Nelson A6/A7
Subsurface Site Assessment

November 20, 2015

Prepared for:

Whiting Petroleum Corporation

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1 Introduction

Talon/LPE (Talon) was contracted by Whiting Petroleum Corporation (Whiting) to conduct site investigation assessment activities associated with a release identified at the Nelson A6/A7 tank battery site (Site) in Weld County, Colorado. The Site is located approximately 2 miles east, 3 miles north and 0.35 miles southeast of the intersection of County Road 110 and County Road 119 (Figure 6 in **Attachment 1**). The Site is located at the center of the northwest quarter of the southeast quarter of Section 20, Township 10 North, Range 58 West, 6th Principal Meridian at 40°49'38"N, 103°53'43"W and is identified by the State of Colorado Oil and Gas Conservation Commission (COGCC) as Spill/Release Point Facility ID 438672.

The following document is a chronological assessment of site investigation activities from multiple consultants associated with a flowline release. Activities included collection of excavation floor and sidewall confirmation samples, shredding stockpiled soil, on-site soil borings and preparation of this summary report.

2 Objective

The primary objective of this investigation is to determine the nature and extent of soil and/or groundwater impacts resulting from a recent flowline release. The release date is determined to be unknown; however, it was first discovered and reported in July 2014. Additionally, this report is to document the remedial activities which have occurred to remove and treat hydrocarbon impacted soils.

3 Site Characteristics

3.1 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.

3.2 Geologic Summary

Surficial geology surrounding the area consists of Tertiary age fluvial deposits of the lower Ogallala Formation. More specifically, these deposits are Miocene in age and are composed of gray to brown and semi-consolidated, ashy sands and silt beds with volcanic ash beds. Deposited material hardened into sandstone and siltstone which are grouped into three formations: White River, Arikaree, and Ogallala.

3.3 Groundwater

Groundwater was not encountered during excavation or soil boring activities which reached a maximum depth of 35 feet below ground surface (ft bgs). Based on the area topography and regional surface water drainages, the expected groundwater flow is south-southeast. According to the Colorado Division of Water Resources Website, there are no water wells within 1,000 foot radius of the Site.

4 Previous Investigation Performed by Other Consultants

4.1 Olsson Associates

On July 31, 2014, Form 19 associated with Spill/Release ID #438404 was submitted to COGCC to report a flowline leak immediately adjacent to the Nelson A7 well pad. It was discovered utilizing a forward looking infrared (FLIR) camera. No free liquids were observed. It was reported on the Form 19 that impacted soils greater than COGCC Table 910-1 were excavated and backfilled with native clean soil and the line was repaired. It was estimated that between approximately 0.5 to 3 barrels (bbls) were lost.

While the flowline was being replaced, historical staining was observed inside the tank battery on the flowline at Nelson A7. On August 19, 2014, initial excavation and soil sampling activities were conducted to determine the extent of the release. Olsson Associates (Olsson) collected five soil samples from the impacted area to the northeast area of the tank battery (Figure 2 in **Attachment 1**). The collected samples were analyzed for Total Petroleum Hydrocarbons (TPH) via Gasoline Range Organics (GRO) and Diesel Range Organics (DRO) method SW8015 and for benzene, ethylbenzene, toluene, and total xylenes (BTEX) via method SW8260 at Origins Laboratory, Inc. (Origins) of Denver, Colorado. All analytical results were below COGCC Table 910-1 concentration levels (Table 1 in **Attachment 2**).

It was estimated that 7 bbls of crude oil had been released. Impacted soils near the tank battery were excavated and transported offsite for disposal at a commercial landfill (Waste Management's North Weld County Landfill in Ault, Colorado). It was reported that haul trucks were used to transport and dispose of the soils. The excavation was filled with clean backfill and gravel and re-graded to match pre-existing conditions. Based upon analytical results and the volume of soil excavated, it was determined that this release meets the reporting requirements for the COGCC. Therefore, on August 24, 2014, another Form 19 was submitted as Spill/Release # 438672.

4.2 Whiting

On March 18, 2015, Whiting personnel collected six soil samples for additional confirmation purposes as Olsson collected soil confirmation samples at shallow intervals only. Whiting utilized a hydro-vac to expose the new flowline and excavated the areas that were not previously sampled by Olsson. Figure 3 in **Attachment 1** shows the locations and analytical results of the soil samples collected by Whiting. Additionally, one soil sample was collected from the stockpile. The collected soil samples were analyzed for TPH via GRO and DRO method SW8015 and BTEX via method SW8260 at ALS Environmental (ALS) of Fort Collins, Colorado. A copy of the laboratory report and chain of custody documentation is included in **Attachment 4**.

Soil sample CS10 at 7 ft bgs, collected from the northeastern side of the tank battery location (Figure 3 in **Attachment 1**), exhibited a TPH concentration of 500 mg/kg, which is at the threshold of COGCC Table 910-1 concentration levels. Soil sample CS12 at 9 ft bgs, collected from the eastern edge of the tank battery location, exhibited benzene (12 mg/kg), toluene (170 mg/kg), total xylenes (270 mg/kg) and TPH (7,500 mg/kg) concentrations above COGCC Table 910-1 concentration levels.

