

**LONGHORN ARMY
AMMUNITION PLANT
KARNACK, TEXAS**

**ADMINISTRATIVE
RECORD**

Volume 12

2020

Bate Stamp Numbers

00970243 – 00971049

Prepared for

**Department of the Army
Longhorn Army Ammunition Plant**

1976–2020

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

VOLUME 12

2020

- A. Title: (cont'd) Report – Appendix C to Quarterly Evaluation Report, 1st Quarter (January-March) 2020 Groundwater Treatment Plant, Longhorn Army Ammunition Plant, Karnack, Texas, June 2020
Author(s): Department of the Army
Recipient: U.S. Environmental Protection Agency and Texas Commission on Environmental Quality
Date: June 9, 2020
Bate Stamp: 00970243 – 00971020
- B. Title: Transmittal Letter – Draft Fifth Annual Remedial Action Operation Report, LHAAP-46 (Plant 2 Area), Longhorn Army Ammunition Plant, Karnack, Texas, June 2020
Author(s): Department of the Army
Recipient: U.S. Environmental Protection Agency
Date: June 10, 2020
Bate Stamp: 00971021 – 00971021
- C. Title: Transmittal Letter – Draft Fifth Annual Remedial Action Operation Report, LHAAP-46 (Plant 2 Area), Longhorn Army Ammunition Plant, Karnack, Texas, June 2020
Author(s): Department of the Army
Recipient: Texas Commission on Environmental Quality
Date: June 10, 2020
Bate Stamp: 00971022 – 00971022
- D. Title: Transmittal Letter – Draft 2019 Remedial Action Operation Report, Landfill 12 (LHAAP-12), Longhorn Army Ammunition Plant, Karnack, Texas, June 2020
Author(s): Department of the Army
Recipient: U.S. Environmental Protection Agency
Date: June 18, 2020
Bate Stamp: 00971023 – 00971023
- E. Title: Transmittal Letter – Draft 2019 Remedial Action Operation Report, Landfill 12 (LHAAP-12), Longhorn Army Ammunition Plant, Karnack, Texas, June 2020
Author(s): Department of the Army
Recipient: Texas Commission on Environmental Quality
Date: June 18, 2020
Bate Stamp: 00971024 – 00971024

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

VOLUME 12 (cont'd)

2020

F. Title: Minutes – Final Monthly Managers' Meeting (MMM), Longhorn Army
Ammunition Plant (LHAAP), May 20, 2020
Author(s): Department of the Army
Recipient: All Parties
Date: June 24, 2020
Bate Stamp: 00971025 – 00971049

Client: ALS Environmental - US
Project: HS20021121

Service Request: E2000179
Date Analyzed: 3/10/20 13:52

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID: I:\LCMS01\DATA\20200310\20200310_005
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000093-01
Analysis Lot: 673019
Signal ID: 1

Sodium Perchlorate-18O4

	<u>Area</u>	<u>RT</u>
ICAL Average ==>	232,157	3.04
Upper Limit ==>	348,236	5.04
Lower Limit ==>	116,079	1.04

Associated Analyses

Continuing Calibration Verification	EQ2000093-01	258,077	3.07
Method Blank	EQ2000089-01	266,181	3.07
Lab Control Sample	EQ2000089-02	259,616	3.07
Duplicate Lab Control Sample	EQ2000089-03	279,998	3.07

Results flagged with an asterisk (*) indicate values outside control criteria.

Client: ALS Environmental - US
Project: HS20021121

Service Request: E2000179
Date Analyzed: 3/10/20 15:44

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID: I:\LCMS01\DATA\20200310\20200310_017
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000093-02
Analysis Lot: 673019
Signal ID: 1

Sodium Perchlorate-1804

	<u>Area</u>	<u>RT</u>
ICAL Average ==>	232,157	3.04
Upper Limit ==>	348,236	5.04
Lower Limit ==>	116,079	1.04

Associated Analyses

Continuing Calibration Verification	EQ2000093-02	289,206	3.07
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Results flagged with an asterisk (*) indicate values outside control criteria.

Client: ALS Environmental - US
Project: HS20021121

Service Request: E2000179
Date Analyzed: 3/11/20 11:38

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID: I:\LCMS01\DATA\20200311\20200311_005
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000094-01
Analysis Lot: 673020
Signal ID: 1

Sodium Perchlorate-1804

	<u>Area</u>	<u>RT</u>
ICAL Average ==>	232,157	3.04
Upper Limit ==>	348,236	5.04
Lower Limit ==>	116,079	1.04

Associated Analyses

Continuing Calibration Verification	EQ2000094-01	280,844	3.07
LH18/24-SP140_022520	E2000179-001	235,862	3.01

Results flagged with an asterisk (*) indicate values outside control criteria.

Client: ALS Environmental - US
Project: HS20021121

Service Request: E2000179
Date Analyzed: 3/11/20 13:28

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID: I:\LCMS01\DATA\20200311\20200311_015
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000094-02
Analysis Lot: 673020
Signal ID: 1

Sodium Perchlorate-18O4

	<u>Area</u>	<u>RT</u>
ICAL Average ==>	232,157	3.04
Upper Limit ==>	348,236	5.04
Lower Limit ==>	116,079	1.04

Associated Analyses

Continuing Calibration Verification	EQ2000094-02	305,228	3.01
-------------------------------------	--------------	---------	------

Results flagged with an asterisk (*) indicate values outside control criteria.

Client: ALS Environmental - US
Project: HS20021121

Service Request: E2000179
Date Analyzed: 3/11/20 15:00

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID: I:\LCMS01\DATA\20200311\20200311_019
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000094-03
Analysis Lot: 673020
Signal ID: 1

Sodium Perchlorate-18O4			
		<u>Area</u>	<u>RT</u>
	ICAL Average ==>	232,157	3.04
	Upper Limit ==>	348,236	5.04
	Lower Limit ==>	116,079	1.04
<i>Associated Analyses</i>			
Continuing Calibration Verification	EQ2000094-03	235,110	3.06

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group Houston

PERCHLORATE7

Date acquired: 3/10/2020 1:52:29 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200310\20200310_005.lcd

Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

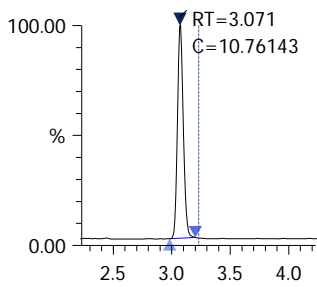
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	3/10/2020 1:52:29 PM	375491	10.76143	20200310_005	3.071	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	3/10/2020 1:52:29 PM	258077	1.00000	20200310_005	3.071	25.0000	1.0000	3

Perchlorate

Conc 10.76143

Area 375491

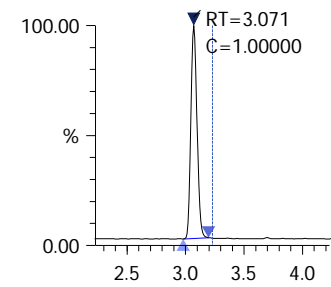
Q 99.00>83.00 (-)

Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 258077

ISTD 107.00>89.00 (-)



ALS Group Houston

EQ2000089-01

Date acquired: 3/10/2020 2:25:38 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200310\20200310_007.lcd

Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000089-01	3/10/2020 2:25:38 PM	----	----	20200310_007	----	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	EQ2000089-01	3/10/2020 2:25:38 PM	266181	1.00000	20200310_007	3.074	25.0000	1.0000	5

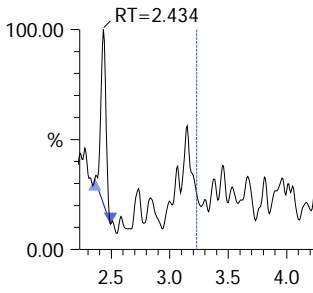
Perchlorate

Conc ----

Area ----

Q 99.00>83.00 (-)

7.48e2

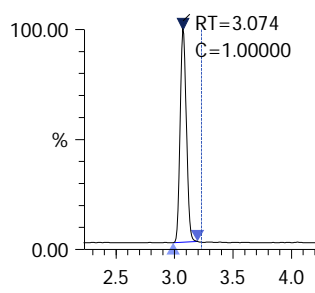
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 266181

ISTD 107.00>89.00 (-)

7.25e4



ALS Group Houston

EQ2000089-02

Date acquired: 3/10/2020 2:33:31 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200310\20200310_008.lcd

Vial: 6 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000089-02	3/10/2020 2:33:31 PM	36514	1.04026	20200310_008	3.069	25.0000	1.0000	6
Sodium Perchlorate-18O4_IS	EQ2000089-02	3/10/2020 2:33:31 PM	259616	1.00000	20200310_008	3.067	25.0000	1.0000	6

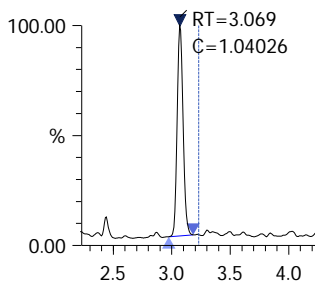
Perchlorate

Conc 1.04026

Area 36514

Q 99.00>83.00 (-)

1.04e4

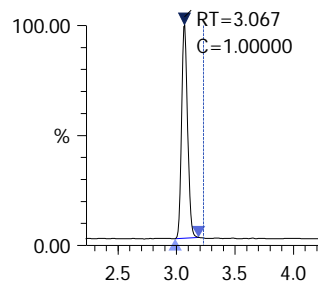
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 259616

ISTD 107.00>89.00 (-)

7.33e4



ALS Group Houston

EQ2000089-03

Date acquired: 3/10/2020 2:41:26 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200310\20200310_009.lcd

Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000089-03	3/10/2020 2:41:26 PM	42719	1.12846	20200310_009	3.074	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	EQ2000089-03	3/10/2020 2:41:26 PM	279998	1.00000	20200310_009	3.071	25.0000	1.0000	7

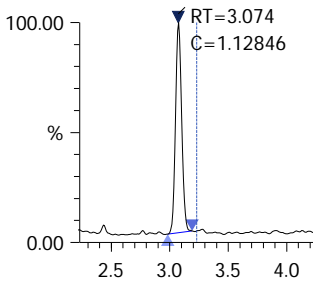
Perchlorate

Conc 1.12846

Area 42719

Q 99.00>83.00 (-)

1.17e4

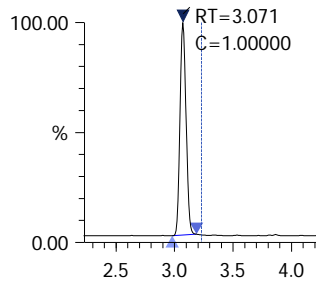
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 279998

ISTD 107.00>89.00 (-)

7.84e4



ALS Group Houston

PERCHLORATE7

Date acquired: 3/10/2020 3:44:38 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200310\20200310_017.lcd

Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	3/10/2020 3:44:38 PM	432316	11.05642	20200310_017	3.072	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	3/10/2020 3:44:38 PM	289206	1.00000	20200310_017	3.071	25.0000	1.0000	3

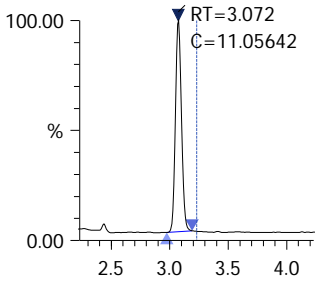
Perchlorate

Conc 11.05642

Area 432316

Q 99.00>83.00 (-)

1.20e5

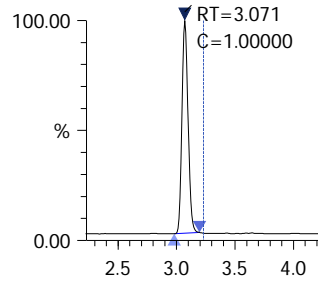
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 289206

ISTD 107.00>89.00 (-)

8.06e4



ALS Group Houston

PERCHLORATE7

Date acquired: 3/11/2020 11:38:55 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200311\20200311_005.lcd

Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

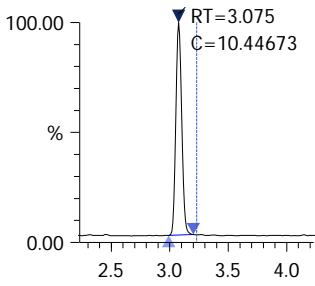
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	3/11/2020 11:38:55 AM	396666	10.44673	20200311_005	3.075	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	3/11/2020 11:38:55 AM	280844	1.00000	20200311_005	3.073	25.0000	1.0000	3

Perchlorate

Conc 10.44673

Area 396666

Q 99.00>83.00 (-)

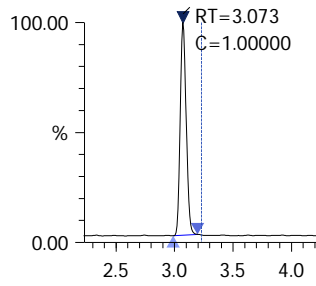
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 280844

ISTD 107.00>89.00 (-)

8.00e4



ALS Group Houston

E2000179-001X1000

Date acquired: 3/11/2020 12:37:25 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200311\20200311_011.lcd

Vial: 16 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	E2000179-001X1000	3/11/2020 12:37:25 PM	331054	10.38153	20200311_011	3.015	25.0000	1.0000	16
Sodium Perchlorate-18O4_IS	E2000179-001X1000	3/11/2020 12:37:25 PM	235862	1.00000	20200311_011	3.013	25.0000	1.0000	16

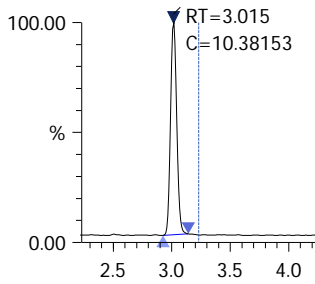
Perchlorate

Conc 10.38153

Area 331054

Q 99.00>83.00 (-)

9.32e4

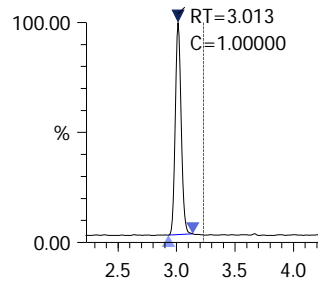
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 235862

ISTD 107.00>89.00 (-)

6.69e4



ALS Group Houston

PERCHLORATE7

Date acquired: 3/11/2020 1:28:17 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200311\20200311_015.lcd

Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	3/11/2020 1:28:17 PM	438640	10.62930	20200311_015	3.013	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	3/11/2020 1:28:17 PM	305228	1.00000	20200311_015	3.011	25.0000	1.0000	3

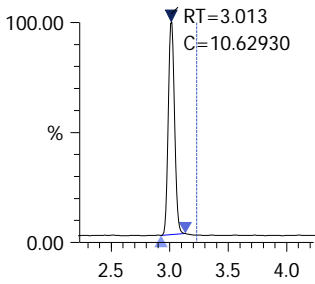
Perchlorate

Conc 10.62930

Area 438640

Q 99.00>83.00 (-)

1.21e5

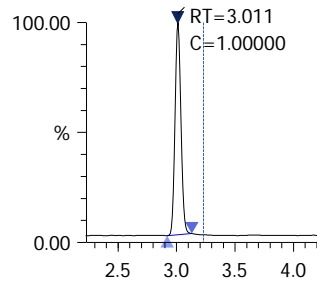
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 305228

ISTD 107.00>89.00 (-)

8.61e4





10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

March 23, 2020

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS20030169**

Laboratory Results for: **Longhorn GW Treatment Plant Weekly Samples**

Dear Marcia,

ALS Environmental received 2 sample(s) on Mar 05, 2020 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read "Raj. P. Modashia", enclosed in a circular scribble.

Generated By: JUMOKE.LAWAL
RJ Modashia
Project Manager

ALS Houston, US

Date: 23-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS20030169

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20030169-01	LH18/24-SP650_030420	Water		04-Mar-2020 14:00	05-Mar-2020 08:50	<input type="checkbox"/>
HS20030169-02	LH18/24-SP650_030420_BIX	Water		04-Mar-2020 14:00	05-Mar-2020 08:50	<input type="checkbox"/>

ALS Houston, US

Date: 23-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS20030169

CASE NARRATIVE**Work Order Comments**

- The analysis for Perchlorate were subcontracted to ALS High Res Lab Houston, TX. Final report attached.
 - The analysis for TOC was subcontracted to ALS Environmental in Kelso, WA. Final Report attached.
-

WetChemistry by Method E350.3**Batch ID: R357858**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
-

WetChemistry by Method E365.3**Batch ID: R357688**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
-

ALS Houston, US

Date: 23-Mar-20

Client: Bhate Environmental Associates, Inc.
 Project: Longhorn GW Treatment Plant Weekly Samples
 Sample ID: LH18/24-SP650_030420
 Collection Date: 04-Mar-2020 14:00

ANALYTICAL REPORT

WorkOrder:HS20030169
 Lab ID:HS20030169-01
 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
AMMONIA AS N BY E350.3(ISE)								Analyst: RG
Nitrogen, Ammonia (As N)	4.7	a	0.20	0.10	0.20	mg/L	1	10-Mar-2020 12:45
ORTHO PHOSPHATE (PO4) AS P BY E365.3								Analyst: MZD
Phosphorus, Total Orthophosphate (As P)	2.16	a	0.100	0.250	0.250	mg/L	10	05-Mar-2020 16:56
SUBCONTRACT ANALYSIS - TOC ANALYSIS								Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	17-Mar-2020 09:12

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 23-Mar-20

Client: Bhate Environmental Associates, Inc.
 Project: Longhorn GW Treatment Plant Weekly Samples
 Sample ID: LH18/24-SP650_030420_BIX
 Collection Date: 04-Mar-2020 14:00

ANALYTICAL REPORT

WorkOrder:HS20030169
 Lab ID:HS20030169-02
 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		Method:NA		Analyst: SUB				
Subcontract Analysis	See Attached		0	0		NA	1	23-Mar-2020 15:42

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 23-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20030169

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R357688 (0)		Test Name : ORTHO PHOSPHATE (PO4) AS P BY E365.3			Matrix: Water	
HS20030169-01	LH18/24-SP650_030420	04 Mar 2020 14:00			05 Mar 2020 16:56	10
Batch ID: R357858 (0)		Test Name : AMMONIA AS N BY E350.3(ISE)			Matrix: Water	
HS20030169-01	LH18/24-SP650_030420	04 Mar 2020 14:00			10 Mar 2020 12:45	1
Batch ID: R358249 (0)		Test Name : SUBCONTRACT ANALYSIS - TOC ANALYSIS			Matrix: Water	
HS20030169-01	LH18/24-SP650_030420	04 Mar 2020 14:00			17 Mar 2020 09:12	1
Batch ID: R358719 (0)		Test Name : SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)			Matrix: Water	
HS20030169-02	LH18/24-SP650_030420_BIX	04 Mar 2020 14:00			23 Mar 2020 15:42	1

ALS Houston, US

Date: 23-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20030169

QC BATCH REPORT

Batch ID:	R357688 (0)	Instrument:	UV-2450	Method:	ORTHO PHOSPHATE (PO4) AS P BY E365.3					
MBLK	Sample ID: MBLK-357688	Units: mg/L		Analysis Date: 05-Mar-2020 16:56						
Client ID:	Run ID: UV-2450_357688	SeqNo: 5502501		PrepDate:		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Phosphorus, Total Orthophosphate (As P)	0.0250	0.0250							U	
LCS	Sample ID: LCS-357688	Units: mg/L		Analysis Date: 05-Mar-2020 16:56						
Client ID:	Run ID: UV-2450_357688	SeqNo: 5502502		PrepDate:		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Phosphorus, Total Orthophosphate (As P)	0.227	0.0250	0.25	0	90.8	85 - 115				
MS	Sample ID: HS20030195-01MS	Units: mg/L		Analysis Date: 05-Mar-2020 16:56						
Client ID:	Run ID: UV-2450_357688	SeqNo: 5502505		PrepDate:		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Phosphorus, Total Orthophosphate (As P)	0.225	0.0250	0.25	0	90.0	80 - 120				
MSD	Sample ID: HS20030195-01MSD	Units: mg/L		Analysis Date: 05-Mar-2020 16:56						
Client ID:	Run ID: UV-2450_357688	SeqNo: 5502506		PrepDate:		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Phosphorus, Total Orthophosphate (As P)	0.226	0.0250	0.25	0	90.4	80 - 120	0.225	0.443	20	

The following samples were analyzed in this batch: HS20030169-01

ALS Houston, US

Date: 23-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20030169

QC BATCH REPORT

Batch ID: R357858 (0)		Instrument: WetChem_HS		Method: AMMONIA AS N BY E350.3(ISE)						
MBLK	Sample ID: MBLK-R357858	Units: mg/L			Analysis Date: 10-Mar-2020 12:45					
Client ID:	Run ID: WetChem_HS_357858	SeqNo: 5506052	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual	
Nitrogen, Ammonia (As N)	0.10	0.20							U	
LCS	Sample ID: LCS-R357858	Units: mg/L			Analysis Date: 10-Mar-2020 12:45					
Client ID:	Run ID: WetChem_HS_357858	SeqNo: 5506051	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual	
Nitrogen, Ammonia (As N)	10.19	0.20	10	0	102	80 - 120				
MS	Sample ID: HS20030285-01MS	Units: mg/L			Analysis Date: 10-Mar-2020 12:45					
Client ID:	Run ID: WetChem_HS_357858	SeqNo: 5506054	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual	
Nitrogen, Ammonia (As N)	10.15	0.20	10	0.167	99.8	80 - 120				
MSD	Sample ID: HS20030285-01MSD	Units: mg/L			Analysis Date: 10-Mar-2020 12:45					
Client ID:	Run ID: WetChem_HS_357858	SeqNo: 5506053	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual	
Nitrogen, Ammonia (As N)	10.13	0.20	10	0.167	99.6	80 - 120	10.15	0.187	20	

The following samples were analyzed in this batch: HS20030169-01

ALS Houston, US

Date: 23-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20030169

**QUALIFIERS,
ACRONYMS, UNITS**

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	19-028-0	27-Mar-2020
California	2919, 2019-2020	30-Apr-2020
Dept of Defense	ANAB L2231 V009	22-Dec-2021
Florida	E87611-28	30-Jun-2020
Illinois	2000322019-2	09-May-2020
Kansas	E-10352 2019-2020	31-Jul-2020
Kentucky	123043, 2019-2020	30-Apr-2020
Louisiana	03087, 2019-2020	30-Jun-2020
Maryland	343, 2019-2020	30-Jun-2020
North Carolina	624-2020	31-Dec-2020
North Dakota	R-193 2019-2020	30-Apr-2020
Oklahoma	2019-067	31-Aug-2020
Texas	T104704231-19-25	30-Apr-2020


ALS Houston, US

Date: 23-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS20030169

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20030169-01	LH18/24-SP650_030420	Login	3/5/2020 10:11:50 AM	PMG	WET083
HS20030169-01	LH18/24-SP650_030420	Login	3/5/2020 10:11:50 AM	PMG	WET083
HS20030169-01	LH18/24-SP650_030420	Login	3/5/2020 10:11:50 AM	PMG	Sub
HS20030169-02	LH18/24-SP650_030420_BIX	Login	3/5/2020 10:11:50 AM	PMG	Sub

 ALS 10450 Stancliff Rd., Suite 210 Houston, Texas 77099 Tel. +1 281 530 5656 Fax. +1 281 530 5687	CUS Date: 3/4/20 Name: Scott Company: D	TODY SEAL Time: 1430 Pass: [unclear] [unclear]	Broken By:	
			+3333	3/5/20

FedEx TRK# 0221 4380 9533 6769	THU - 05 MAR 10:30A PRIORITY OVERNIGHT
AB SGRA	77099 TX-US IAH
	
F1D 3879314 04MAR20 GGA 56RC2/64E0/05A2	



ALS Environmental
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www.alsglobal.com

March 16, 2020

Analytical Report for Service Request No: K2001983

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

RE: HS20030169

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory March 06, 2020
For your reference, these analyses have been assigned our service request number **K2001983**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3350. You may also contact me via email at Kelley.Lovejoy@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

for Kelley Lovejoy
Project Manager



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General Chemistry

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 General Chemistry

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses**

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com



Client: ALS Environmental - US
Project: HS20030169
Sample Matrix: Water

Service Request: K2001983
Date Received: 03/06/2020

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

One water sample was received for analysis at ALS Environmental on 03/06/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The sample was stored at minimum in accordance with the analytical method requirements.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by Noel D. Darr

Date 03/16/2020



Chain of Custody

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
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K2001983

10450 Stancliff Rd, Ste 210
Houston, TX 77099
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www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: Dept of Defense

COC ID: 13468

SUBCONTRACT TO:

ALS Environmental Kelso
1317 S. 13th Avenue
Kelso, WA 98626

Phone: +1 360 501 3312

CUSTOMER INFORMATION:

Company: ALS Houston
Contact: RJ Modashia
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Email: RJ.Modashia@alsglobal.com
Alternate Contact:
Email:

INVOICE INFORMATION:

Company: ALS Houston
Contact: Accounts Payable
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Reference: HS20030169
TSR: Danielle Winnings

LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
ANALYSIS REQUESTED			DUE DATE
1. HS20030169-01	LH18/24-SP650_030420	Water	04 Mar 2020 14:00
TOC Analysis for DOD Level IV			13 Mar 2020

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: _____

Date/Time: 3/5/2020 1800

Received By: _____

Date/Time: 3/6/2020 0940

Cooler ID(s): _____

Temperature(s): _____

RIGHT SOLUTIONS | RIGHT PARTNER

Page 1 of 1



PC KL

Cooler Receipt and Preservation Form

Client ALS Houston Service Request K20 01983
 Received: 3/6/2020 Opened: 3/6/2020 By: CG Unloaded: 3/6/2020 By: CG

1. Samples were received via? USPS Fed Ex UPS DHL PDX Courier Hand Delivered
 2. Samples were received in: (circle) Cooler Box Envelope Other NA
 3. Were custody seals on coolers? NA Y N If yes, how many and where? 1 Front, 1 Back
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID ^{of}	Tracking Number	NA	File
-0.3	-0.5	0.5	0.3	-0.2	379	13468 ^{NA}	1251 0295 0961		

4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
 5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
 6. Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA Y N
 If applicable, tissue samples were received: Frozen Partially Thawed Thawed
 7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
 8. Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA Y N
 9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
 10. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below NA Y N
 11. Were VOA vials received without headspace? Indicate in the table below. NA Y N
 12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____

RUSH



General Chemistry

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Analytical Report

Client: ALS Environmental - US
Project: HS20030169
Sample Matrix: Water
Analysis Method: SM 5310 C
Prep Method: None

Service Request: K2001983
Date Collected: 03/4/20
Date Received: 03/6/20
Units: mg/L
Basis: NA

Carbon, Total Organic

Sample Name	Lab Code	Result	LOQ	LOD	MDL	Dil.	Date Analyzed	Q
LH18/24-SP650_030420	K2001983-001	1.78	0.50	0.20	0.07	1	03/13/20 03:53	
Method Blank	K2001983-MB	ND U	0.50	0.20	0.07	1	03/13/20 02:55	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20030169
Sample Matrix: Water

Service Request: K2001983
Date Collected: 03/04/20
Date Received: 03/06/20
Date Analyzed: 03/13/20

Replicate Sample Summary
General Chemistry Parameters

Sample Name: LH18/24-SP650_030420
Lab Code: K2001983-001

Units: mg/L
Basis: NA

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>LOQ</u>	<u>LOD</u>	<u>MDL</u>	<u>Sample Result</u>	<u>Duplicate Sample K2001983-001DUP Result</u>	<u>Average</u>	<u>RPD</u>	<u>RPD Limit</u>
Carbon, Total Organic	SM 5310 C	0.50	0.20	0.07	1.78	1.75	1.77	2	10

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20030169
Sample Matrix: Water

Service Request: K2001983
Date Analyzed: 03/13/20
Date Extracted: NA

Lab Control Sample Summary
Carbon, Total Organic

Analysis Method: SM 5310 C
Prep Method: None

Units: mg/L
Basis: NA
Analysis Lot: 672646

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2001983-LCS	25.1	25.0	100	83-117

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20030169

Service Request: K2001983

Continuing Calibration Verification (CCV) Summary

Carbon, Total Organic

Analysis Method: SM 5310 C

Units: mg/L

	Analysis		Date	True	Measured	Percent	Acceptance
	Lot	Lab Code	Analyzed	Value	Value	Recovery	Limits
CCV1	672646	KQ2003435-03	03/12/20 19:10	25.0	26.1	104	90-110
CCV2	672646	KQ2003435-04	03/13/20 02:26	25.0	26.7	107	90-110
CCV3	672646	KQ2003435-05	03/13/20 07:09	25.0	27.1	108	90-110
CCV4	672646	KQ2003435-06	03/13/20 11:39	25.0	26.4	105	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20030169

Service Request: K2001983

Continuing Calibration Blank (CCB) Summary
Carbon, Total Organic

Analysis Method: SM 5310 C

Units: mg/L

	Analysis Lot	Lab Code	Date Analyzed	LOQ	LOD	MDL	Result	Q
CCB1	672646	KQ2003435-07	03/12/20 19:25	0.50	0.20	0.07	ND	U
CCB2	672646	KQ2003435-08	03/13/20 02:40	0.50	0.20	0.07	ND	U
CCB3	672646	KQ2003435-09	03/13/20 07:24	0.50	0.20	0.07	ND	U
CCB4	672646	KQ2003435-10	03/13/20 11:54	0.50	0.20	0.07	ND	U



Raw Data

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General Chemistry

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1896, 1924,
II II

Work Request # (Original) K2001878, 1934, 2016, 2019, 1967, 1924, 1937, 1954, 1960, 1983, 1999, 2006, 2014, 2025, 2027
 Tier: IV IV IV IV I II IV I II IV II II II I
 Date Analyzed: 3/11/20 DOC: 672644, 672645, 672646
 Analyst: BOB Run # DOC: 672647
 Analysis: TOC/DOC

**DATA QUALITY REPORT
INORGANICS**

Explain any "no" responses to questions below, and any corrective actions in the comments section below.

- 1. Is the method name and number correct and appropriate? yes/no/NA
- 2. Holding times met for all analyses and for all samples? yes/no/NA
- 3. Are calculations correct? yes/no/NA
- 4. Is the reporting basis correct? (Dry Weight) yes/no/NA
- 5. All quality control criteria met? yes/no
- 6. Is the calibration curve correlation coefficient ≥ 0.995 ? yes/no/NA
- 7. MBs, CCVs, CCBs, LCSs, Dups, and Spikes, analyzed at proper frequency? yes/no/NA
- 8. Are ICVs, CCVs, and CCBs all within acceptance limits? yes/no/NA
- 9. Are results for methods blanks all ND? yes/no/NA
- 10. Are all QC samples within acceptance criteria? (LCS % rec, MS/DMS % rec, DUP or MS/DMS RPDs, etc.) yes/ no/NA
- 11. Are all exceptions explained? yes/no/NA
- 12. Have all applicable service requests been reviewed? yes/no/NA
- 13. Are all samples labeled correctly? yes/no/NA
- 14. Have all instructions on the service request been followed? (e.g. Special MRLs, QC on a specific sample, Form V) yes/no/NA
- 15. Are detection limits and units reported correctly? yes/no/NA
- 16. Is the unused space on the benchsheet crossed out? yes/no/NA
- 17. Was analysis turned in by the due date? (n-2) (If not record SR#) yes/ no/NA

COMMENTS: K2001934 - S/S+5g report a high % RSP. However, these samples are less than six the MRL.

Final Approved by: [Signature] Date: 03/16/20 DQREPORT

Analytical Results Summary

Instrument Name: K-TOC-03

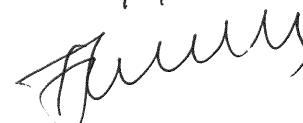
Analyst: BDITZLER

Analysis Lot: 672644 Method/Testcode: 9060/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2001878-002	Carbon, Total Organic	N/A		Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/11/20 18:30:00	N	IV
K2001878-003	Carbon, Total Organic	N/A		Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/11/20 19:26:00	N	IV
K2001878-004	Carbon, Total Organic	N/A		Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/11/20 20:22:00	Y	IV
K2001878-005	Carbon, Total Organic	N/A		Ground Water	0.40 mg/L	10 mL	0.40 mg/L J	1	0.07	0.50			3/11/20 22:28:00	N	IV
K2001878-007	Carbon, Total Organic	N/A		Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/11/20 23:24:00	N	IV
K2001878-008	Carbon, Total Organic	N/A		Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/12/20 00:49:00	N	IV
K2001878-009	Carbon, Total Organic	N/A		Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/12/20 01:44:00	N	IV
K2001878-010	Carbon, Total Organic	N/A		Ground Water	0.01 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/12/20 02:40:00	N	IV
K2001878-012	Carbon, Total Organic	N/A		Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/12/20 03:36:00	N	IV
K2001934-001	Carbon, Total Organic	N/A		Ground Water	0.06 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/12/20 04:31:00	N	IV
K2001934-002	Carbon, Total Organic	N/A		Ground Water	0.10 mg/L	10 mL	0.1 mg/L J	1	0.07	0.50			3/12/20 05:27:00	N	IV
K2001934-003	Carbon, Total Organic	N/A		Ground Water	9.33 mg/L	10 mL	9.33 mg/L	1	0.07	0.50			3/12/20 06:22:00	N	IV
K2001934-004	Carbon, Total Organic	N/A		Ground Water	8.77 mg/L	10 mL	8.77 mg/L	1	0.07	0.50			3/12/20 07:18:00	N	IV
K2001934-005	Carbon, Total Organic	N/A		Ground Water	0.28 mg/L	10 mL	0.28 mg/L J	1	0.07	0.50			3/12/20 08:14:00	N	IV
KQ2003648-01	Carbon, Total Organic	CCV		Ground Water	26.06 mg/L	10 mL	26.1 mg/L	1					3/11/20 15:55:00	N	IV
KQ2003648-02	Carbon, Total Organic	CCV		Ground Water	26.20 mg/L	10 mL	26.2 mg/L	1					3/12/20 00:19:00	N	IV
KQ2003648-03	Carbon, Total Organic	CCV		Ground Water	26.78 mg/L	10 mL	26.8 mg/L	1					3/12/20 10:05:00	N	IV
KQ2003648-04	Carbon, Total Organic	CCB		Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/11/20 16:09:00	N	IV
KQ2003648-05	Carbon, Total Organic	CCB		Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/12/20 00:34:00	N	IV
KQ2003648-06	Carbon, Total Organic	CCB		Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/12/20 10:20:00	N	IV
KQ2003648-07	Carbon, Total Organic	MB		Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/11/20 16:24:00	N	IV
KQ2003648-08	Carbon, Total Organic	LCS		Ground Water	24.36 mg/L	10 mL	24.4 mg/L	1	0.07	0.50	97		3/11/20 17:20:00	N	IV
KQ2003648-09	Carbon, Total Organic	MS	K2001878-004	Ground Water	27.27 mg/L	10 mL	27.3 mg/L	1	0.07	0.50	109		3/11/20 21:18:00	N	IV

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indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

03/16/20


Analytical Results Summary

Instrument Name: K-TOC-03

Analyst: BDITZLER

Analysis Lot: 672644 Method/Testcode: 9060/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ2003648-10	Carbon, Total Organic	MS	K2001878-004	Ground Water	26.68 mg/L	10 mL	26.7 mg/L	1	0.07	0.50	107		3/11/20 21:18:00	N	IV
KQ2003648-11	Carbon, Total Organic	MS	K2001878-004	Ground Water	26.60 mg/L	10 mL	26.6 mg/L	1	0.07	0.50	106		3/11/20 21:18:00	N	IV
KQ2003648-12	Carbon, Total Organic	MS	K2001878-004	Ground Water	26.73 mg/L	10 mL	26.7 mg/L	1	0.07	0.50	107		3/11/20 21:18:00	N	IV
KQ2003648-13	Carbon, Total Organic	MB		Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/11/20 16:24:00	N	IV
KQ2003648-14	Carbon, Total Organic	MB		Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/11/20 16:24:00	N	IV
KQ2003648-15	Carbon, Total Organic	MB		Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/11/20 16:24:00	N	IV
KQ2003648-16	Carbon, Total Organic	LCS		Ground Water	24.39 mg/L	10 mL	24.4 mg/L	1	0.07	0.50	98		3/11/20 17:20:00	N	IV
KQ2003648-17	Carbon, Total Organic	LCS		Ground Water	24.53 mg/L	10 mL	24.5 mg/L	1	0.07	0.50	98		3/11/20 17:20:00	N	IV
KQ2003648-18	Carbon, Total Organic	LCS		Ground Water	24.16 mg/L	10 mL	24.2 mg/L	1	0.07	0.50	97		3/11/20 17:20:00	N	IV
KQ2003648-19	Carbon, Total Organic	DUP	K2001878-003	Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/11/20 19:26:00	N	IV
KQ2003648-20	Carbon, Total Organic	TRP	K2001878-003	Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/11/20 19:26:00	N	IV
KQ2003648-21	Carbon, Total Organic	QUAD	K2001878-003	Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/11/20 19:26:00	N	IV
KQ2003648-22	Carbon, Total Organic	DUP	K2001878-004	Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/11/20 20:22:00	N	IV
KQ2003648-23	Carbon, Total Organic	TRP	K2001878-004	Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/11/20 20:22:00	N	IV
KQ2003648-24	Carbon, Total Organic	QUAD	K2001878-004	Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/11/20 20:22:00	N	IV
KQ2003648-25	Carbon, Total Organic	DUP	K2001878-005	Ground Water	0.33 mg/L	10 mL	0.33 mg/L J	1	0.07	0.50		18	3/11/20 22:28:00	N	IV
KQ2003648-26	Carbon, Total Organic	TRP	K2001878-005	Ground Water	0.33 mg/L	10 mL	0.33 mg/L J	1	0.07	0.50		11	3/11/20 22:28:00	N	IV
KQ2003648-27	Carbon, Total Organic	QUAD	K2001878-005	Ground Water	0.33 mg/L	10 mL	0.33 mg/L J	1	0.07	0.50		9	3/11/20 22:28:00	N	IV
KQ2003648-28	Carbon, Total Organic	DUP	K2001878-007	Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/11/20 23:24:00	N	IV
KQ2003648-29	Carbon, Total Organic	TRP	K2001878-007	Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/11/20 23:24:00	N	IV
KQ2003648-30	Carbon, Total Organic	QUAD	K2001878-007	Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/11/20 23:24:00	N	IV
KQ2003648-31	Carbon, Total Organic	DUP	K2001878-008	Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/12/20 00:49:00	N	IV
KQ2003648-32	Carbon, Total Organic	TRP	K2001878-008	Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/12/20 00:49:00	N	IV

indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03

Analyst: BDITZLER

Analysis Lot: 672644 Method/Testcode: 9060/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ2003648-33	Carbon, Total Organic	QUAD	K2001878-008	Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/12/20 00:49:00	N	IV
KQ2003648-34	Carbon, Total Organic	DUP	K2001878-009	Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/12/20 01:44:00	N	IV
KQ2003648-35	Carbon, Total Organic	TRP	K2001878-009	Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/12/20 01:44:00	N	IV
KQ2003648-36	Carbon, Total Organic	QUAD	K2001878-009	Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/12/20 01:44:00	N	IV
KQ2003648-37	Carbon, Total Organic	DUP	K2001878-010	Ground Water	0.01 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/12/20 02:40:00	N	IV
KQ2003648-38	Carbon, Total Organic	TRP	K2001878-010	Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/12/20 02:40:00	N	IV
KQ2003648-39	Carbon, Total Organic	QUAD	K2001878-010	Ground Water	0.04 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/12/20 02:40:00	N	IV
KQ2003648-40	Carbon, Total Organic	DUP	K2001878-012	Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/12/20 03:36:00	N	IV
KQ2003648-41	Carbon, Total Organic	TRP	K2001878-012	Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/12/20 03:36:00	N	IV
KQ2003648-42	Carbon, Total Organic	QUAD	K2001878-012	Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/12/20 03:36:00	N	IV
KQ2003648-43	Carbon, Total Organic	DUP	K2001878-002	Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/11/20 18:30:00	N	IV
KQ2003648-44	Carbon, Total Organic	TRP	K2001878-002	Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/11/20 18:30:00	N	IV
KQ2003648-45	Carbon, Total Organic	QUAD	K2001878-002	Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/11/20 18:30:00	N	IV
KQ2003648-46	Carbon, Total Organic	DUP	K2001934-001	Ground Water	0.04 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/12/20 04:31:00	N	IV
KQ2003648-47	Carbon, Total Organic	TRP	K2001934-001	Ground Water	0.07 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/12/20 04:31:00	N	IV
KQ2003648-48	Carbon, Total Organic	QUAD	K2001934-001	Ground Water	0.05 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/12/20 04:31:00	N	IV
KQ2003648-49	Carbon, Total Organic	DUP	K2001934-002	Ground Water	0.06 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/12/20 05:27:00	N	IV
KQ2003648-50	Carbon, Total Organic	TRP	K2001934-002	Ground Water	0.07 mg/L	10 mL	0.07 mg/L J	1	0.07	0.50		NC	3/12/20 05:27:00	N	IV
KQ2003648-51	Carbon, Total Organic	QUAD	K2001934-002	Ground Water	0.05 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/12/20 05:27:00	N	IV
KQ2003648-52	Carbon, Total Organic	DUP	K2001934-003	Ground Water	9.31 mg/L	10 mL	9.31 mg/L	1	0.07	0.50		<1	3/12/20 06:22:00	N	IV
KQ2003648-53	Carbon, Total Organic	TRP	K2001934-003	Ground Water	9.31 mg/L	10 mL	9.31 mg/L	1	0.07	0.50		<1	3/12/20 06:22:00	N	IV
KQ2003648-54	Carbon, Total Organic	QUAD	K2001934-003	Ground Water	9.58 mg/L	10 mL	9.58 mg/L	1	0.07	0.50		1	3/12/20 06:22:00	N	IV
KQ2003648-55	Carbon, Total Organic	DUP	K2001934-004	Ground Water	8.75 mg/L	10 mL	8.75 mg/L	1	0.07	0.50		<1	3/12/20 07:18:00	N	IV

indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03

Analyst: BDITZLER

Analysis Lot: 672644 Method/Testcode: 9060/TOC T

<u>Lab Code</u>	<u>Target Analytes</u>	<u>QC</u>	<u>Parent Sample</u>	<u>Matrix</u>	<u>Raw Result</u>	<u>Sample Amt.</u>	<u>Final Result</u>	<u>Dil</u>	<u>MDL</u>	<u>PQL</u>	<u>% Rec</u>	<u>% RSD</u>	<u>Date Analyzed</u>	<u>QC?</u>	<u>Tier</u>
KQ2003648-56	Carbon, Total Organic	TRP	K2001934-004	Ground Water	8.76 mg/L	10 mL	8.76 mg/L	1	0.07	0.50		<1	3/12/20 07:18:00	N	IV
KQ2003648-57	Carbon, Total Organic	QUAD	K2001934-004	Ground Water	8.81 mg/L	10 mL	8.81 mg/L	1	0.07	0.50		<1	3/12/20 07:18:00	N	IV
KQ2003648-58	Carbon, Total Organic	DUP	K2001934-005	Ground Water	0.31 mg/L	10 mL	0.31 mg/L	J 1	0.07	0.50		13	3/12/20 08:14:00	N	IV
KQ2003648-59	Carbon, Total Organic	TRP	K2001934-005	Ground Water	0.20 mg/L	10 mL	0.20 mg/L	J 1	0.07	0.50		21*	3/12/20 08:14:00	N	IV
KQ2003648-60	Carbon, Total Organic	QUAD	K2001934-005	Ground Water	0.15 mg/L	10 mL	0.15 mg/L	J 1	0.07	0.50		31*	3/12/20 08:14:00	N	IV

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indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03

Analyst: BDITZLER

Analysis Lot: 672645 Method/Testcode: 9060/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2001878-011	Carbon, Total Organic	N/A		Ground Water	0.13 mg/L	10 mL	0.13 mg/L	J 1	0.07	0.50			3/12/20 12:26:00	Y	IV
K2001934-006	Carbon, Total Organic	N/A		Ground Water	6.37 mg/L	10 mL	6.37 mg/L	1	0.07	0.50			3/12/20 09:09:00	N	IV
K2002016-001	Carbon, Total Organic	N/A		Ground Water	1.09 mg/L	10 mL	1.09 mg/L	1	0.07	0.50			3/12/20 14:32:00	N	IV
K2002016-002	Carbon, Total Organic	N/A		Ground Water	0.18 mg/L	10 mL	0.18 mg/L	J 1	0.07	0.50			3/12/20 15:27:00	N	IV
K2002016-003	Carbon, Total Organic	N/A		Ground Water	2.21 mg/L	10 mL	2.21 mg/L	1	0.07	0.50			3/12/20 16:23:00	N	IV
K2002016-004	Carbon, Total Organic	N/A		Ground Water	0.51 mg/L	10 mL	0.51 mg/L	1	0.07	0.50			3/12/20 17:19:00	N	IV
K2002016-006	Carbon, Total Organic	N/A		Ground Water	0.00 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/12/20 18:14:00	N	IV
K2002016-007	Carbon, Total Organic	N/A		Ground Water	3.08 mg/L	10 mL	3.08 mg/L	1	0.07	0.50			3/12/20 19:39:00	N	IV
K2002016-008	Carbon, Total Organic	N/A		Ground Water	0.76 mg/L	10 mL	0.76 mg/L	1	0.07	0.50			3/12/20 20:35:00	N	IV
K2002016-009	Carbon, Total Organic	N/A		Ground Water	0.59 mg/L	10 mL	0.59 mg/L	1	0.07	0.50			3/12/20 21:31:00	N	IV
K2002019-001	Carbon, Total Organic	N/A		Ground Water	2.49 mg/L	10 mL	125 mg/L	50	4	25			3/12/20 22:26:00	Y	IV
K2002019-002	Carbon, Total Organic	N/A		Ground Water	2.63 mg/L	10 mL	132 mg/L	50	4	25			3/13/20 00:33:00	N	IV
KQ2003649-01	Carbon, Total Organic	CCV		Ground Water	26.20 mg/L	10 mL	26.2 mg/L	1					3/12/20 00:19:00	N	IV
KQ2003649-02	Carbon, Total Organic	CCV		Ground Water	26.78 mg/L	10 mL	26.8 mg/L	1					3/12/20 10:05:00	N	IV
KQ2003649-03	Carbon, Total Organic	CCV		Ground Water	26.07 mg/L	10 mL	26.1 mg/L	1					3/12/20 19:10:00	N	IV
KQ2003649-04	Carbon, Total Organic	CCV		Ground Water	26.74 mg/L	10 mL	26.7 mg/L	1					3/13/20 02:26:00	N	IV
KQ2003649-05	Carbon, Total Organic	CCB		Ground Water	0.00 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/12/20 00:34:00	N	IV
KQ2003649-06	Carbon, Total Organic	CCB		Ground Water	0.00 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/12/20 10:20:00	N	IV
KQ2003649-07	Carbon, Total Organic	CCB		Ground Water	0.00 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/12/20 19:25:00	N	IV
KQ2003649-08	Carbon, Total Organic	CCB		Ground Water	0.00 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/13/20 02:40:00	N	IV
KQ2003649-09	Carbon, Total Organic	MB		Ground Water	0.00 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/12/20 10:34:00	N	IV
KQ2003649-10	Carbon, Total Organic	MB		Ground Water	0.00 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/12/20 10:34:00	N	IV
KQ2003649-11	Carbon, Total Organic	MB		Ground Water	0.00 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/12/20 10:34:00	N	IV

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indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

03/16/20
Humbly

Analytical Results Summary

Instrument Name: K-TOC-03

Analyst: BDITZLER

Analysis Lot: 672645 Method/Testcode: 9060/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ2003649-12	Carbon, Total Organic	MB		Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/12/20 10:34:00	N	IV
KQ2003649-13	Carbon, Total Organic	LCS		Ground Water	24.67 mg/L	10 mL	24.7 mg/L	1	0.07	0.50	99		3/12/20 11:30:00	N	IV
KQ2003649-14	Carbon, Total Organic	LCS		Ground Water	24.54 mg/L	10 mL	24.5 mg/L	1	0.07	0.50	98		3/12/20 11:30:00	N	IV
KQ2003649-15	Carbon, Total Organic	LCS		Ground Water	24.62 mg/L	10 mL	24.6 mg/L	1	0.07	0.50	98		3/12/20 11:30:00	N	IV
KQ2003649-16	Carbon, Total Organic	LCS		Ground Water	24.43 mg/L	10 mL	24.4 mg/L	1	0.07	0.50	98		3/12/20 11:30:00	N	IV
KQ2003649-17	Carbon, Total Organic	MS	K2002019-001	Ground Water	28.48 mg/L	10 mL	1420 mg/L	50	4	25	104		3/12/20 23:23:00	N	IV
KQ2003649-18	Carbon, Total Organic	MS	K2002019-001	Ground Water	28.71 mg/L	10 mL	1440 mg/L	50	4	25	105		3/12/20 23:23:00	N	IV
KQ2003649-19	Carbon, Total Organic	MS	K2002019-001	Ground Water	28.74 mg/L	10 mL	1440 mg/L	50	4	25	105		3/12/20 23:23:00	N	IV
KQ2003649-20	Carbon, Total Organic	MS	K2002019-001	Ground Water	28.45 mg/L	10 mL	1420 mg/L	50	4	25	104		3/12/20 23:23:00	N	IV
KQ2003649-21	Carbon, Total Organic	MS	K2001878-011	Ground Water	27.00 mg/L	10 mL	27.0 mg/L	1	0.07	0.50	107		3/12/20 13:21:00	N	IV
KQ2003649-22	Carbon, Total Organic	MS	K2001878-011	Ground Water	26.93 mg/L	10 mL	26.9 mg/L	1	0.07	0.50	107		3/12/20 13:21:00	N	IV
KQ2003649-23	Carbon, Total Organic	MS	K2001878-011	Ground Water	26.86 mg/L	10 mL	26.9 mg/L	1	0.07	0.50	107		3/12/20 13:21:00	N	IV
KQ2003649-24	Carbon, Total Organic	MS	K2001878-011	Ground Water	27.08 mg/L	10 mL	27.1 mg/L	1	0.07	0.50	108		3/12/20 13:21:00	N	IV
KQ2003649-25	Carbon, Total Organic	DUP	K2001878-011	Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/12/20 12:26:00	N	IV
KQ2003649-26	Carbon, Total Organic	TRP	K2001878-011	Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/12/20 12:26:00	N	IV
KQ2003649-27	Carbon, Total Organic	QUAD	K2001878-011	Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/12/20 12:26:00	N	IV
KQ2003649-28	Carbon, Total Organic	DUP	K2001934-006	Ground Water	6.59 mg/L	10 mL	6.59 mg/L	1	0.07	0.50		3	3/12/20 09:09:00	N	IV
KQ2003649-29	Carbon, Total Organic	TRP	K2001934-006	Ground Water	6.79 mg/L	10 mL	6.79 mg/L	1	0.07	0.50		3	3/12/20 09:09:00	N	IV
KQ2003649-30	Carbon, Total Organic	QUAD	K2001934-006	Ground Water	6.78 mg/L	10 mL	6.78 mg/L	1	0.07	0.50		3	3/12/20 09:09:00	N	IV
KQ2003649-31	Carbon, Total Organic	DUP	K2002016-002	Ground Water	0.17 mg/L	10 mL	0.17 mg/L J	1	0.07	0.50		7	3/12/20 15:27:00	N	IV
KQ2003649-32	Carbon, Total Organic	TRP	K2002016-002	Ground Water	0.17 mg/L	10 mL	0.17 mg/L J	1	0.07	0.50		4	3/12/20 15:27:00	N	IV
KQ2003649-33	Carbon, Total Organic	QUAD	K2002016-002	Ground Water	0.16 mg/L	10 mL	0.16 mg/L J	1	0.07	0.50		4	3/12/20 15:27:00	N	IV
KQ2003649-34	Carbon, Total Organic	DUP	K2002016-003	Ground Water	2.10 mg/L	10 mL	2.10 mg/L	1	0.07	0.50		5	3/12/20 16:23:00	N	IV

indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03

Analyst: BDITZLER

Analysis Lot: 672645 Method/Testcode: 9060/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ2003649-35	Carbon, Total Organic	TRP	K2002016-003	Ground Water	2.10 mg/L	10 mL	2.10 mg/L	1	0.07	0.50		3	3/12/20 16:23:00	N	IV
KQ2003649-36	Carbon, Total Organic	QUAD	K2002016-003	Ground Water	2.11 mg/L	10 mL	2.11 mg/L	1	0.07	0.50		2	3/12/20 16:23:00	N	IV
KQ2003649-37	Carbon, Total Organic	DUP	K2002016-004	Ground Water	0.58 mg/L	10 mL	0.58 mg/L	1	0.07	0.50		13	3/12/20 17:19:00	N	IV
KQ2003649-38	Carbon, Total Organic	TRP	K2002016-004	Ground Water	0.51 mg/L	10 mL	0.51 mg/L	1	0.07	0.50		8	3/12/20 17:19:00	N	IV
KQ2003649-39	Carbon, Total Organic	QUAD	K2002016-004	Ground Water	0.56 mg/L	10 mL	0.56 mg/L	1	0.07	0.50		7	3/12/20 17:19:00	N	IV
KQ2003649-40	Carbon, Total Organic	DUP	K2002016-006	Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/12/20 18:14:00	N	IV
KQ2003649-41	Carbon, Total Organic	TRP	K2002016-006	Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/12/20 18:14:00	N	IV
KQ2003649-42	Carbon, Total Organic	QUAD	K2002016-006	Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/12/20 18:14:00	N	IV
KQ2003649-43	Carbon, Total Organic	DUP	K2002016-007	Ground Water	3.04 mg/L	10 mL	3.04 mg/L	1	0.07	0.50		1	3/12/20 19:39:00	N	IV
KQ2003649-44	Carbon, Total Organic	TRP	K2002016-007	Ground Water	3.09 mg/L	10 mL	3.09 mg/L	1	0.07	0.50		<1	3/12/20 19:39:00	N	IV
KQ2003649-45	Carbon, Total Organic	QUAD	K2002016-007	Ground Water	3.05 mg/L	10 mL	3.05 mg/L	1	0.07	0.50		<1	3/12/20 19:39:00	N	IV
KQ2003649-46	Carbon, Total Organic	DUP	K2002016-008	Ground Water	0.68 mg/L	10 mL	0.68 mg/L	1	0.07	0.50		11	3/12/20 20:35:00	N	IV
KQ2003649-47	Carbon, Total Organic	TRP	K2002016-008	Ground Water	0.72 mg/L	10 mL	0.72 mg/L	1	0.07	0.50		5	3/12/20 20:35:00	N	IV
KQ2003649-48	Carbon, Total Organic	QUAD	K2002016-008	Ground Water	0.66 mg/L	10 mL	0.66 mg/L	1	0.07	0.50		6	3/12/20 20:35:00	N	IV
KQ2003649-49	Carbon, Total Organic	DUP	K2002016-009	Ground Water	0.52 mg/L	10 mL	0.52 mg/L	1	0.07	0.50		12	3/12/20 21:31:00	N	IV
KQ2003649-50	Carbon, Total Organic	TRP	K2002016-009	Ground Water	0.56 mg/L	10 mL	0.56 mg/L	1	0.07	0.50		6	3/12/20 21:31:00	N	IV
KQ2003649-51	Carbon, Total Organic	QUAD	K2002016-009	Ground Water	0.54 mg/L	10 mL	0.54 mg/L	1	0.07	0.50		5	3/12/20 21:31:00	N	IV
KQ2003649-52	Carbon, Total Organic	DUP	K2002016-001	Ground Water	1.06 mg/L	10 mL	1.06 mg/L	1	0.07	0.50		3	3/12/20 14:32:00	N	IV
KQ2003649-53	Carbon, Total Organic	TRP	K2002016-001	Ground Water	1.08 mg/L	10 mL	1.08 mg/L	1	0.07	0.50		2	3/12/20 14:32:00	N	IV
KQ2003649-54	Carbon, Total Organic	QUAD	K2002016-001	Ground Water	1.10 mg/L	10 mL	1.10 mg/L	1	0.07	0.50		2	3/12/20 14:32:00	N	IV
KQ2003649-55	Carbon, Total Organic	DUP	K2002019-001	Ground Water	2.48 mg/L	10 mL	124 mg/L	50	4	25		<1	3/12/20 22:26:00	N	IV
KQ2003649-56	Carbon, Total Organic	TRP	K2002019-001	Ground Water	2.52 mg/L	10 mL	126 mg/L	50	4	25		<1	3/12/20 22:26:00	N	IV
KQ2003649-57	Carbon, Total Organic	QUAD	K2002019-001	Ground Water	2.55 mg/L	10 mL	127 mg/L	50	4	25		1	3/12/20 22:26:00	N	IV

indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03

Analyst: BDITZLER

Analysis Lot: 672645 Method/Testcode: 9060/TOC T

<u>Lab Code</u>	<u>Target Analytes</u>	<u>QC</u>	<u>Parent Sample</u>	<u>Matrix</u>	<u>Raw Result</u>	<u>Sample Amt.</u>	<u>Final Result</u>	<u>Dil</u>	<u>MDL</u>	<u>PQL</u>	<u>% Rec</u>	<u>% RSD</u>	<u>Date Analyzed</u>	<u>QC?</u>	<u>Tier</u>
KQ2003649-58	Carbon, Total Organic	DUP	K2002019-002	Ground Water	2.55 mg/L	10 mL	128 mg/L	50	4	25		3	3/13/20 00:33:00	N	IV
KQ2003649-59	Carbon, Total Organic	TRP	K2002019-002	Ground Water	2.63 mg/L	10 mL	132 mg/L	50	4	25		2	3/13/20 00:33:00	N	IV
KQ2003649-60	Carbon, Total Organic	QUAD	K2002019-002	Ground Water	2.61 mg/L	10 mL	131 mg/L	50	4	25		2	3/13/20 00:33:00	N	IV

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indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

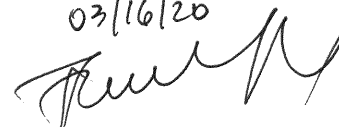
Instrument Name: K-TOC-03

Analyst: BDITZLER

Analysis Lot: 672646 Method/Testcode: SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2001907-002	Carbon, Total Organic	N/A		Drinking Water	0.38 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/13/20 04:21:00	N	I
K2001924-001	Carbon, Total Organic	N/A		Water	3.75 mg/L	10 mL	3.75 mg/L	1	0.07	0.50			3/13/20 04:49:00	N	II
K2001924-003	Carbon, Total Organic	N/A		Water	2.66 mg/L	10 mL	2.66 mg/L	1	0.07	0.50			3/13/20 05:17:00	N	II
K2001937-001	Carbon, Total Organic	N/A		Water	0.13 mg/L	10 mL	0.13 mg/L J	1	0.07	0.50			3/13/20 07:39:00	N	IV
K2001954-001	Carbon, Total Organic	N/A		Water	3.97 mg/L	10 mL	3.97 mg/L	1	0.07	0.50			3/13/20 01:28:00	N	I
K2001960-001	Carbon, Total Organic	N/A		Water	4.85 mg/L	10 mL	4.85 mg/L	1	0.07	0.50			3/13/20 03:25:00	N	II
K2001983-001	Carbon, Total Organic	N/A		Water	1.78 mg/L	10 mL	1.78 mg/L	1	0.07	0.50			3/13/20 03:53:00	N	IV
K2001999-001	Carbon, Total Organic	N/A		Water	0.41 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/13/20 05:45:00	N	II
K2002006-001	Carbon, Total Organic	N/A		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/13/20 06:13:00	N	II
K2002014-001	Carbon, Total Organic	N/A		Water	3.58 mg/L	10 mL	3.58 mg/L	1	0.07	0.50			3/13/20 08:35:00	N	II
K2002025-002	Carbon, Total Organic	N/A		Water	21.64 mg/L	10 mL	21.6 mg/L	1	0.07	0.50			3/13/20 06:41:00	N	II
K2002051-001	Carbon, Total Organic	N/A		Water	4.45 mg/L	10 mL	4.45 mg/L	1	0.07	0.50			3/13/20 08:07:00	N	I
KQ2003435-01	Carbon, Total Organic	N/A		Water	3.97 mg/L	10 mL	3.97 mg/L	1	0.07	0.50			3/13/20 01:28:00	N	II
KQ2003435-02	Carbon, Total Organic	MS	K2001954-001	Water	32.29 mg/L	10 mL	32.3 mg/L	1	0.07	0.50	113		3/13/20 01:57:00	N	I
KQ2003435-03	Carbon, Total Organic	CCV		Water	26.07 mg/L	10 mL	26.1 mg/L	1					3/12/20 19:10:00	N	I
KQ2003435-03	Carbon, Total Organic	CCV		Water	26.07 mg/L	10 mL	26.1 mg/L	1					3/12/20 19:10:00	N	I
KQ2003435-04	Carbon, Total Organic	CCV		Water	26.74 mg/L	10 mL	26.7 mg/L	1					3/13/20 02:26:00	N	I
KQ2003435-04	Carbon, Total Organic	CCV		Water	26.74 mg/L	10 mL	26.7 mg/L	1					3/13/20 02:26:00	N	I
KQ2003435-05	Carbon, Total Organic	CCV		Water	27.10 mg/L	10 mL	27.1 mg/L	1					3/13/20 07:09:00	N	I
KQ2003435-05	Carbon, Total Organic	CCV		Water	27.10 mg/L	10 mL	27.1 mg/L	1					3/13/20 07:09:00	N	I
KQ2003435-06	Carbon, Total Organic	CCV		Water	26.36 mg/L	10 mL	26.4 mg/L	1					3/13/20 11:39:00	N	I
KQ2003435-06	Carbon, Total Organic	CCV		Water	26.36 mg/L	10 mL	26.4 mg/L	1					3/13/20 11:39:00	N	I
KQ2003435-07	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/12/20 19:25:00	N	I
KQ2003435-07	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/12/20 19:25:00	N	I
KQ2003435-08	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/13/20 02:40:00	N	I
KQ2003435-08	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/13/20 02:40:00	N	I
KQ2003435-09	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/13/20 07:24:00	N	I
KQ2003435-09	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/13/20 07:24:00	N	I
KQ2003435-10	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/13/20 11:54:00	N	I
KQ2003435-10	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/13/20 11:54:00	N	I
KQ2003435-11	Carbon, Total Organic	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/13/20 02:55:00	N	I
KQ2003435-11	Carbon, Total Organic	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/13/20 02:55:00	N	I
KQ2003435-12	Carbon, Total Organic	LCS		Water	25.11 mg/L	10 mL	25.1 mg/L	1	0.07	0.50	100		3/13/20 03:10:00	N	I
KQ2003435-12	Carbon, Total Organic	LCS		Water	25.11 mg/L	10 mL	25.1 mg/L	1	0.07	0.50	100		3/13/20 03:10:00	N	I
KQ2003435-13	Carbon, Total Organic	MS	KQ2003435-01	Water	32.29 mg/L	10 mL	32.3 mg/L	1	0.07	0.50	113		3/13/20 01:57:00	N	II

indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

03/16/20


Analytical Results Summary

Instrument Name: K-TOC-03

Analyst: BDITZLER

Analysis Lot: 672646 Method/Testcode: SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ2003435-14	Carbon, Total Organic	DUP	K2001907-002	Drinking Water	0.33 mg/L	10 mL	0.33 mg/L	J 1	0.07	0.50		NC	3/13/20 04:21:00	N	I
KQ2003435-15	Carbon, Total Organic	DUP	KQ2003435-01	Water	3.91 mg/L	10 mL	3.91 mg/L	1	0.07	0.50		2	3/13/20 01:28:00	N	II
KQ2003435-16	Carbon, Total Organic	DUP	K2002051-001	Water	4.31 mg/L	10 mL	4.31 mg/L	1	0.07	0.50		3	3/13/20 08:07:00	N	I
KQ2003435-17	Carbon, Total Organic	DUP	K2001999-001	Water	0.39 mg/L	10 mL	0.39 mg/L	J 1	0.07	0.50		NC	3/13/20 05:45:00	N	II
KQ2003435-18	Carbon, Total Organic	DUP	K2002006-001	Water	0.00 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50		NC	3/13/20 06:13:00	N	II
KQ2003435-19	Carbon, Total Organic	DUP	K2002014-001	Water	3.49 mg/L	10 mL	3.49 mg/L	1	0.07	0.50		2	3/13/20 08:35:00	N	II
KQ2003435-20	Carbon, Total Organic	DUP	K2002025-002	Water	20.87 mg/L	10 mL	20.9 mg/L	1	0.07	0.50		4	3/13/20 06:41:00	N	II
KQ2003435-21	Carbon, Total Organic	DUP	K2001983-001	Water	1.75 mg/L	10 mL	1.75 mg/L	1	0.07	0.50		2	3/13/20 03:53:00	N	IV
KQ2003435-22	Carbon, Total Organic	DUP	K2001924-001	Water	3.74 mg/L	10 mL	3.74 mg/L	1	0.07	0.50		<1	3/13/20 04:49:00	N	II
KQ2003435-23	Carbon, Total Organic	DUP	K2001924-003	Water	2.63 mg/L	10 mL	2.63 mg/L	1	0.07	0.50		1	3/13/20 05:17:00	N	II
KQ2003435-24	Carbon, Total Organic	DUP	K2001937-001	Water	0.14 mg/L	10 mL	0.14 mg/L	J 1	0.07	0.50		8	3/13/20 07:39:00	N	IV
KQ2003435-25	Carbon, Total Organic	DUP	K2001954-001	Water	3.91 mg/L	10 mL	3.91 mg/L	1	0.07	0.50		2	3/13/20 01:28:00	N	I
KQ2003435-26	Carbon, Total Organic	DUP	K2001960-001	Water	4.72 mg/L	10 mL	4.72 mg/L	1	0.07	0.50		3	3/13/20 03:25:00	N	II

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indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

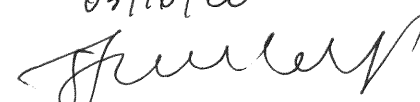
Instrument Name: K-TOC-03

Analyst: BDITZLER

Analysis Lot: 672647 Method/Testcode: SM 5310 C/TOC D

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2001896-001	Carbon, Dissolved Organic (DOC)	N/A		Effluent	1.05 mg/L	10 mL	1.05 mg/L	1	0.07	0.50			3/13/20 10:28:00	N	II
K2001896-002	Carbon, Dissolved Organic (DOC)	N/A		Water	1.03 mg/L	10 mL	1.03 mg/L	1	0.07	0.50			3/13/20 10:56:00	N	II
K2001924-002	Carbon, Dissolved Organic (DOC)	N/A		Water	3.63 mg/L	10 mL	3.63 mg/L	1	0.07	0.50			3/13/20 09:03:00	N	II
K2001924-004	Carbon, Dissolved Organic (DOC)	N/A		Water	2.54 mg/L	10 mL	2.54 mg/L	1	0.07	0.50			3/13/20 10:00:00	N	II
K2002014-001	Carbon, Dissolved Organic (DOC)	N/A		Water	3.00 mg/L	10 mL	3.00 mg/L	1	0.07	0.50			3/13/20 12:53:00	N	II
KQ2003436-01	Carbon, Dissolved Organic (DOC)	N/A		Water	3.63 mg/L	10 mL	3.63 mg/L	1	0.07	0.50			3/13/20 09:03:00	N	II
KQ2003436-02	Carbon, Dissolved Organic (DOC)	MS	K2001924-002	Water	30.90 mg/L	10 mL	30.9 mg/L	1	0.07	0.50	109		3/13/20 09:31:00	N	II
KQ2003436-03	Carbon, Dissolved Organic (DOC)	MS	KQ2003436-01	Water	30.90 mg/L	10 mL	30.9 mg/L	1	0.07	0.50	109		3/13/20 09:31:00	N	II
KQ2003436-04	Carbon, Dissolved Organic (DOC)	CCV		Water	27.10 mg/L	10 mL	27.1 mg/L	1					3/13/20 07:09:00	N	II
KQ2003436-04	Carbon, Dissolved Organic (DOC)	CCV		Water	27.10 mg/L	10 mL	27.1 mg/L	1					3/13/20 07:09:00	N	II
KQ2003436-05	Carbon, Dissolved Organic (DOC)	CCV		Water	26.36 mg/L	10 mL	26.4 mg/L	1					3/13/20 11:39:00	N	II
KQ2003436-05	Carbon, Dissolved Organic (DOC)	CCV		Water	26.36 mg/L	10 mL	26.4 mg/L	1					3/13/20 11:39:00	N	II
KQ2003436-06	Carbon, Dissolved Organic (DOC)	CCV		Water	26.30 mg/L	10 mL	26.3 mg/L	1					3/13/20 13:21:00	N	II
KQ2003436-06	Carbon, Dissolved Organic (DOC)	CCV		Water	26.30 mg/L	10 mL	26.3 mg/L	1					3/13/20 13:21:00	N	II
KQ2003436-07	Carbon, Dissolved Organic (DOC)	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/13/20 07:24:00	N	II
KQ2003436-07	Carbon, Dissolved Organic (DOC)	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/13/20 07:24:00	N	II
KQ2003436-08	Carbon, Dissolved Organic (DOC)	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/13/20 11:54:00	N	II
KQ2003436-08	Carbon, Dissolved Organic (DOC)	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/13/20 11:54:00	N	II
KQ2003436-09	Carbon, Dissolved Organic (DOC)	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/13/20 13:35:00	N	II
KQ2003436-09	Carbon, Dissolved Organic (DOC)	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/13/20 13:35:00	N	II
KQ2003436-10	Carbon, Dissolved Organic (DOC)	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/13/20 12:09:00	N	II
KQ2003436-10	Carbon, Dissolved Organic (DOC)	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/13/20 12:09:00	N	II
KQ2003436-11	Carbon, Dissolved Organic (DOC)	LCS		Water	24.91 mg/L	10 mL	24.9 mg/L	1	0.07	0.50	100		3/13/20 12:23:00	N	II
KQ2003436-11	Carbon, Dissolved Organic (DOC)	LCS		Water	24.91 mg/L	10 mL	24.9 mg/L	1	0.07	0.50	100		3/13/20 12:23:00	N	II
KQ2003436-12	Carbon, Dissolved Organic (DOC)	DUP	K2001896-002	Water	1.02 mg/L	10 mL	1.02 mg/L	1	0.07	0.50		<1	3/13/20 10:56:00	N	II
KQ2003436-13	Carbon, Dissolved Organic (DOC)	DUP	K2001896-001	Effluent	1.05 mg/L	10 mL	1.05 mg/L	1	0.07	0.50		<1	3/13/20 10:28:00	N	II
KQ2003436-14	Carbon, Dissolved Organic (DOC)	DUP	K2001924-002	Water	3.55 mg/L	10 mL	3.55 mg/L	1	0.07	0.50		2	3/13/20 09:03:00	N	II

indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

03/16/20


Analytical Results Summary

Instrument Name: K-TOC-03

Analyst: BDITZLER

Analysis Lot: 672647 Method/Testcode: SM 5310 C/TOC D

<u>Lab Code</u>	<u>Target Analytes</u>	<u>QC</u>	<u>Parent Sample</u>	<u>Matrix</u>	<u>Raw Result</u>	<u>Sample Amt.</u>	<u>Final Result</u>	<u>Dil</u>	<u>MDL</u>	<u>PQL</u>	<u>% Rec</u>	<u>% RSD</u>	<u>Date Analyzed</u>	<u>QC?</u>	<u>Tier</u>
KQ2003436-15	Carbon, Dissolved Organic (DOC)	DUP	K2001924-004	Water	2.52 mg/L	10 mL	2.52 mg/L	1	0.07	0.50		<1	3/13/20 10:00:00	N	II
KQ2003436-16	Carbon, Dissolved Organic	DUP	K2002014-001	Water	3.13 mg/L	10 mL	3.13 mg/L	1	0.07	0.50		4	3/13/20 12:53:00	N	II
KQ2003436-17	Carbon, Dissolved Organic	DUP	KQ2003436-01	Water	3.55 mg/L	10 mL	3.55 mg/L	1	0.07	0.50		2	3/13/20 09:03:00	N	II

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indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

TOC: 672644,
672645,
672646
DOC: 672647

Schedule: 03112020 CAL

Version: 2

Instrument: Fusion1

Last Saved by: Fusion1 (Fusion1)

Last Saved on: 2020/03/11 12:07 - Wednesday

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use
(Clean)	Clean	Clean		1	True
(Clean)	Clean	Clean		1	True
(Clean)	Clean	Clean		1	True
(Blank)	Blank	Reagent/Acid Blank		1	True
D	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	2	True
D	Cal Standard	[TOC] CAS_salt_010711 CAL [DI Water]	CAS_salt_010711 (CAS_salt_010711)	1	True
A	Cal Standard	[TOC] CAS_salt_010711 CAL [0.500 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
A	Cal Standard	[TOC] CAS_salt_010711 CAL [1.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
A	Cal Standard	[TOC] CAS_salt_010711 CAL [5.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
B	Cal Standard	[TOC] CAS_salt_010711 CAL [10 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
B	Cal Standard	[TOC] CAS_salt_010711 CAL [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
B	Cal Standard	[TOC] CAS_salt_010711 CAL [50 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
1	Sample	MB1	CAS_salt_010711 (CAS_salt_010711)	4	True
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	4	True
2	Sample	ICS	CAS_salt_010711 (CAS_salt_010711)	1	True
3	Sample	K2001878-002.08	CAS_salt_010711 (CAS_salt_010711)	4	True
4	Sample	K2001878-003.08	CAS_salt_010711 (CAS_salt_010711)	4	True
5	Sample	K2001878-004.21	CAS_salt_010711 (CAS_salt_010711)	4	True
6	Sample	K2001878-004.21 ms	CAS_salt_010711 (CAS_salt_010711)	4	True
7	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True
8	Sample	K2001878-005.08	CAS_salt_010711 (CAS_salt_010711)	4	True
9	Sample	K2001878-007.08	CAS_salt_010711 (CAS_salt_010711)	4	True
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
10	Sample	K2001878-008.08	CAS_salt_010711 (CAS_salt_010711)	4	True
11	Sample	K2001878-009.08	CAS_salt_010711 (CAS_salt_010711)	4	True
12	Sample	K2001878-010.08	CAS_salt_010711 (CAS_salt_010711)	4	True
13	Sample	K2001878-012.08	CAS_salt_010711 (CAS_salt_010711)	4	True
14	Sample	K2001934-001.08	CAS_salt_010711 (CAS_salt_010711)	4	True
15	Sample	K2001934-002.08	CAS_salt_010711 (CAS_salt_010711)	4	True
16	Sample	K2001934-003.08	CAS_salt_010711 (CAS_salt_010711)	4	True
17	Sample	K2001934-004.08	CAS_salt_010711 (CAS_salt_010711)	4	True
18	Sample	K2001934-005.08	CAS_salt_010711 (CAS_salt_010711)	4	True
19	Sample	K2001934-006.08	CAS_salt_010711 (CAS_salt_010711)	4	True
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
20	Sample	MB2	CAS_salt_010711 (CAS_salt_010711)	4	True
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	4	True
21	Sample	K2001878-011.08	CAS_salt_010711 (CAS_salt_010711)	4	True
22	Sample	K2001878-011.08 ms	CAS_salt_010711 (CAS_salt_010711)	4	True
23	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True
24	Sample	K2002016-001.03	CAS_salt_010711 (CAS_salt_010711)	4	True
25	Sample	K2002016-002.03	CAS_salt_010711 (CAS_salt_010711)	4	True
26	Sample	K2002016-003.03	CAS_salt_010711 (CAS_salt_010711)	4	True
27	Sample	K2002016-004.03	CAS_salt_010711 (CAS_salt_010711)	4	True
28	Sample	K2002016-006.03	CAS_salt_010711 (CAS_salt_010711)	4	True
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
29	Sample	K2002016-007.03	CAS_salt_010711 (CAS_salt_010711)	4	True
30	Sample	K2002016-008.03	CAS_salt_010711 (CAS_salt_010711)	4	True
31	Sample	K2002016-009.03	CAS_salt_010711 (CAS_salt_010711)	4	True
32	Sample	K2002019-001.19 50x	CAS_salt_010711 (CAS_salt_010711)	4	True

Printed on: March 14, 2020 13:13:45

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03/16/20
Full

Schedule: 03112020 CAL

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use
33	Sample	K2002019-001.19 ms 50x	CAS_salt_010711 (CAS_salt_010711)	4	True
34	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True
35	Sample	K2002019-002.19_50x	CAS_salt_010711 (CAS_salt_010711)	4	True
36	Sample	K2001954-001.05	CAS_salt_010711 (CAS_salt_010711)	2	True
37	Sample	K2001954-001.05 ms	CAS_salt_010711 (CAS_salt_010711)	1	True
38	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
39	Sample	MB3	CAS_salt_010711 (CAS_salt_010711)	1	True
C	Check Standard	[TOC] LCS [25.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
40	Sample	K2001960-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True
41	Sample	K2001983-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True
42	Sample	K2001907-002.10	CAS_salt_010711 (CAS_salt_010711)	2	True
43	Sample	K2001924-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True
44	Sample	K2001924-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True
45	Sample	K2001999-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True
46	Sample	K2002006-001.03	CAS_salt_010711 (CAS_salt_010711)	2	True
47	Sample	K2002025-002.03	CAS_salt_010711 (CAS_salt_010711)	2	True
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
48	Sample	K2001937-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True
49	Sample	K2002051-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True
50	Sample	K2002014-001.14	CAS_salt_010711 (CAS_salt_010711)	2	True
51	Sample	K2001924-002.02 doc	CAS_salt_010711 (CAS_salt_010711)	2	True
52	Sample	K2001924-002.02 ms doc	CAS_salt_010711 (CAS_salt_010711)	1	True
53	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True
54	Sample	K2001924-004.02 doc	CAS_salt_010711 (CAS_salt_010711)	2	True
55	Sample	K2001896-001.03 doc	CAS_salt_010711 (CAS_salt_010711)	2	True
56	Sample	K2001896-002.04 doc	CAS_salt_010711 (CAS_salt_010711)	2	True
57	Sample	Phenova	CAS_salt_010711 (CAS_salt_010711)	1	True
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
58	Sample	MB4	CAS_salt_010711 (CAS_salt_010711)	1	True
C	Check Standard	[TOC] LCS [25.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
59	Sample	FB 3/9/20	CAS_salt_010711 (CAS_salt_010711)	1	True
60	Sample	K2002014-001.15	CAS_salt_010711 (CAS_salt_010711)	2	True
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
					False

Fusion Report - 03112020 CAL

Wednesday, March 11, 2020 12:07 PM

(View - Reps, Unused Reps, Meta-Data, Signature, History)
Printed on 2020/03/14 13:13 - Saturday

Report Summary Information

Company Location: Gen Chem Lab
 Schedule Name: 03112020 CAL
 Instrument Name: Fusion1
 Report Version: 1 of 1
 Report Creation by Operators (schedule version): Fusion1 (Fusion1) (v2)
 Comment:

Engine 1.1.5.1
 Version:
 Firmware 1.2.0696
 Version:
 Connection: RS232 COM1

Report Results

03/16/20
[Signature]

Sample Type: Clean

From Schedule Version 2

Pos	Analysis Type	Sample ID	Start Time
♦ (clean)		Clean	2020/03/11 12:07

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	12.34	16.23	3.89	49.62	05:24
2	TC Clean	4.85	8.47	3.62	49.94	04:01
3	TC Clean	1.88	5.52	3.64	49.99	03:56
4	TC Clean	1.29	5.42	4.12	49.98	03:53

Sample Type: Clean

From Schedule Version 2

Pos	Analysis Type	Sample ID	Start Time
♦ (clean)		Clean	2020/03/11 12:29

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.66	4.45	3.79	49.53	05:22
2	TC Clean	4.04	7.91	3.88	50.05	04:03
3	TC Clean	1.66	5.70	4.04	49.98	03:46
4	TC Clean	1.87	5.69	3.82	49.95	03:52

Sample Type: Clean							From Schedule Version 2
Pos	Analysis Type	Sample ID			Start Time		
♦ (clean)		Clean			2020/03/11 12:51		
Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time	
1	IC Clean	0.68	4.57	3.89	49.54	05:19	
2	TC Clean	4.23	8.15	3.91	49.94	03:58	
3	TC Clean	2.50	6.39	3.89	49.91	03:43	
4	TC Clean	2.24	6.31	4.07	50.02	03:45	

Sample Type: Blank (Creating v1363)							From Schedule Version 2
Pos	Analysis Type	Sample ID			Start Time		
♦ (blank)		Reagent/Acid Blank			2020/03/11 13:13		
Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time	
1	IC Clean	0.80	4.65	3.84	49.64	05:12	
2	TC Clean	5.12	9.07	3.95	49.93	04:01	
3	TC Clean	2.58	6.50	3.92	49.98	03:55	
4	TC Clean	2.45	6.46	4.01	49.94	03:55	
5	Reagent Blank	3.55	7.65	4.10	50.01	05:04	
6	Acid Blank	0.92	4.79	3.87	49.61	05:29	

Sample Type: Sample							From Schedule Version 2	
Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time		
♦ D	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/11 13:46		
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	9.28	13.28	4.00	49.97	10:28
2	TOC	0.0000	0.0000	6.18	10.18	4.00	50.00	10:25
Dilution		Blank Contribution		Method		Calibration		
1:10		(TC) 9.4168 (IC) (v1363)		CAS_salt_010711 (v4)		CAS_salt_010711 (v31)		

Sample Type: Calibration Standard: CAS_salt_010711 CAL (Creating calibration CAS_salt_010711 v32)

From Schedule Version 2

Pos	BAT	Concentration (ppm)	STD Conc	Dil	Sample ID	Result (Abs)	Std. Dev. (Abs)	RSD	Start Time
♦	D	0.0000	0 ppmC	1:1	[TOC] CAS_salt_010711 CAL [DI Water]	5.8640	0.0000	0%	2020/03/11 14:14
♦	A	0.5000	5 ppmC	1:10	[TOC] CAS_salt_010711 CAL [0.500 ppm]	9.5210	0.0000	0%	2020/03/11 14:29
♦	A	1.0000	5 ppmC	1:5	[TOC] CAS_salt_010711 CAL [1.0 ppm]	12.5930	0.0000	0%	2020/03/11 14:44
♦	A	5.0000	5 ppmC	1:1	[TOC] CAS_salt_010711 CAL [5.0 ppm]	40.5270	0.0000	0%	2020/03/11 14:58
♦	B	10.0000	50 ppmC	1:5	[TOC] CAS_salt_010711 CAL [10 ppm]	79.5310	0.0000	0%	2020/03/11 15:12
♦	B	25.0000	50 ppmC	1:2	[TOC] CAS_salt_010711 CAL [25 ppm]	181.4610	0.0000	0%	2020/03/11 15:26
♦	B	50.0000	50 ppmC	1:1	[TOC] CAS_salt_010711 CAL [50 ppm]	340.5610	0.0000	0%	2020/03/11 15:41

Pos	Base Analysis Type	ID	Rep #	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	DI Water	1	5.86	9.89	4.02	50.01	10:32
A	TOC	0.500 ppm	1	9.52	13.32	3.80	50.00	10:34
A	TOC	1.0 ppm	1	12.59	16.50	3.91	49.99	10:30
A	TOC	5.0 ppm	1	40.53	44.33	3.80	49.96	10:32
B	TOC	10 ppm	1	79.53	83.42	3.89	49.96	10:28
B	TOC	25 ppm	1	181.46	185.26	3.80	49.95	10:32
B	TOC	50 ppm	1	340.56	344.56	4.00	49.94	10:30

Completion State

Success - All
Update Conditions
met

Method

CAS_salt_010711
(v4)

Success Action

Auto (always)

Sample Type: Check Standard --> CCV 25 ppm

From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
♦	B	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.0622 ppm (PASS)	0.0000 ppm	0%	2020/03/11 15:55

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.0622	260.6218	183.08	186.94	3.85	49.93	10:30
Completion State		Success Action		Method		Calibration		STD Conc - Pos B		
Success - Criteria met.		Do Nothing		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)		50 ppmC		

Sample Type: Check Standard --> CCB From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time	
♦	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/11 16:09

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	6.32	10.21	3.89	49.91	10:32
Completion State		Success Action		Method		Calibration		STD Conc - Pos D		
Success - Criteria met.		Do Nothing		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)		0 ppmC		

Sample Type: Sample From Schedule Version 2

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time	
♦	1	TOC	MB1	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/11 16:24

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time	
1	TOC	0.0000	0.0000	5.89	9.68	3.78	49.89	10:30	
2	TOC	0.0000	0.0000	5.62	9.67	4.05	49.90	10:29	
3	TOC	0.0000	0.0000	5.36	9.00	3.64	49.88	10:24	
4	TOC	0.0000	0.0000	5.43	9.11	3.68	49.88	10:29	
Dilution		Blank Contribution		Method		Calibration			
1:10		(TC) 7.2726 (IC) (v1363)		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)			

Sample Type: Check Standard --> LCS From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time	
♦	C	TOC	25.0000	1:1	[TOC] LCS [24.0 ppm]	0 / infinity (NA / NA)	24.3590 ppm (PASS)	0.1495 ppm	0.61%	2020/03/11 17:20

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.3557	243.5570	171.61	175.23	3.62	49.87	10:27

C	TOC	25.0 ppm	2	24.3887	243.8871	171.83	175.69	3.86	49.86	10:29
C	TOC	25.0 ppm	3	24.5272	245.2715	172.76	176.43	3.67	49.89	10:28
C	TOC	25.0 ppm	4	24.1643	241.6433	170.32	174.28	3.96	49.87	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	25 ppmC

Sample Type: Sample

From Schedule Version 2

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
2	TOC	ICS	0.2056 ppm	0.0000 ppm	0.0000%	2020/03/11 18:16

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2056	2.0556	8.66	12.30	3.65	49.91	10:35

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.2726 (IC) (v1363)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
3	TOC	K2001878-002.08	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/11 18:30

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	7.16	10.91	3.75	49.90	10:26
2	TOC	0.0000	0.0000	7.09	10.89	3.79	49.94	10:30
3	TOC	0.0000	0.0000	6.74	10.69	3.95	49.96	10:28
4	TOC	0.0000	0.0000	6.76	10.62	3.86	49.97	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.2726 (IC) (v1363)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
4	TOC	K2001878-003.08	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/11 19:26

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	7.08	10.82	3.74	50.01	10:28
2	TOC	0.0000	0.0000	6.95	10.70	3.75	50.04	10:27
3	TOC	0.0000	0.0000	6.78	10.62	3.84	50.08	10:29
4	TOC	0.0000	0.0000	6.71	10.45	3.74	50.08	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.2726 (IC) (v1363)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
5	TOC	K2001878-004.21	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/11 20:22

Rep	Base	Adjusted	Baseline	Pressure	Run
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#	Analysis Type	ppm	µg	(Abs)	NDIR (Abs)	(Abs)	(psig)	Time
1	TOC	0.0000	0.0000	6.94	10.75	3.81	50.09	10:28
2	TOC	0.0000	0.0000	6.60	10.42	3.82	50.10	10:29
3	TOC	0.0000	0.0000	6.77	10.50	3.72	50.11	10:27
4	TOC	0.0000	0.0000	6.72	10.49	3.77	50.15	10:23

Dilution 1:10 **Blank Contribution** (TC) 7.2726 (IC) (v1363) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
6	TOC	K2001878-004.21 ms	26.8206 ppm	0.3030 ppm	1.1300%	2020/03/11 21:18

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	26.7309	267.3087	187.04	190.85	3.81	50.12	10:29
2	TOC	26.6011	266.0106	186.16	189.86	3.70	50.11	10:24
3	TOC	26.6825	266.8255	186.71	190.65	3.94	50.11	10:29
4	TOC	27.2680	272.6798	190.65	194.54	3.89	50.10	10:26

Dilution 1:10 **Blank Contribution** (TC) 7.2726 (IC) (v1363) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
7	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/11 22:13

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.22	9.93	3.70	50.08	10:30

Dilution 1:10 **Blank Contribution** (TC) 7.2726 (IC) (v1363) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
8	TOC	K2001878-005.08	0.3495 ppm	0.0330 ppm	9.4500%	2020/03/11 22:28

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3990	3.9902	9.96	13.78	3.82	50.07	10:27
2	TOC	0.3325	3.3255	9.51	13.39	3.88	50.06	10:25
3	TOC	0.3327	3.3270	9.51	13.45	3.94	50.03	10:30
4	TOC	0.3336	3.3359	9.52	13.44	3.93	50.03	10:29

Dilution 1:10 **Blank Contribution** (TC) 7.2726 (IC) (v1363) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
9	TOC	K2001878-007.08	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/11 23:24

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
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1	TOC	0.0000	0.0000	6.19	10.06	3.87	50.01	10:29	
2	TOC	0.0000	0.0000	6.35	10.15	3.80	50.02	10:25	
3	TOC	0.0000	0.0000	6.40	10.12	3.71	50.00	10:28	
4	TOC	0.0000	0.0000	6.38	10.04	3.66	49.99	10:28	
Dilution		Blank Contribution		Method		Calibration			
1:10		(TC) 7.2726 (IC) (v1363)		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)			

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time	
♦ B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.1965 ppm (PASS)	0.0000 ppm	0%	2020/03/12 00:19	
Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.1965	261.9645	183.99	187.71	3.72	49.97	10:31
Completion State		Success Action		Method		Calibration		STD Conc - Pos B		
Success - Criteria met.		Do Nothing		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)		50 ppmC		

Sample Type: Check Standard --> CCB From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time	
♦ D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/12 00:34	
Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	5.63	9.37	3.74	49.97	10:35
Completion State		Success Action		Method		Calibration		STD Conc - Pos D		
Success - Criteria met.		Do Nothing		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)		0 ppmC		

Sample Type: Sample From Schedule Version 2

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time		
♦ 10	TOC	K2001878-008.08	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/12 00:49		
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.70	10.43	3.73	49.94	10:28
2	TOC	0.0000	0.0000	6.50	10.39	3.88	49.96	10:27
3	TOC	0.0000	0.0000	6.37	10.35	3.98	49.95	10:27

4	TOC	0.0000	0.0000	6.36	10.19	3.83	49.94	10:25
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Dilution 1:10 **Blank Contribution** (TC) 7.2726 (IC) (v1363) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
11	TOC	K2001878-009.08	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/12 01:44

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.97	10.74	3.77	49.92	10:28
2	TOC	0.0000	0.0000	7.18	10.85	3.67	49.93	10:29
3	TOC	0.0000	0.0000	7.05	10.85	3.80	49.94	10:24
4	TOC	0.0000	0.0000	7.05	10.77	3.72	49.92	10:26

Dilution 1:10 **Blank Contribution** (TC) 7.2726 (IC) (v1363) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
12	TOC	K2001878-010.08	0.0158 ppm	0.0169 ppm	106.9700%	2020/03/12 02:40

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0122	0.1225	7.36	11.10	3.75	49.92	10:27
2	TOC	0.0112	0.1121	7.35	11.07	3.72	49.92	10:27
3	TOC	0.0000	0.0000	7.26	11.04	3.78	49.92	10:27
4	TOC	0.0398	0.3976	7.54	11.19	3.65	49.93	10:26

Dilution 1:10 **Blank Contribution** (TC) 7.2726 (IC) (v1363) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
13	TOC	K2001878-012.08	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/12 03:36

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	7.15	10.95	3.81	49.92	10:31
2	TOC	0.0000	0.0000	7.11	10.85	3.74	49.90	10:25
3	TOC	0.0000	0.0000	7.24	10.97	3.74	49.91	10:28
4	TOC	0.0000	0.0000	7.18	10.94	3.76	49.92	10:28

Dilution 1:10 **Blank Contribution** (TC) 7.2726 (IC) (v1363) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
14	TOC	K2001934-001.08	0.0541 ppm	0.0150 ppm	27.6300%	2020/03/12 04:31

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0637	0.6370	7.70	11.49	3.79	49.92	10:26

2	TOC	0.0365	0.3649	7.52	11.36	3.84	49.92	10:29
3	TOC	0.0691	0.6905	7.74	11.46	3.72	49.91	10:26
4	TOC	0.0473	0.4734	7.59	11.43	3.84	49.90	10:24

Dilution 1:10
Blank Contribution (TC) 7.2726 (IC) (v1363)
Method CAS_salt_010711 (v4)
Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
15	TOC	K2001934-002.08	0.0701 ppm	0.0220 ppm	31.3900%	2020/03/12 05:27

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0991	0.9909	7.94	11.69	3.75	49.93	10:27
2	TOC	0.0606	0.6058	7.68	11.63	3.95	49.93	10:30
3	TOC	0.0731	0.7307	7.76	11.56	3.79	49.91	10:24
4	TOC	0.0475	0.4749	7.59	11.47	3.88	49.91	10:26

Dilution 1:10
Blank Contribution (TC) 7.2726 (IC) (v1363)
Method CAS_salt_010711 (v4)
Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
16	TOC	K2001934-003.08	9.3827 ppm	0.1322 ppm	1.4100%	2020/03/12 06:22

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	9.3253	93.2530	69.98	73.65	3.66	49.91	10:28
2	TOC	9.3144	93.1444	69.91	73.75	3.84	49.89	10:30
3	TOC	9.3101	93.1013	69.88	73.64	3.76	49.90	10:26
4	TOC	9.5808	95.8077	71.70	75.66	3.96	49.91	10:26

Dilution 1:10
Blank Contribution (TC) 7.2726 (IC) (v1363)
Method CAS_salt_010711 (v4)
Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
17	TOC	K2001934-004.08	8.7726 ppm	0.0274 ppm	0.3100%	2020/03/12 07:18

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	8.7698	87.6976	66.25	69.95	3.70	49.92	10:31
2	TOC	8.7509	87.5087	66.12	69.95	3.83	49.89	10:25
3	TOC	8.7579	87.5786	66.17	70.08	3.91	49.91	10:24
4	TOC	8.8120	88.1199	66.53	70.37	3.83	49.90	10:28

Dilution 1:10
Blank Contribution (TC) 7.2726 (IC) (v1363)
Method CAS_salt_010711 (v4)
Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
18	TOC	K2001934-005.08	0.2372 ppm	0.0727 ppm	30.6600%	2020/03/12 08:14

Rep	Base	Adjusted	Baseline	Pressure	Run
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#	Analysis Type	ppm	µg	(Abs)	NDIR (Abs)	(Abs)	(psig)	Time
1	TOC	0.2775	2.7753	9.14	12.84	3.70	49.92	10:29
2	TOC	0.3147	3.1470	9.39	13.07	3.68	49.90	10:30
3	TOC	0.2033	2.0333	8.64	12.41	3.77	49.90	10:30
4	TOC	0.1531	1.5307	8.30	12.14	3.83	49.90	10:24

Dilution 1:10 **Blank Contribution** (TC) 7.2726 (IC) (v1363) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
19	TOC	K2001934-006.08	6.6333 ppm	0.1957 ppm	2.9500%	2020/03/12 09:09

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	6.3742	63.7421	50.14	53.95	3.81	49.90	10:26
2	TOC	6.5895	65.8953	51.59	55.33	3.74	49.92	10:27
3	TOC	6.7866	67.8655	52.91	56.76	3.85	49.92	10:24
4	TOC	6.7830	67.8298	52.89	56.62	3.74	49.95	10:26

Dilution 1:10 **Blank Contribution** (TC) 7.2726 (IC) (v1363) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm

From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.7816 ppm (PASS)	0.0000 ppm	0%	2020/03/12 10:05

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.7816	267.8159	187.92	191.70	3.78	49.95	10:33

Completion State Success - Criteria met. **Success Action** Do Nothing **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32) **STD Conc - Pos B** 50 ppmC

Sample Type: Check Standard --> CCB

From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/12 10:20

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	6.16	9.99	3.83	49.94	10:32

Completion State **Success Action** **Method** **Calibration** **STD Conc - Pos D**

Success - Criteria met. Do Nothing CAS_salt_010711 (v4) CAS_salt_010711 (v32) 0 ppmC

Sample Type: Sample

From Schedule Version 2

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
20	TOC	MB2	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/12 10:34

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.56	9.50	3.94	49.96	10:26
2	TOC	0.0000	0.0000	6.68	10.34	3.66	49.97	10:24
3	TOC	0.0000	0.0000	4.89	8.73	3.84	49.97	10:27
4	TOC	0.0000	0.0000	5.24	8.97	3.73	49.93	10:28

Dilution 1:10
Blank Contribution (TC) 7.2726 (IC) (v1363)
Method CAS_salt_010711 (v4)
Calibration CAS_salt_010711 (v32)

Sample Type: Check Standard --> LCS

From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
C	TOC	25.0000	1:1	[TOC] LCS [24.0 ppm]	0 / infinity (NA / NA)	24.5661 ppm (PASS)	0.1067 ppm	0.43%	2020/03/12 11:30

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.6745	246.7451	173.75	177.62	3.86	49.94	10:26
C	TOC	25.0 ppm	2	24.5441	245.4411	172.88	176.92	4.04	49.95	10:27
C	TOC	25.0 ppm	3	24.6183	246.1831	173.38	177.32	3.94	49.94	10:26
C	TOC	25.0 ppm	4	24.4275	244.2752	172.09	175.90	3.81	49.98	10:24

Completion State Success - Criteria met.
Success Action Do Nothing
Method CAS_salt_010711 (v4)
Calibration CAS_salt_010711 (v32)
STD Conc - Pos C 25 ppmC

Sample Type: Sample

From Schedule Version 2

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
21	TOC	K2001878-011.08	0.0332 ppm	0.0643 ppm	193.6700%	2020/03/12 12:26

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1296	1.2957	8.14	11.97	3.83	49.97	10:28
2	TOC	0.0032	0.0318	7.29	11.13	3.84	49.98	10:28
3	TOC	0.0000	0.0000	7.17	11.09	3.92	50.00	10:29
4	TOC	0.0000	0.0000	7.04	10.81	3.77	49.99	10:28

Dilution 1:10 **Blank Contribution** (TC) 7.2726 (IC) (v1363) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
22	TOC	K2001878-011.08 ms	26.9688 ppm	0.0955 ppm	0.3500%	2020/03/12 13:21

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	27.0817	270.8166	189.40	193.13	3.73	49.98	10:29
2	TOC	26.8592	268.5920	187.90	191.59	3.69	50.00	10:28
3	TOC	26.9310	269.3102	188.38	192.27	3.88	49.97	10:28
4	TOC	27.0033	270.0329	188.87	192.66	3.79	49.97	10:28

Dilution 1:10 **Blank Contribution** (TC) 7.2726 (IC) (v1363) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
23	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/12 14:17

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.31	10.07	3.76	49.96	10:34

Dilution 1:10 **Blank Contribution** (TC) 7.2726 (IC) (v1363) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
24	TOC	K2002016-001.03	1.0843 ppm	0.0186 ppm	1.7200%	2020/03/12 14:32

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.0948	10.9478	14.64	18.54	3.91	49.97	10:26
2	TOC	1.0604	10.6043	14.40	18.22	3.82	49.97	10:28
3	TOC	1.0793	10.7932	14.53	18.44	3.91	50.00	10:29
4	TOC	1.1027	11.0266	14.69	18.52	3.83	49.97	10:30

Dilution 1:10 **Blank Contribution** (TC) 7.2726 (IC) (v1363) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
25	TOC	K2002016-002.03	0.1695 ppm	0.0068 ppm	4.0300%	2020/03/12 15:27

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1792	1.7924	8.48	12.37	3.90	50.01	10:27
2	TOC	0.1679	1.6794	8.40	12.30	3.90	50.03	10:29
3	TOC	0.1673	1.6734	8.40	12.21	3.81	49.99	10:27
4	TOC	0.1633	1.6333	8.37	12.25	3.88	49.98	10:28

Dilution **Blank Contribution** **Method** **Calibration**

1:10 (TC) 7.2726 (IC) CAS_salt_010711 CAS_salt_010711
(v1363) (v4) (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
26	TOC	K2002016-003.03	2.1298 ppm	0.0520 ppm	2.4400%	2020/03/12 16:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.2072	22.0720	22.12	25.96	3.85	49.97	10:25
2	TOC	2.0957	20.9568	21.37	25.32	3.95	49.96	10:28
3	TOC	2.1042	21.0415	21.42	25.53	4.10	49.96	10:29
4	TOC	2.1122	21.1218	21.48	25.42	3.95	49.93	10:26

Dilution 1:10 Blank Contribution (TC) 7.2726 (IC) (v1363) Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
27	TOC	K2002016-004.03	0.5388 ppm	0.0355 ppm	6.5900%	2020/03/12 17:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5085	5.0846	10.69	14.63	3.93	49.92	10:25
2	TOC	0.5807	5.8073	11.18	14.95	3.77	49.91	10:29
3	TOC	0.5102	5.1024	10.70	14.55	3.84	49.93	10:28
4	TOC	0.5556	5.5560	11.01	14.82	3.82	49.92	10:25

Dilution 1:10 Blank Contribution (TC) 7.2726 (IC) (v1363) Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
28	TOC	K2002016-006.03	0.0006 ppm	0.0011 ppm	200.0000%	2020/03/12 18:14

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0023	0.0229	7.29	11.25	3.97	49.93	10:31
2	TOC	0.0000	0.0000	7.22	11.12	3.91	49.94	10:26
3	TOC	0.0000	0.0000	7.06	10.83	3.78	49.95	10:29
4	TOC	0.0000	0.0000	6.95	10.79	3.84	49.99	10:28

Dilution 1:10 Blank Contribution (TC) 7.2726 (IC) (v1363) Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm

From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev. (ppm)	RSD	Start Time
B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.0729 ppm (PASS)	0.0000 ppm	0%	2020/03/12 19:10

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.0729	260.7289	183.16	186.93	3.77	50.01	10:28
<u>Completion State</u>		<u>Success Action</u>		<u>Method</u>		<u>Calibration</u>		<u>STD Conc - Pos B</u>		
Success - Criteria met.		Do Nothing		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)		50 ppmC		

Sample Type: Check Standard --> CCB From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
♦ D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/12 19:25

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	5.38	9.14	3.76	50.03	10:31
<u>Completion State</u>		<u>Success Action</u>		<u>Method</u>		<u>Calibration</u>		<u>STD Conc - Pos D</u>		
Success - Criteria met.		Do Nothing		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)		0 ppmC		

Sample Type: Sample From Schedule Version 2

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
♦ 29	TOC	K2002016-007.03	3.0642 ppm	0.0249 ppm	0.8100%	2020/03/12 19:39

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.0820	30.8200	28.00	31.76	3.76	50.07	10:30
2	TOC	3.0390	30.3903	27.71	31.53	3.82	50.06	10:26
3	TOC	3.0888	30.8884	28.04	31.98	3.93	50.08	10:26
4	TOC	3.0469	30.4691	27.76	31.67	3.91	50.12	10:25

<u>Dilution</u>	<u>Blank Contribution</u>	<u>Method</u>	<u>Calibration</u>
1:10	(TC) 7.2726 (IC) (v1363)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
♦ 30	TOC	K2002016-008.03	0.7066 ppm	0.0445 ppm	6.3000%	2020/03/12 20:35

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7627	7.6274	12.40	16.12	3.72	50.08	10:26
2	TOC	0.6839	6.8392	11.87	15.67	3.79	50.09	10:24
3	TOC	0.7193	7.1932	12.11	15.77	3.66	50.09	10:31
4	TOC	0.6606	6.6058	11.72	15.53	3.81	50.11	10:26

<u>Dilution</u>	<u>Blank Contribution</u>	<u>Method</u>	<u>Calibration</u>

1:10 (TC) 7.2726 (IC) CAS_salt_010711 CAS_salt_010711
(v1363) (v4) (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
31	TOC	K2002016-009.03	0.5496 ppm	0.0282 ppm	5.1300%	2020/03/12 21:31

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5859	5.8593	11.21	14.91	3.70	50.10	10:31
2	TOC	0.5204	5.2036	10.77	14.53	3.76	50.07	10:29
3	TOC	0.5559	5.5589	11.01	14.85	3.84	50.06	10:29
4	TOC	0.5364	5.3642	10.88	14.68	3.80	50.04	10:25

Dilution 1:10 Blank Contribution (TC) 7.2726 (IC) (v1363) Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
32	TOC	K2002019-001.19 50x	2.5092 ppm	0.0310 ppm	1.2400%	2020/03/12 22:26

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.4918	24.9181	24.03	27.92	3.89	50.04	10:29
2	TOC	2.4783	24.7828	23.94	27.78	3.84	50.05	10:30
3	TOC	2.5180	25.1798	24.21	28.04	3.83	50.05	10:30
4	TOC	2.5486	25.4862	24.41	28.22	3.81	50.04	10:24

Dilution 1:10 Blank Contribution (TC) 7.2726 (IC) (v1363) Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
33	TOC	K2002019-001.19 ms 50x	28.5955 ppm	0.1489 ppm	0.5200%	2020/03/12 23:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	28.4545	284.5445	198.63	202.64	4.02	50.02	10:27
2	TOC	28.7382	287.3817	200.54	204.48	3.94	50.01	10:27
3	TOC	28.7093	287.0932	200.34	204.27	3.93	49.99	10:26
4	TOC	28.4802	284.8018	198.80	202.77	3.97	49.98	10:27

Dilution 1:10 Blank Contribution (TC) 7.2726 (IC) (v1363) Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
34	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/13 00:18

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.02	9.87	3.85	49.97	10:30

Dilution Blank Contribution Method Calibration

1:10 (TC) 7.2726 (IC) CAS_salt_010711 CAS_salt_010711
(v1363) (v4) (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
35	TOC	K2002019-002.19 50x	2.6072 ppm	0.0394 ppm	1.5100%	2020/03/13 00:33

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.6322	26.3219	24.97	28.81	3.84	49.99	10:27
2	TOC	2.5501	25.5010	24.42	28.24	3.82	49.97	10:30
3	TOC	2.6346	26.3457	24.99	28.65	3.66	49.99	10:27
4	TOC	2.6118	26.1181	24.84	28.61	3.77	49.95	10:29

Dilution 1:10 Blank Contribution (TC) 7.2726 (IC) (v1363) Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
36	TOC	K2001954-001.05	3.9435 ppm	0.0436 ppm	1.1100%	2020/03/13 01:28

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.9743	39.7435	34.00	37.80	3.80	49.97	10:30
2	TOC	3.9126	39.1264	33.58	37.44	3.86	49.96	10:29

Dilution 1:10 Blank Contribution (TC) 7.2726 (IC) (v1363) Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
37	TOC	K2001954-001.05 ms	32.2905 ppm	0.0000 ppm	0.0000%	2020/03/13 01:57

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	32.2905	322.9045	224.42	228.17	3.74	49.95	10:32

Dilution 1:10 Blank Contribution (TC) 7.2726 (IC) (v1363) Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
38	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/13 02:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.73	10.54	3.81	49.97	10:32

Dilution 1:10 Blank Contribution (TC) 7.2726 (IC) (v1363) Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm

From Schedule Version 2

Concentration	Min / Max

Pos	BAT	(ppm)	Dil	Sample ID	(% dev)	Result	Std. Dev.	RSD	Start Time
♦ B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.7395 ppm (PASS)	0.0000 ppm	0%	2020/03/13 02:26

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.7395	267.3950	187.64	191.42	3.78	49.94	10:34

<u>Completion State</u>	<u>Success Action</u>	<u>Method</u>	<u>Calibration</u>	<u>STD Conc - Pos B</u>
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
♦ D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/13 02:40

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	5.56	9.61	4.05	49.94	10:32

<u>Completion State</u>	<u>Success Action</u>	<u>Method</u>	<u>Calibration</u>	<u>STD Conc - Pos D</u>
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 2

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
♦ 39	TOC	MB3	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/13 02:55

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.39	9.12	3.73	49.95	10:30

<u>Dilution</u>	<u>Blank Contribution</u>	<u>Method</u>	<u>Calibration</u>
1:10	(TC) 7.2726 (IC) (v1363)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> LCS From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
♦ C	TOC	25.0000	1:1	[TOC] LCS [25.0 ppm]	0 / infinity (NA / NA)	25.1062 ppm (PASS)	0.0000 ppm	0%	2020/03/13 03:10

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time

C	TOC	25.0 ppm	1	25.1062	251.0619	176.66	180.56	3.90	49.93	10:30
Completion State		Success Action		Method		Calibration		STD Conc - Pos C		
Success - Criteria met.		Do Nothing		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)		25 ppmC		

Sample Type: Sample

From Schedule Version 2

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
40	TOC	K2001960-001.01	4.7847 ppm	0.0912 ppm	1.9100%	2020/03/13 03:25

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.8491	48.4915	39.88	43.71	3.83	49.94	10:28
2	TOC	4.7202	47.2022	39.02	42.91	3.89	49.93	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.2726 (IC) (v1363)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
41	TOC	K2001983-001.01	1.7683 ppm	0.0218 ppm	1.2300%	2020/03/13 03:53

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.7837	17.8371	19.27	23.16	3.90	49.93	10:28
2	TOC	1.7529	17.5293	19.06	22.87	3.81	49.93	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.2726 (IC) (v1363)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
42	TOC	K2001907-002.10	0.3554 ppm	0.0351 ppm	9.8800%	2020/03/13 04:21

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3803	3.8028	9.83	13.66	3.83	49.93	10:28
2	TOC	0.3306	3.3061	9.50	13.33	3.83	49.94	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.2726 (IC) (v1363)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
43	TOC	K2001924-001.01	3.7432 ppm	0.0070 ppm	0.1900%	2020/03/13 04:49

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.7482	37.4818	32.48	36.25	3.78	49.92	10:28
2	TOC	3.7382	37.3821	32.41	36.19	3.78	49.94	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.2726 (IC)	CAS_salt_010711	CAS_salt_010711

(v1363)

(v4)

(v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
44	TOC	K2001924-003.01	2.6474 ppm	0.0202 ppm	0.7600%	2020/03/13 05:17

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.6616	26.6163	25.17	29.01	3.84	49.94	10:26
2	TOC	2.6331	26.3308	24.98	28.93	3.95	49.92	10:26

Dilution 1:10 **Blank Contribution** (TC) 7.2726 (IC) (v1363) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
45	TOC	K2001999-001.01	0.4010 ppm	0.0190 ppm	4.7500%	2020/03/13 05:45

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4145	4.1448	10.06	13.69	3.63	49.95	10:28
2	TOC	0.3876	3.8757	9.88	13.64	3.76	49.95	10:24

Dilution 1:10 **Blank Contribution** (TC) 7.2726 (IC) (v1363) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
46	TOC	K2002006-001.03	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/13 06:13

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.62	9.40	3.78	49.99	10:30
2	TOC	0.0000	0.0000	5.83	9.52	3.69	49.89	10:29

Dilution 1:10 **Blank Contribution** (TC) 7.2726 (IC) (v1363) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
47	TOC	K2002025-002.03	21.2578 ppm	0.5475 ppm	2.5800%	2020/03/13 06:41

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	21.6449	216.4490	152.83	156.55	3.72	49.86	10:28
2	TOC	20.8706	208.7063	147.63	151.23	3.60	49.82	10:27

Dilution 1:10 **Blank Contribution** (TC) 7.2726 (IC) (v1363) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm

From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
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◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	27.1043 ppm (PASS)	0.0000 ppm	0%	2020/03/13 07:09
Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	27.1043	271.0426	190.09	193.71	3.61	49.76	10:32
Completion State		Success Action		Method		Calibration		STD Conc - Pos B		
Success - Criteria met.		Do Nothing		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)		50 ppmC		

Sample Type: Check Standard --> CCB From Schedule Version 2

◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/13 07:24
Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	6.17	9.89	3.72	49.74	10:29
Completion State		Success Action		Method		Calibration		STD Conc - Pos D		
Success - Criteria met.		Do Nothing		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)		0 ppmC		

Sample Type: Sample From Schedule Version 2

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time		
◆ 48	TOC	K2001937-001.01	0.1387 ppm	0.0075 ppm	5.3800%	2020/03/13 07:39		
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1334	1.3344	8.17	11.90	3.73	49.71	10:27
2	TOC	0.1440	1.4400	8.24	12.07	3.83	49.67	10:28
Dilution		Blank Contribution		Method		Calibration		
1:10		(TC) 7.2726 (IC) (v1363)		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)		
Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time		
◆ 49	TOC	K2002051-001.01	4.3827 ppm	0.1016 ppm	2.3200%	2020/03/13 08:07		
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.4545	44.5450	37.23	40.89	3.66	49.69	10:28
2	TOC	4.3109	43.1085	36.26	39.96	3.70	49.62	10:29
Dilution		Blank Contribution		Method		Calibration		
1:10		(TC) 7.2726 (IC) (v1363)		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)		

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
50	TOC	K2002014-001.14	3.5343 ppm	0.0606 ppm	1.7100%	2020/03/13 08:35

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.5772	35.7717	31.33	35.12	3.80	49.57	10:31
2	TOC	3.4915	34.9152	30.75	34.57	3.82	49.58	10:28

Dilution 1:10 **Blank Contribution** (TC) 7.2726 (IC) (v1363) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
51	TOC	K2001924-002.02 doc	3.5938 ppm	0.0550 ppm	1.5300%	2020/03/13 09:03

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.6326	36.3264	31.70	35.34	3.64	49.73	10:28
2	TOC	3.5549	35.5487	31.18	34.94	3.76	49.83	10:25

Dilution 1:10 **Blank Contribution** (TC) 7.2726 (IC) (v1363) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
52	TOC	K2001924-002.02 ms doc	30.9049 ppm	0.0000 ppm	0.0000%	2020/03/13 09:31

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	30.9049	309.0487	215.11	218.76	3.65	49.87	10:28

Dilution 1:10 **Blank Contribution** (TC) 7.2726 (IC) (v1363) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
53	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/13 09:46

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.15	9.99	3.84	49.93	10:29

Dilution 1:10 **Blank Contribution** (TC) 7.2726 (IC) (v1363) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
54	TOC	K2001924-004.02 doc	2.5310 ppm	0.0169 ppm	0.6700%	2020/03/13 10:00

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.5430	25.4297	24.37	28.24	3.87	49.91	10:26
2	TOC	2.5190	25.1903	24.21	28.00	3.79	49.95	10:28

Dilution 1:10 **Blank Contribution** (TC) 7.2726 (IC) (v1363) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
55	TOC	K2001896-001.03 doc	1.0503 ppm	0.0013 ppm	0.1200%	2020/03/13 10:28

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.0494	10.4943	14.33	18.00	3.67	49.97	10:28
2	TOC	1.0512	10.5121	14.34	18.07	3.73	49.96	10:27

Dilution 1:10 **Blank Contribution** (TC) 7.2726 (IC) (v1363) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
56	TOC	K2001896-002.04 doc	1.0270 ppm	0.0041 ppm	0.4000%	2020/03/13 10:56

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.0299	10.2995	14.20	17.91	3.71	49.94	10:25
2	TOC	1.0241	10.2415	14.16	17.91	3.75	49.95	10:24

Dilution 1:10 **Blank Contribution** (TC) 7.2726 (IC) (v1363) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
57	TOC	Phenova	9.6181 ppm	0.0000 ppm	0.0000%	2020/03/13 11:24

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	9.6181	96.1809	71.95	75.84	3.88	49.95	10:31

Dilution 1:10 **Blank Contribution** (TC) 7.2726 (IC) (v1363) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm

From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.3556 ppm (PASS)	0.0000 ppm	0%	2020/03/13 11:39

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.3556	263.5556	185.06	188.85	3.79	49.94	10:35

Completion State Success - Criteria met. **Success Action** Do Nothing **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32) **STD Conc - Pos B** 50 ppmC

Sample Type: Check Standard --> CCB										From Schedule Version 2	
Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time		
♦	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/13 11:54	
Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time	
D	TOC	0 ppm	1	0.0000	0.0000	5.60	9.56	3.96	49.94	10:33	
<u>Completion State</u>		<u>Success Action</u>		<u>Method</u>		<u>Calibration</u>		<u>STD Conc - Pos D</u>			
Success - Criteria met.		Do Nothing		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)		0 ppmC			

Sample Type: Sample								From Schedule Version 2			
Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time					
♦	58	TOC	MB4	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/13 12:09				
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time			
1	TOC	0.0000	0.0000	5.17	8.96	3.79	49.95	10:31			
<u>Dilution</u>		<u>Blank Contribution</u>		<u>Method</u>		<u>Calibration</u>					
1:10		(TC) 7.2726 (IC) (v1363)		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)					

Sample Type: Check Standard --> LCS										From Schedule Version 2	
Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time		
♦	C	TOC	25.0000	1:1	[TOC] LCS [25.0 ppm]	0 / infinity (NA / NA)	24.9109 ppm (PASS)	0.0000 ppm	0%	2020/03/13 12:23	
Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time	
C	TOC	25.0 ppm	1	24.9109	249.1095	175.34	179.30	3.95	49.94	10:31	
<u>Completion State</u>		<u>Success Action</u>		<u>Method</u>		<u>Calibration</u>		<u>STD Conc - Pos C</u>			
Success - Criteria met.		Do Nothing		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)		25 ppmC			

Sample Type: Sample								From Schedule Version 2			
Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time					
♦	59	TOC	FB 3/9/20	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/13 12:38				
Rep	Base			Adjusted		Baseline	Pressure	Run			

#	Analysis Type	ppm	µg	(Abs)	NDIR (Abs)	(Abs)	(psig)	Time
1	TOC	0.0000	0.0000	5.75	9.62	3.86	49.96	10:33
<u>Dilution</u>		<u>Blank Contribution</u>		<u>Method</u>	<u>Calibration</u>			
1:10		(TC) 7.2726 (IC) (v1363)		CAS_salt_010711 (v4)	CAS_salt_010711 (v32)			
Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time		
60	TOC	K2002014-001.15	3.0634 ppm	0.0948 ppm	3.1000%	2020/03/13 12:53		
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.9964	29.9635	27.42	31.31	3.89	49.95	10:27
2	TOC	3.1305	31.3048	28.33	32.15	3.82	50.02	10:24
<u>Dilution</u>		<u>Blank Contribution</u>		<u>Method</u>	<u>Calibration</u>			
1:10		(TC) 7.2726 (IC) (v1363)		CAS_salt_010711 (v4)	CAS_salt_010711 (v32)			

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time	
B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.2973 ppm (PASS)	0.0000 ppm	0%	2020/03/13 13:21	
Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.2973	262.9727	184.67	188.48	3.81	50.03	10:32
<u>Completion State</u>		<u>Success Action</u>		<u>Method</u>	<u>Calibration</u>	<u>STD Conc - Pos B</u>				
Success - Criteria met.		Do Nothing		CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC				

Sample Type: Check Standard --> CCB From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time	
D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/13 13:35	
Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	5.57	9.36	3.78	50.06	10:33
<u>Completion State</u>		<u>Success Action</u>		<u>Method</u>	<u>Calibration</u>	<u>STD Conc - Pos D</u>				
Success - Criteria met.		Do Nothing		CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC				

25 ppm	181.4610	25.0000	2020/03/11 15:39
50 ppm	340.5610	50.0000	2020/03/11 15:53

Methods**Name: CAS_salt_010711 (TOC)**

Version: v4

Operator: Fusion1 (Fusion1)

Ver Creation: 2019/02/21 17:57

Comment:

Parameter	Value	Advanced Parameter	Value
SampleVolume	10.0 mL	NeedleRinseVolume	5.0 ml
Dilution	1:10	VialPrimeVolume	2.0 ml
AcidVolume	0.5 ml	ICSamplePrimeVolume	2.0 ml
ReagentVolume	2.0 ml	ICSpurgeRinseVolume	12.0 ml
UVReactorPrerinse	Off	BaselineStabilizeTime	0.70 min
UVReactorPrerinseVolume	5.0	DetectorPressureFlow	150 ml/min
NumberOfUVReactorPrerinses	1	SyringeSpeedWaste	10
ICSpurgeTime	1.00 mins	SyringeSpeedAcid	7
DetectorSweepFlow	500 ml/min	SyringeSpeedReagent	7
PreSpurgeTime	2.00 mins	SyringeSpeedDIWater	7
SystemFlow	500 ml/min	NDIRPressurization	60 psig
		SyringeSpeedSampleDispense	5
		SyringeSpeedSampleAspirate	4
		SyringeSpeedUVDispense	5
		SyringeSpeedUVAspirate	5
		SyringeSpeedICDispense	5
		SyringeSpeedICAspirate	5
		NDIRPressureStabilize	1.75 min
		SampleMixing	Off
		SampleMixingCycles	1
		SampleMixingVolume	10.0
		LowLevelFilterNDIR	Off

Acceptance / Approval**Electronic Signatures**

Report Version	User Name	Acceptance	Reason	Date
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Report History

Report History

Report Version	User Name	System Reason	User Reason	Date
1	Fusion1 (Fusion1)	Schedule completed	Schedule completed	2020/03/13 13:51

ALS Environmental

StarLIMS Run: 672644, 672645, 672646, 672647
 Analysis: DOC/TOC
 Method: SM 5310 C, 9060A, 415.1, 9060

CCV: 11-GEN-05-82C 50 ppm LCS: 11-GEN-05-79J 25.0 ppm

ICAL Date: 1/7/2020

ICAL ID: 11-GEN-05-83-K->O/84-A/11-GEN-05-84-C->H

ICS ID: 11-GEN-05-78M

ICS TV: 25.0 ppm ICS % R < 1

Spike ID: 11-GEN-05-82C 0.05 ml of 5000 ppm stock ---> 10.0 ml = 25.0 ppm x dilution factor


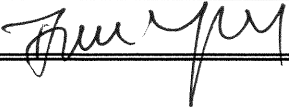
Sodium Persulfate: 19-GEN-08-6-M

21 % H3PO4: 19-GEN-08-6-N

Equipment ID: K-TOC-03

PIPETTE ID: 124276B, 129001F, N11314F, Marge

FILTER ID: 16967789

Analyzed By: 	Date Analyzed: 3/11/20
Reviewed By: 	Date Reviewed: 03/16/20



March 23, 2020

Service Request No:E2000206

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS20030169

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory March 05, 2020
For your reference, these analyses have been assigned our service request number **E2000206**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental



Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client: ALS Houston
Project: HS20030169
Sample Matrix: W

Service Request No.: E2000206
Date Received: 03/05/20

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

One sample was received for analysis at ALS Environmental in Houston on 03/05/20.

