

November 15, 2018

Ms. Karen Shanahan Olson  
Senior Program Manager  
PDC Energy, Inc.  
1775 Sherman Street, Suite 3000  
Denver, Colorado 20203

**RE: SUPPLEMENTAL INVESTIGATION AND SAMPLING SUMMARY  
FORMER SITZMAN 1U TANK BATTERY  
NWSW SEC 27 T5N R65W  
REMEDATION #: 11252**

Dear Ms. Olson:

This report has been prepared by Tasman Geosciences, Inc. (Tasman) to summarize supplemental investigation and sampling activities conducted between October 17 and October 31, 2018 at the former Sitzman 1U tank battery (Site). A summary of previous Site investigation and remedial activities was provided to the Colorado Oil and Gas Conservation Commission (COGCC) in a Supplemental Form 27 on August 3, 2018, under Document Number 401718708.

#### **Drilling, Soil Sampling, and Well Installation**

Between October 17 and October 19, 2018, twelve (12) soil borings were advanced within and surrounding the former excavation area using hollow stem auger drilling methods (Figure 1). Soil borings were advanced to 27 feet below ground surface (bgs), approximately 2 feet below the final depth of the former excavation. Lithological descriptions and volatile organic compound (VOC) concentrations measured by a photoionization detector (PID) were documented for all soil borings. Boring logs are provided in Attachment A.

Soil samples were collected from the saturated interval of each boring below the depth of the former excavation sidewall samples. Soil samples were collected at the depth intervals most likely to be impacted based on field-measured VOC concentrations. Samples were submitted to Summit Scientific Laboratories (Summit) for analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, and total petroleum hydrocarbons (TPH) – gasoline range organics (GRO) by United States Environmental Protection Agency (USEPA) Method 8260B, and TPH – diesel range organics (DRO) by USEPA Method 8015.

Analytical results indicated that the soil sample collected from boring BH03 between 14 and 19 feet bgs exhibited a TPH concentration in exceedance of the COGCC Table 910-1 standard. Organic compound

concentrations were below COGCC standards in the remaining eleven (11) borings. Soil analytical data is summarized in Table 1.

Saturated soils were encountered in the borings at approximately 12.5 feet bgs. Twelve (12) 2-inch monitoring wells (BH01 – BH12) were installed at each boring location. Monitoring well locations are illustrated on Figure 1. Well completion logs are provided in Attachment A.

### **Well Development and Groundwater Sampling**

Between October 23 and October 25, 2018, monitoring wells were developed using a combination of an inertial pump and surge block to remove sediment emplaced during installation activities. Approximately 55-65 gallons of groundwater were purged from each well.

On October 30, 2018, groundwater levels were measured at all Site monitoring wells prior to sampling. Depth to water was measured from the north side of the well casing to the nearest 0.01-foot using an oil-water interface probe (IP). Groundwater levels were used to calculate the groundwater elevation in each well in feet above mean sea level (AMSL) based on the new surveyed top of casing elevation. Groundwater elevation data is illustrated on Figure 2 and summarized in Table 2. Groundwater flow at the Site trends to the north-northwest with an average gradient of approximately 0.0017 vertical feet per horizontal feet between monitoring wells BH09 and BH06.

Groundwater samples were collected from each Site monitoring well using low flow sample collection methods to minimize aquifer drawdown. Wells were purged until water quality parameters reached stabilization, indicating formation conditions. Groundwater samples were collected from all twelve (12) monitoring wells and submitted to Pace Analytical for laboratory analysis of an expanded suite of organic and inorganic compounds, per the request of the landowner.

Analytical results indicated that BTEX concentrations were below laboratory detection limits in all Site monitoring wells. A complete summary of groundwater analytical data is provided in Table 3.

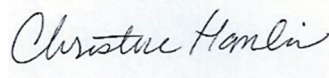
### **Plan Forward**

Based on the analytical data collected during the supplemental site investigation, additional delineation of soil impacts within the saturated interval is required to the northwest. Remedial options for this Site will be evaluated upon completion of further sub-surface assessment and landowner negotiations.

Should you have any questions regarding this report or the activities discussed herein, please contact me by phone at (720) 409-8791.

Sincerely,

Tasman Geosciences, Inc.



Christine Hamlin  
Program Manager

**Enclosures:**

Figure 1 – Monitoring Well Location Map

Figure 2 – Groundwater Elevation Contour Map (10/30/2018)

Table 1 – Soil Analytical Results Summary Table

Table 2 – Groundwater Elevation Data Table

Table 3 – Groundwater Analytical Results Summary Table





DATE:	October 2018
DESIGNED BY:	C. Hamlin
DRAWN BY:	D. Arnold

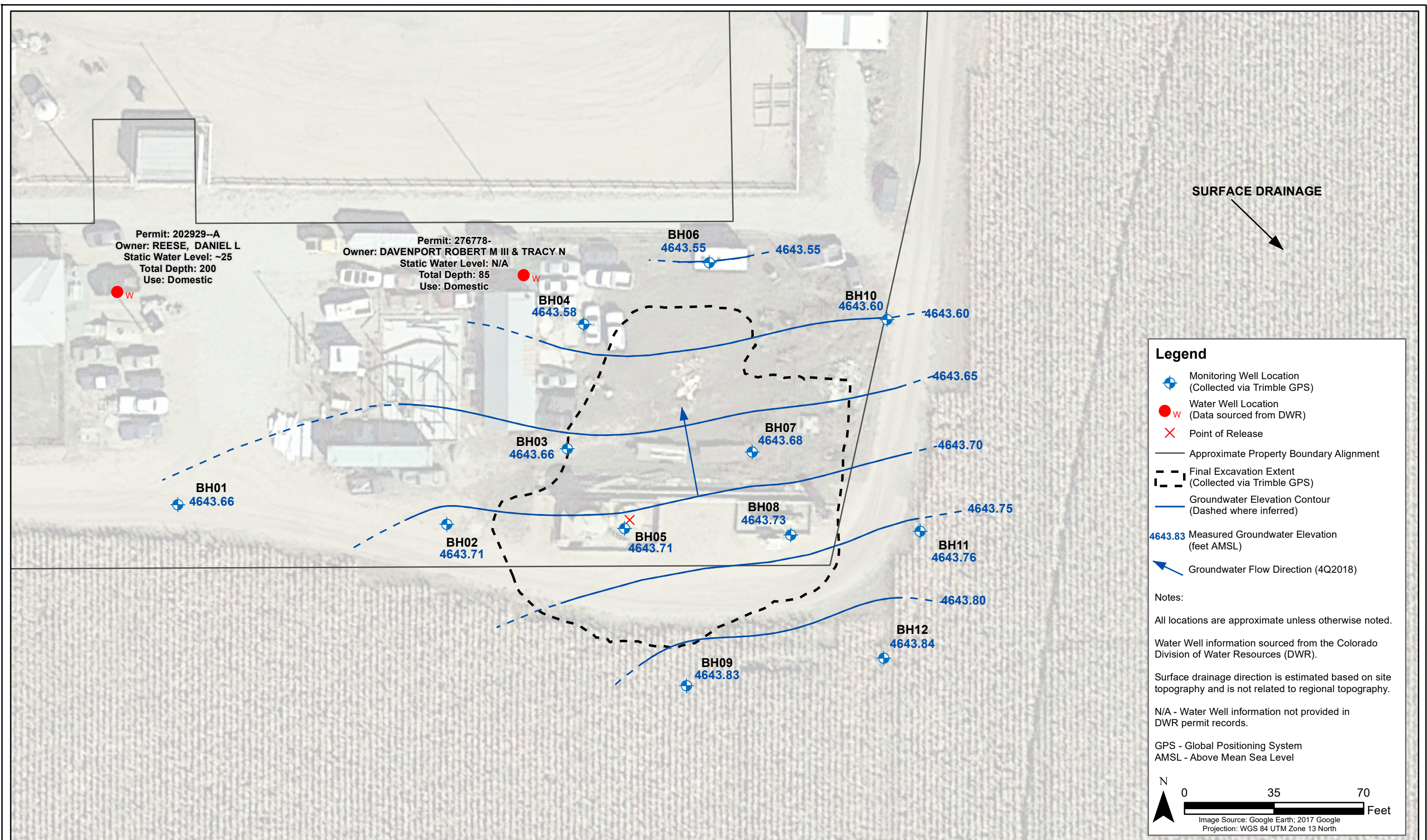


**PDC Energy, Inc. – DJ Basin**  
**Former Sitzman 1U Tank Battery**  
 NWSW, Section 27, Township 5 North, Range 65 West  
 Weld County, Colorado

Monitoring Well Location  
 Map

**FIGURE**  
**1**





DATE:	October 2018
DESIGNED BY:	C. Hamlin
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**PDC Energy, Inc. – DJ Basin**  
**Former Sitzman 1U Tank Battery**  
NWSW, Section 27, Township 5 North, Range 65 West  
Weld County, Colorado

Groundwater Elevation Contour  
Map  
(10/30/2018)

**FIGURE**  
**2**



**TABLE 1**  
**FORMER SITZMAN 1U TANK BATTERY**  
**SOIL ANALYTICAL RESULTS SUMMARY TABLE**

Sample ID	Date Sampled	Depth (feet bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	TPH <sup>(2)</sup> (mg/kg)
<b>COGCC standards for soil (mg/kg) <sup>(1)</sup></b>			<b>0.17</b>	<b>85</b>	<b>100</b>	<b>175</b>	<b>23</b>	<b>500</b>
SS01 @ 14'	3/7/2018	14	<0.0020	<0.0050	<0.0050	0.018	0.035	<b>720</b>
SS02 @ 12.5'	3/7/2018	12.5	<0.0020	<0.0050	<0.0050	0.02	<0.010	258
SS03 @ 10'	3/12/2018	10	0.14	0.014	9.4	140	2.4	<b>6,600</b>
SS04 @ 18'	3/12/2018	18	0.10	<0.0050	7.5	120	1.7	<b>5,400</b>
TP1 @ 14'	5/8/2018	14	<0.0020	0.0056	<0.0050	<0.010	0.011	<b>1,080</b>
SS05 @ 15'	6/12/2018	15	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS06 @ 15'	6/12/2018	15	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS07 @ 15'	6/12/2018	15	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS08 @ 15'	6/12/2018	15	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS09 @ 15'	6/13/2018	15	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS10 @ 15'	6/18/2018	15	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS11 @ 15'	6/25/2018	15	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS12 @ 15'	6/25/2018	15	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS13 @ 15'	6/25/2018	15	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS14 @ 15'	7/12/2018	15	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS15 @ 15'	7/12/2018	15	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS16 @ 15'	7/12/2018	15	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS17 @ 15'	7/13/2018	15	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS18 @ 15'	7/13/2018	15	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS19 @ 15'	7/17/2018	15	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS20 @ 15'	7/17/2018	15	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS21 @ 15'	7/17/2018	15	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS22 @ 15'	7/17/2018	15	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS23 @ 15'	7/17/2018	15	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS24 @ 15'	7/17/2018	15	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH01 @ 19-24'	10/17/2018	19-24	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH02 @ 14-19'	10/17/2018	14-19	<0.0020	<0.0050	<0.0050	<0.010	<0.010	18
BH02 @ 19-24'	10/17/2018	19-24	<0.0020	<0.0050	<0.0050	<0.010	<0.010	8.1
BH03 @ 14-19'	10/17/2018	14-19	<0.0020	<0.0050	0.014	<0.010	<0.010	<b>3,100</b>
BH03 @ 23-24'	10/17/2018	23-24	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH04 @ 18-22'	10/19/2018	18-22	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH05 @ 18-22'	10/18/2018	18-22	<0.0020	<0.0050	<0.0050	<0.010	<0.010	36
BH05 @ 24-27'	10/18/2018	24-27	<0.0020	<0.0050	<0.0050	<0.010	<0.010	0.87
BH06 @ 18-22'	10/18/2018	18-22	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH07 @ 18-22'	10/18/2018	18-22	<0.0020	<0.0050	<0.0050	<0.010	<0.010	1.7
BH08 @ 14-19'	10/18/2018	14-19	<0.0020	<0.0050	<0.0050	<0.010	<0.010	12
BH08 @ 19-24'	10/18/2018	19-24	<0.0020	<0.0050	<0.0050	<0.010	<0.010	1.4
BH09 @ 18-22'	10/19/2018	18-22	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH10 @ 18-22'	10/19/2018	18-22	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH11 @ 18-22'	10/19/2018	18-22	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH12 @ 18-22'	10/19/2018	18-22	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50

**Notes:**

1. Standards for soil are taken from 2 CCR 404-1, Table 910-1, effective May 1, 2018.

2. TPH - Total volatile and extractable petroleum hydrocarbons. Value calculated by adding GRO and DRO concentrations.

COGCC = Colorado Oil and Gas Conservation Commission

GRO = Total volatile petroleum hydrocarbons - gasoline range organics

DRO = Total extractable petroleum hydrocarbons - diesel range organics

mg/kg = Milligrams per kilogram



**TABLE 1**  
**FORMER SITZMAN 1U TANK BATTERY**  
**SOIL ANALYTICAL RESULTS SUMMARY TABLE**

bgs = Below ground surface

(<) = Analytical result is less than the indicated laboratory reporting limit.

**BOLD** = Analytical result is in exceedance of COGCC soil standards.

**TABLE 2**  
**FORMER SITZMAN 1U TANK BATTERY**  
**GROUNDWATER ELEVATION DATA TABLE**

Sample ID	Date Measured	Measured Depth to Groundwater <sup>(1)</sup> (feet)	Corrected Depth to Groundwater <sup>(2)</sup> (feet)	Groundwater Elevation (feet AMSL)	Change in Groundwater Elevation (feet)
BH01	10/30/2018	9.27	9.65	4643.66	-
BH02	10/30/2018	9.36	9.62	4643.71	-
BH03	10/30/2018	8.61	8.75	4643.66	-
BH04	10/30/2018	9.39	9.73	4643.58	-
BH05	10/30/2018	8.43	8.68	4643.71	-
BH06	10/30/2018	8.48	8.52	4643.55	-
BH07	10/30/2018	8.32	8.37	4643.68	-
BH08	10/30/2018	7.90	8.24	4643.73	-
BH09	10/30/2018	8.49	8.64	4643.83	-
BH10	10/30/2018	8.79	8.95	4643.60	-
BH11	10/30/2018	8.27	8.62	4643.76	-
BH12	10/30/2018	8.45	8.45	4643.84	-

**Notes:**

1. Depth to water measured from top of well casing.
  2. Measurements are adjusted using survey data to reflect depth of water from ground surface.
- AMSL = Above Mean Sea Level



TABLE 3  
FORMER SITZMAN 1U TANK BATTERY  
GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE

	Compound	COGCC Groundwater Standard <sup>(1)</sup>	CDPHE WQCC MCL in Groundwater <sup>(2)</sup>	Davenport Deep Well <sup>(3)</sup>	Davenport Shallow Well <sup>(3)</sup>	GW01 <sup>(4)</sup>	BH01	BH02	BH03	BH04	BH05	BH06	BH07	BH08	BH09	BH10	BH11	BH12
	(mg/L)	(mg/L)	(mg/L)	5/15/2018	5/22/2018	7/23/2018	10/30/2018	10/31/2018	10/31/2018	10/30/2018	10/31/2018	10/30/2018	10/31/2018	10/31/2018	10/30/2018	10/30/2018	10/30/2018	10/30/2018
Organic Compounds	Benzene	0.005	0.005	<0.001	<0.001	<0.001	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
	Toluene	0.56	0.56	<0.001	<0.001	<0.001	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
	Ethylbenzene	0.70	0.70	<0.001	<0.001	<0.001	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
	Total Xylenes	1.4	1.4	<0.003	<0.003	<0.002	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300
	Dissolved Organic Carbon	-	-	NA	NA	NA	3.30 <sup>18</sup>	5.14 <sup>18</sup>	6.76 <sup>18</sup>	3.82 <sup>18</sup>	9.11 <sup>18</sup>	5.04 <sup>18</sup>	9.81 <sup>18</sup>	7.61 <sup>18</sup>	NA	4.20 <sup>18</sup>	NA	NA
Inorganic Compounds	Nitrate - Nitrite	-	10	0.088	12	NA	11.9	12.7	7.82	5.14	6.50	6.84	8.07	3.01	NA	8.07	NA	NA
	Aluminum	-	-	NA	NA	NA	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	NA	<0.200	NA	NA
	Aluminum, Dissolved	-	-	NA	NA	NA	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	NA	<0.200	NA	NA
	Antimony	-	0.006	NA	NA	NA	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	NA	<0.0100	NA	NA
	Antimony, Dissolved	-	0.006	NA	NA	NA	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	NA	<0.0100	NA	NA
	Arsenic	-	0.01	NA	<0.0100	NA	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	NA	<0.0100	NA	NA
	Arsenic, Dissolved	-	0.01	NA	NA	NA	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	NA	<0.0100	NA	NA
	Barium	-	2.0	0.046	0.096	NA	0.0945	0.0989	0.141	0.0894	0.0871	0.128	0.119	0.127	NA	0.0674	NA	NA
	Barium, Dissolved	-	2.0	NA	NA	NA	0.0958	0.101	0.134	0.0920	0.0886	0.132	0.118	0.123	NA	0.0671	NA	NA
	Beryllium	-	0.004	NA	NA	NA	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	NA	<0.00200	NA	NA
	Beryllium, Dissolved	-	0.004	NA	<0.00200	NA	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	NA	<0.00200	NA	NA
	Boron	-	0.75	NA	NA	NA	0.274	0.296	0.328	0.310	0.317	0.378	0.337	0.376	NA	0.322	NA	NA
	Boron, Dissolved	-	0.75	NA	NA	NA	0.256	0.265	0.318	0.279	0.297	0.344	0.310	0.342	NA	0.294	NA	NA
	Cadmium	-	0.005	NA	NA	NA	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	NA	<0.00200	NA	NA
	Cadmium, Dissolved	-	0.005	NA	NA	NA	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	NA	<0.00200	NA	NA
	Calcium	-	0.005	40	140	NA	165	155	156	158	160	182	154	155	NA	154	NA	NA
	Calcium, Dissolved	-	0.005	NA	NA	NA	170	160	163	159	165	188	160	161	NA	160	NA	NA
	Chromium	-	0.1	0.00038	0.0035	NA	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	NA	<0.0100	NA	NA
	Chromium, Dissolved	-	0.1	NA	NA	NA	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	NA	<0.0100	NA	NA
	Cobalt	-	-	NA	NA	NA	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	NA	<0.0100	NA	NA
	Cobalt, Dissolved	-	-	NA	NA	NA	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	NA	<0.0100	NA	NA
	Copper	-	1.0	NA	NA	NA	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	NA	<0.0100	NA	NA
	Copper, Dissolved	-	1.0	NA	NA	NA	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	NA	<0.0100	NA	NA
	Iron	-	0.3	0.031	3.2	NA	<0.100	<0.100	0.104	<0.100	0.107	<0.100	0.959	0.737	NA	<0.100	NA	NA
	Iron, Dissolved	-	0.3	NA	NA	NA	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	NA	<0.100	NA	NA
	Lead	-	0.05	0.0006	0.0018	NA	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	NA	<0.00500	NA	NA
	Lead, Dissolved	-	0.05	NA	NA	NA	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	NA	<0.00500	NA	NA
	Magnesium	-	-	8.7	53	NA	47.7	52.3	57.1	53.0	56.9	65.1	58.7	56.5	NA	54.4	NA	NA
	Magnesium, Dissolved	-	-	NA	NA	NA	49.2	54.2	60.2	55.7	59.5	67.8	59.0	60.8	NA	56.9	NA	NA
	Manganese	-	0.05	0.034	0.29	NA	<0.0100	0.119	0.190	<0.0100	0.371	0.0149	0.885	1.44	NA	<0.0100	NA	NA
	Manganese, Dissolved	-	0.05	NA	NA	NA	<0.0100	0.126	0.163	<0.0100	0.375	0.0101	0.928	1.43	NA	<0.0100	NA	NA
	Molybdenum	-	0.21	NA	NA	NA	0.00626	0.00730	0.00503	<0.00500	0.00547	0.00522	0.00635	0.0111	NA	<0.00500	NA	NA
	Molybdenum, Dissolved	-	0.21	NA	NA	NA	0.00590	0.00618	0.00560	<0.00500	0.00548	<0.00500	0.00615	0.0111	NA	<0.00500	NA	NA
	Nickel	-	0.1	NA	NA	NA	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	NA	<0.0100	NA	NA
	Nickel, Dissolved	-	0.1	NA	NA	NA	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	NA	<0.0100	NA	NA
	Phosphorus	-	-	NA	NA	NA	0.269	0.123	<0.100	0.116	<0.100	<0.100	<0.100	<0.100	NA	0.518	NA	NA
	Potassium	-	-	2.20	7.90	NA	6.30	7.65	9.08	15.0	9.36	22.5	18.5	77.3	NA	34.1	NA	NA
	Potassium, Dissolved	-	-	NA	NA	NA	6.85	8.42	9.95	16.1	10.2	23.9	20.0	79.3	NA	32.7	NA	NA
	Selenium	-	0.05	0.00012	0.002	NA	<0.0100	<0.0100	0.0151	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	NA	<0.0100	NA	NA
	Selenium, Dissolved	-	0.05	NA	NA	NA	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	NA	<0.0100	NA	NA
	Silver	-	0.05	NA	NA	NA	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	NA	<0.00500	NA	NA
	Silver, Dissolved	-	0.05	NA	NA	NA	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	NA	<0.00500	NA	NA
	Sodium	-	-	140	140	NA	140	142	148	132	147	152	142	141	NA	138	NA	NA
	Sodium, Dissolved	-	-	NA	NA	NA	146	149	161	140	155	159	150	149	NA	145	NA	NA
	Strontium	-	-	NA	NA	NA	1.59	1.60	1.71	1.62	1.65	1.89	1.71	1.69	NA	1.59	NA	NA
	Sulfur	-	-	NA	NA	NA	100	102	110	111	103	115	94.4	101	NA	108	NA	NA
	Sulfur, Dissolved	-	-	NA	NA	NA	105	105	111	106	106	130	97.4	111	NA	106	NA	NA
	Thallium	-	0.002	NA	NA	NA	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	NA	<0.0100	NA	NA
	Thallium, Dissolved	-	0.002	NA	NA	NA	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	NA	<0.0100	NA	NA
	Tin	-	-	NA	NA	NA	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	NA	<0.0500	NA	NA
	Tin, Dissolved	-	-	NA	NA	NA	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	NA	<0.0500	NA	NA
	Titanium	-	-	NA	NA	NA	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	NA	<0.0500	NA	NA
	Titanium, Dissolved	-	-	NA	NA	NA	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	NA	<0.0500	NA	NA
	Vanadium	-	-	NA	NA	NA	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	NA	<0.0200	NA	NA
	Vanadium, Dissolved	-	-	NA	NA	NA	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	NA	<0.0200	NA	NA
	Zinc	-	5.0	NA	NA	NA	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	NA	<0.0500	NA	NA
	Zinc, Dissolved	-	5.0	NA	NA	NA	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	NA	<0.0500	NA	NA

Notes:

1. Groundwater standards referenced from 2 CCR 404-1, Table 910-1, effective May 1, 2018.  
2. Domestic Water Supply - Human Health Standards referenced from Water Quality Control Commission (WQCC) 5 CCR 1002-41, Basic Standards for Groundwater, effective December 30, 2016.  
3. Water samples collected using the existing pump infrastructure by the COGCC. Samples collected from the deep well (# 202929-A) located adjacent to the residence and the shallow well (# 276778) located adjacent to the outbuilding.  
4. Groundwater sample collected from open excavation area following ex-situ chemical oxidation remediation activities.

COGCC = Colorado Oil and Gas Conservation Commission

CDPHE = Colorado Department of Public Health and Environment

mg/L = Milligrams per liter

Secondary Standard - Drinking Water

Agricultural Standard

NA = Constituent not analyzed

T8 = Laboratory qualifier - Samples received past/too close to holding time expiration.

(<) = Analytical result is less than the indicated laboratory reporting limit.

**BOLD</**

## **ATTACHMENT A**





6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: PDC Energy Inc.