On March 23, 2015, Talon performed soil shredding of 83 cubic yards of hydrocarbon impacted soil at the Site which were stockpiled from the excavation activities performed by Whiting. Additionally, a 5% hydrogen peroxide solution was utilized to chemically oxidize the hydrocarbons. Following the remedial activities, Talon collected a confirmation soil sample on March 25, 2015 to confirm all hydrocarbons had been remediated from the shredded stockpile. The collected sample was analyzed for TPH via GRO and DRO method SW8015 at ALS. All analytical results from the confirmation soil sample were below COGCC Table 910-1 concentration levels.

5 Current Field Investigation

At the request of Whiting, Talon performed this field investigation to further determine if impacts remained at the Site. Between April 14 and 16, 2015, Talon conducted soil boring activities. Seven borings, as shown on Figure 4 in **Attachment 1**, were drilled to a depth of 25 to 35 ft bgs to define vertical and horizontal extent of impacts.

During field drilling activities, soil samples were field screened for volatile organic compounds (VOCs) using a photoionization detector (PID) to determine any areas of impacts. Boring logs detailing observed lithology and PID values are included in **Attachment 3**. Based on the PID values, soil samples were collected from the borings from depths ranging between 0-5 ft bgs and 30-35 ft bgs. A total of 21 soil samples were analyzed for TPH via GRO and DRO method SW8015 and BTEX via method SW8260 at ALS. A copy of the laboratory report and chain of custody documentation is included in **Attachment 4**.

5.1 Discussion of Results

Table 1 in **Attachment 2** summarizes the laboratory analytical results. Soil sample SB-1 at 0-5 ft bgs exhibited benzene concentrations (0.25 mg/kg) and TPH (3,490 mg/kg) above the COGCC Table 910-1 concentration levels. All other analytical results were below COGCC Table 910-1 concentration levels.

Groundwater was not encountered during Site activities; therefore, groundwater samples were not collected.

6 Remedial Activities

Whiting performed soil excavation activities near soil samples CS10 and CS12 to remove the hydrocarbon impacted soils. On June 4, 2015, Talon personnel collected confirmation soil samples. Soil samples FS-1 at 8 ft bgs and F-2 at 6 ft bgs were collected from the floor of the excavated areas. The collected samples were analyzed for TPH via GRO and DRO method SW8015 and BTEX via method SW8260 at ALS. A copy of the laboratory report and chain of custody documentation is included in **Attachment 4**. The excavated soils were stockpiled onsite until mechanical soil shredding and chemical oxidation could be completed.

Analytical results of the confirmation soil samples indicated that soil sample FS-1 at 8 ft bgs had a benzene concentration of 0.42 mg/kg, which is above the COGCC Table 910-1 concentration level. All remaining analytical results were below laboratory reporting limits or COGCC Table 910-1 concentration levels.

On June 25, 2015, Talon oversaw M&E Trucking, LLC (M&E) perform excavation to remove impacted soil near FS-1. The excavation reached the limit of its extent at 13 ft bgs. Soil sample FS-3 at 13 ft bgs was collected from the floor of the excavation and was analyzed for TPH via GRO and DRO method SW8015 and BTEX via method SW8260 at ALS. A copy of the laboratory report and chain of custody documentation is included in **Attachment 4**. The excavated soils were stockpiled onsite until mechanical soil shredding and chemical oxidation could be completed.

Analytical results for soil sample FS-3 for TPH were below laboratory reporting limits. The remaining analytical results were below COGCC Table 910-1 concentration levels. These results indicate that the excavation activities provided complete removal of impacted soils in the vicinity of FS-1.

On June 27, 2015, Talon personnel performed soil shredding of approximately 131 cubic yards of impacted soil. On July 1, 2015, Talon collected two confirmation soil samples from the shredded stockpile to ensure that the hydrocarbon impacted soils had been remediated to the maximum practical extent. The collected samples were analyzed for TPH via GRO and DRO method SW8015 and BTEX via method SW8260 at ALS. A copy of the laboratory report and chain of custody documentation is included in **Attachment 4**. All analytical results from the shredded stockpile confirmation samples were below COGCC Table 910-1 concentration levels, and the soil was used to backfill the excavation area.

During the excavation activities performed on June 25, 2015, Talon collected a soil sample from the bottom of the excavation. However, COGCC requested Talon return to the site to collect sidewall samples as well. On September 3, 2015, Talon personnel collected additional soil samples. Talon personnel used a hand auger to collect soil samples at a depth of 8 ft bgs at four locations (SW-1 through SW-4) as shown on Figure 5 in **Attachment 1**. These locations were at the former sidewalls of the excavated area which had now been backfilled with the remediated stockpile soil. The collected samples were analyzed for TPH via GRO and DRO method SW8015 and BTEX via method SW8260 at ALS. A copy of the laboratory report and chain of custody documentation is included in **Attachment 4**. Analytical results from SW-2 @ 8 ft bgs indicated benzene (30 mg/kg), toluene (580 mg/kg), total xylenes (750 mg/kg) and TPH (14,200 mg/kg) concentrations above COGCC Table 910-1 concentration levels. All remaining analytical results were below COGCC Table 910-1 concentration levels or laboratory detection limits.