The sample was received in good condition and is consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion**Precision and Accuracy:**

EQ2000089: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. The LCS and DLCS recoveries are within QC limits.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - US
Project: HS20030169

Service Request:E2000206

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
E2000206-001	LH18/24-SP650_030420_BIX	3/4/2020	1400

Service Request Summary

Folder #: E2000206
Client Name: ALS Environmental - US
Project Name: HS20030169
Project Number:
Report To: RJ Modashia
 ALS Laboratory Group
 10450 Stancliff Road
 Houston, TX 77099-4338
 USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 03/05/20
Internal Due Date: 3/19/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20030169
EDD: No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 7B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON C104 DOD/6850
E2000206-001	LH18/24-SP650_030420_BIX	Water	03/04/20 1400	IV

Service Request Summary

Folder #: E2000206
Client Name: ALS Environmental - US
Project Name: HS20030169
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 03/05/20
Internal Due Date: 3/19/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20030169
EDD: No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 7B
Pressure Gas:

Data Qualifiers

Lab Standard

- + Possible Tedlar bag artifact.
- A TIC is a suspected aldol-condensation product
- B Analyte found in the associated method blank as well as in the sample.
- BC Reported results are not blank corrected.
- BH The back section of the tube yielded higher results than the front.
- BT Results indicated possible breakthrough; back section $\geq 10\%$ front section.
- C Result identification confirmed.
- D Compound identified in an analysis at a secondary dilution factor
- D Spike was diluted out
- DE Reported results are corrected for desorption efficiency.
- E Estimated value. Concentration above calibration range
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- H1 Sample analysis performed past holding time. See case narrative.
- H2 Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
- H3 Sample was received and analyzed past holding time.
- H4 Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
- I Internal standard not within the specified limits. See case narrative.
- J Estimated Value. Concentration found below MRL.
- K A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
- K Analyte was detected above the method reporting limit prior to normalization.
- L1 Laboratory control sample recovery outside the specified limits; results may be biased high.
- L2 Laboratory control sample recovery outside the specified limits; results may be biased low.
- L3 Laboratory control sample recovery outside the specified limits.
- M Matrix interference; results may be biased high.
- M The duplicate injection precision not met.
- M1 Matrix interference due to coelution with a non-target compound; results may be biased high.
- N Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- P Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
- P Pesticide/Aroclor target analyte $> 40\%$ difference for detected concentrations between GC columns
- Q Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
- R Duplicate Precision not met.
- R1 Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
- S Surrogate recovery not within specified limits.

Data Qualifiers

Lab Standard

- S The reported value was determined by the Method of Standard Additions (MSA).
- T Analyte is a tentatively identified compound, result is estimated.
- U Compound was analyzed for, but was not detected (ND).
- V1 The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
- V2 The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
- W Result quantified, but the corresponding peak was detected outside the generated retention time window.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- X See case narrative.
- Y Recovery outside limits
- Y The chromatogram resembles a petroleum product but does not match the calibration standard.
- Z The chromatogram does not resemble a petroleum product.
- i The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCEntration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient



State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
Arizona Department of Health Services	AZ0793	5/27/2020
Arkansas Department of Environmental Quality	19-028-0	3/27/2020
California Department of Health Services	2919	4/30/2020
Department of Defense	A2LA 2897.01	11/30/2021
Florida Department of Health	E87611	6/30/2020
Hawaii Department of Health	TX02694	4/30/2020
Illinois Environmental Protection Agency	2000322019-2	5/9/2020
Kansas Department of Health and Environment	E-10352	7/31/2020
Louisiana Department of Environmental Quality	03087	6/30/2020
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Center for Disease Control and Prevention	201815	6/5/2020
Maryland Department of the Environment	343	6/30/2020
Minnesota Department of Health	1785988	12/31/2020
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2020
Nevada Department of Conservation and Natural Resources	TX026932019-1	7/31/2020
New Hampshire Environmental Laboratory Accreditation Program	209419	4/24/2020
New Jersey Department of Environmental Protection	NLC190001	6/30/2020
New York Department of Health	11707	3/31/2020
Oklahoma Department of Environmental Quality	2019-067	8/31/2020
Pennsylvania Department of Environmental Protection	68-03441-013	6/30/2020
Tennessee Department of Environment and Conservation	04016	6/30/2020
Texas Commission on Environmental Quality	TX104704231-19-25	4/30/2020
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932019-9	7/31/2020
Washington Department of Health	C819	11/14/2020
West Virginia Department of Environmental Protection	347	6/30/2020



Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com



E2000206

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ALS Laboratory Group
HS20030169



10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: Dept of Defense

COC ID: 13467

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff Road Suite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company: ALS Houston
Contact: RJ Modashia
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Email: RJ.Modashia@alsglobal.com
Alternate Contact:
Email:

INVOICE INFORMATION:

Company: ALS Houston
Contact: Accounts Payable
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Reference: HS20030169
TSR: Danielle Winnings

LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
ANALYSIS REQUESTED			DUE DATE
1. HS20030169-02	LH18/24-SP650_030420_BIX	Water	04 Mar 2020 14:00
	SUB_Perch-6850		13 Mar 2020

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: J. MALUAT

Date/Time: 3/5/20 14:10

Received By: CUREY H

Date/Time: 3/5/20 14:10

Cooler ID(s): _____

Temperature(s): _____

RIGHT SOLUTIONS | RIGHT PARTNER



Cooler Receipt Form

Project Chemist ck

Client/Project ALY-H

Thermometer ID SMU4

Date/Time Received: 3/5/20

Initials: ck

Date/Time Logged in: 3/5/20

Initials ck

1. Method of delivery: US Mail Fed Ex UPS DHL ^{ALS} Courier Client

2. Samples received in: Cooler Box Envelope Other

3. Were custody seals on coolers? Yes No If yes, how many and where?

Were they intact? Yes No N/A

Were they signed and dated? Yes No N/A

4. Packing Material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Sleeves Other

5. Foreign or Regulated Soil? Yes No Location of Sampling: _____

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
-		3/5/20	1400	ck	0.3/0.7	<input checked="" type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>

6. Were custody papers properly filled out (ink, signed, dated, etc)? Yes No

7. Did all bottles arrive in good condition (not broken, no signs of leakage)? Yes No

8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? Yes No

9. Were appropriate bottles/containers and volumes received for the requested tests? Yes No

10. Did sample labels and tags agree with custody documents? Yes No

Notes, Discrepancies, & Resolutions:

Service request Label:

E2000206

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ALS Laboratory Group
HS20030169





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SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sample. The COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6°C.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10°C.
- ✓ Air samples are shipped and stored cold, at 0 to 6°C
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report



Preparation Information Benchsheets

ALS Environmental - Houston HRMS
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Phone (713)266-1599 Fax (713)266-0130
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Preparation Information Benchsheet

Prep Run#: 355072
Team: Semivoa GCMS/KBROWN

Prep Workflow: GenExt28Day
Prep Method: Method

Status: Prepped
Prep Date/Time: 3/10/20 10:33

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2000179-001	LH18/24-SP140_022520	.01	6850/CIO4 DOD			Water	10mL	
2	E2000180-001	LH18/24-SP650_022520_BIX	.01	6850/CIO4 DOD			Water	10mL	
3	E2000181-001	LH18/24-SP650_022520_BIX	.01	6850/CIO4 DOD			Water	10mL	
4	E2000182-001	GW-MW-89D-20200226-01	.01	6850/CIO4			Ground Water	10mL	
5	E2000186-001	GW-MW-98D-20200227-01	.01	6850/CIO4			Ground Water	10mL	
6	E2000186-002	GW-MW-6602-20200227-01	.01	6850/CIO4			Ground Water	10mL	
7	E2000186-003	GW-MW-29D-20200227-01	.01	6850/CIO4			Ground Water	10mL	
8	E2000206-001	LH18/24-SP650_030420_BIX	.01	6850/CIO4 DOD			Water	10mL	
9	EQ2000089-01	MB		6850/CIO4 DOD			Liquid	10mL	
10	EQ2000089-02	LCS		6850/CIO4 DOD			Liquid	10mL	
11	EQ2000089-03	DLCS		6850/CIO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4	Inventory ID: 202037	Logbook Ref: Sodium Perchlorate	Expires On: 05/22/2021
--	----------------------	---------------------------------	------------------------

E2000179-001 100.00µL	E2000180-001 100.00µL	E2000181-001 100.00µL	E2000182-001 100.00µL	E2000186-001 100.00µL	E2000186-002 100.00µL
E2000186-003 100.00µL	E2000206-001 100.00µL	EQ2000089-01 100.00µL	EQ2000089-01 100.00µL	EQ2000089-02 100.00µL	EQ2000089-02 100.00µL
EQ2000089-03 100.00µL	EQ2000089-03 100.00µL				

Name: Perchlorate Intermediate Stock1	Inventory ID: 204799	Logbook Ref: 200657 1.0ug/mL KN	Expires On: 05/15/2020
---------------------------------------	----------------------	---------------------------------	------------------------

EQ2000089-02 10.00µL	EQ2000089-02 10.00µL	EQ2000089-03 10.00µL	EQ2000089-03 10.00µL
----------------------	----------------------	----------------------	----------------------

Preparation Steps

Step: Preparation
Started: 3/10/20 10:33
Finished: 3/10/20 12:00
By: KBROWN
Comments

Comments: _____

Reviewed By: KB Date: 3/11/2020



Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - US
Project: HS20030169
Sample Matrix: Water
Sample Name: LH18/24-SP650_030420_BIX
Lab Code: E2000206-001

Service Request: E2000206
Date Collected: 3/ 4/20 1400
Date Received: 3/ 5/20
Units: µg/L
Basis: NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0250	1	3/10/20	3/11/20 14:52	355072	673020	*

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - US
Project: HS20030169
Sample Matrix: Water
Sample Name: Method Blank
Lab Code: EQ2000089-01

Service Request: E2000206
Date Collected: NA
Date Received: NA
Units: µg/L
Basis: NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0250	1	3/10/20	3/10/20 14:25	355072	673019	



Accuracy & Precision

ALS Environmental - Houston HRMS
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www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20030169
Sample Matrix: Water

Service Request: E2000206
Date Analyzed: 3/10/20

Lab Control Sample Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Units: µg/L
Basis: NA

Extraction Lot: 355072

Analyte Name	Lab Control Sample EQ2000089-02			Duplicate Lab Control Sample EQ2000089-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Perchlorate	1.04	1.00	104	1.13	1.00	113	84 - 119	8	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Analytical Report

Client: ALS Environmental - US
Project: HS20030169
Sample Matrix: Water

Service Request: E2000206
Date Collected: NA
Date Received: NA

Sample Name: Lab Control Sample
Lab Code: EQ2000089-02

Units: ug/L
Basis: NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analysis Method: 6850
Prep Method: Method
Sample Amount: 10mL

Data File Name: I:\LCMS01\DATA\20200310
ICAL Date: EC2000001

Date Analyzed: 03/10/20 14:33
Date Extracted: 3/10/20
Instrument Name: E-LCMS-01
GC Column: 1
Blank File Name:
Cal Ver. File Name:

Native Analyte Results

Analyte Name	Result	Q	MDL	MRL	Ion Ratio	RRT	Dilution Factor
Perchlorate	1.04		0.0250	0.100			1

Analytical Report

Client: ALS Environmental - US
Project: HS20030169
Sample Matrix: Water
Sample Name: Duplicate Lab Control Sample
Lab Code: EQ2000089-03

Service Request: E2000206
Date Collected: NA
Date Received: NA
Units: ug/L
Basis: NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analysis Method: 6850
Prep Method: Method
Sample Amount: 10mL
Data File Name: I:\LCMS01\DATA\20200310
ICAL Date: EC2000001

Date Analyzed: 03/10/20 14:41
Date Extracted: 3/10/20
Instrument Name: E-LCMS-01
GC Column: 1
Blank File Name:
Cal Ver. File Name:

Native Analyte Results

Analyte Name	Result	Q	MDL	MRL	Ion Ratio	RRT	Dilution Factor
Perchlorate	1.13		0.0250	0.100			1



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March 12, 2020

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS20030172**

Laboratory Results for: **Longhorn GW Treatment Plant Bi Weekly Samples**

Dear Marcia,

ALS Environmental received 2 sample(s) on Mar 05, 2020 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Raj. P. Modashia', enclosed in a circular scribble.

Generated By: JUMOKE.LAWAL
RJ Modashia
Project Manager

ALS Houston, US

Date: 12-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
Work Order: HS20030172

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20030172-01	LH18/24-SP650_030420	Water		04-Mar-2020 14:00	05-Mar-2020 08:50	<input type="checkbox"/>
HS20030172-02	Trip Blank	Water	CG-021720 -10	04-Mar-2020 14:00	05-Mar-2020 08:50	<input type="checkbox"/>

ALS Houston, US

Date: 12-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
Work Order: HS20030172

CASE NARRATIVE

GCMS Volatiles by Method SW8260**Batch ID: R358045****Sample ID: HS20030447-01MSD**

- MSD is for an unrelated sample

WetChemistry by Method SW9056**Batch ID: R357861**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
-

ALS Houston, US

Date: 12-Mar-20

Client: Bhate Environmental Associates, Inc.
 Project: Longhorn GW Treatment Plant Bi Weekly Samples
 Sample ID: LH18/24-SP650_030420
 Collection Date: 04-Mar-2020 14:00

ANALYTICAL REPORT
 WorkOrder:HS20030172
 Lab ID:HS20030172-01
 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED	
VOLATILES ORGANICS BY METHOD 8260C		Method:SW8260							Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
1,2-Dichloroethane	1.2		0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	11-Mar-2020 19:35	
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	11-Mar-2020 19:35	
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	11-Mar-2020 19:35	
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	11-Mar-2020 19:35	
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	11-Mar-2020 19:35	
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:35	

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 12-Mar-20

Client: Bhate Environmental Associates, Inc.
 Project: Longhorn GW Treatment Plant Bi Weekly Samples
 Sample ID: LH18/24-SP650_030420
 Collection Date: 04-Mar-2020 14:00

ANALYTICAL REPORT
 WorkOrder:HS20030172
 Lab ID:HS20030172-01
 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED	
VOLATILES ORGANICS BY METHOD 8260C		Method:SW8260						Analyst: PC	
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
cis-1,2-Dichloroethene	27		0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	11-Mar-2020 19:35	
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	11-Mar-2020 19:35	
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	11-Mar-2020 19:35	
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
Trichloroethene	5.1		0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:35	
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>90.3</i>			0	<i>81-118</i>	%REC	<i>1</i>	<i>11-Mar-2020 19:35</i>	
<i>Surr: 4-Bromofluorobenzene</i>	<i>99.6</i>			0	<i>85-114</i>	%REC	<i>1</i>	<i>11-Mar-2020 19:35</i>	
<i>Surr: Dibromofluoromethane</i>	<i>91.5</i>			0	<i>80-119</i>	%REC	<i>1</i>	<i>11-Mar-2020 19:35</i>	
<i>Surr: Toluene-d8</i>	<i>106</i>			0	<i>89-112</i>	%REC	<i>1</i>	<i>11-Mar-2020 19:35</i>	
ANIONS BY SW9056A		Method:SW9056						Analyst: KVL	
Chloride	376		2.00	5.00	5.00	mg/L	10	10-Mar-2020 03:05	
Sulfate	28.5		0.200	0.500	0.500	mg/L	1	10-Mar-2020 02:47	

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 12-Mar-20

Client: Bhate Environmental Associates, Inc.
 Project: Longhorn GW Treatment Plant Bi Weekly Samples
 Sample ID: Trip Blank
 Collection Date: 04-Mar-2020 14:00

ANALYTICAL REPORT
 WorkOrder:HS20030172
 Lab ID:HS20030172-02
 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED	
VOLATILES ORGANICS BY METHOD 8260C		Method:SW8260							Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	11-Mar-2020 18:23	
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	11-Mar-2020 18:23	
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	11-Mar-2020 18:23	
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	11-Mar-2020 18:23	
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	11-Mar-2020 18:23	
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:23	

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 12-Mar-20

Client: Bhate Environmental Associates, Inc.
 Project: Longhorn GW Treatment Plant Bi Weekly Samples
 Sample ID: Trip Blank
 Collection Date: 04-Mar-2020 14:00

ANALYTICAL REPORT
 WorkOrder:HS20030172
 Lab ID:HS20030172-02
 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED	
VOLATILES ORGANICS BY METHOD		Method:SW8260							Analyst: PC
8260C									
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	11-Mar-2020 18:23	
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	11-Mar-2020 18:23	
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	11-Mar-2020 18:23	
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:23	
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>89.7</i>			<i>0</i>	<i>81-118</i>	<i>%REC</i>	<i>1</i>	<i>11-Mar-2020 18:23</i>	
<i>Surr: 4-Bromofluorobenzene</i>	<i>101</i>			<i>0</i>	<i>85-114</i>	<i>%REC</i>	<i>1</i>	<i>11-Mar-2020 18:23</i>	
<i>Surr: Dibromofluoromethane</i>	<i>90.7</i>			<i>0</i>	<i>80-119</i>	<i>%REC</i>	<i>1</i>	<i>11-Mar-2020 18:23</i>	
<i>Surr: Toluene-d8</i>	<i>107</i>			<i>0</i>	<i>89-112</i>	<i>%REC</i>	<i>1</i>	<i>11-Mar-2020 18:23</i>	

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 12-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20030172

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R357861 (0)		Test Name : ANIONS BY SW9056A			Matrix: Water	
HS20030172-01	LH18/24-SP650_030420	04 Mar 2020 14:00			10 Mar 2020 03:05	10
HS20030172-01	LH18/24-SP650_030420	04 Mar 2020 14:00			10 Mar 2020 02:47	1
Batch ID: R358045 (0)		Test Name : VOLATILES ORGANICS BY METHOD 8260C			Matrix: Water	
HS20030172-01	LH18/24-SP650_030420	04 Mar 2020 14:00			11 Mar 2020 19:35	1
HS20030172-02	Trip Blank	04 Mar 2020 14:00			11 Mar 2020 18:23	1

ALS Houston, US

Date: 12-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20030172

QC BATCH REPORT

Batch ID: R358045 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
MBLK	Sample ID: VBLKW-200311	Units: UG/L			Analysis Date: 11-Mar-2020 17:34					
Client ID:	Run ID: VOA6_358045	SeqNo: 5509698	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	0.50	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	0.50	1.0								U
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	0.50	1.0								U
1,2,3-Trichlorobenzene	0.50	1.0								U
1,2,3-Trichloropropane	0.50	1.0								U
1,2,4-Trichlorobenzene	0.50	1.0								U
1,2,4-Trimethylbenzene	0.50	1.0								U
1,2-Dibromo-3-chloropropane	0.50	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	0.50	1.0								U
1,3,5-Trimethylbenzene	0.50	1.0								U
1,3-Dichlorobenzene	0.50	1.0								U
1,3-Dichloropropane	0.50	1.0								U
1,4-Dichlorobenzene	0.50	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	0.50	1.0								U
2-Hexanone	1.0	2.0								U
4-Chlorotoluene	0.50	1.0								U
4-Isopropyltoluene	0.50	1.0								U
4-Methyl-2-pentanone	1.0	2.0								U
Acetone	1.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	0.50	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	0.50	1.0								U
Bromomethane	0.50	1.0								U

ALS Houston, US

Date: 12-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20030172

QC BATCH REPORT

Batch ID: R358045 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
MBLK	Sample ID: VBLKW-200311	Units: UG/L			Analysis Date: 11-Mar-2020 17:34					
Client ID:	Run ID: VOA6_358045	SeqNo: 5509698	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	1.0	2.0								U
Carbon tetrachloride	0.50	1.0								U
Chlorobenzene	0.50	1.0								U
Chloroethane	0.50	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	0.50	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	0.50	1.0								U
Ethylbenzene	0.50	1.0								U
Hexachlorobutadiene	1.0	1.0								U
Isopropylbenzene	0.50	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	1.0	2.0								U
Naphthalene	0.50	1.0								U
n-Butylbenzene	0.50	1.0								U
n-Propylbenzene	0.50	1.0								U
o-Xylene	0.50	1.0								U
sec-Butylbenzene	0.50	1.0								U
Styrene	0.50	1.0								U
tert-Butylbenzene	0.50	1.0								U
Tetrachloroethene	0.50	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	44.48	1.0	50	0	89.0	81 - 118				
Surr: 4-Bromofluorobenzene	49.46	1.0	50	0	98.9	85 - 114				
Surr: Dibromofluoromethane	45.06	1.0	50	0	90.1	80 - 119				
Surr: Toluene-d8	53.28	1.0	50	0	107	89 - 112				

ALS Houston, US

Date: 12-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20030172

QC BATCH REPORT

Batch ID: R358045 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
LCS	Sample ID: VLCSW-200311	Units: UG/L			Analysis Date: 11-Mar-2020 16:46					
Client ID:	Run ID: VOA6_358045	SeqNo: 5509697	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.11	1.0	20	0	101	78 - 124				
1,1,1-Trichloroethane	18.82	1.0	20	0	94.1	74 - 131				
1,1,2,2-Tetrachloroethane	20.72	1.0	20	0	104	71 - 121				
1,1,2-Trichloroethane	19.74	1.0	20	0	98.7	80 - 119				
1,1-Dichloroethane	19.45	1.0	20	0	97.3	77 - 125				
1,1-Dichloroethene	18.73	1.0	20	0	93.7	71 - 131				
1,1-Dichloropropene	19.05	1.0	20	0	95.3	78 - 125				
1,2,3-Trichlorobenzene	22.86	1.0	20	0	114	69 - 129				
1,2,3-Trichloropropane	20.54	1.0	20	0	103	73 - 122				
1,2,4-Trichlorobenzene	22.59	1.0	20	0	113	69 - 130				
1,2,4-Trimethylbenzene	20.71	1.0	20	0	104	76 - 124				
1,2-Dibromo-3-chloropropane	22.33	1.0	20	0	112	62 - 128				
1,2-Dibromoethane	20.64	1.0	20	0	103	77 - 121				
1,2-Dichlorobenzene	20.67	1.0	20	0	103	80 - 119				
1,2-Dichloroethane	20.3	1.0	20	0	101	73 - 128				
1,2-Dichloropropane	19.47	1.0	20	0	97.3	78 - 122				
1,3,5-Trimethylbenzene	20.24	1.0	20	0	101	75 - 124				
1,3-Dichlorobenzene	20.26	1.0	20	0	101	80 - 119				
1,3-Dichloropropane	19.36	1.0	20	0	96.8	80 - 119				
1,4-Dichlorobenzene	20.57	1.0	20	0	103	79 - 118				
2,2-Dichloropropane	18.78	1.0	20	0	93.9	60 - 139				
2-Butanone	39.93	2.0	40	0	99.8	56 - 143				
2-Chlorotoluene	19.81	1.0	20	0	99.1	79 - 122				
2-Hexanone	40.79	2.0	40	0	102	57 - 139				
4-Chlorotoluene	20.04	1.0	20	0	100	78 - 122				
4-Isopropyltoluene	20.2	1.0	20	0	101	77 - 127				
4-Methyl-2-pentanone	39.65	2.0	40	0	99.1	67 - 130				
Acetone	40.51	2.0	40	0	101	39 - 160				
Benzene	20.17	1.0	20	0	101	79 - 120				
Bromobenzene	19.62	1.0	20	0	98.1	80 - 120				
Bromochloromethane	20.78	1.0	20	0	104	78 - 123				
Bromodichloromethane	20.35	1.0	20	0	102	79 - 125				
Bromoform	20.5	1.0	20	0	102	66 - 130				
Bromomethane	21.96	1.0	20	0	110	53 - 141				

ALS Houston, US

Date: 12-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20030172

QC BATCH REPORT

Batch ID: R358045 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
LCS	Sample ID: VLCSW-200311	Units: UG/L			Analysis Date: 11-Mar-2020 16:46					
Client ID:	Run ID: VOA6_358045	SeqNo: 5509697	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	39.31	2.0	40	0	98.3	64 - 133				
Carbon tetrachloride	18.92	1.0	20	0	94.6	72 - 136				
Chlorobenzene	19.97	1.0	20	0	99.9	82 - 118				
Chloroethane	17.97	1.0	20	0	89.8	60 - 138				
Chloroform	19.18	1.0	20	0	95.9	79 - 124				
Chloromethane	19.08	1.0	20	0	95.4	50 - 139				
cis-1,2-Dichloroethene	20.57	1.0	20	0	103	78 - 123				
cis-1,3-Dichloropropene	20.65	1.0	20	0	103	75 - 124				
Dibromochloromethane	20.44	1.0	20	0	102	74 - 126				
Dibromomethane	20.01	1.0	20	0	100	79 - 123				
Dichlorodifluoromethane	18.28	1.0	20	0	91.4	32 - 152				
Ethylbenzene	19.79	1.0	20	0	99.0	79 - 121				
Hexachlorobutadiene	23.57	1.0	20	0	118	66 - 134				
Isopropylbenzene	19.9	1.0	20	0	99.5	72 - 131				
m,p-Xylene	40.53	2.0	40	0	101	80 - 121				
Methylene chloride	19.58	2.0	20	0	97.9	74 - 124				
Naphthalene	21.2	1.0	20	0	106	61 - 128				
n-Butylbenzene	21.05	1.0	20	0	105	75 - 128				
n-Propylbenzene	20.48	1.0	20	0	102	76 - 126				
o-Xylene	20.25	1.0	20	0	101	78 - 122				
sec-Butylbenzene	19.79	1.0	20	0	99.0	77 - 126				
Styrene	20.27	1.0	20	0	101	78 - 123				
tert-Butylbenzene	20	1.0	20	0	100.0	78 - 124				
Tetrachloroethene	20.24	1.0	20	0	101	74 - 129				
Toluene	19.91	1.0	20	0	99.5	80 - 121				
trans-1,2-Dichloroethene	19.75	1.0	20	0	98.7	75 - 124				
trans-1,3-Dichloropropene	20.95	1.0	20	0	105	73 - 127				
Trichloroethene	20.26	1.0	20	0	101	79 - 123				
Trichlorofluoromethane	18.83	1.0	20	0	94.2	65 - 141				
Vinyl chloride	18.49	1.0	20	0	92.4	58 - 137				
Surr: 1,2-Dichloroethane-d4	50.53	1.0	50	0	101	81 - 118				
Surr: 4-Bromofluorobenzene	50.78	1.0	50	0	102	85 - 114				
Surr: Dibromofluoromethane	48.82	1.0	50	0	97.6	80 - 119				
Surr: Toluene-d8	49.79	1.0	50	0	99.6	89 - 112				

ALS Houston, US

Date: 12-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20030172

QC BATCH REPORT

Batch ID: R358045 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
MS	Sample ID: HS20030447-01MS	Units: UG/L			Analysis Date: 11-Mar-2020 20:47					
Client ID:	Run ID: VOA6_358045	SeqNo: 5509706	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.01	1.0	20	0	100	78 - 124				
1,1,1-Trichloroethane	18.49	1.0	20	0	92.4	74 - 131				
1,1,2,2-Tetrachloroethane	20.23	1.0	20	0	101	71 - 121				
1,1,2-Trichloroethane	19.37	1.0	20	0	96.8	80 - 119				
1,1-Dichloroethane	17.78	1.0	20	0	88.9	77 - 125				
1,1-Dichloroethene	18.17	1.0	20	0	90.9	71 - 131				
1,1-Dichloropropene	18.95	1.0	20	0	94.7	78 - 125				
1,2,3-Trichlorobenzene	15.77	1.0	20	0	78.8	69 - 129				
1,2,3-Trichloropropane	20.76	1.0	20	0	104	73 - 122				
1,2,4-Trichlorobenzene	16.39	1.0	20	0	81.9	69 - 130				
1,2,4-Trimethylbenzene	20.69	1.0	20	0	103	76 - 124				
1,2-Dibromo-3-chloropropane	20.11	1.0	20	0	101	62 - 128				
1,2-Dibromoethane	19.76	1.0	20	0	98.8	77 - 121				
1,2-Dichlorobenzene	20.53	1.0	20	0	103	80 - 119				
1,2-Dichloroethane	18.63	1.0	20	0	93.2	73 - 128				
1,2-Dichloropropane	18.01	1.0	20	0	90.1	78 - 122				
1,3,5-Trimethylbenzene	20.62	1.0	20	0	103	75 - 124				
1,3-Dichlorobenzene	20.21	1.0	20	0	101	80 - 119				
1,3-Dichloropropane	19.09	1.0	20	0	95.5	80 - 119				
1,4-Dichlorobenzene	20.22	1.0	20	0	101	79 - 118				
2,2-Dichloropropane	16.85	1.0	20	0	84.3	60 - 139				
2-Butanone	37.64	2.0	40	0	94.1	56 - 143				
2-Chlorotoluene	20.12	1.0	20	0	101	79 - 122				
2-Hexanone	41.43	2.0	40	0	104	57 - 139				
4-Chlorotoluene	20.14	1.0	20	0	101	78 - 122				
4-Isopropyltoluene	20.83	1.0	20	0	104	77 - 127				
4-Methyl-2-pentanone	40.7	2.0	40	0	102	67 - 130				
Acetone	42.86	2.0	40	0	107	39 - 160				
Benzene	19.11	1.0	20	0	95.5	79 - 120				
Bromobenzene	20.49	1.0	20	0	102	80 - 120				
Bromochloromethane	17.53	1.0	20	0	87.6	78 - 123				
Bromodichloromethane	23.58	1.0	20	2.166	107	79 - 125				
Bromoform	20.54	1.0	20	0	103	66 - 130				
Bromomethane	18.9	1.0	20	0	94.5	53 - 141				

ALS Houston, US

Date: 12-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20030172

QC BATCH REPORT

Batch ID: R358045 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
MS	Sample ID: HS20030447-01MS	Units: UG/L			Analysis Date: 11-Mar-2020 20:47					
Client ID:	Run ID: VOA6_358045	SeqNo: 5509706	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	36.71	2.0	40	0	91.8	64 - 133				
Carbon tetrachloride	19.41	1.0	20	0	97.0	72 - 136				
Chlorobenzene	20.3	1.0	20	0	102	82 - 118				
Chloroethane	17.32	1.0	20	0	86.6	60 - 138				
Chloroform	27.38	1.0	20	3.682	118	79 - 124				
Chloromethane	18.08	1.0	20	0	90.4	50 - 139				
cis-1,2-Dichloroethene	18.87	1.0	20	0	94.3	78 - 123				
cis-1,3-Dichloropropene	18.46	1.0	20	0	92.3	75 - 124				
Dibromochloromethane	21.66	1.0	20	1.14	103	74 - 126				
Dibromomethane	18.43	1.0	20	0	92.2	79 - 123				
Dichlorodifluoromethane	17.9	1.0	20	0	89.5	32 - 152				
Ethylbenzene	20.48	1.0	20	0	102	79 - 121				
Hexachlorobutadiene	16.45	1.0	20	0	82.2	66 - 134				
Isopropylbenzene	20.5	1.0	20	0	102	72 - 131				
m,p-Xylene	41.11	2.0	40	0	103	80 - 121				
Methylene chloride	16.9	2.0	20	0	84.5	74 - 124				
Naphthalene	16.38	1.0	20	0	81.9	61 - 128				
n-Butylbenzene	20.91	1.0	20	0	105	75 - 128				
n-Propylbenzene	20.94	1.0	20	0	105	76 - 126				
o-Xylene	19.95	1.0	20	0	99.8	78 - 122				
sec-Butylbenzene	20.64	1.0	20	0	103	77 - 126				
Styrene	19.16	1.0	20	0	95.8	78 - 123				
tert-Butylbenzene	21.04	1.0	20	0	105	78 - 124				
Tetrachloroethene	20.74	1.0	20	0	104	74 - 129				
Toluene	20.12	1.0	20	0	101	80 - 121				
trans-1,2-Dichloroethene	18.45	1.0	20	0	92.3	75 - 124				
trans-1,3-Dichloropropene	19.07	1.0	20	0	95.4	73 - 127				
Trichloroethene	20.39	1.0	20	0	102	79 - 123				
Trichlorofluoromethane	18.54	1.0	20	0	92.7	65 - 141				
Vinyl chloride	18.53	1.0	20	0	92.6	58 - 137				
Surr: 1,2-Dichloroethane-d4	46.38	1.0	50	0	92.8	81 - 118				
Surr: 4-Bromofluorobenzene	49.6	1.0	50	0	99.2	85 - 114				
Surr: Dibromofluoromethane	45.9	1.0	50	0	91.8	80 - 119				
Surr: Toluene-d8	52.88	1.0	50	0	106	89 - 112				

ALS Houston, US

Date: 12-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20030172

QC BATCH REPORT

Batch ID: R358045 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
MSD	Sample ID: HS20030447-01MSD	Units: UG/L			Analysis Date: 11-Mar-2020 21:11					
Client ID:	Run ID: VOA6_358045	SeqNo: 5509707		PrepDate:		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.83	1.0	20	0	99.2	78 - 124	20.01	0.895	20	
1,1,1-Trichloroethane	17.52	1.0	20	0	87.6	74 - 131	18.49	5.33	20	
1,1,2,2-Tetrachloroethane	19.41	1.0	20	0	97.0	71 - 121	20.23	4.14	20	
1,1,2-Trichloroethane	18.51	1.0	20	0	92.6	80 - 119	19.37	4.51	20	
1,1-Dichloroethane	16.74	1.0	20	0	83.7	77 - 125	17.78	6.07	20	
1,1-Dichloroethene	17.5	1.0	20	0	87.5	71 - 131	18.17	3.77	20	
1,1-Dichloropropene	18.38	1.0	20	0	91.9	78 - 125	18.95	3.04	20	
1,2,3-Trichlorobenzene	20.06	1.0	20	0	100	69 - 129	15.77	23.9	20	R
1,2,3-Trichloropropane	19.86	1.0	20	0	99.3	73 - 122	20.76	4.43	20	
1,2,4-Trichlorobenzene	19.25	1.0	20	0	96.3	69 - 130	16.39	16.1	20	
1,2,4-Trimethylbenzene	19.52	1.0	20	0	97.6	76 - 124	20.69	5.81	20	
1,2-Dibromo-3-chloropropane	20.92	1.0	20	0	105	62 - 128	20.11	3.93	20	
1,2-Dibromoethane	19.63	1.0	20	0	98.2	77 - 121	19.76	0.639	20	
1,2-Dichlorobenzene	19.47	1.0	20	0	97.4	80 - 119	20.53	5.26	20	
1,2-Dichloroethane	19.06	1.0	20	0	95.3	73 - 128	18.63	2.25	20	
1,2-Dichloropropane	17.37	1.0	20	0	86.9	78 - 122	18.01	3.63	20	
1,3,5-Trimethylbenzene	19.77	1.0	20	0	98.9	75 - 124	20.62	4.19	20	
1,3-Dichlorobenzene	19.04	1.0	20	0	95.2	80 - 119	20.21	5.96	20	
1,3-Dichloropropane	18.37	1.0	20	0	91.9	80 - 119	19.09	3.85	20	
1,4-Dichlorobenzene	19.24	1.0	20	0	96.2	79 - 118	20.22	4.95	20	
2,2-Dichloropropane	15.76	1.0	20	0	78.8	60 - 139	16.85	6.66	20	
2-Butanone	36.69	2.0	40	0	91.7	56 - 143	37.64	2.55	20	
2-Chlorotoluene	18.72	1.0	20	0	93.6	79 - 122	20.12	7.23	20	
2-Hexanone	41.94	2.0	40	0	105	57 - 139	41.43	1.22	20	
4-Chlorotoluene	18.93	1.0	20	0	94.6	78 - 122	20.14	6.2	20	
4-Isopropyltoluene	19.7	1.0	20	0	98.5	77 - 127	20.83	5.59	20	
4-Methyl-2-pentanone	38.67	2.0	40	0	96.7	67 - 130	40.7	5.11	20	
Acetone	44.62	2.0	40	0	112	39 - 160	42.86	4.01	20	
Benzene	18.42	1.0	20	0	92.1	79 - 120	19.11	3.63	20	
Bromobenzene	19.1	1.0	20	0	95.5	80 - 120	20.49	7.06	20	
Bromochloromethane	16.62	1.0	20	0	83.1	78 - 123	17.53	5.33	20	
Bromodichloromethane	23.7	1.0	20	2.166	108	79 - 125	23.58	0.542	20	
Bromoform	20.28	1.0	20	0	101	66 - 130	20.54	1.27	20	
Bromomethane	16.92	1.0	20	0	84.6	53 - 141	18.9	11	20	

ALS Houston, US

Date: 12-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20030172

QC BATCH REPORT

Batch ID: R358045 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
MSD	Sample ID: HS20030447-01MSD	Units: UG/L			Analysis Date: 11-Mar-2020 21:11					
Client ID:	Run ID: VOA6_358045	SeqNo: 5509707	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	34.17	2.0	40	0	85.4	64 - 133	36.71	7.14	20	
Carbon tetrachloride	18.78	1.0	20	0	93.9	72 - 136	19.41	3.28	20	
Chlorobenzene	19.09	1.0	20	0	95.5	82 - 118	20.3	6.12	20	
Chloroethane	15.2	1.0	20	0	76.0	60 - 138	17.32	13	20	
Chloroform	26.56	1.0	20	3.682	114	79 - 124	27.38	3.01	20	
Chloromethane	16.84	1.0	20	0	84.2	50 - 139	18.08	7.1	20	
cis-1,2-Dichloroethene	17.48	1.0	20	0	87.4	78 - 123	18.87	7.62	20	
cis-1,3-Dichloropropene	18.37	1.0	20	0	91.9	75 - 124	18.46	0.464	20	
Dibromochloromethane	21.08	1.0	20	1.14	99.7	74 - 126	21.66	2.71	20	
Dibromomethane	17.94	1.0	20	0	89.7	79 - 123	18.43	2.69	20	
Dichlorodifluoromethane	16.46	1.0	20	0	82.3	32 - 152	17.9	8.39	20	
Ethylbenzene	19.81	1.0	20	0	99.0	79 - 121	20.48	3.33	20	
Hexachlorobutadiene	18.03	1.0	20	0	90.1	66 - 134	16.45	9.18	20	
Isopropylbenzene	19.46	1.0	20	0	97.3	72 - 131	20.5	5.18	20	
m,p-Xylene	38.51	2.0	40	0	96.3	80 - 121	41.11	6.51	20	
Methylene chloride	16.72	2.0	20	0	83.6	74 - 124	16.9	1.03	20	
Naphthalene	19.59	1.0	20	0	97.9	61 - 128	16.38	17.9	20	
n-Butylbenzene	20.11	1.0	20	0	101	75 - 128	20.91	3.93	20	
n-Propylbenzene	19.38	1.0	20	0	96.9	76 - 126	20.94	7.72	20	
o-Xylene	19.13	1.0	20	0	95.6	78 - 122	19.95	4.2	20	
sec-Butylbenzene	19.38	1.0	20	0	96.9	77 - 126	20.64	6.28	20	
Styrene	19.01	1.0	20	0	95.1	78 - 123	19.16	0.775	20	
tert-Butylbenzene	19.67	1.0	20	0	98.4	78 - 124	21.04	6.74	20	
Tetrachloroethene	19.76	1.0	20	0	98.8	74 - 129	20.74	4.83	20	
Toluene	18.88	1.0	20	0	94.4	80 - 121	20.12	6.34	20	
trans-1,2-Dichloroethene	17.1	1.0	20	0	85.5	75 - 124	18.45	7.63	20	
trans-1,3-Dichloropropene	18.26	1.0	20	0	91.3	73 - 127	19.07	4.35	20	
Trichloroethene	18.59	1.0	20	0	92.9	79 - 123	20.39	9.23	20	
Trichlorofluoromethane	17.07	1.0	20	0	85.4	65 - 141	18.54	8.23	20	
Vinyl chloride	17.18	1.0	20	0	85.9	58 - 137	18.53	7.56	20	
Surr: 1,2-Dichloroethane-d4	45.87	1.0	50	0	91.7	81 - 118	46.38	1.1	20	
Surr: 4-Bromofluorobenzene	50.91	1.0	50	0	102	85 - 114	49.6	2.6	20	
Surr: Dibromofluoromethane	45.67	1.0	50	0	91.3	80 - 119	45.9	0.507	20	
Surr: Toluene-d8	52.57	1.0	50	0	105	89 - 112	52.88	0.601	20	

ALS Houston, US

Date: 12-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20030172

QC BATCH REPORT**Batch ID:** R358045 (0)**Instrument:** VOA6**Method:** VOLATILES ORGANICS BY METHOD
8260C

The following samples were analyzed in this batch:

HS20030172-01	HS20030172-02
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ALS Houston, US

Date: 12-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20030172

QC BATCH REPORT

Batch ID: R357861 (0)		Instrument: ICS-Integrion		Method: ANIONS BY SW9056A						
MBLK	Sample ID: WBLKW1-030920	Units: mg/L			Analysis Date: 10-Mar-2020 01:16					
Client ID:	Run ID: ICS-Integrion_357861	SeqNo: 5506102		PrepDate:			DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Chloride	0.500	0.500							U	
Sulfate	0.500	0.500							U	
LCS	Sample ID: WLCSW1-030920	Units: mg/L			Analysis Date: 10-Mar-2020 01:34					
Client ID:	Run ID: ICS-Integrion_357861	SeqNo: 5506103		PrepDate:			DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Chloride	19.84	0.500	20	0	99.2	80 - 120				
Sulfate	19.46	0.500	20	0	97.3	80 - 120				
LCSD	Sample ID: WLCSDW1-030920	Units: mg/L			Analysis Date: 10-Mar-2020 01:52					
Client ID:	Run ID: ICS-Integrion_357861	SeqNo: 5506104		PrepDate:			DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Chloride	19.88	0.500	20	0	99.4	80 - 120	19.84	0.191	20	
Sulfate	19.57	0.500	20	0	97.8	80 - 120	19.46	0.548	20	
MS	Sample ID: HS20030204-01MS	Units: mg/L			Analysis Date: 09-Mar-2020 23:27					
Client ID:	Run ID: ICS-Integrion_357861	SeqNo: 5506098		PrepDate:			DF: 10			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Chloride	329.5	5.00	100	234.4	95.1	80 - 120				
Sulfate	195.9	5.00	100	98.56	97.3	80 - 120				
MSD	Sample ID: HS20030204-01MSD	Units: mg/L			Analysis Date: 09-Mar-2020 23:45					
Client ID:	Run ID: ICS-Integrion_357861	SeqNo: 5506099		PrepDate:			DF: 10			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Chloride	328.8	5.00	100	234.4	94.4	80 - 120	329.5	0.204	20	
Sulfate	195	5.00	100	98.56	96.4	80 - 120	195.9	0.45	20	

The following samples were analyzed in this batch:

ALS Houston, US

Date: 12-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20030172

**QUALIFIERS,
ACRONYMS, UNITS**

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Unit Reported	Description
mg/L	Milligrams per Liter

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	19-028-0	27-Mar-2020
California	2919, 2019-2020	30-Apr-2020
Dept of Defense	ANAB L2231 V009	22-Dec-2021
Florida	E87611-28	30-Jun-2020
Illinois	2000322019-2	09-May-2020
Kansas	E-10352 2019-2020	31-Jul-2020
Kentucky	123043, 2019-2020	30-Apr-2020
Louisiana	03087, 2019-2020	30-Jun-2020
Maryland	343, 2019-2020	30-Jun-2020
North Carolina	624-2020	31-Dec-2020
North Dakota	R-193 2019-2020	30-Apr-2020
Oklahoma	2019-067	31-Aug-2020
Texas	T104704231-19-25	30-Apr-2020

ALS Houston, US

Date: 12-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
Work Order: HS20030172

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20030172-01	LH18/24-SP650_030420	Login	3/5/2020 10:27:15 AM	PMG	WET247
HS20030172-01	LH18/24-SP650_030420	Login	3/5/2020 10:27:15 AM	PMG	VOA153
HS20030172-02	Trip Blank	Login	3/5/2020 10:27:15 AM	PMG	VOA153

Sample Receipt Checklist

Client Name: Bhate Environmental
 Work Order: HS20030172

Date/Time Received: **05-Mar-2020 08:50**
 Received by: **NDD**

Checklist completed by: Paresh M. Giga 5-Mar-2020
 eSignature Date

Reviewed by: RJ Modashia 5-Mar-2020
 eSignature Date

Matrices: **Water**

Carrier name: **FedEx**

- Shipping container/cooler in good condition? Yes No Not Present
- Custody seals intact on shipping container/cooler? Yes No Not Present
- Custody seals intact on sample bottles? Yes No Not Present
- VOA/TX1005/TX1006 Solids in hermetically sealed vials? Yes No Not Present
- Chain of custody present? Yes No 1 Page(s)
- Chain of custody signed when relinquished and received? Yes No COC IDs:None
- Samplers name present on COC? Yes No
- Chain of custody agrees with sample labels? Yes No
- Samples in proper container/bottle? Yes No
- Sample containers intact? Yes No
- Sufficient sample volume for indicated test? Yes No
- All samples received within holding time? Yes No
- Container/Temp Blank temperature in compliance? Yes No

Temperature(s)/Thermometer(s): 0.3c U/c IR25
 Cooler(s)/Kit(s): 43333
 Date/Time sample(s) sent to storage: 3/5/2020 10:35

- Water - VOA vials have zero headspace? Yes No No VOA vials submitted
- Water - pH acceptable upon receipt? Yes No N/A
- pH adjusted? Yes No N/A

pH adjusted by:

Login Notes:

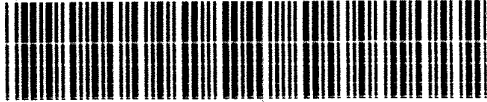
Client Contacted: Date Contacted: Person Contacted:
 Contacted By: Regarding:

Comments:


Corrective Action:

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210, Houston, Tx. 77099 ATTN: R.J. Modashia

Project: BHATE LONGHORN ARMY AMMN. PLANT (LHAAP) GROUNDWATER TREATMENT PLANT (GWTP) KARNACK, TEXAS				Project No. NWO1312.0150.0 16.0001		Analyses <h2 style="margin: 0;">HS20030172</h2> Bhate Environmental Associates, Inc. Longhorn GW Treatment Plant Bi Weekly Samples 															
Job: GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES				MS / MSD	No. OF CONTAINERS	VOC	CHLORIDE, SULFATE														
Prepared By: Scott Beesinger		P.O Number																			
Field Sample I.D.		Sample Matrix														Date / Time		Remarks (Preservatives, etc.)		Lab I.D.#	
LH18/24-SP650_030420		Water		03/04/20 / 14:00		3		3				HCL									
LH18/24-SP650_030420		Water		03/04/20 / 14:00		1		1				NONE									
Trip Blank		Water		03/04/20		2		2				HCL									
Additional Remarks: Standard TAT on Chloride & Sulfate. 24 Hour TAT on VOC																					
Relinquished By: <i>Scott Beesinger</i>		Date 03/04/20		Time 14:30		Received By: <i>[Signature]</i>		Date 3/5/20		Time 08:50		Received By:		Date		Time					
9 For Lab Use Only																					
Received At Lab By:				Date		Time		Airbill No.		Opened By:				Date		Temp of Container		Seal No.		Condition	
Remarks: 43333 0.30 #25 Chloro																					

(Word) S:\1-ces\Forms\Chain of Custody - BiWeekly

 <p>ALS 10450 Stancliff Rd., Suite 210 Houston, Texas 77099 Tel. +1 281 530 5656 Fax. +1 281 530 5887</p>	+3333	CUS
		Date: 3/4/20
		Name: Scott
		Company: B

TODY SEAL	Broken By: <i>[Signature]</i>
Time: 1430	Date: 3/5/20
Personnel: [Signature]	
IAH	

FedEx	THU - 05 MAR 10:30A
TRK# 4380 9533 6769	PRIORITY OVERNIGHT
AB SGRA	77099
	TX-US
	IAH
	
FID 3879314 @4MAR20 GGA 568C2/64E0/05A2	



10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
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March 26, 2020

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS20030425**

Laboratory Results for: **Longhorn GW Treatment Plant Monthly Effluent Samples**

Dear Marcia,

ALS Environmental received 3 sample(s) on Mar 11, 2020 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Raj. P. Modashia', enclosed in a circular scribble.

Generated By: JUMOKE.LAWAL
RJ Modashia
Project Manager

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
Work Order: HS20030425

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20030425-01	LH18/24-SP650_031020	Water		10-Mar-2020 14:00	11-Mar-2020 08:53	<input type="checkbox"/>
HS20030425-02	LH18/24-SP650_031020_BIX	Water		10-Mar-2020 14:00	11-Mar-2020 08:53	<input type="checkbox"/>
HS20030425-03	Trip Blank	Water		10-Mar-2020 14:00	11-Mar-2020 08:53	<input type="checkbox"/>

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
Work Order: HS20030425

CASE NARRATIVE**Work Order Comments**

- The analysis for Perchlorate were subcontracted to ALS High Res Lab Houston, TX. Final report attached.
-

GCMS Semivolatiles by Method SW8270SIM**Batch ID: 151633**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
-

GCMS Volatiles by Method SW8260**Batch ID: R358045****Sample ID: HS20030447-01MSD**

- MSD was performed on unrelated sample
-

Metals by Method SW6020**Batch ID: 151661****Sample ID: LH18/24-SP650_031020 (HS20030425-01MSD)**

- Lead failed for MSD but passed for MS and PDS.
-

WetChemistry by Method SW7196**Batch ID: R358186**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
-

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
 Project: Longhorn GW Treatment Plant Monthly Effluent Samples
 Sample ID: LH18/24-SP650_031020
 Collection Date: 10-Mar-2020 14:00

ANALYTICAL REPORT
 WorkOrder:HS20030425
 Lab ID:HS20030425-01
 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED	
VOLATILES ORGANICS BY METHOD 8260C		Method:SW8260							Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
1,2-Dichloroethane	1.2		0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	11-Mar-2020 19:59	
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	11-Mar-2020 19:59	
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	11-Mar-2020 19:59	
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	11-Mar-2020 19:59	
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	11-Mar-2020 19:59	
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:59	

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
 Project: Longhorn GW Treatment Plant Monthly Effluent Samples
 Sample ID: LH18/24-SP650_031020
 Collection Date: 10-Mar-2020 14:00

ANALYTICAL REPORT
 WorkOrder:HS20030425
 Lab ID:HS20030425-01
 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED	
VOLATILES ORGANICS BY METHOD 8260C		Method:SW8260						Analyst: PC	
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
cis-1,2-Dichloroethene	27		0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	11-Mar-2020 19:59	
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	11-Mar-2020 19:59	
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	11-Mar-2020 19:59	
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
Trichloroethene	5.0		0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 19:59	
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>88.4</i>			0	<i>81-118</i>	%REC	<i>1</i>	<i>11-Mar-2020 19:59</i>	
<i>Surr: 4-Bromofluorobenzene</i>	<i>99.7</i>			0	<i>85-114</i>	%REC	<i>1</i>	<i>11-Mar-2020 19:59</i>	
<i>Surr: Dibromofluoromethane</i>	<i>89.7</i>			0	<i>80-119</i>	%REC	<i>1</i>	<i>11-Mar-2020 19:59</i>	
<i>Surr: Toluene-d8</i>	<i>105</i>			0	<i>89-112</i>	%REC	<i>1</i>	<i>11-Mar-2020 19:59</i>	
SEMIVOLATILES SIM		Method:SW8270SIM						Prep:SW3510 / 12-Mar-2020 Analyst: LG	
1,4-Dioxane	29	a	1.0	1.0	1.0	ug/L	100	13-Mar-2020 15:50	
<i>Surr: 2-Fluorobiphenyl</i>	<i>98.6</i>			0	<i>40-140</i>	%REC	<i>100</i>	<i>13-Mar-2020 15:50</i>	
<i>Surr: 4-Terphenyl-d14</i>	<i>88.4</i>			0	<i>40-140</i>	%REC	<i>100</i>	<i>13-Mar-2020 15:50</i>	
<i>Surr: Nitrobenzene-d5</i>	<i>99.2</i>			0	<i>40-140</i>	%REC	<i>100</i>	<i>13-Mar-2020 15:50</i>	
METALS BY ICPMS BY SW6020A		Method:SW6020						Prep:SW3010A / 13-Mar-2020 Analyst: JHD	
Barium	0.115		0.00190	0.00250	0.00500	mg/L	1	18-Mar-2020 21:46	
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	18-Mar-2020 21:46	
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	18-Mar-2020 21:46	
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	18-Mar-2020 21:46	

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
 Project: Longhorn GW Treatment Plant Monthly Effluent Samples
 Sample ID: LH18/24-SP650_031020
 Collection Date: 10-Mar-2020 14:00

ANALYTICAL REPORT

WorkOrder:HS20030425
 Lab ID:HS20030425-01
 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED	
HEXAVALENT CHROMIUM BY SW7196A		Method:SW7196							Analyst: MZD
Chromium, Hexavalent	0.0100	U	0.00600	0.0100	0.0100	mg/L	1	11-Mar-2020 12:16	

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
 Project: Longhorn GW Treatment Plant Monthly Effluent Samples
 Sample ID: LH18/24-SP650_031020_BIX
 Collection Date: 10-Mar-2020 14:00

ANALYTICAL REPORT

WorkOrder:HS20030425
 Lab ID:HS20030425-02
 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		Method:NA		Analyst: CGG				
Subcontract Analysis	See Attached		0	0		NA	1	26-Mar-2020 12:09

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
 Project: Longhorn GW Treatment Plant Monthly Effluent Samples
 Sample ID: Trip Blank
 Collection Date: 10-Mar-2020 14:00

ANALYTICAL REPORT
 WorkOrder:HS20030425
 Lab ID:HS20030425-03
 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD		Method:SW8260						
8260C								Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:47
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:47
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	11-Mar-2020 18:47
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:47
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:47
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:47
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:47
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	11-Mar-2020 18:47
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	11-Mar-2020 18:47
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	11-Mar-2020 18:47
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:47
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:47
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:47
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	11-Mar-2020 18:47
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:47
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	11-Mar-2020 18:47
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:47
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	11-Mar-2020 18:47
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:47
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	11-Mar-2020 18:47
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:47
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	11-Mar-2020 18:47
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:47
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	11-Mar-2020 18:47
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	11-Mar-2020 18:47
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:47
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	11-Mar-2020 18:47
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	11-Mar-2020 18:47
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:47
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	11-Mar-2020 18:47
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:47
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:47
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	11-Mar-2020 18:47
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	11-Mar-2020 18:47
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	11-Mar-2020 18:47
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	11-Mar-2020 18:47
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:47
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:47
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:47

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
 Project: Longhorn GW Treatment Plant Monthly Effluent Samples
 Sample ID: Trip Blank
 Collection Date: 10-Mar-2020 14:00

ANALYTICAL REPORT
 WorkOrder:HS20030425
 Lab ID:HS20030425-03
 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED	
VOLATILES ORGANICS BY METHOD 8260C		Method:SW8260							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:47	
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:47	
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	11-Mar-2020 18:47	
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:47	
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:47	
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:47	
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:47	
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	11-Mar-2020 18:47	
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:47	
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	11-Mar-2020 18:47	
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	11-Mar-2020 18:47	
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	11-Mar-2020 18:47	
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:47	
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:47	
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:47	
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:47	
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:47	
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:47	
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:47	
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:47	
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:47	
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:47	
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:47	
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	11-Mar-2020 18:47	
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	11-Mar-2020 18:47	
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>89.9</i>			<i>0</i>	<i>81-118</i>	<i>%REC</i>	<i>1</i>	<i>11-Mar-2020 18:47</i>	
<i>Surr: 4-Bromofluorobenzene</i>	<i>97.8</i>			<i>0</i>	<i>85-114</i>	<i>%REC</i>	<i>1</i>	<i>11-Mar-2020 18:47</i>	
<i>Surr: Dibromofluoromethane</i>	<i>91.3</i>			<i>0</i>	<i>80-119</i>	<i>%REC</i>	<i>1</i>	<i>11-Mar-2020 18:47</i>	
<i>Surr: Toluene-d8</i>	<i>107</i>			<i>0</i>	<i>89-112</i>	<i>%REC</i>	<i>1</i>	<i>11-Mar-2020 18:47</i>	

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Weight / Prep Log

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20030425

Batch ID: 151633	Start Date: 12 Mar 2020 09:00	End Date: 12 Mar 2020 13:30
Method: SV AQ SEP FUN EXTRACT-LOWLEV - 3510C	Prep Code: 3510_B_SIM	

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20030425-01	1	1000 (mL)	1 (mL)	0.001

Batch ID: 151661	Start Date: 13 Mar 2020 10:00	End Date: 13 Mar 2020 14:00
Method: WATER - SW3010A	Prep Code: 3010A	

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20030425-01		10 (mL)	10 (mL)	1

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20030425

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 151633 (0)		Test Name : SEMIVOLATILES SIM			Matrix: Water	
HS20030425-01	LH18/24-SP650_031020	10 Mar 2020 14:00		12 Mar 2020 13:58	13 Mar 2020 15:50	100
Batch ID: 151661 (0)		Test Name : METALS BY ICPMS BY SW6020A			Matrix: Water	
HS20030425-01	LH18/24-SP650_031020	10 Mar 2020 14:00		13 Mar 2020 14:00	18 Mar 2020 21:46	1
Batch ID: R358045 (0)		Test Name : VOLATILES ORGANICS BY METHOD 8260C			Matrix: Water	
HS20030425-01	LH18/24-SP650_031020	10 Mar 2020 14:00			11 Mar 2020 19:59	1
HS20030425-03	Trip Blank	10 Mar 2020 14:00			11 Mar 2020 18:47	1
Batch ID: R358186 (0)		Test Name : HEXAVALENT CHROMIUM BY SW7196A			Matrix: Water	
HS20030425-01	LH18/24-SP650_031020	10 Mar 2020 14:00			11 Mar 2020 12:16	1
Batch ID: R358949 (0)		Test Name : SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)			Matrix: Water	
HS20030425-02	LH18/24-SP650_031020_BIX	10 Mar 2020 14:00			26 Mar 2020 12:09	1

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20030425

QC BATCH REPORT

Batch ID: 151661 (0)		Instrument: ICPMS05		Method: METALS BY ICPMS BY SW6020A						
MBLK	Sample ID: MBLK-151661	Units: mg/L			Analysis Date: 18-Mar-2020 21:42					
Client ID:	Run ID: ICPMS05_358447	SeqNo: 5519495		PrepDate: 13-Mar-2020		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Barium	0.00250	0.00500							U	
Lead	0.00100	0.00500							U	
Selenium	0.00250	0.00500							U	
Silver	0.000500	0.00500							U	
LCS	Sample ID: LCS-151661	Units: mg/L			Analysis Date: 19-Mar-2020 13:18					
Client ID:	Run ID: ICPMS06_358488	SeqNo: 5520365		PrepDate: 13-Mar-2020		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Barium	0.04401	0.00500	0.05	0	88.0	86 - 114				
Lead	0.04455	0.00500	0.05	0	89.1	88 - 115				
Selenium	0.04615	0.00500	0.05	0	92.3	80 - 120				
Silver	0.04564	0.00500	0.05	0	91.3	85 - 116				
MS	Sample ID: HS20030425-01MS	Units: mg/L			Analysis Date: 19-Mar-2020 13:20					
Client ID: LH18/24-SP650_031020	Run ID: ICPMS06_358488	SeqNo: 5520366		PrepDate: 13-Mar-2020		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Barium	0.1662	0.00500	0.05	0.1147	103	86 - 114				
Lead	0.045	0.00500	0.05	0	90.0	88 - 115				
Selenium	0.04488	0.00500	0.05	0	89.8	80 - 120				
Silver	0.0459	0.00500	0.05	0	91.8	85 - 116				
MSD	Sample ID: HS20030425-01MSD	Units: mg/L			Analysis Date: 19-Mar-2020 13:22					
Client ID: LH18/24-SP650_031020	Run ID: ICPMS06_358488	SeqNo: 5520367		PrepDate: 13-Mar-2020		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Barium	0.1637	0.00500	0.05	0.1147	98.0	86 - 114	0.1662	1.54	20	
Lead	0.04352	0.00500	0.05	0	87.0	88 - 115	0.045	3.34	20 S	
Selenium	0.04651	0.00500	0.05	0	93.0	80 - 120	0.04488	3.57	20	
Silver	0.04305	0.00500	0.05	0	86.1	85 - 116	0.0459	6.42	20	

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20030425

QC BATCH REPORT

Batch ID: 151661 (0)		Instrument: ICPMS05		Method: METALS BY ICPMS BY SW6020A						
PDS	Sample ID: HS20030425-01PDS	Units: mg/L		Analysis Date: 19-Mar-2020 13:24						
Client ID: LH18/24-SP650_031020	Run ID: ICPMS06_358488	SeqNo: 5520368		PrepDate: 13-Mar-2020		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Barium	0.2036	0.00500	0.1	0.1147	88.9	80 - 120				
Lead	0.09679	0.00500	0.1	0	96.8	80 - 120				
Selenium	0.0948	0.00500	0.1	0	94.8	80 - 120				

SD	Sample ID: HS20030425-01SD	Units: mg/L		Analysis Date: 18-Mar-2020 21:49						
Client ID: LH18/24-SP650_031020	Run ID: ICPMS05_358447	SeqNo: 5519498		PrepDate: 13-Mar-2020		DF: 5				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Barium	0.1184	0.0250					0.1147	3.28	10	
Lead	0.00500	0.0250					0.000275	0	10	U
Selenium	0.0125	0.0250					0.000304	0	10	U
Silver	0.00250	0.0250					0.000015	0	10	U

The following samples were analyzed in this batch:

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20030425

QC BATCH REPORT

Batch ID: 151633 (0)		Instrument: SV-6		Method: SEMIVOLATILES SIM						
MBLK	Sample ID: MBLK-151633	Units: ug/L			Analysis Date: 13-Mar-2020 14:29					
Client ID:	Run ID: SV-6_358138	SeqNo: 5512065		PrepDate: 12-Mar-2020		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
1,4-Dioxane	0.010	0.010							U	
Surr: 2-Fluorobiphenyl	0.08559	0	0.08	0	107	40 - 140				
Surr: 4-Terphenyl-d14	0.09162	0	0.08	0	115	40 - 140				
Surr: Nitrobenzene-d5	0.0769	0	0.08	0	96.1	40 - 140				
LCS	Sample ID: LCS-151633	Units: ug/L			Analysis Date: 13-Mar-2020 14:49					
Client ID:	Run ID: SV-6_358138	SeqNo: 5512066		PrepDate: 12-Mar-2020		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
1,4-Dioxane	0.09385	0.010	0.08	0	117	40 - 140				
Surr: 2-Fluorobiphenyl	0.07978	0	0.08	0	99.7	40 - 140				
Surr: 4-Terphenyl-d14	0.09033	0	0.08	0	113	40 - 140				
Surr: Nitrobenzene-d5	0.0714	0	0.08	0	89.2	40 - 140				
LCSD	Sample ID: LCSD-151633	Units: ug/L			Analysis Date: 13-Mar-2020 15:08					
Client ID:	Run ID: SV-6_358138	SeqNo: 5512067		PrepDate: 12-Mar-2020		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
1,4-Dioxane	0.08137	0.010	0.08	0	102	40 - 140	0.09385	14.3	20	
Surr: 2-Fluorobiphenyl	0.08608	0	0.08	0	108	40 - 140	0.07978	7.6	20	
Surr: 4-Terphenyl-d14	0.1012	0	0.08	0	127	40 - 140	0.09033	11.4	20	
Surr: Nitrobenzene-d5	0.07833	0	0.08	0	97.9	40 - 140	0.0714	9.26	20	
The following samples were analyzed in this batch: HS20030425-01										

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20030425

QC BATCH REPORT

Batch ID: R358045 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
MBLK	Sample ID: VBLKW-200311	Units: UG/L			Analysis Date: 11-Mar-2020 17:34					
Client ID:	Run ID: VOA6_358045	SeqNo: 5509698		PrepDate:		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	0.50	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	0.50	1.0								U
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	0.50	1.0								U
1,2,3-Trichlorobenzene	0.50	1.0								U
1,2,3-Trichloropropane	0.50	1.0								U
1,2,4-Trichlorobenzene	0.50	1.0								U
1,2,4-Trimethylbenzene	0.50	1.0								U
1,2-Dibromo-3-chloropropane	0.50	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	0.50	1.0								U
1,3,5-Trimethylbenzene	0.50	1.0								U
1,3-Dichlorobenzene	0.50	1.0								U
1,3-Dichloropropane	0.50	1.0								U
1,4-Dichlorobenzene	0.50	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	0.50	1.0								U
2-Hexanone	1.0	2.0								U
4-Chlorotoluene	0.50	1.0								U
4-Isopropyltoluene	0.50	1.0								U
4-Methyl-2-pentanone	1.0	2.0								U
Acetone	1.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	0.50	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	0.50	1.0								U
Bromomethane	0.50	1.0								U

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20030425

QC BATCH REPORT

Batch ID: R358045 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
MBLK	Sample ID: VBLKW-200311	Units: UG/L			Analysis Date: 11-Mar-2020 17:34					
Client ID:	Run ID: VOA6_358045	SeqNo: 5509698	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	1.0	2.0								U
Carbon tetrachloride	0.50	1.0								U
Chlorobenzene	0.50	1.0								U
Chloroethane	0.50	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	0.50	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	0.50	1.0								U
Ethylbenzene	0.50	1.0								U
Hexachlorobutadiene	1.0	1.0								U
Isopropylbenzene	0.50	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	1.0	2.0								U
Naphthalene	0.50	1.0								U
n-Butylbenzene	0.50	1.0								U
n-Propylbenzene	0.50	1.0								U
o-Xylene	0.50	1.0								U
sec-Butylbenzene	0.50	1.0								U
Styrene	0.50	1.0								U
tert-Butylbenzene	0.50	1.0								U
Tetrachloroethene	0.50	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	44.48	1.0	50	0	89.0	81 - 118				
Surr: 4-Bromofluorobenzene	49.46	1.0	50	0	98.9	85 - 114				
Surr: Dibromofluoromethane	45.06	1.0	50	0	90.1	80 - 119				
Surr: Toluene-d8	53.28	1.0	50	0	107	89 - 112				

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20030425

QC BATCH REPORT

Batch ID: R358045 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
LCS	Sample ID: VLCSW-200311	Units: UG/L			Analysis Date: 11-Mar-2020 16:46					
Client ID:	Run ID: VOA6_358045	SeqNo: 5509697	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.11	1.0	20	0	101	78 - 124				
1,1,1-Trichloroethane	18.82	1.0	20	0	94.1	74 - 131				
1,1,2,2-Tetrachloroethane	20.72	1.0	20	0	104	71 - 121				
1,1,2-Trichloroethane	19.74	1.0	20	0	98.7	80 - 119				
1,1-Dichloroethane	19.45	1.0	20	0	97.3	77 - 125				
1,1-Dichloroethene	18.73	1.0	20	0	93.7	71 - 131				
1,1-Dichloropropene	19.05	1.0	20	0	95.3	78 - 125				
1,2,3-Trichlorobenzene	22.86	1.0	20	0	114	69 - 129				
1,2,3-Trichloropropane	20.54	1.0	20	0	103	73 - 122				
1,2,4-Trichlorobenzene	22.59	1.0	20	0	113	69 - 130				
1,2,4-Trimethylbenzene	20.71	1.0	20	0	104	76 - 124				
1,2-Dibromo-3-chloropropane	22.33	1.0	20	0	112	62 - 128				
1,2-Dibromoethane	20.64	1.0	20	0	103	77 - 121				
1,2-Dichlorobenzene	20.67	1.0	20	0	103	80 - 119				
1,2-Dichloroethane	20.3	1.0	20	0	101	73 - 128				
1,2-Dichloropropane	19.47	1.0	20	0	97.3	78 - 122				
1,3,5-Trimethylbenzene	20.24	1.0	20	0	101	75 - 124				
1,3-Dichlorobenzene	20.26	1.0	20	0	101	80 - 119				
1,3-Dichloropropane	19.36	1.0	20	0	96.8	80 - 119				
1,4-Dichlorobenzene	20.57	1.0	20	0	103	79 - 118				
2,2-Dichloropropane	18.78	1.0	20	0	93.9	60 - 139				
2-Butanone	39.93	2.0	40	0	99.8	56 - 143				
2-Chlorotoluene	19.81	1.0	20	0	99.1	79 - 122				
2-Hexanone	40.79	2.0	40	0	102	57 - 139				
4-Chlorotoluene	20.04	1.0	20	0	100	78 - 122				
4-Isopropyltoluene	20.2	1.0	20	0	101	77 - 127				
4-Methyl-2-pentanone	39.65	2.0	40	0	99.1	67 - 130				
Acetone	40.51	2.0	40	0	101	39 - 160				
Benzene	20.17	1.0	20	0	101	79 - 120				
Bromobenzene	19.62	1.0	20	0	98.1	80 - 120				
Bromochloromethane	20.78	1.0	20	0	104	78 - 123				
Bromodichloromethane	20.35	1.0	20	0	102	79 - 125				
Bromoform	20.5	1.0	20	0	102	66 - 130				
Bromomethane	21.96	1.0	20	0	110	53 - 141				

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20030425

QC BATCH REPORT

Batch ID: R358045 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
LCS	Sample ID: VLCSW-200311	Units: UG/L			Analysis Date: 11-Mar-2020 16:46					
Client ID:	Run ID: VOA6_358045	SeqNo: 5509697	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	39.31	2.0	40	0	98.3	64 - 133				
Carbon tetrachloride	18.92	1.0	20	0	94.6	72 - 136				
Chlorobenzene	19.97	1.0	20	0	99.9	82 - 118				
Chloroethane	17.97	1.0	20	0	89.8	60 - 138				
Chloroform	19.18	1.0	20	0	95.9	79 - 124				
Chloromethane	19.08	1.0	20	0	95.4	50 - 139				
cis-1,2-Dichloroethene	20.57	1.0	20	0	103	78 - 123				
cis-1,3-Dichloropropene	20.65	1.0	20	0	103	75 - 124				
Dibromochloromethane	20.44	1.0	20	0	102	74 - 126				
Dibromomethane	20.01	1.0	20	0	100	79 - 123				
Dichlorodifluoromethane	18.28	1.0	20	0	91.4	32 - 152				
Ethylbenzene	19.79	1.0	20	0	99.0	79 - 121				
Hexachlorobutadiene	23.57	1.0	20	0	118	66 - 134				
Isopropylbenzene	19.9	1.0	20	0	99.5	72 - 131				
m,p-Xylene	40.53	2.0	40	0	101	80 - 121				
Methylene chloride	19.58	2.0	20	0	97.9	74 - 124				
Naphthalene	21.2	1.0	20	0	106	61 - 128				
n-Butylbenzene	21.05	1.0	20	0	105	75 - 128				
n-Propylbenzene	20.48	1.0	20	0	102	76 - 126				
o-Xylene	20.25	1.0	20	0	101	78 - 122				
sec-Butylbenzene	19.79	1.0	20	0	99.0	77 - 126				
Styrene	20.27	1.0	20	0	101	78 - 123				
tert-Butylbenzene	20	1.0	20	0	100.0	78 - 124				
Tetrachloroethene	20.24	1.0	20	0	101	74 - 129				
Toluene	19.91	1.0	20	0	99.5	80 - 121				
trans-1,2-Dichloroethene	19.75	1.0	20	0	98.7	75 - 124				
trans-1,3-Dichloropropene	20.95	1.0	20	0	105	73 - 127				
Trichloroethene	20.26	1.0	20	0	101	79 - 123				
Trichlorofluoromethane	18.83	1.0	20	0	94.2	65 - 141				
Vinyl chloride	18.49	1.0	20	0	92.4	58 - 137				
Surr: 1,2-Dichloroethane-d4	50.53	1.0	50	0	101	81 - 118				
Surr: 4-Bromofluorobenzene	50.78	1.0	50	0	102	85 - 114				
Surr: Dibromofluoromethane	48.82	1.0	50	0	97.6	80 - 119				
Surr: Toluene-d8	49.79	1.0	50	0	99.6	89 - 112				

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20030425

QC BATCH REPORT

Batch ID: R358045 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
MS	Sample ID: HS20030447-01MS	Units: UG/L			Analysis Date: 11-Mar-2020 20:47					
Client ID:	Run ID: VOA6_358045	SeqNo: 5509706	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.01	1.0	20	0	100	78 - 124				
1,1,1-Trichloroethane	18.49	1.0	20	0	92.4	74 - 131				
1,1,2,2-Tetrachloroethane	20.23	1.0	20	0	101	71 - 121				
1,1,2-Trichloroethane	19.37	1.0	20	0	96.8	80 - 119				
1,1-Dichloroethane	17.78	1.0	20	0	88.9	77 - 125				
1,1-Dichloroethene	18.17	1.0	20	0	90.9	71 - 131				
1,1-Dichloropropene	18.95	1.0	20	0	94.7	78 - 125				
1,2,3-Trichlorobenzene	15.77	1.0	20	0	78.8	69 - 129				
1,2,3-Trichloropropane	20.76	1.0	20	0	104	73 - 122				
1,2,4-Trichlorobenzene	16.39	1.0	20	0	81.9	69 - 130				
1,2,4-Trimethylbenzene	20.69	1.0	20	0	103	76 - 124				
1,2-Dibromo-3-chloropropane	20.11	1.0	20	0	101	62 - 128				
1,2-Dibromoethane	19.76	1.0	20	0	98.8	77 - 121				
1,2-Dichlorobenzene	20.53	1.0	20	0	103	80 - 119				
1,2-Dichloroethane	18.63	1.0	20	0	93.2	73 - 128				
1,2-Dichloropropane	18.01	1.0	20	0	90.1	78 - 122				
1,3,5-Trimethylbenzene	20.62	1.0	20	0	103	75 - 124				
1,3-Dichlorobenzene	20.21	1.0	20	0	101	80 - 119				
1,3-Dichloropropane	19.09	1.0	20	0	95.5	80 - 119				
1,4-Dichlorobenzene	20.22	1.0	20	0	101	79 - 118				
2,2-Dichloropropane	16.85	1.0	20	0	84.3	60 - 139				
2-Butanone	37.64	2.0	40	0	94.1	56 - 143				
2-Chlorotoluene	20.12	1.0	20	0	101	79 - 122				
2-Hexanone	41.43	2.0	40	0	104	57 - 139				
4-Chlorotoluene	20.14	1.0	20	0	101	78 - 122				
4-Isopropyltoluene	20.83	1.0	20	0	104	77 - 127				
4-Methyl-2-pentanone	40.7	2.0	40	0	102	67 - 130				
Acetone	42.86	2.0	40	0	107	39 - 160				
Benzene	19.11	1.0	20	0	95.5	79 - 120				
Bromobenzene	20.49	1.0	20	0	102	80 - 120				
Bromochloromethane	17.53	1.0	20	0	87.6	78 - 123				
Bromodichloromethane	23.58	1.0	20	2.166	107	79 - 125				
Bromoform	20.54	1.0	20	0	103	66 - 130				
Bromomethane	18.9	1.0	20	0	94.5	53 - 141				

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20030425

QC BATCH REPORT

Batch ID: R358045 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
MS	Sample ID: HS20030447-01MS	Units: UG/L			Analysis Date: 11-Mar-2020 20:47					
Client ID:	Run ID: VOA6_358045	SeqNo: 5509706		PrepDate:		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	36.71	2.0	40	0	91.8	64 - 133				
Carbon tetrachloride	19.41	1.0	20	0	97.0	72 - 136				
Chlorobenzene	20.3	1.0	20	0	102	82 - 118				
Chloroethane	17.32	1.0	20	0	86.6	60 - 138				
Chloroform	27.38	1.0	20	3.682	118	79 - 124				
Chloromethane	18.08	1.0	20	0	90.4	50 - 139				
cis-1,2-Dichloroethene	18.87	1.0	20	0	94.3	78 - 123				
cis-1,3-Dichloropropene	18.46	1.0	20	0	92.3	75 - 124				
Dibromochloromethane	21.66	1.0	20	1.14	103	74 - 126				
Dibromomethane	18.43	1.0	20	0	92.2	79 - 123				
Dichlorodifluoromethane	17.9	1.0	20	0	89.5	32 - 152				
Ethylbenzene	20.48	1.0	20	0	102	79 - 121				
Hexachlorobutadiene	16.45	1.0	20	0	82.2	66 - 134				
Isopropylbenzene	20.5	1.0	20	0	102	72 - 131				
m,p-Xylene	41.11	2.0	40	0	103	80 - 121				
Methylene chloride	16.9	2.0	20	0	84.5	74 - 124				
Naphthalene	16.38	1.0	20	0	81.9	61 - 128				
n-Butylbenzene	20.91	1.0	20	0	105	75 - 128				
n-Propylbenzene	20.94	1.0	20	0	105	76 - 126				
o-Xylene	19.95	1.0	20	0	99.8	78 - 122				
sec-Butylbenzene	20.64	1.0	20	0	103	77 - 126				
Styrene	19.16	1.0	20	0	95.8	78 - 123				
tert-Butylbenzene	21.04	1.0	20	0	105	78 - 124				
Tetrachloroethene	20.74	1.0	20	0	104	74 - 129				
Toluene	20.12	1.0	20	0	101	80 - 121				
trans-1,2-Dichloroethene	18.45	1.0	20	0	92.3	75 - 124				
trans-1,3-Dichloropropene	19.07	1.0	20	0	95.4	73 - 127				
Trichloroethene	20.39	1.0	20	0	102	79 - 123				
Trichlorofluoromethane	18.54	1.0	20	0	92.7	65 - 141				
Vinyl chloride	18.53	1.0	20	0	92.6	58 - 137				
Surr: 1,2-Dichloroethane-d4	46.38	1.0	50	0	92.8	81 - 118				
Surr: 4-Bromofluorobenzene	49.6	1.0	50	0	99.2	85 - 114				
Surr: Dibromofluoromethane	45.9	1.0	50	0	91.8	80 - 119				
Surr: Toluene-d8	52.88	1.0	50	0	106	89 - 112				

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20030425

QC BATCH REPORT

Batch ID: R358045 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
MSD	Sample ID: HS20030447-01MSD	Units: UG/L			Analysis Date: 11-Mar-2020 21:11					
Client ID:	Run ID: VOA6_358045	SeqNo: 5509707	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.83	1.0	20	0	99.2	78 - 124	20.01	0.895	20	
1,1,1-Trichloroethane	17.52	1.0	20	0	87.6	74 - 131	18.49	5.33	20	
1,1,2,2-Tetrachloroethane	19.41	1.0	20	0	97.0	71 - 121	20.23	4.14	20	
1,1,2-Trichloroethane	18.51	1.0	20	0	92.6	80 - 119	19.37	4.51	20	
1,1-Dichloroethane	16.74	1.0	20	0	83.7	77 - 125	17.78	6.07	20	
1,1-Dichloroethene	17.5	1.0	20	0	87.5	71 - 131	18.17	3.77	20	
1,1-Dichloropropene	18.38	1.0	20	0	91.9	78 - 125	18.95	3.04	20	
1,2,3-Trichlorobenzene	20.06	1.0	20	0	100	69 - 129	15.77	23.9	20	R
1,2,3-Trichloropropane	19.86	1.0	20	0	99.3	73 - 122	20.76	4.43	20	
1,2,4-Trichlorobenzene	19.25	1.0	20	0	96.3	69 - 130	16.39	16.1	20	
1,2,4-Trimethylbenzene	19.52	1.0	20	0	97.6	76 - 124	20.69	5.81	20	
1,2-Dibromo-3-chloropropane	20.92	1.0	20	0	105	62 - 128	20.11	3.93	20	
1,2-Dibromoethane	19.63	1.0	20	0	98.2	77 - 121	19.76	0.639	20	
1,2-Dichlorobenzene	19.47	1.0	20	0	97.4	80 - 119	20.53	5.26	20	
1,2-Dichloroethane	19.06	1.0	20	0	95.3	73 - 128	18.63	2.25	20	
1,2-Dichloropropane	17.37	1.0	20	0	86.9	78 - 122	18.01	3.63	20	
1,3,5-Trimethylbenzene	19.77	1.0	20	0	98.9	75 - 124	20.62	4.19	20	
1,3-Dichlorobenzene	19.04	1.0	20	0	95.2	80 - 119	20.21	5.96	20	
1,3-Dichloropropane	18.37	1.0	20	0	91.9	80 - 119	19.09	3.85	20	
1,4-Dichlorobenzene	19.24	1.0	20	0	96.2	79 - 118	20.22	4.95	20	
2,2-Dichloropropane	15.76	1.0	20	0	78.8	60 - 139	16.85	6.66	20	
2-Butanone	36.69	2.0	40	0	91.7	56 - 143	37.64	2.55	20	
2-Chlorotoluene	18.72	1.0	20	0	93.6	79 - 122	20.12	7.23	20	
2-Hexanone	41.94	2.0	40	0	105	57 - 139	41.43	1.22	20	
4-Chlorotoluene	18.93	1.0	20	0	94.6	78 - 122	20.14	6.2	20	
4-Isopropyltoluene	19.7	1.0	20	0	98.5	77 - 127	20.83	5.59	20	
4-Methyl-2-pentanone	38.67	2.0	40	0	96.7	67 - 130	40.7	5.11	20	
Acetone	44.62	2.0	40	0	112	39 - 160	42.86	4.01	20	
Benzene	18.42	1.0	20	0	92.1	79 - 120	19.11	3.63	20	
Bromobenzene	19.1	1.0	20	0	95.5	80 - 120	20.49	7.06	20	
Bromochloromethane	16.62	1.0	20	0	83.1	78 - 123	17.53	5.33	20	
Bromodichloromethane	23.7	1.0	20	2.166	108	79 - 125	23.58	0.542	20	
Bromoform	20.28	1.0	20	0	101	66 - 130	20.54	1.27	20	
Bromomethane	16.92	1.0	20	0	84.6	53 - 141	18.9	11	20	

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20030425

QC BATCH REPORT

Batch ID: R358045 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
MSD	Sample ID: HS20030447-01MSD	Units: UG/L			Analysis Date: 11-Mar-2020 21:11					
Client ID:	Run ID: VOA6_358045	SeqNo: 5509707		PrepDate:		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	34.17	2.0	40	0	85.4	64 - 133	36.71	7.14	20	
Carbon tetrachloride	18.78	1.0	20	0	93.9	72 - 136	19.41	3.28	20	
Chlorobenzene	19.09	1.0	20	0	95.5	82 - 118	20.3	6.12	20	
Chloroethane	15.2	1.0	20	0	76.0	60 - 138	17.32	13	20	
Chloroform	26.56	1.0	20	3.682	114	79 - 124	27.38	3.01	20	
Chloromethane	16.84	1.0	20	0	84.2	50 - 139	18.08	7.1	20	
cis-1,2-Dichloroethene	17.48	1.0	20	0	87.4	78 - 123	18.87	7.62	20	
cis-1,3-Dichloropropene	18.37	1.0	20	0	91.9	75 - 124	18.46	0.464	20	
Dibromochloromethane	21.08	1.0	20	1.14	99.7	74 - 126	21.66	2.71	20	
Dibromomethane	17.94	1.0	20	0	89.7	79 - 123	18.43	2.69	20	
Dichlorodifluoromethane	16.46	1.0	20	0	82.3	32 - 152	17.9	8.39	20	
Ethylbenzene	19.81	1.0	20	0	99.0	79 - 121	20.48	3.33	20	
Hexachlorobutadiene	18.03	1.0	20	0	90.1	66 - 134	16.45	9.18	20	
Isopropylbenzene	19.46	1.0	20	0	97.3	72 - 131	20.5	5.18	20	
m,p-Xylene	38.51	2.0	40	0	96.3	80 - 121	41.11	6.51	20	
Methylene chloride	16.72	2.0	20	0	83.6	74 - 124	16.9	1.03	20	
Naphthalene	19.59	1.0	20	0	97.9	61 - 128	16.38	17.9	20	
n-Butylbenzene	20.11	1.0	20	0	101	75 - 128	20.91	3.93	20	
n-Propylbenzene	19.38	1.0	20	0	96.9	76 - 126	20.94	7.72	20	
o-Xylene	19.13	1.0	20	0	95.6	78 - 122	19.95	4.2	20	
sec-Butylbenzene	19.38	1.0	20	0	96.9	77 - 126	20.64	6.28	20	
Styrene	19.01	1.0	20	0	95.1	78 - 123	19.16	0.775	20	
tert-Butylbenzene	19.67	1.0	20	0	98.4	78 - 124	21.04	6.74	20	
Tetrachloroethene	19.76	1.0	20	0	98.8	74 - 129	20.74	4.83	20	
Toluene	18.88	1.0	20	0	94.4	80 - 121	20.12	6.34	20	
trans-1,2-Dichloroethene	17.1	1.0	20	0	85.5	75 - 124	18.45	7.63	20	
trans-1,3-Dichloropropene	18.26	1.0	20	0	91.3	73 - 127	19.07	4.35	20	
Trichloroethene	18.59	1.0	20	0	92.9	79 - 123	20.39	9.23	20	
Trichlorofluoromethane	17.07	1.0	20	0	85.4	65 - 141	18.54	8.23	20	
Vinyl chloride	17.18	1.0	20	0	85.9	58 - 137	18.53	7.56	20	
Surr: 1,2-Dichloroethane-d4	45.87	1.0	50	0	91.7	81 - 118	46.38	1.1	20	
Surr: 4-Bromofluorobenzene	50.91	1.0	50	0	102	85 - 114	49.6	2.6	20	
Surr: Dibromofluoromethane	45.67	1.0	50	0	91.3	80 - 119	45.9	0.507	20	
Surr: Toluene-d8	52.57	1.0	50	0	105	89 - 112	52.88	0.601	20	

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20030425

QC BATCH REPORT**Batch ID:** R358045 (0)**Instrument:** VOA6**Method:** VOLATILES ORGANICS BY METHOD
8260C

The following samples were analyzed in this batch: HS20030425-01 HS20030425-03

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20030425

QC BATCH REPORT

Batch ID: R358186 (0)		Instrument: UV-2450		Method: HEXAVALENT CHROMIUM BY SW7196A					
MBLK	Sample ID: MBLK-358186	Units: mg/L		Analysis Date: 11-Mar-2020 12:16					
Client ID:	Run ID: UV-2450_358186	SeqNo: 5513126		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD Limit Qual	
Chromium, Hexavalent	0.0100	0.0100						U	
LCS	Sample ID: LCS-358186	Units: mg/L		Analysis Date: 11-Mar-2020 12:16					
Client ID:	Run ID: UV-2450_358186	SeqNo: 5513127		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD Limit Qual	
Chromium, Hexavalent	0.275	0.0100	0.25	0	110	90 - 111			
MS	Sample ID: HS20030425-01MS	Units: mg/L		Analysis Date: 11-Mar-2020 12:16					
Client ID: LH18/24-SP650_031020	Run ID: UV-2450_358186	SeqNo: 5513128		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD Limit Qual	
Chromium, Hexavalent	0.27	0.0100	0.25	0.002	107	90 - 111			
MSD	Sample ID: HS20030425-01MSD	Units: mg/L		Analysis Date: 11-Mar-2020 12:16					
Client ID: LH18/24-SP650_031020	Run ID: UV-2450_358186	SeqNo: 5513129		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD Limit Qual	
Chromium, Hexavalent	0.27	0.0100	0.25	0.002	107	90 - 111	0.27	0 20	

The following samples were analyzed in this batch: HS20030425-01

ALS Houston, US

Date: 26-Mar-20

Client:	Bhate Environmental Associates, Inc.	QUALIFIERS, ACRONYMS, UNITS
Project:	Longhorn GW Treatment Plant Monthly Effluent Samples	
WorkOrder:	HS20030425	

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	19-028-0	27-Mar-2020
California	2919, 2019-2020	30-Apr-2020
Dept of Defense	ANAB L2231 V009	22-Dec-2021
Florida	E87611-28	30-Jun-2020
Illinois	2000322019-2	09-May-2020
Kansas	E-10352 2019-2020	31-Jul-2020
Kentucky	123043, 2019-2020	30-Apr-2020
Louisiana	03087, 2019-2020	30-Jun-2020
Maryland	343, 2019-2020	30-Jun-2020
North Carolina	624-2020	31-Dec-2020
North Dakota	R-193 2019-2020	30-Apr-2020
Oklahoma	2019-067	31-Aug-2020
Texas	T104704231-19-25	30-Apr-2020

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
Work Order: HS20030425

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20030425-01	LH18/24-SP650_031020	Login	3/11/2020 11:23:19 AM	AC	EXT047
HS20030425-01	LH18/24-SP650_031020	Login	3/11/2020 11:23:19 AM	AC	WET083
HS20030425-01	LH18/24-SP650_031020	Login	3/11/2020 11:23:19 AM	AC	MET014
HS20030425-01	LH18/24-SP650_031020	Login	3/11/2020 11:23:19 AM	AC	VOA101
HS20030425-02	LH18/24-SP650_031020_BIX	Login	3/11/2020 11:23:19 AM	AC	Sub
HS20030425-03	Trip Blank	Login	3/11/2020 11:23:19 AM	AC	VOA101

Sample Receipt Checklist

Client Name: Bhate Environmental
 Work Order: HS20030425

Date/Time Received: 11-Mar-2020 08:53
 Received by: AC

Checklist completed by: Asad Chaudhry 11-Mar-2020
 eSignature Date

Reviewed by: RJ Modashia 11-Mar-2020
 eSignature Date

Matrices: Water

Carrier name: FedEx Priority Overnight

- Shipping container/cooler in good condition? Yes No Not Present
- Custody seals intact on shipping container/cooler? Yes No Not Present
- Custody seals intact on sample bottles? Yes No Not Present
- VOA/TX1005/TX1006 Solids in hermetically sealed vials? Yes No Not Present
- Chain of custody present? Yes No 1 Page(s)
- Chain of custody signed when relinquished and received? Yes No COC IDs:N/A
- Samplers name present on COC? Yes No
- Chain of custody agrees with sample labels? Yes No
- Samples in proper container/bottle? Yes No
- Sample containers intact? Yes No
- Sufficient sample volume for indicated test? Yes No
- All samples received within holding time? Yes No
- Container/Temp Blank temperature in compliance? Yes No

Temperature(s)/Thermometer(s):

1.6c U/C	IR 25
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Cooler(s)/Kit(s):

45747

Date/Time sample(s) sent to storage:

03/11/2020 11:30

- Water - VOA vials have zero headspace? Yes No No VOA vials submitted
- Water - pH acceptable upon receipt? Yes No N/A
- pH adjusted? Yes No N/A

pH adjusted by:

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Login Notes:

Client Contacted: Date Contacted: Person Contacted:
 Contacted By: Regarding:

Comments:

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Corrective Action:

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ALS
 10450 Stancliff Rd., Suite 210
 Houston, Texas 77099
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CUSTODY SE

Date: 3/11/00 Time: 10:30
 Name: SPIT BEER
 Company: PHYS


45747

FedEx
 TRK# 1251 0291 2489
 0223

WED - 11 MAR 10:30A
PRIORITY OVERNIGHT

AB SGRA

77099
 TX-US
IAH



5107232 10MAR20 GGA 56RC2/64E9/05N2



March 26, 2020

Service Request No:E2000225

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS20030425

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory March 11, 2020
For your reference, these analyses have been assigned our service request number **E2000225**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental



Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client: ALS Houston
Project: HS20030425
Sample Matrix: W

Service Request No.: E2000225
Date Received: 03/11/20

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

One sample was received for analysis at ALS Environmental in Houston on 03/11/20.

The sample was received in good condition and is consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2000110: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. The LCS and DLCS recoveries are within QC limits.

DOD Certification is held for the method/matrix/analytes provided in this report.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - US
Project: HS20030425

Service Request:E2000225

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
E2000225-001	LH18/24-SP650_031020_BIX	3/10/2020	1400

Service Request Summary

Folder #: E2000225
Client Name: ALS Environmental - US
Project Name: HS20030425
Project Number:
Report To: RJ Modashia
 ALS Laboratory Group
 10450 Stancliff Road
 Houston, TX 77099-4338
 USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 03/11/20
Internal Due Date: 3/25/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20030425
EDD: No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 7B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON C104 DOD/6850
E2000225-001	LH18/24-SP650_031020_BIX	Water	03/10/20 1400	IV

Service Request Summary

Folder #: E2000225
Client Name: ALS Environmental - US
Project Name: HS20030425
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA

Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 03/11/20
Internal Due Date: 3/25/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20030425
EDD: No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 7B
Pressure Gas:

Data Qualifiers

Lab Standard

- + Possible Tedlar bag artifact.
- A TIC is a suspected aldol-condensation product
- B Analyte found in the associated method blank as well as in the sample.
- BC Reported results are not blank corrected.
- BH The back section of the tube yielded higher results than the front.
- BT Results indicated possible breakthrough; back section $\geq 10\%$ front section.
- C Result identification confirmed.
- D Compound identified in an analysis at a secondary dilution factor
- D Spike was diluted out
- DE Reported results are corrected for desorption efficiency.
- E Estimated value. Concentration above calibration range
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- H1 Sample analysis performed past holding time. See case narrative.
- H2 Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
- H3 Sample was received and analyzed past holding time.
- H4 Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
- I Internal standard not within the specified limits. See case narrative.
- J Estimated Value. Concentration found below MRL.
- K A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
- K Analyte was detected above the method reporting limit prior to normalization.
- L1 Laboratory control sample recovery outside the specified limits; results may be biased high.
- L2 Laboratory control sample recovery outside the specified limits; results may be biased low.
- L3 Laboratory control sample recovery outside the specified limits.
- M Matrix interference; results may be biased high.
- M The duplicate injection precision not met.
- M1 Matrix interference due to coelution with a non-target compound; results may be biased high.
- N Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- P Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
- P Pesticide/Aroclor target analyte $> 40\%$ difference for detected concentrations between GC columns
- Q Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
- R Duplicate Precision not met.
- R1 Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
- S Surrogate recovery not within specified limits.

Data Qualifiers

Lab Standard

- S The reported value was determined by the Method of Standard Additions (MSA).
- T Analyte is a tentatively identified compound, result is estimated.
- U Compound was analyzed for, but was not detected (ND).
- V1 The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
- V2 The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
- W Result quantified, but the corresponding peak was detected outside the generated retention time window.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- X See case narrative.
- Y Recovery outside limits
- Y The chromatogram resembles a petroleum product but does not match the calibration standard.
- Z The chromatogram does not resemble a petroleum product.
- i The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCEntration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient



State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
Arizona Department of Health Services	AZ0793	5/27/2020
Arkansas Department of Environmental Quality	19-028-0	3/27/2020
California Department of Health Services	2919	4/30/2020
Department of Defense	A2LA 2897.01	11/30/2021
Florida Department of Health	E87611	6/30/2020
Hawaii Department of Health	TX02694	4/30/2020
Illinois Environmental Protection Agency	2000322019-2	5/9/2020
Kansas Department of Health and Environment	E-10352	7/31/2020
Louisiana Department of Environmental Quality	03087	6/30/2020
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Center for Disease Control and Prevention	201815	6/5/2020
Maryland Department of the Environment	343	6/30/2020
Minnesota Department of Health	1785988	12/31/2020
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2020
Nevada Department of Conservation and Natural Resources	TX026932019-1	7/31/2020
New Hampshire Environmental Laboratory Accreditation Program	209419	4/24/2020
New Jersey Department of Environmental Protection	NLC190001	6/30/2020
New York Department of Health	11707	3/31/2020
Oklahoma Department of Environmental Quality	2019-067	8/31/2020
Pennsylvania Department of Environmental Protection	68-03441-013	6/30/2020
Tennessee Department of Environment and Conservation	04016	6/30/2020
Texas Commission on Environmental Quality	TX104704231-19-25	4/30/2020
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932019-9	7/31/2020
Washington Department of Health	C819	11/14/2020
West Virginia Department of Environmental Protection	347	6/30/2020



Chain of Custody

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E2000225

5

ALS Laboratory Group
HS20030425



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Subcontract Chain of Custody

SAMPLING STATE: Dept of Defense

COC ID: 13493

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff Road Suite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company: ALS Houston
Contact: RJ Modashia
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Email: RJ.Modashia@alsglobal.com
Alternate Contact: Jumoke M. Lawal
Email: jumoke.lawal@alsglobal.com

INVOICE INFORMATION:

Company: ALS Houston
Contact: Accounts Payable
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Reference: HS20030425
TSR: Danielle Winnings

LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
ANALYSIS REQUESTED			DUE DATE
1. HS20030425-02	LH18/24-SP650_031020_BIX	Water	10 Mar 2020 14:00
SUB_Perch-6850			19 Mar 2020

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: J. M. Lawal

Date/Time: 3/11/20 12:55

Received By: LOREY G

Date/Time: 3/11/20 12:55

Cooler ID(s): _____

Temperature(s): _____

RIGHT SOLUTIONS | RIGHT PARTNER



Cooler Receipt Form

Project Chemist CC

Client/Project ALC 11 Thermometer ID 5, M03

Date/Time Received: 3/11/20 Initials: CC Date/Time Logged in: 3/11/20 Initials CC

1. Method of delivery: US Mail Fed Ex UPS DHL ^{Air} Courier Client

2. Samples received in: Cooler Box Envelope Other

3. Were custody seals on coolers? Yes No
 Were they intact? Yes No N/A
 Were they signed and dated? Yes No N/A
 If yes, how many and where?

