/17 15:11	01
MW13-032117	L17031339-08	M7.032717.151345	03/27/17 15:13	01
MW13FD-032117	L17031339-09	M7.032717.151616	03/27/17 15:16	01
CO2F-032117	L17031339-11	M7.032717.151846	03/27/17 15:18	01
MW16F-032217	L17031339-13	M7.032717.152117	03/27/17 15:21	01
MW19F-032217	L17031339-15	M7.032717.152348	03/27/17 15:23	01

Report Name: BLANK_SUMMARY
PDF File ID: 5218854
Report generated 03/28/2017 08:40

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L17031339 Prep Date: 03/27/17 07:27 Sample ID: WG607691-03
Instrument ID: CVAA1 Run Date: 03/27/17 14:40 Prep Method: 7470A
File ID: M7.032717.144044 Analyst: LSJ Method: 7470A
Workgroup (AAB#): WG607805 Matrix: Water Units: mg/L
Contract #: Cal ID: CVAA1-27-MAR-17

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Mercury	0.000100	0.000400	0.000100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 5218855
28-MAR-2017 08:40

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L17031339 Run Date: 03/27/2017 Sample ID: WG607691-04
Instrument ID: CVAA1 Run Time: 14:43 Prep Method: 7470A
File ID: M7.032717.144316 Analyst: LSJ Method: 7470A
Workgroup (AAB#): WG607805 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD81115 Cal ID: CVAA1-27-MAR-17

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury	0.00400	0.00376	94.0	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 5218856
Report generated: 03/28/2017 08:40

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum:L17031339 Cal ID:CVAA1- Worknum:WG607805
Instrument ID:CVAA1 Contract #: Method:7470A
Parent ID:WG607691-02 File ID:M7.032717.152620 Dil:1 Matrix:WATER
Sample ID:WG607691-06 MS File ID:M7.032717.152851 Dil:1 Units:mg/L
Sample ID:WG607691-07 MSD File ID:M7.032717.153123 Dil:1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	ND	0.00444	0.00422	95.0	0.00444	0.00422	95.0	0.0789	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 5218857
Report generated 03/28/2017 08:40

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L17031339 **Worknum:** WG607805
Instrument ID: CVAA1 **Method:** 7470A
Post Spike ID: WG607805-01 **File ID:** M7.032717.145323 **Dil:** 1 **Units:** ug/L
Sample ID: L17031330-02 **File ID:** M7.032717.145051 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	1.00		0	U	1	100.4	85 - 115	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 5218852
Report generated: 03/28/2017 08:40

Microbac Laboratories Inc.
INITIAL CALIBRATION SUMMARY

Login Number: L17031339
Analytical Method: 7470A
ICAL Worknum: WG607859

Workgroup (AAB#): WG607805
Instrument ID: CVAA1
Initial Calibration Date: 03/27/2017 14:28

Analyte	WG607859-01		WG607859-02		WG607859-03		WG607859-04		WG607859-05		WG607859-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	52.5	0.200	1218	1.00	5580	2.00	11500	5.00	26990	10.0	58460

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 5218858
Report generated 03/28/2017 08:40

Login Number: L17031339
Analytical Method: 7470A
ICAL Worknum: WG607859

Workgroup (AAB#): WG607805
Instrument ID: CVAA1
Initial Calibration Date: 03/27/2017 14:28

Analyte	R	Q
Mercury	0.9990	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 5218858
Report generated 03/28/2017 08:40

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L17031339 Run Date: 03/27/2017 Sample ID: WG607859-08
Instrument ID: CVAA1 Run Time: 14:33 Method: 7470A
File ID: M7.032717.143310 Analyst: LSJ Units: ug/L
Workgroup (AAB#): WG607805 Cal ID: CVAA1 - 27-MAR-17
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.4	.1	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 5218860
Report generated 03/28/2017 08:40

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031339 | Run Date: 03/27/2017 | Sample ID: WG607859-10
Instrument ID: CVAA1 | Run Time: 14:38 | Method: 7470A
File ID: M7.032717.143814 | Analyst: LSJ | Units: ug/L
Workgroup (AAB#): WG607805 | Cal ID: CVAA1 - 27-MAR-17
Matrix: WATER | QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5218862
Report generated 03/28/2017 08:40

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number:	L17031339	Run Date:	03/27/2017	Sample ID:	WG607859-12
Instrument ID:	CVAA1	Run Time:	15:08	Method:	7470A
File ID:	M7.032717.150838	Analyst:	LSJ	Units:	ug/L
Workgroup (AAB#):	WG607805	Cal ID:	CVAA1 - 27-MAR-17		
Matrix:	WATER	QAPP:	DOD4		

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5218862
Report generated 03/28/2017 08:40

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number:	L17031339	Run Date:	03/27/2017	Sample ID:	WG607859-14
Instrument ID:	CVAA1	Run Time:	15:38	Method:	7470A
File ID:	M7.032717.153859	Analyst:	LSJ	Units:	ug/L
Workgroup (AAB#):	WG607805	Cal ID:	CVAA1 - 27-MAR-17		
Matrix:	WATER	QAPP:	DOD4		

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5218862
Report generated 03/28/2017 08:40

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L17031339 Run Date: 03/27/2017 Sample ID: WG607859-07
Instrument ID: CVAA1 Run Time: 14:30 Method: 7470A
File ID: M7.032717.143040 Analyst: LSJ Units: ug/L
Workgroup (AAB#): WG607805 Cal ID: CVAA1 - 27-MAR-17
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Mercury		2	2.08	104	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 5218859
Report generated 03/28/2017 08:40

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031339 Run Date: 03/27/2017 Sample ID: WG607859-09
Instrument ID: CVAA1 Run Time: 14:35 Method: 7470A
File ID: M7.032717.143543 Analyst: LSJ QC Key: DOD4
Workgroup (AAB#): WG607805 Cal ID: CVAA1 - 27-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00216	mg/L	108	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 5218861
Report generated 03/28/2017 08:40

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031339 Run Date: 03/27/2017 Sample ID: WG607859-11
Instrument ID: CVAA1 Run Time: 15:06 Method: 7470A
File ID: M7.032717.150607 Analyst: LSJ QC Key: DOD4
Workgroup (AAB#): WG607805 Cal ID: CVAA1 - 27-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00216	mg/L	108	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 5218861
Report generated 03/28/2017 08:40

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031339 Run Date: 03/27/2017 Sample ID: WG607859-13
Instrument ID: CVAA1 Run Time: 15:36 Method: 7470A
File ID: M7.032717.153628 Analyst: LSJ QC Key: DOD4
Workgroup (AAB#): WG607805 Cal ID: CVAA1 - 27-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00216	mg/L	108	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 5218861
Report generated 03/28/2017 08:40

2.2.3.3 Raw Data

PDM CVAA1 245.1/7470/7471

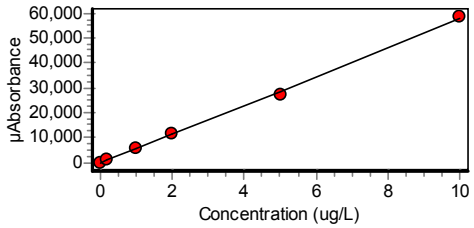
Report Generated By CETAC QuickTrace
Analyst: VOA
Worksheet file: C:\Program Files (x86)\QuickTrace\Worksheets\032717C.wsz
Date Started: 3/27/2017 2:06:44 PM
Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Standard #0					STD	03/27/17 02:15:23 pm	0.0000	52	18.86		1.00
Replicates	60.7	61.2	41.8	46.3							
Standard #1 (0.2 ug/L)					STD	03/27/17 02:17:54 pm	0.2000	1218	0.86		1.00
Replicates	1206.3	1213.4	1223.1	1229.9							
Standard #2 (1.0 ug/L)					STD	03/27/17 02:20:26 pm	1.0000	5580	1.07		1.00
Replicates	5503.7	5573.2	5596.7	5647.6							
Standard #3 (2.0 ug/L)					STD	03/27/17 02:22:59 pm	2.0000	11498	1.04		1.00
Replicates	11346.8	11468.7	11548.6	11626.4							
Standard #4 (5.0 ug/L)					STD	03/27/17 02:25:32 pm	5.0000	26987	0.95		1.00
Replicates	26695.1	26874.7	27093.4	27283.4							
Standard #5 (10.0 ug/L)					STD	03/27/17 02:28:06 pm	10.0000	58463	0.76		1.00
Replicates	57887.5	58362.6	58682.1	58921.6							

Calibration

Equation: A = -273.188 + 5793.287C
R2: 0.99848
SEE: 976.3323
Flags:



ICV					ICV	03/27/17 02:30:40 pm	2.0830	11793	0.78		1.00
Replicates	11679.5	11770.0	11825.4	11896.5							
% Recovery	104.14										

Approved: March 28, 2017

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
ICB					ICB	03/27/17 02:33:10 pm	0.0528	33	59.49		1.00
Replicates	47.8	45.9	5.4	32.4							
CCV					CCV	03/27/17 02:35:43 pm	2.1570	12222	0.96		1.00
Replicates	12074.5	12186.8	12284.0	12342.8							
% Recovery	107.84										
CCB					CCB	03/27/17 02:38:14 pm	0.0518	27	38.19		1.00
Replicates	34.0	36.4	15.2	21.0							
WG607691-03					MB	03/27/17 02:40:44 pm	0.0593	70	16.11		1.00
Replicates	65.7	85.5	71.2	58.8							
WG607691-04					LCS	03/27/17 02:43:16 pm	3.7580	21497	1.22		1.00
Replicates	21175.2	21427.1	21592.7	21794.4							
% Recovery	93.95										
L1703133001					UNK	03/27/17 02:45:47 pm	0.0571	58	20.51		1.00
Replicates	58.2	65.8	66.5	41.0							
WG607691-05					UNK	03/27/17 02:48:19 pm	0.0607	79	12.34		1.00
Replicates	83.7	68.6	89.8	72.9							
L1703133002					UNK	03/27/17 02:50:51 pm	0.0580	63	6.97		1.00
Replicates	66.3	57.8	67.0	61.0							
WG607805-01					SPK	03/27/17 02:53:23 pm	1.0040	5546	0.78		1.00
Replicates	5496.0	5525.3	5574.3	5588.6							
% Recovery	94.64										
L1703133902					UNK	03/27/17 02:55:55 pm	0.0657	108	3.73		1.00
Replicates	109.2	102.6	106.8	112.1							
L1703133904					UNK	03/27/17 02:58:28 pm	0.0669	115	12.48		1.00
Replicates	122.2	129.3	110.3	96.7							
L1703133905					UNK	03/27/17 03:01:01 pm	0.0833	210	3.14		1.00
Replicates	201.8	213.5	216.5	207.0							

Approved: March 28, 2017

Sample Name				Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1703133906				UNK	03/27/17 03:03:35 pm	0.1004	309	7.42		1.00
Replicates	338.5	311.7	299.7	284.4						
CCV				CCV	03/27/17 03:06:07 pm	2.1600	12241	1.01		1.00
Replicates	12095.8	12192.9	12295.5	12380.9						
% Recovery	108.01									
CCB				CCB	03/27/17 03:08:38 pm	0.0566	54	17.11		1.00
Replicates	47.7	56.7	46.7	66.7						
L1703133907				UNK	03/27/17 03:11:11 pm	0.0567	55	29.79		1.00
Replicates	58.6	32.6	71.9	57.1						
L1703133908				UNK	03/27/17 03:13:45 pm	0.0614	82	4.63		1.00
Replicates	86.2	83.9	77.2	82.4						
L1703133909				UNK	03/27/17 03:16:16 pm	0.0599	74	26.88		1.00
Replicates	77.3	46.5	77.3	94.0						
L1703133911				UNK	03/27/17 03:18:46 pm	0.0591	69	25.25		1.00
Replicates	72.1	44.4	85.2	75.0						
L1703133913				UNK	03/27/17 03:21:17 pm	0.0555	48	14.00		1.00
Replicates	51.4	45.1	40.9	56.2						
L1703133915				UNK	03/27/17 03:23:48 pm	0.1957	861	1.54		1.00
Replicates	844.0	856.5	868.5	873.7						
L1703135401				UNK	03/27/17 03:26:20 pm	0.0635	95	5.80		1.00
Replicates	96.7	100.8	87.8	93.5						
WG607691-06				UNK	03/27/17 03:28:51 pm	3.8020	21751	1.12		1.00
Replicates	21452.4	21670.0	21864.5	22016.7						
WG607691-07				UNK	03/27/17 03:31:23 pm	3.7990	21737	1.14		1.00
Replicates	21440.2	21654.9	21836.2	22018.4						

Approved: March 28, 2017

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1703135402					UNK	03/27/17 03:33:56 pm	0.0498	16	62.95		1.00
	Replicates	26.0	4.7	10.3	21.5						
CCV					CCV	03/27/17 03:36:28 pm	2.1610	12247	1.00		1.00
	Replicates	12092.7	12209.5	12311.8	12372.8						
	% Recovery	108.06									
CCB					CCB	03/27/17 03:38:59 pm	0.0533	36	33.61		1.00
	Replicates	39.4	32.0	50.0	21.5						
L1703137801					UNK	03/27/17 03:41:31 pm	0.0548	44	26.81		1.00
	Replicates	45.4	56.2	27.9	46.4						
CCV					CCV	03/27/17 03:44:04 pm	2.1590	12233	1.00		1.00
	Replicates	12085.0	12191.0	12290.4	12367.0						
	% Recovery	107.94									
CCB					CCB	03/27/17 03:46:34 pm	0.0538	39	28.79		1.00
	Replicates	42.6	48.9	39.8	22.9						

Approved: March 28, 2017

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
March 31, 2017

---

001 – BIO-CHEM TESTING WVDEP 220	002 – REIC Consultants, Inc. WVDEP 060
003 – Sturm Environmental	004 – MICROBAC PITTSBURGH
005 – ES LABORATORIES	006 – ALCOSAN LABORATORIES
007 – ALS LABORATORIES	008 – BENCHMARK LABORATORIES
010 – MICROBAC CHICAGOLAND	AC – AMBER R. CARMICHAEL
ADC – ANTHONY D. CANTER	ADG – APRIL D. GREENE
ALS – ADRIANE L. STEED	AWE – ANDREW W. ESSIG
AZH – AFTER HOURS	BJO – BRIAN J. OGDEN
BLG – BRENDA L. GREENWALT	BNB – Brandi N. Bentley
BRG – BRENDA R. GREGORY	CAS – Craig A. Smith
CEB – CHAD E. BARNES	CLC – CHRYS L. CRAWFORD
CLS – CARA L. STRICKLER	CPD – CHAD P. DAVIS
CSH – CHRIS S. HILL	CV – Carl Volkman
DAK – DEAN A. KETELSEN	DCM – DAVID C. MERCKLE
DEV – DAVID E. VANDENBERG	DIH – DEANNA I. HESSON
DLB – DAVID L. BUMGARNER	DLP – DOROTHY L. PAYNE
DSM – DAVID S. MOSSOR	DTG – DOMINIC T. GEHRET
ECL – ERIC C. LAWSON	EPT – ETHAN P. TIDD
ERP – ERIN R. PORTER	FJB – FRANCES J. BOLDEN
HRF – HEATHER R. FAIRCHILD	JDH – JUSTIN D. HESSON
JDS – JARED D. SMITH	JKP – JACQUELINE K. PARSONS
JLD – JESSICA L. DELONG	JST – JOSHUA S. TAYLOR
JTP – JOSHUA T. PEMBERTON	JWR – JOHN W. RICHARDS
JWS – JACK W. SHEAVES	JYH – JI Y. HU
KAK – KATHY A. KIRBY	KDD – Katelyn D. Daley
KEB – KATIE E. BARNES	KHR – KIM H. RHODES
KKB – KERRI K. BUCK	KRA – KATHY R. ALBERTSON
KRP – KATHY R. PARSONS	LJH – Lacey J. Hendershot
LLS – LARRY L. STEPHENS	LSB – LESLIE S. BUCINA
LSJ – LAURA S. JONES	MAP – MARLA A. PORTER
MBK – MORGAN B. KNOWLTON	MES – MARY E. SCHILLING
MMB – MAREN M. BEERY	MRT – MICHELLE R. TAYLOR
PDM – PIERCE D. MORRIS	PIT – MICROBAC WARRENDALE
REK – BOB E. KYER	RLB – BOB BUCHANAN
RNP – RICK N. PETTY	SAV – SARAH A. VANDENBERG
SCB – SARAH C. BOGOLIN	SCJ – SUE ELLEN C. JOHNSON
SDC – SHALYN D. CONLEY	TB – TODD BOYLE
TMB – TIFFANY M. BAILEY	TMM – TAMMY M. MORRIS
VC – VICKI COLLIER	WTD – WADE T. DELONG
XXX – UNAVAILABLE OR SUBCONTRACT	

Microbac Laboratories Inc.
List of Valid Qualifiers
March 31, 2017

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
>,H1	Result is greater than the associated numerical value. Sample analysis performed past holding time.
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound

Microbac Laboratories Inc.
List of Valid Qualifiers
March 31, 2017

Qualkey: DOD

TNTC	Too numerous to count
TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Elspeth Sharp
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60256135. GWTPTHRU MAR16		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	TOTAL METALS	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	126-032117			3/21/17	0815		X	W	3	X						
	126F-032117			3/21/17	0815		X	W	1		X					
	126FD-032117			3/21/17	0815		X	W	3	X						
	126FDF-032117			3/21/17	0815		X	W	1		X					
	MW2-032117			3/21/17	0935		X	W	4	X	X					
	18CPTMW01DW-032117			3/21/17	1035		X	W	4	X	X					
	18CPTMW01SW-032117			3/21/17	1135		X	W	4	X	X					
	MW13-032117			3/21/17	1340		X	W	4	X	X					
	MW13FD-032117			3/21/17	1340		X	W	4	X	X					
	C02-032117			3/21/17	1440		X	W	3	X						
	C02F-032117			3/21/17	1440		X	W	1		X					
	MW16-032217			3/22/17	0845		X	W	3	X						
	MW16F-032217			3/22/17	0845		X	W	1		X					
	MW19-032217			3/22/17	1000		X	W	3	X						

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 3/22/17	Time 1500	Receiv	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Receiv (Signat	Time	Remarks:

Microbac OVD
Received: 03/23/2017 09:38
By: CARA STRICKLER
221000098644
Cara Strickler

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

00850214

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Elspeth Sharp	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205			
Turn Around Time: STANDARD	pH:	Program:	
Project Name/Location: Longhorn			
Project Number: 60256135. GWTPTHRU MAR16			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp-	Grab	Matrix	Number of Containers	VOC	TOTAL METALS	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	MW19F-032217			3/22/17	1000		X	W	1		X					
	TRIP BLANK			3/22/17			X	W	2	X						

Comments: **STANDARD TAT**

Microbac OVD
Received: 03/23/2017 09:38
By: CARA STRICKLER
221000098644

Relinquished by: (Signature) Scott Beesinger	Date 3/22/17	Time 1500	Received: Cara Strickler	Date	Time	Relinquished by: (Signature)	
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Remarks:	

•Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

00850215

MICROBAC

COOLER TEMP >6° C LOG

Cooler ID 8644

SAMPLE ID	Bottle 1 °C	Bottle 2 °C	Bottle 3 °C	Bottle 4 °C	Bottle 5 °C	Bottle 6 °C

DHD 3/23/17

pH Exceptions

pH Lot # HC693124

SAMPLE ID	Bottle 1	Bottle 2	Bottle 3	Bottle 4	Bottle 5	Bottle 6

DHD 3/23/17

PRESERVATIVE EXCEPTIONS

☑ NONE

☐ AS NOTED

DHD 3/23/17

Document Control # 1957
Last 10-07-2016

Issued to: Document Master File

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L17031339
Account: 2551
Project: 2551.096
Samples: 16
Due Date: 03-APR-2017

Samplenum	Container ID	Products
L17031339-01	885373	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	24-MAR-2017 09:48	CLS		
2	ANALYZ	L1	ORG4	24-MAR-2017 09:58	HRF	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	24-MAR-2017 09:48	CLS		
2	ANALYZ	L1	ORG4	24-MAR-2017 09:58	HRF	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	24-MAR-2017 09:48	CLS		
2	ANALYZ	L1	ORG4	24-MAR-2017 09:59	HRF	CLS	

Samplenum	Container ID	Products
L17031339-02	885374	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	24-MAR-2017 09:48	CLS		
2	PREP	W1	DIG	24-MAR-2017 13:13	ERP	CLS	
3	ANALYZ*	DIG	METALS	27-MAR-2017 10:41	JYH	ERP	
4	STORE	DIG	A1	27-MAR-2017 12:51	CLS	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L17031339-03	885375	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	24-MAR-2017 09:48	CLS		
2	ANALYZ	L1	ORG4	24-MAR-2017 09:59	HRF	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	24-MAR-2017 09:48	CLS		
2	ANALYZ	L1	ORG4	24-MAR-2017 09:59	HRF	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	24-MAR-2017 09:48	CLS		
2	ANALYZ	L1	ORG4	24-MAR-2017 09:59	HRF	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L17031339
Account: 2551
Project: 2551.096
Samples: 16
Due Date: 03-APR-2017

Samplenum	Container ID	Products
L17031339-04	885376	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	DIG	24-MAR-2017 09:48	CLS		
2	STORE	DIG	A1	27-MAR-2017 12:51	CLS	ERP	