On September 25, 2015, M&E performed excavation to remove the impacts located near SW-2. An area of approximately 20 feet by 20 feet by 12 feet deep was excavated and stockpiled onsite (Figure 5 in **Attachment 1**). On September 29, 2015, Talon personnel collected confirmation soil samples from the north sidewall (SW-3), east sidewall (SW-4), and the bottom of the excavation (BH-01). The collected samples were analyzed for TPH via GRO and DRO method SW8015 and BTEX via method SW8260 at ALS. Sidewall sample SW-3 at 8 ft bgs collected from the north sidewall had analytical results of benzene (0.76 mg/kg) and TPH (3,100 mg/kg) above COGCC Table 910-1 concentration levels. The excavation was extended approximately seven feet north from the original excavation area to remove these impacted soils. On October 6,

2015, Talon personnel collected a sidewall sample (SW-3A) from the new northern extent of the excavation. The collected sample was analyzed for TPH via DRO method SW8015 and BTEX and GRO via method SW8260 at Summit Scientific laboratory in Golden, Colorado. All analytical results from this sample were below laboratory detection limits. A copy of the laboratory reports and chain of custody documentation are included in **Attachment 4**.

On October 13, 2015, Talon personnel performed mechanical soil shredding on approximately 300 cubic yards of soil from this excavation. The treated soils were stockpiled onsite pending laboratory analytical results.

Following the soil shredding, three confirmation soil samples were obtained to confirm the soils were remediated to below COGCC Table 910-1 concentration levels. The soil samples were collected on November 13, 2015 and submitted to Summit Scientific for analysis of TPH via DRO method SW8015 and BTEX and GRO via method SW8260. All analytical results for the soil confirmation samples were below laboratory detection limits. A copy of the laboratory report and chain of custody documentation is included in **Attachment 4**. The treated soils were placed back into the excavation.

7 Conclusions & Recommendations

The objective of this report was to document the nature and extent of the historical impacts from the Nelson A6/A7 tank battery location as well as the remedial activities that have occurred.

Whiting collected six soil samples in areas that were not previously sampled by Olsson. Soil sample CS10 at 7 ft bgs, collected from the northeastern side of the tank battery location, exhibited a TPH concentration of 500 mg/kg, which is at the threshold of COGCC Table 910-1 concentration levels. Soil sample CS12 at 9 ft bgs, collected from the eastern edge of the tank battery location, exhibited benzene (12 mg/kg), toluene (170 mg/kg), total xylenes (270 mg/kg) and TPH (7,500 mg/kg) concentrations above COGCC Table 910-1 concentration levels.