4. Packing Material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Sleeves Other

5. Foreign or Regulated Soil? Yes No Location of Sampling: _____

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
		3/11/20	1255	CC	0.0/1.0	<input checked="" type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>

- 6. Were custody papers properly filled out (ink, signed, dated, etc)? Yes No
- 7. Did all bottles arrive in good condition (not broken, no signs of leakage)? Yes No
- 8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? Yes No
- 9. Were appropriate bottles/containers and volumes received for the requested tests? Yes No
- 10. Did sample labels and tags agree with custody documents? Yes No

Notes, Discrepancies, & Resolutions:



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SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sample. The COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6°C.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10°C.
- ✓ Air samples are shipped and stored cold, at 0 to 6°C
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report



Preparation Information Benchsheets

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Preparation Information Benchsheet

Prep Run#: 355919
Team: Semivoa GCMS/KBROWN

Prep WorkFlow: GenExt28Day
Prep Method: Method

Status: Prepped
Prep Date/Time: 3/24/20 13:04

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2000225-001	LH18/24-SP650_031020_BIX	.01	6850/CIO4 DOD			Water	10mL	
2	E2000226-001	LH18/24-SP140_031020	.01	6850/CIO4 DOD			Water	10mL	
3	E2000227-001	LH18/24-SP650_031020_BIX	.01	6850/CIO4 DOD			Water	10mL	
4	E2000251-001	LH18/24-SP650_031720_BIX	.01	6850/CIO4 DOD			Water	10mL	
5	E2000263-001	LH18/24-SP650_032020_BIX	.01	6850/CIO4 DOD			Water	10mL	
6	EQ2000110-01	MB		6850/CIO4 DOD			Liquid	10mL	
7	EQ2000110-02	LCS		6850/CIO4 DOD			Liquid	10mL	
8	EQ2000110-03	DLCS		6850/CIO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4	Inventory ID: 202037	Logbook Ref: Sodium Perchlorate	Expires On: 05/22/2021
--	----------------------	---------------------------------	------------------------

E2000225-001	100.00µL	E2000226-001	100.00µL	E2000227-001	100.00µL	E2000251-001	100.00µL	E2000263-001	100.00µL	EQ2000110-01	100.00µL
EQ2000110-02	100.00µL	EQ2000110-03	100.00µL								

Name: Perchlorate Intermediate Stock1	Inventory ID: 204799	Logbook Ref: 200657 1.0ug/mL KN	Expires On: 05/15/2020
---------------------------------------	----------------------	---------------------------------	------------------------

E2000225-001	1.00µL	EQ2000110-02	1.00µL	EQ2000110-03	1.00µL						
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Preparation Steps

Step: Preparation
 Started: 3/24/20 13:04
 Finished: 3/24/20 15:55
 By: KBROWN
 Comments

Comments: _____

Reviewed By: KB Date: 03/24/2020

Chain of Custody

Relinquished By: _____	Date: _____	<u>Extracts Examined</u>
Received By: _____	Date: _____	Yes No



Analytical Results

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ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - US
Project: HS20030425
Sample Matrix: Water
Sample Name: LH18/24-SP650_031020_BIX
Lab Code: E2000225-001

Service Request: E2000225
Date Collected: 3/10/20 1400
Date Received: 3/11/20
Units: µg/L
Basis: NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	3/24/20	3/25/20 15:37	355919	674670	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - US
Project: HS20030425
Sample Matrix: Water
Sample Name: Method Blank
Lab Code: EQ2000110-01

Service Request: E2000225
Date Collected: NA
Date Received: NA
Units: µg/L
Basis: NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	3/24/20	3/25/20 15:13	355919	674670	



Accuracy & Precision

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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20030425
Sample Matrix: Water

Service Request: E2000225
Date Analyzed: 3/25/20

Lab Control Sample Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Units: µg/L
Basis: NA

Extraction Lot: 355919

Analyte Name	Lab Control Sample EQ2000110-02			Duplicate Lab Control Sample EQ2000110-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Perchlorate	0.106	0.100	106	0.101	0.100	101	84 - 119	5	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - US
Project: HS20030425
Sample Matrix: Water
Sample Name: Lab Control Sample
Lab Code: EQ2000110-02

Service Request: E2000225
Date Collected: NA
Date Received: NA
Units: µg/L
Basis: NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	0.106		0.100	0.0500	0.0250	1	3/24/20	3/25/20 15:21	355919	674670	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - US
Project: HS20030425
Sample Matrix: Water
Sample Name: Duplicate Lab Control Sample
Lab Code: EQ2000110-03

Service Request: E2000225
Date Collected: NA
Date Received: NA
Units: µg/L
Basis: NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	0.101		0.100	0.0500	0.0250	1	3/24/20	3/25/20 15:29	355919	674670	



Initial Calibration

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Initial Calibration - Detailed Report

Calibration ID: EC2000001

Instrument ID: E-LCMS-01

Column Name: 1

#	Lab Code	Sample Name	File Location	Aquisition Date
07	EC2000001-07	PERCHLORATE7	20191230_006	12/30/2019 10:48
01	EC2000001-01	PERCHLORATE1	20191230_007	12/30/2019 10:56
02	EC2000001-02	PERCHLORATE2	20191230_008	12/30/2019 11:04
03	EC2000001-03	PERCHLORATE3	20191230_009	12/30/2019 11:12
04	EC2000001-04	PERCHLORATE4	20191230_010	12/30/2019 11:19
05	EC2000001-05	PERCHLORATE5	20191230_011	12/30/2019 11:27
06	EC2000001-06	PERCHLORATE6	20191230_012	12/30/2019 11:35
08	EC2000001-08	PERCHLORATE8	20191230_013	12/30/2019 11:43
09	EC2000001-09	PERCHLORATE9	20191230_014	12/30/2019 11:51
10	EC2000001-10	PERCHLORATE10	20191230_015	12/30/2019 11:59

AnalytePerchlorate

#	Amount	RF
01	0.1000	0.1736
05	2.0000	0.1337
09	30.0000	0.133

Curve FitAverage RF

#	Amount	RF
02	0.5000	0.1222
06	5.0000	0.1268
10	50.0000	0.1325

Weighting

RSD = 10.79

#	Amount	RF
03	0.7000	0.1219
07	10.0000	0.1373

Average RF = 0.1352

#	Amount	RF
04	1.0000	0.1363
08	20.0000	0.1349

AnalytePerchlorate

#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D
01	0.1000	0.128	28.4	02	0.5000	0.452	-9.6	03	0.7000	0.631	-9.9
04	1.0000	1.01	0.8	05	2.0000	1.98	-1.1	06	5.0000	4.69	-6.2
07	10.0000	10.2	1.6	08	20.0000	20.0	-0.2	09	30.0000	29.5	-1.6
10	50.0000	49.0	-2.0								

Initial Calibration Verification Summary Report

Calibration ID:	EC2000001	Instrument ID:	E-LCMS-01
Datafile ID:	20191230_016	Column Name:	1

Analyte	Lab Code	Type	Curve Fit	True Value	Calc Conc	Units	Result	Criteria
Perchlorate	EC2000001-11	T	Average RF	10	12.276	ng/mL	22.7	<= 25

ALS Group Houston

PERCHLORATE1

Date acquired: 12/30/2019 10:56:14 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_007.lcd

Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_007	PERCHLORATE1	3.051	4022	0.12842	12/30/2019 10:56:14 AM	Yes	1.00000	25.0000	231680	1	3
Sodium Perchlorate-18O4_IS	20191230_007	PERCHLORATE1	3.051	231680	1.00000	12/30/2019 10:56:14 AM	No	1.00000	25.0000	231680	1	3

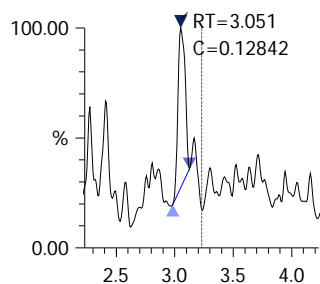
Perchlorate

Conc 0.12842

Area 4022

Q 99.00>83.00 (-)

1.27e3



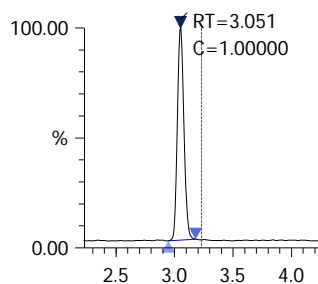
Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 231680

ISTD 107.00>89.00 (-)

5.94e4



ALS Group Houston

PERCHLORATE2

Date acquired: 12/30/2019 11:04:09 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_008.lcd

Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_008	PERCHLORATE2	3.046	15985	0.45177	12/30/2019 11:04:09 AM	Yes	1.00000	25.0000	261704	1	4
Sodium Perchlorate-18O4_IS	20191230_008	PERCHLORATE2	3.045	261704	1.00000	12/30/2019 11:04:09 AM	No	1.00000	25.0000	261704	1	4

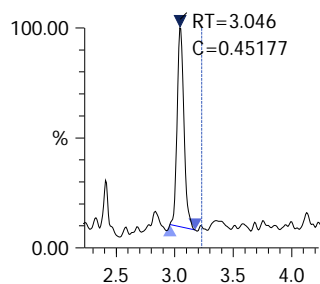
Perchlorate

Conc 0.45177

Area 15985

Q 99.00>83.00 (-)

4.21e3

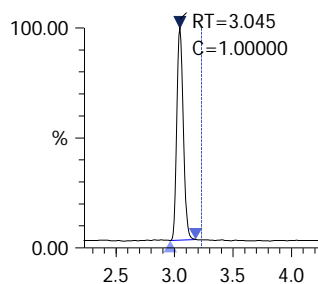
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 261704

ISTD 107.00>89.00 (-)

6.75e4



ALS Group Houston

PERCHLORATE3

Date acquired: 12/30/2019 11:12:06 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_009.lcd

Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_009	PERCHLORATE3	3.046	22031	0.63092	12/30/2019 11:12:06 AM	Yes	1.00000	25.0000	258274	1	5
Sodium Perchlorate-18O4_IS	20191230_009	PERCHLORATE3	3.044	258274	1.00000	12/30/2019 11:12:06 AM	No	1.00000	25.0000	258274	1	5

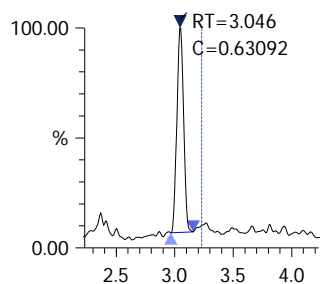
Perchlorate

Conc 0.63092

Area 22031

Q 99.00>83.00 (-)

5.75e3

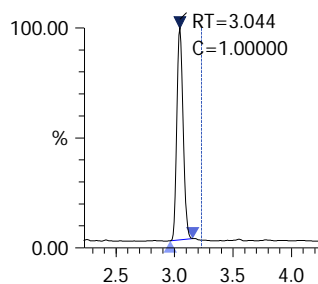
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 258274

ISTD 107.00>89.00 (-)

6.88e4



ALS Group Houston

PERCHLORATE4

Date acquired: 12/30/2019 11:19:58 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_010.lcd

Vial: 6 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_010	PERCHLORATE4	3.048	36488	1.00794	12/30/2019 11:19:58 AM	Yes	1.00000	25.0000	267754	1	6
Sodium Perchlorate-18O4_IS	20191230_010	PERCHLORATE4	3.046	267754	1.00000	12/30/2019 11:19:58 AM	No	1.00000	25.0000	267754	1	6

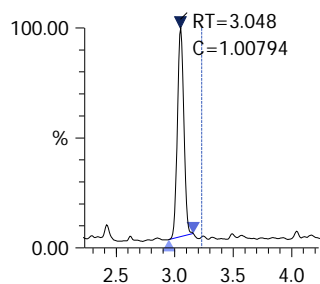
Perchlorate

Conc 1.00794

Area 36488

Q 99.00>83.00 (-)

9.73e3

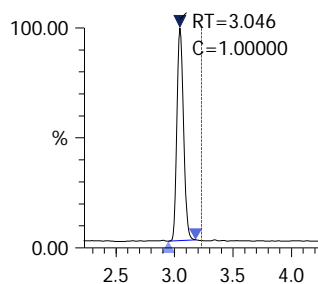
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 267754

ISTD 107.00>89.00 (-)

6.78e4



ALS Group Houston

PERCHLORATE5

Date acquired: 12/30/2019 11:27:53 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_011.lcd

Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_011	PERCHLORATE5	3.050	74631	1.97766	12/30/2019 11:27:53 AM	Yes	1.00000	25.0000	279118	1	7
Sodium Perchlorate-18O4_IS	20191230_011	PERCHLORATE5	3.046	279118	1.00000	12/30/2019 11:27:53 AM	No	1.00000	25.0000	279118	1	7

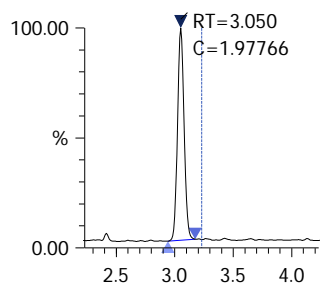
Perchlorate

Conc 1.97766

Area 74631

Q 99.00>83.00 (-)

1.92e4



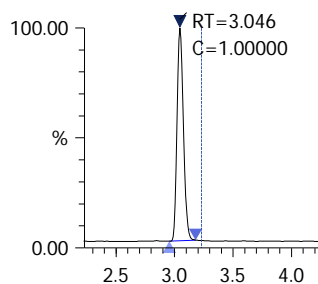
Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 279118

ISTD 107.00>89.00 (-)

7.33e4



ALS Group Houston

PERCHLORATE6

Date acquired: 12/30/2019 11:35:50 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_012.lcd

Vial: 8 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_012	PERCHLORATE6	3.047	159122	4.68764	12/30/2019 11:35:50 AM	Yes	1.00000	25.0000	251072	1	8
Sodium Perchlorate-18O4_IS	20191230_012	PERCHLORATE6	3.045	251072	1.00000	12/30/2019 11:35:50 AM	No	1.00000	25.0000	251072	1	8

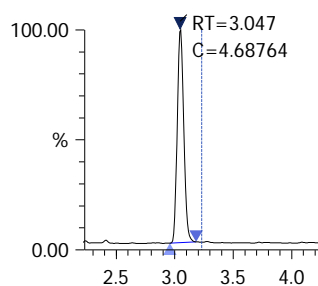
Perchlorate

Conc 4.68764

Area 159122

Q 99.00>83.00 (-)

4.12e4



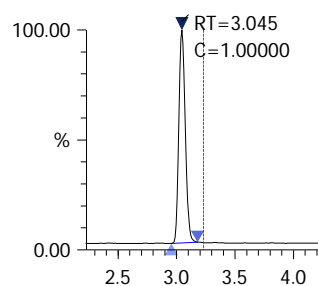
Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 251072

ISTD 107.00>89.00 (-)

6.53e4



ALS Group Houston

PERCHLORATE7

Date acquired: 12/30/2019 10:48:20 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_006.lcd

Vial: 9 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_006	PERCHLORATE7	2.994	298821	10.15570	12/30/2019 10:48:20 AM	Yes	1.00000	25.0000	217632	1	9
Sodium Perchlorate-18O4_IS	20191230_006	PERCHLORATE7	2.991	217632	1.00000	12/30/2019 10:48:20 AM	No	1.00000	25.0000	217632	1	9

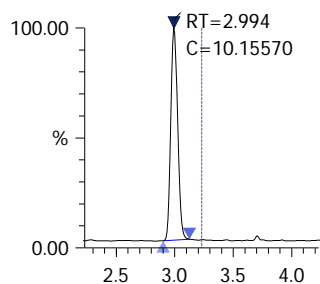
Perchlorate

Conc 10.15570

Area 298821

Q 99.00>83.00 (-)

7.46e4



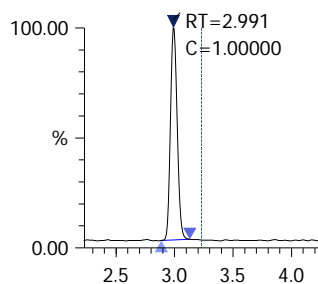
Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 217632

ISTD 107.00>89.00 (-)

5.38e4



ALS Group Houston

PERCHLORATE8

Date acquired: 12/30/2019 11:43:47 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_013.lcd

Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_013	PERCHLORATE8	3.048	557358	19.95021	12/30/2019 11:43:47 AM	Yes	1.00000	25.0000	206636	1	10
Sodium Perchlorate-18O4_IS	20191230_013	PERCHLORATE8	3.045	206636	1.00000	12/30/2019 11:43:47 AM	No	1.00000	25.0000	206636	1	10

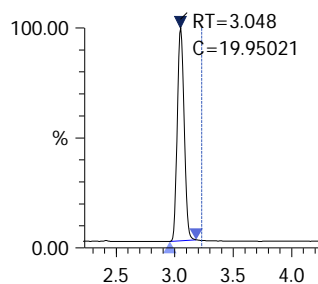
Perchlorate

Conc 19.95021

Area 557358

Q 99.00>83.00 (-)

1.37e5



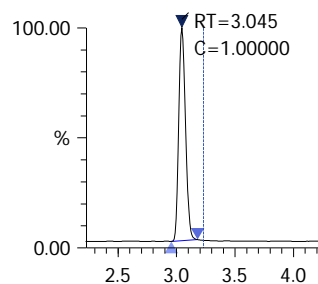
Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 206636

ISTD 107.00>89.00 (-)

5.11e4



ALS Group Houston

PERCHLORATE9

Date acquired: 12/30/2019 11:51:43 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_014.lcd

Vial: 11 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_014	PERCHLORATE9	3.052	730647	29.50809	12/30/2019 11:51:43 AM	Yes	1.00000	25.0000	183142	1	11
Sodium Perchlorate-18O4_IS	20191230_014	PERCHLORATE9	3.049	183142	1.00000	12/30/2019 11:51:43 AM	No	1.00000	25.0000	183142	1	11

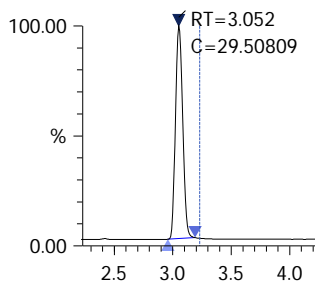
Perchlorate

Conc 29.50809

Area 730647

Q 99.00>83.00 (-)

1.70e5

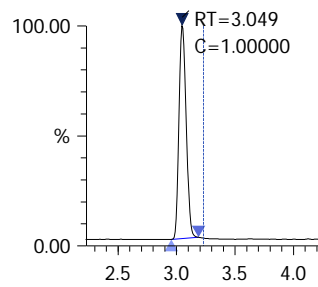
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 183142

ISTD 107.00>89.00 (-)

4.27e4



ALS Group Houston

PERCHLORATE10

Date acquired: 12/30/2019 11:59:38 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_015.lcd

Vial: 12 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_015	PERCHLORATE10	3.046	1090166	48.99902	12/30/2019 11:59:38 AM	Yes	1.00000	25.0000	164560	1	12
Sodium Perchlorate-18O4_IS	20191230_015	PERCHLORATE10	3.043	164560	1.00000	12/30/2019 11:59:38 AM	No	1.00000	25.0000	164560	1	12

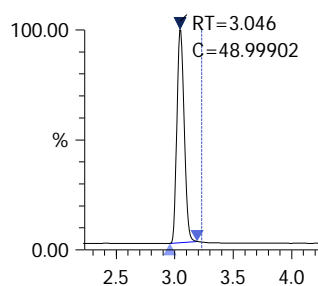
Perchlorate

Conc 48.99902

Area 1090166

Q 99.00>83.00 (-)

2.51e5



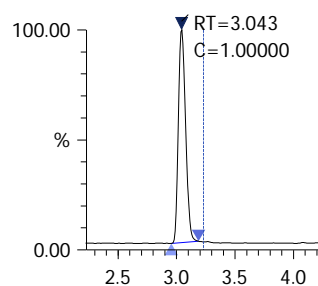
Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 164560

ISTD 107.00>89.00 (-)

3.80e4



ALS Group Houston

ICV

Date acquired: 12/30/2019 12:07:32 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_016.lcd

Vial: 13 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_016	ICV	3.047	347932	12.27639	12/30/2019 12:07:32 PM	No	1.00000	25.0000	209626	1	13
Sodium Perchlorate-18O4_IS	20191230_016	ICV	3.045	209626	1.00000	12/30/2019 12:07:32 PM	No	1.00000	25.0000	209626	1	13

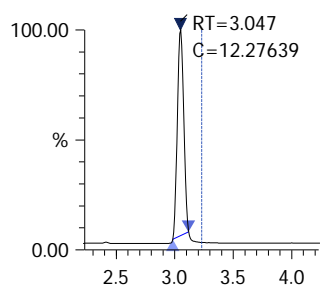
Perchlorate

Conc 12.27639

Area 347932

Q 99.00>83.00 (-)

9.49e4



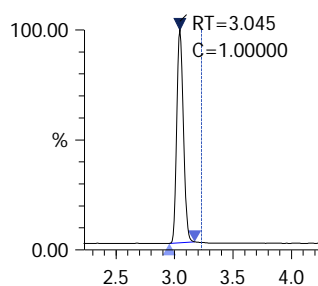
Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 209626

ISTD 107.00>89.00 (-)

5.28e4





Chromatograms and Selected Ion Monitoring

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20030425

Service Request: E2000225
Date Analyzed: 3/25/20 14:57

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID: I:\LCMS01\DATA\20200325\20200325_005
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000112-01
Analysis Lot: 674670
Signal ID: 1

Sodium Perchlorate-18O4

	<u>Area</u>	<u>RT</u>
ICAL Average ==>	232,157	3.04
Upper Limit ==>	348,236	5.04
Lower Limit ==>	116,079	1.04

Associated Analyses

Continuing Calibration Verification	EQ2000112-01	147,967	2.97
Method Blank	EQ2000110-01	153,426	3.03
Lab Control Sample	EQ2000110-02	179,436	3.03
Duplicate Lab Control Sample	EQ2000110-03	176,068	3.03
LH18/24-SP650_031020_BIX	E2000225-001	179,669	3.02

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20030425

Service Request: E2000225
Date Analyzed: 3/25/20 16:42

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID: I:\LCMS01\DATA\20200325\20200325_017
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000112-02
Analysis Lot: 674670
Signal ID: 1

Sodium Perchlorate-1804

	<u>Area</u>	<u>RT</u>
ICAL Average ==>	232,157	3.04
Upper Limit ==>	348,236	5.04
Lower Limit ==>	116,079	1.04

Associated Analyses

Continuing Calibration Verification	EQ2000112-02	171,460	2.97
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Results flagged with an asterisk (*) indicate values outside control criteria.

*Continuing Calibration Verification Summary***Calibration ID:** EC2000001**Spec Set:** #99479 v. 1**QAP Name:** LAB QAP**List ID:** #21851**List Name:** Perchlorate RJ DOD**Signal ID:** 1**Data File:** I:\LCMS01\DATA\20200325\20200325_017

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.4	0.1352	0.1543	14		± 15%	Average RF

*Continuing Calibration Verification Summary***Calibration ID:** EC2000001**Spec Set:** #99479 v. 1**QAP Name:** LAB QAP**List ID:** #21851**List Name:** Perchlorate RJ DOD**Signal ID:** 1**Data File:** I:\LCMS01\DATA\20200325\20200325_005

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.8	0.1352	0.1455	8		± 15%	Average RF

ALS Group Houston

PERCHLORATE7

Date acquired: 3/25/2020 2:57:41 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200325\20200325_005.lcd

Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	3/25/2020 2:57:41 PM	215236	10.75896	20200325_005	2.973	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	3/25/2020 2:57:41 PM	147967	1.00000	20200325_005	2.971	25.0000	1.0000	3

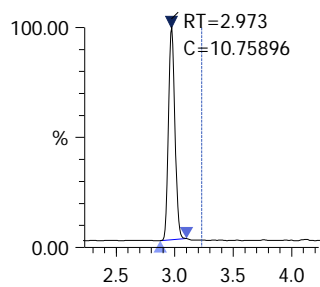
Perchlorate

Conc 10.75896

Area 215236

Q 99.00>83.00 (-)

5.65e4

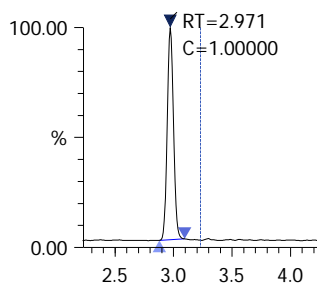
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 147967

ISTD 107.00>89.00 (-)

3.97e4



ALS Group Houston

EQ2000110-01

Date acquired: 3/25/2020 3:13:33 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200325\20200325_007.lcd

Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

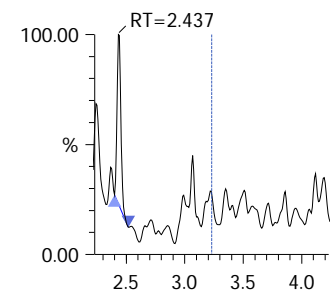
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000110-01	3/25/2020 3:13:33 PM	----	----	20200325_007	----	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	EQ2000110-01	3/25/2020 3:13:33 PM	153426	1.00000	20200325_007	3.030	25.0000	1.0000	5

Perchlorate

Conc ----

Area ----

Q 99.00>83.00 (-)



Sodium Perchlorate-18O4

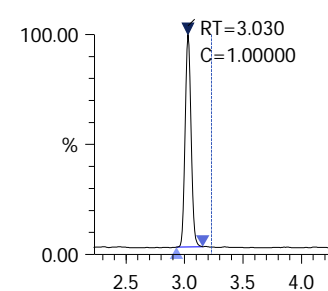
_IS

Conc 1.00000

Area 153426

ISTD 107.00>89.00 (-)

4.30e4



ALS Group Houston

EQ2000110-02

Date acquired: 3/25/2020 3:21:29 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200325\20200325_008.lcd

Vial: 6 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000110-02	3/25/2020 3:21:29 PM	2580	0.10635	20200325_008	3.027	25.0000	1.0000	6
Sodium Perchlorate-18O4_IS	EQ2000110-02	3/25/2020 3:21:29 PM	179436	1.00000	20200325_008	3.026	25.0000	1.0000	6

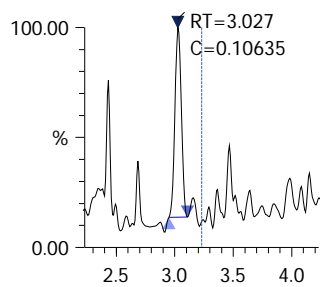
Perchlorate

Conc 0.10635

Area 2580

Q 99.00>83.00 (-)

7.75e2

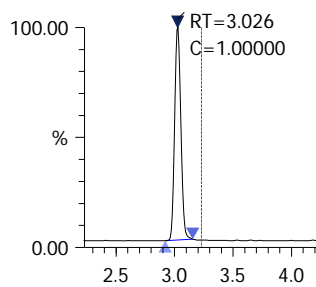
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 179436

ISTD 107.00>89.00 (-)

4.81e4



ALS Group Houston

EQ2000110-03

Date acquired: 3/25/2020 3:29:26 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200325\20200325_009.lcd

Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000110-03	3/25/2020 3:29:26 PM	2398	0.10072	20200325_009	3.027	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	EQ2000110-03	3/25/2020 3:29:26 PM	176068	1.00000	20200325_009	3.025	25.0000	1.0000	7

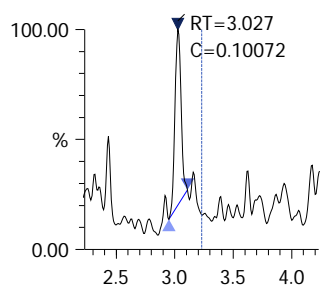
Perchlorate

Conc 0.10072

Area 2398

Q 99.00>83.00 (-)

8.14e2

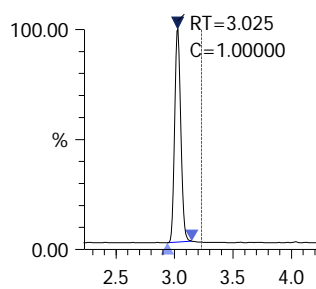
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 176068

ISTD 107.00>89.00 (-)

4.76e4



ALS Group Houston

E2000225-001

Date acquired: 3/25/2020 3:37:20 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200325\20200325_010.lcd

Vial: 8 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	E2000225-001	3/25/2020 3:37:20 PM	----	----	20200325_010	----	25.0000	1.0000	8
Sodium Perchlorate-18O4_IS	E2000225-001	3/25/2020 3:37:20 PM	179669	1.00000	20200325_010	3.015	25.0000	1.0000	8

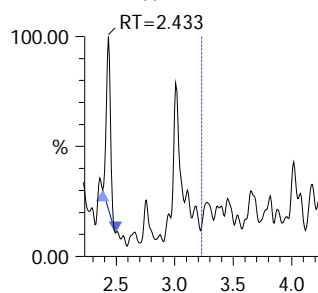
Perchlorate

Conc ----

Area ----

Q 99.00>83.00 (-)

4.03e2



Sodium Perchlorate-18O4

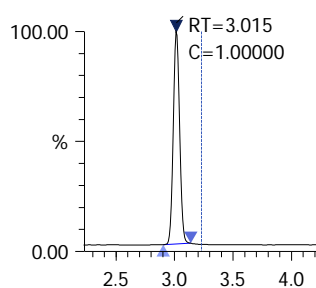
_IS

Conc 1.00000

Area 179669

ISTD 107.00>89.00 (-)

4.72e4



ALS Group Houston

PERCHLORATE7

Date acquired: 3/25/2020 4:42:01 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200325\20200325_017.lcd

Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	3/25/2020 4:42:01 PM	264558	11.41249	20200325_017	2.971	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	3/25/2020 4:42:01 PM	171460	1.00000	20200325_017	2.970	25.0000	1.0000	3

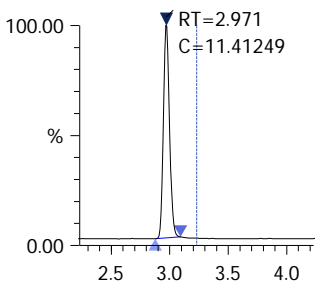
Perchlorate

Conc 11.41249

Area 264558

Q 99.00>83.00 (-)

7.30e4

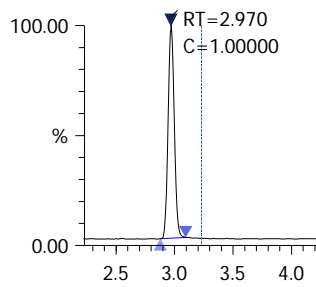
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 171460

ISTD 107.00>89.00 (-)

4.65e4





10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

March 26, 2020

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS20030427**

Laboratory Results for: **Longhorn GW Treatment Plant Monthly Influent Samples**

Dear Marcia,

ALS Environmental received 1 sample(s) on Mar 11, 2020 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read "Raj. P. Modashia", enclosed in a circular scribble.

Generated By: JUMOKE.LAWAL
RJ Modashia
Project Manager

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
Work Order: HS20030427

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20030427-01	LH18/24-SP140_031020	Water		10-Mar-2020 14:00	11-Mar-2020 08:53	<input type="checkbox"/>

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
Work Order: HS20030427

CASE NARRATIVE

Work Order Comments

- The analysis for Perchlorate were subcontracted to ALS High Res Lab Houston, TX. Final report attached.
-

Metals by Method SW6020**Batch ID: 151661**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
-

WetChemistry by Method SW7196**Batch ID: R358186**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
-

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
 Project: Longhorn GW Treatment Plant Monthly Influent Samples
 Sample ID: LH18/24-SP140_031020
 Collection Date: 10-Mar-2020 14:00

ANALYTICAL REPORT
 WorkOrder:HS20030427
 Lab ID:HS20030427-01
 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		Method:SW6020				Prep:SW3010A / 13-Mar-2020		Analyst: JHD
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	18-Mar-2020 22:03
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	18-Mar-2020 22:03
HEXAVALENT CHROMIUM BY SW7196A		Method:SW7196						Analyst: MZD
Chromium, Hexavalent	0.00900	J	0.00600	0.0100	0.0100	mg/L	1	11-Mar-2020 12:16
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		Method:NA						Analyst: CGG
Subcontract Analysis	See Attached		0	0		NA	1	26-Mar-2020 12:09

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Weight / Prep Log

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
WorkOrder: HS20030427

Batch ID: 151661 **Start Date:** 13 Mar 2020 10:00 **End Date:** 13 Mar 2020 14:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20030427-01		10 (mL)	10 (mL)	1

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
WorkOrder: HS20030427

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 151661 (0)		Test Name : METALS BY ICPMS BY SW6020A			Matrix: Water	
HS20030427-01	LH18/24-SP140_031020	10 Mar 2020 14:00		13 Mar 2020 14:00	18 Mar 2020 22:03	1
Batch ID: R358186 (0)		Test Name : HEXAVALENT CHROMIUM BY SW7196A			Matrix: Water	
HS20030427-01	LH18/24-SP140_031020	10 Mar 2020 14:00			11 Mar 2020 12:16	1
Batch ID: R358949 (0)		Test Name : SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)			Matrix: Water	
HS20030427-01	LH18/24-SP140_031020	10 Mar 2020 14:00			26 Mar 2020 12:09	1

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
WorkOrder: HS20030427

QC BATCH REPORT

Batch ID: 151661 (0)		Instrument: ICPMS05		Method: METALS BY ICPMS BY SW6020A						
MBLK	Sample ID: MBLK-151661	Units: mg/L		Analysis Date: 18-Mar-2020 21:42						
Client ID:	Run ID: ICPMS05_358447	SeqNo: 5519495		PrepDate: 13-Mar-2020		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.00250	0.00500								U
Silver	0.000500	0.00500								U
LCS	Sample ID: LCS-151661	Units: mg/L		Analysis Date: 19-Mar-2020 13:18						
Client ID:	Run ID: ICPMS06_358488	SeqNo: 5520365		PrepDate: 13-Mar-2020		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.04615	0.00500	0.05	0	92.3	80 - 120				
Silver	0.04564	0.00500	0.05	0	91.3	85 - 116				
MS	Sample ID: HS20030425-01MS	Units: mg/L		Analysis Date: 19-Mar-2020 13:20						
Client ID:	Run ID: ICPMS06_358488	SeqNo: 5520366		PrepDate: 13-Mar-2020		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.04488	0.00500	0.05	0	89.8	80 - 120				
Silver	0.0459	0.00500	0.05	0	91.8	85 - 116				
MSD	Sample ID: HS20030425-01MSD	Units: mg/L		Analysis Date: 19-Mar-2020 13:22						
Client ID:	Run ID: ICPMS06_358488	SeqNo: 5520367		PrepDate: 13-Mar-2020		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.04651	0.00500	0.05	0	93.0	80 - 120	0.04488	3.57	20	
Silver	0.04305	0.00500	0.05	0	86.1	85 - 116	0.0459	6.42	20	
PDS	Sample ID: HS20030425-01PDS	Units: mg/L		Analysis Date: 19-Mar-2020 13:24						
Client ID:	Run ID: ICPMS06_358488	SeqNo: 5520368		PrepDate: 13-Mar-2020		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.0948	0.00500	0.1	0	94.8	80 - 120				

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
WorkOrder: HS20030427

QC BATCH REPORT

Batch ID: 151661 (0) **Instrument:** ICPMS05 **Method:** METALS BY ICPMS BY SW6020A

SD	Sample ID: HS20030425-01SD	Units: mg/L			Analysis Date: 18-Mar-2020 21:49					
Client ID:	Run ID: ICPMS05_358447	SeqNo: 5519498		PrepDate: 13-Mar-2020		DF: 5				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	Limit	Qual
Selenium	0.0125	0.0250					0.000304	0	10	U
Silver	0.00250	0.0250					0.000015	0	10	U

The following samples were analyzed in this batch: HS20030427-01

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
WorkOrder: HS20030427

QC BATCH REPORT

Batch ID: R358186 (0)		Instrument: UV-2450		Method: HEXAVALENT CHROMIUM BY SW7196A					
MBLK	Sample ID: MBLK-358186	Units: mg/L		Analysis Date: 11-Mar-2020 12:16					
Client ID:	Run ID: UV-2450_358186	SeqNo: 5513126		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD Limit Qual	
Chromium, Hexavalent	0.0100	0.0100						U	
LCS	Sample ID: LCS-358186	Units: mg/L		Analysis Date: 11-Mar-2020 12:16					
Client ID:	Run ID: UV-2450_358186	SeqNo: 5513127		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD Limit Qual	
Chromium, Hexavalent	0.275	0.0100	0.25	0	110	90 - 111			
MS	Sample ID: HS20030425-01MS	Units: mg/L		Analysis Date: 11-Mar-2020 12:16					
Client ID:	Run ID: UV-2450_358186	SeqNo: 5513128		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD Limit Qual	
Chromium, Hexavalent	0.27	0.0100	0.25	0.002	107	90 - 111			
MSD	Sample ID: HS20030425-01MSD	Units: mg/L		Analysis Date: 11-Mar-2020 12:16					
Client ID:	Run ID: UV-2450_358186	SeqNo: 5513129		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD Limit Qual	
Chromium, Hexavalent	0.27	0.0100	0.25	0.002	107	90 - 111	0.27	0 20	

The following samples were analyzed in this batch: HS20030427-01

ALS Houston, US

Date: 26-Mar-20

Client:	Bhate Environmental Associates, Inc.	QUALIFIERS, ACRONYMS, UNITS
Project:	Longhorn GW Treatment Plant Monthly Influent Samples	
WorkOrder:	HS20030427	

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	19-028-0	27-Mar-2020
California	2919, 2019-2020	30-Apr-2020
Dept of Defense	ANAB L2231 V009	22-Dec-2021
Florida	E87611-28	30-Jun-2020
Illinois	2000322019-2	09-May-2020
Kansas	E-10352 2019-2020	31-Jul-2020
Kentucky	123043, 2019-2020	30-Apr-2020
Louisiana	03087, 2019-2020	30-Jun-2020
Maryland	343, 2019-2020	30-Jun-2020
North Carolina	624-2020	31-Dec-2020
North Dakota	R-193 2019-2020	30-Apr-2020
Oklahoma	2019-067	31-Aug-2020
Texas	T104704231-19-25	30-Apr-2020

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
Work Order: HS20030427

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20030427-01	LH18/24-SP140_031020	Login	3/11/2020 11:43:10 AM	AC	Sub
HS20030427-01	LH18/24-SP140_031020	Login	3/11/2020 11:43:10 AM	AC	WET083
HS20030427-01	LH18/24-SP140_031020	Login	3/11/2020 11:43:10 AM	AC	MET014

Sample Receipt Checklist

Client Name: Bhate Environmental
 Work Order: HS20030427

Date/Time Received: 11-Mar-2020 08:53
 Received by: AC

Checklist completed by: Asad Chaudhry 11-Mar-2020
 eSignature Date

Reviewed by: RJ Modashia 11-Mar-2020
 eSignature Date

Matrices: Water

Carrier name: FedEx Priority Overnight

- Shipping container/cooler in good condition? Yes No Not Present
- Custody seals intact on shipping container/cooler? Yes No Not Present
- Custody seals intact on sample bottles? Yes No Not Present
- VOA/TX1005/TX1006 Solids in hermetically sealed vials? Yes No Not Present
- Chain of custody present? Yes No 1 Page(s)
- Chain of custody signed when relinquished and received? Yes No COC IDs:N/A
- Samplers name present on COC? Yes No
- Chain of custody agrees with sample labels? Yes No
- Samples in proper container/bottle? Yes No
- Sample containers intact? Yes No
- Sufficient sample volume for indicated test? Yes No
- All samples received within holding time? Yes No
- Container/Temp Blank temperature in compliance? Yes No

Temperature(s)/Thermometer(s):

1.6c U/C	IR 25
----------	-------

Cooler(s)/Kit(s):

45747

Date/Time sample(s) sent to storage:

03/11/2020 11:55

- Water - VOA vials have zero headspace? Yes No No VOA vials submitted
- Water - pH acceptable upon receipt? Yes No N/A
- pH adjusted? Yes No N/A

pH adjusted by:

--

Login Notes:

Client Contacted: _____ Date Contacted: _____ Person Contacted: _____
 Contacted By: _____ Regarding: _____

Comments:

--

Corrective Action:

--

ALS
 10450 Stanciff Rd., Suite 210
 Houston, Texas 77099
 Tel. +1 281 530 5656
 Fax. +1 281 530 5657

CUSTODY SEAL
 Date: 3/11/02 Time:
 Name: Scott Beesley
 Company: DHTG

Seal Broken by:
Date:

FedEx
 TRK# 1251 0291 2489
 0221

WED - 11 MAR 10:30A
PRIORITY OVERNIGHT

AB SGRA

77099
 TX-US
 IAH



FID 5107232 10MAR20 GGA 560C2/64E0/05/02



March 26, 2020

Service Request No:E2000226

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS20030427

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory March 11, 2020
For your reference, these analyses have been assigned our service request number **E2000226**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental



Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client: ALS Houston
Project: HS20030427
Sample Matrix: W

Service Request No.: E2000226
Date Received: 03/11/20

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

One sample was received for analysis at ALS Environmental in Houston on 03/11/20.

The sample was received in good condition and is consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion**Precision and Accuracy:**

EQ2000110: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. The LCS and DLCS recoveries are within QC limits.

DOD Certification is held for the method/matrix/analytes provided in this report.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - US
Project: HS20030427

Service Request:E2000226

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
E2000226-001	LH18/24-SP140_031020	3/10/2020	1400

Service Request Summary

Folder #: E2000226
Client Name: ALS Environmental - US
Project Name: HS20030427
Project Number:
Report To: RJ Modashia
 ALS Laboratory Group
 10450 Stancliff Road
 Houston, TX 77099-4338
 USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 03/11/20
Internal Due Date: 3/25/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20030427
EDD: No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 7B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON C104 DOD/6850
E2000226-001	LH18/24-SP140_031020	Water	03/10/20 1400	IV

Service Request Summary

Folder #: E2000226
Client Name: ALS Environmental - US
Project Name: HS20030427
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA

Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 03/11/20
Internal Due Date: 3/25/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20030427
EDD: No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 7B
Pressure Gas:

Data Qualifiers

Lab Standard

- + Possible Tedlar bag artifact.
- A TIC is a suspected aldol-condensation product
- B Analyte found in the associated method blank as well as in the sample.
- BC Reported results are not blank corrected.
- BH The back section of the tube yielded higher results than the front.
- BT Results indicated possible breakthrough; back section $\geq 10\%$ front section.
- C Result identification confirmed.
- D Compound identified in an analysis at a secondary dilution factor
- D Spike was diluted out
- DE Reported results are corrected for desorption efficiency.
- E Estimated value. Concentration above calibration range
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- H1 Sample analysis performed past holding time. See case narrative.
- H2 Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
- H3 Sample was received and analyzed past holding time.
- H4 Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
- I Internal standard not within the specified limits. See case narrative.
- J Estimated Value. Concentration found below MRL.
- K A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
- K Analyte was detected above the method reporting limit prior to normalization.
- L1 Laboratory control sample recovery outside the specified limits; results may be biased high.
- L2 Laboratory control sample recovery outside the specified limits; results may be biased low.
- L3 Laboratory control sample recovery outside the specified limits.
- M Matrix interference; results may be biased high.
- M The duplicate injection precision not met.
- M1 Matrix interference due to coelution with a non-target compound; results may be biased high.
- N Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- P Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
- P Pesticide/Aroclor target analyte $> 40\%$ difference for detected concentrations between GC columns
- Q Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
- R Duplicate Precision not met.
- R1 Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
- S Surrogate recovery not within specified limits.

Data Qualifiers

Lab Standard

- S The reported value was determined by the Method of Standard Additions (MSA).
- T Analyte is a tentatively identified compound, result is estimated.
- U Compound was analyzed for, but was not detected (ND).
- V1 The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
- V2 The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
- W Result quantified, but the corresponding peak was detected outside the generated retention time window.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- X See case narrative.
- Y Recovery outside limits
- Y The chromatogram resembles a petroleum product but does not match the calibration standard.
- Z The chromatogram does not resemble a petroleum product.
- i The MRL/MDL has been elevated due to a matrix interference.

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Acronyms

Cal	Calibration
Conc	CONCEntration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient



State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
Arizona Department of Health Services	AZ0793	5/27/2020
Arkansas Department of Environmental Quality	19-028-0	3/27/2020
California Department of Health Services	2919	4/30/2020
Department of Defense	A2LA 2897.01	11/30/2021
Florida Department of Health	E87611	6/30/2020
Hawaii Department of Health	TX02694	4/30/2020
Illinois Environmental Protection Agency	2000322019-2	5/9/2020
Kansas Department of Health and Environment	E-10352	7/31/2020
Louisiana Department of Environmental Quality	03087	6/30/2020
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Center for Disease Control and Prevention	201815	6/5/2020
Maryland Department of the Environment	343	6/30/2020
Minnesota Department of Health	1785988	12/31/2020
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2020
Nevada Department of Conservation and Natural Resources	TX026932019-1	7/31/2020
New Hampshire Environmental Laboratory Accreditation Program	209419	4/24/2020
New Jersey Department of Environmental Protection	NLC190001	6/30/2020
New York Department of Health	11707	3/31/2020
Oklahoma Department of Environmental Quality	2019-067	8/31/2020
Pennsylvania Department of Environmental Protection	68-03441-013	6/30/2020
Tennessee Department of Environment and Conservation	04016	6/30/2020
Texas Commission on Environmental Quality	TX104704231-19-25	4/30/2020
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932019-9	7/31/2020
Washington Department of Health	C819	11/14/2020
West Virginia Department of Environmental Protection	347	6/30/2020



Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com



E2000226

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ALS Laboratory Group
HS20030427



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Subcontract Chain of Custody

SAMPLING STATE: Dept of Defense

COC ID: 13494

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff Road Suite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company: ALS Houston
Contact: RJ Modashia
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Email: RJ.Modashia@alsglobal.com
Alternate Contact: Jumoke M. Lawal
Email: jumoke.lawal@alsglobal.com

INVOICE INFORMATION:

Company: ALS Houston
Contact: Accounts Payable
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Reference: HS20030427
TSR: Danielle Winnings

LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
ANALYSIS REQUESTED			DUE DATE
1. HS20030427-01	LH18/24-SP140_031020	Water	10 Mar 2020 14:00
SUB_Perch-6850			25 Mar 2020

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: J. M. Lawal
Received By: [Signature]
Cooler ID(s): _____

Date/Time: 3/11/20 12:55
Date/Time: 3/11/20 12:55
Temperature(s): _____

RIGHT SOLUTIONS | RIGHT PARTNER



Cooler Receipt Form

Project Chemist CC

Client/Project ALS-H Thermometer ID 5M04

Date/Time Received: 3/11/20 Initials: CC Date/Time Logged in: 3/11/20 Initials CC

1. Method of delivery: US Mail Fed Ex UPS DHL ^{ALS} Courier Client

2. Samples received in: Cooler Box Envelope Other

3. Were custody seals on coolers? Yes No
 Were they intact? Yes No N/A
 Were they signed and dated? Yes No N/A

If yes, how many and where?

4. Packing Material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Sleeves Other

5. Foreign or Regulated Soil? Yes No Location of Sampling: _____

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
-		3/11/20	1255	CC	0.6/1.0	<input checked="" type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>

- 6. Were custody papers properly filled out (ink, signed, dated, etc)? Yes No
- 7. Did all bottles arrive in good condition (not broken, no signs of leakage)? Yes No
- 8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? Yes No
- 9. Were appropriate bottles/containers and volumes received for the requested tests? Yes No
- 10. Did sample labels and tags agree with custody documents? Yes No

Notes, Discrepancies, & Resolutions:

Service request Label:

E2000226

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HS20030427





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SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sample. The COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6°C.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10°C.
- ✓ Air samples are shipped and stored cold, at 0 to 6°C
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report



Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
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Preparation Information Benchsheet

Prep Run#: 355919
Team: Semivoa GCMS/KBROWN

Prep WorkFlow: GenExt28Day
Prep Method: Method

Status: Prepped
Prep Date/Time: 3/24/20 13:04

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2000225-001	LH18/24-SP650_031020_BIX	.01	6850/CIO4 DOD			Water	10mL	
2	E2000226-001	LH18/24-SP140_031020	.01	6850/CIO4 DOD			Water	10mL	
3	E2000227-001	LH18/24-SP650_031020_BIX	.01	6850/CIO4 DOD			Water	10mL	
4	E2000251-001	LH18/24-SP650_031720_BIX	.01	6850/CIO4 DOD			Water	10mL	
5	E2000263-001	LH18/24-SP650_032020_BIX	.01	6850/CIO4 DOD			Water	10mL	
6	EQ2000110-01	MB		6850/CIO4 DOD			Liquid	10mL	
7	EQ2000110-02	LCS		6850/CIO4 DOD			Liquid	10mL	
8	EQ2000110-03	DLCS		6850/CIO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4	Inventory ID: 202037	Logbook Ref: Sodium Perchlorate	Expires On: 05/22/2021
--	----------------------	---------------------------------	------------------------

E2000225-001	100.00µL	E2000226-001	100.00µL	E2000227-001	100.00µL	E2000251-001	100.00µL	E2000263-001	100.00µL	EQ2000110-01	100.00µL
EQ2000110-02	100.00µL	EQ2000110-03	100.00µL								

Name: Perchlorate Intermediate Stock1	Inventory ID: 204799	Logbook Ref: 200657 1.0ug/mL KN	Expires On: 05/15/2020
---------------------------------------	----------------------	---------------------------------	------------------------

E2000225-001	1.00µL	EQ2000110-02	1.00µL	EQ2000110-03	1.00µL						
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Preparation Steps

Step: Preparation
 Started: 3/24/20 13:04
 Finished: 3/24/20 15:55
 By: KBROWN
 Comments

Comments: _____

Reviewed By: KB Date: 03/24/2020

Chain of Custody

Relinquished By: _____	Date: _____	<u>Extracts Examined</u>
Received By: _____	Date: _____	Yes No



Analytical Results

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ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - US
Project: HS20030427
Sample Matrix: Water
Sample Name: LH18/24-SP140_031020
Lab Code: E2000226-001

Service Request: E2000226
Date Collected: 3/10/20 1400
Date Received: 3/11/20
Units: µg/L
Basis: NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	14000		100	50.0	25.0	1000	3/24/20	3/25/20 16:24	355919	674670	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - US
Project: HS20030427
Sample Matrix: Water
Sample Name: Method Blank
Lab Code: EQ2000110-01

Service Request: E2000226
Date Collected: NA
Date Received: NA
Units: µg/L
Basis: NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	3/24/20	3/25/20 15:13	355919	674670	



Accuracy & Precision

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Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20030427
Sample Matrix: Water

Service Request: E2000226
Date Analyzed: 3/25/20

Lab Control Sample Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Units: µg/L
Basis: NA

Extraction Lot: 355919

Analyte Name	Lab Control Sample EQ2000110-02			Duplicate Lab Control Sample EQ2000110-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Perchlorate	0.106	0.100	106	0.101	0.100	101	84 - 119	5	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - US
Project: HS20030427
Sample Matrix: Water
Sample Name: Lab Control Sample
Lab Code: EQ2000110-02

Service Request: E2000226
Date Collected: NA
Date Received: NA
Units: µg/L
Basis: NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	0.106		0.100	0.0500	0.0250	1	3/24/20	3/25/20 15:21	355919	674670	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - US
Project: HS20030427
Sample Matrix: Water
Sample Name: Duplicate Lab Control Sample
Lab Code: EQ2000110-03

Service Request: E2000226
Date Collected: NA
Date Received: NA
Units: µg/L
Basis: NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	0.101		0.100	0.0500	0.0250	1	3/24/20	3/25/20 15:29	355919	674670	



Initial Calibration

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Initial Calibration - Detailed Report

Calibration ID: EC2000001

Instrument ID: E-LCMS-01

Column Name: 1

#	Lab Code	Sample Name	File Location	Aquisition Date
07	EC2000001-07	PERCHLORATE7	20191230_006	12/30/2019 10:48
01	EC2000001-01	PERCHLORATE1	20191230_007	12/30/2019 10:56
02	EC2000001-02	PERCHLORATE2	20191230_008	12/30/2019 11:04
03	EC2000001-03	PERCHLORATE3	20191230_009	12/30/2019 11:12
04	EC2000001-04	PERCHLORATE4	20191230_010	12/30/2019 11:19
05	EC2000001-05	PERCHLORATE5	20191230_011	12/30/2019 11:27
06	EC2000001-06	PERCHLORATE6	20191230_012	12/30/2019 11:35
08	EC2000001-08	PERCHLORATE8	20191230_013	12/30/2019 11:43
09	EC2000001-09	PERCHLORATE9	20191230_014	12/30/2019 11:51
10	EC2000001-10	PERCHLORATE10	20191230_015	12/30/2019 11:59

Analyte**Perchlorate**

#	Amount	RF
01	0.1000	0.1736
05	2.0000	0.1337
09	30.0000	0.133

Curve Fit**Average RF**

#	Amount	RF
02	0.5000	0.1222
06	5.0000	0.1268
10	50.0000	0.1325

Weighting**RSD = 10.79**

#	Amount	RF
03	0.7000	0.1219
07	10.0000	0.1373

Average RF = 0.1352

#	Amount	RF
04	1.0000	0.1363
08	20.0000	0.1349

Analyte**Perchlorate**

#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D
01	0.1000	0.128	28.4	02	0.5000	0.452	-9.6	03	0.7000	0.631	-9.9
04	1.0000	1.01	0.8	05	2.0000	1.98	-1.1	06	5.0000	4.69	-6.2
07	10.0000	10.2	1.6	08	20.0000	20.0	-0.2	09	30.0000	29.5	-1.6
10	50.0000	49.0	-2.0								

Initial Calibration Verification Summary Report

Calibration ID:	EC2000001	Instrument ID:	E-LCMS-01
Datafile ID:	20191230_016	Column Name:	1

Analyte	Lab Code	Type	Curve Fit	True Value	Calc Conc	Units	Result	Criteria
Perchlorate	EC2000001-11	T	Average RF	10	12.276	ng/mL	22.7	<= 25

ALS Group Houston

PERCHLORATE1

Date acquired: 12/30/2019 10:56:14 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_007.lcd

Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_007	PERCHLORATE1	3.051	4022	0.12842	12/30/2019 10:56:14 AM	Yes	1.00000	25.0000	231680	1	3
Sodium Perchlorate-18O4_IS	20191230_007	PERCHLORATE1	3.051	231680	1.00000	12/30/2019 10:56:14 AM	No	1.00000	25.0000	231680	1	3

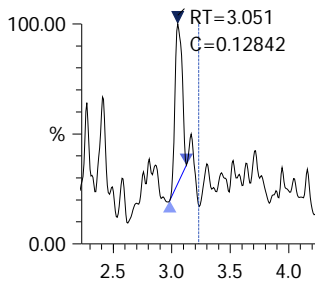
Perchlorate

Conc 0.12842

Area 4022

Q 99.00>83.00 (-)

1.27e3



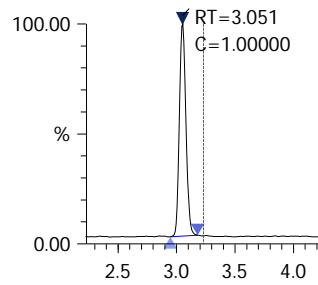
Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 231680

ISTD 107.00>89.00 (-)

5.94e4



ALS Group Houston

PERCHLORATE2

Date acquired: 12/30/2019 11:04:09 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_008.lcd

Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_008	PERCHLORATE2	3.046	15985	0.45177	12/30/2019 11:04:09 AM	Yes	1.00000	25.0000	261704	1	4
Sodium Perchlorate-18O4_IS	20191230_008	PERCHLORATE2	3.045	261704	1.00000	12/30/2019 11:04:09 AM	No	1.00000	25.0000	261704	1	4

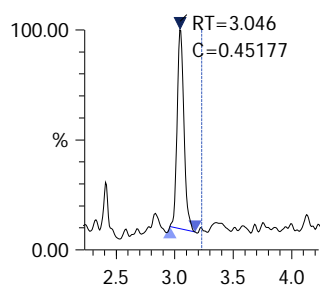
Perchlorate

Conc 0.45177

Area 15985

Q 99.00>83.00 (-)

4.21e3



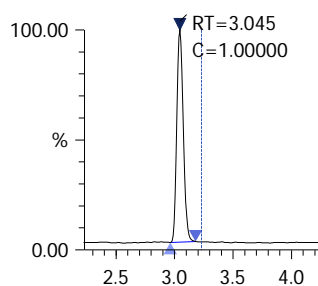
Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 261704

ISTD 107.00>89.00 (-)

6.75e4



ALS Group Houston

PERCHLORATE3

Date acquired: 12/30/2019 11:12:06 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_009.lcd

Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_009	PERCHLORATE3	3.046	22031	0.63092	12/30/2019 11:12:06 AM	Yes	1.00000	25.0000	258274	1	5
Sodium Perchlorate-18O4_IS	20191230_009	PERCHLORATE3	3.044	258274	1.00000	12/30/2019 11:12:06 AM	No	1.00000	25.0000	258274	1	5

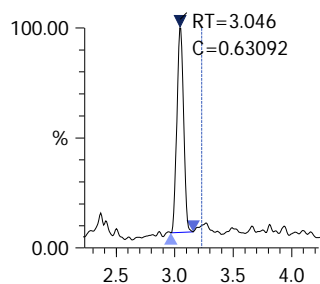
Perchlorate

Conc 0.63092

Area 22031

Q 99.00>83.00 (-)

5.75e3



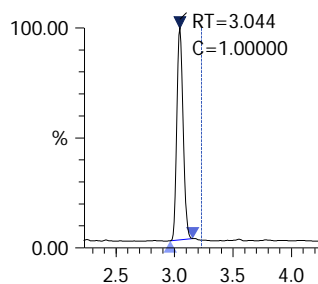
Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 258274

ISTD 107.00>89.00 (-)

6.88e4



ALS Group Houston

PERCHLORATE4

Date acquired: 12/30/2019 11:19:58 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_010.lcd

Vial: 6 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_010	PERCHLORATE4	3.048	36488	1.00794	12/30/2019 11:19:58 AM	Yes	1.00000	25.0000	267754	1	6
Sodium Perchlorate-18O4_IS	20191230_010	PERCHLORATE4	3.046	267754	1.00000	12/30/2019 11:19:58 AM	No	1.00000	25.0000	267754	1	6

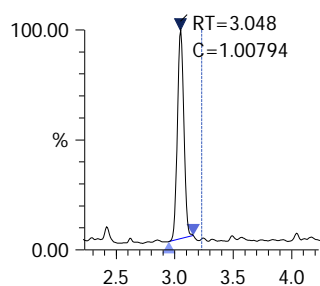
Perchlorate

Conc 1.00794

Area 36488

Q 99.00>83.00 (-)

9.73e3

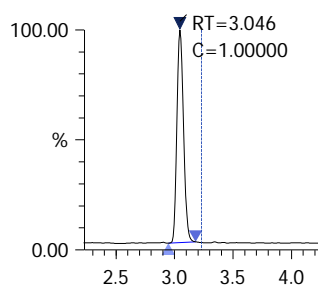
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 267754

ISTD 107.00>89.00 (-)

6.78e4



ALS Group Houston

PERCHLORATE5

Date acquired: 12/30/2019 11:27:53 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_011.lcd

Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_011	PERCHLORATE5	3.050	74631	1.97766	12/30/2019 11:27:53 AM	Yes	1.00000	25.0000	279118	1	7
Sodium Perchlorate-18O4_IS	20191230_011	PERCHLORATE5	3.046	279118	1.00000	12/30/2019 11:27:53 AM	No	1.00000	25.0000	279118	1	7

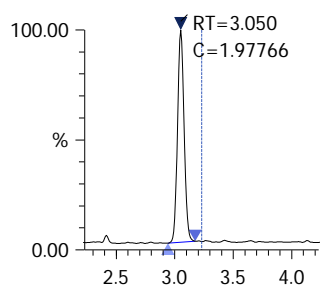
Perchlorate

Conc 1.97766

Area 74631

Q 99.00>83.00 (-)

1.92e4



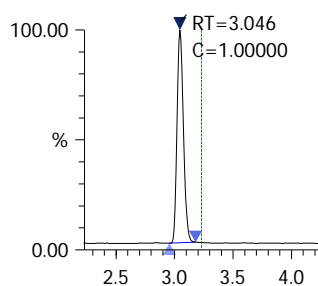
Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 279118

ISTD 107.00>89.00 (-)

7.33e4



ALS Group Houston

PERCHLORATE6

Date acquired: 12/30/2019 11:35:50 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_012.lcd

Vial: 8 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_012	PERCHLORATE6	3.047	159122	4.68764	12/30/2019 11:35:50 AM	Yes	1.00000	25.0000	251072	1	8
Sodium Perchlorate-18O4_IS	20191230_012	PERCHLORATE6	3.045	251072	1.00000	12/30/2019 11:35:50 AM	No	1.00000	25.0000	251072	1	8

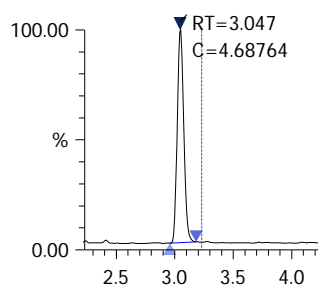
Perchlorate

Conc 4.68764

Area 159122

Q 99.00>83.00 (-)

4.12e4



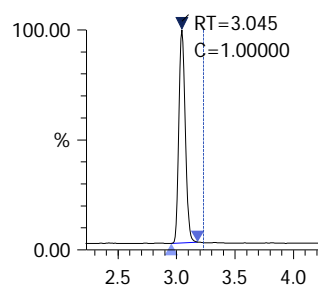
Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 251072

ISTD 107.00>89.00 (-)

6.53e4



ALS Group Houston

PERCHLORATE7

Date acquired: 12/30/2019 10:48:20 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_006.lcd

Vial: 9 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_006	PERCHLORATE7	2.994	298821	10.15570	12/30/2019 10:48:20 AM	Yes	1.00000	25.0000	217632	1	9
Sodium Perchlorate-18O4_IS	20191230_006	PERCHLORATE7	2.991	217632	1.00000	12/30/2019 10:48:20 AM	No	1.00000	25.0000	217632	1	9

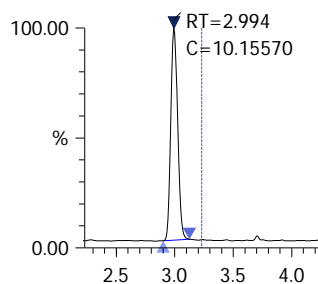
Perchlorate

Conc 10.15570

Area 298821

Q 99.00>83.00 (-)

7.46e4

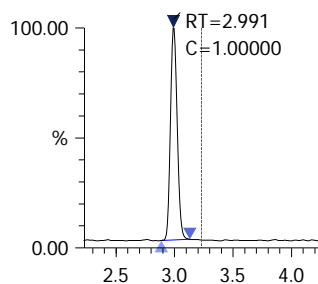
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 217632

ISTD 107.00>89.00 (-)

5.38e4



ALS Group Houston

PERCHLORATE8

Date acquired: 12/30/2019 11:43:47 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_013.lcd

Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_013	PERCHLORATE8	3.048	557358	19.95021	12/30/2019 11:43:47 AM	Yes	1.00000	25.0000	206636	1	10
Sodium Perchlorate-18O4_IS	20191230_013	PERCHLORATE8	3.045	206636	1.00000	12/30/2019 11:43:47 AM	No	1.00000	25.0000	206636	1	10

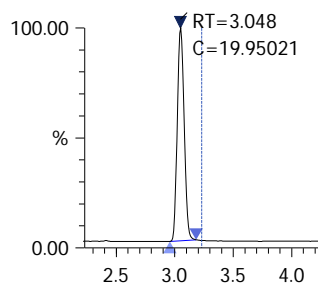
Perchlorate

Conc 19.95021

Area 557358

Q 99.00>83.00 (-)

1.37e5



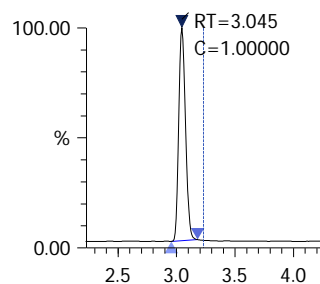
Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 206636

ISTD 107.00>89.00 (-)

5.11e4



ALS Group Houston

PERCHLORATE9

Date acquired: 12/30/2019 11:51:43 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_014.lcd

Vial: 11 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_014	PERCHLORATE9	3.052	730647	29.50809	12/30/2019 11:51:43 AM	Yes	1.00000	25.0000	183142	1	11
Sodium Perchlorate-18O4_IS	20191230_014	PERCHLORATE9	3.049	183142	1.00000	12/30/2019 11:51:43 AM	No	1.00000	25.0000	183142	1	11

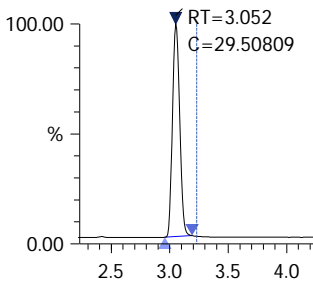
Perchlorate

Conc 29.50809

Area 730647

Q 99.00>83.00 (-)

1.70e5



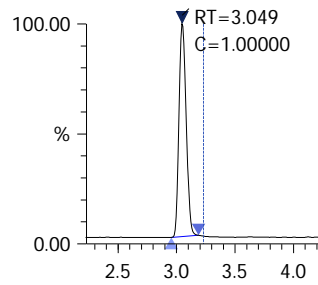
Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 183142

ISTD 107.00>89.00 (-)

4.27e4



ALS Group Houston

PERCHLORATE10

Date acquired: 12/30/2019 11:59:38 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_015.lcd

Vial: 12 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_015	PERCHLORATE10	3.046	1090166	48.99902	12/30/2019 11:59:38 AM	Yes	1.00000	25.0000	164560	1	12
Sodium Perchlorate-18O4_IS	20191230_015	PERCHLORATE10	3.043	164560	1.00000	12/30/2019 11:59:38 AM	No	1.00000	25.0000	164560	1	12

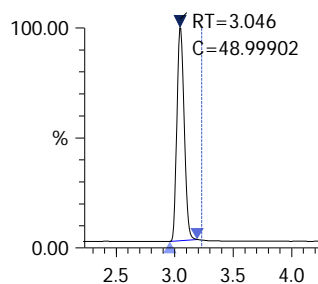
Perchlorate

Conc 48.99902

Area 1090166

Q 99.00>83.00 (-)

2.51e5

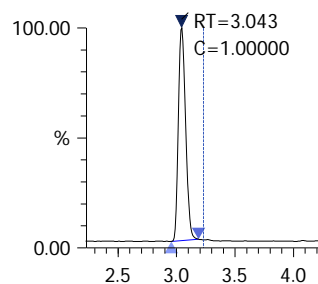
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 164560

ISTD 107.00>89.00 (-)

3.80e4



ALS Group Houston

ICV

Date acquired: 12/30/2019 12:07:32 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_016.lcd

Vial: 13 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_016	ICV	3.047	347932	12.27639	12/30/2019 12:07:32 PM	No	1.00000	25.0000	209626	1	13
Sodium Perchlorate-18O4_IS	20191230_016	ICV	3.045	209626	1.00000	12/30/2019 12:07:32 PM	No	1.00000	25.0000	209626	1	13

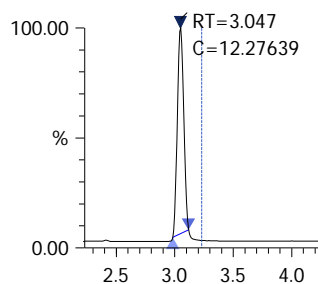
Perchlorate

Conc 12.27639

Area 347932

Q 99.00>83.00 (-)

9.49e4



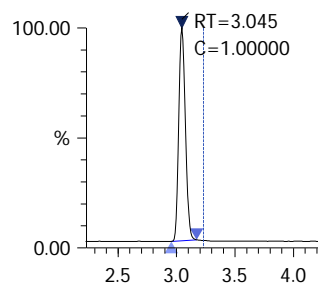
Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 209626

ISTD 107.00>89.00 (-)

5.28e4





Chromatograms and Selected Ion Monitoring

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20030427

Service Request: E2000226
Date Analyzed: 3/25/20 14:57

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID: I:\LCMS01\DATA\20200325\20200325_005
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000112-01
Analysis Lot: 674670
Signal ID: 1

Sodium Perchlorate-18O4

	<u>Area</u>	<u>RT</u>
ICAL Average ==>	232,157	3.04
Upper Limit ==>	348,236	5.04
Lower Limit ==>	116,079	1.04

Associated Analyses

Continuing Calibration Verification	EQ2000112-01	147,967	2.97
Method Blank	EQ2000110-01	153,426	3.03
Lab Control Sample	EQ2000110-02	179,436	3.03
Duplicate Lab Control Sample	EQ2000110-03	176,068	3.03
LH18/24-SP140_031020	E2000226-001	147,373	3.03

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20030427

Service Request: E2000226
Date Analyzed: 3/25/20 16:42

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID: I:\LCMS01\DATA\20200325\20200325_017
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000112-02
Analysis Lot: 674670
Signal ID: 1

Sodium Perchlorate-1804

	<u>Area</u>	<u>RT</u>
ICAL Average ==>	232,157	3.04
Upper Limit ==>	348,236	5.04
Lower Limit ==>	116,079	1.04

Associated Analyses

Continuing Calibration Verification	EQ2000112-02	171,460	2.97
-------------------------------------	--------------	---------	------

Results flagged with an asterisk (*) indicate values outside control criteria.

*Continuing Calibration Verification Summary***Calibration ID:** EC2000001**Spec Set:** #99479 v. 1**QAP Name:** LAB QAP**List ID:** #21851**List Name:** Perchlorate RJ DOD**Signal ID:** 1**Data File:** I:\LCMS01\DATA\20200325\20200325_017

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.4	0.1352	0.1543	14		± 15%	Average RF

*Continuing Calibration Verification Summary***Calibration ID:** EC2000001**Spec Set:** #99479 v. 1**QAP Name:** LAB QAP**List ID:** #21851**List Name:** Perchlorate RJ DOD**Signal ID:** 1**Data File:** I:\LCMS01\DATA\20200325\20200325_005

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.8	0.1352	0.1455	8		± 15%	Average RF

ALS Group Houston

PERCHLORATE7

Date acquired: 3/25/2020 2:57:41 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200325\20200325_005.lcd

Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	3/25/2020 2:57:41 PM	215236	10.75896	20200325_005	2.973	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	3/25/2020 2:57:41 PM	147967	1.00000	20200325_005	2.971	25.0000	1.0000	3

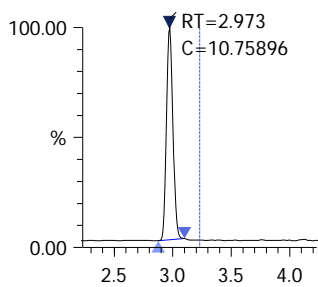
Perchlorate

Conc 10.75896

Area 215236

Q 99.00>83.00 (-)

5.65e4

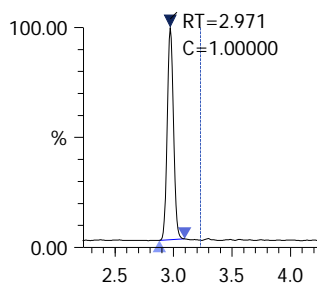
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 147967

ISTD 107.00>89.00 (-)

3.97e4



ALS Group Houston

EQ2000110-01

Date acquired: 3/25/2020 3:13:33 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200325\20200325_007.lcd

Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000110-01	3/25/2020 3:13:33 PM	----	----	20200325_007	----	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	EQ2000110-01	3/25/2020 3:13:33 PM	153426	1.00000	20200325_007	3.030	25.0000	1.0000	5

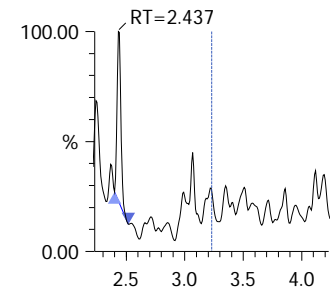
Perchlorate

Conc ----

Area ----

Q 99.00>83.00 (-)

6.99e2

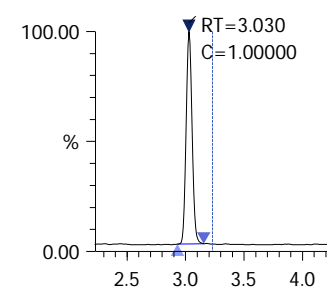
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 153426

ISTD 107.00>89.00 (-)

4.30e4



ALS Group Houston

EQ2000110-02

Date acquired: 3/25/2020 3:21:29 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200325\20200325_008.lcd

Vial: 6 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000110-02	3/25/2020 3:21:29 PM	2580	0.10635	20200325_008	3.027	25.0000	1.0000	6
Sodium Perchlorate-18O4_IS	EQ2000110-02	3/25/2020 3:21:29 PM	179436	1.00000	20200325_008	3.026	25.0000	1.0000	6

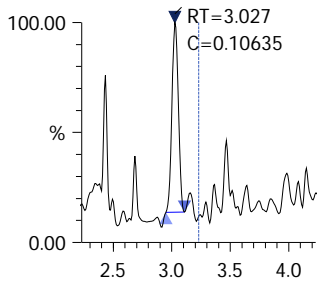
Perchlorate

Conc 0.10635

Area 2580

Q 99.00>83.00 (-)

7.75e2

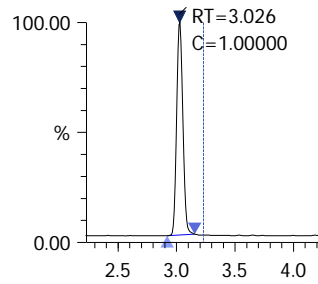
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 179436

ISTD 107.00>89.00 (-)

4.81e4



ALS Group Houston

EQ2000110-03

Date acquired: 3/25/2020 3:29:26 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200325\20200325_009.lcd

Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000110-03	3/25/2020 3:29:26 PM	2398	0.10072	20200325_009	3.027	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	EQ2000110-03	3/25/2020 3:29:26 PM	176068	1.00000	20200325_009	3.025	25.0000	1.0000	7

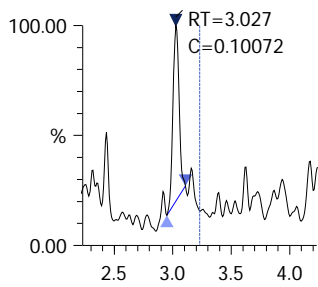
Perchlorate

Conc 0.10072

Area 2398

Q 99.00>83.00 (-)

8.14e2

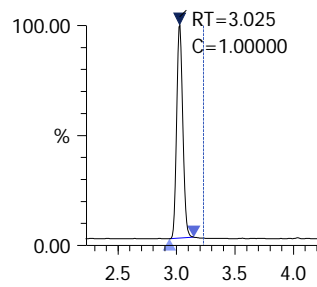
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 176068

ISTD 107.00>89.00 (-)

4.76e4



ALS Group Houston

E2000226-001

Date acquired: 3/25/2020 4:24:52 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200325\20200325_016.lcd

Vial: 13 | Inj. Volume: 25.0000uL | Tray: 1

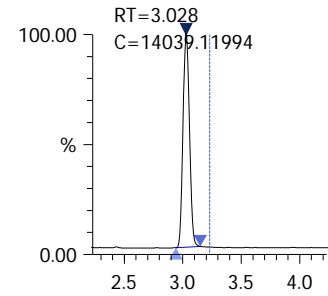
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	E2000226-001	3/25/2020 4:24:52 PM	279729	14039.11994	20200325_016	3.028	25.0000	1.0000	13
Sodium Perchlorate-18O4_IS	E2000226-001	3/25/2020 4:24:52 PM	147373	1.00000	20200325_016	3.026	25.0000	1.0000	13

Perchlorate

Conc 14039.11994

Area 279729

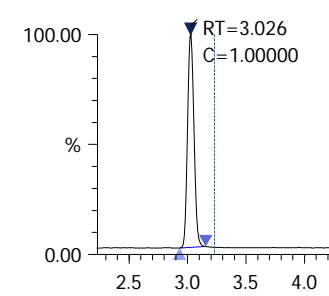
Q 99.00>83.00 (-)

Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 147373

7.40e4 ISTD 107.00>89.00 (-) 3.82e4



ALS Group Houston

PERCHLORATE7

Date acquired: 3/25/2020 4:42:01 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200325\20200325_017.lcd

Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	3/25/2020 4:42:01 PM	264558	11.41249	20200325_017	2.971	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	3/25/2020 4:42:01 PM	171460	1.00000	20200325_017	2.970	25.0000	1.0000	3

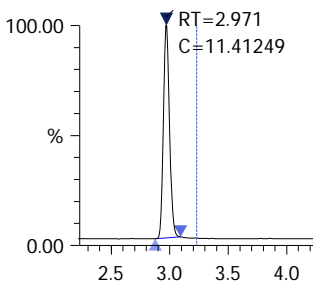
Perchlorate

Conc 11.41249

Area 264558

Q 99.00>83.00 (-)

7.30e4

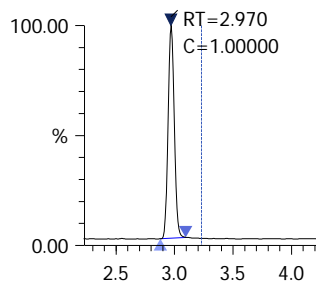
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 171460

ISTD 107.00>89.00 (-)

4.65e4





10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

March 26, 2020

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS20030430**

Laboratory Results for: **Longhorn GW Treatment Plant Weekly Samples**

Dear Marcia,

ALS Environmental received 2 sample(s) on Mar 11, 2020 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Raj. P. Modashia', enclosed in a circular scribble.

Generated By: JUMOKE.LAWAL
RJ Modashia
Project Manager

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS20030430

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20030430-01	LH18/24-SP650_031020	Water		10-Mar-2020 14:00	11-Mar-2020 08:53	<input type="checkbox"/>
HS20030430-02	LH18/24-SP650_031020_BIX	Water		10-Mar-2020 14:00	11-Mar-2020 08:53	<input type="checkbox"/>

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS20030430

CASE NARRATIVE**Work Order Comments**

- The analysis for Perchlorate were subcontracted to ALS High Res Lab Houston, TX. Final report attached.
 - The analysis for TOC was subcontracted to ALS Kelso, WA. Final report attached.
-

Subcontracted by Method NA**Batch ID: R358468,R358949**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
-

WetChemistry by Method E350.3**Batch ID: R358280**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
-

WetChemistry by Method E365.3**Batch ID: R357975**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
-

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
 Project: Longhorn GW Treatment Plant Weekly Samples
 Sample ID: LH18/24-SP650_031020
 Collection Date: 10-Mar-2020 14:00

ANALYTICAL REPORT

WorkOrder:HS20030430
 Lab ID:HS20030430-01
 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
AMMONIA AS N BY E350.3(ISE)								Analyst: RG
Nitrogen, Ammonia (As N)	6.6	a	0.20	0.10	0.20	mg/L	1	17-Mar-2020 11:00
ORTHO PHOSPHATE (PO4) AS P BY E365.3								Analyst: MZD
Phosphorus, Total Orthophosphate (As P)	1.45	a	0.100	0.250	0.250	mg/L	10	11-Mar-2020 13:07
SUBCONTRACT ANALYSIS - TOC ANALYSIS								Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	20-Mar-2020 11:15

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
 Project: Longhorn GW Treatment Plant Weekly Samples
 Sample ID: LH18/24-SP650_031020_BIX
 Collection Date: 10-Mar-2020 14:00

ANALYTICAL REPORT

WorkOrder:HS20030430
 Lab ID:HS20030430-02
 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		Method:NA		Analyst: CGG				
Subcontract Analysis	See Attached		0	0		NA	1	26-Mar-2020 12:09

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20030430

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R357975 (0)		Test Name : ORTHO PHOSPHATE (PO4) AS P BY E365.3			Matrix: Water	
HS20030430-01	LH18/24-SP650_031020	10 Mar 2020 14:00			11 Mar 2020 13:07	10
Batch ID: R358280 (0)		Test Name : AMMONIA AS N BY E350.3(ISE)			Matrix: Water	
HS20030430-01	LH18/24-SP650_031020	10 Mar 2020 14:00			17 Mar 2020 11:00	1
Batch ID: R358468 (0)		Test Name : SUBCONTRACT ANALYSIS - TOC ANALYSIS			Matrix: Water	
HS20030430-01	LH18/24-SP650_031020	10 Mar 2020 14:00			20 Mar 2020 11:15	1
Batch ID: R358949 (0)		Test Name : SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)			Matrix: Water	
HS20030430-02	LH18/24-SP650_031020_BIX	10 Mar 2020 14:00			26 Mar 2020 12:09	1

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20030430

QC BATCH REPORT

Batch ID:	R357975 (0)	Instrument:	UV-2450	Method:	ORTHO PHOSPHATE (PO4) AS P BY E365.3					
MBLK	Sample ID: MBLK-357975	Units: mg/L		Analysis Date: 11-Mar-2020 13:07						
Client ID:		Run ID: UV-2450_357975		SeqNo: 5508433	PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Phosphorus, Total Orthophosphate (As P)	0.0250	0.0250							U	
LCS	Sample ID: LCS-357975	Units: mg/L		Analysis Date: 11-Mar-2020 13:07						
Client ID:		Run ID: UV-2450_357975		SeqNo: 5508434	PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Phosphorus, Total Orthophosphate (As P)	0.26	0.0250	0.25	0	104	85 - 115				
MS	Sample ID: HS20030430-01MS	Units: mg/L		Analysis Date: 11-Mar-2020 13:07						
Client ID: LH18/24-SP650_031020		Run ID: UV-2450_357975		SeqNo: 5508436	PrepDate:		DF: 10			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Phosphorus, Total Orthophosphate (As P)	3.81	0.250	2.5	1.45	94.4	80 - 120				
MSD	Sample ID: HS20030430-01MSD	Units: mg/L		Analysis Date: 11-Mar-2020 13:07						
Client ID: LH18/24-SP650_031020		Run ID: UV-2450_357975		SeqNo: 5508437	PrepDate:		DF: 10			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Phosphorus, Total Orthophosphate (As P)	3.67	0.250	2.5	1.45	88.8	80 - 120	3.81	3.74	20	

The following samples were analyzed in this batch: HS20030430-01

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20030430

QC BATCH REPORT

Batch ID: R358280 (0)		Instrument: WetChem_HS		Method: AMMONIA AS N BY E350.3(ISE)						
MBLK	Sample ID: MBLK-R358280	Units: mg/L			Analysis Date: 17-Mar-2020 11:00					
Client ID:	Run ID: WetChem_HS_358280	SeqNo: 5515208			PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual	
Nitrogen, Ammonia (As N)	0.10	0.20							U	
LCS	Sample ID: LCS-R358280	Units: mg/L			Analysis Date: 17-Mar-2020 11:00					
Client ID:	Run ID: WetChem_HS_358280	SeqNo: 5515207			PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual	
Nitrogen, Ammonia (As N)	10.21	0.20	10	0	102	80 - 120				
MS	Sample ID: HS20030385-01MS	Units: mg/L			Analysis Date: 17-Mar-2020 11:00					
Client ID:	Run ID: WetChem_HS_358280	SeqNo: 5515210			PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual	
Nitrogen, Ammonia (As N)	11.74	0.20	10	1.943	97.9	80 - 120				
MSD	Sample ID: HS20030385-01MSD	Units: mg/L			Analysis Date: 17-Mar-2020 11:00					
Client ID:	Run ID: WetChem_HS_358280	SeqNo: 5515209			PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual	
Nitrogen, Ammonia (As N)	11.87	0.20	10	1.943	99.2	80 - 120	11.74	1.11	20	

The following samples were analyzed in this batch: HS20030430-01

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20030430

**QUALIFIERS,
ACRONYMS, UNITS**

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	19-028-0	27-Mar-2020
California	2919, 2019-2020	30-Apr-2020
Dept of Defense	ANAB L2231 V009	22-Dec-2021
Florida	E87611-28	30-Jun-2020
Illinois	2000322019-2	09-May-2020
Kansas	E-10352 2019-2020	31-Jul-2020
Kentucky	123043, 2019-2020	30-Apr-2020
Louisiana	03087, 2019-2020	30-Jun-2020
Maryland	343, 2019-2020	30-Jun-2020
North Carolina	624-2020	31-Dec-2020
North Dakota	R-193 2019-2020	30-Apr-2020
Oklahoma	2019-067	31-Aug-2020
Texas	T104704231-19-25	30-Apr-2020

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS20030430

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20030430-01	LH18/24-SP650_031020	Login	3/11/2020 12:02:27 PM	AC	WET231
HS20030430-01	LH18/24-SP650_031020	Login	3/11/2020 12:02:27 PM	AC	WET231
HS20030430-01	LH18/24-SP650_031020	Login	3/11/2020 12:02:27 PM	AC	Sub
HS20030430-02	LH18/24-SP650_031020_BIX	Login	3/11/2020 12:02:27 PM	AC	Sub

Sample Receipt Checklist

Client Name: Bhate Environmental
 Work Order: HS20030430

Date/Time Received: **11-Mar-2020 08:53**
 Received by: **AC**

Checklist completed by: Asad Chaudhry 11-Mar-2020
 eSignature Date

Reviewed by: RJ Modashia 11-Mar-2020
 eSignature Date

Matrices: **Water**

Carrier name: **FedEx Priority Overnight**

- Shipping container/cooler in good condition? Yes No Not Present
- Custody seals intact on shipping container/cooler? Yes No Not Present
- Custody seals intact on sample bottles? Yes No Not Present
- VOA/TX1005/TX1006 Solids in hermetically sealed vials? Yes No Not Present
- Chain of custody present? Yes No 1 Page(s)
- Chain of custody signed when relinquished and received? Yes No COC IDs:N/A
- Samplers name present on COC? Yes No
- Chain of custody agrees with sample labels? Yes No
- Samples in proper container/bottle? Yes No
- Sample containers intact? Yes No
- Sufficient sample volume for indicated test? Yes No
- All samples received within holding time? Yes No
- Container/Temp Blank temperature in compliance? Yes No

Temperature(s)/Thermometer(s): 1.6c U/C IR 25
 Cooler(s)/Kit(s): 45747
 Date/Time sample(s) sent to storage: 03/11/2020 12:05

- Water - VOA vials have zero headspace? Yes No No VOA vials submitted
- Water - pH acceptable upon receipt? Yes No N/A
- pH adjusted? Yes No N/A


pH adjusted by:

Login Notes:

Client Contacted: Date Contacted: Person Contacted:
 Contacted By: Regarding:

Comments:

Corrective Action:


 ALS 10450 Stancliff Rd., Suite 210 Houston, Texas 77099 Tel. +1 281 530 5656 Fax. +1 281 530 5887	CUSTODY SEAL		Seal Broken by: Date:
	Date: 3/11/20	Time: 1430	
	Name: Scott Beeler	607	
	Company: DHHS		

FedEx
 TRK# 1251 0291 2489
 0221

AB SGRA

WED - 11 MAR 10:30A
 PRIORITY OVERNIGHT

77099
 TX-US
 IAH



FID 5107232 10MAR20 GGA 56BC2/64E0/05A2



March 26, 2020

Service Request No:E2000227

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS20030430

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory March 11, 2020
For your reference, these analyses have been assigned our service request number **E2000227**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental



Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client: ALS Houston
Project: HS20030430
Sample Matrix: W

Service Request No.: E2000227
Date Received: 03/11/20

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

One sample was received for analysis at ALS Environmental in Houston on 03/11/20.

The sample was received in good condition and is consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion**Precision and Accuracy:**

EQ2000110: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. The LCS and DLCS recoveries are within QC limits.

DOD Certification is held for the method/matrix/analytes provided in this report.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - US
Project: HS20030430

Service Request:E2000227

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
E2000227-001	LH18/24-SP650_031020_BIX	3/10/2020	1400

Service Request Summary

Folder #: E2000227
Client Name: ALS Environmental - US
Project Name: HS20030430
Project Number:
Report To: RJ Modashia
 ALS Laboratory Group
 10450 Stancliff Road
 Houston, TX 77099-4338
 USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 03/11/20
Internal Due Date: 3/25/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20030430
EDD: No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 7B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON C104 DOD/6850
E2000227-001	LH18/24-SP650_031020_BIX	Water	03/10/20 1400	IV

Service Request Summary

Folder #: E2000227
Client Name: ALS Environmental - US
Project Name: HS20030430
Project Number:
Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 03/11/20
Internal Due Date: 3/25/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20030430
EDD: No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 7B
Pressure Gas:

Data Qualifiers

Lab Standard

- + Possible Tedlar bag artifact.
- A TIC is a suspected aldol-condensation product
- B Analyte found in the associated method blank as well as in the sample.
- BC Reported results are not blank corrected.
- BH The back section of the tube yielded higher results than the front.
- BT Results indicated possible breakthrough; back section $\geq 10\%$ front section.
- C Result identification confirmed.
- D Compound identified in an analysis at a secondary dilution factor
- D Spike was diluted out
- DE Reported results are corrected for desorption efficiency.
- E Estimated value. Concentration above calibration range
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- H1 Sample analysis performed past holding time. See case narrative.
- H2 Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
- H3 Sample was received and analyzed past holding time.
- H4 Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
- I Internal standard not within the specified limits. See case narrative.
- J Estimated Value. Concentration found below MRL.
- K A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
- K Analyte was detected above the method reporting limit prior to normalization.
- L1 Laboratory control sample recovery outside the specified limits; results may be biased high.
- L2 Laboratory control sample recovery outside the specified limits; results may be biased low.
- L3 Laboratory control sample recovery outside the specified limits.
- M Matrix interference; results may be biased high.
- M The duplicate injection precision not met.
- M1 Matrix interference due to coelution with a non-target compound; results may be biased high.
- N Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- P Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
- P Pesticide/Aroclor target analyte $> 40\%$ difference for detected concentrations between GC columns
- Q Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
- R Duplicate Precision not met.
- R1 Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
- S Surrogate recovery not within specified limits.

Data Qualifiers

Lab Standard

- S The reported value was determined by the Method of Standard Additions (MSA).
- T Analyte is a tentatively identified compound, result is estimated.
- U Compound was analyzed for, but was not detected (ND).
- V1 The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
- V2 The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
- W Result quantified, but the corresponding peak was detected outside the generated retention time window.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- X See case narrative.
- Y Recovery outside limits
- Y The chromatogram resembles a petroleum product but does not match the calibration standard.
- Z The chromatogram does not resemble a petroleum product.
- i The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCEntration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient



State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
Arizona Department of Health Services	AZ0793	5/27/2020
Arkansas Department of Environmental Quality	19-028-0	3/27/2020
California Department of Health Services	2919	4/30/2020
Department of Defense	A2LA 2897.01	11/30/2021
Florida Department of Health	E87611	6/30/2020
Hawaii Department of Health	TX02694	4/30/2020
Illinois Environmental Protection Agency	2000322019-2	5/9/2020
Kansas Department of Health and Environment	E-10352	7/31/2020
Louisiana Department of Environmental Quality	03087	6/30/2020
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Center for Disease Control and Prevention	201815	6/5/2020
Maryland Department of the Environment	343	6/30/2020
Minnesota Department of Health	1785988	12/31/2020
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2020
Nevada Department of Conservation and Natural Resources	TX026932019-1	7/31/2020
New Hampshire Environmental Laboratory Accreditation Program	209419	4/24/2020
New Jersey Department of Environmental Protection	NLC190001	6/30/2020
New York Department of Health	11707	3/31/2020
Oklahoma Department of Environmental Quality	2019-067	8/31/2020
Pennsylvania Department of Environmental Protection	68-03441-013	6/30/2020
Tennessee Department of Environment and Conservation	04016	6/30/2020
Texas Commission on Environmental Quality	TX104704231-19-25	4/30/2020
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932019-9	7/31/2020
Washington Department of Health	C819	11/14/2020
West Virginia Department of Environmental Protection	347	6/30/2020



Chain of Custody

ALS Environmental - Houston HRMS
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Phone (713)266-1599 Fax (713)266-0130
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E2000227

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ALS Laboratory Group
HS20030430



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Subcontract Chain of Custody

SAMPLING STATE: Dept of Defense

COC ID: 13495

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff Road Suite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company: ALS Houston
Contact: RJ Modashia
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Email: RJ.Modashia@alsglobal.com
Alternate Contact: Jumoke M. Lawal
Email: jumoke.lawal@alsglobal.com

INVOICE INFORMATION:

Company: ALS Houston
Contact: Accounts Payable
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Reference: HS20030430
TSR: Danielle Winnings

LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
ANALYSIS REQUESTED			DUE DATE
1. HS20030430-02	LH18/24-SP650_031020_BIX	Water	10 Mar 2020 14:00
SUB_Perch-6850			19 Mar 2020

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: J. M. Lawal
Received By: LUREY G
Cooler ID(s): _____

Date/Time: 3/11/20 12:55
Date/Time: 3/11/20 12:55
Temperature(s): _____

RIGHT SOLUTIONS | RIGHT PARTNER



Cooler Receipt Form

Project Chemist CC

Client/Project ALC 11 Thermometer ID 6403

Date/Time Received: 3/11/20 Initials: CC Date/Time Logged in: 3/11/20 Initials CC

1. Method of delivery: US Mail Fed Ex UPS DHL Courier Client

2. Samples received in: Cooler Box Envelope Other

3. Were custody seals on coolers? Yes No

If yes, how many and where?

Were they intact? Yes No N/A

Were they signed and dated? Yes No N/A

4. Packing Material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Sleeves Other

5. Foreign or Regulated Soil? Yes No Location of Sampling: _____

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
-		3/11/20	1255	CC	0.0/1.0	<input checked="" type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>

6. Were custody papers properly filled out (ink, signed, dated, etc)? Yes No

7. Did all bottles arrive in good condition (not broken, no signs of leakage)? Yes No

8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? Yes No

9. Were appropriate bottles/containers and volumes received for the requested tests? Yes No

10. Did sample labels and tags agree with custody documents? Yes No

Notes, Discrepancies, & Resolutions:

Service request Label:

E2000227

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ALS Laboratory Group
HS20030450





10450 Stancliff Rd., Suite 210
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SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sample. The COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6°C.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10°C.
- ✓ Air samples are shipped and stored cold, at 0 to 6°C
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report



Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 355919
Team: Semivoa GCMS/KBROWN

Prep WorkFlow: GenExt28Day
Prep Method: Method

Status: Prepped
Prep Date/Time: 3/24/20 13:04

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2000225-001	LH18/24-SP650_031020_BIX	.01	6850/CIO4 DOD			Water	10mL	
2	E2000226-001	LH18/24-SP140_031020	.01	6850/CIO4 DOD			Water	10mL	
3	E2000227-001	LH18/24-SP650_031020_BIX	.01	6850/CIO4 DOD			Water	10mL	
4	E2000251-001	LH18/24-SP650_031720_BIX	.01	6850/CIO4 DOD			Water	10mL	
5	E2000263-001	LH18/24-SP650_032020_BIX	.01	6850/CIO4 DOD			Water	10mL	
6	EQ2000110-01	MB		6850/CIO4 DOD			Liquid	10mL	
7	EQ2000110-02	LCS		6850/CIO4 DOD			Liquid	10mL	
8	EQ2000110-03	DLCS		6850/CIO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4	Inventory ID: 202037	Logbook Ref: Sodium Perchlorate	Expires On: 05/22/2021
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E2000225-001	100.00µL	E2000226-001	100.00µL	E2000227-001	100.00µL	E2000251-001	100.00µL	E2000263-001	100.00µL	EQ2000110-01	100.00µL
EQ2000110-02	100.00µL	EQ2000110-03	100.00µL								

Name: Perchlorate Intermediate Stock1	Inventory ID: 204799	Logbook Ref: 200657 1.0ug/mL KN	Expires On: 05/15/2020
---------------------------------------	----------------------	---------------------------------	------------------------

E2000225-001	1.00µL	EQ2000110-02	1.00µL	EQ2000110-03	1.00µL						
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Preparation Steps

Step: Preparation
 Started: 3/24/20 13:04
 Finished: 3/24/20 15:55
 By: KBROWN
 Comments

Comments: _____

Reviewed By: KB Date: 03/24/2020

Chain of Custody

Relinquished By: _____	Date: _____	<u>Extracts Examined</u>
Received By: _____	Date: _____	Yes No



Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - US
Project: HS20030430
Sample Matrix: Water
Sample Name: LH18/24-SP650_031020_BIX
Lab Code: E2000227-001

Service Request: E2000227
Date Collected: 3/10/20 1400
Date Received: 3/11/20
Units: µg/L
Basis: NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	3/24/20	3/25/20 16:16	355919	674670	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - US
Project: HS20030430
Sample Matrix: Water
Sample Name: Method Blank
Lab Code: EQ2000110-01

Service Request: E2000227
Date Collected: NA
Date Received: NA
Units: µg/L
Basis: NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	3/24/20	3/25/20 15:13	355919	674670	



Accuracy & Precision

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20030430
Sample Matrix: Water

Service Request: E2000227
Date Analyzed: 3/25/20

Lab Control Sample Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Units: µg/L
Basis: NA

Extraction Lot: 355919

Analyte Name	Lab Control Sample EQ2000110-02			Duplicate Lab Control Sample EQ2000110-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Perchlorate	0.106	0.100	106	0.101	0.100	101	84 - 119	5	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - US
Project: HS20030430
Sample Matrix: Water
Sample Name: Lab Control Sample
Lab Code: EQ2000110-02

Service Request: E2000227
Date Collected: NA
Date Received: NA
Units: µg/L
Basis: NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	0.106		0.100	0.0500	0.0250	1	3/24/20	3/25/20 15:21	355919	674670	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - US
Project: HS20030430
Sample Matrix: Water
Sample Name: Duplicate Lab Control Sample
Lab Code: EQ2000110-03

Service Request: E2000227
Date Collected: NA
Date Received: NA
Units: µg/L
Basis: NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	0.101		0.100	0.0500	0.0250	1	3/24/20	3/25/20 15:29	355919	674670	



Initial Calibration

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Initial Calibration - Detailed Report

Calibration ID: EC2000001

Instrument ID: E-LCMS-01

Column Name: 1

#	Lab Code	Sample Name	File Location	Aquisition Date
07	EC2000001-07	PERCHLORATE7	20191230_006	12/30/2019 10:48
01	EC2000001-01	PERCHLORATE1	20191230_007	12/30/2019 10:56
02	EC2000001-02	PERCHLORATE2	20191230_008	12/30/2019 11:04
03	EC2000001-03	PERCHLORATE3	20191230_009	12/30/2019 11:12
04	EC2000001-04	PERCHLORATE4	20191230_010	12/30/2019 11:19
05	EC2000001-05	PERCHLORATE5	20191230_011	12/30/2019 11:27
06	EC2000001-06	PERCHLORATE6	20191230_012	12/30/2019 11:35
08	EC2000001-08	PERCHLORATE8	20191230_013	12/30/2019 11:43
09	EC2000001-09	PERCHLORATE9	20191230_014	12/30/2019 11:51
10	EC2000001-10	PERCHLORATE10	20191230_015	12/30/2019 11:59

Analyte**Perchlorate**

#	Amount	RF
01	0.1000	0.1736
05	2.0000	0.1337
09	30.0000	0.133

Curve Fit**Average RF**

#	Amount	RF
02	0.5000	0.1222
06	5.0000	0.1268
10	50.0000	0.1325

Weighting**RSD = 10.79**

#	Amount	RF
03	0.7000	0.1219
07	10.0000	0.1373

Average RF = 0.1352

#	Amount	RF
04	1.0000	0.1363
08	20.0000	0.1349

Analyte**Perchlorate**

#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D
01	0.1000	0.128	28.4	02	0.5000	0.452	-9.6	03	0.7000	0.631	-9.9
04	1.0000	1.01	0.8	05	2.0000	1.98	-1.1	06	5.0000	4.69	-6.2
07	10.0000	10.2	1.6	08	20.0000	20.0	-0.2	09	30.0000	29.5	-1.6
10	50.0000	49.0	-2.0								

Initial Calibration Verification Summary Report

Calibration ID:	EC2000001	Instrument ID:	E-LCMS-01
Datafile ID:	20191230_016	Column Name:	1

Analyte	Lab Code	Type	Curve Fit	True Value	Calc Conc	Units	Result	Criteria
Perchlorate	EC2000001-11	T	Average RF	10	12.276	ng/mL	22.7	<= 25

ALS Group Houston

PERCHLORATE1

Date acquired: 12/30/2019 10:56:14 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_007.lcd

Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_007	PERCHLORATE1	3.051	4022	0.12842	12/30/2019 10:56:14 AM	Yes	1.00000	25.0000	231680	1	3
Sodium Perchlorate-18O4_IS	20191230_007	PERCHLORATE1	3.051	231680	1.00000	12/30/2019 10:56:14 AM	No	1.00000	25.0000	231680	1	3

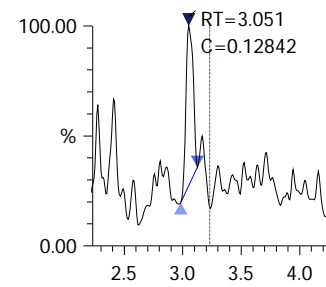
Perchlorate

Conc 0.12842

Area 4022

Q 99.00>83.00 (-)

1.27e3



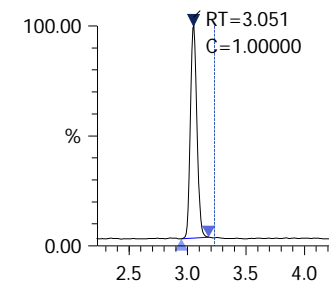
Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 231680

ISTD 107.00>89.00 (-)

5.94e4



ALS Group Houston

PERCHLORATE2

Date acquired: 12/30/2019 11:04:09 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_008.lcd

Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_008	PERCHLORATE2	3.046	15985	0.45177	12/30/2019 11:04:09 AM	Yes	1.00000	25.0000	261704	1	4
Sodium Perchlorate-18O4_IS	20191230_008	PERCHLORATE2	3.045	261704	1.00000	12/30/2019 11:04:09 AM	No	1.00000	25.0000	261704	1	4

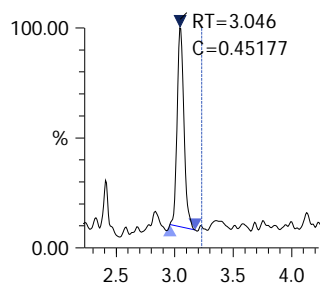
Perchlorate

Conc 0.45177

Area 15985

Q 99.00>83.00 (-)

4.21e3

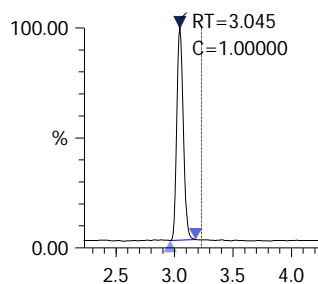
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 261704

ISTD 107.00>89.00 (-)

6.75e4



ALS Group Houston

PERCHLORATE3

Date acquired: 12/30/2019 11:12:06 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_009.lcd

Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_009	PERCHLORATE3	3.046	22031	0.63092	12/30/2019 11:12:06 AM	Yes	1.00000	25.0000	258274	1	5
Sodium Perchlorate-18O4_IS	20191230_009	PERCHLORATE3	3.044	258274	1.00000	12/30/2019 11:12:06 AM	No	1.00000	25.0000	258274	1	5

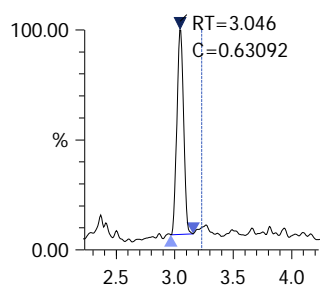
Perchlorate

Conc 0.63092

Area 22031

Q 99.00>83.00 (-)

5.75e3

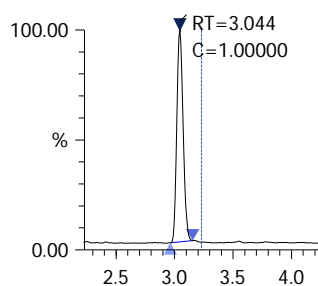
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 258274

ISTD 107.00>89.00 (-)

6.88e4



ALS Group Houston

PERCHLORATE4

Date acquired: 12/30/2019 11:19:58 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_010.lcd

Vial: 6 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_010	PERCHLORATE4	3.048	36488	1.00794	12/30/2019 11:19:58 AM	Yes	1.00000	25.0000	267754	1	6
Sodium Perchlorate-18O4_IS	20191230_010	PERCHLORATE4	3.046	267754	1.00000	12/30/2019 11:19:58 AM	No	1.00000	25.0000	267754	1	6

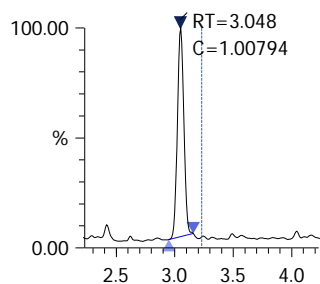
Perchlorate

Conc 1.00794

Area 36488

Q 99.00>83.00 (-)

9.73e3

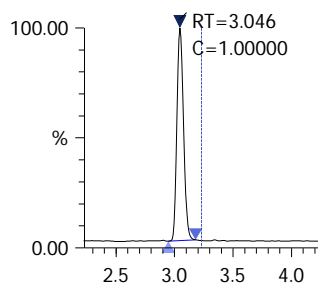
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 267754

ISTD 107.00>89.00 (-)

6.78e4



ALS Group Houston

PERCHLORATE5

Date acquired: 12/30/2019 11:27:53 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_011.lcd

Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_011	PERCHLORATE5	3.050	74631	1.97766	12/30/2019 11:27:53 AM	Yes	1.00000	25.0000	279118	1	7
Sodium Perchlorate-18O4_IS	20191230_011	PERCHLORATE5	3.046	279118	1.00000	12/30/2019 11:27:53 AM	No	1.00000	25.0000	279118	1	7

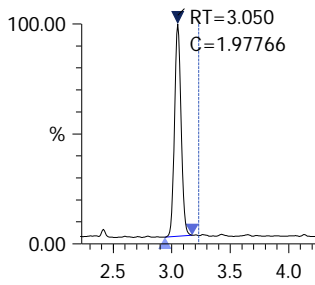
Perchlorate

Conc 1.97766

Area 74631

Q 99.00>83.00 (-)

1.92e4

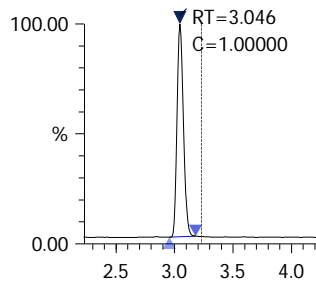
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 279118

ISTD 107.00>89.00 (-)

7.33e4



ALS Group Houston

PERCHLORATE6

Date acquired: 12/30/2019 11:35:50 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_012.lcd

Vial: 8 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_012	PERCHLORATE6	3.047	159122	4.68764	12/30/2019 11:35:50 AM	Yes	1.00000	25.0000	251072	1	8
Sodium Perchlorate-18O4_IS	20191230_012	PERCHLORATE6	3.045	251072	1.00000	12/30/2019 11:35:50 AM	No	1.00000	25.0000	251072	1	8

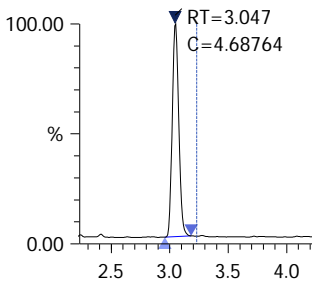
Perchlorate

Conc 4.68764

Area 159122

Q 99.00>83.00 (-)

4.12e4

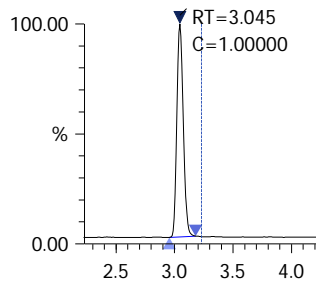
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 251072

ISTD 107.00>89.00 (-)

6.53e4



ALS Group Houston

PERCHLORATE7

Date acquired: 12/30/2019 10:48:20 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_006.lcd

Vial: 9 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_006	PERCHLORATE7	2.994	298821	10.15570	12/30/2019 10:48:20 AM	Yes	1.00000	25.0000	217632	1	9
Sodium Perchlorate-18O4_IS	20191230_006	PERCHLORATE7	2.991	217632	1.00000	12/30/2019 10:48:20 AM	No	1.00000	25.0000	217632	1	9

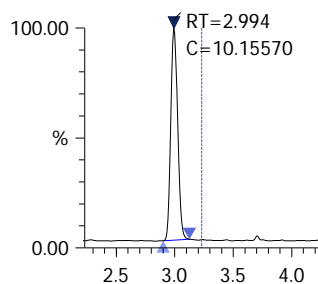
Perchlorate

Conc 10.15570

Area 298821

Q 99.00>83.00 (-)

7.46e4



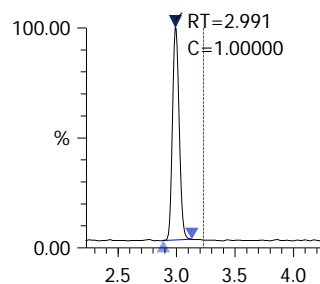
Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 217632

ISTD 107.00>89.00 (-)

5.38e4



ALS Group Houston

PERCHLORATE8

Date acquired: 12/30/2019 11:43:47 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_013.lcd

Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_013	PERCHLORATE8	3.048	557358	19.95021	12/30/2019 11:43:47 AM	Yes	1.00000	25.0000	206636	1	10
Sodium Perchlorate-18O4_IS	20191230_013	PERCHLORATE8	3.045	206636	1.00000	12/30/2019 11:43:47 AM	No	1.00000	25.0000	206636	1	10

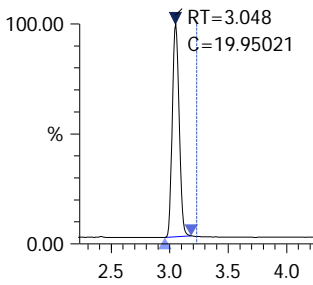
Perchlorate

Conc 19.95021

Area 557358

Q 99.00>83.00 (-)

1.37e5



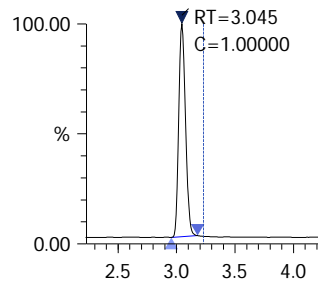
Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 206636

ISTD 107.00>89.00 (-)

5.11e4



ALS Group Houston

PERCHLORATE9

Date acquired: 12/30/2019 11:51:43 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_014.lcd

Vial: 11 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_014	PERCHLORATE9	3.052	730647	29.50809	12/30/2019 11:51:43 AM	Yes	1.00000	25.0000	183142	1	11
Sodium Perchlorate-18O4_IS	20191230_014	PERCHLORATE9	3.049	183142	1.00000	12/30/2019 11:51:43 AM	No	1.00000	25.0000	183142	1	11

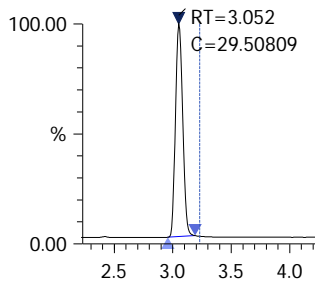
Perchlorate

Conc 29.50809

Area 730647

Q 99.00>83.00 (-)

1.70e5



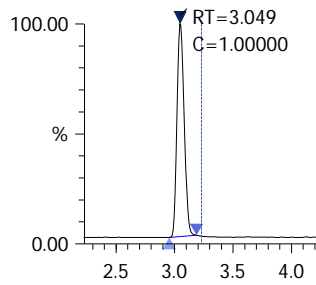
Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 183142

ISTD 107.00>89.00 (-)

4.27e4



ALS Group Houston

PERCHLORATE10

Date acquired: 12/30/2019 11:59:38 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_015.lcd

Vial: 12 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_015	PERCHLORATE10	3.046	1090166	48.99902	12/30/2019 11:59:38 AM	Yes	1.00000	25.0000	164560	1	12
Sodium Perchlorate-18O4_IS	20191230_015	PERCHLORATE10	3.043	164560	1.00000	12/30/2019 11:59:38 AM	No	1.00000	25.0000	164560	1	12

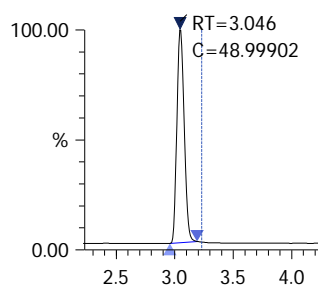
Perchlorate

Conc 48.99902

Area 1090166

Q 99.00>83.00 (-)

2.51e5



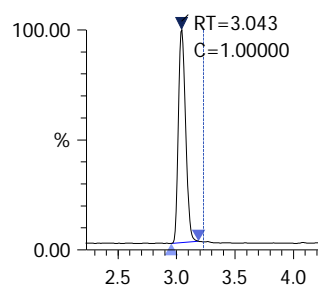
Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 164560

ISTD 107.00>89.00 (-)

3.80e4



ALS Group Houston

ICV

Date acquired: 12/30/2019 12:07:32 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_016.lcd

Vial: 13 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_016	ICV	3.047	347932	12.27639	12/30/2019 12:07:32 PM	No	1.00000	25.0000	209626	1	13
Sodium Perchlorate-18O4_IS	20191230_016	ICV	3.045	209626	1.00000	12/30/2019 12:07:32 PM	No	1.00000	25.0000	209626	1	13

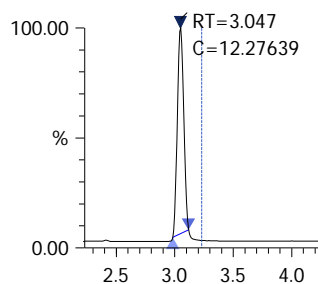
Perchlorate

Conc 12.27639

Area 347932

Q 99.00>83.00 (-)

9.49e4



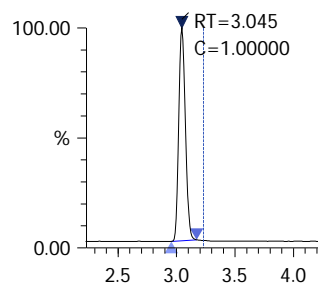
Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 209626

ISTD 107.00>89.00 (-)

5.28e4





Chromatograms and Selected Ion Monitoring

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20200325

ICAL Date: 12/30/2019
Cal. Std. xp: 5/14/2020
ICAL ID: EC2000001

1st Review: Kneir
2nd Review: Hvan



Mobile Phases A: 0.75% Formic Acid/Water 3100803-09 B: MeOH 3100802-01

Table with columns: Sample Name, File Name, Acquisition Method, Dilution, R, Comments, Date/Time. Contains 17 rows of data including sample IDs like null, DI, IB, PERCHLORATE7, LODV, EQ2000110-01, etc.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20030430

Service Request: E2000227
Date Analyzed: 3/25/20 14:57

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID: I:\LCMS01\DATA\20200325\20200325_005
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000112-01
Analysis Lot: 674670
Signal ID: 1

Sodium Perchlorate-18O4

	<u>Area</u>	<u>RT</u>
ICAL Average ==>	232,157	3.04
Upper Limit ==>	348,236	5.04
Lower Limit ==>	116,079	1.04

Associated Analyses

Continuing Calibration Verification	EQ2000112-01	147,967	2.97
Method Blank	EQ2000110-01	153,426	3.03
Lab Control Sample	EQ2000110-02	179,436	3.03
Duplicate Lab Control Sample	EQ2000110-03	176,068	3.03
LH18/24-SP650_031020_BIX	E2000227-001	200,193	3.02

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20030430

Service Request: E2000227
Date Analyzed: 3/25/20 16:42

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID: I:\LCMS01\DATA\20200325\20200325_017
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000112-02
Analysis Lot: 674670
Signal ID: 1

Sodium Perchlorate-1804

	<u>Area</u>	<u>RT</u>
ICAL Average ==>	232,157	3.04
Upper Limit ==>	348,236	5.04
Lower Limit ==>	116,079	1.04

Associated Analyses

Continuing Calibration Verification	EQ2000112-02	171,460	2.97
-------------------------------------	--------------	---------	------

Results flagged with an asterisk (*) indicate values outside control criteria.

