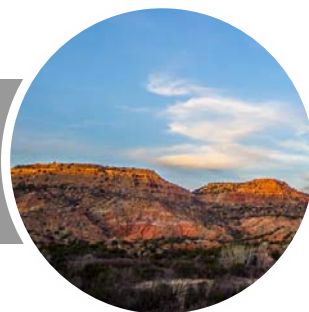


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**Nelson C-1
Groundwater Monitoring Report - Fourth Quarter 2017
Remediation Project No. 9146**

January 22, 2018

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1 Introduction

Talon/LPE (Talon) was contracted by Whiting Petroleum Corporation (Whiting) to conduct groundwater monitoring activities at the Nelson C1 site (Site) in Weld County, Colorado. The site is located at the northwest quarter of the southeast quarter of Section 18, Township 10 North, Range 58 West, 6th Principal Meridian at 40°50'10.72"N and 103°54'17.73"W (Attachment 1). The site is identified by the State of Colorado Oil and Gas Conservation Commission (COGCC) as Spill/Release Point Facility ID 441208 and as Remediation Project Number 9146. The Site Plan is shown on Figure 1, and the general site location is shown on Figure 6.

2 Objective

The primary objective of this document is to report on Site activities completed during Fourth Quarter 2017 which included groundwater monitoring, product removal, and removal of the skimmer pump system.

3 Regulatory Framework

The COGCC has regulatory jurisdiction over oil and natural gas industry operations in the State of Colorado. Section 900 of the COGCC Rules is for Exploration and Production Waste Management. More specifically, Section 910 details the Concentrations and Sampling for Soil and Groundwater rules. The regulatory limits for specific analytes in groundwater are detailed in Table 910-1 and are summarized below.

Compound	COGCC Table 910-1 Groundwater Concentrations
Benzene	0.005 mg/L
Toluene	1.0 mg/L
Ethylbenzene	0.7 mg/L
Xylenes (total)	10 mg/L

4 Site Characteristics

4.1 Geography

The site is located in the Pawnee Grasslands in Weld County, which is the northeastern part of Colorado. The Grasslands are part of the Colorado Eastern Plains and are relatively flat with the exception of the Pawnee Creek which drains into the South Platte River.

4.2 Geologic Summary

Geology in this area consists of Oligocene age soils of the White River Group comprised of the Brule Formation and Chadron Formation. The Brule Formation consists of interbedded claystones, mudstones, and siltstones of grayish green color. Underlying the Brule Formation is the Chadron Formation comprised of sandstones, claystones, and conglomerates; color varies from yellowish-brown to olive-gray.

4.3 Groundwater

According to the Colorado Division of Water Resources Website, there are no water wells within 1,000-foot radius of the Site.

Depth to groundwater levels, as measured on December 19, 2017, in the 22 groundwater monitoring wells range from 28.24 (MW-8) to 39.14 (MW-11) feet below top of casing (Table 4), which are above-ground by approximately three (3) feet (ft). Several wells had measurable amounts of phase-separated hydrocarbons (PSH) during this monitoring event.

5 Well Skimmer Pump Removal

On August 29, 2017, Talon personnel installed a skimmer pump system at the site. Five (5) SPG4 Skimmer pumps were installed in monitoring wells MW-3, MW-5, MW-7, MW-17, and MW-20. The purpose of the pumps was to remove the PSH from the wells.

On December 11, 2017, Talon personnel removed the skimmer pumps from the wells. The pumps were cleaned and stored indoors for the winter season. The air tank and fluid storage tank remain on site.

6 Groundwater Monitoring

6.1 Groundwater Sampling

On December 19 2017, the 22 monitoring wells were gauged for depth to water and depth to PSH (Table 4). Wells with less than 0.1 feet of PSH were purged of three (3) well casing volumes, or until the wells became dry. On December 20, 2017, Talon personnel collected groundwater samples from these wells. Monitoring wells MW-3, MW-5, MW-6, MW-7, MW-17, MW-20, and MW-21 were not sampled due to the presence of PSH greater than 0.1 feet. Figure 5 shows groundwater elevation contours and the hydraulic gradient based on wells with no measurable PSH or skimmer pumps. The hydraulic gradient flows radially outward from monitoring well MW-8. The gradient has been calculated to be approximately 0.012 ft/foot to the northeast between monitoring wells MW-8 and MW-19 and approximately 0.009 ft/foot to the north between monitoring wells MW-8 and MW-10.

The collected groundwater samples were submitted to Summit Scientific in Golden, Colorado (Summit) for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) via method SW8260. Purge water generated during development and sampling was placed in poly containers within secondary containment pending off-site disposal.

Table 1 in Attachment 2 summarizes the well completion and survey information. Groundwater analytical results are summarized in Table 2 and shown on Figure 2.

Groundwater laboratory analytical results for benzene ranged from below laboratory detection limits to 14 mg/L (MW-2 and MW-8). Benzene concentrations increased from Third Quarter 2017 to Fourth Quarter 2017 in monitoring wells MW-8, MW-14, and MW-22. Benzene concentrations decreased in monitoring wells MW-1, MW-4, MW-15, MW-18, and MW-19. Benzene concentrations remained unchanged in monitoring wells MW-2, MW-9, MW-10, MW-11, MW-12, MW-13, and MW-16. Figure 3 shows the isoconcentration contours of dissolved-phase benzene analytical results.

Analytical results for toluene ranged from below laboratory detection limits to 16 mg/L (MW-2). Toluene concentrations increased from Third Quarter 2017 to Fourth Quarter 2017 in monitoring wells MW-4, MW-8, MW-15, MW-18, and MW-22. Toluene concentrations decreased in monitoring wells MW-14, MW-16, and MW-19. Toluene concentrations remained unchanged in monitoring wells MW-1, MW-2, MW-9, MW-10, MW-11, MW-12, and MW-13.

Analytical results for ethylbenzene ranged from below laboratory detection limits to 1.2 mg/L (MW-2 and MW-22). Ethylbenzene concentrations increased from Third Quarter 2017 to Fourth Quarter 2017 in monitoring wells MW-1, MW-2, MW-8, MW-14, MW-15, MW-16, MW-18, and MW-22. Ethylbenzene concentrations decreased in monitoring well MW-4, and remained unchanged in monitoring wells MW-9, MW-10, MW-11, MW-12, MW-13 and MW-19.

Analytical results for total xylenes ranged from below laboratory detection limits to 7.3 mg/L (MW-2). Total xylenes concentrations increased from Third Quarter 2017 to Fourth Quarter 2017 in monitoring wells MW-1, MW-2, MW-4, MW-8, MW-15, MW-18, and MW-19. Total xylenes concentrations decreased in monitoring wells MW-14, MW-16, and MW-22, and remained unchanged in MW-9, MW-10, MW-11, MW-12, and MW-13.

A copy of the laboratory reports and chain of custody documentation is included in Attachment 3.

7 Product Removal and Gauging

Talon gauging data from December 19, 2017, reveals the presence of PSH in monitoring wells MW-3, MW-5, MW-6, MW-7, MW-17, and MW-21, ranging from 0.13 ft to 3.77 ft (Table 3). Figure 4 shows contours of PSH thickness.

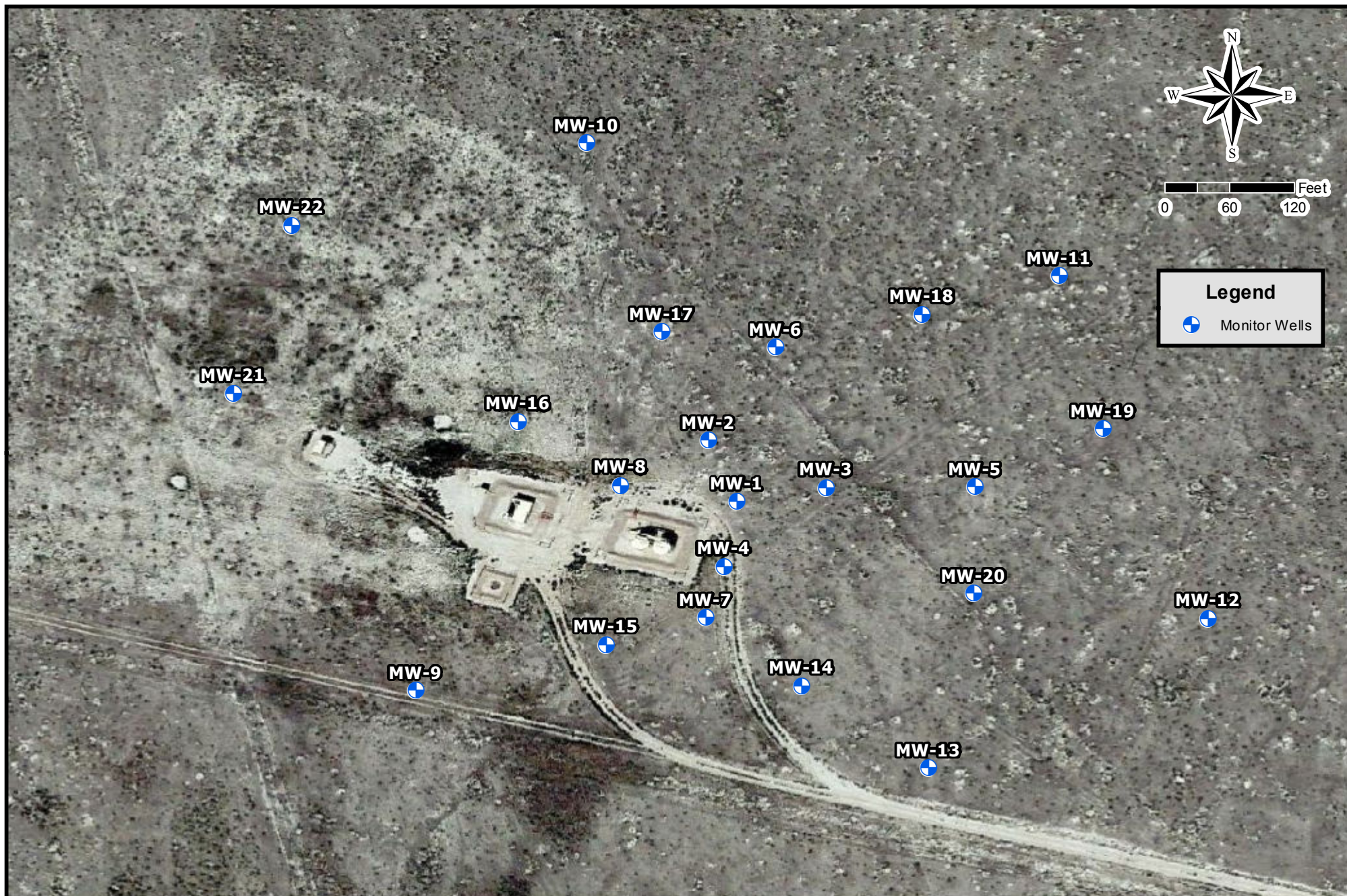
After the skimmer pumps were removed from the site, product recovery is performed twice per week via hand-bailing on monitoring wells containing measurable levels of free product until the well skimmer pumps were installed. All waste produced by hand-bailing is stored on site in poly containers within secondary containment pending offsite disposal. Table 4 summarizes PSH removal and recovery on a monthly basis. To date, nearly 400 gallons of free product have been recovered from the site via hand-bailing.