Samplenum	Container ID	Products
L17031339-05	885377	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	24-MAR-2017 09:48	CLS		
2	ANALYZ	L1	ORG4	24-MAR-2017 09:59	HRF	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	24-MAR-2017 09:48	CLS		
2	ANALYZ	L1	ORG4	24-MAR-2017 09:59	HRF	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	24-MAR-2017 09:48	CLS		
2	ANALYZ	L1	ORG4	24-MAR-2017 09:59	HRF	CLS	

Samplenum	Container ID	Products
L17031339-05	885378	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	24-MAR-2017 09:48	CLS		
2	PREP	W1	DIG	24-MAR-2017 13:13	ERP	CLS	
3	ANALYZ*	DIG	METALS	27-MAR-2017 10:41	JYH	ERP	
4	STORE	DIG	A1	27-MAR-2017 12:51	CLS	ERP	

***Sample extract/digestate/leachate**

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L17031339
Account: 2551
Project: 2551.096
Samples: 16
Due Date: 03-APR-2017

Samplenum	Container ID	Products
L17031339-06	885379	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	24-MAR-2017 09:48	CLS		
2	ANALYZ	L1	ORG4	24-MAR-2017 09:59	HRF	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	24-MAR-2017 09:48	CLS		
2	ANALYZ	L1	ORG4	24-MAR-2017 09:59	HRF	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	24-MAR-2017 09:48	CLS		
2	ANALYZ	L1	ORG4	24-MAR-2017 09:59	HRF	CLS	

Samplenum	Container ID	Products
L17031339-06	885380	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	24-MAR-2017 09:48	CLS		
2	PREP	W1	DIG	24-MAR-2017 13:13	ERP	CLS	
3	ANALYZ*	DIG	METALS	27-MAR-2017 10:41	JYH	ERP	
4	STORE	DIG	A1	27-MAR-2017 12:51	CLS	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L17031339-07	885381	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	24-MAR-2017 09:48	CLS		
2	ANALYZ	L1	ORG4	24-MAR-2017 09:59	HRF	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	24-MAR-2017 09:48	CLS		
2	ANALYZ	L1	ORG4	24-MAR-2017 09:59	HRF	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	24-MAR-2017 09:48	CLS		
2	ANALYZ	L1	ORG4	24-MAR-2017 09:59	HRF	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L17031339
Account: 2551
Project: 2551.096
Samples: 16
Due Date: 03-APR-2017

Samplenum	Container ID	Products
L17031339-07	885382	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	24-MAR-2017 09:48	CLS		
2	PREP	W1	DIG	24-MAR-2017 13:14	ERP	CLS	
3	ANALYZ*	DIG	METALS	27-MAR-2017 10:41	JYH	ERP	
4	STORE	DIG	A1	27-MAR-2017 12:52	CLS	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L17031339-08	885383	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	24-MAR-2017 09:48	CLS		
2	ANALYZ	L1	ORG4	24-MAR-2017 09:59	HRF	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	24-MAR-2017 09:48	CLS		
2	ANALYZ	L1	ORG4	24-MAR-2017 09:59	HRF	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	24-MAR-2017 09:48	CLS		
2	ANALYZ	L1	ORG4	24-MAR-2017 09:59	HRF	CLS	

Samplenum	Container ID	Products
L17031339-08	885384	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	24-MAR-2017 09:48	CLS		
2	PREP	W1	DIG	24-MAR-2017 13:13	ERP	CLS	
3	ANALYZ*	DIG	METALS	27-MAR-2017 10:41	JYH	ERP	
4	STORE	DIG	A1	27-MAR-2017 12:52	CLS	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L17031339
Account: 2551
Project: 2551.096
Samples: 16
Due Date: 03-APR-2017

Samplenum	Container ID	Products
L17031339-09	885385	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	24-MAR-2017 09:48	CLS		
2	ANALYZ	L1	ORG4	24-MAR-2017 09:59	HRF	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	24-MAR-2017 09:48	CLS		
2	ANALYZ	L1	ORG4	24-MAR-2017 09:59	HRF	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	24-MAR-2017 09:48	CLS		
2	ANALYZ	L1	ORG4	24-MAR-2017 10:00	HRF	CLS	

Samplenum	Container ID	Products
L17031339-09	885386	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	24-MAR-2017 09:48	CLS		
2	PREP	W1	DIG	24-MAR-2017 13:13	ERP	CLS	
3	ANALYZ*	DIG	METALS	27-MAR-2017 10:41	JYH	ERP	
4	STORE	DIG	A1	27-MAR-2017 12:52	CLS	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L17031339-10	885387	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	24-MAR-2017 09:48	CLS		
2	ANALYZ	L1	ORG4	24-MAR-2017 10:00	HRF	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	24-MAR-2017 09:48	CLS		
2	ANALYZ	L1	ORG4	24-MAR-2017 10:00	HRF	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	24-MAR-2017 09:48	CLS		
2	ANALYZ	L1	ORG4	24-MAR-2017 10:00	HRF	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L17031339
Account: 2551
Project: 2551.096
Samples: 16
Due Date: 03-APR-2017

Samplenum	Container ID	Products
L17031339-11	885388	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	24-MAR-2017 09:48	CLS		
2	PREP	W1	DIG	24-MAR-2017 13:13	ERP	CLS	
3	ANALYZ*	DIG	METALS	27-MAR-2017 10:41	JYH	ERP	
4	STORE	DIG	A1	27-MAR-2017 12:52	CLS	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L17031339-12	885389	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	24-MAR-2017 09:48	CLS		
2	ANALYZ	L1	ORG4	24-MAR-2017 10:00	HRF	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	24-MAR-2017 09:48	CLS		
2	ANALYZ	L1	ORG4	24-MAR-2017 10:00	HRF	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	24-MAR-2017 09:48	CLS		
2	ANALYZ	L1	ORG4	24-MAR-2017 10:00	HRF	CLS	

Samplenum	Container ID	Products
L17031339-13	885390	AG-MS AL AS-MS BA-MS BE-AX CA TL-MS V-MS ZN-MS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	24-MAR-2017 09:48	CLS		
2	PREP	W1	DIG	24-MAR-2017 13:13	ERP	CLS	
3	ANALYZ*	DIG	METALS	27-MAR-2017 10:41	JYH	ERP	
4	STORE	DIG	A1	27-MAR-2017 12:52	CLS	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L17031339
Account: 2551
Project: 2551.096
Samples: 16
Due Date: 03-APR-2017

Samplenum	Container ID	Products
L17031339-14	885391	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	24-MAR-2017 09:48	CLS		
2	ANALYZ	L1	ORG4	24-MAR-2017 10:00	HRF	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	24-MAR-2017 09:48	CLS		
2	ANALYZ	L1	ORG4	24-MAR-2017 10:00	HRF	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	24-MAR-2017 09:48	CLS		
2	ANALYZ	L1	ORG4	24-MAR-2017 10:00	HRF	CLS	

Samplenum	Container ID	Products
L17031339-15	885392	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	24-MAR-2017 09:48	CLS		
2	PREP	W1	DIG	24-MAR-2017 13:13	ERP	CLS	
3	ANALYZ*	DIG	METALS	27-MAR-2017 10:41	JYH	ERP	
4	STORE	DIG	A1	27-MAR-2017 12:52	CLS	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L17031339-16	885393	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	24-MAR-2017 09:48	CLS		
2	ANALYZ	L1	ORG4	24-MAR-2017 10:00	HRF	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	24-MAR-2017 09:48	CLS		
2	ANALYZ	L1	ORG4	24-MAR-2017 10:00	HRF	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

00850227

GEL Laboratories LLC
a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171
F 843.766.1178

gel.com

April 05, 2017

Mr. Adriane Steed
Microbac Laboratories, Inc.
158 Starlite Drive
Marietta, Ohio 45750

Re: Perchlorate-Steed
Work Order: 419111

Dear Mr. Steed:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on March 23, 2017. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4778.

Sincerely,

Linda Pullano for
Hope Taylor
Project Manager

Purchase Order: SIGNED QUOTE
Enclosures

Table of Contents

Case Narrative

Receipt Narrative
for
Microbac Laboratories, Inc Kentucky Division
SDG: 419111

April 05, 2017

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary:

Sample receipt: The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on March 23, 2017 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Sample Identification: The laboratory received the following samples:

Laboratory ID	Client ID
419111001	126-032117
419111002	126FD-032117
419111003	MW2-032117
419111004	18CPTMW01DW-032117
419111005	18CPTMW01SW-032117
419111006	MW13-032117
419111007	MW13FD-032117
419111008	C02-032117
419111009	MW16-032217
419111010	MW19-032217

Case Narrative:

Sample analyses were conducted using methodology as outlined in GEL's Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Perchlorates by LCMSMS.

Linda Pullano for
Hope Taylor
Project Manager

Chain of Custody and Supporting Documentation

AECOM

Chain of Custody Record

419111

COC Number:

Laboratory: ~~Microbac~~ Gel POC: Hope Taylor	Project Manager: Elspeth Sharp	Mail to: Linda Raabe	
Address: 2040 Savage Road	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Charleston, SC. 29407	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-843-556-8171		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205	pH:	Program:	
Turn Around Time: STANDARD			
Project Name/Location: Longhorn			
Project Number: 60256135. GWTPTHRUMAR16			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp	Grab	Matrix	Number of Containers	PERCHLORATE	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	126-032117			3/21/17	0815		X	W	1	X					
	126FD-032117			3/21/17	0815		X	W	1	X					
	MW2-032117			3/21/17	0935		X	W	1	X					
	18CPTMW01DW-032117			3/21/17	1035		X	W	1	X					
	18CPTMW01SW-032117			3/21/17	1135		X	W	1	X					
	MW13-032117			3/21/17	1340		X	W	1	X					
	MW13FD-032117			3/21/17	1340		X	W	1	X					
	EQ2-032117			3/21/17	1440		X	W	1	X					
	MW16-032217			3/22/17	0845		X	W	1	X					
	MW19-032217			3/22/17	1000		X	W	1	X					

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 3/22/17	Time 1500	Received by: (Signature)	Received by: (Signature)	Date / Time / Relinquished by: (Signature)
Relinquished by: (Signature) Stacy Bow	Date 3/23/17	Time 9:25	Received for Laboratory by: (Signature)	Date	Time / Remarks:

•Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

00850233

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: MBAC	**SDG/AR/COC/Work Order:** 419111
Received By: STACY BOONE	**Date Received:** 23-MAR-17
Carrier and Tracking Number	Circle Applicable: FedEx Express FedEx Ground UPS Field Services Courier Other J461 688 2274

Suspected Hazard Information	Yes	No	
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#:
COC/Samples marked as radioactive?		✓	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): Ø CPM / mR/Hr **Classified as: Rad 1 Rad 2 Rad 3**
Is package, COC, and/or Samples marked HAZ?		✓	If yes, select Hazards below, and contact the GEL Safety Group. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:

*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.

	Sample Receipt Criteria	Yes	NA	No	**Comments/Qualifiers (Required for Non-Conforming Items)**
1	Shipping containers received intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	✓			
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	✓			Preservation Method: Wet Ice Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius TEMP: 1°c
4	Daily check performed and passed on IR temperature gun?	✓			**Temperature Device Serial #:** IR3-17 Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?		✓		Sample ID's and Containers Affected: If Preservation added, Lot#:
7	Do any samples require Volatile Analysis?			✓	If Yes, Are Encores or Soil Kits present? Yes___ No___ (If yes, take to VOA Freezer) Do VOA vials contain acid preservation? Yes___ No___ (If unknown, select No) VOA vials free of headspace? Yes___ No___ Sample ID's and containers affected:
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Sample ID's affected:
11	Number of containers received match number indicated on COC?	✓			Sample ID's affected:
12	Are sample containers identifiable as GEL provided?			✓	
13	COC form is properly signed in relinquished/received sections?	✓			

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials HH Date 032317 Page 1 of 1

GLCHL-SR-001 Rev 4

Laboratory Certifications

List of current GEL Certifications as of 30 March 2017

State	Certification
Alaska	UST−0110
Arkansas	88−0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH−0169
Delaware	SC00012
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330−15−00283, P330−15−00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho Chemistry	SC00012
Idaho Radiochemistry	SC00012
Illinois NELAP	200029
Indiana	C−SC−01
Kansas NELAP	E−10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA170010
Maryland	270
Massachusetts	M−SC012
Michigan	9976
Mississippi	SC00012
Nebraska	NE−OS−26−13
Nevada	SC000122016−1
New Hampshire NELAP	205415
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R−158
Oklahoma	9904
Pennsylvania NELAP	68−00485
S.Carolina Radchem	10120002
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235−17−12
Utah NELAP	SC000122016−21
Vermont	VT87156
Virginia NELAP	460202
Washington	C780
West Virginia	997404

Perchlorates by LCMSMS Analysis

Case Narrative

Perchlorates by LCMSMS
Technical Case Narrative
Microbac Laboratories, Inc Kentucky Division (MBAC)
SDG #: 419111

Method/Analysis Information

Procedure:	**Definitive Low Level Perchlorate Analysis Utilizing Liquid Chromatography/Mass Spectrometry/Mass Spectrometry (LC/MS/MS) by EPA Method 6850 Modified (6850M)**
Analytical Method:	SW846 6850 Modified
Prep Method:	SW846 6850 Modified
Analytical Batch Number:	1651013
Prep Batch Number:	1651011

Sample Analysis

Sample ID	Client ID
419111001	419111001 (126-032117)
419111002	419111002 (126FD-032117)
419111003	419111003 (MW2-032117)
419111004	419111004 (18CPTMW01DW-032117)
419111005	419111005 (18CPTMW01SW-032117)
419111006	419111006 (MW13-032117)
419111007	419111007 (MW13FD-032117)
419111008	419111008 (C02-032117)
419111009	419111009 (MW16-032217)
419111010	419111010 (MW19-032217)
1203755639	Interference Check Sample (ICS)
1203755635	Method Blank (MB)
1203755636	Laboratory Control Sample (LCS)
1203755637	418938001(18WW08-032017) Matrix Spike (MS)
1203755638	418938001(18WW08-032017) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on an "as received" basis.

Preparation/Analytical Method Verification

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-067 REV# 14.

Calibration Information

Initial Calibration
All initial calibration requirements have been met for this SDG. Due to software constraints, all Initial Calibration Blanks must be designated as IPB001.

ICV Requirements
All associated initial calibration verification standard(s) (ICV) met the acceptance criteria.

CCB Requirements
All continuing calibration blanks (CCB) bracketing the analyses associated with this batch were within acceptance criteria.

CCV Requirements
All continuing calibration checks (CCV) requirements were met by all bracketing CCV standards.

Low Level Standard (CRI) Requirements
All low level calibration verification (CRI) requirements were met by all bracketing CRI standards.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Interference Check Sample (ICS)
The ICS spike recoveries met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

QC Sample Designation
Client sample 418938001 (18WW08-032017) was chosen for matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement
In 1203755637 (MS) and 1203755638 (MSD) a 0% recovery of Perchlorate was observed. The acceptance range is 75-125%. The detected concentrations in the MS and MSD were lower than the detected concentration in the parent sample. The outliers observed for the matrix spikes were due to the background concentration in the parent sample, 418938001 (18WW08-032017) and the need of a 1:5 dilution prior to analysis. 1203755637 (18WW08-032017MS) and 1203755638 (18WW08-032017MSD).

MS/MSD Relative Percent Difference (RPD) Statement
The RPDs between the MS and MSD met the acceptance limits.

Internal Standard Area Acceptance
The internal standard areas were within the required acceptance criteria for all samples and QC.

Retention Time
During the analysis of Perchlorate by LC/MS/MS, retention time shifts are commonly observed. These retention time shifts, which are caused by fouling of the column by the sample matrices, are problematic when the retention time is used as one of the criterion for confirmation. To overcome this problem, a known amount of O(18) labeled Perchlorate was added to each sample as a retention time standard. The presence of Perchlorate was confirmed by the relative retention time (RRT) of the Perchlorate peak and the O(18) standard. A RRT window of 0.98 to 1.02, as required by DOD QSM 5.0, has been used. In addition to the isotopic ratio, the presence of Perchlorate in the samples associated with this data package have been confirmed using the relative retention criteria stated above, not the absolute retention time.

Technical Information

Holding Time Specifications
All samples in this SDG in this analytical batch met the specified holding time. GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
Samples 1203755637 (18WW08-032017MS), 1203755638 (18WW08-032017MSD) and 419111003 (MW2-032117) were diluted to bring the over range concentrations within the calibration range.

Sample Re-extraction/Re-analysis
The entire batch was re-analyzed the following day due to the problems with the method blank. A detection of Perchlorate was observed just below our concentration of our low level standard. Upon the analysis of a new aliquot of method blank, the high detection was not confirmed. All samples were re-aliquot and re-analyzed. All QC requirements were met and all data could be reported.

Miscellaneous Information

Data Exception (DER) Documentation
A data exception report (DER) 1618609 was generated for samples 1203755637 (18WW08-032017MS) and 1203755638 (18WW08-032017MSD) in this SDG/batch.

Manual Integrations
Manual integrations were not required for any data file associated with this SDG.

Method Comments
The samples in this SDG were not originally analyzed using EPA Method 314.0.

Additional Comments
The Perchlorate Isotope Ratio on the Form I may differ slightly from the ratio on the corresponding raw data due to rounding rules and/or significant figures or due to software limitations when there are manual integrations, dilutions or other factors. The ratio value of the Form I is the correct value. The retention time marker, Perchlorate-O (18), is added to all samples, instrument blanks, and standards prior to injection. It is used to verify the retention time of Perchlorate and Perchlorate-101 and to insure an accurate injection occurred. Due to various anions affecting the recovery of Perchlorate-O (18) and not Perchlorate and Perchlorate-101, the calibration curves of Perchlorate and Perchlorate-101 are internally corrected for using Perchlorate-O (18).

Perchlorate Isotope Ratio
The Perchlorate isotope ratio met acceptance criteria for all samples and QC samples. Please see the isotope ratio criteria in the Miscellaneous Section.

System Configuration

The laboratory utilizes a Waters LC 2795 liquid chromatography instrument for Perchlorate analysis. It is coupled with a Micromass Quattro Ultima Mass Spectrometer/Mass Spectrometer. It is designated as LCMSMS #2.It is fitted with an electrospray probe that is operated in the negative electrospray ionization mode for Perchlorate analysis. The laboratory may also utilize an Agilent 1100 liquid chromatography instrument for Perchlorate analysis. It is coupled with an Applied Biosystems 4000 Mass Spectrometer/Mass Spectrometer, designated as LCMSMS #3 or LCMSMS #4. It is also fitted with an electrospray probe that is operated in the negative electrospray ionization mode for Perchlorate analysis.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Chromatographic Columns

The LC-MS/MS Perchlorate analysis was performed on a Quatro Ultima LC/MS/MS.