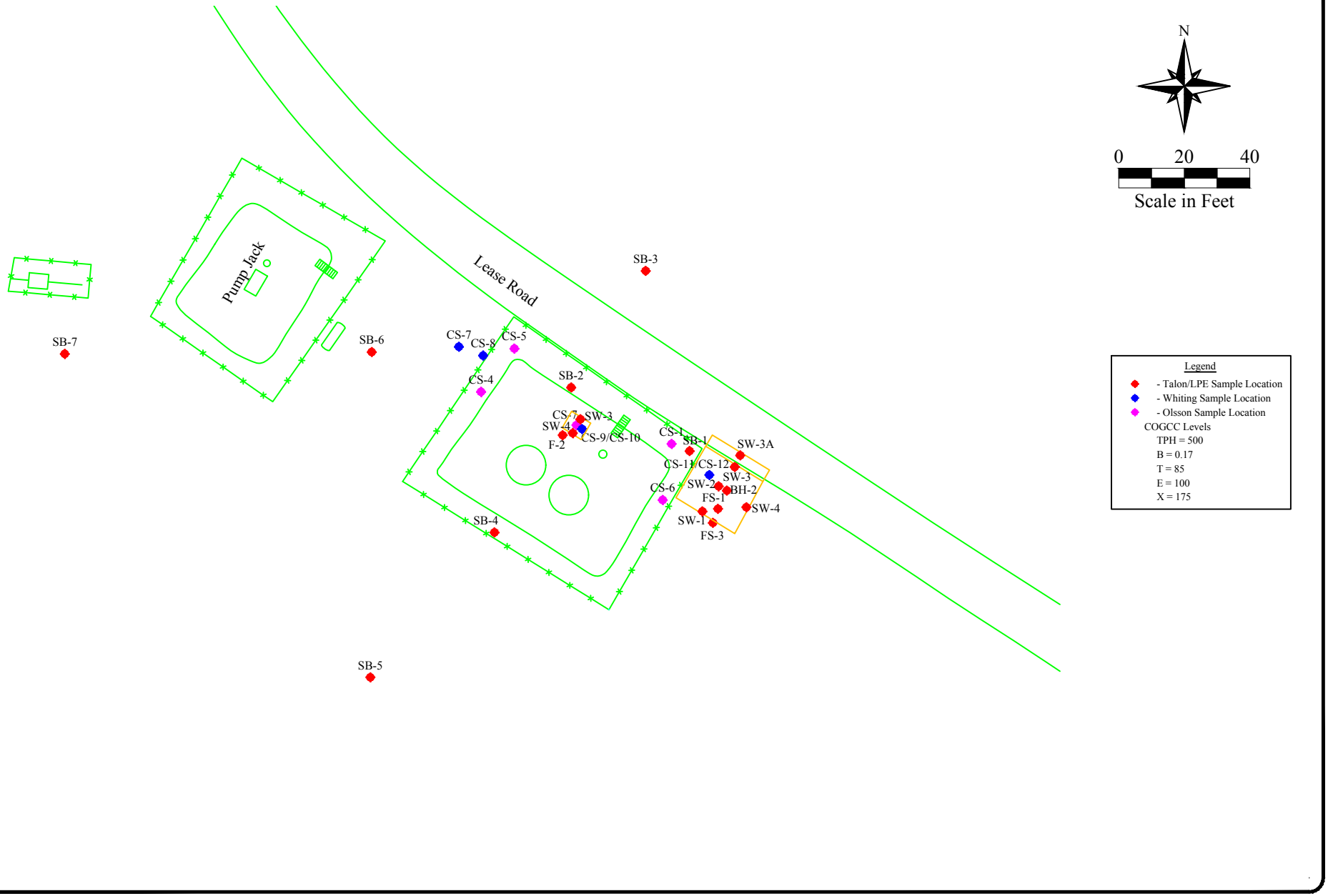
Talon installed seven borings to assess any remaining soil or groundwater impacts from this release. Soil sample SB-1 at 0-5 ft bgs exhibited benzene concentrations (0.25 mg/kg) and TPH (3,490 mg/kg) above the COGCC Table 910-1 concentration levels. This soil boring is located at the eastern edge of the tank battery location.

Remedial activities that have occurred include excavation, soil shredding, and confirmation soil sampling. Following the first excavation, analytical results indicated that all impacted soils had been removed and stockpiled onsite. Talon performed soil shredding on this stockpile and collected confirmation soil samples to verify the shredding remediated the soils to below COGCC standards. All analytical results from the confirmation soil samples were below COGCC standards, indicating the soil has been remediated.

At the request of COGCC, Talon performed additional soil sampling onsite to further delineate any remaining impacts. Talon collected four soil samples from the former excavation sidewalls. Sidewall sample SW-2 @ 8 ft bgs indicated benzene (30 mg/kg), toluene (580 mg/kg), total xylenes (750 mg/kg) and TPH (14,200 mg/kg) concentrations above COGCC Table 910-1 concentration levels. All remaining analytical results were below COGCC Table 910-1

concentration levels or laboratory detection limits. M&E performed excavation to remove additional impacts identified. The northern sidewall sample SW-3 at 8 ft bgs had analytical results of benzene (0.76 mg/kg) and TPH (3,100 mg/kg) above COGCC Table 910-1 concentration levels. Therefore, the excavation area was extended approximately seven feet north to remove these impacted soils. The most current excavation sidewall and floor samples indicate the impacted soils have been removed. All soils were mechanically shredded to remediate any remaining impacts. The soil confirmation samples indicate all remaining impacts were remediated. The excavated soils were placed back to the excavated area.