8 Conclusions & Recommendations

During the Fourth Quarter 2017, Talon collected groundwater samples from 15 of the 22 monitoring wells at the Site. Groundwater laboratory analytical results for benzene ranged from below laboratory detection limits to 14 mg/L (MW-2 and MW-8). Analytical results for toluene ranged from below laboratory detection limits to 16 mg/L (MW-2). Analytical results for ethylbenzene ranged from below laboratory detection limits to 1.2 mg/L (MW-2 and MW-22). Analytical results for total xylenes ranged from below laboratory detection limits to 7.3 mg/L (MW-2).

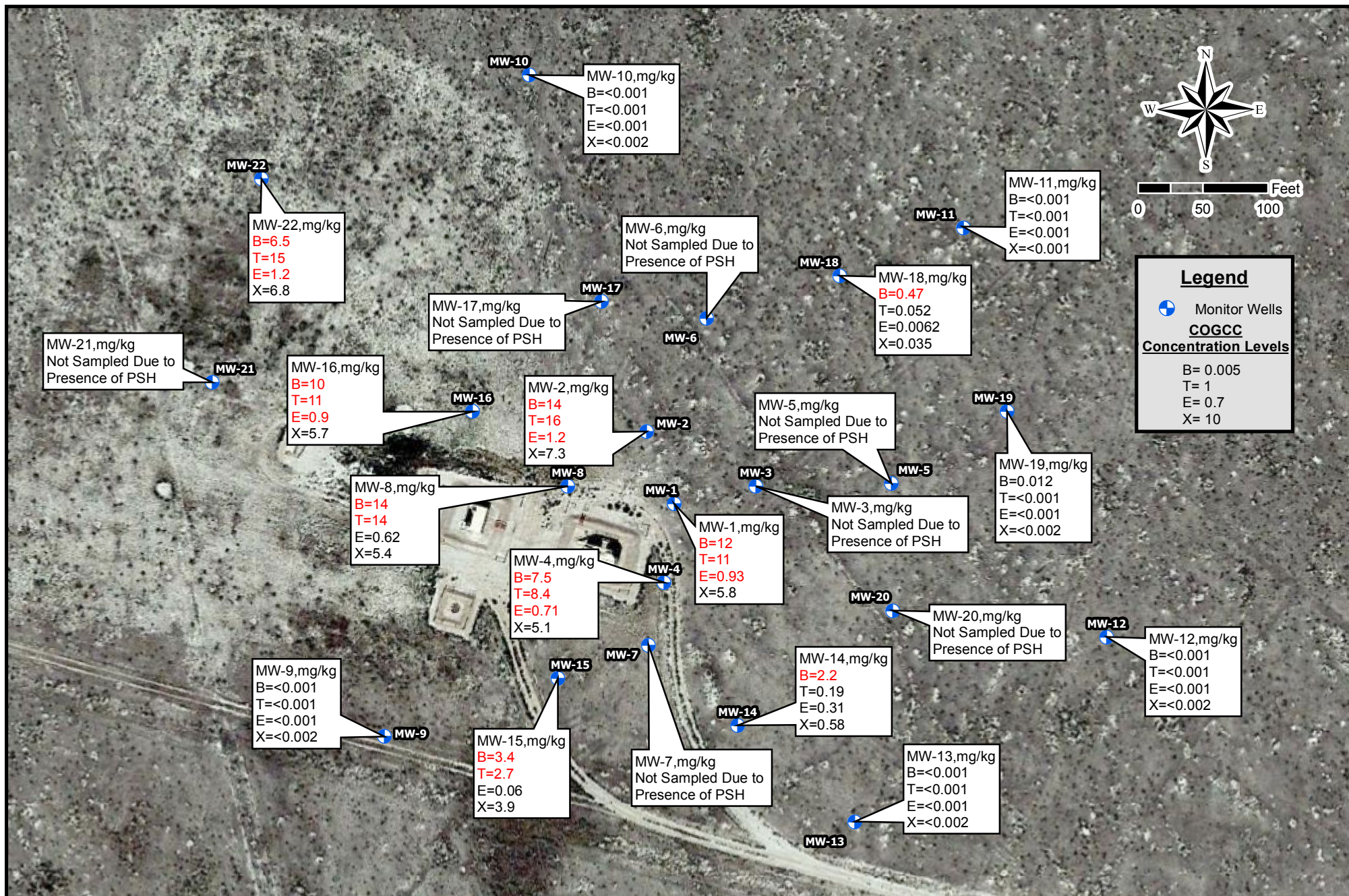
Talon will continue quarterly monitoring and product recovery at the Site. The next groundwater sampling event is anticipated to occur in March 2018.

Attachment 1
Figures



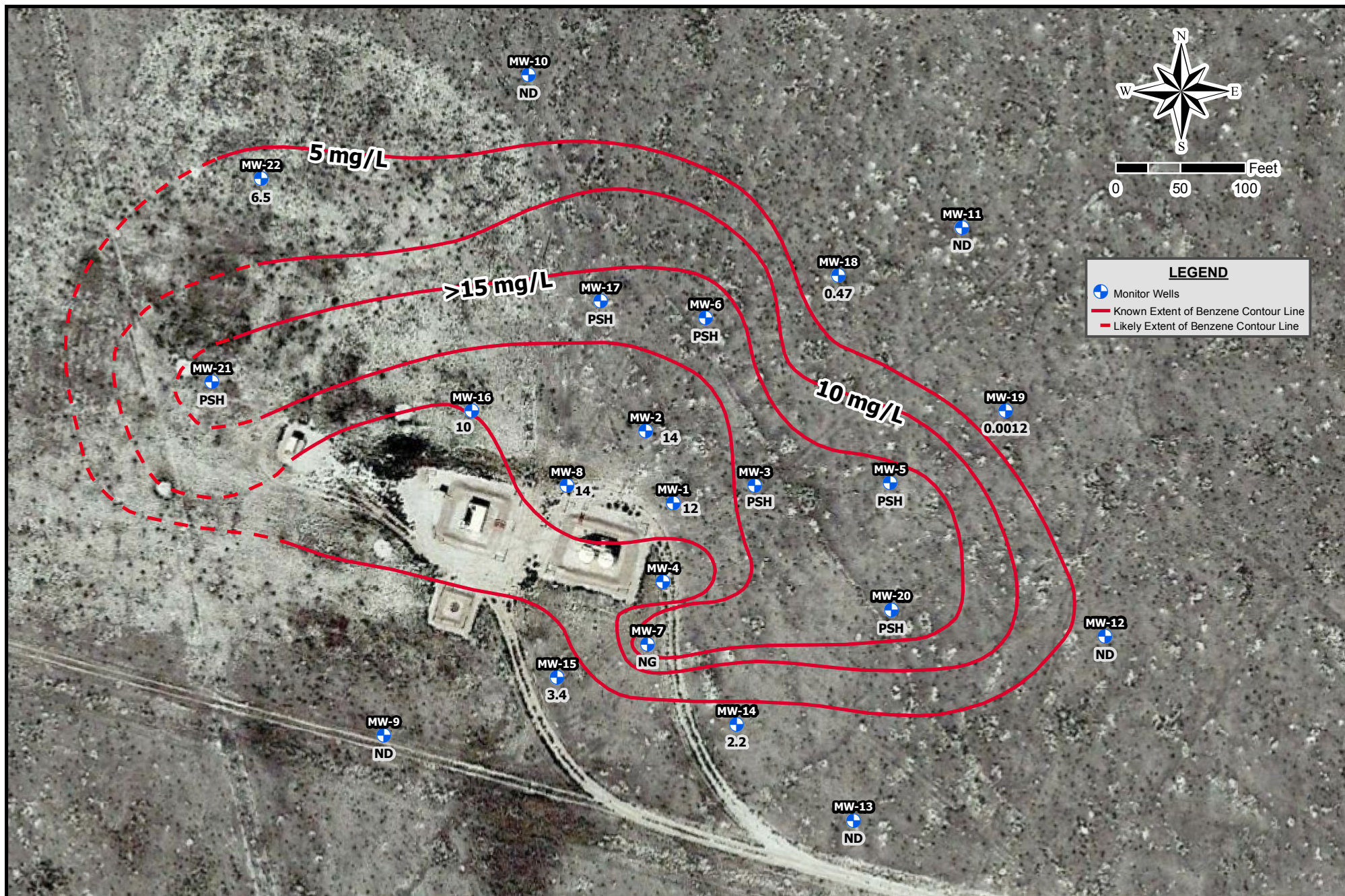
Drafted: 8/15/2017
 1 in = 120 ft
 Drafted By: IJM

Whiting Oil and Gas Corporation
 Nelson C-1
 Weld County, Colorado
 Figure 1- Site Map



Drafted: 1/17/2018
1 in = 100 ft
Drafted By: IJM

Whiting Oil and Gas Corporation
Nelson C-1
Weld County, Colorado
Figure 2 - GW Concentration Map (12/20/2017)



Drafted: 1/17/2018
 1 in = 100 ft
 Drafted By: IJM

Whiting Oil and Gas Corporation
 Nelson C-1
 Weld County, Colorado
 Figure 3 - Benzene Isoconcentration Map (12/20/2017)



Drafted: 1/17/2018
 1 in = 100 ft
 Drafted By: IJM

Whiting Oil and Gas Corporation
 Nelson C-1
 Weld County, Colorado
 Figure 4 - PSH Isoconcentration Map (12/19/2017)



Drafted: 1/15/2018
 1 in = 100 ft
 Drafted By: IJM

Whiting Oil and Gas Corporation
 Nelson C-1
 Weld County, Colorado
 Figure 5 - Groundwater Gradient Map (12/19/2017)



Nelson C-1
Whiting Oil & Gas
Weld County, Colorado
Figure 6 - Topographic Map

Attachment 2 Tables



Table 1 - Well Information

**Whiting Oil and Gas Corporation
Nelson C-1
Weld County, Colorado**

Well ID	Latitude	Longitude	Ground Surface Elevation (ft amsl)	TOC Elevation (ft amsl)	Screen Interval (ft bgs)	Total Depth (ft)
MW-1	40.836400	-103.904672	4861.9	4865.0	19.8-39.8	40.38
MW-2	40.836550	-103.904761	4862.2	4865.6	19-39	39.50
MW-3	40.836453	-103.904461	4863.2	4866.6	19.5-39.5	40.00
MW-4	40.836239	-103.904742	4860.6	4863.7	19.5-39.5	40.00
MW-5	40.836419	-103.904069	4865.0	4868.0	20-40	40.00
MW-6	40.836722	-103.904467	4863.8	4867.1	20-45	45.00
MW-7	40.836089	-103.904822	4859.3	4862.6	20-40	40.00
MW-8	40.836469	-103.904956	4860.9	4864.3	20-40	40.00
MW-9	40.835925	-103.905525	4857.9	4860.9	17-32	35.00
MW-10	40.837317	-103.905089	4864.5	4867.7	19-39	39.00
MW-11	40.836978	-103.903889	4868.6	4871.6	19-44	44.00
MW-12	40.836108	-103.903511	4867.0	4870.1	18-38	38.00
MW-13	40.835728	-103.904222	4861.5	4864.4	20-40	40.00
MW-14	40.835936	-103.904542	4860.4	4863.7	20-40	40.00
MW-15	40.836042	-103.905064	4858.6	4861.4	19-34	34.00
MW-16	40.836608	-103.905264	4860.1	4863.4	19-39	39.00
MW-17	40.836836	-103.904900	4862.8	4866.0	19-44	44.00
MW-18	40.836881	-103.904236	4865.8	4868.6	19-44	44.00
MW-19	40.836589	-103.903778	4867.3	4870.2	19-39	39.00
MW-20	40.836172	-103.904103	4864.1	4867.0	19-39	39.00
MW-21	40.836680	-103.905987	4861.2	4864.0	20-40	40.15
MW-22	40.837107	-103.905838	4863.9	4866.9	20-40	39.68