Chromatographic separation of Perchlorate is accomplished through analysis on the following anion column:

Dionex: IonPac AG-16 2 x 50 mm.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

MBAC001 Microbac Laboratories, Inc Kentucky Division

Client SDG: 419111 GEL Work Order: 419111

The Qualifiers in this report are defined as follows:

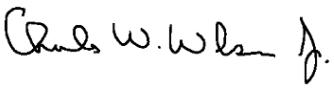
* A quality control analyte recovery is outside of specified acceptance criteria
** Analyte is a surrogate compound
J Value is estimated
U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature:  **Name: Charles Wilson**

Date: 30 MAR 2017 **Title: Analyst II**

Sample Data Summary

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
126-032117

Date Received: 23-MAR-17

GEL Job No (SDG): 419111

GEL Sample ID: 419111001

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.200	ug/L	U	1	28-MAR-17 21:38	per0328028a
	Perchlorate-O(18)			0.512	ug/L		1	28-MAR-17 21:38	per0328028a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\%\text{Solids}}$$

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
126FD-032117

Date Received: 23-MAR-17

GEL Job No (SDG): 419111

GEL Sample ID: 419111002

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.200	ug/L	U	1	28-MAR-17 21:47	per0328029a
	Perchlorate-O(18)			0.524	ug/L		1	28-MAR-17 21:47	per0328029a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration = Instrument Value X $\frac{\text{Concentrated Extract Volume}}{\text{Aliquot}}$ X $\frac{1}{\%\text{Solids}}$

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
MW2-032117

Date Received: 23-MAR-17

GEL Job No (SDG): 419111

GEL Sample ID: 419111003

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	100	400	2040	ug/L		2000	28-MAR-17 21:57	per0328030a
	Perchlorate-O(18)			1010	ug/L		2000	28-MAR-17 21:57	per0328030a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\%\text{Solids}}$$

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
18CPTMW01DW-032117

Date Received: 23-MAR-17

GEL Job No (SDG): 419111

GEL Sample ID: 419111004

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.0702	ug/L	J	1	28-MAR-17 22:06	per0328031a
	Perchlorate-O(18)			0.527	ug/L		1	28-MAR-17 22:06	per0328031a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration = Instrument Value X $\frac{\text{Concentrated Extract Volume}}{\text{Aliquot}}$ X $\frac{1}{\%\text{Solids}}$

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
18CPTMW01SW-032117

Date Received: 23-MAR-17

GEL Job No (SDG): 419111

GEL Sample ID: 419111005

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.200	ug/L	U	1	28-MAR-17 22:16	per0328032a
	Perchlorate-O(18)			0.513	ug/L		1	28-MAR-17 22:16	per0328032a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration = Instrument Value X $\frac{\text{Concentrated Extract Volume}}{\text{Aliquot}}$ X $\frac{1}{\%\text{Solids}}$

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
MW13-032117

Date Received: 23-MAR-17

GEL Job No (SDG): 419111

GEL Sample ID: 419111006

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.200	ug/L	U	1	28-MAR-17 22:25	per0328033a
	Perchlorate-O(18)			0.507	ug/L		1	28-MAR-17 22:25	per0328033a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\%\text{Solids}}$$

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
MW13FD-032117

Date Received: 23-MAR-17

GEL Job No (SDG): 419111

GEL Sample ID: 419111007

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.200	ug/L	U	1	28-MAR-17 22:35	per0328034a
	Perchlorate-O(18)			0.519	ug/L		1	28-MAR-17 22:35	per0328034a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\%\text{Solids}}$$

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
C02-032117

Date Received: 23-MAR-17

GEL Job No (SDG): 419111

GEL Sample ID: 419111008

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.200	ug/L	U	1	28-MAR-17 22:44	per0328035a
	Perchlorate-O(18)			0.503	ug/L		1	28-MAR-17 22:44	per0328035a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\%\text{Solids}}$$

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
MW16-032217

Date Received: 23-MAR-17

GEL Job No (SDG): 419111

GEL Sample ID: 419111009

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	1.30	ug/L		1	28-MAR-17 23:22	per0328039a
	Perchlorate-O(18)			0.533	ug/L		1	28-MAR-17 23:22	per0328039a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\%\text{Solids}}$$

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
MW19-032217

Date Received: 23-MAR-17

GEL Job No (SDG): 419111

GEL Sample ID: 419111010

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.200	ug/L	U	1	28-MAR-17 23:31	per0328040a
	Perchlorate-O(18)			0.530	ug/L		1	28-MAR-17 23:31	per0328040a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\%\text{Solids}}$$

Quality Control Summary

Perchlorate Laboratory Control Sample

Lab Name: General Engineering Laboratories

Lab Code: GEL

GEL Job No. (SDG): 419111

Extract Batch Code: 1651011

Date Filtered: 27-MAR-17

Matrix: WATER

Sample ID: 1203755636

Analyte^	True	Found	Units	%Rec	Q	Control Limits
Perchlorate	0.200	.196	ug/L	98		85 - 115
Perchlorate-O(18)		.5	ug/L			-

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

Perchlorate Interference Check Sample

Lab Name: General Engineering Laboratories

Lab Code: GEL

GEL Job No. (SDG): 419111

Extract Batch Code: 1651011

Date Filtered: 27-MAR-17

Matrix: WATER

Sample ID: 1203755639

Analyte^	True	Found	Units	%Rec	Q	Control Limits
Perchlorate	0.200	.211	ug/L	106		70 - 130
Perchlorate-O(18)		.506	ug/L			

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

Perchlorate Spike/Spike Duplicate Summary

Lab Name: General Engineering Laboratories

Lab Code: GEL

GEL Job No (SDG): 419111

Extract Batch Code: 1651011

Date Extracted: 27-MAR-17

GEL MS/PS ID: 1203755637

Client ID: 18WW08-032017

GEL MSD/PSD ID: 1203755638

QC Type: MS

Compound^	Spike Added	Sample Conc	Units	MS Conc	MS Rec #	MSD Conc	MSD Rec #	RPD #	RPD Limit	Recovery Limit
Perchlorate	0.200	7.72	ug/L	7.46	0 *	7.45	0 *	0	30	75 - 125
Perchlorate-O(18)	0	2.41	ug/L	2.49		2.45		2		-

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

Perchlorate RT And Area Summary

Lab Name: General Engineering Laboratories **GEL Job No.(SDG):** 419111

Lab Code: GEL

HPLC Column: Dionex IonPac AG16 **Instrument ID:** LCMSMS2

Sample ID	Datafile	Run Date	Area	RT	RT CLO4	RRT	Q 0.98-1.02
MidLevel Standard Area	**per0328006a**	**28-MAR-17**	**15530.6**				
Lower Area Limit			**7765.3**				
Upper Area Limit			**23295.9**				
1203755635	per0328013a	28-MAR-17 19:16	15097.5	4.09	4.06102	.993	
1203755636	per0328014a	28-MAR-17 19:25	15400.2	4.06	4.08867	1.007	
1203755639	per0328015a	28-MAR-17 19:35	15579.7	4.06	4.08867	1.007	
1203755637	per0328017a	28-MAR-17 19:54	15340.7	4.03	4.08867	1.015	
1203755638	per0328018a	28-MAR-17 20:03	15112	4.06	4.08867	1.007	
419111001	per0328028a	28-MAR-17 21:38	15763.8	3.98	4.00585	1.006	
419111002	per0328029a	28-MAR-17 21:47	16117.1	3.98	4.00585	1.006	
419111003	per0328030a	28-MAR-17 21:57	15573.2	4.03	4.06102	1.008	
419111004	per0328031a	28-MAR-17 22:06	16235	3.98	4.00585	1.006	

Perchlorate RT And Area Summary

Lab Name: General Engineering Laboratories **GEL Job No.(SDG):** 419111

Lab Code: GEL

Sample ID	Datafile	Run Date	Area	RT	RT CLO4	RRT	Q 0.98-1.02
MidLevel Standard Area	**per0328006a**	**28-MAR-17**	**15530.6**				
Lower Area Limit			**7765.3**				
Upper Area Limit			**23295.9**				
419111005	per0328032a	28-MAR-17 22:16	15789	4.03	4.06102	1.008	
419111006	per0328033a	28-MAR-17 22:25	15617.3	4.01	4.06102	1.013	
419111007	per0328034a	28-MAR-17 22:35	15977.6	4.01	4.0335	1.006	
419111008	per0328035a	28-MAR-17 22:44	15476	4.01	4.0335	1.006	
419111009	per0328039a	28-MAR-17 23:22	16412.3	3.98	4.00585	1.006	
419111010	per0328040a	28-MAR-17 23:31	16315.3	3.9	3.92317	1.006	

Sample Data

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
126-032117

Date Received: 23-MAR-17

GEL Job No (SDG): 419111

GEL Sample ID: 419111001

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.200	ug/L	U	1	28-MAR-17 21:38	per0328028a
	Perchlorate-O(18)			0.512	ug/L		1	28-MAR-17 21:38	per0328028a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\%\text{Solids}}$$

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017

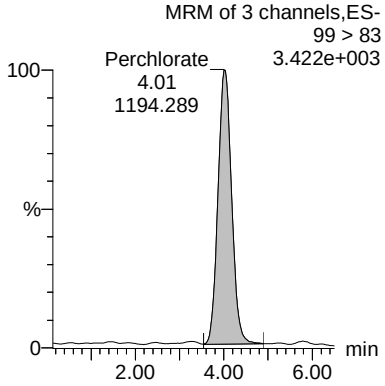
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

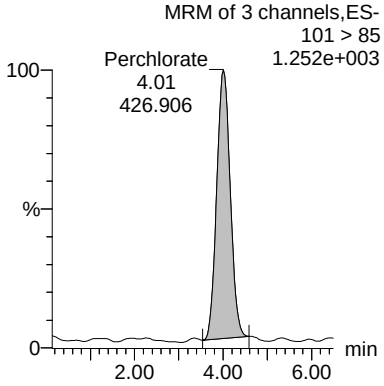
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328028a
Date: 28-Mar-2017
Time: 21:38:11
ID: 419111001
Vial: 1:5,A

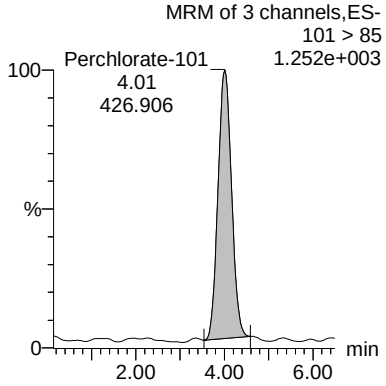
Perchlorate



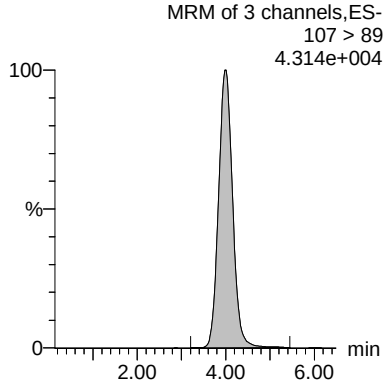
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
419111001	Perchlorate	99 > 83	4.01	1194.289	0.038	bb			0.0362			399.818	2.80
419111001	Perchlorate-101	101 > 85	4.01	426.906	0.014	bb			0.0383			88.377	
419111001	Perchlorate-O(18)	107 > 89	3.98	15763.831	15763.831	bb			0.5121	102.42	2.42	1114.2...	

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
126FD-032117

Date Received: 23-MAR-17

GEL Job No (SDG): 419111

GEL Sample ID: 419111002

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.200	ug/L	U	1	28-MAR-17 21:47	per0328029a
	Perchlorate-O(18)			0.524	ug/L		1	28-MAR-17 21:47	per0328029a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\%\text{Solids}}$$

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

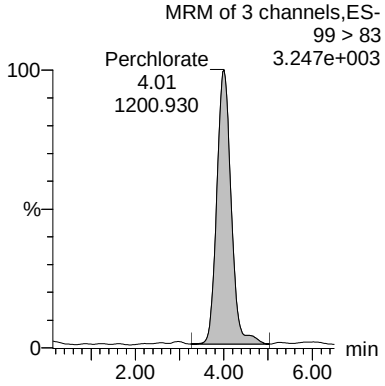
GL 03/29/2017 CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

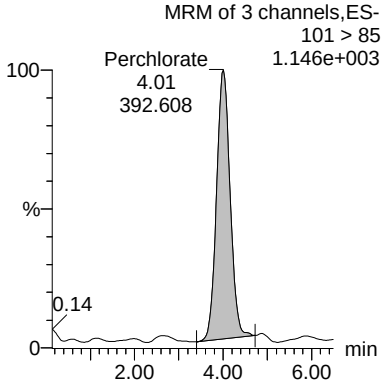
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328029a
Date: 28-Mar-2017
Time: 21:47:40
ID: 419111002
Vial: 1:5,B

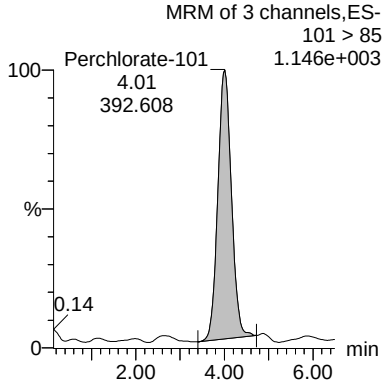
Perchlorate



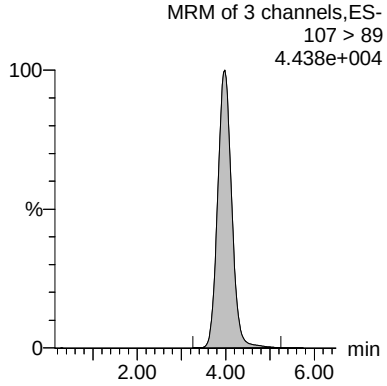
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
419111002	Perchlorate	99 > 83	4.01	1200.930	0.037	bb			0.0356			234.741	3.06
419111002	Perchlorate-101	101 > 85	4.01	392.608	0.012	bb			0.0345			120.319	
419111002	Perchlorate-O(18)	107 > 89	3.98	16117.100	16117.100	bb			0.5236	104.71	4.71	3831.3...	

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
MW2-032117

Date Received: 23-MAR-17

GEL Job No (SDG): 419111

GEL Sample ID: 419111003

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	100	400	2040	ug/L		2000	28-MAR-17 21:57	per0328030a
	Perchlorate-O(18)			1010	ug/L		2000	28-MAR-17 21:57	per0328030a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\%\text{Solids}}$$

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017

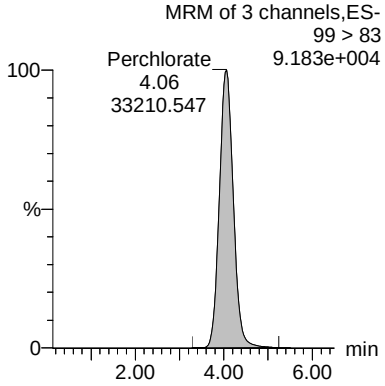
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

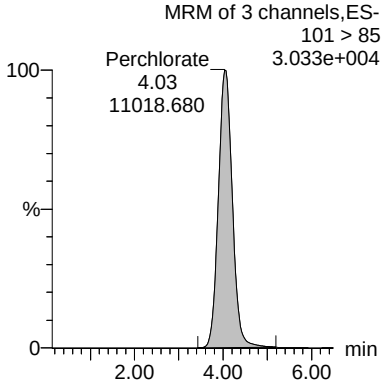
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328030a
Date: 28-Mar-2017
Time: 21:57:10
ID: 419111003
Vial: 1:5,C

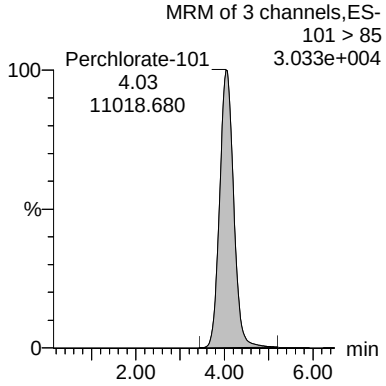
Perchlorate



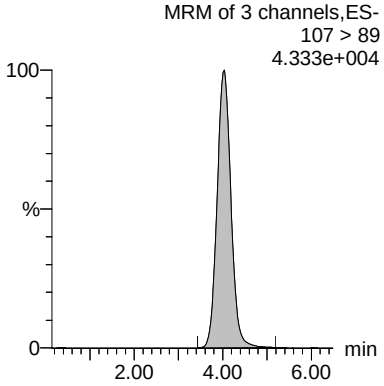
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
419111003	Perchlorate	99 > 83	4.06	33210.547	1.066	bb			1.0189			4874.6...	3.01
419111003	Perchlorate-101	101 > 85	4.03	11018.680	0.354	bb			1.0019			4112.8...	
419111003	Perchlorate-O(18)	107 > 89	4.03	15573.217	15573.217	bb			0.5059	101.18	1.18	486.244	

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
18CPTMW01DW-032117

Date Received: 23-MAR-17

GEL Job No (SDG): 419111

GEL Sample ID: 419111004

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.0702	ug/L	J	1	28-MAR-17 22:06	per0328031a
	Perchlorate-O(18)			0.527	ug/L		1	28-MAR-17 22:06	per0328031a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration = Instrument Value X $\frac{\text{Concentrated Extract Volume}}{\text{Aliquot}}$ X $\frac{1}{\%\text{Solids}}$

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

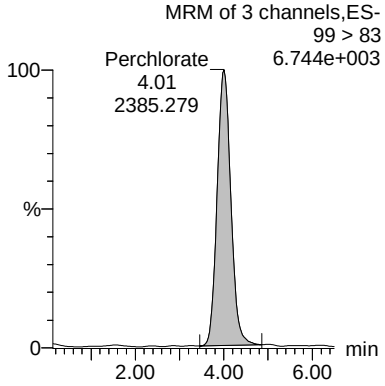
GL 03/29/2017 CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

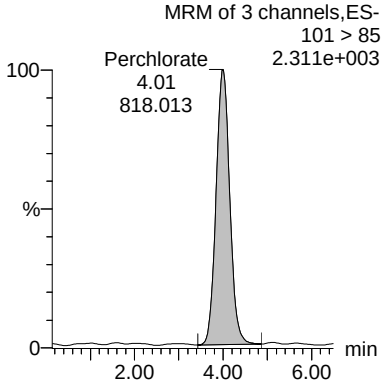
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328031a
Date: 28-Mar-2017
Time: 22:06:38
ID: 419111004
Vial: 1:5,D

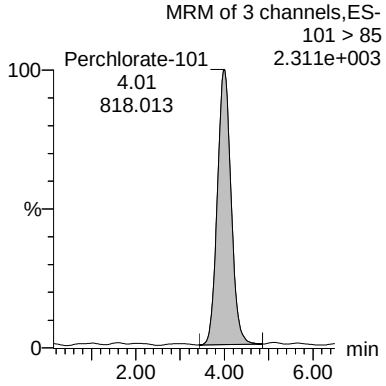
Perchlorate



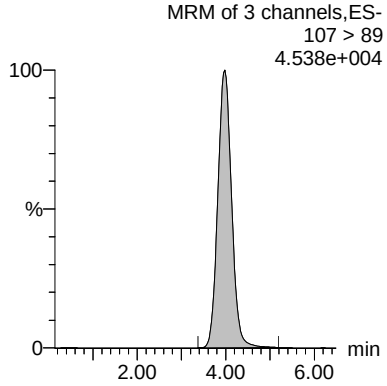
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
419111004	Perchlorate	99 > 83	4.01	2385.279	0.073	bb			0.0702			335.351	2.92
419111004	Perchlorate-101	101 > 85	4.01	818.013	0.025	bb			0.0713			308.555	
419111004	Perchlorate-O(18)	107 > 89	3.98	16234.971	16234.971	bb			0.5274	105.48	5.48	3672.5...	

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
18CPTMW01SW-032117

Date Received: 23-MAR-17

GEL Job No (SDG): 419111

GEL Sample ID: 419111005

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.200	ug/L	U	1	28-MAR-17 22:16	per0328032a
	Perchlorate-O(18)			0.513	ug/L		1	28-MAR-17 22:16	per0328032a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\%\text{Solids}}$$

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017

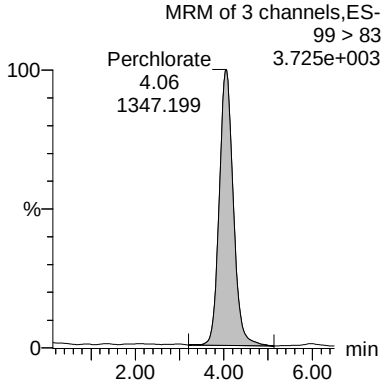
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

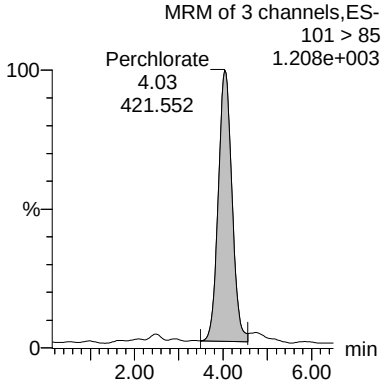
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328032a
Date: 28-Mar-2017
Time: 22:16:06
ID: 419111005
Vial: 1:5,E

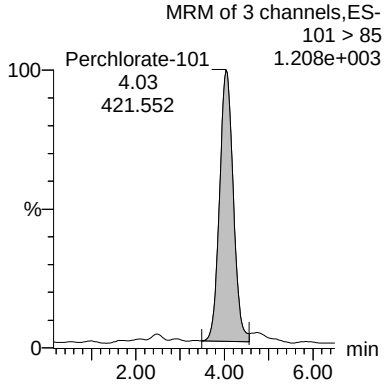
Perchlorate



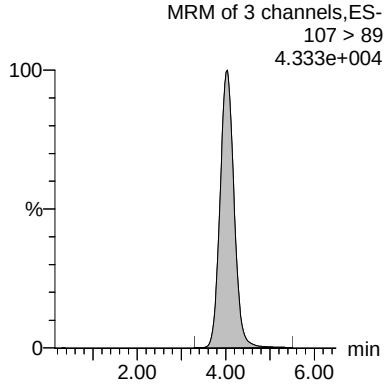
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
419111005	Perchlorate	99 > 83	4.06	1347.199	0.043	bb			0.0408			411.646	3.20
419111005	Perchlorate-101	101 > 85	4.03	421.552	0.013	bd			0.0378			196.079	
419111005	Perchlorate-O(18)	107 > 89	4.03	15788.988	15788.988	bb			0.5129	102.58	2.58	6541.4...	

