INVENTUM ENGINEERING, PC

February 15, 2021

To: Benjamin McPherson

From: John Black

CC: John Yensan, Dan Flanagan, Matt Reardon, Keith Adderley

Subject: Access Improvement Work Plan
ACM Abatement
Coal Crushing Building
Riverview Innovation & Technology Campus, Inc.
Site No. C915353
Town of Tonawanda, New York

The abatement of transite siding on the south side of the Coal Crusher Building (Building No. 63, Grid Q13 to T14) requires access that is currently obstructed by a low-lying area and surface water drainage channel.

Photograph No. 1
Low-lying Surface Water Obstructing Access to the North Wall of the Coal Breaker Building
(Looking East, Transite in on Building No. 63 on left)

481 Carlisle Drive
Suite 202
Herndon, Virginia 20170

Photograph No. 2
Depression next to Coal Breaker Building
(Looking West)

Photograph No. 3
Drainage Features to be Filled

A 120-foot (nominal) personnel lift is required to reach the roof and upper sidewall ACM panels on the exterior of the building. To safely reach the roof and upper sidewalls, the base of the lift must be on solid ground in close proximity to the building. As shown on Photograph Nos. 1 through 3, the location is currently at the western end of the East Coal Yard drainage channel. The bottom of the channel is submerged and the coke in the vicinity of the building is not suitable for safe support of the equipment.

During the Remedial Investigation, a shallow soil sample was collected in the vicinity of the Coal Breaker Building (Sketch No. 1, Table 1, and Enclosure). Table 1 and the Enclosure are provided for information purposes only; these data have not been validated. Five semi-volatile organic compounds were detected at concentrations above the commercial Restricted Use Soil Cleanup Objectives (SCOs):

- Benzo(a)Anthracene
- Benzo(a)Pyrene
- Benzo(b)Fluoranthene

- Dibenz(a,h)Anthracene
- Indento(1,2,3-c,d)Pyrene

These SVOCs are consistent with the compounds anticipated in proximity to the coal breaker building and coke yard.

To allow safe removal of the transite the following will be implemented:

1. Redirection of the flow from the east coke yard drainage to the channel created by Powers Coal and Coke;
2. Installation of 2-12-inch diameter culverts to allow construction of an access road to the building area;
3. Filling of the former east coke yard drainage with approximately 400 cubic yards of compacted coke from the adjacent area of the coke yard and the coke ramp at the east end of the breeze breaker building;
4. Removal of the exterior mezzanine from the coal breaker building;
5. Removal of the breaker building hydraulic oil tank (~170-gallon capacity, currently empty);
6. Removal of the hydraulic oil pump concrete block shed; and
7. Mobilization of the personnel lift equipment.

If possible, OSC would like to complete the grading during the week of February 22 or March 1, 2021.

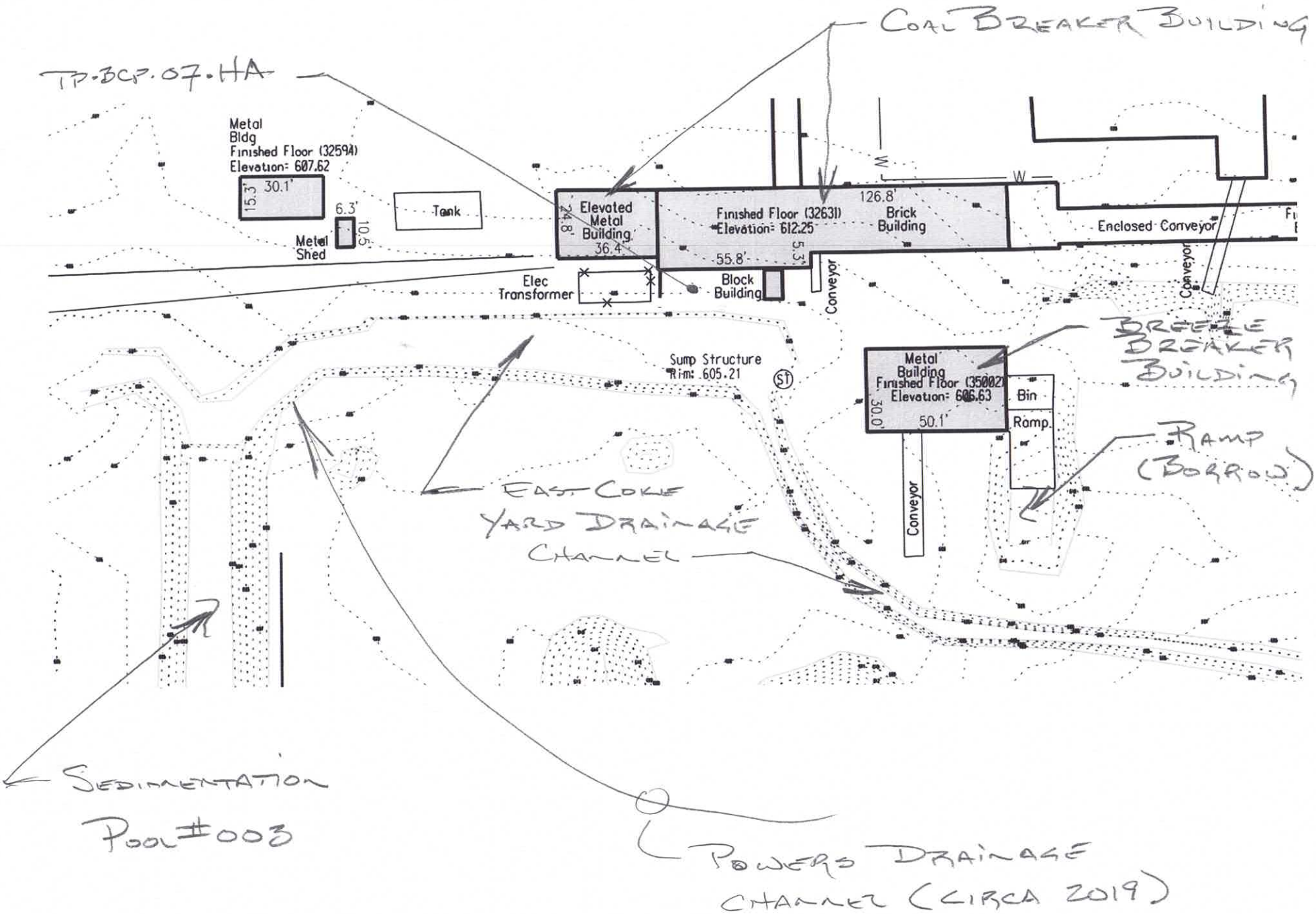
Table

Table CB-1
Soil Sample - Hand Auger at TP-BCP-07 Location
Riverview Innovation Technology Campus, Inc.
Site #C915353
Town of Tonawanda, New York

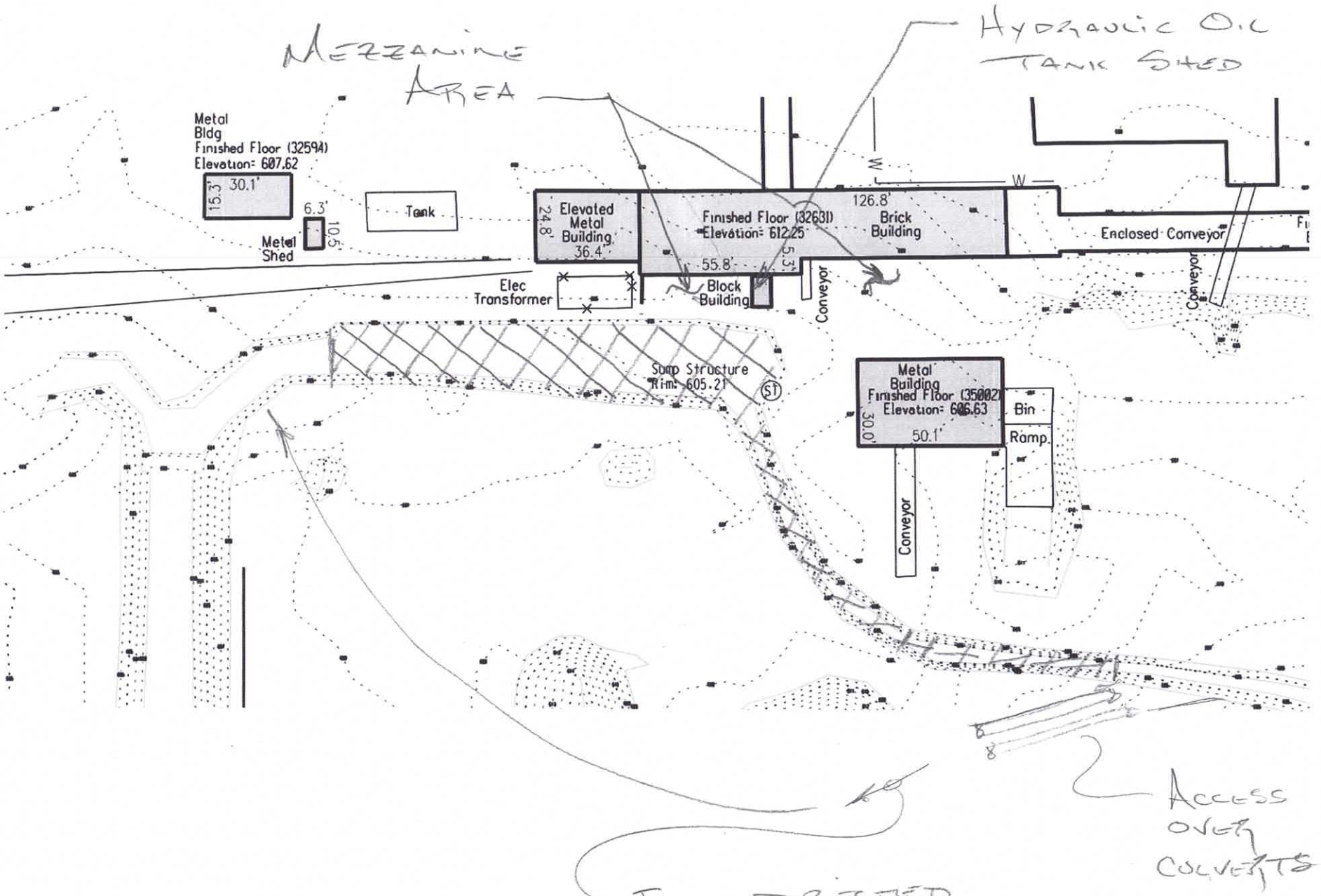
Analytes	CAS Number	Commercial Soil Cleanup Objective	Units	interpreted_qualifiers (Column AL)	TR-BCP-07-HA (Detections Only)	
SW8260C						
Acetone	67-64-1	500000	ug/kg		**52**	
Benzene	71-43-2	44000	ug/kg		**0.52**	**J**
Cyclohexane	110-82-7	-	ug/kg		**5.7**	**J**
Methyl Acetate	79-20-9	-	ug/kg		20	
Methylcyclohexane	108-87-2	-	ug/kg		**5.2**	J
Tetrachloroethylene (PCE)	127-18-4	150000	ug/kg		**1.9**	J
Toluene	108-88-3	500000	ug/kg		**0.45**	J
m,p-Xylene	179601-23-1	500000	ug/kg		**0.9**	J
O-Xylene (1,2-Dimethylbenzene)	95-47-6	500000	ug/kg		**1.1**	J
SW8270D						
2-Methylnaphthalene	91-57-6	-	ug/kg		**2400/2500**	J
Acenaphthene	83-32-9	-	ug/kg		**1200/1200**	J
Acenaphthylene	208-96-8	500000	ug/kg		**3200/3000**	J
Anthracene	120-12-7	500000	ug/kg		**5100/4900**	
Benzo(A)Anthracene	56-55-3	5600	ug/kg		**13000/13000**	E
Benzo(A)Pyrene	50-32-8	1000	ug/kg		**16000/17000**	E
Benzo(B)Fluoranthene	205-99-2	5600	ug/kg		**19000/18000**	E
Benzo(G,H,I)Perylene	191-24-2	500000	ug/kg		**12000/11000**	E
Benzo(K)Fluoranthene	207-08-9	56000	ug/kg		**6400/6700**	
Biphenyl (Diphenyl)	92-52-4	-	ug/kg		**550**	**J**
Bis(2-Ethylhexyl) Phthalate	117-81-7	-	ug/kg		**430**	**J**
Carbazole	86-74-8	-	ug/kg		**2400/2600**	
Chrysene	218-01-9	56000	ug/kg		**13000/13000**	E
Di-N-Octylphthalate	117-84-0	-	ug/kg		220	J
Dibenz(A,H)Anthracene	53-70-3	560	ug/kg		**2400/3000**	J
Dibenzofuran	132-64-9	-	ug/kg		**2200/2400**	J
Fluoranthene	206-44-0	500000	ug/kg		**20000/25000**	E
Fluorene	86-73-7	500000	ug/kg		**2300/2500**	
Indeno(1,2,3-C,D)Pyrene	193-39-5	5600	ug/kg		**10000/130000**	E
Naphthalene	91-20-3	500000	ug/kg		**6200/7000**	
Phenanthrene	85-01-8	500000	ug/kg		**15000/19000**	E
Phenol	108-95-2	500000	ug/kg		**210**	J
Pyrene	129-00-0	500000	ug/kg		**19000/21000**	
8081B						
Endosulfan Sulfate	1031-07-8	200000	ug/kg		14	J
Endrin Ketone	53494-70-5	-	ug/kg		13	J
SOLIDS						
Total Solids	TSO	-	%		**77.7**	

For information purposes only, Data not yet validated

Sketches


TP-BCP-07-HA
Metal Bldg
Finished Floor (32594)
Elevation= 607.62
15.3'
30.1'
6.3'
10.5'
Metal Shed
Tank
Elec Transformer
Elevated Metal Building
24.8'
36.4'
Finished Floor (32631)
Elevation= 612.25
55.8'
5.3'
126.8'
Brick Building
Block Building
Conveyor
Enclosed Conveyor
W
Sump Structure
Rim: 605.21
ST
Metal Building
Finished Floor (35002)
Elevation= 606.63
30.0'
50.1'
Bin
Ramp
Conveyor
COAL BREAKER BUILDING
BREEZE BREAKER BUILDING
RAMP (BORROW)
EAST COKE YARD DRAINAGE CHANNEL
SEDIMENTATION POOL #003
POWERS DRAINAGE CHANNEL (CIRCA 2019)

SKETCH NO. 1


MEZZANINE AREA
HYDRAULIC OIL TANK SHED
Metal Bldg
Finished Floor (32594)
Elevation= 607.62
15.3'
30.1'
6.3'
10.5'
Metal Shed
Tank
Elevated Metal Building
24.8'
36.4'
Finished Floor (32631)
Elevation= 612.25
126.8'
Brick Building
55.8'
5.3'
Block Building
Enclosed Conveyor
Conveyor
Elec Transformer
Sump Structure
Rim= 605.21
ST
Metal Building
Finished Floor (35002)
Elevation= 605.63
30.0'
50.1'
Bin
Ramp
Conveyor
ACCESS OVER CULVERTS
FLOW DIRECTED TO SEDIMENTATION POOL #3 THROUGH POWERS CHANNEL

SKETCH NO. 2

Enclosure

February 05, 2021 Service Request No:R2010938

Mr. Todd Waldrop
Inventum Engineering
481 Carlisle Drive
Herndon, VA 20170

Laboratory Results for: Riverview BCP RI

Dear Mr.Waldrop,

Enclosed are the results of the sample(s) submitted to our laboratory November 18, 2020
For your reference, these analyses have been assigned our service request number **R2010938.**

All testing was performed according to our laboratory's quality assurance program and met the requirements of the TNI standards except as noted in the case narrative report. Any testing not included in the lab's accreditation is identified on a Non-Certified Analytes report. All results are intended to be considered in their entirety. ALS Environmental is not responsible for use of less than the complete report. Results apply only to the individual samples submitted to the lab for analysis, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s), and represented by Laboratory Control Sample control limits. Any events, such as QC failures or Holding Time exceedances, which may add to the uncertainty are explained in the report narrative or are flagged with qualifiers. The flags are explained in the Report Qualifiers and Definitions page of this report.

Please contact me if you have any questions. My extension is 7475. You may also contact me via email at Meghan.Pedro@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Meghan Pedro
Project Manager

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Narrative Documents

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Client: Inventum Engineering
Project: Riverview BCP RI
Sample Matrix: Soil, Water

Service Request: R2010938
Date Received: 11/18/2020

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:

Ten soil, water samples were received for analysis at ALS Environmental on 11/18/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Semivolatiles by GC/MS:

Method 8270D LL, R2010938-005, -006: The samples were doubl spiked with the internal standard. The samples were run at a 1/2 dilution so internal standard was at the level it is calibrated to. Samples will be re-extracted outside holding time.
Method 8270D LL, R2010938-002, -008: Sample(s) required dilution due to the dark oily nature of the extract. The reporting limits are adjusted to reflect the dilution.

Method 8270D, 12/01/2020: The upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.

Method 8270D, 12/01/2020: The lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.

2,4-Dinitrophenol has been reported as zero percent recovery in the LCS/LCSD due to a limitation in LIMs. 2,4-Dinitrophenol was detected at 14% and 20% recovery, respectively, within laboratory limits. The LCS/LCSD is acceptable and should not be flagged on the summary form. The precision is also outside laboratory control limits.

Method 8270D, 12/16/2020: The upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.

Method 8270D, 12/16/2020: The lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.

Method 8270D, 12/08/2020: The upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.

Method 8270D, 12/08/2020: The RPD between the LCS and the LCSD was greater than the RPD limit. The percent recovery limit was met for both the LCS and the LCSD.

Method 8270D, 12/01/2020: The control limits were exceeded for one or more surrogates in one or more QC samples associated with samples in this report. The samples are being re-extracted outside of holding time. No further corrective action was appropriate.

Approved by Meghan Pedro Date 12/31/2020

Method 8270D, 12/01/2020: The lower control limit for the spike recovery of the Laboratory Control Sample (LCS) was exceeded for one or more analyte. There were no detections of the analyte(s) in the associated field samples. The discrepancy associated with reduced recovery equates to a potential low bias. The samples will be re-extracted outside of holding time. The analytes affected are flagged in the LCS Summary.

Semivoa GC:

Method 8081B, 12/22/2020: The lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.

Method 8081B, 12/22/2020: The control limits were exceeded for analytes in the Continuing Calibration Verification (CCV). The QC failure was most likely due to the composition of the sample(s) immediately preceding the failing CCV. In order to protect the integrity of the instrument, no further corrective action was taken. Results should be considered estimated. Samples ran 2x with the same result to the closing ccv .

Method 8081B, R20101938-00,010: The control limits were exceeded for one or more surrogates due to suspected matrix interferences. Dark matrix of the sample is suspected of adversely affecting the recovery. No further corrective action was appropriate.

Metals:

No significant anomalies were noted with this analysis.

General Chemistry:

Method Kelada-01, 11/24/2020: The upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.

Subcontracted Analytical Parameters:

No significant anomalies were noted with this analysis.

Volatiles by GC/MS:

Method 8260C, 11/25/2020: The upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.

Method 8260C, 11/25/2020, R2010938-002: The recovery of one or more internal standards was outside control limits because of suspected matrix interference. The sample was re-extracted and reanalyzed, but produced similar results. No further corrective action was appropriate.

Method 8260C, 11/25/2020: The lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
Freezer blk in soil fridge#09 had J level hit for PCE. Samples may also have J level hit due to contamination.
Method 8260C, 11/28/2020, R2010938-002: The recovery of one or more internal standards was outside control limits because of suspected matrix interference. The sample was re-extracted and reanalyzed, but produced similar results. No further corrective action was appropriate.

Method 8260C, 11/28/2020: The upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and

Approved by Meghan Pedro Date 12/31/2020

ALS Environmental

no further corrective action was taken.
Freezer blk in soil fridge#09 had J level hit for PCE. Samples may also have J level hit due to contamination.

Approved by Meghan Pedro Date 12/31/2020

SAMPLE DETECTION SUMMARY

CLIENT ID: EQB-11172020			Lab ID: R2010938-001			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Bis(2-ethylhexyl) Phthalate	1.2	J	1.1	10	ug/L	8270D
Caprolactam	1.9	J	1.1	11	ug/L	8270D

CLIENT ID: TR-BCP-07-01-HA			Lab ID: R2010938-002			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Cyanide, Total	0.39		0.17	0.29	mg/Kg	9012B
Total Solids	77.7				Percent	ALS SOP
Acetone	52		9.1	9.6	ug/Kg	8260C
Benzene	0.52	J	0.39	9.6	ug/Kg	8260C
Cyclohexane	5.7	J	0.50	9.6	ug/Kg	8260C
Methyl Acetate	20		1.7	9.6	ug/Kg	8260C
Methylcyclohexane	5.2	J	0.60	9.6	ug/Kg	8260C
Tetrachloroethene (PCE)	1.9	J	0.45	9.6	ug/Kg	8260C
Toluene	0.45	J	0.39	9.6	ug/Kg	8260C
m,p-Xylenes	0.90	J	0.71	19	ug/Kg	8260C
o-Xylene	1.1	J	0.39	9.6	ug/Kg	8260C
Acetone	35		9.7	10	ug/Kg	8260C
Benzene	0.46	J	0.41	10	ug/Kg	8260C
Cyclohexane	4.0	J	0.54	10	ug/Kg	8260C
Methyl Acetate	77		1.8	10	ug/Kg	8260C
Methylcyclohexane	6.0	J	0.64	10	ug/Kg	8260C
Tetrachloroethene (PCE)	1.3	J	0.48	10	ug/Kg	8260C
m,p-Xylenes	1.3	J	0.76	20	ug/Kg	8260C
o-Xylene	0.76	J	0.41	10	ug/Kg	8260C
2-Methylnaphthalene	2400		150	660	ug/Kg	8270D
3- and 4-Methylphenol Coelution	250	J	130	660	ug/Kg	8270D
Acenaphthene	1200		150	660	ug/Kg	8270D
Acenaphthylene	3200		180	660	ug/Kg	8270D
Anthracene	5100		190	660	ug/Kg	8270D
Benz(a)anthracene	13000	E	200	660	ug/Kg	8270D
Benzo(a)pyrene	16000	E	240	660	ug/Kg	8270D
Benzo(b)fluoranthene	19000	E	220	660	ug/Kg	8270D
Benzo(g,h,i)perylene	12000	E	180	660	ug/Kg	8270D
Benzo(k)fluoranthene	6400		240	660	ug/Kg	8270D
Biphenyl	550	J	170	660	ug/Kg	8270D
Bis(2-ethylhexyl) Phthalate	430	J	180	1000	ug/Kg	8270D
Carbazole	2400		190	660	ug/Kg	8270D
Chrysene	13000	E	240	660	ug/Kg	8270D
Di-n-octyl Phthalate	220	J	200	660	ug/Kg	8270D
Dibenz(a,h)anthracene	2400		200	660	ug/Kg	8270D
Dibenzofuran	2200		130	660	ug/Kg	8270D
Fluoranthene	20000	E	240	660	ug/Kg	8270D

SAMPLE DETECTION SUMMARY

CLIENT ID: TR-BCP-07-01-HA			Lab ID: R2010938-002			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Fluorene	2300		160	660	ug/Kg	8270D
Indeno(1,2,3-cd)pyrene	10000	E	220	660	ug/Kg	8270D
Naphthalene	6200		170	660	ug/Kg	8270D
Phenanthrene	15000	E	200	660	ug/Kg	8270D
Phenol	210	J	160	660	ug/Kg	8270D
Pyrene	19000	E	260	660	ug/Kg	8270D
2-Methylnaphthalene	2500	DJ	720	3300	ug/Kg	8270D
Acenaphthene	1200	DJ	740	3300	ug/Kg	8270D
Acenaphthylene	3000	DJ	870	3300	ug/Kg	8270D
Anthracene	4900	D	920	3300	ug/Kg	8270D
Benz(a)anthracene	13000	D	970	3300	ug/Kg	8270D
Benzo(a)pyrene	17000	D	1200	3300	ug/Kg	8270D
Benzo(b)fluoranthene	18000	D	1100	3300	ug/Kg	8270D
Benzo(g,h,i)perylene	11000	D	870	3300	ug/Kg	8270D
Benzo(k)fluoranthene	6700	D	1200	3300	ug/Kg	8270D
Carbazole	2600	DJ	950	3300	ug/Kg	8270D
Chrysene	13000	D	1200	3300	ug/Kg	8270D
Dibenz(a,h)anthracene	3000	DJ	980	3300	ug/Kg	8270D
Dibenzofuran	2400	DJ	650	3300	ug/Kg	8270D
Fluoranthene	25000	D	1200	3300	ug/Kg	8270D
Fluorene	2500	DJ	760	3300	ug/Kg	8270D
Indeno(1,2,3-cd)pyrene	13000	D	1100	3300	ug/Kg	8270D
Naphthalene	7000	D	850	3300	ug/Kg	8270D
Phenanthrene	19000	D	960	3300	ug/Kg	8270D
Pyrene	21000	D	1300	3300	ug/Kg	8270D
Endosulfan Sulfate	14	J	11	22	ug/Kg	8081B
Endrin Ketone	13	J	11	22	ug/Kg	8081B

CLIENT ID: SD-BCP-01			Lab ID: R2010938-003			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Cyanide, Total	1.23		0.26	0.45	mg/Kg	9012B
Total Solids	60.5				Percent	ALS SOP
2-Methylnaphthalene	180	J	130	550	ug/Kg	8270D
Acenaphthylene	260	J	150	550	ug/Kg	8270D
Anthracene	340	J	160	550	ug/Kg	8270D
Benz(a)anthracene	880		170	550	ug/Kg	8270D
Benzo(a)pyrene	1300		210	550	ug/Kg	8270D
Benzo(b)fluoranthene	1400		190	550	ug/Kg	8270D
Benzo(g,h,i)perylene	940		150	550	ug/Kg	8270D
Benzo(k)fluoranthene	510	J	210	550	ug/Kg	8270D
Chrysene	950		210	550	ug/Kg	8270D
Dibenz(a,h)anthracene	190	J	170	550	ug/Kg	8270D

SAMPLE DETECTION SUMMARY

CLIENT ID: SD-BCP-01			Lab ID: R2010938-003			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Dibenzofuran	190	J	110	550	ug/Kg	8270D
Fluoranthene	1500		210	550	ug/Kg	8270D
Fluorene	210	J	130	550	ug/Kg	8270D
Indeno(1,2,3-cd)pyrene	750		190	550	ug/Kg	8270D
Naphthalene	650		150	550	ug/Kg	8270D
Phenanthrene	960		170	550	ug/Kg	8270D
Pyrene	1300		220	550	ug/Kg	8270D

CLIENT ID: SD-BCP-02			Lab ID: R2010938-004			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Cyanide, Total	0.21	J	0.20	0.35	mg/Kg	9012B
Total Solids	69.2				Percent	ALS SOP
2-Methylnaphthalene	120	J	110	490	ug/Kg	8270D
Anthracene	210	J	140	490	ug/Kg	8270D
Benz(a)anthracene	670		150	490	ug/Kg	8270D
Benzo(a)pyrene	1100		180	490	ug/Kg	8270D
Benzo(b)fluoranthene	1100		170	490	ug/Kg	8270D
Benzo(g,h,i)perylene	820		130	490	ug/Kg	8270D
Benzo(k)fluoranthene	410	J	180	490	ug/Kg	8270D
Chrysene	720		180	490	ug/Kg	8270D
Dibenz(a,h)anthracene	150	J	150	490	ug/Kg	8270D
Dibenzofuran	110	J	96	490	ug/Kg	8270D
Fluoranthene	1100		180	490	ug/Kg	8270D
Fluorene	130	J	120	490	ug/Kg	8270D
Indeno(1,2,3-cd)pyrene	630		170	490	ug/Kg	8270D
Naphthalene	250	J	130	490	ug/Kg	8270D
Phenanthrene	570		150	490	ug/Kg	8270D
Pyrene	1000		200	490	ug/Kg	8270D

CLIENT ID: SD-BCP-04			Lab ID: R2010938-005			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Total Solids	78.4				Percent	ALS SOP

CLIENT ID: SD-BCP-040			Lab ID: R2010938-006			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Total Solids	73.6				Percent	ALS SOP

CLIENT ID: SD-BCP-03			Lab ID: R2010938-007			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Cyanide, Total	0.94		0.22	0.38	mg/Kg	9012B
Total Solids	54.5				Percent	ALS SOP
2-Methylnaphthalene	290	J	140	610	ug/Kg	8270D
Acenaphthene	170	J	140	610	ug/Kg	8270D

SAMPLE DETECTION SUMMARY

CLIENT ID: SD-BCP-03			Lab ID: R2010938-007			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Acenaphthylene	330	J	170	610	ug/Kg	8270D
Anthracene	580	J	180	610	ug/Kg	8270D
Benz(a)anthracene	730		190	610	ug/Kg	8270D
Benzo(a)pyrene	780		230	610	ug/Kg	8270D
Benzo(b)fluoranthene	850		210	610	ug/Kg	8270D
Benzo(g,h,i)perylene	490	J	170	610	ug/Kg	8270D
Benzo(k)fluoranthene	330	J	230	610	ug/Kg	8270D
Chrysene	730		230	610	ug/Kg	8270D
Dibenzofuran	330	J	130	610	ug/Kg	8270D
Fluoranthene	1700		230	610	ug/Kg	8270D
Fluorene	410	J	150	610	ug/Kg	8270D
Indeno(1,2,3-cd)pyrene	400	J	210	610	ug/Kg	8270D
Naphthalene	830		160	610	ug/Kg	8270D
Phenanthrene	1200		180	610	ug/Kg	8270D
Pyrene	1400		250	610	ug/Kg	8270D

CLIENT ID: SS-BCP-15-02			Lab ID: R2010938-008			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Total Solids	39.4				Percent	ALS SOP
Benz(a)anthracene	1100		320	1100	ug/Kg	8270D
Benzo(a)pyrene	1900		400	1100	ug/Kg	8270D
Benzo(b)fluoranthene	2100		370	1100	ug/Kg	8270D
Benzo(g,h,i)perylene	1500		290	1100	ug/Kg	8270D
Benzo(k)fluoranthene	680	J	400	1100	ug/Kg	8270D
Chrysene	1200		400	1100	ug/Kg	8270D
Fluoranthene	1800		400	1100	ug/Kg	8270D
Indeno(1,2,3-cd)pyrene	1200		370	1100	ug/Kg	8270D
Naphthalene	450	J	280	1100	ug/Kg	8270D
Phenanthrene	710	J	320	1100	ug/Kg	8270D
Pyrene	1700		430	1100	ug/Kg	8270D

CLIENT ID: SS-BCP-15-06			Lab ID: R2010938-009			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Total Solids	64.5				Percent	ALS SOP
1,1-Dichloroethane (1,1-DCA)	1.0	J	0.51	13	ug/Kg	8260C
Carbon Disulfide	1.1	J	0.74	13	ug/Kg	8260C
Tetrachloroethene (PCE)	1.1	J	0.59	13	ug/Kg	8260C