TOC - Top of Casing
ft bgs - Feet Below Ground Surface
ft amsl - Feet Above Mean Sea Level



Table 2 - Groundwater Analytical Data

Whiting Oil and Gas Corporation
Nelson C-1
Weld County, Colorado

Sample ID	Lab ID	Date	Concentration (mg/L)			
			Benzene	Toluene	Ethyl-Benzene	Xylenes
COGCC Table 910-1 Concentration Levels			0.005	1	0.7	10
MW-1	1511065-2	11/04/15	17	18	1	5.4
	1602138-01	02/17/16	15	13	0.99	5.5
	1606205-01	06/21/16	17	16	1.1	6.4
	1609096-01	09/16/16	19	16	1.1	6.5
	1612127-01	12/16/16	28	38	2.5	12
	1703157-01	03/17/17	12	10	0.95	5.9
	1706184-01	06/16/17	11	12	0.97	6.2
	1709144-11	09/15/17	13	11	0.82	5.7
1712267-01	12/20/17	12	11	0.93	5.8	
MW-1 (Duplicate)	1706184-15	06/16/17	11	11	0.93	5.7
MW-2	1511065-3	11/04/15	18	20	0.96	5
	1602138-02	02/17/16	16	14	1.4	8.2
	1606205-02	06/21/16	18	16	1	6.1
	1609096-02	09/16/16	26	25	1.2	7.1
	1612127-02	12/16/16	16	16	1.1	6.8
	NS	03/17/17	Not Sampled Due to Presence of PSH			
	1706184-02	06/16/17	13	15	1	6.1
	1709144-10	09/15/17	14	16	0.41	6.2
	1712267-02	12/20/17	14	16	1.2	7.3
MW-3	NS	11/04/15	Not Sampled Due to Presence of PSH			
	NS	02/17/16	Not Sampled Due to Presence of PSH			
	NS	06/21/16	Not Sampled Due to Presence of PSH			
	NS	09/16/16	Not Sampled Due to Presence of PSH			
	NS	12/16/16	Not Sampled Due to Presence of PSH			
	NS	03/17/17	Not Sampled Due to Presence of PSH			
	NS	06/16/17	Not Sampled Due to Presence of PSH			
	NS	09/15/17	Not Sampled Due to Presence of PSH			
NS	12/20/17	Not Sampled Due to Presence of PSH				
MW-4	1511065-1	11/04/15	16	20	0.94	4.8
	1602138-03	02/17/16	13	15	0.91	5.5
	1606205-03	06/21/16	12	16	0.99	6
	1609096-03	09/16/16	12	18	0.99	6.7
	1612127-03	12/16/16	14	19	1.1	7.2
	1703157-02	03/17/17	9.5	9.5	0.73	4.5
	1706184-03	06/16/17	11	13	0.82	5.8
	1710041-01	10/03/17	7.7	7.9	0.73	4.9
	1712267-03	12/20/17	7.5	8.4	0.71	5.1
MW-4 (Duplicate)	1712267-16	12/20/17	9.9	10	0.86	6.2
MW-5	NS	02/17/16	Not Sampled Due to Presence of PSH			
	NS	06/21/16	Not Sampled Due to Presence of PSH			
	NS	09/16/16	Not Sampled Due to Presence of PSH			
	NS	12/16/16	Not Sampled Due to Presence of PSH			
	NS	03/17/17	Not Sampled Due to Presence of PSH			
	NS	06/16/17	Not Sampled Due to Presence of PSH			
	NS	09/15/17	Not Sampled Due to Presence of PSH			
	NS	12/20/17	Not Sampled Due to Presence of PSH			
MW-6	NS	02/17/16	Not Sampled Due to Presence of PSH			
	NS	06/21/16	Not Sampled Due to Presence of PSH			
	NS	09/16/16	Not Sampled Due to Presence of PSH			
	NS	12/16/16	Not Sampled Due to Presence of PSH			
	NS	03/17/17	Not Sampled Due to Presence of PSH			
	NS	06/16/17	Not Sampled Due to Presence of PSH			
	NS	09/15/17	Not Sampled Due to Presence of PSH			
	NS	12/20/17	Not Sampled Due to Presence of PSH			
MW-7	NS	02/17/16	Not Sampled Due to Presence of PSH			
	NS	06/21/16	Not Sampled Due to Presence of PSH			
	NS	09/16/16	Not Sampled Due to Presence of PSH			
	NS	12/16/16	Not Sampled Due to Presence of PSH			
	NS	03/17/17	Not Sampled Due to Presence of PSH			
	NS	06/16/17	Not Sampled Due to Presence of PSH			
	NS	09/15/17	Not Sampled Due to Presence of PSH			
	NS	12/20/17	Not Sampled Due to Presence of PSH			



Table 2 - Groundwater Analytical Data

Whiting Oil and Gas Corporation
Nelson C-1
Weld County, Colorado

Sample ID	Lab ID	Date	Concentration (mg/L)			
			Benzene	Toluene	Ethyl-Benzene	Xylenes
COGCC Table 910-1 Concentration Levels			0.005	1	0.7	10
MW-8	1602138-04	02/17/16	12	13	1	5.3
	1606205-04	06/21/16	17	17	1.1	6.4
	1609096-04	09/16/16	20	20	0.85	7.1
	1612127-04	12/16/16	17	17	0.82	6.1
	1703157-03	03/17/17	13	14	0.89	6.6
	1706184-04	06/16/17	9.6	14	0.97	6.2
	1709144-09	09/15/17	13	9.4	0.018	5
1712267-04	12/20/17	14	14	0.62	5.4	
MW-9	1603161-01	03/22/16	<0.001	0.0016	<0.001	0.0039
	1606205-05	06/21/16	<0.001	<0.001	<0.001	<0.001
	1609096-05	09/16/16	<0.001	<0.001	<0.001	<0.001
	1612127-05	12/16/16	<0.001	<0.001	<0.001	<0.001
	1703157-04	03/17/17	<0.001	<0.001	<0.001	<0.001
	1706184-05	06/16/17	<0.001	<0.001	<0.001	<0.001
	1709144-08	09/15/17	<0.001	<0.001	<0.001	<0.002
1712267-05	12/20/17	<0.001	<0.001	<0.001	<0.002	
MW-10	NS	03/22/16	Dry - No Sample Collected			
	1606205-06	06/21/16	<0.001	<0.001	<0.001	<0.001
	1609096-06	09/16/16	<0.001	<0.001	<0.001	<0.001
	1612127-06	12/16/16	<0.001	<0.001	<0.001	<0.001
	1703157-05	03/17/17	<0.001	<0.001	<0.001	<0.001
	1706184-06	06/16/17	<0.001	<0.001	<0.001	<0.001
	1709144-07	09/15/17	<0.001	<0.001	<0.001	<0.002
1712267-06	12/20/17	<0.001	<0.001	<0.001	<0.002	
MW-11	1603161-02	03/22/16	0.0016	0.0011	<0.001	<0.001
	1606205-07	06/21/16	<0.001	<0.001	<0.001	<0.001
	1609096-07	09/16/16	0.0078	0.0049	<0.001	<0.001
	1612127-07	12/16/16	0.0023	0.002	<0.001	<0.001
	1703157-06	03/17/17	0.0027	0.0037	<0.001	0.005
	1706184-07	06/16/17	<0.001	<0.001	<0.001	<0.001
	1709144-06	09/15/17	<0.001	<0.001	<0.001	<0.002
1712267-07	12/20/17	<0.001	<0.001	<0.001	<0.002	
MW-12	NS	03/22/16	Dry - No Sample Collected			
	1606205-08	06/21/16	<0.001	<0.001	<0.001	<0.001
	1609096-08	09/16/16	<0.001	<0.001	<0.001	<0.001
	1612127-08	12/16/16	<0.001	<0.001	<0.001	<0.001
	1703157-07	03/17/17	<0.001	<0.001	<0.001	<0.001
	1706184-08	06/16/17	<0.001	<0.001	<0.001	<0.001
	1709144-05	09/15/17	<0.001	<0.001	<0.001	<0.002
1712267-08	12/20/17	<0.001	<0.001	<0.001	<0.002	
MW-13	1603161-03	03/22/16	<0.001	0.0013	<0.001	<0.001
	1606205-09	06/21/16	<0.001	<0.001	<0.001	<0.001
	1609096-09	09/16/16	<0.001	<0.001	<0.001	<0.001
	1612127-09	12/16/16	<0.001	<0.001	<0.001	<0.001
	1703157-08	03/17/17	<0.001	<0.001	<0.001	<0.001
	1706184-09	06/16/17	<0.001	<0.001	<0.001	<0.001
	1709144-04	09/15/17	<0.001	<0.001	<0.001	<0.002
1712267-09	12/20/17	<0.001	<0.001	<0.001	<0.002	
MW-14	1603161-04	03/22/16	2.5	2.3	0.48	1.3
	1606205-10	06/21/16	2.4	2.2	0.39	1.3
	1609096-10	09/16/16	3.4	2.2	0.44	1.5
	1612127-10	12/16/16	12	5.4	0.64	4
	1703157-09	03/17/17	2.5	1.1	0.44	1.4
	1706184-10	06/16/17	2.1	0.7	0.28	0.89
	1709144-03	09/15/17	1.9	0.29	0.27	0.62
1712267-10	12/20/17	2.2	0.19	0.31	0.58	



