Nicholson GeoSolutions, LLC
3433 East Lake Drive
Centennial, CO 80121

June 1, 2021

Mr. Jon Armstrong
Berry Petroleum Company
5201 Truxtun Avenue #100
Bakersfield, CA 90399

Subject: Long Ridge J15 Pipeline Spills Surface Water Reconnaissance

Dear Jon:

Nicholson GeoSolutions LLC was retained by Berry Petroleum Company (Berry) to continue investigation of two produced water and condensate leaks from a pipeline near the J-15 well pad on Long Ridge, Garfield County, Colorado. The second spill occurred about 200 yards to the west of the first spill on the same pipeline. The initial excavation of impacted soils and rock and soil sampling of the excavation walls and floor were previously completed. This report provides the results of a field reconnaissance conducted in the prominent drainages to the south, southeast, northeast, and northwest of the first spill and the East Fork of Parachute Creek, water sampling of three springs, and sampling of one monitoring well at the site of the original spill. The four drainages are also potentially downgradient of the second spill.

Field Reconnaissance

Reconnaissance of the four drainages was conducted on May 8th, 2021. The purpose of the reconnaissance was to look for potential seeps or springs in the four drainages near the releases of produced water from the pipeline. The reconnaissance included walking down the two nearest drainages on either side of the release site on both north and south sides of the ridge axis. The reconnaissance routes, features observed, sampling locations, and surface water monitoring locations are shown on Figure 1. Observations from each transect are described below:

Northwest Drainage

The transect spanned approximately 2,600 feet from the top of the drainage to the upper cliff face in the Green River Formation. A spring was observed near the bottom of the drainage, just above the cliff face. The spring feeds into a developed stock pond. One sample (J15-NWSW-1) was collected from this spring.

Northeast Drainage

The transect spanned approximately 2,500 feet from the top of the drainage to the upper cliff face in the Green River Formation. A spring was observed approximately halfway down the drainage where shale beds are dissected by the drainage. The spring had previously been developed with a spring box; however, no flow was observed in the old infrastructure. Flow was present below the spring box and a sample was collected (J15-NESW-1). A second spring was observed near the bottom of the drainage, just above the cliff face, below the lower stock pond. One sample was collected from the lower spring (J15-NESW-2).

Southeast Drainage

The transect spanned approximately 4,500 feet from the top of the drainage to the upper cliff face in the Green River Formation. No springs were observed. A small seep was observed in shale layers just above the cliff face. The seep showed signs of relatively recent development, including installation of pond liner and plastic piping, however no water had accumulated in the stock pond. The seep did not provide enough flow to collect a sample.

Southwest Drainage

The transect spanned approximately 4,700 feet from the top of the drainage to the upper cliff face in the Green River Formation. No springs were observed. Minor water seepage was observed in shale layers just above the cliff face, however there was no observable flow and no sample could be collected.

East Fork of Parachute Creek

The upper reaches of the East Fork of Parachute Creek and Ben Good Creek below the spill sites were also inspected. Ben Good Creek and the East Fork were both dry.

Water Sampling

Spring water samples were collected from three locations during the reconnaissance as described above. Prior to water sampling, measurements of pH, SC, and T were made using a combination meter. The measurements were made by placing the probes for the meter into the flowing water or sample, allowing the readings to stabilize, and recording the results. In addition, one sample was collected from well MW-2 at the site of the first spill on May 7, 2021 to evaluate the current conditions. Samples were collected into new, pre-preserved sample containers provided by the laboratory. The sample bottles were labeled, placed in plastic zip-lock bags or bubble wrap, and placed immediately on ice in a cooler. The samples were shipped to the Pace Analytical National Laboratory in Mt. Juliet, Tennessee for analysis. Chain-of-custody procedures were followed during collection and shipping of the samples. The laboratory report is included in Appendix A.

Laboratory analyses consisted of all parameters listed on COGCC Table 915-1 and additional parameters including the following: BTEX and VOCs by EPA Method 8260B; PAHs by EPA Method 8270C; total metals by EPA Method 6010B and 6020; bromide, chloride, fluoride, nitrate, nitrite, and sulfate by EPA Method 9056A; nitrate-nitrite by EPA Method 353.2;

alkalinity by EPA Method 2320B; ammonia by EPA Method 350.1; total dissolved solids (TDS) by EPA Method 2540C; total phosphorous by EPA Method 365.4; methane, ethane, and ethene by Method RSK-175M; and TPH (diesel and gasoline range) by EPA Method 8015.

Spring Sample Results

The analytical results for the three spring samples collected from the northeast and northwest drainages are summarized in Table 1. The laboratory report is provided in Appendix A. All parameters are below the Table 915-1 standards for these samples.

Table 1 J-15 Drainages Spring Sample Results

		Sample ID and Date		
Parameter	**Table 915-1 Standards**	**J15-NESW-1 (May 8, 2021)**	**J15-NESW-2 (May 8, 2021)**	**J15-NWSW-1 (May 8, 2021)**
Field Parameters				
sp. conductance (µS/cm)		670	710	990
pH (standard units)		7.87	6.96	8.05
temperature (°C)		11.4	10.3	6.3
estimated flow (gpm)		1.0	0.5	1.0
Groundwater Inorganic Parameters				
TDS	500	350	352	500
chloride	250	32.1	31.3	125
sulfate	250	43.0	57.4	57.6
Organic Compounds in Groundwater				
benzene	0.005	<0.001	<0.001	<0.001
toluene	0.56	<0.001	<0.001	<0.001
ethylbenzene	0.7	<0.001	<0.001	<0.001
xylenes	1.4	<0.003	<0.003	<0.003
1,2,4-trimethylbenzene	0.067	<0.001	<0.001	<0.001
1,3,5-trimethylbenzene	0.067	<0.001	<0.001	<0.001
naphthalene	0.14	<0.005	<0.005	<0.005
Other Parameters				
total petroleum hydrocarbons – gasoline range		<0.1	<0.1	<0.1
total petroleum hydrocarbons – diesel range		<0.1	<0.1	<0.1
methane		<0.010	<0.010	<0.010
ethane		<0.013	<0.013	<0.013
ethene		<0.013	<0.013	<0.013
dissolved sodium (mg/l)		41.0	37.7	52.0
alkalinity		243	231	242

All values in mg/l

Well MW-2 Results

The analytical results for the well water sample from MW-2 are summarized in Table 2. The laboratory report is provided in Appendix A. For the discharge water from well MW-2, TDS (1,640 mg/l), chloride (694 mg/l), benzene (1.36 mg/l), toluene (6.80 mg/l), xylenes (9.40 mg/l), 1,2,4-trimethylbenzene (0.808 mg/l), and 1,3,5-trimethylbenzene (0.752 mg/l) exceeded the Table 915-1 standards. Gasoline-range TPH was reported at 39.9 mg/l and diesel-range TPH was reported at 3.89 mg/l. These compounds are all present in produced water and natural gas condensate liquids in this gas field.

Table 2 J-15 Well Water Sample Results

Parameter	Table 915-1 Standards	J15-MW-2 (May 7, 2021)
Groundwater Inorganic Parameters		
TDS	500	**1,640**
chloride	250	**694**
sulfate	250	8.52
Organic Compounds in Groundwater		
benzene	0.005	**1.36**
toluene	0.56	**6.80**
ethylbenzene	0.7	0.414
xylenes	1.4	**9.40**
1,2,4-trimethylbenzene	0.067	**0.808**
1,3,5-trimethylbenzene	0.067	**0.752**
naphthalene	0.14	<0.1
Other Parameters		
total petroleum hydrocarbons – gasoline range		39.9
total petroleum hydrocarbons – diesel range		3.89
methane		0.597
ethane		<0.013
ethene		<0.013
dissolved sodium (mg/l)		352
alkalinity		521

All values in mg/l Values in bold type exceed Table 915-1 standards

Nicholson GeoSolutions LLC has prepared this report using all available site data. If you have any questions please call me at 303-601-2023.

Nicholson GeoSolutions LLC

David K. Nicholson, P.G.
Principal Geologist

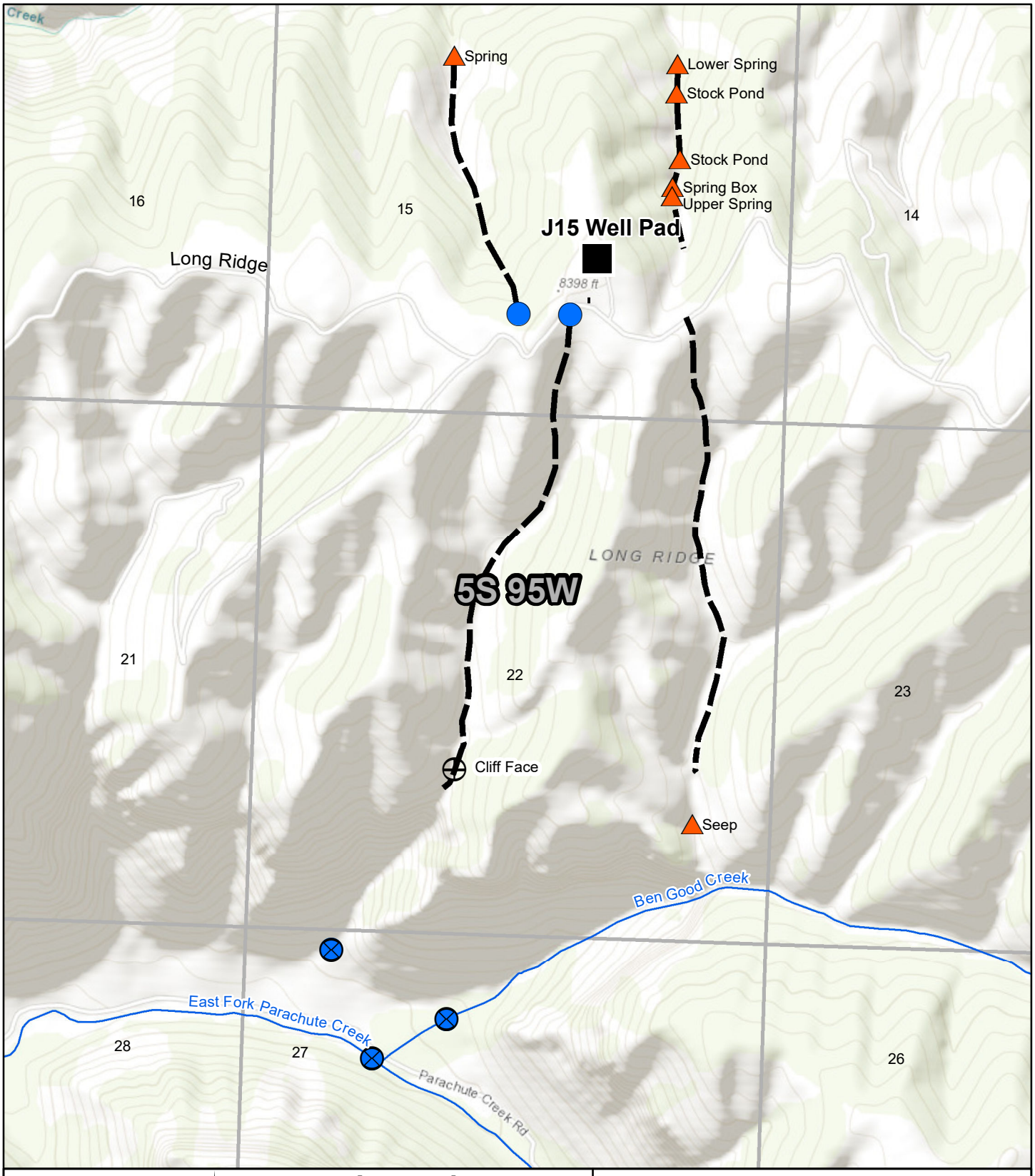

Figure 1

May 2021

GeoSolutions Nicholson

Legend

- Pad Location
- Spill Location
- Surface Water Monitoring Location (Dry)
- Reconnaissance Route