CLIENT ID: SS-BCP-15-024			Lab ID: R2010938-010			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Cyanide, Total	41.8		0.25	0.43	mg/Kg	9012B
Total Solids	63.9				Percent	ALS SOP
2-Methylnaphthalene	210	J	120	520	ug/Kg	8270D

SAMPLE DETECTION SUMMARY

CLIENT ID: SS-BCP-15-024			Lab ID: R2010938-010			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Acenaphthene	180	J	120	520	ug/Kg	8270D
Acenaphthylene	1800		140	520	ug/Kg	8270D
Anthracene	790		150	520	ug/Kg	8270D
Benz(a)anthracene	2400		160	520	ug/Kg	8270D
Benzo(a)pyrene	3600		190	520	ug/Kg	8270D
Benzo(b)fluoranthene	4400		180	520	ug/Kg	8270D
Benzo(g,h,i)perylene	3200		140	520	ug/Kg	8270D
Benzo(k)fluoranthene	1600		190	520	ug/Kg	8270D
Carbazole	290	J	160	520	ug/Kg	8270D
Chrysene	2800		190	520	ug/Kg	8270D
Dibenz(a,h)anthracene	550		160	520	ug/Kg	8270D
Dibenzofuran	170	J	110	520	ug/Kg	8270D
Fluoranthene	4000		190	520	ug/Kg	8270D
Fluorene	170	J	130	520	ug/Kg	8270D
Indeno(1,2,3-cd)pyrene	2500		180	520	ug/Kg	8270D
Naphthalene	800		140	520	ug/Kg	8270D
Phenanthrene	1800		160	520	ug/Kg	8270D
Pyrene	3900		210	520	ug/Kg	8270D
Aroclor 1254	35	J	27	52	ug/Kg	8082A

Sample Receipt Information

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Inventum Engineering **Service Request:**R2010938
Project: Riverview BCP RI

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R2010938-001	EQB-11172020	11/17/2020	0906
R2010938-002	TR-BCP-07-01-HA	11/17/2020	0830
R2010938-003	SD-BCP-01	11/17/2020	1020
R2010938-004	SD-BCP-02	11/17/2020	1145
R2010938-005	SD-BCP-04	11/17/2020	1110
R2010938-006	SD-BCP-040	11/17/2020	1110
R2010938-007	SD-BCP-03	11/17/2020	1515
R2010938-008	SS-BCP-15-02	11/17/2020	1430
R2010938-009	SS-BCP-15-06	11/17/2020	1430
R2010938-010	SS-BCP-15-024	11/17/2020	1430

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

004181

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 1 OF 2

Project Name: Riverview · BCP RI	Project Number:
Project Manager: Todd Waldrop	Report CC:
Company/Address: Inventum Engineering 481 Carlisle Dr. Suite 202 Hanson NY 20170	
Phone #: 571217 3627	Email: Todd.Waldrop@Inventumeng.com
Sampler's Signature:	Sampler's Printed Name: James Edwards

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

PRESERVATIVE

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOAs 8260 • 624 • CLP	GC/MS SVOAs 8270 • 625	GC VOAs 8021 • 8015	PESTICIDES 8081 • 608	PCBs 8082 • 608	METALS: TOTAL (List in comments below)	METALS: DISSOLVED (List in comments below)	Hg (7471A)	1,4 Dioxane
EQB-11172020		11-17-20	0906	Aq		✓	✓	✓			✓	✓		
TRBCP-07-01-HA		11-17-20	830	S		✓	✓	✓	✓	✓	✓	✓	✓	✓
SD BCP01		11-17-20	1020	S			✓	✓			✓	✓		
SD BCP02		11-17-20	1145	S			✓	✓			✓	✓		
SD BCP04		11-17-20	1110	S			✓	✓	✓	✓	✓	✓	✓	✓
SD BCP04D		11-17-20	1110	S			✓	✓	✓	✓	✓	✓	✓	✓
SD BCP03		11-17-20	315	S			✓	✓			✓	✓		
SS BCP15-02		11-17-20	230	S			✓	✓	✓	✓	✓	✓	✓	✓
SS BCP15-06		11-17-20	230	S	4	✓	✓	✓	✓	✓	✓	✓	✓	✓
SS BCP15024		11-17-20	230	S			✓	✓	✓	✓	✓	✓	✓	✓

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

REMARKS/ ALTERNATE DESCRIPTION

11-18-20

SPECIAL INSTRUCTIONS/COMMENTS
Metals

See QAPP ☐

STATE WHERE SAMPLES WERE COLLECTED: NY

TURNAROUND REQUIREMENTS
____ RUSH (SURCHARGES APPLY)
____ 1 day ____ 2 day ____ 3 day
____ 4 day ____ 5 day
✓ Standard (10 business days-No Surcharge)

REQUESTED REPORT DATE: _____

REPORT REQUIREMENTS
____ I. Results Only
____ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
____ III. Results + QC and Calibration Summaries
✓ IV. Data Validation Report with Raw Data
NYSDEC / Honeywell
Edata ✓ Yes ____ No

INVOICE INFORMATION
PO #:
BILL TO: Inventum

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: James Edwards	Signature: Keith James	Signature: Keith James	Signature:	Signature:	Signature:
Printed Name: ~~Todd Waldrop~~	Printed Name: Keith James	Printed Name: Keith James	Printed Name: David Ward	Printed Name:	Printed Name:
Firm: Inventum	Firm: ALS	Firm: ALS	Firm: ALS	Firm:	Firm:
Date/Time:	Date/Time: 11-18-20 11:10	Date/Time: 11-18-20 13:00	Date/Time: 11/18/2020 1300	Date/Time:	Date/Time:

Distribution: White - Lab Copy; Yellow - Return to Originator

R2010938 5
Inventum Engineering
Riverview BCP RI

Cooler Receipt and Preservation Check Form

R2010938 5
Inventum Engineering
Riverview BCP RI

Project/Client Inventum Folder Number

Cooler received on 11/18/2020 by: dlw

COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	Y (N)	5a	**Perchlorate** samples have required headspace?	Y N (NA)
2	**Custody papers** properly completed (ink, signed)?	(Y) N	5b	Did VOA vials, Alk,or Sulfide have sig* **bubbles**?	(Y) N NA
3	Did all bottles arrive in good **condition** (unbroken)?	(Y) N	6	Where did the bottles originate?	ALS/ROC CLIENT
4	Circle: **Wet Ice Dry Ice Gel packs** present?	(Y) N	7	Soil VOA received as:	Bulk Encore 5035set NA

8. Temperature Readings Date: 11/18/2020 Time: 1325 ID: IR#7 IR#10 From: Temp Blank Sample Bottle

Observed Temp (°C)	0.4°	2.6°					
Within 0-6°C?	(Y) N	(Y) N	Y N	Y N	Y N	Y N	Y N
If <0°C, were samples frozen?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: _____ Ice melted Poorly Packed (described below) Same Day Rule

&Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: R-002 by dlw on 11/18/20 at 1325
5035 samples placed in storage location: R-Fridge 5035 11/18/20 by ✓ on ✓ at ✓ within 48 hours of sampling? (Y) N

Cooler Breakdown/Preservation Check**: Date: 11/18/2020 Time: 2210 by: dlw

9. Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? (YES) NO
10. Did all bottle labels and tags agree with custody papers? (YES) NO
11. Were correct containers used for the tests indicated? (YES) NO
12. Were 5035 vials acceptable (no extra labels, not leaking)? YES (NO) N/A
13. Air Samples: Cassettes / Tubes Intact Y / N with MS Y / N Canisters Pressurized Tedlar® Bags Inflated (N/A)

pH	Lot of test paper	Reagent	Preserved? Yes	Preserved? No	Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
≥12	223419	NaOH	✓		208385					
≤2	↓	HNO_3	✓		20200431H					
≤2		H_2SO_4								
<4		$NaHSO_4$								
5-9		For 608pest			No=Notify for 3day					
Residual Chlorine (-)		For CN, Phenol, 625, 608pest, 522	✓		If +, contact PM to add $Na_2S_2O_3$ (625, 608, CN), ascorbic (phenol).					
		$Na_2S_2O_3$								
		ZnAcetate	-	-			**VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).			
		HCl	**	**						

Bottle lot numbers: 080320-ITW, 083120-ISK, 20-09-09, 091420-ISMC
Explain all Discrepancies/ Other Comments:
* 2 vials: Trip Blank

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by: dlw
PC Secondary Review: lm

*significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

Miscellaneous Forms

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

REPORT QUALIFIERS AND DEFINITIONS

U	Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.
J	Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).
B	Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.
E	Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
E	Organics- Concentration has exceeded the calibration range for that specific analysis.
D	Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.
*	Indicates that a quality control parameter has exceeded laboratory limits. Under the ñNotesò column of the Form I, this qualifier denotes analysis was performed out of Holding Time.
H	Analysis was performed out of hold time for tests that have an ñimmediateò hold time criteria.
#	Spike was diluted out.
+	Correlation coefficient for MSA is <0.995.
N	Inorganics- Matrix spike recovery was outside laboratory limits.
N	Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
S	Concentration has been determined using Method of Standard Additions (MSA).
W	Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
P	Concentration >40% difference between the two GC columns.
C	Confirmed by GC/MS
Q	DoD reports: indicates a pesticide/Aroclor is not confirmed (Ó100% Difference between two GC columns).
X	See Case Narrative for discussion.
MRL LOQ	Method Reporting Limit. Also known as: Limit of Quantitation (LOQ) The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
MDL	Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
LOD	Limit of Detection. A value at or above the MDL which has been verified to be detectable.
ND	Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

Rochester Lab ID # for State Certifications[1]

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
Delaware Approved	New Hampshire ID # 2941	Rhode Island ID # 158
DoD ELAP #65817	New York ID # 10145	Virginia #460167
Florida ID # E87674	North Carolina #676	

[1] Analyses were performed according to our laboratoryôs NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to https://www.alsglobal.com/locations/americas/north-america/usa/new-york/rochester-environmental

ALS Laboratory Group

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
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.

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Client: Inventum Engineering **Service Request:** R2010938
Project: Riverview BCP RI

Non-Certified Analytes

Certifying Agency: New York Department of Health

Method	Matrix	Analyte
ALS SOP	Soil	Total Solids

INORGANIC PREPARATION METHODS

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9034 Sulfide Acid Soluble	9030B
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 SPLP (1312) extract	3005A/3010A
7199	3060A
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction
For analytical methods not listed, the preparation method is the same as the analytical method reference.	

Sample Results

ALS Environmental—Rochester Laboratory
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Volatile Organic Compounds by GC/MS

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dba ALS Environmental

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	11/17/20 08:30
Sample Matrix:	Soil	**Date Received:**	11/18/20 13:00
Sample Name:	TR-BCP-07-01-HA	**Units:**	ug/Kg
Lab Code:	R2010938-002	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	0.39 U	9.6	0.39	1.49	11/28/20 15:24	
1,1,2,2-Tetrachloroethane	0.85 U	9.6	0.85	1.49	11/28/20 15:24	
1,1,2-Trichloroethane	0.39 U	9.6	0.39	1.49	11/28/20 15:24	
1,1,2-Trichloro-1,2,2-trifluoroethane	0.39 U	9.6	0.39	1.49	11/28/20 15:24	
1,1-Dichloroethane (1,1-DCA)	0.39 U	9.6	0.39	1.49	11/28/20 15:24	
1,1-Dichloroethene (1,1-DCE)	0.56 U	9.6	0.56	1.49	11/28/20 15:24	
1,2,3-Trichlorobenzene	1.0 U	9.6	1.0	1.49	11/28/20 15:24	
1,2,4-Trichlorobenzene	0.81 U	9.6	0.81	1.49	11/28/20 15:24	
1,2-Dibromo-3-chloropropane (DBCP)	1.5 U	9.6	1.5	1.49	11/28/20 15:24	
1,2-Dibromoethane	0.39 U	9.6	0.39	1.49	11/28/20 15:24	
1,2-Dichlorobenzene	0.39 U	9.6	0.39	1.49	11/28/20 15:24	
1,2-Dichloroethane	0.39 U	9.6	0.39	1.49	11/28/20 15:24	
1,2-Dichloropropane	0.39 U	9.6	0.39	1.49	11/28/20 15:24	
1,3-Dichlorobenzene	0.39 U	9.6	0.39	1.49	11/28/20 15:24	
1,4-Dichlorobenzene	0.43 U	9.6	0.43	1.49	11/28/20 15:24	
1,4-Dioxane	39 U	190	39	1.49	11/28/20 15:24	
2-Butanone (MEK)	3.9 U	9.6	3.9	1.49	11/28/20 15:24	
2-Hexanone	0.70 U	9.6	0.70	1.49	11/28/20 15:24	
4-Methyl-2-pentanone	0.45 U	9.6	0.45	1.49	11/28/20 15:24	
Acetone	**52**	9.6	9.1	1.49	11/28/20 15:24	
Benzene	**0.52 J**	9.6	0.39	1.49	11/28/20 15:24	
Bromochloromethane	0.39 U	9.6	0.39	1.49	11/28/20 15:24	
Bromodichloromethane	0.39 U	9.6	0.39	1.49	11/28/20 15:24	
Bromoform	0.96 U	9.6	0.96	1.49	11/28/20 15:24	
Bromomethane	4.1 U	9.6	4.1	1.49	11/28/20 15:24	
Carbon Disulfide	0.56 U	9.6	0.56	1.49	11/28/20 15:24	
Carbon Tetrachloride	0.50 U	9.6	0.50	1.49	11/28/20 15:24	
Chlorobenzene	0.39 U	9.6	0.39	1.49	11/28/20 15:24	
Chloroethane	0.79 U	9.6	0.79	1.49	11/28/20 15:24	
Chloroform	0.39 U	9.6	0.39	1.49	11/28/20 15:24	
Chloromethane	2.7 U	9.6	2.7	1.49	11/28/20 15:24	
Cyclohexane	**5.7 J**	9.6	0.50	1.49	11/28/20 15:24	
Dibromochloromethane	0.39 U	9.6	0.39	1.49	11/28/20 15:24	
Dichlorodifluoromethane (CFC 12)	0.64 U	9.6	0.64	1.49	11/28/20 15:24	
Dichloromethane	5.4 U	9.6	5.4	1.49	11/28/20 15:24	
Ethylbenzene	0.39 U	9.6	0.39	1.49	11/28/20 15:24	
Isopropylbenzene (Cumene)	0.39 U	9.6	0.39	1.49	11/28/20 15:24	
Methyl Acetate	**20**	9.6	1.7	1.49	11/28/20 15:24	
Methyl tert-Butyl Ether	0.39 U	9.6	0.39	1.49	11/28/20 15:24	
Methylcyclohexane	**5.2 J**	9.6	0.60	1.49	11/28/20 15:24	
Styrene	0.39 U	9.6	0.39	1.49	11/28/20 15:24	
Tetrachloroethene (PCE)	**1.9 J**	9.6	0.45	1.49	11/28/20 15:24	
Toluene	**0.45 J**	9.6	0.39	1.49	11/28/20 15:24	

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	11/17/20 08:30
Sample Matrix:	Soil	**Date Received:**	11/18/20 13:00
Sample Name:	TR-BCP-07-01-HA	**Units:**	ug/Kg
Lab Code:	R2010938-002	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	0.43 U	9.6	0.43	1.49	11/28/20 15:24	
Trichlorofluoromethane (CFC 11)	0.50 U	9.6	0.50	1.49	11/28/20 15:24	
Vinyl Chloride	0.89 U	9.6	0.89	1.49	11/28/20 15:24	
cis-1,2-Dichloroethene	0.39 U	9.6	0.39	1.49	11/28/20 15:24	
cis-1,3-Dichloropropene	0.39 U	9.6	0.39	1.49	11/28/20 15:24	
m,p-Xylenes	**0.90 J**	19	0.71	1.49	11/28/20 15:24	
o-Xylene	**1.1 J**	9.6	0.39	1.49	11/28/20 15:24	
trans-1,2-Dichloroethene	0.39 U	9.6	0.39	1.49	11/28/20 15:24	
trans-1,3-Dichloropropene	0.39 U	9.6	0.39	1.49	11/28/20 15:24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	37	31 - 154	11/28/20 15:24	
Dibromofluoromethane	104	63 - 138	11/28/20 15:24	
Toluene-d8	96	66 - 138	11/28/20 15:24	

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	11/17/20 08:30
Sample Matrix:	Soil	**Date Received:**	11/18/20 13:00
Sample Name:	TR-BCP-07-01-HA	**Units:**	ug/Kg
Lab Code:	R2010938-002	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	0.41 U	10	0.41	1.59	11/25/20 19:00	
1,1,2,2-Tetrachloroethane	0.91 U	10	0.91	1.59	11/25/20 19:00	
1,1,2-Trichloroethane	0.41 U	10	0.41	1.59	11/25/20 19:00	
1,1,2-Trichloro-1,2,2-trifluoroethane	0.41 U	10	0.41	1.59	11/25/20 19:00	
1,1-Dichloroethane (1,1-DCA)	0.41 U	10	0.41	1.59	11/25/20 19:00	
1,1-Dichloroethene (1,1-DCE)	0.60 U	10	0.60	1.59	11/25/20 19:00	
1,2,3-Trichlorobenzene	1.1 U	10	1.1	1.59	11/25/20 19:00	
1,2,4-Trichlorobenzene	0.86 U	10	0.86	1.59	11/25/20 19:00	
1,2-Dibromo-3-chloropropane (DBCP)	1.6 U	10	1.6	1.59	11/25/20 19:00	
1,2-Dibromoethane	0.41 U	10	0.41	1.59	11/25/20 19:00	
1,2-Dichlorobenzene	0.41 U	10	0.41	1.59	11/25/20 19:00	
1,2-Dichloroethane	0.41 U	10	0.41	1.59	11/25/20 19:00	
1,2-Dichloropropane	0.41 U	10	0.41	1.59	11/25/20 19:00	
1,3-Dichlorobenzene	0.41 U	10	0.41	1.59	11/25/20 19:00	
1,4-Dichlorobenzene	0.46 U	10	0.46	1.59	11/25/20 19:00	
1,4-Dioxane	41 U	200	41	1.59	11/25/20 19:00	
2-Butanone (MEK)	4.1 U	10	4.1	1.59	11/25/20 19:00	
2-Hexanone	0.74 U	10	0.74	1.59	11/25/20 19:00	
4-Methyl-2-pentanone	0.48 U	10	0.48	1.59	11/25/20 19:00	
Acetone	**35**	10	9.7	1.59	11/25/20 19:00	
Benzene	**0.46 J**	10	0.41	1.59	11/25/20 19:00	
Bromochloromethane	0.41 U	10	0.41	1.59	11/25/20 19:00	
Bromodichloromethane	0.41 U	10	0.41	1.59	11/25/20 19:00	
Bromoform	1.1 U	10	1.1	1.59	11/25/20 19:00	
Bromomethane	4.3 U	10	4.3	1.59	11/25/20 19:00	
Carbon Disulfide	0.60 U	10	0.60	1.59	11/25/20 19:00	
Carbon Tetrachloride	0.54 U	10	0.54	1.59	11/25/20 19:00	
Chlorobenzene	0.41 U	10	0.41	1.59	11/25/20 19:00	
Chloroethane	0.84 U	10	0.84	1.59	11/25/20 19:00	
Chloroform	0.41 U	10	0.41	1.59	11/25/20 19:00	
Chloromethane	2.9 U	10	2.9	1.59	11/25/20 19:00	
Cyclohexane	**4.0 J**	10	0.54	1.59	11/25/20 19:00	
Dibromochloromethane	0.41 U	10	0.41	1.59	11/25/20 19:00	
Dichlorodifluoromethane (CFC 12)	0.68 U	10	0.68	1.59	11/25/20 19:00	
Dichloromethane	5.8 U	10	5.8	1.59	11/25/20 19:00	
Ethylbenzene	0.41 U	10	0.41	1.59	11/25/20 19:00	
Isopropylbenzene (Cumene)	0.41 U	10	0.41	1.59	11/25/20 19:00	
Methyl Acetate	**77**	10	1.8	1.59	11/25/20 19:00	
Methyl tert-Butyl Ether	0.41 U	10	0.41	1.59	11/25/20 19:00	
Methylcyclohexane	**6.0 J**	10	0.64	1.59	11/25/20 19:00	
Styrene	0.41 U	10	0.41	1.59	11/25/20 19:00	
Tetrachloroethene (PCE)	**1.3 J**	10	0.48	1.59	11/25/20 19:00	
Toluene	0.41 U	10	0.41	1.59	11/25/20 19:00	

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	11/17/20 08:30
Sample Matrix:	Soil	**Date Received:**	11/18/20 13:00
Sample Name:	TR-BCP-07-01-HA	**Units:**	ug/Kg
Lab Code:	R2010938-002	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	0.46 U	10	0.46	1.59	11/25/20 19:00	
Trichlorofluoromethane (CFC 11)	0.54 U	10	0.54	1.59	11/25/20 19:00	
Vinyl Chloride	0.95 U	10	0.95	1.59	11/25/20 19:00	
cis-1,2-Dichloroethene	0.41 U	10	0.41	1.59	11/25/20 19:00	
cis-1,3-Dichloropropene	0.41 U	10	0.41	1.59	11/25/20 19:00	
m,p-Xylenes	**1.3 J**	20	0.76	1.59	11/25/20 19:00	
o-Xylene	**0.76 J**	10	0.41	1.59	11/25/20 19:00	
trans-1,2-Dichloroethene	0.41 U	10	0.41	1.59	11/25/20 19:00	
trans-1,3-Dichloropropene	0.41 U	10	0.41	1.59	11/25/20 19:00	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	32	31 - 154	11/25/20 19:00	
Dibromofluoromethane	106	63 - 138	11/25/20 19:00	
Toluene-d8	105	66 - 138	11/25/20 19:00	

Semivolatile Organic Compounds by GC/MS

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	11/17/20 08:30
Sample Matrix:	Soil	**Date Received:**	11/18/20 13:00
Sample Name:	TR-BCP-07-01-HA	**Units:**	ug/Kg
Lab Code:	R2010938-002	**Basis:**	Dry

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4,5-Tetrachlorobenzene	160	U	660	160	1	12/01/20 23:19	11/23/20	
2,3,4,6-Tetrachlorophenol	140	U	660	140	1	12/01/20 23:19	11/23/20	
2,4,5-Trichlorophenol	560	U	660	560	1	12/01/20 23:19	11/23/20	
2,4,6-Trichlorophenol	120	U	660	120	1	12/01/20 23:19	11/23/20	
2,4-Dichlorophenol	140	U	660	140	1	12/01/20 23:19	11/23/20	
2,4-Dimethylphenol	150	U	660	150	1	12/01/20 23:19	11/23/20	
2,4-Dinitrophenol	1300	U	3400	1300	1	12/01/20 23:19	11/23/20	
2,4-Dinitrotoluene	260	U	660	260	1	12/01/20 23:19	11/23/20	
2,6-Dinitrotoluene	200	U	660	200	1	12/01/20 23:19	11/23/20	
2-Chloronaphthalene	160	U	660	160	1	12/01/20 23:19	11/23/20	
2-Chlorophenol	170	U	660	170	1	12/01/20 23:19	11/23/20	
2-Methylnaphthalene	**2400**		660	150	1	12/01/20 23:19	11/23/20	
2-Methylphenol	150	U	660	150	1	12/01/20 23:19	11/23/20	
2-Nitroaniline	200	U	660	200	1	12/01/20 23:19	11/23/20	
2-Nitrophenol	190	U	660	190	1	12/01/20 23:19	11/23/20	
3,3'-Dichlorobenzidine	140	U	660	140	1	12/01/20 23:19	11/23/20	
3- and 4-Methylphenol Coelution	**250**	**J**	660	130	1	12/01/20 23:19	11/23/20	
3-Nitroaniline	140	U	660	140	1	12/01/20 23:19	11/23/20	
4,6-Dinitro-2-methylphenol	280	U	3400	280	1	12/01/20 23:19	11/23/20	
4-Bromophenyl Phenyl Ether	240	U	660	240	1	12/01/20 23:19	11/23/20	
4-Chloro-3-methylphenol	150	U	660	150	1	12/01/20 23:19	11/23/20	
4-Chloroaniline	160	U	660	160	1	12/01/20 23:19	11/23/20	
4-Chlorophenyl Phenyl Ether	160	U	660	160	1	12/01/20 23:19	11/23/20	
4-Nitroaniline	140	U	660	140	1	12/01/20 23:19	11/23/20	
4-Nitrophenol	220	U	3400	220	1	12/01/20 23:19	11/23/20	
Acenaphthene	**1200**		660	150	1	12/01/20 23:19	11/23/20	
Acenaphthylene	**3200**		660	180	1	12/01/20 23:19	11/23/20	
Acetophenone	150	U	660	150	1	12/01/20 23:19	11/23/20	
Anthracene	**5100**		660	190	1	12/01/20 23:19	11/23/20	
Atrazine	260	U	660	260	1	12/01/20 23:19	11/23/20	
Benz(a)anthracene	**13000**	**E**	660	200	1	12/01/20 23:19	11/23/20	
Benzaldehyde	130	U	660	130	1	12/01/20 23:19	11/23/20	
Benzo(a)pyrene	**16000**	**E**	660	240	1	12/01/20 23:19	11/23/20	
Benzo(b)fluoranthene	**19000**	**E**	660	220	1	12/01/20 23:19	11/23/20	
Benzo(g,h,i)perylene	**12000**	**E**	660	180	1	12/01/20 23:19	11/23/20	
Benzo(k)fluoranthene	**6400**		660	240	1	12/01/20 23:19	11/23/20	
Biphenyl	**550**	**J**	660	170	1	12/01/20 23:19	11/23/20	
2,2'-Oxybis(1-chloropropane)	260	U	660	260	1	12/01/20 23:19	11/23/20	
Bis(2-chloroethoxy)methane	180	U	660	180	1	12/01/20 23:19	11/23/20	
Bis(2-chloroethyl) Ether	180	U	660	180	1	12/01/20 23:19	11/23/20	
Bis(2-ethylhexyl) Phthalate	**430**	**J**	1000	180	1	12/01/20 23:19	11/23/20	
Butyl Benzyl Phthalate	170	U	660	170	1	12/01/20 23:19	11/23/20	
Caprolactam	180	U	660	180	1	12/01/20 23:19	11/23/20	

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	11/17/20 08:30
Sample Matrix:	Soil	**Date Received:**	11/18/20 13:00
Sample Name:	TR-BCP-07-01-HA	**Units:**	ug/Kg
Lab Code:	R2010938-002	**Basis:**	Dry

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Carbazole	**2400**		660	190	1	12/01/20 23:19	11/23/20	
Chrysene	**13000**	**E**	660	240	1	12/01/20 23:19	11/23/20	
Di-n-butyl Phthalate	200	U	660	200	1	12/01/20 23:19	11/23/20	
Di-n-octyl Phthalate	**220**	**J**	660	200	1	12/01/20 23:19	11/23/20	
Dibenz(a,h)anthracene	**2400**		660	200	1	12/01/20 23:19	11/23/20	
Dibenzofuran	**2200**		660	130	1	12/01/20 23:19	11/23/20	
Diethyl Phthalate	140	U	660	140	1	12/01/20 23:19	11/23/20	
Dimethyl Phthalate	150	U	660	150	1	12/01/20 23:19	11/23/20	
Fluoranthene	**20000**	**E**	660	240	1	12/01/20 23:19	11/23/20	
Fluorene	**2300**		660	160	1	12/01/20 23:19	11/23/20	
Hexachlorobenzene	200	U	660	200	1	12/01/20 23:19	11/23/20	
Hexachlorobutadiene	160	U	660	160	1	12/01/20 23:19	11/23/20	
Hexachlorocyclopentadiene	150	U	660	150	1	12/01/20 23:19	11/23/20	
Hexachloroethane	170	U	660	170	1	12/01/20 23:19	11/23/20	
Indeno(1,2,3-cd)pyrene	**10000**	**E**	660	220	1	12/01/20 23:19	11/23/20	
Isophorone	180	U	660	180	1	12/01/20 23:19	11/23/20	
N-Nitrosodi-n-propylamine	180	U	660	180	1	12/01/20 23:19	11/23/20	
N-Nitrosodiphenylamine	440	U	660	440	1	12/01/20 23:19	11/23/20	
Naphthalene	**6200**		660	170	1	12/01/20 23:19	11/23/20	
Nitrobenzene	170	U	660	170	1	12/01/20 23:19	11/23/20	
Pentachlorophenol (PCP)	220	U	3400	220	1	12/01/20 23:19	11/23/20	
Phenanthrene	**15000**	**E**	660	200	1	12/01/20 23:19	11/23/20	
Phenol	**210**	**J**	660	160	1	12/01/20 23:19	11/23/20	
Pyrene	**19000**	**E**	660	260	1	12/01/20 23:19	11/23/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	51	10 - 109	12/01/20 23:19	
2-Fluorobiphenyl	39	10 - 102	12/01/20 23:19	
2-Fluorophenol	37	10 - 88	12/01/20 23:19	
Nitrobenzene-d5	39	10 - 95	12/01/20 23:19	
Phenol-d6	42	10 - 145	12/01/20 23:19	
Terphenyl-d14	45	10 - 106	12/01/20 23:19	

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	11/17/20 08:30
Sample Matrix:	Soil	**Date Received:**	11/18/20 13:00
Sample Name:	TR-BCP-07-01-HA	**Units:**	ug/Kg
Lab Code:	R2010938-002	**Basis:**	Dry