Attachment 1
Figures



TALON LPE

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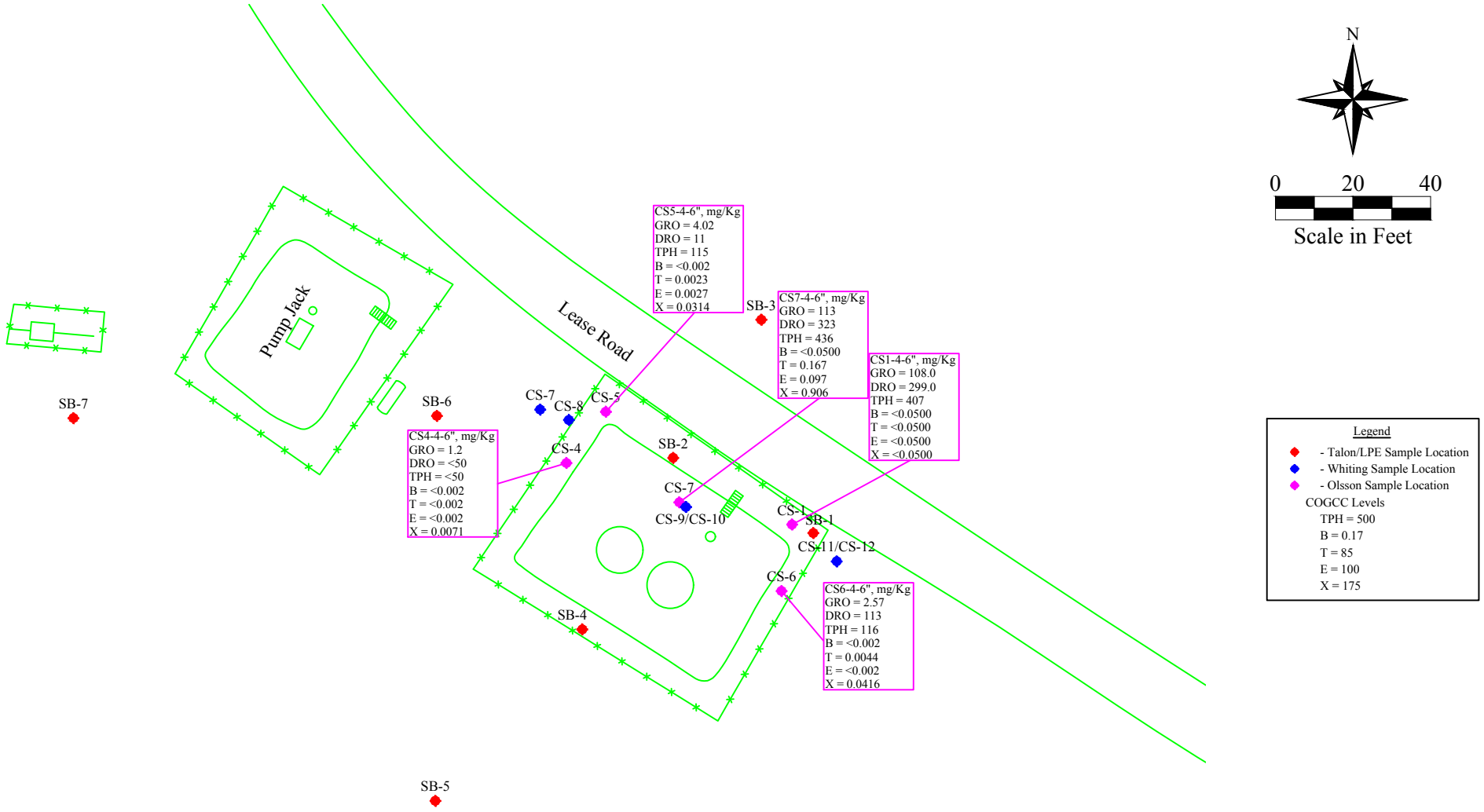
Drawn By:	TJS

Nelson A-6 A-7

Whiting Oil & Gas Corporation
Weld County, Colorado
Figure 1 - Site Plan



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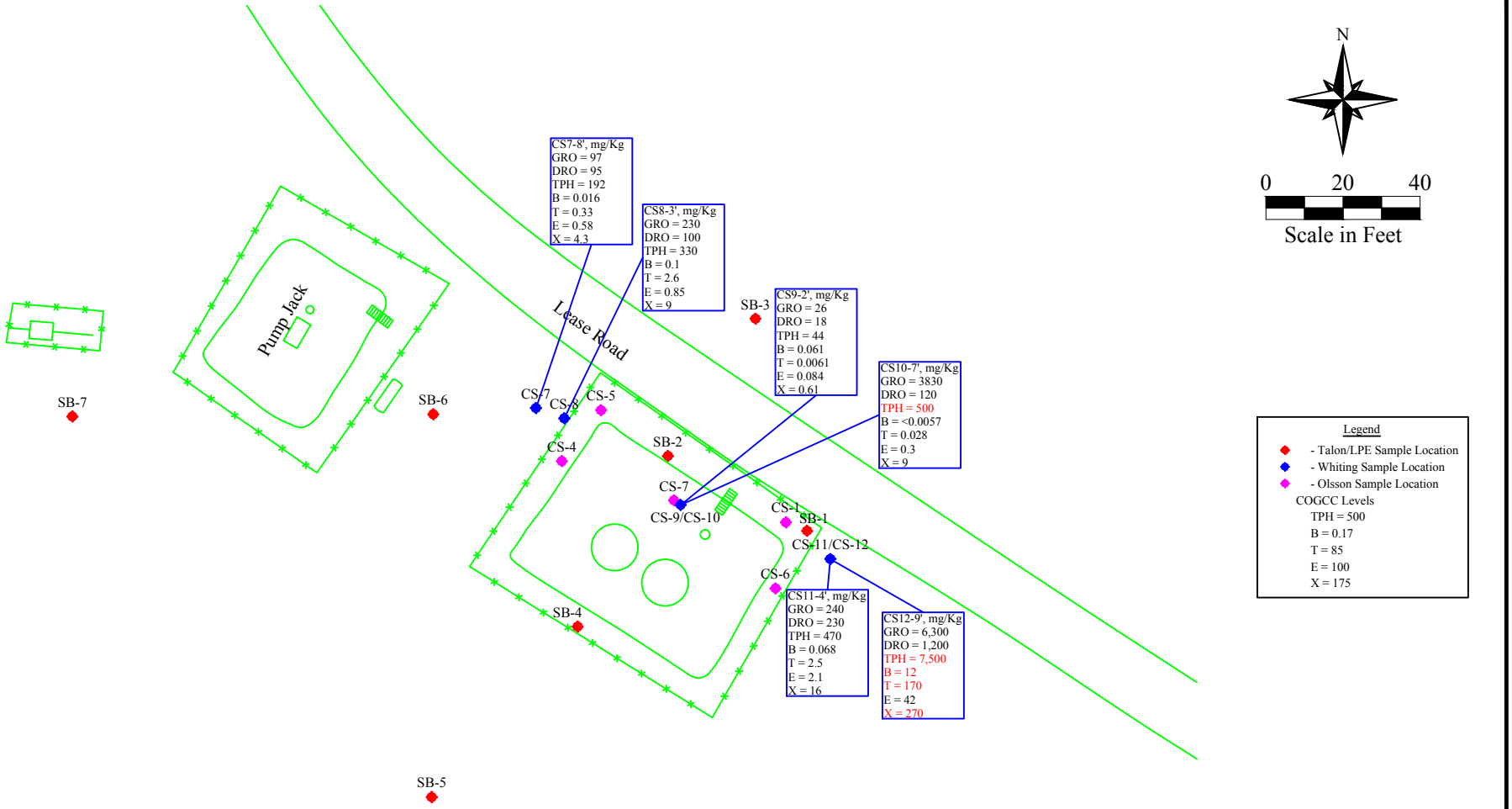
Nelson A-6 A-7