0 625 1,250 2,500 Feet

1" = 60'

Berry Petroleum Company

Long Ridge J-15 Spills Surface Water Monitoring Spring 2021

APPENDIX A
Laboratory Report

ANALYTICAL REPORT

May 21, 2021

Berry Petroleum - Denver, CO

Sample Delivery Group:	L1350793
Samples Received:	05/11/2021
Project Number:	
Description:	J15 Spill

Report To: Dave Nicholson
3433 E. Lake Dr
Centennial, CO 80121

Entire Report Reviewed By:

Mark W. Beasley
Project Manager

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

J15 MW-2 L1350793-01 GW

Collected by: DK Nichiolson | Collected date/time: 05/06/21 09:45 | Received date/time: 05/11/21 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1669627	1	05/13/21 03:15	05/13/21 05:30	MMF	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1671551	1	05/17/21 03:11	05/17/21 03:11	ARD	Mt. Juliet, TN
Wet Chemistry by Method 350.1	WG1669402	1	05/13/21 12:19	05/13/21 12:19	SL	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG1672250	1	05/20/21 18:13	05/20/21 18:13	JER	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1668340	1	05/12/21 01:58	05/12/21 01:58	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1668340	10	05/12/21 02:14	05/12/21 02:14	LBR	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1669760	1	05/14/21 11:56	05/14/21 18:41	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1670033	50	05/14/21 11:28	05/14/21 11:28	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1669120	1	05/13/21 10:44	05/13/21 10:44	CMS	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1670953	20	05/15/21 01:17	05/15/21 01:17	TPR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1671211	200	05/15/21 11:51	05/15/21 11:51	TPR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG1672100	1	05/18/21 10:26	05/18/21 13:47	WCR	Mt. Juliet, TN

J15 NESW-1 L1350793-02 GW

Collected by: DK Nichiolson | Collected date/time: 05/08/21 11:30 | Received date/time: 05/11/21 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1670931	1	05/14/21 16:15	05/14/21 17:03	MMF	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1671551	1	05/17/21 03:19	05/17/21 03:19	ARD	Mt. Juliet, TN
Wet Chemistry by Method 350.1	WG1669402	1	05/13/21 12:24	05/13/21 12:24	SL	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG1672250	20	05/20/21 18:17	05/20/21 18:17	JER	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1668340	1	05/12/21 02:31	05/12/21 02:31	LBR	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1669760	1	05/14/21 11:56	05/14/21 18:44	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1670033	1	05/14/21 10:23	05/14/21 10:23	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1669120	1	05/13/21 10:49	05/13/21 10:49	CMS	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1670953	1	05/14/21 20:50	05/14/21 20:50	TPR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG1672100	1	05/18/21 10:26	05/18/21 15:28	WCR	Mt. Juliet, TN

J15 NESW-2 L1350793-03 GW

Collected by: DK Nichiolson | Collected date/time: 05/08/21 12:00 | Received date/time: 05/11/21 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1670931	1	05/14/21 16:15	05/14/21 17:03	MMF	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1671551	1	05/17/21 03:28	05/17/21 03:28	ARD	Mt. Juliet, TN
Wet Chemistry by Method 350.1	WG1669402	1	05/13/21 13:16	05/13/21 13:16	SL	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG1672250	50	05/20/21 18:18	05/20/21 18:18	JER	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1668340	1	05/12/21 03:03	05/12/21 03:03	LBR	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1669760	1	05/14/21 11:56	05/14/21 18:48	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1670033	1	05/14/21 10:45	05/14/21 10:45	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1669120	1	05/13/21 10:52	05/13/21 10:52	CMS	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1670953	1	05/14/21 21:10	05/14/21 21:10	TPR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG1672100	1	05/18/21 10:26	05/18/21 14:28	WCR	Mt. Juliet, TN

J15 NWSW-1 L1350793-04 GW

Collected by: DK Nichiolson | Collected date/time: 05/08/21 14:00 | Received date/time: 05/11/21 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1670931	1	05/14/21 16:15	05/14/21 17:03	MMF	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1671551	1	05/17/21 03:37	05/17/21 03:37	ARD	Mt. Juliet, TN
Wet Chemistry by Method 350.1	WG1669402	1	05/13/21 13:17	05/13/21 13:17	SL	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG1672250	1	05/20/21 18:19	05/20/21 18:19	JER	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1668340	1	05/12/21 05:15	05/12/21 05:15	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1668340	5	05/12/21 05:47	05/12/21 05:47	LBR	Mt. Juliet, TN

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

J15 NWSW-1 L1350793-04 GW

Collected by	Collected date/time	Received date/time
DK Nichiolson	05/08/21 14:00	05/11/21 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020	WG1669760	1	05/14/21 11:56	05/14/21 18:51	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1670033	1	05/14/21 11:06	05/14/21 11:06	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1669120	1	05/13/21 10:57	05/13/21 10:57	CMS	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1671258	1	05/15/21 15:06	05/15/21 15:06	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG1672100	1	05/18/21 10:26	05/18/21 14:48	WCR	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Mark W. Beasley
Project Manager

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	1640		20.0	1	05/13/2021 05:30	WG1669627

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Alkalinity	521		20.0	1	05/17/2021 03:11	WG1671551

Sample Narrative:

L1350793-01 WG1671551: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 350.1

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Ammonia Nitrogen	ND		0.250	1	05/13/2021 12:19	WG1669402

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Nitrate-Nitrite	ND		0.100	1	05/20/2021 18:13	WG1672250

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	694		10.0	10	05/12/2021 02:14	WG1668340
Fluoride	ND		0.150	1	05/12/2021 01:58	WG1668340
Nitrate as (N)	ND	T8	0.100	1	05/12/2021 01:58	WG1668340
Nitrite as (N)	ND	T8	0.100	1	05/12/2021 01:58	WG1668340
Sulfate	8.52		5.00	1	05/12/2021 01:58	WG1668340

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Sodium,Dissolved	352		2.00	1	05/14/2021 18:41	WG1669760

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
TPH (GC/FID) Low Fraction	39.9		5.00	50	05/14/2021 11:28	WG1670033
(S) a,a,a-Trifluorotoluene(FID)	*99.6*		*78.0-120*		*05/14/2021 11:28*	WG1670033

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Methane	0.597		0.0100	1	05/13/2021 10:44	WG1669120
Ethane	ND		0.0130	1	05/13/2021 10:44	WG1669120
Ethene	ND		0.0130	1	05/13/2021 10:44	WG1669120