Table 2 - Groundwater Analytical Data

Whiting Oil and Gas Corporation
Nelson C-1
Weld County, Colorado

Sample ID	Lab ID	Date	Concentration (mg/L)				
			Benzene	Toluene	Ethyl-Benzene	Xylenes	
COGCC Table 910-1 Concentration Levels			0.005	1	0.7	10	
MW-15	1603161-05	03/22/16	4.3	6.4	0.42	3.5	
	1606205-11	06/21/16	6.5	5.2	0.59	3.6	
	1609096-11	09/16/16	6	3.2	0.63	3.6	
	1612127-11	12/16/16	17	18	1.1	6.4	
	1703157-10	03/17/17	3.8	1	0.35	1.8	
	1706184-11	06/16/17	4.4	1.1	0.52	2.8	
	1709144-02	09/15/17	3.8	1.3	0.0029	3.1	
MW-16	1712267-11	12/20/17	3.4	2.7	0.6	3.9	
	1603161-06	03/22/16	14	16	0.68	6.1	
	1606205-12	06/21/16	16	16	1.1	6.7	
	1609096-12	09/16/16	18	18	1.3	7.3	
	1612127-12	12/16/16	18	20	1.2	7.2	
	1703157-11	03/17/17	12	13	1.1	6.4	
	1706184-12	06/16/17	11	13	1.5	8.4	
MW-16 (Duplicate)	1709144-01	09/15/17	10	12	0.76	5.9	
	1712267-12	12/20/17	10	11	0.9	5.7	
	1703157-14	03/17/17	12	13	1.1	6.2	
	MW-17	NS	03/22/16	Not Sampled Due to Presence of PSH			
		NS	06/21/16	Not Sampled Due to Presence of PSH			
		NS	09/16/16	Not Sampled Due to Presence of PSH			
		NS	12/16/16	Not Sampled Due to Presence of PSH			
NS		03/17/17	Not Sampled Due to Presence of PSH				
NS		06/16/17	Not Sampled Due to Presence of PSH				
NS		09/15/17	Not Sampled Due to Presence of PSH				
MW-18	NS	12/20/17	Not Sampled Due to Presence of PSH				
	1603161-07	03/22/16	0.084	0.047	0.0026	0.0074	
	1606205-13	06/21/16	0.23	0.14	0.0039	0.04	
	1609096-13	09/16/16	0.34	0.097	0.0034	0.04	
	1612127-13	12/16/16	0.45	0.11	0.0089	0.047	
	1703157-12	03/17/17	1.2	0.98	0.034	0.32	
	1706184-13	06/16/17	0.47	0.33	0.015	0.2	
MW-19	1709144-14	09/15/17	1.2	0.0071	<0.001	<0.002	
	1712267-13	12/20/17	0.47	0.052	0.0062	0.035	
	NS	03/22/16	Dry - No Sample Collected				
	1606205-14	06/21/16	0.0011	<0.001	<0.001	<0.001	
	1609096-14	09/16/16	0.0051	0.0011	<0.001	<0.001	
	1612127-14	12/16/16	<0.001	<0.001	<0.001	<0.001	
	1703157-13	03/17/17	0.0021	<0.001	<0.001	<0.001	
MW-20	1706184-14	06/16/17	0.002	0.0011	<0.001	<0.001	
	1709144-13	09/15/17	0.013	0.0017	<0.001	0.0037	
	1712267-14	12/20/17	0.0012	<0.001	<0.001	<0.002	
	NS	03/22/16	Not Sampled Due to Presence of PSH				
	NS	06/21/16	Not Sampled Due to Presence of PSH				
	NS	09/16/16	Not Sampled Due to Presence of PSH				
	NS	12/16/16	Not Sampled Due to Presence of PSH				
MW-21	NS	03/17/17	Not Sampled Due to Presence of PSH				
	NS	06/16/17	Not Sampled Due to Presence of PSH				
	NS	09/15/17	Not Sampled Due to Presence of PSH				
	NS	12/20/17	Not Sampled Due to Presence of PSH				
	NS	09/15/17	Not Sampled Due to Presence of PSH				
	NS	12/20/17	Not Sampled Due to Presence of PSH				
	NS	12/20/17	Not Sampled Due to Presence of PSH				
MW-22	1709144-12	09/15/17	4	14	0.84	11	
	1712267-15	12/20/17	6.5	15	1.2	6.8	

mg/L - milligrams per liter

< - Analytical result is less than the reporting limit

COGCC - Colorado Oil and Gas Conservation Commission

NS - Not Sampled

PSH - Phase-Separated Hydrocarbons



Table 3 - Gauging Data

Whiting Oil and Gas Corporation
Nelson C-1
Weld County, Colorado

Well ID	Top of Casing Elevation (ft amsl)	Total Depth of Well (ft)	Date Gauged	Depth to Product (ft btoc)	DTW (ft btoc)	Product Thickness (ft)	Potentiometric Surface Elevation (ft)
MW-1	4865.00	40.38	11/4/2015	NA	36.49	0.00	4828.51
			12/3/2015	NA	30.88	0.00	4834.12
			12/8/2015	30.62	30.63	0.01	4834.38
			12/22/2015	NA	31.46	0.00	4833.54
			12/30/2015	NA	32.03	0.00	4832.97
			1/13/2016	NA	38.05	0.00	4826.95
			1/21/2016	NA	31.08	0.00	4833.92
			1/27/2016	31.10	31.13	0.03	4833.89
			2/8/2016	31.24	31.29	0.05	4833.75
			2/15/2016	30.90	30.92	0.02	4834.10
			2/16/2016	30.96	30.99	0.03	4834.03
			2/17/2016	NA	32.27	0.00	4832.73
			2/19/2016	NA	31.04	0.00	4833.96
			2/24/2016	NA	31.19	0.00	4833.81
			2/29/2016	NA	30.95	0.00	4834.05
			3/8/2016	NA	32.67	0.00	4832.33
			3/15/2016	NA	32.95	0.00	4832.05
			3/22/2016	NA	33.02	0.00	4831.98
			3/29/2016	NA	33.04	0.00	4831.96
			4/5/2016	NA	33.22	0.00	4831.78
			4/19/2016	NA	31.70	0.00	4833.30
			4/26/2016	NA	32.78	0.00	4832.22
			5/5/2016	NA	31.41	0.00	4833.59
			6/6/2016	31.35	31.36	0.01	4833.65
			6/20/2016	31.38	31.42	0.04	4833.61
			8/11/2016	NA	30.88	0.00	4834.12
			9/15/2016	NA	30.82	0.00	4834.18
			12/15/2016	30.98	30.99	0.01	4834.02
			3/16/2017	31.45	31.49	0.04	4833.54
			6/15/2017	31.91	31.95	0.04	4833.08
			9/14/2017	30.75	30.78	0.03	4834.24
			12/19/2017	NA	30.92	0.00	4834.08
MW-2	4865.6	39.50	11/4/2015	31.15	31.20	0.05	4834.44
			12/3/2015	31.60	31.62	0.02	4834.00
			12/8/2015	31.50	31.52	0.02	4834.10
			12/22/2015	NA	31.29	0.00	4834.31
			12/30/2015	31.93	31.94	0.01	4833.67
			1/13/2016	NA	31.55	0.00	4834.05
			1/21/2016	NA	31.71	0.00	4833.89
			1/27/2016	NA	31.72	0.00	4833.88
			2/8/2016	31.90	31.92	0.02	4833.70
			2/15/2016	31.53	31.58	0.05	4834.06
			2/16/2016	31.63	31.66	0.03	4833.96
			2/17/2016	32.31	32.35	0.04	4833.28
			2/19/2016	31.68	31.73	0.05	4833.91
			2/24/2016	NA	31.80	0.00	4833.80
			2/29/2016	31.56	31.63	0.07	4834.03
			3/8/2016	NA	32.25	0.00	4833.35
			3/15/2016	NA	32.37	0.00	4833.23
			3/22/2016	NA	32.21	0.00	4833.39
			3/29/2016	NA	32.21	0.00	4833.39
			4/5/2016	NA	32.42	0.00	4833.18
			4/19/2016	32.25	32.27	0.02	4833.35
			4/26/2016	NA	32.36	0.00	4833.24
			5/5/2016	NA	32.12	0.00	4833.48
			6/6/2016	32.10	32.14	0.04	4833.49
			6/20/2016	32.15	32.17	0.02	4833.45
			8/11/2016	NA	31.43	0.00	4834.17
			9/15/2016	31.20	31.27	0.07	4834.39
			12/15/2016	38.31	38.50	0.49	4827.49
			3/16/2017	31.45	31.49	0.04	4834.14
			6/15/2017	32.15	32.20	0.05	4833.44
			9/14/2017	30.78	30.80	0.02	4834.82
			12/19/2017	NA	31.24	0.00	4834.36



Table 3 - Gauging Data

Whiting Oil and Gas Corporation
Nelson C-1
Weld County, Colorado

Well ID	Top of Casing Elevation (ft amsl)	Total Depth of Well (ft)	Date Gauged	Depth to Product (ft btoc)	DTW (ft btoc)	Product Thickness (ft)	Potentiometric Surface Elevation (ft)
MW-3	4866.6	40.00	11/4/2015	35.61	36.52	0.91	4830.81
			12/3/2015	34.74	35.89	1.15	4831.63
			12/8/2015	34.77	35.62	0.85	4831.66
			12/22/2015	34.44	35.36	0.92	4831.98
			12/30/2015	35.07	35.93	0.86	4831.36
			1/13/2016	37.32	37.82	0.50	4829.18
			1/21/2016	33.70	34.78	1.08	4832.69
			1/27/2016	33.62	35.13	1.51	4832.68
			2/8/2016	33.47	35.88	2.41	4832.66
			2/15/2016	32.95	36.07	3.12	4833.04
			2/16/2016	32.98	36.16	3.18	4833.00
			2/17/2016	35.38	36.50	1.12	4831.00
			2/19/2016	33.80	35.09	1.29	4832.55
			2/24/2016	33.58	35.29	1.71	4832.68
			2/29/2016	33.46	35.37	1.91	4832.77
			3/8/2016	33.68	34.69	1.01	4832.72
			3/15/2016	33.65	33.70	0.05	4832.94
			3/22/2016	34.55	35.55	1.00	4831.85
			3/29/2016	34.48	35.38	0.90	4831.94
			4/5/2016	34.95	35.05	0.10	4831.63
			4/19/2016	34.01	34.71	0.70	4832.45
			4/26/2016	34.45	35.04	0.59	4832.03
			5/5/2016	35.37	36.11	0.74	4831.08
			6/6/2016	33.91	34.82	0.91	4832.51
			6/20/2016	33.75	35.32	1.57	4832.54
			8/11/2016	33.90	34.60	0.70	4832.56
			9/15/2016	33.71	34.41	0.70	4832.75
			12/15/2016	33.79	34.30	0.51	4832.71
			3/16/2017	34.87	35.72	0.85	4831.56
			6/16/2017	33.90	34.70	0.80	4832.54
			9/14/2017	NG	NG	NG	NG
			12/19/2017	33.40	33.61	0.21	4833.16
MW-4	4863.7	40.00	11/4/2015	NA	35.69	0.00	4828.01
			12/3/2015	NA	37.50	0.00	4826.20
			12/8/2015	NA	35.78	0.00	4827.92
			12/22/2015	NA	34.55	0.00	4829.15
			12/30/2015	NA	35.60	0.00	4828.10
			1/13/2016	NA	38.05	0.00	4825.65
			1/21/2016	NA	34.28	0.00	4829.42
			1/27/2016	NA	30.36	0.00	4833.34
			2/8/2016	NA	29.24	0.00	4834.46
			2/15/2016	NA	29.03	0.00	4834.67
			2/16/2016	NA	29.02	0.00	4834.68
			2/17/2016	NA	36.60	0.00	4827.10
			2/19/2016	NA	33.94	0.00	4829.76
			2/24/2016	NA	29.81	0.00	4833.89
			2/29/2016	NA	29.51	0.00	4834.19
			3/8/2016	NA	33.15	0.00	4830.55
			3/15/2016	NA	35.27	0.00	4828.43
			3/22/2016	NA	35.13	0.00	4828.57
			3/29/2016	NA	35.02	0.00	4828.68
			4/5/2016	NA	35.94	0.00	4827.76
			4/19/2016	NA	33.14	0.00	4830.56
			4/26/2016	NA	29.88	0.00	4833.82
			5/5/2016	NA	29.36	0.00	4834.34
			6/6/2016	NA	29.35	0.00	4834.35
			6/20/2016	NA	29.31	0.00	4834.39
			8/11/2016	NA	29.00	0.00	4834.70
			9/15/2016	NA	29.03	0.00	4834.67
			12/15/2016	NA	29.48	0.00	4834.22
			3/16/2017	NA	29.89	0.00	4833.81
			6/15/2017	NA	31.90	0.00	4831.80
			9/14/2017	NA	29.75	0.00	4833.95
			12/19/2017	NA	29.84	0.00	4833.86