LOGGED BY: Brock Nelson

PROJECT MANAGER: Christine Hamlin

DRILLING CONTRACTOR: Site Services LLC

DRILLING EQUIPMENT: CME 75

DRILL BIT SIZE (INCHES): 8.25"

DATE STARTED - COMPLETED: 10/17/2018

TOTAL WELL DEPTH (FT. BGS): 27

DEPTH TO WATER (FT. BGS): 12.5

Sitzman 1U

BORING / WELL ID: BH01

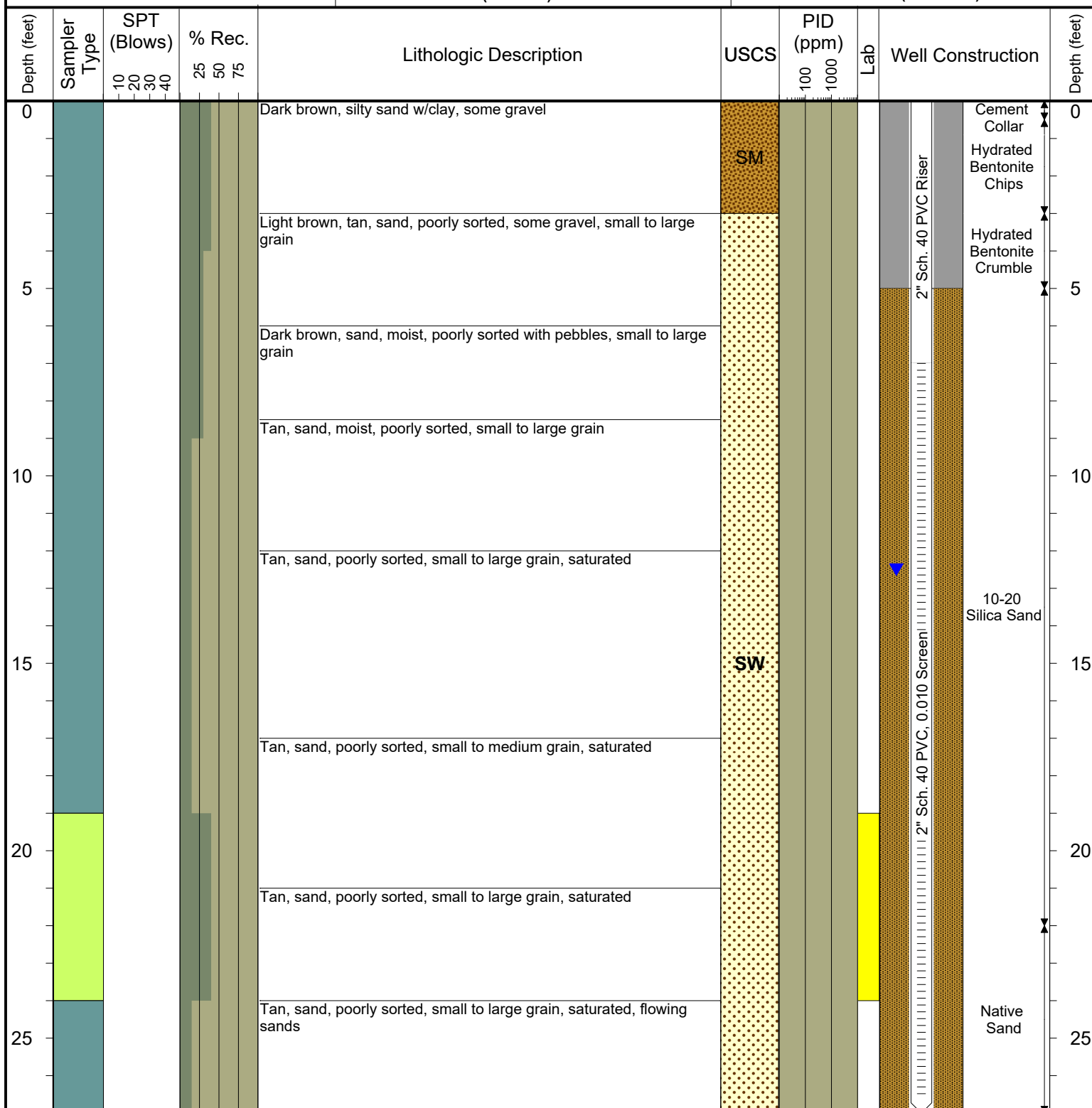
LOCATION: Greeley, CO

NORTHING (CO STATE PLANE): 4468829.9

EASTING (CO STATE PLANE): 529012.7

CASING ELEVATION (FT. AMSL): 4652.93

GROUND ELEVATION (FT. AMSL): 4653.31



Drilling / Sample Method:

Solid Stem Auger

Hollow Stem Auger

Split Spoon Sampler

CME Continuous Sample Tube

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: PDC Energy Inc.

LOGGED BY: Brock Nelson

PROJECT MANAGER: Christine Hamlin

DRILLING CONTRACTOR: Site Services LLC

DRILLING EQUIPMENT: CME 75

DRILL BIT SIZE (INCHES): 8.25"

DATE STARTED - COMPLETED: 10/17/2018

TOTAL WELL DEPTH (FT. BGS): 27

DEPTH TO WATER (FT. BGS): 12.5

Sitzman 1U

BORING / WELL ID: BH02

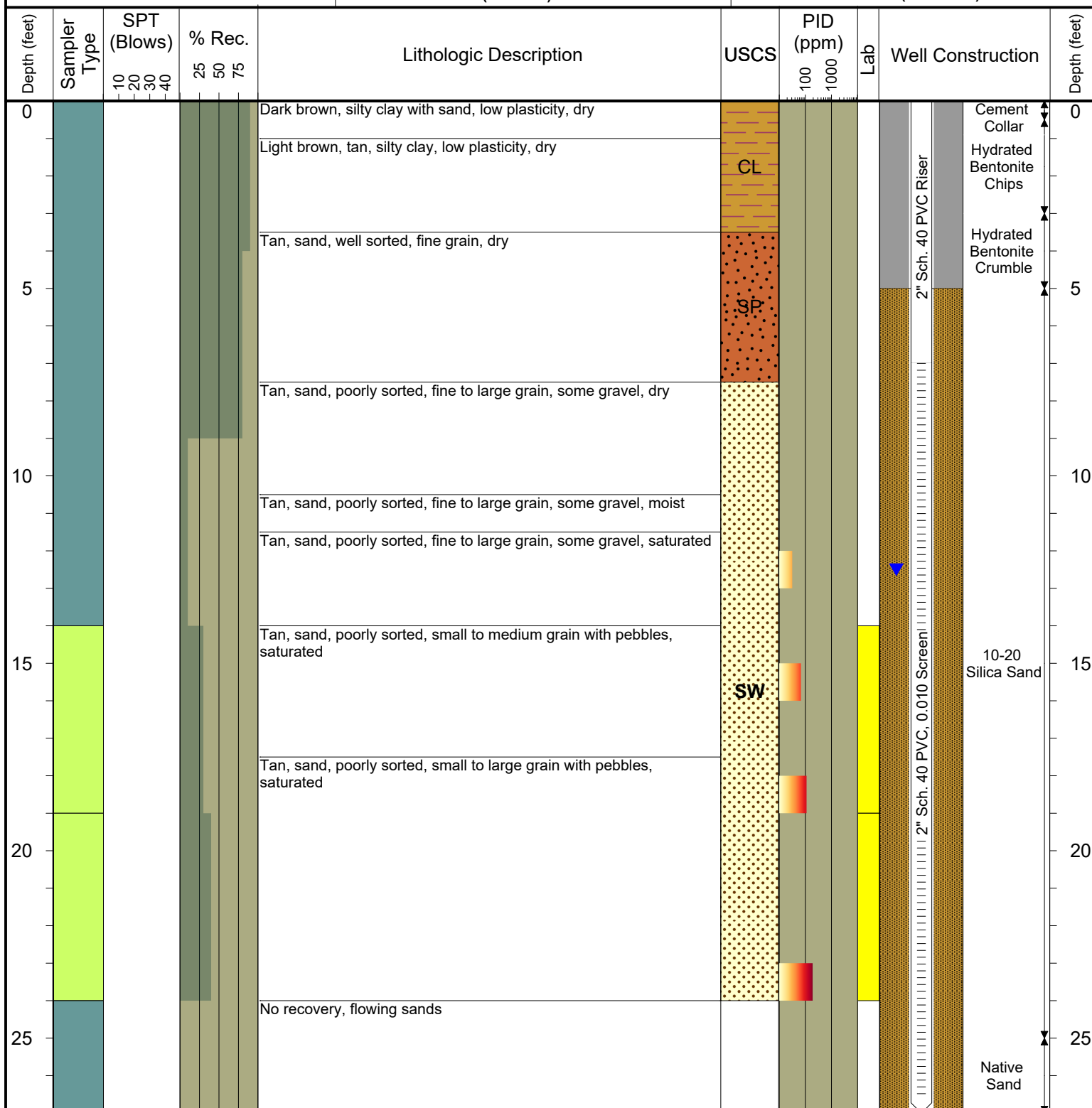
LOCATION: Greeley, CO

NORTHING (CO STATE PLANE): 4468827.5

EASTING (CO STATE PLANE): 529044.7

CASING ELEVATION (FT. AMSL): 4653.07

GROUND ELEVATION (FT. AMSL): 4653.33



**Drilling / Sample Method:**

Solid Stem Auger

Hollow Stem Auger

Split Spoon Sampler

CME Continuous Sample Tube

**Laboratory Sample Types:**

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab





6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: PDC Energy Inc.

LOGGED BY: Brock Nelson

PROJECT MANAGER: Christine Hamlin

DRILLING CONTRACTOR: Site Services LLC

DRILLING EQUIPMENT: CME 75

DRILL BIT SIZE (INCHES): 8.25"

DATE STARTED - COMPLETED: 10/17/2018

TOTAL WELL DEPTH (FT. BGS): 27

DEPTH TO WATER (FT. BGS): 12.5

Sitzman 1U

BORING / WELL ID: BH03

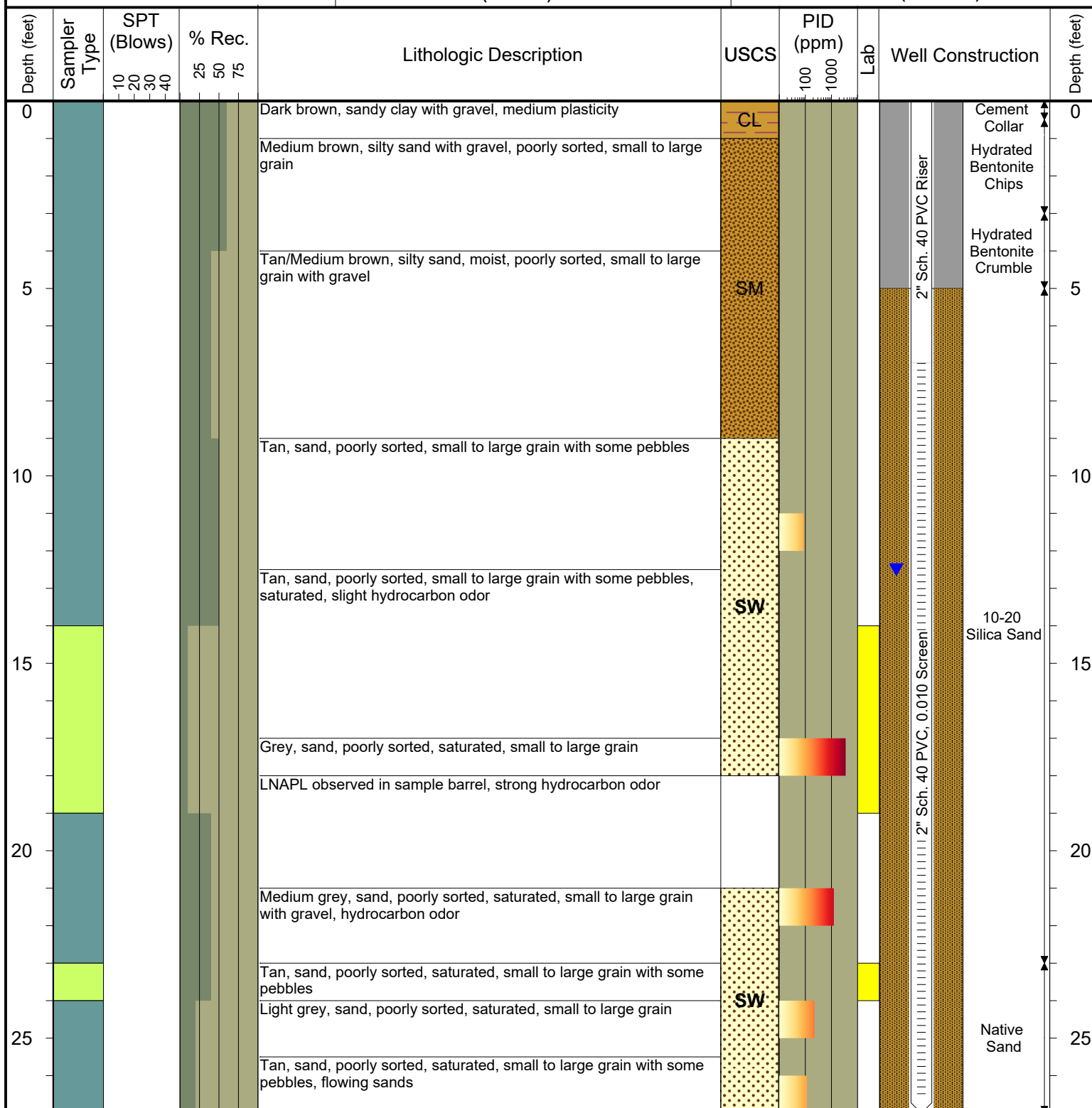
LOCATION: Greeley, CO

NORTHING (CO STATE PLANE): 4468836.5

EASTING (CO STATE PLANE): 529059

CASING ELEVATION (FT. AMSL): 4652.27

GROUND ELEVATION (FT. AMSL): 4652.41



Drilling / Sample Method:

Solid Stem Auger  
Hollow Stem Auger

Split Spoon Sampler

CME Continuous Sample Tube

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: PDC Energy Inc.

LOGGED BY: Brock Nelson

PROJECT MANAGER: Christine Hamlin

DRILLING CONTRACTOR: Site Services LLC

DRILLING EQUIPMENT: CME 75

DRILL BIT SIZE (INCHES): 8.25"

DATE STARTED - COMPLETED: 10/17/2018

TOTAL WELL DEPTH (FT. BGS): 27

DEPTH TO WATER (FT. BGS): 12

Sitzman 1U

BORING / WELL ID: BH04

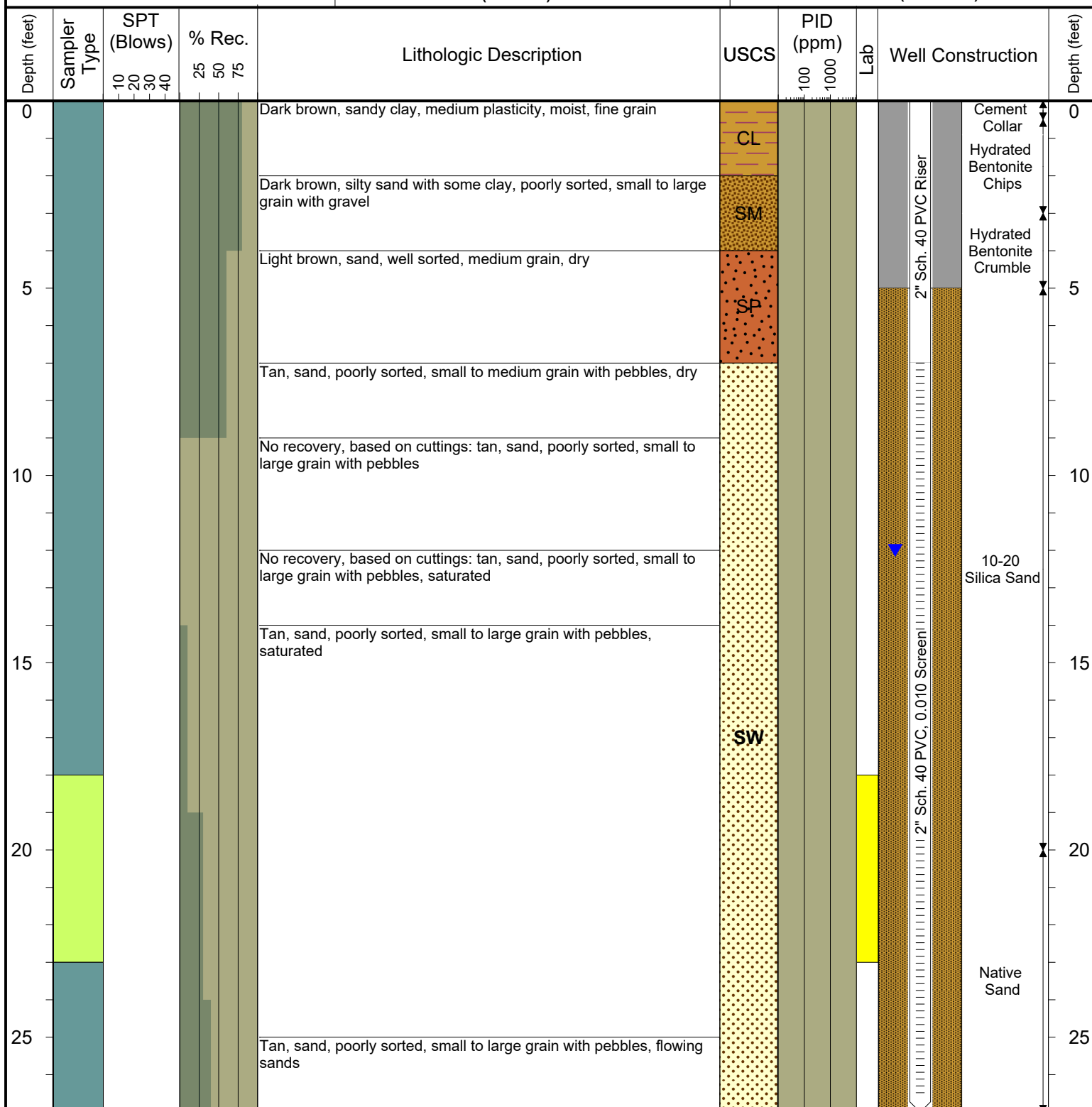
LOCATION: Greeley, CO

NORTHING (CO STATE PLANE): 4468851.4

EASTING (CO STATE PLANE): 529061

CASING ELEVATION (FT. AMSL): 4652.97

GROUND ELEVATION (FT. AMSL): 4653.31



Drilling / Sample Method:

Solid Stem Auger  
 Hollow Stem Auger

Split Spoon Sampler

CME Continuous Sample Tube

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: PDC Energy Inc.

LOGGED BY: Brock Nelson

PROJECT MANAGER: Christine Hamlin

DRILLING CONTRACTOR: Site Services LLC

DRILLING EQUIPMENT: CME 75

DRILL BIT SIZE (INCHES): 8.25"

DATE STARTED - COMPLETED: 10/18/2018

TOTAL WELL DEPTH (FT. BGS): 27

DEPTH TO WATER (FT. BGS): 13

Sitzman 1U

BORING / WELL ID: BH05

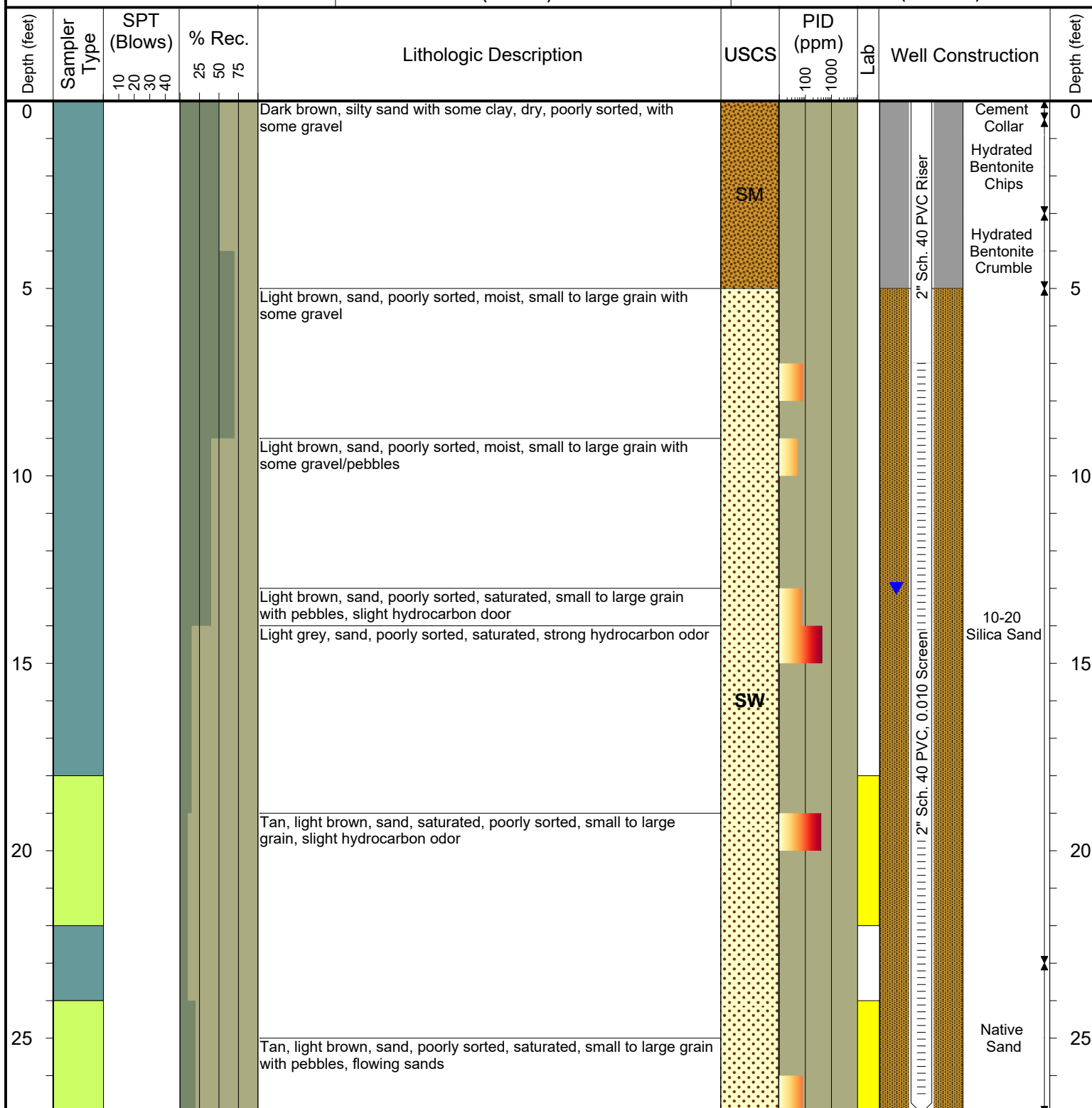
LOCATION: Greeley, CO

NORTHING (CO STATE PLANE): 4468827

EASTING (CO STATE PLANE): 529065.9

CASING ELEVATION (FT. AMSL): 4652.14

GROUND ELEVATION (FT. AMSL): 4652.39



Drilling / Sample Method:

Solid Stem Auger  
Hollow Stem Auger

Split Spoon Sampler

CME Continuous Sample Tube

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: PDC Energy Inc.

LOGGED BY: Brock Nelson

PROJECT MANAGER: Christine Hamlin

DRILLING CONTRACTOR: Site Services LLC

DRILLING EQUIPMENT: CME 75

DRILL BIT SIZE (INCHES): 8.25"

DATE STARTED - COMPLETED: 10/18/2018

TOTAL WELL DEPTH (FT. BGS): 27

DEPTH TO WATER (FT. BGS): 12

Sitzman 1U

BORING / WELL ID: BH06

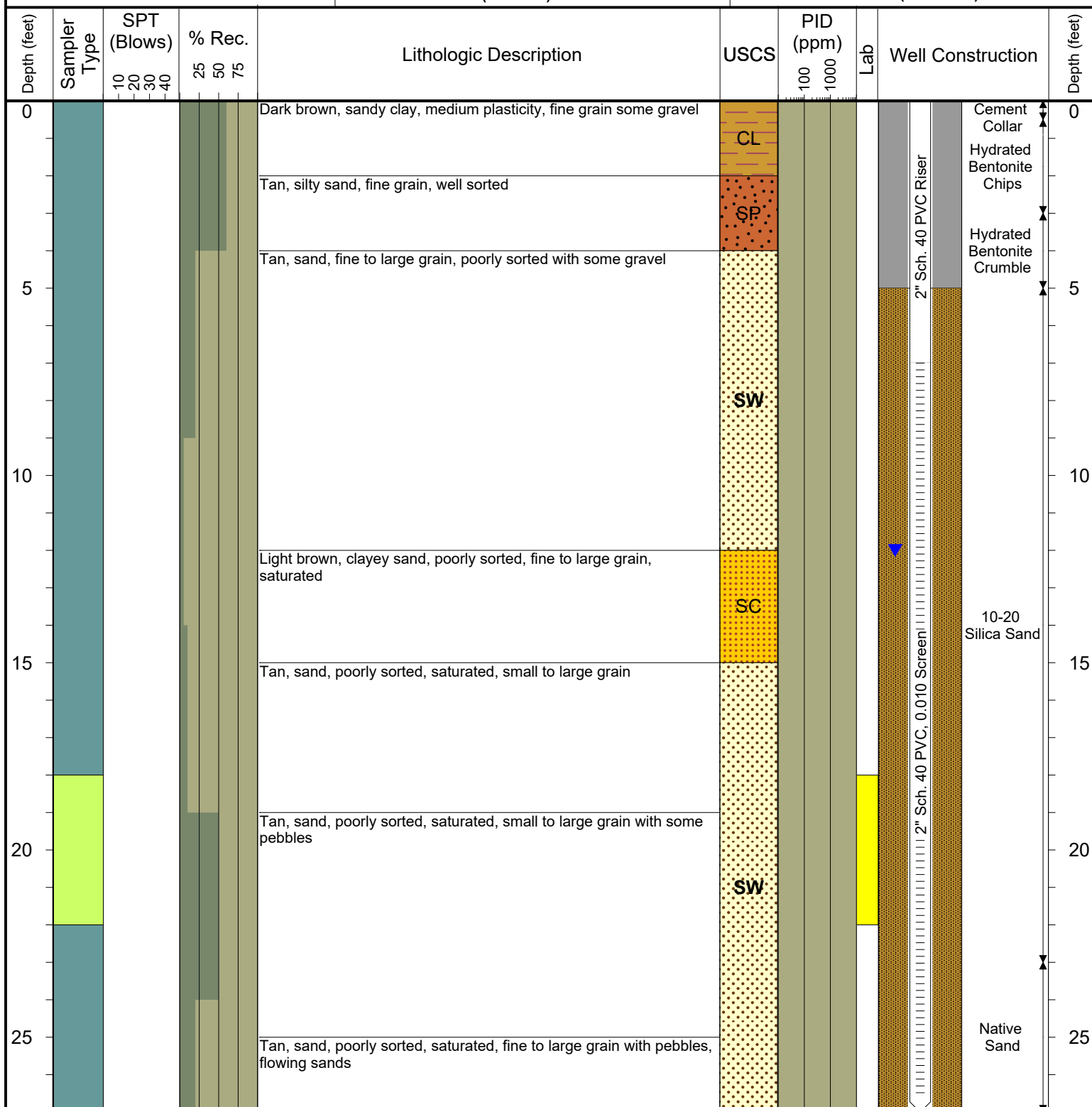
LOCATION: Greeley, CO

NORTHING (CO STATE PLANE): 4468858.7

EASTING (CO STATE PLANE): 529075.9

CASING ELEVATION (FT. AMSL): 4652.03

GROUND ELEVATION (FT. AMSL): 4652.07



Drilling / Sample Method:

Solid Stem Auger

Hollow Stem Auger

Split Spoon Sampler

CME Continuous Sample Tube

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab





6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: PDC Energy Inc.