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
MW13-032117

Date Received: 23-MAR-17

GEL Job No (SDG): 419111

GEL Sample ID: 419111006

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.200	ug/L	U	1	28-MAR-17 22:25	per0328033a
	Perchlorate-O(18)			0.507	ug/L		1	28-MAR-17 22:25	per0328033a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\%\text{Solids}}$$

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

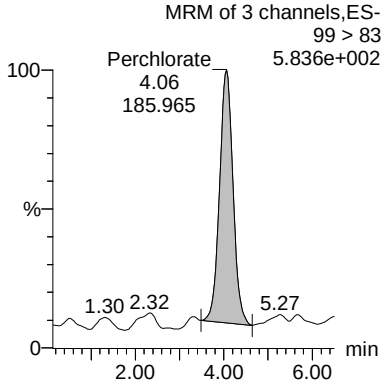
GL 03/29/2017 CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

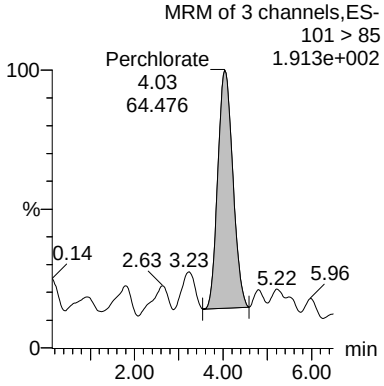
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328033a
Date: 28-Mar-2017
Time: 22:25:33
ID: 419111006
Vial: 1:5,F

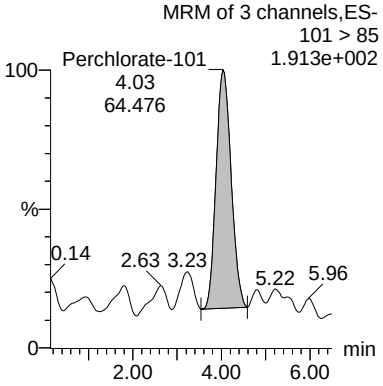
Perchlorate



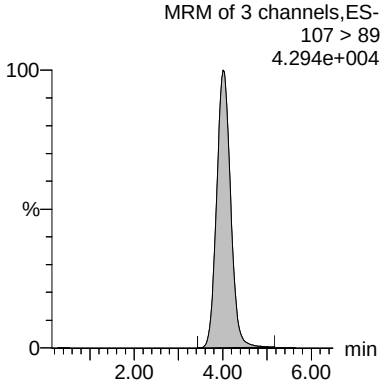
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
419111006	Perchlorate	99 > 83	4.06	185.965	0.006	bb			0.0057			17.036	2.88
419111006	Perchlorate-101	101 > 85	4.03	64.476	0.002	bb			0.0058			24.387	
419111006	Perchlorate-O(18)	107 > 89	4.01	15617.271	15617.271	bb			0.5073	101.47	1.47	4626.0...	

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
MW13FD-032117

Date Received: 23-MAR-17

GEL Job No (SDG): 419111

GEL Sample ID: 419111007

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.200	ug/L	U	1	28-MAR-17 22:35	per0328034a
	Perchlorate-O(18)			0.519	ug/L		1	28-MAR-17 22:35	per0328034a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration = Instrument Value X $\frac{\text{Concentrated Extract Volume}}{\text{Aliquot}}$ X $\frac{1}{\%\text{Solids}}$

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

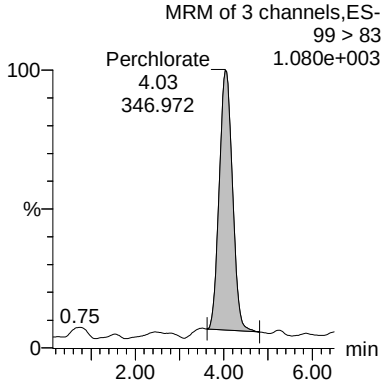
GL 03/29/2017 CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

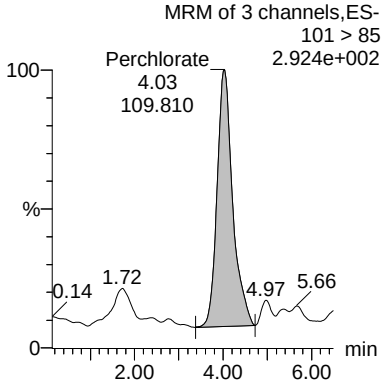
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328034a
Date: 28-Mar-2017
Time: 22:35:01
ID: 419111007
Vial: 1:6,A

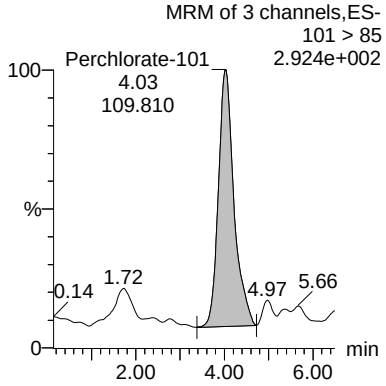
Perchlorate



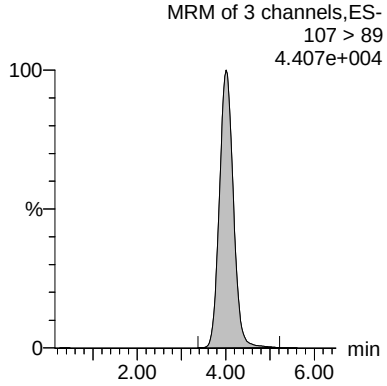
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
419111007	Perchlorate	99 > 83	4.03	346.972	0.011	bb			0.0104			86.740	3.16
419111007	Perchlorate-101	101 > 85	4.03	109.810	0.003	bb			0.0097			25.320	
419111007	Perchlorate-O(18)	107 > 89	4.01	15977.563	15977.563	bb			0.5190	103.81	3.81	6298.4...	

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
C02-032117

Date Received: 23-MAR-17

GEL Job No (SDG): 419111

GEL Sample ID: 419111008

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.200	ug/L	U	1	28-MAR-17 22:44	per0328035a
	Perchlorate-O(18)			0.503	ug/L		1	28-MAR-17 22:44	per0328035a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\%\text{Solids}}$$

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

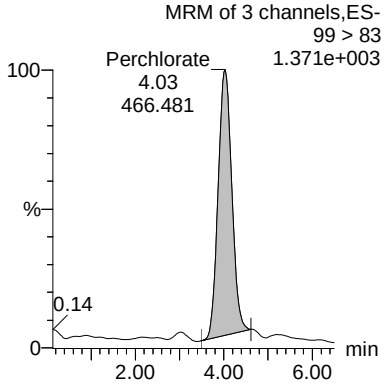
GL 03/29/2017 CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

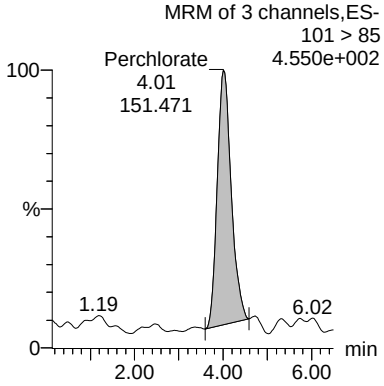
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328035a
Date: 28-Mar-2017
Time: 22:44:31
ID: 419111008
Vial: 1:6,B

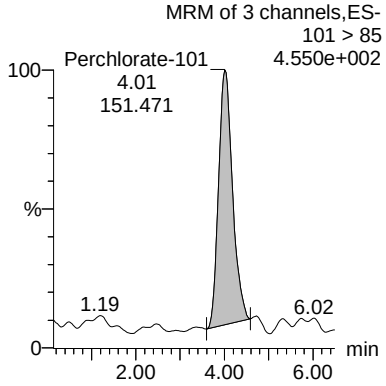
Perchlorate



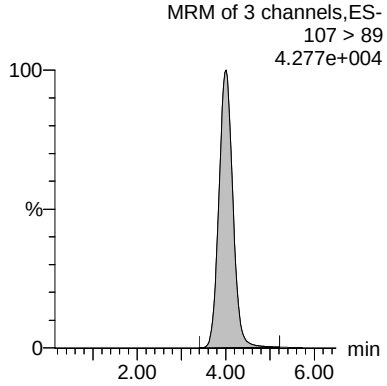
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
419111008	Perchlorate	99 > 83	4.03	466.481	0.015	bb			0.0144			92.429	3.08
419111008	Perchlorate-101	101 > 85	4.01	151.471	0.005	bb			0.0139			58.549	
419111008	Perchlorate-O(18)	107 > 89	4.01	15476.049	15476.049	bb			0.5027	100.55	0.55	4170.4...	

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
MW16-032217

Date Received: 23-MAR-17

GEL Job No (SDG): 419111

GEL Sample ID: 419111009

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	1.30	ug/L		1	28-MAR-17 23:22	per0328039a
	Perchlorate-O(18)			0.533	ug/L		1	28-MAR-17 23:22	per0328039a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\%\text{Solids}}$$

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017

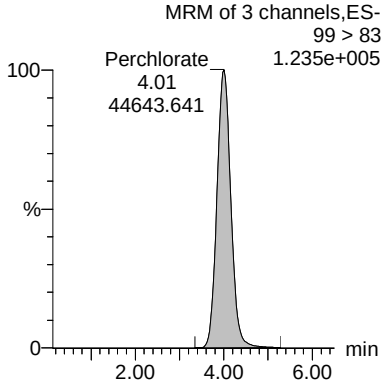
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

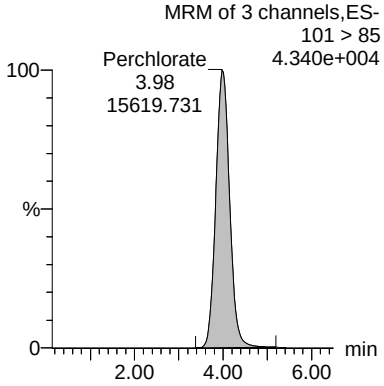
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328039a
Date: 28-Mar-2017
Time: 23:22:22
ID: 419111009
Vial: 1:6,C

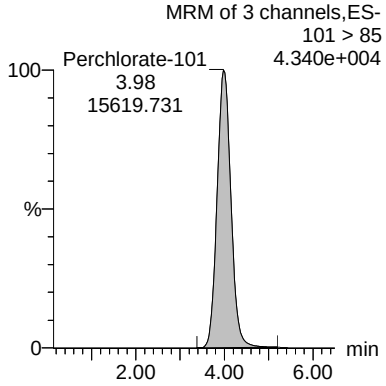
Perchlorate



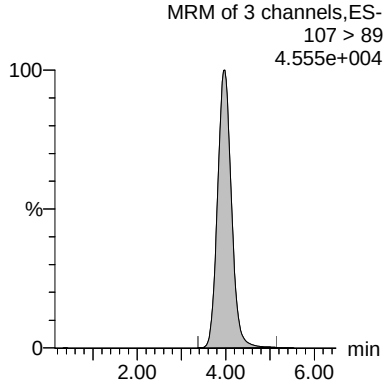
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
419111009	Perchlorate	99 > 83	4.01	44643.641	1.360	bb			1.2996			7426.0...	2.86
419111009	Perchlorate-101	101 > 85	3.98	15619.731	0.476	bb			1.3476			3065.5...	
419111009	Perchlorate-O(18)	107 > 89	3.98	16412.264	16412.264	bb			0.5332	106.63	6.63	2595.9...	

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
MW19-032217

Date Received: 23-MAR-17

GEL Job No (SDG): 419111

GEL Sample ID: 419111010

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.200	ug/L	U	1	28-MAR-17 23:31	per0328040a
	Perchlorate-O(18)			0.530	ug/L		1	28-MAR-17 23:31	per0328040a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration = Instrument Value X $\frac{\text{Concentrated Extract Volume}}{\text{Aliquot}}$ X $\frac{1}{\%\text{Solids}}$

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

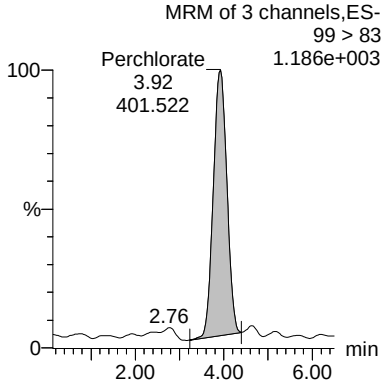
GL 03/29/2017 CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

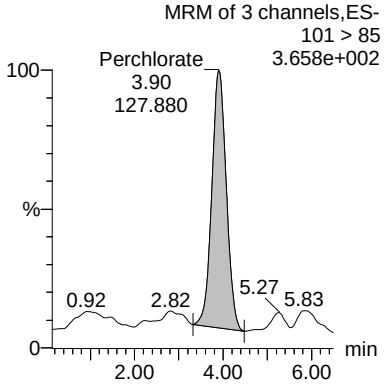
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328040a
Date: 28-Mar-2017
Time: 23:31:51
ID: 419111010
Vial: 1:6,D

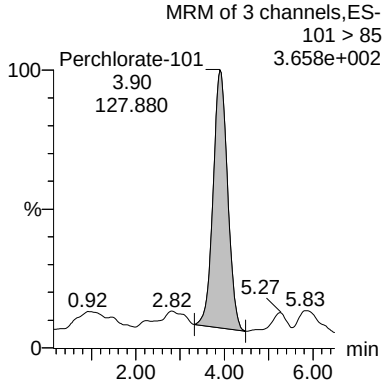
Perchlorate



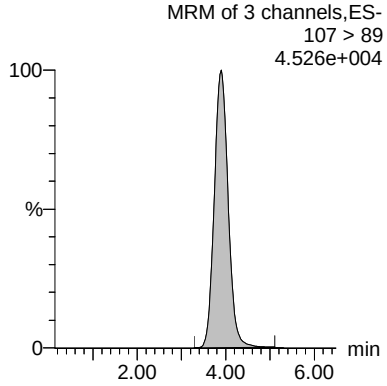
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
419111010	Perchlorate	99 > 83	3.92	401.522	0.012	bb			0.0118			106.390	3.14
419111010	Perchlorate-101	101 > 85	3.90	127.880	0.004	bb			0.0111			42.710	
419111010	Perchlorate-O(18)	107 > 89	3.90	16315.303	16315.303	bb			0.5300	106.00	6.00	4307.7...	

Standards

Perchlorate Initial Calibration

Lab Name: General Engineering Laboratories **GEL Job No.(SDG):** 419111

Lab Code: GEL

Instrument ID: LCMSMS2 **Date Analyzed:** 28-MAR-17

HPLC Column: Dionex IonPac AG16

Calibration Level	1	2	3	4	5	6
Cal Concentration (ug/L)	0.05	0.1	0.25	0.50	1.0	2.0

Parmname Perchlorate

Coefficient of Determination:

Calibration Curve: 1.04667

Response Type: Internal Standard

Curve Type: RF

Perchlorate Initial Calibration

Lab Name: General Engineering Laboratories **GEL Job No.(SDG):** 419111

Lab Code: GEL

Instrument ID: LCMSMS2 **Date Analyzed:** 28-MAR-17

HPLC Column: Dionex IonPac AG16

Calibration Level	1	2	3	4	5	6
Cal Concentration (ug/L)	0.05	0.1	0.25	0.50	1.0	2.0

Parmname Perchlorate-101

Coefficient of Determination:

Calibration Curve: .35333

Response Type: Internal Standard

Curve Type: RF

Quantify Calibration Report MassLynx 4.0 SP4
The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017

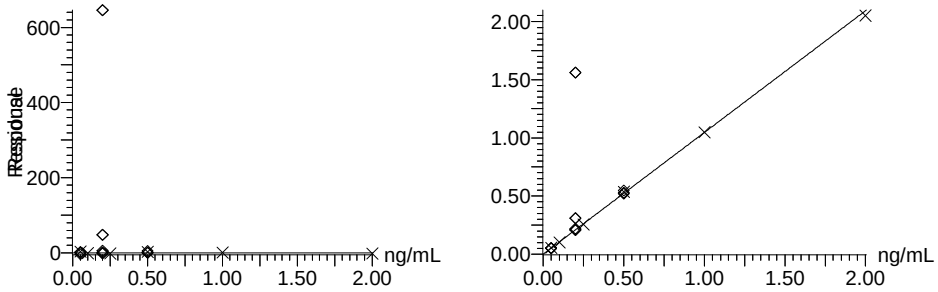
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

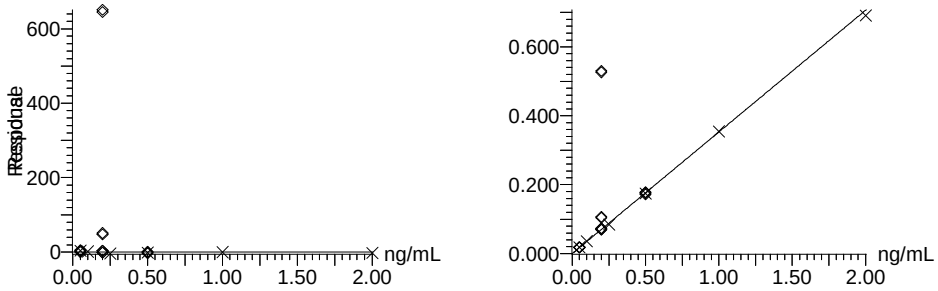
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Method: C:\MassLynx\Perchlorate.PRO\MethDB\per032817a.mdb 28 Mar 2017 15:32:39
Calibration: C:\MassLynx\Perchlorate.PRO\CurveDB\per032817a.cdb 29 Mar 2017 09:31:28

Compound name: Perchlorate
Response Factor: 1.04651
RRF SD: 0.023016, % Relative SD: 2.19931
Response type: Internal Std (Ref 3), Area * (IS Conc. / IS Area)
Curve type: RF



Compound name: Perchlorate-101
Response Factor: 0.353102
RRF SD: 0.0106439, % Relative SD: 3.0144
Response type: Internal Std (Ref 3), Area * (IS Conc. / IS Area)
Curve type: RF



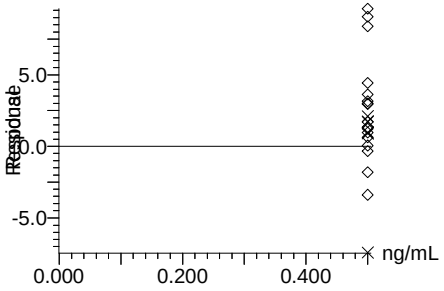
Quantify Calibration Report **MassLynx 4.0 SP4**

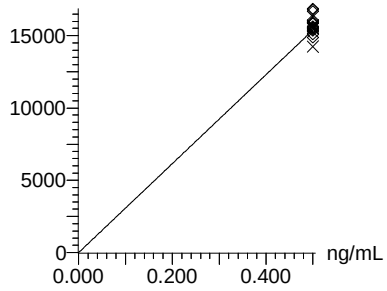
The GEL Group, LLC Analyst: Grace L. Cappelmann

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Compound name: Perchlorate-O(18)
Response Factor: 30783
RRF SD: 1128.79, % Relative SD: 3.66692
Response type: External Std, Area
Curve type: RF





Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017

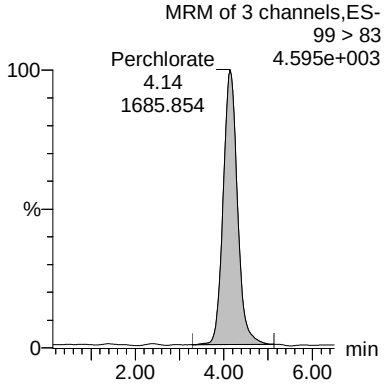
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

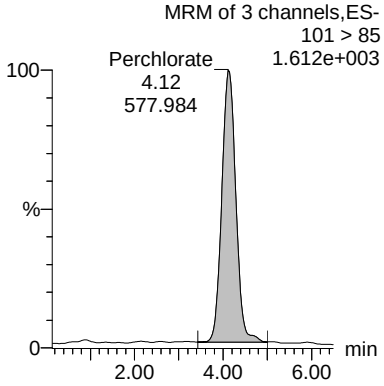
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328003a
Date: 28-Mar-2017
Time: 17:41:40
ID: WCL170320-01
Vial: 1:1,B

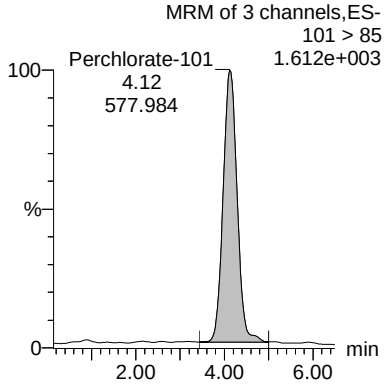
Perchlorate



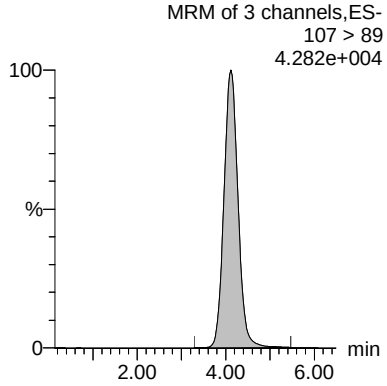
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
WCL170320-01	Perchlorate	99 > 83	4.14	1685.854	0.054	bb			0.0514	102.87	2.87	264.540	2.92
WCL170320-01	Perchlorate-101	101 > 85	4.12	577.984	0.018	bb			0.0523	104.52	4.52	181.765	
WCL170320-01	Perchlorate-O(18)	107 > 89	4.12	15660.600	15660.600	bb			0.5087	101.75	1.75	4034.8...	