*Continuing Calibration Verification Summary***Calibration ID:** EC2000001**Spec Set:** #99479 v. 1**QAP Name:** LAB QAP**List ID:** #21851**List Name:** Perchlorate RJ DOD**Signal ID:** 1**Data File:** I:\LCMS01\DATA\20200325\20200325_017

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.4	0.1352	0.1543	14		± 15%	Average RF

*Continuing Calibration Verification Summary***Calibration ID:** EC2000001**Spec Set:** #99479 v. 1**QAP Name:** LAB QAP**List ID:** #21851**List Name:** Perchlorate RJ DOD**Signal ID:** 1**Data File:** I:\LCMS01\DATA\20200325\20200325_005

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.8	0.1352	0.1455	8		± 15%	Average RF

ALS Group Houston

PERCHLORATE7

Date acquired: 3/25/2020 2:57:41 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200325\20200325_005.lcd

Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	3/25/2020 2:57:41 PM	215236	10.75896	20200325_005	2.973	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	3/25/2020 2:57:41 PM	147967	1.00000	20200325_005	2.971	25.0000	1.0000	3

Perchlorate

Conc 10.75896

Area 215236

Q 99.00>83.00 (-)

5.65e4

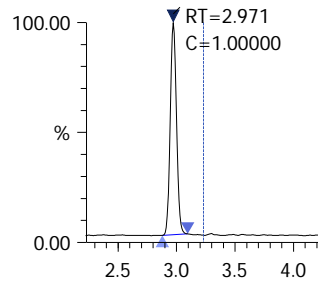
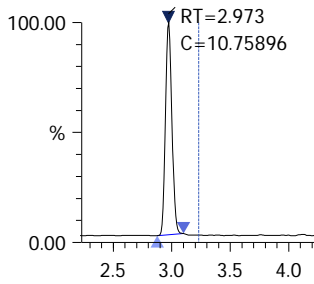
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 147967

ISTD 107.00>89.00 (-)

3.97e4



ALS Group Houston

EQ2000110-01

Date acquired: 3/25/2020 3:13:33 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200325\20200325_007.lcd

Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000110-01	3/25/2020 3:13:33 PM	----	----	20200325_007	----	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	EQ2000110-01	3/25/2020 3:13:33 PM	153426	1.00000	20200325_007	3.030	25.0000	1.0000	5

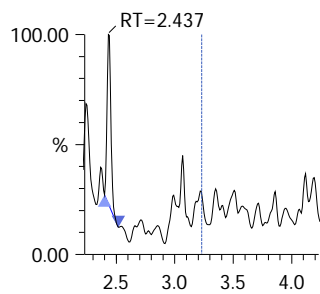
Perchlorate

Conc ----

Area ----

Q 99.00>83.00 (-)

6.99e2



Sodium Perchlorate-18O4

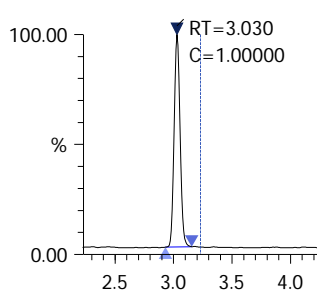
_IS

Conc 1.00000

Area 153426

ISTD 107.00>89.00 (-)

4.30e4



ALS Group Houston

EQ2000110-02

Date acquired: 3/25/2020 3:21:29 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200325\20200325_008.lcd

Vial: 6 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000110-02	3/25/2020 3:21:29 PM	2580	0.10635	20200325_008	3.027	25.0000	1.0000	6
Sodium Perchlorate-18O4_IS	EQ2000110-02	3/25/2020 3:21:29 PM	179436	1.00000	20200325_008	3.026	25.0000	1.0000	6

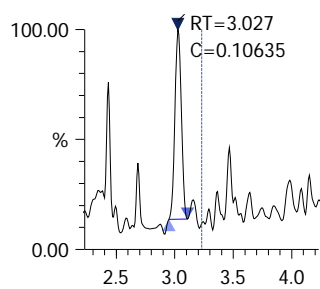
Perchlorate

Conc 0.10635

Area 2580

Q 99.00>83.00 (-)

7.75e2

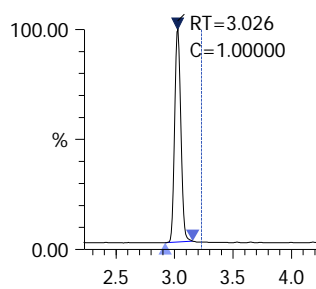
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 179436

ISTD 107.00>89.00 (-)

4.81e4



ALS Group Houston

EQ2000110-03

Date acquired: 3/25/2020 3:29:26 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200325\20200325_009.lcd

Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000110-03	3/25/2020 3:29:26 PM	2398	0.10072	20200325_009	3.027	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	EQ2000110-03	3/25/2020 3:29:26 PM	176068	1.00000	20200325_009	3.025	25.0000	1.0000	7

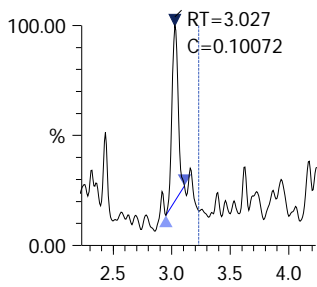
Perchlorate

Conc 0.10072

Area 2398

Q 99.00>83.00 (-)

8.14e2

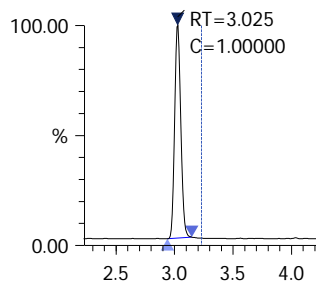
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 176068

ISTD 107.00>89.00 (-)

4.76e4



ALS Group Houston

E2000227-001

Date acquired: 3/25/2020 4:16:57 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200325\20200325_015.lcd

Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	E2000227-001	3/25/2020 4:16:57 PM	----	----	20200325_015	----	25.0000	1.0000	10
Sodium Perchlorate-18O4_IS	E2000227-001	3/25/2020 4:16:57 PM	200193	1.00000	20200325_015	3.015	25.0000	1.0000	10

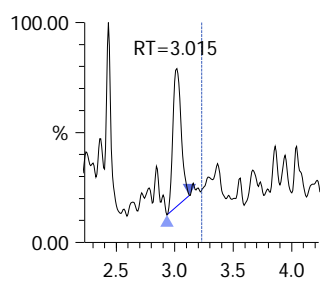
Perchlorate

Conc ----

Area ----

Q 99.00>83.00 (-)

3.95e2

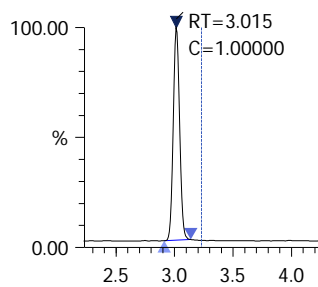
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 200193

ISTD 107.00>89.00 (-)

5.22e4



ALS Group Houston

PERCHLORATE7

Date acquired: 3/25/2020 4:42:01 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200325\20200325_017.lcd

Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	3/25/2020 4:42:01 PM	264558	11.41249	20200325_017	2.971	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	3/25/2020 4:42:01 PM	171460	1.00000	20200325_017	2.970	25.0000	1.0000	3

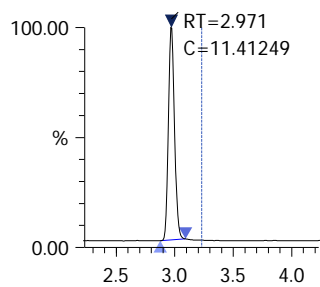
Perchlorate

Conc 11.41249

Area 264558

Q 99.00>83.00 (-)

7.30e4

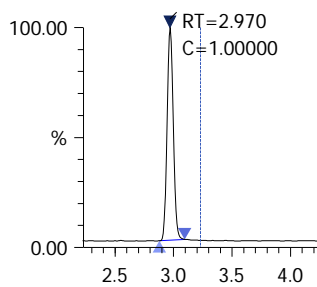
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 171460

ISTD 107.00>89.00 (-)

4.65e4





ALS Environmental
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1317 South 13th Avenue
Kelso, WA 98626
T : +1 360 577 7222
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www.alsglobal.com

March 20, 2020

Analytical Report for Service Request No: K2002277

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

RE: HS20030430

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory March 13, 2020
For your reference, these analyses have been assigned our service request number **K2002277**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3350. You may also contact me via email at Kelley.Lovejoy@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

for Kelley Lovejoy
Project Manager



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ALS Group USA, Corp
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Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

General Chemistry

Raw Data

 General Chemistry

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses**

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com



Client: ALS Environmental - US
Project: HS20030430
Sample Matrix: Water

Service Request: K2002277
Date Received: 03/13/2020

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

One water sample was received for analysis at ALS Environmental on 03/13/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The sample was stored at minimum in accordance with the analytical method requirements.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by *Noel D. Darr*

Date 03/20/2020



Chain of Custody

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
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K2002277

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F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: Dept of Defense

COC ID: 13496

SUBCONTRACT TO:

ALS Environmental Kelso
1317 S. 13th Avenue
Kelso, WA 98626

Phone: +1 360 501 3312

CUSTOMER INFORMATION:

Company: ALS Houston
Contact: RJ Modashia
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Email: RJ.Modashia@alsglobal.com
Alternate Contact: Jumoke M. Lawal
Email: jumoke.lawal@alsglobal.com

INVOICE INFORMATION:

Company: ALS Houston
Contact: Accounts Payable
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Reference: HS20030430
TSR: Danielle Winnings

LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
ANALYSIS REQUESTED			DUE DATE
1. HS20030430-01	LH18/24-SP650_031020	Water	10 Mar 2020 14:00
TOC Analysis for DOD Level IV			19 Mar 2020

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By:

J. Murrell

Date/Time:

3/12/20 18:00

Received By:

J. Murrell ALS Kelso

Date/Time:

3/13/20 0955

Cooler ID(s):

Temperature(s):



PC KV

Cooler Receipt and Preservation Form

Client ALS-Houston Service Request K20 02277
 Received: 3/13/20 Opened: 3/13/20 By: [Signature] Unloaded: 3/13/20 By: Ph

- Samples were received via? USPS Fed Ex UPS DHL PDX Courier Hand Delivered
- Samples were received in: (circle) Cooler Box Envelope Other NA
- Were custody seals on coolers? NA Y N If yes, how many and where? 2 Front
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	File
-0.3	-0.4	N/A	NA	-0.1	397	13496	1251 0295 3927		

- Packing material: Inserts Raggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
- Were custody papers properly filled out (ink, signed, etc.)? NA Y N
- Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA Y N
 If applicable, tissue samples were received: Frozen Partially Thawed Thawed
- Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
- Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
- Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
- Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
- Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
- Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____

RUSH



General Chemistry

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Analytical Report

Client: ALS Environmental - US
Project: HS20030430
Sample Matrix: Water
Analysis Method: SM 5310 C
Prep Method: None

Service Request: K2002277
Date Collected: 03/10/20
Date Received: 03/13/20
Units: mg/L
Basis: NA

Carbon, Total Organic

Sample Name	Lab Code	Result	LOQ	LOD	MDL	Dil.	Date Analyzed	Q
LH18/24-SP650_031020	K2002277-001	2.31	0.50	0.20	0.07	1	03/15/20 05:30	
Method Blank	K2002277-MB	ND U	0.50	0.20	0.07	1	03/15/20 00:20	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20030430
Sample Matrix: Water

Service Request: K2002277
Date Collected: 03/10/20
Date Received: 03/13/20
Date Analyzed: 03/15/20

Replicate Sample Summary
General Chemistry Parameters

Sample Name: LH18/24-SP650_031020
Lab Code: K2002277-001

Units: mg/L
Basis: NA

Analyte Name	Analysis Method	LOQ	LOD	MDL	Sample Result	Duplicate Sample	Average	RPD	RPD Limit
						K2002277-001DUP Result			
Carbon, Total Organic	SM 5310 C	0.50	0.20	0.07	2.31	2.21	2.26	5	10

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20030430
Sample Matrix: Water

Service Request: K2002277
Date Analyzed: 03/15/20
Date Extracted: NA

Lab Control Sample Summary
Carbon, Total Organic

Analysis Method: SM 5310 C
Prep Method: None

Units: mg/L
Basis: NA
Analysis Lot: 673405

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2002277-LCS	24.1	25.0	96	83-117

Client: ALS Environmental - US
Project: HS20030430

Service Request: K2002277

Continuing Calibration Verification (CCV) Summary

Carbon, Total Organic

Analysis Method: SM 5310 C

Units: mg/L

	Analysis Lot	Lab Code	Date Analyzed	True Value	Measured Value	Percent Recovery	Acceptance Limits
CCV1	673405	KQ2003794-02	03/14/20 23:47	25.0	25.6	102	90-110
CCV2	673405	KQ2003794-03	03/15/20 03:53	25.0	25.7	103	90-110
CCV3	673405	KQ2003794-04	03/15/20 09:47	25.0	25.5	102	90-110
CCV4	673405	KQ2003794-05	03/15/20 14:08	25.0	25.2	101	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20030430

Service Request: K2002277

Continuing Calibration Blank (CCB) Summary
Carbon, Total Organic

Analysis Method: SM 5310 C

Units: mg/L

	Analysis Lot	Lab Code	Date Analyzed	LOQ	LOD	MDL	Result	Q
CCB1	673405	KQ2003794-06	03/15/20 00:04	0.50	0.20	0.07	ND	U
CCB2	673405	KQ2003794-07	03/15/20 04:09	0.50	0.20	0.07	ND	U
CCB3	673405	KQ2003794-08	03/15/20 10:03	0.50	0.20	0.07	ND	U
CCB4	673405	KQ2003794-09	03/15/20 14:25	0.50	0.20	0.07	ND	U



Raw Data

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General Chemistry

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Work Request # ^{Original} (K2002129, 2149, 2171, 2186, 2240, 2268, 2276, 2277, 2140)
 Tier: I II I II I II IV IV II
 Date Analyzed: 3/19/20 DC: 673405
 Analyst: BCP Run # DOC 673406
 Analysis: TOC/DOC

**DATA QUALITY REPORT
INORGANICS**

Explain any "no" responses to questions below, and any corrective actions in the comments section below.

1. Is the method name and number correct and appropriate? yes/no/NA
2. Holding times met for all analyses and for all samples? yes/no/NA
3. Are calculations correct? yes/no/NA
4. Is the reporting basis correct? (Dry Weight) yes/no/NA
5. All quality control criteria met? yes/no
6. Is the calibration curve correlation coefficient ≥ 0.995 ? yes/no/NA
7. MBs, CCVs, CCBs, LCSs, Dups, and Spikes, analyzed at proper frequency? yes/no/NA
8. Are ICVs, CCVs, and CCBs all within acceptance limits? yes/no/NA
9. Are results for methods blanks all ND? yes/no/NA
10. Are all QC samples within acceptance criteria? (LCS % rec, MS/DMS % rec, DUP or MS/DMS RPDs, etc.) yes/no/NA
11. Are all exceptions explained? yes/no/NA
12. Have all applicable service requests been reviewed? yes/no/NA
13. Are all samples labeled correctly? yes/no/NA
14. Have all instructions on the service request been followed? (e.g. Special MRLs, QC on a specific sample, Form V) yes/no/NA
15. Are detection limits and units reported correctly? yes/no/NA
16. Is the unused space on the benchsheet crossed out? yes/no/NA
17. Was analysis turned in by the due date? (n-2) (If not record SR#) yes/no/NA

COMMENTS: K2002140-3/3d report a high %RSD. However these samples are less than 5x the MRL.

Final Approved by:  Date: 3/19/20 DQREPORT

Analytical Results Summary

Instrument Name: K-TOC-03

Analyst: BDITZLER

Analysis Lot: 673405 Method/Testcode: 415.1/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2002129-001	Carbon, Total Organic	N/A		Water	0.74 mg/L	10 mL	0.74 mg/L	1	0.07	0.50			3/15/20 01:43:00	N	I
K2002129-002	Carbon, Total Organic	N/A		Water	0.95 mg/L	10 mL	0.95 mg/L	1	0.07	0.50			3/15/20 02:48:00	N	I
K2002129-003	Carbon, Total Organic	N/A		Water	0.87 mg/L	10 mL	0.87 mg/L	1	0.07	0.50			3/15/20 03:21:00	N	I
K2002129-004	Carbon, Total Organic	N/A		Water	3.18 mg/L	10 mL	3.18 mg/L	1	0.07	0.50			3/15/20 04:26:00	N	I
K2002149-001	Carbon, Total Organic	N/A		Drinking Water	0.45 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/15/20 06:02:00	N	II
K2002171-001	Carbon, Total Organic	N/A		Reagent Water	0.00 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/15/20 01:10:00	N	I
K2002171-002	Carbon, Total Organic	N/A		Reagent Water	0.00 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/15/20 01:27:00	N	I
K2002186-001	Carbon, Total Organic	N/A		Water	4.34 mg/L	10 mL	4.34 mg/L	1	0.07	0.50			3/15/20 04:58:00	N	II
K2002240-001	Carbon, Total Organic	N/A		Water	2.79 mg/L	10 mL	56 mg/L	20	2	10			3/15/20 10:54:00	N	I
K2002268-001	Carbon, Total Organic	N/A		Water	3.24 mg/L	10 mL	3.24 mg/L	1	0.07	0.50			3/15/20 06:34:00	N	II
K2002276-002	Carbon, Total Organic	N/A		Ground Water	19.68 mg/L	10 mL	19.7 mg/L	1	0.07	0.50			3/15/20 08:10:00	N	IV
K2002276-003	Carbon, Total Organic	N/A		Ground Water	4.85 mg/L	10 mL	4.85 mg/L	1	0.07	0.50			3/15/20 08:43:00	N	IV
K2002276-004	Carbon, Total Organic	N/A		Ground Water	4.97 mg/L	10 mL	4.97 mg/L	1	0.07	0.50			3/15/20 09:15:00	N	IV
K2002277-001	Carbon, Total Organic	N/A		Water	2.31 mg/L	10 mL	2.31 mg/L	1	0.07	0.50			3/15/20 05:30:00	N	IV
KQ2003794-01	Carbon, Total Organic	MS	K2002129-001	Water	26.85 mg/L	10 mL	26.9 mg/L	1	0.07	0.50	104		3/15/20 02:15:00	N	I
KQ2003794-02	Carbon, Total Organic	CCV		Reagent Water	25.62 mg/L	10 mL	25.6 mg/L	1					3/14/20 23:47:00	N	I
KQ2003794-02	Carbon, Total Organic	CCV		Reagent Water	25.62 mg/L	10 mL	25.6 mg/L	1					3/14/20 23:47:00	N	I
KQ2003794-03	Carbon, Total Organic	CCV		Reagent Water	25.71 mg/L	10 mL	25.7 mg/L	1					3/15/20 03:53:00	N	I
KQ2003794-03	Carbon, Total Organic	CCV		Reagent Water	25.71 mg/L	10 mL	25.7 mg/L	1					3/15/20 03:53:00	N	I
KQ2003794-04	Carbon, Total Organic	CCV		Reagent Water	25.46 mg/L	10 mL	25.5 mg/L	1					3/15/20 09:47:00	N	I
KQ2003794-04	Carbon, Total Organic	CCV		Reagent Water	25.46 mg/L	10 mL	25.5 mg/L	1					3/15/20 09:47:00	N	I
KQ2003794-05	Carbon, Total Organic	CCV		Reagent Water	25.24 mg/L	10 mL	25.2 mg/L	1					3/15/20 14:08:00	N	I
KQ2003794-05	Carbon, Total Organic	CCV		Reagent Water	25.24 mg/L	10 mL	25.2 mg/L	1					3/15/20 14:08:00	N	I
KQ2003794-06	Carbon, Total Organic	CCB		Reagent Water	0.00 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/15/20 00:04:00	N	I
KQ2003794-06	Carbon, Total Organic	CCB		Reagent Water	0.00 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/15/20 00:04:00	N	I
KQ2003794-07	Carbon, Total Organic	CCB		Reagent Water	-0.01 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/15/20 04:09:00	N	I
KQ2003794-07	Carbon, Total Organic	CCB		Reagent Water	-0.01 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/15/20 04:09:00	N	I

indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03

Analyst: BDITZLER

Analysis Lot: 673405 Method/Testcode: SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ2003794-08	Carbon, Total Organic	CCB		Reagent Water	-0.01 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/15/20 10:03:00	N	I
KQ2003794-08	Carbon, Total Organic	CCB		Reagent Water	-0.01 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/15/20 10:03:00	N	I
KQ2003794-09	Carbon, Total Organic	CCB		Reagent Water	-0.01 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/15/20 14:25:00	N	I
KQ2003794-09	Carbon, Total Organic	CCB		Reagent Water	-0.01 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/15/20 14:25:00	N	I
KQ2003794-10	Carbon, Total Organic	MB		Reagent Water	0.04 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/15/20 00:20:00	N	I
KQ2003794-10	Carbon, Total Organic	MB		Reagent Water	0.04 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/15/20 00:20:00	N	I
KQ2003794-11	Carbon, Total Organic	LCS		Reagent Water	24.05 mg/L	10 mL	24.1 mg/L	1	0.07	0.50	96		3/15/20 00:37:00	N	I
KQ2003794-11	Carbon, Total Organic	LCS		Reagent Water	24.05 mg/L	10 mL	24.1 mg/L	1	0.07	0.50	96		3/15/20 00:37:00	N	I
KQ2003794-12	Carbon, Total Organic	DUP	K2002186-001	Water	4.35 mg/L	10 mL	4.35 mg/L	1	0.07	0.50		<1	3/15/20 04:58:00	N	II
KQ2003794-13	Carbon, Total Organic	DUP	K2002240-001	Water	2.65 mg/L	10 mL	53 mg/L	20	2	10		5	3/15/20 10:54:00	N	I
KQ2003794-14	Carbon, Total Organic	DUP	K2002268-001	Water	3.20 mg/L	10 mL	3.20 mg/L	1	0.07	0.50		1	3/15/20 06:34:00	N	II
KQ2003794-15	Carbon, Total Organic	DUP	K2002276-002	Ground Water	19.24 mg/L	10 mL	19.2 mg/L	1	0.07	0.50		2	3/15/20 08:10:00	N	IV
KQ2003794-16	Carbon, Total Organic	DUP	K2002276-003	Ground Water	4.70 mg/L	10 mL	4.70 mg/L	1	0.07	0.50		3	3/15/20 08:43:00	N	IV
KQ2003794-17	Carbon, Total Organic	DUP	K2002276-004	Ground Water	4.75 mg/L	10 mL	4.75 mg/L	1	0.07	0.50		4	3/15/20 09:15:00	N	IV
KQ2003794-18	Carbon, Total Organic	DUP	K2002277-001	Water	2.21 mg/L	10 mL	2.21 mg/L	1	0.07	0.50		5	3/15/20 05:30:00	N	IV
KQ2003794-19	Carbon, Total Organic	DUP	K2002149-001	Drinking Water	0.46 mg/L	10 mL	0.46 mg/L	J 1	0.07	0.50		NC	3/15/20 06:02:00	N	II
KQ2003794-20	Carbon, Total Organic	DUP	K2002129-002	Water	0.90 mg/L	10 mL	0.90 mg/L	1	0.07	0.50		6	3/15/20 02:48:00	N	I
KQ2003794-21	Carbon, Total Organic	DUP	K2002129-001	Water	0.76 mg/L	10 mL	0.76 mg/L	1	0.07	0.50		2	3/15/20 01:43:00	N	I
KQ2003794-22	Carbon, Total Organic	DUP	K2002129-003	Water	0.78 mg/L	10 mL	0.78 mg/L	1	0.07	0.50		11	3/15/20 03:21:00	N	I
KQ2003794-23	Carbon, Total Organic	DUP	K2002129-004	Water	3.06 mg/L	10 mL	3.06 mg/L	1	0.07	0.50		4	3/15/20 04:26:00	N	I
KQ2003794-24	Carbon, Total Organic	N/A		Water	0.74 mg/L	10 mL	0.74 mg/L	1	0.07	0.50			3/15/20 01:43:00	N	I
KQ2003794-25	Carbon, Total Organic	MS	KQ2003794-24	Water	26.85 mg/L	10 mL	26.9 mg/L	1	0.07	0.50	104		3/15/20 02:15:00	N	I
KQ2003794-26	Carbon, Total Organic	DUP	KQ2003794-24	Water	0.76 mg/L	10 mL	0.76 mg/L	1	0.07	0.50		2	3/15/20 01:43:00	N	I

indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03

Analyst: BDITZLER

Analysis Lot: 673406 Method/Testcode: SM 5310 C/TOC D

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2002140-001	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	1.86 mg/L	10 mL	1.86 mg/L	1	0.07	0.50			3/15/20 10:54:00	N	II
K2002140-002	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	1.92 mg/L	10 mL	1.92 mg/L	1	0.07	0.50			3/15/20 13:04:00	N	II
K2002140-003	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	0.36 mg/L	10 mL	0.36 mg/L	J 1	0.07	0.50			3/15/20 13:36:00	N	II
K2002140-004	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	1.38 mg/L	10 mL	1.38 mg/L	1	0.07	0.50			3/15/20 14:41:00	N	II
K2002140-005	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	0.85 mg/L	10 mL	0.85 mg/L	1	0.07	0.50			3/15/20 15:14:00	N	II
K2002140-006	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	1.80 mg/L	10 mL	1.80 mg/L	1	0.07	0.50			3/15/20 15:46:00	N	II
K2002140-007	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	1.97 mg/L	10 mL	1.97 mg/L	1	0.07	0.50			3/15/20 16:18:00	N	II
K2002140-008	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	1.89 mg/L	10 mL	1.89 mg/L	1	0.07	0.50			3/15/20 16:50:00	N	II
K2002140-009	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	1.93 mg/L	10 mL	1.93 mg/L	1	0.07	0.50			3/15/20 17:22:00	N	II
K2002140-010	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	0.90 mg/L	10 mL	0.90 mg/L	1	0.07	0.50			3/15/20 17:54:00	N	II
K2002140-011	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	1.85 mg/L	10 mL	1.85 mg/L	1	0.07	0.50			3/15/20 18:26:00	N	II
K2002140-012	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	1.90 mg/L	10 mL	1.90 mg/L	1	0.07	0.50			3/15/20 18:58:00	N	II
KQ2003796-01	Carbon, Dissolved Organic (DOC)	CCV		Surface Water	25.46 mg/L	10 mL	25.5 mg/L	1					3/15/20 09:47:00	N	II
KQ2003796-02	Carbon, Dissolved Organic (DOC)	CCV		Surface Water	25.24 mg/L	10 mL	25.2 mg/L	1					3/15/20 14:08:00	N	II
KQ2003796-03	Carbon, Dissolved Organic (DOC)	CCV		Surface Water	25.04 mg/L	10 mL	25.0 mg/L	1					3/15/20 19:47:00	N	II
KQ2003796-04	Carbon, Dissolved Organic (DOC)	CCB		Surface Water	-0.01 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/15/20 10:03:00	N	II
KQ2003796-05	Carbon, Dissolved Organic (DOC)	CCB		Surface Water	-0.01 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/15/20 14:25:00	N	II
KQ2003796-06	Carbon, Dissolved Organic (DOC)	CCB		Surface Water	-0.01 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/15/20 20:03:00	N	II
KQ2003796-07	Carbon, Dissolved Organic (DOC)	MB		Surface Water	-0.01 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/15/20 10:20:00	N	II
KQ2003796-08	Carbon, Dissolved Organic (DOC)	LCS		Surface Water	23.95 mg/L	10 mL	24.0 mg/L	1	0.07	0.50	96		3/15/20 10:37:00	N	II
KQ2003796-09	Carbon, Dissolved Organic (DOC)	MS	K2002140-001	Surface Water	28.29 mg/L	10 mL	28.3 mg/L	1	0.07	0.50	106		3/15/20 12:31:00	N	II
KQ2003796-10	Carbon, Dissolved Organic (DOC)	DUP	K2002140-001	Surface Water	1.81 mg/L	10 mL	1.81 mg/L	1	0.07	0.50		3	3/15/20 10:54:00	N	II
KQ2003796-11	Carbon, Dissolved Organic (DOC)	DUP	K2002140-002	Surface Water	1.88 mg/L	10 mL	1.88 mg/L	1	0.07	0.50		2	3/15/20 13:04:00	N	II

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indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03

Analyst: BDITZLER

Analysis Lot: 673406 Method/Testcode: SM 5310 C/TOC D

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ2003796-12	Carbon, Dissolved Organic (DOC)	DUP	K2002140-003	Surface Water	0.31 mg/L	10 mL	0.31 mg/L	J 1	0.07	0.50		16*	3/15/20 13:36:00	N	II
KQ2003796-13	Carbon, Dissolved Organic (DOC)	DUP	K2002140-004	Surface Water	1.32 mg/L	10 mL	1.32 mg/L	1	0.07	0.50		4	3/15/20 14:41:00	N	II
KQ2003796-14	Carbon, Dissolved Organic (DOC)	DUP	K2002140-005	Surface Water	0.83 mg/L	10 mL	0.83 mg/L	1	0.07	0.50		2	3/15/20 15:14:00	N	II
KQ2003796-15	Carbon, Dissolved Organic (DOC)	DUP	K2002140-006	Surface Water	1.71 mg/L	10 mL	1.71 mg/L	1	0.07	0.50		5	3/15/20 15:46:00	N	II
KQ2003796-16	Carbon, Dissolved Organic (DOC)	DUP	K2002140-007	Surface Water	1.87 mg/L	10 mL	1.87 mg/L	1	0.07	0.50		5	3/15/20 16:18:00	N	II
KQ2003796-17	Carbon, Dissolved Organic (DOC)	DUP	K2002140-008	Surface Water	1.86 mg/L	10 mL	1.86 mg/L	1	0.07	0.50		1	3/15/20 16:50:00	N	II
KQ2003796-18	Carbon, Dissolved Organic (DOC)	DUP	K2002140-009	Surface Water	1.90 mg/L	10 mL	1.90 mg/L	1	0.07	0.50		2	3/15/20 17:22:00	N	II
KQ2003796-19	Carbon, Dissolved Organic (DOC)	DUP	K2002140-010	Surface Water	0.84 mg/L	10 mL	0.84 mg/L	1	0.07	0.50		7	3/15/20 17:54:00	N	II
KQ2003796-20	Carbon, Dissolved Organic (DOC)	DUP	K2002140-011	Surface Water	1.82 mg/L	10 mL	1.82 mg/L	1	0.07	0.50		2	3/15/20 18:26:00	N	II
KQ2003796-21	Carbon, Dissolved Organic (DOC)	DUP	K2002140-012	Surface Water	1.86 mg/L	10 mL	1.86 mg/L	1	0.07	0.50		2	3/15/20 18:58:00	N	II

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indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

0.007	0.007	#####	#####	OBSERVATIONS	7	0.0069
0.046				STD Deviation	0.01700	ABOVE
0.000				AVERAGE	0.00750	0
0.000				UCL	0.02450	0
0.000				LCL	-0.00950	0
0.000						0
0.000						0
				OBSERVATIONS	1	0
				STD Deviation	#DIV/0!	0
				AVERAGE	0.00690	0
				UCL	#DIV/0!	0
				LCL	#DIV/0!	0
						0
						0
				OBSERVATIONS	0	0
				STD Deviation	#DIV/0!	0
				AVERAGE	#DIV/0!	0
				UCL	#DIV/0!	0
				LCL	#DIV/0!	0
						0
						0
				OBSERVATIONS	0	0
				STD Deviation	#DIV/0!	0
				AVERAGE	#DIV/0!	0
						0
						0
						0
						0
						0
						0
						0

TOC: 673405
DOC: 673406

Schedule: 03142020 CAL

Version: 3

Instrument: Fusion1

Last Saved by: Fusion1 (Fusion1)

Last Saved on: 2020/03/14 20:22 - Saturday

Position	Sample Type	Sample ID
(Clean)	Clean	Clean
(Clean)	Clean	Clean
(Clean)	Clean	Clean
D	Sample	RB
D	Cal Standard	[TOC] Extended Reaction 021711 CAL [0.0 ppm]
A	Cal Standard	[TOC] Extended Reaction 021711 CAL [0.50 ppm]
A	Cal Standard	[TOC] Extended Reaction 021711 CAL [1.00 ppm]
A	Cal Standard	[TOC] Extended Reaction 021711 CAL [5.00 ppm]
B	Cal Standard	[TOC] Extended Reaction 021711 CAL [10.0 ppm]
B	Cal Standard	[TOC] Extended Reaction 021711 CAL [25.0 ppm]
B	Cal Standard	[TOC] Extended Reaction 021711 CAL [50.0 ppm]
B	Check Standard	[TOC] CCV 021711 [25 ppm]
D	Check Standard	[TOC] CCB 021711 [0.0 ppm]
1	Sample	MB1
C	Check Standard	[TOC] LCS ER [25.0 ppm]
2	Sample	ICS
3	Sample	K2002171-001.01
4	Sample	K2002171-002.01
5	Sample	K2002129-001.03
6	Sample	K2002129-001.03 ms
7	Sample	RB
8	Sample	K2002129-002.03
9	Sample	K2002129-003.03
B	Check Standard	[TOC] CCV 021711 [25 ppm]
D	Check Standard	[TOC] CCB 021711 [0.0 ppm]
10	Sample	K2002129-004.03
11	Sample	K2002186-001.20
12	Sample	K2002277-001.01
13	Sample	K2002149-001.01
14	Sample	K2002268-001.01
15	Sample	K2002276-001.01
16	Sample	RB
17	Sample	K2002276-002.01
18	Sample	K2002276-003.01
19	Sample	K2002276-004.01
B	Check Standard	[TOC] CCV 021711 [25 ppm]
D	Check Standard	[TOC] CCB 021711 [0.0 ppm]
20	Sample	MB2
C	Check Standard	[TOC] LCS ER [25.0 ppm]
21	Sample	K2002240-001.02 20x
22	Sample	RB
23	Sample	FB 3/11/20 1512
24	Sample	K2002140-001.01 doc
25	Sample	K2002140-001.01 ms doc
26	Sample	RB
27	Sample	K2002140-002.01 doc
28	Sample	K2002140-003.01 doc
B	Check Standard	[TOC] CCV 021711 [25 ppm]
D	Check Standard	[TOC] CCB 021711 [0.0 ppm]
29	Sample	K2002140-004.01 doc
30	Sample	K2002140-005.01 doc
31	Sample	K2002140-006.01 doc
32	Sample	K2002140-007.01 doc
33	Sample	K2002140-008.01 doc

Printed on: March 17, 2020 09:20:30

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Schedule: 03142020 CAL

Position	Sample Type	Sample ID
34	Sample	K2002140-009.01 doc
35	Sample	K2002140-010.01 doc
36	Sample	K2002140-011.01 doc
37	Sample	K2002140-012.01 doc
38	Sample	RB
B	Check Standard	[TOC] CCV 021711 [25 ppm]
D	Check Standard	[TOC] CCB 021711 [0.0 ppm]

Schedule: 03142020 CAL

Method ID (Calibration ID)	Reps	Use	State
Extended Reaction 021711 (Extended Reaction 021711)	1	True	Ready
Extended Reaction 021711 (Extended Reaction 021711)	1	True	Ready
		False	

Fusion Report - 03142020 CAL

Saturday, March 14, 2020 08:15 PM

(View - Repts, Unused Repts, Meta-Data, Signature, History)
 Printed on 2020/03/17 09:20 -
 Tuesday

Report Summary Information

Company Location: Gen Chem Lab
 Schedule Name: 03142020 CAL
 Instrument Name: Fusion1
 Report Version: 1 of 1
 Report Creation by Operators (schedule version): Fusion1 (Fusion1) (v2)
 Fusion1 (Fusion1) (v3)
 Comment:

Engine Version: 1.1.5.1
 Firmware Version: 1.2.0696
 Connection: RS232 COM1

Report Results

Sample Type: Clean							From Schedule Version 2
Pos	Analysis Type	Sample ID			Start Time		
♦ (clean)		Clean			2020/03/14 20:15		
Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time	
1	IC Clean	10.19	16.93	6.73	49.55	05:21	
2	TC Clean	10.54	14.62	4.08	50.04	04:02	
3	TC Clean	3.17	7.02	3.84	50.07	03:47	
4	TC Clean	2.35	6.06	3.71	50.04	03:48	

Sample Type: Clean							From Schedule Version 3
Pos	Analysis Type	Sample ID			Start Time		
♦ (clean)		Clean			2020/03/14 20:37		
Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time	
1	IC Clean	1.33	5.13	3.81	49.56	05:23	
2	TC Clean	5.36	9.31	3.95	50.01	04:03	
3	TC Clean	2.36	6.22	3.86	50.00	03:46	
4	TC Clean	2.03	5.91	3.87	49.97	03:46	

Sample Type: Clean							From Schedule Version 3	
Pos	Analysis Type	Sample ID			Start Time			
♦ (clean)		Clean			2020/03/14 20:59			
Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time		
1	IC Clean	1.40	5.27	3.87	49.53	05:11		
2	TC Clean	5.41	9.41	4.00	49.93	04:00		
3	TC Clean	2.82	6.77	3.95	50.04	03:56		
4	TC Clean	2.03	6.13	4.09	49.89	03:52		

Sample Type: Sample							From Schedule Version 3		
Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time			
♦ D	TOC	RB	0.5103 ppm	0.1025 ppm	20.0900%	2020/03/14 21:21			
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time	
1	TOC	0.5828	5.8281	11.44	15.40	3.96	50.04	12:30	
2	TOC	0.4378	4.3783	10.45	14.24	3.79	50.01	12:27	
Dilution		Blank Contribution		Method		Calibration			
1:10		(TC) 7.4542 (IC) (v1363)		Extended Reaction 021711 (v4)		Extended Reaction 021711 (v28)			

Sample Type: Calibration Standard: Extended Reaction 021711 CAL (Creating calibration Extended Reaction 021711 v29)										From Schedule Version 3	
Pos	BAT	Concentration (ppm)	STD Conc	Dil	Sample ID	Result (Abs)	Std. Dev. (Abs)	RSD	Start Time		
♦ D	TOC	0.0000	0 ppmC	1:1	[TOC] Extended Reaction 021711 CAL [0.0 ppm]	9.1000	0.0000	0%	2020/03/14 21:53		
♦ A	TOC	0.5000	5 ppmC	1:10	[TOC] Extended Reaction 021711 CAL [0.50 ppm]	12.8490	0.0000	0%	2020/03/14 22:09		
♦ A	TOC	1.0000	5 ppmC	1:5	[TOC] Extended Reaction 021711 CAL [1.00 ppm]	16.3880	0.0000	0%	2020/03/14 22:26		
♦ A	TOC	5.0000	5 ppmC	1:1	[TOC] Extended Reaction 021711 CAL [5.00 ppm]	45.4380	0.0000	0%	2020/03/14 22:42		
♦ B	TOC	10.0000	50 ppmC	1:5	[TOC] Extended Reaction 021711 CAL [10.0 ppm]	86.0520	0.0000	0%	2020/03/14 22:58		
♦ B	TOC	25.0000	50 ppmC	1:2	[TOC] Extended Reaction 021711 CAL [25.0 ppm]	198.6190	0.0000	0%	2020/03/14 23:15		
♦ B	TOC	50.0000	50	1:1	[TOC] Extended	378.4160	0.0000	0%	2020/03/14 23:31		

Pos	Base Analysis Type	ID	Rep #	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0.0 ppm	1	9.10	13.12	4.02	50.02	12:28
A	TOC	0.50 ppm	1	12.85	16.75	3.90	50.00	12:32
A	TOC	1.00 ppm	1	16.39	20.23	3.85	50.04	12:30
A	TOC	5.00 ppm	1	45.44	49.34	3.90	50.04	12:32
B	TOC	10.0 ppm	1	86.05	89.80	3.75	50.00	12:30
B	TOC	25.0 ppm	1	198.62	202.52	3.91	50.01	12:31
B	TOC	50.0 ppm	1	378.42	382.29	3.88	50.03	12:32

ppmC Reaction 021711
CAL [50.0 ppm]

Completion State **Method** **Success Action**
 Success - All Extended Reaction Auto (always)
 Update Conditions 021711 (v4)
 met

Sample Type: Check Standard --> CCV 021711 From Schedule Version 3

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
♦ B	TOC	25.0000	1:2	[TOC] CCV 021711 [25 ppm]	0 / infinity (NA / NA)	25.6300 ppm (PASS)	0.0000 ppm	0%	2020/03/14 23:47

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.6300	256.3003	199.78	203.48	3.69	50.02	12:30

Completion State **Success Action** **Method** **Calibration** **STD Conc - Pos B**
 Success - Criteria Do Nothing Extended Reaction Extended Reaction 50 ppmC
 met. 021711 (v4) 021711 (v29)

Sample Type: Check Standard --> CCB 021711 From Schedule Version 3

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
♦ D	TOC	0.0000	1:2	[TOC] CCB 021711 [0.0 ppm]	0 / infinity (NA / NA)	0.0069 ppm (PASS)	0.0000 ppm	0%	2020/03/15 00:04

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0.0 ppm	1	0.0069	0.0691	9.85	13.73	3.88	50.02	12:31

<u>Completion State</u>	<u>Success Action</u>	<u>Method</u>	<u>Calibration</u>	<u>STD Conc - Pos D</u>
Success - Criteria met.	Do Nothing	Extended Reaction 021711 (v4)	Extended Reaction 021711 (v29)	0 ppmC

Sample Type: Sample

From Schedule Version 3

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
1	TOC	MB1	0.0456 ppm	0.0000 ppm	0.0000%	2020/03/15 00:20

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0456	0.4555	9.40	13.11	3.71	50.01	12:31

<u>Dilution</u>	<u>Blank Contribution</u>	<u>Method</u>	<u>Calibration</u>
1:10	(TC) 9.0593 (IC) (v1363)	Extended Reaction 021711 (v4)	Extended Reaction 021711 (v29)

Sample Type: Check Standard --> LCS ER

From Schedule Version 3

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
C	TOC	25.0000	1:1	[TOC] LCS ER [25.0 ppm]	0 / infinity (NA / NA)	24.0593 ppm (PASS)	0.0000 ppm	0%	2020/03/15 00:37

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.0593	240.5930	188.14	191.95	3.80	50.03	12:33

<u>Completion State</u>	<u>Success Action</u>	<u>Method</u>	<u>Calibration</u>	<u>STD Conc - Pos C</u>
Success - Criteria met.	Do Nothing	Extended Reaction 021711 (v4)	Extended Reaction 021711 (v29)	25 ppmC

Sample Type: Sample

From Schedule Version 3

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
2	TOC	ICS	0.4431 ppm	0.0000 ppm	0.0000%	2020/03/15 00:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4431	4.4313	12.34	16.22	3.88	50.03	12:29

<u>Dilution</u>	<u>Blank Contribution</u>	<u>Method</u>	<u>Calibration</u>
1:10	(TC) 9.0593 (IC) (v1363)	Extended Reaction 021711 (v4)	Extended Reaction 021711 (v29)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
3	TOC	K2002171-001.01	0.0097 ppm	0.0000 ppm	0.0000%	2020/03/15 01:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time

1	TOC	0.0097	0.0967	9.13	12.87	3.74	50.02	12:29
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Dilution 1:10
Blank Contribution (TC) 9.0593 (IC) (v1363)
Method Extended Reaction 021711 (v4)
Calibration Extended Reaction 021711 (v29)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
4	TOC	K2002171-002.01	0.0072 ppm	0.0000 ppm	0.0000%	2020/03/15 01:27

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0072	0.0724	9.11	12.88	3.76	50.03	12:30

Dilution 1:10
Blank Contribution (TC) 9.0593 (IC) (v1363)
Method Extended Reaction 021711 (v4)
Calibration Extended Reaction 021711 (v29)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
5	TOC	K2002129-001.03	0.7581 ppm	0.0104 ppm	1.3700%	2020/03/15 01:43

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7507	7.5072	14.62	18.49	3.87	50.01	12:25
2	TOC	0.7654	7.6542	14.73	18.49	3.76	50.02	12:25

Dilution 1:10
Blank Contribution (TC) 9.0593 (IC) (v1363)
Method Extended Reaction 021711 (v4)
Calibration Extended Reaction 021711 (v29)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
6	TOC	K2002129-001.03 ms	26.8607 ppm	0.0000 ppm	0.0000%	2020/03/15 02:15

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	26.8607	268.6072	208.16	211.99	3.83	50.00	12:31

Dilution 1:10
Blank Contribution (TC) 9.0593 (IC) (v1363)
Method Extended Reaction 021711 (v4)
Calibration Extended Reaction 021711 (v29)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
7	TOC	RB	0.0813 ppm	0.0000 ppm	0.0000%	2020/03/15 02:32

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0813	0.8131	9.66	13.59	3.93	50.00	12:30

Dilution 1:10
Blank Contribution (TC) 9.0593 (IC) (v1363)
Method Extended Reaction 021711 (v4)
Calibration Extended Reaction 021711 (v29)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
8	TOC	K2002129-002.03	0.9339 ppm	0.0373 ppm	3.9900%	2020/03/15 02:48

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
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1	TOC	0.9602	9.6023	16.18	20.07	3.89	49.99	12:27
2	TOC	0.9075	9.0748	15.79	19.70	3.92	50.00	12:30

Dilution 1:10 **Blank Contribution** (TC) 9.0593 (IC) (v1363) **Method** Extended Reaction 021711 (v4) **Calibration** Extended Reaction 021711 (v29)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
9	TOC	K2002129-003.03	0.8312 ppm	0.0632 ppm	7.6100%	2020/03/15 03:21

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8759	8.7591	15.55	19.36	3.81	50.00	12:26
2	TOC	0.7865	7.8647	14.89	18.83	3.94	50.00	12:25

Dilution 1:10 **Blank Contribution** (TC) 9.0593 (IC) (v1363) **Method** Extended Reaction 021711 (v4) **Calibration** Extended Reaction 021711 (v29)

Sample Type: Check Standard --> CCV 021711

From Schedule Version 3

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
B	TOC	25.0000	1:2	[TOC] CCV 021711 [25 ppm]	0 / infinity (NA / NA)	25.7143 ppm (PASS)	0.0000 ppm	0%	2020/03/15 03:53

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.7143	257.1435	200.41	204.25	3.84	50.03	12:33

Completion State Success - Criteria met. **Success Action** Do Nothing **Method** Extended Reaction 021711 (v4) **Calibration** Extended Reaction 021711 (v29) **STD Conc - Pos B** 50 ppmC

Sample Type: Check Standard --> CCB 021711

From Schedule Version 3

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
D	TOC	0.0000	1:2	[TOC] CCB 021711 [0.0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/15 04:09

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0.0 ppm	1	0.0000	0.0000	9.29	13.34	4.05	49.99	12:30

Completion State Success - Criteria met. **Success Action** Do Nothing **Method** Extended Reaction 021711 (v4) **Calibration** Extended Reaction 021711 (v29) **STD Conc - Pos D** 0 ppmC

Sample Type: Sample

From Schedule Version 3

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time		
◊ 10	TOC	K2002129-004.03	3.1312 ppm	0.0841 ppm	2.6900%	2020/03/15 04:26		
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.1907	31.9065	32.71	36.65	3.94	50.02	12:28
2	TOC	3.0717	30.7167	31.83	35.74	3.91	50.01	12:26
<u>Dilution</u>		<u>Blank Contribution</u>		<u>Method</u>		<u>Calibration</u>		
1:10		(TC) 9.0593 (IC) (v1363)		Extended Reaction 021711 (v4)		Extended Reaction 021711 (v29)		
Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time		
◊ 11	TOC	K2002186-001.20	4.3520 ppm	0.0045 ppm	0.1000%	2020/03/15 04:58		
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.3488	43.4883	41.30	45.08	3.78	50.01	12:28
2	TOC	4.3552	43.5518	41.34	45.27	3.93	50.01	12:23
<u>Dilution</u>		<u>Blank Contribution</u>		<u>Method</u>		<u>Calibration</u>		
1:10		(TC) 9.0593 (IC) (v1363)		Extended Reaction 021711 (v4)		Extended Reaction 021711 (v29)		
Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time		
◊ 12	TOC	K2002277-001.01	2.2677 ppm	0.0735 ppm	3.2400%	2020/03/15 05:30		
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.3197	23.1969	26.25	30.19	3.94	50.02	12:25
2	TOC	2.2157	22.1568	25.48	29.29	3.81	50.03	12:25
<u>Dilution</u>		<u>Blank Contribution</u>		<u>Method</u>		<u>Calibration</u>		
1:10		(TC) 9.0593 (IC) (v1363)		Extended Reaction 021711 (v4)		Extended Reaction 021711 (v29)		
Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time		
◊ 13	TOC	K2002149-001.01	0.4631 ppm	0.0065 ppm	1.4000%	2020/03/15 06:02		
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4585	4.5851	12.46	16.30	3.84	50.04	12:32
2	TOC	0.4677	4.6768	12.53	16.31	3.78	50.02	12:27
<u>Dilution</u>		<u>Blank Contribution</u>		<u>Method</u>		<u>Calibration</u>		
1:10		(TC) 9.0593 (IC) (v1363)		Extended Reaction 021711 (v4)		Extended Reaction 021711 (v29)		
Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time		
◊ 14	TOC	K2002268-001.01	3.2282 ppm	0.0259 ppm	0.8000%	2020/03/15 06:34		
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.2465	32.4651	33.12	37.09	3.97	50.05	12:30

2	TOC	3.2098	32.0981	32.85	36.64	3.78	50.04	12:24
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Dilution 1:10
Blank Contribution (TC) 9.0593 (IC) (v1363)
Method Extended Reaction 021711 (v4)
Calibration Extended Reaction 021711 (v29)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
15	TOC	K2002276-001.01	54.7777 ppm	0.4139 ppm	0.7600%	2020/03/15 07:06

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	54.4851	544.8506	412.93	416.78	3.85	50.02	12:27
2	TOC	55.0704	550.7042	417.27	421.14	3.87	50.02	12:26

Dilution 1:10
Blank Contribution (TC) 9.0593 (IC) (v1363)
Method Extended Reaction 021711 (v4)
Calibration Extended Reaction 021711 (v29)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
16	TOC	RB	0.6427 ppm	0.1587 ppm	24.7000%	2020/03/15 07:38

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5304	5.3041	12.99	16.82	3.83	50.03	12:27
2	TOC	0.7549	7.5490	14.66	18.51	3.85	50.02	12:25

Dilution 1:10
Blank Contribution (TC) 9.0593 (IC) (v1363)
Method Extended Reaction 021711 (v4)
Calibration Extended Reaction 021711 (v29)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
17	TOC	K2002276-002.01	19.4649 ppm	0.3120 ppm	1.6000%	2020/03/15 08:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	19.6855	196.8553	154.98	158.88	3.90	50.02	12:27
2	TOC	19.2442	192.4425	151.71	155.46	3.75	50.01	12:31

Dilution 1:10
Blank Contribution (TC) 9.0593 (IC) (v1363)
Method Extended Reaction 021711 (v4)
Calibration Extended Reaction 021711 (v29)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
18	TOC	K2002276-003.01	4.7814 ppm	0.1077 ppm	2.2500%	2020/03/15 08:43

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.8576	48.5757	45.07	48.84	3.77	50.03	12:27
2	TOC	4.7053	47.0526	43.94	47.71	3.78	50.02	12:26

Dilution 1:10
Blank Contribution (TC) 9.0593 (IC) (v1363)
Method Extended Reaction 021711 (v4)
Calibration Extended Reaction 021711 (v29)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
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◆ 19	TOC	K2002276-004.01	4.8685 ppm	0.1513 ppm	3.1100%	2020/03/15 09:15		
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.9755	49.7548	45.94	49.86	3.92	50.00	12:28
2	TOC	4.7615	47.6152	44.35	48.16	3.81	50.02	12:31
<u>Dilution</u>		<u>Blank Contribution</u>		<u>Method</u>	<u>Calibration</u>			
1:10		(TC) 9.0593 (IC) (v1363)		Extended Reaction 021711 (v4)	Extended Reaction 021711 (v29)			

Sample Type: Check Standard --> CCV 021711 From Schedule Version 3

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆ B	TOC	25.0000	1:2	[TOC] CCV 021711 [25 ppm]	0 / infinity (NA / NA)	25.4637 ppm (PASS)	0.0000 ppm	0%	2020/03/15 09:47

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.4637	254.6369	198.55	202.35	3.80	50.02	12:33

<u>Completion State</u>	<u>Success Action</u>	<u>Method</u>	<u>Calibration</u>	<u>STD Conc - Pos B</u>
Success - Criteria met.	Do Nothing	Extended Reaction 021711 (v4)	Extended Reaction 021711 (v29)	50 ppmC

Sample Type: Check Standard --> CCB 021711 From Schedule Version 3

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆ D	TOC	0.0000	1:2	[TOC] CCB 021711 [0.0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/15 10:03

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0.0 ppm	1	0.0000	0.0000	9.31	13.18	3.87	50.02	12:31

<u>Completion State</u>	<u>Success Action</u>	<u>Method</u>	<u>Calibration</u>	<u>STD Conc - Pos D</u>
Success - Criteria met.	Do Nothing	Extended Reaction 021711 (v4)	Extended Reaction 021711 (v29)	0 ppmC

Sample Type: Sample From Schedule Version 3

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆ 20	TOC	MB2	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/15 10:20

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	8.68	12.31	3.63	50.04	12:30

<u>Dilution</u>	<u>Blank Contribution</u>	<u>Method</u>	<u>Calibration</u>
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1:10 (TC) 9.0593 (IC) Extended Reaction 021711 (v4) Extended Reaction 021711 (v29)

Sample Type: Check Standard --> LCS ER

From Schedule Version 3

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◊ C	TOC	25.0000	1:1	[TOC] LCS ER [25.0 ppm]	0 / infinity (NA / NA)	23.9611 ppm (PASS)	0.0000 ppm	0%	2020/03/15 10:37

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	23.9611	239.6109	187.41	191.21	3.80	50.00	12:29

Completion State Success - Criteria met. **Success Action** Do Nothing **Method** Extended Reaction 021711 (v4) **Calibration** Extended Reaction 021711 (v29) **STD Conc - Pos C** 25 ppmC

Sample Type: Sample

From Schedule Version 3

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◊ 21	TOC	K2002240-001.02.20x	2.7279 ppm	0.1006 ppm	3.6900%	2020/03/15 10:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.7990	27.9902	29.81	33.75	3.95	49.97	12:25
2	TOC	2.6567	26.5669	28.75	32.69	3.94	50.00	12:26

Dilution 1:10 **Blank Contribution** (TC) 9.0593 (IC) (v1363) **Method** Extended Reaction 021711 (v4) **Calibration** Extended Reaction 021711 (v29)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◊ 22	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/15 11:26

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	8.40	12.29	3.89	49.98	12:30

Dilution 1:10 **Blank Contribution** (TC) 9.0593 (IC) (v1363) **Method** Extended Reaction 021711 (v4) **Calibration** Extended Reaction 021711 (v29)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◊ 23	TOC	FB 3/11/20 1512	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/15 11:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	8.56	12.26	3.71	50.00	12:33

Dilution 1:10 **Blank Contribution** (TC) 9.0593 (IC) **Method** Extended Reaction **Calibration** Extended Reaction

(v1363)

021711 (v4)

021711 (v29)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
24	TOC	K2002140-001.01 doc	1.8389 ppm	0.0361 ppm	1.9600%	2020/03/15 11:59

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.8644	18.6438	22.88	26.63	3.75	49.99	12:24
2	TOC	1.8134	18.1338	22.50	26.32	3.82	49.99	12:27

Dilution 1:10
Blank Contribution (TC) 9.0593 (IC) (v1363)
Method Extended Reaction 021711 (v4)
Calibration Extended Reaction 021711 (v29)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
25	TOC	K2002140-001.01 ms doc	28.3003 ppm	0.0000 ppm	0.0000%	2020/03/15 12:31

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	28.3003	283.0032	218.84	222.73	3.89	50.02	12:30

Dilution 1:10
Blank Contribution (TC) 9.0593 (IC) (v1363)
Method Extended Reaction 021711 (v4)
Calibration Extended Reaction 021711 (v29)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
26	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/15 12:47

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	8.98	12.74	3.76	49.99	12:33

Dilution 1:10
Blank Contribution (TC) 9.0593 (IC) (v1363)
Method Extended Reaction 021711 (v4)
Calibration Extended Reaction 021711 (v29)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
27	TOC	K2002140-002.01 doc	1.9078 ppm	0.0293 ppm	1.5400%	2020/03/15 13:04

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9285	19.2846	23.35	27.31	3.96	50.03	12:27
2	TOC	1.8870	18.8704	23.05	26.83	3.78	50.00	12:26

Dilution 1:10
Blank Contribution (TC) 9.0593 (IC) (v1363)
Method Extended Reaction 021711 (v4)
Calibration Extended Reaction 021711 (v29)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
28	TOC	K2002140-003.01 doc	0.3426 ppm	0.0377 ppm	11.0000%	2020/03/15 13:36

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3692	3.6920	11.80	15.63	3.83	50.02	12:27

2	TOC	0.3159	3.1591	11.40	15.21	3.81	50.00	12:29
Dilution		Blank Contribution		Method		Calibration		
1:10		(TC) 9.0593 (IC) (v1363)		Extended Reaction 021711 (v4)		Extended Reaction 021711 (v29)		

Sample Type: Check Standard --> CCV 021711 From Schedule Version 3

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
♦ B	TOC	25.0000	1:2	[TOC] CCV 021711 [25 ppm]	0 / infinity (NA / NA)	25.2446 ppm (PASS)	0.0000 ppm	0%	2020/03/15 14:08

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.2446	252.4460	196.93	200.59	3.66	49.98	12:32

Completion State		Success Action		Method		Calibration		STD Conc - Pos B	
Success - Criteria met.		Do Nothing		Extended Reaction 021711 (v4)		Extended Reaction 021711 (v29)		50 ppmC	

Sample Type: Check Standard --> CCB 021711 From Schedule Version 3

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
♦ D	TOC	0.0000	1:2	[TOC] CCB 021711 [0.0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/15 14:25

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0.0 ppm	1	0.0000	0.0000	8.38	12.30	3.92	50.01	12:32

Completion State		Success Action		Method		Calibration		STD Conc - Pos D	
Success - Criteria met.		Do Nothing		Extended Reaction 021711 (v4)		Extended Reaction 021711 (v29)		0 ppmC	

Sample Type: Sample From Schedule Version 3

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
♦ 29	TOC	K2002140-004.01 doc	1.3611 ppm	0.0421 ppm	3.0900%	2020/03/15 14:41

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.3909	13.9085	19.37	23.24	3.88	50.03	12:28
2	TOC	1.3314	13.3136	18.93	22.73	3.80	50.00	12:26

Dilution		Blank Contribution		Method		Calibration	
1:10		(TC) 9.0593 (IC) (v1363)		Extended Reaction 021711 (v4)		Extended Reaction 021711 (v29)	

	Analysis		Std. Dev.	
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Pos	Type	Sample ID	Result (ppmC)	(ppmC)	RSD	Start Time		
30	TOC	K2002140-005.01 doc	0.8485 ppm	0.0122 ppm	1.4400%	2020/03/15 15:14		
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8572	8.5716	15.41	19.36	3.95	50.01	12:31
2	TOC	0.8399	8.3989	15.28	19.16	3.87	50.02	12:28
<u>Dilution</u>		<u>Blank Contribution</u>		<u>Method</u>		<u>Calibration</u>		
1:10		(TC) 9.0593 (IC) (v1363)		Extended Reaction 021711 (v4)		Extended Reaction 021711 (v29)		
Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time		
31	TOC	K2002140-006.01 doc	1.7616 ppm	0.0622 ppm	3.5300%	2020/03/15 15:46		
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.8056	18.0556	22.44	26.26	3.82	50.02	12:28
2	TOC	1.7176	17.1760	21.79	25.69	3.90	50.01	12:24
<u>Dilution</u>		<u>Blank Contribution</u>		<u>Method</u>		<u>Calibration</u>		
1:10		(TC) 9.0593 (IC) (v1363)		Extended Reaction 021711 (v4)		Extended Reaction 021711 (v29)		
Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time		
32	TOC	K2002140-007.01 doc	1.9266 ppm	0.0669 ppm	3.4700%	2020/03/15 16:18		
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9739	19.7392	23.69	27.58	3.89	50.02	12:24
2	TOC	1.8794	18.7935	22.99	26.89	3.90	50.00	12:27
<u>Dilution</u>		<u>Blank Contribution</u>		<u>Method</u>		<u>Calibration</u>		
1:10		(TC) 9.0593 (IC) (v1363)		Extended Reaction 021711 (v4)		Extended Reaction 021711 (v29)		
Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time		
33	TOC	K2002140-008.01 doc	1.8800 ppm	0.0186 ppm	0.9900%	2020/03/15 16:50		
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.8931	18.9311	23.09	26.92	3.83	50.01	12:29
2	TOC	1.8668	18.6681	22.90	26.72	3.83	49.99	12:28
<u>Dilution</u>		<u>Blank Contribution</u>		<u>Method</u>		<u>Calibration</u>		
1:10		(TC) 9.0593 (IC) (v1363)		Extended Reaction 021711 (v4)		Extended Reaction 021711 (v29)		
Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time		
34	TOC	K2002140-009.01 doc	1.9261 ppm	0.0203 ppm	1.0500%	2020/03/15 17:22		
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9405	19.4047	23.44	27.18	3.73	49.97	12:26
2	TOC	1.9117	19.1173	23.23	26.95	3.72	49.99	12:24

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
35	TOC	K2002140-010.01 doc	0.8734 ppm	0.0425 ppm	4.8600%	2020/03/15 17:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9034	9.0343	15.76	19.63	3.88	49.99	12:30
2	TOC	0.8434	8.4340	15.31	19.15	3.84	49.99	12:28

Dilution 1:10 **Blank Contribution** (TC) 9.0593 (IC) (v1363) **Method** Extended Reaction 021711 (v4) **Calibration** Extended Reaction 021711 (v29)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
36	TOC	K2002140-011.01 doc	1.8437 ppm	0.0220 ppm	1.2000%	2020/03/15 18:26

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.8593	18.5925	22.84	26.83	3.99	50.01	12:30
2	TOC	1.8281	18.2809	22.61	26.59	3.98	50.04	12:27

Dilution 1:10 **Blank Contribution** (TC) 9.0593 (IC) (v1363) **Method** Extended Reaction 021711 (v4) **Calibration** Extended Reaction 021711 (v29)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
37	TOC	K2002140-012.01 doc	1.8868 ppm	0.0244 ppm	1.2900%	2020/03/15 18:58

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9040	19.0404	23.17	26.98	3.81	50.08	12:27
2	TOC	1.8695	18.6950	22.92	26.72	3.81	50.07	12:27

Dilution 1:10 **Blank Contribution** (TC) 9.0593 (IC) (v1363) **Method** Extended Reaction 021711 (v4) **Calibration** Extended Reaction 021711 (v29)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
38	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/15 19:30

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	7.56	11.35	3.79	50.11	12:32

Dilution 1:10 **Blank Contribution** (TC) 9.0593 (IC) (v1363) **Method** Extended Reaction 021711 (v4) **Calibration** Extended Reaction 021711 (v29)

Sample Type: Check Standard --> CCV 021711

From Schedule Version 3

Pos	BAT	Concentration	Dil	Sample ID	Min / Max	Result	Std. Dev.	RSD	Start Time
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			(ppm)			(% dev)				
♦	B	TOC	25.0000	1:2	[TOC] CCV 021711 [25 ppm]	0 / infinity (NA / NA)	25.0447 ppm (PASS)	0.0000 ppm	0%	2020/03/15 19:47
Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.0447	250.4466	195.45	199.23	3.79	50.12	12:28
Completion State		Success Action		Method		Calibration		STD Conc - Pos B		
Success - Criteria met.		Do Nothing		Extended Reaction 021711 (v4)		Extended Reaction 021711 (v29)		50 ppmC		

Sample Type: Check Standard --> CCB 021711 From Schedule Version 3

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time	
♦	D	0.0000	1:2	[TOC] CCB 021711 [0.0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/15 20:03	
Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0.0 ppm	1	0.0000	0.0000	7.92	11.69	3.78	50.10	12:33
Completion State		Success Action		Method		Calibration		STD Conc - Pos D		
Success - Criteria met.		Do Nothing		Extended Reaction 021711 (v4)		Extended Reaction 021711 (v29)		0 ppmC		

Meta Data Used in this Report

Blanks

Version	Reagent (Abs)	Acid (Abs)	DI IC (Abs)	DI TC (Abs)	DI TOC (Abs)	Save Time	Operator
v1363	1.1840	0.9250	0.0000	0.0000	0.0000	2020/03/11 13:46	Fusion1 (Fusion1)

Calibrations

Name: Extended Reaction 021711 (TOC)

Version:	v28	Calibration curve formula:	TOC: $y = 6.836x + 8.019$
Ver Creation:	2020/01/08 19:20	r ² value:	TOC: $r^2 = 0.99990$
Comment:			
Operator:	Fusion1 (Fusion1)		
Basic Analysis Type	TOC		

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
0.0 ppm	8.0870	0.0000		2020/01/08 17:41
0.50 ppm	11.6420	0.5000		2020/01/08 17:58
1.00 ppm	14.6390	1.0000		2020/01/08 18:14
5.00 ppm	43.5800	5.0000		2020/01/08 18:30
10.0 ppm	73.9500	10.0000		2020/01/08 18:46
25.0 ppm	180.1790	25.0000		2020/01/08 19:02
50.0 ppm	349.5080	50.0000		2020/01/08 19:18

Name: Extended Reaction 021711 (TOC)

Version: v29 Calibration curve formula: TOC: $y = 7.413x + 9.803$
 Ver Creation: 2020/03/14 23:47 r^2 value: TOC: $r^2 = 0.99978$
 Comment:
 Operator: Fusion1 (Fusion1)
 Basic Analysis Type: TOC

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
0.0 ppm	9.1000	0.0000		2020/03/14 22:08
0.50 ppm	12.8490	0.5000		2020/03/14 22:25
1.00 ppm	16.3880	1.0000		2020/03/14 22:41
5.00 ppm	45.4380	5.0000		2020/03/14 22:57
10.0 ppm	86.0520	10.0000		2020/03/14 23:13
25.0 ppm	198.6190	25.0000		2020/03/14 23:30
50.0 ppm	378.4160	50.0000		2020/03/14 23:46

Methods**Name: Extended Reaction 021711 (TOC)**

Version: v4 Operator: Fusion1 (Fusion1)
 Ver Creation: 2019/01/31 11:21
 Comment:

Parameter	Value	Advanced Parameter	Value
SampleVolume	10.0 mL	NeedleRinseVolume	5.0 ml
Dilution	1:10	VialPrimeVolume	2.0 ml
AcidVolume	0.5 ml	ICSamplePrimeVolume	2.0 ml
ReagentVolume	2.0 ml	ICSpargeRinseVolume	12.0 ml
UVReactorPrerinse	Off	BaselineStabilizeTime	0.70 min
UVReactorPrerinseVolume	5.0	DetectorPressureFlow	150 ml/min
NumberOfUVReactorPrerinse	1	SyringeSpeedWaste	10
ICSpargeTime	1.00 mins	SyringeSpeedAcid	7
DetectorSweepFlow	500 ml/min	SyringeSpeedReagent	7

PreSpargeTime	4.00 mins	SyringeSpeedDIWater	7
SystemFlow	500 ml/min	NDIRPressurization	60 psig
		SyringeSpeedSampleDispense	5
		SyringeSpeedSampleAspirate	4
		SyringeSpeedUVDispense	5
		SyringeSpeedUVAspirate	5
		SyringeSpeedICDispense	5
		SyringeSpeedICAspirate	5
		NDIRPressureStabilize	1.75 min
		SampleMixing	Off
		SampleMixingCycles	1
		SampleMixingVolume	10.0
		LowLevelFilterNDIR	Off

Acceptance / Approval

Electronic Signatures

Report Version	User Name	Acceptance	Reason	Date
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Report History

Report History

Report Version	User Name	System Reason	User Reason	Date
1	Fusion1 (Fusion1)	Schedule completed	Schedule completed	2020/03/15 20:20

StarLIMS Run: 673405, 673406
 Analysis: DOC/TOC
 Method: SM 5310 C, 9060A, 415.1, 9060

CCV: 11-GEN-05-82C 50 ppm LCS: 11-GEN-05-79J 25.0 ppm

ICAL Date: 3/11/2020

ICAL ID: 19-GEN-8-7-E->J

ICS ID: 11-GEN-05-78M

ICS TV: 25.0 ppm ICS % R < 1

Spike ID: 11-GEN-05-82C 0.05 ml of 5000 ppm stock ---> 10.0 ml = 25.0 ppm x dilution factor

Sodium Persulfate: 19-GEN-08-8-L

21 % H3PO4: 19-GEN-08-8-K

Equipment ID: K-TOC-03

PIPETTE ID: 124276B, 129001F, N11314F, Marge

FILTER ID: 16967789

Analyzed By:	Date Analyzed:
Reviewed By: <i>jk</i>	Date Reviewed: <i>3/19/20</i>



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Houston, TX 77099
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March 26, 2020

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS20030838**

Laboratory Results for: **Longhorn GW Treatment Plant Bi Weekly Samples**

Dear Marcia,

ALS Environmental received 2 sample(s) on Mar 19, 2020 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Raj. P. Modashia', enclosed in a circular scribble.

Generated By: JUMOKE.LAWAL
RJ Modashia
Project Manager

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
Work Order: HS20030838

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20030838-01	LH18/24-SP650_031720	Water		17-Mar-2020 00:00	19-Mar-2020 08:50	<input type="checkbox"/>
HS20030838-02	Trip Blank	Water	CG-021720 -12	17-Mar-2020 00:00	19-Mar-2020 08:50	<input type="checkbox"/>

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
Work Order: HS20030838

CASE NARRATIVE

GCMS Volatiles by Method SW8260**Batch ID: R358594****Sample ID: HS20030498-03MS**

- MS and MSD are for an unrelated sample

WetChemistry by Method SW9056**Batch ID: R358987****Sample ID: LH18/24-SP650_031720 (HS20030838-01MS)**

- The MS and/or MSD recovery was outside of the control limits; however, the result in the parent sample is greater than 4x the spike amount. (Chloride)
-

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
 Project: Longhorn GW Treatment Plant Bi Weekly Samples
 Sample ID: LH18/24-SP650_031720
 Collection Date: 17-Mar-2020 00:00

ANALYTICAL REPORT
 WorkOrder:HS20030838
 Lab ID:HS20030838-01
 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED	
VOLATILES ORGANICS BY METHOD 8260C		Method:SW8260							Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
1,2-Dichloroethane	1.2		0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	20-Mar-2020 01:58	
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	20-Mar-2020 01:58	
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	20-Mar-2020 01:58	
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	20-Mar-2020 01:58	
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	20-Mar-2020 01:58	
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:58	

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
 Project: Longhorn GW Treatment Plant Bi Weekly Samples
 Sample ID: LH18/24-SP650_031720
 Collection Date: 17-Mar-2020 00:00

ANALYTICAL REPORT
 WorkOrder:HS20030838
 Lab ID:HS20030838-01
 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED	
VOLATILES ORGANICS BY METHOD 8260C		Method:SW8260							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
cis-1,2-Dichloroethene	27		0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	20-Mar-2020 01:58	
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	20-Mar-2020 01:58	
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	20-Mar-2020 01:58	
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
Trichloroethene	5.0		0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:58	
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>91.0</i>			0	<i>81-118</i>	%REC	1	20-Mar-2020 01:58	
<i>Surr: 4-Bromofluorobenzene</i>	<i>98.2</i>			0	<i>85-114</i>	%REC	1	20-Mar-2020 01:58	
<i>Surr: Dibromofluoromethane</i>	<i>92.8</i>			0	<i>80-119</i>	%REC	1	20-Mar-2020 01:58	
<i>Surr: Toluene-d8</i>	<i>107</i>			0	<i>89-112</i>	%REC	1	20-Mar-2020 01:58	
ANIONS BY SW9056A		Method:SW9056							Analyst: KVL
Chloride	363		4.00	10.0	10.0	mg/L	20	26-Mar-2020 00:02	
Sulfate	32.8		0.200	0.500	0.500	mg/L	1	25-Mar-2020 23:44	

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
 Project: Longhorn GW Treatment Plant Bi Weekly Samples
 Sample ID: Trip Blank
 Collection Date: 17-Mar-2020 00:00

ANALYTICAL REPORT
 WorkOrder:HS20030838
 Lab ID:HS20030838-02
 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED	
VOLATILES ORGANICS BY METHOD 8260C		Method:SW8260							Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:34	
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:34	
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	20-Mar-2020 01:34	
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:34	
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:34	
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:34	
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:34	
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	20-Mar-2020 01:34	
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	20-Mar-2020 01:34	
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	20-Mar-2020 01:34	
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:34	
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:34	
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:34	
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	20-Mar-2020 01:34	
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:34	
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	20-Mar-2020 01:34	
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:34	
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	20-Mar-2020 01:34	
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:34	
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	20-Mar-2020 01:34	
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:34	
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	20-Mar-2020 01:34	
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:34	
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	20-Mar-2020 01:34	
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	20-Mar-2020 01:34	
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:34	
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	20-Mar-2020 01:34	
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	20-Mar-2020 01:34	
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:34	
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	20-Mar-2020 01:34	
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:34	
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:34	
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	20-Mar-2020 01:34	
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	20-Mar-2020 01:34	
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	20-Mar-2020 01:34	
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	20-Mar-2020 01:34	
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:34	
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:34	
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:34	

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
 Project: Longhorn GW Treatment Plant Bi Weekly Samples
 Sample ID: Trip Blank
 Collection Date: 17-Mar-2020 00:00

ANALYTICAL REPORT
 WorkOrder:HS20030838
 Lab ID:HS20030838-02
 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD		Method:SW8260						
8260C								Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:34
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:34
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	20-Mar-2020 01:34
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:34
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:34
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:34
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:34
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	20-Mar-2020 01:34
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:34
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	20-Mar-2020 01:34
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	20-Mar-2020 01:34
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	20-Mar-2020 01:34
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:34
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:34
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:34
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:34
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:34
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:34
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:34
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:34
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:34
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:34
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:34
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	20-Mar-2020 01:34
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	20-Mar-2020 01:34
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>91.9</i>			0	<i>81-118</i>	<i>%REC</i>	<i>1</i>	<i>20-Mar-2020 01:34</i>
<i>Surr: 4-Bromofluorobenzene</i>	<i>96.6</i>			0	<i>85-114</i>	<i>%REC</i>	<i>1</i>	<i>20-Mar-2020 01:34</i>
<i>Surr: Dibromofluoromethane</i>	<i>92.9</i>			0	<i>80-119</i>	<i>%REC</i>	<i>1</i>	<i>20-Mar-2020 01:34</i>
<i>Surr: Toluene-d8</i>	<i>106</i>			0	<i>89-112</i>	<i>%REC</i>	<i>1</i>	<i>20-Mar-2020 01:34</i>

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20030838

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R358594 (0)		Test Name : VOLATILES ORGANICS BY METHOD 8260C			Matrix: Water	
HS20030838-01	LH18/24-SP650_031720	17 Mar 2020 00:00			20 Mar 2020 01:58	1
HS20030838-02	Trip Blank	17 Mar 2020 00:00			20 Mar 2020 01:34	1
Batch ID: R358987 (0)		Test Name : ANIONS BY SW9056A			Matrix: Water	
HS20030838-01	LH18/24-SP650_031720	17 Mar 2020 00:00			26 Mar 2020 00:02	20
HS20030838-01	LH18/24-SP650_031720	17 Mar 2020 00:00			25 Mar 2020 23:44	1

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20030838

QC BATCH REPORT

Batch ID: R358594 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
MBLK	Sample ID: VBLKW1-200319	Units: UG/L			Analysis Date: 20-Mar-2020 00:21					
Client ID:	Run ID: VOA6_358594	SeqNo: 5522917	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	0.50	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	0.50	1.0								U
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	0.50	1.0								U
1,2,3-Trichlorobenzene	0.50	1.0								U
1,2,3-Trichloropropane	0.50	1.0								U
1,2,4-Trichlorobenzene	0.50	1.0								U
1,2,4-Trimethylbenzene	0.50	1.0								U
1,2-Dibromo-3-chloropropane	0.50	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	0.50	1.0								U
1,3,5-Trimethylbenzene	0.50	1.0								U
1,3-Dichlorobenzene	0.50	1.0								U
1,3-Dichloropropane	0.50	1.0								U
1,4-Dichlorobenzene	0.50	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	0.50	1.0								U
2-Hexanone	1.0	2.0								U
4-Chlorotoluene	0.50	1.0								U
4-Isopropyltoluene	0.50	1.0								U
4-Methyl-2-pentanone	1.0	2.0								U
Acetone	1.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	0.50	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	0.50	1.0								U
Bromomethane	0.50	1.0								U

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20030838

QC BATCH REPORT

Batch ID: R358594 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
MBLK	Sample ID: VBLKW1-200319	Units: UG/L			Analysis Date: 20-Mar-2020 00:21					
Client ID:	Run ID: VOA6_358594	SeqNo: 5522917	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	1.0	2.0								U
Carbon tetrachloride	0.50	1.0								U
Chlorobenzene	0.50	1.0								U
Chloroethane	0.50	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	0.50	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	0.50	1.0								U
Ethylbenzene	0.50	1.0								U
Hexachlorobutadiene	1.0	1.0								U
Isopropylbenzene	0.50	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	1.0	2.0								U
Naphthalene	0.50	1.0								U
n-Butylbenzene	0.50	1.0								U
n-Propylbenzene	0.50	1.0								U
o-Xylene	0.50	1.0								U
sec-Butylbenzene	0.50	1.0								U
Styrene	0.50	1.0								U
tert-Butylbenzene	0.50	1.0								U
Tetrachloroethene	0.50	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	45.02	1.0	50	0	90.0	81 - 118				
Surr: 4-Bromofluorobenzene	48.89	1.0	50	0	97.8	85 - 114				
Surr: Dibromofluoromethane	46.85	1.0	50	0	93.7	80 - 119				
Surr: Toluene-d8	52.49	1.0	50	0	105	89 - 112				

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20030838

QC BATCH REPORT

Batch ID: R358594 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
LCS	Sample ID: VLCSW-200319	Units: UG/L			Analysis Date: 19-Mar-2020 23:33					
Client ID:	Run ID: VOA6_358594	SeqNo: 5522916		PrepDate:		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.78	1.0	20	0	98.9	78 - 124				
1,1,1-Trichloroethane	20.4	1.0	20	0	102	74 - 131				
1,1,2,2-Tetrachloroethane	19.5	1.0	20	0	97.5	71 - 121				
1,1,2-Trichloroethane	19.58	1.0	20	0	97.9	80 - 119				
1,1-Dichloroethane	20.92	1.0	20	0	105	77 - 125				
1,1-Dichloroethene	19.5	1.0	20	0	97.5	71 - 131				
1,1-Dichloropropene	19.28	1.0	20	0	96.4	78 - 125				
1,2,3-Trichlorobenzene	22.16	1.0	20	0	111	69 - 129				
1,2,3-Trichloropropane	19.16	1.0	20	0	95.8	73 - 122				
1,2,4-Trichlorobenzene	20.79	1.0	20	0	104	69 - 130				
1,2,4-Trimethylbenzene	20.52	1.0	20	0	103	76 - 124				
1,2-Dibromo-3-chloropropane	20.17	1.0	20	0	101	62 - 128				
1,2-Dibromoethane	20.08	1.0	20	0	100	77 - 121				
1,2-Dichlorobenzene	20.17	1.0	20	0	101	80 - 119				
1,2-Dichloroethane	20.24	1.0	20	0	101	73 - 128				
1,2-Dichloropropane	19.85	1.0	20	0	99.2	78 - 122				
1,3,5-Trimethylbenzene	20.26	1.0	20	0	101	75 - 124				
1,3-Dichlorobenzene	19.99	1.0	20	0	99.9	80 - 119				
1,3-Dichloropropane	19.55	1.0	20	0	97.7	80 - 119				
1,4-Dichlorobenzene	19.68	1.0	20	0	98.4	79 - 118				
2,2-Dichloropropane	19.1	1.0	20	0	95.5	60 - 139				
2-Butanone	38.31	2.0	40	0	95.8	56 - 143				
2-Chlorotoluene	20.09	1.0	20	0	100	79 - 122				
2-Hexanone	39.73	2.0	40	0	99.3	57 - 139				
4-Chlorotoluene	19.63	1.0	20	0	98.2	78 - 122				
4-Isopropyltoluene	20.58	1.0	20	0	103	77 - 127				
4-Methyl-2-pentanone	38.8	2.0	40	0	97.0	67 - 130				
Acetone	40.17	2.0	40	0	100	39 - 160				
Benzene	19.93	1.0	20	0	99.7	79 - 120				
Bromobenzene	20.44	1.0	20	0	102	80 - 120				
Bromochloromethane	20.03	1.0	20	0	100	78 - 123				
Bromodichloromethane	19.44	1.0	20	0	97.2	79 - 125				
Bromoform	20.19	1.0	20	0	101	66 - 130				
Bromomethane	23.51	1.0	20	0	118	53 - 141				

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20030838

QC BATCH REPORT

Batch ID: R358594 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
LCS	Sample ID: VLCSW-200319	Units: UG/L			Analysis Date: 19-Mar-2020 23:33					
Client ID:	Run ID: VOA6_358594	SeqNo: 5522916	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	41.04	2.0	40	0	103	64 - 133				
Carbon tetrachloride	18.81	1.0	20	0	94.0	72 - 136				
Chlorobenzene	19.76	1.0	20	0	98.8	82 - 118				
Chloroethane	19.55	1.0	20	0	97.7	60 - 138				
Chloroform	20.3	1.0	20	0	102	79 - 124				
Chloromethane	20.02	1.0	20	0	100	50 - 139				
cis-1,2-Dichloroethene	20.38	1.0	20	0	102	78 - 123				
cis-1,3-Dichloropropene	19.25	1.0	20	0	96.3	75 - 124				
Dibromochloromethane	19.67	1.0	20	0	98.4	74 - 126				
Dibromomethane	19.76	1.0	20	0	98.8	79 - 123				
Dichlorodifluoromethane	19.27	1.0	20	0	96.4	32 - 152				
Ethylbenzene	20.33	1.0	20	0	102	79 - 121				
Hexachlorobutadiene	21.22	1.0	20	0	106	66 - 134				
Isopropylbenzene	20.6	1.0	20	0	103	72 - 131				
m,p-Xylene	40.47	2.0	40	0	101	80 - 121				
Methylene chloride	21.1	2.0	20	0	105	74 - 124				
Naphthalene	21.12	1.0	20	0	106	61 - 128				
n-Butylbenzene	20.36	1.0	20	0	102	75 - 128				
n-Propylbenzene	20.33	1.0	20	0	102	76 - 126				
o-Xylene	20.72	1.0	20	0	104	78 - 122				
sec-Butylbenzene	20.46	1.0	20	0	102	77 - 126				
Styrene	20.01	1.0	20	0	100	78 - 123				
tert-Butylbenzene	20.14	1.0	20	0	101	78 - 124				
Tetrachloroethene	20.25	1.0	20	0	101	74 - 129				
Toluene	20.07	1.0	20	0	100	80 - 121				
trans-1,2-Dichloroethene	20.18	1.0	20	0	101	75 - 124				
trans-1,3-Dichloropropene	19.58	1.0	20	0	97.9	73 - 127				
Trichloroethene	20.46	1.0	20	0	102	79 - 123				
Trichlorofluoromethane	20.38	1.0	20	0	102	65 - 141				
Vinyl chloride	19.07	1.0	20	0	95.4	58 - 137				
Surr: 1,2-Dichloroethane-d4	52.83	1.0	50	0	106	81 - 118				
Surr: 4-Bromofluorobenzene	52.74	1.0	50	0	105	85 - 114				
Surr: Dibromofluoromethane	53.21	1.0	50	0	106	80 - 119				
Surr: Toluene-d8	51.86	1.0	50	0	104	89 - 112				

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20030838

QC BATCH REPORT

Batch ID: R358594 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
MS	Sample ID: HS20030498-03MS	Units: UG/L			Analysis Date: 20-Mar-2020 03:34					
Client ID:	Run ID: VOA6_358594	SeqNo: 5522925	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.57	1.0	20	0	97.9	78 - 124				
1,1,1-Trichloroethane	19.4	1.0	20	0	97.0	74 - 131				
1,1,2,2-Tetrachloroethane	18.9	1.0	20	0	94.5	71 - 121				
1,1,2-Trichloroethane	18.87	1.0	20	0	94.3	80 - 119				
1,1-Dichloroethane	19.29	1.0	20	0	96.4	77 - 125				
1,1-Dichloroethene	25.94	1.0	20	7.492	92.2	71 - 131				
1,1-Dichloropropene	19.04	1.0	20	0	95.2	78 - 125				
1,2,3-Trichlorobenzene	13.29	1.0	20	0	66.5	69 - 129				S
1,2,3-Trichloropropane	18.74	1.0	20	0	93.7	73 - 122				
1,2,4-Trichlorobenzene	14.05	1.0	20	0	70.3	69 - 130				
1,2,4-Trimethylbenzene	20.65	1.0	20	0	103	76 - 124				
1,2-Dibromo-3-chloropropane	17.22	1.0	20	0	86.1	62 - 128				
1,2-Dibromoethane	19.5	1.0	20	0	97.5	77 - 121				
1,2-Dichlorobenzene	19.64	1.0	20	0	98.2	80 - 119				
1,2-Dichloroethane	19.02	1.0	20	0	95.1	73 - 128				
1,2-Dichloropropane	18.34	1.0	20	0	91.7	78 - 122				
1,3,5-Trimethylbenzene	20.46	1.0	20	0	102	75 - 124				
1,3-Dichlorobenzene	19.91	1.0	20	0	99.5	80 - 119				
1,3-Dichloropropane	19.13	1.0	20	0	95.7	80 - 119				
1,4-Dichlorobenzene	19.34	1.0	20	0	96.7	79 - 118				
2,2-Dichloropropane	16.42	1.0	20	0	82.1	60 - 139				
2-Butanone	33.48	2.0	40	0	83.7	56 - 143				
2-Chlorotoluene	20.23	1.0	20	0	101	79 - 122				
2-Hexanone	39.02	2.0	40	0	97.6	57 - 139				
4-Chlorotoluene	20.2	1.0	20	0	101	78 - 122				
4-Isopropyltoluene	20.72	1.0	20	0	104	77 - 127				
4-Methyl-2-pentanone	37.98	2.0	40	0	94.9	67 - 130				
Acetone	24.37	2.0	40	0	60.9	39 - 160				
Benzene	19.39	1.0	20	0	97.0	79 - 120				
Bromobenzene	19.65	1.0	20	0	98.2	80 - 120				
Bromochloromethane	18.1	1.0	20	0	90.5	78 - 123				
Bromodichloromethane	18.04	1.0	20	0	90.2	79 - 125				
Bromoform	19.03	1.0	20	0	95.2	66 - 130				
Bromomethane	19.49	1.0	20	0	97.4	53 - 141				

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20030838

QC BATCH REPORT

Batch ID: R358594 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
MS	Sample ID: HS20030498-03MS	Units: UG/L			Analysis Date: 20-Mar-2020 03:34					
Client ID:	Run ID: VOA6_358594	SeqNo: 5522925	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	38.58	2.0	40	0	96.4	64 - 133				
Carbon tetrachloride	18.99	1.0	20	0	94.9	72 - 136				
Chlorobenzene	19.81	1.0	20	0	99.1	82 - 118				
Chloroethane	18.99	1.0	20	0	95.0	60 - 138				
Chloroform	18.52	1.0	20	0	92.6	79 - 124				
Chloromethane	19.33	1.0	20	0	96.7	50 - 139				
cis-1,2-Dichloroethene	52.53	1.0	20	34.18	91.8	78 - 123				
cis-1,3-Dichloropropene	17.92	1.0	20	0	89.6	75 - 124				
Dibromochloromethane	18.76	1.0	20	0	93.8	74 - 126				
Dibromomethane	18.2	1.0	20	0	91.0	79 - 123				
Dichlorodifluoromethane	18.77	1.0	20	0	93.8	32 - 152				
Ethylbenzene	20.44	1.0	20	0	102	79 - 121				
Hexachlorobutadiene	16.3	1.0	20	0	81.5	66 - 134				
Isopropylbenzene	20.53	1.0	20	0	103	72 - 131				
m,p-Xylene	40.95	2.0	40	0	102	80 - 121				
Methylene chloride	17.98	2.0	20	0	89.9	74 - 124				
Naphthalene	13.79	1.0	20	0	68.9	61 - 128				
n-Butylbenzene	19.75	1.0	20	0	98.7	75 - 128				
n-Propylbenzene	20.8	1.0	20	0	104	76 - 126				
o-Xylene	20.17	1.0	20	0	101	78 - 122				
sec-Butylbenzene	20.8	1.0	20	0	104	77 - 126				
Styrene	19.64	1.0	20	0	98.2	78 - 123				
tert-Butylbenzene	20.66	1.0	20	0	103	78 - 124				
Tetrachloroethene	20.3	1.0	20	0	102	74 - 129				
Toluene	19.97	1.0	20	0	99.8	80 - 121				
trans-1,2-Dichloroethene	19.21	1.0	20	0	96.1	75 - 124				
trans-1,3-Dichloropropene	18.05	1.0	20	0	90.3	73 - 127				
Trichloroethene	1258	1.0	20	1235	113	79 - 123				EO
Trichlorofluoromethane	19.25	1.0	20	0	96.2	65 - 141				
Vinyl chloride	59.62	1.0	20	40.77	94.2	58 - 137				
Surr: 1,2-Dichloroethane-d4	46.29	1.0	50	0	92.6	81 - 118				
Surr: 4-Bromofluorobenzene	49.58	1.0	50	0	99.2	85 - 114				
Surr: Dibromofluoromethane	46.85	1.0	50	0	93.7	80 - 119				
Surr: Toluene-d8	51.17	1.0	50	0	102	89 - 112				

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Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20030838

QC BATCH REPORT

Batch ID: R358594 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
MSD	Sample ID: HS20030498-03MSD	Units: UG/L			Analysis Date: 20-Mar-2020 03:58					
Client ID:	Run ID: VOA6_358594	SeqNo: 5522926	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.05	1.0	20	0	100	78 - 124	19.57	2.43	20	
1,1,1-Trichloroethane	18.57	1.0	20	0	92.8	74 - 131	19.4	4.38	20	
1,1,2,2-Tetrachloroethane	19.66	1.0	20	0	98.3	71 - 121	18.9	3.95	20	
1,1,2-Trichloroethane	18.99	1.0	20	0	95.0	80 - 119	18.87	0.645	20	
1,1-Dichloroethane	18.86	1.0	20	0	94.3	77 - 125	19.29	2.25	20	
1,1-Dichloroethene	24.54	1.0	20	7.492	85.2	71 - 131	25.94	5.53	20	
1,1-Dichloropropene	18.16	1.0	20	0	90.8	78 - 125	19.04	4.75	20	
1,2,3-Trichlorobenzene	16.47	1.0	20	0	82.4	69 - 129	13.29	21.4	20	R
1,2,3-Trichloropropane	19.82	1.0	20	0	99.1	73 - 122	18.74	5.59	20	
1,2,4-Trichlorobenzene	15.85	1.0	20	0	79.2	69 - 130	14.05	12	20	
1,2,4-Trimethylbenzene	20.81	1.0	20	0	104	76 - 124	20.65	0.734	20	
1,2-Dibromo-3-chloropropane	18.97	1.0	20	0	94.8	62 - 128	17.22	9.66	20	
1,2-Dibromoethane	19.74	1.0	20	0	98.7	77 - 121	19.5	1.25	20	
1,2-Dichlorobenzene	20.33	1.0	20	0	102	80 - 119	19.64	3.42	20	
1,2-Dichloroethane	19.61	1.0	20	0	98.0	73 - 128	19.02	3.08	20	
1,2-Dichloropropane	18.12	1.0	20	0	90.6	78 - 122	18.34	1.2	20	
1,3,5-Trimethylbenzene	20.54	1.0	20	0	103	75 - 124	20.46	0.411	20	
1,3-Dichlorobenzene	20.56	1.0	20	0	103	80 - 119	19.91	3.22	20	
1,3-Dichloropropane	19.54	1.0	20	0	97.7	80 - 119	19.13	2.09	20	
1,4-Dichlorobenzene	19.73	1.0	20	0	98.7	79 - 118	19.34	2	20	
2,2-Dichloropropane	15.44	1.0	20	0	77.2	60 - 139	16.42	6.15	20	
2-Butanone	33.76	2.0	40	0	84.4	56 - 143	33.48	0.815	20	
2-Chlorotoluene	20.3	1.0	20	0	102	79 - 122	20.23	0.336	20	
2-Hexanone	39.82	2.0	40	0	99.5	57 - 139	39.02	2.02	20	
4-Chlorotoluene	20.61	1.0	20	0	103	78 - 122	20.2	2.01	20	
4-Isopropyltoluene	20.83	1.0	20	0	104	77 - 127	20.72	0.493	20	
4-Methyl-2-pentanone	39.67	2.0	40	0	99.2	67 - 130	37.98	4.35	20	
Acetone	25.04	2.0	40	0	62.6	39 - 160	24.37	2.73	20	
Benzene	18.72	1.0	20	0	93.6	79 - 120	19.39	3.5	20	
Bromobenzene	20.54	1.0	20	0	103	80 - 120	19.65	4.43	20	
Bromochloromethane	17.97	1.0	20	0	89.9	78 - 123	18.1	0.72	20	
Bromodichloromethane	17.89	1.0	20	0	89.4	79 - 125	18.04	0.822	20	
Bromoform	19.38	1.0	20	0	96.9	66 - 130	19.03	1.84	20	
Bromomethane	18.91	1.0	20	0	94.6	53 - 141	19.49	3.01	20	

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20030838

QC BATCH REPORT

Batch ID: R358594 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
MSD	Sample ID: HS20030498-03MSD	Units: UG/L			Analysis Date: 20-Mar-2020 03:58					
Client ID:	Run ID: VOA6_358594	SeqNo: 5522926		PrepDate:		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	36.74	2.0	40	0	91.9	64 - 133	38.58	4.87	20	
Carbon tetrachloride	18.13	1.0	20	0	90.7	72 - 136	18.99	4.6	20	
Chlorobenzene	19.65	1.0	20	0	98.2	82 - 118	19.81	0.847	20	
Chloroethane	17.4	1.0	20	0	87.0	60 - 138	18.99	8.77	20	
Chloroform	18.2	1.0	20	0	91.0	79 - 124	18.52	1.77	20	
Chloromethane	18.55	1.0	20	0	92.7	50 - 139	19.33	4.15	20	
cis-1,2-Dichloroethene	51.07	1.0	20	34.18	84.5	78 - 123	52.53	2.82	20	
cis-1,3-Dichloropropene	17.87	1.0	20	0	89.4	75 - 124	17.92	0.254	20	
Dibromochloromethane	19.17	1.0	20	0	95.9	74 - 126	18.76	2.16	20	
Dibromomethane	18.2	1.0	20	0	91.0	79 - 123	18.2	0.0123	20	
Dichlorodifluoromethane	17.73	1.0	20	0	88.6	32 - 152	18.77	5.7	20	
Ethylbenzene	19.99	1.0	20	0	99.9	79 - 121	20.44	2.22	20	
Hexachlorobutadiene	16.93	1.0	20	0	84.6	66 - 134	16.3	3.77	20	
Isopropylbenzene	20.3	1.0	20	0	101	72 - 131	20.53	1.15	20	
m,p-Xylene	40.19	2.0	40	0	100	80 - 121	40.95	1.87	20	
Methylene chloride	17.1	2.0	20	0	85.5	74 - 124	17.98	5.03	20	
Naphthalene	16.97	1.0	20	0	84.8	61 - 128	13.79	20.7	20	R
n-Butylbenzene	20.36	1.0	20	0	102	75 - 128	19.75	3.05	20	
n-Propylbenzene	20.85	1.0	20	0	104	76 - 126	20.8	0.257	20	
o-Xylene	20.26	1.0	20	0	101	78 - 122	20.17	0.43	20	
sec-Butylbenzene	20.64	1.0	20	0	103	77 - 126	20.8	0.761	20	
Styrene	20.13	1.0	20	0	101	78 - 123	19.64	2.45	20	
tert-Butylbenzene	20.65	1.0	20	0	103	78 - 124	20.66	0.0486	20	
Tetrachloroethene	19.74	1.0	20	0	98.7	74 - 129	20.3	2.8	20	
Toluene	19.7	1.0	20	0	98.5	80 - 121	19.97	1.34	20	
trans-1,2-Dichloroethene	18.08	1.0	20	0	90.4	75 - 124	19.21	6.07	20	
trans-1,3-Dichloropropene	18.19	1.0	20	0	91.0	73 - 127	18.05	0.769	20	
Trichloroethene	1224	1.0	20	1235	-57.6	79 - 123	1258	2.75	20	SEO
Trichlorofluoromethane	18.1	1.0	20	0	90.5	65 - 141	19.25	6.14	20	
Vinyl chloride	56.26	1.0	20	40.77	77.4	58 - 137	59.62	5.8	20	
Surr: 1,2-Dichloroethane-d4	46.41	1.0	50	0	92.8	81 - 118	46.29	0.257	20	
Surr: 4-Bromofluorobenzene	49.12	1.0	50	0	98.2	85 - 114	49.58	0.926	20	
Surr: Dibromofluoromethane	46.99	1.0	50	0	94.0	80 - 119	46.85	0.3	20	
Surr: Toluene-d8	51.54	1.0	50	0	103	89 - 112	51.17	0.733	20	

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20030838

QC BATCH REPORT**Batch ID:** R358594 (0)**Instrument:** VOA6**Method:** VOLATILES ORGANICS BY METHOD
8260C

The following samples were analyzed in this batch: HS20030838-01 HS20030838-02

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20030838

QC BATCH REPORT

Batch ID: R358987 (0)		Instrument: ICS-Integrion		Method: ANIONS BY SW9056A						
MBLK	Sample ID: MBLK-03.24.20 W	Units: mg/L			Analysis Date: 25-Mar-2020 15:10					
Client ID:	Run ID: ICS-Integrion_358987	SeqNo: 5532207		PrepDate:			DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Chloride	0.500	0.500							U	
Sulfate	0.500	0.500							U	
LCS	Sample ID: LCS-03.24.20	Units: mg/L			Analysis Date: 25-Mar-2020 18:29					
Client ID:	Run ID: ICS-Integrion_358987	SeqNo: 5532216		PrepDate:			DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Chloride	20.25	0.500	20	0	101	80 - 120				
Sulfate	18.26	0.500	20	0	91.3	80 - 120				
LCSD	Sample ID: LCSD-03.24.20	Units: mg/L			Analysis Date: 25-Mar-2020 18:47					
Client ID:	Run ID: ICS-Integrion_358987	SeqNo: 5532217		PrepDate:			DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Chloride	20.09	0.500	20	0	100	80 - 120	20.25	0.818	20	
Sulfate	19.82	0.500	20	0	99.1	80 - 120	18.26	8.2	20	
MS	Sample ID: HS20030877-01MS	Units: mg/L			Analysis Date: 26-Mar-2020 15:25					
Client ID:	Run ID: ICS-Integrion_358987	SeqNo: 5532566		PrepDate:			DF: 500			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Chloride	5334	250	5000	627.5	94.1	80 - 120				
Sulfate	14340	250	5000	10070	85.3	80 - 120				
MS	Sample ID: HS20030838-01MS	Units: mg/L			Analysis Date: 26-Mar-2020 00:20					
Client ID: LH18/24-SP650_031720	Run ID: ICS-Integrion_358987	SeqNo: 5532313		PrepDate:			DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Chloride	356.1	0.500	10	352.5	35.8	80 - 120			SEO	
Sulfate	42.57	0.500	10	32.76	98.1	80 - 120				

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20030838

QC BATCH REPORT

Batch ID: R358987 (0)		Instrument: ICS-Integrion		Method: ANIONS BY SW9056A						
MSD	Sample ID: HS20030877-01MSD	Units: mg/L			Analysis Date: 26-Mar-2020 15:43					
Client ID:	Run ID: ICS-Integrion_358987	SeqNo: 5532567		PrepDate:			DF: 500			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	5548	250	5000	627.5	98.4	80 - 120	5334	3.95	20	
Sulfate	14550	250	5000	10070	89.7	80 - 120	14340	1.5	20	
MSD	Sample ID: HS20030838-01MSD	Units: mg/L			Analysis Date: 26-Mar-2020 00:38					
Client ID: LH18/24-SP650_031720	Run ID: ICS-Integrion_358987	SeqNo: 5532314		PrepDate:			DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	353.8	0.500	10	352.5	13.3	80 - 120	356.1	0.632	20	SEO
Sulfate	41.66	0.500	10	32.76	89.0	80 - 120	42.57	2.17	20	

The following samples were analyzed in this batch: HS20030838-01

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20030838

**QUALIFIERS,
ACRONYMS, UNITS**

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Unit Reported	Description
mg/L	Milligrams per Liter

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	19-028-0	27-Mar-2020
California	2919, 2019-2020	30-Apr-2020
Dept of Defense	ANAB L2231 V009	22-Dec-2021
Florida	E87611-28	30-Jun-2020
Illinois	2000322019-2	09-May-2020
Kansas	E-10352 2019-2020	31-Jul-2020
Kentucky	123043, 2019-2020	30-Apr-2020
Louisiana	03087, 2019-2020	30-Jun-2020
Maryland	343, 2019-2020	30-Jun-2020
North Carolina	624-2020	31-Dec-2020
North Dakota	R-193 2019-2020	30-Apr-2020
Oklahoma	2019-067	31-Aug-2020
Texas	T104704231-19-25	30-Apr-2020

ALS Houston, US

Date: 26-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
Work Order: HS20030838

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20030838-01	LH18/24-SP650_031720	Login	3/19/2020 10:41:35 AM	PMG	WET231
HS20030838-01	LH18/24-SP650_031720	Login	3/19/2020 10:41:35 AM	PMG	VOA142
HS20030838-02	Trip Blank	Login	3/19/2020 10:41:35 AM	PMG	VOA142

Sample Receipt Checklist

Client Name: Bhate Environmental
 Work Order: HS20030838

Date/Time Received: **19-Mar-2020 08:50**
 Received by: **AC**

Checklist completed by: Paresh M. Giga 19-Mar-2020
 eSignature Date

Reviewed by: RJ Modashia 19-Mar-2020
 eSignature Date

Matrices: **Water**

Carrier name: **FedEx**

- Shipping container/cooler in good condition? Yes No Not Present
- Custody seals intact on shipping container/cooler? Yes No Not Present
- Custody seals intact on sample bottles? Yes No Not Present
- VOA/TX1005/TX1006 Solids in hermetically sealed vials? Yes No Not Present
- Chain of custody present? Yes No 1 Page(s)
- Chain of custody signed when relinquished and received? Yes No COC IDs:None
- Samplers name present on COC? Yes No
- Chain of custody agrees with sample labels? Yes No
- Samples in proper container/bottle? Yes No
- Sample containers intact? Yes No
- Sufficient sample volume for indicated test? Yes No
- All samples received within holding time? Yes No
- Container/Temp Blank temperature in compliance? Yes No

Temperature(s)/Thermometer(s): 1.5c U/c IR25
 Cooler(s)/Kit(s): 4779
 Date/Time sample(s) sent to storage: 3/19/2020 10:55

- Water - VOA vials have zero headspace? Yes No No VOA vials submitted
- Water - pH acceptable upon receipt? Yes No N/A
- pH adjusted? Yes No N/A

pH adjusted by:

Login Notes:


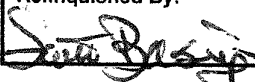
Client Contacted: Date Contacted: Person Contacted:
 Contacted By: Regarding:

Comments:



Corrective Action:

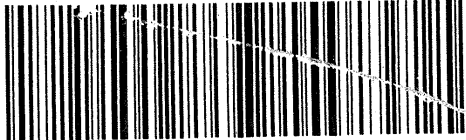
CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210, Houston, Tx. 77099 ATTN: R.J. Modashia

Project: BHATE LONGHORN ARMY AMMN. PLANT (LHAAP) GROUNDWATER TREATMENT PLANT (GWTP) KARNACK, TEXAS			Project No. NWO1312.0150.0 16.0001		Analyses										HS20030838 Bhate Environmental Associates, Inc. Longhorn GW Treatment Plant Bi Weekly Samples 					
Job: GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES					MS / MSD	No. OF CONTAINERS	VOC	CHLORIDE, SULFATE											Remarks (Preservatives, etc.)	Lab I.D.#
Prepared By: Scott Beesinger			P.O Number																	
Field Sample I.D.			Sample Matrix						Date / Time											
LH18/24-SP650_031720			Water		03/17/20 / 14:00		3 3												HCL	
LH18/24-SP650_031720			Water		03/17/20 / 14:00		1 1												NONE	
Trip Blank			Water		03/17/20		2 2												HCL	
Additional Remarks: Standard TAT on Chloride & Sulfate. 24 Hour TAT on VOC																				
Relinquished By: 		Date 03/17/20	Time 14:30	Received By: AC	Date 3/19/2020	Time 08:50	Relinquished By:			Date	Time	Received By:		Date	Time					
9 For Lab Use Only																				
Received At Lab By:		Date	Time	Airbill No.	Opened By:			Date	Time	Temp of Container	Seal No.	Condition								
Remarks																				

U/C 1.5 IR#25 CFB.0 4779

 ALS 10450 Stancliff Rd., Suite 210 Houston, Texas 77099 Tel. +1 281 530 5656 Fax. +1 281 530 5887	CUSTO	Time: 1430	Broken By:  Date: 3/17/20
		Date: 3/17/20	
		Name: Scott B	
		Company: S.H.A.	

FedEx	WED - 18 MAR 10:30A
TRK# 4380 9533 6839	PRIORITY OVERNIGHT
AB SGRA	77099
TX-US	IAH
	



10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

March 30, 2020

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS20030840**

Laboratory Results for: **Longhorn GW Treatment Plant Weekly Samples**

Dear Marcia,

ALS Environmental received 2 sample(s) on Mar 19, 2020 for the analysis presented in the following report.

This is a REVISED REPORT. Please see the Case Narrative for discussion concerning this revision.

Regards,

A handwritten signature in black ink, appearing to read 'Raj. P. AA', enclosed in a circular scribble.

Generated By: JUMOKE.LAWAL
RJ Modashia
Project Manager

ALS Houston, US

Date: 30-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS20030840

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20030840-01	LH18/24-SP650_031720	Water		17-Mar-2020 14:00	19-Mar-2020 08:50	<input type="checkbox"/>
HS20030840-02	LH18/24-SP650_031720_BIX	Water		17-Mar-2020 14:00	19-Mar-2020 08:50	<input type="checkbox"/>

Revision:1

ALS Houston, US

Date: 30-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS20030840

CASE NARRATIVE**Work Order Comments**

- Analysis of Perchlorate was performed by ALS Houston TX, High Resolution. Laboratory. Final report attached.
- The analysis for TOC was subcontracted to ALS Environmental, Kelso Final report attached.
- Report Revised to add Perchlorate Sub Data

WetChemistry by Method E350.3**Batch ID: R358773**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method E365.3**Batch ID: R358571**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
-

ALS Houston, US

Date: 30-Mar-20

Client: Bhate Environmental Associates, Inc.
 Project: Longhorn GW Treatment Plant Weekly Samples
 Sample ID: LH18/24-SP650_031720
 Collection Date: 17-Mar-2020 14:00

ANALYTICAL REPORT
 WorkOrder:HS20030840
 Lab ID:HS20030840-01
 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
AMMONIA AS N BY E350.3(ISE)								
								Analyst: RG
Nitrogen, Ammonia (As N)	0.35	a	0.20	0.10	0.20	mg/L	1	24-Mar-2020 08:00
ORTHO PHOSPHATE (PO4) AS P BY E365.3								Analyst: MZD
								Analyst: MZD
Phosphorus, Total Orthophosphate (As P)	0.0250	aU	0.0100	0.0250	0.0250	mg/L	1	19-Mar-2020 12:48
SUBCONTRACT ANALYSIS - TOC ANALYSIS								Analyst: SUBK
								Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	25-Mar-2020 14:54

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US

Date: 30-Mar-20

Client: Bhate Environmental Associates, Inc.
 Project: Longhorn GW Treatment Plant Weekly Samples
 Sample ID: LH18/24-SP650_031720_BIX
 Collection Date: 17-Mar-2020 14:00

ANALYTICAL REPORT

WorkOrder:HS20030840
 Lab ID:HS20030840-02
 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		Method:NA		Analyst: CGG				
Subcontract Analysis	See Attached		0	0		NA	1	26-Mar-2020 12:09

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US

Date: 30-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20030840

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R358571 (0)		Test Name : ORTHO PHOSPHATE (PO4) AS P BY E365.3			Matrix: Water	
HS20030840-01	LH18/24-SP650_031720	17 Mar 2020 14:00			19 Mar 2020 12:48	1
Batch ID: R358773 (0)		Test Name : AMMONIA AS N BY E350.3(ISE)			Matrix: Water	
HS20030840-01	LH18/24-SP650_031720	17 Mar 2020 14:00			24 Mar 2020 08:00	1
Batch ID: R358878 (0)		Test Name : SUBCONTRACT ANALYSIS - TOC ANALYSIS			Matrix: Water	
HS20030840-01	LH18/24-SP650_031720	17 Mar 2020 14:00			25 Mar 2020 14:54	1
Batch ID: R358949 (0)		Test Name : SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)			Matrix: Water	
HS20030840-02	LH18/24-SP650_031720_BIX	17 Mar 2020 14:00			26 Mar 2020 12:09	1

Revision: 1

ALS Houston, US

Date: 30-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20030840

QC BATCH REPORT

Batch ID: R358571 (0)		Instrument: UV-2450		Method: ORTHO PHOSPHATE (PO4) AS P BY E365.3						
MBLK	Sample ID: MBLK-358571	Units: mg/L			Analysis Date: 19-Mar-2020 12:48					
Client ID:	Run ID: UV-2450_358571	SeqNo: 5522545		PrepDate:			DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Phosphorus, Total Orthophosphate (As P)	0.0250	0.0250							U	
LCS	Sample ID: LCS-358571	Units: mg/L			Analysis Date: 19-Mar-2020 12:48					
Client ID:	Run ID: UV-2450_358571	SeqNo: 5522546		PrepDate:			DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Phosphorus, Total Orthophosphate (As P)	0.243	0.0250	0.25	0	97.2	85 - 115				
MS	Sample ID: HS20030840-01MS	Units: mg/L			Analysis Date: 19-Mar-2020 12:48					
Client ID: LH18/24-SP650_031720	Run ID: UV-2450_358571	SeqNo: 5522548		PrepDate:			DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Phosphorus, Total Orthophosphate (As P)	0.231	0.0250	0.25	0.007	89.6	80 - 120				
MSD	Sample ID: HS20030840-01MSD	Units: mg/L			Analysis Date: 19-Mar-2020 12:48					
Client ID: LH18/24-SP650_031720	Run ID: UV-2450_358571	SeqNo: 5522549		PrepDate:			DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Phosphorus, Total Orthophosphate (As P)	0.231	0.0250	0.25	0.007	89.6	80 - 120	0.231	0	20	

The following samples were analyzed in this batch: HS20030840-01

Revision: 1

ALS Houston, US

Date: 30-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20030840

QC BATCH REPORT

Batch ID: R358773 (0)		Instrument: WetChem_HS		Method: AMMONIA AS N BY E350.3(ISE)						
MBLK	Sample ID: MBLK-R358773	Units: mg/L			Analysis Date: 24-Mar-2020 08:00					
Client ID:	Run ID: WetChem_HS_358773	SeqNo: 5528384			PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual	
Nitrogen, Ammonia (As N)	0.10	0.20							U	
LCS	Sample ID: LCS-R358773	Units: mg/L			Analysis Date: 24-Mar-2020 08:00					
Client ID:	Run ID: WetChem_HS_358773	SeqNo: 5528383			PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual	
Nitrogen, Ammonia (As N)	10.32	0.20	10	0	103	80 - 120				
MS	Sample ID: HS20030743-01MS	Units: mg/L			Analysis Date: 24-Mar-2020 08:00					
Client ID:	Run ID: WetChem_HS_358773	SeqNo: 5527012			PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual	
Nitrogen, Ammonia (As N)	17.43	0.20	10	7.254	102	80 - 120				
MSD	Sample ID: HS20030743-01MSD	Units: mg/L			Analysis Date: 24-Mar-2020 08:00					
Client ID:	Run ID: WetChem_HS_358773	SeqNo: 5527011			PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual	
Nitrogen, Ammonia (As N)	17.37	0.20	10	7.254	101	80 - 120	17.43	0.374	20	

The following samples were analyzed in this batch: HS20030840-01

Revision: 1

ALS Houston, US

Date: 30-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20030840

**QUALIFIERS,
ACRONYMS, UNITS**

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
California	2919, 2019-2020	30-Apr-2020
Dept of Defense	ANAB L2231 V009	22-Dec-2021
Florida	E87611-28	30-Jun-2020
Illinois	2000322019-2	09-May-2020
Kansas	E-10352 2019-2020	31-Jul-2020
Kentucky	123043, 2019-2020	30-Apr-2020
Louisiana	03087, 2019-2020	30-Jun-2020
Maryland	343, 2019-2020	30-Jun-2020
North Carolina	624-2020	31-Dec-2020
North Dakota	R-193 2019-2020	30-Apr-2020
Oklahoma	2019-067	31-Aug-2020
Texas	T104704231-19-25	30-Apr-2020

ALS Houston, US

Date: 30-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS20030840

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20030840-01	LH18/24-SP650_031720	Login	3/19/2020 10:53:41 AM	PMG	WET231
HS20030840-01	LH18/24-SP650_031720	Login	3/19/2020 10:53:41 AM	PMG	WET231
HS20030840-01	LH18/24-SP650_031720	Login	3/19/2020 10:53:41 AM	PMG	Sub
HS20030840-02	LH18/24-SP650_031720_BIX	Login	3/19/2020 10:53:41 AM	PMG	Sub

Revision:1

Sample Receipt Checklist

Client Name: Bhate Environmental
 Work Order: HS20030840

Date/Time Received: **19-Mar-2020 08:50**
 Received by: **AC**

Checklist completed by: Paresh M. Giga 19-Mar-2020
 eSignature Date

Reviewed by: RJ Modashia 19-Mar-2020
 eSignature Date

Matrices: **Water**

Carrier name: **FedEx**

- Shipping container/cooler in good condition? Yes No Not Present
- Custody seals intact on shipping container/cooler? Yes No Not Present
- Custody seals intact on sample bottles? Yes No Not Present
- VOA/TX1005/TX1006 Solids in hermetically sealed vials? Yes No Not Present
- Chain of custody present? Yes No 1 Page(s)
- Chain of custody signed when relinquished and received? Yes No COC IDs:None
- Samplers name present on COC? Yes No
- Chain of custody agrees with sample labels? Yes No
- Samples in proper container/bottle? Yes No
- Sample containers intact? Yes No
- Sufficient sample volume for indicated test? Yes No
- All samples received within holding time? Yes No
- Container/Temp Blank temperature in compliance? Yes No

Temperature(s)/Thermometer(s): 1.5c U/c IR25
 Cooler(s)/Kit(s): 4779
 Date/Time sample(s) sent to storage: 3/19/2020 11:10

- Water - VOA vials have zero headspace? Yes No No VOA vials submitted
- Water - pH acceptable upon receipt? Yes No N/A
- pH adjusted? Yes No N/A

pH adjusted by:

Login Notes:

Client Contacted: Date Contacted: Person Contacted:
 Contacted By: Regarding:

Comments:

Corrective Action:

 <p>ALS 10450 Stanciff Rd., Suite 210 Houston, Texas 77099 Tel. +1 281 530 5656 Fax. +1 281 530 5887</p>	CUSTOMER	
	Date: <u>3/17/20</u>	
	Name: <u>Scott D</u>	
	Company: <u>SHR</u>	

VOID SEAL	Broken By: <u>[Signature]</u>
Time: <u>1430</u>	Date: <u>3/17/20</u>
<u>[Signature]</u>	

FedEx	WED - 18 MAR 10:30A
TRK# 0221 4380 9533 6839	PRIORITY OVERNIGHT
AB SGRA	4119
	77099
	TX-US IAH
	



ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626
T : +1 360 577 7222
F : +1 360 636 1068
www.alsglobal.com

March 25, 2020

Analytical Report for Service Request No: K2002470

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

RE: HS20030840

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory March 20, 2020
For your reference, these analyses have been assigned our service request number **K2002470**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3350. You may also contact me via email at Kelley.Lovejoy@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Kelley Lovejoy
Project Manager



ALS Environmental
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Table of Contents

Acronyms

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 General Chemistry

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses**

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Client: ALS Environmental - US
Project: HS20030840
Sample Matrix: Water

Service Request: K2002470
Date Received: 03/20/2020

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

One water sample was received for analysis at ALS Environmental on 03/20/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The sample was stored at minimum in accordance with the analytical method requirements.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by

Kelley Avejoy

Date

03/25/2020



Chain of Custody

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
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10450 Stancliff Rd, Ste 210
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www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: Dept of Defense

COC ID: 13548

HS20030840

SUBCONTRACT TO:

ALS Environmental Kelso
1317 S. 13th Avenue
Kelso, WA 98626

Phone: +1 360 501 3312

CUSTOMER INFORMATION:

Company: ALS Houston
Contact: RJ Modashia
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Email: RJ.Modashia@alsglobal.com
Alternate Contact:
Email:

INVOICE INFORMATION:

Company: ALS Houston
Contact: Accounts Payable
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Reference: HS20030840
TSR: Danielle Winnings

LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
ANALYSIS REQUESTED			DUE DATE
1. HS20030840-01	LH18/24-SP650_031720	Water	17 Mar 2020 14:00
TOC Analysis for DOD Level IV			02 Apr 2020

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: J. M...
Received By: [Signature] ALS
Cooler ID(s): _____

Date/Time: 3/19/20 18:00
Date/Time: 3/20/20 0940
Temperature(s): _____

RIGHT SOLUTIONS | BOLD PARTNER



PC KL

Cooler Receipt and Preservation Form

Client ALS-Houston Service Request K20 02470
 Received: 3/20/20 Opened: 3/20/20 By: [Signature] Unloaded: 3/20/20 By: [Signature]

1. Samples were received via? USPS Fed Ex UPS DHL PDX Courier Hand Delivered
2. Samples were received in: (circle) Cooler Box Envelope Other NA
3. Were custody seals on coolers? NA Y N If yes, how many and where? 1 Ear Side
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Temp Blank	Sample 1	Sample 2	Sample 3	Sample 4	IR GUN	Cooler / COC ID	NA	Tracking Number	NA	Filed
0.7	—	—	—	—	39800488WS	13548		125102956639		

4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA Y N
 If applicable, tissue samples were received: Frozen Partially Thawed Thawed
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____



General Chemistry

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Analytical Report

Client: ALS Environmental - US
Project: HS20030840
Sample Matrix: Water
Analysis Method: SM 5310 C
Prep Method: None

Service Request: K2002470
Date Collected: 03/17/20
Date Received: 03/20/20
Units: mg/L
Basis: NA

Carbon, Total Organic

Sample Name	Lab Code	Result	LOQ	LOD	MDL	Dil.	Date Analyzed	Q
LH18/24-SP650_031720	K2002470-001	2.07	0.50	0.20	0.07	1	03/22/20 12:26	
Method Blank	K2002470-MB	ND U	0.50	0.20	0.07	1	03/22/20 05:21	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20030840
Sample Matrix: Water

Service Request: K2002470
Date Collected: 03/17/20
Date Received: 03/20/20
Date Analyzed: 03/22/20

Replicate Sample Summary
General Chemistry Parameters

Sample Name: LH18/24-SP650_031720
Lab Code: K2002470-001

Units: mg/L
Basis: NA

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>LOQ</u>	<u>LOD</u>	<u>MDL</u>	<u>Sample Result</u>	<u>Duplicate Sample K2002470-001DUP Result</u>	<u>Average</u>	<u>RPD</u>	<u>RPD Limit</u>
Carbon, Total Organic	SM 5310 C	0.50	0.20	0.07	2.07	1.98	2.03	4	10

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20030840
Sample Matrix: Water

Service Request: K2002470
Date Analyzed: 03/22/20
Date Extracted: NA

Lab Control Sample Summary
Carbon, Total Organic

Analysis Method: SM 5310 C
Prep Method: None

Units: mg/L
Basis: NA
Analysis Lot: 674225

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2002470-LCS	24.6	25.0	98	83-117

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20030840

Service Request: K2002470

Continuing Calibration Verification (CCV) Summary

Carbon, Total Organic

Analysis Method: SM 5310 C

Units: mg/L

	Analysis		Date	True	Measured	Percent	Acceptance
	Lot	Lab Code	Analyzed	Value	Value	Recovery	Limits
CCV1	674225	KQ2004008-17	03/22/20 04:51	25.0	26.5	106	90-110
CCV2	674225	KQ2004008-18	03/22/20 09:35	25.0	25.8	103	90-110
CCV3	674225	KQ2004008-19	03/22/20 14:19	25.0	25.6	102	90-110
CCV4	674225	KQ2004008-20	03/22/20 18:35	25.0	25.3	101	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20030840

Service Request:K2002470

Continuing Calibration Blank (CCB) Summary
Carbon, Total Organic

Analysis Method: SM 5310 C

Units:mg/L

	Analysis Lot	Lab Code	Date Analyzed	LOQ	LOD	MDL	Result	Q
CCB1	674225	KQ2004008-21	03/22/20 05:06	0.50	0.20	0.07	ND	U
CCB2	674225	KQ2004008-22	03/22/20 09:49	0.50	0.20	0.07	ND	U
CCB3	674225	KQ2004008-23	03/22/20 14:33	0.50	0.20	0.07	ND	U
CCB4	674225	KQ2004008-24	03/22/20 18:50	0.50	0.20	0.07	ND	U



Raw Data

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General Chemistry

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Work Request # Original 2002276, 2337, 2353, 2365, 2412, 2434, 2416, 2421, 2434, 2462, 2470, 2471, 2489, 2497, 2496
 Tier: IV, II, IV, II, IV, I, IV, IV, I, II, IV, IV, II, I, II
 Date Analyzed: 3/21/20 TOC: 674205, 674225, 674226
 Analyst: RP Run # DC: 67427
 Analysis: TOC/DOC

DATA QUALITY REPORT
INORGANICS

Explain any "no" responses to questions below, and any corrective actions in the comments section below.