Table 3 - Gauging Data

**Whiting Oil and Gas Corporation
Nelson C-1
Weld County, Colorado**

Well ID	Top of Casing Elevation (ft amsl)	Total Depth of Well (ft)	Date Gauged	Depth to Product (ft btoc)	DTW (ft btoc)	Product Thickness (ft)	Potentiometric Surface Elevation (ft)
MW-5	4868.0	40.00	2/15/2016	40.31	40.41	0.10	4827.67
			2/16/2016	39.95	40.09	0.14	4828.02
			2/17/2016	Dry	Dry	0.00	
			2/19/2016	39.78	40.07	0.29	4828.16
			2/24/2016	38.60	39.19	0.59	4829.28
			2/29/2016	37.66	38.56	0.90	4830.16
			3/8/2016	36.66	37.95	1.29	4831.09
			3/15/2016	36.20	36.35	0.15	4831.77
			3/22/2016	35.95	37.80	1.85	4831.69
			3/29/2016	35.78	36.51	0.73	4832.08
			4/5/2016	NA	35.74	0.00	4832.26
			4/19/2016	35.65	38.30	2.65	4831.83
			4/26/2016	35.48	38.30	2.82	4831.97
			5/5/2016	35.52	35.53	0.01	4832.48
			6/6/2016	39.08	39.85	0.77	4828.77
			6/20/2016	37.22	38.46	1.24	4830.54
			8/11/2016	39.08	39.65	0.57	4828.81
			9/15/2016	37.18	38.37	1.19	4830.59
			12/15/2016	37.05	38.22	1.17	4830.72
			3/16/2017	37.10	38.22	1.12	4830.68
MW-6	4867.1	45.00	6/15/2017	36.86	37.90	1.04	4830.94
			9/14/2017	NG	NG	NG	NG
			12/19/2017	35.87	36.00	0.13	4832.10
			2/15/2016	35.32	36.60	1.28	4831.53
			2/16/2016	35.33	36.91	1.58	4831.46
			2/17/2016	35.95	36.14	0.19	4831.11
			2/19/2016	35.55	36.50	0.95	4831.36
			2/24/2016	35.30	37.55	2.25	4831.36
			2/29/2016	34.76	38.19	3.43	4831.67
			3/8/2016	34.44	39.14	4.70	4831.74
			3/15/2016	34.28	38.44	4.16	4832.00
			3/22/2016	33.92	39.90	5.98	4832.01
			3/29/2016	33.88	40.03	6.15	4832.01
			4/5/2016	34.02	39.58	5.56	4831.99
			4/19/2016	34.11	40.91	6.80	4831.66
			4/26/2016	33.80	38.87	5.07	4832.31
			5/5/2016	34.01	40.78	6.77	4831.76
			6/6/2016	33.94	40.80	6.86	4831.82
			6/20/2016	34.72	39.50	4.78	4831.44
			8/11/2016	35.53	36.32	0.79	4831.42
			9/15/2016	35.17	36.99	1.82	4831.57
			12/15/2016	35.11	36.27	1.16	4831.76
			3/16/2017	35.19	36.20	1.01	4831.71
			6/15/2017	35.25	36.20	0.95	4831.66
			9/14/2017	34.81	35.09	0.28	4832.24
			12/19/2017	34.43	34.87	0.44	4832.58



Table 3 - Gauging Data

**Whiting Oil and Gas Corporation
Nelson C-1
Weld County, Colorado**

Well ID	Top of Casing Elevation (ft amsl)	Total Depth of Well (ft)	Date Gauged	Depth to Product (ft btoc)	DTW (ft btoc)	Product Thickness (ft)	Potentiometric Surface Elevation (ft)
MW-7	4862.6	40.00	2/15/2016	31.86	34.29	2.43	4830.26
			2/16/2016	30.00	33.03	3.03	4832.01
			2/17/2016	35.38	36.50	1.12	4827.00
			2/19/2016	30.26	32.22	1.96	4831.96
			2/24/2016	28.01	30.35	2.34	4834.13
			2/29/2016	27.75	29.91	2.16	4834.43
			3/8/2016	27.55	29.73	2.18	4834.62
			3/15/2016	27.61	29.90	2.29	4834.54
			3/22/2016	27.58	29.93	2.35	4834.56
			3/29/2016	27.55	29.95	2.40	4834.58
			4/5/2016	27.75	30.28	2.53	4834.35
			4/19/2016	27.89	27.91	0.02	4834.71
			4/26/2016	27.44	30.06	2.62	4834.65
			5/5/2016	27.81	29.09	1.28	4834.54
			6/6/2016	28.62	30.50	1.88	4833.61
			6/20/2016	28.10	29.61	1.51	4834.20
			8/11/2016	28.68	29.30	0.62	4833.80
			9/15/2016	28.38	29.27	0.89	4834.05
			12/15/2016	28.67	29.32	0.65	4833.80
			3/16/2017	28.96	29.66	0.70	4833.50
			6/15/2017	29.21	29.89	0.68	4833.26
			9/14/2017	NG	NG	NG	NG
			12/19/2017	28.87	30.56	1.69	4833.40



Table 3 - Gauging Data

Whiting Oil and Gas Corporation
Nelson C-1
Weld County, Colorado

Well ID	Top of Casing Elevation (ft amsl)	Total Depth of Well (ft)	Date Gauged	Depth to Product (ft btoc)	DTW (ft btoc)	Product Thickness (ft)	Potentiometric Surface Elevation (ft)
MW-8	4864.3	40.00	2/15/2016	NA	35.85	0.00	4828.45
			2/16/2016	NA	34.10	0.00	4830.20
			2/17/2016	NA	35.09	0.00	4829.21
			2/19/2016	NA	32.57	0.00	4831.73
			2/24/2016	NA	28.81	0.00	4835.49
			2/29/2016	NA	27.45	0.00	4836.85
			3/8/2016	NA	27.14	0.00	4837.16
			3/15/2016	NA	27.25	0.00	4837.05
			3/22/2016	NA	33.80	0.00	4830.50
			3/29/2016	NA	27.38	0.00	4836.92
			4/5/2016	27.70	27.73	0.03	4836.59
			4/19/2016	28.04	28.06	0.02	4836.26
			4/26/2016	27.72	27.75	0.03	4836.57
			5/5/2016	28.28	28.30	0.02	4836.02
			6/6/2016	28.46	28.52	0.06	4835.83
			6/20/2016	NA	27.83	0.00	4836.47
			8/11/2016	NA	26.28	0.00	4838.02
			9/15/2016	26.35	26.36	0.01	4837.95
			12/15/2016	NA	27.45	0.00	4836.85
			3/16/2017	28.06	28.07	0.01	4836.24
MW-9	4860.9	35.00	6/15/2017	NA	27.15	0.00	4837.15
			9/14/2017	NA	26.04	0.00	4838.26
			12/19/2017	NA	28.24	0.00	4836.06
			3/15/2016	NA	33.45	0.00	4827.45
			3/21/2016	NA	31.84	0.00	4829.06
			3/22/2016	NA	33.80	0.00	4827.10
			3/29/2016	NA	31.85	0.00	4829.05
			4/5/2016	NA	29.98	0.00	4830.92
			4/19/2016	NA	27.48	0.00	4833.42
			4/26/2016	NA	26.80	0.00	4834.10
			5/5/2016	NA	26.61	0.00	4834.29
			6/6/2016	NA	26.50	0.00	4834.40
			6/20/2016	NA	26.40	0.00	4834.50
			8/11/2016	NA	26.52	0.00	4834.38
MW-10	4867.7	39	9/15/2016	NA	26.75	0.00	4834.15
			12/15/2016	NA	27.09	0.00	4833.81
			3/16/2017	NA	27.44	0.00	4833.46
			6/15/2017	NA	27.72	0.00	4833.18
			9/14/2017	NA	27.84	0.00	4833.06
			12/19/2017	NA	28.76	0.00	4832.14
			3/15/2016	NA	Dry	0.00	
			3/21/2016	NA	Dry	0.00	
			3/22/2016	NA	Dry	0.00	
			3/29/2016	NA	Dry	0.00	
			4/5/2016	NA	39.12	0.00	4828.58
			4/19/2016	NA	38.19	0.00	4829.51
			4/26/2016	NA	37.78	0.00	4829.92
			5/5/2016	NA	37.58	0.00	4830.12
			6/6/2016	NA	37.35	0.00	4830.35
			6/20/2016	NA	37.32	0.00	4830.38
			8/11/2016	NA	37.20	0.00	4830.50
			9/15/2016	NA	37.13	0.00	4830.57
			12/15/2016	NA	36.89	0.00	4830.81
			3/16/2017	NA	36.75	0.00	4830.95
			6/15/2017	NA	36.41	0.00	4831.29
			9/14/2017	NA	35.78	0.00	4831.92
			12/19/2017	NA	34.63	0.00	4833.07