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Acetone	1.98		1.00	20	05/15/2021 01:17	WG1670953
Acrolein	ND		1.00	20	05/15/2021 01:17	WG1670953
Acrylonitrile	ND		0.200	20	05/15/2021 01:17	WG1670953
Benzene	1.36		0.0200	20	05/15/2021 01:17	WG1670953
Bromobenzene	ND		0.0200	20	05/15/2021 01:17	WG1670953
Bromodichloromethane	ND		0.0200	20	05/15/2021 01:17	WG1670953
Bromoform	ND		0.0200	20	05/15/2021 01:17	WG1670953
Bromomethane	ND		0.100	20	05/15/2021 01:17	WG1670953
n-Butylbenzene	ND		0.0200	20	05/15/2021 01:17	WG1670953
sec-Butylbenzene	ND		0.0200	20	05/15/2021 01:17	WG1670953
tert-Butylbenzene	ND		0.0200	20	05/15/2021 01:17	WG1670953
Carbon tetrachloride	ND		0.0200	20	05/15/2021 01:17	WG1670953
Chlorobenzene	ND		0.0200	20	05/15/2021 01:17	WG1670953
Chlorodibromomethane	ND		0.0200	20	05/15/2021 01:17	WG1670953
Chloroethane	ND		0.100	20	05/15/2021 01:17	WG1670953
Chloroform	ND		0.100	20	05/15/2021 01:17	WG1670953
Chloromethane	ND		0.0500	20	05/15/2021 01:17	WG1670953
2-Chlorotoluene	0.0806		0.0200	20	05/15/2021 01:17	WG1670953
4-Chlorotoluene	ND		0.0200	20	05/15/2021 01:17	WG1670953
1,2-Dibromo-3-Chloropropane	ND		0.100	20	05/15/2021 01:17	WG1670953
1,2-Dibromoethane	ND		0.0200	20	05/15/2021 01:17	WG1670953
Dibromomethane	ND		0.0200	20	05/15/2021 01:17	WG1670953
1,2-Dichlorobenzene	ND		0.0200	20	05/15/2021 01:17	WG1670953
1,3-Dichlorobenzene	ND		0.0200	20	05/15/2021 01:17	WG1670953
1,4-Dichlorobenzene	ND		0.0200	20	05/15/2021 01:17	WG1670953
Dichlorodifluoromethane	ND		0.100	20	05/15/2021 01:17	WG1670953
1,1-Dichloroethane	ND		0.0200	20	05/15/2021 01:17	WG1670953
1,2-Dichloroethane	ND		0.0200	20	05/15/2021 01:17	WG1670953
1,1-Dichloroethene	ND		0.0200	20	05/15/2021 01:17	WG1670953
cis-1,2-Dichloroethene	ND		0.0200	20	05/15/2021 01:17	WG1670953
trans-1,2-Dichloroethene	ND		0.0200	20	05/15/2021 01:17	WG1670953
1,2-Dichloropropane	ND		0.0200	20	05/15/2021 01:17	WG1670953
1,1-Dichloropropene	ND		0.0200	20	05/15/2021 01:17	WG1670953
1,3-Dichloropropane	ND		0.0200	20	05/15/2021 01:17	WG1670953
cis-1,3-Dichloropropene	ND		0.0200	20	05/15/2021 01:17	WG1670953
trans-1,3-Dichloropropene	ND		0.0200	20	05/15/2021 01:17	WG1670953
2,2-Dichloropropane	ND		0.0200	20	05/15/2021 01:17	WG1670953
Di-isopropyl ether	ND		0.0200	20	05/15/2021 01:17	WG1670953
Ethylbenzene	0.414		0.0200	20	05/15/2021 01:17	WG1670953
Hexachloro-1,3-butadiene	ND		0.0200	20	05/15/2021 01:17	WG1670953
Isopropylbenzene	0.0331		0.0200	20	05/15/2021 01:17	WG1670953
p-Isopropyltoluene	0.0444		0.0200	20	05/15/2021 01:17	WG1670953
2-Butanone (MEK)	ND		0.200	20	05/15/2021 01:17	WG1670953
Methylene Chloride	ND		0.100	20	05/15/2021 01:17	WG1670953
4-Methyl-2-pentanone (MIBK)	ND		0.200	20	05/15/2021 01:17	WG1670953
Methyl tert-butyl ether	ND		0.0200	20	05/15/2021 01:17	WG1670953
Naphthalene	ND		0.100	20	05/15/2021 01:17	WG1670953
n-Propylbenzene	0.0262		0.0200	20	05/15/2021 01:17	WG1670953
Styrene	ND		0.0200	20	05/15/2021 01:17	WG1670953
1,1,1,2-Tetrachloroethane	ND		0.0200	20	05/15/2021 01:17	WG1670953
1,1,2,2-Tetrachloroethane	ND		0.0200	20	05/15/2021 01:17	WG1670953
1,1,2-Trichlorotrifluoroethane	ND		0.0200	20	05/15/2021 01:17	WG1670953
Tetrachloroethene	ND		0.0200	20	05/15/2021 01:17	WG1670953
Toluene	6.80		0.200	200	05/15/2021 11:51	WG1671211
1,2,3-Trichlorobenzene	ND		0.0200	20	05/15/2021 01:17	WG1670953
1,2,4-Trichlorobenzene	ND		0.0200	20	05/15/2021 01:17	WG1670953

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	ND		0.0200	20	05/15/2021 01:17	WG1670953
1,1,2-Trichloroethane	ND		0.0200	20	05/15/2021 01:17	WG1670953
Trichloroethene	ND		0.0200	20	05/15/2021 01:17	WG1670953
Trichlorofluoromethane	ND		0.100	20	05/15/2021 01:17	WG1670953
1,2,3-Trichloropropane	ND		0.0500	20	05/15/2021 01:17	WG1670953
1,2,4-Trimethylbenzene	0.808		0.0200	20	05/15/2021 01:17	WG1670953
1,2,3-Trimethylbenzene	0.155		0.0200	20	05/15/2021 01:17	WG1670953
1,3,5-Trimethylbenzene	0.752		0.0200	20	05/15/2021 01:17	WG1670953
Vinyl chloride	ND		0.0200	20	05/15/2021 01:17	WG1670953
Xylenes, Total	9.40		0.0600	20	05/15/2021 01:17	WG1670953
(S) Toluene-d8	*110*		*80.0-120*		*05/15/2021 01:17*	WG1670953
(S) Toluene-d8	*99.2*		*80.0-120*		*05/15/2021 11:51*	WG1671211
(S) 4-Bromofluorobenzene	*109*		*77.0-126*		*05/15/2021 01:17*	WG1670953
(S) 4-Bromofluorobenzene	*97.4*		*77.0-126*		*05/15/2021 11:51*	WG1671211
(S) 1,2-Dichloroethane-d4	*93.8*		*70.0-130*		*05/15/2021 01:17*	WG1670953
(S) 1,2-Dichloroethane-d4	*107*		*70.0-130*		*05/15/2021 11:51*	WG1671211

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	3.89		0.100	1	05/18/2021 13:47	WG1672100
(S) o-Terphenyl	*104*		*31.0-160*		*05/18/2021 13:47*	WG1672100

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	350		10.0	1	05/14/2021 17:03	WG1670931

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Alkalinity	243		20.0	1	05/17/2021 03:19	WG1671551

Sample Narrative:

L1350793-02 WG1671551: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 350.1

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Ammonia Nitrogen	ND		0.250	1	05/13/2021 12:24	WG1669402

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Nitrate-Nitrite	38.0		2.00	20	05/20/2021 18:17	WG1672250

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	32.1		1.00	1	05/12/2021 02:31	WG1668340
Fluoride	ND		0.150	1	05/12/2021 02:31	WG1668340
Nitrate as (N)	0.465	T8	0.100	1	05/12/2021 02:31	WG1668340
Nitrite as (N)	ND	T8	0.100	1	05/12/2021 02:31	WG1668340
Sulfate	43.0		5.00	1	05/12/2021 02:31	WG1668340

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Sodium,Dissolved	41.0		2.00	1	05/14/2021 18:44	WG1669760

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
TPH (GC/FID) Low Fraction	ND		0.100	1	05/14/2021 10:23	WG1670033
(S) a,a,a-Trifluorotoluene(FID)	*97.2*		*78.0-120*		*05/14/2021 10:23*	WG1670033

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Methane	ND		0.0100	1	05/13/2021 10:49	WG1669120
Ethane	ND		0.0130	1	05/13/2021 10:49	WG1669120
Ethene	ND		0.0130	1	05/13/2021 10:49	WG1669120

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Acetone	ND		0.0500	1	05/14/2021 20:50	WG1670953
Acrolein	ND		0.0500	1	05/14/2021 20:50	WG1670953
Acrylonitrile	ND		0.0100	1	05/14/2021 20:50	WG1670953
Benzene	ND		0.00100	1	05/14/2021 20:50	WG1670953
Bromobenzene	ND		0.00100	1	05/14/2021 20:50	WG1670953
Bromodichloromethane	ND		0.00100	1	05/14/2021 20:50	WG1670953
Bromoform	ND		0.00100	1	05/14/2021 20:50	WG1670953
Bromomethane	ND		0.00500	1	05/14/2021 20:50	WG1670953
n-Butylbenzene	ND		0.00100	1	05/14/2021 20:50	WG1670953
sec-Butylbenzene	ND		0.00100	1	05/14/2021 20:50	WG1670953
tert-Butylbenzene	ND		0.00100	1	05/14/2021 20:50	WG1670953
Carbon tetrachloride	ND		0.00100	1	05/14/2021 20:50	WG1670953
Chlorobenzene	ND		0.00100	1	05/14/2021 20:50	WG1670953
Chlorodibromomethane	ND		0.00100	1	05/14/2021 20:50	WG1670953
Chloroethane	ND		0.00500	1	05/14/2021 20:50	WG1670953
Chloroform	ND		0.00500	1	05/14/2021 20:50	WG1670953
Chloromethane	ND		0.00250	1	05/14/2021 20:50	WG1670953
2-Chlorotoluene	ND		0.00100	1	05/14/2021 20:50	WG1670953
4-Chlorotoluene	ND		0.00100	1	05/14/2021 20:50	WG1670953
1,2-Dibromo-3-Chloropropane	ND		0.00500	1	05/14/2021 20:50	WG1670953
1,2-Dibromoethane	ND		0.00100	1	05/14/2021 20:50	WG1670953
Dibromomethane	ND		0.00100	1	05/14/2021 20:50	WG1670953
1,2-Dichlorobenzene	ND		0.00100	1	05/14/2021 20:50	WG1670953
1,3-Dichlorobenzene	ND		0.00100	1	05/14/2021 20:50	WG1670953
1,4-Dichlorobenzene	ND		0.00100	1	05/14/2021 20:50	WG1670953
Dichlorodifluoromethane	ND		0.00500	1	05/14/2021 20:50	WG1670953
1,1-Dichloroethane	ND		0.00100	1	05/14/2021 20:50	WG1670953
1,2-Dichloroethane	ND		0.00100	1	05/14/2021 20:50	WG1670953
1,1-Dichloroethene	ND		0.00100	1	05/14/2021 20:50	WG1670953
cis-1,2-Dichloroethene	ND		0.00100	1	05/14/2021 20:50	WG1670953
trans-1,2-Dichloroethene	ND		0.00100	1	05/14/2021 20:50	WG1670953
1,2-Dichloropropane	ND		0.00100	1	05/14/2021 20:50	WG1670953
1,1-Dichloropropene	ND		0.00100	1	05/14/2021 20:50	WG1670953
1,3-Dichloropropane	ND		0.00100	1	05/14/2021 20:50	WG1670953
cis-1,3-Dichloropropene	ND		0.00100	1	05/14/2021 20:50	WG1670953
trans-1,3-Dichloropropene	ND		0.00100	1	05/14/2021 20:50	WG1670953
2,2-Dichloropropane	ND		0.00100	1	05/14/2021 20:50	WG1670953
Di-isopropyl ether	ND		0.00100	1	05/14/2021 20:50	WG1670953
Ethylbenzene	ND		0.00100	1	05/14/2021 20:50	WG1670953
Hexachloro-1,3-butadiene	ND		0.00100	1	05/14/2021 20:50	WG1670953
Isopropylbenzene	ND		0.00100	1	05/14/2021 20:50	WG1670953
p-Isopropyltoluene	ND		0.00100	1	05/14/2021 20:50	WG1670953
2-Butanone (MEK)	ND		0.0100	1	05/14/2021 20:50	WG1670953
Methylene Chloride	ND		0.00500	1	05/14/2021 20:50	WG1670953
4-Methyl-2-pentanone (MIBK)	ND		0.0100	1	05/14/2021 20:50	WG1670953
Methyl tert-butyl ether	ND		0.00100	1	05/14/2021 20:50	WG1670953
Naphthalene	ND		0.00500	1	05/14/2021 20:50	WG1670953
n-Propylbenzene	ND		0.00100	1	05/14/2021 20:50	WG1670953
Styrene	ND		0.00100	1	05/14/2021 20:50	WG1670953
1,1,1,2-Tetrachloroethane	ND		0.00100	1	05/14/2021 20:50	WG1670953
1,1,2,2-Tetrachloroethane	ND		0.00100	1	05/14/2021 20:50	WG1670953
1,1,2-Trichlorotrifluoroethane	ND		0.00100	1	05/14/2021 20:50	WG1670953
Tetrachloroethene	ND		0.00100	1	05/14/2021 20:50	WG1670953
Toluene	ND		0.00100	1	05/14/2021 20:50	WG1670953
1,2,3-Trichlorobenzene	ND		0.00100	1	05/14/2021 20:50	WG1670953
1,2,4-Trichlorobenzene	ND		0.00100	1	05/14/2021 20:50	WG1670953