Whiting Oil & Gas Corporation
Weld County, Colorado
Figure 2 - Soil Concentration Map - Olsson Associates (04/14-16/2015)



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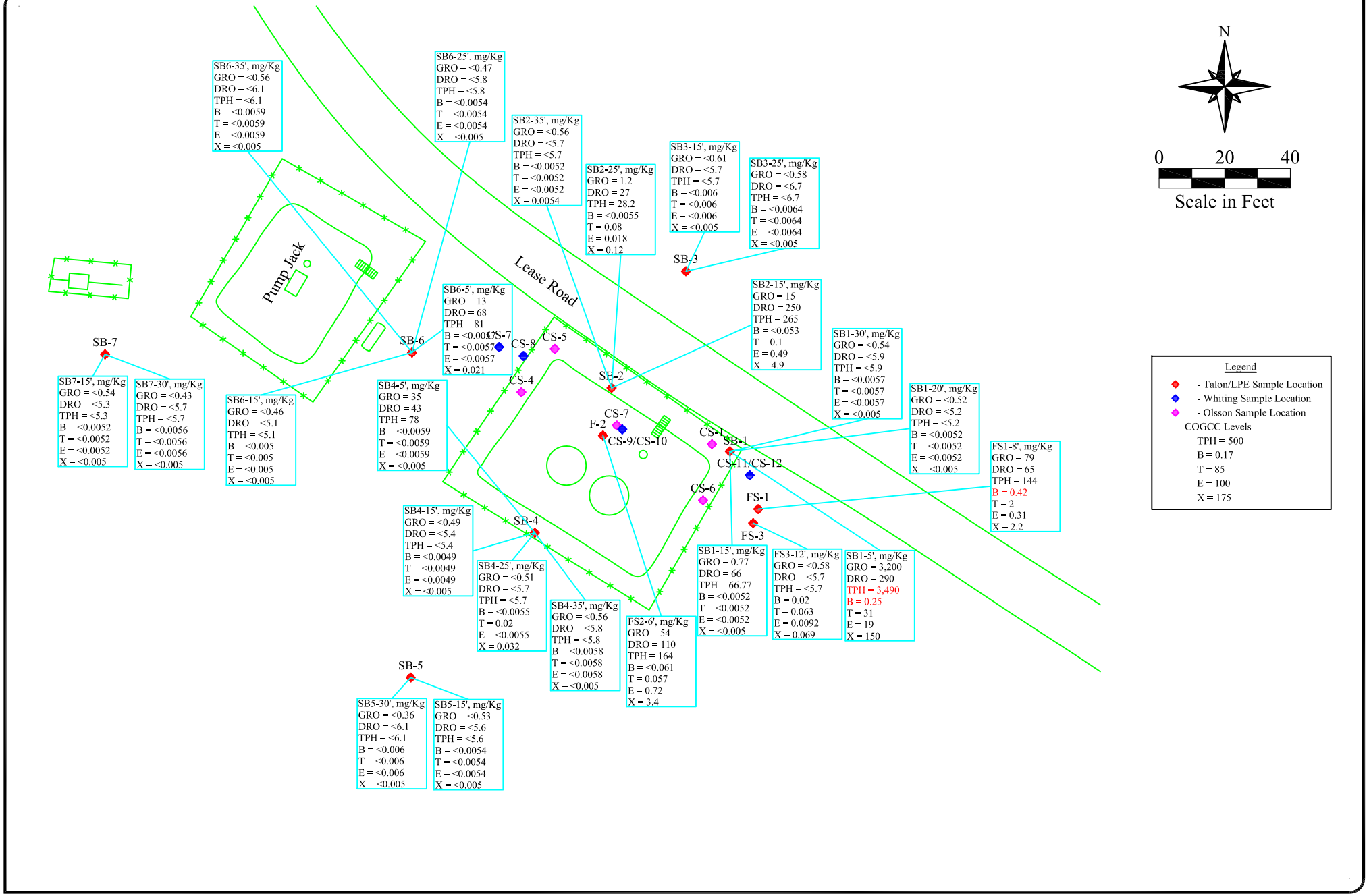
Nelson A-6 A-7