Table 3 - Gauging Data

Whiting Oil and Gas Corporation
Nelson C-1
Weld County, Colorado

Well ID	Top of Casing Elevation (ft amsl)	Total Depth of Well (ft)	Date Gauged	Depth to Product (ft btoc)	DTW (ft btoc)	Product Thickness (ft)	Potentiometric Surface Elevation (ft)
MW-11	4871.6	44.00	3/15/2016	NA	41.07	0.00	4830.53
			3/21/2016	NA	41.10	0.00	4830.50
			3/22/2016	NA	42.22	0.00	4829.38
			3/29/2016	NA	40.98	0.00	4830.62
			4/5/2016	NA	41.06	0.00	4830.54
			4/19/2016	NA	47.15	0.00	4824.45
			4/26/2016	NA	40.83	0.00	4830.77
			5/5/2016	NA	41.06	0.00	4830.54
			6/6/2016	NA	41.00	0.00	4830.60
			6/20/2016	NA	41.08	0.00	4830.52
			8/11/2016	NA	41.83	0.00	4829.77
			9/15/2016	NA	40.81	0.00	4830.79
			12/15/2016	NA	40.59	0.00	4831.01
			3/16/2017	NA	40.39	0.00	4831.21
			6/15/2017	NA	40.17	0.00	4831.43
			9/14/2017	NA	39.63	0.00	4831.97
			12/19/2017	NA	39.14	0.00	4832.46
MW-12	4870.1	38.00	3/15/2016	NA	Dry	0.00	
			3/21/2016	NA	Dry	0.00	
			3/22/2016	NA	Dry	0.00	
			3/29/2016	NA	Dry	0.00	
			4/5/2016	NA	40.09	0.00	4830.01
			4/19/2016	NA	39.46	0.00	4830.64
			4/26/2016	NA	39.28	0.00	4830.82
			5/5/2016	NA	39.16	0.00	4830.94
			6/6/2016	NA	38.94	0.00	4831.16
			6/20/2016	NA	38.91	0.00	4831.19
			8/11/2016	NA	38.83	0.00	4831.27
			9/15/2016	NA	38.78	0.00	4831.32
			12/15/2016	NA	38.67	0.00	4831.43
			3/16/2017	NA	38.61	0.00	4831.49
			6/15/2017	NA	38.45	0.00	4831.65
			9/14/2017	NA	38.35	0.00	4831.75
			12/19/2017	NA	38.10	0.00	4832.00
MW-13	4864.4	40.00	3/15/2016	NA	Dry	0.00	
			3/21/2016	NA	38.86	0.00	4825.54
			3/22/2016	NA	39.35	0.00	4825.05
			3/29/2016	NA	37.37	0.00	4827.03
			4/5/2016	NA	35.84	0.00	4828.56
			4/19/2016	NA	33.26	0.00	4831.14
			4/26/2016	NA	32.39	0.00	4832.01
			5/5/2016	NA	31.71	0.00	4832.69
			6/6/2016	NA	30.83	0.00	4833.57
			6/20/2016	NA	30.76	0.00	4833.64
			8/11/2016	NA	31.00	0.00	4833.40
			9/15/2016	NA	30.77	0.00	4833.63
			12/15/2016	NA	31.06	0.00	4833.34
			3/16/2017	NA	31.15	0.00	4833.25
			6/15/2017	NA	31.30	0.00	4833.10
			9/14/2017	NA	31.46	0.00	4832.94
			12/19/2017	NA	32.63	0.00	4831.77



Table 3 - Gauging Data

**Whiting Oil and Gas Corporation
Nelson C-1
Weld County, Colorado**

Well ID	Top of Casing Elevation (ft amsl)	Total Depth of Well (ft)	Date Gauged	Depth to Product (ft btoc)	DTW (ft btoc)	Product Thickness (ft)	Potentiometric Surface Elevation (ft)
MW-14	4863.7	40.00	3/15/2016	NA	29.62	0.00	4834.08
			3/21/2016	NA	29.55	0.00	4834.15
			3/22/2016	NA	29.35	0.00	4834.35
			3/29/2016	NA	29.37	0.00	4834.33
			4/5/2016	NA	29.64	0.00	4834.06
			4/19/2016	NA	29.85	0.00	4833.85
			4/26/2016	NA	29.51	0.00	4834.19
			5/5/2016	NA	29.79	0.00	4833.91
			6/6/2016	NA	29.73	0.00	4833.97
			6/20/2016	NA	29.94	0.00	4833.76
			8/11/2016	NA	29.71	0.00	4833.99
			9/15/2016	NA	29.80	0.00	4833.90
			12/15/2016	NA	29.87	0.00	4833.83
			3/16/2017	NA	30.29	0.00	4833.41
			6/15/2017	NA	30.65	0.00	4833.05
			9/14/2017	NA	30.42	0.00	4833.28
			12/19/2017	NA	30.63	0.00	4833.07
MW-15	4861.4	34.00	3/15/2016	NA	35.15	0.00	4826.25
			3/21/2016	NA	33.75	0.00	4827.65
			3/22/2016	NA	34.15	0.00	4827.25
			3/29/2016	NA	31.69	0.00	4829.71
			4/5/2016	NA	30.14	0.00	4831.26
			4/19/2016	NA	28.50	0.00	4832.90
			4/26/2016	NA	27.96	0.00	4833.44
			5/5/2016	NA	27.64	0.00	4833.76
			6/6/2016	NA	27.12	0.00	4834.28
			6/20/2016	NA	27.00	0.00	4834.40
			8/11/2016	NA	27.47	0.00	4833.93
			9/15/2016	NA	27.19	0.00	4834.21
			12/15/2016	NA	27.60	0.00	4833.80
			3/16/2017	NA	28.11	0.00	4833.29
			6/15/2017	NA	28.59	0.00	4832.81
			9/14/2017	28.92	28.99	0.07	4832.47
			12/19/2017	NA	29.10	0.00	4832.30
MW-16	4863.4	39.00	3/15/2016	NA	35.52	0.00	4827.88
			3/21/2016	NA	32.67	0.00	4830.73
			3/22/2016	36.31	36.34	0.03	4827.08
			3/29/2016	NA	30.70	0.00	4832.70
			4/5/2016	NA	29.65	0.00	4833.75
			4/19/2016	NA	29.19	0.00	4834.21
			4/26/2016	NA	28.98	0.00	4834.42
			5/5/2016	NA	29.18	0.00	4834.22
			6/6/2016	NA	29.27	0.00	4834.13
			6/20/2016	NA	29.30	0.00	4834.10
			8/11/2016	NA	29.30	0.00	4834.10
			9/15/2016	NA	29.20	0.00	4834.20
			12/15/2016	NA	29.15	0.00	4834.25
			3/16/2017	NA	29.13	0.00	4834.27
			6/15/2017	NA	29.53	0.00	4833.87
			9/14/2017	NA	29.47	0.00	4833.93
			12/19/2017	NA	30.00	0.00	4833.40



Table 3 - Gauging Data

**Whiting Oil and Gas Corporation
Nelson C-1
Weld County, Colorado**

Well ID	Top of Casing Elevation (ft amsl)	Total Depth of Well (ft)	Date Gauged	Depth to Product (ft btoc)	DTW (ft btoc)	Product Thickness (ft)	Potentiometric Surface Elevation (ft)
MW-17	4866.0	44.00	3/16/2016	NA	Dry	0.00	
			3/21/2016	43.16	NA	0.84	
			3/22/2016	44.45	45.53	1.08	4821.34
			3/29/2016	39.16	43.55	4.39	4825.98
			4/5/2016	36.62	42.32	5.70	4828.26
			4/19/2016	34.22	42.25	8.03	4830.21
			4/26/2016	33.39	42.16	8.77	4830.89
			5/5/2016	33.04	42.05	9.01	4831.19
			6/6/2016	32.71	41.94	9.23	4831.48
			6/20/2016	36.13	43.14	7.01	4828.50
			8/11/2016	44.20	45.25	1.05	4821.59
			9/15/2016	40.19	43.34	3.15	4825.19
			12/15/2016	40.75	43.09	2.34	4824.79
			3/16/2017	38.92	41.12	2.20	4826.65
			6/15/2017	38.00	39.74	1.74	4827.66
			9/14/2017	NG	NG	NG	NG
			12/19/2017	33.50	35.59	2.09	4832.09
MW-18	4868.6	44.00	3/16/2016	NA	38.87	0.00	4829.73
			3/21/2016	NA	37.72	0.00	4830.88
			3/22/2016	NA	38.10	0.00	4830.50
			3/29/2016	NA	37.55	0.00	4831.05
			4/5/2016	NA	37.74	0.00	4830.86
			4/19/2016	NA	37.87	0.00	4830.73
			4/26/2016	NA	37.55	0.00	4831.05
			5/5/2016	NA	37.79	0.00	4830.81
			6/6/2016	NA	37.75	0.00	4830.85
			6/20/2016	NA	37.90	0.00	4830.70
			8/11/2016	NA	37.63	0.00	4830.97
			9/15/2016	NA	37.56	0.00	4831.04
			12/15/2016	NA	37.33	0.00	4831.27
			3/16/2017	NA	37.29	0.00	4831.31
			6/15/2017	NA	37.49	0.00	4831.11
			9/14/2017	NA	36.60	0.00	4832.00
			12/19/2017	NA	28.90	0.00	4839.70
MW-19	4870.2	39.00	3/21/2016	NA	Dry	0.00	
			3/22/2016	NA	Dry	0.00	
			3/29/2016	NA	Dry	0.00	
			4/5/2016	NA	Dry	0.00	
			4/19/2016	NA	39.87	0.00	4830.33
			4/26/2016	NA	39.56	0.00	4830.64
			5/5/2016	NA	39.44	0.00	4830.76
			6/6/2016	NA	39.20	0.00	4831.00
			6/20/2016	NA	39.18	0.00	4831.02
			8/11/2016	NA	39.10	0.00	4831.10
			9/15/2016	NA	39.05	0.00	4831.15
			12/15/2016	NA	38.92	0.00	4831.28
			3/16/2017	NA	38.81	0.00	4831.39
			6/15/2017	NA	38.68	0.00	4831.52
			9/14/2017	NA	38.50	0.00	4831.70
			12/19/2017	NA	38.25	0.00	4831.95



Table 3 - Gauging Data

**Whiting Oil and Gas Corporation
Nelson C-1
Weld County, Colorado**

Well ID	Top of Casing Elevation (ft amsl)	Total Depth of Well (ft)	Date Gauged	Depth to Product (ft btoc)	DTW (ft btoc)	Product Thickness (ft)	Potentiometric Surface Elevation (ft)
MW-20	4867.0	39.00	3/21/2016	33.95	38.85	4.90	4832.09
			3/22/2016	38.35	40.21	1.86	4828.29
			3/29/2016	38.34	39.15	0.81	4828.50
			4/5/2016	33.52	38.88	5.36	4832.43
			4/19/2016	33.67	38.29	4.62	4832.42
			4/26/2016	33.26	38.05	4.79	4832.80
			5/5/2016	33.60	36.30	2.70	4832.87
			6/6/2016	33.85	38.85	5.00	4832.17
			6/20/2016	33.80	38.30	4.50	4832.32
			8/11/2016	35.02	38.32	3.30	4831.33
			9/15/2016	33.89	37.57	3.68	4832.39
			12/15/2016	34.10	35.90	1.80	4832.55
			3/16/2017	34.27	35.91	1.64	4832.41
			6/15/2017	34.27	35.88	1.61	4832.41
			9/14/2017	NG	NG	NG	NG
			12/19/2017	34.06	35.65	1.59	4832.63
MW-21	4864.0	40.15	6/29/2017	NA	Dry	0.00	
			9/14/2017	30.78	32.29	1.51	4832.92
			12/19/2017	29.33	33.10	3.77	4833.93
MW-22	4866.9	39.68	6/29/2017	35.69	35.88	0.19	4831.17
			9/14/2017	33.97	34.09	0.12	4832.91
			12/19/2017	NA	32.17	0.00	4834.73

NA - Not Applicable
 NG - Not Gauged
 DTW - Depth to Water
 ft btoc - Feet Below Top of Casing
 ft amsl - Feet Above Mean Sea Level