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	ND		0.00100	1	05/14/2021 20:50	WG1670953
1,1,2-Trichloroethane	ND		0.00100	1	05/14/2021 20:50	WG1670953
Trichloroethene	ND		0.00100	1	05/14/2021 20:50	WG1670953
Trichlorofluoromethane	ND		0.00500	1	05/14/2021 20:50	WG1670953
1,2,3-Trichloropropane	ND		0.00250	1	05/14/2021 20:50	WG1670953
1,2,4-Trimethylbenzene	ND		0.00100	1	05/14/2021 20:50	WG1670953
1,2,3-Trimethylbenzene	ND		0.00100	1	05/14/2021 20:50	WG1670953
1,3,5-Trimethylbenzene	ND		0.00100	1	05/14/2021 20:50	WG1670953
Vinyl chloride	ND		0.00100	1	05/14/2021 20:50	WG1670953
Xylenes, Total	ND		0.00300	1	05/14/2021 20:50	WG1670953
(S) Toluene-d8	*107*		*80.0-120*		*05/14/2021 20:50*	WG1670953
(S) 4-Bromofluorobenzene	*102*		*77.0-126*		*05/14/2021 20:50*	WG1670953
(S) 1,2-Dichloroethane-d4	*89.6*		*70.0-130*		*05/14/2021 20:50*	WG1670953

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		0.100	1	05/18/2021 15:28	WG1672100
(S) o-Terphenyl	*91.1*		*31.0-160*		*05/18/2021 15:28*	WG1672100

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	352		10.0	1	05/14/2021 17:03	WG1670931

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Alkalinity	231		20.0	1	05/17/2021 03:28	WG1671551

Sample Narrative:

L1350793-03 WG1671551: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 350.1

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Ammonia Nitrogen	ND		0.250	1	05/13/2021 13:16	WG1669402

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Nitrate-Nitrite	39.1		5.00	50	05/20/2021 18:18	WG1672250

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	31.3		1.00	1	05/12/2021 03:03	WG1668340
Fluoride	ND		0.150	1	05/12/2021 03:03	WG1668340
Nitrate as (N)	ND	T8	0.100	1	05/12/2021 03:03	WG1668340
Nitrite as (N)	ND	T8	0.100	1	05/12/2021 03:03	WG1668340
Sulfate	57.4		5.00	1	05/12/2021 03:03	WG1668340

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Sodium,Dissolved	37.7		2.00	1	05/14/2021 18:48	WG1669760

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
TPH (GC/FID) Low Fraction	ND		0.100	1	05/14/2021 10:45	WG1670033
(S) a,a,a-Trifluorotoluene(FID)	*97.7*		*78.0-120*		*05/14/2021 10:45*	WG1670033

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Methane	ND		0.0100	1	05/13/2021 10:52	WG1669120
Ethane	ND		0.0130	1	05/13/2021 10:52	WG1669120
Ethene	ND		0.0130	1	05/13/2021 10:52	WG1669120

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Acetone	ND		0.0500	1	05/14/2021 21:10	WG1670953
Acrolein	ND		0.0500	1	05/14/2021 21:10	WG1670953
Acrylonitrile	ND		0.0100	1	05/14/2021 21:10	WG1670953
Benzene	ND		0.00100	1	05/14/2021 21:10	WG1670953
Bromobenzene	ND		0.00100	1	05/14/2021 21:10	WG1670953
Bromodichloromethane	ND		0.00100	1	05/14/2021 21:10	WG1670953
Bromoform	ND		0.00100	1	05/14/2021 21:10	WG1670953
Bromomethane	ND		0.00500	1	05/14/2021 21:10	WG1670953
n-Butylbenzene	ND		0.00100	1	05/14/2021 21:10	WG1670953
sec-Butylbenzene	ND		0.00100	1	05/14/2021 21:10	WG1670953
tert-Butylbenzene	ND		0.00100	1	05/14/2021 21:10	WG1670953
Carbon tetrachloride	ND		0.00100	1	05/14/2021 21:10	WG1670953
Chlorobenzene	ND		0.00100	1	05/14/2021 21:10	WG1670953
Chlorodibromomethane	ND		0.00100	1	05/14/2021 21:10	WG1670953
Chloroethane	ND		0.00500	1	05/14/2021 21:10	WG1670953
Chloroform	ND		0.00500	1	05/14/2021 21:10	WG1670953
Chloromethane	ND		0.00250	1	05/14/2021 21:10	WG1670953
2-Chlorotoluene	ND		0.00100	1	05/14/2021 21:10	WG1670953
4-Chlorotoluene	ND		0.00100	1	05/14/2021 21:10	WG1670953
1,2-Dibromo-3-Chloropropane	ND		0.00500	1	05/14/2021 21:10	WG1670953
1,2-Dibromoethane	ND		0.00100	1	05/14/2021 21:10	WG1670953
Dibromomethane	ND		0.00100	1	05/14/2021 21:10	WG1670953
1,2-Dichlorobenzene	ND		0.00100	1	05/14/2021 21:10	WG1670953
1,3-Dichlorobenzene	ND		0.00100	1	05/14/2021 21:10	WG1670953
1,4-Dichlorobenzene	ND		0.00100	1	05/14/2021 21:10	WG1670953
Dichlorodifluoromethane	ND		0.00500	1	05/14/2021 21:10	WG1670953
1,1-Dichloroethane	ND		0.00100	1	05/14/2021 21:10	WG1670953
1,2-Dichloroethane	ND		0.00100	1	05/14/2021 21:10	WG1670953
1,1-Dichloroethene	ND		0.00100	1	05/14/2021 21:10	WG1670953
cis-1,2-Dichloroethene	ND		0.00100	1	05/14/2021 21:10	WG1670953
trans-1,2-Dichloroethene	ND		0.00100	1	05/14/2021 21:10	WG1670953
1,2-Dichloropropane	ND		0.00100	1	05/14/2021 21:10	WG1670953
1,1-Dichloropropene	ND		0.00100	1	05/14/2021 21:10	WG1670953
1,3-Dichloropropane	ND		0.00100	1	05/14/2021 21:10	WG1670953
cis-1,3-Dichloropropene	ND		0.00100	1	05/14/2021 21:10	WG1670953
trans-1,3-Dichloropropene	ND		0.00100	1	05/14/2021 21:10	WG1670953
2,2-Dichloropropane	ND		0.00100	1	05/14/2021 21:10	WG1670953
Di-isopropyl ether	ND		0.00100	1	05/14/2021 21:10	WG1670953
Ethylbenzene	ND		0.00100	1	05/14/2021 21:10	WG1670953
Hexachloro-1,3-butadiene	ND		0.00100	1	05/14/2021 21:10	WG1670953
Isopropylbenzene	ND		0.00100	1	05/14/2021 21:10	WG1670953
p-Isopropyltoluene	ND		0.00100	1	05/14/2021 21:10	WG1670953
2-Butanone (MEK)	ND		0.0100	1	05/14/2021 21:10	WG1670953
Methylene Chloride	ND		0.00500	1	05/14/2021 21:10	WG1670953
4-Methyl-2-pentanone (MIBK)	ND		0.0100	1	05/14/2021 21:10	WG1670953
Methyl tert-butyl ether	ND		0.00100	1	05/14/2021 21:10	WG1670953
Naphthalene	ND		0.00500	1	05/14/2021 21:10	WG1670953
n-Propylbenzene	ND		0.00100	1	05/14/2021 21:10	WG1670953
Styrene	ND		0.00100	1	05/14/2021 21:10	WG1670953
1,1,1,2-Tetrachloroethane	ND		0.00100	1	05/14/2021 21:10	WG1670953
1,1,2,2-Tetrachloroethane	ND		0.00100	1	05/14/2021 21:10	WG1670953
1,1,2-Trichlorotrifluoroethane	ND		0.00100	1	05/14/2021 21:10	WG1670953
Tetrachloroethene	ND		0.00100	1	05/14/2021 21:10	WG1670953
Toluene	ND		0.00100	1	05/14/2021 21:10	WG1670953
1,2,3-Trichlorobenzene	ND		0.00100	1	05/14/2021 21:10	WG1670953
1,2,4-Trichlorobenzene	ND		0.00100	1	05/14/2021 21:10	WG1670953

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	ND		0.00100	1	05/14/2021 21:10	WG1670953
1,1,2-Trichloroethane	ND		0.00100	1	05/14/2021 21:10	WG1670953
Trichloroethene	ND		0.00100	1	05/14/2021 21:10	WG1670953
Trichlorofluoromethane	ND		0.00500	1	05/14/2021 21:10	WG1670953
1,2,3-Trichloropropane	ND		0.00250	1	05/14/2021 21:10	WG1670953
1,2,4-Trimethylbenzene	ND		0.00100	1	05/14/2021 21:10	WG1670953
1,2,3-Trimethylbenzene	ND		0.00100	1	05/14/2021 21:10	WG1670953
1,3,5-Trimethylbenzene	ND		0.00100	1	05/14/2021 21:10	WG1670953
Vinyl chloride	ND		0.00100	1	05/14/2021 21:10	WG1670953
Xylenes, Total	ND		0.00300	1	05/14/2021 21:10	WG1670953
(S) Toluene-d8	*111*		*80.0-120*		*05/14/2021 21:10*	WG1670953
(S) 4-Bromofluorobenzene	*108*		*77.0-126*		*05/14/2021 21:10*	WG1670953
(S) 1,2-Dichloroethane-d4	*90.8*		*70.0-130*		*05/14/2021 21:10*	WG1670953

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		0.100	1	05/18/2021 14:28	WG1672100
(S) o-Terphenyl	*104*		*31.0-160*		*05/18/2021 14:28*	WG1672100