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4,5-Tetrachlorobenzene	780	U	3300	780	5	12/16/20 18:01	11/23/20	
2,3,4,6-Tetrachlorophenol	690	U	3300	690	5	12/16/20 18:01	11/23/20	
2,4,5-Trichlorophenol	2800	U	3300	2800	5	12/16/20 18:01	11/23/20	
2,4,6-Trichlorophenol	580	U	3300	580	5	12/16/20 18:01	11/23/20	
2,4-Dichlorophenol	700	U	3300	700	5	12/16/20 18:01	11/23/20	
2,4-Dimethylphenol	720	U	3300	720	5	12/16/20 18:01	11/23/20	
2,4-Dinitrophenol	6500	U	17000	6500	5	12/16/20 18:01	11/23/20	
2,4-Dinitrotoluene	1300	U	3300	1300	5	12/16/20 18:01	11/23/20	
2,6-Dinitrotoluene	960	U	3300	960	5	12/16/20 18:01	11/23/20	
2-Chloronaphthalene	790	U	3300	790	5	12/16/20 18:01	11/23/20	
2-Chlorophenol	810	U	3300	810	5	12/16/20 18:01	11/23/20	
2-Methylnaphthalene	**2500**	**DJ**	3300	720	5	12/16/20 18:01	11/23/20	
2-Methylphenol	710	U	3300	710	5	12/16/20 18:01	11/23/20	
2-Nitroaniline	980	U	3300	980	5	12/16/20 18:01	11/23/20	
2-Nitrophenol	950	U	3300	950	5	12/16/20 18:01	11/23/20	
3,3'-Dichlorobenzidine	690	U	3300	690	5	12/16/20 18:01	11/23/20	
3- and 4-Methylphenol Coelution	630	U	3300	630	5	12/16/20 18:01	11/23/20	
3-Nitroaniline	700	U	3300	700	5	12/16/20 18:01	11/23/20	
4,6-Dinitro-2-methylphenol	1400	U	17000	1400	5	12/16/20 18:01	11/23/20	
4-Bromophenyl Phenyl Ether	1200	U	3300	1200	5	12/16/20 18:01	11/23/20	
4-Chloro-3-methylphenol	720	U	3300	720	5	12/16/20 18:01	11/23/20	
4-Chloroaniline	780	U	3300	780	5	12/16/20 18:01	11/23/20	
4-Chlorophenyl Phenyl Ether	790	U	3300	790	5	12/16/20 18:01	11/23/20	
4-Nitroaniline	700	U	3300	700	5	12/16/20 18:01	11/23/20	
4-Nitrophenol	1100	U	17000	1100	5	12/16/20 18:01	11/23/20	
Acenaphthene	**1200**	**DJ**	3300	740	5	12/16/20 18:01	11/23/20	
Acenaphthylene	**3000**	**DJ**	3300	870	5	12/16/20 18:01	11/23/20	
Acetophenone	750	U	3300	750	5	12/16/20 18:01	11/23/20	
Anthracene	**4900**	**D**	3300	920	5	12/16/20 18:01	11/23/20	
Atrazine	1300	U	3300	1300	5	12/16/20 18:01	11/23/20	
Benz(a)anthracene	**13000**	**D**	3300	970	5	12/16/20 18:01	11/23/20	
Benzaldehyde	650	U	3300	650	5	12/16/20 18:01	11/23/20	
Benzo(a)pyrene	**17000**	**D**	3300	1200	5	12/16/20 18:01	11/23/20	
Benzo(b)fluoranthene	**18000**	**D**	3300	1100	5	12/16/20 18:01	11/23/20	
Benzo(g,h,i)perylene	**11000**	**D**	3300	870	5	12/16/20 18:01	11/23/20	
Benzo(k)fluoranthene	**6700**	**D**	3300	1200	5	12/16/20 18:01	11/23/20	
Biphenyl	810	U	3300	810	5	12/16/20 18:01	11/23/20	
2,2'-Oxybis(1-chloropropane)	1300	U	3300	1300	5	12/16/20 18:01	11/23/20	
Bis(2-chloroethoxy)methane	880	U	3300	880	5	12/16/20 18:01	11/23/20	
Bis(2-chloroethyl) Ether	860	U	3300	860	5	12/16/20 18:01	11/23/20	
Bis(2-ethylhexyl) Phthalate	880	U	5000	880	5	12/16/20 18:01	11/23/20	
Butyl Benzyl Phthalate	820	U	3300	820	5	12/16/20 18:01	11/23/20	
Caprolactam	860	U	3300	860	5	12/16/20 18:01	11/23/20	

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	11/17/20 08:30
Sample Matrix:	Soil	**Date Received:**	11/18/20 13:00
Sample Name:	TR-BCP-07-01-HA	**Units:**	ug/Kg
Lab Code:	R2010938-002	**Basis:**	Dry

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Carbazole	**2600**	**DJ**	3300	950	5	12/16/20 18:01	11/23/20	
Chrysene	**13000**	**D**	3300	1200	5	12/16/20 18:01	11/23/20	
Di-n-butyl Phthalate	1000	U	3300	1000	5	12/16/20 18:01	11/23/20	
Di-n-octyl Phthalate	970	U	3300	970	5	12/16/20 18:01	11/23/20	
Dibenz(a,h)anthracene	**3000**	**DJ**	3300	980	5	12/16/20 18:01	11/23/20	
Dibenzofuran	**2400**	**DJ**	3300	650	5	12/16/20 18:01	11/23/20	
Diethyl Phthalate	700	U	3300	700	5	12/16/20 18:01	11/23/20	
Dimethyl Phthalate	740	U	3300	740	5	12/16/20 18:01	11/23/20	
Fluoranthene	**25000**	**D**	3300	1200	5	12/16/20 18:01	11/23/20	
Fluorene	**2500**	**DJ**	3300	760	5	12/16/20 18:01	11/23/20	
Hexachlorobenzene	1000	U	3300	1000	5	12/16/20 18:01	11/23/20	
Hexachlorobutadiene	800	U	3300	800	5	12/16/20 18:01	11/23/20	
Hexachlorocyclopentadiene	720	U	3300	720	5	12/16/20 18:01	11/23/20	
Hexachloroethane	850	U	3300	850	5	12/16/20 18:01	11/23/20	
Indeno(1,2,3-cd)pyrene	**13000**	**D**	3300	1100	5	12/16/20 18:01	11/23/20	
Isophorone	900	U	3300	900	5	12/16/20 18:01	11/23/20	
N-Nitrosodi-n-propylamine	880	U	3300	880	5	12/16/20 18:01	11/23/20	
N-Nitrosodiphenylamine	2200	U	3300	2200	5	12/16/20 18:01	11/23/20	
Naphthalene	**7000**	**D**	3300	850	5	12/16/20 18:01	11/23/20	
Nitrobenzene	850	U	3300	850	5	12/16/20 18:01	11/23/20	
Pentachlorophenol (PCP)	1100	U	17000	1100	5	12/16/20 18:01	11/23/20	
Phenanthrene	**19000**	**D**	3300	960	5	12/16/20 18:01	11/23/20	
Phenol	780	U	3300	780	5	12/16/20 18:01	11/23/20	
Pyrene	**21000**	**D**	3300	1300	5	12/16/20 18:01	11/23/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	53	10 - 109	12/16/20 18:01	
2-Fluorobiphenyl	44	10 - 102	12/16/20 18:01	
2-Fluorophenol	40	10 - 88	12/16/20 18:01	
Nitrobenzene-d5	43	10 - 95	12/16/20 18:01	
Phenol-d6	45	10 - 145	12/16/20 18:01	
Terphenyl-d14	50	10 - 106	12/16/20 18:01	

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	11/17/20 08:30
Sample Matrix:	Soil	**Date Received:**	11/18/20 13:00
Sample Name:	TR-BCP-07-01-HA	**Units:**	ug/Kg
Lab Code:	R2010938-002	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,4-Dioxane	630 U	1200	630	10	12/03/20 21:36	11/23/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	73	10 - 115	12/03/20 21:36	
Nitrobenzene-d5	118	10 - 130	12/03/20 21:36	
p-Terphenyl-d14	107	10 - 130	12/03/20 21:36	

Semivolatile Organic Compounds by GC

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	11/17/20 08:30
Sample Matrix:	Soil	**Date Received:**	11/18/20 13:00
Sample Name:	TR-BCP-07-01-HA	**Units:**	ug/Kg
Lab Code:	R2010938-002	**Basis:**	Dry

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
4,4'-DDD	11 U	22	11	10	12/22/20 13:51	11/20/20	
4,4'-DDE	11 U	22	11	10	12/22/20 13:51	11/20/20	
4,4'-DDT	11 U	22	11	10	12/22/20 13:51	11/20/20	
Aldrin	11 U	22	11	10	12/22/20 13:51	11/20/20	
Dieldrin	11 U	22	11	10	12/22/20 13:51	11/20/20	
Endosulfan I	11 U	22	11	10	12/22/20 13:51	11/20/20	
Endosulfan II	11 U	22	11	10	12/22/20 13:51	11/20/20	
Endosulfan Sulfate	**14 J**	22	11	10	12/22/20 13:51	11/20/20	
Endrin	11 U	22	11	10	12/22/20 13:51	11/20/20	
Endrin Aldehyde	11 U	22	11	10	12/22/20 13:51	11/20/20	
Endrin Ketone	**13 J**	22	11	10	12/22/20 13:51	11/20/20	
Heptachlor	11 U	22	11	10	12/22/20 13:51	11/20/20	
Heptachlor Epoxide	11 U	22	11	10	12/22/20 13:51	11/20/20	
Methoxychlor	11 U	22	11	10	12/22/20 13:51	11/20/20	
Toxaphene	250 U	430	250	10	12/22/20 13:51	11/20/20	
alpha-BHC	11 U	22	11	10	12/22/20 13:51	11/20/20	
alpha-Chlordane	11 U	22	11	10	12/22/20 13:51	11/20/20	
beta-BHC	11 U	22	11	10	12/22/20 13:51	11/20/20	
delta-BHC	11 U	22	11	10	12/22/20 13:51	11/20/20	
gamma-BHC (Lindane)	11 U	22	11	10	12/22/20 13:51	11/20/20	
gamma-Chlordane	11 U	22	11	10	12/22/20 13:51	11/20/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	77	10 - 145	12/22/20 13:51	
Tetrachloro-m-xylene	52	10 - 123	12/22/20 13:51	

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	11/17/20 08:30
Sample Matrix:	Soil	**Date Received:**	11/18/20 13:00
Sample Name:	TR-BCP-07-01-HA	**Units:**	ug/Kg
Lab Code:	R2010938-002	**Basis:**	Dry

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	23 U	43	23	1	12/29/20 03:52	11/20/20	
Aroclor 1221	23 U	87	23	1	12/29/20 03:52	11/20/20	
Aroclor 1232	23 U	43	23	1	12/29/20 03:52	11/20/20	
Aroclor 1242	23 U	43	23	1	12/29/20 03:52	11/20/20	
Aroclor 1248	23 U	43	23	1	12/29/20 03:52	11/20/20	
Aroclor 1254	23 U	43	23	1	12/29/20 03:52	11/20/20	
Aroclor 1260	23 U	43	23	1	12/29/20 03:52	11/20/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	25	22 - 128	12/29/20 03:52	
Tetrachloro-m-xylene	34	14 - 119	12/29/20 03:52	

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	11/17/20 08:30
Sample Matrix:	Soil	**Date Received:**	11/18/20 13:00
Sample Name:	TR-BCP-07-01-HA	**Units:**	ug/Kg
Lab Code:	R2010938-002	**Basis:**	Dry

Chlorinated Herbicides by GC

Analysis Method: 8151A
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4,5-T	6.5 U	13	6.5	1	11/30/20 22:50	11/25/20	
2,4,5-TP	5.9 U	13	5.9	1	11/30/20 22:50	11/25/20	
2,4-D	8.5 U	13	8.5	1	11/30/20 22:50	11/25/20	
Dicamba	4.1 U	13	4.1	1	11/30/20 22:50	11/25/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4-Dichlorophenylacetic Acid	79	10 - 151	11/30/20 22:50	

Metals

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METALS
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: Inventum Engineering
Project No.: R2010938
Project Name:
Matrix: SOIL

Service Request: EQB-11172020
Date Collected: 11/17/2020
Date Received: 11/18/2020
Units: mg/Kg
Basis:

Sample Name: TR-BCP-07-01-HA **Lab Code:** R2010938-002

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Aluminum	6010C	25.7	15.4	1.0	1430		
Antimony	6010C	7.7	0.695	1.0	7.7	U	
Arsenic	6010C	1.3	0.901	1.0	6.0		
Barium	6010C	2.6	1.9	1.0	41.4		
Beryllium	6010C	0.386	0.077	1.0	1.1		
Cadmium	6010C	0.644	0.309	1.0	1.0		
Mercury	7471B	0.042	0.016	1.0	0.108		
Calcium	6010C	129	41.2	1.0	653		
Chromium	6010C	1.3	0.450	1.0	16.3		
Cobalt	6010C	6.4	0.592	1.0	5.1	J	
Copper	6010C	2.6	0.811	1.0	63.9		
Iron	6010C	257	167	10.0	15900		
Lead	6010C	6.4	0.515	1.0	22.3		
Magnesium	6010C	129	16.7	1.0	259		
Manganese	6010C	2.6	1.9	1.0	80.5		
Nickel	6010C	5.2	0.849	1.0	13.9		
Potassium	6010C	257	64.4	1.0	199	J	
Selenium	6010C	1.3	0.695	1.0	2.3		
Silver	6010C	1.3	0.116	1.0	0.167	J	
Sodium	6010C	129	66.9	1.0	129	U	
Thallium	6010C	1.3	0.837	1.0	1.3	U	
Vanadium	6010C	6.4	0.914	1.0	13.3		
Zinc	6010C	2.6	1.8	1.0	127		

% Solids: 77.7

Comments:

General Chemistry

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	11/17/20 08:30
Sample Matrix:	Soil	**Date Received:**	11/18/20 13:00
Sample Name:	TR-BCP-07-01-HA	**Basis:**	Dry
Lab Code:	R2010938-002		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cyanide, Total	9012B	**0.39**	mg/Kg	0.29	0.17	1	11/25/20 11:10	11/24/20	

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	11/17/20 08:30
Sample Matrix:	Soil	**Date Received:**	11/18/20 13:00
Sample Name:	TR-BCP-07-01-HA	**Basis:**	As Received
Lab Code:	R2010938-002		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Total Solids	ALS SOP	**77.7**	Percent	-	-	1	11/28/20 06:45	NA	

QC Summary Forms

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Volatile Organic Compounds by GC/MS

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QA/QC Report

Client: Inventum Engineering **Service Request:** R2010938
Project: Riverview BCP RI
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Extraction Method: EPA 5030C

Sample Name	Lab Code	4-Bromofluorobenzene 85-122	Dibromofluoromethane 80-116	Toluene-d8 87-121
EQB-11172020	R2010938-001	95	93	100
Method Blank	RQ2014681-04	95	96	100
Lab Control Sample	RQ2014681-03	98	97	99

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QA/QC Report

Client: Inventum Engineering **Service Request:** R2010938
Project: Riverview BCP RI
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Extraction Method: EPA 5030C

Sample Name	Lab Code	4-Bromofluorobenzene 85-122	Dibromofluoromethane 80-116	Toluene-d8 87-121
TR-BCP-07-01-HA	R2010938-002	37	104	96
TR-BCP-07-01-HA DL	R2010938-002	32	106	105
SS-BCP-15-06	R2010938-009	77	100	104
Method Blank	RQ2014615-04	91	97	103
Method Blank	RQ2014680-05	91	102	103
Lab Control Sample	RQ2014615-03	93	101	100
Lab Control Sample	RQ2014680-03	94	100	98
Duplicate Lab Control Sample	RQ2014680-04	95	102	101

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QA/QC Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Analyzed:**	11/25/20 11:16
Sample Matrix:	Soil	**Date Extracted:**	

Method Blank Summary
Volatile Organic Compounds by GC/MS

Sample Name:	Method Blank	**Instrument ID:**	R-MS-14
Lab Code:	RQ2014615-04	**File ID:**	I:\ACQUDATA\MSVOA14\Data\112520\F1719.D\
Analysis Method:	8260C	**Analysis Lot:**	704944
Prep Method:	EPA 5035A		

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	RQ2014615-03	I:\ACQUDATA\MSVOA14\Data\112520 \F1717.D\	11/25/20 10:06
TR-BCP-07-01-HA	R2010938-002	I:\ACQUDATA\MSVOA14\Data\112520 \F1739.D\	11/25/20 19:00
SS-BCP-15-06	R2010938-009	I:\ACQUDATA\MSVOA14\Data\112520 \F1740.D\	11/25/20 19:23

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QA/QC Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Analyzed:**	11/28/20 12:11
Sample Matrix:	Soil	**Date Extracted:**	

Method Blank Summary
Volatile Organic Compounds by GC/MS

Sample Name:	Method Blank	**Instrument ID:**	R-MS-14
Lab Code:	RQ2014680-05	**File ID:**	I:\ACQUDATA\MSVOA14\Data\112820\F1754.D\
Analysis Method:	8260C	**Analysis Lot:**	705127
Prep Method:	EPA 5035A		

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	RQ2014680-03	I:\ACQUDATA\MSVOA14\Data\112820 \F1751.D\	11/28/20 10:43
Duplicate Lab Control Sample	RQ2014680-04	I:\ACQUDATA\MSVOA14\Data\112820 \F1752.D\	11/28/20 11:18
TR-BCP-07-01-HA	R2010938-002	I:\ACQUDATA\MSVOA14\Data\112820 \F1762.D\	11/28/20 15:24

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QA/QC Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Analyzed:**	11/28/20 12:27
Sample Matrix:	Water	**Date Extracted:**	

Method Blank Summary
Volatile Organic Compounds by GC/MS

Sample Name:	Method Blank	**Instrument ID:**	R-MS-12
Lab Code:	RQ2014681-04	**File ID:**	I:\ACQUDATA\msvoa12\Data\112820\P42912.D\
Analysis Method:	8260C	**Analysis Lot:**	705129
Prep Method:	EPA 5030C		

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	RQ2014681-03	I:\ACQUDATA\msvoa12\Data\112820\P42909.D\	11/28/20 11:08
EQB-11172020	R2010938-001	I:\ACQUDATA\msvoa12\Data\112820\P42917.D\	11/28/20 14:17

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2014615-04	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	0.20 U	5.0	0.20	1	11/25/20 11:16	
1,1,2,2-Tetrachloroethane	0.44 U	5.0	0.44	1	11/25/20 11:16	
1,1,2-Trichloroethane	0.20 U	5.0	0.20	1	11/25/20 11:16	
1,1,2-Trichloro-1,2,2-trifluoroethane	0.20 U	5.0	0.20	1	11/25/20 11:16	
1,1-Dichloroethane (1,1-DCA)	0.20 U	5.0	0.20	1	11/25/20 11:16	
1,1-Dichloroethene (1,1-DCE)	0.29 U	5.0	0.29	1	11/25/20 11:16	
1,2,3-Trichlorobenzene	0.52 U	5.0	0.52	1	11/25/20 11:16	
1,2,4-Trichlorobenzene	0.42 U	5.0	0.42	1	11/25/20 11:16	
1,2-Dibromo-3-chloropropane (DBCP)	0.75 U	5.0	0.75	1	11/25/20 11:16	
1,2-Dibromoethane	0.20 U	5.0	0.20	1	11/25/20 11:16	
1,2-Dichlorobenzene	0.20 U	5.0	0.20	1	11/25/20 11:16	
1,2-Dichloroethane	0.20 U	5.0	0.20	1	11/25/20 11:16	
1,2-Dichloropropane	0.20 U	5.0	0.20	1	11/25/20 11:16	
1,3-Dichlorobenzene	0.20 U	5.0	0.20	1	11/25/20 11:16	
1,4-Dichlorobenzene	0.22 U	5.0	0.22	1	11/25/20 11:16	
1,4-Dioxane	20 U	100	20	1	11/25/20 11:16	
2-Butanone (MEK)	2.0 U	5.0	2.0	1	11/25/20 11:16	
2-Hexanone	0.36 U	5.0	0.36	1	11/25/20 11:16	
4-Methyl-2-pentanone	0.23 U	5.0	0.23	1	11/25/20 11:16	
Acetone	4.7 U	5.0	4.7	1	11/25/20 11:16	
Benzene	0.20 U	5.0	0.20	1	11/25/20 11:16	
Bromochloromethane	0.20 U	5.0	0.20	1	11/25/20 11:16	
Bromodichloromethane	0.20 U	5.0	0.20	1	11/25/20 11:16	
Bromoform	0.50 U	5.0	0.50	1	11/25/20 11:16	
Bromomethane	2.1 U	5.0	2.1	1	11/25/20 11:16	
Carbon Disulfide	0.29 U	5.0	0.29	1	11/25/20 11:16	
Carbon Tetrachloride	0.26 U	5.0	0.26	1	11/25/20 11:16	
Chlorobenzene	0.20 U	5.0	0.20	1	11/25/20 11:16	
Chloroethane	0.41 U	5.0	0.41	1	11/25/20 11:16	
Chloroform	0.20 U	5.0	0.20	1	11/25/20 11:16	
Chloromethane	1.4 U	5.0	1.4	1	11/25/20 11:16	
Cyclohexane	0.26 U	5.0	0.26	1	11/25/20 11:16	
Dibromochloromethane	0.20 U	5.0	0.20	1	11/25/20 11:16	
Dichlorodifluoromethane (CFC 12)	0.33 U	5.0	0.33	1	11/25/20 11:16	
Dichloromethane	2.8 U	5.0	2.8	1	11/25/20 11:16	
Ethylbenzene	0.20 U	5.0	0.20	1	11/25/20 11:16	
Isopropylbenzene (Cumene)	0.20 U	5.0	0.20	1	11/25/20 11:16	
Methyl Acetate	0.84 U	5.0	0.84	1	11/25/20 11:16	
Methyl tert-Butyl Ether	0.20 U	5.0	0.20	1	11/25/20 11:16	
Methylcyclohexane	0.31 U	5.0	0.31	1	11/25/20 11:16	
Styrene	0.20 U	5.0	0.20	1	11/25/20 11:16	
Tetrachloroethene (PCE)	0.23 U	5.0	0.23	1	11/25/20 11:16	
Toluene	0.20 U	5.0	0.20	1	11/25/20 11:16	

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2014615-04	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	0.22 U	5.0	0.22	1	11/25/20 11:16	
Trichlorofluoromethane (CFC 11)	0.26 U	5.0	0.26	1	11/25/20 11:16	
Vinyl Chloride	0.46 U	5.0	0.46	1	11/25/20 11:16	
cis-1,2-Dichloroethene	0.20 U	5.0	0.20	1	11/25/20 11:16	
cis-1,3-Dichloropropene	0.20 U	5.0	0.20	1	11/25/20 11:16	
m,p-Xylenes	0.37 U	10	0.37	1	11/25/20 11:16	
o-Xylene	0.20 U	5.0	0.20	1	11/25/20 11:16	
trans-1,2-Dichloroethene	0.20 U	5.0	0.20	1	11/25/20 11:16	
trans-1,3-Dichloropropene	0.20 U	5.0	0.20	1	11/25/20 11:16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	91	31 - 154	11/25/20 11:16	
Dibromofluoromethane	97	63 - 138	11/25/20 11:16	
Toluene-d8	103	66 - 138	11/25/20 11:16	

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2014680-05	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	0.20 U	5.0	0.20	1	11/28/20 12:11	
1,1,2,2-Tetrachloroethane	0.44 U	5.0	0.44	1	11/28/20 12:11	
1,1,2-Trichloroethane	0.20 U	5.0	0.20	1	11/28/20 12:11	
1,1,2-Trichloro-1,2,2-trifluoroethane	0.20 U	5.0	0.20	1	11/28/20 12:11	
1,1-Dichloroethane (1,1-DCA)	0.20 U	5.0	0.20	1	11/28/20 12:11	
1,1-Dichloroethene (1,1-DCE)	0.29 U	5.0	0.29	1	11/28/20 12:11	
1,2,3-Trichlorobenzene	0.52 U	5.0	0.52	1	11/28/20 12:11	
1,2,4-Trichlorobenzene	0.42 U	5.0	0.42	1	11/28/20 12:11	
1,2-Dibromo-3-chloropropane (DBCP)	0.75 U	5.0	0.75	1	11/28/20 12:11	
1,2-Dibromoethane	0.20 U	5.0	0.20	1	11/28/20 12:11	
1,2-Dichlorobenzene	0.20 U	5.0	0.20	1	11/28/20 12:11	
1,2-Dichloroethane	0.20 U	5.0	0.20	1	11/28/20 12:11	
1,2-Dichloropropane	0.20 U	5.0	0.20	1	11/28/20 12:11	
1,3-Dichlorobenzene	0.20 U	5.0	0.20	1	11/28/20 12:11	
1,4-Dichlorobenzene	0.22 U	5.0	0.22	1	11/28/20 12:11	
1,4-Dioxane	20 U	100	20	1	11/28/20 12:11	
2-Butanone (MEK)	2.0 U	5.0	2.0	1	11/28/20 12:11	
2-Hexanone	0.36 U	5.0	0.36	1	11/28/20 12:11	
4-Methyl-2-pentanone	0.23 U	5.0	0.23	1	11/28/20 12:11	
Acetone	4.7 U	5.0	4.7	1	11/28/20 12:11	
Benzene	0.20 U	5.0	0.20	1	11/28/20 12:11	
Bromochloromethane	0.20 U	5.0	0.20	1	11/28/20 12:11	
Bromodichloromethane	0.20 U	5.0	0.20	1	11/28/20 12:11	
Bromoform	0.50 U	5.0	0.50	1	11/28/20 12:11	
Bromomethane	2.1 U	5.0	2.1	1	11/28/20 12:11	
Carbon Disulfide	0.29 U	5.0	0.29	1	11/28/20 12:11	
Carbon Tetrachloride	0.26 U	5.0	0.26	1	11/28/20 12:11	
Chlorobenzene	0.20 U	5.0	0.20	1	11/28/20 12:11	
Chloroethane	0.41 U	5.0	0.41	1	11/28/20 12:11	
Chloroform	0.20 U	5.0	0.20	1	11/28/20 12:11	
Chloromethane	1.4 U	5.0	1.4	1	11/28/20 12:11	
Cyclohexane	0.26 U	5.0	0.26	1	11/28/20 12:11	
Dibromochloromethane	0.20 U	5.0	0.20	1	11/28/20 12:11	
Dichlorodifluoromethane (CFC 12)	0.33 U	5.0	0.33	1	11/28/20 12:11	
Dichloromethane	2.8 U	5.0	2.8	1	11/28/20 12:11	
Ethylbenzene	0.20 U	5.0	0.20	1	11/28/20 12:11	
Isopropylbenzene (Cumene)	0.20 U	5.0	0.20	1	11/28/20 12:11	
Methyl Acetate	0.84 U	5.0	0.84	1	11/28/20 12:11	
Methyl tert-Butyl Ether	0.20 U	5.0	0.20	1	11/28/20 12:11	
Methylcyclohexane	0.31 U	5.0	0.31	1	11/28/20 12:11	
Styrene	0.20 U	5.0	0.20	1	11/28/20 12:11	
Tetrachloroethene (PCE)	0.23 U	5.0	0.23	1	11/28/20 12:11	
Toluene	0.20 U	5.0	0.20	1	11/28/20 12:11	

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2014680-05	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	0.22 U	5.0	0.22	1	11/28/20 12:11	
Trichlorofluoromethane (CFC 11)	0.26 U	5.0	0.26	1	11/28/20 12:11	
Vinyl Chloride	0.46 U	5.0	0.46	1	11/28/20 12:11	
cis-1,2-Dichloroethene	0.20 U	5.0	0.20	1	11/28/20 12:11	
cis-1,3-Dichloropropene	0.20 U	5.0	0.20	1	11/28/20 12:11	
m,p-Xylenes	0.37 U	10	0.37	1	11/28/20 12:11	
o-Xylene	0.20 U	5.0	0.20	1	11/28/20 12:11	
trans-1,2-Dichloroethene	0.20 U	5.0	0.20	1	11/28/20 12:11	
trans-1,3-Dichloropropene	0.20 U	5.0	0.20	1	11/28/20 12:11	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	91	31 - 154	11/28/20 12:11	
Dibromofluoromethane	102	63 - 138	11/28/20 12:11	
Toluene-d8	103	66 - 138	11/28/20 12:11	

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2014681-04	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	0.20 U	5.0	0.20	1	11/28/20 12:27	
1,1,2,2-Tetrachloroethane	0.20 U	5.0	0.20	1	11/28/20 12:27	
1,1,2-Trichloroethane	0.20 U	5.0	0.20	1	11/28/20 12:27	
1,1,2-Trichloro-1,2,2-trifluoroethane	0.20 U	5.0	0.20	1	11/28/20 12:27	
1,1-Dichloroethane (1,1-DCA)	0.20 U	5.0	0.20	1	11/28/20 12:27	
1,1-Dichloroethene (1,1-DCE)	0.20 U	5.0	0.20	1	11/28/20 12:27	
1,2,3-Trichlorobenzene	0.25 U	5.0	0.25	1	11/28/20 12:27	
1,2,4-Trichlorobenzene	0.34 U	5.0	0.34	1	11/28/20 12:27	
1,2-Dibromo-3-chloropropane (DBCP)	0.45 U	5.0	0.45	1	11/28/20 12:27	
1,2-Dibromoethane	0.20 U	5.0	0.20	1	11/28/20 12:27	
1,2-Dichlorobenzene	0.20 U	5.0	0.20	1	11/28/20 12:27	
1,2-Dichloroethane	0.20 U	5.0	0.20	1	11/28/20 12:27	
1,2-Dichloropropane	0.20 U	5.0	0.20	1	11/28/20 12:27	
1,3-Dichlorobenzene	0.20 U	5.0	0.20	1	11/28/20 12:27	
1,4-Dichlorobenzene	0.20 U	5.0	0.20	1	11/28/20 12:27	
1,4-Dioxane	13 U	100	13	1	11/28/20 12:27	
2-Butanone (MEK)	0.78 U	10	0.78	1	11/28/20 12:27	
2-Hexanone	0.20 U	10	0.20	1	11/28/20 12:27	
4-Methyl-2-pentanone	0.20 U	10	0.20	1	11/28/20 12:27	
Acetone	5.0 U	10	5.0	1	11/28/20 12:27	
Benzene	0.20 U	5.0	0.20	1	11/28/20 12:27	
Bromochloromethane	0.20 U	5.0	0.20	1	11/28/20 12:27	
Bromodichloromethane	0.20 U	5.0	0.20	1	11/28/20 12:27	
Bromoform	0.25 U	5.0	0.25	1	11/28/20 12:27	
Bromomethane	0.70 U	5.0	0.70	1	11/28/20 12:27	
Carbon Disulfide	0.42 U	10	0.42	1	11/28/20 12:27	
Carbon Tetrachloride	0.34 U	5.0	0.34	1	11/28/20 12:27	
Chlorobenzene	0.20 U	5.0	0.20	1	11/28/20 12:27	
Chloroethane	0.23 U	5.0	0.23	1	11/28/20 12:27	
Chloroform	0.24 U	5.0	0.24	1	11/28/20 12:27	
Chloromethane	**0.45 J**	5.0	0.28	1	11/28/20 12:27	
Cyclohexane	0.26 U	10	0.26	1	11/28/20 12:27	
Dibromochloromethane	0.20 U	5.0	0.20	1	11/28/20 12:27	
Dichlorodifluoromethane (CFC 12)	0.21 U	5.0	0.21	1	11/28/20 12:27	
Dichloromethane	0.65 U	5.0	0.65	1	11/28/20 12:27	
Ethylbenzene	0.20 U	5.0	0.20	1	11/28/20 12:27	
Isopropylbenzene (Cumene)	0.20 U	5.0	0.20	1	11/28/20 12:27	
Methyl Acetate	0.33 U	10	0.33	1	11/28/20 12:27	
Methyl tert-Butyl Ether	0.20 U	5.0	0.20	1	11/28/20 12:27	
Methylcyclohexane	0.20 U	10	0.20	1	11/28/20 12:27	
Styrene	0.20 U	5.0	0.20	1	11/28/20 12:27	
Tetrachloroethene (PCE)	0.21 U	5.0	0.21	1	11/28/20 12:27	
Toluene	0.20 U	5.0	0.20	1	11/28/20 12:27	