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017

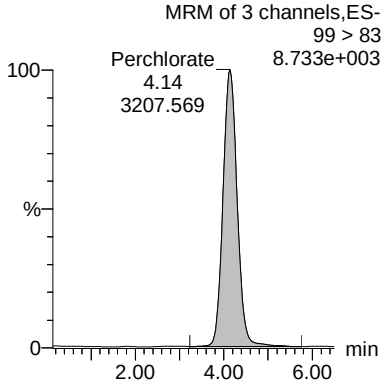
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

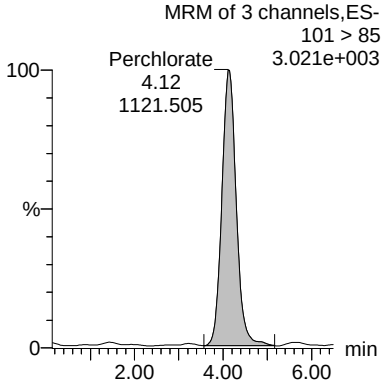
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328004a
Date: 28-Mar-2017
Time: 17:51:08
ID: WCL170320-02
Vial: 1:1,C

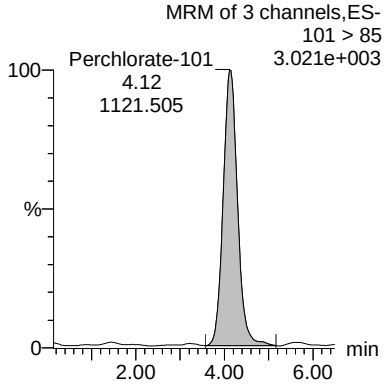
Perchlorate



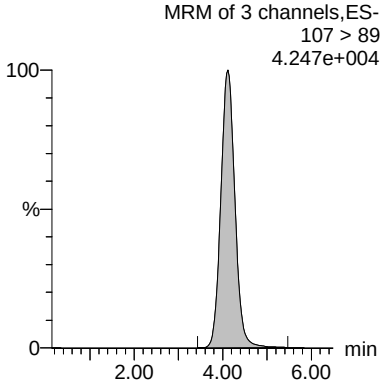
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
WCL170320-02	Perchlorate	99 > 83	4.14	3207.569	0.103	bb			0.0986	98.61	-1.39	1722.6...	2.86
WCL170320-02	Perchlorate-101	101 > 85	4.12	1121.505	0.036	bb			0.1022	102.18	2.18	237.467	
WCL170320-02	Perchlorate-O(18)	107 > 89	4.12	15541.402	15541.402	bb			0.5049	100.97	0.97	3529.0...	

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

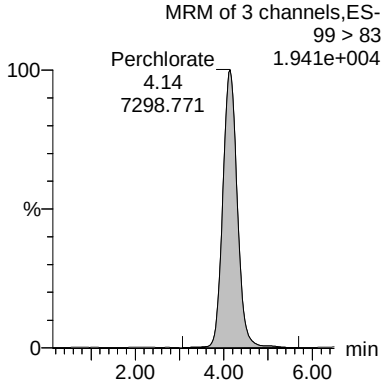
GL 03/29/2017 CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

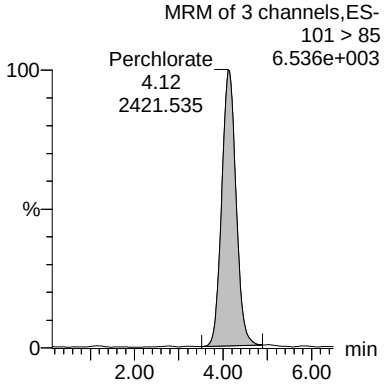
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328005a
Date: 28-Mar-2017
Time: 18:00:35
ID: WCL170320-03
Vial: 1:1,D

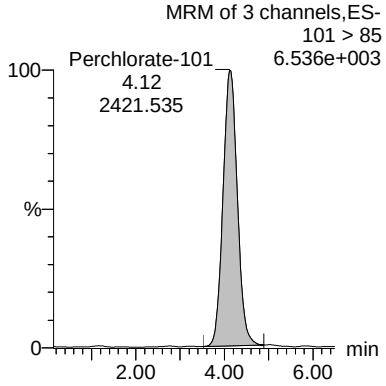
Perchlorate



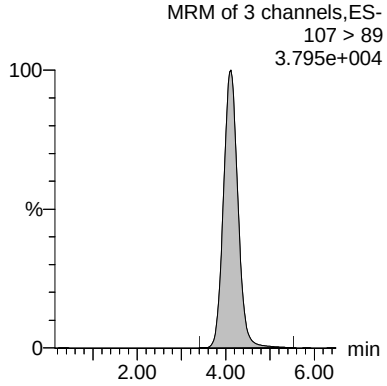
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
WCL170320-03	Perchlorate	99 > 83	4.14	7298.771	0.256	bb			0.2447	97.89	-2.11	625.719	3.01
WCL170320-03	Perchlorate-101	101 > 85	4.12	2421.535	0.085	bb			0.2406	96.26	-3.74	435.045	
WCL170320-03	Perchlorate-O(18)	107 > 89	4.12	14248.785	14248.785	bb			0.4629	92.58	-7.42	2410.8...	

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017

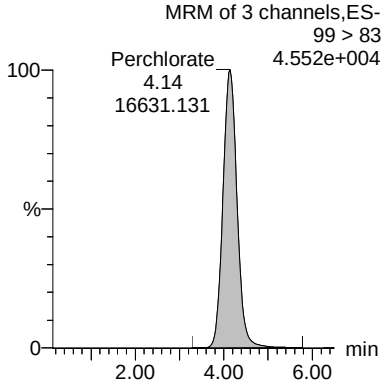
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

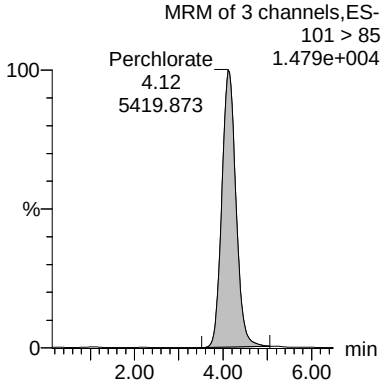
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328006a
Date: 28-Mar-2017
Time: 18:10:02
ID: WCL170320-04
Vial: 1:1,E

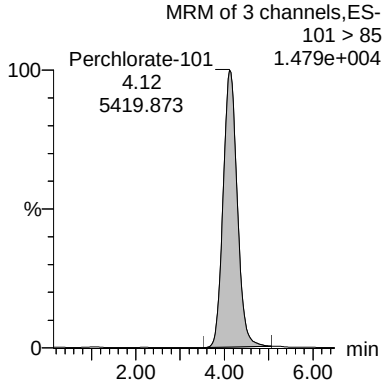
Perchlorate



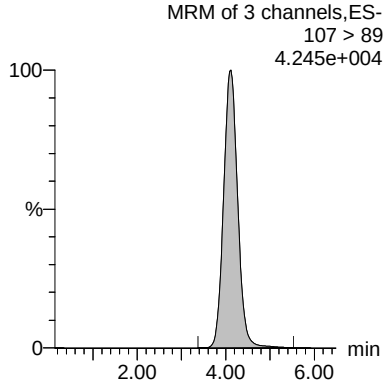
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
WCL170320-04	Perchlorate	99 > 83	4.14	16631.131	0.535	bb			0.5116	102.33	2.33	2542.8...	3.07
WCL170320-04	Perchlorate-101	101 > 85	4.12	5419.873	0.174	bb			0.4942	98.83	-1.17	1419.4...	
WCL170320-04	Perchlorate-O(18)	107 > 89	4.12	15530.634	15530.634	bb			0.5045	100.90	0.90	6433.9...	

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017

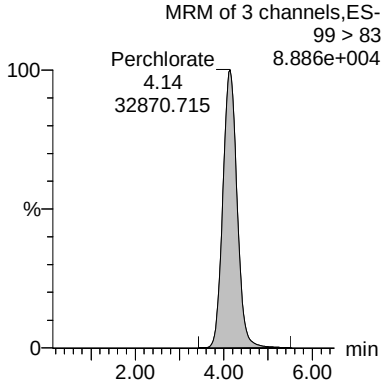
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

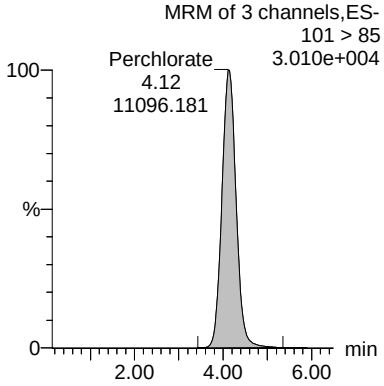
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328007a
Date: 28-Mar-2017
Time: 18:19:29
ID: WCL170320-05
Vial: 1:1,F

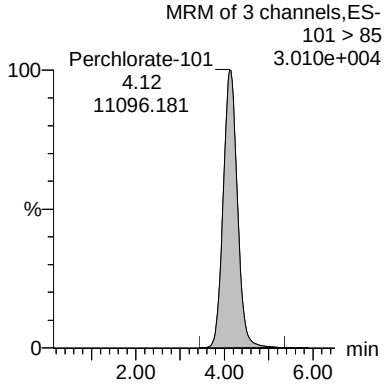
Perchlorate



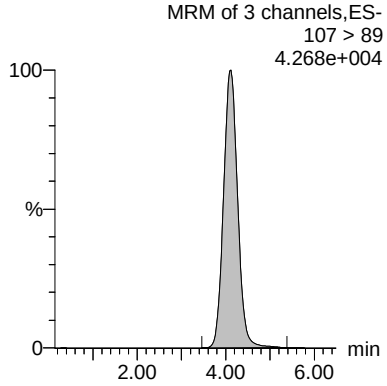
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
WCL170320-05	Perchlorate	99 > 83	4.14	32870.715	1.050	bb			1.0033	100.33	0.33	5946.6...	2.96
WCL170320-05	Perchlorate-101	101 > 85	4.12	11096.181	0.354	bb			1.0038	100.38	0.38	4116.1...	
WCL170320-05	Perchlorate-O(18)	107 > 89	4.12	15653.696	15653.696	bb			0.5085	101.70	1.70	1806.9...	

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

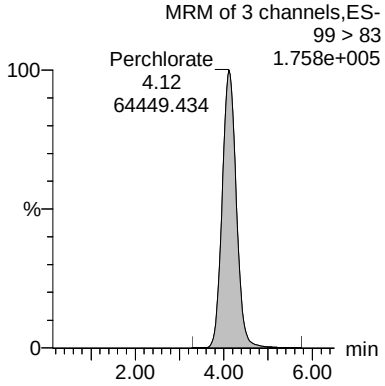
GL 03/29/2017 CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

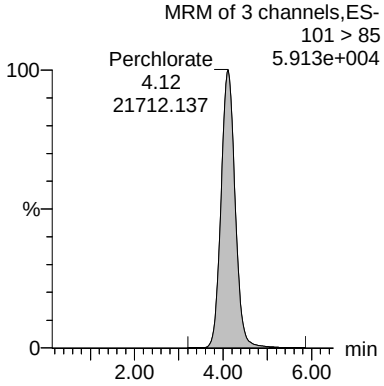
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328008a
Date: 28-Mar-2017
Time: 18:28:55
ID: WCL170320-06
Vial: 1:2,A

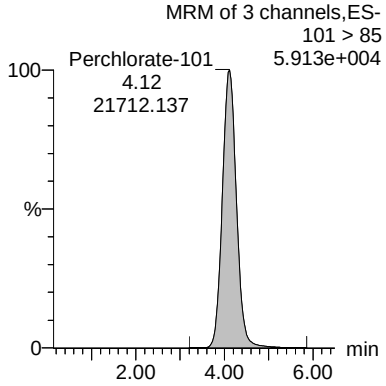
Perchlorate



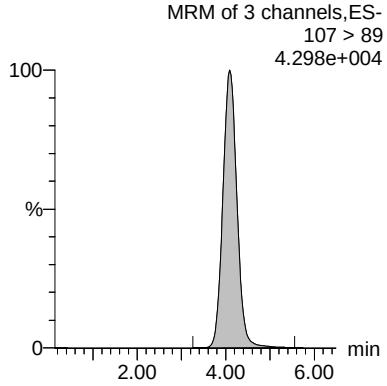
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
WCL170320-06	Perchlorate	99 > 83	4.12	64449.434	2.051	bb			1.9596	97.98	-2.02	11932....	2.97
WCL170320-06	Perchlorate-101	101 > 85	4.12	21712.137	0.691	bb			1.9565	97.83	-2.17	2202.0...	
WCL170320-06	Perchlorate-O(18)	107 > 89	4.09	15713.861	15713.861	bb			0.5105	102.09	2.09	5310.3...	

Perchlorate Initial Calibration Verification

Lab Name: General Engineering Laboratories **GEL Job No.(SDG):** 419111

Lab Code: GEL

Reporting Units: ug/L

Analyte	True	Found	%Rec	Date Analyzed	GEL File Id
Perchlorate	.5	.5	99.53	28-MAR-17 18:47	per0328010a
Perchlorate Isotope Ratio		2.92		28-MAR-17 18:47	per0328010a
Perchlorate-101	.5	.51	101.04	28-MAR-17 18:47	per0328010a

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017

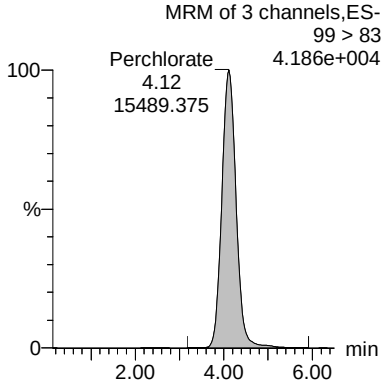
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

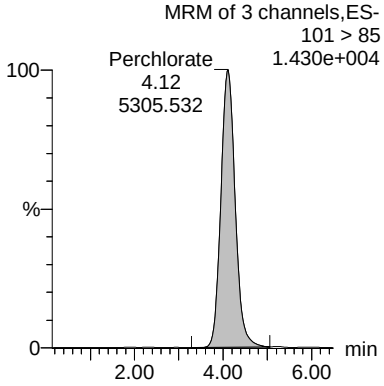
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328010a
Date: 28-Mar-2017
Time: 18:47:51
ID: WCL170320-07ICV
Vial: 1:2,B

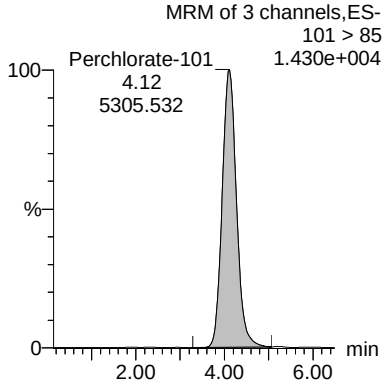
Perchlorate



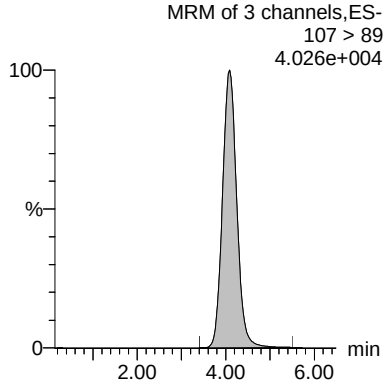
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
WCL170320-07ICV	Perchlorate	99 > 83	4.12	15489.375	0.521	bb			0.4977	99.53	-0.47	3353.3...	2.92
WCL170320-07ICV	Perchlorate-101	101 > 85	4.12	5305.532	0.178	bb			0.5052	101.04	1.04	1142.2...	
WCL170320-07ICV	Perchlorate-O(18)	107 > 89	4.09	14870.273	14870.273	bb			0.4831	96.61	-3.39	590.627	

Perchlorate Continuing Calibration Verification

Lab Name: General Engineering Laboratories **GEL Job No.(SDG):** 419111

Lab Code: GEL

Reporting Units: ug/L

Analyte	True	Found	%Rec	Date Analyzed	GEL File Id
Perchlorate	.5	.52	104.31	28-MAR-17 20:50	per0328023a
Perchlorate Isotope Ratio		3.13		28-MAR-17 20:50	per0328023a
Perchlorate-101	.5	.49	98.81	28-MAR-17 20:50	per0328023a
Perchlorate	.5	.5	100.49	28-MAR-17 22:53	per0328036a
Perchlorate Isotope Ratio		3.06		28-MAR-17 22:53	per0328036a
Perchlorate-101	.5	.49	97.34	28-MAR-17 22:53	per0328036a
Perchlorate	.5	.5	100.92	29-MAR-17 00:47	per0328048a
Perchlorate Isotope Ratio		2.98		29-MAR-17 00:47	per0328048a
Perchlorate-101	.5	.5	100.42	29-MAR-17 00:47	per0328048a

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017

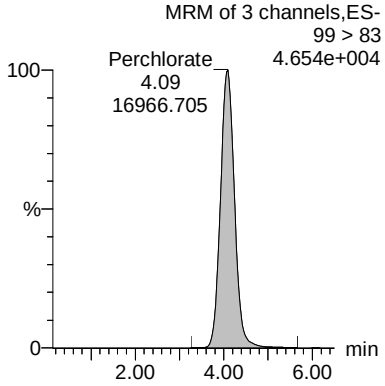
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

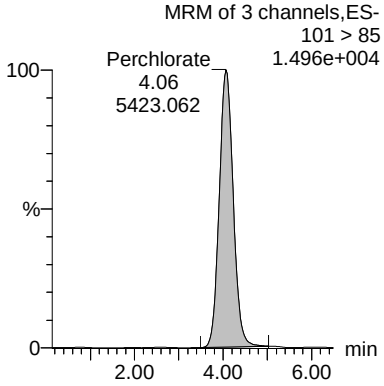
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328023a
Date: 28-Mar-2017
Time: 20:50:53
ID: WCL170320-07CCV
Vial: 1:2,B

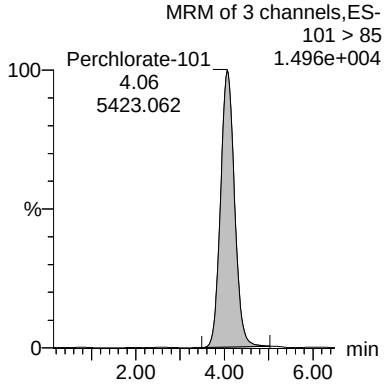
Perchlorate



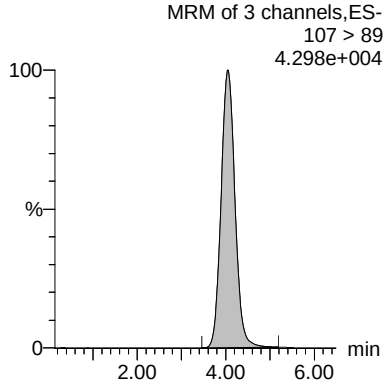
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
WCL170320-07CCV	Perchlorate	99 > 83	4.09	16966.705	0.546	bb			0.5215	104.31	4.31	3293.1...	3.13
WCL170320-07CCV	Perchlorate-101	101 > 85	4.06	5423.062	0.174	bb			0.4941	98.81	-1.19	664.482	
WCL170320-07CCV	Perchlorate-O(18)	107 > 89	4.03	15543.203	15543.203	bb			0.5049	100.99	0.99	4090.0...	

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

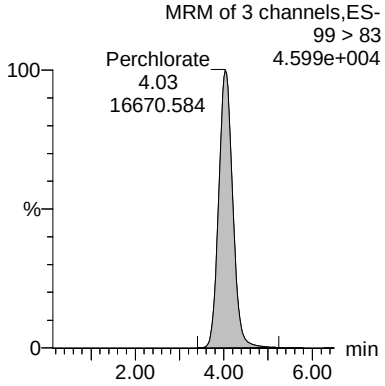
GL 03/29/2017 CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

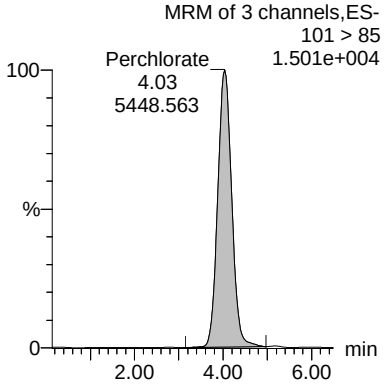
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328036a
Date: 28-Mar-2017
Time: 22:53:59
ID: WCL170320-07CCV
Vial: 1:2,B

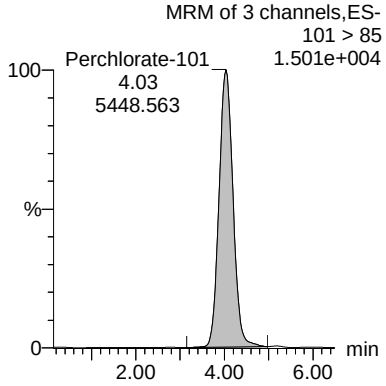
Perchlorate



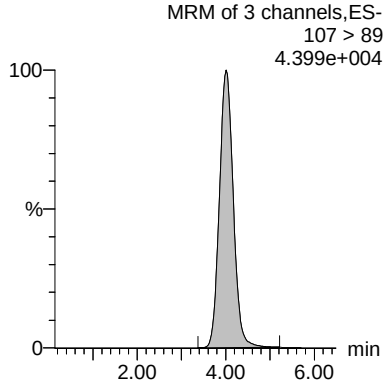
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
WCL170320-07CCV	Perchlorate	99 > 83	4.03	16670.584	0.526	bb			0.5025	100.49	0.49	3325.0...	3.06
WCL170320-07CCV	Perchlorate-101	101 > 85	4.03	5448.563	0.172	bb			0.4867	97.34	-2.66	781.536	
WCL170320-07CCV	Perchlorate-O(18)	107 > 89	4.01	15851.859	15851.859	bb			0.5150	102.99	2.99	2720.8...	