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	500		10.0	1	05/14/2021 17:03	WG1670931

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Alkalinity	242		20.0	1	05/17/2021 03:37	WG1671551

Sample Narrative:

L1350793-04 WG1671551: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 350.1

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Ammonia Nitrogen	ND		0.250	1	05/13/2021 13:17	WG1669402

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Nitrate-Nitrite	0.909		0.100	1	05/20/2021 18:19	WG1672250

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	125		5.00	5	05/12/2021 05:47	WG1668340
Fluoride	ND		0.150	1	05/12/2021 05:15	WG1668340
Nitrate as (N)	0.857	T8	0.100	1	05/12/2021 05:15	WG1668340
Nitrite as (N)	ND	T8	0.100	1	05/12/2021 05:15	WG1668340
Sulfate	57.6		5.00	1	05/12/2021 05:15	WG1668340

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Sodium,Dissolved	52.0		2.00	1	05/14/2021 18:51	WG1669760

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
TPH (GC/FID) Low Fraction	ND		0.100	1	05/14/2021 11:06	WG1670033
(S) a,a,a-Trifluorotoluene(FID)	*98.3*		*78.0-120*		*05/14/2021 11:06*	WG1670033

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Methane	ND		0.0100	1	05/13/2021 10:57	WG1669120
Ethane	ND		0.0130	1	05/13/2021 10:57	WG1669120
Ethene	ND		0.0130	1	05/13/2021 10:57	WG1669120

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Acetone	ND		0.0500	1	05/15/2021 15:06	WG1671258
Acrolein	ND		0.0500	1	05/15/2021 15:06	WG1671258
Acrylonitrile	ND		0.0100	1	05/15/2021 15:06	WG1671258
Benzene	ND		0.00100	1	05/15/2021 15:06	WG1671258
Bromobenzene	ND		0.00100	1	05/15/2021 15:06	WG1671258
Bromodichloromethane	ND		0.00100	1	05/15/2021 15:06	WG1671258
Bromoform	ND		0.00100	1	05/15/2021 15:06	WG1671258
Bromomethane	ND	J4	0.00500	1	05/15/2021 15:06	WG1671258
n-Butylbenzene	ND		0.00100	1	05/15/2021 15:06	WG1671258
sec-Butylbenzene	ND		0.00100	1	05/15/2021 15:06	WG1671258
tert-Butylbenzene	ND		0.00100	1	05/15/2021 15:06	WG1671258
Carbon tetrachloride	ND		0.00100	1	05/15/2021 15:06	WG1671258
Chlorobenzene	ND		0.00100	1	05/15/2021 15:06	WG1671258
Chlorodibromomethane	ND		0.00100	1	05/15/2021 15:06	WG1671258
Chloroethane	ND		0.00500	1	05/15/2021 15:06	WG1671258
Chloroform	ND		0.00500	1	05/15/2021 15:06	WG1671258
Chloromethane	ND		0.00250	1	05/15/2021 15:06	WG1671258
2-Chlorotoluene	ND		0.00100	1	05/15/2021 15:06	WG1671258
4-Chlorotoluene	ND		0.00100	1	05/15/2021 15:06	WG1671258
1,2-Dibromo-3-Chloropropane	ND		0.00500	1	05/15/2021 15:06	WG1671258
1,2-Dibromoethane	ND		0.00100	1	05/15/2021 15:06	WG1671258
Dibromomethane	ND		0.00100	1	05/15/2021 15:06	WG1671258
1,2-Dichlorobenzene	ND		0.00100	1	05/15/2021 15:06	WG1671258
1,3-Dichlorobenzene	ND		0.00100	1	05/15/2021 15:06	WG1671258
1,4-Dichlorobenzene	ND		0.00100	1	05/15/2021 15:06	WG1671258
Dichlorodifluoromethane	ND		0.00500	1	05/15/2021 15:06	WG1671258
1,1-Dichloroethane	ND		0.00100	1	05/15/2021 15:06	WG1671258
1,2-Dichloroethane	ND		0.00100	1	05/15/2021 15:06	WG1671258
1,1-Dichloroethene	ND		0.00100	1	05/15/2021 15:06	WG1671258
cis-1,2-Dichloroethene	ND		0.00100	1	05/15/2021 15:06	WG1671258
trans-1,2-Dichloroethene	ND		0.00100	1	05/15/2021 15:06	WG1671258
1,2-Dichloropropane	ND		0.00100	1	05/15/2021 15:06	WG1671258
1,1-Dichloropropene	ND		0.00100	1	05/15/2021 15:06	WG1671258
1,3-Dichloropropane	ND		0.00100	1	05/15/2021 15:06	WG1671258
cis-1,3-Dichloropropene	ND		0.00100	1	05/15/2021 15:06	WG1671258
trans-1,3-Dichloropropene	ND		0.00100	1	05/15/2021 15:06	WG1671258
2,2-Dichloropropane	ND		0.00100	1	05/15/2021 15:06	WG1671258
Di-isopropyl ether	ND		0.00100	1	05/15/2021 15:06	WG1671258
Ethylbenzene	ND		0.00100	1	05/15/2021 15:06	WG1671258
Hexachloro-1,3-butadiene	ND		0.00100	1	05/15/2021 15:06	WG1671258
Isopropylbenzene	ND		0.00100	1	05/15/2021 15:06	WG1671258
p-Isopropyltoluene	ND		0.00100	1	05/15/2021 15:06	WG1671258
2-Butanone (MEK)	ND		0.0100	1	05/15/2021 15:06	WG1671258
Methylene Chloride	ND	J4	0.00500	1	05/15/2021 15:06	WG1671258
4-Methyl-2-pentanone (MIBK)	ND		0.0100	1	05/15/2021 15:06	WG1671258
Methyl tert-butyl ether	ND		0.00100	1	05/15/2021 15:06	WG1671258
Naphthalene	ND		0.00500	1	05/15/2021 15:06	WG1671258
n-Propylbenzene	ND		0.00100	1	05/15/2021 15:06	WG1671258
Styrene	ND		0.00100	1	05/15/2021 15:06	WG1671258
1,1,1,2-Tetrachloroethane	ND		0.00100	1	05/15/2021 15:06	WG1671258
1,1,2,2-Tetrachloroethane	ND		0.00100	1	05/15/2021 15:06	WG1671258
1,1,2-Trichlorotrifluoroethane	ND		0.00100	1	05/15/2021 15:06	WG1671258
Tetrachloroethene	ND		0.00100	1	05/15/2021 15:06	WG1671258
Toluene	ND		0.00100	1	05/15/2021 15:06	WG1671258
1,2,3-Trichlorobenzene	ND		0.00100	1	05/15/2021 15:06	WG1671258
1,2,4-Trichlorobenzene	ND		0.00100	1	05/15/2021 15:06	WG1671258

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	ND		0.00100	1	05/15/2021 15:06	WG1671258
1,1,2-Trichloroethane	ND		0.00100	1	05/15/2021 15:06	WG1671258
Trichloroethene	ND		0.00100	1	05/15/2021 15:06	WG1671258
Trichlorofluoromethane	ND		0.00500	1	05/15/2021 15:06	WG1671258
1,2,3-Trichloropropane	ND		0.00250	1	05/15/2021 15:06	WG1671258
1,2,4-Trimethylbenzene	ND		0.00100	1	05/15/2021 15:06	WG1671258
1,2,3-Trimethylbenzene	ND		0.00100	1	05/15/2021 15:06	WG1671258
1,3,5-Trimethylbenzene	ND		0.00100	1	05/15/2021 15:06	WG1671258
Vinyl chloride	ND		0.00100	1	05/15/2021 15:06	WG1671258
Xylenes, Total	ND		0.00300	1	05/15/2021 15:06	WG1671258
(S) Toluene-d8	*105*		*80.0-120*		*05/15/2021 15:06*	WG1671258
(S) 4-Bromofluorobenzene	*104*		*77.0-126*		*05/15/2021 15:06*	WG1671258
(S) 1,2-Dichloroethane-d4	*95.8*		*70.0-130*		*05/15/2021 15:06*	WG1671258

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		0.100	1	05/18/2021 14:48	WG1672100
(S) o-Terphenyl	*84.7*		*31.0-160*		*05/18/2021 14:48*	WG1672100

Method Blank (MB)

(MB) R3655525-1 05/13/21 05:30

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		10.0	10.0

L1350266-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1350266-11 05/13/21 05:30 • (DUP) R3655525-3 05/13/21 05:30

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	3850	3850	1	0.000		5

L1350430-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1350430-01 05/13/21 05:30 • (DUP) R3655525-4 05/13/21 05:30

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	954	973	1	1.97		5

Laboratory Control Sample (LCS)

(LCS) R3655525-2 05/13/21 05:30

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8720	99.1	77.4-123	

Method Blank (MB)

(MB) R3655735-1 05/14/21 17:03

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		10.0	10.0

L1350430-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1350430-03 05/14/21 17:03 • (DUP) R3655735-3 05/14/21 17:03

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	944	966	1	2.30		5

L1351073-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1351073-01 05/14/21 17:03 • (DUP) R3655735-5 05/14/21 17:03

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1710	1960	1	13.9	J3	5

Laboratory Control Sample (LCS)

(LCS) R3655735-2 05/14/21 17:03

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8440	95.9	77.4-123	

Method Blank (MB)

(MB) R3655159-1 05/17/21 01:17

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Alkalinity	U		8.45	20.0

Sample Narrative:

BLANK: Endpoint pH 4.5

L1350856-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1350856-02 05/17/21 02:25 • (DUP) R3655159-2 05/17/21 02:33

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	316	313	1	0.963		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

L1351091-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1351091-01 05/17/21 03:45 • (DUP) R3655159-4 05/17/21 03:52

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	432	433	1	0.288		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3655159-3 05/17/21 02:50

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Alkalinity	100	104	104	90.0-110	

Sample Narrative:

LCS: Endpoint pH 4.5

Method Blank (MB)

(MB) R3654059-1 05/13/21 12:14

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Ammonia Nitrogen	U		0.117	0.250

L1350793-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1350793-02 05/13/21 12:24 • (DUP) R3654059-5 05/13/21 12:26

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Ammonia Nitrogen	ND	ND	1	0.000		10

L1351635-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1351635-02 05/13/21 13:32 • (DUP) R3654059-7 05/13/21 13:34

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Ammonia Nitrogen	ND	ND	1	0.000		10

Laboratory Control Sample (LCS)

(LCS) R3654059-2 05/13/21 12:16

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Ammonia Nitrogen	7.50	7.39	98.5	90.0-110	