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2014681-04	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	0.20 U	5.0	0.20	1	11/28/20 12:27	
Trichlorofluoromethane (CFC 11)	0.24 U	5.0	0.24	1	11/28/20 12:27	
Vinyl Chloride	0.20 U	5.0	0.20	1	11/28/20 12:27	
cis-1,2-Dichloroethene	0.23 U	5.0	0.23	1	11/28/20 12:27	
cis-1,3-Dichloropropene	0.20 U	5.0	0.20	1	11/28/20 12:27	
m,p-Xylenes	0.20 U	5.0	0.20	1	11/28/20 12:27	
o-Xylene	0.20 U	5.0	0.20	1	11/28/20 12:27	
trans-1,2-Dichloroethene	0.20 U	5.0	0.20	1	11/28/20 12:27	
trans-1,3-Dichloropropene	0.23 U	5.0	0.23	1	11/28/20 12:27	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	95	85 - 122	11/28/20 12:27	
Dibromofluoromethane	96	80 - 116	11/28/20 12:27	
Toluene-d8	100	87 - 121	11/28/20 12:27	

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QA/QC Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Analyzed:**	11/25/20 10:06
Sample Matrix:	Soil	**Date Extracted:**	

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Sample Name:	Lab Control Sample	**Instrument ID:**	R-MS-14
Lab Code:	RQ2014615-03	**File ID:**	I:\ACQUDATA\MSVOA14\Data\112520\F1717.D\
Analysis Method:	8260C	**Analysis Lot:**	704944
Prep Method:	EPA 5035A		

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	RQ2014615-04	I:\ACQUDATA\MSVOA14\Data\112520 \F1719.D\	11/25/20 11:16
TR-BCP-07-01-HA	R2010938-002	I:\ACQUDATA\MSVOA14\Data\112520 \F1739.D\	11/25/20 19:00
SS-BCP-15-06	R2010938-009	I:\ACQUDATA\MSVOA14\Data\112520 \F1740.D\	11/25/20 19:23

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QA/QC Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Analyzed:**	11/28/20 10:43
Sample Matrix:	Soil	**Date Extracted:**	

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Sample Name:	Lab Control Sample	**Instrument ID:**	R-MS-14
Lab Code:	RQ2014680-03	**File ID:**	I:\ACQUDATA\MSVOA14\Data\112820\F1751.D\
Analysis Method:	8260C	**Analysis Lot:**	705127
Prep Method:	EPA 5035A		

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Duplicate Lab Control Sample	RQ2014680-04	I:\ACQUDATA\MSVOA14\Data\112820 \F1752.D\	11/28/20 11:18
Method Blank	RQ2014680-05	I:\ACQUDATA\MSVOA14\Data\112820 \F1754.D\	11/28/20 12:11
TR-BCP-07-01-HA	R2010938-002	I:\ACQUDATA\MSVOA14\Data\112820 \F1762.D\	11/28/20 15:24

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QA/QC Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Analyzed:**	11/28/20 11:08
Sample Matrix:	Water	**Date Extracted:**	

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Sample Name:	Lab Control Sample	**Instrument ID:**	R-MS-12
Lab Code:	RQ2014681-03	**File ID:**	I:\ACQUDATA\msvoa12\Data\112820\P42909.D\
Analysis Method:	8260C	**Analysis Lot:**	705129
Prep Method:	EPA 5030C		

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	RQ2014681-04	I:\ACQUDATA\msvoa12\Data\112820\P42912.D\	11/28/20 12:27
EQB-11172020	R2010938-001	I:\ACQUDATA\msvoa12\Data\112820\P42917.D\	11/28/20 14:17

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QA/QC Report

Client: Inventum Engineering
Project: Riverview BCP RI
Sample Matrix: Soil

Service Request: R2010938
Date Analyzed: 11/25/20

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/Kg
Basis: Dry

Lab Control Sample
RQ2014615-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
1,1,1-Trichloroethane (TCA)	8260C	22.0	20.0	110	68-123
1,1,2,2-Tetrachloroethane	8260C	21.7	20.0	108	78-121
1,1,2-Trichloroethane	8260C	21.2	20.0	106	84-117
1,1,2-Trichloro-1,2,2-trifluoroethane	8260C	23.0	20.0	115	54-121
1,1-Dichloroethane (1,1-DCA)	8260C	22.2	20.0	111	76-123
1,1-Dichloroethene (1,1-DCE)	8260C	26.1	20.0	131 *	65-115
1,2,3-Trichlorobenzene	8260C	21.0	20.0	105	60-128
1,2,4-Trichlorobenzene	8260C	21.7	20.0	108	62-130
1,2-Dibromo-3-chloropropane (DBCP)	8260C	22.9	20.0	114	54-135
1,2-Dibromoethane	8260C	21.5	20.0	108	77-117
1,2-Dichlorobenzene	8260C	21.2	20.0	106	75-116
1,2-Dichloroethane	8260C	20.5	20.0	103	74-116
1,2-Dichloropropane	8260C	20.8	20.0	104	79-112
1,3-Dichlorobenzene	8260C	21.7	20.0	108	72-118
1,4-Dichlorobenzene	8260C	20.9	20.0	105	72-117
1,4-Dioxane	8260C	376	400	94	59-147
2-Butanone (MEK)	8260C	19.0	20.0	95	67-129
2-Hexanone	8260C	21.4	20.0	107	68-118
4-Methyl-2-pentanone	8260C	22.0	20.0	110	64-123
Acetone	8260C	14.0	20.0	70	32-154
Benzene	8260C	21.4	20.0	107	77-114
Bromochloromethane	8260C	20.9	20.0	104	78-117
Bromodichloromethane	8260C	20.3	20.0	102	72-118
Bromoform	8260C	23.4	20.0	117	55-134
Bromomethane	8260C	26.0	20.0	130	10-150
Carbon Disulfide	8260C	22.4	20.0	112	44-139
Carbon Tetrachloride	8260C	21.7	20.0	108	51-123
Chlorobenzene	8260C	21.0	20.0	105	79-115
Chloroethane	8260C	22.2	20.0	111	10-140
Chloroform	8260C	21.2	20.0	106	76-115
Chloromethane	8260C	23.6	20.0	118	10-131
Cyclohexane	8260C	20.2	20.0	101	67-122
Dibromochloromethane	8260C	24.3	20.0	121	68-121

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QA/QC Report

Client: Inventum Engineering
Project: Riverview BCP RI
Sample Matrix: Soil

Service Request: R2010938
Date Analyzed: 11/25/20

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/Kg
Basis: Dry

Lab Control Sample
RQ2014615-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Dichlorodifluoromethane (CFC 12)	8260C	25.5	20.0	127	51-144
Dichloromethane	8260C	20.5	20.0	103	72-118
Ethylbenzene	8260C	22.2	20.0	111	64-118
Isopropylbenzene (Cumene)	8260C	22.0	20.0	110	60-123
Methyl Acetate	8260C	22.5	20.0	112	31-122
Methyl tert-Butyl Ether	8260C	22.5	20.0	113	76-118
Methylcyclohexane	8260C	21.7	20.0	109	70-124
Styrene	8260C	21.1	20.0	106	74-117
Tetrachloroethene (PCE)	8260C	22.1	20.0	111	58-124
Toluene	8260C	20.9	20.0	104	72-116
Trichloroethene (TCE)	8260C	20.9	20.0	105	69-118
Trichlorofluoromethane (CFC 11)	8260C	20.2	20.0	101	52-127
Vinyl Chloride	8260C	22.8	20.0	114	59-153
cis-1,2-Dichloroethene	8260C	22.2	20.0	111	79-113
cis-1,3-Dichloropropene	8260C	22.7	20.0	113	66-117
m,p-Xylenes	8260C	43.7	40.0	109	68-118
o-Xylene	8260C	22.3	20.0	112	71-116
trans-1,2-Dichloroethene	8260C	24.3	20.0	122 *	73-114
trans-1,3-Dichloropropene	8260C	23.4	20.0	117	57-135

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QA/QC Report

Client: Inventum Engineering
Project: Riverview BCP RI
Sample Matrix: Water

Service Request: R2010938
Date Analyzed: 11/28/20

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ2014681-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
1,1,1-Trichloroethane (TCA)	8260C	18.3	20.0	92	75-125
1,1,2,2-Tetrachloroethane	8260C	23.3	20.0	116	78-126
1,1,2-Trichloroethane	8260C	19.6	20.0	98	82-121
1,1,2-Trichloro-1,2,2-trifluoroethane	8260C	18.9	20.0	94	67-124
1,1-Dichloroethane (1,1-DCA)	8260C	19.8	20.0	99	80-124
1,1-Dichloroethene (1,1-DCE)	8260C	22.0	20.0	110	71-118
1,2,3-Trichlorobenzene	8260C	19.7	20.0	99	67-136
1,2,4-Trichlorobenzene	8260C	19.7	20.0	98	75-132
1,2-Dibromo-3-chloropropane (DBCP)	8260C	22.4	20.0	112	55-136
1,2-Dibromoethane	8260C	20.3	20.0	101	82-127
1,2-Dichlorobenzene	8260C	19.3	20.0	96	80-119
1,2-Dichloroethane	8260C	18.1	20.0	91	71-127
1,2-Dichloropropane	8260C	20.1	20.0	100	80-119
1,3-Dichlorobenzene	8260C	19.8	20.0	99	83-121
1,4-Dichlorobenzene	8260C	18.7	20.0	94	79-119
1,4-Dioxane	8260C	355	400	89	44-154
2-Butanone (MEK)	8260C	21.9	20.0	110	61-137
2-Hexanone	8260C	23.4	20.0	117	63-124
4-Methyl-2-pentanone	8260C	23.3	20.0	117	66-124
Acetone	8260C	21.1	20.0	106	40-161
Benzene	8260C	19.7	20.0	98	79-119
Bromochloromethane	8260C	18.9	20.0	94	81-126
Bromodichloromethane	8260C	18.6	20.0	93	81-123
Bromoform	8260C	21.1	20.0	105	65-146
Bromomethane	8260C	17.6	20.0	88	42-166
Carbon Disulfide	8260C	17.2	20.0	86	66-128
Carbon Tetrachloride	8260C	18.0	20.0	90	70-127
Chlorobenzene	8260C	19.0	20.0	95	80-121
Chloroethane	8260C	19.1	20.0	96	62-131
Chloroform	8260C	18.8	20.0	94	79-120
Chloromethane	8260C	22.4	20.0	112	65-135
Cyclohexane	8260C	20.6	20.0	103	69-120
Dibromochloromethane	8260C	21.9	20.0	110	72-128

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QA/QC Report

Client: Inventum Engineering
Project: Riverview BCP RI
Sample Matrix: Water

Service Request: R2010938
Date Analyzed: 11/28/20

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ2014681-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Dichlorodifluoromethane (CFC 12)	8260C	22.7	20.0	113	59-155
Dichloromethane	8260C	18.9	20.0	94	73-122
Ethylbenzene	8260C	18.5	20.0	93	76-120
Isopropylbenzene (Cumene)	8260C	19.8	20.0	99	77-128
Methyl Acetate	8260C	21.4	20.0	107	61-133
Methyl tert-Butyl Ether	8260C	20.9	20.0	105	75-118
Methylcyclohexane	8260C	21.4	20.0	107	51-129
Styrene	8260C	19.7	20.0	99	80-124
Tetrachloroethene (PCE)	8260C	18.6	20.0	93	72-125
Toluene	8260C	19.3	20.0	97	79-119
Trichloroethene (TCE)	8260C	16.7	20.0	83	74-122
Trichlorofluoromethane (CFC 11)	8260C	17.7	20.0	89	71-136
Vinyl Chloride	8260C	20.1	20.0	100	74-159
cis-1,2-Dichloroethene	8260C	20.4	20.0	102	80-121
cis-1,3-Dichloropropene	8260C	20.4	20.0	102	77-122
m,p-Xylenes	8260C	39.9	40.0	100	80-126
o-Xylene	8260C	19.5	20.0	98	79-123
trans-1,2-Dichloroethene	8260C	21.0	20.0	105	73-118
trans-1,3-Dichloropropene	8260C	20.1	20.0	100	71-133

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QA/QC Report

Client: Inventum Engineering
Project: Riverview BCP RI
Sample Matrix: Soil

Service Request: R2010938
Date Analyzed: 11/28/20

Duplicate Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/Kg
Basis: Dry

	Lab Control Sample				Duplicate Lab Control Sample					
	RQ2014680-03				RQ2014680-04					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,1,1-Trichloroethane (TCA)	8260C	19.9	20.0	99	19.7	20.0	99	68-123	<1	30
1,1,2,2-Tetrachloroethane	8260C	20.0	20.0	100	19.9	20.0	99	78-121	1	30
1,1,2-Trichloroethane	8260C	19.4	20.0	97	19.8	20.0	99	84-117	2	30
1,1,2-Trichloro-1,2,2-trifluoroethane	8260C	19.9	20.0	100	18.8	20.0	94	54-121	6	30
1,1-Dichloroethane (1,1-DCA)	8260C	20.1	20.0	100	20.0	20.0	100	76-123	<1	30
1,1-Dichloroethene (1,1-DCE)	8260C	22.3	20.0	111	22.5	20.0	112	65-115	<1	30
1,2,3-Trichlorobenzene	8260C	20.0	20.0	100	16.7	20.0	84	60-128	17	30
1,2,4-Trichlorobenzene	8260C	20.5	20.0	103	19.9	20.0	100	62-130	3	30
1,2-Dibromo-3-chloropropane (DBCP)	8260C	20.9	20.0	105	21.0	20.0	105	54-135	<1	30
1,2-Dibromoethane	8260C	20.5	20.0	103	19.8	20.0	99	77-117	4	30
1,2-Dichlorobenzene	8260C	19.9	20.0	100	19.4	20.0	97	75-116	3	30
1,2-Dichloroethane	8260C	18.7	20.0	94	19.3	20.0	97	74-116	3	30
1,2-Dichloropropane	8260C	19.6	20.0	98	19.6	20.0	98	79-112	<1	30
1,3-Dichlorobenzene	8260C	19.7	20.0	98	19.2	20.0	96	72-118	2	30
1,4-Dichlorobenzene	8260C	18.8	20.0	94	18.9	20.0	95	72-117	1	30
1,4-Dioxane	8260C	363	400	91	293	400	73	59-147	22	30
2-Butanone (MEK)	8260C	19.2	20.0	96	18.5	20.0	92	67-129	4	30
2-Hexanone	8260C	20.9	20.0	105	19.9	20.0	100	68-118	5	30
4-Methyl-2-pentanone	8260C	20.6	20.0	103	21.2	20.0	106	64-123	3	30
Acetone	8260C	13.2	20.0	66	13.5	20.0	67	32-154	2	30
Benzene	8260C	19.5	20.0	97	19.3	20.0	96	77-114	1	30
Bromochloromethane	8260C	19.6	20.0	98	19.8	20.0	99	78-117	1	30
Bromodichloromethane	8260C	19.2	20.0	96	19.5	20.0	98	72-118	2	30
Bromoform	8260C	22.3	20.0	111	21.9	20.0	110	55-134	<1	30
Bromomethane	8260C	19.7	20.0	99	20.5	20.0	102	10-150	3	30
Carbon Disulfide	8260C	20.5	20.0	102	20.2	20.0	101	44-139	<1	30
Carbon Tetrachloride	8260C	19.6	20.0	98	18.9	20.0	95	51-123	3	30
Chlorobenzene	8260C	19.4	20.0	97	19.1	20.0	96	79-115	1	30
Chloroethane	8260C	20.5	20.0	102	20.8	20.0	104	10-140	2	30
Chloroform	8260C	19.5	20.0	98	19.7	20.0	98	76-115	<1	30
Chloromethane	8260C	22.3	20.0	112	21.3	20.0	106	10-131	6	30
Cyclohexane	8260C	19.9	20.0	100	19.7	20.0	98	67-122	2	30
Dibromochloromethane	8260C	22.8	20.0	114	22.7	20.0	114	68-121	<1	30

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QA/QC Report

Client: Inventum Engineering
Project: Riverview BCP RI
Sample Matrix: Soil

Service Request: R2010938
Date Analyzed: 11/28/20

Duplicate Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/Kg
Basis: Dry

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2014680-03			RQ2014680-04					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Dichlorodifluoromethane (CFC 12)	8260C	22.9	20.0	114	22.1	20.0	111	51-144	3	30
Dichloromethane	8260C	18.6	20.0	93	18.5	20.0	92	72-118	1	30
Ethylbenzene	8260C	19.6	20.0	98	19.5	20.0	98	64-118	<1	30
Isopropylbenzene (Cumene)	8260C	19.6	20.0	98	19.2	20.0	96	60-123	2	30
Methyl Acetate	8260C	22.9	20.0	115	23.4	20.0	117	31-122	2	30
Methyl tert-Butyl Ether	8260C	20.8	20.0	104	21.2	20.0	106	76-118	2	30
Methylcyclohexane	8260C	20.8	20.0	104	20.0	20.0	100	70-124	4	30
Styrene	8260C	19.3	20.0	97	19.3	20.0	96	74-117	1	30
Tetrachloroethene (PCE)	8260C	19.3	20.0	96	18.3	20.0	92	58-124	4	30
Toluene	8260C	19.1	20.0	96	19.2	20.0	96	72-116	<1	30
Trichloroethene (TCE)	8260C	19.3	20.0	97	19.0	20.0	95	69-118	2	30
Trichlorofluoromethane (CFC 11)	8260C	22.3	20.0	112	17.6	20.0	88	52-127	24	30
Vinyl Chloride	8260C	21.2	20.0	106	20.3	20.0	102	59-153	4	30
cis-1,2-Dichloroethene	8260C	20.3	20.0	101	19.8	20.0	99	79-113	2	30
cis-1,3-Dichloropropene	8260C	20.5	20.0	103	20.9	20.0	105	66-117	2	30
m,p-Xylenes	8260C	39.4	40.0	98	38.5	40.0	96	68-118	2	30
o-Xylene	8260C	20.3	20.0	101	19.8	20.0	99	71-116	2	30
trans-1,2-Dichloroethene	8260C	22.1	20.0	110	21.4	20.0	107	73-114	3	30
trans-1,3-Dichloropropene	8260C	22.0	20.0	110	22.5	20.0	113	57-135	3	30

Semivolatile Organic Compounds by GC/MS

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QA/QC Report

Client: Inventum Engineering **Service Request:** R2010938
Project: Riverview BCP RI
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Extraction Method: EPA 3510C

Sample Name	Lab Code	2,4,6-Tribromophenol 35-141	2-Fluorobiphenyl 31-118	2-Fluorophenol 10-105
EQB-11172020	R2010938-001	41	25*	26
EQB-11172020 RE	R2010938-001	64	49	40
Method Blank	RQ2014426-01	51	30*	26
Method Blank	RQ2014426-01	45	27*	27
Method Blank	RQ2014954-01	51	33	32
Lab Control Sample	RQ2014426-02	71	42	24
Duplicate Lab Control Sample	RQ2014426-03	75	53	30
Lab Control Sample	RQ2014954-02	73	65	38
Duplicate Lab Control Sample	RQ2014954-03	79	64	38

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QA/QC Report

Client: Inventum Engineering **Service Request:** R2010938
Project: Riverview BCP RI
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Extraction Method: EPA 3510C

Sample Name	Lab Code	Nitrobenzene-d5 31-110	Phenol-d6 10-107	Terphenyl-d14 10-165
EQB-11172020	R2010938-001	25*	19	60
EQB-11172020 RE	R2010938-001	46	23	77
Method Blank	RQ2014426-01	33	21	56
Method Blank	RQ2014426-01	27*	15	57
Method Blank	RQ2014954-01	36	20	60
Lab Control Sample	RQ2014426-02	23*	22	67
Duplicate Lab Control Sample	RQ2014426-03	38	24	72
Lab Control Sample	RQ2014954-02	63	32	78
Duplicate Lab Control Sample	RQ2014954-03	60	31	80

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QA/QC Report

Client: Inventum Engineering **Service Request:** R2010938
Project: Riverview BCP RI
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Extraction Method: EPA 3510C

		2,4,6-Tribromophenol	2-Fluorobiphenyl	2-Fluorophenol
Sample Name	**Lab Code**	**35-141**	**31-118**	**10-105**
TR-BCP-07-01-HA	R2010938-002	51	39	37
TR-BCP-07-01-HA DL	R2010938-002	53	44	40
SD-BCP-01	R2010938-003	41	27	33
SD-BCP-02	R2010938-004	48	34	36
SD-BCP-04	R2010938-005	42	34	37
SD-BCP-040	R2010938-006	42	32	34
SD-BCP-03	R2010938-007	48	30	30
SS-BCP-15-02	R2010938-008	34	26	28
SS-BCP-15-024	R2010938-010	48	17	28
Method Blank	RQ2014429-01	41	42	41
Lab Control Sample	RQ2014429-02	33	32	32
Duplicate Lab Control Sample	RQ2014429-03	43	42	42

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QA/QC Report

Client: Inventum Engineering **Service Request:** R2010938
Project: Riverview BCP RI
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Extraction Method: EPA 3510C

Sample Name	Lab Code	Nitrobenzene-d5 31-110	Phenol-d6 10-107	Terphenyl-d14 10-165
TR-BCP-07-01-HA	R2010938-002	39	42	45
TR-BCP-07-01-HA DL	R2010938-002	43	45	50
SD-BCP-01	R2010938-003	32	35	40
SD-BCP-02	R2010938-004	36	37	46
SD-BCP-04	R2010938-005	36	38	40
SD-BCP-040	R2010938-006	35	34	42
SD-BCP-03	R2010938-007	31	31	50
SS-BCP-15-02	R2010938-008	28	30	32
SS-BCP-15-024	R2010938-010	24	31	38
Method Blank	RQ2014429-01	41	41	39
Lab Control Sample	RQ2014429-02	31	33	33
Duplicate Lab Control Sample	RQ2014429-03	40	43	43

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QA/QC Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Analyzed:**	11/30/20 22:55
Sample Matrix:	Water	**Date Extracted:**	11/23/20

Method Blank Summary
Semivolatile Organic Compounds by GC/MS

Sample Name:	Method Blank	**Instrument ID:**	R-MS-51
Lab Code:	RQ2014426-01	**File ID:**	I:\ACQUDATA\5973A\DATA\113020\EA302.D\
Analysis Method:	8270D	**Analysis Lot:**	705343,705680,705554,706464,707741
Prep Method:	EPA 3510C	**Extraction Lot:**	370226

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	RQ2014426-02	I:\ACQUDATA\5973A\DATA\113020\EA303.D\	11/30/20 23:23
Duplicate Lab Control Sample	RQ2014426-03	I:\ACQUDATA\5973A\DATA\113020\EA304.D\	11/30/20 23:51
EQB-11172020	R2010938-001	I:\ACQUDATA\5973A\DATA\120120\EA326.D\	12/01/20 12:14

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QA/QC Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Analyzed:**	12/01/20 16:07
Sample Matrix:	Soil	**Date Extracted:**	11/23/20

Method Blank Summary
Semivolatile Organic Compounds by GC/MS

Sample Name:	Method Blank	**Instrument ID:**	R-MS-54
Lab Code:	RQ2014429-01	**File ID:**	I:\ACQUDATA\5973D\Data\120120\CA414.D\
Analysis Method:	8270D	**Analysis Lot:**	705343,705680,705554,706464,707741
Prep Method:	EPA 3541	**Extraction Lot:**	370230

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	RQ2014429-02	I:\ACQUDATA\5973D\Data\120120\CA415.D\	12/01/20 16:36
Duplicate Lab Control Sample	RQ2014429-03	I:\ACQUDATA\5973D\Data\120120\CA416.D\	12/01/20 17:04
TR-BCP-07-01-HA	R2010938-002	I:\ACQUDATA\5973D\Data\120120\CA429.D\	12/01/20 23:19
SD-BCP-01	R2010938-003	I:\ACQUDATA\5973D\Data\120120\CA430.D\	12/01/20 23:47
SD-BCP-02	R2010938-004	I:\ACQUDATA\5973D\Data\120120\CA431.D\	12/02/20 00:16
SD-BCP-04	R2010938-005	I:\ACQUDATA\5973D\Data\120120\CA432.D\	12/02/20 00:44
SD-BCP-040	R2010938-006	I:\ACQUDATA\5973D\Data\120120\CA433.D\	12/02/20 01:12
SD-BCP-03	R2010938-007	I:\ACQUDATA\5973D\Data\120120\CA434.D\	12/02/20 01:41
SS-BCP-15-02	R2010938-008	I:\ACQUDATA\5973D\Data\120120\CA435.D\	12/02/20 02:09
SS-BCP-15-024	R2010938-010	I:\ACQUDATA\5973D\Data\120120\CA436.D\	12/02/20 02:37
TR-BCP-07-01-HA	R2010938-002	I:\ACQUDATA\5973D\Data\121620\CA746.D\	12/16/20 18:01

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QA/QC Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Analyzed:**	12/08/20 17:17
Sample Matrix:	Water	**Date Extracted:**	12/04/20

Method Blank Summary
Semivolatile Organic Compounds by GC/MS

Sample Name:	Method Blank	**Instrument ID:**	R-MS-54
Lab Code:	RQ2014954-01	**File ID:**	I:\ACQUDATA\5973D\Data\120820\CA549.D\
Analysis Method:	8270D	**Analysis Lot:**	705343,705680,705554,706464,707741
Prep Method:	EPA 3510C	**Extraction Lot:**	370860

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	RQ2014954-02	I:\ACQUDATA\5973D\Data\120820\CA550.D\	12/08/20 17:46
Duplicate Lab Control Sample	RQ2014954-03	I:\ACQUDATA\5973D\Data\120820\CA551.D\	12/08/20 18:14
EQB-11172020	R2010938-001	I:\ACQUDATA\5973D\Data\120820\CA555.D\	12/08/20 20:08

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2014426-01	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4,5-Tetrachlorobenzene	1.2 U	10	1.2	1	11/30/20 22:55	11/23/20	
2,3,4,6-Tetrachlorophenol	1.2 U	10	1.2	1	11/30/20 22:55	11/23/20	
2,4,5-Trichlorophenol	1.1 U	10	1.1	1	11/30/20 22:55	11/23/20	
2,4,6-Trichlorophenol	1.4 U	10	1.4	1	11/30/20 22:55	11/23/20	
2,4-Dichlorophenol	1.3 U	10	1.3	1	11/30/20 22:55	11/23/20	
2,4-Dimethylphenol	1.4 U	10	1.4	1	11/30/20 22:55	11/23/20	
2,4-Dinitrophenol	20 U	50	20	1	11/30/20 22:55	11/23/20	
2,4-Dinitrotoluene	2.4 U	10	2.4	1	11/30/20 22:55	11/23/20	
2,6-Dinitrotoluene	1.4 U	10	1.4	1	11/30/20 22:55	11/23/20	
2-Chloronaphthalene	1.4 U	10	1.4	1	11/30/20 22:55	11/23/20	
2-Chlorophenol	1.1 U	10	1.1	1	11/30/20 22:55	11/23/20	
2-Methylnaphthalene	1.3 U	10	1.3	1	11/30/20 22:55	11/23/20	
2-Methylphenol	1.0 U	10	1.0	1	11/30/20 22:55	11/23/20	
2-Nitroaniline	1.4 U	10	1.4	1	11/30/20 22:55	11/23/20	
2-Nitrophenol	1.5 U	10	1.5	1	11/30/20 22:55	11/23/20	
3,3'-Dichlorobenzidine	1.2 U	10	1.2	1	11/30/20 22:55	11/23/20	
3- and 4-Methylphenol Coelution	1.2 U	10	1.2	1	11/30/20 22:55	11/23/20	
3-Nitroaniline	2.5 U	10	2.5	1	11/30/20 22:55	11/23/20	
4,6-Dinitro-2-methylphenol	20 U	50	20	1	11/30/20 22:55	11/23/20	
4-Bromophenyl Phenyl Ether	1.7 U	10	1.7	1	11/30/20 22:55	11/23/20	
4-Chloro-3-methylphenol	1.1 U	10	1.1	1	11/30/20 22:55	11/23/20	
4-Chloroaniline	1.0 U	10	1.0	1	11/30/20 22:55	11/23/20	
4-Chlorophenyl Phenyl Ether	1.5 U	10	1.5	1	11/30/20 22:55	11/23/20	
4-Nitroaniline	2.7 U	10	2.7	1	11/30/20 22:55	11/23/20	
4-Nitrophenol	6.4 U	50	6.4	1	11/30/20 22:55	11/23/20	
Acenaphthene	1.4 U	10	1.4	1	11/30/20 22:55	11/23/20	
Acenaphthylene	1.4 U	10	1.4	1	11/30/20 22:55	11/23/20	
Acetophenone	1.3 U	10	1.3	1	11/30/20 22:55	11/23/20	
Anthracene	1.3 U	10	1.3	1	11/30/20 22:55	11/23/20	
Atrazine	2.1 U	10	2.1	1	11/30/20 22:55	11/23/20	
Benz(a)anthracene	1.6 U	10	1.6	1	11/30/20 22:55	11/23/20	
Benzaldehyde	3.7 U	10	3.7	1	11/30/20 22:55	11/23/20	
Benzo(a)pyrene	1.2 U	10	1.2	1	11/30/20 22:55	11/23/20	
Benzo(b)fluoranthene	1.2 U	10	1.2	1	11/30/20 22:55	11/23/20	
Benzo(g,h,i)perylene	1.0 U	10	1.0	1	11/30/20 22:55	11/23/20	
Benzo(k)fluoranthene	1.3 U	10	1.3	1	11/30/20 22:55	11/23/20	
Biphenyl	1.4 U	10	1.4	1	11/30/20 22:55	11/23/20	
2,2'-Oxybis(1-chloropropane)	1.4 U	10	1.4	1	11/30/20 22:55	11/23/20	
Bis(2-chloroethoxy)methane	1.9 U	10	1.9	1	11/30/20 22:55	11/23/20	
Bis(2-chloroethyl) Ether	1.3 U	10	1.3	1	11/30/20 22:55	11/23/20	
Bis(2-ethylhexyl) Phthalate	1.0 U	10	1.0	1	11/30/20 22:55	11/23/20	
Butyl Benzyl Phthalate	1.4 U	10	1.4	1	11/30/20 22:55	11/23/20	
Caprolactam	1.0 U	10	1.0	1	11/30/20 22:55	11/23/20	