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

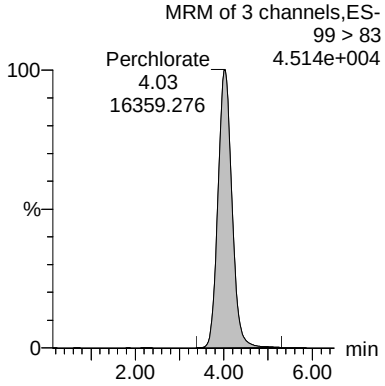
GL 03/29/2017 CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

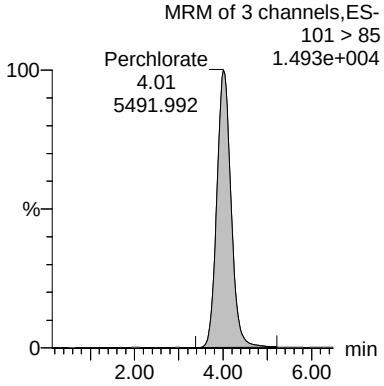
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328048a
Date: 29-Mar-2017
Time: 00:47:39
ID: WCL170320-07CCV
Vial: 1:2,B

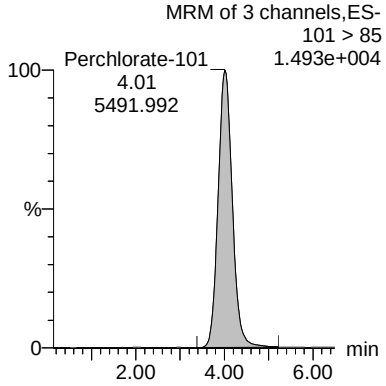
Perchlorate



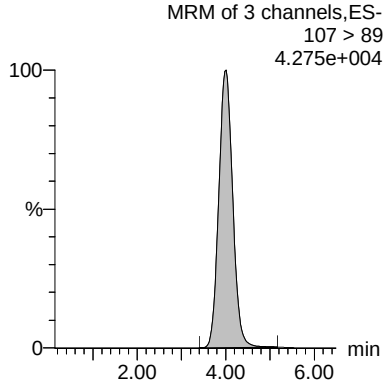
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
WCL170320-07CCV	Perchlorate	99 > 83	4.03	16359.276	0.528	bb			0.5046	100.92	0.92	3278.3...	2.98
WCL170320-07CCV	Perchlorate-101	101 > 85	4.01	5491.992	0.177	bb			0.5021	100.42	0.42	2237.9...	
WCL170320-07CCV	Perchlorate-O(18)	107 > 89	4.01	15489.033	15489.033	bb			0.5032	100.63	0.63	5962.0...	

Perchlorate MDL Verification

Lab Name: General Engineering Laboratories **GEL Job No.(SDG):** 419111

Lab Code: GEL

Reporting Units: ug/L

Analyte	True	Found	%Rec	Date Analyzed	GEL File Id
Perchlorate	.05	.05	100.74	28-MAR-17 19:06	per0328012a
Perchlorate Isotope Ratio		2.81		28-MAR-17 19:06	per0328012a
Perchlorate-101	.05	.05	106.07	28-MAR-17 19:06	per0328012a
Perchlorate	.05	.05	101.79	28-MAR-17 21:09	per0328025a
Perchlorate Isotope Ratio		2.94		28-MAR-17 21:09	per0328025a
Perchlorate-101	.05	.05	102.48	28-MAR-17 21:09	per0328025a
Perchlorate	.05	.05	96.48	28-MAR-17 23:12	per0328038a
Perchlorate Isotope Ratio		2.84		28-MAR-17 23:12	per0328038a
Perchlorate-101	.05	.05	100.64	28-MAR-17 23:12	per0328038a
Perchlorate	.05	.05	100.34	29-MAR-17 01:06	per0328050a
Perchlorate Isotope Ratio		2.85		29-MAR-17 01:06	per0328050a

Perchlorate MDL Verification

Lab Name: General Engineering Laboratories **GEL Job No.(SDG):** 419111

Lab Code: GEL

Reporting Units: ug/L

Perchlorate-101	.05	.05	104.41	29-MAR-17 01:06	per0328050a

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017

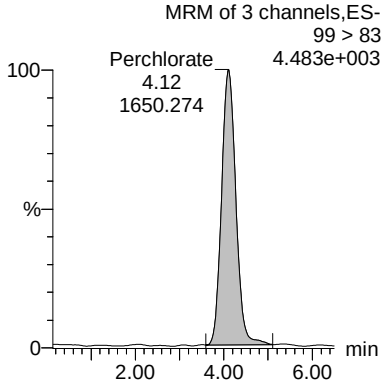
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

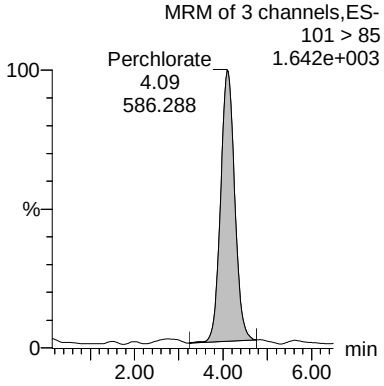
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328012a
Date: 28-Mar-2017
Time: 19:06:45
ID: WCL170320-08CRI
Vial: 1:2,C

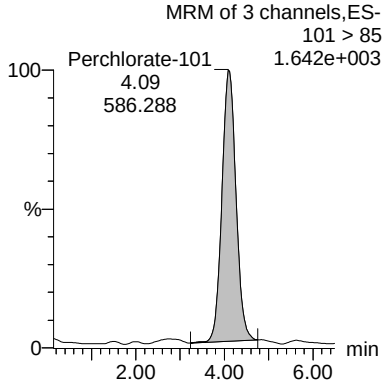
Perchlorate



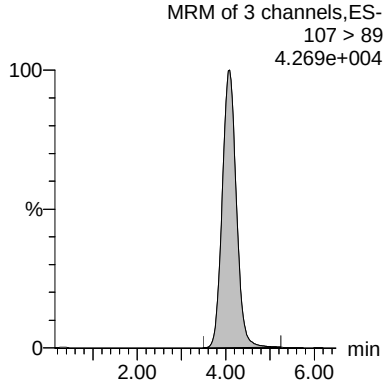
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
WCL170320-08CRI	Perchlorate	99 > 83	4.12	1650.274	0.053	bb			0.0504	100.74	0.74	501.890	2.81
WCL170320-08CRI	Perchlorate-101	101 > 85	4.09	586.288	0.019	bb			0.0530	106.07	6.07	100.665	
WCL170320-08CRI	Perchlorate-O(18)	107 > 89	4.09	15653.307	15653.307	bb			0.5085	101.70	1.70	3864.9...	

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017

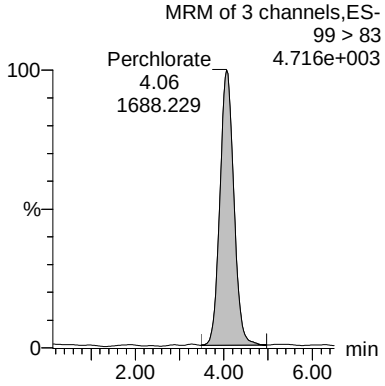
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

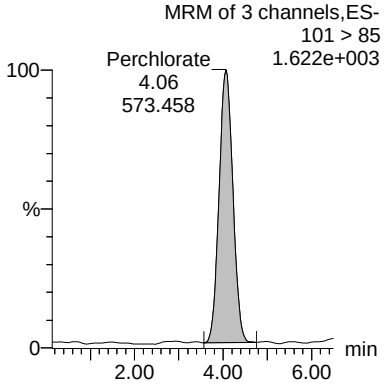
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328025a
Date: 28-Mar-2017
Time: 21:09:49
ID: WCL170320-08CRI
Vial: 1:2,C

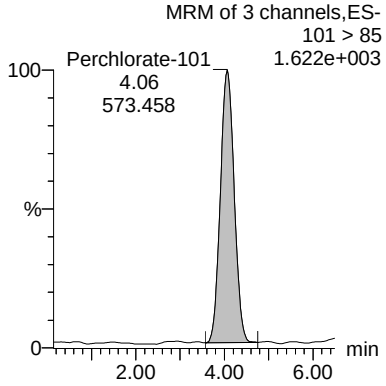
Perchlorate



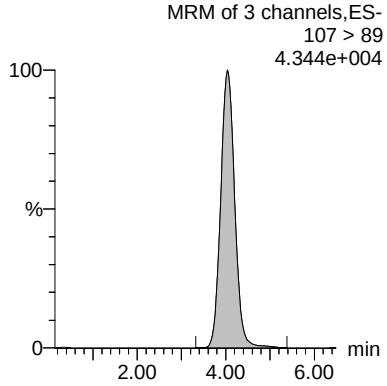
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
WCL170320-08CRI	Perchlorate	99 > 83	4.06	1688.229	0.053	bb			0.0509	101.79	1.79	528.091	2.94
WCL170320-08CRI	Perchlorate-101	101 > 85	4.06	573.458	0.018	bb			0.0512	102.48	2.48	184.648	
WCL170320-08CRI	Perchlorate-O(18)	107 > 89	4.03	15847.729	15847.729	bb			0.5148	102.96	2.96	1672.2...	

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

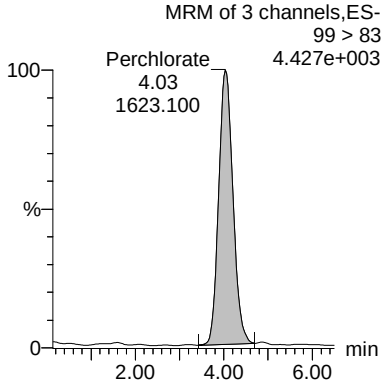
GC 03/29/2017 CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

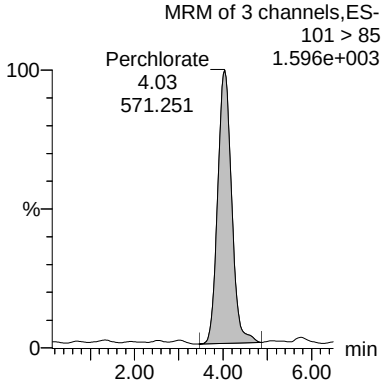
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328038a
Date: 28-Mar-2017
Time: 23:12:54
ID: WCL170320-08CRI
Vial: 1:2,C

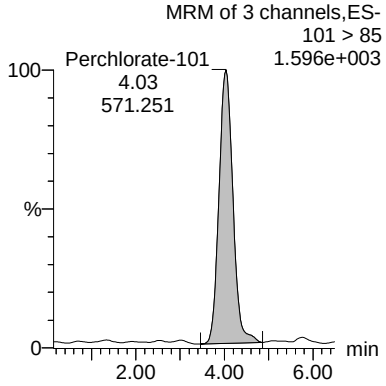
Perchlorate



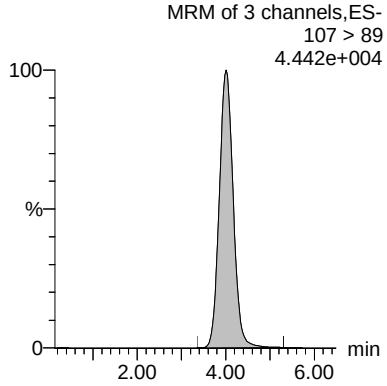
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
WCL170320-08CRI	Perchlorate	99 > 83	4.03	1623.100	0.050	bb			0.0482	96.48	-3.52	261.661	2.84
WCL170320-08CRI	Perchlorate-101	101 > 85	4.03	571.251	0.018	bb			0.0503	100.64	0.64	148.788	
WCL170320-08CRI	Perchlorate-O(18)	107 > 89	4.01	16075.658	16075.658	bb			0.5222	104.45	4.45	2606.2...	

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

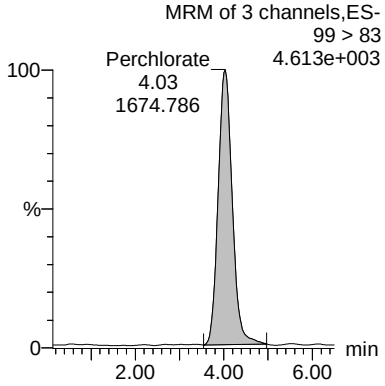
GC 03/29/2017 CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

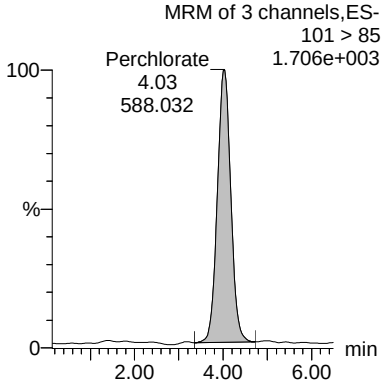
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328050a
Date: 29-Mar-2017
Time: 01:06:35
ID: WCL170320-08CRI
Vial: 1:2,C

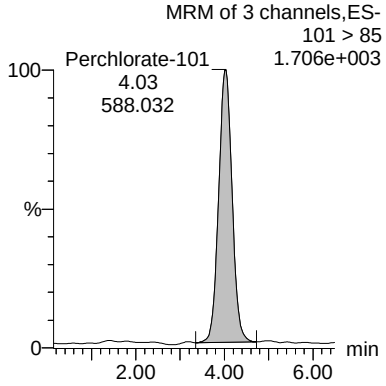
Perchlorate



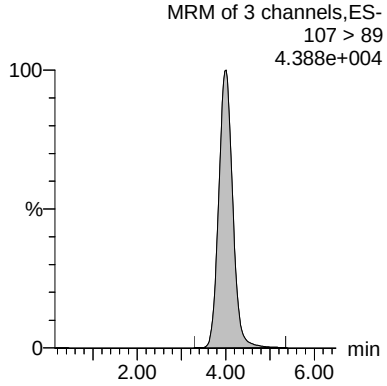
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
WCL170320-08CRI	Perchlorate	99 > 83	4.03	1674.786	0.053	bb			0.0502	100.34	0.34	304.534	2.85
WCL170320-08CRI	Perchlorate-101	101 > 85	4.03	588.032	0.018	bb			0.0522	104.41	4.41	152.010	
WCL170320-08CRI	Perchlorate-O(18)	107 > 89	4.01	15949.618	15949.618	bb			0.5181	103.63	3.63	2904.5...	

Quality Control Data

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: EPA 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
MB

Date Received: 27-MAR-17

GEL Job No (SDG): 419111

GEL Sample ID: 1203755635

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.200	ug/L	U	1	28-MAR-17 19:16	per0328013a
	Perchlorate-O(18)			0.490	ug/L		1	28-MAR-17 19:16	per0328013a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\%\text{Solids}}$$

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

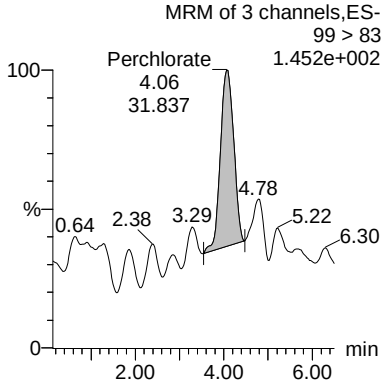
GL 03/29/2017 CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

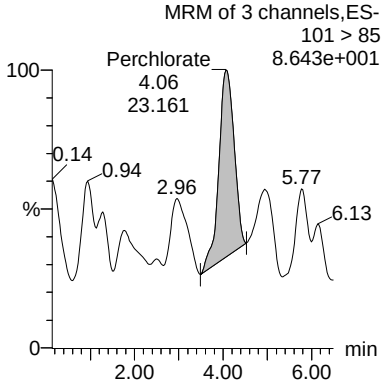
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328013a
Date: 28-Mar-2017
Time: 19:16:12
ID: 1203755635
Vial: 1:3,A

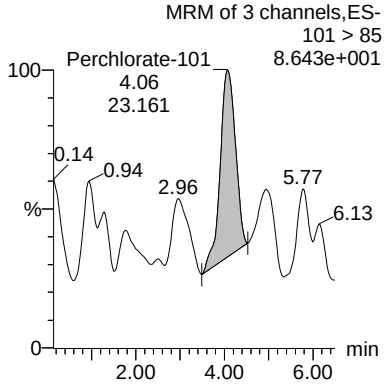
Perchlorate



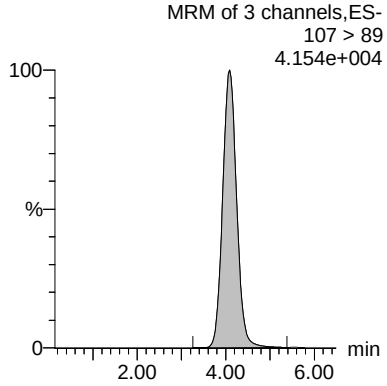
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
1203755635	Perchlorate	99 > 83	4.06	31.837	0.001	bb			0.0010			6.229	1.37
1203755635	Perchlorate-101	101 > 85	4.06	23.161	0.001	bb			0.0022			1.948	
1203755635	Perchlorate-O(18)	107 > 89	4.09	15097.521	15097.521	bb			0.4905	98.09	-1.91	1465.2...	

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: EPA 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
LCS

Date Received: 27-MAR-17

GEL Job No (SDG): 419111

GEL Sample ID: 1203755636

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.196	ug/L	J	1	28-MAR-17 19:25	per0328014a
	Perchlorate-O(18)			0.500	ug/L		1	28-MAR-17 19:25	per0328014a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\%\text{Solids}}$$

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

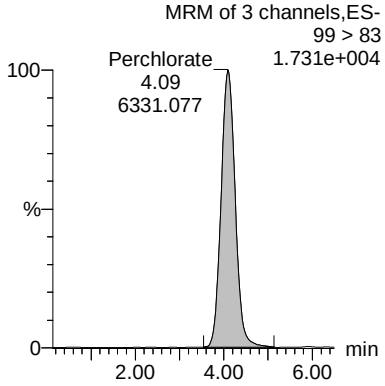
GL 03/29/2017 CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

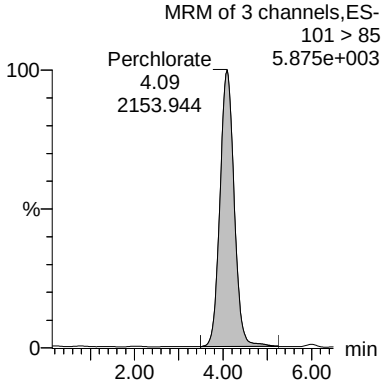
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328014a
Date: 28-Mar-2017
Time: 19:25:41
ID: 1203755636
Vial: 1:3,B

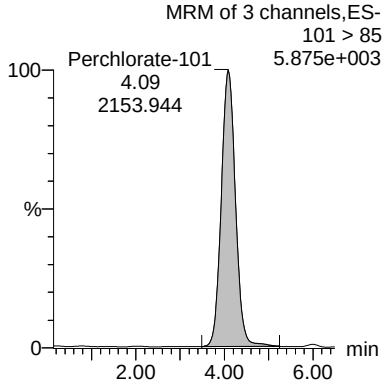
Perchlorate



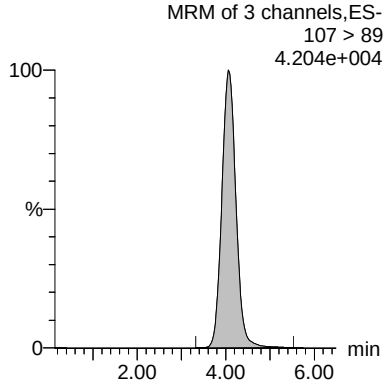
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
1203755636	Perchlorate	99 > 83	4.09	6331.077	0.206	bb			0.1964	98.21	-1.79	710.715	2.94
1203755636	Perchlorate-101	101 > 85	4.09	2153.944	0.070	bb			0.1981	99.03	-0.97	363.928	
1203755636	Perchlorate-O(18)	107 > 89	4.06	15400.181	15400.181	bb			0.5003	100.06	0.06	3437.1...	

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
ICS

Date Received:

GEL Job No (SDG): 419111

GEL Sample ID: 1203755639

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.211	ug/L		1	28-MAR-17 19:35	per0328015a
	Perchlorate-O(18)			0.506	ug/L		1	28-MAR-17 19:35	per0328015a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\%\text{Solids}}$$

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

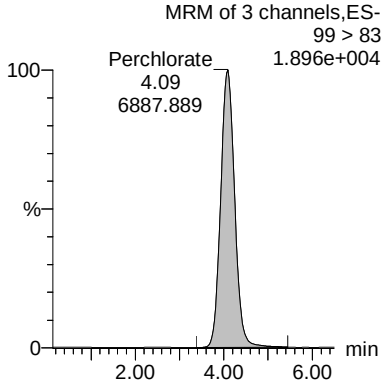
GC 03/29/2017 CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

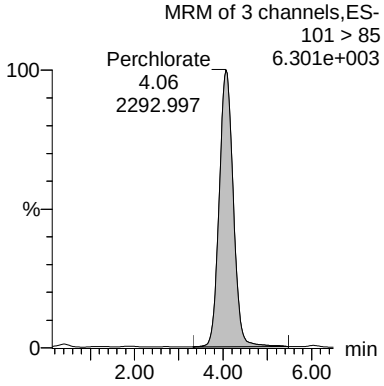
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328015a
Date: 28-Mar-2017
Time: 19:35:09
ID: 1203755639
Vial: 1:3,C

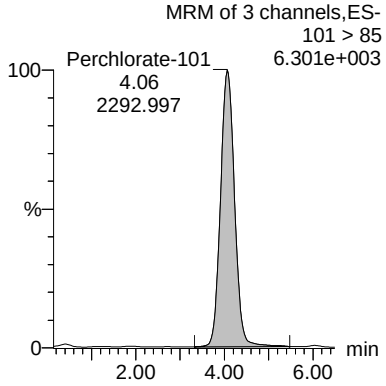
Perchlorate



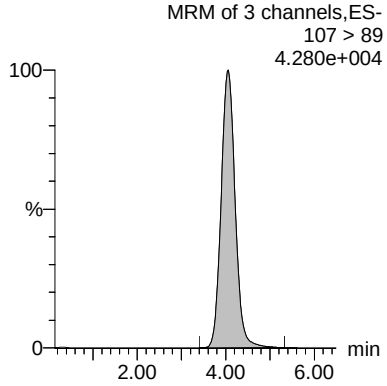
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
1203755639	Perchlorate	99 > 83	4.09	6887.889	0.221	bb			0.2112	105.61	5.61	3146.6...	3.00
1203755639	Perchlorate-101	101 > 85	4.06	2292.997	0.074	bb			0.2084	104.20	4.20	516.199	
1203755639	Perchlorate-O(18)	107 > 89	4.06	15579.710	15579.710	bb			0.5061	101.22	1.22	3501.5...	