Whiting Oil & Gas Corporation
Weld County, Colorado
Figure 3 - Soil Concentration Map - Whiting Petroleum Corp. (04/14-16/2015)



TALON LPE

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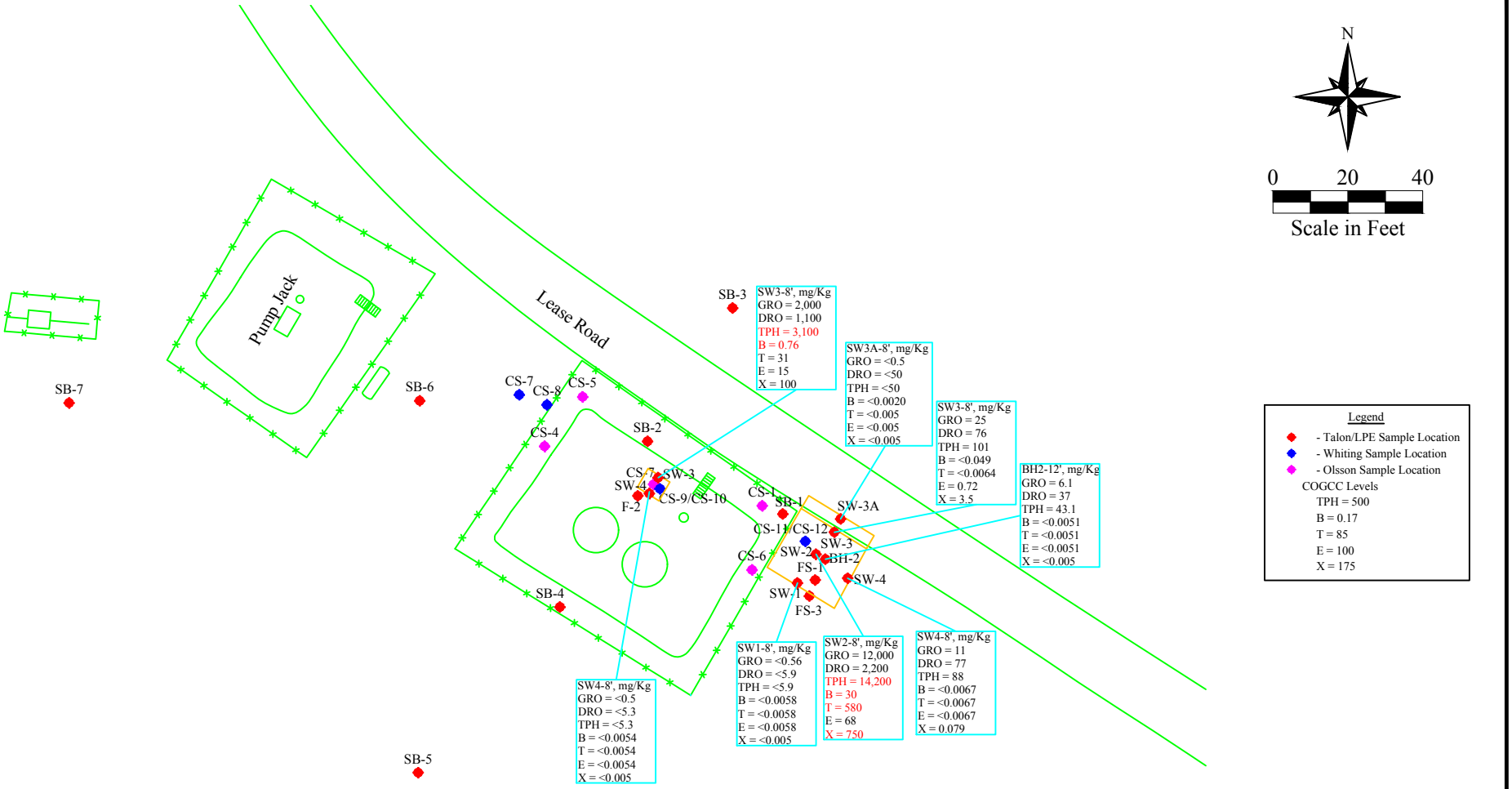
Nelson A-6 A-7