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2014426-01	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Carbazole	1.6 U	10	1.6	1	11/30/20 22:55	11/23/20	
Chrysene	1.2 U	10	1.2	1	11/30/20 22:55	11/23/20	
Di-n-butyl Phthalate	2.0 U	10	2.0	1	11/30/20 22:55	11/23/20	
Di-n-octyl Phthalate	3.3 U	10	3.3	1	11/30/20 22:55	11/23/20	
Dibenz(a,h)anthracene	1.1 U	10	1.1	1	11/30/20 22:55	11/23/20	
Dibenzofuran	1.4 U	10	1.4	1	11/30/20 22:55	11/23/20	
Diethyl Phthalate	1.1 U	10	1.1	1	11/30/20 22:55	11/23/20	
Dimethyl Phthalate	1.3 U	10	1.3	1	11/30/20 22:55	11/23/20	
Fluoranthene	1.5 U	10	1.5	1	11/30/20 22:55	11/23/20	
Fluorene	1.3 U	10	1.3	1	11/30/20 22:55	11/23/20	
Hexachlorobenzene	1.6 U	10	1.6	1	11/30/20 22:55	11/23/20	
Hexachlorobutadiene	1.0 U	10	1.0	1	11/30/20 22:55	11/23/20	
Hexachlorocyclopentadiene	2.2 U	10	2.2	1	11/30/20 22:55	11/23/20	
Hexachloroethane	1.1 U	10	1.1	1	11/30/20 22:55	11/23/20	
Indeno(1,2,3-cd)pyrene	1.8 U	10	1.8	1	11/30/20 22:55	11/23/20	
Isophorone	1.4 U	10	1.4	1	11/30/20 22:55	11/23/20	
N-Nitrosodi-n-propylamine	1.2 U	10	1.2	1	11/30/20 22:55	11/23/20	
N-Nitrosodiphenylamine	2.7 U	10	2.7	1	11/30/20 22:55	11/23/20	
Naphthalene	1.2 U	10	1.2	1	11/30/20 22:55	11/23/20	
Nitrobenzene	1.5 U	10	1.5	1	11/30/20 22:55	11/23/20	
Pentachlorophenol (PCP)	9.8 U	50	9.8	1	11/30/20 22:55	11/23/20	
Phenanthrene	1.4 U	10	1.4	1	11/30/20 22:55	11/23/20	
Phenol	1.0 U	10	1.0	1	11/30/20 22:55	11/23/20	
Pyrene	1.5 U	10	1.5	1	11/30/20 22:55	11/23/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	51	35 - 141	11/30/20 22:55	
2-Fluorobiphenyl	30 *	31 - 118	11/30/20 22:55	*
2-Fluorophenol	26	10 - 105	11/30/20 22:55	
Nitrobenzene-d5	33	31 - 110	11/30/20 22:55	
Phenol-d6	21	10 - 107	11/30/20 22:55	
Terphenyl-d14	56	10 - 165	11/30/20 22:55	

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2014426-01	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4,5-Tetrachlorobenzene	1.2 U	10	1.2	1	12/08/20 21:34	11/23/20	
2,3,4,6-Tetrachlorophenol	1.2 U	10	1.2	1	12/08/20 21:34	11/23/20	
2,4,5-Trichlorophenol	1.1 U	10	1.1	1	12/08/20 21:34	11/23/20	
2,4,6-Trichlorophenol	1.4 U	10	1.4	1	12/08/20 21:34	11/23/20	
2,4-Dichlorophenol	1.3 U	10	1.3	1	12/08/20 21:34	11/23/20	
2,4-Dimethylphenol	1.4 U	10	1.4	1	12/08/20 21:34	11/23/20	
2,4-Dinitrophenol	20 U	50	20	1	12/08/20 21:34	11/23/20	
2,4-Dinitrotoluene	2.4 U	10	2.4	1	12/08/20 21:34	11/23/20	
2,6-Dinitrotoluene	1.4 U	10	1.4	1	12/08/20 21:34	11/23/20	
2-Chloronaphthalene	1.4 U	10	1.4	1	12/08/20 21:34	11/23/20	
2-Chlorophenol	1.1 U	10	1.1	1	12/08/20 21:34	11/23/20	
2-Methylnaphthalene	1.3 U	10	1.3	1	12/08/20 21:34	11/23/20	
2-Methylphenol	1.0 U	10	1.0	1	12/08/20 21:34	11/23/20	
2-Nitroaniline	1.4 U	10	1.4	1	12/08/20 21:34	11/23/20	
2-Nitrophenol	1.5 U	10	1.5	1	12/08/20 21:34	11/23/20	
3,3'-Dichlorobenzidine	1.2 U	10	1.2	1	12/08/20 21:34	11/23/20	
3- and 4-Methylphenol Coelution	1.2 U	10	1.2	1	12/08/20 21:34	11/23/20	
3-Nitroaniline	2.5 U	10	2.5	1	12/08/20 21:34	11/23/20	
4,6-Dinitro-2-methylphenol	20 U	50	20	1	12/08/20 21:34	11/23/20	
4-Bromophenyl Phenyl Ether	1.7 U	10	1.7	1	12/08/20 21:34	11/23/20	
4-Chloro-3-methylphenol	1.1 U	10	1.1	1	12/08/20 21:34	11/23/20	
4-Chloroaniline	1.0 U	10	1.0	1	12/08/20 21:34	11/23/20	
4-Chlorophenyl Phenyl Ether	1.5 U	10	1.5	1	12/08/20 21:34	11/23/20	
4-Nitroaniline	2.7 U	10	2.7	1	12/08/20 21:34	11/23/20	
4-Nitrophenol	6.4 U	50	6.4	1	12/08/20 21:34	11/23/20	
Acenaphthene	1.4 U	10	1.4	1	12/08/20 21:34	11/23/20	
Acenaphthylene	1.4 U	10	1.4	1	12/08/20 21:34	11/23/20	
Acetophenone	1.3 U	10	1.3	1	12/08/20 21:34	11/23/20	
Anthracene	1.3 U	10	1.3	1	12/08/20 21:34	11/23/20	
Atrazine	2.1 U	10	2.1	1	12/08/20 21:34	11/23/20	
Benz(a)anthracene	1.6 U	10	1.6	1	12/08/20 21:34	11/23/20	
Benzaldehyde	3.7 U	10	3.7	1	12/08/20 21:34	11/23/20	
Benzo(a)pyrene	1.2 U	10	1.2	1	12/08/20 21:34	11/23/20	
Benzo(b)fluoranthene	1.2 U	10	1.2	1	12/08/20 21:34	11/23/20	
Benzo(g,h,i)perylene	1.0 U	10	1.0	1	12/08/20 21:34	11/23/20	
Benzo(k)fluoranthene	1.3 U	10	1.3	1	12/08/20 21:34	11/23/20	
Biphenyl	1.4 U	10	1.4	1	12/08/20 21:34	11/23/20	
2,2'-Oxybis(1-chloropropane)	1.4 U	10	1.4	1	12/08/20 21:34	11/23/20	
Bis(2-chloroethoxy)methane	1.9 U	10	1.9	1	12/08/20 21:34	11/23/20	
Bis(2-chloroethyl) Ether	1.3 U	10	1.3	1	12/08/20 21:34	11/23/20	
Bis(2-ethylhexyl) Phthalate	1.0 U	10	1.0	1	12/08/20 21:34	11/23/20	
Butyl Benzyl Phthalate	1.4 U	10	1.4	1	12/08/20 21:34	11/23/20	
Caprolactam	1.0 U	10	1.0	1	12/08/20 21:34	11/23/20	

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2014426-01	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Carbazole	1.6 U	10	1.6	1	12/08/20 21:34	11/23/20	
Chrysene	1.2 U	10	1.2	1	12/08/20 21:34	11/23/20	
Di-n-butyl Phthalate	2.0 U	10	2.0	1	12/08/20 21:34	11/23/20	
Di-n-octyl Phthalate	3.3 U	10	3.3	1	12/08/20 21:34	11/23/20	
Dibenz(a,h)anthracene	1.1 U	10	1.1	1	12/08/20 21:34	11/23/20	
Dibenzofuran	1.4 U	10	1.4	1	12/08/20 21:34	11/23/20	
Diethyl Phthalate	1.1 U	10	1.1	1	12/08/20 21:34	11/23/20	
Dimethyl Phthalate	1.3 U	10	1.3	1	12/08/20 21:34	11/23/20	
Fluoranthene	1.5 U	10	1.5	1	12/08/20 21:34	11/23/20	
Fluorene	1.3 U	10	1.3	1	12/08/20 21:34	11/23/20	
Hexachlorobenzene	1.6 U	10	1.6	1	12/08/20 21:34	11/23/20	
Hexachlorobutadiene	1.0 U	10	1.0	1	12/08/20 21:34	11/23/20	
Hexachlorocyclopentadiene	2.2 U	10	2.2	1	12/08/20 21:34	11/23/20	
Hexachloroethane	1.1 U	10	1.1	1	12/08/20 21:34	11/23/20	
Indeno(1,2,3-cd)pyrene	1.8 U	10	1.8	1	12/08/20 21:34	11/23/20	
Isophorone	1.4 U	10	1.4	1	12/08/20 21:34	11/23/20	
N-Nitrosodi-n-propylamine	1.2 U	10	1.2	1	12/08/20 21:34	11/23/20	
N-Nitrosodiphenylamine	2.7 U	10	2.7	1	12/08/20 21:34	11/23/20	
Naphthalene	1.2 U	10	1.2	1	12/08/20 21:34	11/23/20	
Nitrobenzene	1.5 U	10	1.5	1	12/08/20 21:34	11/23/20	
Pentachlorophenol (PCP)	9.8 U	50	9.8	1	12/08/20 21:34	11/23/20	
Phenanthrene	1.4 U	10	1.4	1	12/08/20 21:34	11/23/20	
Phenol	1.0 U	10	1.0	1	12/08/20 21:34	11/23/20	
Pyrene	1.5 U	10	1.5	1	12/08/20 21:34	11/23/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	45	35 - 141	12/08/20 21:34	
2-Fluorobiphenyl	27 *	31 - 118	12/08/20 21:34	*
2-Fluorophenol	27	10 - 105	12/08/20 21:34	
Nitrobenzene-d5	27 *	31 - 110	12/08/20 21:34	*
Phenol-d6	15	10 - 107	12/08/20 21:34	
Terphenyl-d14	57	10 - 165	12/08/20 21:34	

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2014429-01	**Basis:**	Dry

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4,5-Tetrachlorobenzene	79	U	330	79	1	12/01/20 16:07	11/23/20	
2,3,4,6-Tetrachlorophenol	70	U	330	70	1	12/01/20 16:07	11/23/20	
2,4,5-Trichlorophenol	290	U	330	290	1	12/01/20 16:07	11/23/20	
2,4,6-Trichlorophenol	59	U	330	59	1	12/01/20 16:07	11/23/20	
2,4-Dichlorophenol	71	U	330	71	1	12/01/20 16:07	11/23/20	
2,4-Dimethylphenol	73	U	330	73	1	12/01/20 16:07	11/23/20	
2,4-Dinitrophenol	660	U	1700	660	1	12/01/20 16:07	11/23/20	
2,4-Dinitrotoluene	140	U	330	140	1	12/01/20 16:07	11/23/20	
2,6-Dinitrotoluene	98	U	330	98	1	12/01/20 16:07	11/23/20	
2-Chloronaphthalene	80	U	330	80	1	12/01/20 16:07	11/23/20	
2-Chlorophenol	82	U	330	82	1	12/01/20 16:07	11/23/20	
2-Methylnaphthalene	73	U	330	73	1	12/01/20 16:07	11/23/20	
2-Methylphenol	72	U	330	72	1	12/01/20 16:07	11/23/20	
2-Nitroaniline	100	U	330	100	1	12/01/20 16:07	11/23/20	
2-Nitrophenol	97	U	330	97	1	12/01/20 16:07	11/23/20	
3,3'-Dichlorobenzidine	70	U	330	70	1	12/01/20 16:07	11/23/20	
3- and 4-Methylphenol Coelution	64	U	330	64	1	12/01/20 16:07	11/23/20	
3-Nitroaniline	71	U	330	71	1	12/01/20 16:07	11/23/20	
4,6-Dinitro-2-methylphenol	150	U	1700	150	1	12/01/20 16:07	11/23/20	
4-Bromophenyl Phenyl Ether	130	U	330	130	1	12/01/20 16:07	11/23/20	
4-Chloro-3-methylphenol	73	U	330	73	1	12/01/20 16:07	11/23/20	
4-Chloroaniline	79	U	330	79	1	12/01/20 16:07	11/23/20	
4-Chlorophenyl Phenyl Ether	80	U	330	80	1	12/01/20 16:07	11/23/20	
4-Nitroaniline	71	U	330	71	1	12/01/20 16:07	11/23/20	
4-Nitrophenol	120	U	1700	120	1	12/01/20 16:07	11/23/20	
Acenaphthene	75	U	330	75	1	12/01/20 16:07	11/23/20	
Acenaphthylene	88	U	330	88	1	12/01/20 16:07	11/23/20	
Acetophenone	76	U	330	76	1	12/01/20 16:07	11/23/20	
Anthracene	93	U	330	93	1	12/01/20 16:07	11/23/20	
Atrazine	140	U	330	140	1	12/01/20 16:07	11/23/20	
Benz(a)anthracene	99	U	330	99	1	12/01/20 16:07	11/23/20	
Benzaldehyde	66	U	330	66	1	12/01/20 16:07	11/23/20	
Benzo(a)pyrene	130	U	330	130	1	12/01/20 16:07	11/23/20	
Benzo(b)fluoranthene	120	U	330	120	1	12/01/20 16:07	11/23/20	
Benzo(g,h,i)perylene	88	U	330	88	1	12/01/20 16:07	11/23/20	
Benzo(k)fluoranthene	130	U	330	130	1	12/01/20 16:07	11/23/20	
Biphenyl	82	U	330	82	1	12/01/20 16:07	11/23/20	
2,2'-Oxybis(1-chloropropane)	140	U	330	140	1	12/01/20 16:07	11/23/20	
Bis(2-chloroethoxy)methane	89	U	330	89	1	12/01/20 16:07	11/23/20	
Bis(2-chloroethyl) Ether	87	U	330	87	1	12/01/20 16:07	11/23/20	
Bis(2-ethylhexyl) Phthalate	89	U	510	89	1	12/01/20 16:07	11/23/20	
Butyl Benzyl Phthalate	83	U	330	83	1	12/01/20 16:07	11/23/20	
Caprolactam	87	U	330	87	1	12/01/20 16:07	11/23/20	

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2014429-01	**Basis:**	Dry

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Carbazole	97	U	330	97	1	12/01/20 16:07	11/23/20	
Chrysene	130	U	330	130	1	12/01/20 16:07	11/23/20	
Di-n-butyl Phthalate	110	U	330	110	1	12/01/20 16:07	11/23/20	
Di-n-octyl Phthalate	99	U	330	99	1	12/01/20 16:07	11/23/20	
Dibenz(a,h)anthracene	100	U	330	100	1	12/01/20 16:07	11/23/20	
Dibenzofuran	66	U	330	66	1	12/01/20 16:07	11/23/20	
Diethyl Phthalate	71	U	330	71	1	12/01/20 16:07	11/23/20	
Dimethyl Phthalate	75	U	330	75	1	12/01/20 16:07	11/23/20	
Fluoranthene	130	U	330	130	1	12/01/20 16:07	11/23/20	
Fluorene	77	U	330	77	1	12/01/20 16:07	11/23/20	
Hexachlorobenzene	110	U	330	110	1	12/01/20 16:07	11/23/20	
Hexachlorobutadiene	81	U	330	81	1	12/01/20 16:07	11/23/20	
Hexachlorocyclopentadiene	73	U	330	73	1	12/01/20 16:07	11/23/20	
Hexachloroethane	86	U	330	86	1	12/01/20 16:07	11/23/20	
Indeno(1,2,3-cd)pyrene	120	U	330	120	1	12/01/20 16:07	11/23/20	
Isophorone	91	U	330	91	1	12/01/20 16:07	11/23/20	
N-Nitrosodi-n-propylamine	89	U	330	89	1	12/01/20 16:07	11/23/20	
N-Nitrosodiphenylamine	230	U	330	230	1	12/01/20 16:07	11/23/20	
Naphthalene	86	U	330	86	1	12/01/20 16:07	11/23/20	
Nitrobenzene	86	U	330	86	1	12/01/20 16:07	11/23/20	
Pentachlorophenol (PCP)	120	U	1700	120	1	12/01/20 16:07	11/23/20	
Phenanthrene	98	U	330	98	1	12/01/20 16:07	11/23/20	
Phenol	79	U	330	79	1	12/01/20 16:07	11/23/20	
Pyrene	140	U	330	140	1	12/01/20 16:07	11/23/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	41	10 - 109	12/01/20 16:07	
2-Fluorobiphenyl	42	10 - 102	12/01/20 16:07	
2-Fluorophenol	41	10 - 88	12/01/20 16:07	
Nitrobenzene-d5	41	10 - 95	12/01/20 16:07	
Phenol-d6	41	10 - 145	12/01/20 16:07	
Terphenyl-d14	39	10 - 106	12/01/20 16:07	

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2014954-01	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4,5-Tetrachlorobenzene	1.2 U	10	1.2	1	12/08/20 17:17	12/4/20	
2,3,4,6-Tetrachlorophenol	1.2 U	10	1.2	1	12/08/20 17:17	12/4/20	
2,4,5-Trichlorophenol	1.1 U	10	1.1	1	12/08/20 17:17	12/4/20	
2,4,6-Trichlorophenol	1.4 U	10	1.4	1	12/08/20 17:17	12/4/20	
2,4-Dichlorophenol	1.3 U	10	1.3	1	12/08/20 17:17	12/4/20	
2,4-Dimethylphenol	1.4 U	10	1.4	1	12/08/20 17:17	12/4/20	
2,4-Dinitrophenol	20 U	50	20	1	12/08/20 17:17	12/4/20	
2,4-Dinitrotoluene	2.4 U	10	2.4	1	12/08/20 17:17	12/4/20	
2,6-Dinitrotoluene	1.4 U	10	1.4	1	12/08/20 17:17	12/4/20	
2-Chloronaphthalene	1.4 U	10	1.4	1	12/08/20 17:17	12/4/20	
2-Chlorophenol	1.1 U	10	1.1	1	12/08/20 17:17	12/4/20	
2-Methylnaphthalene	1.3 U	10	1.3	1	12/08/20 17:17	12/4/20	
2-Methylphenol	1.0 U	10	1.0	1	12/08/20 17:17	12/4/20	
2-Nitroaniline	1.4 U	10	1.4	1	12/08/20 17:17	12/4/20	
2-Nitrophenol	1.5 U	10	1.5	1	12/08/20 17:17	12/4/20	
3,3'-Dichlorobenzidine	1.2 U	10	1.2	1	12/08/20 17:17	12/4/20	
3- and 4-Methylphenol Coelution	1.2 U	10	1.2	1	12/08/20 17:17	12/4/20	
3-Nitroaniline	2.5 U	10	2.5	1	12/08/20 17:17	12/4/20	
4,6-Dinitro-2-methylphenol	20 U	50	20	1	12/08/20 17:17	12/4/20	
4-Bromophenyl Phenyl Ether	1.7 U	10	1.7	1	12/08/20 17:17	12/4/20	
4-Chloro-3-methylphenol	1.1 U	10	1.1	1	12/08/20 17:17	12/4/20	
4-Chloroaniline	1.0 U	10	1.0	1	12/08/20 17:17	12/4/20	
4-Chlorophenyl Phenyl Ether	1.5 U	10	1.5	1	12/08/20 17:17	12/4/20	
4-Nitroaniline	2.7 U	10	2.7	1	12/08/20 17:17	12/4/20	
4-Nitrophenol	6.4 U	50	6.4	1	12/08/20 17:17	12/4/20	
Acenaphthene	1.4 U	10	1.4	1	12/08/20 17:17	12/4/20	
Acenaphthylene	1.4 U	10	1.4	1	12/08/20 17:17	12/4/20	
Acetophenone	1.3 U	10	1.3	1	12/08/20 17:17	12/4/20	
Anthracene	1.3 U	10	1.3	1	12/08/20 17:17	12/4/20	
Atrazine	2.1 U	10	2.1	1	12/08/20 17:17	12/4/20	
Benz(a)anthracene	1.6 U	10	1.6	1	12/08/20 17:17	12/4/20	
Benzaldehyde	3.7 U	10	3.7	1	12/08/20 17:17	12/4/20	
Benzo(a)pyrene	1.2 U	10	1.2	1	12/08/20 17:17	12/4/20	
Benzo(b)fluoranthene	1.2 U	10	1.2	1	12/08/20 17:17	12/4/20	
Benzo(g,h,i)perylene	1.0 U	10	1.0	1	12/08/20 17:17	12/4/20	
Benzo(k)fluoranthene	1.3 U	10	1.3	1	12/08/20 17:17	12/4/20	
Biphenyl	1.4 U	10	1.4	1	12/08/20 17:17	12/4/20	
2,2'-Oxybis(1-chloropropane)	1.4 U	10	1.4	1	12/08/20 17:17	12/4/20	
Bis(2-chloroethoxy)methane	1.9 U	10	1.9	1	12/08/20 17:17	12/4/20	
Bis(2-chloroethyl) Ether	1.3 U	10	1.3	1	12/08/20 17:17	12/4/20	
Bis(2-ethylhexyl) Phthalate	1.0 U	10	1.0	1	12/08/20 17:17	12/4/20	
Butyl Benzyl Phthalate	1.4 U	10	1.4	1	12/08/20 17:17	12/4/20	
Caprolactam	1.0 U	10	1.0	1	12/08/20 17:17	12/4/20	

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2014954-01	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Carbazole	1.6 U	10	1.6	1	12/08/20 17:17	12/4/20	
Chrysene	1.2 U	10	1.2	1	12/08/20 17:17	12/4/20	
Di-n-butyl Phthalate	2.0 U	10	2.0	1	12/08/20 17:17	12/4/20	
Di-n-octyl Phthalate	3.3 U	10	3.3	1	12/08/20 17:17	12/4/20	
Dibenz(a,h)anthracene	1.1 U	10	1.1	1	12/08/20 17:17	12/4/20	
Dibenzofuran	1.4 U	10	1.4	1	12/08/20 17:17	12/4/20	
Diethyl Phthalate	1.1 U	10	1.1	1	12/08/20 17:17	12/4/20	
Dimethyl Phthalate	1.3 U	10	1.3	1	12/08/20 17:17	12/4/20	
Fluoranthene	1.5 U	10	1.5	1	12/08/20 17:17	12/4/20	
Fluorene	1.3 U	10	1.3	1	12/08/20 17:17	12/4/20	
Hexachlorobenzene	1.6 U	10	1.6	1	12/08/20 17:17	12/4/20	
Hexachlorobutadiene	1.0 U	10	1.0	1	12/08/20 17:17	12/4/20	
Hexachlorocyclopentadiene	2.2 U	10	2.2	1	12/08/20 17:17	12/4/20	
Hexachloroethane	1.1 U	10	1.1	1	12/08/20 17:17	12/4/20	
Indeno(1,2,3-cd)pyrene	1.8 U	10	1.8	1	12/08/20 17:17	12/4/20	
Isophorone	1.4 U	10	1.4	1	12/08/20 17:17	12/4/20	
N-Nitrosodi-n-propylamine	1.2 U	10	1.2	1	12/08/20 17:17	12/4/20	
N-Nitrosodiphenylamine	2.7 U	10	2.7	1	12/08/20 17:17	12/4/20	
Naphthalene	1.2 U	10	1.2	1	12/08/20 17:17	12/4/20	
Nitrobenzene	1.5 U	10	1.5	1	12/08/20 17:17	12/4/20	
Pentachlorophenol (PCP)	9.8 U	50	9.8	1	12/08/20 17:17	12/4/20	
Phenanthrene	1.4 U	10	1.4	1	12/08/20 17:17	12/4/20	
Phenol	1.0 U	10	1.0	1	12/08/20 17:17	12/4/20	
Pyrene	1.5 U	10	1.5	1	12/08/20 17:17	12/4/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	51	35 - 141	12/08/20 17:17	
2-Fluorobiphenyl	33	31 - 118	12/08/20 17:17	
2-Fluorophenol	32	10 - 105	12/08/20 17:17	
Nitrobenzene-d5	36	31 - 110	12/08/20 17:17	
Phenol-d6	20	10 - 107	12/08/20 17:17	
Terphenyl-d14	60	10 - 165	12/08/20 17:17	

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QA/QC Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Analyzed:**	11/30/20 23:23
Sample Matrix:	Water	**Date Extracted:**	11/23/20

Lab Control Sample Summary
Semivolatile Organic Compounds by GC/MS

Sample Name:	Lab Control Sample	**Instrument ID:**	R-MS-51
Lab Code:	RQ2014426-02	**File ID:**	I:\ACQUDATA\5973A\DATA\113020\EA303.D\
Analysis Method:	8270D	**Analysis Lot:**	705343,705680,705554,706464,707741
Prep Method:	EPA 3510C	**Extraction Lot:**	370226

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	RQ2014426-01	I:\ACQUDATA\5973A\DATA\113020\EA302.D\	11/30/20 22:55
Duplicate Lab Control Sample	RQ2014426-03	I:\ACQUDATA\5973A\DATA\113020\EA304.D\	11/30/20 23:51
EQB-11172020	R2010938-001	I:\ACQUDATA\5973A\DATA\120120\EA326.D\	12/01/20 12:14
Method Blank	RQ2014426-01	I:\ACQUDATA\5973D\Data\120820\CA558.D\	12/08/20 21:34

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QA/QC Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Analyzed:**	12/01/20 16:36
Sample Matrix:	Soil	**Date Extracted:**	11/23/20

Lab Control Sample Summary
Semivolatile Organic Compounds by GC/MS

Sample Name:	Lab Control Sample	**Instrument ID:**	R-MS-54
Lab Code:	RQ2014429-02	**File ID:**	I:\ACQUDATA\5973D\Data\120120\CA415.D\
Analysis Method:	8270D	**Analysis Lot:**	705343,705680,705554,706464,707741
Prep Method:	EPA 3541	**Extraction Lot:**	370230

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	RQ2014429-01	I:\ACQUDATA\5973D\Data\120120\CA414.D\	12/01/20 16:07
Duplicate Lab Control Sample	RQ2014429-03	I:\ACQUDATA\5973D\Data\120120\CA416.D\	12/01/20 17:04
TR-BCP-07-01-HA	R2010938-002	I:\ACQUDATA\5973D\Data\120120\CA429.D\	12/01/20 23:19
SD-BCP-01	R2010938-003	I:\ACQUDATA\5973D\Data\120120\CA430.D\	12/01/20 23:47
SD-BCP-02	R2010938-004	I:\ACQUDATA\5973D\Data\120120\CA431.D\	12/02/20 00:16
SD-BCP-04	R2010938-005	I:\ACQUDATA\5973D\Data\120120\CA432.D\	12/02/20 00:44
SD-BCP-040	R2010938-006	I:\ACQUDATA\5973D\Data\120120\CA433.D\	12/02/20 01:12
SD-BCP-03	R2010938-007	I:\ACQUDATA\5973D\Data\120120\CA434.D\	12/02/20 01:41
SS-BCP-15-02	R2010938-008	I:\ACQUDATA\5973D\Data\120120\CA435.D\	12/02/20 02:09
SS-BCP-15-024	R2010938-010	I:\ACQUDATA\5973D\Data\120120\CA436.D\	12/02/20 02:37
TR-BCP-07-01-HA	R2010938-002	I:\ACQUDATA\5973D\Data\121620\CA746.D\	12/16/20 18:01

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QA/QC Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Analyzed:**	12/08/20 17:46
Sample Matrix:	Water	**Date Extracted:**	12/04/20

Lab Control Sample Summary
Semivolatile Organic Compounds by GC/MS

Sample Name:	Lab Control Sample	**Instrument ID:**	R-MS-54
Lab Code:	RQ2014954-02	**File ID:**	I:\ACQUDATA\5973D\Data\120820\CA550.D\
Analysis Method:	8270D	**Analysis Lot:**	705343,705680,705554,706464,707741
Prep Method:	EPA 3510C	**Extraction Lot:**	370860

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	RQ2014954-01	I:\ACQUDATA\5973D\Data\120820\CA549.D\	12/08/20 17:17
Duplicate Lab Control Sample	RQ2014954-03	I:\ACQUDATA\5973D\Data\120820\CA551.D\	12/08/20 18:14
EQB-11172020	R2010938-001	I:\ACQUDATA\5973D\Data\120820\CA555.D\	12/08/20 20:08

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QA/QC Report

Client: Inventum Engineering
Project: Riverview BCP RI
Sample Matrix: Water

Service Request: R2010938
Date Analyzed: 11/30/20

Duplicate Lab Control Sample Summary
Semivolatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2014426-02			RQ2014426-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,4,5-Tetrachlorobenzene	8270D	35.6	80.5	44	52.0	80.5	65	15-132	39*	30
2,3,4,6-Tetrachlorophenol	8270D	58.0	80.0	73	58.3	80.0	73	42-136	<1	30
2,4,5-Trichlorophenol	8270D	49.6	80.0	62	51.8	80.0	65	48-134	5	30
2,4,6-Trichlorophenol	8270D	45.4	80.0	57	46.2	80.0	58	44-135	2	30
2,4-Dichlorophenol	8270D	31.4	80.0	39 *	39.1	80.0	49	48-127	23	30
2,4-Dimethylphenol	8270D	36.4	80.0	45 *	40.8	80.0	51 *	59-113	13	30
2,4-Dinitrophenol	8270D	20 U	80.0	0 *	20 U	80.0	0 *	21-154	NC	30
2,4-Dinitrotoluene	8270D	52.6	80.0	66	55.5	80.0	69	54-130	4	30
2,6-Dinitrotoluene	8270D	60.3	80.0	75	65.2	80.0	82	51-127	9	30
2-Chloronaphthalene	8270D	33.6	80.0	42	43.3	80.0	54	40-108	25	30
2-Chlorophenol	8270D	21.6	80.0	27 *	28.5	80.0	36 *	42-112	29	30
2-Methylnaphthalene	8270D	26.6	80.0	33 *	37.8	80.0	47	34-102	35*	30
2-Methylphenol	8270D	33.3	80.0	42 *	37.8	80.0	47	47-100	11	30
2-Nitroaniline	8270D	53.7	80.0	67	55.9	80.0	70	52-133	4	30
2-Nitrophenol	8270D	21.4	80.0	27 *	32.5	80.0	41 *	43-131	41*	30
3,3'-Dichlorobenzidine	8270D	53.2	80.0	67	58.8	80.0	73	43-126	9	30
3- and 4-Methylphenol Coelution	8270D	35.5	80.0	44	38.5	80.0	48	40-92	9	30
3-Nitroaniline	8270D	51.4	80.0	64	54.7	80.0	68	42-111	6	30
4,6-Dinitro-2-methylphenol	8270D	42.9 J	80.0	54	46.9 J	80.0	59	36-152	9	30
4-Bromophenyl Phenyl Ether	8270D	68.8	80.0	86	77.6	80.0	97	48-114	12	30
4-Chloro-3-methylphenol	8270D	51.0	80.0	64	53.4	80.0	67	52-113	5	30
4-Chloroaniline	8270D	45.2	80.0	56	52.1	80.0	65	44-109	15	30
4-Chlorophenyl Phenyl Ether	8270D	50.3	80.0	63	58.7	80.0	73	51-107	15	30
4-Nitroaniline	8270D	50.9	80.0	64	54.2	80.0	68	54-133	6	30
4-Nitrophenol	8270D	25.0 J	80.0	31	25.1 J	80.0	31	10-126	<1	30
Acenaphthene	8270D	43.6	80.0	54	52.1	80.0	65	52-107	18	30
Acenaphthylene	8270D	42.2	80.0	53 *	51.8	80.0	65	55-109	20	30
Acetophenone	8270D	49.3	160	31 *	69.2	160	43 *	46-114	32*	30
Anthracene	8270D	58.9	80.0	74	63.7	80.0	80	55-116	8	30
Atrazine	8270D	76.6	80.0	96	83.1	80.0	104	61-164	8	30
Benz(a)anthracene	8270D	55.1	80.0	69	59.1	80.0	74	61-121	7	30
Benzaldehyde	8270D	20.2	80.0	25 *	31.6	80.0	40 *	45-132	46*	30
Benzo(a)pyrene	8270D	67.4	80.0	84	73.6	80.0	92	44-114	9	30