LOGGED BY: Brock Nelson

PROJECT MANAGER: Christine Hamlin

DRILLING CONTRACTOR: Site Services LLC

DRILLING EQUIPMENT: CME 75

DRILL BIT SIZE (INCHES): 8.25"

DATE STARTED - COMPLETED: 10/18/2018

TOTAL WELL DEPTH (FT. BGS): 27

DEPTH TO WATER (FT. BGS): 14

Sitzman 1U

BORING / WELL ID: BH07

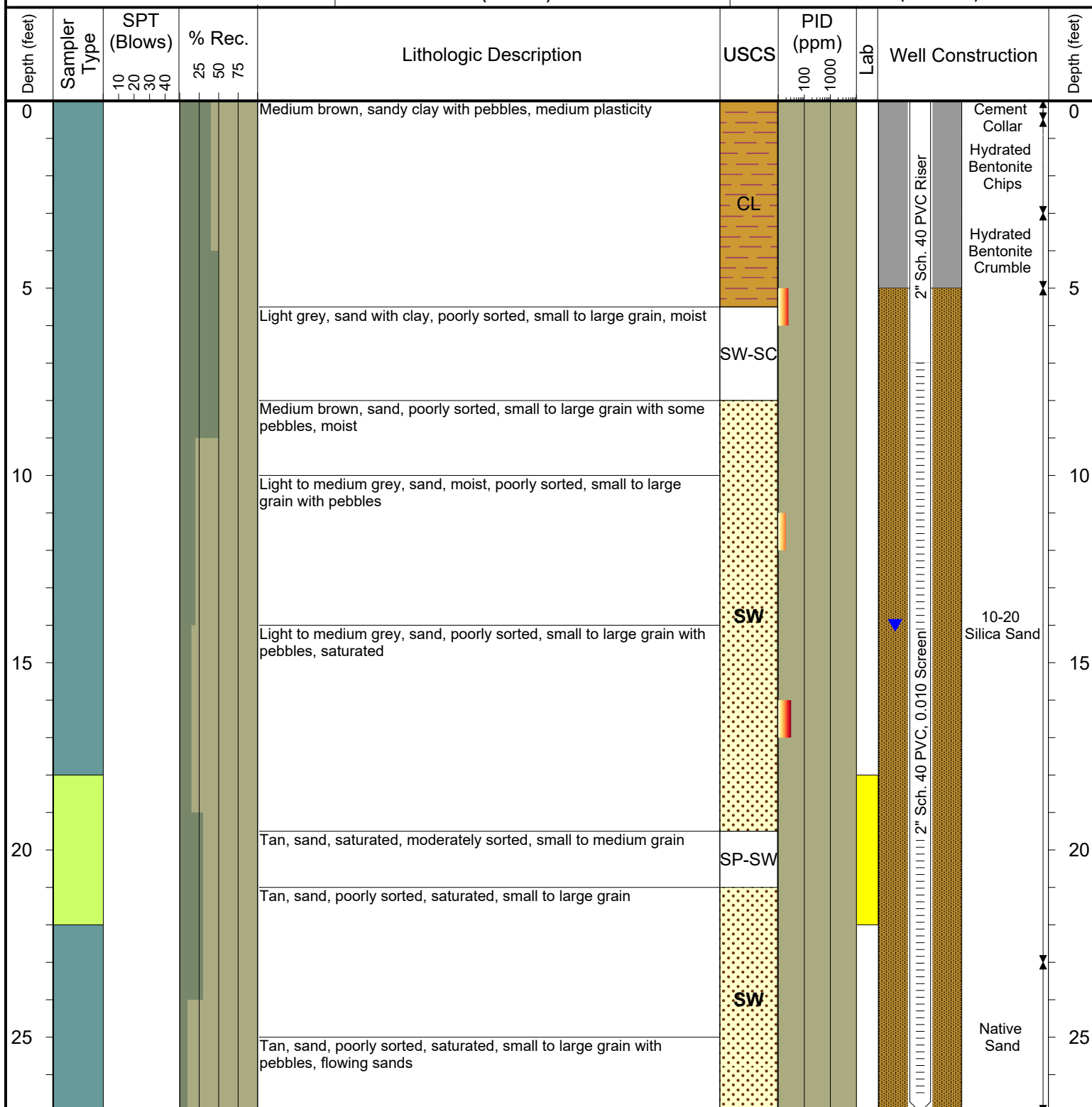
LOCATION: Greeley, CO

NORTHING (CO STATE PLANE): 4468836.2

EASTING (CO STATE PLANE): 529081.1

CASING ELEVATION (FT. AMSL): 4652

GROUND ELEVATION (FT. AMSL): 4652.05



Drilling / Sample Method:

Solid Stem Auger

Hollow Stem Auger

Split Spoon Sampler

CME Continuous Sample Tube

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: PDC Energy Inc.

LOGGED BY: Brock Nelson

PROJECT MANAGER: Christine Hamlin

DRILLING CONTRACTOR: Site Services LLC

DRILLING EQUIPMENT: CME 75

DRILL BIT SIZE (INCHES): 8.25"

DATE STARTED - COMPLETED: 10/18/2018

TOTAL WELL DEPTH (FT. BGS): 27

DEPTH TO WATER (FT. BGS): 13.5

Sitzman 1U

BORING / WELL ID: BH08

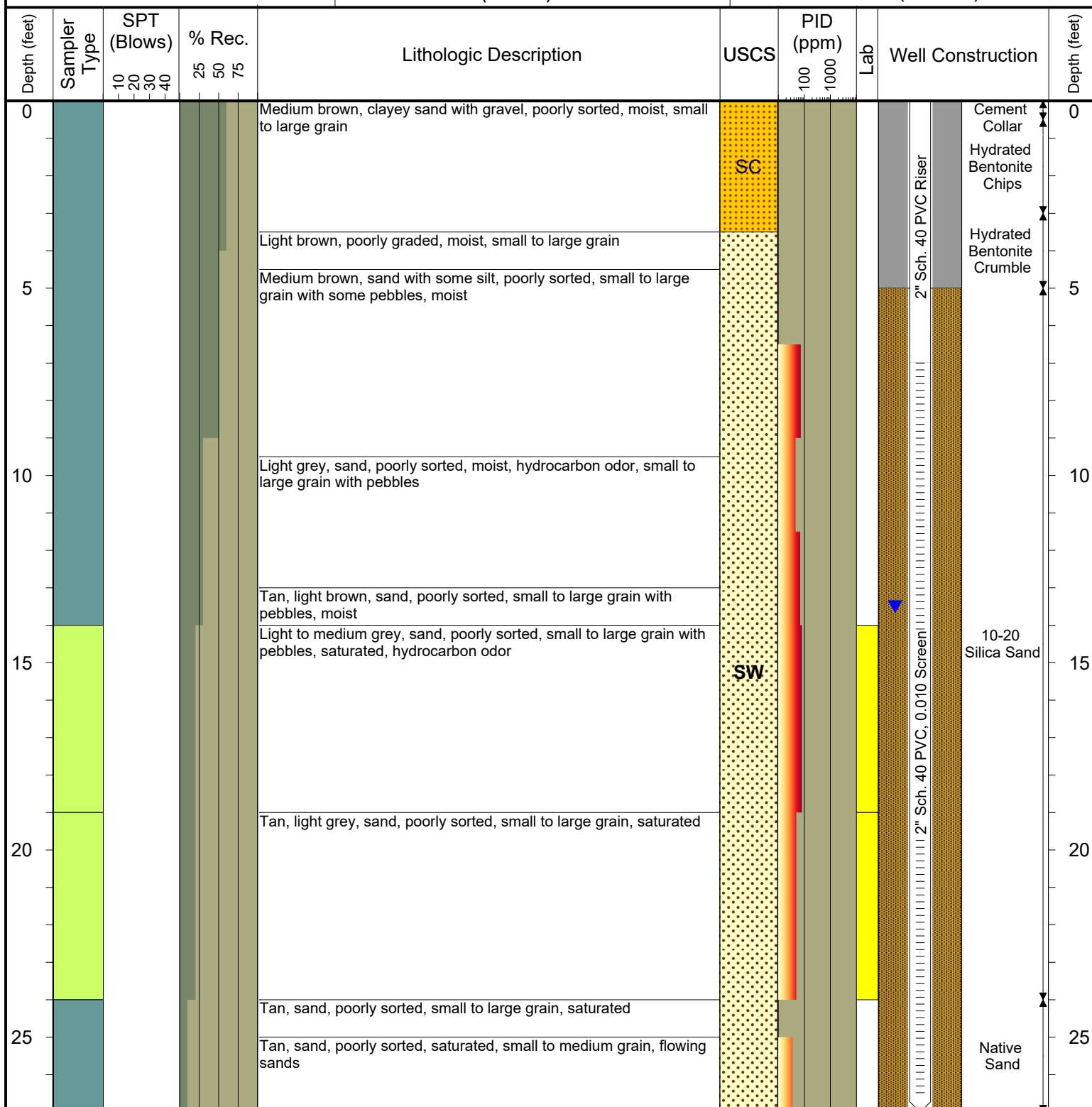
LOCATION: Greeley, CO

NORTHING (CO STATE PLANE): 4468826.2

EASTING (CO STATE PLANE): 529085.7

CASING ELEVATION (FT. AMSL): 4651.63

GROUND ELEVATION (FT. AMSL): 4651.97



Drilling / Sample Method:

Solid Stem Auger

Hollow Stem Auger

Split Spoon Sampler

CME Continuous Sample Tube

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: PDC Energy Inc.

LOGGED BY: Brock Nelson

PROJECT MANAGER: Christine Hamlin

DRILLING CONTRACTOR: Site Services LLC

DRILLING EQUIPMENT: CME 75

DRILL BIT SIZE (INCHES): 8.25"

DATE STARTED - COMPLETED: 10/19/2018

TOTAL WELL DEPTH (FT. BGS): 27

DEPTH TO WATER (FT. BGS): 12.5

Sitzman 1U

BORING / WELL ID: BH09

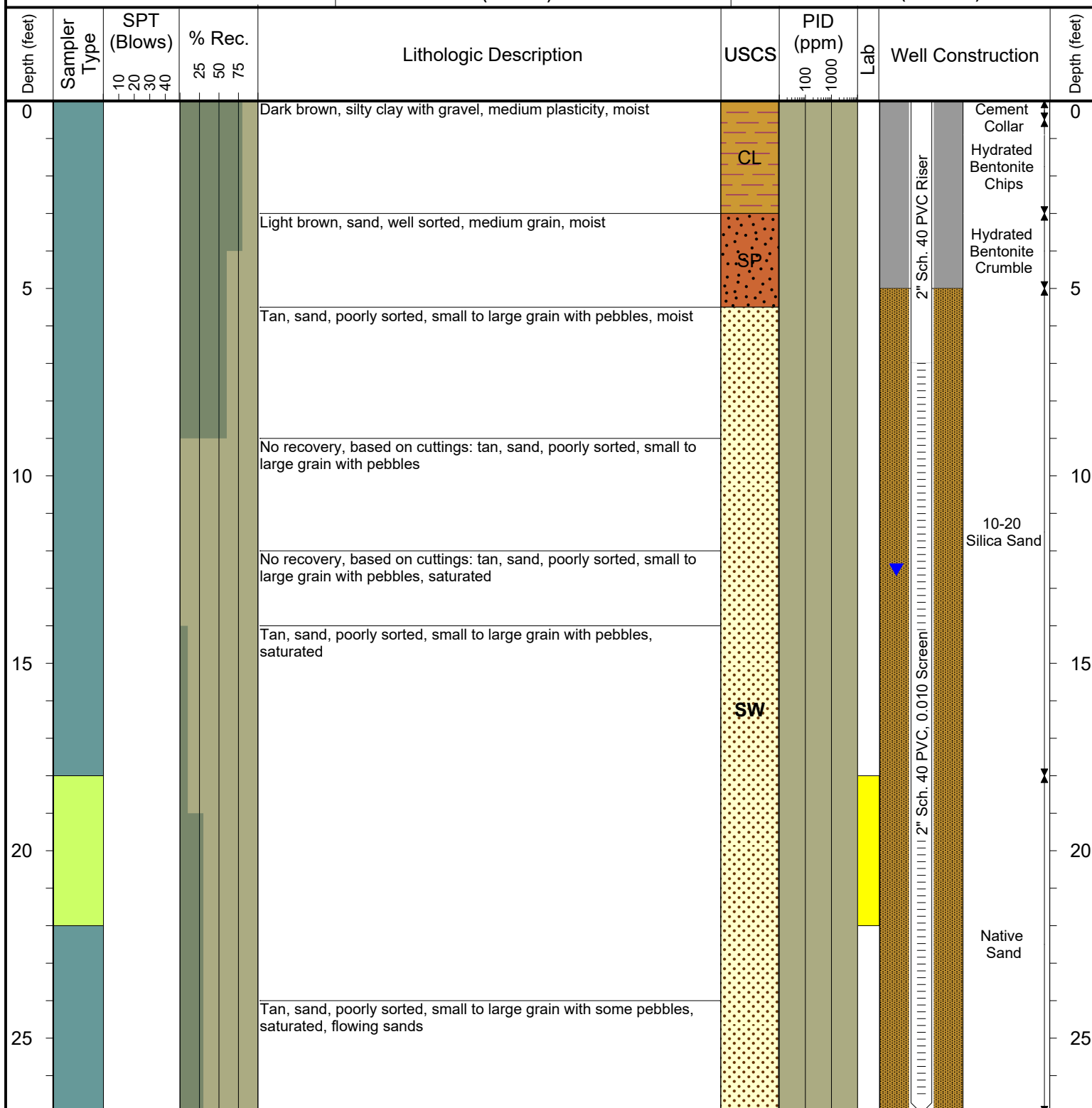
LOCATION: Greeley, CO

NORTHING (CO STATE PLANE): 4468808.3

EASTING (CO STATE PLANE): 529073.2

CASING ELEVATION (FT. AMSL): 4652.32

GROUND ELEVATION (FT. AMSL): 4652.47



Drilling / Sample Method:

Solid Stem Auger

Hollow Stem Auger

Split Spoon Sampler

CME Continuous Sample Tube

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: PDC Energy Inc.

LOGGED BY: Brock Nelson

PROJECT MANAGER: Christine Hamlin

DRILLING CONTRACTOR: Site Services LLC

DRILLING EQUIPMENT: CME 75

DRILL BIT SIZE (INCHES): 8.25"

DATE STARTED - COMPLETED: 10/19/2018

TOTAL WELL DEPTH (FT. BGS): 27

DEPTH TO WATER (FT. BGS): 12

Sitzman 1U

BORING / WELL ID: BH10

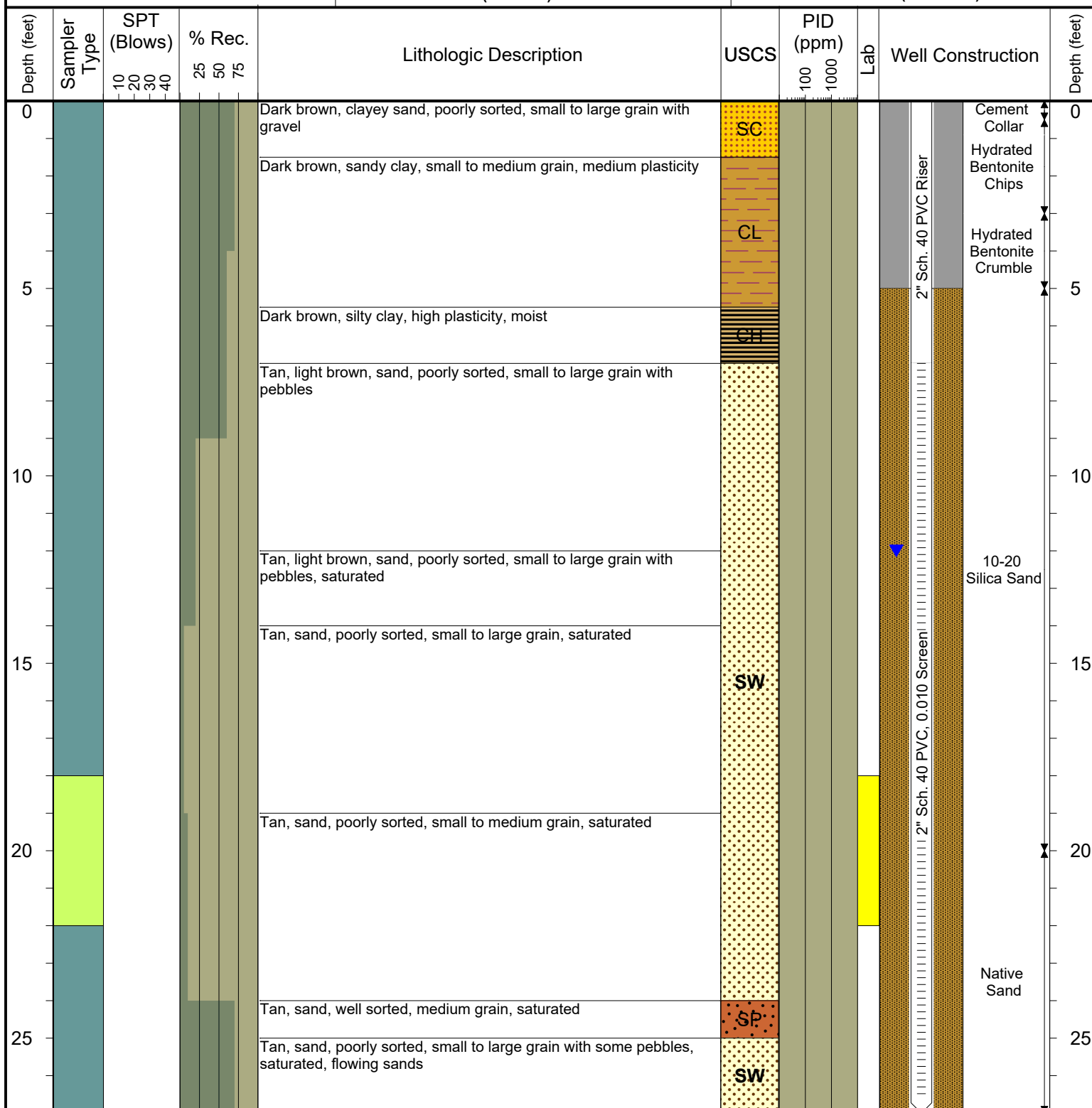
LOCATION: Greeley, CO

NORTHING (CO STATE PLANE): 4468851.9

EASTING (CO STATE PLANE): 529097.1

CASING ELEVATION (FT. AMSL): 4652.39

GROUND ELEVATION (FT. AMSL): 4652.55



Drilling / Sample Method:

Solid Stem Auger  
Hollow Stem Auger

Split Spoon Sampler

CME Continuous Sample Tube

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: PDC Energy Inc.

LOGGED BY: Brock Nelson

PROJECT MANAGER: Christine Hamlin

DRILLING CONTRACTOR: Site Services LLC

DRILLING EQUIPMENT: CME 75

DRILL BIT SIZE (INCHES): 8.25"

DATE STARTED - COMPLETED: 10/19/2018

TOTAL WELL DEPTH (FT. BGS): 27

DEPTH TO WATER (FT. BGS): 12.5

Sitzman 1U

BORING / WELL ID: BH11

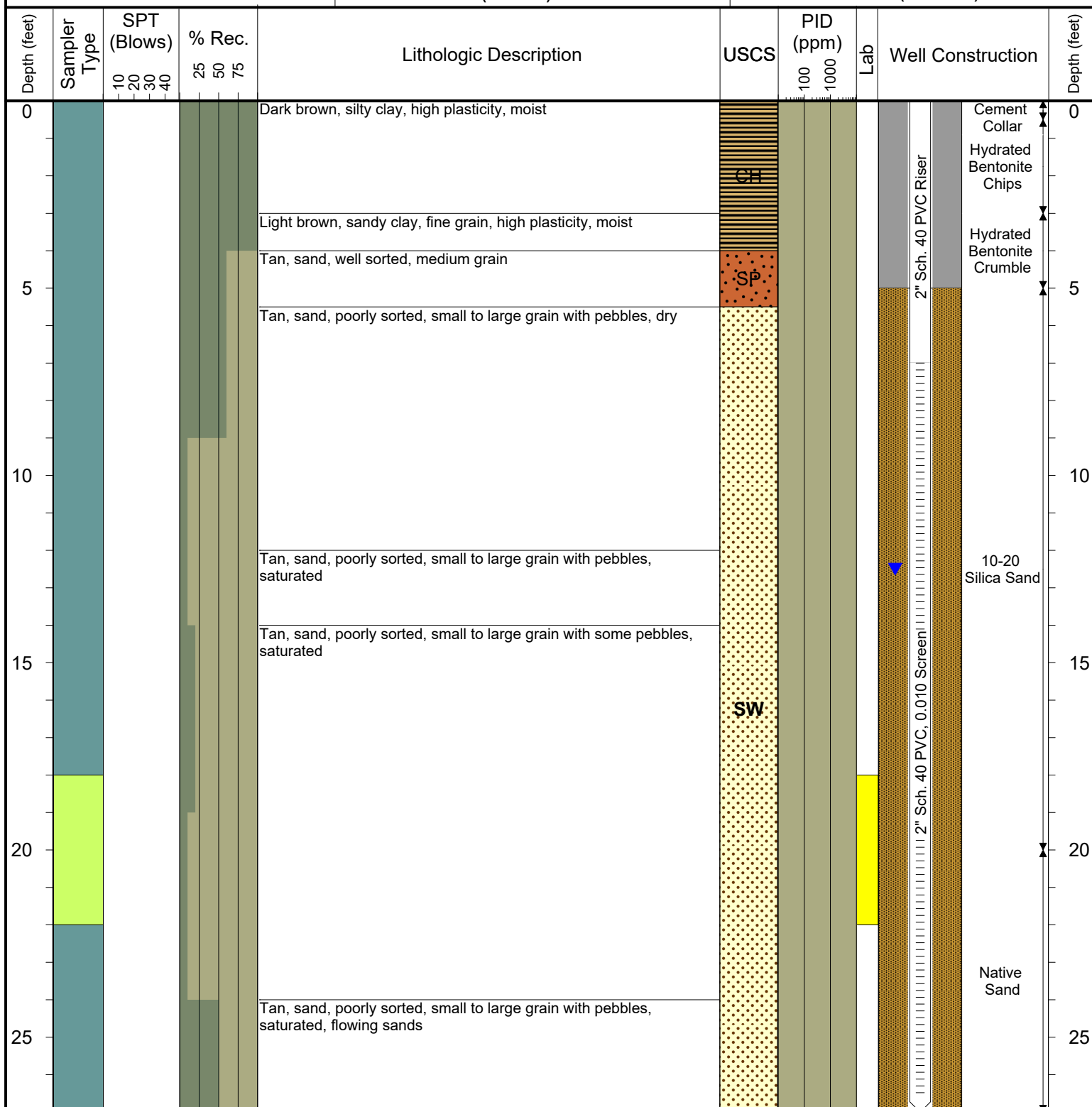
LOCATION: Greeley, CO

NORTHING (CO STATE PLANE): 4468826.7

EASTING (CO STATE PLANE): 529101.1

CASING ELEVATION (FT. AMSL): 4652.03

GROUND ELEVATION (FT. AMSL): 4652.38



Drilling / Sample Method:

Solid Stem Auger  
 Hollow Stem Auger

Split Spoon Sampler

CME Continuous Sample Tube

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab





6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: PDC Energy Inc.