L1350793-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1350793-01 05/13/21 12:19 • (MS) R3654059-3 05/13/21 12:21 • (MSD) R3654059-4 05/13/21 12:23

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Ammonia Nitrogen	5.00	ND	4.74	4.64	94.7	92.8	1	90.0-110			2.01	10

L1351635-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1351635-01 05/13/21 13:29 • (MS) R3654059-6 05/13/21 13:31

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Ammonia Nitrogen	5.00	ND	4.81	96.2	1	90.0-110	

Method Blank (MB)

(MB) R3657237-1 05/20/21 17:54

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Nitrate-Nitrite	U		0.0500	0.100

L1346509-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1346509-02 05/20/21 17:57 • (DUP) R3657237-3 05/20/21 17:59

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate-Nitrite	15.4	15.3	10	0.651		20

L1350793-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1350793-04 05/20/21 18:19 • (DUP) R3657237-6 05/20/21 18:20

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate-Nitrite	0.909	0.908	1	0.110		20

Laboratory Control Sample (LCS)

(LCS) R3657237-2 05/20/21 17:55

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Nitrate-Nitrite	2.50	2.42	96.8	90.0-110	

L1350793-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1350793-01 05/20/21 18:13 • (MS) R3657237-4 05/20/21 18:14 • (MSD) R3657237-5 05/20/21 18:15

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Nitrate-Nitrite	2.50	ND	2.36	2.70	94.4	108	1	90.0-110			13.4	20

Original Sample (OS) • Matrix Spike (MS)

(OS) • (MS) R3657237-7 05/20/21 18:27

Analyte	Spike Amount mg/l	Original Result	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Nitrate-Nitrite	2.50		5.80	90.4	1	90.0-110	E

Method Blank (MB)

(MB) R3653700-1 05/11/21 07:50

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Chloride	U		0.379	1.00
Fluoride	U		0.0640	0.150
Nitrate	U		0.0480	0.100
Nitrite	U		0.0420	0.100
Sulfate	U		0.594	5.00

L1351057-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1351057-01 05/11/21 21:30 • (DUP) R3653700-5 05/11/21 21:52

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	24.5	24.7	5	0.736		15
Fluoride	ND	ND	5	0.000		15
Nitrate	7.38	6.75	5	9.03		15
Nitrite	ND	ND	5	0.000		15
Sulfate	ND	ND	5	0.000		15

L1350756-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1350756-01 05/11/21 23:14 • (DUP) R3653700-6 05/11/21 23:47

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	4.20	4.20	1	0.205		15
Fluoride	ND	ND	1	1.65		15
Nitrate	0.964	1.02	1	5.25		15
Nitrite	ND	ND	1	0.000		15
Sulfate	92.0	92.3	1	0.321		15

L1350793-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1350793-03 05/12/21 03:03 • (DUP) R3653700-8 05/12/21 03:20

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	31.3	31.4	1	0.340		15
Fluoride	ND	ND	1	0.0754		15
Nitrate	ND	ND	1	0.000		15
Nitrite	ND	ND	1	0.000		15

L1350793-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1350793-03 05/12/21 03:03 • (DUP) R3653700-8 05/12/21 03:20

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Sulfate	57.4	57.6	1	0.248		15

Laboratory Control Sample (LCS)

(LCS) R3653700-2 05/11/21 08:06

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40.0	39.2	98.0	80.0-120	
Fluoride	8.00	7.88	98.5	80.0-120	
Nitrate	8.00	7.90	98.7	80.0-120	
Nitrite	8.00	7.94	99.3	80.0-120	
Sulfate	40.0	40.9	102	80.0-120	

L1350674-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1350674-08 05/11/21 18:57 • (MS) R3653700-3 05/11/21 19:13 • (MSD) R3653700-4 05/11/21 19:30

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50.0	28.3	78.9	78.9	101	101	1	80.0-120			0.0486	15
Fluoride	5.00	0.431	5.63	5.64	104	104	1	80.0-120			0.174	15
Nitrate	5.00	ND	4.79	5.41	95.9	108	1	80.0-120			12.2	15
Nitrite	5.00	ND	5.20	5.21	104	104	1	80.0-120			0.0692	15
Sulfate	50.0	122	165	166	85.9	89.3	1	80.0-120	E	E	1.03	15

L1350793-04 Original Sample (OS) • Matrix Spike (MS)

(OS) L1350793-04 05/12/21 05:15 • (MS) R3653700-10 05/12/21 05:31

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50.0	125	171	92.4	1	80.0-120	E
Fluoride	5.00	ND	5.32	104	1	80.0-120	
Nitrate	5.00	0.857	5.95	102	1	80.0-120	
Nitrite	5.00	ND	5.25	105	1	80.0-120	
Sulfate	50.0	57.6	107	98.1	1	80.0-120	E

Method Blank (MB)

(MB) R3654716-1 05/14/21 16:18

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Sodium,Dissolved	U		0.376	2.00

Laboratory Control Sample (LCS)

(LCS) R3654716-2 05/14/21 16:22

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Sodium,Dissolved	5.00	4.54	90.7	80.0-120	

L1348900-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1348900-02 05/14/21 16:25 • (MS) R3654716-4 05/14/21 16:39 • (MSD) R3654716-5 05/14/21 16:42

Analyte	Spike Amount mg/l	Original Result	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Sodium,Dissolved	5.00		62.9	61.4	193	163	1	75.0-125	V	V	2.45	20

Method Blank (MB)

(MB) R3655344-2 05/14/21 03:29

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
TPH (GC/FID) Low Fraction	0.0504	J	0.0314	0.100
(S) a,a,a-Trifluorotoluene(FID)	*98.4*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R3655344-1 05/14/21 02:34

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.80	105	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*105*	*78.0-120*	

Method Blank (MB)

(MB) R3653958-2 05/13/21 08:43

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Methane	U		0.00291	0.0100
Ethane	U		0.00407	0.0130
Ethene	U		0.00426	0.0130

L1350757-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1350757-01 05/13/21 10:04 • (DUP) R3653958-3 05/13/21 10:14

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Methane	ND	ND	1	0.000		20
Ethane	ND	ND	1	0.000		20
Ethene	ND	ND	1	0.000		20

L1350793-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1350793-04 05/13/21 10:57 • (DUP) R3653958-4 05/13/21 11:24

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Methane	ND	ND	1	0.000		20
Ethane	ND	ND	1	0.000		20
Ethene	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3653958-1 05/13/21 08:35 • (LCSD) R3653958-5 05/13/21 11:27

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Methane	0.0678	0.0749	0.0709	110	105	85.0-115			5.49	20
Ethane	0.129	0.132	0.121	102	93.8	85.0-115			8.70	20
Ethene	0.127	0.131	0.121	103	95.3	85.0-115			7.94	20

Method Blank (MB)

(MB) R3654787-3 05/14/21 19:49

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Acetone	U		0.0113	0.0500
Acrolein	U		0.00254	0.0500
Acrylonitrile	U		0.000671	0.0100
Benzene	U		0.0000941	0.00100
Bromobenzene	U		0.000118	0.00100
Bromodichloromethane	U		0.000136	0.00100
Bromoform	U		0.000129	0.00100
Bromomethane	U		0.000605	0.00500
n-Butylbenzene	U		0.000157	0.00100
sec-Butylbenzene	U		0.000125	0.00100
tert-Butylbenzene	U		0.000127	0.00100
Carbon tetrachloride	U		0.000128	0.00100
Chlorobenzene	U		0.000116	0.00100
Chlorodibromomethane	U		0.000140	0.00100
Chloroethane	U		0.000192	0.00500
Chloroform	U		0.000111	0.00500
Chloromethane	U		0.000960	0.00250
2-Chlorotoluene	U		0.000106	0.00100
4-Chlorotoluene	U		0.000114	0.00100
1,2-Dibromo-3-Chloropropane	U		0.000276	0.00500
1,2-Dibromoethane	U		0.000126	0.00100
Dibromomethane	U		0.000122	0.00100
1,2-Dichlorobenzene	U		0.000107	0.00100
1,3-Dichlorobenzene	U		0.000110	0.00100
1,4-Dichlorobenzene	U		0.000120	0.00100
Dichlorodifluoromethane	U		0.000374	0.00500
1,1-Dichloroethane	U		0.000100	0.00100
1,2-Dichloroethane	U		0.0000819	0.00100
1,1-Dichloroethene	U		0.000188	0.00100
cis-1,2-Dichloroethene	U		0.000126	0.00100
trans-1,2-Dichloroethene	U		0.000149	0.00100
1,2-Dichloropropane	U		0.000149	0.00100
1,1-Dichloropropene	U		0.000142	0.00100
1,3-Dichloropropane	U		0.000110	0.00100
cis-1,3-Dichloropropene	U		0.000111	0.00100
trans-1,3-Dichloropropene	U		0.000118	0.00100
2,2-Dichloropropane	U		0.000161	0.00100
Di-isopropyl ether	U		0.000105	0.00100
Ethylbenzene	U		0.000137	0.00100
Hexachloro-1,3-butadiene	U		0.000337	0.00100

Method Blank (MB)

(MB) R3654787-3 05/14/21 19:49

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Isopropylbenzene	U		0.000105	0.00100
p-Isopropyltoluene	U		0.000120	0.00100
2-Butanone (MEK)	U		0.00119	0.0100
Methylene Chloride	U		0.000430	0.00500
4-Methyl-2-pentanone (MIBK)	U		0.000478	0.0100
Methyl tert-butyl ether	U		0.000101	0.00100
Naphthalene	U		0.00100	0.00500
n-Propylbenzene	U		0.0000993	0.00100
Styrene	U		0.000118	0.00100
1,1,1,2-Tetrachloroethane	U		0.000147	0.00100
1,1,2,2-Tetrachloroethane	U		0.000133	0.00100
Tetrachloroethene	U		0.000300	0.00100
Toluene	U		0.000278	0.00100
1,1,2-Trichlorotrifluoroethane	U		0.000180	0.00100
1,2,3-Trichlorobenzene	U		0.000230	0.00100
1,2,4-Trichlorobenzene	U		0.000481	0.00100
1,1,1-Trichloroethane	U		0.000149	0.00100
1,1,2-Trichloroethane	U		0.000158	0.00100
Trichloroethene	U		0.000190	0.00100
Trichlorofluoromethane	U		0.000160	0.00500
1,2,3-Trichloropropane	U		0.000237	0.00250
1,2,3-Trimethylbenzene	U		0.000104	0.00100
1,2,4-Trimethylbenzene	U		0.000322	0.00100
1,3,5-Trimethylbenzene	U		0.000104	0.00100
Vinyl chloride	U		0.000234	0.00100
Xylenes, Total	U		0.000174	0.00300
(S) Toluene-d8	*112*			*80.0-120*
(S) 4-Bromofluorobenzene	*110*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*95.4*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3654787-2 05/14/21 18:47