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QA/QC Report

Client: Inventum Engineering
Project: Riverview BCP RI
Sample Matrix: Water

Service Request: R2010938
Date Analyzed: 11/30/20

Duplicate Lab Control Sample Summary
Semivolatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2014426-02			RQ2014426-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Benzo(b)fluoranthene	8270D	57.2	80.0	72	61.2	80.0	76	62-115	5	30
Benzo(g,h,i)perylene	8270D	81.4	80.0	102	89.9	80.0	112	63-136	9	30
Benzo(k)fluoranthene	8270D	61.2	80.0	77	66.0	80.0	82	49-133	6	30
Biphenyl	8270D	32.7	80.0	41	42.1	80.0	53	39-106	26	30
2,2'-Oxybis(1-chloropropane)	8270D	18.9	80.0	24 *	29.7	80.0	37	32-122	43*	30
Bis(2-chloroethoxy)methane	8270D	37.9	80.0	47 *	46.4	80.0	58	55-110	21	30
Bis(2-chloroethyl) Ether	8270D	21.2	80.0	27 *	32.0	80.0	40 *	46-102	39*	30
Bis(2-ethylhexyl) Phthalate	8270D	52.8	80.0	66	58.9	80.0	74	51-132	11	30
Butyl Benzyl Phthalate	8270D	51.0	80.0	64	56.3	80.0	70	41-148	9	30
Caprolactam	8270D	18.1	80.0	23	20.0	80.0	25	10-41	8	30
Carbazole	8270D	67.2	80.0	84	71.7	80.0	90	56-139	7	30
Chrysene	8270D	58.4	80.0	73	63.1	80.0	79	57-118	8	30
Di-n-butyl Phthalate	8270D	66.0	80.0	82	70.3	80.0	88	57-128	7	30
Di-n-octyl Phthalate	8270D	52.3	80.0	65	58.5	80.0	73	62-124	12	30
Dibenz(a,h)anthracene	8270D	65.3	80.0	82	70.3	80.0	88	54-135	7	30
Dibenzofuran	8270D	48.8	80.0	61	55.5	80.0	69	55-110	12	30
Diethyl Phthalate	8270D	52.9	80.0	66	54.5	80.0	68	53-113	3	30
Dimethyl Phthalate	8270D	59.8	80.0	75	64.5	80.0	81	51-112	8	30
Fluoranthene	8270D	67.9	80.0	85	71.1	80.0	89	66-127	5	30
Fluorene	8270D	53.4	80.0	67	59.6	80.0	75	54-106	11	30
Hexachlorobenzene	8270D	68.9	80.0	86	77.0	80.0	96	53-123	11	30
Hexachlorobutadiene	8270D	14.3	80.0	18	27.5	80.0	34	16-95	62*	30
Hexachlorocyclopentadiene	8270D	14.1	80.0	18	22.7	80.0	28	10-99	43*	30
Hexachloroethane	8270D	10.8	80.0	14 *	21.0	80.0	26	15-92	60*	30
Indeno(1,2,3-cd)pyrene	8270D	62.1	80.0	78	69.0	80.0	86	62-137	10	30
Isophorone	8270D	34.2	80.0	43 *	39.5	80.0	49 *	50-116	13	30
N-Nitrosodi-n-propylamine	8270D	33.1	80.0	41 *	41.7	80.0	52	49-115	24	30
N-Nitrosodiphenylamine	8270D	68.5	80.0	86	73.4	80.0	92	45-123	7	30
Naphthalene	8270D	17.9	80.0	22 *	30.8	80.0	39	38-99	56*	30
Nitrobenzene	8270D	19.2	80.0	24 *	30.3	80.0	38 *	46-108	45*	30
Pentachlorophenol (PCP)	8270D	44.4 J	80.0	55	46.2 J	80.0	58	29-164	5	30
Phenanthrene	8270D	56.8	80.0	71	61.0	80.0	76	58-118	7	30
Phenol	8270D	19.4	80.0	24	20.7	80.0	26	10-113	8	30

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QA/QC Report

Client: Inventum Engineering
Project: Riverview BCP RI
Sample Matrix: Water

Service Request: R2010938
Date Analyzed: 11/30/20

Duplicate Lab Control Sample Summary
Semivolatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2014426-02			RQ2014426-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Pyrene	8270D	56.2	80.0	70	62.2	80.0	78	61-122	11	30

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QA/QC Report

Client: Inventum Engineering
Project: Riverview BCP RI
Sample Matrix: Soil

Service Request: R2010938
Date Analyzed: 12/01/20

Duplicate Lab Control Sample Summary
Semivolatile Organic Compounds by GC/MS

Units:ug/Kg
Basis: Dry

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2014429-02			RQ2014429-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,4,5-Tetrachlorobenzene	8270D	784	1670	47	1050	1680	62	10-115	28	30
2,3,4,6-Tetrachlorophenol	8270D	608	1660	37	772	1670	46	29-100	22	30
2,4,5-Trichlorophenol	8270D	572	1660	34	719	1670	43	29-97	23	30
2,4,6-Trichlorophenol	8270D	550	1660	33	738	1670	44	26-97	29	30
2,4-Dichlorophenol	8270D	570	1660	34	750	1670	45	25-90	28	30
2,4-Dimethylphenol	8270D	580	1660	35	769	1670	46	26-89	27	30
2,4-Dinitrophenol	8270D	650 U	1660	0 *	660 U	1670	0 *	10-128	NC	30
2,4-Dinitrotoluene	8270D	702	1660	42	924	1670	55	30-111	27	30
2,6-Dinitrotoluene	8270D	719	1660	43	940	1670	56	28-105	26	30
2-Chloronaphthalene	8270D	608	1660	37	791	1670	47	21-88	24	30
2-Chlorophenol	8270D	548	1660	33	699	1670	42	18-87	24	30
2-Methylnaphthalene	8270D	593	1660	36	779	1670	47	21-83	27	30
2-Methylphenol	8270D	585	1660	35	771	1670	46	22-86	27	30
2-Nitroaniline	8270D	639	1660	38	836	1670	50	27-105	27	30
2-Nitrophenol	8270D	540	1660	32	701	1670	42	20-88	27	30
3- and 4-Methylphenol Coelution	8270D	588	1660	35	778	1670	47	27-92	29	30
3-Nitroaniline	8270D	500	1660	30	658	1670	39	27-98	26	30
4,6-Dinitro-2-methylphenol	8270D	345 J	1660	21	530 J	1670	32	11-96	42*	30
4-Bromophenyl Phenyl Ether	8270D	688	1660	41	861	1670	52	25-96	24	30
4-Chloro-3-methylphenol	8270D	575	1660	35	753	1670	45	29-92	25	30
4-Chloroaniline	8270D	358	1660	22	497	1670	30	21-72	31*	30
4-Chlorophenyl Phenyl Ether	8270D	620	1660	37	806	1670	48	25-92	26	30
4-Nitroaniline	8270D	643	1660	39	843	1670	51	27-102	27	30
4-Nitrophenol	8270D	473 J	1660	28	655 J	1670	39	10-130	33*	30
Acenaphthene	8270D	607	1660	36	791	1670	47	25-92	27	30
Acenaphthylene	8270D	663	1660	40	855	1670	51	27-93	24	30
Acetophenone	8270D	977	3330	29	1290	3340	39	23-87	29	30
Anthracene	8270D	715	1660	43	940	1670	56	32-106	26	30
Benz(a)anthracene	8270D	707	1660	42	919	1670	55	33-109	27	30
Benzo(a)pyrene	8270D	941	1660	57	1230	1670	74	34-115	26	30
Benzo(b)fluoranthene	8270D	712	1660	43	924	1670	55	31-107	24	30
Benzo(g,h,i)perylene	8270D	973	1660	58	1270	1670	76	30-127	27	30
Benzo(k)fluoranthene	8270D	792	1660	48	1010	1670	61	34-111	24	30

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QA/QC Report

Client: Inventum Engineering
Project: Riverview BCP RI
Sample Matrix: Soil

Service Request: R2010938
Date Analyzed: 12/01/20

Duplicate Lab Control Sample Summary
Semivolatile Organic Compounds by GC/MS

Units:ug/Kg
Basis: Dry

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2014429-02			RQ2014429-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Biphenyl	8270D	561	1660	34	759	1670	45	26-88	28	30
2,2'-Oxybis(1-chloropropane)	8270D	564	1660	34	733	1670	44	10-82	26	30
Bis(2-chloroethoxy)methane	8270D	594	1660	36	768	1670	46	17-85	24	30
Bis(2-chloroethyl) Ether	8270D	559	1660	34	730	1670	44	10-79	26	30
Bis(2-ethylhexyl) Phthalate	8270D	831	1660	50	1100	1670	66	31-115	28	30
Butyl Benzyl Phthalate	8270D	774	1660	46	1040	1670	63	31-115	31*	30
Caprolactam	8270D	618	1660	37	860	1670	52	28-99	34*	30
Carbazole	8270D	804	1660	48	1040	1670	62	23-129	25	30
Chrysene	8270D	742	1660	45	977	1670	59	34-108	27	30
Di-n-butyl Phthalate	8270D	845	1660	51	1100	1670	66	33-114	26	30
Di-n-octyl Phthalate	8270D	879	1660	53	1130	1670	68	32-116	25	30
Dibenz(a,h)anthracene	8270D	749	1660	45	973	1670	58	23-122	25	30
Dibenzofuran	8270D	631	1660	38	824	1670	49	27-94	25	30
Diethyl Phthalate	8270D	601	1660	36	809	1670	48	26-101	29	30
Dimethyl Phthalate	8270D	671	1660	40	860	1670	52	27-98	26	30
Fluoranthene	8270D	785	1660	47	1010	1670	60	34-111	24	30
Fluorene	8270D	654	1660	39	848	1670	51	27-95	27	30
Hexachlorobenzene	8270D	685	1660	41	901	1670	54	30-104	27	30
Hexachlorobutadiene	8270D	560	1660	34	730	1670	44	10-142	26	30
Hexachlorocyclopentadiene	8270D	187 J	1660	11	273 J	1670	16	10-133	37*	30
Hexachloroethane	8270D	485	1660	29	636	1670	38	10-129	27	30
Indeno(1,2,3-cd)pyrene	8270D	772	1660	46	987	1670	59	33-121	25	30
Isophorone	8270D	483	1660	29	628	1670	38	21-79	27	30
N-Nitrosodi-n-propylamine	8270D	544	1660	33	719	1670	43	15-78	26	30
N-Nitrosodiphenylamine	8270D	747	1660	45	943	1670	57	29-108	24	30
Naphthalene	8270D	592	1660	36	787	1670	47	18-81	27	30
Nitrobenzene	8270D	572	1660	34	733	1670	44	14-80	26	30
Pentachlorophenol (PCP)	8270D	520 J	1660	31	676 J	1670	40	13-117	25	30
Phenanthrene	8270D	671	1660	40	892	1670	53	33-103	28	30
Phenol	8270D	571	1660	34	743	1670	45	10-144	28	30
Pyrene	8270D	758	1660	46	1010	1670	61	33-111	28	30

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QA/QC Report

Client: Inventum Engineering
Project: Riverview BCP RI
Sample Matrix: Water

Service Request: R2010938
Date Analyzed: 12/08/20

Duplicate Lab Control Sample Summary
Semivolatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2014954-02			RQ2014954-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,4,5-Tetrachlorobenzene	8270D	54.8	80.5	68	63.7	80.5	79	15-132	15	30
2,3,4,6-Tetrachlorophenol	8270D	56.9	80.0	71	69.2	80.0	87	42-136	20	30
2,4,5-Trichlorophenol	8270D	55.3	80.0	69	67.0	80.0	84	48-134	20	30
2,4,6-Trichlorophenol	8270D	46.6	80.0	58	56.8	80.0	71	44-135	20	30
2,4-Dichlorophenol	8270D	46.8	80.0	59	53.6	80.0	67	48-127	13	30
2,4-Dimethylphenol	8270D	49.4	80.0	62	58.4	80.0	73	59-113	16	30
2,4-Dinitrophenol	8270D	34.2 J	80.0	43	53.6	80.0	67	21-154	44*	30
2,4-Dinitrotoluene	8270D	57.2	80.0	71	72.4	80.0	91	54-130	25	30
2,6-Dinitrotoluene	8270D	59.7	80.0	75	73.1	80.0	91	51-127	19	30
2-Chloronaphthalene	8270D	42.6	80.0	53	54.1	80.0	68	40-108	25	30
2-Chlorophenol	8270D	37.0	80.0	46	44.7	80.0	56	42-112	20	30
2-Methylnaphthalene	8270D	42.3	80.0	53	53.2	80.0	67	34-102	23	30
2-Methylphenol	8270D	43.0	80.0	54	50.2	80.0	63	47-100	15	30
2-Nitroaniline	8270D	54.1	80.0	68	68.2	80.0	85	52-133	22	30
2-Nitrophenol	8270D	44.2	80.0	55	52.6	80.0	66	43-131	18	30
3,3'-Dichlorobenzidine	8270D	59.6	80.0	75	71.3	80.0	89	43-126	17	30
3- and 4-Methylphenol Coelution	8270D	42.1	80.0	53	47.3	80.0	59	40-92	11	30
3-Nitroaniline	8270D	42.9	80.0	54	55.7	80.0	70	42-111	26	30
4,6-Dinitro-2-methylphenol	8270D	54.9	80.0	69	67.1	80.0	84	36-152	20	30
4-Bromophenyl Phenyl Ether	8270D	64.7	80.0	81	72.8	80.0	91	48-114	12	30
4-Chloro-3-methylphenol	8270D	53.4	80.0	67	63.4	80.0	79	52-113	16	30
4-Chloroaniline	8270D	45.9	80.0	57	61.4	80.0	77	44-109	30	30
4-Chlorophenyl Phenyl Ether	8270D	53.8	80.0	67	68.9	80.0	86	51-107	25	30
4-Nitroaniline	8270D	50.2	80.0	63	68.3	80.0	85	54-133	30	30
4-Nitrophenol	8270D	25.3 J	80.0	32	31.5 J	80.0	39	10-126	20	30
Acenaphthene	8270D	49.5	80.0	62	63.3	80.0	79	52-107	24	30
Acenaphthylene	8270D	51.2	80.0	64	63.8	80.0	80	55-109	22	30
Acetophenone	8270D	104	160	65	110	160	69	46-114	6	30
Anthracene	8270D	63.0	80.0	79	74.7	80.0	93	55-116	16	30
Atrazine	8270D	104	80.0	130	108	80.0	135	61-164	4	30
Benz(a)anthracene	8270D	52.1	80.0	65	64.3	80.0	80	61-121	21	30
Benzaldehyde	8270D	51.3	80.0	64	53.2	80.0	67	45-132	5	30
Benzo(a)pyrene	8270D	67.3	80.0	84	81.9	80.0	102	44-114	19	30

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QA/QC Report

Client: Inventum Engineering
Project: Riverview BCP RI
Sample Matrix: Water

Service Request: R2010938
Date Analyzed: 12/08/20

Duplicate Lab Control Sample Summary
Semivolatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2014954-02			RQ2014954-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Benzo(b)fluoranthene	8270D	53.1	80.0	66	62.2	80.0	78	62-115	17	30
Benzo(g,h,i)perylene	8270D	61.2	80.0	77	75.2	80.0	94	63-136	20	30
Benzo(k)fluoranthene	8270D	58.3	80.0	73	67.9	80.0	85	49-133	15	30
Biphenyl	8270D	44.5	80.0	56	52.9	80.0	66	39-106	16	30
2,2'-Oxybis(1-chloropropane)	8270D	42.1	80.0	53	50.8	80.0	64	32-122	19	30
Bis(2-chloroethoxy)methane	8270D	56.0	80.0	70	64.8	80.0	81	55-110	15	30
Bis(2-chloroethyl) Ether	8270D	45.1	80.0	56	51.6	80.0	64	46-102	13	30
Bis(2-ethylhexyl) Phthalate	8270D	64.9	80.0	81	80.2	80.0	100	51-132	21	30
Butyl Benzyl Phthalate	8270D	55.0	80.0	69	69.0	80.0	86	41-148	22	30
Caprolactam	8270D	22.9	80.0	29	27.5	80.0	34	10-41	16	30
Carbazole	8270D	76.4	80.0	95	85.7	80.0	107	56-139	12	30
Chrysene	8270D	55.8	80.0	70	67.2	80.0	84	57-118	18	30
Di-n-butyl Phthalate	8270D	76.9	80.0	96	84.6	80.0	106	57-128	10	30
Di-n-octyl Phthalate	8270D	73.0	80.0	91	80.5	80.0	101	62-124	10	30
Dibenz(a,h)anthracene	8270D	66.9	80.0	84	81.8	80.0	102	54-135	19	30
Dibenzofuran	8270D	50.3	80.0	63	62.8	80.0	78	55-110	21	30
Diethyl Phthalate	8270D	47.5	80.0	59	62.2	80.0	78	53-113	28	30
Dimethyl Phthalate	8270D	57.2	80.0	71	70.2	80.0	88	51-112	21	30
Fluoranthene	8270D	68.5	80.0	86	76.5	80.0	96	66-127	11	30
Fluorene	8270D	54.5	80.0	68	69.4	80.0	87	54-106	25	30
Hexachlorobenzene	8270D	68.2	80.0	85	75.2	80.0	94	53-123	10	30
Hexachlorobutadiene	8270D	35.1	80.0	44	45.2	80.0	56	16-95	24	30
Hexachlorocyclopentadiene	8270D	24.1	80.0	30	31.7	80.0	40	10-99	29	30
Hexachloroethane	8270D	26.8	80.0	33	31.9	80.0	40	15-92	19	30
Indeno(1,2,3-cd)pyrene	8270D	57.7	80.0	72	71.9	80.0	90	62-137	22	30
Isophorone	8270D	45.3	80.0	57	54.5	80.0	68	50-116	18	30
N-Nitrosodi-n-propylamine	8270D	51.5	80.0	64	61.6	80.0	77	49-115	18	30
N-Nitrosodiphenylamine	8270D	65.0	80.0	81	70.1	80.0	88	45-123	8	30
Naphthalene	8270D	39.9	80.0	50	49.9	80.0	62	38-99	21	30
Nitrobenzene	8270D	45.1	80.0	56	50.5	80.0	63	46-108	12	30
Pentachlorophenol (PCP)	8270D	67.3	80.0	84	81.2	80.0	101	29-164	18	30
Phenanthrene	8270D	58.0	80.0	72	71.0	80.0	89	58-118	21	30
Phenol	8270D	23.3	80.0	29	26.3	80.0	33	10-113	13	30

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QA/QC Report

Client: Inventum Engineering
Project: Riverview BCP RI
Sample Matrix: Water

Service Request: R2010938
Date Analyzed: 12/08/20

Duplicate Lab Control Sample Summary
Semivolatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2014954-02			RQ2014954-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Pyrene	8270D	53.8	80.0	67	67.6	80.0	85	61-122	24	30

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QA/QC Report

Client: Inventum Engineering **Service Request:** R2010938
Project: Riverview BCP RI
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Extraction Method: EPA 3541

Sample Name	Lab Code	2-Fluorobiphenyl 10-115	Nitrobenzene-d5 10-130	p-Terphenyl-d14 10-130
TR-BCP-07-01-HA	R2010938-002	73	118	107
SD-BCP-04	R2010938-005	58	49	81
SD-BCP-04 DL	R2010938-005	61	53	55
SD-BCP-040	R2010938-006	78	78	89
SD-BCP-040 DL	R2010938-006	70	68	62
SS-BCP-15-02	R2010938-008	70	77	50
SS-BCP-15-024	R2010938-010	66	77	58
Method Blank	RQ2014439-01	45	40	67
Method Blank	RQ2015142-01	88	96	100
Lab Control Sample	RQ2014439-02	79	74	81
Duplicate Lab Control Sample	RQ2014439-03	81	74	81
Lab Control Sample	RQ2015142-02	64	69	71
Duplicate Lab Control Sample	RQ2015142-03	80	86	88

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QA/QC Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Analyzed:**	11/25/20 18:23
Sample Matrix:	Soil	**Date Extracted:**	11/23/20

Method Blank Summary
Low Level Semivolatile Organic Compounds by GC/MS

Sample Name:	Method Blank	**Instrument ID:**	R-MS-53
Lab Code:	RQ2014439-01	**File ID:**	I:\ACQUDATA\5973C\DATA\112520\CC809.D\
Analysis Method:	8270D	**Analysis Lot:**	705141,705819,707244
Prep Method:	EPA 3541	**Extraction Lot:**	370241

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	RQ2014439-02	I:\ACQUDATA\5973C\DATA\112520\CC810.D\	11/25/20 18:52
Duplicate Lab Control Sample	RQ2014439-03	I:\ACQUDATA\5973C\DATA\112520\CC811.D\	11/25/20 19:21
TR-BCP-07-01-HA	R2010938-002	I:\ACQUDATA\5973C\DATA\120320\CC951.D\	12/03/20 21:36
SD-BCP-04	R2010938-005	I:\ACQUDATA\5973C\DATA\120320\CC952.D\	12/03/20 22:04
SD-BCP-040	R2010938-006	I:\ACQUDATA\5973C\DATA\120320\CC953.D\	12/03/20 22:32
SS-BCP-15-02	R2010938-008	I:\ACQUDATA\5973C\DATA\120320\CC954.D\	12/03/20 23:01
SS-BCP-15-024	R2010938-010	I:\ACQUDATA\5973C\DATA\120320\CC955.D\	12/03/20 23:28

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QA/QC Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Analyzed:**	12/14/20 08:58
Sample Matrix:	Soil	**Date Extracted:**	12/09/20

Method Blank Summary
Low Level Semivolatile Organic Compounds by GC/MS

Sample Name:	Method Blank	**Instrument ID:**	R-MS-53
Lab Code:	RQ2015142-01	**File ID:**	I:\ACQUDATA\5973C\DATA\121420\CD115.D\
Analysis Method:	8270D	**Analysis Lot:**	705141,705819,707244
Prep Method:	EPA 3541	**Extraction Lot:**	371189

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	RQ2015142-02	I:\ACQUDATA\5973C\DATA\121420\CD116.D\	12/14/20 09:27
Duplicate Lab Control Sample	RQ2015142-03	I:\ACQUDATA\5973C\DATA\121420\CD117.D\	12/14/20 09:56
SD-BCP-04	R2010938-005	I:\ACQUDATA\5973C\DATA\121420\CD118.D\	12/14/20 10:24
SD-BCP-040	R2010938-006	I:\ACQUDATA\5973C\DATA\121420\CD119.D\	12/14/20 10:53

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2014439-01	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,4-Dioxane	35 U	68	35	1	11/25/20 18:23	11/23/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	45	10 - 115	11/25/20 18:23	
Nitrobenzene-d5	40	10 - 130	11/25/20 18:23	
p-Terphenyl-d14	67	10 - 130	11/25/20 18:23	

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2015142-01	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,4-Dioxane	35 U	67	35	1	12/14/20 08:58	12/9/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	88	10 - 115	12/14/20 08:58	
Nitrobenzene-d5	96	10 - 130	12/14/20 08:58	
p-Terphenyl-d14	100	10 - 130	12/14/20 08:58	

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QA/QC Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Analyzed:**	11/25/20 18:52
Sample Matrix:	Soil	**Date Extracted:**	11/23/20

Lab Control Sample Summary
Low Level Semivolatile Organic Compounds by GC/MS

Sample Name:	Lab Control Sample	**Instrument ID:**	R-MS-53
Lab Code:	RQ2014439-02	**File ID:**	I:\ACQUDATA\5973C\DATA\112520\CC810.D\
Analysis Method:	8270D	**Analysis Lot:**	705141,705819,707244
Prep Method:	EPA 3541	**Extraction Lot:**	370241

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	RQ2014439-01	I:\ACQUDATA\5973C\DATA\112520\CC809.D\	11/25/20 18:23
Duplicate Lab Control Sample	RQ2014439-03	I:\ACQUDATA\5973C\DATA\112520\CC811.D\	11/25/20 19:21
TR-BCP-07-01-HA	R2010938-002	I:\ACQUDATA\5973C\DATA\120320\CC951.D\	12/03/20 21:36
SD-BCP-04	R2010938-005	I:\ACQUDATA\5973C\DATA\120320\CC952.D\	12/03/20 22:04
SD-BCP-040	R2010938-006	I:\ACQUDATA\5973C\DATA\120320\CC953.D\	12/03/20 22:32
SS-BCP-15-02	R2010938-008	I:\ACQUDATA\5973C\DATA\120320\CC954.D\	12/03/20 23:01
SS-BCP-15-024	R2010938-010	I:\ACQUDATA\5973C\DATA\120320\CC955.D\	12/03/20 23:28

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QA/QC Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Analyzed:**	12/14/20 09:27
Sample Matrix:	Soil	**Date Extracted:**	12/09/20

Lab Control Sample Summary
Low Level Semivolatile Organic Compounds by GC/MS

Sample Name:	Lab Control Sample	**Instrument ID:**	R-MS-53
Lab Code:	RQ2015142-02	**File ID:**	I:\ACQUDATA\5973C\DATA\121420\CD116.D\
Analysis Method:	8270D	**Analysis Lot:**	705141,705819,707244
Prep Method:	EPA 3541	**Extraction Lot:**	371189

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	RQ2015142-01	I:\ACQUDATA\5973C\DATA\121420\CD115.D\	12/14/20 08:58
Duplicate Lab Control Sample	RQ2015142-03	I:\ACQUDATA\5973C\DATA\121420\CD117.D\	12/14/20 09:56
SD-BCP-04	R2010938-005	I:\ACQUDATA\5973C\DATA\121420\CD118.D\	12/14/20 10:24
SD-BCP-040	R2010938-006	I:\ACQUDATA\5973C\DATA\121420\CD119.D\	12/14/20 10:53

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QA/QC Report

Client: Inventum Engineering
Project: Riverview BCP RI
Sample Matrix: Soil

Service Request: R2010938
Date Analyzed: 11/25/20

Duplicate Lab Control Sample Summary
Low Level Semivolatile Organic Compounds by GC/MS

Units:ug/Kg
Basis: Dry

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2014439-02			RQ2014439-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,4-Dioxane	8270D	192	205	94	176	206	86	24-101	9	30

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QA/QC Report

Client: Inventum Engineering
Project: Riverview BCP RI
Sample Matrix: Soil

Service Request: R2010938
Date Analyzed: 12/14/20

Duplicate Lab Control Sample Summary
Low Level Semivolatile Organic Compounds by GC/MS

Units:ug/Kg
Basis: Dry

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2015142-02			RQ2015142-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,4-Dioxane	8270D	163	203	80	205	207	99	24-101	23	30

Semivolatile Organic Compounds by GC

ALS Environmental—Rochester Laboratory
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QA/QC Report

Client: Inventum Engineering **Service Request:** R2010938
Project: Riverview BCP RI
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Extraction Method: EPA 3541

Sample Name	Lab Code	Decachlorobiphenyl 10-145	Tetrachloro-m-xylene 10-123
TR-BCP-07-01-HA	R2010938-002	77	52
SD-BCP-04	R2010938-005	73	53
SD-BCP-040	R2010938-006	64	44
SS-BCP-15-02	R2010938-008	52	61
SS-BCP-15-024	R2010938-010	71	69
Method Blank	RQ2014353-01	77	76
Method Blank	RQ2014353-01	78	81
Lab Control Sample	RQ2014353-02	78	76
Lab Control Sample	RQ2014353-02	80	79
Duplicate Lab Control Sample	RQ2014353-03	84	81
Duplicate Lab Control Sample	RQ2014353-03	84	83

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QA/QC Report

Client: Inventum Engineering
Project: Riverview BCP RI
Sample Matrix: Soil

Service Request: R2010938
Date Analyzed: NA

Method Blank Summary
Organochlorine Pesticides by Gas Chromatography

Sample Name:
Lab Code:

Instrument ID:
File ID:

Analysis Method: 8081B

Analysis Lot:708290,708304,708589

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Performance Evaluation	RQ2015834-05	I:\ACQUDATA\7890m\DATA\121620\az6313.D\	12/16/20 15:38
Performance Evaluation	RQ2015842-04	I:\ACQUDATA\7890m\DATA\122220\az6422.D\	12/22/20 09:20
Performance Evaluation	RQ2015968-09	I:\ACQUDATA\7890m\DATA\122820\az6539.D\	12/28/20 15:19

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QA/QC Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Analyzed:**	12/16/20 23:51
Sample Matrix:	Soil	**Date Extracted:**	11/20/20

Method Blank Summary
Organochlorine Pesticides by Gas Chromatography

Sample Name:	Method Blank	**Instrument ID:**	R-GC-62
Lab Code:	RQ2014353-01	**File ID:**	I:\ACQUDATA\7890m\DATA\121620\az6334.D\
Analysis Method:	8081B	**Analysis Lot:**	708290,708304,708589
Prep Method:	EPA 3541	**Extraction Lot:**	370143

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	RQ2014353-02	I:\ACQUDATA\7890m\DATA\121620\az6335.D\	12/17/20 00:10
Duplicate Lab Control Sample	RQ2014353-03	I:\ACQUDATA\7890m\DATA\121620\az6336.D\	12/17/20 00:29
TR-BCP-07-01-HA	R2010938-002	I:\ACQUDATA\7890m\DATA\122220\az6436.D\	12/22/20 13:51
SS-BCP-15-02	R2010938-008	I:\ACQUDATA\7890m\DATA\122220\az6437.D\	12/22/20 14:09
SS-BCP-15-024	R2010938-010	I:\ACQUDATA\7890m\DATA\122220\az6438.D\	12/22/20 14:28
SD-BCP-04	R2010938-005	I:\ACQUDATA\7890m\DATA\122220\az6440.D\	12/22/20 15:06
SD-BCP-040	R2010938-006	I:\ACQUDATA\7890m\DATA\122220\az6441.D\	12/22/20 15:25
Lab Control Sample	RQ2014353-02	I:\ACQUDATA\7890m\DATA\122820\az6556.D\	12/28/20 21:06
Duplicate Lab Control Sample	RQ2014353-03	I:\ACQUDATA\7890m\DATA\122820\az6557.D\	12/28/20 21:25