Table 4 - PSH Removal

**Whiting Oil and Gas Corporation
Nelson C-1
Weld County, Colorado**

Well ID	Date Gauged	Estimated PSH Recovered (gallons)	Cumulative PSH Recovered (gallons)
MW-1	Nov-15	0.00	0.00
	Dec-15	0.03	0.03
	Jan-16	0.00	0.03
	Feb-16	0.03	0.06
	Mar-16	0.00	0.06
	Apr-16	0.00	0.06
	May-16	0.00	0.06
	Jun-16	0.04	0.10
	Jul-17	0.03	0.13
MW-2	Dec-15	0.03	0.03
	Jan-16	0.00	0.03
	Feb-16	0.17	0.20
	Mar-16	0.00	0.20
	Apr-16	0.01	0.21
	May-16	0.00	0.21
	Jun-16	0.04	0.25
	Mar-17	0.03	0.28
	May-17	0.08	0.36
	Jun-17	0.01	0.38
	Jul-17	0.00	0.38
	Aug-17	0.00	0.38
	Dec-17	0.00	0.38
MW-3	Dec-15	2.47	2.47
	Jan-16	2.02	4.49
	Feb-16	9.63	14.12
	Mar-16	1.93	16.05
	Apr-16	0.91	16.96
	May-16	0.48	17.44
	Jun-16	2.12	19.56
	Jul-16	4.50	24.06
	Aug-16	2.75	26.81
	Sep-16	2.47	29.29
	Oct-16	3.14	32.43
	Nov-16	2.08	34.51
	Dec-16	2.17	36.67
	Jan-17	1.98	38.65
	Feb-17	1.72	40.37
	Mar-17	1.47	41.84
	Apr-17	1.83	43.67
	May-17	1.49	45.16
	Jun-17	1.67	46.83
	Jul-17	1.14	47.96
	Aug-17	1.00	48.96
	Dec-17	0.22	49.19



Table 4 - PSH Removal

**Whiting Oil and Gas Corporation
Nelson C-1
Weld County, Colorado**

Well ID	Date Gauged	Estimated PSH Recovered (gallons)	Cumulative PSH Recovered (gallons)
MW-4	Dec-15	0.00	0.00
	Jan-16	0.00	0.00
	Feb-16	0.00	0.00
	Mar-16	0.00	0.00
	Apr-16	0.00	0.00
	May-16	0.00	0.00
	Jun-16	0.00	0.00
	Jul-16	0.00	0.00
MW-5	Jun-16	1.50	1.50
	Jul-16	7.00	8.50
	Aug-16	2.41	10.91
	Sep-16	1.55	12.46
	Oct-16	2.49	14.95
	Nov-16	2.42	17.37
	Dec-16	2.67	20.04
	Jan-17	1.86	21.90
	Feb-17	2.20	24.10
	Mar-17	1.08	25.18
	Apr-17	1.96	27.14
	May-17	1.97	29.11
	Jun-17	1.83	30.95
	Jul-17	1.03	31.97
	Aug-17	0.94	32.92
	Dec-17	0.00	32.92
MW-6	Jun-16	6.98	6.98
	Jul-16	10.50	17.48
	Aug-16	4.10	21.58
	Sep-16	2.56	24.14
	Oct-16	4.05	28.19
	Nov-16	3.05	31.24
	Dec-16	2.51	33.75
	Jan-17	1.60	35.36
	Feb-17	2.56	37.91
	Mar-17	1.06	38.97
	Apr-17	1.35	40.32
	May-17	1.08	41.40
	Jun-17	1.44	42.84
	Jul-17	0.64	43.48
	Aug-17	0.53	44.01
	Sep-17	0.44	44.46
	Dec-17	0.19	44.65



Table 4 - PSH Removal

**Whiting Oil and Gas Corporation
Nelson C-1
Weld County, Colorado**

Well ID	Date Gauged	Estimated PSH Recovered (gallons)	Cumulative PSH Recovered (gallons)
MW-7	Jun-16	3.73	3.73
	Jul-16	10.50	14.23
	Aug-16	3.06	17.29
	Sep-16	2.75	20.04
	Oct-16	2.70	22.74
	Nov-16	2.14	24.88
	Dec-16	1.78	26.66
	Jan-17	1.77	28.43
	Feb-17	2.23	30.66
	Mar-17	1.11	31.77
	Apr-17	1.71	33.48
	May-17	1.36	34.84
	Jun-17	1.06	35.90
	Jul-17	0.58	36.48
	Aug-17	0.61	37.09
	Dec-17	2.47	39.56
MW-17	Jun-16	9.03	9.03
	Jul-16	22.00	31.03
	Aug-16	7.68	38.71
	Sep-16	3.86	42.57
	Oct-16	6.60	49.17
	Nov-16	5.13	54.30
	Dec-16	5.03	59.32
	Jan-17	2.91	62.23
	Feb-17	2.84	65.07
	Mar-17	3.06	68.13
	Apr-17	4.11	72.24
	May-17	3.96	76.20
	Jun-17	2.75	78.95
	Jul-17	1.54	80.49
	Aug-17	0.78	81.27
	Dec-17	2.00	83.27
MW-20	Jun-16	7.27	7.27
	Jul-16	36.00	43.27
	Aug-16	27.11	70.38
	Sep-16	12.30	82.68
	Oct-16	13.42	96.10
	Nov-16	8.59	104.69
	Dec-16	6.27	110.97
	Jan-17	5.01	115.97
	Feb-17	3.75	119.72
	Mar-17	2.67	122.39
	Apr-17	5.86	128.25
	May-17	5.89	134.14
	Jun-17	4.83	138.97
	Jul-17	2.92	141.89
	Aug-17	3.56	145.45
	Dec-17	2.81	148.25



Table 4 - PSH Removal

Whiting Oil and Gas Corporation
Nelson C-1
Weld County, Colorado

Well ID	Date Gauged	Estimated PSH Recovered (gallons)	Cumulative PSH Recovered (gallons)
MW-21	Jul-17	0.15	0.15
	Aug-17	0.06	0.21
	Dec-17	5.17	5.38
Site Total			398.55

PSH - Phase Separated Hydrocarbons

Attachment 3
Analytical Reports

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

December 31, 2017

Jennifer Galles
Talon/LPE
1811 E Mulberry
Ft Collins, CO 80524
RE: Nelson C1

Enclosed are the results of analyses for samples received by Summit Scientific on 12/21/17 15:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury For Ben Shrewsbury
Laboratory Manager



Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Nelson C1
Project Number: 701530.020.10
Project Manager: Jennifer Galles

Reported:
12/31/17 14:36

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	1712267-01	Water	12/20/17 13:15	12/21/17 15:45
MW-2	1712267-02	Water	12/20/17 13:00	12/21/17 15:45
MW-4	1712267-03	Water	12/20/17 11:35	12/21/17 15:45
MW-8	1712267-04	Water	12/20/17 12:15	12/21/17 15:45
MW-9	1712267-05	Water	12/20/17 11:00	12/21/17 15:45
MW-10	1712267-06	Water	12/20/17 11:10	12/21/17 15:45
MW-11	1712267-07	Water	12/20/17 11:25	12/21/17 15:45
MW-12	1712267-08	Water	12/20/17 10:30	12/21/17 15:45
MW-13	1712267-09	Water	12/20/17 10:35	12/21/17 15:45
MW-14	1712267-10	Water	12/20/17 10:45	12/21/17 15:45
MW-15	1712267-11	Water	12/20/17 11:20	12/21/17 15:45
MW-16	1712267-12	Water	12/20/17 11:30	12/21/17 15:45
MW-18	1712267-13	Water	12/20/17 12:10	12/21/17 15:45
MW-19	1712267-14	Water	12/20/17 12:25	12/21/17 15:45
MW-22	1712267-15	Water	12/20/17 12:45	12/21/17 15:45
Dup-A	1712267-16	Water	12/20/17 12:00	12/21/17 15:45

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.



Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Nelson C1
Project Number: 701530.020.10
Project Manager: Jennifer Galles

Reported:
12/31/17 14:36

Sample Receipt Checklist

S2 Work Order: Talon 1712267

Client: Talon LPO

Client Project ID: Nelson C1

Shipped Via: _____
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Airbill #: _____

Matrix (check all that apply): ☐ Air ☐ Soil/Solid ☒ Water ☐ Other: _____
(Describe)

Cooler ID					
Temp (°C)	7.0				

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ?				
NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	✓			in ice
Were all samples received intact ⁽¹⁾ ?	✓			
Was adequate sample volume provided ⁽¹⁾ ?	✓			
If custody seals are present, are they intact ⁽¹⁾ ?			✓	
Are short holding time analytes or samples with HTs due within 48 hours present?		✓		
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	✓			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	✓			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	✓			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	✓			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.		✓		
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?	✓			HCL
Note the type of preservative in the Comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , ect				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			✓	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

Custodian Printed Name

Signature or Initials of Custodian

Date/Time

12-21-17 1600

Summit Scientific

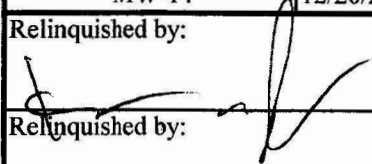
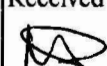
1712267.1

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

Page 1 of 2

Client: Talon/LPE - Bill Whiting
Address: 1811 East Mulberry
City/State/Zip: Fort Collins, CO 80525
Phone: 970-818-5330 Fax:
Sampler Name: Jason Leverton and Ken Rogowski

Project Manager: Jennifer Galles
E-Mail: csterling@talonlpe.com and jgalles@talonlpe.com
Project Name: Nelson C1
Project Number: 701530.020.10

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix				Analyze For:										Special Instructions					
				HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	BTEX															
MW-1	12/20/2017	1315	3	x				x					x														
MW-2	12/20/2017	1300	3	x				x					x														
MW-4	12/20/2017	1135	3	x				x					x														
MW-8	12/20/2017	1215	3	x				x					x														
MW-9	12/20/2017	1100	3	x				x					x														
MW-10	12/20/2017	1110	3	x				x					x														
MW-11	12/20/2017	1125	3	x				x					x														
MW-12	12/20/2017	1030	3	x				x					x														
MW-13	12/20/2017	1035	3	x				x					x														
MW-14	12/20/2017	1045	3	x				x					x														
Relinquished by: 				Date/Time: 12-20-17 15:45				Received by:  12-20-17 15:45				Date/Time:				Turn Around Time (Check)										Notes:	
Relinquished by:				Date/Time:				Received by:				Date/Time:				Same Day <input type="checkbox"/> 72 Hours <input type="checkbox"/> 24 Hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 Hours <input type="checkbox"/>											
Relinquished by:				Date/Time:				Received in Lab by:				Date/Time:				Sample Integrity: Temperature Upon Receipt: 7.0 Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>											

Summit Scientific

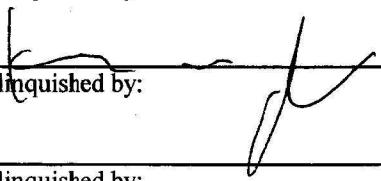

1712267.2

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

Page 2 of 2

Client: Talon/LPE - Bill Whiting
Address: 1811 East Mulberry
City/State/Zip: Fort Collins, CO 80525
Phone: 970-818-5330 Fax:
Sampler Name: Jason Leverton and Ken Rogowski

Project Manager: Jennifer Galles
E-Mail: csterling@talonlpe.com and jgalles@talonlpe.com
Project Name: Nelson C1
Project Number: 701530.020.10

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix				Analyze For:								Special Instructions					
				HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	BTEX													
MW-15	12/20/2017	1120	3	x				x					x												
MW-16	12/20/2017	1130	3	x				x					x												
MW-18	12/20/2017	1210	3	x				x					x												
MW-19	12/20/2017	1225	3	x				x					x												
MW-22	12/20/2017	1245	3	x				x					x												
Dup-A	12/20/2017	1200	3	x				x					x												
Relinquished by: 				Date/Time: 12.20.17 15:45				Received by: 				Date/Time: 12-20-17 15:45				Turn Around Time (Check)								Notes:	
Relinquished by:				Date/Time:				Received by:				Date/Time:				Same Day <input type="checkbox"/> 72 Hours <input type="checkbox"/> 24 Hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 Hours <input type="checkbox"/>									
Relinquished by:				Date/Time:				Received in Lab by:				Date/Time:				Sample Integrity: Temperature Upon Receipt: 7.0 Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>									



Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Nelson C1
Project Number: 701530.020.10
Project Manager: Jennifer Galles

Reported:
12/31/17 14:36

MW-1
1712267-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/20/17 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	12000	100	ug/l	100	1712310	12/29/17	12/29/17	EPA 8260B	
Toluene	11000	100	"	"	"	"	"	"	
Ethylbenzene	930	100	"	"	"	"	"	"	
Xylenes (total)	5800	200	"	"	"	"	"	"	

Date Sampled: **12/20/17 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		100 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		95.9 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.5 %	45-146		"	"	"	"	

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.



Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Nelson C1
Project Number: 701530.020.10
Project Manager: Jennifer Galles

Reported:
12/31/17 14:36

MW-2
1712267-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/20/17 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	14000	100	ug/l	100	1712310	12/29/17	12/29/17	EPA 8260B	
Toluene	16000	100	"	"	"	"	"	"	
Ethylbenzene	1200	100	"	"	"	"	"	"	
Xylenes (total)	7300	200	"	"	"	"	"	"	

Date Sampled: **12/20/17 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		134 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		95.2 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		95.1 %	45-146		"	"	"	"	

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.



Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Nelson C1
Project Number: 701530.020.10
Project Manager: Jennifer Galles

Reported:
12/31/17 14:36

MW-4
1712267-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/20/17 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	7500	100	ug/l	100	1712310	12/29/17	12/29/17	EPA 8260B	
Toluene	8400	100	"	"	"	"	"	"	
Ethylbenzene	710	100	"	"	"	"	"	"	
Xylenes (total)	5100	200	"	"	"	"	"	"	

Date Sampled: **12/20/17 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		95.0 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		97.8 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		99.5 %	45-146		"	"	"	"	

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.



Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Nelson C1
Project Number: 701530.020.10
Project Manager: Jennifer Galles

Reported:
12/31/17 14:36

MW-8
1712267-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/20/17 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	14000	100	ug/l	100	1712310	12/29/17	12/29/17	EPA 8260B	
Toluene	14000	100	"	"	"	"	"	"	
Ethylbenzene	620	100	"	"	"	"	"	"	
Xylenes (total)	5400	200	"	"	"	"	"	"	

Date Sampled: **12/20/17 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		103 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		97.6 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		97.4 %	45-146		"	"	"	"	

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.



Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Nelson C1
Project Number: 701530.020.10
Project Manager: Jennifer Galles

Reported:
12/31/17 14:36

MW-9
1712267-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/20/17 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1712310	12/29/17	12/29/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **12/20/17 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		99.0 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.5 %	45-146		"	"	"	"	

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.



Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Nelson C1
Project Number: 701530.020.10
Project Manager: Jennifer Galles

Reported:
12/31/17 14:36

MW-10
1712267-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/20/17 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1712310	12/29/17	12/29/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **12/20/17 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		98.0 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		95.0 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.0 %	45-146		"	"	"	"	

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.



Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Nelson C1
Project Number: 701530.020.10
Project Manager: Jennifer Galles

Reported:
12/31/17 14:36

MW-11
1712267-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/20/17 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1712310	12/29/17	12/29/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **12/20/17 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		99.5 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.8 %	45-146		"	"	"	"	

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.



Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Nelson C1
Project Number: 701530.020.10
Project Manager: Jennifer Galles

Reported:
12/31/17 14:36

MW-12
1712267-08 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/20/17 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1712310	12/29/17	12/29/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **12/20/17 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		97.8 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		96.8 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	45-146		"	"	"	"	

Summit Scientific

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Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Nelson C1
Project Number: 701530.020.10
Project Manager: Jennifer Galles

Reported:
12/31/17 14:36

MW-13
1712267-09 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/20/17 10:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1712310	12/29/17	12/29/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **12/20/17 10:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		99.2 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		94.4 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.6 %	45-146		"	"	"	"	

Summit Scientific

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Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Nelson C1
Project Number: 701530.020.10
Project Manager: Jennifer Galles

Reported:
12/31/17 14:36

MW-14
1712267-10 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/20/17 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	2200	100	ug/l	100	1712310	12/29/17	12/29/17	EPA 8260B	
Toluene	190	100	"	"	"	"	"	"	
Ethylbenzene	310	100	"	"	"	"	"	"	
Xylenes (total)	580	200	"	"	"	"	"	"	

Date Sampled: **12/20/17 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		93.6 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		97.4 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		98.5 %	45-146		"	"	"	"	

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.



Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Nelson C1
Project Number: 701530.020.10
Project Manager: Jennifer Galles

Reported:
12/31/17 14:36

MW-15
1712267-11 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/20/17 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	3400	100	ug/l	100	1712310	12/29/17	12/29/17	EPA 8260B	
Toluene	2700	100	"	"	"	"	"	"	
Ethylbenzene	600	100	"	"	"	"	"	"	
Xylenes (total)	3900	200	"	"	"	"	"	"	

Date Sampled: **12/20/17 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		106 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		93.6 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		103 %	45-146		"	"	"	"	

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.



Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Nelson C1
Project Number: 701530.020.10
Project Manager: Jennifer Galles

Reported:
12/31/17 14:36

MW-16
1712267-12 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/20/17 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	10000	100	ug/l	100	1712310	12/29/17	12/29/17	EPA 8260B	
Toluene	11000	100	"	"	"	"	"	"	
Ethylbenzene	900	100	"	"	"	"	"	"	
Xylenes (total)	5700	200	"	"	"	"	"	"	

Date Sampled: **12/20/17 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		95.5 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		94.7 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		99.0 %	45-146		"	"	"	"	

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Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Nelson C1
Project Number: 701530.020.10
Project Manager: Jennifer Galles

Reported:
12/31/17 14:36

MW-18
1712267-13 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/20/17 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	470	100	ug/l	100	1712310	12/29/17	12/29/17	EPA 8260B	
Toluene	52	1.0	"	1	"	"	"	"	
Ethylbenzene	6.2	1.0	"	"	"	"	"	"	
Xylenes (total)	35	2.0	"	"	"	"	"	"	

Date Sampled: **12/20/17 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		97.8 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		98.1 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		99.3 %	45-146		"	"	"	"	

Summit Scientific

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Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Nelson C1
Project Number: 701530.020.10
Project Manager: Jennifer Galles

Reported:
12/31/17 14:36

MW-19
1712267-14 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/20/17 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	1.2	1.0	ug/l	1	1712310	12/29/17	12/29/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **12/20/17 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		100 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		92.2 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.1 %	45-146		"	"	"	"	

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.



Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Nelson C1
Project Number: 701530.020.10
Project Manager: Jennifer Galles

Reported:
12/31/17 14:36

MW-22
1712267-15 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/20/17 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	6500	100	ug/l	100	1712310	12/29/17	12/29/17	EPA 8260B	
Toluene	15000	100	"	"	"	"	"	"	
Ethylbenzene	1200	100	"	"	"	"	"	"	
Xylenes (total)	6800	200	"	"	"	"	"	"	

Date Sampled: **12/20/17 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		96.2 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		101 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		102 %	45-146		"	"	"	"	

Summit Scientific

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Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Nelson C1
Project Number: 701530.020.10
Project Manager: Jennifer Galles

Reported:
12/31/17 14:36

Dup-A
1712267-16 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/20/17 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	9900	100	ug/l	100	1712310	12/29/17	12/29/17	EPA 8260B	
Toluene	10000	100	"	"	"	"	"	"	
Ethylbenzene	860	100	"	"	"	"	"	"	
Xylenes (total)	6200	200	"	"	"	"	"	"	

Date Sampled: **12/20/17 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		98.3 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		98.6 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		98.4 %	45-146		"	"	"	"	

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Project Manager: Jennifer Galles

Reported:
12/31/17 14:36

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 1712310 - EPA 5030 Water MS

Blank (1712310-BLK1)

Prepared & Analyzed: 12/29/17

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	13.2		"	13.3		98.8	37-154			
Surrogate: Toluene-d8	12.6		"	13.3		94.1	45-149			
Surrogate: 4-Bromofluorobenzene	12.6		"	13.3		94.1	45-146			

LCS (1712310-BS1)

Prepared & Analyzed: 12/29/17

Benzene	32.8	1.0	ug/l	33.3		98.4	51-132			
Toluene	33.5	1.0	"	33.3		100	51-138			
Ethylbenzene	34.8	1.0	"	33.1		105	58-146			
m,p-Xylene	65.5	2.0	"	66.5		98.4	57-144			
o-Xylene	33.8	1.0	"	32.7		103	53-146			
Surrogate: 1,2-Dichloroethane-d4	13.6		"	13.3		102	37-154			
Surrogate: Toluene-d8	13.0		"	13.3		97.3	45-149			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		96.4	45-146			

Matrix Spike (1712310-MS1)

Source: 1712277-01

Prepared & Analyzed: 12/29/17

Benzene	33.6	1.0	ug/l	33.3	ND	101	34-141			
Toluene	34.2	1.0	"	33.3	ND	103	27-151			
Ethylbenzene	33.9	1.0	"	33.1	ND	103	29-160			
m,p-Xylene	62.7	2.0	"	66.5	ND	94.3	20-166			
o-Xylene	32.2	1.0	"	32.7	ND	98.6	33-159			
Surrogate: 1,2-Dichloroethane-d4	13.2		"	13.3		99.1	37-154			
Surrogate: Toluene-d8	13.1		"	13.3		98.4	45-149			
Surrogate: 4-Bromofluorobenzene	12.7		"	13.3		95.0	45-146			

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Ft Collins CO, 80524

Project: Nelson C1
Project Number: 701530.020.10
Project Manager: Jennifer Galles

Reported:
12/31/17 14:36

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 1712310 - EPA 5030 Water MS

Matrix Spike Dup (1712310-MSD1)	Source: 1712277-01			Prepared & Analyzed: 12/29/17						
Benzene	33.7	1.0	ug/l	33.3	ND	101	34-141	0.267	32	
Toluene	33.1	1.0	"	33.3	ND	99.3	27-151	3.18	25	
Ethylbenzene	33.1	1.0	"	33.1	ND	100	29-160	2.39	50	
m,p-Xylene	61.0	2.0	"	66.5	ND	91.7	20-166	2.78	36	
o-Xylene	32.2	1.0	"	32.7	ND	98.7	33-159	0.0931	26	
Surrogate: 1,2-Dichloroethane-d4	14.9		"	13.3		112	37-154			
Surrogate: Toluene-d8	12.8		"	13.3		95.6	45-149			
Surrogate: 4-Bromofluorobenzene	12.7		"	13.3		95.3	45-146			

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Reported:
12/31/17 14:36

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