LOGGED BY: Brock Nelson

PROJECT MANAGER: Christine Hamlin

DRILLING CONTRACTOR: Site Services LLC

DRILLING EQUIPMENT: CME 75

DRILL BIT SIZE (INCHES): 8.25"

DATE STARTED - COMPLETED: 10/19/2018

TOTAL WELL DEPTH (FT. BGS): 27

DEPTH TO WATER (FT. BGS): 12

Sitzman 1U

BORING / WELL ID: BH12

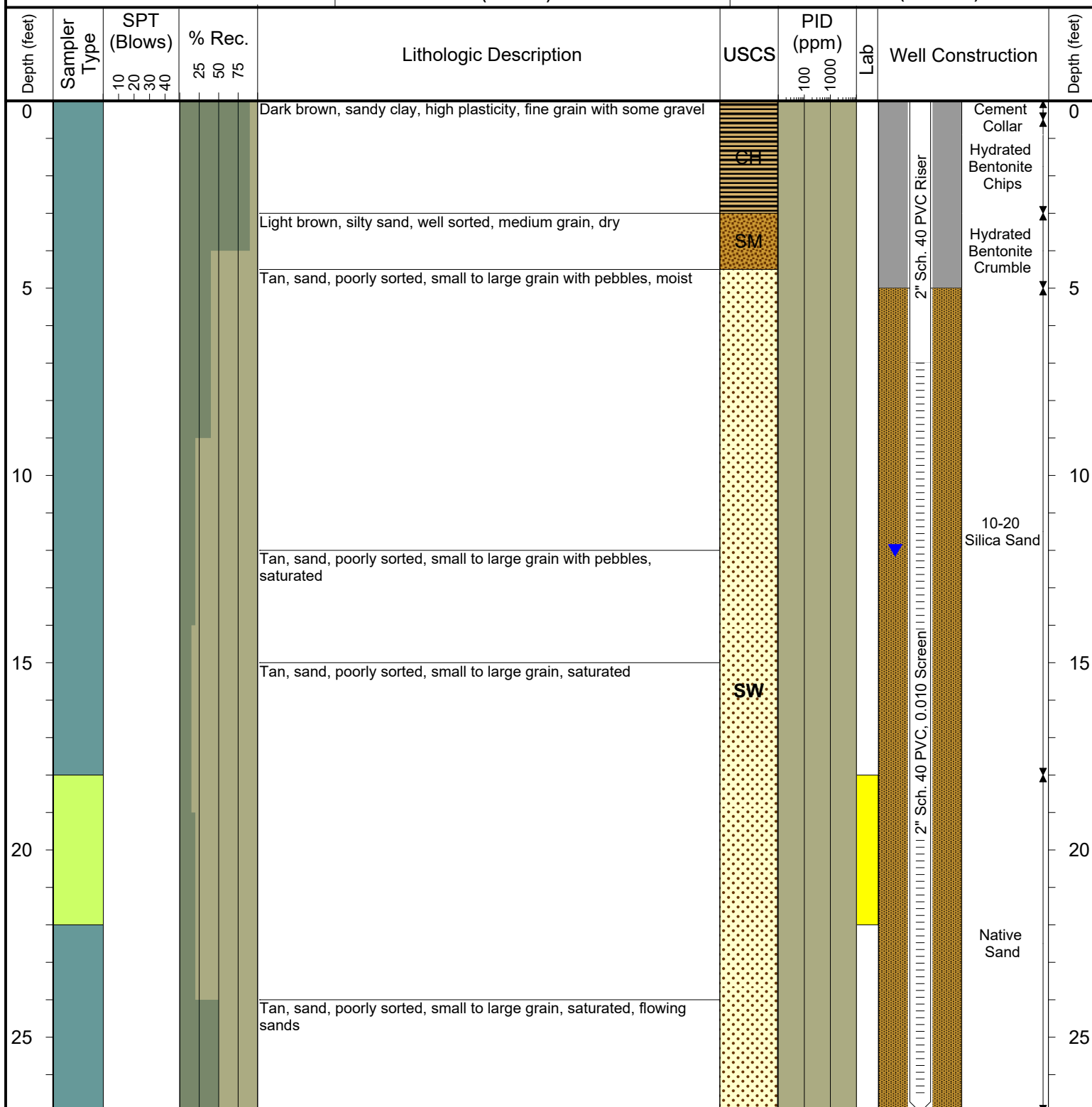
LOCATION: Greeley, CO

NORTHING (CO STATE PLANE): 4468811.6

EASTING (CO STATE PLANE): 529096.7

CASING ELEVATION (FT. AMSL): 4652.17

GROUND ELEVATION (FT. AMSL): 4652.29



Drilling / Sample Method:

Solid Stem Auger  
 Hollow Stem Auger

Split Spoon Sampler

CME Continuous Sample Tube

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab

## **ATTACHMENT B**

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 22, 2018

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Sitzman 1U

Enclosed are the results of analyses for samples received by Summit Scientific on 10/19/18 18:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to be 'P. Shrewsbury', written in a cursive style.

Paul Shrewsbury For Ben Shrewsbury

Laboratory Manager



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Sitzman 1U

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
10/22/18 07:30

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01@19-24'	1810257-01	Soil	10/17/18 09:47	10/19/18 18:20
BH03@14-19'	1810257-02	Soil	10/17/18 12:37	10/19/18 18:20
BH02@14-19'	1810257-03	Soil	10/17/18 15:02	10/19/18 18:20
BH02@19-24'	1810257-04	Soil	10/17/18 15:11	10/19/18 18:20
BH05@18-22'	1810257-05	Soil	10/18/18 09:01	10/19/18 18:20
BH05@24-27'	1810257-06	Soil	10/18/18 09:14	10/19/18 18:20
BH08@19-24'	1810257-07	Soil	10/18/18 11:27	10/19/18 18:20
BH08@14-19'	1810257-08	Soil	10/18/18 11:12	10/19/18 18:20
BH07@18-22'	1810257-09	Soil	10/18/18 14:04	10/19/18 18:20
BH06@18-22'	1810257-10	Soil	10/18/18 16:01	10/19/18 18:20
BH10@18-22'	1810257-11	Soil	10/19/18 08:36	10/19/18 18:20
BH04@18-22'	1810257-12	Soil	10/19/18 10:11	10/19/18 18:20
BH11@18-22'	1810257-13	Soil	10/19/18 11:39	10/19/18 18:20
BH12@18-22'	1810257-14	Soil	10/19/18 13:02	10/19/18 18:20
BH09@18-22'	1810257-15	Soil	10/19/18 14:46	10/19/18 18:20
BH03@23-24'	1810257-16	Soil	10/17/18 12:49	10/19/18 18:20

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

# Summit Scientific

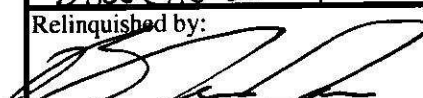
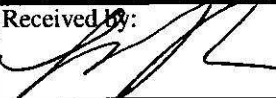
1810252.1

741 Corporate Circle Suite I ♦ Golden, Colorado 80401  
303-277-9310 ♦ 303-374-5933 Fax

Page 1 of 2

Client: PDC  
Address: \_\_\_\_\_  
City/State/Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
Sampler Name: Brock Nelson

Project Manager: Mark Longhurst  
E-Mail: Mark.Longhurst@pdce.com  
Project Name: Sitzman 20  
Project Number: \_\_\_\_\_

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix		Analyze For:										Special Instructions				
				HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	STEX 8260	TPH-620 8260	TPH-Deo 8015										
BH01 @ 19-24'	10/17/18	947	1			X			X				X	X	X									
BH03 @ 14-19'		1237	1			X			X				X	X	X									
BH02 @ 14-19'		1502	1			X			X				X	X	X									
BH02 @ 19-24'		1511	1			X			X				X	X	X									
BH05 @ 18-22'	10/18/18	901	1			X			X				X	X	X									
BH05 @ 24-27'		914	1			X			X				X	X	X									
BH08 @ 19-24'		1127	1			X			X				X	X	X									
BH08 @ 14-19'		1112	1			X			X				X	X	X									
BH07 @ 18-22'		1402	1			X			X				X	X	X									
BH06 @ 18-22'		1601	1			X			X				X	X	X									
Relinquished by: 				Date/Time: 10/19/18 1630		Received by: 				Date/Time: 10.19.18 1820		Turn Around Time (Check)												
Relinquished by:				Date/Time:		Received by:				Date/Time:		Same Day <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/>												
Relinquished by:				Date/Time:		Received by:				Date/Time:		24 Hours <input type="checkbox"/> Standard <input type="checkbox"/>												
Relinquished by:				Date/Time:		Received in Lab by:				Date/Time:		Sample Integrity:												
Relinquished by:				Date/Time:		Received in Lab by:				Date/Time:		Temperature Upon Receipt: 8.9												
Relinquished by:				Date/Time:		Received in Lab by:				Date/Time:		Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>												

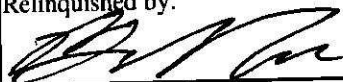


Summit Scientific

Page 2 of 2

Project Manager: Mark Longhurst  
E-Mail: Mark.Longhurst@pdce.com  
Project Name:  
Project Number:

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix		Analyze For:										Special Instructions			
				HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	BTEX 8260	TPH - 620 8260	TPH - D60 8015									
BH10@18-22'	10/19/18	836	1			X			X			Y	Y	Y									r. sample added to Project
BH04@18-22'		1011	1			X			X			X	X	X									
BH11@18-22'		1189	1			X			X			X	X	X									
BH12@18-22'		1302	1			X			X			X	X	X									
BH09@18-22'		1446	1			X			X			X	X	X									
BH03@23-24'	10/17/18	12:49	1																				

Relinquished by: 

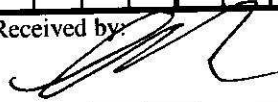
Relinquished by: \_\_\_\_\_

Relinquished by: \_\_\_\_\_

Date/Time: 10/19/18 1520

Date/Time: \_\_\_\_\_

Date/Time: \_\_\_\_\_

Received by: 

Received by: \_\_\_\_\_

Received in Lab by: \_\_\_\_\_

Date/Time: 10.19.18 1300

Date/Time: \_\_\_\_\_

Date/Time: \_\_\_\_\_

Turn Around Time (Check)

Same Day ☒ 72 Hours ☐

24 Hours ☐ Standard ☐

48 Hours ☐

Sample Integrity:

Temperature Upon Receipt: 8.9

Intact: Yes ☒ No ☐

# Sample Receipt Checklist

S2 Work Order 1810257

Client: PDC

Client Project ID: Sitzman 10

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other P.U. Airbill #: \_\_\_\_\_

Matrix (check all that apply):      Air   /   Soil/Solid      Water      Other: \_\_\_\_\_  
(Describe)

Temp (°C)	<u>8.9</u>
-----------	------------

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C <sup>(1)</sup> ?	<u>  /  </u>			
NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.				
Were all samples received intact <sup>(1)</sup> ?	<u>  /  </u>			
Was adequate sample volume provided <sup>(1)</sup> ?	<u>  /  </u>			
If custody seals are present, are they intact <sup>(1)</sup> ?			<u>  /  </u>	
Are samples with holding times due within 48 hours sample due within 48 hours present?			<u>  /  </u>	
Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?	<u>  /  </u>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<u>  /  </u>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<u>  /  </u>			
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	<u>  /  </u>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			<u>  /  </u>	
Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ?			<u>  /  </u>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect				
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ? Record the pH in Comments.			<u>  /  </u>	
If dissolved metals are requested, were samples field filtered?			<u>  /  </u>	
Additional Comments (if any):   				
<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.				

UP  
Custodian Printed Name or Initials

[Signature]  
Signature of Custodian

10.19.18 1800  
Date/Time



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Sitzman 1U

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/22/18 07:30

**BH01@19-24'**  
**1810257-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/17/18 09:47**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1810283	10/19/18	10/21/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/17/18 09:47**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		110 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/17/18 09:47**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1810284	10/19/18	10/20/18	EPA 8015M	

Date Sampled: **10/17/18 09:47**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		97.5 %	30-150		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Sitzman 1U  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/22/18 07:30

**BH03@14-19'**  
**1810257-02 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/17/18 12:37**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1810283	10/19/18	10/22/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.014</b>	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>200</b>	5.0	"	10	"	"	"	"	

Date Sampled: **10/17/18 12:37**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		148 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		87.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		147 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/17/18 12:37**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
<b>C10-C28 (DRO)</b>	<b>2900</b>	50	mg/kg	1	1810284	10/19/18	10/20/18	EPA 8015M	

Date Sampled: **10/17/18 12:37**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		103 %	30-150		"	"	"	"	

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Sitzman 1U  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/22/18 07:30

**BH02@14-19'**  
**1810257-03 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/17/18 15:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1810283	10/19/18	10/21/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>18</b>	0.50	"	"	"	"	"	"	

Date Sampled: **10/17/18 15:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		110 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		127 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/17/18 15:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1810284	10/19/18	10/20/18	EPA 8015M	

Date Sampled: **10/17/18 15:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		96.7 %	30-150		"	"	"	"	

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Sitzman 1U  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/22/18 07:30

**BH02@19-24'**  
**1810257-04 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/17/18 15:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1810283	10/19/18	10/21/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>8.1</b>	0.50	"	"	"	"	"	"	

Date Sampled: **10/17/18 15:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		114 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/17/18 15:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1810284	10/19/18	10/20/18	EPA 8015M	

Date Sampled: **10/17/18 15:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		94.2 %	30-150		"	"	"	"	

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Sitzman 1U

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/22/18 07:30

**BH05@18-22'**  
**1810257-05 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/18/18 09:01**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1810283	10/19/18	10/22/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>36</b>	0.50	"	"	"	"	"	"	

Date Sampled: **10/18/18 09:01**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		117 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/18/18 09:01**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1810284	10/19/18	10/20/18	EPA 8015M	

Date Sampled: **10/18/18 09:01**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		97.6 %	30-150		"	"	"	"	

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Sitzman 1U  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/22/18 07:30

**BH05@24-27'**  
**1810257-06 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/18/18 09:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1810283	10/19/18	10/21/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>0.87</b>	0.50	"	"	"	"	"	"	

Date Sampled: **10/18/18 09:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		110 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/18/18 09:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1810284	10/19/18	10/20/18	EPA 8015M	

Date Sampled: **10/18/18 09:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		97.1 %	30-150		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Sitzman 1U  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/22/18 07:30

**BH08@19-24'**  
**1810257-07 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/18/18 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1810283	10/19/18	10/21/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>1.4</b>	<b>0.50</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	

Date Sampled: **10/18/18 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		115 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		107 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		114 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/18/18 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1810284	10/19/18	10/20/18	EPA 8015M	

Date Sampled: **10/18/18 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		97.3 %	30-150		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Sitzman 1U  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/22/18 07:30

**BH08@14-19'**  
**1810257-08 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/18/18 11:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1810283	10/19/18	10/21/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>12</b>	0.50	"	"	"	"	"	"	

Date Sampled: **10/18/18 11:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		160 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/18/18 11:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1810284	10/19/18	10/20/18	EPA 8015M	

Date Sampled: **10/18/18 11:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		96.8 %	30-150		"	"	"	"	

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Sitzman 1U  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/22/18 07:30

**BH07@18-22'**  
**1810257-09 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/18/18 14:04**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1810283	10/19/18	10/21/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>1.7</b>	<b>0.50</b>	"	"	"	"	"	"	

Date Sampled: **10/18/18 14:04**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		111 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		111 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/18/18 14:04**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1810284	10/19/18	10/21/18	EPA 8015M	

Date Sampled: **10/18/18 14:04**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		97.4 %	30-150		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Sitzman 1U  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/22/18 07:30

**BH06@18-22'**  
**1810257-10 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/18/18 16:01**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1810283	10/19/18	10/21/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	10/22/18	"	

Date Sampled: **10/18/18 16:01**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		114 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/18/18 16:01**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1810284	10/19/18	10/21/18	EPA 8015M	

Date Sampled: **10/18/18 16:01**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		96.7 %	30-150		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Sitzman 1U  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/22/18 07:30

**BH10@18-22'**  
**1810257-11 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/19/18 08:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1810283	10/19/18	10/21/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/19/18 08:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/19/18 08:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1810284	10/19/18	10/21/18	EPA 8015M	

Date Sampled: **10/19/18 08:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		95.9 %	30-150		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Sitzman 1U  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/22/18 07:30

**BH04@18-22'**  
**1810257-12 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/19/18 10:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1810283	10/19/18	10/21/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/19/18 10:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/19/18 10:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1810284	10/19/18	10/21/18	EPA 8015M	

Date Sampled: **10/19/18 10:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		98.0 %	30-150		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Sitzman 1U  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/22/18 07:30

**BH11@18-22'**  
**1810257-13 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/19/18 11:39**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1810283	10/19/18	10/21/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/19/18 11:39**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		113 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/19/18 11:39**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1810284	10/19/18	10/21/18	EPA 8015M	

Date Sampled: **10/19/18 11:39**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		97.9 %	30-150		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Sitzman 1U  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/22/18 07:30

**BH12@18-22'**  
**1810257-14 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/19/18 13:02**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1810283	10/19/18	10/21/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/19/18 13:02**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		116 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		110 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/19/18 13:02**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1810284	10/19/18	10/21/18	EPA 8015M	

Date Sampled: **10/19/18 13:02**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		95.4 %	30-150		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Sitzman 1U  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/22/18 07:30

**BH09@18-22'**  
**1810257-15 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/19/18 14:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1810283	10/19/18	10/21/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/19/18 14:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		112 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/19/18 14:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1810284	10/19/18	10/21/18	EPA 8015M	

Date Sampled: **10/19/18 14:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		95.8 %	30-150		"	"	"	"	

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Sitzman 1U  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/22/18 07:30

**BH03@23-24'**  
**1810257-16 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/17/18 12:49**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1810283	10/19/18	10/21/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/17/18 12:49**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		112 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/17/18 12:49**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1810284	10/19/18	10/21/18	EPA 8015M	

Date Sampled: **10/17/18 12:49**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		96.4 %	30-150		"	"	"	"	

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Sitzman 1U

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/22/18 07:30

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

### Summit Scientific

Analyte	Reporting			Spike	Source	%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit

#### Batch 1810283 - EPA 5030 Soil MS

##### Blank (1810283-BLK1)

Prepared: 10/19/18 Analyzed: 10/21/18

Benzene	ND	0.0020	mg/kg						
Toluene	ND	0.0050	"						
Ethylbenzene	ND	0.0050	"						
Xylenes (total)	ND	0.010	"						
Naphthalene	ND	0.010	"						
Gasoline Range Hydrocarbons	ND	0.50	"						
Surrogate: 1,2-Dichloroethane-d4	0.0448		"	0.0396	113	23-173			
Surrogate: Toluene-d8	0.0394		"	0.0400	98.6	20-170			
Surrogate: 4-Bromofluorobenzene	0.0443		"	0.0400	111	21-167			

##### LCS (1810283-BS1)

Prepared: 10/19/18 Analyzed: 10/21/18

Benzene	0.0818	0.0020	mg/kg	0.100	81.8	70-130			
Toluene	0.0874	0.0050	"	0.100	87.4	70-130			
Ethylbenzene	0.0807	0.0050	"	0.100	80.7	70-130			
m,p-Xylene	0.181	0.010	"	0.200	90.4	70-130			
o-Xylene	0.0870	0.0050	"	0.100	87.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0442		"	0.0396	112	23-173			
Surrogate: Toluene-d8	0.0399		"	0.0400	99.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0441		"	0.0400	110	21-167			

##### Matrix Spike (1810283-MS1)

Source: 1810257-01

Prepared: 10/19/18 Analyzed: 10/21/18

Benzene	0.0757	0.0020	mg/kg	0.100	ND	75.7	70-130		
Toluene	0.0786	0.0050	"	0.100	ND	78.6	70-130		
Ethylbenzene	0.0821	0.0050	"	0.100	ND	82.1	70-130		
m,p-Xylene	0.179	0.010	"	0.200	ND	89.4	70-130		
o-Xylene	0.0892	0.0050	"	0.100	ND	89.2	70-130		
Surrogate: 1,2-Dichloroethane-d4	0.0442		"	0.0396	112	23-173			
Surrogate: Toluene-d8	0.0409		"	0.0400	102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0436		"	0.0400	109	21-167			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Sitzman 1U

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
10/22/18 07:30

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

### Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

#### Batch 1810283 - EPA 5030 Soil MS

Matrix Spike Dup (1810283-MSD1)		Source: 1810257-01			Prepared: 10/19/18 Analyzed: 10/21/18					
Benzene	0.0749	0.0020	mg/kg	0.100	ND	74.9	70-130	0.956	30	
Toluene	0.0780	0.0050	"	0.100	ND	78.0	70-130	0.767	30	
Ethylbenzene	0.0810	0.0050	"	0.100	ND	81.0	70-130	1.36	30	
m,p-Xylene	0.177	0.010	"	0.200	ND	88.4	70-130	1.15	30	
o-Xylene	0.0887	0.0050	"	0.100	ND	88.7	70-130	0.472	30	
Surrogate: 1,2-Dichloroethane-d4	0.0428		"	0.0396		108	23-173			
Surrogate: Toluene-d8	0.0408		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0428		"	0.0400		107	21-167			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Sitzman 1U

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/22/18 07:30

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

**Batch 1810284 - EPA 3550A**

**Blank (1810284-BLK1)**

Prepared: 10/19/18 Analyzed: 10/20/18

C10-C28 (DRO) ND 50 mg/kg

**LCS (1810284-BS1)**

Prepared: 10/19/18 Analyzed: 10/20/18

C10-C28 (DRO) 600 50 mg/kg 500 120 70-130

**Matrix Spike (1810284-MS1)**

**Source: 1810257-01**

Prepared: 10/19/18 Analyzed: 10/20/18

C10-C28 (DRO) 527 50 mg/kg 500 18.5 102 70-130

**Matrix Spike Dup (1810284-MSD1)**

**Source: 1810257-01**

Prepared: 10/19/18 Analyzed: 10/20/18

C10-C28 (DRO) 536 50 mg/kg 500 18.5 104 70-130 1.65 20

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



PDC Energy

1775 Sherman St. STE. 3000

Denver CO, 80203

Project: Sitzman 1U

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**

10/22/18 07:30

### Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

## Tasman Geosciences- Arvada, CO

Sample Delivery Group: L1040460

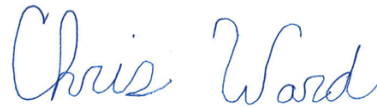
Samples Received: 11/02/2018

Project Number:

Description: Sitzman 1U

Report To: Christine Hamlin  
6899 Pecos Street, Unit C  
Denver, CO 80221

Entire Report Reviewed By:



Chris Ward  
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



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# SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



## BH01 L1040460-01 GW

			Collected by Christine Hamlin	Collected date/time 10/30/18 11:35	Received date/time 11/02/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 353.2	WG1191649	5	11/07/18 16:51	11/07/18 16:51	JER
Wet Chemistry by Method 5310 B-2011	WG1190394	1	11/04/18 14:43	11/04/18 14:43	SJM
Metals (ICP) by Method 6010B	WG1190857	1	11/03/18 13:56	11/06/18 10:29	CCE
Metals (ICP) by Method 6010B	WG1190866	1	11/05/18 22:45	11/06/18 20:22	JDG
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1190931	1	11/03/18 14:57	11/03/18 14:57	JHH

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

## BH09 L1040460-02 GW

			Collected by Christine Hamlin	Collected date/time 10/30/18 12:12	Received date/time 11/02/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1190931	1	11/03/18 15:16	11/03/18 15:16	JHH

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

## BH12 L1040460-03 GW

			Collected by Christine Hamlin	Collected date/time 10/30/18 17:33	Received date/time 11/02/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1190931	1	11/03/18 15:35	11/03/18 15:35	JHH

<sup>8</sup> Al

<sup>9</sup> Sc

## BH11 L1040460-04 GW

			Collected by Christine Hamlin	Collected date/time 10/30/18 12:54	Received date/time 11/02/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1190931	1	11/03/18 15:55	11/03/18 15:55	JHH

## BH10 L1040460-05 GW

			Collected by Christine Hamlin	Collected date/time 10/30/18 13:30	Received date/time 11/02/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 353.2	WG1191649	2	11/07/18 16:53	11/07/18 16:53	JER
Wet Chemistry by Method 5310 B-2011	WG1190394	1	11/04/18 17:12	11/04/18 17:12	SJM
Metals (ICP) by Method 6010B	WG1190857	1	11/03/18 13:56	11/06/18 10:37	CCE
Metals (ICP) by Method 6010B	WG1190866	1	11/05/18 22:45	11/06/18 20:32	JDG
Metals (ICP) by Method 6010B	WG1190866	5	11/05/18 22:45	11/07/18 14:26	ST
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1190931	1	11/03/18 16:14	11/03/18 16:14	JHH