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2014353-01	**Basis:**	Dry

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3541

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
4,4'-DDD	0.84	U	1.7	0.84	1	12/16/20 23:51	11/20/20	
4,4'-DDE	0.84	U	1.7	0.84	1	12/16/20 23:51	11/20/20	
4,4'-DDT	0.84	U	1.7	0.84	1	12/16/20 23:51	11/20/20	
Aldrin	0.84	U	1.7	0.84	1	12/16/20 23:51	11/20/20	
Dieldrin	0.84	U	1.7	0.84	1	12/16/20 23:51	11/20/20	
Endosulfan I	0.84	U	1.7	0.84	1	12/16/20 23:51	11/20/20	
Endosulfan II	0.84	U	1.7	0.84	1	12/16/20 23:51	11/20/20	
Endosulfan Sulfate	0.84	U	1.7	0.84	1	12/16/20 23:51	11/20/20	
Endrin	0.84	U	1.7	0.84	1	12/16/20 23:51	11/20/20	
Endrin Aldehyde	0.84	U	1.7	0.84	1	12/16/20 23:51	11/20/20	
Endrin Ketone	0.84	U	1.7	0.84	1	12/16/20 23:51	11/20/20	
Heptachlor	0.84	U	1.7	0.84	1	12/16/20 23:51	11/20/20	
Heptachlor Epoxide	0.84	U	1.7	0.84	1	12/16/20 23:51	11/20/20	
Methoxychlor	0.84	U	1.7	0.84	1	12/16/20 23:51	11/20/20	
Toxaphene	19	U	33	19	1	12/16/20 23:51	11/20/20	
alpha-BHC	0.84	U	1.7	0.84	1	12/16/20 23:51	11/20/20	
alpha-Chlordane	0.84	U	1.7	0.84	1	12/16/20 23:51	11/20/20	
beta-BHC	0.84	U	1.7	0.84	1	12/16/20 23:51	11/20/20	
delta-BHC	0.84	U	1.7	0.84	1	12/16/20 23:51	11/20/20	
gamma-BHC (Lindane)	0.84	U	1.7	0.84	1	12/16/20 23:51	11/20/20	
gamma-Chlordane	0.84	U	1.7	0.84	1	12/16/20 23:51	11/20/20	

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2014353-01	**Basis:**	Dry

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3541

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	77	10 - 145	12/16/20 23:51	
Tetrachloro-m-xylene	76	10 - 123	12/16/20 23:51	

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2014353-01	**Basis:**	Dry

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3541

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
4,4'-DDD	0.84	U	1.7	0.84	1	12/28/20 20:47	11/20/20	
4,4'-DDE	0.84	U	1.7	0.84	1	12/28/20 20:47	11/20/20	
4,4'-DDT	0.84	U	1.7	0.84	1	12/28/20 20:47	11/20/20	
Aldrin	0.84	U	1.7	0.84	1	12/28/20 20:47	11/20/20	
Dieldrin	0.84	U	1.7	0.84	1	12/28/20 20:47	11/20/20	
Endosulfan I	0.84	U	1.7	0.84	1	12/28/20 20:47	11/20/20	
Endosulfan II	0.84	U	1.7	0.84	1	12/28/20 20:47	11/20/20	
Endosulfan Sulfate	0.84	U	1.7	0.84	1	12/28/20 20:47	11/20/20	
Endrin	0.84	U	1.7	0.84	1	12/28/20 20:47	11/20/20	
Endrin Aldehyde	0.84	U	1.7	0.84	1	12/28/20 20:47	11/20/20	
Endrin Ketone	0.84	U	1.7	0.84	1	12/28/20 20:47	11/20/20	
Heptachlor	0.84	U	1.7	0.84	1	12/28/20 20:47	11/20/20	
Heptachlor Epoxide	0.84	U	1.7	0.84	1	12/28/20 20:47	11/20/20	
Methoxychlor	0.84	U	1.7	0.84	1	12/28/20 20:47	11/20/20	
Toxaphene	19	U	33	19	1	12/28/20 20:47	11/20/20	
alpha-BHC	0.84	U	1.7	0.84	1	12/28/20 20:47	11/20/20	
alpha-Chlordane	0.84	U	1.7	0.84	1	12/28/20 20:47	11/20/20	
beta-BHC	0.84	U	1.7	0.84	1	12/28/20 20:47	11/20/20	
delta-BHC	0.84	U	1.7	0.84	1	12/28/20 20:47	11/20/20	
gamma-BHC (Lindane)	0.84	U	1.7	0.84	1	12/28/20 20:47	11/20/20	
gamma-Chlordane	0.84	U	1.7	0.84	1	12/28/20 20:47	11/20/20	

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2014353-01	**Basis:**	Dry

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3541

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	78	10 - 145	12/28/20 20:47	
Tetrachloro-m-xylene	81	10 - 123	12/28/20 20:47	

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QA/QC Report

Client: Inventum Engineering
Project: Riverview BCP RI
Sample Matrix: Soil

Service Request: R2010938
Date Analyzed: NA

Lab Control Sample Summary
Organochlorine Pesticides by Gas Chromatography

Sample Name:
Lab Code:

Instrument ID:
File ID:

Analysis Method: 8081B

Analysis Lot:708290,708304,708589

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Performance Evaluation	RQ2015834-05	I:\ACQUDATA\7890m\DATA\121620\az6313.D\	12/16/20 15:38
Performance Evaluation	RQ2015842-04	I:\ACQUDATA\7890m\DATA\122220\az6422.D\	12/22/20 09:20
Performance Evaluation	RQ2015968-09	I:\ACQUDATA\7890m\DATA\122820\az6539.D\	12/28/20 15:19

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QA/QC Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Analyzed:**	12/17/20 00:10
Sample Matrix:	Soil	**Date Extracted:**	11/20/20

Lab Control Sample Summary
Organochlorine Pesticides by Gas Chromatography

Sample Name:	Lab Control Sample	**Instrument ID:**	R-GC-62
Lab Code:	RQ2014353-02	**File ID:**	I:\ACQUDATA\7890m\DATA\121620\az6335.D\
Analysis Method:	8081B	**Analysis Lot:**	708290,708304,708589
Prep Method:	EPA 3541	**Extraction Lot:**	370143

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	RQ2014353-01	I:\ACQUDATA\7890m\DATA\121620\az6334.D\	12/16/20 23:51
Duplicate Lab Control Sample	RQ2014353-03	I:\ACQUDATA\7890m\DATA\121620\az6336.D\	12/17/20 00:29
TR-BCP-07-01-HA	R2010938-002	I:\ACQUDATA\7890m\DATA\122220\az6436.D\	12/22/20 13:51
SS-BCP-15-02	R2010938-008	I:\ACQUDATA\7890m\DATA\122220\az6437.D\	12/22/20 14:09
SS-BCP-15-024	R2010938-010	I:\ACQUDATA\7890m\DATA\122220\az6438.D\	12/22/20 14:28
SD-BCP-04	R2010938-005	I:\ACQUDATA\7890m\DATA\122220\az6440.D\	12/22/20 15:06
SD-BCP-040	R2010938-006	I:\ACQUDATA\7890m\DATA\122220\az6441.D\	12/22/20 15:25
Method Blank	RQ2014353-01	I:\ACQUDATA\7890m\DATA\122820\az6555.D\	12/28/20 20:47
Duplicate Lab Control Sample	RQ2014353-03	I:\ACQUDATA\7890m\DATA\122820\az6557.D\	12/28/20 21:25

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QA/QC Report

Client: Inventum Engineering
Project: Riverview BCP RI
Sample Matrix: Soil

Service Request: R2010938
Date Analyzed: 12/28/20

Duplicate Lab Control Sample Summary
Organochlorine Pesticides by Gas Chromatography

Units:ug/Kg
Basis: Dry

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2014353-02			RQ2014353-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
4,4'-DDD	8081B	5.46	6.62	83	5.79	6.56	88	33-149	6	30
4,4'-DDE	8081B	5.75	6.62	87	6.24	6.56	95	38-147	8	30
4,4'-DDT	8081B	5.58	6.62	84	5.95	6.56	91	37-146	6	30
Aldrin	8081B	5.65	6.62	85	6.05	6.56	92	25-146	7	30
Dieldrin	8081B	5.84	6.62	88	6.20	6.56	95	40-140	6	30
Endosulfan I	8081B	5.61	6.62	85	5.96	6.56	91	35-116	6	30
Endosulfan II	8081B	5.65	6.62	85	5.97	6.56	91	39-122	6	30
Endosulfan Sulfate	8081B	5.35	6.62	81	5.61	6.56	85	31-132	5	30
Endrin	8081B	5.79	6.62	87	6.20	6.56	95	40-144	7	30
Endrin Aldehyde	8081B	3.89	6.62	59	4.63	6.56	71	10-109	17	30
Endrin Ketone	8081B	5.69	6.62	86	6.04	6.56	92	38-122	6	30
Heptachlor	8081B	5.51	6.62	83	5.88	6.56	90	34-142	6	30
Heptachlor Epoxide	8081B	5.64	6.62	85	5.98	6.56	91	37-113	6	30
Methoxychlor	8081B	5.31	6.62	80	5.69	6.56	87	41-152	7	30
alpha-BHC	8081B	5.66	6.62	86	6.00	6.56	92	28-145	6	30
alpha-Chlordane	8081B	5.56	6.62	84	5.90	6.56	90	37-114	6	30
beta-BHC	8081B	5.65	6.62	85	6.01	6.56	92	38-144	6	30
delta-BHC	8081B	5.96	6.62	90	6.29	6.56	96	30-153	5	30
gamma-BHC (Lindane)	8081B	5.62	6.62	85	5.95	6.56	91	32-145	6	30
gamma-Chlordane	8081B	5.60	6.62	85	6.02	6.56	92	34-123	7	30

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QA/QC Report

Client: Inventum Engineering **Service Request:** R2010938
Project: Riverview BCP RI
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Extraction Method: EPA 3541

Sample Name	Lab Code	Decachlorobiphenyl 22-128	Tetrachloro-m-xylene 14-119
TR-BCP-07-01-HA	R2010938-002	25	34
SS-BCP-15-02	R2010938-008	36	41
SS-BCP-15-024	R2010938-010	40	39
Method Blank	RQ2014353-01	61	61
Lab Control Sample	RQ2014353-04	65	60
Duplicate Lab Control Sample	RQ2014353-05	60	58

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QA/QC Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Analyzed:**	12/29/20 01:55
Sample Matrix:	Soil	**Date Extracted:**	11/20/20

Method Blank Summary
Polychlorinated Biphenyls (PCBs) by GC

Sample Name:	Method Blank	**Instrument ID:**	R-GC-58
Lab Code:	RQ2014353-01	**File ID:**	I:\ACQUDATA\6890G\Data\122820\Bk4720.D\
Analysis Method:	8082A	**Analysis Lot:**	708471,708712
Prep Method:	EPA 3541	**Extraction Lot:**	370143

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	RQ2014353-04	I:\ACQUDATA\6890G\Data\122820\Bk4721.D\	12/29/20 02:15
Duplicate Lab Control Sample	RQ2014353-05	I:\ACQUDATA\6890G\Data\122820\Bk4722.D\	12/29/20 02:34
TR-BCP-07-01-HA	R2010938-002	I:\ACQUDATA\6890G\Data\122820\Bk4726.D\	12/29/20 03:52
SS-BCP-15-02	R2010938-008	I:\ACQUDATA\6890G\Data\122820\Bk4731.D\	12/29/20 05:30
SS-BCP-15-024	R2010938-010	I:\ACQUDATA\6890G\Data\122920\Bk4852.D\	12/30/20 12:56

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2014353-01	**Basis:**	Dry

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	17 U	32	17	1	12/29/20 01:55	11/20/20	
Aroclor 1221	17 U	65	17	1	12/29/20 01:55	11/20/20	
Aroclor 1232	17 U	32	17	1	12/29/20 01:55	11/20/20	
Aroclor 1242	17 U	32	17	1	12/29/20 01:55	11/20/20	
Aroclor 1248	17 U	32	17	1	12/29/20 01:55	11/20/20	
Aroclor 1254	17 U	32	17	1	12/29/20 01:55	11/20/20	
Aroclor 1260	17 U	32	17	1	12/29/20 01:55	11/20/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	61	22 - 128	12/29/20 01:55	
Tetrachloro-m-xylene	61	14 - 119	12/29/20 01:55	

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QA/QC Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Analyzed:**	12/29/20 02:15
Sample Matrix:	Soil	**Date Extracted:**	11/20/20

Lab Control Sample Summary
Polychlorinated Biphenyls (PCBs) by GC

Sample Name:	Lab Control Sample	**Instrument ID:**	R-GC-58
Lab Code:	RQ2014353-04	**File ID:**	I:\ACQUDATA\6890G\Data\122820\Bk4721.D\
Analysis Method:	8082A	**Analysis Lot:**	708471,708712
Prep Method:	EPA 3541	**Extraction Lot:**	370143

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	RQ2014353-01	I:\ACQUDATA\6890G\Data\122820\Bk4720.D\	12/29/20 01:55
Duplicate Lab Control Sample	RQ2014353-05	I:\ACQUDATA\6890G\Data\122820\Bk4722.D\	12/29/20 02:34
TR-BCP-07-01-HA	R2010938-002	I:\ACQUDATA\6890G\Data\122820\Bk4726.D\	12/29/20 03:52
SS-BCP-15-02	R2010938-008	I:\ACQUDATA\6890G\Data\122820\Bk4731.D\	12/29/20 05:30
SS-BCP-15-024	R2010938-010	I:\ACQUDATA\6890G\Data\122920\Bk4852.D\	12/30/20 12:56

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QA/QC Report

Client: Inventum Engineering
Project: Riverview BCP RI
Sample Matrix: Soil

Service Request: R2010938
Date Analyzed: 12/29/20

Duplicate Lab Control Sample Summary
Polychlorinated Biphenyls (PCBs) by GC

Units:ug/Kg
Basis: Dry

			Lab Control Sample RQ2014353-04			Duplicate Lab Control Sample RQ2014353-05				
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Aroclor 1016	8082A	104	162	64	103	169	61	41-127	<1	30
Aroclor 1260	8082A	106	162	65	102	169	61	37-127	3	30

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QA/QC Report

Client: Inventum Engineering **Service Request:** R2010938
Project: Riverview BCP RI
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Chlorinated Herbicides by GC

Analysis Method: 8151A
Extraction Method: Method

Sample Name	Lab Code	2,4-Dichlorophenylacetic Acid 10-151
TR-BCP-07-01-HA	R2010938-002	79
SD-BCP-04	R2010938-005	54
SD-BCP-040	R2010938-006	58
SS-BCP-15-02	R2010938-008	74
SS-BCP-15-024	R2010938-010	89
Method Blank	RQ2014594-01	70
Lab Control Sample	RQ2014594-02	71
Duplicate Lab Control Sample	RQ2014594-03	72

ALS Group USA, Corp.
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QA/QC Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Analyzed:**	11/30/20 17:14
Sample Matrix:	Soil	**Date Extracted:**	11/25/20

Method Blank Summary
Chlorinated Herbicides by GC

Sample Name:	Method Blank	**Instrument ID:**	R-GC-54
Lab Code:	RQ2014594-01	**File ID:**	I:\ACQUDATA\6890D\DATA\113020\GH2452.D\
Analysis Method:	8151A	**Analysis Lot:**	705386
Prep Method:	Method	**Extraction Lot:**	370437

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	RQ2014594-02	I:\ACQUDATA\6890D\DATA\113020\GH2453.D\	11/30/20 17:34
Duplicate Lab Control Sample	RQ2014594-03	I:\ACQUDATA\6890D\DATA\113020\GH2454.D\	11/30/20 17:54
TR-BCP-07-01-HA	R2010938-002	I:\ACQUDATA\6890D\DATA\113020\GH2469.D\	11/30/20 22:50
SS-BCP-15-02	R2010938-008	I:\ACQUDATA\6890D\DATA\113020\GH2470.D\	11/30/20 23:10
SD-BCP-04	R2010938-005	I:\ACQUDATA\6890D\DATA\113020\GH2471.D\	11/30/20 23:29
SD-BCP-040	R2010938-006	I:\ACQUDATA\6890D\DATA\113020\GH2472.D\	11/30/20 23:49
SS-BCP-15-024	R2010938-010	I:\ACQUDATA\6890D\DATA\113020\GH2474.D\	12/01/20 00:28

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2014594-01	**Basis:**	Dry

Chlorinated Herbicides by GC

Analysis Method: 8151A
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4,5-T	5.0 U	10	5.0	1	11/30/20 17:14	11/25/20	
2,4,5-TP	4.5 U	10	4.5	1	11/30/20 17:14	11/25/20	
2,4-D	6.5 U	10	6.5	1	11/30/20 17:14	11/25/20	
Dicamba	3.1 U	10	3.1	1	11/30/20 17:14	11/25/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4-Dichlorophenylacetic Acid	70	10 - 151	11/30/20 17:14	

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QA/QC Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Analyzed:**	11/30/20 17:34
Sample Matrix:	Soil	**Date Extracted:**	11/25/20

Lab Control Sample Summary
Chlorinated Herbicides by GC

Sample Name:	Lab Control Sample	**Instrument ID:**	R-GC-54
Lab Code:	RQ2014594-02	**File ID:**	I:\ACQUDATA\6890D\DATA\113020\GH2453.D\
Analysis Method:	8151A	**Analysis Lot:**	705386
Prep Method:	Method	**Extraction Lot:**	370437

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	RQ2014594-01	I:\ACQUDATA\6890D\DATA\113020\GH2452.D\	11/30/20 17:14
Duplicate Lab Control Sample	RQ2014594-03	I:\ACQUDATA\6890D\DATA\113020\GH2454.D\	11/30/20 17:54
TR-BCP-07-01-HA	R2010938-002	I:\ACQUDATA\6890D\DATA\113020\GH2469.D\	11/30/20 22:50
SS-BCP-15-02	R2010938-008	I:\ACQUDATA\6890D\DATA\113020\GH2470.D\	11/30/20 23:10
SD-BCP-04	R2010938-005	I:\ACQUDATA\6890D\DATA\113020\GH2471.D\	11/30/20 23:29
SD-BCP-040	R2010938-006	I:\ACQUDATA\6890D\DATA\113020\GH2472.D\	11/30/20 23:49
SS-BCP-15-024	R2010938-010	I:\ACQUDATA\6890D\DATA\113020\GH2474.D\	12/01/20 00:28

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: Riverview BCP RI
Sample Matrix: Soil

Service Request: R2010938
Date Analyzed: 11/30/20

Duplicate Lab Control Sample Summary
Chlorinated Herbicides by GC

Units:ug/Kg
Basis: Dry

			Lab Control Sample			Duplicate Lab Control Sample				
			RQ2014594-02			RQ2014594-03				
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
2,4,5-T	8151A	30.2	50.0	60	30.8	50.1	61	19-127	2	30
2,4,5-TP	8151A	28.3	50.0	57	29.1	50.1	58	18-122	3	30
2,4-D	8151A	33.4	50.0	67	34.1	50.1	68	24-165	2	30
Dicamba	8151A	26.5	50.0	53	26.9	50.1	54	26-128	2	30

Metals

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METALS

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BLANKS

Contract: R2010938

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: EQB-11172020

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L, ppt, or mg/kg): MG/KG

Analyte	Initial Calib. Blank ug/L	C	Continuing Calibration Blank ug/L 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	120.00	U	120.00	U	120.00	U	120.00	U	12.000	U	P
Antimony	7.50	J	7.40	J	5.40	U	5.80	J	0.540	U	P
Arsenic	7.00	U	7.00	U	7.00	U	7.00	U	0.700	U	P
Barium	15.00	U	15.00	U	15.00	U	15.00	U	1.500	U	P
Beryllium	0.60	U	0.60	U	0.60	U	0.60	U	0.060	U	P
Cadmium	2.40	U	2.40	U	2.40	U	2.40	U	0.240	U	P
Mercury	0.078	U	0.078	U	0.078	U	0.078	U	0.013	U	CV
Calcium	320.00	U	320.00	U	320.00	U	320.00	U	32.000	U	P
Chromium	3.50	U	3.50	U	3.50	U	3.50	U	0.350	U	P
Cobalt	4.60	U	4.60	U	4.60	U	4.60	U	0.460	U	P
Copper	6.30	U	6.30	U	6.30	U	6.30	U	0.630	U	P
Iron	130.00	U	130.00	U	130.00	U	130.00	U	13.000	U	P
Lead	4.00	U	4.00	U	4.00	U	4.00	U	0.400	U	P
Magnesium	130.00	U	130.00	U	130.00	U	130.00	U	13.000	U	P
Manganese	15.00	U	15.00	U	15.00	U	15.00	U	1.500	U	P
Nickel	6.60	U	6.60	U	6.60	U	6.60	U	0.660	U	P
Potassium	500.00	U	500.00	U	500.00	U	500.00	U	50.000	U	P
Selenium	5.40	U	5.40	U	5.40	U	5.40	U	0.540	U	P
Silver	0.90	U	0.90	U	0.90	U	0.90	U	0.090	U	P
Sodium	520.00	U	520.00	U	520.00	U	520.00	U	52.000	U	P
Thallium	6.50	U	6.50	U	6.50	U	6.50	U	0.650	U	P
Vanadium	7.10	U	7.10	U	7.10	U	7.10	U	0.710	U	P
Zinc	14.00	U	14.00	U	14.00	U	14.00	U	1.400	U	P

Comments:

METALS

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BLANKS

Contract: R2010938

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: EQB-11172020

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L, ppt, or mg/kg): UG/L

Analyte	Initial Calib. Blank ug/L	C	Continuing Calibration Blank ug/L 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum			120.00	U	120.00	U	120.00	U			P
Antimony			6.30	J	6.00	J	5.40	U			P
Arsenic			7.00	U	7.00	U	7.00	U			P
Barium			15.00	U	15.00	U	15.00	U			P
Beryllium			0.60	U	0.60	U	0.60	U			P
Cadmium			2.40	U	2.40	U	2.40	U			P
Mercury			0.078	U							CV
Calcium			320.00	U	320.00	U	320.00	U			P
Chromium			3.50	U	3.50	U	3.50	U			P
Cobalt			4.60	U	4.60	U	4.60	U			P
Copper			6.30	U	6.30	U	6.30	U			P
Iron			130.00	U	130.00	U	130.00	U			P
Lead			4.00	U	4.00	U	4.00	U			P
Magnesium			130.00	U	130.00	U	130.00	U			P
Manganese			15.00	U	15.00	U	15.00	U			P
Nickel			6.60	U	6.60	U	6.60	U			P
Potassium			500.00	U	500.00	U	500.00	U			P
Selenium			5.40	U	5.40	U	5.40	U			P
Silver			0.90	U	0.90	U	0.90	U			P
Sodium			520.00	U	520.00	U	520.00	U			P
Thallium			6.50	U	6.50	U	6.50	U			P
Vanadium			7.10	U	7.10	U	7.10	U			P
Zinc			14.00	U	14.00	U	14.00	U			P

Comments:

METALS

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BLANKS

Contract: R2010938

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: EQB-11172020

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L, ppt, or mg/kg): UG/L

Analyte	Initial Calib. Blank ug/L	C	Continuing Calibration Blank ug/L 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum			120.00	U	120.00	U					P
Antimony			5.80	J	5.40	U					P
Arsenic			7.00	U	7.00	U					P
Barium			15.00	U	15.00	U					P
Beryllium			0.60	U	0.60	U					P
Cadmium			2.40	U	2.40	U					P
Calcium			320.00	U	320.00	U					P
Chromium			3.50	U	3.50	U					P
Cobalt			4.60	U	4.60	U					P
Copper			6.30	U	6.30	U					P
Iron			130.00	U	130.00	U					P
Lead			4.00	U	4.00	U					P
Magnesium			130.00	U	130.00	U					P
Manganese			15.00	U	15.00	U					P
Nickel			6.60	U	6.60	U					P
Potassium			500.00	U	500.00	U					P
Selenium			5.40	U	5.40	U					P
Silver			0.90	U	0.90	U					P
Sodium			520.00	U	520.00	U					P
Thallium			6.50	U	6.50	U					P
Vanadium			7.10	U	7.10	U					P
Zinc			14.00	U	14.00	U					P

Comments:

METALS

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BLANKS

Contract: R2010938

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: EQB-11172020

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L, ppt, or mg/kg): UG/L

Analyte	Initial Calib. Blank ug/L	C	Continuing Calibration Blank ug/L 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	23.00	U	23.00	U	23.00	U	23.00	U	23.000	U	P
Antimony	7.50	J	6.10	J	10.40	J	7.30	J	6.200	J	P
Arsenic	5.50	U	5.50	U	5.50	U	5.50	U	5.500	U	P
Barium	3.00	U	3.00	U	3.00	U	3.00	U	3.000	U	P
Beryllium	0.13	U	0.13	U	0.13	U	0.13	U	0.130	U	P
Cadmium	0.35	U	0.35	U	0.35	U	0.35	U	0.350	U	P
Mercury	0.077	U	0.077	U	0.077	U	0.077	U	0.077	U	CV
Calcium	220.00	U	220.00	U	220.00	U	220.00	U	220.000	U	P
Chromium	0.59	U	0.59	U	0.59	U	0.59	U	0.590	U	P
Cobalt	0.89	U	0.89	U	0.89	U	0.89	U	0.890	U	P
Copper	3.90	U	3.90	U	3.90	U	3.90	U	3.900	U	P
Iron	61.00	U	61.00	U	61.00	U	61.00	U	61.000	U	P
Lead	2.10	U	2.10	U	2.40	J	2.10	U	2.100	U	P
Magnesium	29.00	U	29.00	U	29.00	U	29.00	U	29.000	U	P
Manganese	3.70	U	3.70	U	3.70	U	3.70	U	3.700	U	P
Nickel	2.60	U	2.60	U	2.60	U	2.60	U	2.600	U	P
Potassium	200.00	U	200.00	U	200.00	U	200.00	U	200.000	U	P
Selenium	6.40	U	6.40	U	6.40	U	6.40	U	6.400	U	P
Silver	0.57	U	0.57	U	0.57	U	0.57	U	0.570	U	P
Sodium	130.00	U	130.00	U	130.00	U	130.00	U	130.000	U	P
Thallium	6.60	U	6.60	U	6.60	U	6.60	U	6.600	U	P
Vanadium	0.67	U	0.67	U	0.67	U	0.67	U	0.670	U	P
Zinc	9.40	U	9.40	U	9.40	U	9.40	U	9.400	U	P

Comments:

METALS

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BLANKS

Contract: R2010938

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: EQB-11172020

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L, ppt, or mg/kg): UG/L

Analyte	Initial Calib. Blank ug/L	C	Continuing Calibration Blank ug/L 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum			23.00	U	23.00	U	23.00	U			P
Antimony			8.50	J	5.10	J	4.70	U			P
Arsenic			5.50	U	5.50	U	5.50	U			P
Barium			3.00	U	3.00	U	3.00	U			P
Beryllium			0.13	U	0.13	U	0.13	U			P
Cadmium			0.35	U	0.35	U	0.35	U			P
Mercury			0.077	U							CV
Calcium			220.00	U	220.00	U	220.00	U			P
Chromium			0.59	U	0.59	U	0.59	U			P
Cobalt			0.89	U	0.89	U	0.89	U			P
Copper			3.90	U	3.90	U	3.90	U			P
Iron			61.00	U	61.00	U	61.00	U			P
Lead			2.10	U	2.90	J	2.60	J			P
Magnesium			29.00	U	29.00	U	29.00	U			P
Manganese			3.70	U	3.70	U	3.70	U			P
Nickel			2.60	U	2.60	U	2.60	U			P
Potassium			200.00	U	200.00	U	200.00	U			P
Selenium			6.40	U	6.40	U	6.40	U			P
Silver			0.57	U	0.57	U	0.57	U			P
Sodium			130.00	U	572.10	J	458.10	J			P
Thallium			6.60	U	6.60	U	6.60	U			P
Vanadium			0.67	U	0.67	U	0.67	U			P
Zinc			9.40	U	9.40	U	9.40	U			P

Comments:

METALS

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BLANKS

Contract: R2010938

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: EQB-11172020

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L, ppt, or mg/kg): UG/L

Analyte	Initial Calib. Blank ug/L	C	Continuing Calibration Blank ug/L 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum			23.00	U							P
Antimony			5.40	J							P
Arsenic			5.50	U							P
Barium			3.00	U							P
Beryllium			0.13	U							P
Cadmium			0.35	U							P
Calcium			220.00	U							P
Chromium			0.59	U							P
Cobalt			0.89	U							P
Copper			3.90	U							P
Iron			61.00	U							P
Lead			3.60	J							P
Magnesium			29.00	U							P
Manganese			3.70	U							P
Nickel			2.60	U							P
Potassium			200.00	U							P
Selenium			6.40	U							P
Silver			0.57	U							P
Sodium			287.00	J							P
Thallium			6.60	U							P
Vanadium			0.67	U							P
Zinc			9.40	U							P

Comments:

METALS
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POST DIGEST SPIKE SAMPLE RECOVERY

SAMPLE NO.: SS-BCP-15-02A

Contract: R2010938

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: EQB-11172020

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added(SA)	%R	Q	M
Aluminum		30600.00		29500.00		2000.0	55		P
Antimony		454.00		5.40	U	500.0	91		P
Arsenic		128.00		98.80		40.0	73		P
Barium		2250.00		325.00		2000.0	96		P
Beryllium		50.50		3.40		50.0	94		P
Cadmium		53.90		7.60		50.0	93		P
Calcium		44500.00		43800.00		2000.0	35		P
Chromium		269.00		78.10		200.0	95		P
Cobalt		495.00		13.40	J	500.0	96		P
Copper		479.00		236.00		250.0	97		P
Iron		20900.00		21100.00		1000.0	-20		P
Lead		678.00		217.00		500.0	92		P
Magnesium		7620.00		5930.00		2000.0	84		P
Manganese		977.00		527.00		500.0	90		P
Nickel		569.00		98.70		500.0	94		P
Potassium		23600.00		5300.00		20000.0	92		P
Selenium		854.00		26.40		1010.0	82		P
Silver		47.30		0.90	U	50.0	95		P
Sodium		18500.00		520.00	U	20000.0	92		P
Thallium		1810.00		6.50	U	2000.0	90		P
Vanadium		602.00		132.00		500.0	94		P
Zinc		787.00		317.00		500.0	94		P

Comments: _____

METALS
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DUPLICATES

SAMPLE NO.