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
18WW08-032017MS

Date Received: 21-MAR-17

GEL Job No (SDG): 419111

GEL Sample ID: 1203755637

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.25	1	7.46	ug/L		5	28-MAR-17 19:54	per0328017a
	Perchlorate-O(18)			2.49	ug/L		5	28-MAR-17 19:54	per0328017a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\%\text{Solids}}$$

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017

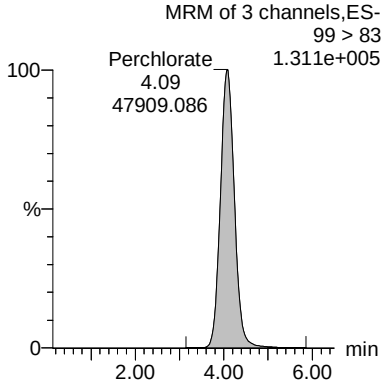
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

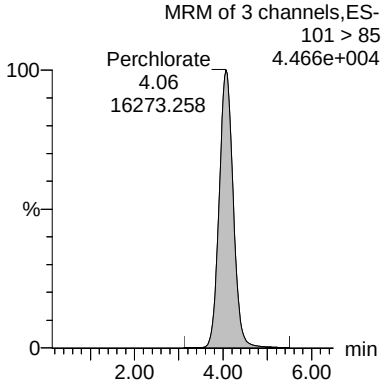
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328017a
Date: 28-Mar-2017
Time: 19:54:05
ID: 1203755637
Vial: 1:3,E

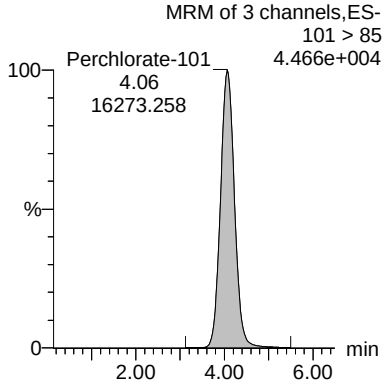
Perchlorate



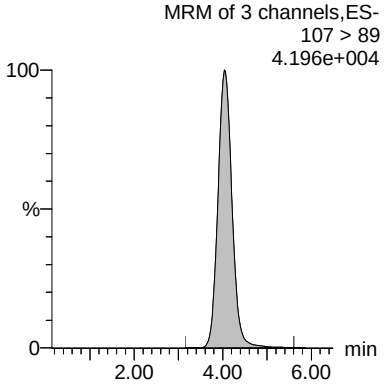
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
1203755637	Perchlorate	99 > 83	4.09	47909.086	1.562	bb			1.4921	746.05	646.05	11634....	2.94
1203755637	Perchlorate-101	101 > 85	4.06	16273.258	0.530	bb			1.5021	751.05	651.05	1548.0...	
1203755637	Perchlorate-O(18)	107 > 89	4.03	15340.698	15340.698	bb			0.4983	99.67	-0.33	2750.6...	

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
18WW08-032017MSD

Date Received: 21-MAR-17

GEL Job No (SDG): 419111

GEL Sample ID: 1203755638

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.25	1	7.45	ug/L		5	28-MAR-17 20:03	per0328018a
	Perchlorate-O(18)			2.45	ug/L		5	28-MAR-17 20:03	per0328018a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\%\text{Solids}}$$

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017

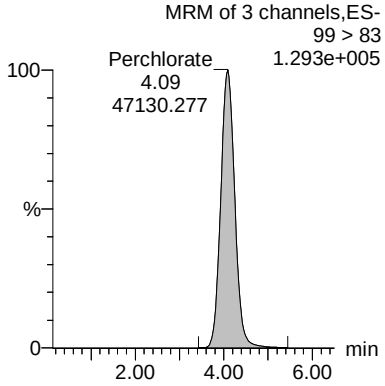
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

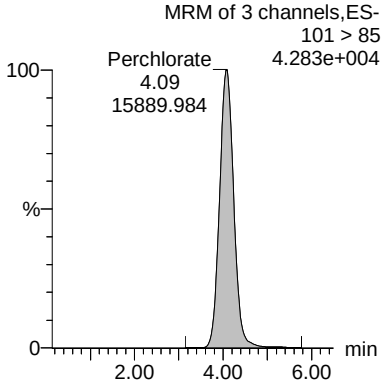
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328018a
Date: 28-Mar-2017
Time: 20:03:33
ID: 1203755638
Vial: 1:3,F

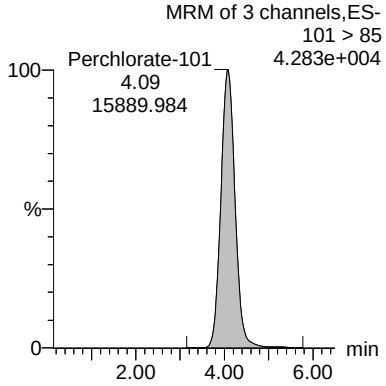
Perchlorate



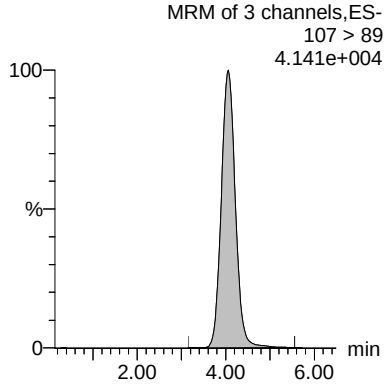
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
1203755638	Perchlorate	99 > 83	4.09	47130.277	1.559	bb			1.4901	745.03	645.03	4484.3...	2.97
1203755638	Perchlorate-101	101 > 85	4.09	15889.984	0.526	bb			1.4889	744.46	644.46	3362.7...	
1203755638	Perchlorate-O(18)	107 > 89	4.06	15111.959	15111.959	bb			0.4909	98.18	-1.82	5667.8...	

Perchlorate Initial Calibration Blank

Lab Name: General Engineering Laboratories **GEL Job No.(SDG):** 419111

Lab Code: GEL

Reporting Units: ug/L

Analyte	True	Found	%Rec	Date Analyzed	GEL File Id	GEL Sample ID
Perchlorate	0.00	0	NA	28-MAR-17	per0328001a	IPB001
Perchlorate-101	0.00	0	NA	28-MAR-17	per0328001a	IPB001
Perchlorate	0.00	0	NA	28-MAR-17	per0328002a	IPB001
Perchlorate-101	0.00	0	NA	28-MAR-17	per0328002a	IPB001

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GC 03/29/2017 CWW 03/30/2017

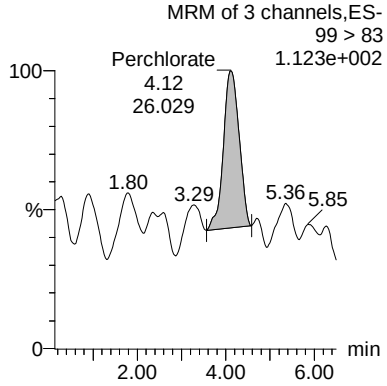
Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

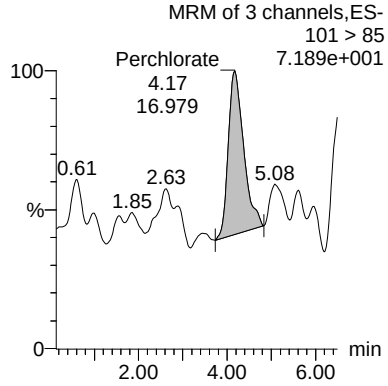
Method: C:\MassLynx\Perchlorate.PRO\MethDB\per032817a.mdb 28 Mar 2017 15:32:39
Calibration: C:\MassLynx\Perchlorate.PRO\CurveDB\per032817a.cdb 29 Mar 2017 09:31:28

Name: per0328001a
Date: 28-Mar-2017
Time: 17:22:40
ID: IPB001
Vial: 1:1,A

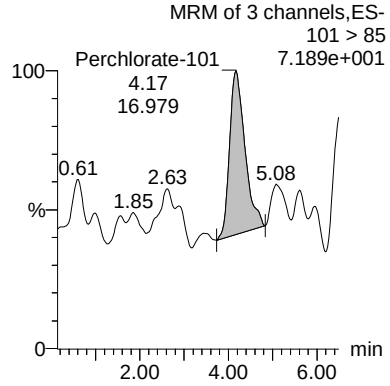
Perchlorate



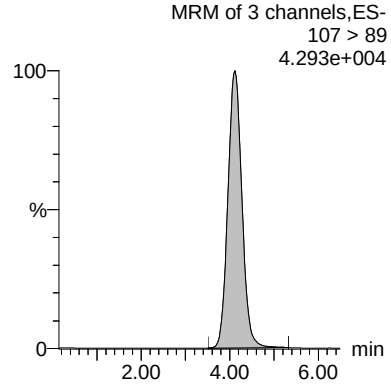
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
IPB001	Perchlorate	99 > 83	4.12	26.029	0.001	bb			0.0008			5.733	1.53
IPB001	Perchlorate-101	101 > 85	4.17	16.979	0.001	bb			0.0015			8.208	
IPB001	Perchlorate-O(18)	107 > 89	4.12	15705.856	15705.856	bb			0.5102	102.04	2.04	1516.2...	

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

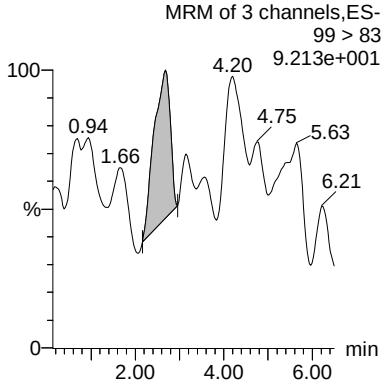
GL 03/29/2017 CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

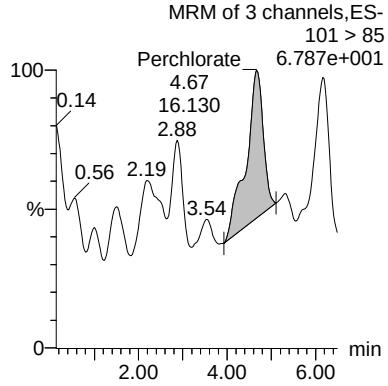
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328002a
Date: 28-Mar-2017
Time: 17:32:12
ID: IPB001
Vial: 1:1,A

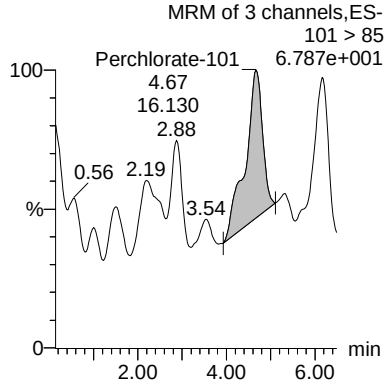
Perchlorate



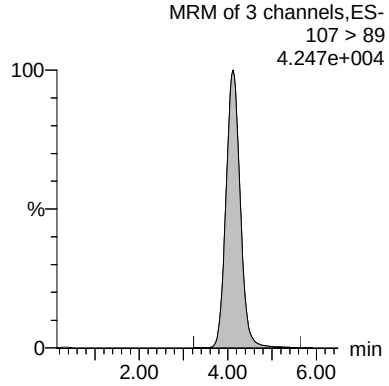
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
IPB001	Perchlorate	99 > 83	2.68	21.127	0.001	bb			0.0006			2.053	1.31
IPB001	Perchlorate-101	101 > 85	4.67	16.130	0.001	bb			0.0015			4.395	
IPB001	Perchlorate-O(18)	107 > 89	4.12	15721.755	15721.755	bb			0.5107	102.15	2.15	1755.5...	

Perchlorate Continuing Calibration Blank

Lab Name: General Engineering Laboratories **GEL Job No.(SDG):** 419111

Lab Code: GEL

Reporting Units: ug/L

Analyte	True	Found	%Rec	Date Analyzed	GEL File Id	GEL Sample ID
Perchlorate	0.00	0	NA	28-MAR-17	per0328009a	IPB002
Perchlorate-101	0.00	0	NA	28-MAR-17	per0328009a	IPB002
Perchlorate	0.00	0	NA	28-MAR-17	per0328011a	IPB003
Perchlorate-101	0.00	0	NA	28-MAR-17	per0328011a	IPB003
Perchlorate	0.00	0	NA	28-MAR-17	per0328024a	IPB004
Perchlorate-101	0.00	0	NA	28-MAR-17	per0328024a	IPB004
Perchlorate	0.00	0	NA	28-MAR-17	per0328037a	IPB005
Perchlorate-101	0.00	0	NA	28-MAR-17	per0328037a	IPB005
Perchlorate	0.00	0	NA	28-MAR-17	per0328041a	IPB006
Perchlorate-101	0.00	0	NA	28-MAR-17	per0328041a	IPB006
Perchlorate	0.00	0	NA	29-MAR-17	per0328049a	IPB007
Perchlorate-101	0.00	0	NA	29-MAR-17	per0328049a	IPB007

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

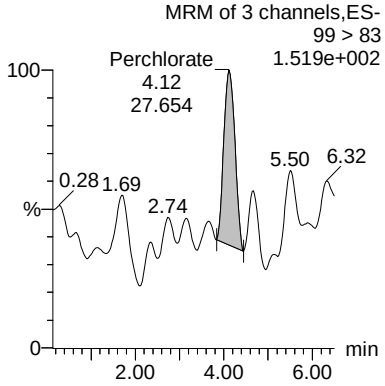
GL 03/29/2017 CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

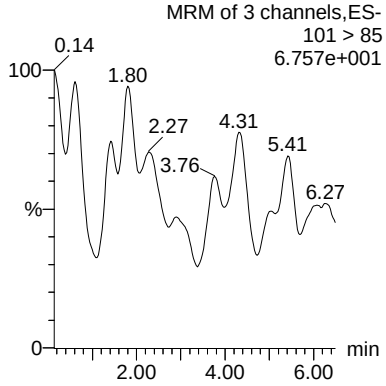
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328009a
Date: 28-Mar-2017
Time: 18:38:23
ID: IPB002
Vial: 1:1,A

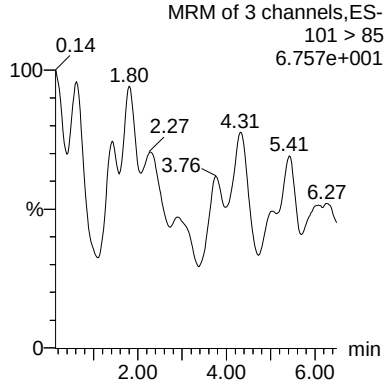
Perchlorate



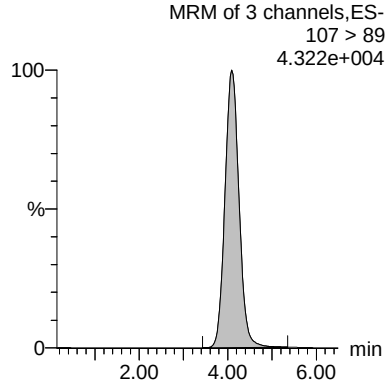
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
IPB002	Perchlorate	99 > 83	4.12	27.654	0.001	bb			0.0008			5.988	0.00
IPB002	Perchlorate-101	101 > 85											
IPB002	Perchlorate-O(18)	107 > 89	4.09	15841.096	15841.096	bb			0.5146	102.92	2.92	2561.1...	

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

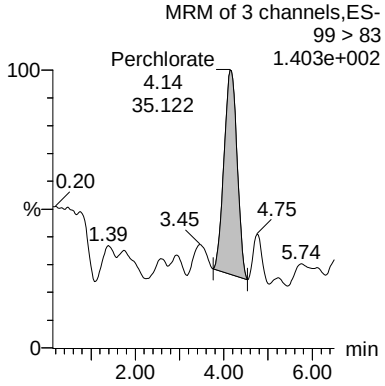
GL 03/29/2017 CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

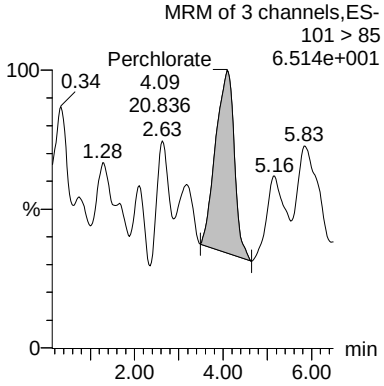
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328011a
Date: 28-Mar-2017
Time: 18:57:18
ID: IPB003
Vial: 1:1,A

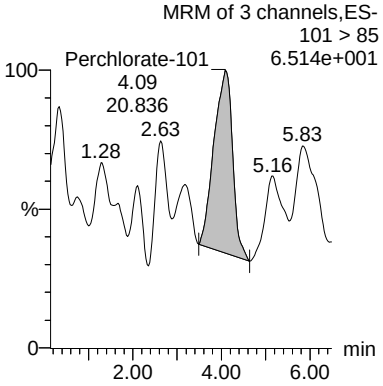
Perchlorate



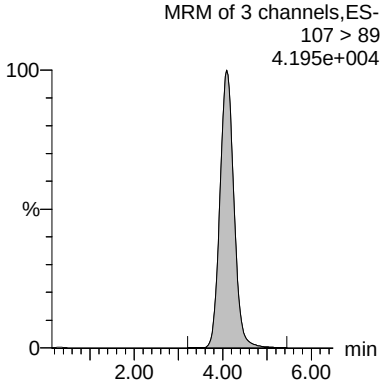
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
IPB003	Perchlorate	99 > 83	4.14	35.122	0.001	bb			0.0011			7.519	1.69
IPB003	Perchlorate-101	101 > 85	4.09	20.836	0.001	bb			0.0019			6.259	
IPB003	Perchlorate-O(18)	107 > 89	4.09	15253.137	15253.137	bb			0.4955	99.10	-0.90	1904.9...	

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

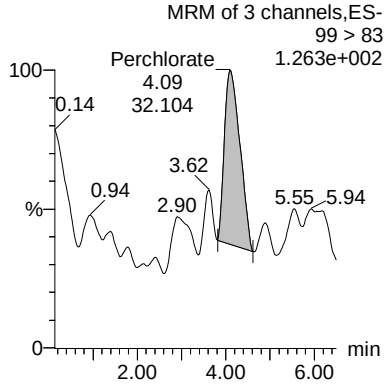
GL 03/29/2017 CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

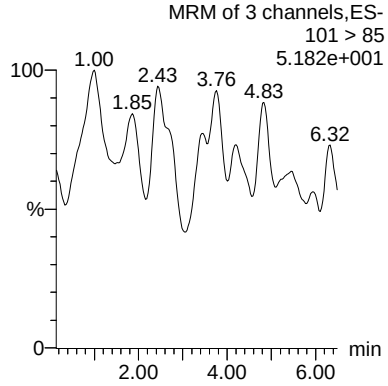
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328024a
Date: 28-Mar-2017
Time: 21:00:21
ID: IPB004
Vial: 1:1,A

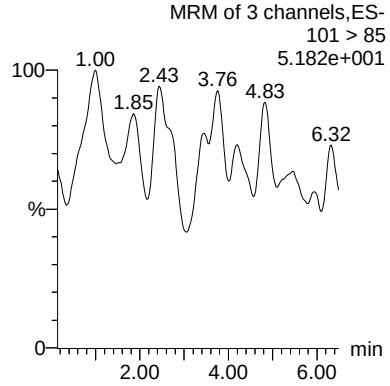
Perchlorate



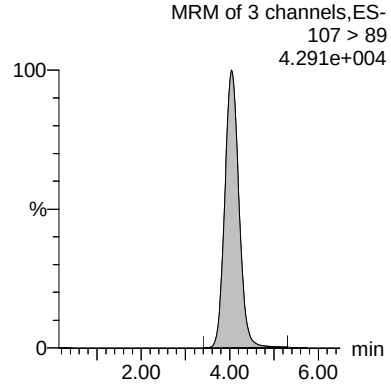
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
IPB004	Perchlorate	99 > 83	4.09	32.104	0.001	bb			0.0010			7.179	0.00
IPB004	Perchlorate-101	101 > 85											
IPB004	Perchlorate-O(18)	107 > 89	4.03	15784.369	15784.369	bb			0.5128	102.55	2.55	2586.5...	