- 1. Is the method name and number correct and appropriate? yes/no/NA
- 2. Holding times met for all analyses and for all samples? yes/no/NA
- 3. Are calculations correct? yes/no/NA
- 4. Is the reporting basis correct? (Dry Weight) yes/no/NA
- 5. All quality control criteria met? yes/no
- 6. Is the calibration curve correlation coefficient ≥ 0.995 ? yes/no/NA
- 7. MBs, CCVs, CCBs, LCSs, Dups, and Spikes, analyzed at proper frequency? yes/no/NA
- 8. Are ICVs, CCVs, and CCBs all within acceptance limits? yes/no/NA
- 9. Are results for methods blanks all ND? yes/no/NA
- 10. Are all QC samples within acceptance criteria? (LCS % rec, MS/DMS % rec, DUP or MS/DMS RPDs, etc.) yes/no/NA
- 11. Are all exceptions explained? yes/no/NA
- 12. Have all applicable service requests been reviewed? yes/no/NA
- 13. Are all samples labeled correctly? yes/no/NA
- 14. Have all instructions on the service request been followed? (e.g. Special MRLs, QC on a specific sample, Form V) yes/no/NA
- 15. Are detection limits and units reported correctly? yes/no/NA
- 16. Is the unused space on the benchsheet crossed out? yes/no/NA
- 17. Was analysis turned in by the due date? (n-2) (If not record SR#) yes/no/NA

COMMENTS: 2002416-3/21, 2412-4/14, 241277d report on high % RSD. However, these samples are less than 5x the MRL

Final Approved by: [Signature] Date: 3/24/20 DQREPORT

Analytical Results Summary

Instrument Name: K-TOC-03

Analyst: BDITZLER

Analysis Lot: 674205 Method/Testcode: SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2002276-001	Carbon, Total Organic	N/A		Ground Water	5.85 mg/L	10 mL	58.5 mg/L	10	0.7	5.0			3/22/20 01:06:00	N	IV
K2002337-001	Carbon, Total Organic	N/A		Water	0.92 mg/L	10 mL	0.92 mg/L	1	0.07	0.50			3/21/20 20:51:00	N	II
K2002337-002	Carbon, Total Organic	N/A		Water	0.85 mg/L	10 mL	0.85 mg/L	1	0.07	0.50			3/21/20 21:48:00	N	II
K2002337-003	Carbon, Total Organic	N/A		Water	0.77 mg/L	10 mL	0.77 mg/L	1	0.07	0.50			3/21/20 22:16:00	N	II
K2002337-004	Carbon, Total Organic	N/A		Water	0.68 mg/L	10 mL	0.68 mg/L	1	0.07	0.50			3/21/20 22:44:00	N	II
K2002337-005	Carbon, Total Organic	N/A		Water	0.45 mg/L	10 mL	0.45 mg/L	J 1	0.07	0.50			3/21/20 23:12:00	N	II
K2002337-006	Carbon, Total Organic	N/A		Water	1.87 mg/L	10 mL	1.87 mg/L	1	0.07	0.50			3/22/20 00:10:00	N	II
K2002337-007	Carbon, Total Organic	N/A		Water	0.63 mg/L	10 mL	0.63 mg/L	1	0.07	0.50			3/22/20 00:38:00	N	II
K2002353-001	Carbon, Total Organic	N/A		Ground Water	1.25 mg/L	10 mL	500 mg/L	400	30	200			3/22/20 02:03:00	N	IV
K2002365-001	Carbon, Total Organic	N/A		Water	6.75 mg/L	10 mL	6.75 mg/L	1	0.07	0.50			3/22/20 01:34:00	N	II
K2002412-001	Carbon, Total Organic	N/A		Ground Water	10.68 mg/L	10 mL	10.7 mg/L	1	0.07	0.50			3/22/20 02:59:00	N	IV
K2002412-002	Carbon, Total Organic	N/A		Ground Water	2.35 mg/L	10 mL	2.35 mg/L	1	0.07	0.50			3/22/20 03:27:00	N	IV
K2002412-003	Carbon, Total Organic	N/A		Ground Water	44.83 mg/L	10 mL	44.8 mg/L	1	0.07	0.50			3/22/20 03:55:00	N	IV
K2002412-004	Carbon, Total Organic	N/A		Ground Water	1.20 mg/L	10 mL	1.20 mg/L	1	0.07	0.50			3/22/20 04:23:00	N	34of 88V
K2002412-005	Carbon, Total Organic	N/A		Ground Water	4.57 mg/L	10 mL	4.57 mg/L	1	0.07	0.50			3/22/20 05:50:00	N	34of 88V
K2002412-006	Carbon, Total Organic	N/A		Ground Water	31.25 mg/L	10 mL	31.2 mg/L	1	0.07	0.50			3/22/20 06:18:00	N	IV
K2002412-007	Carbon, Total Organic	N/A		Ground Water	0.78 mg/L	10 mL	0.78 mg/L	1	0.07	0.50			3/22/20 06:46:00	N	IV
K2002412-008	Carbon, Total Organic	N/A		Ground Water	5.22 mg/L	10 mL	5.22 mg/L	1	0.07	0.50			3/22/20 07:14:00	N	IV
K2002434-001	Carbon, Total Organic	N/A		Water	0.24 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/22/20 07:42:00	N	I
K2002434-002	Carbon, Total Organic	N/A		Water	0.61 mg/L	10 mL	0.61 mg/L	1	0.07	0.50			3/22/20 08:10:00	N	I
KQ2003999-01	Carbon, Total Organic	CCV		Water	26.33 mg/L	10 mL	26.3 mg/L	1					3/21/20 19:52:00	N	II
KQ2003999-02	Carbon, Total Organic	CCV		Water	26.30 mg/L	10 mL	26.3 mg/L	1					3/21/20 23:40:00	N	II
KQ2003999-03	Carbon, Total Organic	CCV		Water	26.46 mg/L	10 mL	26.5 mg/L	1					3/22/20 04:51:00	N	II
KQ2003999-04	Carbon, Total Organic	CCB		Water	-0.03 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/21/20 19:37:00	N	II
KQ2003999-05	Carbon, Total Organic	CCB		Water	0.12 mg/L	10 mL	0.12 mg/L	J 1	0.07	0.50			3/21/20 23:55:00	N	II
KQ2003999-06	Carbon, Total Organic	CCB		Water	-0.02 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/22/20 05:06:00	N	II
KQ2003999-07	Carbon, Total Organic	MB		Water	0.29 mg/L	10 mL	0.29 mg/L	J 1	0.07	0.50			3/21/20 20:07:00	N	II
KQ2003999-08	Carbon, Total Organic	LCS		Water	24.88 mg/L	10 mL	24.9 mg/L	1	0.07	0.50	100		3/21/20 20:21:00	N	II
KQ2003999-09	Carbon, Total Organic	MS	K2002337-001	Water	29.48 mg/L	10 mL	29.5 mg/L	1	0.07	0.50	114		3/21/20 21:19:00	N	II
KQ2003999-10	Carbon, Total Organic	DUP	K2002276-001	Ground Water	5.92 mg/L	10 mL	59.2 mg/L	10	0.7	5.0		1	3/22/20 01:06:00	N	IV

indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03

Analyst: BDITZLER

Analysis Lot: 674205 Method/Testcode: SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ2003999-11	Carbon, Total Organic	DUP	K2002337-001	Water	0.91 mg/L	10 mL	0.91 mg/L	1	0.07	0.50		1	3/21/20 20:51:00	N	II
KQ2003999-12	Carbon, Total Organic	DUP	K2002337-002	Water	0.79 mg/L	10 mL	0.79 mg/L	1	0.07	0.50		7	3/21/20 21:48:00	N	II
KQ2003999-13	Carbon, Total Organic	DUP	K2002337-003	Water	0.70 mg/L	10 mL	0.70 mg/L	1	0.07	0.50		10	3/21/20 22:16:00	N	II
KQ2003999-14	Carbon, Total Organic	DUP	K2002337-004	Water	0.67 mg/L	10 mL	0.67 mg/L	1	0.07	0.50		2	3/21/20 22:44:00	N	II
KQ2003999-15	Carbon, Total Organic	DUP	K2002337-005	Water	0.46 mg/L	10 mL	0.46 mg/L	J 1	0.07	0.50		3	3/21/20 23:12:00	N	II
KQ2003999-16	Carbon, Total Organic	DUP	K2002337-006	Water	1.85 mg/L	10 mL	1.85 mg/L	1	0.07	0.50		1	3/22/20 00:10:00	N	II
KQ2003999-17	Carbon, Total Organic	DUP	K2002337-007	Water	0.58 mg/L	10 mL	0.58 mg/L	1	0.07	0.50		9	3/22/20 00:38:00	N	II
KQ2003999-18	Carbon, Total Organic	DUP	K2002353-001	Ground Water	1.19 mg/L	10 mL	480 mg/L	400	30	200		4	3/22/20 02:03:00	N	IV
KQ2003999-19	Carbon, Total Organic	DUP	K2002365-001	Water	6.74 mg/L	10 mL	6.74 mg/L	1	0.07	0.50		<1	3/22/20 01:34:00	N	II
KQ2003999-20	Carbon, Total Organic	DUP	K2002434-001	Water	0.19 mg/L	10 mL	0.19 mg/L	J 1	0.07	0.50		NC	3/22/20 07:42:00	N	I
KQ2003999-21	Carbon, Total Organic	DUP	K2002434-002	Water	0.60 mg/L	10 mL	0.60 mg/L	1	0.07	0.50		2	3/22/20 08:10:00	N	I
KQ2003999-22	Carbon, Total Organic	DUP	K2002412-002	Ground Water	2.15 mg/L	10 mL	2.15 mg/L	1	0.07	0.50		9	3/22/20 03:27:00	N	IV
KQ2003999-23	Carbon, Total Organic	DUP	K2002412-001	Ground Water	10.27 mg/L	10 mL	10.3 mg/L	1	0.07	0.50		4	3/22/20 02:59:00	N	IV
KQ2003999-24	Carbon, Total Organic	DUP	K2002412-003	Ground Water	44.51 mg/L	10 mL	44.5 mg/L	1	0.07	0.50		<1	3/22/20 03:55:00	N	IV
KQ2003999-25	Carbon, Total Organic	DUP	K2002412-004	Ground Water	0.91 mg/L	10 mL	0.91 mg/L	1	0.07	0.50		27*	3/22/20 04:23:00	N	9 9 9 IV
KQ2003999-26	Carbon, Total Organic	DUP	K2002412-005	Ground Water	4.41 mg/L	10 mL	4.41 mg/L	1	0.07	0.50		4	3/22/20 05:50:00	N	IV
KQ2003999-27	Carbon, Total Organic	DUP	K2002412-006	Ground Water	30.72 mg/L	10 mL	30.7 mg/L	1	0.07	0.50		2	3/22/20 06:18:00	N	IV
KQ2003999-28	Carbon, Total Organic	DUP	K2002412-007	Ground Water	0.58 mg/L	10 mL	0.58 mg/L	1	0.07	0.50		30*	3/22/20 06:46:00	N	IV
KQ2003999-29	Carbon, Total Organic	DUP	K2002412-008	Ground Water	5.27 mg/L	10 mL	5.27 mg/L	1	0.07	0.50		<1	3/22/20 07:14:00	N	IV
KQ2003999-30	Carbon, Total Organic	CCV		Water	25.76 mg/L	10 mL	25.8 mg/L	1					3/22/20 09:35:00	N	II
KQ2003999-31	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/22/20 09:49:00	N	II

indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03

Analyst: BDITZLER

Analysis Lot: 674225 Method/Testcode: 415.1/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2002416-001	Carbon, Total Organic	N/A		Ground Water	0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 09:07:00	Y	IV
K2002416-002	Carbon, Total Organic	N/A		Ground Water	0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 10:33:00	N	IV
K2002416-003	Carbon, Total Organic	N/A		Ground Water	0.19 mg/L	10 mL	0.19 mg/L J	1	0.07	0.50			3/22/20 11:01:00	N	IV
K2002416-004	Carbon, Total Organic	N/A		Ground Water	0.54 mg/L	10 mL	0.54 mg/L	1	0.07	0.50			3/22/20 11:29:00	N	IV
K2002421-001	Carbon, Total Organic	N/A		Water	1.53 mg/L	10 mL	1.53 mg/L	1	0.07	0.50			3/22/20 15:45:00	N	IV
K2002421-002	Carbon, Total Organic	N/A		Water	0.79 mg/L	10 mL	0.79 mg/L	1	0.07	0.50			3/22/20 16:14:00	N	IV
K2002421-003	Carbon, Total Organic	N/A		Water	1.69 mg/L	10 mL	1.69 mg/L	1	0.07	0.50			3/22/20 16:42:00	N	IV
K2002421-004	Carbon, Total Organic	N/A		Water	0.82 mg/L	10 mL	0.82 mg/L	1	0.07	0.50			3/22/20 17:10:00	N	IV
K2002434-003	Carbon, Total Organic	N/A		Water	0.11 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 08:39:00	N	I
K2002462-001	Carbon, Total Organic	N/A		Water	2.96 mg/L	10 mL	2.96 mg/L	1	0.07	0.50			3/22/20 11:58:00	N	II
K2002470-001	Carbon, Total Organic	N/A		Water	2.07 mg/L	10 mL	2.07 mg/L	1	0.07	0.50			3/22/20 12:26:00	N	IV
K2002471-001	Carbon, Total Organic	N/A		Ground Water	4.43 mg/L	10 mL	4.43 mg/L	1	0.07	0.50			3/22/20 12:54:00	N	IV
K2002489-001	Carbon, Total Organic	N/A		Water	4.72 mg/L	10 mL	4.72 mg/L	1	0.07	0.50			3/22/20 13:22:00	N	II
K2002492-002	Carbon, Total Organic	N/A		Drinking Water	0.37 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 13:50:00	N	II
K2002496-001	Carbon, Total Organic	N/A		Water	14.38 mg/L	10 mL	14.4 mg/L	1	0.07	0.50			3/22/20 15:17:00	N	II
KQ2004008-01	Carbon, Total Organic	MS	K2002416-001	Ground Water	27.78 mg/L	10 mL	27.8 mg/L	1	0.07	0.50	111		3/22/20 10:04:00	N	IV
KQ2004008-02	Carbon, Total Organic	DUP	K2002416-001	Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/22/20 09:07:00	N	IV
KQ2004008-03	Carbon, Total Organic	DUP	K2002416-002	Ground Water	0.01 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/22/20 10:33:00	N	IV
KQ2004008-04	Carbon, Total Organic	DUP	K2002416-003	Ground Water	0.16 mg/L	10 mL	0.16 mg/L J	1	0.07	0.50		21*	3/22/20 11:01:00	N	IV
KQ2004008-05	Carbon, Total Organic	DUP	K2002416-004	Ground Water	0.53 mg/L	10 mL	0.53 mg/L	1	0.07	0.50		2	3/22/20 11:29:00	N	IV
KQ2004008-06	Carbon, Total Organic	DUP	K2002421-001	Water	1.47 mg/L	10 mL	1.47 mg/L	1	0.07	0.50		4	3/22/20 15:45:00	N	IV
KQ2004008-07	Carbon, Total Organic	DUP	K2002421-002	Water	0.76 mg/L	10 mL	0.76 mg/L	1	0.07	0.50		3	3/22/20 16:14:00	N	IV
KQ2004008-08	Carbon, Total Organic	DUP	K2002421-003	Water	1.71 mg/L	10 mL	1.71 mg/L	1	0.07	0.50		1	3/22/20 16:42:00	N	IV
KQ2004008-09	Carbon, Total Organic	DUP	K2002421-004	Water	0.78 mg/L	10 mL	0.78 mg/L	1	0.07	0.50		5	3/22/20 17:10:00	N	IV
KQ2004008-10	Carbon, Total Organic	DUP	K2002434-003	Water	0.18 mg/L	10 mL	0.18 mg/L J	1	0.07	0.50		NC	3/22/20 08:39:00	N	I
KQ2004008-11	Carbon, Total Organic	DUP	K2002462-001	Water	2.96 mg/L	10 mL	2.96 mg/L	1	0.07	0.50		<1	3/22/20 11:58:00	N	II
KQ2004008-12	Carbon, Total Organic	DUP	K2002470-001	Water	1.98 mg/L	10 mL	1.98 mg/L	1	0.07	0.50		4	3/22/20 12:26:00	N	IV
KQ2004008-13	Carbon, Total Organic	DUP	K2002471-001	Ground Water	4.30 mg/L	10 mL	4.30 mg/L	1	0.07	0.50		3	3/22/20 12:54:00	N	IV
KQ2004008-14	Carbon, Total Organic	DUP	K2002489-001	Water	4.65 mg/L	10 mL	4.65 mg/L	1	0.07	0.50		2	3/22/20 13:22:00	N	II
KQ2004008-15	Carbon, Total Organic	DUP	K2002492-002	Drinking Water	0.40 mg/L	10 mL	0.40 mg/L J	1	0.07	0.50		NC	3/22/20 13:50:00	N	I

indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03

Analyst: BDITZLER

Analysis Lot: 674225 Method/Testcode: SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ2004008-16	Carbon, Total Organic	DUP	K2002496-001	Water	13.50 mg/L	10 mL	13.5 mg/L	1	0.07	0.50		6	3/22/20 15:17:00	N	II
KQ2004008-17	Carbon, Total Organic	CCV		Water	26.46 mg/L	10 mL	26.5 mg/L	1					3/22/20 04:51:00	N	I
KQ2004008-17	Carbon, Total Organic	CCV		Water	26.46 mg/L	10 mL	26.5 mg/L	1					3/22/20 04:51:00	N	I
KQ2004008-18	Carbon, Total Organic	CCV		Water	25.76 mg/L	10 mL	25.8 mg/L	1					3/22/20 09:35:00	N	I
KQ2004008-18	Carbon, Total Organic	CCV		Water	25.76 mg/L	10 mL	25.8 mg/L	1					3/22/20 09:35:00	N	I
KQ2004008-19	Carbon, Total Organic	CCV		Water	25.62 mg/L	10 mL	25.6 mg/L	1					3/22/20 14:19:00	N	I
KQ2004008-19	Carbon, Total Organic	CCV		Water	25.62 mg/L	10 mL	25.6 mg/L	1					3/22/20 14:19:00	N	I
KQ2004008-20	Carbon, Total Organic	CCV		Water	25.34 mg/L	10 mL	25.3 mg/L	1					3/22/20 18:35:00	N	I
KQ2004008-20	Carbon, Total Organic	CCV		Water	25.34 mg/L	10 mL	25.3 mg/L	1					3/22/20 18:35:00	N	I
KQ2004008-21	Carbon, Total Organic	CCB		Water	-0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 05:06:00	N	I
KQ2004008-21	Carbon, Total Organic	CCB		Water	-0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 05:06:00	N	I
KQ2004008-22	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 09:49:00	N	I
KQ2004008-22	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 09:49:00	N	I
KQ2004008-23	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 14:33:00	N	I
KQ2004008-23	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 14:33:00	N	I
KQ2004008-24	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 18:50:00	N	I
KQ2004008-24	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 18:50:00	N	I
KQ2004008-25	Carbon, Total Organic	MB		Water	0.06 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 05:21:00	N	I
KQ2004008-25	Carbon, Total Organic	MB		Water	0.06 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 05:21:00	N	I
KQ2004008-26	Carbon, Total Organic	LCS		Water	24.62 mg/L	10 mL	24.6 mg/L	1	0.07	0.50	98		3/22/20 05:35:00	N	I
KQ2004008-26	Carbon, Total Organic	LCS		Water	24.62 mg/L	10 mL	24.6 mg/L	1	0.07	0.50	98		3/22/20 05:35:00	N	I
KQ2004008-27	Carbon, Total Organic	N/A		Water	0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 09:07:00	N	IV
KQ2004008-28	Carbon, Total Organic	MS	KQ2004008-27	Water	27.78 mg/L	10 mL	27.8 mg/L	1	0.07	0.50	111		3/22/20 10:04:00	N	IV
KQ2004008-29	Carbon, Total Organic	DUP	KQ2004008-27	Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/22/20 09:07:00	N	IV

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indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03

Analyst: BDITZLER

Analysis Lot: 674226 Method/Testcode: SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2002432-001	Carbon, Total Organic	N/A		Water	0.03 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 17:38:00	N	IV
K2002437-001	Carbon, Total Organic	N/A		Water	1.83 mg/L	10 mL	1.83 mg/L	1	0.07	0.50			3/22/20 19:04:00	N	I
K2002437-002	Carbon, Total Organic	N/A		Water	0.72 mg/L	10 mL	0.72 mg/L	1	0.07	0.50			3/22/20 19:33:00	N	I
K2002437-003	Carbon, Total Organic	N/A		Water	3.10 mg/L	10 mL	3.10 mg/L	1	0.07	0.50			3/22/20 20:00:00	N	I
K2002437-004	Carbon, Total Organic	N/A		Water	0.71 mg/L	10 mL	0.71 mg/L	1	0.07	0.50			3/22/20 20:29:00	N	I
K2002437-005	Carbon, Total Organic	N/A		Water	0.59 mg/L	10 mL	0.59 mg/L	1	0.07	0.50			3/22/20 20:57:00	N	I
K2002456-001	Carbon, Total Organic	N/A		Water	1.07 mg/L	10 mL	1.07 mg/L	1	0.07	0.50			3/22/20 21:25:00	N	IV
K2002456-002	Carbon, Total Organic	N/A		Water	0.72 mg/L	10 mL	0.72 mg/L	1	0.07	0.50			3/22/20 21:53:00	N	IV
K2002456-003	Carbon, Total Organic	N/A		Water	1.35 mg/L	10 mL	1.35 mg/L	1	0.07	0.50			3/22/20 22:21:00	N	IV
K2002456-004	Carbon, Total Organic	N/A		Water	1.35 mg/L	10 mL	1.35 mg/L	1	0.07	0.50			3/22/20 22:49:00	N	IV
KQ2004009-01	Carbon, Total Organic	CCV		Water	25.62 mg/L	10 mL	25.6 mg/L	1					3/22/20 14:19:00	N	IV
KQ2004009-02	Carbon, Total Organic	CCV		Water	25.34 mg/L	10 mL	25.3 mg/L	1					3/22/20 18:35:00	N	IV
KQ2004009-03	Carbon, Total Organic	CCV		Water	25.05 mg/L	10 mL	25.1 mg/L	1					3/23/20 00:13:00	N	IV
KQ2004009-04	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 14:33:00	N	IV
KQ2004009-05	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 18:50:00	N	IV
KQ2004009-06	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 00:27:00	N	IV
KQ2004009-07	Carbon, Total Organic	MB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 14:48:00	N	IV
KQ2004009-08	Carbon, Total Organic	LCS		Water	24.66 mg/L	10 mL	24.7 mg/L	1	0.07	0.50	99		3/22/20 15:03:00	N	IV
KQ2004009-09	Carbon, Total Organic	MS	K2002432-001	Water	26.30 mg/L	10 mL	26.3 mg/L	1	0.07	0.50	105		3/22/20 18:06:00	N	IV
KQ2004009-10	Carbon, Total Organic	DUP	K2002432-001	Water	0.06 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/22/20 17:38:00	N	IV
KQ2004009-11	Carbon, Total Organic	DUP	K2002437-001	Water	1.78 mg/L	10 mL	1.78 mg/L	1	0.07	0.50		3	3/22/20 19:04:00	N	I
KQ2004009-12	Carbon, Total Organic	DUP	K2002437-002	Water	0.71 mg/L	10 mL	0.71 mg/L	1	0.07	0.50		2	3/22/20 19:33:00	N	I
KQ2004009-13	Carbon, Total Organic	DUP	K2002437-003	Water	3.13 mg/L	10 mL	3.13 mg/L	1	0.07	0.50		<1	3/22/20 20:00:00	N	I
KQ2004009-14	Carbon, Total Organic	DUP	K2002437-004	Water	0.64 mg/L	10 mL	0.64 mg/L	1	0.07	0.50		10	3/22/20 20:29:00	N	I
KQ2004009-15	Carbon, Total Organic	DUP	K2002437-005	Water	0.56 mg/L	10 mL	0.56 mg/L	1	0.07	0.50		4	3/22/20 20:57:00	N	I
KQ2004009-16	Carbon, Total Organic	DUP	K2002456-001	Water	1.04 mg/L	10 mL	1.04 mg/L	1	0.07	0.50		2	3/22/20 21:25:00	N	IV
KQ2004009-17	Carbon, Total Organic	DUP	K2002456-002	Water	0.66 mg/L	10 mL	0.66 mg/L	1	0.07	0.50		9	3/22/20 21:53:00	N	IV
KQ2004009-18	Carbon, Total Organic	DUP	K2002456-003	Water	1.35 mg/L	10 mL	1.35 mg/L	1	0.07	0.50		<1	3/22/20 22:21:00	N	IV
KQ2004009-19	Carbon, Total Organic	DUP	K2002456-004	Water	1.30 mg/L	10 mL	1.30 mg/L	1	0.07	0.50		4	3/22/20 22:49:00	N	IV

indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03

Analyst: BDITZLER

Analysis Lot: 674227 Method/Testcode: SM 5310 C/TOC D

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2002422-001	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	9.45 mg/L	10 mL	9.45 mg/L	1	0.07	0.50			3/23/20 02:23:00	N	III
K2002462-002	Carbon, Dissolved Organic	N/A		Water	4.12 mg/L	10 mL	4.12 mg/L	1	0.07	0.50			3/23/20 01:11:00	N	II
KQ2004010-01	Carbon, Dissolved Organic	CCV		Water	25.13 mg/L	10 mL	25.1 mg/L	1					3/23/20 00:13:00	N	II
KQ2004010-01	Carbon, Dissolved Organic (DOC)	CCV		Water	25.13 mg/L	10 mL	25.1 mg/L	1					3/23/20 00:13:00	N	II
KQ2004010-02	Carbon, Dissolved Organic	CCV		Water	25.06 mg/L	10 mL	25.1 mg/L	1					3/23/20 03:20:00	N	II
KQ2004010-02	Carbon, Dissolved Organic (DOC)	CCV		Water	25.06 mg/L	10 mL	25.1 mg/L	1					3/23/20 03:20:00	N	II
KQ2004010-03	Carbon, Dissolved Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/23/20 00:27:00	N	II
KQ2004010-03	Carbon, Dissolved Organic (DOC)	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/23/20 00:27:00	N	II
KQ2004010-04	Carbon, Dissolved Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/23/20 03:35:00	N	II
KQ2004010-04	Carbon, Dissolved Organic (DOC)	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/23/20 03:35:00	N	II
KQ2004010-05	Carbon, Dissolved Organic	MB		Water	0.00 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/23/20 00:42:00	N	II
KQ2004010-05	Carbon, Dissolved Organic (DOC)	MB		Water	0.00 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/23/20 00:42:00	N	II
KQ2004010-06	Carbon, Dissolved Organic	LCS		Water	24.20 mg/L	10 mL	24.2 mg/L	1	0.07	0.50	97		3/23/20 00:57:00	N	II
KQ2004010-06	Carbon, Dissolved Organic (DOC)	LCS		Water	24.20 mg/L	10 mL	24.2 mg/L	1	0.07	0.50	97		3/23/20 00:57:00	N	II
KQ2004010-07	Carbon, Dissolved Organic	MS	K2002462-002	Water	32.05 mg/L	10 mL	32.0 mg/L	1	0.07	0.50	112		3/23/20 01:40:00	N	II
KQ2004010-08	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	4.12 mg/L	10 mL	4.12 mg/L	1	0.07	0.50			3/23/20 01:11:00	N	III
KQ2004010-09	Carbon, Dissolved Organic (DOC)	MS	KQ2004010-08	Surface Water	32.05 mg/L	10 mL	32.0 mg/L	1	0.07	0.50	112		3/23/20 01:40:00	N	III
KQ2004010-10	Carbon, Dissolved Organic (DOC)	DUP	K2002422-001	Surface Water	9.61 mg/L	10 mL	9.61 mg/L	1	0.07	0.50		2	3/23/20 02:23:00	N	III
KQ2004010-11	Carbon, Dissolved Organic	DUP	K2002462-002	Water	4.07 mg/L	10 mL	4.07 mg/L	1	0.07	0.50		1	3/23/20 01:11:00	N	II
KQ2004010-12	Carbon, Dissolved Organic (DOC)	DUP	KQ2004010-08	Surface Water	4.07 mg/L	10 mL	4.07 mg/L	1	0.07	0.50		1	3/23/20 01:11:00	N	III

indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

0.043	0.043			OBSERVATIONS	12	0.0432
0.366				STD Deviation	0.11429	ABOVE
0.200				AVERAGE	0.06658	ABOVE
0.055	0.055	0.055	#####	UCL	0.18087	0.0545
0.136	0.136			LCL	-0.04772	0.1357
0.000						0
0.000						0
0.000				OBSERVATIONS	3	0
0.000				STD Deviation	0.02578	0
0.000				AVERAGE	0.07780	0
0.000				UCL	0.10358	0
0.000				LCL	0.05202	0
						0
						0
				OBSERVATIONS	1	0
				STD Deviation	#DIV/0!	0
				AVERAGE	0.05450	0
				UCL	#DIV/0!	0
				LCL	#DIV/0!	0
						0
						0
				OBSERVATIONS	0	0
				STD Deviation	#DIV/0!	0
				AVERAGE	#DIV/0!	0
						0
						0
						0
						0
						0
						0

BP 3/21/20

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER)

Method: Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccb	1	0.043	0.0778	-0.0346	-0.0346	<0.5	3/21/2020
3	ccv	1	26.406	0.0778	26.3280	26.328	26.3	3/21/2020
4	mb	1	0.366	0.0778	0.2878	0.2878	<0.5	3/21/2020
5	lcs	1	24.954	0.0778	24.8758	24.8758	24.9	3/21/2020
6	K2002337-001	1	0.994	0.0778	0.9162	0.9162	0.92	3/21/2020
7	K2002337-001	1	0.983	0.0778	0.9055	0.9055	0.9	3/21/2020
8	KQ2003999-09	1	29.561	0.0778	29.4834	29.4834	29	3/21/2020
9	K2002337-002	1	0.927	0.0778	0.8490	0.849	0.85	3/21/2020
10	K2002337-002	1	0.868	0.0778	0.7902	0.7902	0.79	3/21/2020
11	K2002337-003	1	0.851	0.0778	0.7733	0.7733	0.8	3/21/2020
12	K2002337-003	1	0.778	0.0778	0.6997	0.6997	0.70	3/21/2020
13	K2002337-004	1	0.759	0.0778	0.6814	0.6814	0.68	3/21/2020
14	K2002337-004	1	0.748	0.0778	0.6704	0.6704	0.67	3/21/2020
15	K2002337-005	1	0.530	0.0778	0.4518	0.4518	<0.5	3/21/2020
16	K2002337-005	1	0.543	0.0778	0.4649	0.4649	<0.5	3/21/2020
17	ccv	1	26.379	0.0778	26.3014	26.3014	26.30	3/21/2020
18	ccb	1	0.200	0.0778	0.1221	0.1221	<0.5	3/21/2020
19	K2002337-006	1	1.952	0.0778	1.8738	1.8738	1.9	3/22/2020
20	K2002337-006	1	1.929	0.0778	1.8513	1.8513	1.85	3/22/2020
21	K2002337-007	1	0.710	0.0778	0.6317	0.6317	0.63	3/22/2020
22	K2002337-007	1	0.658	0.0778	0.5798	0.5798	0.6	3/22/2020
23	K2002276-001	10	5.931	0.0778	5.8531	58.531	58.5	3/22/2020
24	K2002276-001	10	5.997	0.0778	5.9193	59.193	59.19	3/22/2020
25	K2002365-001	1	6.825	0.0778	6.7471	6.7471	6.75	3/22/2020

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

	date	time
Analyzed By: <i>W</i>	Date Analyzed	3/21/20
Reviewed By:	Date Reviewed	

Revision 1, 2010 R:\WET\ANALYSES\TOC\TEMPLATE\TOCwaterLIMS

Matrix: WATER

Analysis: Total Organic Carbon (WATER)

Method: Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
26	K2002365-001	1	6.814	0.0778	6.7366	6.7366	6.74	3/22/2020
27	K2002353-001	400	1.325	0.0778	1.2473	498.92	498.92	3/22/2020
28	K2002353-001	400	1.272	0.0778	1.1941	477.64	477.6	3/22/2020
29	K2002412-001	1	10.758	0.0778	10.6798	10.6798	10.7	3/22/2020
30	K2002412-001	1	10.352	0.0778	10.2738	10.2738	10.3	3/22/2020
31	K2002412-002	1	2.431	0.0778	2.3535	2.3535	2.4	3/22/2020
32	K2002412-002	1	2.226	0.0778	2.1484	2.1484	2.1	3/22/2020
33	K2002412-003	1	44.908	0.0778	44.8304	44.8304	44.8	3/22/2020
34	K2002412-003	1	44.589	0.0778	44.5114	44.5114	44.5	3/22/2020
35	K2002412-004	1	1.276	0.0778	1.1981	1.1981	1.2	3/22/2020
36	K2002412-004	1	0.987	0.0778	0.9096	0.9096	0.9	3/22/2020
37	ccv	1	26.538	0.0778	26.4599	26.4599	26.5	3/22/2020
38	ccb	1	0.055	0.0778	-0.0233	-0.0233	<0.5	3/22/2020
39	K2002412-005	1	4.650	0.0778	4.5720	4.572	4.6	3/22/2020
40	K2002412-005	1	4.487	0.0778	4.4096	4.4096	4.4	3/22/2020
41	K2002412-006	1	31.326	0.0778	31.2482	31.2482	31.2	3/22/2020
42	K2002412-006	1	30.802	0.0778	30.7243	30.7243	30.7	3/22/2020
43	K2002412-007	1	0.861	0.0778	0.7828	0.7828	0.8	3/22/2020
44	K2002412-007	1	0.659	0.0778	0.5810	0.581	0.6	3/22/2020
45	K2002412-008	1	5.297	0.0778	5.2192	5.2192	5.2	3/22/2020
46	K2002412-008	1	5.349	0.0778	5.2707	5.2707	5.3	3/22/2020
47	K2002434-001	1	0.318	0.0778	0.2402	0.2402	<0.5	3/22/2020
48	K2002434-001	1	0.271	0.0778	0.1933	0.1933	<0.5	3/22/2020
49	K2002434-002	1	0.689	0.0778	0.6116	0.6116	0.6	3/22/2020
50	K2002434-002	1	0.674	0.0778	0.5965	0.5965	0.6	3/22/2020

Analyzed By: <i>BCD</i>	Date Analyzed <i>3/22/20</i>
Reviewed By:	Date Reviewed

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER)

Method: Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
51	ccv	1	25.843	0.0778	25.7647	25.7647	25.76	3/22/2020
52	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
53		1		0.0000	0.0000	0	<0.5	
54		1		0.0000	0.0000	0	<0.5	
55		1		0.0000	0.0000	0	<0.5	
56		1		0.0000	0.0000	0	<0.5	
57		1		0.0000	0.0000	0	<0.5	
58		1		0.0000	0.0000	0	<0.5	
59		1		0.0000	0.0000	0	<0.5	
60		1		0.0000	0.0000	0	<0.5	
61		1		0.0000	0.0000	0	<0.5	
62		1		0.0000	0.0000	0	<0.5	
63		1		0.0000	0.0000	0	<0.5	
64		1		0.0000	0.0000	0	<0.5	
65		1		0.0000	0.0000	0	<0.5	
66		1		0.0000	0.0000	0	<0.5	
67		1		0.0000	0.0000	0	<0.5	
68		1		0.0000	0.0000	0	<0.5	
69		1		0.0000	0.0000	0	<0.5	
70		1		0.0000	0.0000	0	<0.5	
71		1		0.0000	0.0000	0	<0.5	
72		1		0.0000	0.0000	0	<0.5	
73		1		0.0000	0.0000	0	<0.5	
74		1		0.0000	0.0000	0	<0.5	
75		1		0.0000	0.0000	0	<0.5	

Analyzed By: <i>BP</i>	Date Analyzed: <i>3/21/20</i>
Reviewed By:	Date Reviewed:

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER)

Method: Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	26.538	0.0778	26.4599	26.4599	26.5	3/22/2020
3	ccb	1	0.055	0.0778	-0.0233	-0.0233	<0.5	3/22/2020
4	mb	1	0.136	0.0778	0.0579	0.0579	<0.5	3/22/2020
5	lcs	1	24.698	0.0778	24.6205	24.6205	24.6	3/22/2020
6	K2002434-003	1	0.192	0.0778	0.1139	0.1139	<0.5	3/22/2020
7	K2002434-003	1	0.258	0.0778	0.1797	0.1797	<0.5	3/22/2020
8	K2002416-001	1	0.099	0.0778	0.0207	0.0207	<0.5	3/22/2020
9	K2002416-001	1	0.083	0.0778	0.0048	0.0048	<0.5	3/22/2020
10	ccv	1	25.843	0.0778	25.7647	25.7647	25.76	3/22/2020
11	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
12	KQ2004008-01	1	27.862	0.0778	27.7842	27.7842	27.78	3/22/2020
13	K2002416-002	1	0.099	0.0778	0.0210	0.021	<0.5	3/22/2020
14	K2002416-002	1	0.085	0.0778	0.0067	0.0067	<0.5	3/22/2020
15	K2002416-003	1	0.271	0.0778	0.1932	0.1932	<0.5	3/22/2020
16	K2002416-003	1	0.235	0.0778	0.1572	0.1572	<0.5	3/22/2020
17	K2002416-004	1	1.615	0.0778	1.5370	1.537	1.54	3/22/2020
18	K2002416-004	1	1.605	0.0778	1.5267	1.5267	1.5	3/22/2020
19	K2002462-001	1	3.041	0.0778	2.9627	2.9627	3.0	3/22/2020
20	K2002462-001	1	3.038	0.0778	2.9600	2.96	2.96	3/22/2020
21	K2002470-001	1	2.148	0.0778	2.0704	2.0704	2.07	3/22/2020
22	K2002470-001	1	2.061	0.0778	1.9828	1.9828	2.0	3/22/2020
23	K2002471-001	1	4.509	0.0778	4.4308	4.4308	4.4	3/22/2020
24	K2002471-001	1	4.381	0.0778	4.3030	4.303	4.30	3/22/2020
25	K2002489-001	1	4.801	0.0778	4.7227	4.7227	4.72	3/22/2020

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

Analyzed By: <i>Ycp</i>	Date Analyzed <i>3/22/20</i>	date	time
Reviewed By:	Date Reviewed		

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER)

Method: Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
26	K2002489-001	1	4.724	0.0778	4.6460	4.646	4.65	3/22/2020
27	K2002492-002	1	0.452	0.0778	0.3746	0.3746	<0.5	3/22/2020
28	K2002492-002	1	0.479	0.0778	0.4014	0.4014	<0.5	3/22/2020
29	ccv	1	25.695	0.0778	25.6168	25.6168	25.6	3/22/2020
30	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
31	K2002496-001	1	14.459	0.0778	14.3812	14.3812	14.4	3/22/2020
32	K2002496-001	1	13.578	0.0778	13.5000	13.5	13.5	3/22/2020
33	K2002421-001	1	1.605	0.0778	1.5272	1.5272	1.5	3/22/2020
34	K2002421-001	1	1.548	0.0778	1.4705	1.4705	1.5	3/22/2020
35	K2002421-002	1	0.866	0.0778	0.7878	0.7878	0.8	3/22/2020
36	K2002421-002	1	0.842	0.0778	0.7645	0.7645	0.8	3/22/2020
37	K2002421-003	1	1.766	0.0778	1.6881	1.6881	1.7	3/22/2020
38	K2002421-003	1	1.790	0.0778	1.7125	1.7125	1.7	3/22/2020
39	K2002421-004	1	0.896	0.0778	0.8180	0.818	0.8	3/22/2020
40	K2002421-004	1	0.859	0.0778	0.7812	0.7812	0.8	3/22/2020
41	ccv	1	25.418	0.0778	25.3398	25.3398	25.3	3/22/2020
42	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
43		1		0.0000	0.0000	0	<0.5	
44		1		0.0000	0.0000	0	<0.5	
45		1		0.0000	0.0000	0	<0.5	
46		1		0.0000	0.0000	0	<0.5	
47		1		0.0000	0.0000	0	<0.5	
48		1		0.0000	0.0000	0	<0.5	
49		1		0.0000	0.0000	0	<0.5	
50		1		0.0000	0.0000	0	<0.5	

Analyzed By: <i>WCP</i>	Date Analyzed: <i>3/22/20</i>
Reviewed By:	Date Reviewed:

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER)

Method: Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	25.695	0.0778	25.6168	25.6168	25.6	3/22/2020
3	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
4	mb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
5	lcs	1	24.742	0.0778	24.6645	24.6645	24.7	3/22/2020
6	K2002432-001	1	0.108	0.0778	0.0305	0.0305	<0.5	3/22/2020
7	K2002432-001	1	0.143	0.0778	0.0649	0.0649	<0.5	3/22/2020
8	KQ2004009-09	1	26.380	0.0778	26.3020	26.302	26	3/22/2020
9	ccv	1	25.418	0.0778	25.3398	25.3398	25.34	3/22/2020
10	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
11	K2002437-001	1	1.911	0.0778	1.8331	1.8331	1.8	3/22/2020
12	K2002437-001	1	1.853	0.0778	1.7754	1.7754	1.78	3/22/2020
13	K2002437-002	1	0.802	0.0778	0.7246	0.7246	0.72	3/22/2020
14	K2002437-002	1	0.788	0.0778	0.7099	0.7099	0.71	3/22/2020
15	K2002437-003	1	3.181	0.0778	3.1028	3.1028	3.1	3/22/2020
16	K2002437-003	1	3.208	0.0778	3.1306	3.1306	3.1	3/22/2020
17	K2002437-004	1	0.783	0.0778	0.7056	0.7056	0.71	3/22/2020
18	K2002437-004	1	0.715	0.0778	0.6372	0.6372	0.6	3/22/2020
19	K2002437-005	1	0.665	0.0778	0.5874	0.5874	0.6	3/22/2020
20	K2002437-005	1	0.641	0.0778	0.5633	0.5633	0.56	3/22/2020
21	K2002456-001	1	1.145	0.0778	1.0675	1.0675	1.07	3/22/2020
22	K2002456-001	1	1.122	0.0778	1.0438	1.0438	1.0	3/22/2020
23	K2002456-002	1	0.794	0.0778	0.7165	0.7165	0.7	3/22/2020
24	K2002456-002	1	0.735	0.0778	0.6568	0.6568	0.66	3/22/2020
25	K2002456-003	1	1.431	0.0778	1.3528	1.3528	1.35	3/22/2020

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

date

time

Analyzed By: <i>POP</i>	Date Analyzed: <i>3/22/20</i>
Reviewed By:	Date Reviewed:

Revision 1, 2010 R:\WET\ANALYSES\TOC\TEMPLATE\TOCwaterLIMS

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER)

Method: Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
26	K2002456-003	1	1.431	0.0778	1.3528	1.3528	1.35	3/22/2020
27	K2002456-004	1	1.433	0.0778	1.3548	1.3548	1.35	3/22/2020
28	K2002456-004	1	1.375	0.0778	1.2971	1.2971	1.3	3/22/2020
29	ccv	1	25.130	0.0778	25.0525	25.0525	25.1	3/23/2020
30	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/23/2020
31		1		0.0000	0.0000	0	<0.5	
32		1		0.0000	0.0000	0	<0.5	
33		1		0.0000	0.0000	0	<0.5	
34		1		0.0000	0.0000	0	<0.5	
35		1		0.0000	0.0000	0	<0.5	
36		1		0.0000	0.0000	0	<0.5	
37		1		0.0000	0.0000	0	<0.5	
38		1		0.0000	0.0000	0	<0.5	
39		1		0.0000	0.0000	0	<0.5	
40		1		0.0000	0.0000	0	<0.5	
41		1		0.0000	0.0000	0	<0.5	
42		1		0.0000	0.0000	0	<0.5	
43		1		0.0000	0.0000	0	<0.5	
44		1		0.0000	0.0000	0	<0.5	
45		1		0.0000	0.0000	0	<0.5	
46		1		0.0000	0.0000	0	<0.5	
47		1		0.0000	0.0000	0	<0.5	
48		1		0.0000	0.0000	0	<0.5	
49		1		0.0000	0.0000	0	<0.5	
50		1		0.0000	0.0000	0	<0.5	

Analyzed By: <i>BCP</i>	Date Analyzed: <i>3/21/20</i>
Reviewed By:	Date Reviewed:

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER)

Method: Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	25.130	0.0778	25.0525	25.0525	25.1	3/23/2020
3	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/23/2020
4	mb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/23/2020
5	lcs	1	24.199	0.0778	24.1209	24.1209	24.1	3/23/2020
6	K2002462-002	1	4.117	0.0778	4.0393	4.0393	4.04	3/23/2020
7	K2002462-002	1	4.067	0.0778	3.9892	3.9892	4.0	3/23/2020
8	KQ2004010-07	1	32.047	0.0778	31.9695	31.9695	32	3/23/2020
9	K2002422-001	1	9.445	0.0778	9.3675	9.3675	9.37	3/23/2020
10	K2002422-001	1	9.612	0.0778	9.5338	9.5338	9.53	3/23/2020
11	ccv	1	25.060	0.0778	24.9820	24.982	25.0	3/23/2020
12	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/23/2020
13		1		0.0000	0.0000	0	<0.5	
14		1		0.0000	0.0000	0	<0.5	
15		1		0.0000	0.0000	0	<0.5	
16		1		0.0000	0.0000	0	<0.5	
17		1		0.0000	0.0000	0	<0.5	
18		1		0.0000	0.0000	0	<0.5	
19		1		0.0000	0.0000	0	<0.5	
20		1		0.0000	0.0000	0	<0.5	
21		1		0.0000	0.0000	0	<0.5	
22		1		0.0000	0.0000	0	<0.5	
23		1		0.0000	0.0000	0	<0.5	
24		1		0.0000	0.0000	0	<0.5	
25		1		0.0000	0.0000	0	<0.5	

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

Analyzed By: <i>BCP</i>	Date Analyzed: <i>3/23/20</i>
Reviewed By:	Date Reviewed:

TOC: 674209,
674225,
674226
DOC: 674227

Schedule: 03212020

Version: 4

Instrument: Fusion1

Last Saved by: Fusion1 (Fusion1)

Last Saved on: 2020/03/21 21:07 - Saturday

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use	State
(Clean)	Clean	Clean		1	True	Ready
74	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
(Clean)	Clean	Clean		1	True	Ready
(Clean)	Clean	Clean		1	True	Ready
D	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
1	Sample	MB1	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
2	Sample	ICS	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
3	Sample	K2002337-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
4	Sample	K2002337-001.01 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
5	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
6	Sample	K2002337-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
7	Sample	K2002337-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
8	Sample	K2002337-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
9	Sample	K2002337-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
10	Sample	K2002337-006.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
11	Sample	K2002337-007.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
12	Sample	K2002276-001.01 10x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
13	Sample	K2002365-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
14	Sample	K2002353-001.01 400x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
15	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
16	Sample	K2002412-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
17	Sample	K2002412-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
18	Sample	K2002412-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
19	Sample	K2002412-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
20	Sample	MB2	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
21	Sample	K2002412-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
22	Sample	K2002412-006.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
23	Sample	K2002412-007.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
24	Sample	K2002412-008.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
25	Sample	K2002434-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
26	Sample	K2002434-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
27	Sample	K2002434-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
28	Sample	K2002416-001.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
29	Sample	K2002416-001.02 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
30	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
31	Sample	K2002416-002.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
32	Sample	K2002416-003.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
33	Sample	K2002416-004.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
34	Sample	K2002462-001.06	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
35	Sample	K2002470-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
36	Sample	K2002471-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
37	Sample	K2002489-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
38	Sample	K2002492-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready

Printed on: March 24, 2020 09:26:01

Page 1

Schedule: 03212020

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use	State
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
39	Sample	MB3	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [25.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
40	Sample	K2002496-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
41	Sample	K2002421-001.12	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
42	Sample	K2002421-002.12	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
43	Sample	K2002421-003.12	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
44	Sample	K2002421-004.12	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
45	Sample	K2002432-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
46	Sample	K2002432-001.01 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
47	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
48	Sample	K2002437-001.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
49	Sample	K2002437-002.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
50	Sample	K2002437-003.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
51	Sample	K2002437-004.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
52	Sample	K2002437-005.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
53	Sample	K2002456-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
54	Sample	K2002456-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
55	Sample	K2002456-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
56	Sample	K2002456-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
57	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
58	Sample	MB4	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [25.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
59	Sample	K2002462-002.04 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
60	Sample	K2002462-002.04 ms doc	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
61	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
62	Sample	FB 3/19/20 1619	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
63	Sample	K2002422-001.04 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
64	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
					False	

Fusion Report - 03212020

Saturday, March 21, 2020 04:44 PM

(View - Reps, Unused Reps, Meta-Data, Signature, History)
Printed on 2020/03/24 09:26 -
Tuesday

Report Summary Information

Company Location: Gen Chem Lab
 Schedule Name: 03212020
 Instrument Name: Fusion1
 Report Version: 1 of 1
 Report Creation by Operators (schedule version): Fusion1 (Fusion1) (v2)
 Fusion1 (Fusion1) (v3)
 Fusion1 (Fusion1) (v4)
 Comment:

Engine Version: 1.1.5.1
 Firmware Version: 1.2.0696
 Connection: RS232 COM1

Report Results

Sample Type: Clean

From Schedule Version 2

Pos	Analysis Type	Sample ID	Start Time
♦ (clean)		Clean	2020/03/21 16:44

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	12.01	16.15	4.14	49.81	08:01
2	TC Clean	18.09	21.86	3.77	49.56	07:17
3	TC Clean	6.93	10.79	3.86	49.61	07:02
4	TC Clean	5.02	8.90	3.88	49.63	07:01

Sample Type: Sample

From Schedule Version 2

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
♦ 74	TOC	RB	0.4528 ppm	0.0533 ppm	11.7700%	2020/03/21 17:18

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4804	4.8037	10.62	14.37	3.75	49.71	10:29
2	TOC	0.4973	4.9732	10.74	14.56	3.82	49.67	10:29
3	TOC	0.4567	4.5672	10.46	14.14	3.68	49.67	10:27
4	TOC	0.3769	3.7687	9.93	13.76	3.83	49.65	10:29

Dilution

Blank Contribution

Method

Calibration

1:10 (TC) 7.3916 (IC) CAS_salt_010711 CAS_salt_010711
(v1364) (v4) (v32)

Sample Type: Clean

From Schedule Version 2

Pos	Analysis Type	Sample ID	Start Time
◆ (clean)		Clean	2020/03/21 18:14

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	9.17	13.91	4.74	49.79	07:59
2	TC Clean	6.79	10.62	3.83	49.55	07:20
3	TC Clean	4.32	8.23	3.91	49.61	07:00
4	TC Clean	3.54	7.40	3.86	49.60	07:01

Sample Type: Clean

From Schedule Version 2

Pos	Analysis Type	Sample ID	Start Time
◆ (clean)		Clean	2020/03/21 18:48

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.92	4.73	3.81	49.82	07:59
2	TC Clean	8.57	12.40	3.83	49.62	07:17
3	TC Clean	4.30	8.10	3.80	49.63	07:00
4	TC Clean	3.55	7.36	3.81	49.65	07:03

Sample Type: Sample

From Schedule Version 2

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆ D	TOC	RB	0.2621 ppm	0.0000 ppm	0.0000%	2020/03/21 19:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2621	2.6207	9.15	12.95	3.80	49.69	10:31

<u>Dilution</u>	<u>Blank Contribution</u>	<u>Method</u>	<u>Calibration</u>
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCB

From Schedule Version 3

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time

♦	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0432 ppm (PASS)	0.0000 ppm	0%	2020/03/21 19:37
Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0432	0.4318	8.11	11.92	3.82	49.72	10:29
<u>Completion State</u>		<u>Success Action</u>		<u>Method</u>		<u>Calibration</u>		<u>STD Conc - Pos D</u>		
Success - Criteria met.		Do Nothing		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)		0 ppmC		

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 3

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time	
♦	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.4058 ppm (PASS)	0.0000 ppm	0%	2020/03/21 19:52
Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.4058	264.0582	185.40	189.22	3.82	49.75	10:33
<u>Completion State</u>		<u>Success Action</u>		<u>Method</u>		<u>Calibration</u>		<u>STD Conc - Pos B</u>		
Success - Criteria met.		Do Nothing		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)		50 ppmC		

Sample Type: Sample From Schedule Version 3

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time		
♦	1	TOC	MB1	0.3656 ppm	0.0000 ppm	0.0000%	2020/03/21 20:07	
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3656	3.6557	9.85	13.62	3.77	49.76	10:35
<u>Dilution</u>		<u>Blank Contribution</u>		<u>Method</u>		<u>Calibration</u>		
1:10		(TC) 7.3916 (IC) (v1364)		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)		

Sample Type: Check Standard --> LCS From Schedule Version 3

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time	
♦	C	TOC	25.0000	1:1	[TOC] LCS [24.0 ppm]	0 / infinity (NA / NA)	24.9536 ppm (PASS)	0.0000 ppm	0%	2020/03/21 20:21
Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.9536	249.5362	175.63	179.68	4.05	49.79	10:33

<u>Completion State</u>	<u>Success Action</u>	<u>Method</u>	<u>Calibration</u>	<u>STD Conc - Pos C</u>
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	25 ppmC

Sample Type: Sample

From Schedule Version 3

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
2	TOC	ICS	2.0813 ppm	0.0000 ppm	0.0000%	2020/03/21 20:36

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.0813	20.8126	21.39	25.32	3.93	49.83	10:29

<u>Dilution</u>	<u>Blank Contribution</u>	<u>Method</u>	<u>Calibration</u>
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
3	TOC	K2002337-001.01	0.9886 ppm	0.0076 ppm	0.7700%	2020/03/21 20:51

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9940	9.9397	14.08	17.85	3.78	49.85	10:28
2	TOC	0.9833	9.8327	14.00	17.80	3.80	49.88	10:28

<u>Dilution</u>	<u>Blank Contribution</u>	<u>Method</u>	<u>Calibration</u>
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Sample

From Schedule Version 4

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
4	TOC	K2002337-001.01 ms	29.5612 ppm	0.0000 ppm	0.0000%	2020/03/21 21:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	29.5612	295.6123	206.19	209.98	3.79	49.90	10:33

<u>Dilution</u>	<u>Blank Contribution</u>	<u>Method</u>	<u>Calibration</u>
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
5	TOC	RB	0.2728 ppm	0.0000 ppm	0.0000%	2020/03/21 21:34

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2728	2.7278	9.23	12.95	3.72	49.94	10:32

<u>Dilution</u>	<u>Blank Contribution</u>	<u>Method</u>	<u>Calibration</u>
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time		
6	TOC	K2002337-002.01	0.8974 ppm	0.0415 ppm	4.6300%	2020/03/21 21:48		
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9268	9.2676	13.62	17.26	3.63	49.95	10:26
2	TOC	0.8680	8.6802	13.23	17.12	3.89	49.98	10:30
<u>Dilution</u>		<u>Blank Contribution</u>		<u>Method</u>	<u>Calibration</u>			
1:10		(TC) 7.3916 (IC) (v1364)		CAS_salt_010711 (v4)	CAS_salt_010711 (v32)			
Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time		
7	TOC	K2002337-003.01	0.8143 ppm	0.0520 ppm	6.3900%	2020/03/21 22:16		
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8511	8.5107	13.12	16.70	3.59	49.97	10:27
2	TOC	0.7775	7.7747	12.62	16.55	3.93	50.00	10:27
<u>Dilution</u>		<u>Blank Contribution</u>		<u>Method</u>	<u>Calibration</u>			
1:10		(TC) 7.3916 (IC) (v1364)		CAS_salt_010711 (v4)	CAS_salt_010711 (v32)			
Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time		
8	TOC	K2002337-004.01	0.7537 ppm	0.0078 ppm	1.0300%	2020/03/21 22:44		
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7592	7.5918	12.50	16.55	4.05	50.01	10:30
2	TOC	0.7482	7.4817	12.42	16.32	3.90	50.00	10:29
<u>Dilution</u>		<u>Blank Contribution</u>		<u>Method</u>	<u>Calibration</u>			
1:10		(TC) 7.3916 (IC) (v1364)		CAS_salt_010711 (v4)	CAS_salt_010711 (v32)			
Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time		
9	TOC	K2002337-005.01	0.5361 ppm	0.0093 ppm	1.7300%	2020/03/21 23:12		
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5296	5.2958	10.95	14.68	3.72	49.98	10:30
2	TOC	0.5427	5.4267	11.04	14.79	3.75	49.99	10:29
<u>Dilution</u>		<u>Blank Contribution</u>		<u>Method</u>	<u>Calibration</u>			
1:10		(TC) 7.3916 (IC) (v1364)		CAS_salt_010711 (v4)	CAS_salt_010711 (v32)			

Sample Type: Check Standard --> CCV 25 ppm

From Schedule Version 4

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.3792 ppm	0.0000 ppm	0%	2020/03/21 23:40

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.3792	263.7921	185.22	188.92	3.71	50.01	10:34
Completion State		Success Action		Method		Calibration		STD Conc - Pos B		
Success - Criteria met.		Do Nothing		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)		50 ppmC		

Sample Type: Check Standard --> CCB From Schedule Version 4

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
♦ D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.1999 ppm (PASS)	0.0000 ppm	0%	2020/03/21 23:55

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.1999	1.9991	9.16	12.96	3.80	50.00	10:32
Completion State		Success Action		Method		Calibration		STD Conc - Pos D		
Success - Criteria met.		Do Nothing		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)		0 ppmC		

Sample Type: Sample From Schedule Version 4

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
♦ 10	TOC	K2002337-006.01	1.9404 ppm	0.0159 ppm	0.8200%	2020/03/22 00:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9516	19.5160	20.52	24.28	3.76	50.01	10:33
2	TOC	1.9291	19.2914	20.37	24.25	3.89	49.98	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
♦ 11	TOC	K2002337-007.01	0.6836 ppm	0.0367 ppm	5.3700%	2020/03/22 00:38

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7095	7.0951	12.16	15.91	3.75	49.97	10:25
2	TOC	0.6576	6.5762	11.81	15.68	3.87	49.95	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Pos	Analysis	Sample ID	Result (ppmC)	Std. Dev.	RSD	Start Time
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Type	(ppmC)
12 TOC K2002276-001.01 10x	5.9640 ppm 0.0468 ppm 0.7800%

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.9309	59.3095	47.28	51.18	3.91	49.95	10:27
2	TOC	5.9971	59.9712	47.72	51.51	3.79	49.96	10:27

Dilution 1:10
Blank Contribution (TC) 7.3916 (IC) (v1364)
Method CAS_salt_010711 (v4)
Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
13	TOC	K2002365-001.01	6.8196 ppm	0.0075 ppm	0.1100%	2020/03/22 01:34

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	6.8249	68.2493	53.29	57.25	3.96	49.94	10:26
2	TOC	6.8144	68.1437	53.22	57.13	3.91	49.94	10:29

Dilution 1:10
Blank Contribution (TC) 7.3916 (IC) (v1364)
Method CAS_salt_010711 (v4)
Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
14	TOC	K2002353-001.01 400x	1.2985 ppm	0.0376 ppm	2.9000%	2020/03/22 02:03

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.3251	13.2513	16.30	20.20	3.90	49.93	10:28
2	TOC	1.2719	12.7189	15.94	19.92	3.97	49.90	10:25

Dilution 1:10
Blank Contribution (TC) 7.3916 (IC) (v1364)
Method CAS_salt_010711 (v4)
Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
15	TOC	RB	0.0981 ppm	0.0036 ppm	3.6500%	2020/03/22 02:31

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1006	1.0059	8.07	11.84	3.77	49.88	10:26
2	TOC	0.0955	0.9553	8.03	12.08	4.05	49.88	10:29

Dilution 1:10
Blank Contribution (TC) 7.3916 (IC) (v1364)
Method CAS_salt_010711 (v4)
Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
16	TOC	K2002412-001.01	10.5546 ppm	0.2870 ppm	2.7200%	2020/03/22 02:59

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	10.7576	107.5758	79.74	83.68	3.95	49.85	10:29
2	TOC	10.3516	103.5163	77.01	80.95	3.94	49.85	10:26

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
17	TOC	K2002412-002.01	2.3288 ppm	0.1450 ppm	6.2300%	2020/03/22 03:27

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.4313	24.3130	23.74	27.73	3.98	49.85	10:28
2	TOC	2.2262	22.2625	22.36	26.60	4.24	49.85	10:28

Dilution 1:10 **Blank Contribution** (TC) 7.3916 (IC) (v1364) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
18	TOC	K2002412-003.01	44.7487 ppm	0.2255 ppm	0.5000%	2020/03/22 03:55

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	44.9082	449.0821	309.40	313.24	3.84	49.85	10:30
2	TOC	44.5892	445.8925	307.25	311.28	4.03	49.85	10:30

Dilution 1:10 **Blank Contribution** (TC) 7.3916 (IC) (v1364) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
19	TOC	K2002412-004.01	1.1317 ppm	0.2040 ppm	18.0300%	2020/03/22 04:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.2759	12.7591	15.97	20.08	4.10	49.87	10:27
2	TOC	0.9874	9.8743	14.03	18.07	4.04	49.92	10:28

Dilution 1:10 **Blank Contribution** (TC) 7.3916 (IC) (v1364) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm

From Schedule Version 4

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.5377 ppm (PASS)	0.0000 ppm	0%	2020/03/22 04:51

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.5377	265.3772	186.28	190.22	3.94	49.88	10:30

Completion State Success - Criteria **Success Action** Do Nothing **Method** CAS_salt_010711 **Calibration** CAS_salt_010711 **STD Conc - Pos B** 50 ppmC

met.

(v4)

(v32)

Sample Type: Check Standard --> CCB

From Schedule Version 4

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◊ D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0545 ppm (PASS)	0.0000 ppm	0%	2020/03/22 05:06

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0545	0.5449	8.18	12.24	4.06	49.92	10:32

Completion State

Success - Criteria met.

Success Action

Do Nothing

Method

CAS_salt_010711 (v4)

Calibration

CAS_salt_010711 (v32)

STD Conc - Pos D

0 ppmC

Sample Type: Sample

From Schedule Version 4

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◊ 20	TOC	MB2	0.1357 ppm	0.0000 ppm	0.0000%	2020/03/22 05:21

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1357	1.3568	8.30	12.27	3.97	49.92	10:32

Dilution

1:10

Blank Contribution

(TC) 7.3916 (IC) (v1364)

Method

CAS_salt_010711 (v4)

Calibration

CAS_salt_010711 (v32)

Sample Type: Check Standard --> LCS

From Schedule Version 4

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◊ C	TOC	25.0000	1:1	[TOC] LCS [24.0 ppm]	0 / infinity (NA / NA)	24.6983 ppm (PASS)	0.0000 ppm	0%	2020/03/22 05:35

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.6983	246.9831	173.91	177.85	3.94	49.91	10:35

Completion State

Success - Criteria met.

Success Action

Do Nothing

Method

CAS_salt_010711 (v4)

Calibration

CAS_salt_010711 (v32)

STD Conc - Pos C

25 ppmC

Sample Type: Sample

From Schedule Version 4

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time

♦	21	TOC	K2002412-005.01	4.5686 ppm	0.1148 ppm	2.5100%	2020/03/22 05:50
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Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.6498	46.4975	38.66	42.58	3.92	49.92	10:28
2	TOC	4.4874	44.8737	37.57	41.59	4.02	49.93	10:29

Dilution 1:10
Blank Contribution (TC) 7.3916 (IC) (v1364)
Method CAS_salt_010711 (v4)
Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time	
♦	22	TOC	K2002412-006.01	31.0641 ppm	0.3704 ppm	1.1900%	2020/03/22 06:18

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	31.3260	313.2600	218.06	222.06	4.00	49.92	10:27
2	TOC	30.8021	308.0213	214.54	218.63	4.09	49.93	10:27

Dilution 1:10
Blank Contribution (TC) 7.3916 (IC) (v1364)
Method CAS_salt_010711 (v4)
Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time	
♦	23	TOC	K2002412-007.01	0.7597 ppm	0.1427 ppm	18.7800%	2020/03/22 06:46

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8606	8.6059	13.18	17.31	4.14	49.93	10:28
2	TOC	0.6588	6.5880	11.82	15.93	4.11	49.94	10:29

Dilution 1:10
Blank Contribution (TC) 7.3916 (IC) (v1364)
Method CAS_salt_010711 (v4)
Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time	
♦	24	TOC	K2002412-008.01	5.3228 ppm	0.0364 ppm	0.6800%	2020/03/22 07:14

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.2970	52.9704	43.01	47.07	4.06	49.93	10:27
2	TOC	5.3485	53.4849	43.36	47.40	4.04	49.95	10:26

Dilution 1:10
Blank Contribution (TC) 7.3916 (IC) (v1364)
Method CAS_salt_010711 (v4)
Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time	
♦	25	TOC	K2002434-001.01	0.2946 ppm	0.0331 ppm	11.2400%	2020/03/22 07:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3180	3.1799	9.53	13.49	3.96	49.96	10:27
2	TOC	0.2711	2.7115	9.22	13.14	3.93	49.95	10:27

Dilution 1:10 **Blank Contribution** (TC) 7.3916 (IC) (v1364) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
26	TOC	K2002434-002.01	0.6819 ppm	0.0107 ppm	1.5700%	2020/03/22 08:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6894	6.8944	12.03	15.93	3.91	49.95	10:31
2	TOC	0.6743	6.7427	11.93	15.87	3.94	49.94	10:26

Dilution 1:10 **Blank Contribution** (TC) 7.3916 (IC) (v1364) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
27	TOC	K2002434-003.01	0.2246 ppm	0.0465 ppm	20.6900%	2020/03/22 08:39

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1917	1.9174	8.68	12.65	3.97	49.94	10:25
2	TOC	0.2575	2.5746	9.12	13.14	4.02	49.95	10:26

Dilution 1:10 **Blank Contribution** (TC) 7.3916 (IC) (v1364) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
28	TOC	K2002416-001.02	0.0905 ppm	0.0113 ppm	12.4200%	2020/03/22 09:07

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0985	0.9850	8.05	11.97	3.92	49.94	10:26
2	TOC	0.0826	0.8259	7.95	11.91	3.97	49.95	10:30

Dilution 1:10 **Blank Contribution** (TC) 7.3916 (IC) (v1364) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm

From Schedule Version 4

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.8425 ppm (PASS)	0.0000 ppm	0%	2020/03/22 09:35

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.8425	258.4255	181.61	185.65	4.04	49.95	10:31

Completion State Success - Criteria **Success Action** Do Nothing **Method** CAS_salt_010711 **Calibration** CAS_salt_010711 **STD Conc - Pos B** 50 ppmC

met.

(v4)

(v32)

Sample Type: Check Standard --> CCB

From Schedule Version 4

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
♦ D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/22 09:49

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	7.06	10.95	3.89	49.94	10:28

<u>Completion State</u>	<u>Success Action</u>	<u>Method</u>	<u>Calibration</u>	<u>STD Conc - Pos D</u>
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample

From Schedule Version 4

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
♦ 29	TOC	K2002416-001.02 ms	27.8620 ppm	0.0000 ppm	0.0000%	2020/03/22 10:04

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	27.8620	278.6204	194.76	198.67	3.91	49.95	10:29

<u>Dilution</u>	<u>Blank Contribution</u>	<u>Method</u>	<u>Calibration</u>
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
♦ 30	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/22 10:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	7.09	11.09	4.00	49.95	10:33

<u>Dilution</u>	<u>Blank Contribution</u>	<u>Method</u>	<u>Calibration</u>
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
♦ 31	TOC	K2002416-002.02	0.0917 ppm	0.0101 ppm	11.0100%	2020/03/22 10:33

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0988	0.9880	8.06	12.13	4.08	49.96	10:26
2	TOC	0.0845	0.8453	7.96	12.11	4.15	49.97	10:26

<u>Dilution</u>	<u>Blank Contribution</u>	<u>Method</u>	<u>Calibration</u>
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
32	TOC	K2002416-003.02	0.2530 ppm	0.0254 ppm	10.0600%	2020/03/22 11:01

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2710	2.7100	9.21	13.27	4.06	49.93	10:29
2	TOC	0.2350	2.3501	8.97	12.92	3.95	49.92	10:27

Dilution 1:10 **Blank Contribution** (TC) 7.3916 (IC) (v1364) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
33	TOC	K2002416-004.02	1.6097 ppm	0.0073 ppm	0.4500%	2020/03/22 11:29

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.6148	16.1479	18.25	22.09	3.84	49.94	10:26
2	TOC	1.6045	16.0453	18.18	22.08	3.90	49.92	10:30

Dilution 1:10 **Blank Contribution** (TC) 7.3916 (IC) (v1364) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
34	TOC	K2002462-001.06	3.0392 ppm	0.0019 ppm	0.0600%	2020/03/22 11:58

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.0405	30.4052	27.84	31.73	3.89	49.91	10:31
2	TOC	3.0378	30.3785	27.82	31.60	3.78	49.91	10:29

Dilution 1:10 **Blank Contribution** (TC) 7.3916 (IC) (v1364) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
35	TOC	K2002470-001.01	2.1044 ppm	0.0619 ppm	2.9400%	2020/03/22 12:26

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.1482	21.4818	21.84	25.60	3.76	49.92	10:27
2	TOC	2.0606	20.6059	21.25	25.19	3.94	49.92	10:31

Dilution 1:10 **Blank Contribution** (TC) 7.3916 (IC) (v1364) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
36	TOC	K2002471-001.01	4.4447 ppm	0.0904 ppm	2.0300%	2020/03/22 12:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.5086	45.0863	37.71	41.74	4.03	49.90	10:29

2	TOC	4.3808	43.8075	36.85	40.81	3.96	49.89	10:28
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Dilution 1:10
Blank Contribution (TC) 7.3916 (IC) (v1364)
Method CAS_salt_010711 (v4)
Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
37	TOC	K2002489-001.01	4.7622 ppm	0.0543 ppm	1.1400%	2020/03/22 13:22

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.8005	48.0053	39.67	43.66	3.99	49.91	10:29
2	TOC	4.7238	47.2380	39.16	43.00	3.84	49.91	10:26

Dilution 1:10
Blank Contribution (TC) 7.3916 (IC) (v1364)
Method CAS_salt_010711 (v4)
Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
38	TOC	K2002492-002.01	0.4658 ppm	0.0189 ppm	4.0600%	2020/03/22 13:50

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4524	4.5241	10.43	14.40	3.97	49.90	10:27
2	TOC	0.4792	4.7918	10.61	14.28	3.66	49.89	10:26

Dilution 1:10
Blank Contribution (TC) 7.3916 (IC) (v1364)
Method CAS_salt_010711 (v4)
Calibration CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm

From Schedule Version 4

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.6946 ppm (PASS)	0.0000 ppm	0%	2020/03/22 14:19

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.6946	256.9459	180.61	184.49	3.88	49.89	10:30

Completion State Success - Criteria met.
Success Action Do Nothing
Method CAS_salt_010711 (v4)
Calibration CAS_salt_010711 (v32)
STD Conc - Pos B 50 ppmC

Sample Type: Check Standard --> CCB

From Schedule Version 4

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/22 14:33

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	6.32	10.16	3.85	49.87	10:30
<u>Completion State</u>		<u>Success Action</u>		<u>Method</u>		<u>Calibration</u>		<u>STD Conc - Pos D</u>		
Success - Criteria met.		Do Nothing		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)		0 ppmC		

Sample Type: Sample From Schedule Version 4

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
39	TOC	MB3	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/22 14:48

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.92	9.75	3.83	49.87	10:34
<u>Dilution</u>		<u>Blank Contribution</u>		<u>Method</u>		<u>Calibration</u>		
1:10		(TC) 7.3916 (IC) (v1364)		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)		

Sample Type: Check Standard --> LCS From Schedule Version 4

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
C	TOC	25.0000	1:1	[TOC] LCS [25.0 ppm]	0 / infinity (NA / NA)	24.7423 ppm (PASS)	0.0000 ppm	0%	2020/03/22 15:03

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.7423	247.4232	174.21	178.06	3.85	49.87	10:34
<u>Completion State</u>		<u>Success Action</u>		<u>Method</u>		<u>Calibration</u>		<u>STD Conc - Pos C</u>		
Success - Criteria met.		Do Nothing		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)		25 ppmC		

Sample Type: Sample From Schedule Version 4

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
40	TOC	K2002496-001.01	14.0184 ppm	0.6231 ppm	4.4400%	2020/03/22 15:17

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	14.4590	144.5901	104.63	108.44	3.81	49.85	10:28
2	TOC	13.5778	135.7782	98.70	102.54	3.83	49.84	10:29
<u>Dilution</u>		<u>Blank Contribution</u>		<u>Method</u>		<u>Calibration</u>		
1:10		(TC) 7.3916 (IC) (v1364)		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)		

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
41	TOC	K2002421-001.12	1.5767 ppm	0.0401 ppm	2.5400%	2020/03/22 15:45

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.6050	16.0498	18.18	22.01	3.83	49.82	10:28
2	TOC	1.5483	15.4833	17.80	21.76	3.95	49.80	10:27

Dilution 1:10 **Blank Contribution** (TC) 7.3916 (IC) (v1364) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
42	TOC	K2002421-002.12	0.8540 ppm	0.0165 ppm	1.9300%	2020/03/22 16:14

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8656	8.6565	13.21	17.17	3.96	49.80	10:29
2	TOC	0.8423	8.4230	13.06	16.87	3.81	49.81	10:26

Dilution 1:10 **Blank Contribution** (TC) 7.3916 (IC) (v1364) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
43	TOC	K2002421-003.12	1.7781 ppm	0.0172 ppm	0.9700%	2020/03/22 16:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.7659	17.6587	19.27	23.22	3.95	49.79	10:29
2	TOC	1.7903	17.9026	19.43	23.24	3.81	49.77	10:32

Dilution 1:10 **Blank Contribution** (TC) 7.3916 (IC) (v1364) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
44	TOC	K2002421-004.12	0.8774 ppm	0.0261 ppm	2.9700%	2020/03/22 17:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8958	8.9583	13.42	17.18	3.76	49.77	10:27
2	TOC	0.8590	8.5895	13.17	16.92	3.75	49.78	10:28

Dilution 1:10 **Blank Contribution** (TC) 7.3916 (IC) (v1364) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
45	TOC	K2002432-001.01	0.1255 ppm	0.0243 ppm	19.3500%	2020/03/22 17:38

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1083	1.0832	8.12	11.94	3.82	49.80	10:28

2	TOC	0.1427	1.4267	8.35	12.16	3.81	49.84	10:27
<u>Dilution</u>		<u>Blank Contribution</u>		<u>Method</u>		<u>Calibration</u>		
1:10		(TC) 7.3916 (IC) (v1364)		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)		
Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time		
46	TOC	K2002432-001.01 ms	26.3798 ppm	0.0000 ppm	0.0000%	2020/03/22 18:06		
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	26.3798	263.7980	184.80	188.75	3.96	49.85	10:30
<u>Dilution</u>		<u>Blank Contribution</u>		<u>Method</u>		<u>Calibration</u>		
1:10		(TC) 7.3916 (IC) (v1364)		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)		
Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time		
47	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/22 18:20		
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.97	9.86	3.88	49.86	10:31
<u>Dilution</u>		<u>Blank Contribution</u>		<u>Method</u>		<u>Calibration</u>		
1:10		(TC) 7.3916 (IC) (v1364)		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)		

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time	
B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.4176 ppm (PASS)	0.0000 ppm	0%	2020/03/22 18:35	
Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.4176	254.1757	178.75	182.64	3.89	49.88	10:33
<u>Completion State</u>		<u>Success Action</u>		<u>Method</u>		<u>Calibration</u>		<u>STD Conc - Pos B</u>		
Success - Criteria met.		Do Nothing		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)		50 ppmC		

Sample Type: Check Standard --> CCB From Schedule Version 4

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time	
D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/22 18:50	
Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time

D	TOC	0 ppm	1	0.0000	0.0000	6.08	9.82	3.74	49.92	10:32
---	-----	-------	---	--------	--------	------	------	------	-------	-------

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample

From Schedule Version 4

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
48	TOC	K2002437-001.03	1.8820 ppm	0.0408 ppm	2.1700%	2020/03/22 19:04

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9109	19.1085	20.24	24.02	3.78	49.93	10:29
2	TOC	1.8532	18.5316	19.85	23.57	3.71	49.95	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
49	TOC	K2002437-002.03	0.7951 ppm	0.0104 ppm	1.3100%	2020/03/22 19:33

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8024	8.0245	12.79	16.50	3.71	50.00	10:24
2	TOC	0.7877	7.8773	12.69	16.46	3.77	49.99	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
50	TOC	K2002437-003.03	3.1945 ppm	0.0197 ppm	0.6200%	2020/03/22 20:00

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.1806	31.8060	28.78	32.47	3.69	50.00	10:30
2	TOC	3.2084	32.0841	28.97	32.65	3.68	50.00	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
51	TOC	K2002437-004.03	0.7492 ppm	0.0484 ppm	6.4600%	2020/03/22 20:29

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7834	7.8341	12.66	16.42	3.76	50.00	10:32
2	TOC	0.7150	7.1501	12.20	15.91	3.71	50.03	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC)	CAS_salt_010711	CAS_salt_010711

(v1364)

(v4)

(v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
52	TOC	K2002437-005.03	0.6532 ppm	0.0170 ppm	2.6100%	2020/03/22 20:57

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6652	6.6520	11.86	15.62	3.76	50.00	10:25
2	TOC	0.6411	6.4111	11.70	15.67	3.96	50.03	10:26

Dilution

1:10

Blank Contribution(TC) 7.3916 (IC)
(v1364)MethodCAS_salt_010711
(v4)CalibrationCAS_salt_010711
(v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
53	TOC	K2002456-001.01	1.1335 ppm	0.0168 ppm	1.4800%	2020/03/22 21:25

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.1453	11.4535	15.09	18.93	3.84	50.00	10:25
2	TOC	1.1216	11.2156	14.93	18.88	3.94	50.02	10:27

Dilution

1:10

Blank Contribution(TC) 7.3916 (IC)
(v1364)MethodCAS_salt_010711
(v4)CalibrationCAS_salt_010711
(v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
54	TOC	K2002456-002.01	0.7645 ppm	0.0422 ppm	5.5200%	2020/03/22 21:53

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7943	7.9427	12.73	16.72	3.99	50.05	10:29
2	TOC	0.7346	7.3464	12.33	16.17	3.83	50.01	10:25

Dilution

1:10

Blank Contribution(TC) 7.3916 (IC)
(v1364)MethodCAS_salt_010711
(v4)CalibrationCAS_salt_010711
(v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
55	TOC	K2002456-003.01	1.4306 ppm	0.0000 ppm	0.0000%	2020/03/22 22:21

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.4306	14.3056	17.01	21.07	4.05	50.03	10:28
2	TOC	1.4306	14.3056	17.01	20.90	3.89	50.04	10:24

Dilution

1:10

Blank Contribution(TC) 7.3916 (IC)
(v1364)MethodCAS_salt_010711
(v4)CalibrationCAS_salt_010711
(v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
56	TOC	K2002456-004.01	1.4038 ppm	0.0408 ppm	2.9100%	2020/03/22 22:49

Rep	Base	ppm	µg	Adjusted	NDIR (Abs)	Baseline	Pressure	Run
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#	Analysis Type			(Abs)		(Abs)	(psig)	Time
1	TOC	1.4326	14.3264	17.03	21.09	4.07	50.03	10:26
2	TOC	1.3749	13.7494	16.64	20.59	3.96	50.03	10:31

Dilution 1:10 **Blank Contribution** (TC) 7.3916 (IC) (v1364) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
57	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/22 23:17

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.12	9.08	3.96	50.08	10:29
2	TOC	0.0000	0.0000	5.08	8.91	3.83	50.03	10:26
3	TOC	0.0000	0.0000	4.92	8.74	3.82	50.02	10:27
4	TOC	0.0000	0.0000	4.82	8.59	3.76	50.04	10:25

Dilution 1:10 **Blank Contribution** (TC) 7.3916 (IC) (v1364) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm

From Schedule Version 4

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.1303 ppm (PASS)	0.0000 ppm	0%	2020/03/23 00:13

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.1303	251.3028	176.82	180.56	3.74	50.04	10:33

Completion State Success - Criteria met. **Success Action** Do Nothing **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32) **STD Conc - Pos B** 50 ppmC

Sample Type: Check Standard --> CCB

From Schedule Version 4

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/23 00:27

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	5.42	9.22	3.80	50.03	10:33

Completion State Success - Criteria met. **Success Action** Do Nothing **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32) **STD Conc - Pos D** 0 ppmC

Sample Type: Sample							From Schedule Version 4		
Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time			
58	TOC	MB4	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/23 00:42			
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time	
1	TOC	0.0000	0.0000	5.04	8.76	3.72	50.03	10:31	
Dilution		Blank Contribution		Method		Calibration			
1:10		(TC) 7.3916 (IC) (v1364)		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)			

Sample Type: Check Standard --> LCS											From Schedule Version 4	
Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time			
C	TOC	25.0000	1:1	[TOC] LCS [25.0 ppm]	0 / infinity (NA / NA)	24.1987 ppm (PASS)	0.0000 ppm	0%	2020/03/23 00:57			
Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time		
C	TOC	25.0 ppm	1	24.1987	241.9868	170.55	174.42	3.87	50.01	10:33		
Completion State		Success Action		Method		Calibration		STD Conc - Pos C				
Success - Criteria met.		Do Nothing		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)		25 ppmC				

Sample Type: Sample							From Schedule Version 4		
Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time			
59	TOC	K2002462-002.04 doc	4.0921 ppm	0.0354 ppm	0.8700%	2020/03/23 01:11			
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time	
1	TOC	4.1171	41.1711	35.08	38.88	3.80	50.00	10:29	
2	TOC	4.0670	40.6700	34.74	38.61	3.87	50.04	10:26	
Dilution		Blank Contribution		Method		Calibration			
1:10		(TC) 7.3916 (IC) (v1364)		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)			
Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time			
60	TOC	K2002462-002.04 ms doc	32.0473 ppm	0.0000 ppm	0.0000%	2020/03/23 01:40			
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time	
1	TOC	32.0473	320.4734	222.91	226.80	3.89	50.01	10:31	
Dilution		Blank Contribution		Method		Calibration			

1:10 (TC) 7.3916 (IC) CAS_salt_010711 CAS_salt_010711
(v1364) (v4) (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
61	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/23 01:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.10	10.11	4.00	50.00	10:34

Dilution 1:10 Blank Contribution (TC) 7.3916 (IC) (v1364) Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
62	TOC	FB 3/19/20 1619	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/23 02:09

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.24	9.23	4.00	49.99	10:31

Dilution 1:10 Blank Contribution (TC) 7.3916 (IC) (v1364) Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
63	TOC	K2002422-001.04 doc	9.5284 ppm	0.1176 ppm	1.2300%	2020/03/23 02:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	9.4453	94.4531	70.91	74.94	4.03	50.01	10:29
2	TOC	9.6116	96.1156	72.03	75.73	3.70	49.98	10:25

Dilution 1:10 Blank Contribution (TC) 7.3916 (IC) (v1364) Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
64	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/23 02:52

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.59	9.48	3.89	49.99	10:29
2	TOC	0.0000	0.0000	5.25	9.15	3.90	49.99	10:29

Dilution 1:10 Blank Contribution (TC) 7.3916 (IC) (v1364) Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm

From Schedule Version 4

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
B	TOC	25.0000	1:2	[TOC] CCV 25	0 / infinity	25.0598	0.0000	0%	2020/03/23 03:20

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.0598	250.5980	176.34	180.27	3.92	49.97	10:32
Completion State		Success Action		Method		Calibration		STD Conc - Pos B		
Success - Criteria met.		Do Nothing		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)		50 ppmC		

Sample Type: Check Standard --> CCB From Schedule Version 4

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
♦ D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/23 03:35

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	5.46	9.42	3.96	50.00	10:31
Completion State		Success Action		Method		Calibration		STD Conc - Pos D		
Success - Criteria met.		Do Nothing		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)		0 ppmC		

Meta Data Used in this Report

Blanks

Version	Reagent (Abs)	Acid (Abs)	DI IC (Abs)	DI TC (Abs)	DI TOC (Abs)	Save Time	Operator
v1364	1.7787	1.3950	0.0000	0.0000	0.0000	2020/03/19 15:10	Fusion1 (Fusion1)

Calibrations

Name: CAS_salt_010711 (TOC)

Version: v32 Calibration curve formula: TOC: $y = 6.725x + 7.818$

Ver Creation: 2020/03/11 15:55 r^2 value: TOC: $r^2 = 0.99921$

Comment:

Operator: Fusion1 (Fusion1)

Basic Analysis Type: TOC

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
DI Water	5.8640	0.0000		2020/03/11 14:28
0.500 ppm	9.5210	0.5000		2020/03/11 14:42
1.0 ppm	12.5930	1.0000		2020/03/11 14:56
5.0 ppm	40.5270	5.0000		2020/03/11 15:10
10 ppm	79.5310	10.0000		2020/03/11 15:25
25 ppm	181.4610	25.0000		2020/03/11 15:39
50 ppm	340.5610	50.0000		2020/03/11 15:53

Methods

Name: CAS_salt_010711 (TOC)

Version: v4

Operator: Fusion1 (Fusion1)

Ver Creation: 2019/02/21 17:57

Comment:

Parameter	Value	Advanced Parameter	Value
SampleVolume	10.0 mL	NeedleRinseVolume	5.0 ml
Dilution	1:10	VialPrimeVolume	2.0 ml
AcidVolume	0.5 ml	ICSamplePrimeVolume	2.0 ml
ReagentVolume	2.0 ml	ICSpargeRinseVolume	12.0 ml
UVReactorPrerinse	Off	BaselineStabilizeTime	0.70 min
UVReactorPrerinseVolume	5.0	DetectorPressureFlow	150 ml/min
NumberOfUVReactorPrerinses	1	SyringeSpeedWaste	10
ICSpargeTime	1.00 mins	SyringeSpeedAcid	7
DetectorSweepFlow	500 ml/min	SyringeSpeedReagent	7
PreSpargeTime	2.00 mins	SyringeSpeedDIWater	7
SystemFlow	500 ml/min	NDIRPressurization	60 psig
		SyringeSpeedSampleDispense	5
		SyringeSpeedSampleAspirate	4
		SyringeSpeedUVDispense	5
		SyringeSpeedUVAspirate	5
		SyringeSpeedICDispense	5
		SyringeSpeedICAspirate	5
		NDIRPressureStabilize	1.75 min
		SampleMixing	Off
		SampleMixingCycles	1
		SampleMixingVolume	10.0
		LowLevelFilterNDIR	Off

Acceptance / Approval

Electronic Signatures

Report Version	User Name	Acceptance	Reason	Date
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Report History

Report History

Report Version	User Name	System Reason	User Reason	Date
1	Fusion1 (Fusion1)	Schedule completed	Schedule completed	2020/03/23 03:50

StarLIMS Run: 674205, 674225, 674226, 674227
 Analysis: DOC/TOC
 Method: SM 5310 C, 9060A, 415.1, 9060

CCV: 11-GEN-05-82C 50 ppm LCS: 11-GEN-05-79J 25.0 ppm

ICAL Date: 3/11/2020

ICAL ID: 19-GEN-8-7-E->J

ICS ID: 11-GEN-05-78M

ICS TV: 25.0 ppm

ICS % R < 1

Spike ID: 11-GEN-05-82C 0.05 ml of 5000 ppm stock ---> 10.0 ml = 25.0 ppm x dilution factor

Sodium Persulfate: 19-GEN-08-9-H

21 % H3PO4: 19-GEN-08-8-K

Equipment ID: K-TOC-03

PIPETTE ID: 124276B, 129001F, N11314F, Marge

FILTER ID: 16967789

Analyzed By: <i>for</i>	Date Analyzed: <i>21 3/24/20</i> <i>3/29/20</i>
Reviewed By: <i>gc</i>	Date Reviewed: <i>3/24/20</i>



March 30, 2020

Service Request No:E2000251

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS20030840

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory March 19, 2020
For your reference, these analyses have been assigned our service request number **E2000251**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental



Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client: ALS Houston
Project: HS20030840
Sample Matrix: W

Service Request No.: E2000251
Date Received: 03/19/20

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

One sample was received for analysis at ALS Environmental in Houston on 03/19/20.

The sample was received in good condition and is consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion**Precision and Accuracy:**

EQ2000110: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. The LCS and DLCS recoveries are within QC limits.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - US
Project: HS20030840

Service Request:E2000251

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
E2000251-001	LH18/24-SP650_031720_BIX	3/17/2020	1400

Service Request Summary

Folder #: E2000251
Client Name: ALS Environmental - US
Project Name: HS20030840
Project Number:
Report To: RJ Modashia
 ALS Laboratory Group
 10450 Stancliff Road
 Houston, TX 77099-4338
 USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 03/19/20
Internal Due Date: 4/2/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20030840
EDD: No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 7B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON C104 DOD/6850
E2000251-001	LH18/24-SP650_031720_BIX	Water	03/17/20 1400	IV

Service Request Summary

Folder #: E2000251
Client Name: ALS Environmental - US
Project Name: HS20030840
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA

Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 03/19/20
Internal Due Date: 4/2/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20030840
EDD: No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 7B
Pressure Gas:

Data Qualifiers

Lab Standard

- + Possible Tedlar bag artifact.
- A TIC is a suspected aldol-condensation product
- B Analyte found in the associated method blank as well as in the sample.
- BC Reported results are not blank corrected.
- BH The back section of the tube yielded higher results than the front.
- BT Results indicated possible breakthrough; back section $\geq 10\%$ front section.
- C Result identification confirmed.
- D Compound identified in an analysis at a secondary dilution factor
- D Spike was diluted out
- DE Reported results are corrected for desorption efficiency.
- E Estimated value. Concentration above calibration range
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- H1 Sample analysis performed past holding time. See case narrative.
- H2 Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
- H3 Sample was received and analyzed past holding time.
- H4 Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
- I Internal standard not within the specified limits. See case narrative.
- J Estimated Value. Concentration found below MRL.
- K A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
- K Analyte was detected above the method reporting limit prior to normalization.
- L1 Laboratory control sample recovery outside the specified limits; results may be biased high.
- L2 Laboratory control sample recovery outside the specified limits; results may be biased low.
- L3 Laboratory control sample recovery outside the specified limits.
- M Matrix interference; results may be biased high.
- M The duplicate injection precision not met.
- M1 Matrix interference due to coelution with a non-target compound; results may be biased high.
- N Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- P Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
- P Pesticide/Aroclor target analyte $> 40\%$ difference for detected concentrations between GC columns
- Q Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
- R Duplicate Precision not met.
- R1 Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
- S Surrogate recovery not within specified limits.

Data Qualifiers

Lab Standard

- S The reported value was determined by the Method of Standard Additions (MSA).
- T Analyte is a tentatively identified compound, result is estimated.
- U Compound was analyzed for, but was not detected (ND).
- V1 The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
- V2 The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
- W Result quantified, but the corresponding peak was detected outside the generated retention time window.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- X See case narrative.
- Y Recovery outside limits
- Y The chromatogram resembles a petroleum product but does not match the calibration standard.
- Z The chromatogram does not resemble a petroleum product.
- i The MRL/MDL has been elevated due to a matrix interference.

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Acronyms

Cal	Calibration
Conc	CONCetration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient



State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
Arizona Department of Health Services	AZ0793	5/27/2020
California Department of Health Services	2919	4/30/2020
Department of Defense	A2LA 2897.01	11/30/2021
Florida Department of Health	E87611	6/30/2020
Hawaii Department of Health	TX02694	4/30/2020
Illinois Environmental Protection Agency	2000322019-2	5/9/2020
Kansas Department of Health and Environment	E-10352	7/31/2020
Louisiana Department of Environmental Quality	03087	6/30/2020
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Center for Disease Control and Prevention	201815	6/5/2020
Maryland Department of the Environment	343	6/30/2020
Minnesota Department of Health	1785988	12/31/2020
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2020
Nevada Department of Conservation and Natural Resources	TX026932019-1	7/31/2020
New Hampshire Environmental Laboratory Accreditation Program	209419	4/24/2020
New Jersey Department of Environmental Protection	NLC190001	6/30/2020
New York Department of Health	11707	3/31/2020
Oklahoma Department of Environmental Quality	2019-067	8/31/2020
Pennsylvania Department of Environmental Protection	68-03441-013	6/30/2020
Tennessee Department of Environment and Conservation	04016	6/30/2020
Texas Commission on Environmental Quality	TX104704231-19-25	4/30/2020
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932019-9	7/31/2020
Washington Department of Health	C819	11/14/2020
West Virginia Department of Environmental Protection	347	6/30/2020



Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
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E2000251

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ALS Laboratory Group
HS20030840



10450 Stancliff Rd, Ste 210
Houston, TX 77099
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Subcontract Chain of Custody

SAMPLING STATE: Dept of Defense

COC ID: 13549

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff Road Suite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company: ALS Houston
Contact: RJ Modashia
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Email: RJ.Modashia@alsglobal.com
Alternate Contact:
Email:

INVOICE INFORMATION:

Company: ALS Houston
Contact: Accounts Payable
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Reference: HS20030840
TSR: Danielle Winnings

LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
ANALYSIS REQUESTED			DUE DATE
1. HS20030840-02	LH18/24-SP650_031720_BIX	Water	17 Mar 2020 14:00
SUB_Perch-6850			02 Apr 2020

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: J. MALWAN
Received By: URETA
Cooler ID(s): _____

Date/Time: 3/19/20 12:05
Date/Time: 3/19/20 12:09
Temperature(s): _____

RIGHT SOLUTIONS | RIGHT PARTNER



Cooler Receipt Form

Project Chemist CG

Client/Project ALS-H Thermometer ID 5M04

Date/Time Received: 3/14/20 Initials: CG Date/Time Logged in: 3/14/20 Initials CG

1. Method of delivery: US Mail Fed Ex UPS DHL ^{ALS} Courier Client

2. Samples received in: Cooler Box Envelope Other

3. Were custody seals on coolers? Yes No
 Were they intact? Yes No N/A
 Were they signed and dated? Yes No N/A
 If yes, how many and where?

4. Packing Material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Sleeves Other

5. Foreign or Regulated Soil? Yes No Location of Sampling: _____

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
-		3/14/20	1205	CG	0.3/0.7	<input checked="" type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>

- 6. Were custody papers properly filled out (ink, signed, dated, etc)? Yes No
- 7. Did all bottles arrive in good condition (not broken, no signs of leakage)? Yes No
- 8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? Yes No
- 9. Were appropriate bottles/containers and volumes received for the requested tests? Yes No
- 10. Did sample labels and tags agree with custody documents? Yes No

Notes, Discrepancies, & Resolutions:

Service request Label:

E2000251

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ALS Laboratory Group
HS20030840





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SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sample. The COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6°C.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10°C.
- ✓ Air samples are shipped and stored cold, at 0 to 6°C
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report



Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 355919
Team: Semivoa GCMS/KBROWN

Prep WorkFlow: GenExt28Day
Prep Method: Method

Status: Prepped
Prep Date/Time: 3/24/20 13:04

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2000225-001	LH18/24-SP650_031020_BIX	.01	6850/CIO4 DOD			Water	10mL	
2	E2000226-001	LH18/24-SP140_031020	.01	6850/CIO4 DOD			Water	10mL	
3	E2000227-001	LH18/24-SP650_031020_BIX	.01	6850/CIO4 DOD			Water	10mL	
4	E2000251-001	LH18/24-SP650_031720_BIX	.01	6850/CIO4 DOD			Water	10mL	
5	E2000263-001	LH18/24-SP650_032020_BIX	.01	6850/CIO4 DOD			Water	10mL	
6	EQ2000110-01	MB		6850/CIO4 DOD			Liquid	10mL	
7	EQ2000110-02	LCS		6850/CIO4 DOD			Liquid	10mL	
8	EQ2000110-03	DLCS		6850/CIO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4	Inventory ID: 202037	Logbook Ref: Sodium Perchlorate	Expires On: 05/22/2021
--	----------------------	---------------------------------	------------------------

E2000225-001	100.00µL	E2000226-001	100.00µL	E2000227-001	100.00µL	E2000251-001	100.00µL	E2000263-001	100.00µL	EQ2000110-01	100.00µL
EQ2000110-02	100.00µL	EQ2000110-03	100.00µL								

Name: Perchlorate Intermediate Stock1	Inventory ID: 204799	Logbook Ref: 200657 1.0ug/mL KN	Expires On: 05/15/2020
---------------------------------------	----------------------	---------------------------------	------------------------

E2000225-001	1.00µL	EQ2000110-02	1.00µL	EQ2000110-03	1.00µL
--------------	--------	--------------	--------	--------------	--------

Preparation Steps

Step: Preparation
 Started: 3/24/20 13:04
 Finished: 3/24/20 15:55
 By: KBROWN
 Comments

Comments: _____

Reviewed By: KB Date: 3/25/2020

Chain of Custody

Relinquished By: _____	Date: _____	<u>Extracts Examined</u>
Received By: _____	Date: _____	Yes No



Analytical Results

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Phone (713)266-1599 Fax (713)266-0130
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Analytical Report

Client: ALS Environmental - US
Project: HS20030840
Sample Matrix: Water
Sample Name: LH18/24-SP650_031720_BIX
Lab Code: E2000251-001

Service Request: E2000251
Date Collected: 03/17/20 14:00
Date Received: 03/19/20 12:05
Units: ug/L
Basis: NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analysis Method: 6850
Prep Method: Method
Sample Amount: 10mL
Data File Name: I:\LCMS01\DATA\20200325
ICAL Date: EC2000001

Date Analyzed: 03/25/20 16:01
Date Extracted: 3/24/20
Instrument Name: E-LCMS-01
GC Column: 1
Blank File Name:
Cal Ver. File Name:

Native Analyte Results

Analyte Name	Result	Q	DL	LOD	LOQ	Ion Ratio	RRT	Dilution Factor
Perchlorate	ND	U	0.0250	0.0500	0.100			1

Analytical Report

Client: ALS Environmental - US
Project: HS20030840
Sample Matrix: Water
Sample Name: Method Blank
Lab Code: EQ2000110-01

Service Request: E2000251
Date Collected: NA
Date Received: NA
Units: ug/L
Basis: NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analysis Method: 6850
Prep Method: Method
Sample Amount: 10mL
Data File Name: I:\LCMS01\DATA\20200325
ICAL Date: EC2000001

Date Analyzed: 03/25/20 15:13
Date Extracted: 3/24/20
Instrument Name: E-LCMS-01
GC Column: 1
Blank File Name:
Cal Ver. File Name:

Native Analyte Results

Analyte Name	Result	Q	DL	LOD	LOQ	Ion Ratio	RRT	Dilution Factor
Perchlorate	ND	U	0.0250	0.0500	0.100			1



Accuracy & Precision

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

QA/QC Report

Client: ALS Environmental - US
Project: HS20030840
Sample Matrix: Water

Service Request: E2000251
Date Analyzed: 03/25/20
Date Extracted: 03/24/20

Duplicate Lab Control Sample Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analysis Method: 6850
Prep Method: Method

Units: ug/L
Basis: NA
Analysis Lot: 674670

Lab Control Sample
EQ2000110-02

Duplicate Lab Control Sample
EQ2000110-03

<u>Analyte Name</u>	<u>Result</u>	<u>Spike Amount</u>	<u>% Rec</u>	<u>Result</u>	<u>Spike Amount</u>	<u>% Rec</u>	<u>% Rec Limits</u>	<u>RPD</u>	<u>RPD Limit</u>
Perchlorate	0.106	0.100	106	0.101	0.100	101	84-119	5	15

Analytical Report

Client: ALS Environmental - US
Project: HS20030840
Sample Matrix: Water
Sample Name: Lab Control Sample
Lab Code: EQ2000110-02

Service Request: E2000251
Date Collected: NA
Date Received: NA
Units: ug/L
Basis: NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analysis Method: 6850
Prep Method: Method
Sample Amount: 10mL
Data File Name: I:\LCMS01\DATA\20200325
ICAL Date: EC2000001

Date Analyzed: 03/25/20 15:21
Date Extracted: 3/24/20
Instrument Name: E-LCMS-01
GC Column: 1
Blank File Name:
Cal Ver. File Name:

Native Analyte Results

Analyte Name	Result	Q	DL	LOD	LOQ	Ion Ratio	RRT	Dilution Factor
Perchlorate	0.106		0.0250	0.0500	0.100			1

Analytical Report

Client: ALS Environmental - US
Project: HS20030840
Sample Matrix: Water
Sample Name: Duplicate Lab Control Sample
Lab Code: EQ2000110-03

Service Request: E2000251
Date Collected: NA
Date Received: NA
Units: ug/L
Basis: NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analysis Method: 6850
Prep Method: Method
Sample Amount: 10mL
Data File Name: I:\LCMS01\DATA\20200325
ICAL Date: EC2000001

Date Analyzed: 03/25/20 15:29
Date Extracted: 3/24/20
Instrument Name: E-LCMS-01
GC Column: 1
Blank File Name:
Cal Ver. File Name:

Native Analyte Results

Analyte Name	Result	Q	DL	LOD	LOQ	Ion Ratio	RRT	Dilution Factor
Perchlorate	0.101		0.0250	0.0500	0.100			1



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March 25, 2020

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS20031080**

Laboratory Results for: **Longhorn GW Treatment Plant - Special Samples**

Dear Marcia,

ALS Environmental received 2 sample(s) on Mar 25, 2020 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Raj. P. Modashia', enclosed in a circular scribble.