## BH06 L1040460-06 GW

			Collected by Christine Hamlin	Collected date/time 10/30/18 14:00	Received date/time 11/02/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 353.2	WG1191649	2	11/07/18 16:54	11/07/18 16:54	JER
Wet Chemistry by Method 5310 B-2011	WG1190394	1	11/04/18 17:35	11/04/18 17:35	SJM
Metals (ICP) by Method 6010B	WG1190857	1	11/03/18 13:56	11/06/18 10:40	CCE
Metals (ICP) by Method 6010B	WG1190857	5	11/03/18 13:56	11/06/18 12:14	CCE
Metals (ICP) by Method 6010B	WG1190866	1	11/05/18 22:45	11/06/18 20:35	RDS
Metals (ICP) by Method 6010B	WG1190866	5	11/05/18 22:45	11/07/18 14:28	ST
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1190931	1	11/03/18 16:34	11/03/18 16:34	JHH

ACCOUNT:

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11/09/18 09:36

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# SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



## BH04 L1040460-07 GW

Collected by  
Christine Hamlin

Collected date/time  
10/30/18 14:30

Received date/time  
11/02/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 353.2	WG1191649	2	11/07/18 16:56	11/07/18 16:56	JER
Wet Chemistry by Method 5310 B-2011	WG1190394	1	11/04/18 17:48	11/04/18 17:48	SJM
Metals (ICP) by Method 6010B	WG1190857	1	11/03/18 13:56	11/06/18 10:42	CCE
Metals (ICP) by Method 6010B	WG1190866	1	11/05/18 22:45	11/06/18 20:38	RDS
Metals (ICP) by Method 6010B	WG1190866	5	11/05/18 22:45	11/07/18 14:31	ST
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1190931	1	11/03/18 16:53	11/03/18 16:53	JHH

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

## BH02 L1040460-08 GW

Collected by  
Christine Hamlin

Collected date/time  
10/31/18 07:50

Received date/time  
11/02/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 353.2	WG1191649	5	11/07/18 16:57	11/07/18 16:57	JER
Wet Chemistry by Method 5310 B-2011	WG1190394	5	11/04/18 18:09	11/04/18 18:09	SJM
Metals (ICP) by Method 6010B	WG1190857	1	11/03/18 13:56	11/06/18 10:45	CCE
Metals (ICP) by Method 6010B	WG1190866	1	11/05/18 22:45	11/06/18 20:46	JDG
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1190931	1	11/03/18 17:12	11/03/18 17:12	JHH

## BH07 L1040460-09 GW

Collected by  
Christine Hamlin

Collected date/time  
10/31/18 08:35

Received date/time  
11/02/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 353.2	WG1191649	2	11/07/18 16:59	11/07/18 16:59	JER
Wet Chemistry by Method 5310 B-2011	WG1190394	5	11/04/18 18:28	11/04/18 18:28	SJM
Metals (ICP) by Method 6010B	WG1190857	1	11/03/18 13:56	11/06/18 10:48	CCE
Metals (ICP) by Method 6010B	WG1190866	1	11/05/18 22:45	11/06/18 20:48	JDG
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1190931	1	11/03/18 17:32	11/03/18 17:32	JHH

## BH08 L1040460-10 GW

Collected by  
Christine Hamlin

Collected date/time  
10/31/18 09:09

Received date/time  
11/02/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 353.2	WG1191649	1	11/07/18 17:00	11/07/18 17:00	JER
Wet Chemistry by Method 5310 B-2011	WG1190394	5	11/04/18 18:46	11/04/18 18:46	SJM
Metals (ICP) by Method 6010B	WG1190857	1	11/03/18 13:56	11/06/18 10:51	CCE
Metals (ICP) by Method 6010B	WG1190857	5	11/03/18 13:56	11/06/18 12:17	CCE
Metals (ICP) by Method 6010B	WG1190866	1	11/05/18 22:45	11/06/18 20:51	RDS
Metals (ICP) by Method 6010B	WG1190866	5	11/05/18 22:45	11/07/18 14:34	ST
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1190931	1	11/03/18 17:51	11/03/18 17:51	JHH

## BH05 L1040460-11 GW

Collected by  
Christine Hamlin

Collected date/time  
10/31/18 09:45

Received date/time  
11/02/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 353.2	WG1191649	2	11/07/18 17:09	11/07/18 17:09	JER
Wet Chemistry by Method 5310 B-2011	WG1190394	5	11/04/18 19:05	11/04/18 19:05	SJM
Metals (ICP) by Method 6010B	WG1190857	1	11/03/18 13:56	11/06/18 10:53	CCE
Metals (ICP) by Method 6010B	WG1190866	1	11/05/18 22:45	11/06/18 20:54	JDG
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1190931	1	11/03/18 18:11	11/03/18 18:11	JHH

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## SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



BH03 L1040460-12 GW

Collected by  
Christine HamlinCollected date/time  
10/31/18 10:15Received date/time  
11/02/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 353.2	WG1191649	2	11/07/18 17:11	11/07/18 17:11	JER
Wet Chemistry by Method 5310 B-2011	WG1190394	5	11/04/18 19:25	11/04/18 19:25	SJM
Metals (ICP) by Method 6010B	WG1190857	1	11/03/18 13:56	11/06/18 10:56	CCE
Metals (ICP) by Method 6010B	WG1190866	1	11/05/18 22:45	11/06/18 20:57	JDG
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1190931	1	11/03/18 18:30	11/03/18 18:30	JHH

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

ACCOUNT:

Tasman Geosciences- Arvada, CO

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

Chris Ward  
Project Manager

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



## Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	11.9		0.500	5	11/07/2018 16:51	<a href="#">WG1191649</a>

## Wet Chemistry by Method 5310 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
DOC	3.30	<a href="#">T8</a>	1.00	1	11/04/2018 14:43	<a href="#">WG1190394</a>

## Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Aluminum	ND		0.200	1	11/06/2018 10:29	<a href="#">WG1190857</a>
Aluminum,Dissolved	ND		0.200	1	11/06/2018 20:22	<a href="#">WG1190866</a>
Antimony	ND		0.0100	1	11/06/2018 10:29	<a href="#">WG1190857</a>
Antimony,Dissolved	ND		0.0100	1	11/06/2018 20:22	<a href="#">WG1190866</a>
Arsenic	ND		0.0100	1	11/06/2018 10:29	<a href="#">WG1190857</a>
Arsenic,Dissolved	ND		0.0100	1	11/06/2018 20:22	<a href="#">WG1190866</a>
Barium	0.0945		0.00500	1	11/06/2018 10:29	<a href="#">WG1190857</a>
Barium,Dissolved	0.0958		0.00500	1	11/06/2018 20:22	<a href="#">WG1190866</a>
Beryllium	ND		0.00200	1	11/06/2018 10:29	<a href="#">WG1190857</a>
Beryllium,Dissolved	ND		0.00200	1	11/06/2018 20:22	<a href="#">WG1190866</a>
Boron	0.274		0.200	1	11/06/2018 10:29	<a href="#">WG1190857</a>
Boron,Dissolved	0.256		0.200	1	11/06/2018 20:22	<a href="#">WG1190866</a>
Cadmium	ND		0.00200	1	11/06/2018 10:29	<a href="#">WG1190857</a>
Cadmium,Dissolved	ND		0.00200	1	11/06/2018 20:22	<a href="#">WG1190866</a>
Calcium	165		1.00	1	11/06/2018 10:29	<a href="#">WG1190857</a>
Calcium,Dissolved	170	<a href="#">V</a>	1.00	1	11/06/2018 20:22	<a href="#">WG1190866</a>
Chromium	ND		0.0100	1	11/06/2018 10:29	<a href="#">WG1190857</a>
Chromium,Dissolved	ND		0.0100	1	11/06/2018 20:22	<a href="#">WG1190866</a>
Cobalt	ND		0.0100	1	11/06/2018 10:29	<a href="#">WG1190857</a>
Cobalt,Dissolved	ND		0.0100	1	11/06/2018 20:22	<a href="#">WG1190866</a>
Copper	ND		0.0100	1	11/06/2018 10:29	<a href="#">WG1190857</a>
Copper,Dissolved	ND		0.0100	1	11/06/2018 20:22	<a href="#">WG1190866</a>
Iron	ND		0.100	1	11/06/2018 10:29	<a href="#">WG1190857</a>
Iron,Dissolved	ND		0.100	1	11/06/2018 20:22	<a href="#">WG1190866</a>
Lead	ND		0.00500	1	11/06/2018 10:29	<a href="#">WG1190857</a>
Lead,Dissolved	ND		0.00500	1	11/06/2018 20:22	<a href="#">WG1190866</a>
Magnesium	47.7		1.00	1	11/06/2018 10:29	<a href="#">WG1190857</a>
Magnesium,Dissolved	49.2		1.00	1	11/06/2018 20:22	<a href="#">WG1190866</a>
Manganese	ND		0.0100	1	11/06/2018 10:29	<a href="#">WG1190857</a>
Manganese,Dissolved	ND		0.0100	1	11/06/2018 20:22	<a href="#">WG1190866</a>
Molybdenum	0.00626		0.00500	1	11/06/2018 10:29	<a href="#">WG1190857</a>
Molybdenum,Dissolved	0.00590		0.00500	1	11/06/2018 20:22	<a href="#">WG1190866</a>
Nickel	ND		0.0100	1	11/06/2018 10:29	<a href="#">WG1190857</a>
Nickel,Dissolved	ND		0.0100	1	11/06/2018 20:22	<a href="#">WG1190866</a>
Phosphorus	0.269		0.100	1	11/06/2018 10:29	<a href="#">WG1190857</a>
Potassium	6.30		1.00	1	11/06/2018 10:29	<a href="#">WG1190857</a>
Potassium,Dissolved	6.85		1.00	1	11/06/2018 20:22	<a href="#">WG1190866</a>
Selenium	ND		0.0100	1	11/06/2018 10:29	<a href="#">WG1190857</a>
Selenium,Dissolved	ND		0.0100	1	11/06/2018 20:22	<a href="#">WG1190866</a>
Silver	ND		0.00500	1	11/06/2018 10:29	<a href="#">WG1190857</a>
Silver,Dissolved	ND		0.00500	1	11/06/2018 20:22	<a href="#">WG1190866</a>
Sodium	140		1.00	1	11/06/2018 10:29	<a href="#">WG1190857</a>
Sodium,Dissolved	146		1.00	1	11/06/2018 20:22	<a href="#">WG1190866</a>
Strontium	1.59		0.0100	1	11/06/2018 10:29	<a href="#">WG1190857</a>
Sulfur	100		1.00	1	11/06/2018 10:29	<a href="#">WG1190857</a>





## Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Sulfur,Dissolved	105	V	1.00	1	11/06/2018 20:22	<a href="#">WG1190866</a>
Thallium	ND		0.0100	1	11/06/2018 10:29	<a href="#">WG1190857</a>
Thallium,Dissolved	ND		0.0100	1	11/06/2018 20:22	<a href="#">WG1190866</a>
Tin	ND		0.0500	1	11/06/2018 10:29	<a href="#">WG1190857</a>
Tin,Dissolved	ND		0.0500	1	11/06/2018 20:22	<a href="#">WG1190866</a>
Titanium	ND		0.0500	1	11/06/2018 10:29	<a href="#">WG1190857</a>
Titanium,Dissolved	ND		0.0500	1	11/06/2018 20:22	<a href="#">WG1190866</a>
Vanadium	ND		0.0200	1	11/06/2018 10:29	<a href="#">WG1190857</a>
Vanadium,Dissolved	ND		0.0200	1	11/06/2018 20:22	<a href="#">WG1190866</a>
Zinc	ND		0.0500	1	11/06/2018 10:29	<a href="#">WG1190857</a>
Zinc,Dissolved	ND		0.0500	1	11/06/2018 20:22	<a href="#">WG1190866</a>

1  
Cp2  
Tc3  
Ss4  
Cn5  
Sr6  
Qc7  
Gl8  
Al9  
Sc

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	11/03/2018 14:57	<a href="#">WG1190931</a>
Toluene	ND		0.00100	1	11/03/2018 14:57	<a href="#">WG1190931</a>
Ethylbenzene	ND		0.00100	1	11/03/2018 14:57	<a href="#">WG1190931</a>
Total Xylenes	ND		0.00300	1	11/03/2018 14:57	<a href="#">WG1190931</a>
(S) Toluene-d8	105		80.0-120		11/03/2018 14:57	<a href="#">WG1190931</a>
(S) Dibromofluoromethane	92.4		75.0-120		11/03/2018 14:57	<a href="#">WG1190931</a>
(S) a,a,a-Trifluorotoluene	105		80.0-120		11/03/2018 14:57	<a href="#">WG1190931</a>
(S) 4-Bromofluorobenzene	96.8		77.0-126		11/03/2018 14:57	<a href="#">WG1190931</a>



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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	11/03/2018 15:16	<a href="#">WG1190931</a>
Toluene	ND		0.00100	1	11/03/2018 15:16	<a href="#">WG1190931</a>
Ethylbenzene	ND		0.00100	1	11/03/2018 15:16	<a href="#">WG1190931</a>
Total Xylenes	ND		0.00300	1	11/03/2018 15:16	<a href="#">WG1190931</a>
(S) Toluene-d8	108		80.0-120		11/03/2018 15:16	<a href="#">WG1190931</a>
(S) Dibromofluoromethane	93.5		75.0-120		11/03/2018 15:16	<a href="#">WG1190931</a>
(S) a,a,a-Trifluorotoluene	105		80.0-120		11/03/2018 15:16	<a href="#">WG1190931</a>
(S) 4-Bromofluorobenzene	97.6		77.0-126		11/03/2018 15:16	<a href="#">WG1190931</a>

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



L1040460

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	11/03/2018 15:35	<a href="#">WG1190931</a>
Toluene	ND		0.00100	1	11/03/2018 15:35	<a href="#">WG1190931</a>
Ethylbenzene	ND		0.00100	1	11/03/2018 15:35	<a href="#">WG1190931</a>
Total Xylenes	ND		0.00300	1	11/03/2018 15:35	<a href="#">WG1190931</a>
(S) Toluene-d8	105		80.0-120		11/03/2018 15:35	<a href="#">WG1190931</a>
(S) Dibromofluoromethane	92.7		75.0-120		11/03/2018 15:35	<a href="#">WG1190931</a>
(S) a,a,a-Trifluorotoluene	103		80.0-120		11/03/2018 15:35	<a href="#">WG1190931</a>
(S) 4-Bromofluorobenzene	97.3		77.0-126		11/03/2018 15:35	<a href="#">WG1190931</a>

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	11/03/2018 15:55	<a href="#">WG1190931</a>
Toluene	ND		0.00100	1	11/03/2018 15:55	<a href="#">WG1190931</a>
Ethylbenzene	ND		0.00100	1	11/03/2018 15:55	<a href="#">WG1190931</a>
Total Xylenes	ND		0.00300	1	11/03/2018 15:55	<a href="#">WG1190931</a>
(S) Toluene-d8	104		80.0-120		11/03/2018 15:55	<a href="#">WG1190931</a>
(S) Dibromofluoromethane	93.2		75.0-120		11/03/2018 15:55	<a href="#">WG1190931</a>
(S) a,a,a-Trifluorotoluene	105		80.0-120		11/03/2018 15:55	<a href="#">WG1190931</a>
(S) 4-Bromofluorobenzene	98.2		77.0-126		11/03/2018 15:55	<a href="#">WG1190931</a>

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



## Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	RD mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	9.01		0.200	2	11/07/2018 16:53	<a href="#">WG1191649</a>

## Wet Chemistry by Method 5310 B-2011

Analyte	Result mg/l	Qualifier	RD mg/l	Dilution	Analysis date / time	Batch
DOC	4.20	<a href="#">T8</a>	1.00	1	11/04/2018 17:12	<a href="#">WG1190394</a>

## Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RD mg/l	Dilution	Analysis date / time	Batch
Aluminum	ND		0.200	1	11/06/2018 10:37	<a href="#">WG1190857</a>
Aluminum,Dissolved	ND		0.200	1	11/06/2018 20:32	<a href="#">WG1190866</a>
Antimony	ND		0.0100	1	11/06/2018 10:37	<a href="#">WG1190857</a>
Antimony,Dissolved	ND		0.0100	1	11/06/2018 20:32	<a href="#">WG1190866</a>
Arsenic	ND		0.0100	1	11/06/2018 10:37	<a href="#">WG1190857</a>
Arsenic,Dissolved	ND		0.0100	1	11/06/2018 20:32	<a href="#">WG1190866</a>
Barium	0.0674		0.00500	1	11/06/2018 10:37	<a href="#">WG1190857</a>
Barium,Dissolved	0.0671		0.00500	1	11/06/2018 20:32	<a href="#">WG1190866</a>
Beryllium	ND		0.00200	1	11/06/2018 10:37	<a href="#">WG1190857</a>
Beryllium,Dissolved	ND		0.00200	1	11/06/2018 20:32	<a href="#">WG1190866</a>
Boron	0.322		0.200	1	11/06/2018 10:37	<a href="#">WG1190857</a>
Boron,Dissolved	0.294		0.200	1	11/06/2018 20:32	<a href="#">WG1190866</a>
Cadmium	ND		0.00200	1	11/06/2018 10:37	<a href="#">WG1190857</a>
Cadmium,Dissolved	ND		0.00200	1	11/06/2018 20:32	<a href="#">WG1190866</a>
Calcium	154		1.00	1	11/06/2018 10:37	<a href="#">WG1190857</a>
Calcium,Dissolved	160		1.00	1	11/06/2018 20:32	<a href="#">WG1190866</a>
Chromium	ND		0.0100	1	11/06/2018 10:37	<a href="#">WG1190857</a>
Chromium,Dissolved	ND		0.0100	1	11/06/2018 20:32	<a href="#">WG1190866</a>
Cobalt	ND		0.0100	1	11/06/2018 10:37	<a href="#">WG1190857</a>
Cobalt,Dissolved	ND		0.0100	1	11/06/2018 20:32	<a href="#">WG1190866</a>
Copper	ND		0.0100	1	11/06/2018 10:37	<a href="#">WG1190857</a>
Copper,Dissolved	ND		0.0100	1	11/06/2018 20:32	<a href="#">WG1190866</a>
Iron	ND		0.100	1	11/06/2018 10:37	<a href="#">WG1190857</a>
Iron,Dissolved	ND		0.100	1	11/06/2018 20:32	<a href="#">WG1190866</a>
Lead	ND		0.00500	1	11/06/2018 10:37	<a href="#">WG1190857</a>
Lead,Dissolved	ND		0.00500	1	11/06/2018 20:32	<a href="#">WG1190866</a>
Magnesium	54.4		1.00	1	11/06/2018 10:37	<a href="#">WG1190857</a>
Magnesium,Dissolved	56.9		1.00	1	11/06/2018 20:32	<a href="#">WG1190866</a>
Manganese	ND		0.0100	1	11/06/2018 10:37	<a href="#">WG1190857</a>
Manganese,Dissolved	ND		0.0100	1	11/06/2018 20:32	<a href="#">WG1190866</a>
Molybdenum	ND		0.00500	1	11/06/2018 10:37	<a href="#">WG1190857</a>
Molybdenum,Dissolved	ND		0.00500	1	11/06/2018 20:32	<a href="#">WG1190866</a>
Nickel	ND		0.0100	1	11/06/2018 10:37	<a href="#">WG1190857</a>
Nickel,Dissolved	ND		0.0100	1	11/06/2018 20:32	<a href="#">WG1190866</a>
Phosphorus	0.518		0.100	1	11/06/2018 10:37	<a href="#">WG1190857</a>
Potassium	34.1		1.00	1	11/06/2018 10:37	<a href="#">WG1190857</a>
Potassium,Dissolved	32.7		1.00	1	11/06/2018 20:32	<a href="#">WG1190866</a>
Selenium	ND		0.0100	1	11/06/2018 10:37	<a href="#">WG1190857</a>
Selenium,Dissolved	ND		0.0100	1	11/06/2018 20:32	<a href="#">WG1190866</a>
Silver	ND		0.00500	1	11/06/2018 10:37	<a href="#">WG1190857</a>
Silver,Dissolved	ND		0.00500	1	11/06/2018 20:32	<a href="#">WG1190866</a>
Sodium	138		1.00	1	11/06/2018 10:37	<a href="#">WG1190857</a>
Sodium,Dissolved	145		1.00	1	11/06/2018 20:32	<a href="#">WG1190866</a>
Strontium	1.59		0.0100	1	11/06/2018 10:37	<a href="#">WG1190857</a>
Sulfur	108		1.00	1	11/06/2018 10:37	<a href="#">WG1190857</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/30/18 13:30

L1040460

## Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Sulfur,Dissolved	106		5.00	5	11/07/2018 14:26	<a href="#">WG1190866</a>
Thallium	ND		0.0100	1	11/06/2018 10:37	<a href="#">WG1190857</a>
Thallium,Dissolved	ND		0.0100	1	11/06/2018 20:32	<a href="#">WG1190866</a>
Tin	ND		0.0500	1	11/06/2018 10:37	<a href="#">WG1190857</a>
Tin,Dissolved	ND		0.0500	1	11/06/2018 20:32	<a href="#">WG1190866</a>
Titanium	ND		0.0500	1	11/06/2018 10:37	<a href="#">WG1190857</a>
Titanium,Dissolved	ND		0.0500	1	11/06/2018 20:32	<a href="#">WG1190866</a>
Vanadium	ND		0.0200	1	11/06/2018 10:37	<a href="#">WG1190857</a>
Vanadium,Dissolved	ND		0.0200	1	11/06/2018 20:32	<a href="#">WG1190866</a>
Zinc	ND		0.0500	1	11/06/2018 10:37	<a href="#">WG1190857</a>
Zinc,Dissolved	ND		0.0500	1	11/06/2018 20:32	<a href="#">WG1190866</a>

1  
Cp2  
Tc3  
Ss4  
Cn5  
Sr6  
Qc7  
Gl8  
Al9  
Sc

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	11/03/2018 16:14	<a href="#">WG1190931</a>
Toluene	ND		0.00100	1	11/03/2018 16:14	<a href="#">WG1190931</a>
Ethylbenzene	ND		0.00100	1	11/03/2018 16:14	<a href="#">WG1190931</a>
Total Xylenes	ND		0.00300	1	11/03/2018 16:14	<a href="#">WG1190931</a>
(S) Toluene-d8	105		80.0-120		11/03/2018 16:14	<a href="#">WG1190931</a>
(S) Dibromofluoromethane	95.0		75.0-120		11/03/2018 16:14	<a href="#">WG1190931</a>
(S) a,a,a-Trifluorotoluene	103		80.0-120		11/03/2018 16:14	<a href="#">WG1190931</a>
(S) 4-Bromofluorobenzene	97.4		77.0-126		11/03/2018 16:14	<a href="#">WG1190931</a>



## Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	RD L	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Nitrate-Nitrite	6.84		0.200	2	11/07/2018 16:54	<a href="#">WG1191649</a>

## Wet Chemistry by Method 5310 B-2011

Analyte	Result	Qualifier	RD L	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
DOC	5.04	<a href="#">T8</a>	1.00	1	11/04/2018 17:35	<a href="#">WG1190394</a>