TR-BCP-07-01-HASD

Contract: R2010938

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: EQB-11172020

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 77.7 % Solids for Duplicate: 77.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Mercury		0.333		0.317		5		CV

Comments: _____

METALS
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DUPLICATES

SAMPLE NO.

SS-BCP-15-02SD

Contract: R2010938

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: EQB-11172020

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 39.4 % Solids for Duplicate: 39.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		8530.00		8800.00		3		P
Antimony		99.80		93.20		7		P
Arsenic		34.90		34.60		1		P
Barium		601.00		574.00		5		P
Beryllium		13.50		12.90		5		P
Cadmium		14.30		13.80		4		P
Calcium		10900.00		11000.00		1		P
Chromium		72.30		70.40		3		P
Cobalt		131.00		125.00		5		P
Copper		124.00		123.00		1		P
Iron		52400.00		53800.00		3		P
Lead		179.00		175.00		2		P
Magnesium		2020.00		2050.00		1		P
Manganese		256.00		263.00		3		P
Nickel		150.00		145.00		3		P
Potassium		6080.00		5990.00		1		P
Selenium		228.00		215.00		6		P
Silver		12.80		12.10		6		P
Sodium		4920.00		4680.00		5		P
Thallium		480.00		455.00		5		P
Vanadium		161.00		155.00		4		P
Zinc		900.00		939.00		4		P

Comments: _____

ALS Environmental

METALS
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DUPLICATES

SAMPLE NO.

DLCSW

Contract: R2010938

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: EQB-11172020

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		1990		1970		1		P
Antimony		491		484		1		P
Arsenic		39		40		3		P
Barium		2060		2020		2		P
Beryllium		50		49		2		P
Cadmium		51		50		2		P
Calcium		2040		2020		1		P
Chromium		205		203		1		P
Cobalt		512		505		1		P
Copper		244		241		1		P
Iron		1000		993		1		P
Lead		501		495		1		P
Magnesium		1970		1950		1		P
Manganese		501		495		1		P
Nickel		509		503		1		P
Potassium		19100		18900		1		P
Selenium		971		963		1		P
Silver		48		48		0		P
Sodium		19700		19400		2		P
Thallium		1870		1850		1		P
Vanadium		501		496		1		P
Zinc		498		493		1		P

Comments: _____

METALS

-7-

LABORATORY CONTROL SAMPLE

Contract: R2010938

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: EQB-11172020

Solid LCS Source: CPI

Aqueous LCS Source:

Analyte	Aqueous (ug/L			Solid (mg/K				
	True	Found	%R	True	Found	C	Limits	%R
Aluminum				200	201.30		160 240	101
Antimony				50	48.29		40 60	97
Arsenic				4	3.74		3.2 4.8	94
Barium				200	208.34		160 240	104
Beryllium				5	5.07		4 6	101
Cadmium				5	5.14		4 6	103
Mercury				0.166	0.17		.133 .199	102
Calcium				200	205.51		160 240	103
Chromium				20	20.96		16 24	105
Cobalt				50	51.72		40 60	103
Copper				25	25.71		20 30	103
Iron				100	101.80		80 120	102
Lead				50	50.39		40 60	101
Magnesium				200	197.39		160 240	99
Manganese				50	50.56		40 60	101
Nickel				50	50.76		40 60	102
Potassium				2000	1943.70		1600 2400	97
Selenium				101	87.76		80.8 121	87
Silver				5	4.92		4 6	98
Sodium				2000	1920.98		1600 2400	96
Thallium				200	187.18		160 240	94
Vanadium				50	50.83		40 60	102
Zinc				50	50.00		40 60	100

Comments: _____

METALS

-7-

LABORATORY CONTROL SAMPLE

Contract: R2010938

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: EQB-11172020

Solid LCS Source: _____

Aqueous LCS Source: CPI

Analyte	Aqueous (ug/L			Solid (mg/K				
	True	Found	%R	True	Found	C	Limits	%R
Aluminum	2000	1990	100					
Antimony	500	491	98					
Arsenic	40	39	98					
Barium	2000	2060	103					
Beryllium	50	50	100					
Cadmium	50	51	102					
Mercury	1.000	1.020	102					
Calcium	2000	2040	102					
Chromium	200	205	102					
Cobalt	500	512	102					
Copper	250	244	98					
Iron	1000	1000	100					
Lead	500	501	100					
Magnesium	2000	1970	98					
Manganese	500	501	100					
Nickel	500	509	102					
Potassium	20000	19100	96					
Selenium	1010	971	96					
Silver	50	48	96					
Sodium	20000	19700	98					
Thallium	2000	1870	94					
Vanadium	500	501	100					
Zinc	500	498	100					

Comments: _____

METALS

-7-

LABORATORY CONTROL SAMPLE

Contract: R2010938

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: EQB-11172020

Solid LCS Source: _____

Aqueous LCS Source: CPI

Analyte	Aqueous (ug/L			Solid (mg/K				
	True	Found	%R	True	Found	C	Limits	%R
Aluminum	2000	1970	98					
Antimony	500	484	97					
Arsenic	40	40	100					
Barium	2000	2020	101					
Beryllium	50	49	98					
Cadmium	50	50	100					
Calcium	2000	2020	101					
Chromium	200	203	102					
Cobalt	500	505	101					
Copper	250	241	96					
Iron	1000	993	99					
Lead	500	495	99					
Magnesium	2000	1950	98					
Manganese	500	495	99					
Nickel	500	503	101					
Potassium	20000	18900	94					
Selenium	1010	963	95					
Silver	50	48	96					
Sodium	20000	19400	97					
Thallium	2000	1850	92					
Vanadium	500	496	99					
Zinc	500	493	99					

Comments: _____

General Chemistry

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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	Dry
Lab Code:	R2010938-MB1		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cyanide, Total	9012B	0.17 U	mg/Kg	0.30	0.17	1	11/25/20 10:53	11/24/20	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	R2010938-MB2		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Cyanide, Total	Kelada-01	0.0040 U	mg/L	0.0050	0.0040	1	11/24/20 16:56	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project	Riverview BCP RI	**Date Collected:**	11/17/20
Sample Matrix:	Soil	**Date Received:**	11/18/20
		Date Analyzed:	11/28/20

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	TR-BCP-07-01-HA	**Units:**	Percent
Lab Code:	R2010938-002	**Basis:**	As Received

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample R2010938-002DUP Result	Average	RPD	RPD Limit
Total Solids	ALS SOP	-	-	77.7	75.6	76.7	3	20

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: Inventum Engineering
Project: Riverview BCP RI
Sample Matrix: Soil

Service Request: R2010938
Date Analyzed: 11/25/20

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/Kg
Basis: Dry

Lab Control Sample
R2010938-LCS1

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Cyanide, Total	9012B	3.02	3.00	101	85-115

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: Riverview BCP RI
Sample Matrix: Soil

Service Request: R2010938
Date Analyzed: 11/25/20

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/Kg
Basis: Dry

Lab Control Sample
R2010938-LCS2

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Cyanide, Total	9012B	17.9	18.0	99	85-115

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: Riverview BCP RI
Sample Matrix: Water

Service Request: R2010938
Date Analyzed: 11/24/20

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
R2010938-LCS3

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Cyanide, Total	Kelada-01	0.117	0.100	117 *	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Inventum Engineering **Service Request:**R2010938
Project: Riverview BCP RI

Continuing Calibration Blank (CCB) Summary
Cyanide, Total

Analysis Method: Kelada-01 **Units:**mg/L

	Analysis Lot	Lab Code	Date Analyzed	MRL	MDL	Result	Q
CCB1	704883	RQ2014589-04	11/24/20 16:56	0.0050	0.0040	0.0040	U
CCB2	704883	RQ2014589-05	11/24/20 17:52	0.0050	0.0040	0.0040	U
CCB3	704883	RQ2014589-06	11/24/20 18:44	0.0050	0.0040	0.0040	U

Client: Inventum Engineering **Service Request:**R2010938
Project: Riverview BCP RI

Continuing Calibration Blank (CCB) Summary
Cyanide, Total

Analysis Method: 9012B **Units:**mg/Kg

	Analysis Lot	Lab Code	Date Analyzed	MRL	MDL	Result	Q
CCB1	705021	RQ2014650-02	11/25/20 10:49	0.30	0.17	0.17	U
CCB2	705021	RQ2014650-04	11/25/20 10:58	0.30	0.17	0.17	U
CCB3	705021	RQ2014650-06	11/25/20 11:07	0.30	0.17	0.17	U
CCB4	705021	RQ2014650-08	11/25/20 11:17	0.30	0.17	0.17	U
CCB5	705021	RQ2014650-10	11/25/20 11:26	0.30	0.17	0.17	U
CCB6	705021	RQ2014650-12	11/25/20 11:36	0.30	0.17	0.17	U
CCB7	705021	RQ2014650-14	11/25/20 11:43	0.30	0.17	0.17	U

Client: Inventum Engineering **Service Request:** R2010938
Project: Riverview BCP RI

Continuing Calibration Verification (CCV) Summary

Cyanide, Total

Analysis Method: Kelada-01 **Units:** mg/L

	Analysis Lot	Lab Code	Date Analyzed	True Value	Measured Value	Percent Recovery	Acceptance Limits
CCV1	704883	RQ2014589-01	11/24/20 16:52	0.200	0.230	115	90-110
CCV2	704883	RQ2014589-02	11/24/20 17:48	0.200	0.234	117	90-110
CCV3	704883	RQ2014589-03	11/24/20 18:40	0.200	0.222	111	90-110

Client: Inventum Engineering **Service Request:** R2010938
Project: Riverview BCP RI

Continuing Calibration Verification (CCV) Summary

Cyanide, Total

Analysis Method: 9012B **Units:** mg/L

	Analysis Lot	Lab Code	Date Analyzed	True Value	Measured Value	Percent Recovery	Acceptance Limits
CCV1	705021	RQ2014650-01	11/25/20 10:48	0.500	0.507	101	85-115
CCV2	705021	RQ2014650-03	11/25/20 10:57	0.500	0.506	101	85-115
CCV3	705021	RQ2014650-05	11/25/20 11:07	0.500	0.499	100	85-115
CCV4	705021	RQ2014650-07	11/25/20 11:16	0.500	0.501	100	85-115
CCV5	705021	RQ2014650-09	11/25/20 11:25	0.500	0.495	99	85-115
CCV6	705021	RQ2014650-11	11/25/20 11:35	0.500	0.497	99	85-115
CCV7	705021	RQ2014650-13	11/25/20 11:42	0.500	0.502	100	85-115

Subcontracted Analytical Parameters

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December 15, 2020 **Analytical Report for Service Request No:** R2010938

Meghan Pedro
ALS Environmental
1565 Jefferson Rd, Building 300
Suite 360
Rochester, NY 14623

RE: Riverview BCP RI

Dear Meghan Pedro,

Enclosed are the results of the sample(s) submitted to our laboratory November 18, 2020
For your reference, these analyses have been assigned our service request number **R2010938.**

All testing was performed according to our laboratory's quality assurance program and met the requirements of the TNI standards except as noted in the case narrative report. Any testing not included in the lab's accreditation is identified on a Non-Certified Analytes report. All results are intended to be considered in their entirety. ALS Environmental is not responsible for use of less than the complete report. Results apply only to the individual samples submitted to the lab for analysis, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s), and represented by Laboratory Control Sample control limits. Any events, such as QC failures or Holding Time exceedances, which may add to the uncertainty are explained in the report narrative or are flagged with qualifiers. The flags are explained in the Report Qualifiers and Definitions page of this report.

Please contact me if you have any questions. My extension is 3376. You may also contact me via email at Mark.Harris@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Mark Harris
Project Manager

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Table of Contents

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/anlayte is offered by that state.

Case Narrative

ALS Environmental—Kelso Laboratory
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Client: Inventum Engineering
Project: Riverview BCP RI
Sample Matrix: Soil

Service Request: R2010938
Date Received: 11/18/2020

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 II requested by the client.

Sample Receipt:

Five soil samples were received for analysis at ALS Environmental on 11/18/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Organic LC:

Method PFC/537M, 12/05/2020:Insufficient sample volume was received to perform a Matrix Spike/Matrix Spike Duplicate (MS/MSD). A Laboratory Control Sample/Duplicate Laboratory Control Sample (LCS/DLCS) was analyzed and reported in lieu of the MS/MSD for these samples.
Method PFC/537M, 12/05/2020:The upper control criterion was exceeded for one or more surrogates in sample/s TR-BCP-07-01 -HA, SD-BCP-04, and SS-BCP-15-02. The associated native analytes were not detected above the Method Reporting Limit (MRL) in this sample. The error associated with an elevated recovery equated to a high bias. Assuming the native analytes performed similar to the labeled analogs, the effect on the reported results was minimal. The quality of the sample data was not significantly affected. No further corrective action was appropriate.

Approved by _____ Date 12/15/2020

Chain of Custody

ALS Environmental—Kelso Laboratory
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Phone (360)577-7222 Fax (360)636-1068
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Intra-Network Chain of Custody

1565 Jefferson Rd, Building 300 • Rochester, NY 14623 • 585-288-5380 • FAX 585-288-8475

ALS Contact: Meghan Pedro

Project Name: Riverview BCP RI
Project Number:
Project Manager: Todd Waldrop
Company: Inventum Engineering
QAP: LAB QAP

Lab Code	Client Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Date Received	Send To	PFAS PFC/537M
R2010938-002	TR-BCP-07-01-HA	1	Soil	11/17/20	0830	11/18/20	KELSO	IV
R2010938-005	SD-BCP-04	1	Soil	11/17/20	1110	11/18/20	KELSO	IV
R2010938-006	SD-BCP-040	1	Soil	11/17/20	1110	11/18/20	KELSO	IV
R2010938-008	SS-BCP-15-02	1	Soil	11/17/20	1430	11/18/20	KELSO	IV
R2010938-010	SS-BCP-15-024	1	Soil	11/17/20	1430	11/18/20	KELSO	IV

Test Comments

PFAS - PFC/537M R2010938-002,5,6,8,10 Tier II and Tier IV

Special Instructions/Comments

N421

pH Checked _____

Turnaround Requirements

_____ **RUSH** (Surcharges Apply)

PLEASE CIRCLE WORK DAYS

1 2 3 4 5

✓ **STANDARD**

Requested FAX Date: _____

Requested Report Date: 12/04/20

Report Requirements

___ I. Results Only

✓ II. Results + QC Summaries

___ III. Results + QC and Calibration Summaries

X IV. Data Validation Report with Raw Data

PQL/MDL/J Y

EDD Y

Invoice Information

PO# 58R2010938

Bill to

Relinquished By: _____ 11/20/2020/1250 Received By: _____ 11/18/20 1130 Airbill Number: _____

PM MH

Cooler Receipt and Preservation Form

Client AIR - Rock Service Request ~~K20~~ R2010938

Received: 11/21/20 Opened: 11/21/20 By: BR Unloaded: 11/21/20 By: BR

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? front
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N
4. Was a Temperature Blank present in cooler? NA Y N If yes, notate the temperature in the appropriate column below:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA Y N
   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. NA Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
NA	4.4	12182				773024331116	

6. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
8. Were samples received in good condition (unbroken) NA Y N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA Y N
10. Did all sample labels and tags agree with custody papers? NA Y N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
13. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
14. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

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

Notes, Discrepancies, Resolutions: _____

PFAS by HPLC/MS/MS

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Sample Results

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Organic Compounds by HPLC/MS/MS

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	11/17/20 08:30
Sample Matrix:	Soil	**Date Received:**	11/18/20 13:00
Sample Name:	TR-BCP-07-01-HA	**Units:**	ng/g
Lab Code:	R2010938-002	**Basis:**	Dry

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoroalkyl Sulfonic Acids (PFSAs)							
Perfluorobutane sulfonic acid (PFBS)	1.2 U	1.2	0.26	1	12/05/20 22:31	11/30/20	
Perfluorohexane sulfonic acid (PFHxS)	1.2 U	1.2	0.36	1	12/05/20 22:31	11/30/20	
Perfluoroheptane sulfonic acid (PFHpS)	1.2 U	1.2	0.073	1	12/05/20 22:31	11/30/20	
Perfluorooctane sulfonic acid (PFOS)	**0.35 J**	1.2	0.16	1	12/05/20 22:31	11/30/20	
Perfluorodecane sulfonic acid (PFDS)	1.2 U	1.2	0.20	1	12/05/20 22:31	11/30/20	
Perfluoroalkyl Carboxylic Acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	**0.55 J**	1.2	0.46	1	12/05/20 22:31	11/30/20	
Perfluoropentanoic acid (PFPeA)	1.2 U	1.2	0.25	1	12/05/20 22:31	11/30/20	
Perfluorohexanoic acid (PFHxA)	**0.52 J**	1.2	0.37	1	12/05/20 22:31	11/30/20	
Perfluoroheptanoic acid (PFHpA)	**0.34 J**	1.2	0.23	1	12/05/20 22:31	11/30/20	
Perfluorooctanoic acid (PFOA)	**0.24 J**	1.2	0.16	1	12/05/20 22:31	11/30/20	
Perfluorononanoic acid (PFNA)	1.2 U	1.2	0.39	1	12/05/20 22:31	11/30/20	
Perfluorodecanoic acid (PFDA)	1.2 U	1.2	0.31	1	12/05/20 22:31	11/30/20	
Perfluoroundecanoic acid (PFUnDA)	1.2 U	1.2	0.22	1	12/05/20 22:31	11/30/20	
Perfluorododecanoic acid (PFDoDA)	1.2 U	1.2	0.32	1	12/05/20 22:31	11/30/20	
Perfluorotridecanoic acid (PFTrDA)	1.2 U	1.2	0.25	1	12/05/20 22:31	11/30/20	
Perfluorotetradecanoic acid (PFTeDA)	1.2 U	1.2	0.22	1	12/05/20 22:31	11/30/20	
Perfluoroalkyl Sulfonamido Substances							
Perfluorooctane sulfonamide (FOSA)	1.2 U	1.2	0.079	1	12/05/20 22:31	11/30/20	
N-Methyl perfluorooctane sulfonamidoacetic acid	1.2 U	1.2	0.32	1	12/05/20 22:31	11/30/20	
N-Ethyl perfluorooctane sulfonamidoacetic acid	1.2 U	1.2	0.24	1	12/05/20 22:31	11/30/20	
n:2 Fluorotelomer Sulfonic Acids (n:2 FTSAs)							
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	1.2 U	1.2	0.18	1	12/05/20 22:31	11/30/20	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	1.2 U	1.2	0.035	1	12/05/20 22:31	11/30/20	

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	11/17/20 08:30
Sample Matrix:	Soil	**Date Received:**	11/18/20 13:00
Sample Name:	TR-BCP-07-01-HA	**Units:**	ng/g
Lab Code:	R2010938-002	**Basis:**	Dry

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C3-PFBS	69	33 - 109	12/05/20 22:31	
18O2-PFHxS	83	36 - 120	12/05/20 22:31	
13C4-PFOS	76	32 - 130	12/05/20 22:31	
13C4-PFBA	84	34 - 116	12/05/20 22:31	
13C5-PFPeA	77	39 - 133	12/05/20 22:31	
13C2-PFHxA	68	32 - 136	12/05/20 22:31	
13C4-PFHpA	80	36 - 133	12/05/20 22:31	
13C4-PFOA	79	31 - 134	12/05/20 22:31	
13C5-PFNA	99	27 - 133	12/05/20 22:31	
13C2-PFDA	82	30 - 137	12/05/20 22:31	
13C2-PFUnDA	94	32 - 146	12/05/20 22:31	
13C2-PFDoDA	96	36 - 136	12/05/20 22:31	
13C2-PFTeDA	100	39 - 138	12/05/20 22:31	
13C8-FOSA	62	40 - 132	12/05/20 22:31	
D3-MeFOSAA	103	20 - 154	12/05/20 22:31	
D5-EtFOSAA	125	29 - 153	12/05/20 22:31	
13C2-6:2 FTS	128	30 - 140	12/05/20 22:31	
13C2-8:2 FTS	173	9 - 171	12/05/20 22:31	*

QC Summary Forms

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Organic Compounds by HPLC/MS/MS

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Client: Inventum Engineering **Service Request:** R2010938
Project: Riverview BCP RI/
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Extraction Method: ALS SOP

Surrogate	Control Limits	TR-BCP-07-01-HA R2010938-002	SD-BCP-04 R2010938-005	SD-BCP-040 R2010938-006
13C3-PFBS	33-109	69	77	77
18O2-PFHxS	36-120	83	80	101
13C4-PFOS	32-130	76	80	93
13C4-PFBA	34-116	84	83	97
13C5-PFPeA	39-133	77	85	81
13C2-PFHxA	32-136	68	69	82
13C4-PFHpA	36-133	80	88	91
13C4-PFOA	31-134	79	77	93
13C5-PFNA	27-133	99	94	107
13C2-PFDA	30-137	82	95	98
13C2-PFUnDA	32-146	94	105	105
13C2-PFDoDA	36-136	96	113	121
13C2-PFTeDA	39-138	100	136	134
13C8-FOSA	40-132	62	80	78
D3-MeFOSAA	20-154	103	126	102
D5-EtFOSAA	29-153	125	167*	124
13C2-6:2 FTS	30-140	128	113	99
13C2-8:2 FTS	9-171	173*	160	129

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with an pound (#) indicate the control criteria is not acceptable.

Client: Inventum Engineering **Service Request:** R2010938
Project: Riverview BCP RI/
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Extraction Method: ALS SOP

Surrogate	Control Limits	SS-BCP-15-02 R2010938-008	SS-BCP-15-024 R2010938-010	Method Blank KQ2018961-03
13C3-PFBS	33-109	90	81	78
18O2-PFHxS	36-120	92	80	81
13C4-PFOS	32-130	86	87	86
13C4-PFBA	34-116	98	94	89
13C5-PFPeA	39-133	94	86	84
13C2-PFHxA	32-136	87	67	73
13C4-PFHpA	36-133	109	78	85
13C4-PFOA	31-134	87	73	80
13C5-PFNA	27-133	100	96	97
13C2-PFDA	30-137	95	87	89
13C2-PFUnDA	32-146	95	86	87
13C2-PFDoDA	36-136	104	110	94
13C2-PFTeDA	39-138	149*	137	132
13C8-FOSA	40-132	93	67	78
D3-MeFOSAA	20-154	112	92	101
D5-EtFOSAA	29-153	120	111	116
13C2-6:2 FTS	30-140	97	112	96
13C2-8:2 FTS	9-171	132	129	115

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with an pound (#) indicate the control criteria is not acceptable.

Client: Inventum Engineering **Service Request:** R2010938
Project: Riverview BCP RI/
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Extraction Method: ALS SOP

Surrogate	Control Limits	Lab Control Sample KQ2018961-01	Duplicate Lab Control Sample KQ2018961-02
13C3-PFBS	33-109	75	79
18O2-PFHxS	36-120	72	85
13C4-PFOS	32-130	76	89
13C4-PFBA	34-116	84	93
13C5-PFPeA	39-133	78	83
13C2-PFHxA	32-136	68	74
13C4-PFHpA	36-133	75	83
13C4-PFOA	31-134	68	81
13C5-PFNA	27-133	91	99
13C2-PFDA	30-137	86	91
13C2-PFUnDA	32-146	82	90
13C2-PFDoDA	36-136	88	97
13C2-PFTeDA	39-138	126	133
13C8-FOSA	40-132	76	77
D3-MeFOSAA	20-154	96	98
D5-EtFOSAA	29-153	107	114
13C2-6:2 FTS	30-140	86	94
13C2-8:2 FTS	9-171	109	116

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with an pound (#) indicate the control criteria is not acceptable.

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/g
Lab Code:	KQ2018961-03	**Basis:**	Dry

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoroalkyl Sulfonic Acids (PFSAs)							
Perfluorobutane sulfonic acid (PFBS)	1.0 U	1.0	0.22	1	12/05/20 21:05	11/30/20	
Perfluorohexane sulfonic acid (PFHxS)	1.0 U	1.0	0.30	1	12/05/20 21:05	11/30/20	
Perfluoroheptane sulfonic acid (PFHpS)	1.0 U	1.0	0.062	1	12/05/20 21:05	11/30/20	
Perfluorooctane sulfonic acid (PFOS)	1.0 U	1.0	0.13	1	12/05/20 21:05	11/30/20	
Perfluorodecane sulfonic acid (PFDS)	1.0 U	1.0	0.17	1	12/05/20 21:05	11/30/20	
Perfluoroalkyl Carboxylic Acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	1.0 U	1.0	0.39	1	12/05/20 21:05	11/30/20	
Perfluoropentanoic acid (PFPeA)	1.0 U	1.0	0.21	1	12/05/20 21:05	11/30/20	
Perfluorohexanoic acid (PFHxA)	1.0 U	1.0	0.31	1	12/05/20 21:05	11/30/20	
Perfluoroheptanoic acid (PFHpA)	1.0 U	1.0	0.19	1	12/05/20 21:05	11/30/20	
Perfluorooctanoic acid (PFOA)	1.0 U	1.0	0.13	1	12/05/20 21:05	11/30/20	
Perfluorononanoic acid (PFNA)	1.0 U	1.0	0.33	1	12/05/20 21:05	11/30/20	
Perfluorodecanoic acid (PFDA)	1.0 U	1.0	0.26	1	12/05/20 21:05	11/30/20	
Perfluoroundecanoic acid (PFUnDA)	1.0 U	1.0	0.18	1	12/05/20 21:05	11/30/20	
Perfluorododecanoic acid (PFDoDA)	1.0 U	1.0	0.27	1	12/05/20 21:05	11/30/20	
Perfluorotridecanoic acid (PFTrDA)	1.0 U	1.0	0.21	1	12/05/20 21:05	11/30/20	
Perfluorotetradecanoic acid (PFTeDA)	1.0 U	1.0	0.18	1	12/05/20 21:05	11/30/20	
Perfluoroalkyl Sulfonamido Substances							
Perfluorooctane sulfonamide (FOSA)	1.0 U	1.0	0.067	1	12/05/20 21:05	11/30/20	
N-Methyl perfluorooctane sulfonamidoacetic acid	1.0 U	1.0	0.27	1	12/05/20 21:05	11/30/20	
N-Ethyl perfluorooctane sulfonamidoacetic acid	1.0 U	1.0	0.20	1	12/05/20 21:05	11/30/20	
n:2 Fluorotelomer Sulfonic Acids (n:2 FTSAs)							
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	1.0 U	1.0	0.15	1	12/05/20 21:05	11/30/20	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	1.0 U	1.0	0.029	1	12/05/20 21:05	11/30/20	

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/g
Lab Code:	KQ2018961-03	**Basis:**	Dry

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C3-PFBS	78	33 - 109	12/05/20 21:05	
18O2-PFHxS	81	36 - 120	12/05/20 21:05	
13C4-PFOS	86	32 - 130	12/05/20 21:05	
13C4-PFBA	89	34 - 116	12/05/20 21:05	
13C5-PFPeA	84	39 - 133	12/05/20 21:05	
13C2-PFHxA	73	32 - 136	12/05/20 21:05	
13C4-PFHpA	85	36 - 133	12/05/20 21:05	
13C4-PFOA	80	31 - 134	12/05/20 21:05	
13C5-PFNA	97	27 - 133	12/05/20 21:05	
13C2-PFDA	89	30 - 137	12/05/20 21:05	
13C2-PFUnDA	87	32 - 146	12/05/20 21:05	
13C2-PFDoDA	94	36 - 136	12/05/20 21:05	
13C2-PFTeDA	132	39 - 138	12/05/20 21:05	
13C8-FOSA	78	40 - 132	12/05/20 21:05	
D3-MeFOSAA	101	20 - 154	12/05/20 21:05	
D5-EtFOSAA	116	29 - 153	12/05/20 21:05	
13C2-6:2 FTS	96	30 - 140	12/05/20 21:05	
13C2-8:2 FTS	115	9 - 171	12/05/20 21:05	

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QA/QC Report

Client:	Inventum Engineering	**Service Request:**	R2010938
Project:	Riverview BCP RI	**Date Analyzed:**	12/05/20
Sample Matrix:	Soil	**Date Extracted:**	11/30/20

Duplicate Lab Control Sample Summary
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method:	PFC/537M	**Units:**	ng/g
Prep Method:	ALS SOP	**Basis:**	Dry
		Analysis Lot:	705981

	Lab Control Sample KQ2018961-01			Duplicate Lab Control Sample KQ2018961-02					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8.56	7.61	112	9.13	7.61	120	69-147	6	50
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	9.69	7.68	126	9.31	7.68	121	66-141	4	50
N-Ethyl perfluorooctane sulfonamidoacetic acid	9.03	8.00	113	10.3	8.00	129	57-159	13	50
N-Methyl perfluorooctane sulfonamidoacetic acid	8.70	8.00	109	8.77	8.00	110	69-162	<1	50
Perfluorobutane sulfonic acid (PFBS)	7.97	7.10	112	8.37	7.10	118	48-148	5	50
Perfluorobutanoic acid (PFBA)	9.52	8.00	119	9.63	8.00	120	29-179	1	50
Perfluorodecane sulfonic acid (PFDS)	9.11	7.72	118	8.98	7.72	116	83-152	1	50
Perfluorodecanoic acid (PFDA)	9.30	8.00	116	9.84	8.00	123	73-142	6	50
Perfluorododecanoic acid (PFDoDA)	8.13	8.00	102	8.48	8.00	106	69-150	4	50
Perfluoroheptane sulfonic acid (PFHpS)	10.8	7.63	142	9.19	7.63	120	69-173	16	50
Perfluoroheptanoic acid (PFHpA)	8.03	8.00	100	8.75	8.00	109	73-136	9	50
Perfluorohexane sulfonic acid (PFHxS)	7.91	7.30	108	7.87	7.30	108	75-142	<1	50
Perfluorohexanoic acid (PFHxA)	9.23	8.00	115	9.50	8.00	119	68-148	3	50
Perfluorononanoic acid (PFNA)	8.62	8.00	108	8.98	8.00	112	63-160	4	50
Perfluorooctane sulfonamide (FOSA)	8.86	8.00	111	9.12	8.00	114	63-138	3	50
Perfluorooctane sulfonic acid (PFOS)	8.24	7.43	111	7.93	7.43	107	72-141	4	50
Perfluorooctanoic acid (PFOA)	8.58	8.00	107	8.54	8.00	107	77-151	<1	50
Perfluoropentanoic acid (PFPeA)	8.81	8.00	110	9.12	8.00	114	64-131	3	50
Perfluorotetradecanoic acid (PFTeDA)	8.34	8.00	104	8.47	8.00	106	70-143	2	50
Perfluorotridecanoic acid (PFTrDA)	6.64	8.00	83	6.53	8.00	82	63-134	2	50
Perfluoroundecanoic acid (PFUnDA)	8.95	8.00	112	8.92	8.00	111	69-147	<1	50