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	0.0250	0.0230	92.0	19.0-160	
Acrolein	0.0250	0.00752	30.1	10.0-160	
Acrylonitrile	0.0250	0.0220	88.0	55.0-149	
Benzene	0.00500	0.00487	97.4	70.0-123	

Laboratory Control Sample (LCS)

(LCS) R3654787-2 05/14/21 18:47

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Bromobenzene	0.00500	0.00409	81.8	73.0-121	
Bromodichloromethane	0.00500	0.00457	91.4	75.0-120	
Bromoform	0.00500	0.00380	76.0	68.0-132	
Bromomethane	0.00500	0.00662	132	10.0-160	
n-Butylbenzene	0.00500	0.00466	93.2	73.0-125	
sec-Butylbenzene	0.00500	0.00481	96.2	75.0-125	
tert-Butylbenzene	0.00500	0.00451	90.2	76.0-124	
Carbon tetrachloride	0.00500	0.00563	113	68.0-126	
Chlorobenzene	0.00500	0.00491	98.2	80.0-121	
Chlorodibromomethane	0.00500	0.00426	85.2	77.0-125	
Chloroethane	0.00500	0.00555	111	47.0-150	
Chloroform	0.00500	0.00491	98.2	73.0-120	
Chloromethane	0.00500	0.00410	82.0	41.0-142	
2-Chlorotoluene	0.00500	0.00417	83.4	76.0-123	
4-Chlorotoluene	0.00500	0.00454	90.8	75.0-122	
1,2-Dibromo-3-Chloropropane	0.00500	0.00407	81.4	58.0-134	
1,2-Dibromoethane	0.00500	0.00478	95.6	80.0-122	
Dibromomethane	0.00500	0.00461	92.2	80.0-120	
1,2-Dichlorobenzene	0.00500	0.00469	93.8	79.0-121	
1,3-Dichlorobenzene	0.00500	0.00449	89.8	79.0-120	
1,4-Dichlorobenzene	0.00500	0.00496	99.2	79.0-120	
Dichlorodifluoromethane	0.00500	0.00344	68.8	51.0-149	
1,1-Dichloroethane	0.00500	0.00457	91.4	70.0-126	
1,2-Dichloroethane	0.00500	0.00460	92.0	70.0-128	
1,1-Dichloroethene	0.00500	0.00515	103	71.0-124	
cis-1,2-Dichloroethene	0.00500	0.00481	96.2	73.0-120	
trans-1,2-Dichloroethene	0.00500	0.00503	101	73.0-120	
1,2-Dichloropropane	0.00500	0.00498	99.6	77.0-125	
1,1-Dichloropropene	0.00500	0.00448	89.6	74.0-126	
1,3-Dichloropropane	0.00500	0.00504	101	80.0-120	
cis-1,3-Dichloropropene	0.00500	0.00464	92.8	80.0-123	
trans-1,3-Dichloropropene	0.00500	0.00425	85.0	78.0-124	
2,2-Dichloropropane	0.00500	0.00475	95.0	58.0-130	
Di-isopropyl ether	0.00500	0.00440	88.0	58.0-138	
Ethylbenzene	0.00500	0.00494	98.8	79.0-123	
Hexachloro-1,3-butadiene	0.00500	0.00492	98.4	54.0-138	
Isopropylbenzene	0.00500	0.00462	92.4	76.0-127	
p-Isopropyltoluene	0.00500	0.00474	94.8	76.0-125	
2-Butanone (MEK)	0.0250	0.0221	88.4	44.0-160	
Methylene Chloride	0.00500	0.00502	100	67.0-120	

Laboratory Control Sample (LCS)

(LCS) R3654787-2 05/14/21 18:47

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
4-Methyl-2-pentanone (MIBK)	0.0250	0.0219	87.6	68.0-142	
Methyl tert-butyl ether	0.00500	0.00493	98.6	68.0-125	
Naphthalene	0.00500	0.00487	97.4	54.0-135	
n-Propylbenzene	0.00500	0.00410	82.0	77.0-124	
Styrene	0.00500	0.00474	94.8	73.0-130	
1,1,1,2-Tetrachloroethane	0.00500	0.00468	93.6	75.0-125	
1,1,2,2-Tetrachloroethane	0.00500	0.00407	81.4	65.0-130	
Tetrachloroethene	0.00500	0.00512	102	72.0-132	
Toluene	0.00500	0.00485	97.0	79.0-120	
1,1,2-Trichlorotrifluoroethane	0.00500	0.00478	95.6	69.0-132	
1,2,3-Trichlorobenzene	0.00500	0.00437	87.4	50.0-138	
1,2,4-Trichlorobenzene	0.00500	0.00432	86.4	57.0-137	
1,1,1-Trichloroethane	0.00500	0.00458	91.6	73.0-124	
1,1,2-Trichloroethane	0.00500	0.00489	97.8	80.0-120	
Trichloroethene	0.00500	0.00515	103	78.0-124	
Trichlorofluoromethane	0.00500	0.00434	86.8	59.0-147	
1,2,3-Trichloropropane	0.00500	0.00483	96.6	73.0-130	
1,2,3-Trimethylbenzene	0.00500	0.00484	96.8	77.0-120	
1,2,4-Trimethylbenzene	0.00500	0.00468	93.6	76.0-121	
1,3,5-Trimethylbenzene	0.00500	0.00480	96.0	76.0-122	
Vinyl chloride	0.00500	0.00504	101	67.0-131	
Xylenes, Total	0.0150	0.0144	96.0	79.0-123	
(S) Toluene-d8			*106*	*80.0-120*	
(S) 4-Bromofluorobenzene			*106*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*95.3*	*70.0-130*	

Method Blank (MB)

(MB) R3654836-2 05/15/21 09:29

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Toluene	U		0.000278	0.00100
(S) Toluene-d8	*110*			*80.0-120*
(S) 4-Bromofluorobenzene	*109*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*103*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3654836-1 05/15/21 08:50

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Toluene	0.00500	0.00486	97.2	79.0-120	
(S) Toluene-d8			*102*	*80.0-120*	
(S) 4-Bromofluorobenzene			*98.8*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*105*	*70.0-130*	

Method Blank (MB)

(MB) R3655074-3 05/15/21 09:56

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Acetone	U		0.0113	0.0500
Acrolein	U		0.00254	0.0500
Acrylonitrile	U		0.000671	0.0100
Benzene	U		0.0000941	0.00100
Bromobenzene	U		0.000118	0.00100
Bromodichloromethane	U		0.000136	0.00100
Bromoform	U		0.000129	0.00100
Bromomethane	U		0.000605	0.00500
n-Butylbenzene	U		0.000157	0.00100
sec-Butylbenzene	U		0.000125	0.00100
tert-Butylbenzene	U		0.000127	0.00100
Carbon tetrachloride	U		0.000128	0.00100
Chlorobenzene	U		0.000116	0.00100
Chlorodibromomethane	U		0.000140	0.00100
Chloroethane	U		0.000192	0.00500
Chloroform	U		0.000111	0.00500
Chloromethane	U		0.000960	0.00250
2-Chlorotoluene	U		0.000106	0.00100
4-Chlorotoluene	U		0.000114	0.00100
1,2-Dibromo-3-Chloropropane	U		0.000276	0.00500
1,2-Dibromoethane	U		0.000126	0.00100
Dibromomethane	U		0.000122	0.00100
1,2-Dichlorobenzene	U		0.000107	0.00100
1,3-Dichlorobenzene	U		0.000110	0.00100
1,4-Dichlorobenzene	U		0.000120	0.00100
Dichlorodifluoromethane	U		0.000374	0.00500
1,1-Dichloroethane	U		0.000100	0.00100
1,2-Dichloroethane	U		0.0000819	0.00100
1,1-Dichloroethene	U		0.000188	0.00100
cis-1,2-Dichloroethene	U		0.000126	0.00100
trans-1,2-Dichloroethene	U		0.000149	0.00100
1,2-Dichloropropane	U		0.000149	0.00100
1,1-Dichloropropene	U		0.000142	0.00100
1,3-Dichloropropane	U		0.000110	0.00100
cis-1,3-Dichloropropene	U		0.000111	0.00100
trans-1,3-Dichloropropene	U		0.000118	0.00100
2,2-Dichloropropane	U		0.000161	0.00100
Di-isopropyl ether	U		0.000105	0.00100
Ethylbenzene	U		0.000137	0.00100
Hexachloro-1,3-butadiene	U		0.000337	0.00100

Method Blank (MB)

(MB) R3655074-3 05/15/21 09:56

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Isopropylbenzene	U		0.000105	0.00100
p-Isopropyltoluene	U		0.000120	0.00100
2-Butanone (MEK)	U		0.00119	0.0100
Methylene Chloride	U		0.000430	0.00500
4-Methyl-2-pentanone (MIBK)	U		0.000478	0.0100
Methyl tert-butyl ether	U		0.000101	0.00100
Naphthalene	U		0.00100	0.00500
n-Propylbenzene	U		0.0000993	0.00100
Styrene	U		0.000118	0.00100
1,1,1,2-Tetrachloroethane	U		0.000147	0.00100
1,1,2,2-Tetrachloroethane	U		0.000133	0.00100
Tetrachloroethene	U		0.000300	0.00100
Toluene	U		0.000278	0.00100
1,1,2-Trichlorotrifluoroethane	U		0.000180	0.00100
1,2,3-Trichlorobenzene	U		0.000230	0.00100
1,2,4-Trichlorobenzene	U		0.000481	0.00100
1,1,1-Trichloroethane	U		0.000149	0.00100
1,1,2-Trichloroethane	U		0.000158	0.00100
Trichloroethene	U		0.000190	0.00100
Trichlorofluoromethane	U		0.000160	0.00500
1,2,3-Trichloropropane	U		0.000237	0.00250
1,2,3-Trimethylbenzene	U		0.000104	0.00100
1,2,4-Trimethylbenzene	U		0.000322	0.00100
1,3,5-Trimethylbenzene	U		0.000104	0.00100
Vinyl chloride	U		0.000234	0.00100
Xylenes, Total	U		0.000174	0.00300
(S) Toluene-d8	*105*			*80.0-120*
(S) 4-Bromofluorobenzene	*99.5*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*95.2*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3655074-1 05/15/21 08:34 • (LCSD) R3655074-2 05/15/21 08:55