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RD L	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Aluminum	ND		0.200	1	11/06/2018 10:40	<a href="#">WG1190857</a>
Aluminum,Dissolved	ND		0.200	1	11/06/2018 20:35	<a href="#">WG1190866</a>
Antimony	ND		0.0100	1	11/06/2018 10:40	<a href="#">WG1190857</a>
Antimony,Dissolved	ND		0.0100	1	11/06/2018 20:35	<a href="#">WG1190866</a>
Arsenic	ND		0.0100	1	11/06/2018 10:40	<a href="#">WG1190857</a>
Arsenic,Dissolved	ND		0.0100	1	11/06/2018 20:35	<a href="#">WG1190866</a>
Barium	0.128		0.00500	1	11/06/2018 10:40	<a href="#">WG1190857</a>
Barium,Dissolved	0.132		0.00500	1	11/06/2018 20:35	<a href="#">WG1190866</a>
Beryllium	ND		0.00200	1	11/06/2018 10:40	<a href="#">WG1190857</a>
Beryllium,Dissolved	ND		0.00200	1	11/06/2018 20:35	<a href="#">WG1190866</a>
Boron	0.378		0.200	1	11/06/2018 10:40	<a href="#">WG1190857</a>
Boron,Dissolved	0.344		0.200	1	11/06/2018 20:35	<a href="#">WG1190866</a>
Cadmium	ND		0.00200	1	11/06/2018 10:40	<a href="#">WG1190857</a>
Cadmium,Dissolved	ND		0.00200	1	11/06/2018 20:35	<a href="#">WG1190866</a>
Calcium	182		1.00	1	11/06/2018 10:40	<a href="#">WG1190857</a>
Calcium,Dissolved	188		1.00	1	11/06/2018 20:35	<a href="#">WG1190866</a>
Chromium	ND		0.0100	1	11/06/2018 10:40	<a href="#">WG1190857</a>
Chromium,Dissolved	ND		0.0100	1	11/06/2018 20:35	<a href="#">WG1190866</a>
Cobalt	ND		0.0100	1	11/06/2018 10:40	<a href="#">WG1190857</a>
Cobalt,Dissolved	ND		0.0100	1	11/06/2018 20:35	<a href="#">WG1190866</a>
Copper	ND		0.0100	1	11/06/2018 10:40	<a href="#">WG1190857</a>
Copper,Dissolved	ND		0.0100	1	11/06/2018 20:35	<a href="#">WG1190866</a>
Iron	ND		0.100	1	11/06/2018 10:40	<a href="#">WG1190857</a>
Iron,Dissolved	ND		0.100	1	11/06/2018 20:35	<a href="#">WG1190866</a>
Lead	ND		0.00500	1	11/06/2018 10:40	<a href="#">WG1190857</a>
Lead,Dissolved	ND		0.00500	1	11/06/2018 20:35	<a href="#">WG1190866</a>
Magnesium	65.1		1.00	1	11/06/2018 10:40	<a href="#">WG1190857</a>
Magnesium,Dissolved	67.8		1.00	1	11/06/2018 20:35	<a href="#">WG1190866</a>
Manganese	0.0149		0.0100	1	11/06/2018 10:40	<a href="#">WG1190857</a>
Manganese,Dissolved	0.0101		0.0100	1	11/06/2018 20:35	<a href="#">WG1190866</a>
Molybdenum	0.00522		0.00500	1	11/06/2018 10:40	<a href="#">WG1190857</a>
Molybdenum,Dissolved	ND		0.00500	1	11/06/2018 20:35	<a href="#">WG1190866</a>
Nickel	ND		0.0100	1	11/06/2018 10:40	<a href="#">WG1190857</a>
Nickel,Dissolved	ND		0.0100	1	11/06/2018 20:35	<a href="#">WG1190866</a>
Phosphorus	ND		0.100	1	11/06/2018 10:40	<a href="#">WG1190857</a>
Potassium	22.5		1.00	1	11/06/2018 10:40	<a href="#">WG1190857</a>
Potassium,Dissolved	23.9		1.00	1	11/06/2018 20:35	<a href="#">WG1190866</a>
Selenium	ND		0.0100	1	11/06/2018 10:40	<a href="#">WG1190857</a>
Selenium,Dissolved	ND		0.0100	1	11/06/2018 20:35	<a href="#">WG1190866</a>
Silver	ND		0.00500	1	11/06/2018 10:40	<a href="#">WG1190857</a>
Silver,Dissolved	ND		0.00500	1	11/06/2018 20:35	<a href="#">WG1190866</a>
Sodium	152		1.00	1	11/06/2018 10:40	<a href="#">WG1190857</a>
Sodium,Dissolved	159		1.00	1	11/06/2018 20:35	<a href="#">WG1190866</a>
Strontium	1.89		0.0100	1	11/06/2018 10:40	<a href="#">WG1190857</a>
Sulfur	115		5.00	5	11/06/2018 12:14	<a href="#">WG1190857</a>

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



Collected date/time: 10/30/18 14:00

L1040460

## Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Sulfur,Dissolved	130		5.00	5	11/07/2018 14:28	<a href="#">WG1190866</a>
Thallium	ND		0.0100	1	11/06/2018 10:40	<a href="#">WG1190857</a>
Thallium,Dissolved	ND		0.0100	1	11/06/2018 20:35	<a href="#">WG1190866</a>
Tin	ND		0.0500	1	11/06/2018 10:40	<a href="#">WG1190857</a>
Tin,Dissolved	ND		0.0500	1	11/06/2018 20:35	<a href="#">WG1190866</a>
Titanium	ND		0.0500	1	11/06/2018 10:40	<a href="#">WG1190857</a>
Titanium,Dissolved	ND		0.0500	1	11/06/2018 20:35	<a href="#">WG1190866</a>
Vanadium	ND		0.0200	1	11/06/2018 10:40	<a href="#">WG1190857</a>
Vanadium,Dissolved	ND		0.0200	1	11/06/2018 20:35	<a href="#">WG1190866</a>
Zinc	ND		0.0500	1	11/06/2018 10:40	<a href="#">WG1190857</a>
Zinc,Dissolved	ND		0.0500	1	11/06/2018 20:35	<a href="#">WG1190866</a>

1  
Cp2  
Tc3  
Ss4  
Cn5  
Sr6  
Qc7  
Gl8  
Al9  
Sc

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	11/03/2018 16:34	<a href="#">WG1190931</a>
Toluene	ND		0.00100	1	11/03/2018 16:34	<a href="#">WG1190931</a>
Ethylbenzene	ND		0.00100	1	11/03/2018 16:34	<a href="#">WG1190931</a>
Total Xylenes	ND		0.00300	1	11/03/2018 16:34	<a href="#">WG1190931</a>
(S) Toluene-d8	106		80.0-120		11/03/2018 16:34	<a href="#">WG1190931</a>
(S) Dibromofluoromethane	93.6		75.0-120		11/03/2018 16:34	<a href="#">WG1190931</a>
(S) a,a,a-Trifluorotoluene	104		80.0-120		11/03/2018 16:34	<a href="#">WG1190931</a>
(S) 4-Bromofluorobenzene	97.4		77.0-126		11/03/2018 16:34	<a href="#">WG1190931</a>



## Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Nitrate-Nitrite	5.14		0.200	2	11/07/2018 16:56	<a href="#">WG1191649</a>

1 Cp

2 Tc

3 Ss

4 Cn

## Wet Chemistry by Method 5310 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
DOC	3.82	<a href="#">T8</a>	1.00	1	11/04/2018 17:48	<a href="#">WG1190394</a>

5 Sr

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Aluminum	ND		0.200	1	11/06/2018 10:42	<a href="#">WG1190857</a>
Aluminum,Dissolved	ND		0.200	1	11/06/2018 20:38	<a href="#">WG1190866</a>
Antimony	ND		0.0100	1	11/06/2018 10:42	<a href="#">WG1190857</a>
Antimony,Dissolved	ND		0.0100	1	11/06/2018 20:38	<a href="#">WG1190866</a>
Arsenic	ND		0.0100	1	11/06/2018 10:42	<a href="#">WG1190857</a>
Arsenic,Dissolved	ND		0.0100	1	11/06/2018 20:38	<a href="#">WG1190866</a>
Barium	0.0894		0.00500	1	11/06/2018 10:42	<a href="#">WG1190857</a>
Barium,Dissolved	0.0920		0.00500	1	11/06/2018 20:38	<a href="#">WG1190866</a>
Beryllium	ND		0.00200	1	11/06/2018 10:42	<a href="#">WG1190857</a>
Beryllium,Dissolved	ND		0.00200	1	11/06/2018 20:38	<a href="#">WG1190866</a>
Boron	0.310		0.200	1	11/06/2018 10:42	<a href="#">WG1190857</a>
Boron,Dissolved	0.279		0.200	1	11/06/2018 20:38	<a href="#">WG1190866</a>
Cadmium	ND		0.00200	1	11/06/2018 10:42	<a href="#">WG1190857</a>
Cadmium,Dissolved	ND		0.00200	1	11/06/2018 20:38	<a href="#">WG1190866</a>
Calcium	152		1.00	1	11/06/2018 10:42	<a href="#">WG1190857</a>
Calcium,Dissolved	159		1.00	1	11/06/2018 20:38	<a href="#">WG1190866</a>
Chromium	ND		0.0100	1	11/06/2018 10:42	<a href="#">WG1190857</a>
Chromium,Dissolved	ND		0.0100	1	11/06/2018 20:38	<a href="#">WG1190866</a>
Cobalt	ND		0.0100	1	11/06/2018 10:42	<a href="#">WG1190857</a>
Cobalt,Dissolved	ND		0.0100	1	11/06/2018 20:38	<a href="#">WG1190866</a>
Copper	ND		0.0100	1	11/06/2018 10:42	<a href="#">WG1190857</a>
Copper,Dissolved	ND		0.0100	1	11/06/2018 20:38	<a href="#">WG1190866</a>
Iron	ND		0.100	1	11/06/2018 10:42	<a href="#">WG1190857</a>
Iron,Dissolved	ND		0.100	1	11/06/2018 20:38	<a href="#">WG1190866</a>
Lead	ND		0.00500	1	11/06/2018 10:42	<a href="#">WG1190857</a>
Lead,Dissolved	ND		0.00500	1	11/06/2018 20:38	<a href="#">WG1190866</a>
Magnesium	53.0		1.00	1	11/06/2018 10:42	<a href="#">WG1190857</a>
Magnesium,Dissolved	55.7		1.00	1	11/06/2018 20:38	<a href="#">WG1190866</a>
Manganese	ND		0.0100	1	11/06/2018 10:42	<a href="#">WG1190857</a>
Manganese,Dissolved	ND		0.0100	1	11/06/2018 20:38	<a href="#">WG1190866</a>
Molybdenum	ND		0.00500	1	11/06/2018 10:42	<a href="#">WG1190857</a>
Molybdenum,Dissolved	ND		0.00500	1	11/06/2018 20:38	<a href="#">WG1190866</a>
Nickel	ND		0.0100	1	11/06/2018 10:42	<a href="#">WG1190857</a>
Nickel,Dissolved	ND		0.0100	1	11/06/2018 20:38	<a href="#">WG1190866</a>
Phosphorus	0.116		0.100	1	11/06/2018 10:42	<a href="#">WG1190857</a>
Potassium	15.0		1.00	1	11/06/2018 10:42	<a href="#">WG1190857</a>
Potassium,Dissolved	16.1		1.00	1	11/06/2018 20:38	<a href="#">WG1190866</a>
Selenium	ND		0.0100	1	11/06/2018 10:42	<a href="#">WG1190857</a>
Selenium,Dissolved	ND		0.0100	1	11/06/2018 20:38	<a href="#">WG1190866</a>
Silver	ND		0.00500	1	11/06/2018 10:42	<a href="#">WG1190857</a>
Silver,Dissolved	ND		0.00500	1	11/06/2018 20:38	<a href="#">WG1190866</a>
Sodium	132		1.00	1	11/06/2018 10:42	<a href="#">WG1190857</a>
Sodium,Dissolved	140		1.00	1	11/06/2018 20:38	<a href="#">WG1190866</a>
Strontium	1.62		0.0100	1	11/06/2018 10:42	<a href="#">WG1190857</a>
Sulfur	111		1.00	1	11/06/2018 10:42	<a href="#">WG1190857</a>

6 Qc

7 Gl

8 Al

9 Sc





Collected date/time: 10/30/18 14:30

L1040460

## Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Sulfur,Dissolved	106		5.00	5	11/07/2018 14:31	<a href="#">WG1190866</a>
Thallium	ND		0.0100	1	11/06/2018 10:42	<a href="#">WG1190857</a>
Thallium,Dissolved	ND		0.0100	1	11/06/2018 20:38	<a href="#">WG1190866</a>
Tin	ND		0.0500	1	11/06/2018 10:42	<a href="#">WG1190857</a>
Tin,Dissolved	ND		0.0500	1	11/06/2018 20:38	<a href="#">WG1190866</a>
Titanium	ND		0.0500	1	11/06/2018 10:42	<a href="#">WG1190857</a>
Titanium,Dissolved	ND		0.0500	1	11/06/2018 20:38	<a href="#">WG1190866</a>
Vanadium	ND		0.0200	1	11/06/2018 10:42	<a href="#">WG1190857</a>
Vanadium,Dissolved	ND		0.0200	1	11/06/2018 20:38	<a href="#">WG1190866</a>
Zinc	ND		0.0500	1	11/06/2018 10:42	<a href="#">WG1190857</a>
Zinc,Dissolved	ND		0.0500	1	11/06/2018 20:38	<a href="#">WG1190866</a>

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

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	11/03/2018 16:53	<a href="#">WG1190931</a>
Toluene	ND		0.00100	1	11/03/2018 16:53	<a href="#">WG1190931</a>
Ethylbenzene	ND		0.00100	1	11/03/2018 16:53	<a href="#">WG1190931</a>
Total Xylenes	ND		0.00300	1	11/03/2018 16:53	<a href="#">WG1190931</a>
(S) Toluene-d8	103		80.0-120		11/03/2018 16:53	<a href="#">WG1190931</a>
(S) Dibromofluoromethane	91.8		75.0-120		11/03/2018 16:53	<a href="#">WG1190931</a>
(S) a,a,a-Trifluorotoluene	105		80.0-120		11/03/2018 16:53	<a href="#">WG1190931</a>
(S) 4-Bromofluorobenzene	96.6		77.0-126		11/03/2018 16:53	<a href="#">WG1190931</a>



## Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	12.7		0.500	5	11/07/2018 16:57	<a href="#">WG1191649</a>

## Wet Chemistry by Method 5310 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
DOC	5.14	<a href="#">B T8</a>	5.00	5	11/04/2018 18:09	<a href="#">WG1190394</a>

## Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Aluminum	ND		0.200	1	11/06/2018 10:45	<a href="#">WG1190857</a>
Aluminum,Dissolved	ND		0.200	1	11/06/2018 20:46	<a href="#">WG1190866</a>
Antimony	ND		0.0100	1	11/06/2018 10:45	<a href="#">WG1190857</a>
Antimony,Dissolved	ND		0.0100	1	11/06/2018 20:46	<a href="#">WG1190866</a>
Arsenic	ND		0.0100	1	11/06/2018 10:45	<a href="#">WG1190857</a>
Arsenic,Dissolved	ND		0.0100	1	11/06/2018 20:46	<a href="#">WG1190866</a>
Barium	0.0989		0.00500	1	11/06/2018 10:45	<a href="#">WG1190857</a>
Barium,Dissolved	0.101		0.00500	1	11/06/2018 20:46	<a href="#">WG1190866</a>
Beryllium	ND		0.00200	1	11/06/2018 10:45	<a href="#">WG1190857</a>
Beryllium,Dissolved	ND		0.00200	1	11/06/2018 20:46	<a href="#">WG1190866</a>
Boron	0.296		0.200	1	11/06/2018 10:45	<a href="#">WG1190857</a>
Boron,Dissolved	0.265		0.200	1	11/06/2018 20:46	<a href="#">WG1190866</a>
Cadmium	ND		0.00200	1	11/06/2018 10:45	<a href="#">WG1190857</a>
Cadmium,Dissolved	ND		0.00200	1	11/06/2018 20:46	<a href="#">WG1190866</a>
Calcium	155		1.00	1	11/06/2018 10:45	<a href="#">WG1190857</a>
Calcium,Dissolved	160		1.00	1	11/06/2018 20:46	<a href="#">WG1190866</a>
Chromium	ND		0.0100	1	11/06/2018 10:45	<a href="#">WG1190857</a>
Chromium,Dissolved	ND		0.0100	1	11/06/2018 20:46	<a href="#">WG1190866</a>
Cobalt	ND		0.0100	1	11/06/2018 10:45	<a href="#">WG1190857</a>
Cobalt,Dissolved	ND		0.0100	1	11/06/2018 20:46	<a href="#">WG1190866</a>
Copper	ND		0.0100	1	11/06/2018 10:45	<a href="#">WG1190857</a>
Copper,Dissolved	ND		0.0100	1	11/06/2018 20:46	<a href="#">WG1190866</a>
Iron	ND		0.100	1	11/06/2018 10:45	<a href="#">WG1190857</a>
Iron,Dissolved	ND		0.100	1	11/06/2018 20:46	<a href="#">WG1190866</a>
Lead	ND		0.00500	1	11/06/2018 10:45	<a href="#">WG1190857</a>
Lead,Dissolved	ND		0.00500	1	11/06/2018 20:46	<a href="#">WG1190866</a>
Magnesium	52.3		1.00	1	11/06/2018 10:45	<a href="#">WG1190857</a>
Magnesium,Dissolved	54.2		1.00	1	11/06/2018 20:46	<a href="#">WG1190866</a>
Manganese	0.119		0.0100	1	11/06/2018 10:45	<a href="#">WG1190857</a>
Manganese,Dissolved	0.126		0.0100	1	11/06/2018 20:46	<a href="#">WG1190866</a>
Molybdenum	0.00730		0.00500	1	11/06/2018 10:45	<a href="#">WG1190857</a>
Molybdenum,Dissolved	0.00618		0.00500	1	11/06/2018 20:46	<a href="#">WG1190866</a>
Nickel	ND		0.0100	1	11/06/2018 10:45	<a href="#">WG1190857</a>
Nickel,Dissolved	ND		0.0100	1	11/06/2018 20:46	<a href="#">WG1190866</a>
Phosphorus	0.123		0.100	1	11/06/2018 10:45	<a href="#">WG1190857</a>
Potassium	7.65		1.00	1	11/06/2018 10:45	<a href="#">WG1190857</a>
Potassium,Dissolved	8.42		1.00	1	11/06/2018 20:46	<a href="#">WG1190866</a>
Selenium	ND		0.0100	1	11/06/2018 10:45	<a href="#">WG1190857</a>
Selenium,Dissolved	ND		0.0100	1	11/06/2018 20:46	<a href="#">WG1190866</a>
Silver	ND		0.00500	1	11/06/2018 10:45	<a href="#">WG1190857</a>
Silver,Dissolved	ND		0.00500	1	11/06/2018 20:46	<a href="#">WG1190866</a>
Sodium	142		1.00	1	11/06/2018 10:45	<a href="#">WG1190857</a>
Sodium,Dissolved	149		1.00	1	11/06/2018 20:46	<a href="#">WG1190866</a>
Strontium	1.60		0.0100	1	11/06/2018 10:45	<a href="#">WG1190857</a>
Sulfur	102		1.00	1	11/06/2018 10:45	<a href="#">WG1190857</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



## Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Sulfur,Dissolved	105		1.00	1	11/06/2018 20:46	<a href="#">WG1190866</a>
Thallium	ND		0.0100	1	11/06/2018 10:45	<a href="#">WG1190857</a>
Thallium,Dissolved	ND		0.0100	1	11/06/2018 20:46	<a href="#">WG1190866</a>
Tin	ND		0.0500	1	11/06/2018 10:45	<a href="#">WG1190857</a>
Tin,Dissolved	ND		0.0500	1	11/06/2018 20:46	<a href="#">WG1190866</a>
Titanium	ND		0.0500	1	11/06/2018 10:45	<a href="#">WG1190857</a>
Titanium,Dissolved	ND		0.0500	1	11/06/2018 20:46	<a href="#">WG1190866</a>
Vanadium	ND		0.0200	1	11/06/2018 10:45	<a href="#">WG1190857</a>
Vanadium,Dissolved	ND		0.0200	1	11/06/2018 20:46	<a href="#">WG1190866</a>
Zinc	ND		0.0500	1	11/06/2018 10:45	<a href="#">WG1190857</a>
Zinc,Dissolved	ND		0.0500	1	11/06/2018 20:46	<a href="#">WG1190866</a>

1  
Cp2  
Tc3  
Ss4  
Cn5  
Sr6  
Qc7  
Gl8  
Al9  
Sc

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	11/03/2018 17:12	<a href="#">WG1190931</a>
Toluene	ND		0.00100	1	11/03/2018 17:12	<a href="#">WG1190931</a>
Ethylbenzene	ND		0.00100	1	11/03/2018 17:12	<a href="#">WG1190931</a>
Total Xylenes	ND		0.00300	1	11/03/2018 17:12	<a href="#">WG1190931</a>
(S) Toluene-d8	105		80.0-120		11/03/2018 17:12	<a href="#">WG1190931</a>
(S) Dibromofluoromethane	92.3		75.0-120		11/03/2018 17:12	<a href="#">WG1190931</a>
(S) a,a,a-Trifluorotoluene	103		80.0-120		11/03/2018 17:12	<a href="#">WG1190931</a>
(S) 4-Bromofluorobenzene	95.2		77.0-126		11/03/2018 17:12	<a href="#">WG1190931</a>



## Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	8.07		0.200	2	11/07/2018 16:59	<a href="#">WG1191649</a>

## Wet Chemistry by Method 5310 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
DOC	9.81	<a href="#">T8</a>	5.00	5	11/04/2018 18:28	<a href="#">WG1190394</a>

## Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Aluminum	ND		0.200	1	11/06/2018 10:48	<a href="#">WG1190857</a>
Aluminum,Dissolved	ND		0.200	1	11/06/2018 20:48	<a href="#">WG1190866</a>
Antimony	ND		0.0100	1	11/06/2018 10:48	<a href="#">WG1190857</a>
Antimony,Dissolved	ND		0.0100	1	11/06/2018 20:48	<a href="#">WG1190866</a>
Arsenic	ND		0.0100	1	11/06/2018 10:48	<a href="#">WG1190857</a>
Arsenic,Dissolved	ND		0.0100	1	11/06/2018 20:48	<a href="#">WG1190866</a>
Barium	0.119		0.00500	1	11/06/2018 10:48	<a href="#">WG1190857</a>
Barium,Dissolved	0.118		0.00500	1	11/06/2018 20:48	<a href="#">WG1190866</a>
Beryllium	ND		0.00200	1	11/06/2018 10:48	<a href="#">WG1190857</a>
Beryllium,Dissolved	ND		0.00200	1	11/06/2018 20:48	<a href="#">WG1190866</a>
Boron	0.337		0.200	1	11/06/2018 10:48	<a href="#">WG1190857</a>
Boron,Dissolved	0.310		0.200	1	11/06/2018 20:48	<a href="#">WG1190866</a>
Cadmium	ND		0.00200	1	11/06/2018 10:48	<a href="#">WG1190857</a>
Cadmium,Dissolved	ND		0.00200	1	11/06/2018 20:48	<a href="#">WG1190866</a>
Calcium	154		1.00	1	11/06/2018 10:48	<a href="#">WG1190857</a>
Calcium,Dissolved	160		1.00	1	11/06/2018 20:48	<a href="#">WG1190866</a>
Chromium	ND		0.0100	1	11/06/2018 10:48	<a href="#">WG1190857</a>
Chromium,Dissolved	ND		0.0100	1	11/06/2018 20:48	<a href="#">WG1190866</a>
Cobalt	ND		0.0100	1	11/06/2018 10:48	<a href="#">WG1190857</a>
Cobalt,Dissolved	ND		0.0100	1	11/06/2018 20:48	<a href="#">WG1190866</a>
Copper	ND		0.0100	1	11/06/2018 10:48	<a href="#">WG1190857</a>
Copper,Dissolved	ND		0.0100	1	11/06/2018 20:48	<a href="#">WG1190866</a>
Iron	0.959		0.100	1	11/06/2018 10:48	<a href="#">WG1190857</a>
Iron,Dissolved	ND		0.100	1	11/06/2018 20:48	<a href="#">WG1190866</a>
Lead	ND		0.00500	1	11/06/2018 10:48	<a href="#">WG1190857</a>
Lead,Dissolved	ND		0.00500	1	11/06/2018 20:48	<a href="#">WG1190866</a>
Magnesium	56.5		1.00	1	11/06/2018 10:48	<a href="#">WG1190857</a>
Magnesium,Dissolved	59.0		1.00	1	11/06/2018 20:48	<a href="#">WG1190866</a>
Manganese	0.885		0.0100	1	11/06/2018 10:48	<a href="#">WG1190857</a>
Manganese,Dissolved	0.928		0.0100	1	11/06/2018 20:48	<a href="#">WG1190866</a>
Molybdenum	0.00635		0.00500	1	11/06/2018 10:48	<a href="#">WG1190857</a>
Molybdenum,Dissolved	0.00615		0.00500	1	11/06/2018 20:48	<a href="#">WG1190866</a>
Nickel	ND		0.0100	1	11/06/2018 10:48	<a href="#">WG1190857</a>
Nickel,Dissolved	ND		0.0100	1	11/06/2018 20:48	<a href="#">WG1190866</a>
Phosphorus	ND		0.100	1	11/06/2018 10:48	<a href="#">WG1190857</a>
Potassium	18.5		1.00	1	11/06/2018 10:48	<a href="#">WG1190857</a>
Potassium,Dissolved	20.0		1.00	1	11/06/2018 20:48	<a href="#">WG1190866</a>
Selenium	ND		0.0100	1	11/06/2018 10:48	<a href="#">WG1190857</a>
Selenium,Dissolved	ND		0.0100	1	11/06/2018 20:48	<a href="#">WG1190866</a>
Silver	ND		0.00500	1	11/06/2018 10:48	<a href="#">WG1190857</a>
Silver,Dissolved	ND		0.00500	1	11/06/2018 20:48	<a href="#">WG1190866</a>
Sodium	142		1.00	1	11/06/2018 10:48	<a href="#">WG1190857</a>
Sodium,Dissolved	150		1.00	1	11/06/2018 20:48	<a href="#">WG1190866</a>
Strontium	1.71		0.0100	1	11/06/2018 10:48	<a href="#">WG1190857</a>
Sulfur	94.4		1.00	1	11/06/2018 10:48	<a href="#">WG1190857</a>