Generated By: JUMOKE.LAWAL
RJ Modashia
Project Manager

ALS Houston, US

Date: 25-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant - Special Samples
Work Order: HS20031080

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20031080-01	LH18/24-SP650-032420	Water		24-Mar-2020 14:00	25-Mar-2020 08:45	<input type="checkbox"/>
HS20031080-02	Trip Blank	Water	CG-021720 -81	24-Mar-2020 00:00	25-Mar-2020 08:45	<input type="checkbox"/>

ALS Houston, US

Date: 25-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant - Special Samples
Work Order: HS20031080

CASE NARRATIVE**GCMS Volatiles by Method SW8260****Batch ID: R358868**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
-

ALS Houston, US

Date: 25-Mar-20

Client: Bhate Environmental Associates, Inc.
 Project: Longhorn GW Treatment Plant - Special Samples
 Sample ID: LH18/24-SP650-032420
 Collection Date: 24-Mar-2020 14:00

ANALYTICAL REPORT
 WorkOrder:HS20031080
 Lab ID:HS20031080-01
 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED	
VOLATILES ORGANICS BY METHOD 8260C		Method:SW8260							Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
1,2-Dichloroethane	1.0		0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	25-Mar-2020 10:43	
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	25-Mar-2020 10:43	
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	25-Mar-2020 10:43	
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	25-Mar-2020 10:43	
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	25-Mar-2020 10:43	
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:43	

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 25-Mar-20

Client: Bhate Environmental Associates, Inc.
 Project: Longhorn GW Treatment Plant - Special Samples
 Sample ID: LH18/24-SP650-032420
 Collection Date: 24-Mar-2020 14:00

ANALYTICAL REPORT
 WorkOrder:HS20031080
 Lab ID:HS20031080-01
 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED	
VOLATILES ORGANICS BY METHOD 8260C		Method:SW8260							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
cis-1,2-Dichloroethene	26		0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	25-Mar-2020 10:43	
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	25-Mar-2020 10:43	
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	25-Mar-2020 10:43	
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
Trichloroethene	5.4		0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:43	
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>90.7</i>			0	<i>81-118</i>	%REC	1	25-Mar-2020 10:43	
<i>Surr: 4-Bromofluorobenzene</i>	<i>97.0</i>			0	<i>85-114</i>	%REC	1	25-Mar-2020 10:43	
<i>Surr: Dibromofluoromethane</i>	<i>95.0</i>			0	<i>80-119</i>	%REC	1	25-Mar-2020 10:43	
<i>Surr: Toluene-d8</i>	<i>105</i>			0	<i>89-112</i>	%REC	1	25-Mar-2020 10:43	

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 25-Mar-20

Client: Bhate Environmental Associates, Inc.
 Project: Longhorn GW Treatment Plant - Special Samples
 Sample ID: Trip Blank
 Collection Date: 24-Mar-2020 00:00

ANALYTICAL REPORT
 WorkOrder:HS20031080
 Lab ID:HS20031080-02
 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD		Method:SW8260						
8260C								Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:19
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:19
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	25-Mar-2020 10:19
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:19
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:19
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:19
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:19
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	25-Mar-2020 10:19
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	25-Mar-2020 10:19
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	25-Mar-2020 10:19
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:19
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:19
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:19
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	25-Mar-2020 10:19
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:19
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	25-Mar-2020 10:19
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:19
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	25-Mar-2020 10:19
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:19
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	25-Mar-2020 10:19
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:19
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	25-Mar-2020 10:19
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:19
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	25-Mar-2020 10:19
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	25-Mar-2020 10:19
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:19
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	25-Mar-2020 10:19
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	25-Mar-2020 10:19
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:19
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	25-Mar-2020 10:19
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:19
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:19
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	25-Mar-2020 10:19
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	25-Mar-2020 10:19
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	25-Mar-2020 10:19
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	25-Mar-2020 10:19
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:19
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:19
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:19

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 25-Mar-20

Client: Bhate Environmental Associates, Inc.
 Project: Longhorn GW Treatment Plant - Special Samples
 Sample ID: Trip Blank
 Collection Date: 24-Mar-2020 00:00

ANALYTICAL REPORT
 WorkOrder:HS20031080
 Lab ID:HS20031080-02
 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD		Method:SW8260						
8260C								Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:19
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:19
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	25-Mar-2020 10:19
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:19
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:19
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:19
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:19
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	25-Mar-2020 10:19
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:19
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	25-Mar-2020 10:19
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	25-Mar-2020 10:19
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	25-Mar-2020 10:19
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:19
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:19
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:19
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:19
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:19
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:19
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:19
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:19
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:19
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:19
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:19
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	25-Mar-2020 10:19
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	25-Mar-2020 10:19
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>88.9</i>			<i>0</i>	<i>81-118</i>	<i>%REC</i>	<i>1</i>	<i>25-Mar-2020 10:19</i>
<i>Surr: 4-Bromofluorobenzene</i>	<i>94.6</i>			<i>0</i>	<i>85-114</i>	<i>%REC</i>	<i>1</i>	<i>25-Mar-2020 10:19</i>
<i>Surr: Dibromofluoromethane</i>	<i>94.5</i>			<i>0</i>	<i>80-119</i>	<i>%REC</i>	<i>1</i>	<i>25-Mar-2020 10:19</i>
<i>Surr: Toluene-d8</i>	<i>106</i>			<i>0</i>	<i>89-112</i>	<i>%REC</i>	<i>1</i>	<i>25-Mar-2020 10:19</i>

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 25-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant - Special Samples
WorkOrder: HS20031080

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R358868 (0)		Test Name : VOLATILES ORGANICS BY METHOD 8260C			Matrix: Water	
HS20031080-01	LH18/24-SP650-032420	24 Mar 2020 14:00			25 Mar 2020 10:43	1
HS20031080-02	Trip Blank	24 Mar 2020 00:00			25 Mar 2020 10:19	1

ALS Houston, US

Date: 25-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant - Special Samples
WorkOrder: HS20031080

QC BATCH REPORT

Batch ID: R358868 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
MBLK	Sample ID: VBLKW1-200324	Units: UG/L			Analysis Date: 25-Mar-2020 02:42					
Client ID:	Run ID: VOA6_358868	SeqNo: 5529370	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	0.50	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	0.50	1.0								U
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	0.50	1.0								U
1,2,3-Trichlorobenzene	0.50	1.0								U
1,2,3-Trichloropropane	0.50	1.0								U
1,2,4-Trichlorobenzene	0.50	1.0								U
1,2,4-Trimethylbenzene	0.50	1.0								U
1,2-Dibromo-3-chloropropane	0.50	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	0.50	1.0								U
1,3,5-Trimethylbenzene	0.50	1.0								U
1,3-Dichlorobenzene	0.50	1.0								U
1,3-Dichloropropane	0.50	1.0								U
1,4-Dichlorobenzene	0.50	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	0.50	1.0								U
2-Hexanone	1.0	2.0								U
4-Chlorotoluene	0.50	1.0								U
4-Isopropyltoluene	0.50	1.0								U
4-Methyl-2-pentanone	1.0	2.0								U
Acetone	1.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	0.50	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	0.50	1.0								U
Bromomethane	0.50	1.0								U

ALS Houston, US

Date: 25-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant - Special Samples
WorkOrder: HS20031080

QC BATCH REPORT

Batch ID: R358868 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
MBLK	Sample ID: VBLKW1-200324	Units: UG/L			Analysis Date: 25-Mar-2020 02:42					
Client ID:	Run ID: VOA6_358868	SeqNo: 5529370	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	1.0	2.0								U
Carbon tetrachloride	0.50	1.0								U
Chlorobenzene	0.50	1.0								U
Chloroethane	0.50	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	0.50	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	0.50	1.0								U
Ethylbenzene	0.50	1.0								U
Hexachlorobutadiene	1.0	1.0								U
Isopropylbenzene	0.50	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	1.0	2.0								U
Naphthalene	0.50	1.0								U
n-Butylbenzene	0.50	1.0								U
n-Propylbenzene	0.50	1.0								U
o-Xylene	0.50	1.0								U
sec-Butylbenzene	0.50	1.0								U
Styrene	0.50	1.0								U
tert-Butylbenzene	0.50	1.0								U
Tetrachloroethene	0.50	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	44.67	1.0	50	0	89.3	81 - 118				
Surr: 4-Bromofluorobenzene	48.13	1.0	50	0	96.3	85 - 114				
Surr: Dibromofluoromethane	47.07	1.0	50	0	94.1	80 - 119				
Surr: Toluene-d8	52.47	1.0	50	0	105	89 - 112				

ALS Houston, US

Date: 25-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant - Special Samples
WorkOrder: HS20031080

QC BATCH REPORT

Batch ID: R358868 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
LCS	Sample ID: VLCSW-200324	Units: UG/L			Analysis Date: 25-Mar-2020 01:54					
Client ID:	Run ID: VOA6_358868	SeqNo: 5529369	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.29	1.0	20	0	101	78 - 124				
1,1,1-Trichloroethane	20.94	1.0	20	0	105	74 - 131				
1,1,2,2-Tetrachloroethane	20.13	1.0	20	0	101	71 - 121				
1,1,2-Trichloroethane	20.38	1.0	20	0	102	80 - 119				
1,1-Dichloroethane	21.66	1.0	20	0	108	77 - 125				
1,1-Dichloroethene	20.09	1.0	20	0	100	71 - 131				
1,1-Dichloropropene	18.92	1.0	20	0	94.6	78 - 125				
1,2,3-Trichlorobenzene	19.4	1.0	20	0	97.0	69 - 129				
1,2,3-Trichloropropane	20.71	1.0	20	0	104	73 - 122				
1,2,4-Trichlorobenzene	19.95	1.0	20	0	99.8	69 - 130				
1,2,4-Trimethylbenzene	20.91	1.0	20	0	105	76 - 124				
1,2-Dibromo-3-chloropropane	18.16	1.0	20	0	90.8	62 - 128				
1,2-Dibromoethane	20.86	1.0	20	0	104	77 - 121				
1,2-Dichlorobenzene	20.62	1.0	20	0	103	80 - 119				
1,2-Dichloroethane	20.42	1.0	20	0	102	73 - 128				
1,2-Dichloropropane	20.72	1.0	20	0	104	78 - 122				
1,3,5-Trimethylbenzene	20.79	1.0	20	0	104	75 - 124				
1,3-Dichlorobenzene	20.57	1.0	20	0	103	80 - 119				
1,3-Dichloropropane	20.37	1.0	20	0	102	80 - 119				
1,4-Dichlorobenzene	19.85	1.0	20	0	99.2	79 - 118				
2,2-Dichloropropane	17.79	1.0	20	0	88.9	60 - 139				
2-Butanone	38.57	2.0	40	0	96.4	56 - 143				
2-Chlorotoluene	20.75	1.0	20	0	104	79 - 122				
2-Hexanone	39.17	2.0	40	0	97.9	57 - 139				
4-Chlorotoluene	20.93	1.0	20	0	105	78 - 122				
4-Isopropyltoluene	20.9	1.0	20	0	104	77 - 127				
4-Methyl-2-pentanone	38.32	2.0	40	0	95.8	67 - 130				
Acetone	34.33	2.0	40	0	85.8	39 - 160				
Benzene	20.44	1.0	20	0	102	79 - 120				
Bromobenzene	21.11	1.0	20	0	106	80 - 120				
Bromochloromethane	21.05	1.0	20	0	105	78 - 123				
Bromodichloromethane	20.16	1.0	20	0	101	79 - 125				
Bromoform	20.22	1.0	20	0	101	66 - 130				
Bromomethane	24.41	1.0	20	0	122	53 - 141				

ALS Houston, US

Date: 25-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant - Special Samples
WorkOrder: HS20031080

QC BATCH REPORT

Batch ID: R358868 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
LCS	Sample ID: VLCSW-200324	Units: UG/L			Analysis Date: 25-Mar-2020 01:54					
Client ID:	Run ID: VOA6_358868	SeqNo: 5529369	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	41.47	2.0	40	0	104	64 - 133				
Carbon tetrachloride	18.63	1.0	20	0	93.1	72 - 136				
Chlorobenzene	20.41	1.0	20	0	102	82 - 118				
Chloroethane	20.37	1.0	20	0	102	60 - 138				
Chloroform	21.03	1.0	20	0	105	79 - 124				
Chloromethane	20.28	1.0	20	0	101	50 - 139				
cis-1,2-Dichloroethene	21.16	1.0	20	0	106	78 - 123				
cis-1,3-Dichloropropene	19.81	1.0	20	0	99.0	75 - 124				
Dibromochloromethane	20.59	1.0	20	0	103	74 - 126				
Dibromomethane	20.62	1.0	20	0	103	79 - 123				
Dichlorodifluoromethane	18.24	1.0	20	0	91.2	32 - 152				
Ethylbenzene	20.5	1.0	20	0	102	79 - 121				
Hexachlorobutadiene	19.61	1.0	20	0	98.1	66 - 134				
Isopropylbenzene	20.08	1.0	20	0	100	72 - 131				
m,p-Xylene	40.86	2.0	40	0	102	80 - 121				
Methylene chloride	21.08	2.0	20	0	105	74 - 124				
Naphthalene	18.39	1.0	20	0	92.0	61 - 128				
n-Butylbenzene	20.41	1.0	20	0	102	75 - 128				
n-Propylbenzene	20.84	1.0	20	0	104	76 - 126				
o-Xylene	20.67	1.0	20	0	103	78 - 122				
sec-Butylbenzene	20.56	1.0	20	0	103	77 - 126				
Styrene	20.41	1.0	20	0	102	78 - 123				
tert-Butylbenzene	20.32	1.0	20	0	102	78 - 124				
Tetrachloroethene	19.86	1.0	20	0	99.3	74 - 129				
Toluene	20.53	1.0	20	0	103	80 - 121				
trans-1,2-Dichloroethene	20.98	1.0	20	0	105	75 - 124				
trans-1,3-Dichloropropene	19.92	1.0	20	0	99.6	73 - 127				
Trichloroethene	20.34	1.0	20	0	102	79 - 123				
Trichlorofluoromethane	20.85	1.0	20	0	104	65 - 141				
Vinyl chloride	18.79	1.0	20	0	94.0	58 - 137				
Surr: 1,2-Dichloroethane-d4	54.19	1.0	50	0	108	81 - 118				
Surr: 4-Bromofluorobenzene	49.99	1.0	50	0	100.0	85 - 114				
Surr: Dibromofluoromethane	53.03	1.0	50	0	106	80 - 119				
Surr: Toluene-d8	50.17	1.0	50	0	100	89 - 112				

ALS Houston, US

Date: 25-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant - Special Samples
WorkOrder: HS20031080

QC BATCH REPORT

Batch ID: R358868 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
MS	Sample ID: HS20030869-02MS	Units: UG/L			Analysis Date: 25-Mar-2020 06:42					
Client ID:	Run ID: VOA6_358868	SeqNo: 5529372	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.42	1.0	20	0	97.1	78 - 124				
1,1,1-Trichloroethane	18.86	1.0	20	0	94.3	74 - 131				
1,1,2,2-Tetrachloroethane	19.07	1.0	20	0	95.3	71 - 121				
1,1,2-Trichloroethane	19.09	1.0	20	0	95.5	80 - 119				
1,1-Dichloroethane	19.27	1.0	20	0	96.4	77 - 125				
1,1-Dichloroethene	18.14	1.0	20	0	90.7	71 - 131				
1,1-Dichloropropene	17.5	1.0	20	0	87.5	78 - 125				
1,2,3-Trichlorobenzene	14	1.0	20	0	70.0	69 - 129				
1,2,3-Trichloropropane	19.13	1.0	20	0	95.6	73 - 122				
1,2,4-Trichlorobenzene	14.59	1.0	20	0	72.9	69 - 130				
1,2,4-Trimethylbenzene	19.13	1.0	20	0	95.7	76 - 124				
1,2-Dibromo-3-chloropropane	15.64	1.0	20	0	78.2	62 - 128				
1,2-Dibromoethane	19.47	1.0	20	0	97.3	77 - 121				
1,2-Dichlorobenzene	19.07	1.0	20	0	95.3	80 - 119				
1,2-Dichloroethane	18.89	1.0	20	0	94.5	73 - 128				
1,2-Dichloropropane	19.12	1.0	20	0	95.6	78 - 122				
1,3,5-Trimethylbenzene	18.86	1.0	20	0	94.3	75 - 124				
1,3-Dichlorobenzene	18.74	1.0	20	0	93.7	80 - 119				
1,3-Dichloropropane	18.96	1.0	20	0	94.8	80 - 119				
1,4-Dichlorobenzene	18.09	1.0	20	0	90.5	79 - 118				
2,2-Dichloropropane	14.76	1.0	20	0	73.8	60 - 139				
2-Butanone	33.25	2.0	40	0	83.1	56 - 143				
2-Chlorotoluene	19.36	1.0	20	0	96.8	79 - 122				
2-Hexanone	37.21	2.0	40	0	93.0	57 - 139				
4-Chlorotoluene	19.36	1.0	20	0	96.8	78 - 122				
4-Isopropyltoluene	18.45	1.0	20	0	92.3	77 - 127				
4-Methyl-2-pentanone	37.95	2.0	40	0	94.9	67 - 130				
Acetone	24.13	2.0	40	0	60.3	39 - 160				
Benzene	19.17	1.0	20	0	95.9	79 - 120				
Bromobenzene	19.83	1.0	20	0	99.2	80 - 120				
Bromochloromethane	18.29	1.0	20	0	91.5	78 - 123				
Bromodichloromethane	18.66	1.0	20	0	93.3	79 - 125				
Bromoform	18.82	1.0	20	0	94.1	66 - 130				
Bromomethane	20.36	1.0	20	0	102	53 - 141				

ALS Houston, US

Date: 25-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant - Special Samples
WorkOrder: HS20031080

QC BATCH REPORT

Batch ID: R358868 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
MS	Sample ID: HS20030869-02MS	Units: UG/L			Analysis Date: 25-Mar-2020 06:42					
Client ID:	Run ID: VOA6_358868	SeqNo: 5529372	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	37.33	2.0	40	0	93.3	64 - 133				
Carbon tetrachloride	17.55	1.0	20	0	87.8	72 - 136				
Chlorobenzene	19.16	1.0	20	0	95.8	82 - 118				
Chloroethane	18.66	1.0	20	0	93.3	60 - 138				
Chloroform	18.64	1.0	20	0	93.2	79 - 124				
Chloromethane	19.98	1.0	20	0	99.9	50 - 139				
cis-1,2-Dichloroethene	18.95	1.0	20	0	94.8	78 - 123				
cis-1,3-Dichloropropene	17.77	1.0	20	0	88.9	75 - 124				
Dibromochloromethane	19.09	1.0	20	0	95.4	74 - 126				
Dibromomethane	18.99	1.0	20	0	95.0	79 - 123				
Dichlorodifluoromethane	17.01	1.0	20	0	85.0	32 - 152				
Ethylbenzene	18.92	1.0	20	0	94.6	79 - 121				
Hexachlorobutadiene	15.08	1.0	20	0	75.4	66 - 134				
Isopropylbenzene	18.85	1.0	20	0	94.3	72 - 131				
m,p-Xylene	37.6	2.0	40	0	94.0	80 - 121				
Methylene chloride	18.34	2.0	20	0	91.7	74 - 124				
Naphthalene	14.01	1.0	20	0	70.1	61 - 128				
n-Butylbenzene	18.34	1.0	20	0	91.7	75 - 128				
n-Propylbenzene	19.35	1.0	20	0	96.7	76 - 126				
o-Xylene	19.16	1.0	20	0	95.8	78 - 122				
sec-Butylbenzene	18.79	1.0	20	0	94.0	77 - 126				
Styrene	18.5	1.0	20	0	92.5	78 - 123				
tert-Butylbenzene	19.05	1.0	20	0	95.2	78 - 124				
Tetrachloroethene	18.65	1.0	20	0	93.3	74 - 129				
Toluene	19.42	1.0	20	0	97.1	80 - 121				
trans-1,2-Dichloroethene	18.71	1.0	20	0	93.6	75 - 124				
trans-1,3-Dichloropropene	18.19	1.0	20	0	91.0	73 - 127				
Trichloroethene	18.72	1.0	20	0	93.6	79 - 123				
Trichlorofluoromethane	18.43	1.0	20	0	92.2	65 - 141				
Vinyl chloride	18.41	1.0	20	0	92.1	58 - 137				
Surr: 1,2-Dichloroethane-d4	45.52	1.0	50	0	91.0	81 - 118				
Surr: 4-Bromofluorobenzene	49.04	1.0	50	0	98.1	85 - 114				
Surr: Dibromofluoromethane	47.83	1.0	50	0	95.7	80 - 119				
Surr: Toluene-d8	52.03	1.0	50	0	104	89 - 112				

ALS Houston, US

Date: 25-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant - Special Samples
WorkOrder: HS20031080

QC BATCH REPORT

Batch ID: R358868 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
MSD	Sample ID: HS20030869-02MSD	Units: UG/L			Analysis Date: 25-Mar-2020 07:07					
Client ID:	Run ID: VOA6_358868	SeqNo: 5529373	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	18.68	1.0	20	0	93.4	78 - 124	19.42	3.9	20	
1,1,1-Trichloroethane	17.94	1.0	20	0	89.7	74 - 131	18.86	5.04	20	
1,1,2,2-Tetrachloroethane	19.13	1.0	20	0	95.7	71 - 121	19.07	0.346	20	
1,1,2-Trichloroethane	19.08	1.0	20	0	95.4	80 - 119	19.09	0.0476	20	
1,1-Dichloroethane	18.11	1.0	20	0	90.5	77 - 125	19.27	6.23	20	
1,1-Dichloroethene	16.92	1.0	20	0	84.6	71 - 131	18.14	6.92	20	
1,1-Dichloropropene	16.85	1.0	20	0	84.2	78 - 125	17.5	3.8	20	
1,2,3-Trichlorobenzene	14.55	1.0	20	0	72.7	69 - 129	14	3.82	20	
1,2,3-Trichloropropane	19.2	1.0	20	0	96.0	73 - 122	19.13	0.378	20	
1,2,4-Trichlorobenzene	14.92	1.0	20	0	74.6	69 - 130	14.59	2.23	20	
1,2,4-Trimethylbenzene	19.33	1.0	20	0	96.7	76 - 124	19.13	1.03	20	
1,2-Dibromo-3-chloropropane	16.82	1.0	20	0	84.1	62 - 128	15.64	7.31	20	
1,2-Dibromoethane	18.71	1.0	20	0	93.5	77 - 121	19.47	3.99	20	
1,2-Dichlorobenzene	19.04	1.0	20	0	95.2	80 - 119	19.07	0.142	20	
1,2-Dichloroethane	18.63	1.0	20	0	93.1	73 - 128	18.89	1.41	20	
1,2-Dichloropropane	18.6	1.0	20	0	93.0	78 - 122	19.12	2.8	20	
1,3,5-Trimethylbenzene	18.77	1.0	20	0	93.8	75 - 124	18.86	0.503	20	
1,3-Dichlorobenzene	19.04	1.0	20	0	95.2	80 - 119	18.74	1.58	20	
1,3-Dichloropropane	18.87	1.0	20	0	94.3	80 - 119	18.96	0.502	20	
1,4-Dichlorobenzene	18.2	1.0	20	0	91.0	79 - 118	18.09	0.593	20	
2,2-Dichloropropane	13.88	1.0	20	0	69.4	60 - 139	14.76	6.13	20	
2-Butanone	35.7	2.0	40	0	89.2	56 - 143	33.25	7.1	20	
2-Chlorotoluene	18.85	1.0	20	0	94.2	79 - 122	19.36	2.71	20	
2-Hexanone	36.96	2.0	40	0	92.4	57 - 139	37.21	0.674	20	
4-Chlorotoluene	18.89	1.0	20	0	94.4	78 - 122	19.36	2.49	20	
4-Isopropyltoluene	18.58	1.0	20	0	92.9	77 - 127	18.45	0.692	20	
4-Methyl-2-pentanone	36.18	2.0	40	0	90.4	67 - 130	37.95	4.78	20	
Acetone	23.43	2.0	40	0	58.6	39 - 160	24.13	2.95	20	
Benzene	18.49	1.0	20	0	92.5	79 - 120	19.17	3.61	20	
Bromobenzene	19.56	1.0	20	0	97.8	80 - 120	19.83	1.4	20	
Bromochloromethane	18	1.0	20	0	90.0	78 - 123	18.29	1.63	20	
Bromodichloromethane	18.18	1.0	20	0	90.9	79 - 125	18.66	2.56	20	
Bromoform	18.29	1.0	20	0	91.5	66 - 130	18.82	2.82	20	
Bromomethane	18.86	1.0	20	0	94.3	53 - 141	20.36	7.65	20	

ALS Houston, US

Date: 25-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant - Special Samples
WorkOrder: HS20031080

QC BATCH REPORT

Batch ID: R358868 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
MSD	Sample ID: HS20030869-02MSD	Units: UG/L			Analysis Date: 25-Mar-2020 07:07					
Client ID:	Run ID: VOA6_358868	SeqNo: 5529373	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	34.72	2.0	40	0	86.8	64 - 133	37.33	7.24	20	
Carbon tetrachloride	16.84	1.0	20	0	84.2	72 - 136	17.55	4.13	20	
Chlorobenzene	18.47	1.0	20	0	92.3	82 - 118	19.16	3.66	20	
Chloroethane	17.74	1.0	20	0	88.7	60 - 138	18.66	5.02	20	
Chloroform	18.01	1.0	20	0	90.1	79 - 124	18.64	3.39	20	
Chloromethane	18.26	1.0	20	0	91.3	50 - 139	19.98	8.98	20	
cis-1,2-Dichloroethene	17.98	1.0	20	0	89.9	78 - 123	18.95	5.26	20	
cis-1,3-Dichloropropene	17.34	1.0	20	0	86.7	75 - 124	17.77	2.46	20	
Dibromochloromethane	18.74	1.0	20	0	93.7	74 - 126	19.09	1.84	20	
Dibromomethane	19.01	1.0	20	0	95.1	79 - 123	18.99	0.122	20	
Dichlorodifluoromethane	15.65	1.0	20	0	78.3	32 - 152	17.01	8.28	20	
Ethylbenzene	18.04	1.0	20	0	90.2	79 - 121	18.92	4.74	20	
Hexachlorobutadiene	15.19	1.0	20	0	76.0	66 - 134	15.08	0.744	20	
Isopropylbenzene	17.85	1.0	20	0	89.3	72 - 131	18.85	5.45	20	
m,p-Xylene	36.65	2.0	40	0	91.6	80 - 121	37.6	2.56	20	
Methylene chloride	17.35	2.0	20	0	86.7	74 - 124	18.34	5.53	20	
Naphthalene	15.57	1.0	20	0	77.9	61 - 128	14.01	10.6	20	
n-Butylbenzene	18.12	1.0	20	0	90.6	75 - 128	18.34	1.21	20	
n-Propylbenzene	19.36	1.0	20	0	96.8	76 - 126	19.35	0.0929	20	
o-Xylene	18.77	1.0	20	0	93.9	78 - 122	19.16	2.02	20	
sec-Butylbenzene	18.67	1.0	20	0	93.4	77 - 126	18.79	0.648	20	
Styrene	17.88	1.0	20	0	89.4	78 - 123	18.5	3.41	20	
tert-Butylbenzene	18.77	1.0	20	0	93.9	78 - 124	19.05	1.46	20	
Tetrachloroethene	17.85	1.0	20	0	89.3	74 - 129	18.65	4.4	20	
Toluene	18.32	1.0	20	0	91.6	80 - 121	19.42	5.79	20	
trans-1,2-Dichloroethene	17.62	1.0	20	0	88.1	75 - 124	18.71	6.02	20	
trans-1,3-Dichloropropene	17.8	1.0	20	0	89.0	73 - 127	18.19	2.18	20	
Trichloroethene	18.19	1.0	20	0	91.0	79 - 123	18.72	2.87	20	
Trichlorofluoromethane	17.15	1.0	20	0	85.8	65 - 141	18.43	7.2	20	
Vinyl chloride	16.83	1.0	20	0	84.1	58 - 137	18.41	9.01	20	
Surr: 1,2-Dichloroethane-d4	45.36	1.0	50	0	90.7	81 - 118	45.52	0.352	20	
Surr: 4-Bromofluorobenzene	49	1.0	50	0	98.0	85 - 114	49.04	0.0888	20	
Surr: Dibromofluoromethane	47.32	1.0	50	0	94.6	80 - 119	47.83	1.07	20	
Surr: Toluene-d8	51.45	1.0	50	0	103	89 - 112	52.03	1.12	20	

ALS Houston, US

Date: 25-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant - Special Samples
WorkOrder: HS20031080

QC BATCH REPORT

Batch ID: R358868 (0)	Instrument: VOA6	Method: VOLATILES ORGANICS BY METHOD 8260C
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The following samples were analyzed in this batch:

HS20031080-01	HS20031080-02
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ALS Houston, US

Date: 25-Mar-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant - Special Samples
WorkOrder: HS20031080

**QUALIFIERS,
ACRONYMS, UNITS**

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	19-028-0	27-Mar-2020
California	2919, 2019-2020	30-Apr-2020
Dept of Defense	ANAB L2231 V009	22-Dec-2021
Florida	E87611-28	30-Jun-2020
Illinois	2000322019-2	09-May-2020
Kansas	E-10352 2019-2020	31-Jul-2020
Kentucky	123043, 2019-2020	30-Apr-2020
Louisiana	03087, 2019-2020	30-Jun-2020
Maryland	343, 2019-2020	30-Jun-2020
North Carolina	624-2020	31-Dec-2020
North Dakota	R-193 2019-2020	30-Apr-2020
Oklahoma	2019-067	31-Aug-2020
Texas	T104704231-19-25	30-Apr-2020



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April 08, 2020

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS20031081**

Laboratory Results for: **Longhorn GW Treatment Plant Weekly Samples**

Dear Marcia,

ALS Environmental received 2 sample(s) on Mar 25, 2020 for the analysis presented in the following report.

This is a REVISED REPORT. Please see the Case Narrative for discussion concerning this revision.

Regards,

A handwritten signature in black ink, appearing to read "Raj. P. Modashia", enclosed in a circular scribble.

Generated By: **RJ.MODASHIA**
RJ Modashia
Project Manager

ALS Houston, US

Date: 08-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS20031081

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20031081-01	LH18/24-SP650_032420	Water		24-Mar-2020 14:00	25-Mar-2020 08:45	<input type="checkbox"/>
HS20031081-02	LH18/24-SP650_032420_BIX	Water		24-Mar-2020 14:00	25-Mar-2020 08:45	<input type="checkbox"/>

Revision:1

ALS Houston, US

Date: 08-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS20031081

CASE NARRATIVE

Work Order Comments

- Revised to update the sample ID to LH18/24-SP650_032420_BIX for Perchlorate.
 - The analysis for Perchlorate was subcontracted to ALS Salt Lake City, UT. Final report attached.
-

Work Order Comments

- The analysis for Perchlorate were subcontracted to ALS High Res Lab Houston, TX. Final report attached.
 - The analysis for TOC was subcontracted to ALS Kelso, WA. Final report attached.
-

Wet Chemistry by Method E350.3**Batch ID: R359291**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
-

Wet Chemistry by Method E365.3**Batch ID: R359097**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
-

ALS Houston, US

Date: 08-Apr-20

Client: Bhate Environmental Associates, Inc.
 Project: Longhorn GW Treatment Plant Weekly Samples
 Sample ID: LH18/24-SP650_032420
 Collection Date: 24-Mar-2020 14:00

ANALYTICAL REPORT

WorkOrder:HS20031081
 Lab ID:HS20031081-01
 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
AMMONIA AS N BY E350.3(ISE)								Analyst: RG
	Method:E350.3							
Nitrogen, Ammonia (As N)	2.2	a	0.20	0.10	0.20	mg/L	1	01-Apr-2020 08:45
ORTHO PHOSPHATE (PO4) AS P BY E365.3								Analyst: MZD
	Method:E365.3							
Phosphorus, Total Orthophosphate (As P)	0.461	a	0.0100	0.0250	0.0250	mg/L	1	26-Mar-2020 12:35
SUBCONTRACT ANALYSIS - TOC ANALYSIS								Analyst: SUBK
	Method:NA							
Subcontract Analysis	See Attached		0	0		NA	1	03-Apr-2020 15:23

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US

Date: 08-Apr-20

Client: Bhate Environmental Associates, Inc.
 Project: Longhorn GW Treatment Plant Weekly Samples
 Sample ID: LH18/24-SP650_032420_BIX
 Collection Date: 24-Mar-2020 14:00

ANALYTICAL REPORT

WorkOrder:HS20031081
 Lab ID:HS20031081-02
 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		Method:NA		Analyst: CGG				
Subcontract Analysis	See Attached		0	0		NA	1	26-Mar-2020 12:09

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US

Date: 08-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20031081

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R358949 (0)		Test Name : SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)			Matrix: Water	
HS20031081-02	LH18/24-SP650_032420_BIX	24 Mar 2020 14:00			26 Mar 2020 12:09	1
Batch ID: R359097 (0)		Test Name : ORTHO PHOSPHATE (PO4) AS P BY E365.3			Matrix: Water	
HS20031081-01	LH18/24-SP650_032420	24 Mar 2020 14:00			26 Mar 2020 12:35	1
Batch ID: R359291 (0)		Test Name : AMMONIA AS N BY E350.3(ISE)			Matrix: Water	
HS20031081-01	LH18/24-SP650_032420	24 Mar 2020 14:00			01 Apr 2020 08:45	1
Batch ID: R359470 (0)		Test Name : SUBCONTRACT ANALYSIS - TOC ANALYSIS			Matrix: Water	
HS20031081-01	LH18/24-SP650_032420	24 Mar 2020 14:00			03 Apr 2020 15:23	1

ALS Houston, US

Date: 08-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20031081

QC BATCH REPORT

Batch ID:	R359097 (0)	Instrument:	UV-2450	Method:	ORTHO PHOSPHATE (PO4) AS P BY E365.3					
MBLK	Sample ID: MBLK-359097	Units: mg/L		Analysis Date: 26-Mar-2020 12:35						
Client ID:	Run ID: UV-2450_359097	SeqNo: 5536163		PrepDate:		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Phosphorus, Total Orthophosphate (As P)	0.0250	0.0250							U	
LCS	Sample ID: LCS-359097	Units: mg/L		Analysis Date: 26-Mar-2020 12:35						
Client ID:	Run ID: UV-2450_359097	SeqNo: 5536164		PrepDate:		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Phosphorus, Total Orthophosphate (As P)	0.236	0.0250	0.25	0	94.4	85 - 115				
MS	Sample ID: HS20031081-01MS	Units: mg/L		Analysis Date: 26-Mar-2020 12:35						
Client ID: LH18/24-SP650_032420	Run ID: UV-2450_359097	SeqNo: 5536166		PrepDate:		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Phosphorus, Total Orthophosphate (As P)	0.68	0.0250	0.25	0.461	87.6	80 - 120				
MSD	Sample ID: HS20031081-01MSD	Units: mg/L		Analysis Date: 26-Mar-2020 12:35						
Client ID: LH18/24-SP650_032420	Run ID: UV-2450_359097	SeqNo: 5536167		PrepDate:		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Phosphorus, Total Orthophosphate (As P)	0.686	0.0250	0.25	0.461	90.0	80 - 120	0.68	0.878	20	

The following samples were analyzed in this batch:

Revision: 1

Page 7 of 105

ALS Houston, US

Date: 08-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20031081

QC BATCH REPORT

Batch ID: R359291 (0)		Instrument: WetChem_HS		Method: AMMONIA AS N BY E350.3(ISE)						
MBLK	Sample ID: MBLK-R359291	Units: mg/L			Analysis Date: 01-Apr-2020 08:45					
Client ID:	Run ID: WetChem_HS_359291	SeqNo: 5539876		PrepDate:			DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual	
Nitrogen, Ammonia (As N)	0.10	0.20							U	
LCS	Sample ID: LCS-R359291	Units: mg/L			Analysis Date: 01-Apr-2020 08:45					
Client ID:	Run ID: WetChem_HS_359291	SeqNo: 5539875		PrepDate:			DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual	
Nitrogen, Ammonia (As N)	10.28	0.20	10	0	103	80 - 120				
MS	Sample ID: HS20031218-01MS	Units: mg/L			Analysis Date: 01-Apr-2020 08:45					
Client ID:	Run ID: WetChem_HS_359291	SeqNo: 5539878		PrepDate:			DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual	
Nitrogen, Ammonia (As N)	41.32	0.20	10	31.08	102	80 - 120				
MSD	Sample ID: HS20031218-01MSD	Units: mg/L			Analysis Date: 01-Apr-2020 08:45					
Client ID:	Run ID: WetChem_HS_359291	SeqNo: 5539877		PrepDate:			DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual	
Nitrogen, Ammonia (As N)	41.16	0.20	10	31.08	101	80 - 120	41.32	0.393	20	

The following samples were analyzed in this batch: HS20031081-01

Revision: 1

Page 8 of 105

ALS Houston, US

Date: 08-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20031081

**QUALIFIERS,
ACRONYMS, UNITS**

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
California	2919, 2019-2020	30-Apr-2020
Dept of Defense	ANAB L2231 V009	22-Dec-2021
Florida	E87611-28	30-Jun-2020
Illinois	2000322019-2	09-May-2020
Kansas	E-10352 2019-2020	31-Jul-2020
Kentucky	123043, 2019-2020	30-Apr-2020
Louisiana	03087, 2019-2020	30-Jun-2020
Maryland	343, 2019-2020	30-Jun-2020
North Carolina	624-2020	31-Dec-2020
North Dakota	R-193 2019-2020	30-Apr-2020
Oklahoma	2019-067	31-Aug-2020
Texas	T104704231-19-25	30-Apr-2020

ALS Houston, US

Date: 08-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS20031081

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20031081-01	LH18/24-SP650_032420	Login	3/25/2020 9:57:53 AM	PMG	WET001
HS20031081-01	LH18/24-SP650_032420	Login	3/25/2020 9:57:53 AM	PMG	WET001
HS20031081-01	LH18/24-SP650_032420	Login	3/25/2020 9:57:53 AM	PMG	Sub
HS20031081-02	LH18/24-SP650_032420_BIX	Login	3/25/2020 9:57:53 AM	PMG	Sub

Revision:1

Sample Receipt Checklist

Client Name: Bhate Environmental
 Work Order: HS20031081

Date/Time Received: **25-Mar-2020 08:45**
 Received by: **AC**

Checklist completed by: Paresh M. Giga 25-Mar-2020
 eSignature Date

Reviewed by: RJ Modashia 25-Mar-2020
 eSignature Date

Matrices: **Water**

Carrier name: **FedEx**

- Shipping container/cooler in good condition? Yes No Not Present
- Custody seals intact on shipping container/cooler? Yes No Not Present
- Custody seals intact on sample bottles? Yes No Not Present
- VOA/TX1005/TX1006 Solids in hermetically sealed vials? Yes No Not Present
- Chain of custody present? Yes No 1 Page(s)
- Chain of custody signed when relinquished and received? Yes No COC IDs:None
- Samplers name present on COC? Yes No
- Chain of custody agrees with sample labels? Yes No
- Samples in proper container/bottle? Yes No
- Sample containers intact? Yes No
- Sufficient sample volume for indicated test? Yes No
- All samples received within holding time? Yes No
- Container/Temp Blank temperature in compliance? Yes No

Temperature(s)/Thermometer(s): 1.6c U/C IR11

Cooler(s)/Kit(s): Blue

Date/Time sample(s) sent to storage: 3/25/2020 10:10

Water - VOA vials have zero headspace? Yes No No VOA vials submitted

Water - pH acceptable upon receipt? Yes No N/A

pH adjusted? Yes No N/A

pH adjusted by:


Login Notes:

Client Contacted: _____ Date Contacted: _____ Person Contacted: _____

Contacted By: _____ Regarding: _____

Comments:

Corrective Action:

 ALS 10450 Stancliff Rd., Suite 210 Houston, Texas 77099 Tel. +1 281 530 5656 Fax. +1 281 530 5887	Date: 3/24/00 Name: [Signature] Company:	CUSTODY SEAL 20 Time: 1430 [Signature] [Signature]	Seal Broken By: [Signature] Date: 3/25/00
--	--	--	--

FedEx TRK# 0221 4380 9533 6828	WED - 25 MAR 10:30A PRIORITY OVERNIGHT
AB SGRA	Blue - 77099 TX-US IAH
	
<small>F10 5121960 24MAR00 GGA 56BC2/64E0/05A2</small>	



April 07, 2020

Service Request No:E2000263

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS20031081

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory March 25, 2020
For your reference, these analyses have been assigned our service request number **E2000263**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Revision I - This report was revised to corrected the sample ID to LH18/24-SP650_032420_BIX; originally reported as LH18/24-SP650_032020_BIX.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental



Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client: ALS Houston
Project: HS20031081
Sample Matrix: W

Service Request No.: E2000263
Date Received: 03/25/20

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

One sample was received for analysis at ALS Environmental in Houston on 03/25/20.

The sample was received in good condition and is consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2000110: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. The LCS and DLCS recoveries are within QC limits.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - US
Project: HS20031081

Service Request:E2000263

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
E2000263-001	LH18/24-SP650_032420_BIX	3/24/2020	1400

Service Request Summary

Folder #: E2000263
Client Name: ALS Environmental - US
Project Name: HS20031081
Project Number:
Report To: RJ Modashia
 ALS Laboratory Group
 10450 Stancliff Road
 Houston, TX 77099-4338
 USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 03/25/20
Internal Due Date: 4/8/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20031081
EDD: No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 7B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON C104 DOD/6850
E2000263-001	LH18/24-SP650_032420_BIX	Water	03/24/20 1400	IV

Service Request Summary

Folder #: E2000263
Client Name: ALS Environmental - US
Project Name: HS20031081
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA

Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 03/25/20
Internal Due Date: 4/8/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20031081
EDD: No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 7B
Pressure Gas:

Data Qualifiers

Lab Standard

- + Possible Tedlar bag artifact.
- A TIC is a suspected aldol-condensation product
- B Analyte found in the associated method blank as well as in the sample.
- BC Reported results are not blank corrected.
- BH The back section of the tube yielded higher results than the front.
- BT Results indicated possible breakthrough; back section $\geq 10\%$ front section.
- C Result identification confirmed.
- D Compound identified in an analysis at a secondary dilution factor
- D Spike was diluted out
- DE Reported results are corrected for desorption efficiency.
- E Estimated value. Concentration above calibration range
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- H1 Sample analysis performed past holding time. See case narrative.
- H2 Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
- H3 Sample was received and analyzed past holding time.
- H4 Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
- I Internal standard not within the specified limits. See case narrative.
- J Estimated Value. Concentration found below MRL.
- K A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
- K Analyte was detected above the method reporting limit prior to normalization.
- L1 Laboratory control sample recovery outside the specified limits; results may be biased high.
- L2 Laboratory control sample recovery outside the specified limits; results may be biased low.
- L3 Laboratory control sample recovery outside the specified limits.
- M Matrix interference; results may be biased high.
- M The duplicate injection precision not met.
- M1 Matrix interference due to coelution with a non-target compound; results may be biased high.
- N Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- P Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
- P Pesticide/Aroclor target analyte $> 40\%$ difference for detected concentrations between GC columns
- Q Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
- R Duplicate Precision not met.
- R1 Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
- S Surrogate recovery not within specified limits.

Data Qualifiers

Lab Standard

- S The reported value was determined by the Method of Standard Additions (MSA).
- T Analyte is a tentatively identified compound, result is estimated.
- U Compound was analyzed for, but was not detected (ND).
- V1 The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
- V2 The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
- W Result quantified, but the corresponding peak was detected outside the generated retention time window.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- X See case narrative.
- Y Recovery outside limits
- Y The chromatogram resembles a petroleum product but does not match the calibration standard.
- Z The chromatogram does not resemble a petroleum product.
- i The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCEntration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient



State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
Arizona Department of Health Services	AZ0793	5/27/2020
California Department of Health Services	2919	4/30/2020
Department of Defense	A2LA 2897.01	11/30/2021
Florida Department of Health	E87611	6/30/2020
Hawaii Department of Health	TX02694	4/30/2020
Illinois Environmental Protection Agency	2000322019-2	5/9/2020
Kansas Department of Health and Environment	E-10352	7/31/2020
Louisiana Department of Environmental Quality	03087	6/30/2020
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Center for Disease Control and Prevention	201815	6/5/2020
Maryland Department of the Environment	343	6/30/2020
Minnesota Department of Health	1785988	12/31/2020
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2020
Nevada Department of Conservation and Natural Resources	TX026932019-1	7/31/2020
New Hampshire Environmental Laboratory Accreditation Program	209419	4/24/2020
New Jersey Department of Environmental Protection	NLC190001	6/30/2020
New York Department of Health	11707	3/31/2020
Oklahoma Department of Environmental Quality	2019-067	8/31/2020
Pennsylvania Department of Environmental Protection	68-03441-013	6/30/2020
Tennessee Department of Environment and Conservation	04016	6/30/2020
Texas Commission on Environmental Quality	TX104704231-19-25	4/30/2020
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932019-9	7/31/2020
Washington Department of Health	C819	11/14/2020
West Virginia Department of Environmental Protection	347	6/30/2020



Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com



E2000263

5

ALS Laboratory Group
HS20031081



10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: Dept of Defense

COC ID: 13578

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff Road Suite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company: ALS Houston
Contact: RJ Modashia
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Email: RJ.Modashia@alsglobal.com
Alternate Contact:
Email:

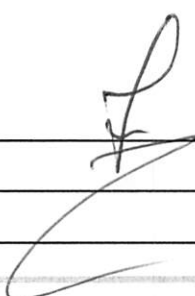
INVOICE INFORMATION:

Company: ALS Houston
Contact: Accounts Payable
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Reference: HS20031081
TSR: Danielle Winnings

LAB SAMPLE ID	CLIENT SAMPLE-ID---	MATRIX	COLLECT DATE
ANALYSIS REQUESTED	032420 - CG	4/7/20	DUE DATE
1. HS20031081-02	LH18/24-SP650_032020_BIX	Water	24 Mar 2020 14:00
	SUB_Perch-6850		08 Apr 2020

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: 

Received By: _____

Cooler ID(s): _____

Date/Time: 3/25/2020 11:35

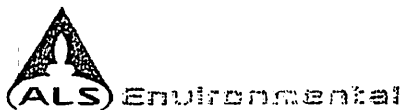
Date/Time: 3/25/2020 11:35

Temperature(s): _____

RIGHT SOLUTIONS | RIGHT PARTNER

25 Mar 2020

Page 1 of 1



Cooler Receipt Form

Project Chemist CA

Client/Project AL4-H Thermometer ID 5M04/1R11

Date/Time Received: 3/25/20 Initials: CA Date/Time Logged in: 3/25/20 Initials CA

1. Method of delivery: US Mail Fed Ex UPS DHL ^{ALS} Courier Client

2. Samples received in: Cooler Box Envelope Other

3. Were custody seals on coolers? Yes No If yes, how many and where?
 Were they intact? Yes No N/A
 Were they signed and dated? Yes No N/A

4. Packing Material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Sleeves Other

5. Foreign or Regulated Soil? Yes No Location of Sampling: _____

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
-		3/25/20	1135	CA	1.1	<input type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>

- 6. Were custody papers properly filled out (ink, signed, dated, etc)? Yes No
- 7. Did all bottles arrive in good condition (not broken, no signs of leakage)? Yes No
- 8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? Yes No
- 9. Were appropriate bottles/containers and volumes received for the requested tests? Yes No
- 10. Did sample labels and tags agree with custody documents? Yes No

Notes, Discrepancies, & Resolutions:

Service request Label:

E2000263

5

ALS Laboratory Group
HS20031081



REV01



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SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sample. The COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6°C.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10°C.
- ✓ Air samples are shipped and stored cold, at 0 to 6°C
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report



Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 355919
Team: Semivoa GCMS/KBROWN

Prep Workflow: GenExt28Day
Prep Method: Method

Status: Prepped
Prep Date/Time: 3/24/20 13:04

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2000225-001	LH18/24-SP650_031020_BIX	.01	6850/CIO4 DOD			Water	10mL	
2	E2000226-001	LH18/24-SP140_031020	.01	6850/CIO4 DOD			Water	10mL	
3	E2000227-001	LH18/24-SP650_031020_BIX	.01	6850/CIO4 DOD			Water	10mL	
4	E2000251-001	LH18/24-SP650_031720_BIX	.01	6850/CIO4 DOD			Water	10mL	
5	E2000263-001	LH18/24-SP650_032420_BIX	.01	6850/CIO4 DOD			Water	10mL	
6	EQ2000110-01	MB		6850/CIO4 DOD			Liquid	10mL	
7	EQ2000110-02	LCS		6850/CIO4 DOD			Liquid	10mL	
8	EQ2000110-03	DLCS		6850/CIO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4	Inventory ID: 202037	Logbook Ref: Sodium Perchlorate	Expires On: 05/22/2021
--	----------------------	---------------------------------	------------------------

E2000225-001	100.00µL	E2000226-001	100.00µL	E2000227-001	100.00µL	E2000251-001	100.00µL	E2000263-001	100.00µL	EQ2000110-01	100.00µL
EQ2000110-02	100.00µL	EQ2000110-03	100.00µL								

Name: Perchlorate Intermediate Stock1	Inventory ID: 204799	Logbook Ref: 200657 1.0ug/mL KN	Expires On: 05/15/2020
---------------------------------------	----------------------	---------------------------------	------------------------

E2000225-001	1.00µL	EQ2000110-02	1.00µL	EQ2000110-03	1.00µL						
--------------	--------	--------------	--------	--------------	--------	--	--	--	--	--	--

Preparation Steps

Step: Preparation
 Started: 3/24/20 13:04
 Finished: 3/24/20 15:55
 By: KBROWN
 Comments

Comments: _____

Reviewed By: KB Date: 03/25/2020

Chain of Custody

Relinquished By: _____	Date: _____	<u>Extracts Examined</u>
Received By: _____	Date: _____	Yes No



Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Analytical Report

Client: ALS Environmental - US
Project: HS20031081
Sample Matrix: Water
Sample Name: LH18/24-SP650_032420_BIX
Lab Code: E2000263-001

Service Request: E2000263
Date Collected: 3/24/20 1400
Date Received: 3/25/20
Units: µg/L
Basis: NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	0.0720	J	0.100	0.0500	0.0250	1	3/24/20	3/25/20 16:09	355919	674670	

Analytical Report

Client: ALS Environmental - US
Project: HS20031081
Sample Matrix: Water
Sample Name: Method Blank
Lab Code: EQ2000110-01

Service Request: E2000263
Date Collected: NA
Date Received: NA
Units: µg/L
Basis: NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	3/24/20	3/25/20 15:13	355919	674670	

Analytical Report

Client: ALS Environmental - US
Project: HS20031081
Sample Matrix: Water
Sample Name: Lab Control Sample
Lab Code: EQ2000110-02

Service Request: E2000263
Date Collected: NA
Date Received: NA
Units: µg/L
Basis: NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	0.106		0.100	0.0500	0.0250	1	3/24/20	3/25/20 15:21	355919	674670	



Accuracy & Precision

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Client: ALS Environmental - US
Project: HS20031081
Sample Matrix: Water

Service Request: E2000263
Date Analyzed: 3/25/20

Lab Control Sample Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Units: µg/L
Basis: NA

Extraction Lot: 355919

Analyte Name	Lab Control Sample EQ2000110-02			Duplicate Lab Control Sample EQ2000110-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Perchlorate	0.106	0.100	106	0.101	0.100	101	84 - 119	5	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Analytical Report

Client: ALS Environmental - US
Project: HS20031081
Sample Matrix: Water
Sample Name: Duplicate Lab Control Sample
Lab Code: EQ2000110-03

Service Request: E2000263
Date Collected: NA
Date Received: NA
Units: µg/L
Basis: NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	0.101		0.100	0.0500	0.0250	1	3/24/20	3/25/20 15:29	355919	674670	



Initial Calibration

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Initial Calibration - Detailed Report**Calibration ID:** EC2000001**Instrument ID:** E-LCMS-01**Column Name:** 1

#	Lab Code	Sample Name	File Location	Aquisition Date
07	EC2000001-07	PERCHLORATE7	20191230_006	12/30/2019 10:48
01	EC2000001-01	PERCHLORATE1	20191230_007	12/30/2019 10:56
02	EC2000001-02	PERCHLORATE2	20191230_008	12/30/2019 11:04
03	EC2000001-03	PERCHLORATE3	20191230_009	12/30/2019 11:12
04	EC2000001-04	PERCHLORATE4	20191230_010	12/30/2019 11:19
05	EC2000001-05	PERCHLORATE5	20191230_011	12/30/2019 11:27
06	EC2000001-06	PERCHLORATE6	20191230_012	12/30/2019 11:35
08	EC2000001-08	PERCHLORATE8	20191230_013	12/30/2019 11:43
09	EC2000001-09	PERCHLORATE9	20191230_014	12/30/2019 11:51
10	EC2000001-10	PERCHLORATE10	20191230_015	12/30/2019 11:59

Analyte**Curve Fit****Weighting****Perchlorate****Average RF****RSD = 10.79****Average RF = 0.1352**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.1000	0.1736	02	0.5000	0.1222	03	0.7000	0.1219	04	1.0000	0.1363
05	2.0000	0.1337	06	5.0000	0.1268	07	10.0000	0.1373	08	20.0000	0.1349
09	30.0000	0.133	10	50.0000	0.1325						

Analyte**Perchlorate**

#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D
01	0.1000	0.128	28.4	02	0.5000	0.452	-9.6	03	0.7000	0.631	-9.9
04	1.0000	1.01	0.8	05	2.0000	1.98	-1.1	06	5.0000	4.69	-6.2
07	10.0000	10.2	1.6	08	20.0000	20.0	-0.2	09	30.0000	29.5	-1.6
10	50.0000	49.0	-2.0								

Initial Calibration Verification Summary Report

Calibration ID: EC2000001	Instrument ID: E-LCMS-01
Datafile ID: 20191230_016	Column Name: 1

Analyte	Lab Code	Type	Curve Fit	True Value	Calc Conc	Units	Result	Criteria
Perchlorate	EC2000001-11	T	Average RF	10	12.276	ng/mL	22.7	<= 25

ALS Group Houston

PERCHLORATE1

Date acquired: 12/30/2019 10:56:14 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_007.lcd

Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_007	PERCHLORATE1	3.051	4022	0.12842	12/30/2019 10:56:14 AM	Yes	1.00000	25.0000	231680	1	3
Sodium Perchlorate-18O4_IS	20191230_007	PERCHLORATE1	3.051	231680	1.00000	12/30/2019 10:56:14 AM	No	1.00000	25.0000	231680	1	3

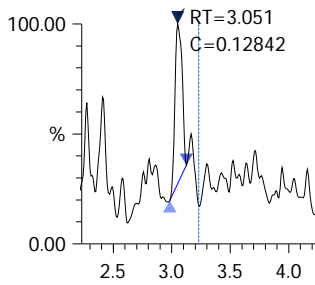
Perchlorate

Conc 0.12842

Area 4022

Q 99.00>83.00 (-)

1.27e3



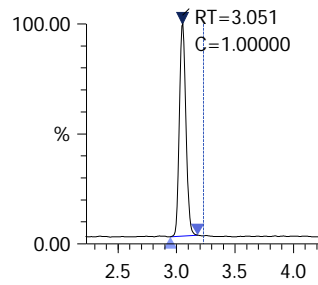
Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 231680

ISTD 107.00>89.00 (-)

5.94e4



ALS Group Houston

PERCHLORATE2

Date acquired: 12/30/2019 11:04:09 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_008.lcd

Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_008	PERCHLORATE2	3.046	15985	0.45177	12/30/2019 11:04:09 AM	Yes	1.00000	25.0000	261704	1	4
Sodium Perchlorate-18O4_IS	20191230_008	PERCHLORATE2	3.045	261704	1.00000	12/30/2019 11:04:09 AM	No	1.00000	25.0000	261704	1	4

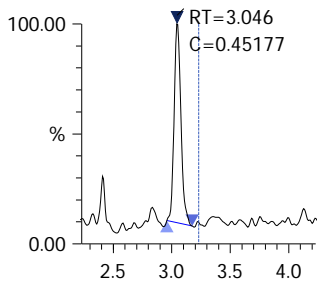
Perchlorate

Conc 0.45177

Area 15985

Q 99.00>83.00 (-)

4.21e3

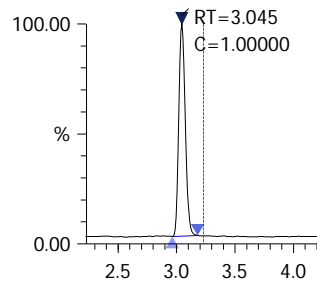
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 261704

ISTD 107.00>89.00 (-)

6.75e4



ALS Group Houston

PERCHLORATE3

Date acquired: 12/30/2019 11:12:06 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_009.lcd

Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_009	PERCHLORATE3	3.046	22031	0.63092	12/30/2019 11:12:06 AM	Yes	1.00000	25.0000	258274	1	5
Sodium Perchlorate-18O4_IS	20191230_009	PERCHLORATE3	3.044	258274	1.00000	12/30/2019 11:12:06 AM	No	1.00000	25.0000	258274	1	5

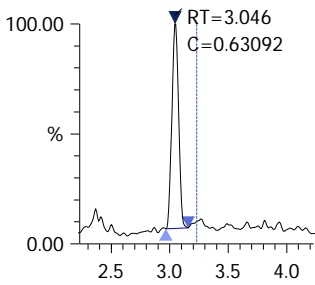
Perchlorate

Conc 0.63092

Area 22031

Q 99.00>83.00 (-)

5.75e3



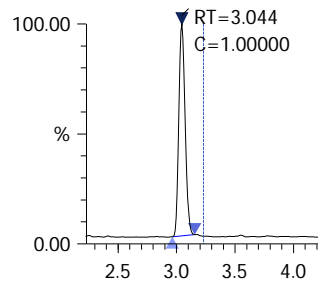
Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 258274

ISTD 107.00>89.00 (-)

6.88e4



ALS Group Houston

PERCHLORATE4

Date acquired: 12/30/2019 11:19:58 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_010.lcd

Vial: 6 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_010	PERCHLORATE4	3.048	36488	1.00794	12/30/2019 11:19:58 AM	Yes	1.00000	25.0000	267754	1	6
Sodium Perchlorate-18O4_IS	20191230_010	PERCHLORATE4	3.046	267754	1.00000	12/30/2019 11:19:58 AM	No	1.00000	25.0000	267754	1	6

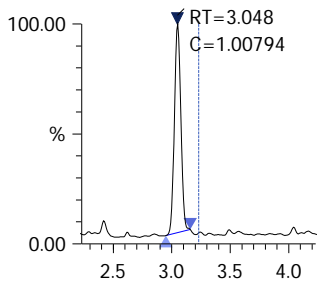
Perchlorate

Conc 1.00794

Area 36488

Q 99.00>83.00 (-)

9.73e3



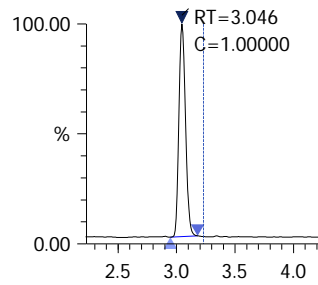
Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 267754

ISTD 107.00>89.00 (-)

6.78e4



ALS Group Houston

PERCHLORATE5

Date acquired: 12/30/2019 11:27:53 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_011.lcd

Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_011	PERCHLORATE5	3.050	74631	1.97766	12/30/2019 11:27:53 AM	Yes	1.00000	25.0000	279118	1	7
Sodium Perchlorate-18O4_IS	20191230_011	PERCHLORATE5	3.046	279118	1.00000	12/30/2019 11:27:53 AM	No	1.00000	25.0000	279118	1	7

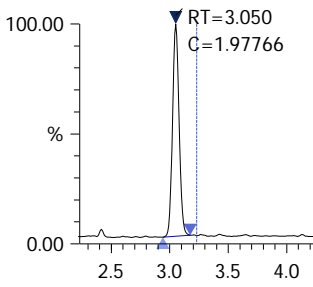
Perchlorate

Conc 1.97766

Area 74631

Q 99.00>83.00 (-)

1.92e4



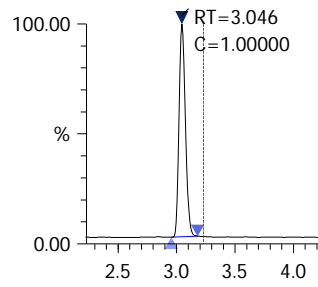
Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 279118

ISTD 107.00>89.00 (-)

7.33e4



ALS Group Houston

PERCHLORATE6

Date acquired: 12/30/2019 11:35:50 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_012.lcd

Vial: 8 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_012	PERCHLORATE6	3.047	159122	4.68764	12/30/2019 11:35:50 AM	Yes	1.00000	25.0000	251072	1	8
Sodium Perchlorate-18O4_IS	20191230_012	PERCHLORATE6	3.045	251072	1.00000	12/30/2019 11:35:50 AM	No	1.00000	25.0000	251072	1	8

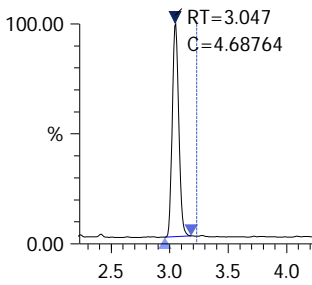
Perchlorate

Conc 4.68764

Area 159122

Q 99.00>83.00 (-)

4.12e4



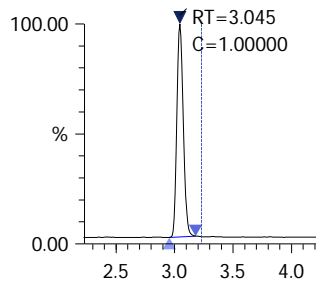
Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 251072

ISTD 107.00>89.00 (-)

6.53e4



ALS Group Houston

PERCHLORATE7

Date acquired: 12/30/2019 10:48:20 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_006.lcd

Vial: 9 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_006	PERCHLORATE7	2.994	298821	10.15570	12/30/2019 10:48:20 AM	Yes	1.00000	25.0000	217632	1	9
Sodium Perchlorate-18O4_IS	20191230_006	PERCHLORATE7	2.991	217632	1.00000	12/30/2019 10:48:20 AM	No	1.00000	25.0000	217632	1	9

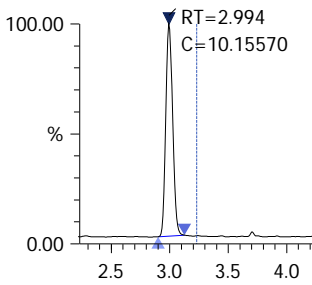
Perchlorate

Conc 10.15570

Area 298821

Q 99.00>83.00 (-)

7.46e4

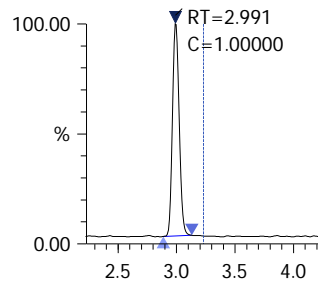
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 217632

ISTD 107.00>89.00 (-)

5.38e4



ALS Group Houston

PERCHLORATE8

Date acquired: 12/30/2019 11:43:47 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_013.lcd

Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_013	PERCHLORATE8	3.048	557358	19.95021	12/30/2019 11:43:47 AM	Yes	1.00000	25.0000	206636	1	10
Sodium Perchlorate-18O4_IS	20191230_013	PERCHLORATE8	3.045	206636	1.00000	12/30/2019 11:43:47 AM	No	1.00000	25.0000	206636	1	10

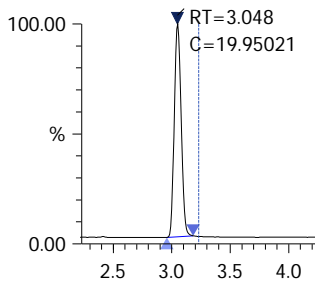
Perchlorate

Conc 19.95021

Area 557358

Q 99.00>83.00 (-)

1.37e5



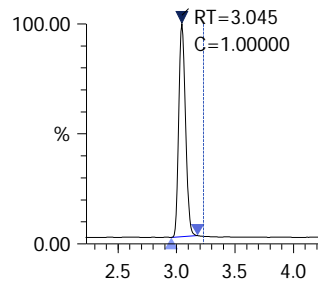
Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 206636

ISTD 107.00>89.00 (-)

5.11e4



ALS Group Houston

PERCHLORATE9

Date acquired: 12/30/2019 11:51:43 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_014.lcd

Vial: 11 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_014	PERCHLORATE9	3.052	730647	29.50809	12/30/2019 11:51:43 AM	Yes	1.00000	25.0000	183142	1	11
Sodium Perchlorate-18O4_IS	20191230_014	PERCHLORATE9	3.049	183142	1.00000	12/30/2019 11:51:43 AM	No	1.00000	25.0000	183142	1	11

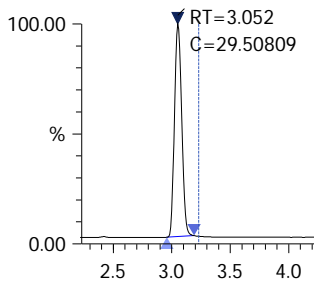
Perchlorate

Conc 29.50809

Area 730647

Q 99.00>83.00 (-)

1.70e5

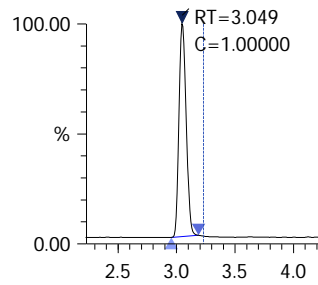
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 183142

ISTD 107.00>89.00 (-)

4.27e4



ALS Group Houston

PERCHLORATE10

Date acquired: 12/30/2019 11:59:38 AM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_015.lcd

Vial: 12 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_015	PERCHLORATE10	3.046	1090166	48.99902	12/30/2019 11:59:38 AM	Yes	1.00000	25.0000	164560	1	12
Sodium Perchlorate-18O4_IS	20191230_015	PERCHLORATE10	3.043	164560	1.00000	12/30/2019 11:59:38 AM	No	1.00000	25.0000	164560	1	12

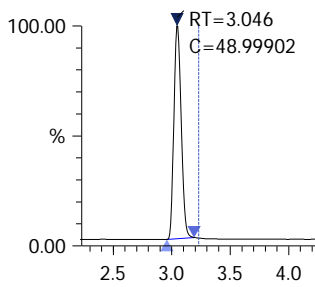
Perchlorate

Conc 48.99902

Area 1090166

Q 99.00>83.00 (-)

2.51e5

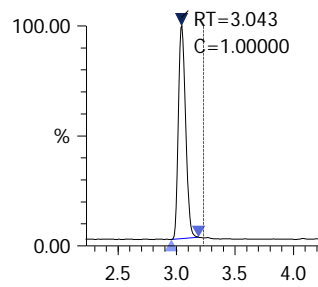
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 164560

ISTD 107.00>89.00 (-)

3.80e4



ALS Group Houston

ICV

Date acquired: 12/30/2019 12:07:32 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20191230\20191230_016.lcd

Vial: 13 | Inj. Volume: 25.0000uL | Tray: 1

Name	Data Filename	Sample ID	Found RT	Area	Conc.	Acquired Date	Cal Point	Dil. Factor	Inj Vol	ISTD Area	Tray	Vial
Perchlorate	20191230_016	ICV	3.047	347932	12.27639	12/30/2019 12:07:32 PM	No	1.00000	25.0000	209626	1	13
Sodium Perchlorate-18O4_IS	20191230_016	ICV	3.045	209626	1.00000	12/30/2019 12:07:32 PM	No	1.00000	25.0000	209626	1	13

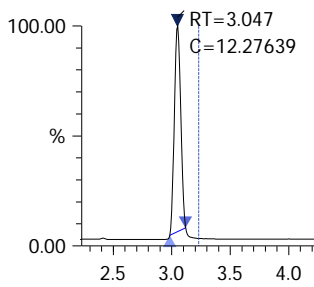
Perchlorate

Conc 12.27639

Area 347932

Q 99.00>83.00 (-)

9.49e4

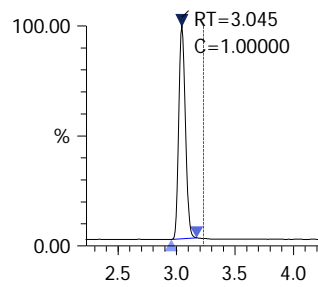
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 209626

ISTD 107.00>89.00 (-)

5.28e4





Chromatograms and Selected Ion Monitoring

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

*Continuing Calibration Verification Summary***Calibration ID:** EC2000001**Spec Set:** #99479 v. 1**QAP Name:** LAB QAP**List ID:** #21851**List Name:** Perchlorate RJ DOD**Signal ID:** 1**Data File:** I:\LCMS01\DATA\20200325\20200325_017

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.4	0.1352	0.1543	14		± 15%	Average RF

*Continuing Calibration Verification Summary***Calibration ID:** EC2000001**Spec Set:** #99479 v. 1**QAP Name:** LAB QAP**List ID:** #21851**List Name:** Perchlorate RJ DOD**Signal ID:** 1**Data File:** I:\LCMS01\DATA\20200325\20200325_005

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.8	0.1352	0.1455	8		± 15%	Average RF

Client: ALS Environmental - US
Project: HS20031081

Service Request: E2000263
Date Analyzed: 3/25/20 14:57

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID: I:\LCMS01\DATA\20200325\20200325_005
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000112-01
Analysis Lot: 674670
Signal ID: 1

Sodium Perchlorate-18O4

	<u>Area</u>	<u>RT</u>
ICAL Average ==>	232,157	3.04
Upper Limit ==>	348,236	5.04
Lower Limit ==>	116,079	1.04

Associated Analyses

Continuing Calibration Verification	EQ2000112-01	147,967	2.97
Method Blank	EQ2000110-01	153,426	3.03
Lab Control Sample	EQ2000110-02	179,436	3.03
Duplicate Lab Control Sample	EQ2000110-03	176,068	3.03
LH18/24-SP650_032420_BIX	E2000263-001	184,449	3.01

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20031081

Service Request: E2000263
Date Analyzed: 3/25/20 16:42

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID: I:\LCMS01\DATA\20200325\20200325_017
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000112-02
Analysis Lot: 674670
Signal ID: 1

Sodium Perchlorate-1804

	<u>Area</u>	<u>RT</u>
ICAL Average ==>	232,157	3.04
Upper Limit ==>	348,236	5.04
Lower Limit ==>	116,079	1.04

Associated Analyses

Continuing Calibration Verification	EQ2000112-02	171,460	2.97
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Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group Houston

PERCHLORATE7

Date acquired: 3/25/2020 2:57:41 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200325\20200325_005.lcd

Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	3/25/2020 2:57:41 PM	215236	10.75896	20200325_005	2.973	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	3/25/2020 2:57:41 PM	147967	1.00000	20200325_005	2.971	25.0000	1.0000	3

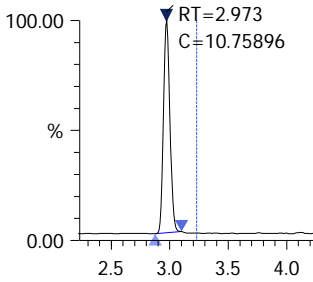
Perchlorate

Conc 10.75896

Area 215236

Q 99.00>83.00 (-)

5.65e4

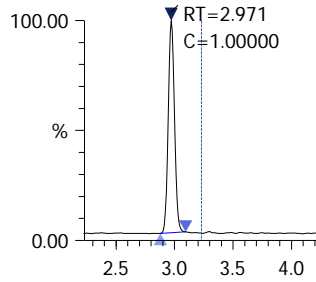
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 147967

ISTD 107.00>89.00 (-)

3.97e4



ALS Group Houston

EQ2000110-01

Date acquired: 3/25/2020 3:13:33 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200325\20200325_007.lcd

Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000110-01	3/25/2020 3:13:33 PM	----	----	20200325_007	----	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	EQ2000110-01	3/25/2020 3:13:33 PM	153426	1.00000	20200325_007	3.030	25.0000	1.0000	5

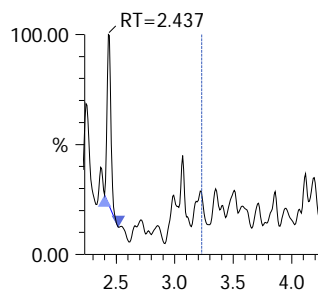
Perchlorate

Conc ----

Area ----

Q 99.00>83.00 (-)

6.99e2



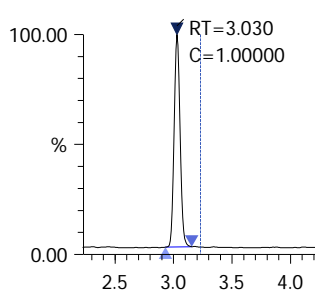
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 153426

ISTD 107.00>89.00 (-)

4.30e4



ALS Group Houston

EQ2000110-02

Date acquired: 3/25/2020 3:21:29 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200325\20200325_008.lcd

Vial: 6 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000110-02	3/25/2020 3:21:29 PM	2580	0.10635	20200325_008	3.027	25.0000	1.0000	6
Sodium Perchlorate-18O4_IS	EQ2000110-02	3/25/2020 3:21:29 PM	179436	1.00000	20200325_008	3.026	25.0000	1.0000	6

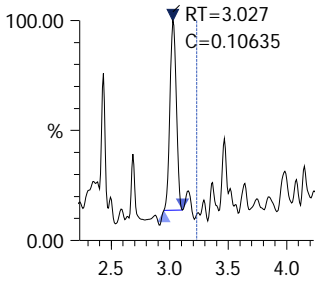
Perchlorate

Conc 0.10635

Area 2580

Q 99.00>83.00 (-)

7.75e2

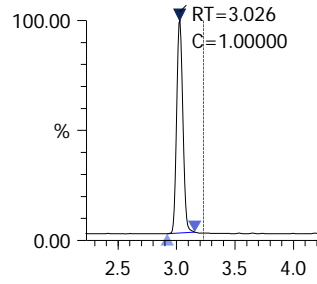
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 179436

ISTD 107.00>89.00 (-)

4.81e4



ALS Group Houston

EQ2000110-03

Date acquired: 3/25/2020 3:29:26 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200325\20200325_009.lcd

Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000110-03	3/25/2020 3:29:26 PM	2398	0.10072	20200325_009	3.027	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	EQ2000110-03	3/25/2020 3:29:26 PM	176068	1.00000	20200325_009	3.025	25.0000	1.0000	7

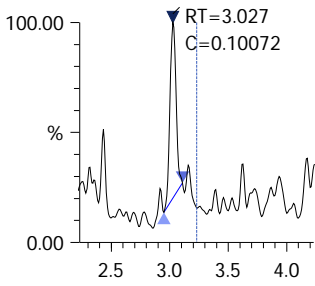
Perchlorate

Conc 0.10072

Area 2398

Q 99.00>83.00 (-)

8.14e2

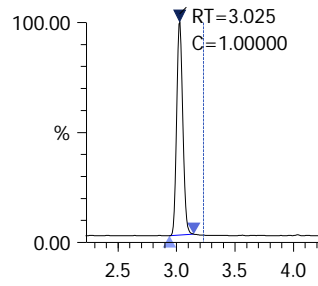
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 176068

ISTD 107.00>89.00 (-)

4.76e4



ALS Group Houston

E2000263-001

Date acquired: 3/25/2020 4:09:02 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200325\20200325_014.lcd

Vial: 12 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	E2000263-001	3/25/2020 4:09:02 PM	1796	0.07202	20200325_014	3.016	25.0000	1.0000	12
Sodium Perchlorate-18O4_IS	E2000263-001	3/25/2020 4:09:02 PM	184449	1.00000	20200325_014	3.013	25.0000	1.0000	12

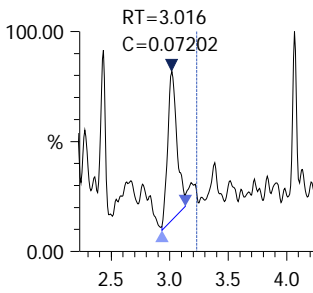
Perchlorate

Conc 0.07202

Area 1796

Q 99.00>83.00 (-)

4.75e2

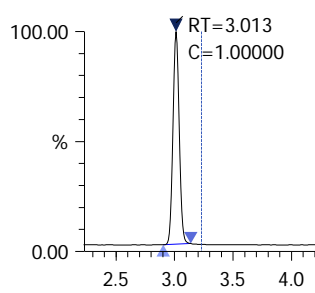
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 184449

ISTD 107.00>89.00 (-)

4.90e4



ALS Group Houston

PERCHLORATE7

Date acquired: 3/25/2020 4:42:01 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200325\20200325_017.lcd

Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

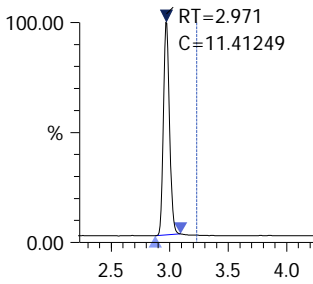
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	3/25/2020 4:42:01 PM	264558	11.41249	20200325_017	2.971	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	3/25/2020 4:42:01 PM	171460	1.00000	20200325_017	2.970	25.0000	1.0000	3

Perchlorate

Conc 11.41249

Area 264558

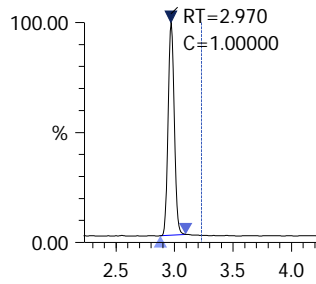
Q 99.00>83.00 (-)

Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 171460

7.30e4 ISTD 107.00>89.00 (-) 4.65e4





ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626
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www.alsglobal.com

April 03, 2020

Analytical Report for Service Request No: K2002617

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

RE: HS20031081

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory March 26, 2020
For your reference, these analyses have been assigned our service request number **K2002617**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3350. You may also contact me via email at Kelley.Lovejoy@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Kelley Lovejoy
Project Manager



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Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

General Chemistry

Raw Data

 General Chemistry

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses**

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjllabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Client: ALS Environmental - US
Project: HS20031081
Sample Matrix: Water

Service Request: K2002617
Date Received: 03/26/2020

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

One water sample was received for analysis at ALS Environmental on 03/26/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The sample was stored at minimum in accordance with the analytical method requirements.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by

Kelley Avejoy

Date

04/03/2020



Chain of Custody

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com



K2002617

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: Dept of Defense

COC ID: 13577

SUBCONTRACT TO:

ALS Environmental Kelso
1317 S. 13th Avenue
Kelso, WA 98626

Phone: +1 360 501 3312

CUSTOMER INFORMATION:

Company: ALS Houston
Contact: RJ Modashia
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Email: RJ.Modashia@alsglobal.com
Alternate Contact:
Email:

INVOICE INFORMATION:

Company: ALS Houston
Contact: Accounts Payable
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Reference: HS20031081
TSR: Danielle Winnings

LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
ANALYSIS REQUESTED			DUE DATE
1. HS20031081-01	LH18/24-SP650_032420	Water	24 Mar 2020 14:00
TOC Analysis for DOD Level IV			08 Apr 2020

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: J. J. [Signature] Date/Time: 3/25/20 18:00
Received By: [Signature] Morrow ALS Date/Time: 3/26/20 0940
Cooler ID(s): Kelso Temperature(s): _____

RIGHT SOLUTIONS | RIGHT PARTNER

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Page 9 of 11



PC KL

Cooler Receipt and Preservation Form

Client ALS-Houston Service Request K2002617

Received: 3/26/20 Opened: 3/26/20 By: dkh Unloaded: 3/26/20 By: dkh

- Samples were received via? **USPS** **Fed Ex** **UPS** **DHL** **PDX** **Courier** **Hand Delivered**
- Samples were received in: (circle) **Cooler** **Box** **Envelope** **Other** **NA**
- Were custody seals on coolers? **NA** **Y** **N** If yes, how many and where? 2 Front
- If present, were custody seals intact? **Y** **N** If present, were they signed and dated? **Y** **N**

Temp Blank	Sample 1	Sample 2	Sample 3	Sample 4	IR GUN	Cooler / COC ID	NA	Tracking Number	NA	Filed
—	4.2	4.3	3.9	3.8	3980048805	(3577)		125102958701		

- Packing material: **Inserts** **Baggies** **Bubble Wrap** **Gel Packs** **Wet Ice** **Dry Ice** **Sleeves**
- Were custody papers properly filled out (ink, signed, etc.)? **NA** **Y** **N**
- Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* **NA** **Y** **N**
If applicable, tissue samples were received: **Frozen** **Partially Thawed** **Thawed**
- Were all sample labels complete (i.e analysis, preservation, etc.)? **NA** **Y** **N**
- Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* **NA** **Y** **N**
- Were appropriate bottles/containers and volumes received for the tests indicated? **NA** **Y** **N**
- Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* **NA** **Y** **N**
- Were VOA vials received without headspace? *Indicate in the table below.* **NA** **Y** **N**
- Was C12/Res negative? **NA** **Y** **N**

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Out of	Head-	Broke	pH	Reagent	Volume	Reagent Lot	Initials	Time
	Bottle Type	Temp	space				added	Number		

Notes, Discrepancies, & Resolutions: _____



General Chemistry

ALS Environmental—Kelso Laboratory
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Analytical Report

Client: ALS Environmental - US
Project: HS20031081
Sample Matrix: Water
Analysis Method: SM 5310 C
Prep Method: None

Service Request: K2002617
Date Collected: 03/24/20
Date Received: 03/26/20
Units: mg/L
Basis: NA

Carbon, Total Organic

Sample Name	Lab Code	Result	LOQ	LOD	MDL	Dil.	Date Analyzed	Q
LH18/24-SP650_032420	K2002617-001	1.97	0.50	0.20	0.07	1	03/31/20 18:40	
Method Blank	K2002617-MB	ND U	0.50	0.20	0.07	1	03/31/20 13:40	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20031081
Sample Matrix: Water

Service Request: K2002617
Date Collected: 03/24/20
Date Received: 03/26/20
Date Analyzed: 03/31/20

Replicate Sample Summary
General Chemistry Parameters

Sample Name: LH18/24-SP650_032420
Lab Code: K2002617-001

Units: mg/L
Basis: NA

Analyte Name	Analysis Method	LOQ	LOD	MDL	Sample Result	Duplicate	Average	RPD	RPD Limit
						Sample K2002617-001DUP Result			
Carbon, Total Organic	SM 5310 C	0.50	0.20	0.07	1.97	1.92	1.94	3	10

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20031081
Sample Matrix: Water

Service Request: K2002617
Date Analyzed: 03/31/20
Date Extracted: NA

Lab Control Sample Summary
Carbon, Total Organic

Analysis Method: SM 5310 C
Prep Method: None

Units: mg/L
Basis: NA
Analysis Lot: 675059

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2002617-LCS	23.2	25.0	93	83-117

Client: ALS Environmental - US
Project: HS20031081

Service Request: K2002617

Continuing Calibration Verification (CCV) Summary

Carbon, Total Organic

Analysis Method: SM 5310 C

Units: mg/L

	Analysis		Date	True	Measured	Percent	Acceptance Limits
	Lot	Lab Code	Analyzed	Value	Value	Recovery	
CCV1	675059	KQ2004390-01	03/31/20 13:11	25.0	24.9	100	90-110
CCV2	675059	KQ2004390-02	03/31/20 17:14	25.0	26.4	105	90-110
CCV3	675059	KQ2004390-03	03/31/20 22:24	25.0	24.5	98	90-110
CCV4	675059	KQ2004390-04	04/01/20 03:08	25.0	23.9	96	90-110

Client: ALS Environmental - US
Project: HS20031081

Service Request: K2002617

Continuing Calibration Blank (CCB) Summary
Carbon, Total Organic

Analysis Method: SM 5310 C

Units: mg/L

	Analysis Lot	Lab Code	Date Analyzed	LOQ	LOD	MDL	Result	Q
CCB1	675059	KQ2004390-05	03/31/20 13:25	0.50	0.20	0.07	ND	U
CCB2	675059	KQ2004390-06	03/31/20 17:29	0.50	0.20	0.07	ND	U
CCB3	675059	KQ2004390-07	03/31/20 22:39	0.50	0.20	0.07	ND	U
CCB4	675059	KQ2004390-08	04/01/20 03:22	0.50	0.20	0.07	ND	U



Raw Data

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General Chemistry

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Work Request # (Original) 2002616, 257, 2626, 2643, 2669, 2619, 2627
 Tier: IV IV I IV II I I
 Date Analyzed: 3/31/20 TOC: 675059, 675060
 Analyst: Bob Run # _____
 Analysis: TOC

**DATA QUALITY REPORT
INORGANICS**

Explain any "no" responses to questions below, and any corrective actions in the comments section below.

- 1. Is the method name and number correct and appropriate? yes/no/NA
- 2. Holding times met for all analyses and for all samples? yes/no/NA
- 3. Are calculations correct? yes/no/NA
- 4. Is the reporting basis correct? (Dry Weight) yes/no/NA
- 5. All quality control criteria met? yes/no
- 6. Is the calibration curve correlation coefficient ≥ 0.995 ? yes/no/NA
- 7. MBs, CCVs, CCBs, LCSs, Dups, and Spikes, analyzed at proper frequency? yes/no/NA
- 8. Are ICVs, CCVs, and CCBs all within acceptance limits? yes/no/NA
- 9. Are results for methods blanks all ND? yes/no/NA
- 10. Are all QC samples within acceptance criteria? (LCS % rec, MS/DMS % rec, DUP or MS/DMS RPDs, etc.) yes/no/NA
- 11. Are all exceptions explained? yes/no/NA
- 12. Have all applicable service requests been reviewed? yes/no/NA
- 13. Are all samples labeled correctly? yes/no/NA
- 14. Have all instructions on the service request been followed? (e.g. Special MRLs, QC on a specific sample, Form V) yes/no/NA
- 15. Are detection limits and units reported correctly? yes/no/NA
- 16. Is the unused space on the benchsheet crossed out? yes/no/NA
- 17. Was analysis turned in by the due date? (n-2) (If not record SR#) yes/no/NA

COMMENTS: 2002616 - 4/4d report a high %RSD due to suspected non-homogenous sample.

Final Approved by: [Signature] Date: 4/1/20
 DOREPORT

Analytical Results Summary

00970862

Instrument Name: K-TOC-03

Analyst: BDITZLER

Analysis Lot: 675059

Method/Testcode: SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2002616-001	Carbon, Total Organic	N/A		Ground Water	5.88 mg/L	10 mL	5.88 mg/L	1	0.07	0.50			3/31/20 14:24:00	N	IV
K2002616-002	Carbon, Total Organic	N/A		Ground Water	7.86 mg/L	10 mL	7.86 mg/L	1	0.07	0.50			3/31/20 14:52:00	N	IV
K2002616-003	Carbon, Total Organic	N/A		Ground Water	18.28 mg/L	10 mL	18.3 mg/L	1	0.07	0.50			3/31/20 15:20:00	Y	IV
K2002616-004	Carbon, Total Organic	N/A		Ground Water	3.29 mg/L	10 mL	3.29 mg/L	1	0.07	0.50			3/31/20 16:18:00	N	IV
K2002616-005	Carbon, Total Organic	N/A		Ground Water	15.55 mg/L	10 mL	15.6 mg/L	1	0.07	0.50			3/31/20 16:46:00	N	IV
K2002616-006	Carbon, Total Organic	N/A		Ground Water	1.25 mg/L	10 mL	250 mg/L	200	20	100			3/31/20 17:44:00	N	IV
K2002616-007	Carbon, Total Organic	N/A		Ground Water	1.79 mg/L	10 mL	1.79 mg/L	1	0.07	0.50			3/31/20 18:12:00	N	IV
K2002617-001	Carbon, Total Organic	N/A		Water	1.97 mg/L	10 mL	1.97 mg/L	1	0.07	0.50			3/31/20 18:40:00	N	IV
K2002626-001	Carbon, Total Organic	N/A		Ground Water	1.96 mg/L	10 mL	78 mg/L	40	3	20			3/31/20 21:56:00	N	I
K2002626-002	Carbon, Total Organic	N/A		Ground Water	4.92 mg/L	10 mL	4.92 mg/L	1	0.07	0.50			3/31/20 23:23:00	N	I
K2002626-003	Carbon, Total Organic	N/A		Ground Water	8.93 mg/L	10 mL	8.93 mg/L	1	0.07	0.50			3/31/20 23:51:00	N	I
K2002643-001	Carbon, Total Organic	N/A		Ground Water	5.21 mg/L	10 mL	5.21 mg/L	1	0.07	0.50			3/31/20 19:08:00	N	IV
K2002643-002	Carbon, Total Organic	N/A		Ground Water	13.59 mg/L	10 mL	2720 mg/L	200	20	100			3/31/20 19:36:00	N	IV
K2002643-003	Carbon, Total Organic	N/A		Ground Water	4.10 mg/L	10 mL	820 mg/L	200	20	100			3/31/20 20:04:00	N	IV
K2002643-004	Carbon, Total Organic	N/A		Ground Water	4.10 mg/L	10 mL	820 mg/L	200	20	100			3/31/20 20:32:00	N	IV
K2002643-005	Carbon, Total Organic	N/A		Ground Water	3.23 mg/L	10 mL	650 mg/L	200	20	100			3/31/20 21:00:00	N	IV
K2002669-001	Carbon, Total Organic	N/A		Water	2.38 mg/L	10 mL	2.38 mg/L	1	0.07	0.50			3/31/20 21:28:00	N	II
KQ2004390-01	Carbon, Total Organic	CCV		Ground Water	24.90 mg/L	10 mL	24.9 mg/L	1					3/31/20 13:11:00	N	IV
KQ2004390-02	Carbon, Total Organic	CCV		Ground Water	26.36 mg/L	10 mL	26.4 mg/L	1					3/31/20 17:14:00	N	IV
KQ2004390-03	Carbon, Total Organic	CCV		Ground Water	24.52 mg/L	10 mL	24.5 mg/L	1					3/31/20 22:24:00	N	IV
KQ2004390-04	Carbon, Total Organic	CCV		Ground Water	23.88 mg/L	10 mL	23.9 mg/L	1					4/1/20 03:08:00	N	IV
KQ2004390-05	Carbon, Total Organic	CCB		Ground Water	0.00 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/31/20 13:25:00	N	IV
KQ2004390-06	Carbon, Total Organic	CCB		Ground Water	0.00 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/31/20 17:29:00	N	IV
KQ2004390-07	Carbon, Total Organic	CCB		Ground Water	0.00 mg/L	10 mL	0.50 mg/L	U 1	0.07	0.50			3/31/20 22:39:00	N	IV

indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

[Signature] 4/1/20

Analytical Results Summary

00970863

Instrument Name: K-TOC-03

Analyst: BDITZLER

Analysis Lot: 675059 Method/Testcode: SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ2004390-08	Carbon, Total Organic	CCB		Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/1/20 03:22:00	N	IV
KQ2004390-09	Carbon, Total Organic	MB		Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/31/20 13:40:00	N	IV
KQ2004390-10	Carbon, Total Organic	LCS		Ground Water	23.18 mg/L	10 mL	23.2 mg/L	1	0.07	0.50	93		3/31/20 13:55:00	N	IV
KQ2004390-11	Carbon, Total Organic	MS	K2002616-003	Ground Water	32.23 mg/L	10 mL	129 mg/L	4	0.3	2.0	111		3/31/20 15:49:00	N	IV
KQ2004390-12	Carbon, Total Organic	DUP	K2002616-002	Ground Water	8.19 mg/L	10 mL	8.19 mg/L	1	0.07	0.50		4	3/31/20 14:52:00	N	IV
KQ2004390-13	Carbon, Total Organic	DUP	K2002616-001	Ground Water	5.76 mg/L	10 mL	5.76 mg/L	1	0.07	0.50		2	3/31/20 14:24:00	N	IV
KQ2004390-14	Carbon, Total Organic	DUP	K2002616-003	Ground Water	17.94 mg/L	10 mL	17.9 mg/L	1	0.07	0.50		2	3/31/20 15:20:00	N	IV
KQ2004390-15	Carbon, Total Organic	DUP	K2002616-004	Ground Water	2.88 mg/L	10 mL	2.88 mg/L	1	0.07	0.50		13*	3/31/20 16:18:00	N	IV
KQ2004390-16	Carbon, Total Organic	DUP	K2002616-005	Ground Water	16.31 mg/L	10 mL	16.3 mg/L	1	0.07	0.50		5	3/31/20 16:46:00	N	IV
KQ2004390-17	Carbon, Total Organic	DUP	K2002616-006	Ground Water	1.19 mg/L	10 mL	240 mg/L	200	20	100		5	3/31/20 17:44:00	N	IV
KQ2004390-18	Carbon, Total Organic	DUP	K2002616-007	Ground Water	1.76 mg/L	10 mL	1.76 mg/L	1	0.07	0.50		1	3/31/20 18:12:00	N	IV
KQ2004390-19	Carbon, Total Organic	DUP	K2002617-001	Water	1.92 mg/L	10 mL	1.92 mg/L	1	0.07	0.50		3	3/31/20 18:40:00	N	IV
KQ2004390-20	Carbon, Total Organic	DUP	K2002626-003	Ground Water	9.15 mg/L	10 mL	9.15 mg/L	1	0.07	0.50		3	3/31/20 23:51:00	N	I
KQ2004390-21	Carbon, Total Organic	DUP	K2002626-001	Ground Water	1.84 mg/L	10 mL	74 mg/L	40	3	20		6	3/31/20 21:56:00	N	I
KQ2004390-22	Carbon, Total Organic	DUP	K2002626-002	Ground Water	4.82 mg/L	10 mL	4.82 mg/L	1	0.07	0.50		2	3/31/20 23:23:00	N	I
KQ2004390-23	Carbon, Total Organic	DUP	K2002643-002	Ground Water	13.82 mg/L	10 mL	2760 mg/L	200	20	100		2	3/31/20 19:36:00	N	IV
KQ2004390-24	Carbon, Total Organic	DUP	K2002643-001	Ground Water	5.01 mg/L	10 mL	5.01 mg/L	1	0.07	0.50		4	3/31/20 19:08:00	N	IV
KQ2004390-25	Carbon, Total Organic	DUP	K2002643-003	Ground Water	4.00 mg/L	10 mL	800 mg/L	200	20	100		3	3/31/20 20:04:00	N	IV
KQ2004390-26	Carbon, Total Organic	DUP	K2002643-004	Ground Water	4.10 mg/L	10 mL	820 mg/L	200	20	100		<1	3/31/20 20:32:00	N	IV
KQ2004390-27	Carbon, Total Organic	DUP	K2002643-005	Ground Water	3.23 mg/L	10 mL	650 mg/L	200	20	100		<1	3/31/20 21:00:00	N	IV
KQ2004390-28	Carbon, Total Organic	DUP	K2002669-001	Water	2.35 mg/L	10 mL	2.35 mg/L	1	0.07	0.50		1	3/31/20 21:28:00	N	II

indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Printed 4/1/20 16:33

Analytical Results Summary

00970864

Instrument Name: K-TOC-03

Analyst: BDITZLER

Analysis Lot: 675060

Method/Testcode: SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2002615-001	Carbon, Total Organic	N/A		Water	3.82 mg/L	10 mL	3.82 mg/L	1	0.07	0.50			4/1/20 02:40:00	N	I
K2002615-002	Carbon, Total Organic	N/A		Water	1.99 mg/L	10 mL	1.99 mg/L	1	0.07	0.50			4/1/20 03:37:00	N	I
K2002615-003	Carbon, Total Organic	N/A		Water	1.84 mg/L	10 mL	1.84 mg/L	1	0.07	0.50			4/1/20 04:34:00	N	I
K2002615-004	Carbon, Total Organic	N/A		Water	1.94 mg/L	10 mL	1.94 mg/L	1	0.07	0.50			4/1/20 05:03:00	N	I
K2002615-005	Carbon, Total Organic	N/A		Water	1.75 mg/L	10 mL	1.75 mg/L	1	0.07	0.50			4/1/20 05:31:00	N	I
K2002627-001	Carbon, Total Organic	N/A		Ground Water	9.51 mg/L	10 mL	9.51 mg/L	1	0.07	0.50			4/1/20 00:19:00	N	I
K2002627-002	Carbon, Total Organic	N/A		Ground Water	17.26 mg/L	10 mL	17.3 mg/L	1	0.07	0.50			4/1/20 00:47:00	N	I
K2002627-003	Carbon, Total Organic	N/A		Ground Water	21.98 mg/L	10 mL	22.0 mg/L	1	0.07	0.50			4/1/20 01:15:00	N	I
K2002627-004	Carbon, Total Organic	N/A		Ground Water	16.50 mg/L	10 mL	16.5 mg/L	1	0.07	0.50			4/1/20 01:43:00	N	I
K2002627-005	Carbon, Total Organic	N/A		Ground Water	3.70 mg/L	10 mL	74 mg/L	20	2	10			4/1/20 02:11:00	N	I
KQ2004389-01	Carbon, Total Organic	MS	K2002615-002	Water	29.40 mg/L	10 mL	29.4 mg/L	1	0.07	0.50	110		4/1/20 04:05:00	N	I
KQ2004389-02	Carbon, Total Organic	CCV		Ground Water	24.52 mg/L	10 mL	24.5 mg/L	1					3/31/20 22:24:00	N	I
KQ2004389-03	Carbon, Total Organic	CCV		Ground Water	23.88 mg/L	10 mL	23.9 mg/L	1					4/1/20 03:08:00	N	I
KQ2004389-04	Carbon, Total Organic	CCV		Ground Water	24.14 mg/L	10 mL	24.1 mg/L	1					4/1/20 05:59:00	N	I
KQ2004389-05	Carbon, Total Organic	CCB		Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/31/20 22:39:00	N	I
KQ2004389-06	Carbon, Total Organic	CCB		Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/1/20 03:22:00	N	I
KQ2004389-07	Carbon, Total Organic	CCB		Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/1/20 06:14:00	N	I
KQ2004389-08	Carbon, Total Organic	MB		Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/31/20 22:54:00	N	I
KQ2004389-09	Carbon, Total Organic	LCS		Ground Water	23.02 mg/L	10 mL	23.0 mg/L	1	0.07	0.50	92		3/31/20 23:08:00	N	I
KQ2004389-10	Carbon, Total Organic	DUP	K2002615-001	Water	3.86 mg/L	10 mL	3.86 mg/L	1	0.07	0.50		<1	4/1/20 02:40:00	N	I
KQ2004389-11	Carbon, Total Organic	DUP	K2002615-002	Water	2.06 mg/L	10 mL	2.06 mg/L	1	0.07	0.50		3	4/1/20 03:37:00	N	I
KQ2004389-12	Carbon, Total Organic	DUP	K2002615-003	Water	1.83 mg/L	10 mL	1.83 mg/L	1	0.07	0.50		<1	4/1/20 04:34:00	N	I
KQ2004389-13	Carbon, Total Organic	DUP	K2002615-004	Water	1.97 mg/L	10 mL	1.97 mg/L	1	0.07	0.50		1	4/1/20 05:03:00	N	I
KQ2004389-14	Carbon, Total Organic	DUP	K2002615-005	Water	1.77 mg/L	10 mL	1.77 mg/L	1	0.07	0.50		1	4/1/20 05:31:00	N	I
KQ2004389-15	Carbon, Total Organic	DUP	K2002627-001	Ground Water	9.27 mg/L	10 mL	9.27 mg/L	1	0.07	0.50		3	4/1/20 00:19:00	N	I
KQ2004389-16	Carbon, Total Organic	DUP	K2002627-002	Ground Water	16.99 mg/L	10 mL	17.0 mg/L	1	0.07	0.50		2	4/1/20 00:47:00	N	I
KQ2004389-17	Carbon, Total Organic	DUP	K2002627-003	Ground Water	22.16 mg/L	10 mL	22.2 mg/L	1	0.07	0.50		<1	4/1/20 01:15:00	N	I

indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03

Analyst: BDITZLER

Analysis Lot: 675060 Method/Testcode: SM 5310 C/TOC T

<u>Lab Code</u>	<u>Target Analytes</u>	<u>QC</u>	<u>Parent Sample</u>	<u>Matrix</u>	<u>Raw Result</u>	<u>Sample Amt.</u>	<u>Final Result</u>	<u>Dil</u>	<u>MDL</u>	<u>PQL</u>	<u>% Rec</u>	<u>% RSD</u>	<u>Date Analyzed</u>	<u>QC?</u>	<u>Tier</u>
KQ2004389-18	Carbon, Total Organic	DUP	K2002627-004	Ground Water	15.54 mg/L	10 mL	15.5 mg/L	1	0.07	0.50	6	4/1/20 01:43:00	N	I	
KQ2004389-19	Carbon, Total Organic	DUP	K2002627-005	Ground Water	3.73 mg/L	10 mL	75 mg/L	20	2	10	<1	4/1/20 02:11:00	N	I	

indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

TOC: ~~674059~~ ⁶⁷⁹⁰⁵⁹
675080

Schedule: 03312020

Version: 2

Instrument: Fusion1

Last Saved by: Fusion1 (Fusion1)

Last Saved on: 2020/03/31 09:56 - Tuesday

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use	State
(Clean)	Clean	Clean		1	True	Ready
75	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	6	True	Ready
(Clean)	Clean	Clean		1	True	Ready
(Clean)	Clean	Clean		1	True	Ready
(Blank)	Blank	Reagent/Acid Blank		1	True	Ready
D	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
1	Sample	MB1	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
2	Sample	ICS	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
3	Sample	K2002616-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
4	Sample	K2002616-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
5	Sample	K2002616-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
6	Sample	K2002616-003.01 ms 4x	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
7	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
8	Sample	K2002616-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
9	Sample	K2002616-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
10	Sample	K2002616-006.01 200x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
11	Sample	K2002616-007.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
12	Sample	K2002617-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
13	Sample	K2002643-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
14	Sample	K2002643-002.01 200x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
15	Sample	K2002643-003.01 200x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
16	Sample	K2002643-004.01 200x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
17	Sample	K2002643-005.01 200x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
18	Sample	K2002669-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
19	Sample	K2002626-001.03 40x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
20	Sample	MB2	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
21	Sample	K2002626-002.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
22	Sample	K2002626-003.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
23	Sample	K2002627-001.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
24	Sample	K2002627-002.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
25	Sample	K2002627-003.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
26	Sample	K2002627-004.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
27	Sample	K2002627-005.03 20x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
28	Sample	K2002615-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
29	Sample	K2002615-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
30	Sample	K2002615-002.01 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
31	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
32	Sample	K2002615-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
33	Sample	K2002615-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
34	Sample	K2002615-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
					False	

Fusion Report - 03312020

Tuesday, March 31, 2020 09:56 AM

(View - Repts, Unused Repts, Meta-Data, Signature, History)
Printed on 2020/04/01 09:42 -
Wednesday

Report Summary Information

Company Location: Gen Chem Lab
 Schedule Name: 03312020
 Instrument Name: Fusion1
 Report Version: 1 of 1
 Report Creation by Operators (schedule version): Fusion1 (Fusion1) (v2)
 Comment:

Engine 1.1.5.1
 Version:
 Firmware 1.2.0696
 Version:
 Connection: RS232 COM1

Report Results

Sample Type: Clean From Schedule Version 2

Pos	Analysis Type	Sample ID	Start Time
◇ (clean)		Clean	2020/03/31 09:56

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	14.29	20.33	6.04	49.65	05:22
2	TC Clean	48.76	52.68	3.92	49.97	04:04
3	TC Clean	23.02	27.18	4.16	50.02	03:48
4	TC Clean	16.99	20.98	3.99	49.98	03:47

Sample Type: Sample From Schedule Version 2

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◇ 75	TOC	RB	0.3482 ppm	0.3035 ppm	87.1600%	2020/03/31 10:18

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8670	8.6704	13.06	17.11	4.06	49.97	10:26
2	TOC	0.5444	5.4437	10.89	14.92	4.03	49.95	10:27
3	TOC	0.2892	2.8920	9.17	13.14	3.96	50.01	10:25
4	TOC	0.1915	1.9150	8.51	12.63	4.12	50.00	10:26
5	TOC	0.1109	1.1091	7.97	11.90	3.93	50.02	10:26
6	TOC	0.0864	0.8637	7.81	11.82	4.01	50.06	10:27

Dilution 1:10	Blank Contribution (TC) 7.2272 (IC) (v1367)	Method CAS_salt_010711 (v4)	Calibration CAS_salt_010711 (v32)
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Sample Type: Clean From Schedule Version 2

Pos	Analysis Type	Sample ID				Start Time
◆ (clean)		Clean				2020/03/31 11:39
Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	12.69	17.32	4.63	49.59	05:20
2	TC Clean	5.58	9.55	3.97	49.97	04:00
3	TC Clean	3.49	7.47	3.98	49.97	03:46
4	TC Clean	3.19	7.07	3.88	50.08	03:44

Sample Type: Clean From Schedule Version 2

Pos	Analysis Type	Sample ID				Start Time
◆ (clean)		Clean				2020/03/31 12:00
Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.98	4.91	3.92	49.61	05:11
2	TC Clean	7.38	11.45	4.07	50.06	04:05
3	TC Clean	2.70	6.66	3.96	49.97	03:52
4	TC Clean	2.62	6.74	4.12	50.04	03:54

Sample Type: Blank (Creating v1368) From Schedule Version 2

Pos	Analysis Type	Sample ID				Start Time
◆ (blank)		Reagent/Acid Blank				2020/03/31 12:22
Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.99	4.94	3.95	49.76	05:21
2	TC Clean	6.55	10.65	4.10	50.01	04:03
3	TC Clean	2.47	6.68	4.21	49.97	03:54
4	TC Clean	2.37	6.44	4.07	50.00	03:54
5	Reagent Blank	2.81	6.93	4.12	50.03	05:06

6	Acid Blank	0.86	5.01	4.15	49.61	05:28
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Sample Type: Sample

From Schedule Version 2

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
D	TOC	RB	0.1360 ppm	0.0000 ppm	0.0000%	2020/03/31 12:56

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1360	1.3602	8.14	12.20	4.06	50.02	10:30

Dilution

1:10

Blank Contribution(TC) 7.2233 (IC)
(v1368)**Method**CAS_salt_010711
(v4)**Calibration**CAS_salt_010711
(v32)**Sample Type:** Check Standard --> CCV 25 ppm

From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	24.9028 ppm (PASS)	0.0000 ppm	0%	2020/03/31 13:11

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.9028	249.0277	175.29	179.38	4.09	50.03	10:31

Completion State

Success - Criteria met.

Success Action

Do Nothing

MethodCAS_salt_010711
(v4)**Calibration**CAS_salt_010711
(v32)**STD Conc - Pos B**

50 ppmC

Sample Type: Check Standard --> CCB

From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/31 13:25

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	6.09	10.24	4.15	50.07	10:32

Completion State

Success - Criteria met.

Success Action

Do Nothing

MethodCAS_salt_010711
(v4)**Calibration**CAS_salt_010711
(v32)**STD Conc - Pos D**

0 ppmC

Sample Type: Sample

From Schedule Version 2

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
1	TOC	MB1	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/31 13:40

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.63	9.78	4.15	50.03	10:32

<u>Dilution</u>	<u>Blank Contribution</u>	<u>Method</u>	<u>Calibration</u>
1:10	(TC) 7.2233 (IC) (v1368)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> LCS From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
C	TOC	25.0000	1:1	[TOC] LCS [24.0 ppm]	0 / infinity (NA / NA)	23.1776 ppm (PASS)	0.0000 ppm	0%	2020/03/31 13:55

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	23.1776	231.7756	163.69	167.63	3.94	50.02	10:32

<u>Completion State</u>	<u>Success Action</u>	<u>Method</u>	<u>Calibration</u>	<u>STD Conc - Pos C</u>
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	25 ppmC

Sample Type: Sample From Schedule Version 2

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
2	TOC	ICS	0.3678 ppm	0.0000 ppm	0.0000%	2020/03/31 14:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3678	3.6784	9.70	13.82	4.12	50.04	10:33

<u>Dilution</u>	<u>Blank Contribution</u>	<u>Method</u>	<u>Calibration</u>
1:10	(TC) 7.2233 (IC) (v1368)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
3	TOC	K2002616-001.01	5.8203 ppm	0.0834 ppm	1.4300%	2020/03/31 14:24

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.8792	58.7924	46.76	50.75	3.99	50.05	10:27
2	TOC	5.7613	57.6132	45.97	49.87	3.90	50.07	10:25

<u>Dilution</u>	<u>Blank Contribution</u>	<u>Method</u>	<u>Calibration</u>
1:10	(TC) 7.2233 (IC) (v1368)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Pos	Analysis	Sample ID	Result (ppmC)	Std. Dev.	RSD	Start Time
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Type	(ppmC)
4 TOC K2002616-002.01	8.0252 ppm 0.2306 ppm 2.8700%

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	7.8621	78.6215	60.10	64.03	3.94	50.05	10:30
2	TOC	8.1882	81.8824	62.29	66.34	4.05	50.04	10:27

Dilution 1:10 Blank Contribution (TC) 7.2233 (IC) (v1368) Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
5	TOC	K2002616-003.01	18.1073 ppm	0.2396 ppm	1.3200%	2020/03/31 15:20

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	18.2768	182.7676	130.13	134.06	3.92	50.07	10:29
2	TOC	17.9379	179.3788	127.86	131.72	3.86	50.08	10:25

Dilution 1:10 Blank Contribution (TC) 7.2233 (IC) (v1368) Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
6	TOC	K2002616-003.01 ms 4x	32.2294 ppm	0.0000 ppm	0.0000%	2020/03/31 15:49

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	32.2294	322.2939	223.96	227.85	3.88	50.08	10:34

Dilution 1:10 Blank Contribution (TC) 7.2233 (IC) (v1368) Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
7	TOC	RB	0.1033 ppm	0.0000 ppm	0.0000%	2020/03/31 16:03

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1033	1.0330	7.92	11.83	3.92	50.11	10:32

Dilution 1:10 Blank Contribution (TC) 7.2233 (IC) (v1368) Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
8	TOC	K2002616-004.01	3.0809 ppm	0.2896 ppm	9.4000%	2020/03/31 16:18

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.2856	32.8562	29.32	33.48	4.16	50.10	10:28
2	TOC	2.8761	28.7610	26.56	30.62	4.06	50.08	10:28

Dilution Blank Contribution Method Calibration

1:10 (TC) 7.2233 (IC) CAS_salt_010711 (v4) CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
9	TOC	K2002616-005.01	15.9327 ppm	0.5349 ppm	3.3600%	2020/03/31 16:46

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	15.5545	155.5452	111.83	115.79	3.96	50.06	10:29
2	TOC	16.3110	163.1095	116.91	121.05	4.14	50.06	10:27

Dilution 1:10 **Blank Contribution** (TC) 7.2233 (IC) (v1368) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.3566 ppm (PASS)	0.0000 ppm	0%	2020/03/31 17:14

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.3566	263.5660	185.06	188.96	3.89	50.09	10:33

Completion State Success - Criteria met. **Success Action** Do Nothing **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32) **STD Conc - Pos B** 50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/31 17:29

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	7.58	11.56	3.98	50.10	10:31

Completion State Success - Criteria met. **Success Action** Do Nothing **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32) **STD Conc - Pos D** 0 ppmC

Sample Type: Sample From Schedule Version 2

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
10	TOC	K2002616-006.01 200x	1.2187 ppm	0.0421 ppm	3.4500%	2020/03/31 17:44

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.2484	12.4844	15.62	19.50	3.88	50.11	10:29
2	TOC	1.1890	11.8896	15.22	19.07	3.85	50.09	10:25

Dilution 1:10 **Blank Contribution** (TC) 7.2233 (IC) (v1368) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
11	TOC	K2002616-007.01	1.7747 ppm	0.0154 ppm	0.8700%	2020/03/31 18:12

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.7855	17.8554	19.23	23.17	3.94	50.06	10:32
2	TOC	1.7638	17.6383	19.08	22.95	3.86	50.08	10:24

Dilution 1:10 **Blank Contribution** (TC) 7.2233 (IC) (v1368) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
12	TOC	K2002617-001.01	1.9417 ppm	0.0365 ppm	1.8800%	2020/03/31 18:40

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9675	19.6755	20.45	24.36	3.91	50.05	10:29
2	TOC	1.9159	19.1595	20.11	24.00	3.90	50.07	10:24

Dilution 1:10 **Blank Contribution** (TC) 7.2233 (IC) (v1368) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
13	TOC	K2002643-001.01	5.1094 ppm	0.1398 ppm	2.7400%	2020/03/31 19:08

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.2083	52.0831	42.25	46.15	3.90	50.07	10:31
2	TOC	5.0105	50.1054	40.92	44.84	3.93	50.07	10:26

Dilution 1:10 **Blank Contribution** (TC) 7.2233 (IC) (v1368) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
14	TOC	K2002643-002.01 200x	13.7052 ppm	0.1570 ppm	1.1500%	2020/03/31 19:36

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	13.5942	135.9421	98.64	102.59	3.94	50.12	10:27
2	TOC	13.8162	138.1622	100.14	104.12	3.99	50.10	10:25

Dilution 1:10 **Blank Contribution** (TC) 7.2233 (IC) **Method** CAS_salt_010711 **Calibration** CAS_salt_010711

(v1368)

(v4)

(v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
15	TOC	K2002643-003.01 200x	4.0489 ppm	0.0728 ppm	1.8000%	2020/03/31 20:04

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.1003	41.0035	34.80	38.76	3.96	50.11	10:30
2	TOC	3.9974	39.9745	34.11	38.24	4.13	50.08	10:26

Dilution

1:10

Blank Contribution(TC) 7.2233 (IC)
(v1368)MethodCAS_salt_010711
(v4)CalibrationCAS_salt_010711
(v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
16	TOC	K2002643-004.01 200x	4.0983 ppm	0.0005 ppm	0.0100%	2020/03/31 20:32

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.0980	40.9797	34.78	38.80	4.01	50.07	10:29
2	TOC	4.0987	40.9871	34.79	38.58	3.79	50.11	10:31

Dilution

1:10

Blank Contribution(TC) 7.2233 (IC)
(v1368)MethodCAS_salt_010711
(v4)CalibrationCAS_salt_010711
(v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
17	TOC	K2002643-005.01 200x	3.2333 ppm	0.0011 ppm	0.0300%	2020/03/31 21:00

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.2340	32.3402	28.97	32.78	3.80	50.06	10:28
2	TOC	3.2325	32.3254	28.96	32.83	3.86	50.08	10:25

Dilution

1:10

Blank Contribution(TC) 7.2233 (IC)
(v1368)MethodCAS_salt_010711
(v4)CalibrationCAS_salt_010711
(v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
18	TOC	K2002669-001.01	2.3631 ppm	0.0214 ppm	0.9100%	2020/03/31 21:28

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.3783	23.7826	23.22	27.17	3.95	50.04	10:25
2	TOC	2.3479	23.4792	23.01	26.81	3.80	50.03	10:28

Dilution

1:10

Blank Contribution(TC) 7.2233 (IC)
(v1368)MethodCAS_salt_010711
(v4)CalibrationCAS_salt_010711
(v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
19	TOC	K2002626-001.03 40x	1.8987 ppm	0.0801 ppm	4.2200%	2020/03/31 21:56

Rep	Base	ppm	µg	Adjusted	NDIR (Abs)	Baseline	Pressure	Run

#	Analysis Type			(Abs)		(Abs)	(psig)	Time
1	TOC	1.9554	19.5536	20.37	24.04	3.67	50.04	10:30
2	TOC	1.8420	18.4205	19.61	23.45	3.84	50.05	10:30

Dilution 1:10
Blank Contribution (TC) 7.2233 (IC) (v1368)
Method CAS_salt_010711 (v4)
Calibration CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm

From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
* B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	24.5215 ppm (PASS)	0.0000 ppm	0%	2020/03/31 22:24

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.5215	245.2150	172.72	176.49	3.77	50.04	10:29

Completion State Success - Criteria met.
Success Action Do Nothing
Method CAS_salt_010711 (v4)
Calibration CAS_salt_010711 (v32)
STD Conc - Pos B 50 ppmC

Sample Type: Check Standard --> CCB

From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
* D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/31 22:39

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	5.75	9.68	3.93	50.03	10:32

Completion State Success - Criteria met.
Success Action Do Nothing
Method CAS_salt_010711 (v4)
Calibration CAS_salt_010711 (v32)
STD Conc - Pos D 0 ppmC

Sample Type: Sample

From Schedule Version 2

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
* 20	TOC	MB2	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/31 22:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.38	9.25	3.86	50.02	10:30

Dilution 1:10
Blank Contribution (TC) 7.2233 (IC) (v1368)
Method CAS_salt_010711 (v4)
Calibration CAS_salt_010711 (v32)

Sample Type: Check Standard --> LCS										From Schedule Version 2	
Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time		
◊ C	TOC	25.0000	1:1	[TOC] LCS [24.0 ppm]	0 / infinity (NA / NA)	23.0156 ppm (PASS)	0.0000 ppm	0%	2020/03/31 23:08		
Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time	
C	TOC	25.0 ppm	1	23.0156	230.1562	162.60	166.47	3.87	50.01	10:31	
Completion State		Success Action		Method		Calibration		STD Conc - Pos C			
Success - Criteria met.		Do Nothing		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)		25 ppmC			

Sample Type: Sample										From Schedule Version 2	
Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time					
◊ 21	TOC	K2002626-002.03	4.8696 ppm	0.0768 ppm	1.5800%	2020/03/31 23:23					
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time			
1	TOC	4.9238	49.2384	40.34	44.20	3.87	50.02	10:26			
2	TOC	4.8153	48.1529	39.61	43.50	3.90	50.01	10:30			
Dilution		Blank Contribution		Method		Calibration					
1:10		(TC) 7.2233 (IC) (v1368)		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)					
Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time					
◊ 22	TOC	K2002626-003.03	9.0398 ppm	0.1610 ppm	1.7800%	2020/03/31 23:51					
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time			
1	TOC	8.9259	89.2594	67.25	71.09	3.84	50.00	10:29			
2	TOC	9.1536	91.5360	68.78	72.65	3.87	50.01	10:31			
Dilution		Blank Contribution		Method		Calibration					
1:10		(TC) 7.2233 (IC) (v1368)		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)					
Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time					
◊ 23	TOC	K2002627-001.03	9.3889 ppm	0.1660 ppm	1.7700%	2020/04/01 00:19					
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time			
1	TOC	9.5063	95.0632	71.15	75.01	3.86	49.99	10:26			
2	TOC	9.2715	92.7152	69.57	73.58	4.01	50.01	10:25			
Dilution		Blank Contribution		Method		Calibration					
1:10		(TC) 7.2233 (IC) (v1368)		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)					

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
24	TOC	K2002627-002.03	17.1223 ppm	0.1942 ppm	1.1300%	2020/04/01 00:47

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	17.2597	172.5966	123.29	127.22	3.92	49.99	10:30
2	TOC	16.9850	169.8501	121.45	125.30	3.85	50.00	10:26

Dilution 1:10
Blank Contribution (TC) 7.2233 (IC) (v1368)
Method CAS_salt_010711 (v4)
Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
25	TOC	K2002627-003.03	22.0681 ppm	0.1309 ppm	0.5900%	2020/04/01 01:15

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	21.9755	219.7551	155.01	158.98	3.97	50.02	10:29
2	TOC	22.1606	221.6064	156.25	160.15	3.89	49.98	10:25

Dilution 1:10
Blank Contribution (TC) 7.2233 (IC) (v1368)
Method CAS_salt_010711 (v4)
Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
26	TOC	K2002627-004.03	16.0202 ppm	0.6826 ppm	4.2600%	2020/04/01 01:43

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	16.5029	165.0293	118.20	122.21	4.01	49.98	10:27
2	TOC	15.5376	155.3757	111.71	115.69	3.97	50.00	10:27

Dilution 1:10
Blank Contribution (TC) 7.2233 (IC) (v1368)
Method CAS_salt_010711 (v4)
Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
27	TOC	K2002627-005.03 20x	3.7166 ppm	0.0182 ppm	0.4900%	2020/04/01 02:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.7038	37.0376	32.13	36.14	4.01	50.00	10:29
2	TOC	3.7295	37.2949	32.30	36.31	4.01	49.99	10:25

Dilution 1:10
Blank Contribution (TC) 7.2233 (IC) (v1368)
Method CAS_salt_010711 (v4)
Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
28	TOC	K2002615-001.01	3.8382 ppm	0.0252 ppm	0.6600%	2020/04/01 02:40

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.8203	38.2034	32.92	36.90	3.98	49.98	10:25

2	TOC	3.8560	38.5603	33.16	37.04	3.89	49.98	10:26
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Dilution 1:10
Blank Contribution (TC) 7.2233 (IC) 1368
Method CAS_salt_010711 (v4)
Calibration CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
♦ B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	23.8767 ppm (PASS)	0.0000 ppm	0%	2020/04/01 03:08

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	23.8767	238.7674	168.39	172.35	3.96	50.00	10:28

Completion State Success - Criteria met.
Success Action Do Nothing
Method CAS_salt_010711 (v4)
Calibration CAS_salt_010711 (v32)
STD Conc - Pos B 50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
♦ D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/04/01 03:22

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	5.05	8.96	3.91	49.97	10:33

Completion State Success - Criteria met.
Success Action Do Nothing
Method CAS_salt_010711 (v4)
Calibration CAS_salt_010711 (v32)
STD Conc - Pos D 0 ppmC

Sample Type: Sample From Schedule Version 2

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
♦ 29	TOC	K2002615-002.01	2.0222 ppm	0.0481 ppm	2.3800%	2020/04/01 03:37

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9882	19.8822	20.59	24.65	4.06	49.96	10:27
2	TOC	2.0562	20.5617	21.05	24.93	3.88	49.99	10:26

Dilution 1:10
Blank Contribution (TC) 7.2233 (IC) v1368
Method CAS_salt_010711 (v4)
Calibration CAS_salt_010711 (v32)

Analysis	Std. Dev.