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	0.0250	0.0239	0.0277	95.6	111	19.0-160			14.7	27
Acrolein	0.0250	0.0333	0.0339	133	136	10.0-160			1.79	26
Acrylonitrile	0.0250	0.0287	0.0278	115	111	55.0-149			3.19	20
Benzene	0.00500	0.00527	0.00561	105	112	70.0-123			6.25	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3655074-1 05/15/21 08:34 • (LCSD) R3655074-2 05/15/21 08:55

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Bromobenzene	0.00500	0.00535	0.00552	107	110	73.0-121			3.13	20
Bromodichloromethane	0.00500	0.00534	0.00565	107	113	75.0-120			5.64	20
Bromoform	0.00500	0.00514	0.00565	103	113	68.0-132			9.45	20
Bromomethane	0.00500	0.00985	0.00912	197	182	10.0-160	J4	J4	7.70	25
n-Butylbenzene	0.00500	0.00515	0.00595	103	119	73.0-125			14.4	20
sec-Butylbenzene	0.00500	0.00552	0.00591	110	118	75.0-125			6.82	20
tert-Butylbenzene	0.00500	0.00559	0.00594	112	119	76.0-124			6.07	20
Carbon tetrachloride	0.00500	0.00508	0.00549	102	110	68.0-126			7.76	20
Chlorobenzene	0.00500	0.00536	0.00587	107	117	80.0-121			9.08	20
Chlorodibromomethane	0.00500	0.00504	0.00551	101	110	77.0-125			8.91	20
Chloroethane	0.00500	0.00532	0.00550	106	110	47.0-150			3.33	20
Chloroform	0.00500	0.00579	0.00583	116	117	73.0-120			0.688	20
Chloromethane	0.00500	0.00485	0.00493	97.0	98.6	41.0-142			1.64	20
2-Chlorotoluene	0.00500	0.00548	0.00573	110	115	76.0-123			4.46	20
4-Chlorotoluene	0.00500	0.00511	0.00541	102	108	75.0-122			5.70	20
1,2-Dibromo-3-Chloropropane	0.00500	0.00542	0.00552	108	110	58.0-134			1.83	20
1,2-Dibromoethane	0.00500	0.00517	0.00573	103	115	80.0-122			10.3	20
Dibromomethane	0.00500	0.00508	0.00500	102	100	80.0-120			1.59	20
1,2-Dichlorobenzene	0.00500	0.00532	0.00574	106	115	79.0-121			7.59	20
1,3-Dichlorobenzene	0.00500	0.00554	0.00598	111	120	79.0-120			7.64	20
1,4-Dichlorobenzene	0.00500	0.00555	0.00573	111	115	79.0-120			3.19	20
Dichlorodifluoromethane	0.00500	0.00450	0.00476	90.0	95.2	51.0-149			5.62	20
1,1-Dichloroethane	0.00500	0.00516	0.00529	103	106	70.0-126			2.49	20
1,2-Dichloroethane	0.00500	0.00516	0.00531	103	106	70.0-128			2.87	20
1,1-Dichloroethene	0.00500	0.00516	0.00582	103	116	71.0-124			12.0	20
cis-1,2-Dichloroethene	0.00500	0.00518	0.00535	104	107	73.0-120			3.23	20
trans-1,2-Dichloroethene	0.00500	0.00513	0.00546	103	109	73.0-120			6.23	20
1,2-Dichloropropane	0.00500	0.00542	0.00549	108	110	77.0-125			1.28	20
1,1-Dichloropropene	0.00500	0.00519	0.00555	104	111	74.0-126			6.70	20
1,3-Dichloropropane	0.00500	0.00479	0.00535	95.8	107	80.0-120			11.0	20
cis-1,3-Dichloropropene	0.00500	0.00511	0.00539	102	108	80.0-123			5.33	20
trans-1,3-Dichloropropene	0.00500	0.00501	0.00559	100	112	78.0-124			10.9	20
2,2-Dichloropropane	0.00500	0.00554	0.00588	111	118	58.0-130			5.95	20
Di-isopropyl ether	0.00500	0.00505	0.00519	101	104	58.0-138			2.73	20
Ethylbenzene	0.00500	0.00537	0.00590	107	118	79.0-123			9.41	20
Hexachloro-1,3-butadiene	0.00500	0.00605	0.00647	121	129	54.0-138			6.71	20
Isopropylbenzene	0.00500	0.00554	0.00595	111	119	76.0-127			7.14	20
p-Isopropyltoluene	0.00500	0.00545	0.00597	109	119	76.0-125			9.11	20
2-Butanone (MEK)	0.0250	0.0263	0.0276	105	110	44.0-160			4.82	20
Methylene Chloride	0.00500	0.00562	0.00617	112	123	67.0-120		J4	9.33	20

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3655074-1 05/15/21 08:34 • (LCSD) R3655074-2 05/15/21 08:55

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
4-Methyl-2-pentanone (MIBK)	0.0250	0.0254	0.0270	102	108	68.0-142			6.11	20
Methyl tert-butyl ether	0.00500	0.00513	0.00543	103	109	68.0-125			5.68	20
Naphthalene	0.00500	0.00584	0.00632	117	126	54.0-135			7.89	20
n-Propylbenzene	0.00500	0.00542	0.00573	108	115	77.0-124			5.56	20
Styrene	0.00500	0.00543	0.00559	109	112	73.0-130			2.90	20
1,1,1,2-Tetrachloroethane	0.00500	0.00538	0.00612	108	122	75.0-125			12.9	20
1,1,2,2-Tetrachloroethane	0.00500	0.00548	0.00563	110	113	65.0-130			2.70	20
Tetrachloroethene	0.00500	0.00542	0.00603	108	121	72.0-132			10.7	20
Toluene	0.00500	0.00513	0.00554	103	111	79.0-120			7.69	20
1,1,2-Trichlorotrifluoroethane	0.00500	0.00526	0.00547	105	109	69.0-132			3.91	20
1,2,3-Trichlorobenzene	0.00500	0.00539	0.00625	108	125	50.0-138			14.8	20
1,2,4-Trichlorobenzene	0.00500	0.00589	0.00650	118	130	57.0-137			9.85	20
1,1,1-Trichloroethane	0.00500	0.00570	0.00584	114	117	73.0-124			2.43	20
1,1,2-Trichloroethane	0.00500	0.00535	0.00559	107	112	80.0-120			4.39	20
Trichloroethene	0.00500	0.00549	0.00592	110	118	78.0-124			7.54	20
Trichlorofluoromethane	0.00500	0.00460	0.00495	92.0	99.0	59.0-147			7.33	20
1,2,3-Trichloropropane	0.00500	0.00534	0.00554	107	111	73.0-130			3.68	20
1,2,3-Trimethylbenzene	0.00500	0.00523	0.00554	105	111	77.0-120			5.76	20
1,2,4-Trimethylbenzene	0.00500	0.00529	0.00566	106	113	76.0-121			6.76	20
1,3,5-Trimethylbenzene	0.00500	0.00544	0.00578	109	116	76.0-122			6.06	20
Vinyl chloride	0.00500	0.00529	0.00523	106	105	67.0-131			1.14	20
Xylenes, Total	0.0150	0.0162	0.0177	108	118	79.0-123			8.85	20
(S) Toluene-d8				*101*	*102*	*80.0-120*				
(S) 4-Bromofluorobenzene				*99.7*	*100*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*94.7*	*95.6*	*70.0-130*				

Method Blank (MB)

(MB) R3656063-1 05/18/21 14:16

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
TPH (GC/FID) High Fraction	U		0.0247	0.100
(S) o-Terphenyl	*125*			*31.0-160*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3656063-2 05/18/21 14:42 • (LCSD) R3656063-3 05/18/21 15:08

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
TPH (GC/FID) High Fraction	1.50	1.81	1.82	121	121	50.0-150			0.551	20
(S) o-Terphenyl				*130*	*130*	*31.0-160*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
Berry Petroleum - Denver, CO
3433 E. Lake Dr
Centennial, CO 80121

Billing Information:
Christy Halsell
1614 S 2000 W
Roosevelt, UT 84066

Pres Chk

Report to: Dave Nicholson

Email To: dknicholson@q.com

Project Description: ~~Berry Surface Water~~ J15 Spill

City/State Collected:

Please Circle: PT MT CT ET

Phone: 303-601-2023

Client Project #

Lab Project # BERPETDCO-030615

Collected by (print):

Site/Facility ID #

P.O. #

Collected by (signature): DK Nicholson

Immediately Packed on Ice N ___ Y ___

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

Pace Analytical®

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1350793

A088

Acctnum: BERPETDCO

Template: T186993

Prelogin: P845520

PM: 134 - Mark W. Beasley

PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Alk,Cl,F,NO2,NO3,SO4 125mlHDPE-NoPres	DROLVI 40mlAmb-HCl-BT	Diss. Na 250mlHDPE-NoPres	GRO 40mlAmb HCl	NH3 250mlHDPE-H2SO4 <2	~~NO2NO3 250mlHDPE-H2SO4~~	RSK175 40mlAmb HCl	TDS 250mlHDPE-NoPres	V8260 40mlAmb-HCl * Full Screen	lab Filter for Diss. Na	Remarks	Sample # (lab only)
J15 MW-2		GW		5/6	0945	13	X	X	X	X	X		X	X	X	X		-01
J1 NESW-1		GW		5/8	1130	13	X	X	X	X	X		X	X	X	X		-02
J15 NESW-2		GW		11	1200	13	X	X	X	X	X		X	X	X	X		-03
J15 NWSW-1		GW		5/8	1400	13	X	X	X	X	X		X	X	X	X		-04
		GW																
		GW																
		GW																
		GW																
		GW																
		GW																
		GW																

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: * Including 1,2,4 + 1,3,5 - Trimethylbenzene + naphthalene

pH ___ Temp ___ Flow ___ Other ___

Samples returned via: __ UPS __ FedEx __ Courier ___

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
RAD Screen <0.5 mR/hr: Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / (No) HCL / MeoH TBR
DK Nicholson	5/10/21	1200	FedEx	0
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 0268°C Bottles Received: 2.9-.2=2.7 52
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 5-11-21 Time: 1000

If preservation required by Login: Date/Time

Hold:

Condition: NCF / (OK)