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



Collected date/time: 10/31/18 08:35

L1040460

## Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Sulfur,Dissolved	97.4		1.00	1	11/06/2018 20:48	<a href="#">WG1190866</a>
Thallium	ND		0.0100	1	11/06/2018 10:48	<a href="#">WG1190857</a>
Thallium,Dissolved	ND		0.0100	1	11/06/2018 20:48	<a href="#">WG1190866</a>
Tin	ND		0.0500	1	11/06/2018 10:48	<a href="#">WG1190857</a>
Tin,Dissolved	ND		0.0500	1	11/06/2018 20:48	<a href="#">WG1190866</a>
Titanium	ND		0.0500	1	11/06/2018 10:48	<a href="#">WG1190857</a>
Titanium,Dissolved	ND		0.0500	1	11/06/2018 20:48	<a href="#">WG1190866</a>
Vanadium	ND		0.0200	1	11/06/2018 10:48	<a href="#">WG1190857</a>
Vanadium,Dissolved	ND		0.0200	1	11/06/2018 20:48	<a href="#">WG1190866</a>
Zinc	ND		0.0500	1	11/06/2018 10:48	<a href="#">WG1190857</a>
Zinc,Dissolved	ND		0.0500	1	11/06/2018 20:48	<a href="#">WG1190866</a>

1  
Cp2  
Tc3  
Ss4  
Cn5  
Sr6  
Qc7  
Gl8  
Al9  
Sc

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	11/03/2018 17:32	<a href="#">WG1190931</a>
Toluene	ND		0.00100	1	11/03/2018 17:32	<a href="#">WG1190931</a>
Ethylbenzene	ND		0.00100	1	11/03/2018 17:32	<a href="#">WG1190931</a>
Total Xylenes	ND		0.00300	1	11/03/2018 17:32	<a href="#">WG1190931</a>
(S) Toluene-d8	106		80.0-120		11/03/2018 17:32	<a href="#">WG1190931</a>
(S) Dibromofluoromethane	92.7		75.0-120		11/03/2018 17:32	<a href="#">WG1190931</a>
(S) a,a,a-Trifluorotoluene	104		80.0-120		11/03/2018 17:32	<a href="#">WG1190931</a>
(S) 4-Bromofluorobenzene	98.2		77.0-126		11/03/2018 17:32	<a href="#">WG1190931</a>



## Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Nitrate-Nitrite	3.01		0.100	1	11/07/2018 17:00	<a href="#">WG1191649</a>

## Wet Chemistry by Method 5310 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
DOC	7.61	<a href="#">B T8</a>	5.00	5	11/04/2018 18:46	<a href="#">WG1190394</a>

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Aluminum	ND		0.200	1	11/06/2018 10:51	<a href="#">WG1190857</a>
Aluminum,Dissolved	ND		0.200	1	11/06/2018 20:51	<a href="#">WG1190866</a>
Antimony	ND		0.0100	1	11/06/2018 10:51	<a href="#">WG1190857</a>
Antimony,Dissolved	ND		0.0100	1	11/06/2018 20:51	<a href="#">WG1190866</a>
Arsenic	ND		0.0100	1	11/06/2018 10:51	<a href="#">WG1190857</a>
Arsenic,Dissolved	ND		0.0100	1	11/06/2018 20:51	<a href="#">WG1190866</a>
Barium	0.127		0.00500	1	11/06/2018 10:51	<a href="#">WG1190857</a>
Barium,Dissolved	0.123		0.00500	1	11/06/2018 20:51	<a href="#">WG1190866</a>
Beryllium	ND		0.00200	1	11/06/2018 10:51	<a href="#">WG1190857</a>
Beryllium,Dissolved	ND		0.00200	1	11/06/2018 20:51	<a href="#">WG1190866</a>
Boron	0.376		0.200	1	11/06/2018 10:51	<a href="#">WG1190857</a>
Boron,Dissolved	0.342		0.200	1	11/06/2018 20:51	<a href="#">WG1190866</a>
Cadmium	ND		0.00200	1	11/06/2018 10:51	<a href="#">WG1190857</a>
Cadmium,Dissolved	ND		0.00200	1	11/06/2018 20:51	<a href="#">WG1190866</a>
Calcium	155		1.00	1	11/06/2018 10:51	<a href="#">WG1190857</a>
Calcium,Dissolved	161		1.00	1	11/06/2018 20:51	<a href="#">WG1190866</a>
Chromium	ND		0.0100	1	11/06/2018 10:51	<a href="#">WG1190857</a>
Chromium,Dissolved	ND		0.0100	1	11/06/2018 20:51	<a href="#">WG1190866</a>
Cobalt	ND		0.0100	1	11/06/2018 10:51	<a href="#">WG1190857</a>
Cobalt,Dissolved	ND		0.0100	1	11/06/2018 20:51	<a href="#">WG1190866</a>
Copper	ND		0.0100	1	11/06/2018 10:51	<a href="#">WG1190857</a>
Copper,Dissolved	ND		0.0100	1	11/06/2018 20:51	<a href="#">WG1190866</a>
Iron	0.737		0.100	1	11/06/2018 10:51	<a href="#">WG1190857</a>
Iron,Dissolved	ND		0.100	1	11/06/2018 20:51	<a href="#">WG1190866</a>
Lead	ND		0.00500	1	11/06/2018 10:51	<a href="#">WG1190857</a>
Lead,Dissolved	ND		0.00500	1	11/06/2018 20:51	<a href="#">WG1190866</a>
Magnesium	58.7		1.00	1	11/06/2018 10:51	<a href="#">WG1190857</a>
Magnesium,Dissolved	60.8		1.00	1	11/06/2018 20:51	<a href="#">WG1190866</a>
Manganese	1.44		0.0100	1	11/06/2018 10:51	<a href="#">WG1190857</a>
Manganese,Dissolved	1.43		0.0100	1	11/06/2018 20:51	<a href="#">WG1190866</a>
Molybdenum	0.0111		0.00500	1	11/06/2018 10:51	<a href="#">WG1190857</a>
Molybdenum,Dissolved	0.0111		0.00500	1	11/06/2018 20:51	<a href="#">WG1190866</a>
Nickel	ND		0.0100	1	11/06/2018 10:51	<a href="#">WG1190857</a>
Nickel,Dissolved	ND		0.0100	1	11/06/2018 20:51	<a href="#">WG1190866</a>
Phosphorus	ND		0.100	1	11/06/2018 10:51	<a href="#">WG1190857</a>
Potassium	77.3		1.00	1	11/06/2018 10:51	<a href="#">WG1190857</a>
Potassium,Dissolved	79.3		1.00	1	11/06/2018 20:51	<a href="#">WG1190866</a>
Selenium	ND		0.0100	1	11/06/2018 10:51	<a href="#">WG1190857</a>
Selenium,Dissolved	ND		0.0100	1	11/06/2018 20:51	<a href="#">WG1190866</a>
Silver	ND		0.00500	1	11/06/2018 10:51	<a href="#">WG1190857</a>
Silver,Dissolved	ND		0.00500	1	11/06/2018 20:51	<a href="#">WG1190866</a>
Sodium	141		1.00	1	11/06/2018 10:51	<a href="#">WG1190857</a>
Sodium,Dissolved	149		1.00	1	11/06/2018 20:51	<a href="#">WG1190866</a>
Strontium	1.69		0.0100	1	11/06/2018 10:51	<a href="#">WG1190857</a>
Sulfur	101		5.00	5	11/06/2018 12:17	<a href="#">WG1190857</a>

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



Collected date/time: 10/31/18 09:09

L1040460

## Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Sulfur,Dissolved	111		5.00	5	11/07/2018 14:34	<a href="#">WG1190866</a>
Thallium	ND		0.0100	1	11/06/2018 10:51	<a href="#">WG1190857</a>
Thallium,Dissolved	ND		0.0100	1	11/06/2018 20:51	<a href="#">WG1190866</a>
Tin	ND		0.0500	1	11/06/2018 10:51	<a href="#">WG1190857</a>
Tin,Dissolved	ND		0.0500	1	11/06/2018 20:51	<a href="#">WG1190866</a>
Titanium	ND		0.0500	1	11/06/2018 10:51	<a href="#">WG1190857</a>
Titanium,Dissolved	ND		0.0500	1	11/06/2018 20:51	<a href="#">WG1190866</a>
Vanadium	ND		0.0200	1	11/06/2018 10:51	<a href="#">WG1190857</a>
Vanadium,Dissolved	ND		0.0200	1	11/06/2018 20:51	<a href="#">WG1190866</a>
Zinc	ND		0.0500	1	11/06/2018 10:51	<a href="#">WG1190857</a>
Zinc,Dissolved	ND		0.0500	1	11/06/2018 20:51	<a href="#">WG1190866</a>

1  
Cp2  
Tc3  
Ss4  
Cn5  
Sr6  
Qc7  
Gl8  
Al9  
Sc

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	11/03/2018 17:51	<a href="#">WG1190931</a>
Toluene	ND		0.00100	1	11/03/2018 17:51	<a href="#">WG1190931</a>
Ethylbenzene	ND		0.00100	1	11/03/2018 17:51	<a href="#">WG1190931</a>
Total Xylenes	ND		0.00300	1	11/03/2018 17:51	<a href="#">WG1190931</a>
(S) Toluene-d8	109		80.0-120		11/03/2018 17:51	<a href="#">WG1190931</a>
(S) Dibromofluoromethane	92.1		75.0-120		11/03/2018 17:51	<a href="#">WG1190931</a>
(S) a,a,a-Trifluorotoluene	102		80.0-120		11/03/2018 17:51	<a href="#">WG1190931</a>
(S) 4-Bromofluorobenzene	98.5		77.0-126		11/03/2018 17:51	<a href="#">WG1190931</a>





Collected date/time: 10/31/18 09:45

L1040460

## Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	RD L	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Nitrate-Nitrite	6.50		0.200	2	11/07/2018 17:09	<a href="#">WG1191649</a>

## Wet Chemistry by Method 5310 B-2011

Analyte	Result	Qualifier	RD L	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
DOC	9.11	<a href="#">T8</a>	5.00	5	11/04/2018 19:05	<a href="#">WG1190394</a>

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RD L	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Aluminum	ND		0.200	1	11/06/2018 10:53	<a href="#">WG1190857</a>
Aluminum,Dissolved	ND		0.200	1	11/06/2018 20:54	<a href="#">WG1190866</a>
Antimony	ND		0.0100	1	11/06/2018 10:53	<a href="#">WG1190857</a>
Antimony,Dissolved	ND		0.0100	1	11/06/2018 20:54	<a href="#">WG1190866</a>
Arsenic	ND		0.0100	1	11/06/2018 10:53	<a href="#">WG1190857</a>
Arsenic,Dissolved	ND		0.0100	1	11/06/2018 20:54	<a href="#">WG1190866</a>
Barium	0.0871		0.00500	1	11/06/2018 10:53	<a href="#">WG1190857</a>
Barium,Dissolved	0.0886		0.00500	1	11/06/2018 20:54	<a href="#">WG1190866</a>
Beryllium	ND		0.00200	1	11/06/2018 10:53	<a href="#">WG1190857</a>
Beryllium,Dissolved	ND		0.00200	1	11/06/2018 20:54	<a href="#">WG1190866</a>
Boron	0.317		0.200	1	11/06/2018 10:53	<a href="#">WG1190857</a>
Boron,Dissolved	0.297		0.200	1	11/06/2018 20:54	<a href="#">WG1190866</a>
Cadmium	ND		0.00200	1	11/06/2018 10:53	<a href="#">WG1190857</a>
Cadmium,Dissolved	ND		0.00200	1	11/06/2018 20:54	<a href="#">WG1190866</a>
Calcium	160		1.00	1	11/06/2018 10:53	<a href="#">WG1190857</a>
Calcium,Dissolved	165		1.00	1	11/06/2018 20:54	<a href="#">WG1190866</a>
Chromium	ND		0.0100	1	11/06/2018 10:53	<a href="#">WG1190857</a>
Chromium,Dissolved	ND		0.0100	1	11/06/2018 20:54	<a href="#">WG1190866</a>
Cobalt	ND		0.0100	1	11/06/2018 10:53	<a href="#">WG1190857</a>
Cobalt,Dissolved	ND		0.0100	1	11/06/2018 20:54	<a href="#">WG1190866</a>
Copper	ND		0.0100	1	11/06/2018 10:53	<a href="#">WG1190857</a>
Copper,Dissolved	ND		0.0100	1	11/06/2018 20:54	<a href="#">WG1190866</a>
Iron	0.107		0.100	1	11/06/2018 10:53	<a href="#">WG1190857</a>
Iron,Dissolved	ND		0.100	1	11/06/2018 20:54	<a href="#">WG1190866</a>
Lead	ND		0.00500	1	11/06/2018 10:53	<a href="#">WG1190857</a>
Lead,Dissolved	ND		0.00500	1	11/06/2018 20:54	<a href="#">WG1190866</a>
Magnesium	56.9		1.00	1	11/06/2018 10:53	<a href="#">WG1190857</a>
Magnesium,Dissolved	59.5		1.00	1	11/06/2018 20:54	<a href="#">WG1190866</a>
Manganese	0.371		0.0100	1	11/06/2018 10:53	<a href="#">WG1190857</a>
Manganese,Dissolved	0.375		0.0100	1	11/06/2018 20:54	<a href="#">WG1190866</a>
Molybdenum	0.00547		0.00500	1	11/06/2018 10:53	<a href="#">WG1190857</a>
Molybdenum,Dissolved	0.00548		0.00500	1	11/06/2018 20:54	<a href="#">WG1190866</a>
Nickel	ND		0.0100	1	11/06/2018 10:53	<a href="#">WG1190857</a>
Nickel,Dissolved	ND		0.0100	1	11/06/2018 20:54	<a href="#">WG1190866</a>
Phosphorus	ND		0.100	1	11/06/2018 10:53	<a href="#">WG1190857</a>
Potassium	9.36		1.00	1	11/06/2018 10:53	<a href="#">WG1190857</a>
Potassium,Dissolved	10.2		1.00	1	11/06/2018 20:54	<a href="#">WG1190866</a>
Selenium	ND		0.0100	1	11/06/2018 10:53	<a href="#">WG1190857</a>
Selenium,Dissolved	ND		0.0100	1	11/06/2018 20:54	<a href="#">WG1190866</a>
Silver	ND		0.00500	1	11/06/2018 10:53	<a href="#">WG1190857</a>
Silver,Dissolved	ND		0.00500	1	11/06/2018 20:54	<a href="#">WG1190866</a>
Sodium	147		1.00	1	11/06/2018 10:53	<a href="#">WG1190857</a>
Sodium,Dissolved	155		1.00	1	11/06/2018 20:54	<a href="#">WG1190866</a>
Strontium	1.65		0.0100	1	11/06/2018 10:53	<a href="#">WG1190857</a>
Sulfur	103		1.00	1	11/06/2018 10:53	<a href="#">WG1190857</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/31/18 09:45

L1040460

## Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Sulfur,Dissolved	106		1.00	1	11/06/2018 20:54	<a href="#">WG1190866</a>
Thallium	ND		0.0100	1	11/06/2018 10:53	<a href="#">WG1190857</a>
Thallium,Dissolved	ND		0.0100	1	11/06/2018 20:54	<a href="#">WG1190866</a>
Tin	ND		0.0500	1	11/06/2018 10:53	<a href="#">WG1190857</a>
Tin,Dissolved	ND		0.0500	1	11/06/2018 20:54	<a href="#">WG1190866</a>
Titanium	ND		0.0500	1	11/06/2018 10:53	<a href="#">WG1190857</a>
Titanium,Dissolved	ND		0.0500	1	11/06/2018 20:54	<a href="#">WG1190866</a>
Vanadium	ND		0.0200	1	11/06/2018 10:53	<a href="#">WG1190857</a>
Vanadium,Dissolved	ND		0.0200	1	11/06/2018 20:54	<a href="#">WG1190866</a>
Zinc	ND		0.0500	1	11/06/2018 10:53	<a href="#">WG1190857</a>
Zinc,Dissolved	ND		0.0500	1	11/06/2018 20:54	<a href="#">WG1190866</a>

1  
Cp2  
Tc3  
Ss4  
Cn5  
Sr6  
Qc7  
Gl8  
Al9  
Sc

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	11/03/2018 18:11	<a href="#">WG1190931</a>
Toluene	ND		0.00100	1	11/03/2018 18:11	<a href="#">WG1190931</a>
Ethylbenzene	ND		0.00100	1	11/03/2018 18:11	<a href="#">WG1190931</a>
Total Xylenes	ND		0.00300	1	11/03/2018 18:11	<a href="#">WG1190931</a>
(S) Toluene-d8	105		80.0-120		11/03/2018 18:11	<a href="#">WG1190931</a>
(S) Dibromofluoromethane	91.8		75.0-120		11/03/2018 18:11	<a href="#">WG1190931</a>
(S) a,a,a-Trifluorotoluene	106		80.0-120		11/03/2018 18:11	<a href="#">WG1190931</a>
(S) 4-Bromofluorobenzene	95.9		77.0-126		11/03/2018 18:11	<a href="#">WG1190931</a>



## Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	7.82		0.200	2	11/07/2018 17:11	<a href="#">WG1191649</a>

## Wet Chemistry by Method 5310 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
DOC	6.76	<a href="#">B T8</a>	5.00	5	11/04/2018 19:25	<a href="#">WG1190394</a>

## Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Aluminum	ND		0.200	1	11/06/2018 10:56	<a href="#">WG1190857</a>
Aluminum,Dissolved	ND		0.200	1	11/06/2018 20:57	<a href="#">WG1190866</a>
Antimony	ND		0.0100	1	11/06/2018 10:56	<a href="#">WG1190857</a>
Antimony,Dissolved	ND		0.0100	1	11/06/2018 20:57	<a href="#">WG1190866</a>
Arsenic	ND		0.0100	1	11/06/2018 10:56	<a href="#">WG1190857</a>
Arsenic,Dissolved	ND		0.0100	1	11/06/2018 20:57	<a href="#">WG1190866</a>
Barium	0.141		0.00500	1	11/06/2018 10:56	<a href="#">WG1190857</a>
Barium,Dissolved	0.134		0.00500	1	11/06/2018 20:57	<a href="#">WG1190866</a>
Beryllium	ND		0.00200	1	11/06/2018 10:56	<a href="#">WG1190857</a>
Beryllium,Dissolved	ND		0.00200	1	11/06/2018 20:57	<a href="#">WG1190866</a>
Boron	0.328		0.200	1	11/06/2018 10:56	<a href="#">WG1190857</a>
Boron,Dissolved	0.318		0.200	1	11/06/2018 20:57	<a href="#">WG1190866</a>
Cadmium	ND		0.00200	1	11/06/2018 10:56	<a href="#">WG1190857</a>
Cadmium,Dissolved	ND		0.00200	1	11/06/2018 20:57	<a href="#">WG1190866</a>
Calcium	156		1.00	1	11/06/2018 10:56	<a href="#">WG1190857</a>
Calcium,Dissolved	163		1.00	1	11/06/2018 20:57	<a href="#">WG1190866</a>
Chromium	ND		0.0100	1	11/06/2018 10:56	<a href="#">WG1190857</a>
Chromium,Dissolved	ND		0.0100	1	11/06/2018 20:57	<a href="#">WG1190866</a>
Cobalt	ND		0.0100	1	11/06/2018 10:56	<a href="#">WG1190857</a>
Cobalt,Dissolved	ND		0.0100	1	11/06/2018 20:57	<a href="#">WG1190866</a>
Copper	ND		0.0100	1	11/06/2018 10:56	<a href="#">WG1190857</a>
Copper,Dissolved	ND		0.0100	1	11/06/2018 20:57	<a href="#">WG1190866</a>
Iron	0.104		0.100	1	11/06/2018 10:56	<a href="#">WG1190857</a>
Iron,Dissolved	ND		0.100	1	11/06/2018 20:57	<a href="#">WG1190866</a>
Lead	ND		0.00500	1	11/06/2018 10:56	<a href="#">WG1190857</a>
Lead,Dissolved	ND		0.00500	1	11/06/2018 20:57	<a href="#">WG1190866</a>
Magnesium	57.1		1.00	1	11/06/2018 10:56	<a href="#">WG1190857</a>
Magnesium,Dissolved	60.2		1.00	1	11/06/2018 20:57	<a href="#">WG1190866</a>
Manganese	0.190		0.0100	1	11/06/2018 10:56	<a href="#">WG1190857</a>
Manganese,Dissolved	0.163		0.0100	1	11/06/2018 20:57	<a href="#">WG1190866</a>
Molybdenum	0.00503		0.00500	1	11/06/2018 10:56	<a href="#">WG1190857</a>
Molybdenum,Dissolved	0.00560		0.00500	1	11/06/2018 20:57	<a href="#">WG1190866</a>
Nickel	ND		0.0100	1	11/06/2018 10:56	<a href="#">WG1190857</a>
Nickel,Dissolved	ND		0.0100	1	11/06/2018 20:57	<a href="#">WG1190866</a>
Phosphorus	ND		0.100	1	11/06/2018 10:56	<a href="#">WG1190857</a>
Potassium	9.08		1.00	1	11/06/2018 10:56	<a href="#">WG1190857</a>
Potassium,Dissolved	9.95		1.00	1	11/06/2018 20:57	<a href="#">WG1190866</a>
Selenium	0.0151		0.0100	1	11/06/2018 10:56	<a href="#">WG1190857</a>
Selenium,Dissolved	ND		0.0100	1	11/06/2018 20:57	<a href="#">WG1190866</a>
Silver	ND		0.00500	1	11/06/2018 10:56	<a href="#">WG1190857</a>
Silver,Dissolved	ND		0.00500	1	11/06/2018 20:57	<a href="#">WG1190866</a>
Sodium	148		1.00	1	11/06/2018 10:56	<a href="#">WG1190857</a>
Sodium,Dissolved	161		1.00	1	11/06/2018 20:57	<a href="#">WG1190866</a>
Strontium	1.71		0.0100	1	11/06/2018 10:56	<a href="#">WG1190857</a>
Sulfur	110		1.00	1	11/06/2018 10:56	<a href="#">WG1190857</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



## Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Sulfur,Dissolved	111		1.00	1	11/06/2018 20:57	<a href="#">WG1190866</a>
Thallium	ND		0.0100	1	11/06/2018 10:56	<a href="#">WG1190857</a>
Thallium,Dissolved	ND		0.0100	1	11/06/2018 20:57	<a href="#">WG1190866</a>
Tin	ND		0.0500	1	11/06/2018 10:56	<a href="#">WG1190857</a>
Tin,Dissolved	ND		0.0500	1	11/06/2018 20:57	<a href="#">WG1190866</a>
Titanium	ND		0.0500	1	11/06/2018 10:56	<a href="#">WG1190857</a>
Titanium,Dissolved	ND		0.0500	1	11/06/2018 20:57	<a href="#">WG1190866</a>
Vanadium	ND		0.0200	1	11/06/2018 10:56	<a href="#">WG1190857</a>
Vanadium,Dissolved	ND		0.0200	1	11/06/2018 20:57	<a href="#">WG1190866</a>
Zinc	ND		0.0500	1	11/06/2018 10:56	<a href="#">WG1190857</a>
Zinc,Dissolved	ND		0.0500	1	11/06/2018 20:57	<a href="#">WG1190866</a>

1  
Cp2  
Tc3  
Ss4  
Cn5  
Sr6  
Qc7  
Gl8  
Al9  
Sc

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	11/03/2018 18:30	<a href="#">WG1190931</a>
Toluene	ND		0.00100	1	11/03/2018 18:30	<a href="#">WG1190931</a>
Ethylbenzene	ND		0.00100	1	11/03/2018 18:30	<a href="#">WG1190931</a>
Total Xylenes	ND		0.00300	1	11/03/2018 18:30	<a href="#">WG1190931</a>
(S) Toluene-d8	108		80.0-120		11/03/2018 18:30	<a href="#">WG1190931</a>
(S) Dibromofluoromethane	91.8		75.0-120		11/03/2018 18:30	<a href="#">WG1190931</a>
(S) a,a,a-Trifluorotoluene	104		80.0-120		11/03/2018 18:30	<a href="#">WG1190931</a>
(S) 4-Bromofluorobenzene	99.5		77.0-126		11/03/2018 18:30	<a href="#">WG1190931</a>



Method Blank (MB)

(MB) R3357895-1 11/07/18 16:48

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Nitrate-Nitrite	U		0.0197	0.100

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc

L1040460-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1040460-10 11/07/18 17:00 • (DUP) R3357895-3 11/07/18 17:08

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Nitrate-Nitrite	3.01	3.12	1	3.53		20

L1040709-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1040709-06 11/07/18 17:32 • (DUP) R3357895-5 11/07/18 17:33

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Nitrate-Nitrite	ND	0.000	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3357895-2 11/07/18 16:50

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/l	mg/l	%	%	
Nitrate-Nitrite	4.00	3.63	90.8	90.0-110	

L1040524-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1040524-01 11/07/18 17:12 • (MS) R3357895-4 11/07/18 17:14

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/l	mg/l	mg/l	%		%	
Nitrate-Nitrite	2.50	0.505	2.60	83.7	1	90.0-110	J6

L1040720-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1040720-01 11/07/18 17:35 • (MS) R3357895-6 11/07/18 17:36 • (MSD) R3357895-7 11/07/18 17:38

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Nitrate-Nitrite	2.50	0.207	2.17	2.34	78.5	85.2	1	90.0-110	J6	J6	7.46	20