1:10 (TC) 7.2233 (IC) CAS_salt_010711 CAS_salt_010711
(v1368) (v4) (v32)

Sample Type: Check Standard --> CCV 25 ppm

From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
♦ B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	24.1353 ppm (PASS)	0.0000 ppm	0%	2020/04/01 05:59

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.1353	241.3533	170.13	174.09	3.97	49.99	10:29

Completion State Success - Criteria met.
Success Action Do Nothing
Method CAS_salt_010711 (v4)
Calibration CAS_salt_010711 (v32)
STD Conc - Pos B 50 ppmC

Sample Type: Check Standard --> CCB

From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
♦ D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/04/01 06:14

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	4.66	8.60	3.94	49.99	10:30

Completion State Success - Criteria met.
Success Action Do Nothing
Method CAS_salt_010711 (v4)
Calibration CAS_salt_010711 (v32)
STD Conc - Pos D 0 ppmC

Meta Data Used in this Report

Blanks

Version	Reagent (Abs)	Acid (Abs)	DI IC (Abs)	DI TC (Abs)	DI TOC (Abs)	Save Time	Operator
v1367	0.9567	1.0790	0.0000	0.0000	0.0000	2020/03/28 23:52	Fusion1 (Fusion1)
v1368	0.9373	0.8610	0.0000	0.0000	0.0000	2020/03/31 12:56	Fusion1 (Fusion1)

Calibrations

Name: CAS_salt_010711 (TOC)

Version: v32 Calibration curve formula: TOC: $y = 6.725x + 7.818$
 Ver Creation: 2020/03/11 15:55 r^2 value: TOC: $r^2 = 0.99921$
 Comment:
 Operator: Fusion1 (Fusion1)
 Basic Analysis Type TOC

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
DI Water	5.8640	0.0000		2020/03/11 14:28
0.500 ppm	9.5210	0.5000		2020/03/11 14:42
1.0 ppm	12.5930	1.0000		2020/03/11 14:56
5.0 ppm	40.5270	5.0000		2020/03/11 15:10
10 ppm	79.5310	10.0000		2020/03/11 15:25
25 ppm	181.4610	25.0000		2020/03/11 15:39
50 ppm	340.5610	50.0000		2020/03/11 15:53

Methods

Name: CAS_salt_010711 (TOC)

Version: v4 Operator: Fusion1 (Fusion1)
 Ver Creation: 2019/02/21 17:57
 Comment:

Parameter	Value	Advanced Parameter	Value
SampleVolume	10.0 mL	NeedleRinseVolume	5.0 ml
Dilution	1:10	VialPrimeVolume	2.0 ml
AcidVolume	0.5 ml	ICSamplePrimeVolume	2.0 ml
ReagentVolume	2.0 ml	ICSpurgeRinseVolume	12.0 ml
UVReactorPrerinse	Off	BaselineStabilizeTime	0.70 min
UVReactorPrerinseVolume	5.0	DetectorPressureFlow	150 ml/min
NumberOfUVReactorPrerinses	1	SyringeSpeedWaste	10
ICSpurgeTime	1.00 mins	SyringeSpeedAcid	7
DetectorSweepFlow	500 ml/min	SyringeSpeedReagent	7
PreSpurgeTime	2.00 mins	SyringeSpeedDIWater	7
SystemFlow	500 ml/min	NDIRPressurization	60 psig
		SyringeSpeedSampleDispense	5
		SyringeSpeedSampleAspirate	4
		SyringeSpeedUVDispense	5
		SyringeSpeedUVAspirate	5
		SyringeSpeedICDispense	5
		SyringeSpeedICAspirate	5
		NDIRPressureStabilize	1.75 min
		SampleMixing	Off
		SampleMixingCycles	1
		SampleMixingVolume	10.0

LowLevelFilterNDIR	Off
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Acceptance / Approval

Electronic Signatures

Report Version	User Name	Acceptance	Reason	Date
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Report History

Report History

Report Version	User Name	System Reason	User Reason	Date
1	Fusion1 (Fusion1)	Schedule completed	Schedule completed	2020/04/01 06:29

StarLIMS Run: 675059, 675060
 Analysis: DOC/TOC
 Method: SM 5310 C, 9060A, 415.1, 9060

CCV: 11-GEN-05-82C 50 ppm LCS: 11-GEN-05-79J 25.0 ppm

ICAL Date: 3/11/2020

ICAL ID: 19-GEN-8-7-E->J

ICS ID: 11-GEN-05-78M

ICS TV: 25.0 ppm ICS % R < 1

Spike ID: 11-GEN-05-82C 0.05 ml of 5000 ppm stock ---> 10.0 ml = 25.0 ppm x dilution factor



Sodium Persulfate: 19-GEN-08-9-H

21 % H3PO4: 19-GEN-08-10-G

Equipment ID: K-TOC-03

PIPETTE ID: 124276B, 129001F, N11314F, Marge

FILTER ID: 16967789

Analyzed By: 	Date Analyzed: 3/31/20
Reviewed By: 	Date Reviewed: 4/1/20



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April 21, 2020

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS20040018**

Laboratory Results for: **Longhorn GW Treatment Plant Weekly Samples**

Dear Marcia,

ALS Environmental received 2 sample(s) on Apr 01, 2020 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read "Raj. P. Modashia", enclosed in a circular scribble.

Generated By: JUMOKE.LAWAL
RJ Modashia
Project Manager

ALS Houston, US

Date: 21-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS20040018

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20040018-01	LH18/24-SP650_033120	Water		31-Mar-2020 14:00	01-Apr-2020 09:00	<input type="checkbox"/>
HS20040018-02	LH18/24-SP650_033120_BIX	Water		31-Mar-2020 14:00	01-Apr-2020 09:00	<input type="checkbox"/>

ALS Houston, US

Date: 21-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS20040018

CASE NARRATIVE**Work Order Comments**

- The analysis for Dioxins/Furans was subcontracted to our ALS Houston TX, High Resolution Lab. Final report attached.
 - The analysis for TOC was subcontracted to ALS Kelso, WA. Final report attached.
-

WetChemistry by Method E365.3**Batch ID: R359481**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
-

WetChemistry by Method E350.3**Batch ID: R359291**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
-

ALS Houston, US

Date: 21-Apr-20

Client: Bhate Environmental Associates, Inc.
 Project: Longhorn GW Treatment Plant Weekly Samples
 Sample ID: LH18/24-SP650_033120
 Collection Date: 31-Mar-2020 14:00

ANALYTICAL REPORT

WorkOrder:HS20040018
 Lab ID:HS20040018-01
 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
AMMONIA AS N BY E350.3(ISE)								Analyst: RG
Nitrogen, Ammonia (As N)	7.8	a	0.20	0.10	0.20	mg/L	1	01-Apr-2020 08:45
ORTHO PHOSPHATE (PO4) AS P BY E365.3								Analyst: KVL
Phosphorus, Total Orthophosphate (As P)	2.26	a	0.100	0.250	0.250	mg/L	10	02-Apr-2020 12:00
SUBCONTRACT ANALYSIS - TOC ANALYSIS								Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	09-Apr-2020 11:00

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 21-Apr-20

Client: Bhate Environmental Associates, Inc.
 Project: Longhorn GW Treatment Plant Weekly Samples
 Sample ID: LH18/24-SP650_033120_BIX
 Collection Date: 31-Mar-2020 14:00

ANALYTICAL REPORT

WorkOrder:HS20040018
 Lab ID:HS20040018-02
 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		Method:NA		Analyst: SUB				
Subcontract Analysis	See Attached		0	0		NA	1	21-Apr-2020 17:00

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 21-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20040018

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R359291 (0)		Test Name : AMMONIA AS N BY E350.3(ISE)			Matrix: Water	
HS20040018-01	LH18/24-SP650_033120	31 Mar 2020 14:00			01 Apr 2020 08:45	1
Batch ID: R359481 (0)		Test Name : ORTHO PHOSPHATE (PO4) AS P BY E365.3			Matrix: Water	
HS20040018-01	LH18/24-SP650_033120	31 Mar 2020 14:00			02 Apr 2020 12:00	10
Batch ID: R359711 (0)		Test Name : SUBCONTRACT ANALYSIS - TOC ANALYSIS			Matrix: Water	
HS20040018-01	LH18/24-SP650_033120	31 Mar 2020 14:00			09 Apr 2020 11:00	1
Batch ID: R360329 (0)		Test Name : SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)			Matrix: Water	
HS20040018-02	LH18/24-SP650_033120_BIX	31 Mar 2020 14:00			21 Apr 2020 17:00	1

ALS Houston, US

Date: 21-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20040018

QC BATCH REPORT

Batch ID: R359291 (0)		Instrument: WetChem_HS		Method: AMMONIA AS N BY E350.3(ISE)						
MBLK	Sample ID: MBLK-R359291	Units: mg/L			Analysis Date: 01-Apr-2020 08:45					
Client ID:	Run ID: WetChem_HS_359291	SeqNo: 5539876			PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual	
Nitrogen, Ammonia (As N)	0.10	0.20							U	
LCS	Sample ID: LCS-R359291	Units: mg/L			Analysis Date: 01-Apr-2020 08:45					
Client ID:	Run ID: WetChem_HS_359291	SeqNo: 5539875			PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual	
Nitrogen, Ammonia (As N)	10.28	0.20	10	0	103	80 - 120				
MS	Sample ID: HS20031218-01MS	Units: mg/L			Analysis Date: 01-Apr-2020 08:45					
Client ID:	Run ID: WetChem_HS_359291	SeqNo: 5539878			PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual	
Nitrogen, Ammonia (As N)	41.32	0.20	10	31.08	102	80 - 120				
MSD	Sample ID: HS20031218-01MSD	Units: mg/L			Analysis Date: 01-Apr-2020 08:45					
Client ID:	Run ID: WetChem_HS_359291	SeqNo: 5539877			PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual	
Nitrogen, Ammonia (As N)	41.16	0.20	10	31.08	101	80 - 120	41.32	0.393	20	

The following samples were analyzed in this batch: HS20040018-01

ALS Houston, US

Date: 21-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20040018

QC BATCH REPORT

Batch ID:	R359481 (0)	Instrument:	UV-2450	Method:	ORTHO PHOSPHATE (PO4) AS P BY E365.3					
MBLK	Sample ID: MBLK-R359481	Units: mg/L		Analysis Date: 02-Apr-2020 12:00						
Client ID:	Run ID: UV-2450_359481	SeqNo: 5543535	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Phosphorus, Total Orthophosphate (As P)	0.0250	0.0250							U	
LCS	Sample ID: LCS-R359481	Units: mg/L		Analysis Date: 02-Apr-2020 12:00						
Client ID:	Run ID: UV-2450_359481	SeqNo: 5543534	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Phosphorus, Total Orthophosphate (As P)	0.234	0.0250	0.25	0	93.6	85 - 115				
LCSD	Sample ID: LCSD-R359481	Units: mg/L		Analysis Date: 02-Apr-2020 12:00						
Client ID:	Run ID: UV-2450_359481	SeqNo: 5543533	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Phosphorus, Total Orthophosphate (As P)	0.236	0.0250	0.25	0	94.4	85 - 115	0.234	0.851	20	
MS	Sample ID: HS20040018-01MS	Units: mg/L		Analysis Date: 02-Apr-2020 12:00						
Client ID: LH18/24-SP650_033120	Run ID: UV-2450_359481	SeqNo: 5543537	PrepDate:	DF: 10						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Phosphorus, Total Orthophosphate (As P)	4.54	0.250	2.5	2.26	91.2	80 - 120				
MSD	Sample ID: HS20040018-01MSD	Units: mg/L		Analysis Date: 02-Apr-2020 12:00						
Client ID: LH18/24-SP650_033120	Run ID: UV-2450_359481	SeqNo: 5543536	PrepDate:	DF: 10						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Phosphorus, Total Orthophosphate (As P)	4.54	0.250	2.5	2.26	91.2	80 - 120	4.54	0	20	

The following samples were analyzed in this batch: HS20040018-01

ALS Houston, US

Date: 21-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20040018

**QUALIFIERS,
ACRONYMS, UNITS**

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
California	2919, 2019-2020	30-Apr-2020
Dept of Defense	ANAB L2231 V009	22-Dec-2021
Florida	E87611-28	30-Jun-2020
Illinois	2000322019-2	09-May-2020
Kansas	E-10352 2019-2020	31-Jul-2020
Kentucky	123043, 2019-2020	30-Apr-2020
Louisiana	03087, 2019-2020	30-Jun-2020
Maryland	343, 2019-2020	30-Jun-2020
North Carolina	624-2020	31-Dec-2020
North Dakota	R-193 2019-2020	30-Apr-2020
Oklahoma	2019-067	31-Aug-2020
Texas	T104704231-19-25	30-Apr-2020

ALS Houston, US

Date: 21-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS20040018

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20040018-01	LH18/24-SP650_033120	Login	4/1/2020 10:38:49 AM	JRM	WET034
HS20040018-01	LH18/24-SP650_033120	Login	4/1/2020 10:38:49 AM	JRM	WET034
HS20040018-01	LH18/24-SP650_033120	Login	4/1/2020 10:38:49 AM	JRM	Sub
HS20040018-02	LH18/24-SP650_033120_BIX	Login	4/1/2020 10:38:49 AM	JRM	Sub

Sample Receipt Checklist

Client Name: Bhate Environmental
 Work Order: HS20040018

Date/Time Received: **01-Apr-2020 09:00**
 Received by: **JRM**

Checklist completed by: Jared R. Makan 30-Mar-2020
 eSignature Date

Reviewed by: RJ Modashia 1-Apr-2020
 eSignature Date

Matrices: **Water**

Carrier name: **FedEx**

- Shipping container/cooler in good condition? Yes No Not Present
- Custody seals intact on shipping container/cooler? Yes No Not Present
- Custody seals intact on sample bottles? Yes No Not Present
- VOA/TX1005/TX1006 Solids in hermetically sealed vials? Yes No Not Present
- Chain of custody present? Yes No 1 Page(s)
- Chain of custody signed when relinquished and received? Yes No
- Samplers name present on COC? Yes No
- Chain of custody agrees with sample labels? Yes No
- Samples in proper container/bottle? Yes No
- Sample containers intact? Yes No
- Sufficient sample volume for indicated test? Yes No
- All samples received within holding time? Yes No
- Container/Temp Blank temperature in compliance? Yes No

Temperature(s)/Thermometer(s): 1.1°C/1.1°C UC/C IR11
 Cooler(s)/Kit(s): 43904
 Date/Time sample(s) sent to storage: 4/01/2020 10:40

- Water - VOA vials have zero headspace? Yes No No VOA vials submitted
- Water - pH acceptable upon receipt? Yes No N/A
- pH adjusted? Yes No N/A

pH adjusted by:

Login Notes:

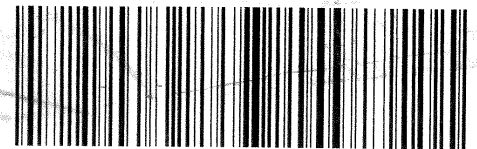
Client Contacted: Date Contacted: Person Contacted:
 Contacted By: Regarding:

Comments:

Corrective Action:

	ALS 10450 Stancilff Rd., Suite 210 Houston, Texas 77099 Tel. +1 281 530 5656 Fax. +1 281 530 5887	CU Date: 3/30/21 Name: Scott Company: S H
---	--	---

STUDY SEAL. Time: 1430 Bill: W 242 ATC	Seal Broken By: Date:
--	--------------------------

FedEx TRK# 4380 9533 6817 0221	WED - 01 APR 10:30A PRIORITY OVERNIGHT 77099 TX-US IAH
AB SGRA	
	
F10 162785 31MAR20 GGGA 56BC3/9C25/05A2	



April 21, 2020

Service Request No:E2000287

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS20040018

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory April 02, 2020
For your reference, these analyses have been assigned our service request number **E2000287**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental



Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client: ALS Houston
Project: HS20040018
Sample Matrix: W

Service Request No.: E2000287
Date Received: 04/02/20

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

One sample was received for analysis at ALS Environmental in Houston on 04/02/20.

The sample was received in good condition and is consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion**Precision and Accuracy:**

EQ2000143: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. The LCS and DLCS recoveries are within QC limits.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - US
Project: HS20040018

Service Request:E2000287

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
E2000287-001	LH18/24-SP650_033120_BIX	3/31/2020	1400

Service Request Summary

Folder #: E2000287
Client Name: ALS Environmental - US
Project Name: HS20040018
Project Number:
Report To: RJ Modashia
 ALS Laboratory Group
 10450 Stancliff Road
 Houston, TX 77099-4338
 USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 04/02/20
Internal Due Date: 4/23/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20040018
EDD: No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 7B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON C104 DOD/6850
E2000287-001	LH18/24-SP650_033120_BIX	Water	03/31/20 1400	IV

Service Request Summary

Folder #: E2000287
Client Name: ALS Environmental - US
Project Name: HS20040018
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 04/02/20
Internal Due Date: 4/23/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20040018
EDD: No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 7B
Pressure Gas:

Data Qualifiers

Lab Standard

- + Possible Tedlar bag artifact.
- A TIC is a suspected aldol-condensation product
- B Analyte found in the associated method blank as well as in the sample.
- BC Reported results are not blank corrected.
- BH The back section of the tube yielded higher results than the front.
- BT Results indicated possible breakthrough; back section $\geq 10\%$ front section.
- C Result identification confirmed.
- D Compound identified in an analysis at a secondary dilution factor
- D Spike was diluted out
- DE Reported results are corrected for desorption efficiency.
- E Estimated value. Concentration above calibration range
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- H1 Sample analysis performed past holding time. See case narrative.
- H2 Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
- H3 Sample was received and analyzed past holding time.
- H4 Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
- I Internal standard not within the specified limits. See case narrative.
- J Estimated Value. Concentration found below MRL.
- K A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
- K Analyte was detected above the method reporting limit prior to normalization.
- L1 Laboratory control sample recovery outside the specified limits; results may be biased high.
- L2 Laboratory control sample recovery outside the specified limits; results may be biased low.
- L3 Laboratory control sample recovery outside the specified limits.
- M Matrix interference; results may be biased high.
- M The duplicate injection precision not met.
- M1 Matrix interference due to coelution with a non-target compound; results may be biased high.
- N Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- P Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
- P Pesticide/Aroclor target analyte $> 40\%$ difference for detected concentrations between GC columns
- Q Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
- R Duplicate Precision not met.
- R1 Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
- S Surrogate recovery not within specified limits.

Data Qualifiers

Lab Standard

- S The reported value was determined by the Method of Standard Additions (MSA).
- T Analyte is a tentatively identified compound, result is estimated.
- U Compound was analyzed for, but was not detected (ND).
- V1 The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
- V2 The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
- W Result quantified, but the corresponding peak was detected outside the generated retention time window.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- X See case narrative.
- Y Recovery outside limits
- Y The chromatogram resembles a petroleum product but does not match the calibration standard.
- Z The chromatogram does not resemble a petroleum product.
- i The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCetration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient



State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
Arizona Department of Health Services	AZ0793	5/27/2020
California Department of Health Services	2919	4/30/2020
Department of Defense	A2LA 2897.01	11/30/2021
Florida Department of Health	E87611	6/30/2020
Hawaii Department of Health	TX02694	4/30/2020
Illinois Environmental Protection Agency	2000322019-2	5/9/2020
Kansas Department of Health and Environment	E-10352	7/31/2020
Louisiana Department of Environmental Quality	03087	6/30/2020
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Center for Disease Control and Prevention	201815	6/5/2020
Maryland Department of the Environment	343	6/30/2020
Minnesota Department of Health	1785988	12/31/2020
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2020
Nevada Department of Conservation and Natural Resources	TX026932019-1	7/31/2020
New Hampshire Environmental Laboratory Accreditation Program	209419	4/24/2020
New Jersey Department of Environmental Protection	NLC190001	6/30/2020
New York Department of Health	11707	3/31/2021
Oklahoma Department of Environmental Quality	2019-067	8/31/2020
Pennsylvania Department of Environmental Protection	68-03441-013	6/30/2020
Tennessee Department of Environment and Conservation	04016	6/30/2020
Texas Commission on Environmental Quality	TX104704231-19-25	4/30/2020
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932019-9	7/31/2020
Washington Department of Health	C819	11/14/2020
West Virginia Department of Environmental Protection	347	6/30/2020



Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
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E2000287

5

ALS Laboratory Group
HS20040018



10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: Dept of Defense

COC ID: 13609

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff Road Suite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company: ALS Houston
Contact: RJ Modashia
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Email: RJ.Modashia@alsglobal.com
Alternate Contact: Jumoke M. Lawal
Email: jumoke.lawal@alsglobal.com

INVOICE INFORMATION:

Company: ALS Houston
Contact: Accounts Payable
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Reference: HS20040018
TSR: Danielle Winnings

LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
ANALYSIS REQUESTED			DUE DATE
1. HS20040018-02	LH18/24-SP650_033120_BIX	Water	31 Mar 2020 14:00
	SUB_Perch-6850		09 Apr 2020

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: J. M. Murrill
Received By: COREY H
Cooler ID(s): _____

Date/Time: 4/2/20 12:50
Date/Time: 4/2/20 12:56
Temperature(s): _____

RIGHT SOLUTIONS | RIGHT PARTNER



Cooler Receipt Form

Project Chemist ck

Client/Project ALS-H Thermometer ID SM04 / 1025

Date/Time Received: 4/12/20 Initials: ck Date/Time Logged in: 4/12/20 Initials ck

1. Method of delivery: US Mail Fed Ex UPS DHL ^{ALS} Courier Client

2. Samples received in: Cooler Box Envelope Other

3. Were custody seals on coolers? Yes No
 Were they intact? Yes No N/A
 Were they signed and dated? Yes No N/A
 If yes, how many and where?

4. Packing Material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Sleeves Other

5. Foreign or Regulated Soil? Yes No Location of Sampling: _____

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
-		4/12/20	1200	ck	2.7	<input checked="" type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>

- 6. Were custody papers properly filled out (ink, signed, dated, etc)? Yes No
- 7. Did all bottles arrive in good condition (not broken, no signs of leakage)? Yes No
- 8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? Yes No
- 9. Were appropriate bottles/containers and volumes received for the requested tests? Yes No
- 10. Did sample labels and tags agree with custody documents? Yes No

Notes, Discrepancies, & Resolutions:

Service request Label:

E2000287

5

ALS Laboratory Group
HS20040018





10450 Stancliff Rd., Suite 210
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SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sample. The COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6°C.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10°C.
- ✓ Air samples are shipped and stored cold, at 0 to 6°C
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report



Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
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Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - US
Project: HS20040018
Sample Matrix: Water
Sample Name: LH18/24-SP650_033120_BIX
Lab Code: E2000287-001

Service Request: E2000287
Date Collected: 3/31/20 1400
Date Received: 4/ 2/20
Units: µg/L
Basis: NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	4/20/20	4/20/20 15:57	357146	677504	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - US
Project: HS20040018
Sample Matrix: Water
Sample Name: Method Blank
Lab Code: EQ2000143-01

Service Request: E2000287
Date Collected: NA
Date Received: NA
Units: µg/L
Basis: NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	4/20/20	4/20/20 15:10	357146	677504	



Accuracy & Precision

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20040018
Sample Matrix: Water

Service Request: E2000287
Date Analyzed: 4/20/20

Lab Control Sample Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Units: µg/L
Basis: NA

Extraction Lot: 357146

Analyte Name	Lab Control Sample EQ2000143-02			Duplicate Lab Control Sample EQ2000143-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Perchlorate	0.112	0.100	112	0.113	0.100	113	84 - 119	1	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - US
Project: HS20040018
Sample Matrix: Water
Sample Name: Lab Control Sample
Lab Code: EQ2000143-02

Service Request: E2000287
Date Collected: NA
Date Received: NA
Units: µg/L
Basis: NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	0.112		0.100	0.0500	0.0250	1	4/20/20	4/20/20 15:18	357146	677504	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - US
Project: HS20040018
Sample Matrix: Water
Sample Name: Duplicate Lab Control Sample
Lab Code: EQ2000143-03

Service Request: E2000287
Date Collected: NA
Date Received: NA
Units: µg/L
Basis: NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	0.113		0.100	0.0500	0.0250	1	4/20/20	4/20/20 15:26	357146	677504	



Initial Calibration

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Initial Calibration - Detailed Report**Calibration ID:** EC2000003**Instrument ID:** E-LCMS-01**Column Name:** 1

#	Lab Code	Sample Name	File Location	Aquisition Date
08	EC2000003-08	PERCHLORATE7	20200420_005	04/20/2020 13:27
01	EC2000003-01	PERCHLORATE1	20200420_007	04/20/2020 13:43
02	EC2000003-02	PERCHLORATE2	20200420_008	04/20/2020 13:51
03	EC2000003-03	PERCHLORATE3	20200420_009	04/20/2020 13:58
04	EC2000003-04	PERCHLORATE4	20200420_010	04/20/2020 14:06
05	EC2000003-05	PERCHLORATE5	20200420_011	04/20/2020 14:14
06	EC2000003-06	PERCHLORATE6	20200420_012	04/20/2020 14:22
07	EC2000003-07	PERCHLORATE8	20200420_013	04/20/2020 14:30
09	EC2000003-09	PERCHLORATE9	20200420_014	04/20/2020 14:38
10	EC2000003-10	PERCHLORATE10	20200420_015	04/20/2020 14:46

Analyte**Perchlorate**

#	Amount	RF
01	0.1000	0.1558
05	2.0000	0.1298
09	30.0000	0.1365

Curve Fit**Average RF**

#	Amount	RF
02	0.5000	0.1297
06	5.0000	0.1245
10	50.0000	0.1345

Weighting**RSD = 8.066**

#	Amount	RF
03	0.7000	0.1277
07	20.0000	0.1341

Average RF = 0.1368

#	Amount	RF
04	1.0000	0.1397
08	10.0000	0.1562

Analyte**Perchlorate**

#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D
01	0.1000	0.114	13.9	02	0.5000	0.474	-5.2	03	0.7000	0.653	-6.7
04	1.0000	1.02	2.1	05	2.0000	1.90	-5.1	06	5.0000	4.55	-9.0
07	20.0000	19.6	-2.0	08	10.0000	11.4	14.2	09	30.0000	29.9	-0.2
10	50.0000	49.1	-1.7								

Initial Calibration Verification Summary Report

Calibration ID:	EC2000003	Instrument ID:	E-LCMS-01
Datafile ID:	20200420_016	Column Name:	1

Analyte	Lab Code	Type	Curve Fit	True Value	Calc Conc	Units	Result	Criteria
Perchlorate	EC2000003-11	T	Average RF	10	11.345	ng/mL	13.4	<= 15

ALS Group Houston

PERCHLORATE7

Date acquired: 4/20/2020 1:27:21 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200420\20200420_005.lcd

Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	4/20/2020 1:27:21 PM	144494	11.41673	20200420_005	3.077	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	4/20/2020 1:27:21 PM	92497	1.00000	20200420_005	3.076	25.0000	1.0000	3

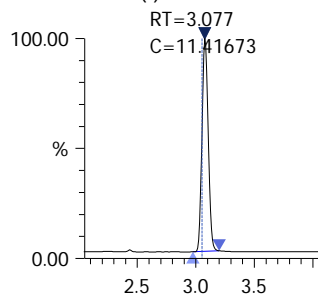
Perchlorate

Conc 11.41673

Area 144494

Q 99.00>83.00 (-)

3.93e4

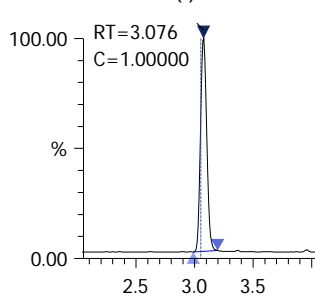
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 92497

ISTD 107.00>89.00 (-)

2.48e4



ALS Group Houston

PERCHLORATE1

Date acquired: 4/20/2020 1:43:09 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200420\20200420_007.lcd

Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

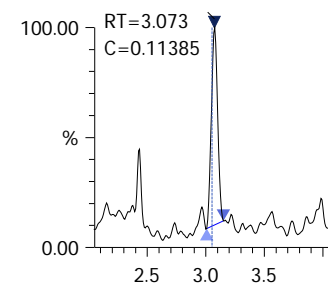
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE1	4/20/2020 1:43:09 PM	1840	0.11385	20200420_007	3.073	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	PERCHLORATE1	4/20/2020 1:43:09 PM	118078	1.00000	20200420_007	3.073	25.0000	1.0000	5

Perchlorate

Conc 0.11385

Area 1840

Q 99.00>83.00 (-)

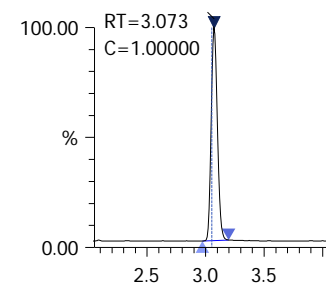
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 118078

ISTD 107.00>89.00 (-)

3.18e4



ALS Group Houston

PERCHLORATE2

Date acquired: 4/20/2020 1:51:02 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200420\20200420_008.lcd

Vial: 6 | Inj. Volume: 25.0000uL | Tray: 1

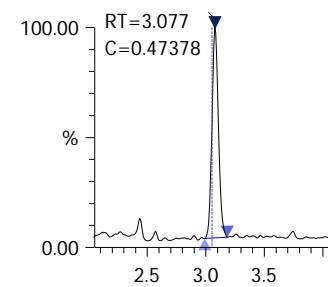
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE2	4/20/2020 1:51:02 PM	7551	0.47378	20200420_008	3.077	25.0000	1.0000	6
Sodium Perchlorate-18O4_IS	PERCHLORATE2	4/20/2020 1:51:02 PM	116479	1.00000	20200420_008	3.075	25.0000	1.0000	6

Perchlorate

Conc 0.47378

Area 7551

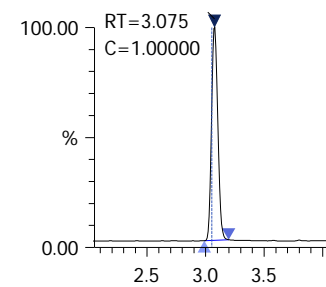
Q 99.00>83.00 (-)

Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 116479

2.00e3 ISTD 107.00>89.00 (-) 3.08e4



ALS Group Houston

PERCHLORATE3

Date acquired: 4/20/2020 1:58:56 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200420\20200420_009.lcd

Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

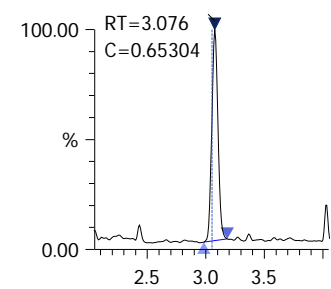
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE3	4/20/2020 1:58:56 PM	11235	0.65304	20200420_009	3.076	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	PERCHLORATE3	4/20/2020 1:58:56 PM	125731	1.00000	20200420_009	3.073	25.0000	1.0000	7

Perchlorate

Conc 0.65304

Area 11235

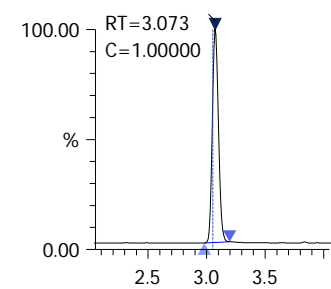
Q 99.00>83.00 (-)

Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 125731

ISTD 107.00>89.00 (-)



ALS Group Houston

PERCHLORATE4

Date acquired: 4/20/2020 2:06:51 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200420\20200420_010.lcd

Vial: 8 | Inj. Volume: 25.0000uL | Tray: 1

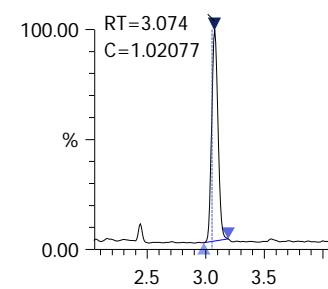
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE4	4/20/2020 2:06:51 PM	16670	1.02077	20200420_010	3.074	25.0000	1.0000	8
Sodium Perchlorate-18O4_IS	PERCHLORATE4	4/20/2020 2:06:51 PM	119354	1.00000	20200420_010	3.074	25.0000	1.0000	8

Perchlorate

Conc 1.02077

Area 16670

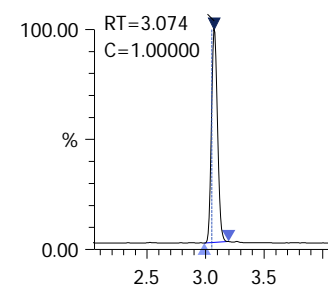
Q 99.00>83.00 (-)

Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 119354

4.51e3 ISTD 107.00>89.00 (-) 3.26e4



ALS Group Houston

PERCHLORATE5

Date acquired: 4/20/2020 2:14:45 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200420\20200420_011.lcd

Vial: 9 | Inj. Volume: 25.0000uL | Tray: 1

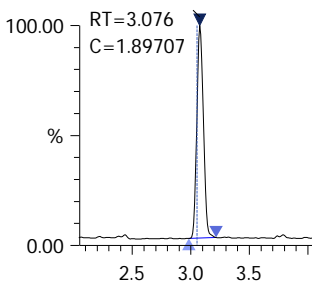
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE5	4/20/2020 2:14:45 PM	33786	1.89707	20200420_011	3.076	25.0000	1.0000	9
Sodium Perchlorate-18O4_IS	PERCHLORATE5	4/20/2020 2:14:45 PM	130159	1.00000	20200420_011	3.075	25.0000	1.0000	9

Perchlorate

Conc 1.89707

Area 33786

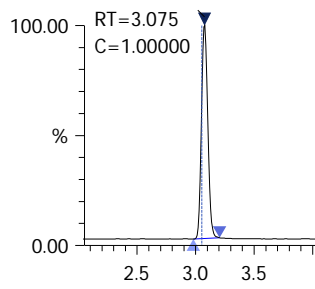
Q 99.00>83.00 (-)

Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 130159

8.73e3 ISTD 107.00>89.00 (-) 3.41e4



ALS Group Houston

PERCHLORATE6

Date acquired: 4/20/2020 2:22:39 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200420\20200420_012.lcd

Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

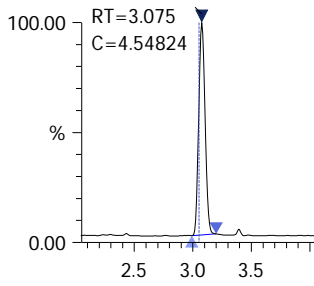
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE6	4/20/2020 2:22:39 PM	69848	4.54824	20200420_012	3.075	25.0000	1.0000	10
Sodium Perchlorate-18O4_IS	PERCHLORATE6	4/20/2020 2:22:39 PM	112235	1.00000	20200420_012	3.074	25.0000	1.0000	10

Perchlorate

Conc 4.54824

Area 69848

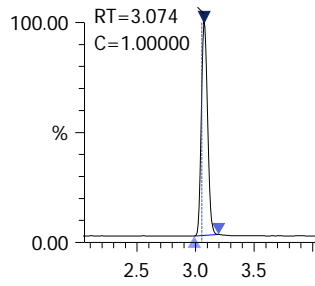
Q 99.00>83.00 (-)

Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 112235

1.86e4 ISTD 107.00>89.00 (-) 2.98e4



ALS Group Houston

PERCHLORATE8

Date acquired: 4/20/2020 2:30:36 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200420\20200420_013.lcd

Vial: 11 | Inj. Volume: 25.0000uL | Tray: 1

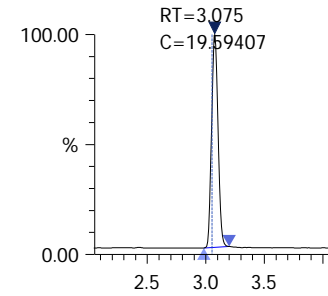
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE8	4/20/2020 2:30:36 PM	275854	19.59407	20200420_013	3.075	25.0000	1.0000	11
Sodium Perchlorate-18O4_IS	PERCHLORATE8	4/20/2020 2:30:36 PM	102890	1.00000	20200420_013	3.072	25.0000	1.0000	11

Perchlorate

Conc 19.59407

Area 275854

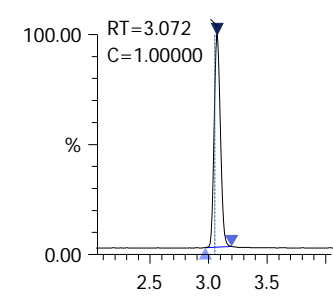
Q 99.00>83.00 (-)

Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 102890

ISTD 107.00>89.00 (-)



ALS Group Houston

PERCHLORATE9

Date acquired: 4/20/2020 2:38:33 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200420\20200420_014.lcd

Vial: 12 | Inj. Volume: 25.0000uL | Tray: 1

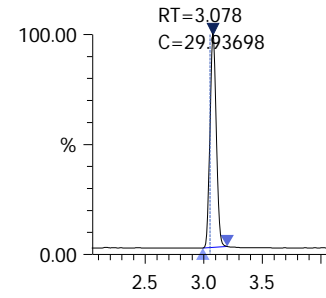
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE9	4/20/2020 2:38:33 PM	390068	29.93698	20200420_014	3.078	25.0000	1.0000	12
Sodium Perchlorate-18O4_IS	PERCHLORATE9	4/20/2020 2:38:33 PM	95225	1.00000	20200420_014	3.075	25.0000	1.0000	12

Perchlorate

Conc 29.93698

Area 390068

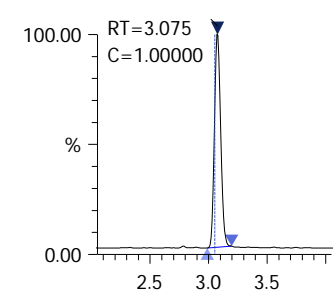
Q 99.00>83.00 (-)

Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 95225

ISTD 107.00>89.00 (-)



ALS Group Houston

PERCHLORATE10

Date acquired: 4/20/2020 2:46:25 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200420\20200420_015.lcd

Vial: 13 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE10	4/20/2020 2:46:25 PM	632804	49.13765	20200420_015	3.076	25.0000	1.0000	13
Sodium Perchlorate-18O4_IS	PERCHLORATE10	4/20/2020 2:46:25 PM	94118	1.00000	20200420_015	3.075	25.0000	1.0000	13

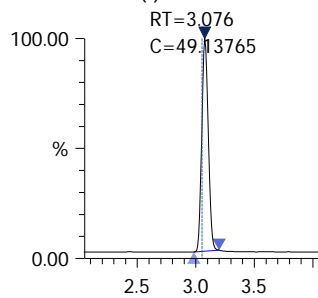
Perchlorate

Conc 49.13765

Area 632804

Q 99.00>83.00 (-)

1.65e5

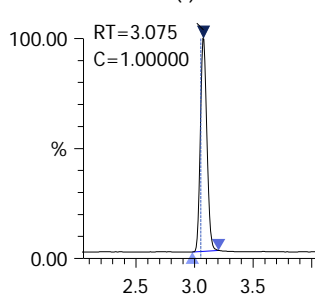
Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 94118

ISTD 107.00>89.00 (-)

2.41e4



ALS Group Houston

PERCHLORATEICV

Date acquired: 4/20/2020 2:54:20 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200420\20200420_016.lcd

Vial: 14 | Inj. Volume: 25.0000uL | Tray: 1

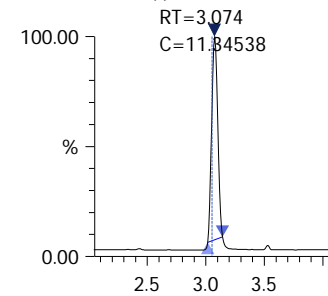
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATEICV	4/20/2020 2:54:20 PM	149807	11.34538	20200420_016	3.074	25.0000	1.0000	14
Sodium Perchlorate-18O4_IS	PERCHLORATEICV	4/20/2020 2:54:20 PM	96501	1.00000	20200420_016	3.072	25.0000	1.0000	14

Perchlorate

Conc 11.34538

Area 149807

Q 99.00>83.00 (-)



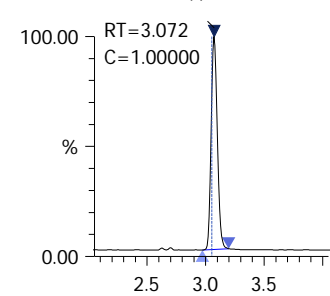
Sodium Perchlorate-18O4

_IS

Conc 1.00000

Area 96501

ISTD 107.00>89.00 (-)





Chromatograms and Selected Ion Monitoring

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20040018

Service Request: E2000287
Date Analyzed: 4/20/20 14:54

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID: I:\LCMS01\DATA\20200420\20200420_016
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000148-01
Analysis Lot: 677504
Signal ID: 1

Sodium Perchlorate-18O4

	<u>Area</u>	<u>RT</u>
ICAL Average ==>	110,677	3.07
Upper Limit ==>	166,016	5.07
Lower Limit ==>	55,339	1.07

Associated Analyses

Continuing Calibration Verification	EQ2000148-01	96,501	3.07
Method Blank	EQ2000143-01	113,200	3.08
Lab Control Sample	EQ2000143-02	84,678	3.07
Duplicate Lab Control Sample	EQ2000143-03	108,366	3.07
LH18/24-SP650_033120_BIX	E2000287-001	147,956	3.06

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20040018

Service Request: E2000287
Date Analyzed: 4/20/20 16:29

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID: I:\LCMS01\DATA\20200420\20200420_028
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000148-02
Analysis Lot: 677504
Signal ID: 1

Sodium Perchlorate-1804

	<u>Area</u>	<u>RT</u>
ICAL Average ==>	110,677	3.07
Upper Limit ==>	166,016	5.07
Lower Limit ==>	55,339	1.07

Associated Analyses

Continuing Calibration Verification	EQ2000148-02	97,156	3.07
-------------------------------------	--------------	--------	------

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20040018

Service Request: E2000287
Date Analyzed: 4/20/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20200420\20200420_016

Calibration Date: 4/20/20
Calibration ID: EC2000003
Analysis Lot: 677504
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.3	0.1368	0.1552	13.5	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20040018

Service Request: E2000287
Date Analyzed: 4/20/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20200420\20200420_028

Calibration Date: 4/20/20
Calibration ID: EC2000003
Analysis Lot: 677504
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.3	0.1368	0.1543	12.7	NA	± 15 %	Average RF

ALS Group Houston

EQ2000143-01

Date acquired: 4/20/2020 3:10:11 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200420\20200420_018.lcd

Vial: 15 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000143-01	4/20/2020 3:10:11 PM	----	----	20200420_018	----	25.0000	1.0000	15
Sodium Perchlorate-18O4_IS	EQ2000143-01	4/20/2020 3:10:11 PM	113200	1.00000	20200420_018	3.076	25.0000	1.0000	15

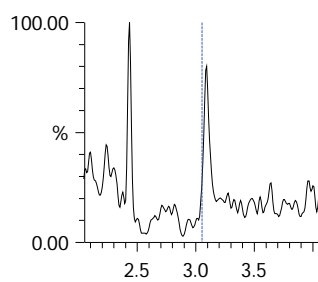
Perchlorate

Conc ----

Area ----

Q 99.00>83.00 (-)

2.29e2



Sodium Perchlorate-18O4

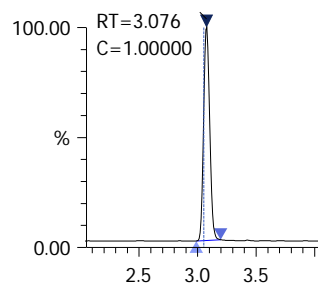
_IS

Conc 1.00000

Area 113200

ISTD 107.00>89.00 (-)

3.08e4



ALS Group Houston

EQ2000143-02

Date acquired: 4/20/2020 3:18:04 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200420\20200420_019.lcd

Vial: 16 | Inj. Volume: 25.0000uL | Tray: 1

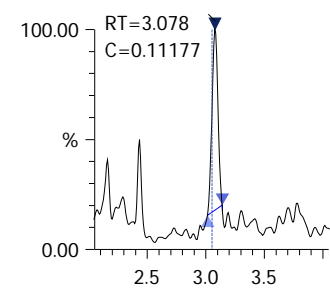
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000143-02	4/20/2020 3:18:04 PM	1295	0.11177	20200420_019	3.078	25.0000	1.0000	16
Sodium Perchlorate-18O4_IS	EQ2000143-02	4/20/2020 3:18:04 PM	84678	1.00000	20200420_019	3.072	25.0000	1.0000	16

Perchlorate

Conc 0.11177

Area 1295

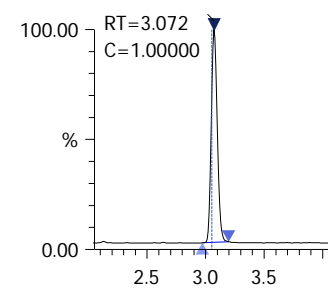
Q 99.00>83.00 (-)

Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 84678

ISTD 107.00>89.00 (-)



ALS Group Houston

EQ2000143-03

Date acquired: 4/20/2020 3:26:00 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200420\20200420_020.lcd

Vial: 17 | Inj. Volume: 25.0000uL | Tray: 1

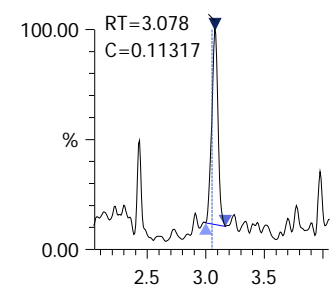
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000143-03	4/20/2020 3:26:00 PM	1678	0.11317	20200420_020	3.078	25.0000	1.0000	17
Sodium Perchlorate-18O4_IS	EQ2000143-03	4/20/2020 3:26:00 PM	108366	1.00000	20200420_020	3.072	25.0000	1.0000	17

Perchlorate

Conc 0.11317

Area 1678

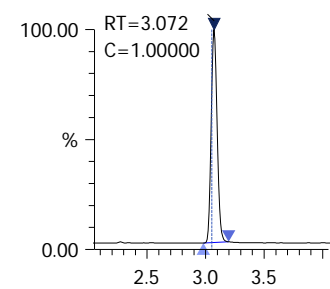
Q 99.00>83.00 (-)

Sodium Perchlorate-18O4
_IS

Conc 1.00000

Area 108366

ISTD 107.00>89.00 (-)



ALS Group Houston

E2000287-001

Date acquired: 4/20/2020 3:57:34 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200420\20200420_024.lcd

Vial: 21 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	E2000287-001	4/20/2020 3:57:34 PM	----	----	20200420_024	----	25.0000	1.0000	21
Sodium Perchlorate-18O4_IS	E2000287-001	4/20/2020 3:57:34 PM	147956	1.00000	20200420_024	3.055	25.0000	1.0000	21

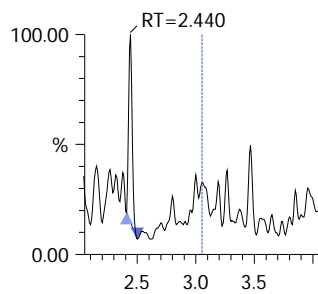
Perchlorate

Conc ----

Area ----

Q 99.00>83.00 (-)

1.93e2



Sodium Perchlorate-18O4

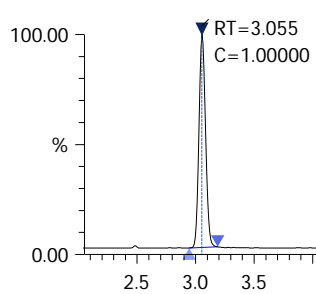
_IS

Conc 1.00000

Area 147956

ISTD 107.00>89.00 (-)

3.74e4



ALS Group Houston

PERCHLORATE7

Date acquired: 4/20/2020 4:29:14 PM

Acquired by: System Administrator

Data File: I:\LCMS01\DATA\20200420\20200420_028.lcd

Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

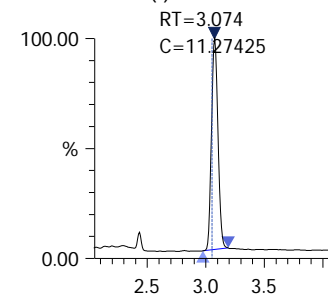
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	4/20/2020 4:29:14 PM	149879	11.27425	20200420_028	3.074	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	4/20/2020 4:29:14 PM	97156	1.00000	20200420_028	3.073	25.0000	1.0000	3

Perchlorate

Conc 11.27425

Area 149879

Q 99.00>83.00 (-)



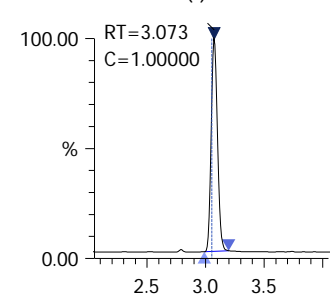
Sodium Perchlorate-18O4

_IS

Conc 1.00000

Area 97156

ISTD 107.00>89.00 (-)





ALS Environmental
ALS Group USA, Corp
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Kelso, WA 98626
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April 08, 2020

Analytical Report for Service Request No: K2002854

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

RE: HS20040018

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory April 03, 2020
For your reference, these analyses have been assigned our service request number **K2002854**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3350. You may also contact me via email at Kelley.Lovejoy@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Kelley Lovejoy
Project Manager



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Table of Contents

Acronyms

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General Chemistry

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 General Chemistry

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses**

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com



Client: ALS Environmental - US
Project: HS20040018
Sample Matrix: Water

Service Request: K2002854
Date Received: 04/03/2020

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

One water sample was received for analysis at ALS Environmental on 04/03/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The sample was stored at minimum in accordance with the analytical method requirements.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by Kelley Avejoy

Date 04/08/2020



Chain of Custody

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
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K 2002854

10450 Stancliff Rd, Ste 210
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T: +1 281 530 5656
F: +1 281 530 5887
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Subcontract Chain of Custody

SAMPLING STATE: Dept of Defense

COC ID: 13608

SUBCONTRACT TO:

ALS Environmental Kelso
1317 S. 13th Avenue
Kelso, WA 98626

Phone: +1 360 501 3312

CUSTOMER INFORMATION:

Company: ALS Houston
Contact: RJ Modashia
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Email: RJ.Modashia@alsglobal.com
Alternate Contact: Jumoke M. Lawal
Email: jumoke.lawal@alsglobal.com

INVOICE INFORMATION:

Company: ALS Houston
Contact: Accounts Payable
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Reference: HS20040018
TSR: Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	HS20040018-01	LH18/24-SP650_033120	Water	31 Mar 2020 14:00
	TOC Analysis for DOD Level IV			09 Apr 2020

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By:

Date/Time:

4/2/2020 18:00

Received By:

Date/Time:

4/3/20 1000

Cooler ID(s):

Temperature(s):



PC KL

Cooler Receipt and Preservation Form

Client ALS/Houston Service Request K20 02854

Received: 4/3/20 Opened: 4/3/20 By: [Signature] Unloaded: 4/9/20 By: [Signature]

- 1. Samples were received via? USPS Fed Ex UPS DHL PDX Courier Hand Delivered
- 2. Samples were received in: (circle) Cooler Box Envelope Other NA
- 3. Were custody seals on coolers? NA (Y) N If yes, how many and where? 2, sides
- If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N

Temp Blank	Sample 1	Sample 2	Sample 3	Sample 4	IR GUN	Cooler / COC ID NA	Tracking Number NA	Filed
<u>0.3</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>39800488 WS</u>	<u>13608</u> <u>13613</u> <u>13618</u>	<u>1251 0296 1167</u>	

- 4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
- 5. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
- 6. Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA (Y) N
If applicable, tissue samples were received: Frozen Partially Thawed Thawed
- 7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA (Y) N
- 8. Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA (Y) N
- 9. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
- 10. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below NA (Y) (N) 4/3
- 11. Were VOA vials received without headspace? Indicate in the table below. (NA) Y N
- 12. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions:
4/3 116 EW08-206331 " did not pH. Did not add acid due to sample matrix.

RUSH



General Chemistry

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Analytical Report

Client: ALS Environmental - US
Project: HS20040018
Sample Matrix: Water
Analysis Method: SM 5310 C
Prep Method: None

Service Request: K2002854
Date Collected: 03/31/20
Date Received: 04/3/20
Units: mg/L
Basis: NA

Carbon, Total Organic

Sample Name	Lab Code	Result	LOQ	LOD	MDL	Dil.	Date Analyzed	Q
LH18/24-SP650_033120	K2002854-001	2.92	0.50	0.20	0.07	1	04/05/20 09:34	
Method Blank	K2002854-MB	ND U	0.50	0.20	0.07	1	04/05/20 07:13	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20040018
Sample Matrix: Water

Service Request: K2002854
Date Collected: 03/31/20
Date Received: 04/03/20
Date Analyzed: 04/05/20

Replicate Sample Summary
General Chemistry Parameters

Sample Name: LH18/24-SP650_033120
Lab Code: K2002854-001

Units: mg/L
Basis: NA

Analyte Name	Analysis Method	LOQ	LOD	MDL	Sample Result	Duplicate Sample	Average	RPD	RPD Limit
						K2002854-001DUP Result			
Carbon, Total Organic	SM 5310 C	0.50	0.20	0.07	2.92	2.96	2.94	1	10

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20040018
Sample Matrix: Water

Service Request: K2002854
Date Analyzed: 04/05/20
Date Extracted: NA

Lab Control Sample Summary
Carbon, Total Organic

Analysis Method: SM 5310 C
Prep Method: None

Units: mg/L
Basis: NA
Analysis Lot: 675809

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2002854-LCS	23.1	25.0	93	83-117

Client: ALS Environmental - US
Project: HS20040018

Service Request: K2002854

Continuing Calibration Verification (CCV) Summary

Carbon, Total Organic

Analysis Method: SM 5310 C

Units: mg/L

	Analysis Lot	Lab Code	Date Analyzed	True Value	Measured Value	Percent Recovery	Acceptance Limits
CCV1	675809	KQ2004679-01	04/05/20 02:26	25.0	24.1	96	90-110
CCV2	675809	KQ2004679-02	04/05/20 06:43	25.0	24.8	99	90-110
CCV3	675809	KQ2004679-03	04/05/20 11:54	25.0	24.2	97	90-110
CCV4	675809	KQ2004679-04	04/05/20 17:18	25.0	24.3	97	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20040018

Service Request: K2002854

Continuing Calibration Blank (CCB) Summary
Carbon, Total Organic

Analysis Method: SM 5310 C

Units: mg/L

	Analysis Lot	Lab Code	Date Analyzed	LOQ	LOD	MDL	Result	Q
CCB1	675809	KQ2004679-05	04/05/20 02:41	0.50	0.20	0.07	ND	U
CCB2	675809	KQ2004679-06	04/05/20 06:58	0.50	0.20	0.07	ND	U
CCB3	675809	KQ2004679-07	04/05/20 12:09	0.50	0.20	0.07	ND	U
CCB4	675809	KQ2004679-08	04/05/20 17:33	0.50	0.20	0.07	ND	U



Raw Data

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com



General Chemistry

ALS Environmental—Kelso Laboratory
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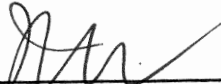
Work Request # ^{Original} (K2002766, 2824, 2730, 2744, 2782, 2854, 2855, 2876, 2883, 2760)
 Tier: IV IV III IV I IV IV III IV II
 Date Analyzed: 4/4/20 TOC: 675809,
675809,
 Analyst: BCV Run # DOC: 675810
 Analysis: TOC/DOC

**DATA QUALITY REPORT
INORGANICS**

Explain any "no" responses to questions below, and any corrective actions in the comments section below.

- | | | |
|-----|---|-----------|
| 1. | Is the method name and number correct and appropriate? | yes/no/NA |
| 2. | Holding times met for all analyses and for all samples? | yes/no/NA |
| 3. | Are calculations correct? | yes/no/NA |
| 4. | Is the reporting basis correct? (Dry Weight) | yes/no/NA |
| 5. | All quality control criteria met? | yes/no |
| 6. | Is the calibration curve correlation coefficient ≥ 0.995 ? | yes/no/NA |
| 7. | MBs, CCVs, CCBs, LCSs, Dups, and Spikes, analyzed at proper frequency? | yes/no/NA |
| 8. | Are ICVs, CCVs, and CCBs all within acceptance limits? | yes/no/NA |
| 9. | Are results for methods blanks all ND? | yes/no/NA |
| 10. | Are all QC samples within acceptance criteria?
(LCS % rec, MS/DMS % rec, DUP or MS/DMS RPDs, etc.) | yes/no/NA |
| 11. | Are all exceptions explained? | yes/no/NA |
| 12. | Have all applicable service requests been reviewed? | yes/no/NA |
| 13. | Are all samples labeled correctly? | yes/no/NA |
| 14. | Have all instructions on the service request been followed?
(e.g. Special MRLs, QC on a specific sample, Form V) | yes/no/NA |
| 15. | Are detection limits and units reported correctly? | yes/no/NA |
| 16. | Is the unused space on the benchsheet crossed out? | yes/no/NA |
| 17. | Was analysis turned in by the due date? (n-2) (If not record SR#) | yes/no/NA |

COMMENTS: K2002744-575d, and 2893-1/1d report a high %RSD. However, these samples are less than 5x the MRL.

Final Approved by:  Date: 4/8/20 DQREPORT

Analytical Results Summary

Instrument Name: K-TOC-03

Analyst: BDITZLER

Analysis Lot: 675808 Method/Testcode: 415.1/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2002766-001	Carbon, Total Organic	N/A		Water	0.51 mg/L	10 ml	51 mg/L	100	7	50			4/4/20 23:37	N	IV
K2002766-002	Carbon, Total Organic	N/A		Water	15.44 mg/L	10 ml	15.4 mg/L	1	0.07	0.50			4/5/20 00:05	N	IV
K2002766-003	Carbon, Total Organic	N/A		Water	0.94 mg/L	10 ml	94 mg/L	100	7	50			4/5/20 01:02	N	IV
K2002766-004	Carbon, Total Organic	N/A		Water	10.84 mg/L	10 ml	10.8 mg/L	1	0.07	0.50			4/5/20 01:30	N	IV
K2002824-004	Carbon, Total Organic	N/A		Water	0.59 mg/L	10 ml	59 mg/L	100	7	50			4/5/20 01:58	N	IV
K2002824-005	Carbon, Total Organic	N/A		Water	15.49 mg/L	10 ml	15.5 mg/L	1	0.07	0.50			4/5/20 02:56	N	IV
K2002824-006	Carbon, Total Organic	N/A		Water	0.58 mg/L	10 ml	58 mg/L	100	7	50			4/5/20 03:24	N	IV
KQ2004678-01	Carbon, Total Organic	CCV		Water	25.78 mg/L	10 ml	25.8 mg/L	1					4/4/20 22:23	N	IV
KQ2004678-02	Carbon, Total Organic	CCV		Water	24.12 mg/L	10 ml	24.1 mg/L	1					4/5/20 02:26	N	IV
KQ2004678-03	Carbon, Total Organic	CCV		Water	24.81 mg/L	10 ml	24.8 mg/L	1					4/5/20 06:43	N	IV
KQ2004678-04	Carbon, Total Organic	CCB		Water	0.38 mg/L	10 ml	0.38 mg/L	J 1	0.07	0.50			4/4/20 22:38	N	IV
KQ2004678-05	Carbon, Total Organic	CCB		Water	-0.03 mg/L	10 ml	0.50 mg/L	U 1	0.07	0.50			4/5/20 02:41	N	IV
KQ2004678-06	Carbon, Total Organic	CCB		Water	0.03 mg/L	10 ml	0.50 mg/L	U 1	0.07	0.50			4/5/20 06:58	N	IV
KQ2004678-07	Carbon, Total Organic	MB		Water	0.10 mg/L	10 ml	0.10 mg/L	J 1	0.07	0.50			4/4/20 22:53	N	IV
KQ2004678-08	Carbon, Total Organic	LCS		Water	23.65 mg/L	10 ml	23.7 mg/L	1	0.07	0.50	95		4/4/20 23:08	N	IV
KQ2004678-09	Carbon, Total Organic	MS	K2002766-002	Water	32.15 mg/L	10 ml	129 mg/L	4	0.3	2.0	113		4/5/20 00:33	N	IV
KQ2004678-10	Carbon, Total Organic	DUP	K2002766-001	Water	0.50 mg/L	10 ml	50 mg/L	J 100	7	50		4	4/4/20 23:37	N	IV
KQ2004678-11	Carbon, Total Organic	DUP	K2002766-002	Water	15.32 mg/L	10 ml	15.3 mg/L	1	0.07	0.50		<1	4/5/20 00:05	N	IV
KQ2004678-12	Carbon, Total Organic	DUP	K2002766-003	Water	0.98 mg/L	10 ml	98 mg/L	100	7	50		4	4/5/20 01:02	N	IV
KQ2004678-13	Carbon, Total Organic	DUP	K2002766-004	Water	10.78 mg/L	10 ml	10.8 mg/L	1	0.07	0.50		<1	4/5/20 01:30	N	IV
KQ2004678-14	Carbon, Total Organic	DUP	K2002824-004	Water	0.54 mg/L	10 ml	54 mg/L	100	7	50		8	4/5/20 01:58	N	IV
KQ2004678-15	Carbon, Total Organic	DUP	K2002824-005	Water	15.47 mg/L	10 ml	15.5 mg/L	1	0.07	0.50		<1	4/5/20 02:56	N	IV
KQ2004678-16	Carbon, Total Organic	DUP	K2002824-006	Water	0.51 mg/L	10 ml	51 mg/L	100	7	50		13	4/5/20 03:24	N	IV

indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03

Analyst: BDITZLER

Analysis Lot: 675809 Method/Testcode: SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2002730-001	Carbon, Total Organic	N/A		Water	0.68 mg/L	10 ml	0.68 mg/L	1	0.07	0.50			4/5/20 10:02	N	II
K2002730-002	Carbon, Total Organic	N/A		Water	0.69 mg/L	10 ml	0.69 mg/L	1	0.07	0.50			4/5/20 10:30	N	II
K2002730-003	Carbon, Total Organic	N/A		Water	0.53 mg/L	10 ml	0.53 mg/L	1	0.07	0.50			4/5/20 10:58	N	II
K2002730-004	Carbon, Total Organic	N/A		Water	0.94 mg/L	10 ml	0.94 mg/L	1	0.07	0.50			4/5/20 11:26	N	II
K2002730-005	Carbon, Total Organic	N/A		Water	0.77 mg/L	10 ml	0.77 mg/L	1	0.07	0.50			4/5/20 12:24	N	II
K2002730-006	Carbon, Total Organic	N/A		Water	1.49 mg/L	10 ml	1.49 mg/L	1	0.07	0.50			4/5/20 12:52	N	II
K2002730-007	Carbon, Total Organic	N/A		Water	0.88 mg/L	10 ml	0.88 mg/L	1	0.07	0.50			4/5/20 13:20	N	II
K2002744-001	Carbon, Total Organic	N/A		Ground Water	5.23 mg/L	10 ml	5.23 mg/L	1	0.07	0.50			4/5/20 04:50	N	IV
K2002744-002	Carbon, Total Organic	N/A		Ground Water	15.99 mg/L	10 ml	16.0 mg/L	1	0.07	0.50			4/5/20 05:18	Y	IV
K2002744-003	Carbon, Total Organic	N/A		Ground Water	9.82 mg/L	10 ml	9.82 mg/L	1	0.07	0.50			4/5/20 06:15	N	IV
K2002744-004	Carbon, Total Organic	N/A		Ground Water	9.50 mg/L	10 ml	9.50 mg/L	1	0.07	0.50			4/5/20 07:42	N	IV
K2002744-005	Carbon, Total Organic	N/A		Ground Water	0.76 mg/L	10 ml	300 mg/L	400	30	200			4/5/20 08:10	N	IV
K2002782-001	Carbon, Total Organic	N/A		Reagent Water	-0.10 mg/L	10 ml	0.50 mg/L	U 1	0.07	0.50			4/5/20 04:21	N	I
K2002782-002	Carbon, Total Organic	N/A		Reagent Water	-0.03 mg/L	10 ml	0.50 mg/L	U 1	0.07	0.50			4/5/20 04:35	N	I
K2002854-001	Carbon, Total Organic	N/A		Water	2.92 mg/L	10 ml	2.92 mg/L	1	0.07	0.50			4/5/20 09:34	N	IV
K2002855-001	Carbon, Total Organic	N/A		Ground Water	2.01 mg/L	10 ml	800 mg/L	400	30	200			4/5/20 14:16	N	IV
K2002858-001	Carbon, Total Organic	N/A		Water	2.11 mg/L	10 ml	2.11 mg/L	1	0.07	0.50			4/5/20 13:48	N	II
K2002876-001	Carbon, Total Organic	N/A		Water	-0.10 mg/L	10 ml	0.50 mg/L	U 1	0.07	0.50			4/5/20 15:40	N	II
K2002883-001	Carbon, Total Organic	N/A		Water	0.28 mg/L	10 ml	0.28 mg/L	J 1	0.07	0.50			4/5/20 16:08	N	IV
KQ2004679-01	Carbon, Total Organic	CCV		Reagent Water	24.12 mg/L	10 ml	24.1 mg/L	1					4/5/20 02:26	N	I
KQ2004679-02	Carbon, Total Organic	CCV		Reagent Water	24.81 mg/L	10 ml	24.8 mg/L	1					4/5/20 06:43	N	I
KQ2004679-03	Carbon, Total Organic	CCV		Reagent Water	24.17 mg/L	10 ml	24.2 mg/L	1					4/5/20 11:54	N	I
KQ2004679-04	Carbon, Total Organic	CCV		Reagent Water	24.31 mg/L	10 ml	24.3 mg/L	1					4/5/20 17:18	N	I
KQ2004679-05	Carbon, Total Organic	CCB		Reagent Water	-0.03 mg/L	10 ml	0.50 mg/L	U 1	0.07	0.50			4/5/20 02:41	N	I
KQ2004679-06	Carbon, Total Organic	CCB		Reagent Water	0.03 mg/L	10 ml	0.50 mg/L	U 1	0.07	0.50			4/5/20 06:58	N	I
KQ2004679-07	Carbon, Total Organic	CCB		Reagent Water	-0.09 mg/L	10 ml	0.50 mg/L	U 1	0.07	0.50			4/5/20 12:09	N	I
KQ2004679-08	Carbon, Total Organic	CCB		Reagent Water	-0.10 mg/L	10 ml	0.50 mg/L	U 1	0.07	0.50			4/5/20 17:33	N	I

indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03

Analyst: BDITZLER

Analysis Lot: 675809 Method/Testcode: SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ2004679-09	Carbon, Total Organic	MB		Reagent Water	-0.05 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			4/5/20 07:13	N	I
KQ2004679-10	Carbon, Total Organic	LCS		Reagent Water	23.13 mg/L	10 ml	23.1 mg/L	1	0.07	0.50	93		4/5/20 07:27	N	I
KQ2004679-11	Carbon, Total Organic	MS	K2002744-002	Ground Water	31.79 mg/L	10 ml	127 mg/L	4	0.3	2.0	111		4/5/20 05:46	N	IV
KQ2004679-12	Carbon, Total Organic	DUP	K2002730-001	Water	0.64 mg/L	10 ml	0.64 mg/L	1	0.07	0.50		7	4/5/20 10:02	N	II
KQ2004679-13	Carbon, Total Organic	DUP	K2002730-002	Water	0.68 mg/L	10 ml	0.68 mg/L	1	0.07	0.50		<1	4/5/20 10:30	N	II
KQ2004679-14	Carbon, Total Organic	DUP	K2002730-003	Water	0.55 mg/L	10 ml	0.55 mg/L	1	0.07	0.50		4	4/5/20 10:58	N	II
KQ2004679-15	Carbon, Total Organic	DUP	K2002730-004	Water	0.94 mg/L	10 ml	0.94 mg/L	1	0.07	0.50		<1	4/5/20 11:26	N	II
KQ2004679-16	Carbon, Total Organic	DUP	K2002730-005	Water	0.72 mg/L	10 ml	0.72 mg/L	1	0.07	0.50		7	4/5/20 12:24	N	II
KQ2004679-17	Carbon, Total Organic	DUP	K2002730-006	Water	1.53 mg/L	10 ml	1.53 mg/L	1	0.07	0.50		3	4/5/20 12:52	N	II
KQ2004679-18	Carbon, Total Organic	DUP	K2002730-007	Water	0.85 mg/L	10 ml	0.85 mg/L	1	0.07	0.50		3	4/5/20 13:20	N	II
KQ2004679-19	Carbon, Total Organic	DUP	K2002744-002	Ground Water	15.96 mg/L	10 ml	16.0 mg/L	1	0.07	0.50		<1	4/5/20 05:18	N	IV
KQ2004679-20	Carbon, Total Organic	DUP	K2002744-001	Ground Water	5.27 mg/L	10 ml	5.27 mg/L	1	0.07	0.50		<1	4/5/20 04:50	N	IV
KQ2004679-21	Carbon, Total Organic	DUP	K2002744-003	Ground Water	9.62 mg/L	10 ml	9.62 mg/L	1	0.07	0.50		2	4/5/20 06:15	N	IV
KQ2004679-22	Carbon, Total Organic	DUP	K2002744-004	Ground Water	9.21 mg/L	10 ml	9.21 mg/L	1	0.07	0.50		3	4/5/20 07:42	N	IV
KQ2004679-23	Carbon, Total Organic	DUP	K2002744-005	Ground Water	0.85 mg/L	10 ml	340 mg/L	400	30	200		11*	4/5/20 08:10	N	85 of 112 IV
KQ2004679-26	Carbon, Total Organic	DUP	K2002854-001	Water	2.96 mg/L	10 ml	2.96 mg/L	1	0.07	0.50		1	4/5/20 09:34	N	IV
KQ2004679-27	Carbon, Total Organic	DUP	K2002855-001	Ground Water	2.14 mg/L	10 ml	850 mg/L	400	30	200		6	4/5/20 14:16	N	IV
KQ2004679-28	Carbon, Total Organic	DUP	K2002858-001	Water	2.11 mg/L	10 ml	2.11 mg/L	1	0.07	0.50		<1	4/5/20 13:48	N	II
KQ2004679-29	Carbon, Total Organic	DUP	K2002876-001	Water	-0.08 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50		NC	4/5/20 15:40	N	II
KQ2004679-30	Carbon, Total Organic	DUP	K2002883-001	Water	0.22 mg/L	10 ml	0.22 mg/L J	1	0.07	0.50		25*	4/5/20 16:08	N	IV

indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03

Analyst: BDITZLER

Analysis Lot: 675810 Method/Testcode: SM 5310 C/TOC D

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2002760-001	Carbon, Dissolved Organic N/A (DOC)			Effluent	1.26 mg/L	10 ml	1.26 mg/L	1	0.07	0.50			4/5/20 16:36	N	II
K2002760-002	Carbon, Dissolved Organic N/A (DOC)			Water	1.30 mg/L	10 ml	1.30 mg/L	1	0.07	0.50			4/5/20 18:17	N	II
KQ2004680-01	Carbon, Dissolved Organic CCV (DOC)			Effluent	24.17 mg/L	10 ml	24.2 mg/L	1					4/5/20 11:54	N	II
KQ2004680-02	Carbon, Dissolved Organic CCV (DOC)			Effluent	24.31 mg/L	10 ml	24.3 mg/L	1					4/5/20 17:18	N	II
KQ2004680-03	Carbon, Dissolved Organic CCV (DOC)			Effluent	24.12 mg/L	10 ml	24.1 mg/L	1					4/5/20 18:45	N	II
KQ2004680-04	Carbon, Dissolved Organic CCB (DOC)			Effluent	-0.09 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			4/5/20 12:09	N	II
KQ2004680-05	Carbon, Dissolved Organic CCB (DOC)			Effluent	-0.10 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			4/5/20 17:33	N	II
KQ2004680-06	Carbon, Dissolved Organic CCB (DOC)			Effluent	-0.10 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			4/5/20 19:00	N	II
KQ2004680-07	Carbon, Dissolved Organic MB (DOC)			Effluent	-0.10 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			4/5/20 17:48	N	II
KQ2004680-08	Carbon, Dissolved Organic LCS (DOC)			Effluent	23.12 mg/L	10 ml	23.1 mg/L	1	0.07	0.50	92		4/5/20 18:03	N	II
KQ2004680-09	Carbon, Dissolved Organic MS (DOC)		K2002760-001	Effluent	29.25 mg/L	10 ml	29.3 mg/L	1	0.07	0.50	112		4/5/20 17:04	N	II
KQ2004680-10	Carbon, Dissolved Organic DUP (DOC)		K2002760-001	Effluent	1.29 mg/L	10 ml	1.29 mg/L	1	0.07	0.50		2	4/5/20 16:36	N	II
KQ2004680-11	Carbon, Dissolved Organic DUP (DOC)		K2002760-002	Water	1.29 mg/L	10 ml	1.29 mg/L	1	0.07	0.50		1	4/5/20 18:17	N	II

indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

0.486			OBSERVATIONS	9	ABOVE
0.204	0.204		STD Deviation	0.15797	0.2044
0.073	0.073	0.073	AVERAGE	0.10796	0.0726
0.135	0.135	0.135	UCL	0.26593	0.1346
0.056	0.056		LCL	-0.05002	0.0558
0.019	0.019				0.0185
0.000					0
0.000			OBSERVATIONS	5	0
0.000			STD Deviation	0.03997	0
			AVERAGE	0.09718	0
			UCL	0.13715	0
			LCL	0.05721	0
					0
					0
			OBSERVATIONS	2	0
			STD Deviation	0.03002	0
			AVERAGE	0.10360	0
			UCL	0.13362	0
			LCL	0.07358	0
					0
					0
			OBSERVATIONS	0	0
			STD Deviation	#DIV/0!	0
			AVERAGE	#DIV/0!	0
					0
					0
					0
					0
					0
					0
					0

Bob 4/4/20

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER)

Method: Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	25.884	0.1036	25.7801	25.7801	25.8	4/4/2020
3	ccb	1	0.486	0.1036	0.3821	0.3821	<0.5	4/4/2020
4	mb	1	0.204	0.1036	0.1008	0.1008	<0.5	4/4/2020
5	lcs	1	23.755	0.1036	23.6517	23.6517	23.7	4/4/2020
6	K2002766-001	100	0.618	0.1036	0.5148	51.48	51.48	4/4/2020
7	K2002766-001	100	0.599	0.1036	0.4954	49.54	49.5	4/4/2020
8	K2002766-002	1	15.545	0.1036	15.4418	15.4418	15	4/5/2020
9	K2002766-002	1	15.423	0.1036	15.3194	15.3194	15.32	4/5/2020
10	KQ2004678-09	4	32.257	0.1036	32.1530	128.612	128.61	4/5/2020
11	K2002766-003	100	1.044	0.1036	0.9404	94.04	94.0	4/5/2020
12	K2002766-003	100	1.079	0.1036	0.9756	97.56	97.56	4/5/2020
13	K2002766-004	1	10.939	0.1036	10.8356	10.8356	10.84	4/5/2020
14	K2002766-004	1	10.885	0.1036	10.7811	10.7811	10.78	4/5/2020
15	K2002824-004	100	0.692	0.1036	0.5884	58.84	58.8	4/5/2020
16	K2002824-004	100	0.646	0.1036	0.5421	54.21	54.2	4/5/2020
17	ccv	1	24.225	0.1036	24.1217	24.1217	24.12	4/5/2020
18	ccb	1	0.073	0.1036	-0.0310	-0.031	<0.5	4/5/2020
19	K2002824-005	1	15.591	0.1036	15.4873	15.4873	15.5	4/5/2020
20	K2002824-005	1	15.572	0.1036	15.4684	15.4684	15.47	4/5/2020
21	K2002824-006	100	0.684	0.1036	0.5805	58.05	58.05	4/5/2020
22	K2002824-006	100	0.612	0.1036	0.5084	50.84	50.8	4/5/2020
23	ccv	1	24.911	0.1036	24.8069	24.8069	24.8	4/5/2020
24	ccb	1	0.135	0.1036	0.0310	0.031	<0.5	4/5/2020
25		1		0.0000	0.0000	0	<0.5	

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

Analyzed By: <i>[Signature]</i>	Date Analyzed: 4/7/20
Reviewed By: <i>[Signature]</i>	Date Reviewed: 4/8/20

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER)

Method: Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	24.225	0.1036	24.1217	24.1217	24.1	4/5/2020
3	ccb	1	0.073	0.1036	-0.0310	-0.031	<0.5	4/5/2020
4	K2002782-001	1	0.000	0.1036	-0.1036	-0.1036	<0.5	4/5/2020
5	K2002782-002	1	0.074	0.1036	-0.0299	-0.0299	<0.5	4/5/2020
6	K2002744-001	1	5.337	0.1036	5.2333	5.2333	5.23	4/5/2020
7	K2002744-001	1	5.376	0.1036	5.2723	5.2723	5.3	4/5/2020
8	K2002744-002	1	16.090	0.1036	15.9861	15.9861	16	4/5/2020
9	K2002744-002	1	16.060	0.1036	15.9559	15.9559	15.96	4/5/2020
10	KQ2004679-11	4	31.898	0.1036	31.7943	127.1772	127.18	4/5/2020
11	K2002744-003	1	9.927	0.1036	9.8231	9.8231	9.8	4/5/2020
12	K2002744-003	1	9.722	0.1036	9.6186	9.6186	9.62	4/5/2020
13	ccv	1	24.911	0.1036	24.8069	24.8069	24.81	4/5/2020
14	ccb	1	0.135	0.1036	0.0310	0.031	<0.5	4/5/2020
15	mb	1	0.056	0.1036	-0.0478	-0.0478	<0.5	4/5/2020
16	lcs	1	23.236	0.1036	23.1325	23.1325	23.1	4/5/2020
17	K2002744-004	1	9.607	0.1036	9.5035	9.5035	9.50	4/5/2020
18	K2002744-004	1	9.316	0.1036	9.2125	9.2125	9.2	4/5/2020
19	K2002744-005	400	0.865	0.1036	0.7609	304.36	304.4	4/5/2020
20	K2002744-005	400	0.950	0.1036	0.8459	338.36	338.36	4/5/2020
21	K2002854-001	1	3.027	0.1036	2.9236	2.9236	2.92	4/5/2020
22	K2002854-001	1	3.064	0.1036	2.9601	2.9601	3.0	4/5/2020
23	K2002730-001	1	0.787	0.1036	0.6838	0.6838	0.7	4/5/2020
24	K2002730-001	1	0.740	0.1036	0.6367	0.6367	0.64	4/5/2020
25	K2002730-002	1	0.792	0.1036	0.6880	0.688	0.69	4/5/2020

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

Analyzed By: <i>RUP</i>	Date Analyzed: <i>9/7/20</i>
Reviewed By: <i>[Signature]</i>	Date Reviewed: <i>4/13/20</i>

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER)Method: Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
26	K2002730-002	1	0.788	0.1036	0.6840	0.684	0.68	4/5/2020
27	K2002730-003	1	0.631	0.1036	0.5274	0.5274	0.53	4/5/2020
28	K2002730-003	1	0.650	0.1036	0.5463	0.5463	0.5	4/5/2020
29	K2002730-004	1	1.041	0.1036	0.9375	0.9375	0.9	4/5/2020
30	K2002730-004	1	1.046	0.1036	0.9423	0.9423	0.9	4/5/2020
31	ccv	1	24.276	0.1036	24.1725	24.1725	24.2	4/5/2020
32	ccb	1	0.019	0.1036	-0.0851	-0.0851	<0.5	4/5/2020
33	K2002730-005	1	0.869	0.1036	0.7653	0.7653	0.8	4/5/2020
34	K2002730-005	1	0.821	0.1036	0.7170	0.717	0.7	4/5/2020
35	K2002730-006	1	1.593	0.1036	1.4892	1.4892	1.5	4/5/2020
36	K2002730-006	1	1.633	0.1036	1.5298	1.5298	1.5	4/5/2020
37	K2002730-007	1	0.984	0.1036	0.8807	0.8807	0.9	4/5/2020
38	K2002730-007	1	0.954	0.1036	0.8505	0.8505	0.9	4/5/2020
39	K2002858-001	1	2.216	0.1036	2.1127	2.1127	2.1	4/5/2020
40	K2002858-001	1	2.216	0.1036	2.1123	2.1123	2.1	4/5/2020
41	K2002855-001	400	2.109	0.1036	2.0053	802.12	802.1	4/5/2020
42	K2002855-001	400	2.240	0.1036	2.1362	854.48	854.5	4/5/2020
43	K2002876-001	1	0.004	0.1036	-0.0998	-0.0998	<0.5	4/5/2020
44	K2002876-001	1	0.019	0.1036	-0.0848	-0.0848	<0.5	4/5/2020
45	K2002883-001	1	0.387	0.1036	0.2834	0.2834	<0.5	4/5/2020
46	K2002883-001	1	0.324	0.1036	0.2204	0.2204	<0.5	4/5/2020
47	ccv	1	24.411	0.1036	24.3074	24.3074	24.3	4/5/2020
48	ccb	1	0.000	0.1036	-0.1036	-0.1036	<0.5	4/5/2020
49		1		0.0000	0.0000	0	<0.5	
50		1		0.0000	0.0000	0	<0.5	

Analyzed By: <i>EW</i>	Date Analyzed: <i>4/7/20</i>
Reviewed By: <i>[Signature]</i>	Date Reviewed: <i>4/8/20</i>

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER)

Method: Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	24.276	0.1036	24.1725	24.1725	24.2	4/5/2020
3	ccb	1	0.019	0.1036	-0.0851	-0.0851	<0.5	4/5/2020
4	K2002760-001	1	1.365	0.1036	1.2610	1.261	1.3	4/5/2020
5	K2002760-001	1	1.392	0.1036	1.2886	1.2886	1.3	4/5/2020
6	KQ2004680-09	1	29.358	0.1036	29.2544	29.2544	29.25	4/5/2020
7	ccv	1	24.411	0.1036	24.3074	24.3074	24.3	4/5/2020
8	ccb	1	0.000	0.1036	-0.1036	-0.1036	<0.5	4/5/2020
9	mb	1	0.000	0.1036	-0.1036	-0.1036	<0.5	4/5/2020
10	lcs	1	23.223	0.1036	23.1192	23.1192	23.12	4/5/2020
11	K2002760-002	1	1.407	0.1036	1.3032	1.3032	1.3	4/5/2020
12	K2002760-002	1	1.389	0.1036	1.2852	1.2852	1.29	4/5/2020
13	ccv	1	24.220	0.1036	24.1165	24.1165	24.12	4/5/2020
14	ccb	1	0.000	0.1036	-0.1036	-0.1036	<0.5	4/5/2020
15		1		0.0000	0.0000	0	<0.5	
16		1		0.0000	0.0000	0	<0.5	
17		1		0.0000	0.0000	0	<0.5	
18		1		0.0000	0.0000	0	<0.5	
19		1		0.0000	0.0000	0	<0.5	
20		1		0.0000	0.0000	0	<0.5	
21		1		0.0000	0.0000	0	<0.5	
22		1		0.0000	0.0000	0	<0.5	
23		1		0.0000	0.0000	0	<0.5	
24		1		0.0000	0.0000	0	<0.5	
25		1		0.0000	0.0000	0	<0.5	

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

Analyzed By: <i>WV</i>	Date Analyzed: 4/7/20
Reviewed By: <i>JC</i>	Date Reviewed: 4/8/20

TOC: 675808,
675809,
DOC: 675810

Schedule: 04042020

Version: 2

Instrument: Fusion1

Last Saved by: Fusion1 (Fusion1)

Last Saved on: 2020/04/04 20:29 - Saturday

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use	State
(Clean)	Clean	Clean		1	True	Ready
(Clean)	Clean	Clean		1	True	Ready
(Clean)	Clean	Clean		1	True	Ready
(Blank)	Blank	Reagent/Acid Blank		1	True	Ready
D	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
1	Sample	MB1	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
2	Sample	ICS	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
3	Sample	K2002766-001.03 100x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
4	Sample	K2002766-002.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
5	Sample	K2002766-002.03 ms 4x	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
6	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
7	Sample	K2002766-003.03 100x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
8	Sample	K2002766-004.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
9	Sample	K2002824-004.03 100x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
10	Sample	K2002824-005.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
11	Sample	K2002824-006.03 100x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
12	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
13	Sample	K2002782-001.01	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
14	Sample	K2002782-002.01	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
15	Sample	K2002744-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
16	Sample	K2002744-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
17	Sample	K2002744-002.01 ms 4x	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
18	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
19	Sample	K2002744-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
20	Sample	MB2	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
21	Sample	K2002744-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
22	Sample	K2002744-005.01 400x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
23	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
24	Sample	K2002854-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
25	Sample	K2002730-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
26	Sample	K2002730-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
27	Sample	K2002730-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
28	Sample	K2002730-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
29	Sample	K2002730-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
30	Sample	K2002730-006.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
31	Sample	K2002730-007.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
32	Sample	K2002858-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
33	Sample	K2002855-001.01 400x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
34	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
35	Sample	K2002876-001.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
36	Sample	K2002883-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
37	Sample	K2002760-001.03 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
38	Sample	K2002760-001.03 ms doc	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready

Printed on: April 7, 2020 09:09:59

Page 1

Schedule: 04042020

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use	State
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
39	Sample	MB3	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [25.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
40	Sample	K2002760-002.04 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
					False	

Fusion Report - 04042020

Saturday, April 04, 2020 08:29 PM

(View - Repts, Unused Repts, Meta-Data, Signature, History)
Printed on 2020/04/07 09:10 -
Tuesday

Report Summary Information

Company Location: Gen Chem Lab
Schedule Name: 04042020
Instrument Name: Fusion1
Report Version: 1 of 1
Report Creation by Operators (schedule version): Fusion1 (Fusion1) (v2)
Comment:

Engine Version: 1.1.5.1
Firmware Version: 1.2.0696
Connection: RS232 COM1

Report Results

Sample Type: Clean							From Schedule Version 2
Pos	Analysis Type	Sample ID			Start Time		
♦ (clean)		Clean			2020/04/04 20:29		
Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time	
1	IC Clean	13.60	17.72	4.12	49.79	05:25	
2	TC Clean	15.12	19.33	4.20	49.95	04:03	
3	TC Clean	3.74	7.76	4.01	50.06	03:57	
4	TC Clean	2.77	6.74	3.97	50.02	03:56	

Sample Type: Clean							From Schedule Version 2
Pos	Analysis Type	Sample ID			Start Time		
♦ (clean)		Clean			2020/04/04 20:52		
Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time	
1	IC Clean	1.27	5.16	3.89	49.75	05:23	
2	TC Clean	6.26	10.30	4.04	50.04	04:02	
3	TC Clean	2.00	6.00	4.00	49.92	03:48	
4	TC Clean	2.09	6.00	3.91	49.93	03:51	

Sample Type: Clean			From Schedule Version 2			
Pos	Analysis Type	Sample ID			Start Time	
♦ (clean)		Clean			2020/04/04 21:14	
Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	1.19	5.23	4.05	49.80	05:24
2	TC Clean	5.69	9.69	4.01	50.02	04:00
3	TC Clean	2.00	6.21	4.20	49.92	03:44
4	TC Clean	2.02	6.00	3.97	49.93	03:45

Sample Type: Blank (Creating v1370)			From Schedule Version 2			
Pos	Analysis Type	Sample ID			Start Time	
♦ (blank)		Reagent/Acid Blank			2020/04/04 21:35	
Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.84	4.90	4.06	49.59	05:11
2	TC Clean	5.35	9.59	4.24	49.94	03:58
3	TC Clean	2.20	6.32	4.12	50.02	03:48
4	TC Clean	2.02	6.22	4.20	49.92	03:54
5	Reagent Blank	8.29	12.45	4.16	49.89	05:03
6	Acid Blank	1.52	5.63	4.11	49.53	05:27

Sample Type: Sample			From Schedule Version 2					
Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time		
♦ D	TOC	RB	0.3677 ppm	0.0000 ppm	0.0000%	2020/04/04 22:09		
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3677	3.6767	10.06	14.29	4.23	50.00	10:31
<u>Dilution</u>		<u>Blank Contribution</u>		<u>Method</u>	<u>Calibration</u>			
1:10		(TC) 7.5884 (IC) (v1370)		CAS_salt_010711 (v4)	CAS_salt_010711 (v32)			

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
♦ B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.8837 ppm (PASS)	0.0000 ppm	0%	2020/04/04 22:23

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.8837	258.8374	181.88	185.92	4.04	50.03	10:34

<u>Completion State</u>	<u>Success Action</u>	<u>Method</u>	<u>Calibration</u>	<u>STD Conc - Pos B</u>
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
♦ D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.4857 ppm (PASS)	0.0000 ppm	0%	2020/04/04 22:38

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.4857	4.8571	11.08	15.12	4.03	50.02	10:29

<u>Completion State</u>	<u>Success Action</u>	<u>Method</u>	<u>Calibration</u>	<u>STD Conc - Pos D</u>
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 2

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
♦ 1	TOC	MB1	0.2044 ppm	0.0000 ppm	0.0000%	2020/04/04 22:53

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2044	2.0440	8.96	12.91	3.95	50.02	10:30

<u>Dilution</u>	<u>Blank Contribution</u>	<u>Method</u>	<u>Calibration</u>
1:10	(TC) 7.5884 (IC) (v1370)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> LCS From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
♦ C	TOC	25.0000	1:1	[TOC] LCS [24.0 ppm]	0 / infinity (NA / NA)	23.7553 ppm (PASS)	0.0000 ppm	0%	2020/04/04 23:08

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25 ppm	1	23.7553	237.553	181.88	185.92	4.04	50.03	10:34

Type	25.0 ppm	1	23.7553	237.5525	167.57	171.50	3.93	50.02	10:36
Completion State	Success Action	Method	Calibration	STD Conc - Pos C					
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	25 ppmC					

Sample Type: Sample

From Schedule Version 2

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
2	TOC	ICS	0.5427 ppm	0.0000 ppm	0.0000%	2020/04/04 23:22

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5427	5.4269	11.24	15.23	3.99	50.02	10:30

Dilution 1:10 **Blank Contribution** (TC) 7.5884 (IC) (v1370) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
3	TOC	K2002766-001.03 100x	0.6087 ppm	0.0137 ppm	2.2500%	2020/04/04 23:37

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6184	6.1838	11.75	15.78	4.03	50.03	10:26
2	TOC	0.5990	5.9905	11.62	15.49	3.87	50.02	10:26

Dilution 1:10 **Blank Contribution** (TC) 7.5884 (IC) (v1370) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
4	TOC	K2002766-002.03	15.4842 ppm	0.0865 ppm	0.5600%	2020/04/05 00:05

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	15.5454	155.4543	112.13	116.00	3.86	50.03	10:26
2	TOC	15.4230	154.2305	111.31	115.22	3.91	50.03	10:29

Dilution 1:10 **Blank Contribution** (TC) 7.5884 (IC) (v1370) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
5	TOC	K2002766-002.03 ms 4x	32.2566 ppm	0.0000 ppm	0.0000%	2020/04/05 00:33

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	32.2566	322.5658	224.51	228.49	3.97	50.05	10:28

Dilution 1:10 **Blank Contribution** (TC) 7.5884 (IC) **Method** CAS_salt_010711 **Calibration** CAS_salt_010711

(v1370)

(v4)

(v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
6	TOC	RB	0.3031 ppm	0.0000 ppm	0.0000%	2020/04/05 00:48

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3031	3.0314	9.63	13.58	3.95	50.03	10:31

Dilution

1:10

Blank Contribution(TC) 7.5884 (IC)
(v1370)MethodCAS_salt_010711
(v4)CalibrationCAS_salt_010711
(v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
7	TOC	K2002766-003.03 100x	1.0616 ppm	0.0249 ppm	2.3500%	2020/04/05 01:02

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.0440	10.4396	14.61	18.58	3.97	50.07	10:26
2	TOC	1.0792	10.7920	14.85	18.60	3.76	50.06	10:30

Dilution

1:10

Blank Contribution(TC) 7.5884 (IC)
(v1370)MethodCAS_salt_010711
(v4)CalibrationCAS_salt_010711
(v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
8	TOC	K2002766-004.03	10.9120 ppm	0.0385 ppm	0.3500%	2020/04/05 01:30

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	10.9392	109.3916	81.15	84.97	3.82	50.03	10:29
2	TOC	10.8847	108.8474	80.79	84.41	3.63	50.04	10:30

Dilution

1:10

Blank Contribution(TC) 7.5884 (IC)
(v1370)MethodCAS_salt_010711
(v4)CalibrationCAS_salt_010711
(v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
9	TOC	K2002824-004.03 100x	0.6689 ppm	0.0327 ppm	4.8900%	2020/04/05 01:58

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6920	6.9198	12.24	15.94	3.70	50.03	10:29
2	TOC	0.6457	6.4574	11.93	15.69	3.76	50.03	10:25

Dilution

1:10

Blank Contribution(TC) 7.5884 (IC)
(v1370)MethodCAS_salt_010711
(v4)CalibrationCAS_salt_010711
(v32)Sample Type: Check Standard --> CCV 25 ppm

From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
B	TOC	25.0000	1:2	[TOC] CCV 25	0 / infinity	24.2253	0.0000	0%	2020/04/05 02:26

				ppm [25 ppm]	(NA / NA)	ppm (PASS)	ppm			
Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.2253	242.2529	170.73	174.61	3.88	50.01	10:29
Completion State		Success Action		Method		Calibration		STD Conc - Pos B		
Success - Criteria met.		Do Nothing		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)		50 ppmC		

Sample Type: Check Standard --> CCB From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
♦ D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0726 ppm (PASS)	0.0000 ppm	0%	2020/04/05 02:41

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0726	0.7263	8.31	12.27	3.96	50.00	10:32

Completion State		Success Action		Method		Calibration		STD Conc - Pos D		
Success - Criteria met.		Do Nothing		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)		0 ppmC		

Sample Type: Sample From Schedule Version 2

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
♦ 10	TOC	K2002824-005.03	15.5815 ppm	0.0134 ppm	0.0900%	2020/04/05 02:56

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	15.5909	155.9093	112.44	116.33	3.89	49.96	10:31
2	TOC	15.5720	155.7205	112.31	116.14	3.83	50.00	10:29

Dilution		Blank Contribution		Method		Calibration	
1:10		(TC) 7.5884 (IC) (v1370)		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)	

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
♦ 11	TOC	K2002824-006.03 100x	0.6480 ppm	0.0510 ppm	7.8700%	2020/04/05 03:24

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6841	6.8410	12.19	15.98	3.79	49.95	10:25
2	TOC	0.6120	6.1198	11.70	15.59	3.88	49.97	10:28

Dilution		Blank Contribution		Method		Calibration	
1:10		(TC) 7.5884 (IC) (v1370)		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)	

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
12	TOC	RB	0.0847 ppm	0.0013 ppm	1.4900%	2020/04/05 03:52

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0856	0.8559	8.16	12.04	3.88	49.94	10:28
2	TOC	0.0838	0.8380	8.15	12.08	3.93	49.97	10:28

Dilution 1:10 Blank Contribution (TC) 7.5884 (IC) (v1370) Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
13	TOC	K2002782-001.01	0.0000 ppm	0.0000 ppm	0.0000%	2020/04/05 04:21

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	7.54	11.45	3.91	49.98	10:33

Dilution 1:10 Blank Contribution (TC) 7.5884 (IC) (v1370) Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
14	TOC	K2002782-002.01	0.0737 ppm	0.0000 ppm	0.0000%	2020/04/05 04:35

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0737	0.7369	8.08	11.94	3.86	49.97	10:32

Dilution 1:10 Blank Contribution (TC) 7.5884 (IC) (v1370) Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
15	TOC	K2002744-001.01	5.3564 ppm	0.0275 ppm	0.5100%	2020/04/05 04:50

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.3369	53.3691	43.48	47.35	3.87	50.00	10:25
2	TOC	5.3759	53.7587	43.74	47.56	3.82	49.97	10:31

Dilution 1:10 Blank Contribution (TC) 7.5884 (IC) (v1370) Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
16	TOC	K2002744-002.01	16.0746 ppm	0.0213 ppm	0.1300%	2020/04/05 05:18

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	16.0897	160.8967	115.79	119.74	3.95	49.99	10:25
2	TOC	16.0595	160.5948	115.59	119.70	4.11	49.98	10:29

Dilution Blank Contribution Method Calibration

1:10 (TC) 7.5884 (IC) CAS_salt_010711 CAS_salt_010711
(v1370) (v4) (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
17	TOC	K2002744-002.01 ms 4x	31.8979 ppm	0.0000 ppm	0.0000%	2020/04/05 05:46

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	31.8979	318.9791	222.10	226.10	4.00	50.01	10:34

Dilution 1:10 Blank Contribution (TC) 7.5884 (IC) (v1370) Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
18	TOC	RB	0.1837 ppm	0.0000 ppm	0.0000%	2020/04/05 06:01

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1837	1.8373	8.82	12.75	3.92	50.04	10:29

Dilution 1:10 Blank Contribution (TC) 7.5884 (IC) (v1370) Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
19	TOC	K2002744-003.01	9.8244 ppm	0.1446 ppm	1.4700%	2020/04/05 06:15

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	9.9267	99.2667	74.34	78.39	4.05	50.00	10:26
2	TOC	9.7222	97.2221	72.97	77.00	4.03	50.07	10:26

Dilution 1:10 Blank Contribution (TC) 7.5884 (IC) (v1370) Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm

From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	24.9105 ppm (PASS)	0.0000 ppm	0%	2020/04/05 06:43

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.9105	249.1050	175.34	179.18	3.84	50.04	10:33

Completion State Success - Criteria met. Success Action Do Nothing Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32) STD Conc - Pos B 50 ppmC

Sample Type: Check Standard --> CCB

From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
♦ D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.1346 ppm (PASS)	0.0000 ppm	0%	2020/04/05 06:58

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.1346	1.3464	8.72	12.68	3.95	50.07	10:31

Completion State Success - Criteria met.	Success Action Do Nothing	Method CAS_salt_010711 (v4)	Calibration CAS_salt_010711 (v32)	STD Conc - Pos D 0 ppmC
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Sample Type: Sample

From Schedule Version 2

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
♦ 20	TOC	MB2	0.0558 ppm	0.0000 ppm	0.0000%	2020/04/05 07:13

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0558	0.5585	7.96	11.92	3.95	50.06	10:30

Dilution 1:10	Blank Contribution (TC) 7.5884 (IC) (v1370)	Method CAS_salt_010711 (v4)	Calibration CAS_salt_010711 (v32)
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Sample Type: Check Standard --> LCS

From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
♦ C	TOC	25.0000	1:1	[TOC] LCS [24.0 ppm]	0 / infinity (NA / NA)	23.2361 ppm (PASS)	0.0000 ppm	0%	2020/04/05 07:27

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	23.2361	232.3614	164.08	168.09	4.01	50.08	10:31

Completion State Success - Criteria met.	Success Action Do Nothing	Method CAS_salt_010711 (v4)	Calibration CAS_salt_010711 (v32)	STD Conc - Pos C 25 ppmC
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Sample Type: Sample

From Schedule Version 2

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
♦ 21	TOC	K2002744-004.01	9.4616 ppm	0.2058 ppm	2.1700%	2020/04/05 07:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time

1	TOC	9.6071	96.0711	72.20	76.18	3.99	50.04	10:25
2	TOC	9.3161	93.1611	70.24	74.19	3.95	50.07	10:28

Dilution 1:10 **Blank Contribution** (TC) 7.5884 (IC) (v1370) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
22	TOC	K2002744-005.01 400x	0.9070 ppm	0.0601 ppm	6.6300%	2020/04/05 08:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8645	8.6448	13.40	17.38	3.98	50.06	10:30
2	TOC	0.9495	9.4953	13.97	17.82	3.84	50.06	10:26

Dilution 1:10 **Blank Contribution** (TC) 7.5884 (IC) (v1370) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
23	TOC	RB	0.0957 ppm	0.0583 ppm	60.9900%	2020/04/05 08:38

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1709	1.7094	8.74	12.61	3.88	50.07	10:30
2	TOC	0.1073	1.0730	8.31	12.16	3.85	50.06	10:27
3	TOC	0.0700	0.6997	8.06	11.85	3.79	50.07	10:26
4	TOC	0.0344	0.3444	7.82	11.68	3.86	50.06	10:29

Dilution 1:10 **Blank Contribution** (TC) 7.5884 (IC) (v1370) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
24	TOC	K2002854-001.01	3.0455 ppm	0.0259 ppm	0.8500%	2020/04/05 09:34

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.0272	30.2716	27.95	31.66	3.71	50.05	10:29
2	TOC	3.0637	30.6374	28.19	32.15	3.96	50.05	10:25

Dilution 1:10 **Blank Contribution** (TC) 7.5884 (IC) (v1370) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
25	TOC	K2002730-001.01	0.7639 ppm	0.0333 ppm	4.3600%	2020/04/05 10:02

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7874	7.8745	12.88	16.93	4.05	50.05	10:31
2	TOC	0.7403	7.4031	12.57	16.52	3.95	50.06	10:31

Dilution **Blank Contribution** **Method** **Calibration**

1:10 (TC) 7.5884 (IC) CAS_salt_010711 CAS_salt_010711
(v1370) (v4) (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
26	TOC	K2002730-002.01	0.7896 ppm	0.0028 ppm	0.3600%	2020/04/05 10:30

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7916	7.9161	12.91	16.88	3.97	50.09	10:27
2	TOC	0.7876	7.8760	12.88	16.87	3.99	50.08	10:29

Dilution 1:10 Blank Contribution (TC) 7.5884 (IC) (v1370) Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
27	TOC	K2002730-003.01	0.6405 ppm	0.0134 ppm	2.0900%	2020/04/05 10:58

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6310	6.3102	11.83	15.66	3.83	50.07	10:29
2	TOC	0.6499	6.4990	11.96	15.80	3.84	50.05	10:29

Dilution 1:10 Blank Contribution (TC) 7.5884 (IC) (v1370) Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
28	TOC	K2002730-004.01	1.0435 ppm	0.0034 ppm	0.3200%	2020/04/05 11:26

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.0411	10.4113	14.59	18.47	3.88	50.04	10:26
2	TOC	1.0459	10.4589	14.62	18.46	3.84	50.03	10:28

Dilution 1:10 Blank Contribution (TC) 7.5884 (IC) (v1370) Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm

From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	24.2761 ppm (PASS)	0.0000 ppm	0%	2020/04/05 11:54

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.2761	242.7615	171.07	174.85	3.78	50.02	10:31

Completion State Success - Criteria met. Success Action Do Nothing Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32) STD Conc - Pos B 50 ppmC

Sample Type: Check Standard --> CCB

From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time	
◊	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0185 ppm (PASS)	0.0000 ppm	0%	2020/04/05 12:09

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0185	0.1850	7.94	11.86	3.92	50.00	10:34

Completion State

Success - Criteria met.

Success Action

Do Nothing

Method

CAS_salt_010711 (v4)

Calibration

CAS_salt_010711 (v32)

STD Conc - Pos D

0 ppmC

Sample Type: Sample

From Schedule Version 2

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time	
◊	29	TOC	K2002730-005.01	0.8448 ppm	0.0342 ppm	4.0500%	2020/04/05 12:24

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8689	8.6894	13.43	17.34	3.91	49.99	10:29
2	TOC	0.8206	8.2061	13.11	17.08	3.97	49.97	10:27

Dilution

1:10

Blank Contribution

(TC) 7.5884 (IC) (v1370)

Method

CAS_salt_010711 (v4)

Calibration

CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time	
◊	30	TOC	K2002730-006.01	1.6131 ppm	0.0287 ppm	1.7800%	2020/04/05 12:52

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.5928	15.9281	18.30	22.08	3.78	49.96	10:28
2	TOC	1.6334	16.3340	18.57	22.45	3.88	49.94	10:25

Dilution

1:10

Blank Contribution

(TC) 7.5884 (IC) (v1370)

Method

CAS_salt_010711 (v4)

Calibration

CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time	
◊	31	TOC	K2002730-007.01	0.9692 ppm	0.0213 ppm	2.2000%	2020/04/05 13:20

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9843	9.8433	14.21	17.97	3.76	49.94	10:26
2	TOC	0.9541	9.5414	14.00	17.91	3.90	49.91	10:26

Dilution

1:10

Blank Contribution

(TC) 7.5884 (IC) (v1370)

Method

CAS_salt_010711 (v4)

Calibration

CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
32	TOC	K2002858-001.01	2.2161 ppm	0.0003 ppm	0.0100%	2020/04/05 13:48

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.2163	22.1630	22.49	26.32	3.82	49.90	10:27
2	TOC	2.2159	22.1586	22.49	26.19	3.70	49.90	10:24

Dilution 1:10 Blank Contribution (TC) 7.5884 (IC) (v1370) Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
33	TOC	K2002855-001.01 400x	2.1744 ppm	0.0925 ppm	4.2600%	2020/04/05 14:16

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.1089	21.0894	21.77	25.54	3.77	49.88	10:33
2	TOC	2.2398	22.3980	22.65	26.38	3.73	49.86	10:27

Dilution 1:10 Blank Contribution (TC) 7.5884 (IC) (v1370) Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
34	TOC	RB	0.0556 ppm	0.0730 ppm	131.1800%	2020/04/05 14:44

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1562	1.5622	8.64	12.25	3.61	49.84	10:26
2	TOC	0.0628	0.6284	8.01	11.94	3.93	49.84	10:26
3	TOC	0.0035	0.0351	7.61	11.39	3.77	49.84	10:26
4	TOC	0.0000	0.0000	7.45	11.29	3.84	49.85	10:28

Dilution 1:10 Blank Contribution (TC) 7.5884 (IC) (v1370) Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
35	TOC	K2002876-001.02	0.0113 ppm	0.0106 ppm	93.8800%	2020/04/05 15:40

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0038	0.0380	7.61	11.65	4.03	49.82	10:29
2	TOC	0.0188	0.1882	7.72	11.66	3.94	49.82	10:27

Dilution 1:10 Blank Contribution (TC) 7.5884 (IC) (v1370) Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
36	TOC	K2002883-001.01	0.3555 ppm	0.0446 ppm	12.5400%	2020/04/05 16:08

Rep	Base	Adjusted	Baseline	Pressure	Run
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#	Analysis Type	ppm	µg	(Abs)	NDIR (Abs)	(Abs)	(psig)	Time
1	TOC	0.3870	3.8700	10.19	13.98	3.79	49.79	10:26
2	TOC	0.3240	3.2395	9.77	13.73	3.96	49.80	10:25

Dilution 1:10 **Blank Contribution** (TC) 7.5884 (IC) (v1370) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
37	TOC	K2002760-001.03 doc	1.3784 ppm	0.0196 ppm	1.4200%	2020/04/05 16:36

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.3646	13.6455	16.76	20.62	3.85	49.80	10:27
2	TOC	1.3922	13.9221	16.95	20.81	3.86	49.78	10:28

Dilution 1:10 **Blank Contribution** (TC) 7.5884 (IC) (v1370) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
38	TOC	K2002760-001.03 ms doc	29.3580 ppm	0.0000 ppm	0.0000%	2020/04/05 17:04

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	29.3580	293.5798	205.02	208.83	3.81	49.77	10:31

Dilution 1:10 **Blank Contribution** (TC) 7.5884 (IC) (v1370) **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm

From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	24.4110 ppm (PASS)	0.0000 ppm	0%	2020/04/05 17:18

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.4110	244.1102	171.98	175.94	3.96	49.76	10:32

Completion State Success - Criteria met. **Success Action** Do Nothing **Method** CAS_salt_010711 (v4) **Calibration** CAS_salt_010711 (v32) **STD Conc - Pos B** 50 ppmC

Sample Type: Check Standard --> CCB

From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm	0.0000 ppm	0%	2020/04/05 17:33

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	7.17	11.10	3.93	49.75	10:31
(PASS)										
<u>Completion State</u>		<u>Success Action</u>		<u>Method</u>		<u>Calibration</u>		<u>STD Conc - Pos D</u>		
Success - Criteria met.		Do Nothing		CAS_salt_010711 (v4)		CAS_salt_010711 (v32)		0 ppmC		

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
39	TOC	MB3	0.0000 ppm	0.0000 ppm	0.0000%	2020/04/05 17:48

Sample Type: Sample From Schedule Version 2

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.56	10.48	3.92	49.76	10:30

Dilution 1:10 Blank Contribution (TC) 7.5884 (IC) (v1370) Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32)

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
C	TOC	25.0000	1:1	[TOC] LCS [25.0 ppm]	0 / infinity (NA / NA)	23.2228 ppm (PASS)	0.0000 ppm	0%	2020/04/05 18:03

Sample Type: Check Standard --> LCS From Schedule Version 2

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	23.2228	232.2276	163.99	167.94	3.95	49.77	10:31

Completion State Success - Criteria met. Success Action Do Nothing Method CAS_salt_010711 (v4) Calibration CAS_salt_010711 (v32) STD Conc - Pos C 25 ppmC

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
40	TOC	K2002760-002.04 doc	1.3978 ppm	0.0127 ppm	0.9100%	2020/04/05 18:17

Sample Type: Sample From Schedule Version 2

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.4068	14.0678	17.05	21.20	4.15	49.77	10:29
2	TOC	1.3888	13.8879	16.93	20.82	3.90	49.79	10:27

Dilution 1:10 Blank Contribution (TC) 7.5884 (IC) Method CAS_salt_010711 Calibration CAS_salt_010711

(v1370)

(v4)

(v32)

Sample Type: Check Standard --> CCV 25 ppm

From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
♦ B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	24.2201 ppm (PASS)	0.0000 ppm	0%	2020/04/05 18:45

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.2201	242.2009	170.70	174.61	3.91	49.78	10:33

Completion State

Success - Criteria met.

Success Action

Do Nothing

Method

CAS_salt_010711 (v4)

Calibration

CAS_salt_010711 (v32)

STD Conc - Pos B

50 ppmC

Sample Type: Check Standard --> CCB

From Schedule Version 2

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
♦ D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/04/05 19:00

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	7.06	10.84	3.78	49.80	10:28

Completion State

Success - Criteria met.