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017

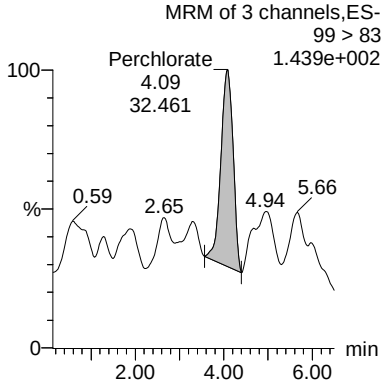
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

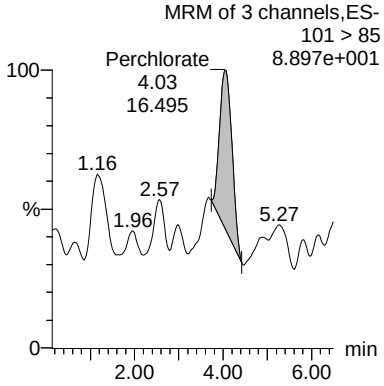
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328037a
Date: 28-Mar-2017
Time: 23:03:27
ID: IPB005
Vial: 1:1,A

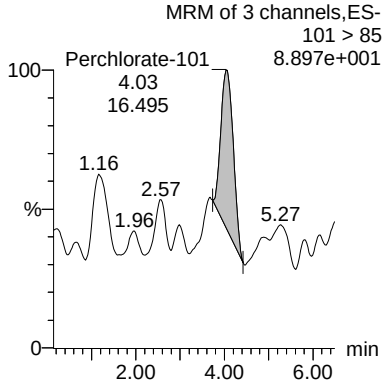
Perchlorate



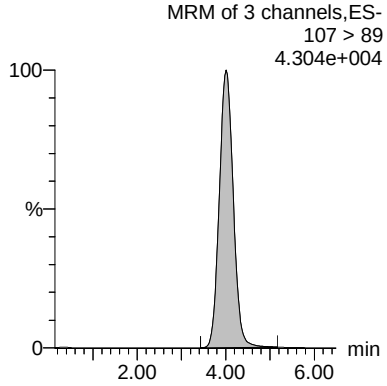
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
IPB005	Perchlorate	99 > 83	4.09	32.461	0.001	bb			0.0010			6.871	1.97
IPB005	Perchlorate-101	101 > 85	4.03	16.495	0.001	bb			0.0015			4.416	
IPB005	Perchlorate-O(18)	107 > 89	4.01	15615.953	15615.953	bb			0.5073	101.46	1.46	2420.0...	

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

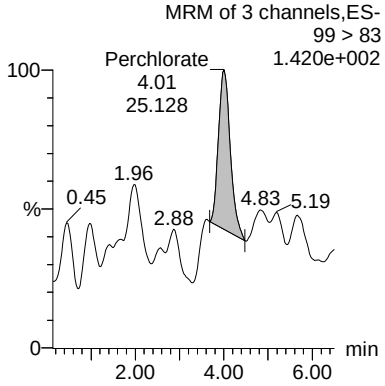
GL 03/29/2017 CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

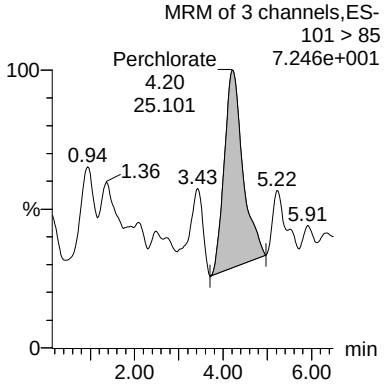
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328041a
Date: 28-Mar-2017
Time: 23:41:19
ID: IPB006
Vial: 1:1,A

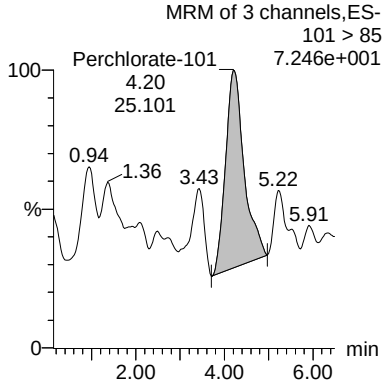
Perchlorate



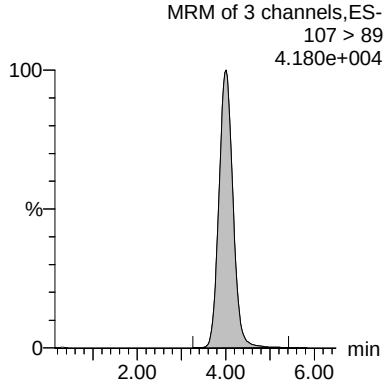
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
IPB006	Perchlorate	99 > 83	4.01	25.128	0.001	bb			0.0008			5.299	1.00
IPB006	Perchlorate-101	101 > 85	4.20	25.101	0.001	bb			0.0023			8.354	
IPB006	Perchlorate-O(18)	107 > 89	4.01	15251.348	15251.348	bb			0.4954	99.09	-0.91	10025....	

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

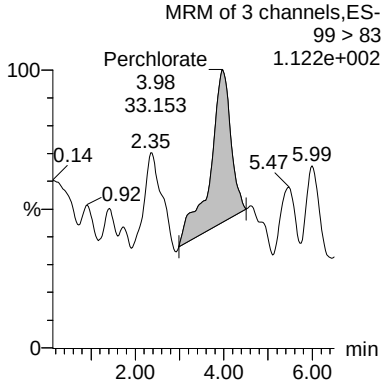
GL 03/29/2017 CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

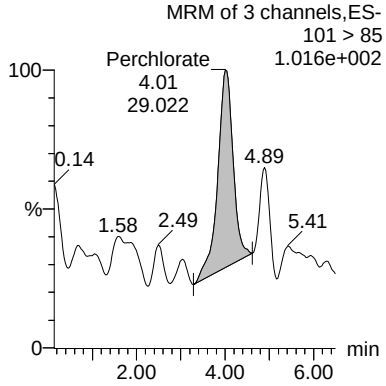
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328049a
Date: 29-Mar-2017
Time: 00:57:07
ID: IPB007
Vial: 1:1,A

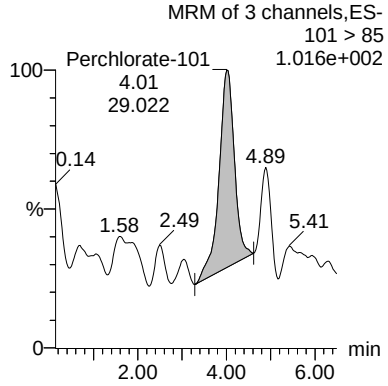
Perchlorate



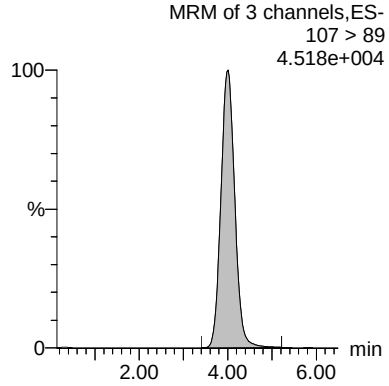
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
IPB007	Perchlorate	99 > 83	3.98	33.153	0.001	bb			0.0010			4.467	1.14
IPB007	Perchlorate-101	101 > 85	4.01	29.022	0.001	bb			0.0025			9.309	
IPB007	Perchlorate-O(18)	107 > 89	4.01	16268.974	16268.974	bb			0.5285	105.70	5.70	3188.5...	

Miscellaneous

Prep Logbook

Definitive Low Level Perchlorate Analysis Utilizing Liquid Chromatography/Mass Spectrometry/Mass Spectrometry (LC/MS/MS) by EPA Method 6850 Modified (6850M)

Batch ID: 1651011 **Verified by:** _____
Analyst: Grace Cappelmann
Method: SW846 6850 Modified

Lab SOP: GL-OA-E-067 REV# 14
Instrument: LCMSMS Manual Instrument

Sample ID	Prep Date	Initial Volume (mL)	Final Volume (mL)	Prepped Factor (mL/mL)
1203755635 MB	27-MAR-2017 14:00:00	10	10	1
1203755636 LCS	27-MAR-2017 14:00:00	10	10	1
1203755639 ICS	27-MAR-2017 14:00:00	10	10	1
418938001	27-MAR-2017 14:00:00	10	10	1
1203755637 MS (418938001)	27-MAR-2017 14:00:00	10	10	1
1203755638 MSD (418938001)	27-MAR-2017 14:00:00	10	10	1
418938002	27-MAR-2017 14:00:00	10	10	1
418938003	27-MAR-2017 14:00:00	10	10	1
418938004	27-MAR-2017 14:00:00	10	10	1
418938005	27-MAR-2017 14:00:00	10	10	1
418939001	27-MAR-2017 14:00:00	10	10	1
419110001	27-MAR-2017 14:00:00	10	10	1
419111001	27-MAR-2017 14:00:00	10	10	1
419111002	27-MAR-2017 14:00:00	10	10	1
419111003	27-MAR-2017 14:00:00	10	10	1
419111004	27-MAR-2017 14:00:00	10	10	1
419111005	27-MAR-2017 14:00:00	10	10	1
419111006	27-MAR-2017 14:00:00	10	10	1
419111007	27-MAR-2017 14:00:00	10	10	1
419111008	27-MAR-2017 14:00:00	10	10	1
419111009	27-MAR-2017 14:00:00	10	10	1
419111010	27-MAR-2017 14:00:00	10	10	1

Type	Sample Id	Description	Serial Number	Spike Amt	Units
ICS	1203755639	10 ug/L ICV/CCV Second Source	UCL161229-01.1	.2	mL
LCS	1203755636	10 ug/L ICV/CCV Second Source	UCL161229-01.1	.2	mL
MS	1203755637	10 ug/L ICV/CCV Second Source	UCL161229-01.1	.2	mL
MSD	1203755638	10 ug/L ICV/CCV Second Source	UCL161229-01.1	.2	mL
RGNT	All	TYPE I Water for HPLC	2457559	10	mL
RGNT	All	500 ppm Carbonate, Bicarbonate, Chloride, Sulfate	2463729	10	mL

Comments:

De-salting cartridge: 161107-2.5-Ba/Ag/H

00850328

03/29/2017

03/30/2017

GEL ORGANIC RUN LOG INSTRUMENT ID: LC-MS/MS#2

Date: 03/28/17 Method: EPA 6850-Modified
Extr. Injection Volume: 20uL Int. Std.: UCL161103-01
Sequence Number: per032817a Mobile Phase Lot#: 2523118, 2457559 SOP: GL-OA-E-067
Initial Calibration Date: 03/28/17 Standard-Samp Reagent Lot#:: 2457559 Alt Check Std. ID: WCL170320-07

DataFile	Sample	Analyst	Injection Date	Batch	SDG	Dilution	Client	Comments	QC_Flag
per0328001a	IPB001	GXC1	3/28/2017 17:22			1		USE	B
per0328002a	IPB001	GXC1	3/28/2017 17:32			1		USE	B
per0328003a	WCLICAL-01	GXC1	3/28/2017 17:41			1		USE	I
per0328004a	WCLICAL-02	GXC1	3/28/2017 17:51			1		USE	I
per0328005a	WCLICAL-03	GXC1	3/28/2017 18:00			1		USE	I
per0328006a	WCLICAL-04	GXC1	3/28/2017 18:10			1		USE	I
per0328007a	WCLICAL-05	GXC1	3/28/2017 18:19			1		USE	I
per0328008a	WCLICAL-06	GXC1	3/28/2017 18:28			1		USE	I
per0328009a	IPB002	GXC1	3/28/2017 18:38			1		USE	B
per0328010a	WCLICV	GXC1	3/28/2017 18:47			1		USE	C
per0328011a	IPB003	GXC1	3/28/2017 18:57			1		USE	B
per0328012a	WCLCRI	GXC1	3/28/2017 19:06			1		USE	C
per0328013a	1203755635	GXC1	3/28/2017 19:16	1651013	Various	1	MBAC	USE	S
per0328014a	1203755636	GXC1	3/28/2017 19:25	1651013	Various	1	MBAC	USE	S
per0328015a	1203755639	GXC1	3/28/2017 19:35	1651013	Various	1	MBAC	USE	S
per0328016a	418938001	GXC1	3/28/2017 19:44	1651013	418938	5	MBAC	USE	S
per0328017a	1203755637	GXC1	3/28/2017 19:54	1651013	418938	5	MBAC	USE	S
per0328018a	1203755638	GXC1	3/28/2017 20:03	1651013	418938	5	MBAC	USE	S
per0328019a	418938002	GXC1	3/28/2017 20:12	1651013	418938	1	MBAC	USE	S
per0328020a	418938003	GXC1	3/28/2017 20:22	1651013	418938	1	MBAC	USE	S
per0328021a	418938004	GXC1	3/28/2017 20:31	1651013	418938	1	MBAC	USE	S
per0328022a	418938005	GXC1	3/28/2017 20:41	1651013	418938	1	MBAC	USE	S
per0328023a	WCLCCV	GXC1	3/28/2017 20:50			1		USE	C
per0328024a	IPB004	GXC1	3/28/2017 21:00			1		USE	B
per0328025a	WCLCRI	GXC1	3/28/2017 21:09			1		USE	C
per0328026a	418939001	GXC1	3/28/2017 21:19	1651013	418939	1	MBAC	USE	S
per0328027a	419110001	GXC1	3/28/2017 21:28	1651013	419110	5	MBAC	USE	S
per0328028a	419111001	GXC1	3/28/2017 21:38	1651013	419111	1	MBAC	USE	S
per0328029a	419111002	GXC1	3/28/2017 21:47	1651013	419111	1	MBAC	USE	S

per0328030a	419111003	GXC1	3/28/2017 21:57	1651013	419111	2000	MBAC	USE	S
per0328031a	419111004	GXC1	3/28/2017 22:06	1651013	419111	1	MBAC	USE	S
per0328032a	419111005	GXC1	3/28/2017 22:16	1651013	419111	1	MBAC	USE	S
per0328033a	419111006	GXC1	3/28/2017 22:25	1651013	419111	1	MBAC	USE	S
per0328034a	419111007	GXC1	3/28/2017 22:35	1651013	419111	1	MBAC	USE	S
per0328035a	419111008	GXC1	3/28/2017 22:44	1651013	419111	1	MBAC	USE	S
per0328036a	WCLCCV	GXC1	3/28/2017 22:53			1		USE	C
per0328037a	IPB005	GXC1	3/28/2017 23:03			1		USE	B
per0328038a	WCLCRI	GXC1	3/28/2017 23:12			1		USE	C
per0328039a	419111009	GXC1	3/28/2017 23:22	1651013	419111	1	MBAC	USE	S
per0328040a	419111010	GXC1	3/28/2017 23:31	1651013	419111	1	MBAC	USE	S
per0328041a	IPB006	GXC1	3/28/2017 23:41			1		USE	B
per0328042a	1203756791	GXC1	3/28/2017 23:50	1651435	2017-1250	1	ARSL	USE	S
per0328043a	1203756792	GXC1	3/29/2017 0:00	1651435	2017-1250	1	ARSL	USE	S
per0328044a	1203756795	GXC1	3/29/2017 0:09	1651435	2017-1250	1	ARSL	USE	S
per0328045a	419173001	GXC1	3/29/2017 0:19	1651435	2017-1250	1	ARSL	USE	S
per0328046a	1203756793	GXC1	3/29/2017 0:28	1651435	2017-1250	1	ARSL	USE	S
per0328047a	1203756794	GXC1	3/29/2017 0:38	1651435	2017-1250	1	ARSL	USE	S
per0328048a	WCLCCV	GXC1	3/29/2017 0:47			1		USE	C
per0328049a	IPB007	GXC1	3/29/2017 0:57			1		USE	B
per0328050a	WCLCRI	GXC1	3/29/2017 1:06			1		USE	C

GEL Laboratories LLC
Form GEL-DER

DER Report No.: 1618609
Revision No.: 1

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
29-MAR-17	Federal	Others	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
LC-MS/MS	SW846-6850 Modified	Liquid	MBAC001
Batch ID:	**Sample Numbers:**		
1651013	See Below		

Potentially affected work order(s)(SDG): 418938,418939,419110,419111

Application Issues:

Failed Recovery for MS/MSD, or PS/PSD

Specification and Requirements Exception Description:	DER Disposition:
1. In 1203755637 (MS) and 1203755638 (MSD) a 0% recovery of Perchlorate was observed. The acceptance range is 75-125%. The detected concentrations in the MS and MSD were lower than the detected concentration in the parent sample.	1. The outliers observed for the matrix spikes were due to the background concentration in the parent sample, 418938001 (18WW08-032017) and the need of a 1:5 dilution prior to analysis. Will report data and note in case narrative.

Originator's Name:

Grace Cappelmann 29-MAR-17

Data Validator/Group Leader:

Charles Wilson 30-MAR-17

Isotope Ratio Criteria

Isotope Ratio $_{35}Cl/_{37}CL$

2.31-3.85

Tune Criteria

The tuning solution is introduced directly into the mass spectrometer using the ESI interface in the positive ion mode. The mass range scanned is 20 to 1100 amu using at least six scans. The observed mass for the target compound in the daily calibration standards must be within 0.2 amu of the expected value. If it is greater than 0.2 amu, then a mass calibration is performed and the instrument is re-calibrated.

Microbac

Laboratory Report Number: L17031689

Linda Raabe
AECOM Technical Services, Inc.
1950 N Stemmons FWY
Dallas, TX 75207

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Adriane Steed – Client Services Specialist
(740) 373-4071
Adriane.Steed@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on April 11 2017

Leslie Bucina – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L17031689
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00110903	I	2.0		J4616882194	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac

Lab Report #: L17031689
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
LH18/24-SP140-7428-GRAB	L17031689-01	03/29/2017 15:00	03/31/2017 09:42
TRIP BLANK	L17031689-02	03/29/2017 00:01	03/31/2017 09:42

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L17031689
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data

1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG608588	**Reviewer Name:**	Franci Bolden
LRC Date:	2017-04-07 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden		Analyst I	2017-04-07 16:00:43

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG608588	**Reviewer Name:**	Franci Bolden
LRC Date:	2017-04-07 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG608588	**Reviewer Name:**	Franci Bolden
LRC Date:	2017-04-07 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG608588	**Reviewer Name:**	Franci Bolden
LRC Date:	2017-04-07 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG608588	**Reviewer Name:**	Franci Bolden
LRC Date:	2017-04-07 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG608588	**Reviewer Name:**	Franci Bolden
LRC Date:	2017-04-07 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG608522	**Reviewer Name:**	Eric Lawson
LRC Date:	2017-04-06 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2017-04-06 19:40:01

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG608522	**Reviewer Name:**	Eric Lawson
LRC Date:	2017-04-06 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?		X			1
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG608522	**Reviewer Name:**	Eric Lawson
LRC Date:	2017-04-06 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?		X			2
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG608522	**Reviewer Name:**	Eric Lawson
LRC Date:	2017-04-06 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG608522	**Reviewer Name:**	Eric Lawson
LRC Date:	2017-04-06 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG608522	**Reviewer Name:**	Eric Lawson
LRC Date:	2017-04-06 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Sample 01 yielded a recovery for the surrogate that was above the acceptance limit. This sample was run at a dilution and yielded similar results, suggesting matrix interference.
2. The RPD was above the acceptance limit, however the LCS/LCS2 results are both within acceptance limits.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	6010
Prep Batch Number(s):	608524	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-04-10 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Kerri Buck	Kerri K Buck		2017-04-10 19:01:36

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	6010
Prep Batch Number(s):	608524	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-04-10 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				ER#1
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	6010
Prep Batch Number(s):	608524	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-04-10 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	6010
Prep Batch Number(s):	608524	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-04-10 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	6010
Prep Batch Number(s):	608524	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-04-10 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	6010
Prep Batch Number(s):	608524	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-04-10 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Client sample 01 required dilution analysis in order to obtain a result for iron within the calibration range.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	6020
Prep Batch Number(s):	608583	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-04-10 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Kerri Buck	Kerri K Buck		2017-04-10 19:03:38

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	6020
Prep Batch Number(s):	608583	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-04-10 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				ER#2
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	6020
Prep Batch Number(s):	608583	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-04-10 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	6020
Prep Batch Number(s):	608583	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-04-10 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				ER#1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	6020
Prep Batch Number(s):	608583	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-04-10 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	6020
Prep Batch Number(s):	608583	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-04-10 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Due to the low level continuing calibration verification failure for thallium on 04-Apr-2017 at 13:51, client sample 01 along with the batch QA/QC were reanalyzed on a later calibration which was compliant for thallium.

ER#2 - Client sample 01 required dilution analysis in order to obtain results for barium, manganese, and zinc within the calibration range.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG608568	**Reviewer Name:**	Eric Lawson
LRC Date:	2017-04-05 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2017-04-05 15:02:00

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG608568	**Reviewer Name:**	Eric Lawson
LRC Date:	2017-04-05 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG608568	**Reviewer Name:**	Eric Lawson
LRC Date:	2017-04-05 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG608568	**Reviewer Name:**	Eric Lawson
LRC Date:	2017-04-05 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					