Method Blank (MB)

(MB) R3356789-1 11/04/18 12:12

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
DOC	0.169	⬇	0.106	1.00

L1039933-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1039933-01 11/04/18 14:08 • (DUP) R3356789-3 11/04/18 14:27

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
DOC	5.25	5.08	1	3.31		20

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

(LCS) R3356789-2 11/04/18 13:35 • (LCSD) R3356789-6 11/04/18 15:57

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
DOC	75.0	72.0	72.0	96.0	96.0	85.0-115			0.0278	20

L1040460-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1040460-01 11/04/18 14:43 • (MS) R3356789-4 11/04/18 15:12 • (MSD) R3356789-5 11/04/18 15:37

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
DOC	50.0	3.30	52.4	52.7	98.2	98.8	1	80.0-120			0.571	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



[L1040460-01,05,06,07,08,09,10,11,12](#)

Method Blank (MB)

(MB) R3357361-1 11/06/18 10:05

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Aluminum	U		0.0350	0.200
Antimony	U		0.00750	0.0100
Arsenic	U		0.00650	0.0100
Barium	U		0.00170	0.00500
Beryllium	U		0.000700	0.00200
Boron	U		0.0126	0.200
Cadmium	U		0.000700	0.00200
Calcium	U		0.0463	1.00
Chromium	U		0.00140	0.0100
Cobalt	U		0.00230	0.0100
Copper	U		0.00530	0.0100
Iron	U		0.0141	0.100
Lead	U		0.00190	0.00500
Magnesium	U		0.0111	1.00
Manganese	U		0.00120	0.0100
Molybdenum	U		0.00160	0.00500
Nickel	U		0.00490	0.0100
Phosphorus	0.00641	U	0.00370	0.100
Potassium	U		0.102	1.00
Selenium	U		0.00740	0.0100
Silver	U		0.00280	0.00500
Sodium	U		0.0985	1.00
Strontium	U		0.00170	0.0100
Sulfur	U		0.220	1.00
Thallium	U		0.00650	0.0100
Tin	U		0.00440	0.0500
Titanium	U		0.00210	0.0500
Vanadium	U		0.00240	0.0200
Zinc	U		0.00590	0.0500

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc

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

(LCS) R3357361-2 11/06/18 10:07 • (LCSD) R3357361-3 11/06/18 10:10

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Aluminum	10.0	9.91	9.84	99.1	98.4	80.0-120			0.702	20
Antimony	1.00	1.00	0.987	100	98.7	80.0-120			1.64	20
Arsenic	1.00	0.974	0.975	97.4	97.5	80.0-120			0.0466	20
Barium	1.00	1.02	1.01	102	101	80.0-120			0.959	20





L1040460-01,05,06,07,08,09,10,11,12

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

(LCS) R3357361-2 11/06/18 10:07 • (LCSD) R3357361-3 11/06/18 10:10

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Beryllium	1.00	0.993	0.983	99.3	98.3	80.0-120			1.05	20
Boron	1.00	1.01	0.990	101	99.0	80.0-120			2.16	20
Cadmium	1.00	0.979	0.970	97.9	97.0	80.0-120			0.865	20
Calcium	10.0	10.0	9.81	100	98.1	80.0-120			2.00	20
Chromium	1.00	0.996	0.987	99.6	98.7	80.0-120			0.845	20
Cobalt	1.00	1.02	1.01	102	101	80.0-120			1.17	20
Copper	1.00	0.989	0.978	98.9	97.8	80.0-120			1.13	20
Iron	10.0	9.82	9.72	98.2	97.2	80.0-120			1.05	20
Lead	1.00	0.995	0.987	99.5	98.7	80.0-120			0.895	20
Magnesium	10.0	9.83	9.74	98.3	97.4	80.0-120			0.984	20
Manganese	1.00	0.972	0.962	97.2	96.2	80.0-120			1.07	20
Molybdenum	1.00	1.02	1.01	102	101	80.0-120			1.15	20
Nickel	1.00	1.00	0.991	100	99.1	80.0-120			1.06	20
Phosphorus	1.00	1.01	0.994	101	99.4	80.0-120			1.45	20
Potassium	10.0	9.57	9.13	95.7	91.3	80.0-120			4.69	20
Selenium	1.00	0.968	0.975	96.8	97.5	80.0-120			0.751	20
Silver	0.200	0.190	0.188	95.1	94.1	80.0-120			1.12	20
Sodium	10.0	10.4	9.83	104	98.3	80.0-120			5.34	20
Strontium	1.00	0.984	0.974	98.4	97.4	80.0-120			1.04	20
Sulfur	10.0	9.58	9.50	95.8	95.0	80.0-120			0.922	20
Thallium	1.00	0.986	0.977	98.6	97.7	80.0-120			0.876	20
Tin	1.00	1.00	0.987	100	98.7	80.0-120			1.22	20
Titanium	1.00	0.996	0.986	99.6	98.6	80.0-120			0.977	20
Vanadium	1.00	0.997	0.988	99.7	98.8	80.0-120			0.941	20
Zinc	1.00	0.981	0.973	98.1	97.3	80.0-120			0.852	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1040415-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1040415-01 11/06/18 10:12 • (MS) R3357361-5 11/06/18 10:18 • (MSD) R3357361-6 11/06/18 10:20

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Aluminum	10.0	ND	9.98	9.86	99.8	98.6	1	75.0-125			1.17	20
Antimony	1.00	ND	1.00	0.997	100	99.7	1	75.0-125			0.570	20
Arsenic	1.00	ND	0.996	0.987	99.6	98.7	1	75.0-125			0.886	20
Barium	1.00	0.426	1.43	1.42	100	99.7	1	75.0-125			0.366	20
Beryllium	1.00	ND	0.997	0.988	99.7	98.8	1	75.0-125			0.885	20
Boron	1.00	ND	1.06	1.07	98.9	99.6	1	75.0-125			0.704	20
Cadmium	1.00	ND	0.983	0.977	98.3	97.7	1	75.0-125			0.696	20
Calcium	10.0	32.2	42.3	42.0	101	98.3	1	75.0-125			0.702	20



L1040415-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1040415-01 11/06/18 10:12 • (MS) R3357361-5 11/06/18 10:18 • (MSD) R3357361-6 11/06/18 10:20

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chromium	1.00	ND	0.996	1.00	99.6	100	1	75.0-125			0.443	20
Cobalt	1.00	ND	1.02	1.02	102	102	1	75.0-125			0.590	20
Copper	1.00	ND	0.986	0.988	98.6	98.8	1	75.0-125			0.227	20
Iron	10.0	0.171	9.92	9.88	97.5	97.1	1	75.0-125			0.359	20
Lead	1.00	ND	0.998	0.989	99.8	98.9	1	75.0-125			0.861	20
Magnesium	10.0	7.07	16.7	16.7	96.7	96.2	1	75.0-125			0.283	20
Manganese	1.00	0.0169	0.982	0.983	96.5	96.6	1	75.0-125			0.144	20
Molybdenum	1.00	ND	1.02	1.02	102	101	1	75.0-125			0.377	20
Nickel	1.00	ND	1.01	1.00	101	100	1	75.0-125			0.658	20
Phosphorus	1.00		1.05	1.04	102	101	1	75.0-125			0.934	20
Potassium	10.0	ND	10.1	10.0	92.5	92.3	1	75.0-125			0.225	20
Selenium	1.00	ND	0.997	0.988	99.7	98.8	1	75.0-125			0.929	20
Silver	0.200	ND	0.188	0.189	94.2	94.7	1	75.0-125			0.581	20
Sodium	10.0	20.0	30.7	30.5	106	105	1	75.0-125			0.432	20
Strontium	1.00	0.909	1.87	1.87	96.6	96.0	1	75.0-125			0.336	20
Sulfur	10.0	3.17	12.8	12.7	96.6	95.6	1	75.0-125			0.725	20
Thallium	1.00	ND	0.983	0.978	98.3	97.8	1	75.0-125			0.571	20
Tin	1.00	ND	0.990	0.989	99.0	98.9	1	75.0-125			0.0878	20
Titanium	1.00	ND	1.00	0.989	100	98.9	1	75.0-125			1.13	20
Vanadium	1.00	ND	0.993	0.984	98.8	97.9	1	75.0-125			0.934	20
Zinc	1.00	ND	0.999	0.997	97.5	97.3	1	75.0-125			0.181	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3357606-1 11/06/18 20:14

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Aluminum,Dissolved	U		0.0350	0.200
Antimony,Dissolved	U		0.00750	0.0100
Arsenic,Dissolved	U		0.00650	0.0100
Barium,Dissolved	U		0.00170	0.00500
Beryllium,Dissolved	U		0.000700	0.00200
Boron,Dissolved	U		0.0126	0.200
Cadmium,Dissolved	U		0.000700	0.00200
Calcium,Dissolved	U		0.0463	1.00
Chromium,Dissolved	U		0.00140	0.0100
Cobalt,Dissolved	U		0.00230	0.0100
Copper,Dissolved	U		0.00530	0.0100
Iron,Dissolved	U		0.0141	0.100
Lead,Dissolved	U		0.00190	0.00500
Magnesium,Dissolved	U		0.0111	1.00
Manganese,Dissolved	U		0.00120	0.0100
Molybdenum,Dissolved	U		0.00160	0.00500
Nickel,Dissolved	U		0.00490	0.0100
Potassium,Dissolved	0.514	U	0.102	1.00
Selenium,Dissolved	U		0.00740	0.0100
Silver,Dissolved	U		0.00280	0.00500
Sulfur,Dissolved	U		0.220	1.00
Thallium,Dissolved	U		0.00650	0.0100
Tin,Dissolved	U		0.00440	0.0500
Titanium,Dissolved	U		0.00210	0.0500
Vanadium,Dissolved	U		0.00240	0.0200
Zinc,Dissolved	U		0.00590	0.0500

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3357749-1 11/07/18 11:28

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Sodium,Dissolved	U		0.0985	1.00



L1040460-01,05,06,07,08,09,10,11,12

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

(LCS) R3357606-2 11/06/18 20:16 • (LCSD) R3357606-3 11/06/18 20:19

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Aluminum,Dissolved	10.0	9.88	9.88	98.8	98.8	80.0-120			0.0178	20
Antimony,Dissolved	1.00	1.00	0.996	100	99.6	80.0-120			0.669	20
Arsenic,Dissolved	1.00	0.994	0.997	99.4	99.7	80.0-120			0.319	20
Barium,Dissolved	1.00	1.01	1.01	101	101	80.0-120			0.376	20
Beryllium,Dissolved	1.00	0.973	0.978	97.3	97.8	80.0-120			0.549	20
Boron,Dissolved	1.00	0.998	1.01	99.8	101	80.0-120			0.960	20
Cadmium,Dissolved	1.00	0.998	0.996	99.8	99.6	80.0-120			0.118	20
Calcium,Dissolved	10.0	10.0	10.1	100	101	80.0-120			0.727	20
Chromium,Dissolved	1.00	1.00	0.999	100	99.9	80.0-120			0.486	20
Cobalt,Dissolved	1.00	1.03	1.03	103	103	80.0-120			0.0518	20
Copper,Dissolved	1.00	1.00	0.999	100	99.9	80.0-120			0.332	20
Iron,Dissolved	10.0	10.1	10.1	101	101	80.0-120			0.0302	20
Lead,Dissolved	1.00	0.988	0.997	98.8	99.7	80.0-120			0.935	20
Magnesium,Dissolved	10.0	9.66	9.70	96.6	97.0	80.0-120			0.376	20
Manganese,Dissolved	1.00	1.01	1.00	101	100	80.0-120			0.651	20
Molybdenum,Dissolved	1.00	1.03	1.03	103	103	80.0-120			0.548	20
Nickel,Dissolved	1.00	1.01	1.01	101	101	80.0-120			0.381	20
Potassium,Dissolved	10.0	9.84	9.84	98.4	98.4	80.0-120			0.0132	20
Selenium,Dissolved	1.00	0.989	0.989	98.9	98.9	80.0-120			0.00538	20
Silver,Dissolved	0.200	0.188	0.187	94.0	93.6	80.0-120			0.425	20
Sodium,Dissolved	10.0	10.9	10.7	109	107	80.0-120			1.79	20
Sulfur,Dissolved	10.0	9.52	9.58	95.2	95.8	80.0-120			0.584	20
Thallium,Dissolved	1.00	1.01	1.01	101	101	80.0-120			0.0543	20
Tin,Dissolved	1.00	1.03	1.02	103	102	80.0-120			0.989	20
Titanium,Dissolved	1.00	1.01	1.01	101	101	80.0-120			0.253	20
Vanadium,Dissolved	1.00	0.993	1.00	99.3	100	80.0-120			0.737	20
Zinc,Dissolved	1.00	1.01	1.01	101	101	80.0-120			0.0664	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1040460-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1040460-01 11/06/18 20:22 • (MS) R3357606-5 11/06/18 20:27 • (MSD) R3357606-6 11/06/18 20:29

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Aluminum,Dissolved	10.0	ND	9.96	9.91	99.6	99.1	1	75.0-125			0.475	20
Antimony,Dissolved	1.00	ND	1.03	1.02	103	102	1	75.0-125			0.485	20
Arsenic,Dissolved	1.00	ND	1.04	1.03	104	103	1	75.0-125			0.820	20
Barium,Dissolved	1.00	0.0958	1.09	1.09	99.5	99.1	1	75.0-125			0.335	20
Beryllium,Dissolved	1.00	ND	0.975	0.970	97.5	97.0	1	75.0-125			0.466	20
Boron,Dissolved	1.00	0.256	1.27	1.25	101	99.9	1	75.0-125			0.817	20



L1040460-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1040460-01 11/06/18 20:22 • (MS) R3357606-5 11/06/18 20:27 • (MSD) R3357606-6 11/06/18 20:29

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cadmium,Dissolved	1.00	ND	1.02	1.02	102	102	1	75.0-125			0.426	20
Calcium,Dissolved	10.0	170	178	177	77.9	71.6	1	75.0-125		V	0.356	20
Chromium,Dissolved	1.00	ND	0.990	0.984	99.0	98.4	1	75.0-125			0.583	20
Cobalt,Dissolved	1.00	ND	1.03	1.03	103	103	1	75.0-125			0.335	20
Copper,Dissolved	1.00	ND	1.02	1.02	101	101	1	75.0-125			0.190	20
Iron,Dissolved	10.0	ND	10.0	9.92	100	99.2	1	75.0-125			0.784	20
Lead,Dissolved	1.00	ND	0.994	0.990	99.4	99.0	1	75.0-125			0.365	20
Magnesium,Dissolved	10.0	49.2	58.4	58.3	91.6	90.9	1	75.0-125			0.109	20
Manganese,Dissolved	1.00	ND	0.995	0.990	99.1	98.5	1	75.0-125			0.516	20
Molybdenum,Dissolved	1.00	0.00590	1.04	1.03	103	103	1	75.0-125			0.519	20
Nickel,Dissolved	1.00	ND	1.01	1.00	101	100	1	75.0-125			0.353	20
Potassium,Dissolved	10.0	6.85	16.7	16.6	98.0	97.7	1	75.0-125			0.179	20
Selenium,Dissolved	1.00	ND	1.04	1.03	104	103	1	75.0-125			0.512	20
Silver,Dissolved	0.200	ND	0.193	0.193	96.5	96.3	1	75.0-125			0.268	20
Sodium,Dissolved	10.0	146	154	154	81.2	77.4	1	75.0-125			0.251	20
Sulfur,Dissolved	10.0	105	112	111	70.8	67.2	1	75.0-125	EV	EV	0.326	20
Thallium,Dissolved	1.00	ND	1.01	1.00	101	100	1	75.0-125			0.228	20
Tin,Dissolved	1.00	ND	1.02	1.01	102	101	1	75.0-125			0.800	20
Titanium,Dissolved	1.00	ND	1.02	1.02	101	101	1	75.0-125			0.194	20
Vanadium,Dissolved	1.00	ND	1.01	0.996	101	99.6	1	75.0-125			1.01	20
Zinc,Dissolved	1.00	ND	0.990	0.988	99.0	98.8	1	75.0-125			0.204	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3358208-4 11/03/18 13:58

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.000331	0.00100
Ethylbenzene	U		0.000384	0.00100
Toluene	U		0.000412	0.00100
Xylenes, Total	U		0.00106	0.00300
(S) Toluene-d8	104			80.0-120
(S) Dibromofluoromethane	92.5			75.0-120
(S) a,a,a-Trifluorotoluene	103			80.0-120
(S) 4-Bromofluorobenzene	99.1			77.0-126

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

(LCS) R3358208-1 11/03/18 12:41 • (LCSD) R3358208-2 11/03/18 13:00

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0238	0.0198	95.1	79.3	70.0-123			18.0	20
Ethylbenzene	0.0250	0.0276	0.0231	110	92.6	79.0-123			17.5	20
Toluene	0.0250	0.0267	0.0225	107	90.1	79.0-120			16.9	20
Xylenes, Total	0.0750	0.0829	0.0709	111	94.5	79.0-123			15.6	20
(S) Toluene-d8				105	105	80.0-120				
(S) Dibromofluoromethane				91.7	91.1	75.0-120				
(S) a,a,a-Trifluorotoluene				105	102	80.0-120				
(S) 4-Bromofluorobenzene				94.9	94.6	77.0-126				

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc



## Guide to Reading and Understanding Your Laboratory Report

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

### Abbreviations and Definitions

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

Qualifier	Description
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 GI

8 AI

9 Sc





Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

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

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

## State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico <sup>1</sup>	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina <sup>1</sup>	DW21704
Georgia	NELAP	North Carolina <sup>3</sup>	41
Georgia <sup>1</sup>	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky <sup>1 6</sup>	90010	South Carolina	84004
Kentucky <sup>2</sup>	16	South Dakota	n/a
Louisiana	AI30792	Tennessee <sup>1 4</sup>	2006
Louisiana <sup>1</sup>	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

## Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

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

## Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



Tasman Geosciences  
1899 Pecos St. Unit C  
Denver, CO 80221

Report to:  
Christine Hamlin

Project description:  
Sitzman 1U

Phone: 720-409-8791  
Fax:

Collected by (print):

HEIDENE HAMLIN  
Collected by (signature):

Immediately  
acked on Ice: N ☐ Y ☒

Billing Information:

Email To:  
chamlin@tasman-geo.com

City/State  
Collected: COLORADO

Lab Project #

P.O. #

Quote #

Rush? (Lab MUST Be Notified)

Same Day ☒ Five Day  
Next Day ☐ 5 Day (Rad Only)  
Two Day ☐ 10 Day (Rad Only)  
Three Day ☐

Date Results Needed

No.  
of  
Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	Pres Chk	Analysis / Container / Preservative	Chain of Custody
BH101		GW		10/30/18	1135	7	BTEX8260B (2) 40ml Amber w/HCl	
BH109		GW		10/30/18	1412	2	DOC - 250ml Amber No Pres	
BH112		GW		10/30/18	1233	2	N02N03 - 250ml HDPE w/H2SO4	
BH111		GW		10/30/18	1254	2	Na,Ca,Mg - 500ml HDPE No Pres	
BH110		GW		10/30/18	1330	7	Diss. Metals - 500ml HDPE No Pres	
BH106		GW		10/30/18	1400	7	Total Metals - 500ml HDPE No Pres	
BH104		GW		10/30/18	1430	7		
BH102		GW		10/31/18	750	7		
BH107		GW		10/31/18	835	7		
BH108		GW		10/31/18	909	7		

Matrix:  
S - Soil AIR - Air F - Filter  
W - Groundwater B - Bioassay  
TW - WasteWater  
W - Drinking Water  
T - Other

Remarks:

Samples returned via:  
UPS ☒ FedEx ☐ Courier ☐

Tracking # 4430 3424 2493 / 2508

pH Temp

Flow Other

Sample Receipt Checklist  
COC Seal Present/Intact: ☐ Y ☒ N  
COC Signed/Accurate: ☐ Y ☒ N  
Bottles arrive intact: ☐ Y ☒ N  
Correct bottles used: ☐ Y ☒ N  
Sufficient volume sent: ☐ Y ☒ N  
If Applicable  
VOA Zero Headpace: ☐ Y ☒ N  
Preservation Correct/Checked: ☐ Y ☒ N

Relinquished by: (Signature)

Relinquished by: (Signature)

Relinquished by: (Signature)

Date: 10/31/18 Time: 1330

Received by: (Signature)

Trip Blank Received: Yes / ☒ No  
HCL / MeOH  
TBR

Received by: (Signature)

Temp: 14.18 °C Bottles Received: 69.

Received for lab by: (Signature)

Date: 11/1/18 Time: 845

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

Chain of Custody Page 1 of 2



12065 Lebanon Rd  
Mount Juliet, TN 37122  
Phone: 615-758-3858  
Phone: 800-367-5859  
Fax: 615-758-5859



L# L1040460

Table #

Acctnum: TASGEOACO

Template:

Prelogin:

TSR: Chris Ward

PB:

Shipped Via:

Remarks Sample # (lab only)

-01  
-02  
-03  
-04  
-05  
-06  
-07  
-08  
-09  
-10

Tasman Geosciences  
899 Pecos St. Unit C  
Denver, CO 80221

Report to:  
Christine Hamlin

Project description:  
Sitzman 1U

Phone: 720-409-8791  
Fax:

Collected by (print):

Christine Hamlin

Collected by (signature):

Immediately  
Packed on Ice N Y

Billing Information:

Email To:  
chamlin@tasman-geo.com

City/State  
Collected: COLORADO

Lab Project #

Site/Facility ID #

P.O. #

Rush? (Lab MUST Be Notified)

Same Day ☒ Five Day  
Next Day ☐ 5 Day (Rad Only)  
Two Day ☐ 10 Day (Rad Only)  
Three Day ☐

Quote #

Date Results Needed

No.  
of  
Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	Pres	Chk	Analysis / Container / Preservative	Chain of Custody
BH05		GW		10/11/18	9:45	7	X	BTEX8260B (2) 40ml Amber w/HCI	L# 21040460 Table # Acctnum: TASGEOACO Template: Prelogin: TSR: Chris Ward PB: Shipped Via: Remarks: Sample # (Lab only)
BH03		GW		10/12/18	10:15	7	X	DOC - 250ml Amber No Pres	
		GW					X	N02N03 - 250ml HDPE w/H2504	
		GW					X	Na,Ca,Mg - 500ml HDPE No Pres	
		GW					X	Diss. Metals - 500ml HDPE No Pres	
		GW					X	Total Metals - 500ml HDPE No Pres	
		GW					X		
		GW					X		

Matrix:  
- Soil AIR - Air F - Filter  
N - Groundwater B - Bioassay  
W - WasteWater  
M - Drinking Water  
F - Other

Remarks:

Samples returned via:

UPS ☐ FedEx ☒ Courier

Tracking # Same

Received by: (Signature)

Trip Blank Received: Yes ☒  
HCL / MeOH  
TBR

Received by: (Signature)

Temp: 19.4°C  
Bottles Received: 109

Received for lab by: (Signature)

Date: 11/1/18  
Time: 845

Sample Receipt Checklist  
COC Seal Present/Intact: ☐ Y ☐ N  
COC Signed/Accurate: ☐ Y ☐ N  
Bottles arrive intact: ☐ Y ☐ N  
Correct bottles used: ☐ Y ☐ N  
Sufficient volume sent: ☐ Y ☐ N  
If Applicable  
VOA Zero Headspace: ☐ Y ☐ N  
Preservation Correct/Checked: ☐ Y ☐ N

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK



Katie Ingram



Login #: <i>L104D410</i>	Client: TASGEOACO	Date: 10/01/18	Evaluated by: Myra "Katie" Ingram
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Non-Conformance (check applicable items)

Sample Integrity	Chain of Custody Clarification	
X Parameter(s) past holding time	Login Clarification Needed	If Broken Container:
Improper temperature	Chain of custody is incomplete	Insufficient packing material around container
Improper container type	Please specify Metals requested.	Insufficient packing material inside cooler
Improper preservation	Please specify TCLP requested.	Improper handling by carrier (FedEx / UPS / Courier)
Insufficient sample volume.	Received additional samples not listed on COC	Sample was frozen
Sample is biphasic.	Sample ids on containers do not match ids on COC	Container lid not intact
Vials received with headspace.	Trip Blank not received.	If no Chain of Custody:
Broken container	Client did not "X" analysis.	Received by: Patrick N.
Broken container:	X Chain of Custody is missing	Date/Time: 10/31/18 0845
Sufficient sample remains		X Temp./Cont Rec./pH: 1.4, 1.8/
		X Carrier:
		X Tracking#

Login Comments:

Project: Sitzman

Received 12 water IDs

See attached for a list of IDs, collect times, containers counts, and types of containers

All DOCs are out of hold

All metals containers unpreserved

Client informed by:	Call	X	Email	Voice Mail	Date: 11/2/18	Time: 1051
TSR Initials: CMW	Client Contact: Christine Hamlin					

Login Instructions: Please log according to the attached COC

Total Metals: ICP METALS SCAN

Diss Metals: ICP DISS METALS SCAN

Client notified, Proceed with out of hold reporting

Preserve and proceed with analysis