Success Action

Do Nothing

Method

CAS_salt_010711 (v4)

Calibration

CAS_salt_010711 (v32)

STD Conc - Pos D

0 ppmC

Meta Data Used in this Report

Blanks

Version	Reagent (Abs)	Acid (Abs)	DI IC (Abs)	DI TC (Abs)	DI TOC (Abs)	Save Time	Operator
v1369	0.8713	0.5640	0.0000	0.0000	0.0000	2020/04/01 15:25	Fusion1 (Fusion1)
v1370	2.7630	1.5170	0.0000	0.0000	0.0000	2020/04/04 22:09	Fusion1 (Fusion1)

Calibrations

Name: CAS_salt_010711 (TOC)

Version: v32 Calibration curve formula: TOC: $y = 6.725x + 7.818$
 Ver Creation: 2020/03/11 15:55 r^2 value: TOC: $r^2 = 0.99921$
 Comment:
 Operator: Fusion1 (Fusion1)
 Basic Analysis Type: TOC

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
DI Water	5.8640	0.0000		2020/03/11 14:28
0.500 ppm	9.5210	0.5000		2020/03/11 14:42
1.0 ppm	12.5930	1.0000		2020/03/11 14:56
5.0 ppm	40.5270	5.0000		2020/03/11 15:10
10 ppm	79.5310	10.0000		2020/03/11 15:25
25 ppm	181.4610	25.0000		2020/03/11 15:39
50 ppm	340.5610	50.0000		2020/03/11 15:53

Methods**Name:** CAS_salt_010711 (TOC)

Version: v4 Operator: Fusion1 (Fusion1)
 Ver Creation: 2019/02/21 17:57
 Comment:

Parameter	Value	Advanced Parameter	Value
SampleVolume	10.0 mL	NeedleRinseVolume	5.0 ml
Dilution	1:10	VialPrimeVolume	2.0 ml
AcidVolume	0.5 ml	ICSamplePrimeVolume	2.0 ml
ReagentVolume	2.0 ml	ICSpurgeRinseVolume	12.0 ml
UVReactorPrerinse	Off	BaselineStabilizeTime	0.70 min
UVReactorPrerinseVolume	5.0	DetectorPressureFlow	150 ml/min
NumberOfUVReactorPrerinse	1	SyringeSpeedWaste	10
ICSpurgeTime	1.00 mins	SyringeSpeedAcid	7
DetectorSweepFlow	500 ml/min	SyringeSpeedReagent	7
PreSpurgeTime	2.00 mins	SyringeSpeedDIWater	7
SystemFlow	500 ml/min	NDIRPressurization	60 psig
		SyringeSpeedSampleDispense	5
		SyringeSpeedSampleAspirate	4
		SyringeSpeedUVDispense	5
		SyringeSpeedUVAspirate	5
		SyringeSpeedICDispense	5
		SyringeSpeedICAspirate	5
		NDIRPressureStabilize	1.75 min
		SampleMixing	Off
		SampleMixingCycles	1
		SampleMixingVolume	10.0

LowLevelFilterNDIR

Off

Acceptance / Approval

Electronic Signatures

Report Version	User Name	Acceptance	Reason	Date
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Report History

Report History

Report Version	User Name	System Reason	User Reason	Date
1	Fusion1 (Fusion1)	Schedule completed	Schedule completed	2020/04/05 19:15

StarLIMS Run: 675808, 675809, 675810
 Analysis: DOC/TOC
 Method: SM 5310 C, 9060A, 415.1, 9060

CCV: 11-GEN-05-82C 50 ppm LCS: 11-GEN-05-79J 25.0 ppm

ICAL Date: 3/11/2020

ICAL ID: 19-GEN-8-7-E->J

ICS ID: 19-GEN-8-4-G

ICS TV: 25.0 ppm ICS % R < 1

Spike ID: 11-GEN-05-82C 0.05 ml of 5000 ppm stock ---> 10.0 ml = 25.0 ppm x dilution factor

Sodium Persulfate: 19-GEN-08-11-J

21 % H3PO4: 19-GEN-08-10-G

Equipment ID: K-TOC-03

PIPETTE ID: 124276B, 129001F, N11314F, Marge

FILTER ID: 16967789

Analyzed By: <i>BCP</i>	Date Analyzed: <i>4/14/20</i>
Reviewed By: <i>gc</i>	Date Reviewed: <i>4/8/20</i>



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April 06, 2020

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS20040019**

Laboratory Results for: **Longhorn GW Treatment Plant Bi Weekly Samples**

Dear Marcia,

ALS Environmental received 2 sample(s) on Apr 01, 2020 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: JUMOKE.LAWAL
RJ Modashia
Project Manager

ALS Houston, US

Date: 06-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
Work Order: HS20040019

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20040019-01	LH18/24-SP650_033120	Water		31-Mar-2020 14:00	01-Apr-2020 09:00	<input type="checkbox"/>
HS20040019-02	Trip Blank	Water	CG 021720 -06	31-Mar-2020 14:00	01-Apr-2020 09:00	<input type="checkbox"/>

ALS Houston, US

Date: 06-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
Work Order: HS20040019

CASE NARRATIVE

GCMS Volatiles by Method SW8260**Batch ID: R359546****Sample ID: HS20040191-02MS**

- MS and MSD are for an unrelated sample
-

WetChemistry by Method SW9056**Batch ID: R359458****Sample ID: HS20040048-01MS**

- MS and MSD are for an unrelated sample
-

ALS Houston, US

Date: 06-Apr-20

Client: Bhate Environmental Associates, Inc.
 Project: Longhorn GW Treatment Plant Bi Weekly Samples
 Sample ID: LH18/24-SP650_033120
 Collection Date: 31-Mar-2020 14:00

ANALYTICAL REPORT
 WorkOrder:HS20040019
 Lab ID:HS20040019-01
 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED	
VOLATILES ORGANICS BY METHOD 8260C		Method:SW8260							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Apr-2020 14:56	
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
1,1-Dichloroethane	0	U	0.20	0	1.0	UG/L	1	06-Apr-2020 14:56	
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Apr-2020 14:56	
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Apr-2020 14:56	
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Apr-2020 14:56	
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Apr-2020 14:56	
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
1,2-Dichloroethane	1.0		0.20	0.50	1.0	UG/L	1	06-Apr-2020 14:56	
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
2,2-Dichloropropane	0	U	0.20	0	1.0	UG/L	1	06-Apr-2020 14:56	
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	06-Apr-2020 14:56	
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	06-Apr-2020 14:56	
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	06-Apr-2020 14:56	
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	06-Apr-2020 14:56	
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Apr-2020 14:56	
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Apr-2020 14:56	
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Apr-2020 14:56	
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	06-Apr-2020 14:56	
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	06-Apr-2020 14:56	

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 06-Apr-20

Client: Bhate Environmental Associates, Inc.
 Project: Longhorn GW Treatment Plant Bi Weekly Samples
 Sample ID: LH18/24-SP650_033120
 Collection Date: 31-Mar-2020 14:00

ANALYTICAL REPORT
 WorkOrder:HS20040019
 Lab ID:HS20040019-01
 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED	
VOLATILES ORGANICS BY METHOD 8260C		Method:SW8260							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Apr-2020 14:56	
cis-1,2-Dichloroethene	22		0.20	0.50	1.0	UG/L	1	06-Apr-2020 14:56	
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	06-Apr-2020 14:56	
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Apr-2020 14:56	
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	06-Apr-2020 14:56	
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	06-Apr-2020 14:56	
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Apr-2020 14:56	
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Apr-2020 14:56	
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Apr-2020 14:56	
Trichloroethene	4.0		0.20	0.50	1.0	UG/L	1	06-Apr-2020 14:56	
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:56	
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	06-Apr-2020 14:56	
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>88.2</i>			0	<i>81-118</i>	%REC	1	06-Apr-2020 14:56	
<i>Surr: 4-Bromofluorobenzene</i>	<i>96.6</i>			0	<i>85-114</i>	%REC	1	06-Apr-2020 14:56	
<i>Surr: Dibromofluoromethane</i>	<i>93.8</i>			0	<i>80-119</i>	%REC	1	06-Apr-2020 14:56	
<i>Surr: Toluene-d8</i>	<i>105</i>			0	<i>89-112</i>	%REC	1	06-Apr-2020 14:56	
ANIONS BY SW9056A		Method:SW9056							Analyst: JHD
Chloride	326		2.00	0	5.00	mg/L	10	04-Apr-2020 10:54	
Sulfate	29.0		2.00	0	5.00	mg/L	10	04-Apr-2020 10:54	

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 06-Apr-20

Client: Bhate Environmental Associates, Inc.
 Project: Longhorn GW Treatment Plant Bi Weekly Samples
 Sample ID: Trip Blank
 Collection Date: 31-Mar-2020 14:00

ANALYTICAL REPORT
 WorkOrder:HS20040019
 Lab ID:HS20040019-02
 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED	
VOLATILES ORGANICS BY METHOD 8260C		Method:SW8260							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Apr-2020 14:32	
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
1,1-Dichloroethane	0	U	0.20	0	1.0	UG/L	1	06-Apr-2020 14:32	
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Apr-2020 14:32	
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Apr-2020 14:32	
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Apr-2020 14:32	
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Apr-2020 14:32	
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Apr-2020 14:32	
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
2,2-Dichloropropane	0	U	0.20	0	1.0	UG/L	1	06-Apr-2020 14:32	
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	06-Apr-2020 14:32	
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	06-Apr-2020 14:32	
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	06-Apr-2020 14:32	
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	06-Apr-2020 14:32	
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Apr-2020 14:32	
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Apr-2020 14:32	
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Apr-2020 14:32	
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	06-Apr-2020 14:32	
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	06-Apr-2020 14:32	

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 06-Apr-20

Client: Bhate Environmental Associates, Inc.
 Project: Longhorn GW Treatment Plant Bi Weekly Samples
 Sample ID: Trip Blank
 Collection Date: 31-Mar-2020 14:00

ANALYTICAL REPORT
 WorkOrder:HS20040019
 Lab ID:HS20040019-02
 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED	
VOLATILES ORGANICS BY METHOD		Method:SW8260							Analyst: PC
8260C									
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Apr-2020 14:32	
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Apr-2020 14:32	
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	06-Apr-2020 14:32	
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Apr-2020 14:32	
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	06-Apr-2020 14:32	
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	06-Apr-2020 14:32	
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Apr-2020 14:32	
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Apr-2020 14:32	
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Apr-2020 14:32	
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Apr-2020 14:32	
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	06-Apr-2020 14:32	
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	06-Apr-2020 14:32	
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>88.5</i>			<i>0</i>	<i>81-118</i>	<i>%REC</i>	<i>1</i>	<i>06-Apr-2020 14:32</i>	
<i>Surr: 4-Bromofluorobenzene</i>	<i>99.0</i>			<i>0</i>	<i>85-114</i>	<i>%REC</i>	<i>1</i>	<i>06-Apr-2020 14:32</i>	
<i>Surr: Dibromofluoromethane</i>	<i>93.8</i>			<i>0</i>	<i>80-119</i>	<i>%REC</i>	<i>1</i>	<i>06-Apr-2020 14:32</i>	
<i>Surr: Toluene-d8</i>	<i>105</i>			<i>0</i>	<i>89-112</i>	<i>%REC</i>	<i>1</i>	<i>06-Apr-2020 14:32</i>	

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 06-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20040019

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R359458 (0)		Test Name : ANIONS BY SW9056A			Matrix: Water	
HS20040019-01	LH18/24-SP650_033120	31 Mar 2020 14:00			04 Apr 2020 10:54	10
Batch ID: R359546 (0)		Test Name : VOLATILES ORGANICS BY METHOD 8260C			Matrix: Water	
HS20040019-01	LH18/24-SP650_033120	31 Mar 2020 14:00			06 Apr 2020 14:56	1
HS20040019-02	Trip Blank	31 Mar 2020 14:00			06 Apr 2020 14:32	1

ALS Houston, US

Date: 06-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20040019

QC BATCH REPORT

Batch ID: R359546 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
MBLK	Sample ID: VBLKW-200406	Units: UG/L			Analysis Date: 06-Apr-2020 14:08					
Client ID:	Run ID: VOA6_359546	SeqNo: 5545053	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	1.0	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	1.0	1.0								U
1,1,2-Trichloroethane	1.0	1.0								U
1,1-Dichloroethane	0	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	0.50	1.0								U
1,2,3-Trichlorobenzene	1.0	1.0								U
1,2,3-Trichloropropane	1.0	1.0								U
1,2,4-Trichlorobenzene	1.0	1.0								U
1,2,4-Trimethylbenzene	1.0	1.0								U
1,2-Dibromo-3-chloropropane	0.50	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	1.0	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	1.0	1.0								U
1,3,5-Trimethylbenzene	1.0	1.0								U
1,3-Dichlorobenzene	1.0	1.0								U
1,3-Dichloropropane	1.0	1.0								U
1,4-Dichlorobenzene	1.0	1.0								U
2,2-Dichloropropane	0	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	1.0	1.0								U
2-Hexanone	1.0	2.0								U
4-Chlorotoluene	1.0	1.0								U
4-Isopropyltoluene	1.0	1.0								U
4-Methyl-2-pentanone	1.0	2.0								U
Acetone	1.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	1.0	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	1.0	1.0								U
Bromomethane	1.0	1.0								U

ALS Houston, US

Date: 06-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20040019

QC BATCH REPORT

Batch ID: R359546 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
MBLK	Sample ID: VBLKW-200406	Units: UG/L			Analysis Date: 06-Apr-2020 14:08					
Client ID:	Run ID: VOA6_359546	SeqNo: 5545053		PrepDate:		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	1.0	2.0								U
Carbon tetrachloride	1.0	1.0								U
Chlorobenzene	1.0	1.0								U
Chloroethane	1.0	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	1.0	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	1.0	1.0								U
Ethylbenzene	1.0	1.0								U
Hexachlorobutadiene	1.0	1.0								U
Isopropylbenzene	1.0	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	1.0	2.0								U
Naphthalene	1.0	1.0								U
n-Butylbenzene	1.0	1.0								U
n-Propylbenzene	1.0	1.0								U
o-Xylene	1.0	1.0								U
sec-Butylbenzene	1.0	1.0								U
Styrene	1.0	1.0								U
tert-Butylbenzene	1.0	1.0								U
Tetrachloroethene	1.0	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	1.0	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	44.65	1.0	50	0	89.3	81 - 118				
Surr: 4-Bromofluorobenzene	48.27	1.0	50	0	96.5	85 - 114				
Surr: Dibromofluoromethane	46.77	1.0	50	0	93.5	80 - 119				
Surr: Toluene-d8	51.92	1.0	50	0	104	89 - 112				

ALS Houston, US

Date: 06-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20040019

QC BATCH REPORT

Batch ID: R359546 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
LCS	Sample ID: VLCSW-200406	Units: UG/L			Analysis Date: 06-Apr-2020 13:20					
Client ID:	Run ID: VOA6_359546	SeqNo: 5545052	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	21.44	1.0	20	0	107	78 - 124				
1,1,1-Trichloroethane	21.37	1.0	20	0	107	74 - 131				
1,1,2,2-Tetrachloroethane	19.98	1.0	20	0	99.9	71 - 121				
1,1,2-Trichloroethane	20.91	1.0	20	0	105	80 - 119				
1,1-Dichloroethane	21.86	1.0	20	0	109	77 - 125				
1,1-Dichloroethene	19.67	1.0	20	0	98.4	71 - 131				
1,1-Dichloropropene	18.99	1.0	20	0	95.0	78 - 125				
1,2,3-Trichlorobenzene	13.9	1.0	20	0	69.5	69 - 129				
1,2,3-Trichloropropane	20.62	1.0	20	0	103	73 - 122				
1,2,4-Trichlorobenzene	13.8	1.0	20	0	69.0	69 - 130				
1,2,4-Trimethylbenzene	21.67	1.0	20	0	108	76 - 124				
1,2-Dibromo-3-chloropropane	17.12	1.0	20	0	85.6	62 - 128				
1,2-Dibromoethane	20.93	1.0	20	0	105	77 - 121				
1,2-Dichlorobenzene	20.88	1.0	20	0	104	80 - 119				
1,2-Dichloroethane	20.36	1.0	20	0	102	73 - 128				
1,2-Dichloropropane	20.43	1.0	20	0	102	78 - 122				
1,3,5-Trimethylbenzene	21.02	1.0	20	0	105	75 - 124				
1,3-Dichlorobenzene	21.52	1.0	20	0	108	80 - 119				
1,3-Dichloropropane	20.78	1.0	20	0	104	80 - 119				
1,4-Dichlorobenzene	20.96	1.0	20	0	105	79 - 118				
2,2-Dichloropropane	21.66	1.0	20	0	108	60 - 139				
2-Butanone	40.54	2.0	40	0	101	56 - 143				
2-Chlorotoluene	21.18	1.0	20	0	106	79 - 122				
2-Hexanone	40.39	2.0	40	0	101	57 - 139				
4-Chlorotoluene	21.46	1.0	20	0	107	78 - 122				
4-Isopropyltoluene	21.16	1.0	20	0	106	77 - 127				
4-Methyl-2-pentanone	39.69	2.0	40	0	99.2	67 - 130				
Acetone	36.02	2.0	40	0	90.0	39 - 160				
Benzene	20.68	1.0	20	0	103	79 - 120				
Bromobenzene	22.07	1.0	20	0	110	80 - 120				
Bromochloromethane	21.74	1.0	20	0	109	78 - 123				
Bromodichloromethane	20.99	1.0	20	0	105	79 - 125				
Bromoform	21.61	1.0	20	0	108	66 - 130				
Bromomethane	24.44	1.0	20	0	122	53 - 141				

ALS Houston, US

Date: 06-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20040019

QC BATCH REPORT

Batch ID: R359546 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
LCS	Sample ID: VLCSW-200406	Units: UG/L			Analysis Date: 06-Apr-2020 13:20					
Client ID:	Run ID: VOA6_359546	SeqNo: 5545052	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	40.42	2.0	40	0	101	64 - 133				
Carbon tetrachloride	19.17	1.0	20	0	95.9	72 - 136				
Chlorobenzene	21.39	1.0	20	0	107	82 - 118				
Chloroethane	19.15	1.0	20	0	95.8	60 - 138				
Chloroform	21.2	1.0	20	0	106	79 - 124				
Chloromethane	18.86	1.0	20	0	94.3	50 - 139				
cis-1,2-Dichloroethene	21.24	1.0	20	0	106	78 - 123				
cis-1,3-Dichloropropene	21.05	1.0	20	0	105	75 - 124				
Dibromochloromethane	21.04	1.0	20	0	105	74 - 126				
Dibromomethane	21.69	1.0	20	0	108	79 - 123				
Dichlorodifluoromethane	17.41	1.0	20	0	87.1	32 - 152				
Ethylbenzene	20.91	1.0	20	0	105	79 - 121				
Hexachlorobutadiene	13.79	1.0	20	0	69.0	66 - 134				
Isopropylbenzene	21.12	1.0	20	0	106	72 - 131				
m,p-Xylene	42.47	2.0	40	0	106	80 - 121				
Methylene chloride	20.82	2.0	20	0	104	74 - 124				
Naphthalene	14.83	1.0	20	0	74.1	61 - 128				
n-Butylbenzene	20.54	1.0	20	0	103	75 - 128				
n-Propylbenzene	21.53	1.0	20	0	108	76 - 126				
o-Xylene	21.47	1.0	20	0	107	78 - 122				
sec-Butylbenzene	20.59	1.0	20	0	103	77 - 126				
Styrene	20.85	1.0	20	0	104	78 - 123				
tert-Butylbenzene	20.9	1.0	20	0	105	78 - 124				
Tetrachloroethene	21.01	1.0	20	0	105	74 - 129				
Toluene	20.83	1.0	20	0	104	80 - 121				
trans-1,2-Dichloroethene	21.63	1.0	20	0	108	75 - 124				
trans-1,3-Dichloropropene	21.34	1.0	20	0	107	73 - 127				
Trichloroethene	21.23	1.0	20	0	106	79 - 123				
Trichlorofluoromethane	20.55	1.0	20	0	103	65 - 141				
Vinyl chloride	17.84	1.0	20	0	89.2	58 - 137				
Surr: 1,2-Dichloroethane-d4	49.72	1.0	50	0	99.4	81 - 118				
Surr: 4-Bromofluorobenzene	49.1	1.0	50	0	98.2	85 - 114				
Surr: Dibromofluoromethane	51.91	1.0	50	0	104	80 - 119				
Surr: Toluene-d8	49.64	1.0	50	0	99.3	89 - 112				

ALS Houston, US

Date: 06-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20040019

QC BATCH REPORT

Batch ID: R359546 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
MS	Sample ID: HS20040191-02MS	Units: UG/L			Analysis Date: 06-Apr-2020 15:45					
Client ID:	Run ID: VOA6_359546	SeqNo: 5545118	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.77	1.0	20	0	98.9	78 - 124				
1,1,1-Trichloroethane	19.57	1.0	20	0	97.9	74 - 131				
1,1,2,2-Tetrachloroethane	18.9	1.0	20	0	94.5	71 - 121				
1,1,2-Trichloroethane	19.25	1.0	20	0	96.3	80 - 119				
1,1-Dichloroethane	19.46	1.0	20	0.6384	94.1	77 - 125				
1,1-Dichloroethene	19.24	1.0	20	0.8771	91.8	71 - 131				
1,1-Dichloropropene	19.49	1.0	20	0	97.4	78 - 125				
1,2,3-Trichlorobenzene	12.55	1.0	20	0	62.7	69 - 129				S
1,2,3-Trichloropropane	19.36	1.0	20	0	96.8	73 - 122				
1,2,4-Trichlorobenzene	12.99	1.0	20	0	64.9	69 - 130				S
1,2,4-Trimethylbenzene	22.31	1.0	20	1.57	104	76 - 124				
1,2-Dibromo-3-chloropropane	18.8	1.0	20	0	94.0	62 - 128				
1,2-Dibromoethane	19.35	1.0	20	0	96.7	77 - 121				
1,2-Dichlorobenzene	19.79	1.0	20	0	99.0	80 - 119				
1,2-Dichloroethane	19.34	1.0	20	0	96.7	73 - 128				
1,2-Dichloropropane	19.3	1.0	20	0	96.5	78 - 122				
1,3,5-Trimethylbenzene	20.89	1.0	20	0	104	75 - 124				
1,3-Dichlorobenzene	20.16	1.0	20	0	101	80 - 119				
1,3-Dichloropropane	18.86	1.0	20	0	94.3	80 - 119				
1,4-Dichlorobenzene	19.65	1.0	20	0	98.2	79 - 118				
2,2-Dichloropropane	19.08	1.0	20	0	95.4	60 - 139				
2-Butanone	32.69	2.0	40	0	81.7	56 - 143				
2-Chlorotoluene	20.43	1.0	20	0	102	79 - 122				
2-Hexanone	42.26	2.0	40	0	106	57 - 139				
4-Chlorotoluene	20.43	1.0	20	0	102	78 - 122				
4-Isopropyltoluene	20.83	1.0	20	0	104	77 - 127				
4-Methyl-2-pentanone	39.07	2.0	40	0	97.7	67 - 130				
Acetone	21.41	2.0	40	0	53.5	39 - 160				
Benzene	20.03	1.0	20	0	100	79 - 120				
Bromobenzene	20.37	1.0	20	0	102	80 - 120				
Bromochloromethane	18.07	1.0	20	0	90.4	78 - 123				
Bromodichloromethane	19.19	1.0	20	0	96.0	79 - 125				
Bromoform	19.91	1.0	20	0	99.5	66 - 130				
Bromomethane	20.69	1.0	20	0	103	53 - 141				

ALS Houston, US

Date: 06-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20040019

QC BATCH REPORT

Batch ID: R359546 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
MS	Sample ID: HS20040191-02MS	Units: UG/L			Analysis Date: 06-Apr-2020 15:45					
Client ID:	Run ID: VOA6_359546	SeqNo: 5545118	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	39.5	2.0	40	0	98.8	64 - 133				
Carbon tetrachloride	19.89	1.0	20	0	99.5	72 - 136				
Chlorobenzene	20.09	1.0	20	0	100	82 - 118				
Chloroethane	18.4	1.0	20	0	92.0	60 - 138				
Chloroform	18.79	1.0	20	0	94.0	79 - 124				
Chloromethane	18.57	1.0	20	0	92.9	50 - 139				
cis-1,2-Dichloroethene	18.95	1.0	20	0	94.7	78 - 123				
cis-1,3-Dichloropropene	19.62	1.0	20	0	98.1	75 - 124				
Dibromochloromethane	19.37	1.0	20	0	96.8	74 - 126				
Dibromomethane	19.71	1.0	20	0	98.5	79 - 123				
Dichlorodifluoromethane	18.12	1.0	20	0	90.6	32 - 152				
Ethylbenzene	20.13	1.0	20	0	101	79 - 121				
Hexachlorobutadiene	12.41	1.0	20	0	62.0	66 - 134				S
Isopropylbenzene	21.63	1.0	20	1.273	102	72 - 131				
m,p-Xylene	42.37	2.0	40	2.679	99.2	80 - 121				
Methylene chloride	17.86	2.0	20	0	89.3	74 - 124				
Naphthalene	14.12	1.0	20	0	70.6	61 - 128				
n-Butylbenzene	19.98	1.0	20	0	99.9	75 - 128				
n-Propylbenzene	21.58	1.0	20	0	108	76 - 126				
o-Xylene	21.23	1.0	20	1.273	99.8	78 - 122				
sec-Butylbenzene	20.7	1.0	20	0	104	77 - 126				
Styrene	19.87	1.0	20	0	99.3	78 - 123				
tert-Butylbenzene	20.77	1.0	20	0	104	78 - 124				
Tetrachloroethene	21.11	1.0	20	0	106	74 - 129				
Toluene	20.09	1.0	20	0	100	80 - 121				
trans-1,2-Dichloroethene	18.77	1.0	20	0	93.8	75 - 124				
trans-1,3-Dichloropropene	18.85	1.0	20	0	94.2	73 - 127				
Trichloroethene	20.44	1.0	20	0	102	79 - 123				
Trichlorofluoromethane	20.14	1.0	20	0	101	65 - 141				
Vinyl chloride	18.05	1.0	20	0	90.3	58 - 137				
Surr: 1,2-Dichloroethane-d4	45.21	1.0	50	0	90.4	81 - 118				
Surr: 4-Bromofluorobenzene	48.44	1.0	50	0	96.9	85 - 114				
Surr: Dibromofluoromethane	46.99	1.0	50	0	94.0	80 - 119				
Surr: Toluene-d8	50.76	1.0	50	0	102	89 - 112				

ALS Houston, US

Date: 06-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20040019

QC BATCH REPORT

Batch ID: R359546 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
MSD	Sample ID: HS20040191-02MSD	Units: UG/L			Analysis Date: 06-Apr-2020 16:09					
Client ID:	Run ID: VOA6_359546	SeqNo: 5545119	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.46	1.0	20	0	97.3	78 - 124	19.77	1.61	20	
1,1,1-Trichloroethane	18.8	1.0	20	0	94.0	74 - 131	19.57	3.99	20	
1,1,2,2-Tetrachloroethane	18.7	1.0	20	0	93.5	71 - 121	18.9	1.1	20	
1,1,2-Trichloroethane	19.1	1.0	20	0	95.5	80 - 119	19.25	0.779	20	
1,1-Dichloroethane	18.9	1.0	20	0.6384	91.3	77 - 125	19.46	2.9	20	
1,1-Dichloroethene	18.07	1.0	20	0.8771	86.0	71 - 131	19.24	6.27	20	
1,1-Dichloropropene	18.59	1.0	20	0	93.0	78 - 125	19.49	4.71	20	
1,2,3-Trichlorobenzene	15.68	1.0	20	0	78.4	69 - 129	12.55	22.2	20	R
1,2,3-Trichloropropane	19.51	1.0	20	0	97.6	73 - 122	19.36	0.798	20	
1,2,4-Trichlorobenzene	14.81	1.0	20	0	74.0	69 - 130	12.99	13.1	20	
1,2,4-Trimethylbenzene	21.64	1.0	20	1.57	100	76 - 124	22.31	3.01	20	
1,2-Dibromo-3-chloropropane	19	1.0	20	0	95.0	62 - 128	18.8	1.1	20	
1,2-Dibromoethane	19.5	1.0	20	0	97.5	77 - 121	19.35	0.769	20	
1,2-Dichlorobenzene	19.63	1.0	20	0	98.1	80 - 119	19.79	0.831	20	
1,2-Dichloroethane	19.35	1.0	20	0	96.8	73 - 128	19.34	0.0433	20	
1,2-Dichloropropane	18.46	1.0	20	0	92.3	78 - 122	19.3	4.46	20	
1,3,5-Trimethylbenzene	20.25	1.0	20	0	101	75 - 124	20.89	3.12	20	
1,3-Dichlorobenzene	19.98	1.0	20	0	99.9	80 - 119	20.16	0.908	20	
1,3-Dichloropropane	19.23	1.0	20	0	96.1	80 - 119	18.86	1.91	20	
1,4-Dichlorobenzene	19	1.0	20	0	95.0	79 - 118	19.65	3.32	20	
2,2-Dichloropropane	17.74	1.0	20	0	88.7	60 - 139	19.08	7.29	20	
2-Butanone	32.25	2.0	40	0	80.6	56 - 143	32.69	1.36	20	
2-Chlorotoluene	20.19	1.0	20	0	101	79 - 122	20.43	1.2	20	
2-Hexanone	42.82	2.0	40	0	107	57 - 139	42.26	1.3	20	
4-Chlorotoluene	20.32	1.0	20	0	102	78 - 122	20.43	0.552	20	
4-Isopropyltoluene	20.14	1.0	20	0	101	77 - 127	20.83	3.39	20	
4-Methyl-2-pentanone	38.94	2.0	40	0	97.3	67 - 130	39.07	0.356	20	
Acetone	22.4	2.0	40	0	56.0	39 - 160	21.41	4.52	20	
Benzene	19.4	1.0	20	0	97.0	79 - 120	20.03	3.2	20	
Bromobenzene	20.46	1.0	20	0	102	80 - 120	20.37	0.406	20	
Bromochloromethane	17.84	1.0	20	0	89.2	78 - 123	18.07	1.27	20	
Bromodichloromethane	18.67	1.0	20	0	93.4	79 - 125	19.19	2.76	20	
Bromoform	19.59	1.0	20	0	98.0	66 - 130	19.91	1.59	20	
Bromomethane	19.99	1.0	20	0	100.0	53 - 141	20.69	3.45	20	

ALS Houston, US

Date: 06-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20040019

QC BATCH REPORT

Batch ID: R359546 (0)		Instrument: VOA6		Method: VOLATILES ORGANICS BY METHOD 8260C						
MSD	Sample ID: HS20040191-02MSD	Units: UG/L			Analysis Date: 06-Apr-2020 16:09					
Client ID:	Run ID: VOA6_359546	SeqNo: 5545119	PrepDate:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	36.42	2.0	40	0	91.1	64 - 133	39.5	8.12	20	
Carbon tetrachloride	18.39	1.0	20	0	91.9	72 - 136	19.89	7.86	20	
Chlorobenzene	19.46	1.0	20	0	97.3	82 - 118	20.09	3.17	20	
Chloroethane	17.89	1.0	20	0	89.4	60 - 138	18.4	2.82	20	
Chloroform	17.98	1.0	20	0	89.9	79 - 124	18.79	4.41	20	
Chloromethane	17.54	1.0	20	0	87.7	50 - 139	18.57	5.72	20	
cis-1,2-Dichloroethene	17.76	1.0	20	0	88.8	78 - 123	18.95	6.48	20	
cis-1,3-Dichloropropene	18.16	1.0	20	0	90.8	75 - 124	19.62	7.71	20	
Dibromochloromethane	19.6	1.0	20	0	98.0	74 - 126	19.37	1.2	20	
Dibromomethane	19.03	1.0	20	0	95.2	79 - 123	19.71	3.48	20	
Dichlorodifluoromethane	16.77	1.0	20	0	83.9	32 - 152	18.12	7.71	20	
Ethylbenzene	20.02	1.0	20	0	100	79 - 121	20.13	0.571	20	
Hexachlorobutadiene	13.13	1.0	20	0	65.6	66 - 134	12.41	5.63	20	S
Isopropylbenzene	20.92	1.0	20	1.273	98.2	72 - 131	21.63	3.37	20	
m,p-Xylene	42.01	2.0	40	2.679	98.3	80 - 121	42.37	0.854	20	
Methylene chloride	16.95	2.0	20	0	84.7	74 - 124	17.86	5.25	20	
Naphthalene	17.18	1.0	20	0	85.9	61 - 128	14.12	19.5	20	
n-Butylbenzene	19.33	1.0	20	0	96.7	75 - 128	19.98	3.26	20	
n-Propylbenzene	20.61	1.0	20	0	103	76 - 126	21.58	4.61	20	
o-Xylene	21.11	1.0	20	1.273	99.2	78 - 122	21.23	0.541	20	
sec-Butylbenzene	20.29	1.0	20	0	101	77 - 126	20.7	2.01	20	
Styrene	18.96	1.0	20	0	94.8	78 - 123	19.87	4.64	20	
tert-Butylbenzene	20.25	1.0	20	0	101	78 - 124	20.77	2.58	20	
Tetrachloroethene	20.31	1.0	20	0	102	74 - 129	21.11	3.86	20	
Toluene	19.63	1.0	20	0	98.2	80 - 121	20.09	2.3	20	
trans-1,2-Dichloroethene	18.34	1.0	20	0	91.7	75 - 124	18.77	2.33	20	
trans-1,3-Dichloropropene	18.74	1.0	20	0	93.7	73 - 127	18.85	0.573	20	
Trichloroethene	19.43	1.0	20	0	97.1	79 - 123	20.44	5.05	20	
Trichlorofluoromethane	18.64	1.0	20	0	93.2	65 - 141	20.14	7.74	20	
Vinyl chloride	16.45	1.0	20	0	82.3	58 - 137	18.05	9.27	20	
Surr: 1,2-Dichloroethane-d4	44.89	1.0	50	0	89.8	81 - 118	45.21	0.702	20	
Surr: 4-Bromofluorobenzene	48.63	1.0	50	0	97.3	85 - 114	48.44	0.401	20	
Surr: Dibromofluoromethane	47.13	1.0	50	0	94.3	80 - 119	46.99	0.3	20	
Surr: Toluene-d8	51.41	1.0	50	0	103	89 - 112	50.76	1.26	20	

ALS Houston, US

Date: 06-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20040019

QC BATCH REPORT**Batch ID:** R359546 (0)**Instrument:** VOA6**Method:** VOLATILES ORGANICS BY METHOD
8260C

The following samples were analyzed in this batch: HS20040019-01 HS20040019-02

ALS Houston, US

Date: 06-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20040019

QC BATCH REPORT

Batch ID: R359458 (0)		Instrument: ICS-Integrion		Method: ANIONS BY SW9056A						
MBLK	Sample ID: MBLK040320	Units: mg/L			Analysis Date: 04-Apr-2020 02:09					
Client ID:	Run ID: ICS-Integrion_359458	SeqNo: 5544178			PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Chloride	0	0.500							U	
Sulfate	0	0.500							U	
MBLK	Sample ID: MBLK040320	Units: mg/L			Analysis Date: 03-Apr-2020 08:29					
Client ID:	Run ID: ICS-Integrion_359458	SeqNo: 5543150			PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Chloride	0	0.500							U	
Sulfate	0	0.500							U	
LCS	Sample ID: LCS	Units: mg/L			Analysis Date: 04-Apr-2020 02:27					
Client ID:	Run ID: ICS-Integrion_359458	SeqNo: 5544179			PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Chloride	20.45	0.500	20	0	102	80 - 120				
Sulfate	19.01	0.500	20	0	95.1	80 - 120				
LCS	Sample ID: LCS	Units: mg/L			Analysis Date: 03-Apr-2020 08:47					
Client ID:	Run ID: ICS-Integrion_359458	SeqNo: 5543151			PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Chloride	19.33	0.500	20	0	96.6	80 - 120				
Sulfate	18.8	0.500	20	0	94.0	80 - 120				
LCSD	Sample ID: LCSD	Units: mg/L			Analysis Date: 04-Apr-2020 02:45					
Client ID:	Run ID: ICS-Integrion_359458	SeqNo: 5544180			PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Chloride	19.58	0.500	20	0	97.9	80 - 120	19.33	1.3	20	
Sulfate	19.08	0.500	20	0	95.4	80 - 120	18.8	1.5	20	

ALS Houston, US

Date: 06-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20040019

QC BATCH REPORT

Batch ID: R359458 (0)		Instrument: ICS-Integrion		Method: ANIONS BY SW9056A						
LCSD	Sample ID: LCSD	Units: mg/L			Analysis Date: 03-Apr-2020 09:05					
Client ID:	Run ID: ICS-Integrion_359458	SeqNo: 5543152		PrepDate:			DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Chloride	19.33	0.500	20	0	96.7	80 - 120	19.33	0.031	20	
Sulfate	18.91	0.500	20	0	94.6	80 - 120	18.8	0.605	20	
MS	Sample ID: HS20040048-01MS	Units: mg/L			Analysis Date: 03-Apr-2020 10:04					
Client ID:	Run ID: ICS-Integrion_359458	SeqNo: 5543155		PrepDate:			DF: 10			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Chloride	105.8	5.00	100	8.38	97.4	80 - 120				
Sulfate	1197	5.00	100	1168	28.4	80 - 120			SEO	
MS	Sample ID: HS20031198-12MS	Units: mg/L			Analysis Date: 04-Apr-2020 10:00					
Client ID:	Run ID: ICS-Integrion_359458	SeqNo: 5544200		PrepDate:			DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Chloride	9.788	0.500	10	0.105	96.8	80 - 120				
Sulfate	9.364	0.500	10	0.1617	92.0	80 - 120				
MSD	Sample ID: HS20040048-01MSD	Units: mg/L			Analysis Date: 03-Apr-2020 10:22					
Client ID:	Run ID: ICS-Integrion_359458	SeqNo: 5543156		PrepDate:			DF: 10			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Chloride	104.7	5.00	100	8.38	96.3	80 - 120	105.8	1.01	20	
Sulfate	1202	5.00	100	1168	34.0	80 - 120	1197	0.463	20 SEO	
MSD	Sample ID: HS20031198-12MSD	Units: mg/L			Analysis Date: 04-Apr-2020 10:18					
Client ID:	Run ID: ICS-Integrion_359458	SeqNo: 5544201		PrepDate:			DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Chloride	9.477	0.500	10	0.105	93.7	80 - 120	9.788	3.23	20	
Sulfate	9.093	0.500	10	0.1617	89.3	80 - 120	9.364	2.95	20	

The following samples were analyzed in this batch: HS20040019-01

ALS Houston, US

Date: 06-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20040019

**QUALIFIERS,
ACRONYMS, UNITS**

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Unit Reported	Description
mg/L	Milligrams per Liter

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
California	2919, 2019-2020	30-Apr-2020
Dept of Defense	ANAB L2231 V009	22-Dec-2021
Florida	E87611-28	30-Jun-2020
Illinois	2000322019-2	09-May-2020
Kansas	E-10352 2019-2020	31-Jul-2020
Kentucky	123043, 2019-2020	30-Apr-2020
Louisiana	03087, 2019-2020	30-Jun-2020
Maryland	343, 2019-2020	30-Jun-2020
North Carolina	624-2020	31-Dec-2020
North Dakota	R-193 2019-2020	30-Apr-2020
Oklahoma	2019-067	31-Aug-2020
Texas	T104704231-19-25	30-Apr-2020

ALS Houston, US

Date: 06-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
Work Order: HS20040019

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20040019-01	LH18/24-SP650_033120	Login	4/1/2020 10:56:54 AM	JRM	WET001
HS20040019-01	LH18/24-SP650_033120	Login	4/1/2020 10:56:54 AM	JRM	VOA027
HS20040019-02	Trip Blank	Login	4/1/2020 10:56:54 AM	JRM	VOA027

Sample Receipt Checklist

Client Name: Bhate Environmental
 Work Order: HS20040019

Date/Time Received: **01-Apr-2020 09:00**
 Received by: **JRM**

Checklist completed by: Jared R. Makan 1-Apr-2020
 eSignature Date

Reviewed by: RJ Modashia 1-Apr-2020
 eSignature Date

Matrices: **Water**

Carrier name: **FedEx Priority Overnight**

- Shipping container/cooler in good condition? Yes No Not Present
- Custody seals intact on shipping container/cooler? Yes No Not Present
- Custody seals intact on sample bottles? Yes No Not Present
- VOA/TX1005/TX1006 Solids in hermetically sealed vials? Yes No Not Present
- Chain of custody present? Yes No 1 Page(s)
- Chain of custody signed when relinquished and received? Yes No
- Samplers name present on COC? Yes No
- Chain of custody agrees with sample labels? Yes No
- Samples in proper container/bottle? Yes No
- Sample containers intact? Yes No
- Sufficient sample volume for indicated test? Yes No
- All samples received within holding time? Yes No
- Container/Temp Blank temperature in compliance? Yes No

Temperature(s)/Thermometer(s): 1.1°C/1.1°C UC/C IR11
 Cooler(s)/Kit(s): 43904
 Date/Time sample(s) sent to storage: 04/01/2020 11:00

- Water - VOA vials have zero headspace? Yes No No VOA vials submitted
- Water - pH acceptable upon receipt? Yes No N/A
- pH adjusted? Yes No N/A

pH adjusted by:

Login Notes:

Client Contacted: Date Contacted: Person Contacted:
 Contacted By: Regarding:

Comments:

Corrective Action:

CHAIN OF CUSTODY

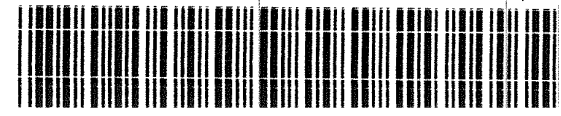
Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210, Houston, Tx. 77099 ATTN: R.J. Modashia

Project: BHATE LONGHORN ARMY AMMN. PLANT (LHAAP) GROUNDWATER TREATMENT PLANT (GWTP) KARNACK, TEXAS		Project No. NWO1312.0150.0 16.0001		Analyses										Remarks (Preservatives, etc.)	Lab I.D.#			
Job: GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES				MS / MSD	No. OF CONTAINERS	VOC	CHLORIDE, SULFATE											
Prepared By: Scott Beesinger		P.O Number						Field Sample I.D.	Sample Matrix	Date / Time								
LH18/24-SP650_033120	Water	03/31/20 / 14:00	3	3													HCL	
LH18/24-SP650_033120	Water	03/31/20 / 14:00	1	1													NONE	
Trip Blank	Water	03/31/20	2	2													HCL	

Additional Remarks: **Standard TAT on Chloride & Sulfate. 24 Hour TAT on VOC**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
<i>Scott Beesinger</i>	03/31/20	14:30									

9 For Lab Use Only											
Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition		
<i>J. Murrain</i>	4/1/20	09:00									
Remarks: <i>Cooler - 43904 11211</i> <i>Temp = 1.1°C CFOO</i>											
HS20040019 Bhate Environmental Associates, Inc. Longhorn GW Treatment Plant Bi Weekly Samples											



(Word) S:\1-ces\Forms\Chain of Custody - BiWeekly

	ALS 10450 Stancliff Rd., Suite 210 Houston, Texas 77099 Tel. +1 281 530 5656 Fax. +1 281 530 5887	CU Date: <u>3/30/20</u> Name: <u>Scott</u> Company: <u>BH</u>
--	--	---

PROBATION SEAL		Seal Broken By: <u>Jm</u>
2	Time: <u>1430</u>	Date: <u>4/1/20</u>
<u>Blessing</u>		
<u>NTS</u>		

FedEx TRK# 0221 4380 9533 6817	WED - 01 APR 10:30A PRIORITY OVERNIGHT
AB SGRA	77099 TX-US IAH
	
F1D 162785 31MAR20 GGGG 568C3/9C25/05A2	



DEPARTMENT OF THE ARMY
 LONGHORN ARMY AMMUNITION PLANT
 POST OFFICE BOX 220
 RATCLIFF, AR 72951

June 10, 2020

DAIN-ODB-LO

Mr. William Rhotenberry
 U.S. Environmental Protection Agency
 1201 Elm Street, Suite 500
 Dallas, TX 75270-2002

**Re: Draft Fifth Annual Remedial Action Operation Report, LHAAP-46 (Plant 2 Area),
 Longhorn Army Ammunition Plant, Karnack, Texas, June 2020**

Dear Mr. Rhotenberry,

An electronic copy of the above referenced document has been added to the project portal's "Documents" folder at the following address for your review:

<https://docs.cbifederaleservices.com/sites/501032/regulators/Shared%20Documents/Forms/AllItems.aspx>. An electronic copy of this letter and download instructions for the electronic file have been sent via email. Review comments are requested by July 10, 2020.

The document was prepared by Bhate Environmental Associates, Inc., (Bhate) team, on behalf of the Army as part of Bhate's Performance Based Remediation contract for the facility. I ask that Kim Nemmers, Bhate's Project Manager, be copied on any communications related to the project.

The point of contact for this action is the undersigned. I may be contacted at 479-635-0110, or by email at rose.m.zeiler.civ@mail.mil.

Sincerely,

Rose M. Zeiler, Ph.D.
 Longhorn AAP Site Manager

Copies furnished:

- A. Palmie, TCEQ, Austin, TX (electronic/online)
- P. Bruckwicki, Caddo Lake NWR, TX (electronic/online)
- R. Smith USACE, Tulsa District, OK (electronic/online)
- A. Williams, USACE, Tulsa District, OK (electronic/online)
- A. Maly USAEC, San Antonio, TX (electronic/online)
- K. Nemmers, Bhate, Lakewood, CO (electronic/online)
- P. Srivastav, APTIM, Houston, TX (electronic/online)



DEPARTMENT OF THE ARMY
 LONGHORN ARMY AMMUNITION PLANT
 POST OFFICE BOX 220
 RATCLIFF, AR 72951

June 10, 2020

DAIN-ODB-LO

Ms. April Palmie
 Texas Commission on Environmental Quality
 Superfund Section, MC-136
 12100 Park 35 Circle, Bldg D
 Austin, TX 78753

**Re: Draft Fifth Annual Remedial Action Operation Report, LHAAP-46 (Plant 2 Area),
 Longhorn Army Ammunition Plant, Karnack, Texas, June 2020**

Dear Ms. Palmie,

An electronic copy of the above referenced document has been added to the project portal's "Documents" folder at the following address for your review:

<https://docs.cbifederalservices.com/sites/501032/regulators/Shared%20Documents/Forms/AllItems.aspx>). An electronic copy of this letter and download instructions for the electronic file have been sent via email. Review comments are requested by July 10, 2020.

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Sincerely,

Rose M. Zeiler, Ph.D.
 Longhorn AAP Site Manager

Copies furnished (letter only):

W. Rhotenberry, USEPA Region 6, Dallas, TX
 P. Bruckwicki, Caddo Lake NWR, TX
 R. Smith, USACE, Tulsa District, OK
 A. Williams, USACE, Tulsa District, OK
 A. Maly, USAEC, San Antonio, TX
 K. Nemmers, Bhate, Lakewood, CO
 P. Srivastav, APTIM, Houston, TX



DEPARTMENT OF THE ARMY
 LONGHORN ARMY AMMUNITION PLANT
 POST OFFICE BOX 220
 RATCLIFF, AR 72951

June 18, 2020

DAIN-ODB-LO

Mr. William Rhotenberry
 U.S. Environmental Protection Agency
 1201 Elm Street, Suite 500
 Dallas, TX 75270-2002

**Re: Draft 2019 Remedial Action Operation Report, Landfill 12 (LHAAP-12),
 Longhorn Army Ammunition Plant, Karnack, Texas, June 2020**

Dear Mr. Rhotenberry,

An electronic copy of the above referenced document has been added to the project portal's "Documents" folder at the following address for your review: (<https://docs.cbifederalservices.com/sites/501032/regulators/Shared%20Documents/Forms/AllItems.aspx>). An electronic copy of this letter and download instructions for the electronic file have been sent via email. Review comments are requested by July 20, 2020.

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- A. Maly USAEC, San Antonio, TX (electronic/online)
- K. Nemmers, Bhate, Lakewood, CO (electronic/online)
- P. Srivastav, APTIM, Houston, TX (electronic/online)



DEPARTMENT OF THE ARMY
 LONGHORN ARMY AMMUNITION PLANT
 POST OFFICE BOX 220
 RATCLIFF, AR 72951

June 18, 2020

DAIN-ODB-LO

Ms. April Palmie
 Texas Commission on Environmental Quality
 Superfund Section, MC-136
 12100 Park 35 Circle, Bldg D
 Austin, TX 78753

**Re: Draft 2019 Remedial Action Operation Report, Landfill 12 (LHAAP-12),
 Longhorn Army Ammunition Plant, Karnack, Texas, June 2020**

Dear Ms. Palmie,

An electronic copy of the above referenced document has been added to the project portal's "Documents" folder at the following address for your review: (<https://docs.cbifederalservices.com/sites/501032/regulators/Shared%20Documents/Forms/AllItems.aspx>). An electronic copy of this letter and download instructions for the electronic file have been sent via email. Review comments are requested by July 20, 2020.

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 A. Maly, USAEC, San Antonio, TX
 K. Nemmers, Bhate, Lakewood, CO
 P. Srivastav, APTIM, Houston, TX

Subject: Final Monthly Managers' Meeting (MMM),
Longhorn Army Ammunition Plant (LHAAP)
Location of Meeting: Teleconference
Date of Meeting: 20 May 2020– 2:00 Central Daylight Time (CDT)

Attendees:

Army BRAC: Rose M. Zeiler (RMZ)
 USEPA: Bill Rhotenberry (BR) and Kent Becher (KB)-USGS Liaison
 AEC: Andrew Maly (AM)
 TCEQ: April Palmie (AP)
 USACE: Aaron Williams (AW)
 Bhate: Kim Nemmers (KN) and Scott Beesinger (SB)
 APTIM: Bill Foss (BF)
 USFWS: Paul Bruckwicki (PB)

Defense Environmental Restoration Program (DERP) Performance-Based Remediation (PBR) Update

Army – RMZ discussed the letter that she sent via electronic mail (e-mail) regarding electronic copies for all deliverables. E-mail transmittals of the electronic copies will serve as the official submittal dates for submittals. If possible, the file containing the submittal will be included in the e-mail. Final copies for the EPA will be provided on a compact disc (CD) with a hard copy of the letter. Also, PB has asked for a hard copy with a CD of all three versions of submittals (draft, draft final and final). RMZ indicated that this is retro-active through the start of the stay-at-home orders.

RMZ asked BR if he was retiring this year. BR was uncertain of a date but said that Lauren Poulos is lined up as the new EPA Project Manager, coming over from the water division. BR would like to have Lauren Poulos come to the meeting in July, if still held.

AP asked about the July 2020 Restoration Advisory Board (RAB) meeting. AM said that no travel is currently allowed until the end of June 2020 and then any travel requests will be highly scrutinized. RMZ said that the Army will continue to evaluate options for the July 2020 RAB meeting. KB suggested a video conference based upon success for similar meetings on other projects.

Groundwater Treatment Plant (GWTP) –SB stated that ICT well pumps were being replaced and repaired. SB discussed the evaluation of an inline screen from the fluidized bed reactor (FBR). KN explained that the current media capture tank after the FBR is rusting and leaking. KN said that the replacement of tank was discussed with Envirogen (who designed the FBR system). As indicated by the name of the GWTP component, the media capture tank is used to capture media that might escape from the FBR. KN stated that Envirogen said that the tank was not required due to the current perchlorate loading. KN explained that the buildup on the screen within the media capture tank is also significantly less since completing the maintenance on the FBR. KN mentioned the granular activated carbon (GAC) vessel does not appear to be working properly. SB explained that the GAC vessel continues to be flushed, when time allows, as the water is not clear when flushing. KN explained that the air stripper had another acid wash and effluent has been below the maximum contaminant levels (MCLs). KN said that the treated effluent from the GWTP continues to be discharged to the bayou.

June 2020 Groundwater Sampling – KN discussed the sampling planned for June 2020, which includes LHAAP-18/24, LHAAP-58, LHAAP-50 and LHAAP-16. KN requested to move the LHAAP-16 sampling to July 2020 to allow the site to dry out more and allow opportunity for access

to clear trees that prevented the sampling of two monitoring wells across the bayou that were not sampled in March 2020. KN explained that while it sounds like we are shifting sampling a month that the actual duration is more like two weeks because the site was last sampled in mid-March. BF corrected KN's statement by indicating that the performance sampling at LHAAP-16 was completed at the end of March 2020. AP and BR concurred with sampling LHAAP-16 in July 2020.

Additional Well Installation at LHAAP-46- BF stated that the additional well at LHAAP-46 was scheduled to be installed on Tuesday, 26 May 2020.

Following the installation of the new monitoring well at LHAAP-46, BF said that he plans to visit the well abandonment locations to evaluate the current conditions and evaluate to see if we can move forward with a portion of the well abandonments. BF is also going to look at the site conditions at LHAAP-17 and LHAAP-03.

KN asked everyone to refer to the Document and Issues Tracking Table dated 20 May 2020.

- **Task 1** (Project Management) – KN stated that minutes from the May 2020 MMM had been finalized and that the Restoration Advisory Board (RAB) is planned for 15 July 2020 as previously discussed.
- **Task 3** (LHAAP-03) – BF said that no documents are in process. Field work is still on hold due to wet weather to complete the excavation.
- **Task 4** (LHAAP-04) – BF said that the Remedial Action Completion Report (RACR) was reviewed by the Army and that Army comments are being addressed. The draft RACR should be submitted to the Regulators in early June 2020.
- **Task 5** (LHAAP-12) – BF said that the Remedial Action Operation (RA-O) Report is under Army review. The draft 2019 Annual RA-O Report should also be provided for Regulator review in June 2020.
- **Task 6** (LHAAP-16) – BF said RACR is in progress for submittal to Regulators in late June. BF stated that the validated data from the March 2020 design effectiveness sampling was included in the MMM information. BF stated that the contamination within the mid-plume had reduced, but the data for the other injection areas was mixed.
- **Task 7** (LHAAP-17) – BF explained that no documents are in progress, but the backfilling of the clean excavations will occur when the site conditions are drier.
- **Task 9** (LHAAP-37) – BF stated that the Year 3, 2nd semiannual sampling was completed in May 2020 and that the data will be provided for the July 2020 MMM. BF stated that the Year 2 Annual RA-O Report went final in April 2020.
- **Task 10** (LHAAP-46) –BF stated that Year 5 Annual RA-O Report was reviewed by the Army and should be ready to issue draft for regulatory review in May 2020. BF stated that the Year 6 sampling was completed in February 2020 and that the Year 6 RA-O Report is being prepared.
- **Task 11** (LHAAP-50) –BF stated that the RACR is in progress for submittal in late June 2020. BF stated that the Year 5 RA-O Report was submitted draft on 27 April 2020.
- **Task 12** (LHAAP-58) – KN stated the March 2020 validated data for the western plume was included in the information provided for the May 2020 MMM. KN stated that the final sampling event as part of the Year 6 RA-O Report was being completed in mid to late June.
- **Task 13** (LHAAP-67) –BF stated that the Year 6 Report was being prepared with the draft to Regulators in late June.
- **Task 14** (LHAAP-001-R and –003-R) - KN stated that Annual LUC Report had gone final on 28 April 2020.

- **Task 16** (GWTP) – KN indicated that the 4th Quarter 2019 GWTP Report was submitted in April 2020 and that comments from the TCEQ had been received. KN indicated that no comments had been received to date from the EPA. KN stated that the 1st Quarter 2020 report was currently under Army review and only included data for the GWTP operations.
- **Task 17** (LHAAP-18/24) – KN stated that the validated data from the LHAAP-18/24 sampling completed in December 2019 was included in the 4th Quarter 2019 GWTP Report.
- **Task 18** (Surface Water) – KN stated that 2nd Quarter 2020 surface water samples were collected on 20 April 2020 and that the validated data was included in the May 2020 MMM validated data.
- **Task 19** (LUC Management Plan) – Not discussed.
- **Administrative Record (AR)** –BF said that September 2019 AR is on the website but CDs had not yet been created. BF stated that the documents and document list for the next upload is being put together this week for Army review. After approval by the Army, the electronic version will be produced. AP said she is okay if the CDs from multiple cutoff dates come under the same cover. BR concurred with this approach.

Update on other DERP Sites:

- **LHAAP 18/24 and LHAAP-29** –AW stated that the final Record of Decisions (RODs) are being placed into AR.
- **LHAAP-47** – AW explained that the Post-Screening Investigation (PSI) Work Plan Addendum Number 2 was approved. AW said that HDR, Inc. is scheduling the field work and planned to complete the well sampling first (sample wells that were previously dry in the shallow aquifer and sample the intermediate wells) from 27 to 29 May 2020. The direct push technology (DPT) borings were planned for the week of 1 June 2020. AW explained that an onsite mobile laboratory will be used so regulators are requested to be available to discuss results in real-time, if needed. AP said her only limitation that week is that she is planning to be off on that Friday.
- **Five Year Review (FYR)** - AW stated that the FYR is going into the AR.

Contract updates:

- **LHAAP-18/24 and 29:** AW stated that the request for proposal (RFP) for the remedial design was on schedule to be released later in the day with a June award date.
- **LHAAP-17:** AW said the scope of work is drafted and it is in management review. The scope of work (SOW) for LHAAP-17 will be competitively bid and will include a site visit. The site visit would ideally fall in the middle of the time that the bid is out so the timing for the release of the RFP depends on when a site visit can occur. The SOW will include surface clearing and geophysical mapping of the entire site and options for digging. The selected contractor will then complete the remaining work at the site, including installation of the groundwater extraction system.

USFWS Update: A return to work plan is being developed. The USFWS continues to telework with no one present at the refuge.

SB plans to get a trackhoe onsite on 26 May 2020 to clear the trees within the bayou where the discharge point is located due to flow being blocked. SB also plans to use the trackhoe to move trees from the wells at LHAAP-18/24.

Schedule Next Managers' Meeting

The next MMM will be held on Wednesday 17 June 2020 at 10:30 am CDT via conference call.

Meeting concluded at approximately 2:41 pm CDT.

ACRONYM LIST

µg/L	micrograms per liter
AM	Andrew Maly
AP	April Palmie
APTIM	APTIM Federal Services, LLC
AR	Administrative Record
AW	Aaron Williams
BF	Bill Foss
Bhate	Bhate Environmental Associates, Inc.
BR	Bill Rhotenberry
BRAC	Base Realignment and Closure
CD	Compact Disc
CDT	Central Daylight Time
DERP	Defense Environmental Restoration Program
DPT	Direct Push Technology
e-mail	Electronic Mail
FBR	Fluidized Bed Reactor
GAC	Granular Activated Carbon
GWTP	Groundwater Treatment Plant
KB	Kent Becher
KN	Kim Nemmers
LHAAP	Longhorn Army Ammunition Plant
LUC	Land Use Control
MCL	Maximum contaminant level
MMM	Monthly Managers' Meeting
PB	Paul Bruckwicki
PBR	Performance-Based Remediation
PSI	Post-Screening Investigation
RAB	Restoration Advisory Board
RACR	Remedial Action Completion Report
RA-O	Remedial Action – Operation
RAWP	Remedial Action Work Plan
RD	Remedial Design
RFP	Request for Proposal
RMZ	Rose M. Zeiler
ROD	Record of Decision
SB	Scott Beesinger
SOW	Scope of Work
TCEQ	Texas Commission on Environmental Quality
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

LHAAP
May 2020 MMM Validated Data

GWTP Effluent	<i>Weekly Perchlorate Sampling – March 2020</i> Perchlorate (6850)
GWTP Effluent	<i>Weekly, Bi-Weekly, and Monthly Sampling – March 2020</i> Ammonia (350.3) Ortho-Phosphate (365.3) Total Organic Carbon (SM5310C) VOC (8260C) Metals (6020A) Hexavalent Chromium (7196A) 1,4-Dioxane (8270D-SIM) Anions (9056)
GWTP Influent	<i>Monthly Sampling – March 2020</i> Metals (6020A) Perchlorate (6850) Hexavalent Chromium (7196A)
LHAAP-58	<i>West Plume Quarterly Performance Sampling Event– March 2020</i> Anions (9056) VOC (8260C) Total Organic Carbon (SM5310C) Metabolic Acids (HPLC-METACIDS) Dechlorinating Bacteria (CENSUS) Dissolved Gases (RSK-175)
LHAAP Surface Water	<i>Quarterly Perchlorate Sampling - April 2020</i> Perchlorate (6850)
LHAAP-16	<i>Remedial Performance Monitoring (Year 1, Quarter 1)-March 2020</i> Volatile Organic Compounds (8260C) Metals (SW6020) Perchlorate (EPA 6850) Dissolved Gases (RSK-175) Bromide (SW9056A) Total Organic Carbon (SM5310B) Dechlorinating Bacteria (Census) Field Measurements (Dissolved Oxygen, Oxidation Reduction Potential, and pH)

GWTP Weekly/Effluent Perchlorate Sampling - March 2020

Location ID: Sample Date:	Units	Daily Maximum Conc	INF pond (PCL)	LH18/24- SP650_030420_BIX 3/4/20	LH18/24- SP650_031020_BIX 3/10/20	LH18/24- SP650_031020_BIX 3/10/20	LH18/24- SP650_031720_BIX 3/17/20	LH18/24- SP650_032420_BIX 3/24/20	LH18/24- SP650_033120_BIX 3/31/20
Location Description				Collected from a spigot on the discharge of effluent TK-650.					
				Weekly	Weekly	Monthly EFF	Weekly	Weekly	Weekly
Perchlorate (6850)									
Perchlorate	µg/L	589	17	< 0.0500 U	< 0.0500 U	< 0.0500 U	< 0.0500 U	0.0720 J	< 0.0500 U

µg/L - micrograms per liter

U- Undetected: The analyte was analyzed for, but not detected and reported to the limit of detection.

BIX - before ion exchange

J - estimated value between the detection limit and limit of quantitation and/or due to quality control issues

GWTP Weekly Sampling - March 2020

Location ID: Sample Date:	Units	Daily Maximum Conc	LH18/24-SP650_030420 3/4/20	LH18/24-SP650_031020 3/10/20	LH18/24-SP650_031720 3/17/20	LH18/24-SP650_032420 3/24/20	LH18/24-SP650_033120 3/31/20
Location Description			GWTP—Collected from a spigot on the discharge of effluent TK-650. Sampled Weekly.				
Ammonia as N (350.3)							
Ammonia as N	mg/L	NV	4.7	6.6	0.35	2.2	7.8
Ortho-Phosphate (365.3)							
Ortho-Phosphate	mg/L	NV	2.16	1.45	< 0.0250 U	0.461	2.26
Organic Carbon (SM5310C)							
Total Organic Carbon (TOC)	mg/L	NV	1.78	2.31	2.07	1.97	2.92

mg/L - milligrams per liter

NV - No Value

U- Undetected: The analyte was analyzed for, but not detected and reported to the limit of detection.

GWTP Bi-Weekly Sampling - March 2020

Location ID: Sample Date:	Units	(Bayou) Daily Maximum Conc	(INF pond) MCL	LH18/24-SP650_030420 3/4/20	LH18/24-SP650_031720 3/17/20	LH18/24-SP650-032420 3/24/20	LH18/24-SP650_033120 3/31/20
Location Description				GWTP – Collected from a spigot on the discharge of effluent TK-650. Sampled Biweekly.			
Volatile Organic Compounds (8260C)							
1,1,1-Trichloroethane	µg/L	7,230	200	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2-Trichloroethane	µg/L	216.9	5	< 0.50 U	< 0.50 U	< 0.50 U	< 1.0 U
1,1-Dichloroethane	µg/L	14,032	NV	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1-Dichloroethene	µg/L	253	7	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-Dichloroethane	µg/L	181	5	1.2	1.0	1.0	1.0
1,2-Dichloropropane	µg/L	5	5	< 0.50 U	< 0.50 U	< 0.50 U	< 1.0 U
Acetone	µg/L	2,395	NV	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Benzene	µg/L	181	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Carbon tetrachloride	µg/L	181	5	< 0.50 U	< 0.50 U	< 0.50 U	< 1.0 U
Chlorobenzene	µg/L	47,180	100	< 0.50 U	< 0.50 U	< 0.50 U	< 1.0 U
Chloroform	µg/L	3,615	NV	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
cis-1,2-Dichloroethene	µg/L	NV	70	27	27	26	22
Ethylbenzene	µg/L	57,025	700	< 0.50 U	< 0.50 U	< 0.50 U	< 1.0 U
m,p-Xylene	µg/L	83.6	NV	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Methylene chloride	µg/L	1,699	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
o-Xylene	µg/L	83.6	NV	< 0.50 U	< 0.50 U	< 0.50 U	< 1.0 U
Styrene	µg/L	5,987	100	< 0.50 U	< 0.50 U	< 0.50 U	< 1.0 U
Tetrachloroethene	µg/L	180.7	5	< 0.50 U	< 0.50 U	< 0.50 U	< 1.0 U
Toluene	µg/L	4,189	10	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Trichloroethene	µg/L	181	5	5.1	5.0	5.4	4.0
Vinyl chloride	µg/L	72	2	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Anions (9056)							
Chloride	mg/L	NV	NV	376	363	NA	326
Sulfate	mg/L	NV	NV	28.5	32.8	NA	29

µg/L - micrograms per liter

mg/L - milligrams per liter

U - Undetected: The analyte was analyzed for, but not detected and reported to the limit of detection.

NV - No Value

NA - not analyzed

GWTP Monthly Effluent Sampling - March 2020

Location ID: Sample Date:	Units	Daily Maximum Conc	(INF pond) MCL	LH18/24-SP650_031020 3/10/20
Location Description				GWTP – Collected from a spigot on the discharge of effluent TK-650. Sampled monthly
Volatile Organic Compounds (8260C)				
1,1,1-Trichloroethane	µg/L	7,230	200	< 0.50 U
1,1,2-Trichloroethane	µg/L	216.9	5	< 0.50 U
1,1-Dichloroethane	µg/L	14,032	NV	< 0.50 U
1,1-Dichloroethene	µg/L	253	7	< 0.50 U
1,2-Dichloroethane	µg/L	181	5	1.2
1,2-Dichloropropane	µg/L	5	5	< 0.50 U
Acetone	µg/L	2,395	NV	< 1.0 U
Benzene	µg/L	181	5	< 0.50 U
Carbon tetrachloride	µg/L	181	5	< 0.50 U
Chlorobenzene	µg/L	47,180	100	< 0.50 U
Chloroform	µg/L	3,615	NV	< 0.50 U
cis-1,2-dichloroethene	µg/L	NV	70	27
Ethylbenzene	µg/L	57,025	700	< 0.50 U
m,p-Xylene	µg/L	83.6	NV	< 1.0 U
Methylene chloride	µg/L	1,699	5	< 1.0 U
o-Xylene	µg/L	83.6	NV	< 0.50 U
Styrene	µg/L	5,987	100	< 0.50 U
Tetrachloroethene	µg/L	180.7	5	< 0.50 U
Toluene	µg/L	4,189	10	< 0.50 U
Trichloroethene	µg/L	181	5	5.0
Vinyl chloride	µg/L	72	2	< 0.50 U
Metals (6020A)				
Barium	mg/L	2	2	0.115
Lead	mg/L	0.0046	0.015	< 0.00100 U
Selenium	mg/L	0.012	0.05	< 0.00250 U
Silver	mg/L	0.003	0.1	< 0.000500 U
Hexavalent Chromium (7196A)				
Hexavalent Chromium	mg/L	0.1244	NV	< 0.0100 U
Semi-Volatile Organic Compounds (8270D SIM)				
1,4-Dioxane	µg/L	134.2	NV	29

µg/L - micrograms per liter

mg/L - milligrams per liter

U- Undetected: The analyte was analyzed for, but not detected and reported to the limit of detection.

NV - no value

GWTP Monthly Influent Sampling - March 2020

Location ID: Sample Date:	Units	LH18/24-SP140_031020 3/10/20
Location Description		GWTP – Collected from a spigot on the influent to TK-140. Sampled Monthly.
Metals (6020A)		
Selenium	mg/L	< 0.00250 U
Silver	mg/L	< 0.000500 U
Hexavalent Chromium (7196A)		
Hexavalent Chromium	mg/L	0.00900 J
Perchlorate (6850)		
Perchlorate	µg/L	14,000

mg/L - milligrams per liter

µg/L - micrograms per liter

U- Undetected: The analyte was analyzed for, but not detected and reported to the limit of detection.

J - estimated value between the detection limit and limit of quantitation and/or due to quality control issues

Location ID: Sample Date:	Units	MCL/MSC	35AWW06_032420 03/24/20	35AWW11_032420 03/24/20	35AWW11_032420-a 03/24/20	35AWW19_032420 03/24/20	35AWW20_032420 03/24/20	35AWW23_032420 03/24/20	LHSMW07_032420 03/24/20
Location Description			Site 58 - SW, outside site boundary.	Site 58 - SE, inside site boundary.	Site 58 - SE, inside site boundary. Duplicate	Site 59 - S, outside site boundary.	Site 58 - SW, inside site boundary.	Downgradient Western Plume well	Site 58 - SW, outside site boundary.
Location Depth			Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Lab Package			HS20040727/HS20031084		R2002537/HS20031084				
Total Organic Carbon (415.1/SM5310C)									
Total Organic Carbon	mg/L	NV	15.6	5.88	7.86	1.79	18.3	250	3.29 J
Volatile Organic Compounds (8260C)									
1,1,1,2-Tetrachloroethane	µg/L	110	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
1,1,1-Trichloroethane	µg/L	200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
1,1,2,2-Tetrachloroethane	µg/L	14	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
1,1,2-Trichloroethane	µg/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	83	<0.5 U	<0.5 U
1,1-Dichloroethane	µg/L	10000	<0.5 U	<0.5 U	<0.5 U	0.84 J	560	<0.5 U	11
1,1-Dichloroethene	µg/L	7	0.78 J	<0.5 U	<0.5 U	4.4	1,300	<0.5 U	94
1,1-Dichloropropene	µg/L	2.9	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
1,2,3-Trichlorobenzene	µg/L	310	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
1,2,3-Trichloropropane	µg/L	0.041	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
1,2,4-Trichlorobenzene	µg/L	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
1,2,4-Trimethylbenzene	µg/L	5100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
1,2-Dibromo-3-chloropropane	µg/L	0.2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
1,2-Dibromoethane	µg/L	0.05	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
1,2-Dichlorobenzene	µg/L	600	<0.5 U	<0.5 U	<0.5 U	<0.5 U	25	<0.5 U	<0.5 U
1,2-Dichloroethane	µg/L	5	<0.5 U	<0.5 U	<0.5 U	1.1	18	<0.5 U	<0.5 U
1,2-Dichloropropane	µg/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
1,3,5-Trimethylbenzene	µg/L	5100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
1,3-Dichlorobenzene	µg/L	3100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
1,3-Dichloropropane	µg/L	29	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
1,4-Dichlorobenzene	µg/L	75	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
2,2-Dichloropropane	µg/L	42	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
2-Butanone	µg/L	61000	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<5.0 U	300	<1.0 U
2-Chlorotoluene	µg/L	2000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
2-Hexanone	µg/L	6100	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<5.0 U	4.0	<1.0 U
4-Chlorotoluene	µg/L	2000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
4-Isopropyltoluene	µg/L	10000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
4-Methyl-2-pentanone	µg/L	8200	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<5.0 U	<1.0 U	<1.0 U
Acetone	µg/L	92000	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<5.0 U	400	<1.0 U
Benzene	µg/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	8.7	<0.5 U	<0.5 U
Bromobenzene	µg/L	2000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
Bromochloromethane	µg/L	4100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
Bromodichloromethane	µg/L	4.6	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
Bromoforn	µg/L	36	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
Bromomethane	µg/L	140	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
Carbon disulfide	µg/L	10000	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<5.0 U	<1.0 U	<1.0 U
Carbon tetrachloride	µg/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
Chlorobenzene	µg/L	100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
Chloroethane	µg/L	41000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
Chloroform	µg/L	1000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
Chloromethane	µg/L	220	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
cis-1,2-Dichloroethene	µg/L	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	71	6.5	1.0
cis-1,3-Dichloropropene	µg/L	5.3	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
Dibromochloromethane	µg/L	34	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
Dibromomethane	µg/L	380	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
Dichlorodifluoromethane	µg/L	20000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
Ethylbenzene	µg/L	700	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
Hexachlorobutadiene	µg/L	20	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<5.0 U	<1.0 U	<1.0 U
Isopropylbenzene	µg/L	10000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
m,p-Xylene	µg/L	10000	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<5.0 U	<1.0 U	<1.0 U
Methylene chloride	µg/L	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<5.0 U	<1.0 U	<1.0 U
n-Butylbenzene	µg/L	4100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
n-Propylbenzene	µg/L	4100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
Naphthalene	µg/L	2000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	3.0	<0.5 U
o-Xylene	µg/L	10000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
sec-Butylbenzene	µg/L	4100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
Styrene	µg/L	100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
tert-Butylbenzene	µg/L	4100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
Tetrachloroethene	µg/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
Toluene	µg/L	1000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
trans-1,2-Dichloroethene	µg/L	100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	6.6	<0.5 U	<0.5 U
trans-1,3-Dichloropropene	µg/L	29	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
Trichloroethene	µg/L	5	<0.5 U	1.4	<0.5 U	<0.5 U	120	1.3	2.8
Trichlorofluoromethane	µg/L	31000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2.5 U	<0.5 U	<0.5 U
Vinyl chloride	µg/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	1,500	<0.5 U	46
Volatile Fatty Acids (HPLC-METACIDS)									
Acetic Acid	mg/L	NV	1.5 J	5.8	5.5	<2.0 U	<2.0 U	97	<2.0 U
Butyric Acid	mg/L	NV	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<2.0 U	<1.0 U
Lactic Acid	mg/L	NV	<1.0 U	<1.0 U	0.67 J	<1.0 U	<1.0 U	<2.0 U	<1.0 U
Propionic Acid	mg/L	51	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	320	<1.0 U
Pyruvic Acid	mg/L	NV	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.20 U	<0.10 U
Anions (9056A)									
Chloride	mg/L	NV	968	2,090	2,110	922	718 J	925	1,960
Nitrate	mg/L	10	<0.100 U	<0.500 U	<0.500 U	<0.100 U	<0.100 U	<0.100 U	<0.500 U
Sulfate	mg/L	NV	1.51	282 J	113 J	989	1,020 J	1.84	2,750
Dissolved Gases (RSK-175)									
Carbon Dioxide	µg/L	NV	360,000	450,000	510,000	200,000	260,000	600,000	250,000
Ethane	µg/L	NV	<0.47 U	<0.47 U	<0.47 U	<0.47 U	<0.47 U	<0.47 U	<0.47 U
Ethene	µg/L	NV	<0.55 U	<0.55 U	<0.55 U	<0.55 U	<0.55 U	6.0 J	2.3
Methane	µg/L	NV	1,300	850	860	3.1	410	1,400	77
Dechlorinating Bacteria									
BAV1 Vinyl Chloride Reductase	cells/mL	NV	4.7	19.5	NA	1.8	19800	0.90	4.8
Dehalobacter spp.	cells/mL	NV	1220	40600	NA	12200	954	<5.50 U	10300
Dehalococcoides	cells/mL	NV	9.6	940	NA	9.4	13000	136	2280
tceA Reductase	cells/mL	NV	<0.50 U	<0.60 U	NA	<0.50 U	<0.50 U	23	<0.60 U
Vinyl Chloride Reductase	cells/mL	NV	<0.50 U	443	NA	<0.50 U	<0.50 U	49.3	2270

Blue Highlighting Indicates concentrations above the MCL/MSC

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations

NA - Not Analyzed

µg/L - micrograms per liter

mg/L - milligrams per liter

J - Estimated: Between the method detection limit and reporting limit and/or due to discrepancies in meeting certain analyte-specific quality control criteria.

U - The analyte was not detected; however the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

- Undetected: The analyte was analyzed for but not detected.

NV - No Value

LHAAP-Quarterly Surface Water Sampling - April 2020

Location ID: Sample Date:	Units	PCL	HBW7_042020 4/20/20	HBW10_042020 4/20/20	HBW1_042020 4/20/20	GPW1_042020 4/20/20	GPW3_042020 4/20/20	GPW3_042020_a 4/20/20
Perchlorate (6850)			Harrison Bayou			Goose Prairie Creek		
Perchlorate	µg/L	17	< 0.0500 U	< 0.0500 U	< 0.0500 U	0.0589 J	< 0.0500 U	0.0662 J

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

µg/L - micrograms per liter

J - estimated value between the detection limit and limit of quantitation and/or due to quality control issues

U- Undetected: The analyte was analyzed for, but not detected and reported to the limit of detection.

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Injection Area			Landfill Bayou Biobarrier #1													
			16IW09		16RW01		16RW02		16RW03		16RW04		16RW05			
Location Code			16IW09-200325		16IW09-200325-FD		16RW01-200312		16RW02-200312		16RW03-200309		16RW04-200309		16RW05-200312	
Sample ID			16IW09-200325		16IW09-200325-FD		16RW01-200312		16RW02-200312		16RW03-200309		16RW04-200309		16RW05-200312	
Sample Date			3/25/2020		3/25/2020		3/12/2020		3/12/2020		3/9/2020		3/9/2020		3/12/2020	
Sample Purpose			REG		FD		REG		REG		REG		REG		REG	
Analyte	Units	MCL/PCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Dechlorinating Bacteria (Census)																
Dehalococcoides	cells/mL	NV	27.8		NA		NA		NA		NA		NA		NA	
Field Measurements																
Dissolved oxygen	mg/L	NV	0.09		0.09		0.08		0.69		0.32		0.2		0.03	
Oxidation-Reduction Potential	mV	NV	8		8		151		119		199		250		-97	
pH	STD UNIT	NV	4.94		4.94		5.49		5.26		5.62		5.07		6.36	
Dissolved Gases (RSK-175)																
Ethane	µg/L	NV	11.4		11.9		NA		NA		NA		NA		NA	
Ethylene	µg/L	NV	10.2		7.93		NA		NA		NA		NA		NA	
Methane	µg/L	NV	1,340		1,110		NA		NA		NA		NA		NA	
General Chemistry (2320B/SM5310B/SW9056A)																
Alkalinity	mg/L	NV	432		440		NA		NA		NA		NA		NA	
Bromide	mg/L	NV	11.6		11.3		NA		NA		0.792		0.43		52.8	
Nitrate	mg/L	NV	< 0.1	U	< 0.1	U	NA		NA		NA		NA		NA	
Sulfate	mg/L	NV	1.43		1.48		NA		NA		NA		NA		NA	
Total organic carbon	mg/L	NV	820		820		NA		NA		1.04		3.17		500	
Metals (SW6020)																
Arsenic	mg/L	0.01	NA		NA		NA		NA		NA		NA		NA	
Chromium	mg/L	0.1	NA		NA		NA		NA		NA		NA		NA	
Manganese	mg/L	1.1	NA		NA		NA		NA		NA		NA		NA	
Nickel	mg/L	0.49	NA		NA		NA		NA		NA		NA		NA	
Thallium	mg/L	0.002	NA		NA		NA		NA		NA		NA		NA	
Perchlorate (EPA 6850)																
Perchlorate	µg/L	17	< 2	UJ	< 2	U	< 2	U	< 2	U	NA		< 2	U	< 2	U
Volatile Organic Compounds (8260C)																
1,1,2-Trichloroethane	µg/L	5	< 5	UJ	< 5	U	< 2.5	U	< 0.5	U	NA		< 2.5	U	< 0.5	U
1,1-Dichloroethene	µg/L	7	< 5	UJ	< 5	U	< 2.5	U	< 0.5	U	NA		< 2.5	U	< 0.5	U
1,2-Dichloroethane	µg/L	5	< 5	UJ	< 5	UJ	< 2.5	U	< 0.5	U	NA		< 2.5	U	< 0.5	U
cis-1,2-Dichloroethene	µg/L	70	< 5	UJ	< 5	UJ	120		< 0.5	U	NA		120		7.8	
Methylene chloride	µg/L	5	< 10	UJ	< 10	UJ	< 5	U	< 1	U	NA		< 5	U	< 1	U
Trichloroethene	µg/L	5	< 5	UJ	< 5	U	3,300		2.3		NA		3,000		3	
Vinyl chloride	µg/L	2	< 5	UJ	< 5	UJ	4	J	< 0.5	U	NA		< 2.5	U	< 0.5	U

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Injection Area			Landfill Bayou Biobarrier #1						Landfill Biobarrier #2								
			16WW26		16WW42				16IW03		16IW04		16PM02		16PM03		
Location Code			16WW26-200309		16WW42-200310		16WW42-200310-FD		16IW03-200325		16IW04-200310		16PM02-200317		16PM03-200317		
Sample ID			3/9/2020		3/10/2020		3/10/2020		3/25/2020		3/10/2020		3/17/2020		3/17/2020		
Sample Date			REG		REG		FD		REG		REG		REG		REG		
Sample Purpose			Analyte	Units	MCL/PCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Dechlorinating Bacteria (Census)																	
	Dehalococcoides	cells/mL	NV	16.7		NA		NA		866		NA		NA		NA	
Field Measurements																	
	Dissolved oxygen	mg/L	NV	0.07		1.52		1.52		0.1		0.06		0.09		0.06	
	Oxidation-Reduction Potential	mV	NV	266		241		241		-53		-79		102		74	
	pH	STD UNIT	NV	4.72		5.15		5.15		5.21		6.56		5.91		6.35	
Dissolved Gases (RSK-175)																	
	Ethane	µg/L	NV	1.86		NA		NA		1.38		NA		NA		NA	
	Ethylene	µg/L	NV	0.295	J	NA		NA		4.6		NA		NA		NA	
	Methane	µg/L	NV	5.1		NA		NA		12.4		NA		NA		NA	
General Chemistry (2320B/SM5310B/SW9056A)																	
	Alkalinity	mg/L	NV	14.9		NA		NA		502		NA		NA		NA	
	Bromide	mg/L	NV	0.258		1.36		1.35		0.582		4.82		NA		NA	
	Nitrate	mg/L	NV	1.23		NA		NA		0.325		NA		NA		NA	
	Sulfate	mg/L	NV	390		NA		NA		6.92	J-	NA		NA		NA	
	Total organic carbon	mg/L	NV	2.27		1.73		1.68		650		7.68		NA		NA	
Metals (SW6020)																	
	Arsenic	mg/L	0.01	NA		NA		NA		NA		NA		NA		NA	
	Chromium	mg/L	0.1	NA		NA		NA		NA		NA		NA		NA	
	Manganese	mg/L	1.1	NA		NA		NA		NA		NA		NA		NA	
	Nickel	mg/L	0.49	NA		NA		NA		NA		NA		NA		NA	
	Thallium	mg/L	0.002	NA		NA		NA		NA		NA		NA		NA	
Perchlorate (EPA 6850)																	
	Perchlorate	µg/L	17	< 2	U	< 2	U	< 2	U	< 2	U	NA		< 2	U	400	
Volatile Organic Compounds (8260C)																	
	1,1,2-Trichloroethane	µg/L	5	< 0.5	U	< 0.5	U	< 0.5	U	< 5	U	NA		< 25	U	< 5	U
	1,1-Dichloroethene	µg/L	7	1.4		< 0.5	U	< 0.5	U	37		NA		32	J	66	
	1,2-Dichloroethane	µg/L	5	< 0.5	U	< 0.5	U	< 0.5	U	< 5	U	NA		< 25	U	21	
	cis-1,2-Dichloroethene	µg/L	70	56		8.6		8.2		14,000		NA		3,200		6,600	
	Methylene chloride	µg/L	5	< 1	U	< 1	U	< 1	U	< 10	U	NA		< 50	U	< 10	U
	Trichloroethene	µg/L	5	900		3.3		3.3		8,000		NA		21,000		9,700	
	Vinyl chloride	µg/L	2	1.3		< 0.5	U	< 0.5	U	160		NA		51		370	

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Injection Area			Landfill Biobarrier #2								Landfill Biobarrier #3					
Location Code			16PM06		16PM09		16PM14		16WW36		16RW06		16RW07		16RW08	
Sample ID			16PM06-200310		16PM09-200310		16PM14-200310		16WW36-200311		16RW06-200317		16RW07-200317		16RW08-200311	
Sample Date			3/10/2020		3/10/2020		3/10/2020		3/11/2020		3/17/2020		3/17/2020		3/11/2020	
Sample Purpose			REG		REG		REG		REG		REG		REG		REG	
Analyte	Units	MCL/PCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Dechlorinating Bacteria (Census)																
Dehalococcoides	cells/mL	NV	NA		NA		NA		1,500		NA		NA		NA	
Field Measurements																
Dissolved oxygen	mg/L	NV	0.09		0.64		0.08		0.1		0.73		0.09		0.67	
Oxidation-Reduction Potential	mV	NV	-53		75		88		101		134		-26		28	
pH	STD UNIT	NV	6.21		6.36		6.36		6.61		5.99		6.41		6.76	
Dissolved Gases (RSK-175)																
Ethane	µg/L	NV	NA		NA		NA		2.16		NA		NA		NA	
Ethylene	µg/L	NV	NA		NA		NA		18.9		NA		NA		NA	
Methane	µg/L	NV	NA		NA		NA		749		NA		NA		NA	
General Chemistry (2320B/SM5310B/SW9056A)																
Alkalinity	mg/L	NV	NA		NA		NA		614		NA		NA		NA	
Bromide	mg/L	NV	2.26		0.266		2.65		0.91		NA		NA		5.1	
Nitrate	mg/L	NV	NA		NA		NA		< 0.5	U	NA		NA		NA	
Sulfate	mg/L	NV	NA		NA		NA		2,670		NA		NA		NA	
Total organic carbon	mg/L	NV	8		3.33		10.5		19.7		NA		NA		2.6	
Metals (SW6020)																
Arsenic	mg/L	0.01	NA		NA		NA		NA		NA		NA		NA	
Chromium	mg/L	0.1	NA		NA		NA		NA		NA		NA		NA	
Manganese	mg/L	1.1	NA		NA		NA		NA		NA		NA		NA	
Nickel	mg/L	0.49	NA		NA		NA		NA		NA		NA		NA	
Thallium	mg/L	0.002	NA		NA		NA		NA		NA		NA		NA	
Perchlorate (EPA 6850)																
Perchlorate	µg/L	17	< 2	U	< 2	U	< 2	U	< 2	U	< 2	U	4.9		NA	
Volatile Organic Compounds (8260C)																
1,1,2-Trichloroethane	µg/L	5	< 12	U	1		< 5	U	< 12	U	< 0.5	U	< 2.5	U	NA	
1,1-Dichloroethene	µg/L	7	120		14		20		160		0.9	J	12		NA	
1,2-Dichloroethane	µg/L	5	45		< 0.5	U	25		13	J	< 0.5	U	< 2.5	U	NA	
cis-1,2-Dichloroethene	µg/L	70	42,000		250		3,500		19,000		1.9		120		NA	
Methylene chloride	µg/L	5	< 25	U	< 1	U	< 10	U	< 25	U	< 1	U	< 5	U	NA	
Trichloroethene	µg/L	5	44,000		680		4,900		18,000		86		1,900		NA	
Vinyl chloride	µg/L	2	1,700		7.8		110		180		0.84	J	76		NA	

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Injection Area			Landfill Biobarrier #3						Bayou Biobarrier							
Location Code			16RW09		16RW10		16IW10		16IW20		16RW11		16RW12		16WW12	
Sample ID			16RW09-200311		16RW10-200311		16IW10-200325		16IW20-200309		16RW11-200317		16RW12-200310		16WW12-200311	
Sample Date			3/11/2020		3/11/2020		3/25/2020		3/9/2020		3/17/2020		3/10/2020		3/11/2020	
Sample Purpose			REG		REG		REG		REG		REG		REG		REG	
Analyte	Units	MCL/PCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Dechlorinating Bacteria (Census)																
Dehalococcoides	cells/mL	NV	NA		NA		9,120		0.4	J	NA		NA		NA	
Field Measurements																
Dissolved oxygen	mg/L	NV	0.04		0.86		0.09		2.6		0.07		1.34		0.61	
Oxidation-Reduction Potential	mV	NV	53		50		-21		-230		-82		7		158	
pH	STD UNIT	NV	6.69		6.64		5.19		6.49		6.28		6.65		6.41	
Dissolved Gases (RSK-175)																
Ethane	µg/L	NV	NA		NA		6.46		0.951	J	NA		NA		NA	
Ethylene	µg/L	NV	NA		NA		48.3		4.95		NA		NA		NA	
Methane	µg/L	NV	NA		NA		1,450		46.6		NA		NA		NA	
General Chemistry (2320B/SM5310B/SW9056A)																
Alkalinity	mg/L	NV	NA		NA		2,390		599		NA		NA		NA	
Bromide	mg/L	NV	4.86		3.33		143		13.4		NA		4.3		3.71	
Nitrate	mg/L	NV	NA		NA		< 0.1	U	< 0.1	U	NA		NA		NA	
Sulfate	mg/L	NV	NA		NA		3.19		795		NA		NA		NA	
Total organic carbon	mg/L	NV	2.56		4.08		2,720		10.7		NA		2.56		7.08	
Metals (SW6020)																
Arsenic	mg/L	0.01	NA		NA		NA		NA		NA		NA		NA	
Chromium	mg/L	0.1	NA		NA		NA		NA		NA		NA		NA	
Manganese	mg/L	1.1	NA		NA		NA		NA		NA		NA		NA	
Nickel	mg/L	0.49	NA		NA		NA		NA		NA		NA		NA	
Thallium	mg/L	0.002	NA		NA		NA		NA		NA		NA		NA	
Perchlorate (EPA 6850)																
Perchlorate	µg/L	17	< 2	U	150		< 2	U	< 2	U	< 2	U	NA		53	
Volatile Organic Compounds (8260C)																
1,1,2-Trichloroethane	µg/L	5	< 0.5	U	< 2.5	U	< 5	U	< 0.5	U	< 0.5	U	NA		< 2.5	U
1,1-Dichloroethene	µg/L	7	7.5		10		< 5	U	5.4		0.56	J	NA		3.6	J
1,2-Dichloroethane	µg/L	5	< 0.5	U	38		< 5	U	6.2		1.6		NA		7.5	
cis-1,2-Dichloroethene	µg/L	70	34		830		110		57		73		NA		48	
Methylene chloride	µg/L	5	< 1	U	< 5	U	< 10	U	< 1	U	< 1	U	NA		< 5	U
Trichloroethene	µg/L	5	1,300		4,800		200		850		20		NA		1,700	
Vinyl chloride	µg/L	2	41		22		< 5	U	< 0.5	U	< 0.5	U	NA		3.4	J

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Injection Area			Bayou Biobarrier				Mid Plume and Bayou Biobarriers		Mid Plume Area							
Location Code			16WW22		16WW40		16WW39		16EW01		16EW02		16EW03		16EW04	
Sample ID			16WW22-200316		16WW40-200310		16WW39-200316		16EW01-200309		16EW02-200309		16EW03-200325		16EW04-200309	
Sample Date			3/16/2020		3/10/2020		3/16/2020		3/9/2020		3/9/2020		3/25/2020		3/9/2020	
Sample Purpose			REG		REG		REG		REG		REG		REG		REG	
Analyte	Units	MCL/PCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Dechlorinating Bacteria (Census)																
Dehalococcoides	cells/mL	NV	4.6		NA		NA		4.9		3.6		NA		NA	
Field Measurements																
Dissolved oxygen	mg/L	NV	0.05		0.06		0.08		4.68		3.77		0.24		2.78	
Oxidation-Reduction Potential	mV	NV	-5		78		122		-79		55		-98		65	
pH	STD UNIT	NV	6.39		6.3		6.50		6.36		6.86		6.97		7.26	
Dissolved Gases (RSK-175)																
Ethane	µg/L	NV	0.288	J	NA		NA		3.01	J	0.463	J	NA		NA	
Ethylene	µg/L	NV	1.68		NA		NA		92.8		1.58		NA		NA	
Methane	µg/L	NV	2.98		NA		NA		82.6		4.34		NA		NA	
General Chemistry (2320B/SM5310B/SW9056A)																
Alkalinity	mg/L	NV	168		NA		NA		396		418		NA		NA	
Bromide	mg/L	NV	4		4.2		4.84		3.39		2.06		NA		0.637	
Nitrate	mg/L	NV	< 0.5	U	NA		NA		< 0.1	U	< 0.1	U	NA		NA	
Sulfate	mg/L	NV	368		NA		NA		206		1,260		NA		NA	
Total organic carbon	mg/L	NV	2.35		9.79		4.57		13.4		6.48		NA		3.4	
Metals (SW6020)																
Arsenic	mg/L	0.01	NA		NA		NA		NA		NA		NA		NA	
Chromium	mg/L	0.1	NA		NA		NA		NA		NA		NA		NA	
Manganese	mg/L	1.1	NA		NA		NA		NA		NA		NA		NA	
Nickel	mg/L	0.49	NA		NA		NA		NA		NA		NA		NA	
Thallium	mg/L	0.002	NA		NA		NA		NA		NA		NA		NA	
Perchlorate (EPA 6850)																
Perchlorate	µg/L	17	< 2	U	< 2	U	62		28		25		< 10	U	< 2	U
Volatile Organic Compounds (8260C)																
1,1,2-Trichloroethane	µg/L	5	< 0.5	U	< 0.5	U	< 0.5	U	< 5	U	< 12	U	< 2.5	U	< 2.5	U
1,1-Dichloroethene	µg/L	7	0.65	J	5.8		2.3		27		37		< 2.5	U	3	J
1,2-Dichloroethane	µg/L	5	< 0.5	U	5.2		1.7		24		22	J	4.5	J	2.5	J
cis-1,2-Dichloroethene	µg/L	70	4.2		160		98		6,500		11,000		1,700	J-	960	
Methylene chloride	µg/L	5	< 1	U	< 1	U	< 1	U	< 10	U	< 25	U	< 5	U	< 5	U
Trichloroethene	µg/L	5	52		1,500		1,100		3,700		17,000		170		3,400	
Vinyl chloride	µg/L	2	0.69	J	4.1		5.3		530		< 12	U	750		< 2.5	U

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Injection Area			Mid Plume Area															
			16EW05		16EW06		16EW07		16EW08		16WW21				16WW29			
Location Code			16EW05		16EW06		16EW07		16EW08		16WW21				16WW29			
Sample ID			16EW05-200330		16EW06-200325		16EW07-200325		16EW08-200331		16WW21-200316				16WW21-200316-FD		16WW29-200330	
Sample Date			3/30/2020		3/25/2020		3/25/2020		3/31/2020		3/16/2020				3/16/2020		3/30/2020	
Sample Purpose			REG		REG		REG		REG		REG				FD		REG	
Analyte	Units	MCL/PCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual		
Dechlorinating Bacteria (Census)																		
Dehalococcoides	cells/mL	NV	5,060		NA		NA		NA		NA		NA		10.1			
Field Measurements																		
Dissolved oxygen	mg/L	NV	0.07		0.02		0.05		0.07		0.88		0.88		0.04			
Oxidation-Reduction Potential	mV	NV	-47		29		-37		-27		50		50		-44			
pH	STD UNIT	NV	5.25		4.52		5.1		5.20		7.89		7.89		4.96			
Dissolved Gases (RSK-175)																		
Ethane	µg/L	NV	9.16		NA		NA		NA		NA		NA		0.275	J		
Ethylene	µg/L	NV	2.22		NA		NA		NA		NA		NA		0.864	J		
Methane	µg/L	NV	248		NA		NA		NA		NA		NA		35.5			
General Chemistry (2320B/SM5310B/SW9056A)																		
Alkalinity	mg/L	NV	102	U	NA		NA		NA		NA		NA		65.2			
Bromide	mg/L	NV	5	U	NA		NA		< 0.5	U	0.206		0.209		1.16			
Nitrate	mg/L	NV	5	U	NA		NA		NA		NA		NA		< 0.1	U		
Sulfate	mg/L	NV	25	U	NA		NA		NA		NA		NA		1,560			
Total organic carbon	mg/L	NV	300		NA		NA		800		< 1.2	UJ	< 0.78	UJ	16			
Metals (SW6020)																		
Arsenic	mg/L	0.01	NA		NA		NA		NA		NA		NA		NA			
Chromium	mg/L	0.1	NA		NA		NA		NA		NA		NA		NA			
Manganese	mg/L	1.1	NA		NA		NA		NA		NA		NA		NA			
Nickel	mg/L	0.49	NA		NA		NA		NA		NA		NA		NA			
Thallium	mg/L	0.002	NA		NA		NA		NA		NA		NA		NA			
Perchlorate (EPA 6850)																		
Perchlorate	µg/L	17	< 20	U	< 10	U	< 10	U	< 20	U	< 2	U	< 2	U	< 2	U		
Volatile Organic Compounds (8260C)																		
1,1,2-Trichloroethane	µg/L	5	< 50	UJ	< 50	U	< 50	U	< 100	U	< 0.5	U	< 0.5	U	< 0.5	U		
1,1-Dichloroethene	µg/L	7	< 50	UJ	< 50	U	< 50	U	< 50	U	< 0.5	U	< 0.5	U	< 0.5	U		
1,2-Dichloroethane	µg/L	5	< 50	UJ	< 50	U	< 50	U	< 50	U	< 0.5	U	< 0.5	U	< 0.5	U		
cis-1,2-Dichloroethene	µg/L	70	< 50	UJ	160		< 50	U	< 50	U	< 0.5	U	< 0.5	U	< 0.5	U		
Methylene chloride	µg/L	5	< 100	UJ	< 100	U	< 100	U	< 100	U	< 1	U	< 1	U	< 1	U		
Trichloroethene	µg/L	5	< 50	UJ	< 50	U	100		52	J	1.3		1.1		< 0.5	U		
Vinyl chloride	µg/L	2	< 50	UJ	< 50	U	< 50	U	< 50	U	< 0.5	U	< 0.5	U	< 0.5	U		

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Injection Area			Mid Plume Area										MNA and LTM Performance Wells from RAWP Table 4-9			
Location Code			16WW30		16WW48				16WW49		16WW51		16WW13		16WW14	
Sample ID			16WW30-200330		16WW48-200330		16WW48-200330-FD		16WW49-200316		16WW51-200317		16WW13-200312		16WW14-200317	
Sample Date			3/30/2020		3/30/2020		3/30/2020		3/16/2020		3/17/2020		3/12/2020		3/17/2020	
Sample Purpose			REG		REG		FD		REG		REG		REG		REG	
Analyte	Units	MCL/PCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Dechlorinating Bacteria (Census)																
Dehalococcoides	cells/mL	NV	NA		1		NA		NA		NA		NA		NA	
Field Measurements																
Dissolved oxygen	mg/L	NV	0.06		0.08		0.08		0.08		0.07		2.47		0.03	
Oxidation-Reduction Potential	mV	NV	152		33		33		-38		-84		161		52	
pH	STD UNIT	NV	4.40		5.6		5.6		6.51		6.32		5.58		6.41	
Dissolved Gases (RSK-175)																
Ethane	µg/L	NV	NA		< 0.5	U	< 0.5	U	NA		NA		NA		NA	
Ethylene	µg/L	NV	NA		0.244	J	0.546	J	NA		NA		NA		NA	
Methane	µg/L	NV	NA		1.12		1.48		NA		NA		NA		NA	
General Chemistry (2320B/SM5310B/SW9056A)																
Alkalinity	mg/L	NV	NA		312		313		NA		NA		NA		NA	
Bromide	mg/L	NV	1.05		4.55		4.62		2.16		3.71		NA		NA	
Nitrate	mg/L	NV	NA		< 0.5	U	< 0.5	U	NA		NA		NA		NA	
Sulfate	mg/L	NV	NA		2,020		2,010		NA		NA		NA		NA	
Total organic carbon	mg/L	NV	5.23		9.82		9.5		5.22		4.43		NA		NA	
Metals (SW6020)																
Arsenic	mg/L	0.01	NA		NA		NA		NA		NA		NA		NA	
Chromium	mg/L	0.1	NA		NA		NA		NA		NA		NA		NA	
Manganese	mg/L	1.1	NA		NA		NA		NA		NA		NA		NA	
Nickel	mg/L	0.49	NA		NA		NA		NA		NA		NA		NA	
Thallium	mg/L	0.002	NA		NA		NA		NA		NA		NA		NA	
Perchlorate (EPA 6850)																
Perchlorate	µg/L	17	< 2	U	120		110		< 2	U	< 2	U	< 2	U	< 2	U
Volatile Organic Compounds (8260C)																
1,1,2-Trichloroethane	µg/L	5	< 0.5	U	< 10	U	< 10	U	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U
1,1-Dichloroethene	µg/L	7	< 0.5	U	12	J	13	J	0.77	J	1.4		< 0.5	U	< 0.5	U
1,2-Dichloroethane	µg/L	5	< 0.5	U	19	J	18	J	0.85	J	< 0.5	U	< 0.5	U	< 0.5	U
cis-1,2-Dichloroethene	µg/L	70	< 0.5	U	5,000		4,800		270		25		18		1.2	
Methylene chloride	µg/L	5	< 1	U	< 20	U	< 20	U	< 1	U	< 1	U	< 1	U	< 1	U
Trichloroethene	µg/L	5	14		7,100		6,900		8.3		830		7.5		33	
Vinyl chloride	µg/L	2	< 0.5	U	< 10	U	< 10	U	< 0.5	U	< 0.5	U	< 0.5	U	0.4	J

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Injection Area			MNA and LTM Performance Wells from RAWP Table 4-9													
			Location Code		16WW16		16WW23		16WW24				16WW25			
			Sample ID		16WW16-200311		16WW16-200311-FD		16WW23-200331		16WW24-200331		16WW24-200331-FD		16WW25-200316	
			Sample Date		3/11/2020		3/11/2020		3/31/2020		3/31/2020		3/31/2020		3/16/2020	
			Sample Purpose		REG		FD		REG		REG		FD		REG	
Analyte	Units	MCL/PCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual		
Dechlorinating Bacteria (Census)																
Dehalococcoides	cells/mL	NV	5.1		NA		NA		NA		NA		6.2			
Field Measurements																
Dissolved oxygen	mg/L	NV	0.44		0.44		0.08		0.04		0.04		0.05			
Oxidation-Reduction Potential	mV	NV	113		113		2		356		356		-38			
pH	STD UNIT	NV	6.59		6.59		4.53		4.78		4.78		6.20			
Dissolved Gases (RSK-175)																
Ethane	µg/L	NV	4.87		4.98		NA		NA		NA		0.371	J		
Ethylene	µg/L	NV	10.2		9.84		NA		NA		NA		2.26			
Methane	µg/L	NV	1,210		1,290		NA		NA		NA		22.1			
General Chemistry (2320B/SM5310B/SW9056A)																
Alkalinity	mg/L	NV	397		393		NA		NA		NA		32.4			
Bromide	mg/L	NV	4.51		4.62		NA		NA		NA		3.71	J		
Nitrate	mg/L	NV	< 0.1	U	< 0.1	U	NA		NA		NA		< 0.5	U		
Sulfate	mg/L	NV	433		437		NA		NA		NA		5,000			
Total organic carbon	mg/L	NV	4.85		4.97		NA		NA		NA		31.2			
Metals (SW6020)																
Arsenic	mg/L	0.01	NA		NA		NA		NA		NA		NA			
Chromium	mg/L	0.1	NA		NA		NA		NA		NA		NA			
Manganese	mg/L	1.1	NA		NA		NA		NA		NA		NA			
Nickel	mg/L	0.49	NA		NA		NA		NA		NA		NA			
Thallium	mg/L	0.002	NA		NA		NA		NA		NA		NA			
Perchlorate (EPA 6850)																
Perchlorate	µg/L	17	510		560		< 20	U	< 2	U	< 2	U	< 2	U		
Volatile Organic Compounds (8260C)																
1,1,2-Trichloroethane	µg/L	5	< 12	U	< 12	U	< 1	U	< 1	U	< 1	U	< 0.5	U		
1,1-Dichloroethene	µg/L	7	37		41		< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U		
1,2-Dichloroethane	µg/L	5	30		30		< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U		
cis-1,2-Dichloroethene	µg/L	70	13,000		13,000		< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U		
Methylene chloride	µg/L	5	< 25	U	< 25	U	< 1	U	< 1	U	< 1	U	< 1	U		
Trichloroethene	µg/L	5	27,000		28,000		< 0.5	U	< 0.5	U	< 0.5	U	0.85	J		
Vinyl chloride	µg/L	2	300		310		< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U		

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Injection Area			MNA and LTM Performance Wells from RAWP Table 4-9															
			16WW37		16WW38		16WW41		16WW43		16WW44		16WW46		16WW55			
Location Code			16WW37-200317		16WW38-200317		16WW41-200316		16WW43-200312		16WW44-200317		16WW46-200312		16WW55-200325			
Sample ID			3/17/2020		3/17/2020		3/16/2020		3/12/2020		3/17/2020		3/12/2020		3/25/2020			
Sample Date			REG		REG		REG		REG		REG		REG		REG			
Sample Purpose			Analyte	Units	MCL/PCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	
Dechlorinating Bacteria (Census)																		
Dehalococcoides			cells/mL	NV	NA		NA		< 0.5	U	NA		NA		NA		0.3	J
Field Measurements																		
Dissolved oxygen			mg/L	NV	0.08		0.07		0.09		1.37		0.03		0.61		0.05	
Oxidation-Reduction Potential			mV	NV	-11		-16		82		62		4		70		134	
pH			STD UNIT	NV	7.17		6.50		6.59		6.24		6.42		6.88		6.24	
Dissolved Gases (RSK-175)																		
Ethane			µg/L	NV	NA		NA		0.374	J	NA		NA		NA		0.607	J
Ethylene			µg/L	NV	NA		NA		9.96		NA		NA		NA		2.06	
Methane			µg/L	NV	NA		NA		16.3		NA		NA		NA		70.1	
General Chemistry (2320B/SM5310B/SW9056A)																		
Alkalinity			mg/L	NV	NA		NA		1,010		NA		NA		NA		381	
Bromide			mg/L	NV	NA		NA		< 0.5	U	NA		NA		NA		3.78	
Nitrate			mg/L	NV	NA		NA		< 0.5	U	NA		NA		NA		1.21	
Sulfate			mg/L	NV	NA		NA		8,060		NA		NA		NA		770	
Total organic carbon			mg/L	NV	NA		NA		44.8		NA		NA		NA		5.21	
Metals (SW6020)																		
Arsenic			mg/L	0.01	NA		NA		NA		NA		NA		NA		NA	
Chromium			mg/L	0.1	NA		NA		NA		NA		NA		NA		NA	
Manganese			mg/L	1.1	NA		NA		NA		NA		NA		NA		NA	
Nickel			mg/L	0.49	NA		NA		NA		NA		NA		NA		NA	
Thallium			mg/L	0.002	NA		NA		NA		NA		NA		NA		NA	
Perchlorate (EPA 6850)																		
Perchlorate			µg/L	17	< 2	U	< 2	U	310		< 2	U	< 2	U	< 2	U	360	
Volatile Organic Compounds (8260C)																		
1,1,2-Trichloroethane			µg/L	5	< 0.5	U	< 2.5	U	< 2.5	U	< 0.5	U	< 0.5	U	< 0.5	U	< 2.5	U
1,1-Dichloroethene			µg/L	7	0.82	J	13		14		< 0.5	U	< 0.5	U	< 0.5	U	10	
1,2-Dichloroethane			µg/L	5	< 0.5	U	< 2.5	U	4	J	< 0.5	U	< 0.5	U	< 0.5	U	5.8	
cis-1,2-Dichloroethene			µg/L	70	6.1		200		2,000		< 0.5	U	< 0.5	U	< 0.5	U	380	
Methylene chloride			µg/L	5	< 1	U	< 5	U	< 5	U	< 1	U	< 1	U	< 1	U	< 5	U
Trichloroethene			µg/L	5	110		3,000		6,400		0.61	J	< 0.5	U	2.7		4,300	
Vinyl chloride			µg/L	2	2.1		95		120		< 0.5	U	< 0.5	U	< 0.5	U	25	

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Injection Area			MNA and LTM Performance Wells from RAWP Table 4-9									
			16WW56		16WW57		16WW58					
Location Code			16WW56-200316		No Sample		No Sample					
Sample ID			3/16/2020									
Sample Date			REG									
Sample Purpose												
Analyte	Units	MCL/PCL	Result	Val Qual	Result	Val Qual	Result	Val Qual				
Dechlorinating Bacteria (Census)												
Dehalococcoides	cells/mL	NV	8.8		Not sampled due to wet conditions and downed trees blocking access to the wells		Not sampled due to wet conditions and downed trees blocking access to the wells					
Field Measurements												
Dissolved oxygen	mg/L	NV	0.55									
Oxidation-Reduction Potential	mV	NV	2									
pH	STD UNIT	NV	6.75									
Dissolved Gases (RSK-175)												
Ethane	µg/L	NV	0.417	J								
Ethylene	µg/L	NV	5.17									
Methane	µg/L	NV	4.94									
General Chemistry (2320B/SM5310B/SW9056A)												
Alkalinity	mg/L	NV	389									
Bromide	mg/L	NV	3.19									
Nitrate	mg/L	NV	< 0.5	U								
Sulfate	mg/L	NV	2,090									
Total organic carbon	mg/L	NV	10.7									
Metals (SW6020)												
Arsenic	mg/L	0.01	NA									
Chromium	mg/L	0.1	NA									
Manganese	mg/L	1.1	NA									
Nickel	mg/L	0.49	NA									
Thallium	mg/L	0.002	NA									
Perchlorate (EPA 6850)												
Perchlorate	µg/L	17	< 2	U								
Volatile Organic Compounds (8260C)												
1,1,2-Trichloroethane	µg/L	5	< 0.5	U								
1,1-Dichloroethene	µg/L	7	2.9									
1,2-Dichloroethane	µg/L	5	3.4									
cis-1,2-Dichloroethene	µg/L	70	44									
Methylene chloride	µg/L	5	< 1	U								
Trichloroethene	µg/L	5	520									
Vinyl chloride	µg/L	2	6.3									

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Injection Area			Surface Water							
			Location Code		16SW01		16SW02		16SW03	
			Sample ID		16SW01-200331		16SW02-200331		16SW03-200331	
			Sample Date		3/31/2020		3/31/2020		3/31/2020	
			Sample Purpose		REG		REG		REG	
Analyte	Units	MCL/PCL	Result	Val Qual	Result	Val Qual	Result	Val Qual		
Dechlorinating Bacteria (Census)										
Dehalococcoides	cells/mL	NV	NA		NA		NA			
Field Measurements										
Dissolved oxygen	mg/L	NV	NM		NM		NM			
Oxidation-Reduction Potential	mV	NV	NM		NM		NM			
pH	STD UNIT	NV	NM		NM		NM			
Dissolved Gases (RSK-175)										
Ethane	µg/L	NV	NA		NA		NA			
Ethylene	µg/L	NV	NA		NA		NA			
Methane	µg/L	NV	NA		NA		NA			
General Chemistry (2320B/SM5310B/SW9056A)										
Alkalinity	mg/L	NV	NA		NA		NA			
Bromide	mg/L	NV	NA		NA		NA			
Nitrate	mg/L	NV	NA		NA		NA			
Sulfate	mg/L	NV	NA		NA		NA			
Total organic carbon	mg/L	NV	NA		NA		NA			
Metals (SW6020)										
Arsenic	mg/L	0.01	0.00106	J	0.00102	J	0.0012	J		
Chromium	mg/L	0.1	0.00185	J	0.00138	J	0.00206	J		
Manganese	mg/L	1.1	0.123		0.114		0.136			
Nickel	mg/L	0.49	0.00397	J	0.00349	J	0.00436	J		
Thallium	mg/L	0.002	< 0.0005	U	< 0.0005	U	< 0.0005	U		
Perchlorate (EPA 6850)										
Perchlorate	µg/L	17	< 2	U	< 2	U	< 2	U		
Volatile Organic Compounds (8260C)										
1,1,2-Trichloroethane	µg/L	5	< 1	U	< 1	U	< 1	U		
1,1-Dichloroethene	µg/L	7	< 0.5	U	< 0.5	U	< 0.5	U		
1,2-Dichloroethane	µg/L	5	< 0.5	U	< 0.5	U	< 0.5	U		
cis-1,2-Dichloroethene	µg/L	70	< 0.5	U	< 0.5	U	< 0.5	U		
Methylene chloride	µg/L	5	< 1	U	< 1	U	< 1	U		
Trichloroethene	µg/L	5	< 0.5	U	< 0.5	U	< 0.5	U		
Vinyl chloride	µg/L	2	< 0.5	U	< 0.5	U	< 0.5	U		

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Notes:

Blue Highlighting Indicates the concentration exceeds the MCL/PCL

Some samples have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

J- - The analyte was positively identified; the associated numerical value is its approximate concentration with a low bias in the sample.

U - Undetected: The analyte was analyzed for, but not detected.

MCL - Maximum Contaminant Limit

PCL - Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level (used for perchlorate, manganese, and nickel where no MCL has been established)

mg/L - milligrams per liter

ug/L - micrograms per liter

ID - Identification

REG - Regular sample

FD - Field duplicate sample

< - The analyte was not detected above the concentration shown

NV - No MCL/PCL is shown for analytes that are not contaminants of concern

NA - Not analyzed

STD UNIT - standard pH Units

mV - millivolts

cells/mL - cells per milliliter