Whiting Oil & Gas Corporation

Weld County, Colorado

Figure 4 - Soil Concentration Map - Talon/LPE (04/14 & 06-04/2015)



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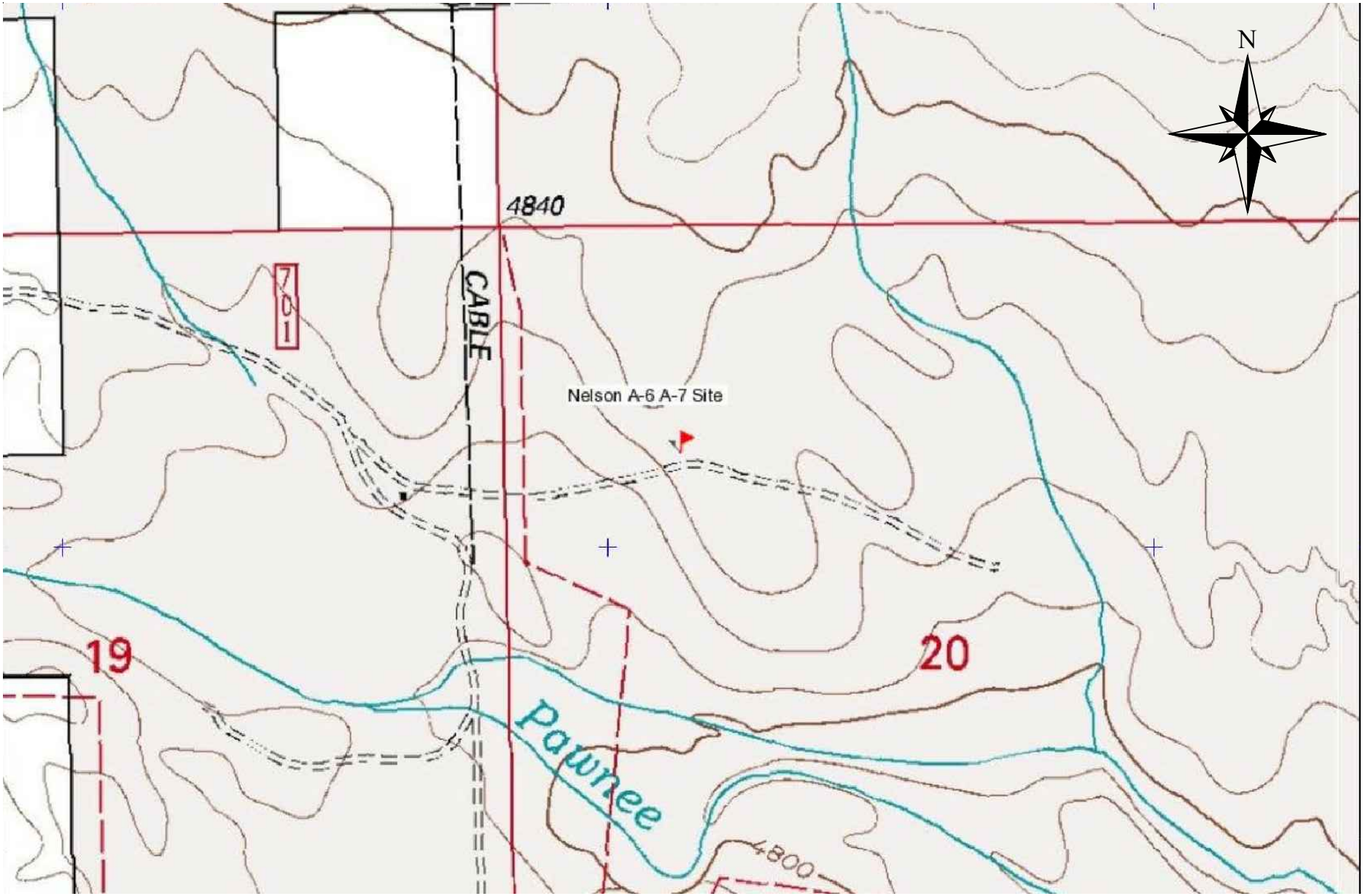
Nelson A-6 A-7

Whiting Oil & Gas Corporation
Weld County, Colorado
Figure 5 - Soil Concentration Map - Talon/LPE (09/03/2015)



TALON LPE

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Nelson A-6 A-7
Whiting Oil & Gas Corporation
Weld County, Colorado
Figure 6 - Topographic Map

Attachment 2
Analytical Table

Table 1 - Soil Analytical Data

Whiting Oil and Gas Corporation
Nelson A6 A7
Weld County, Colorado

Sample ID	Comment	Lab ID	Date Sampled	Concentration (mg/kg)						
				Benzene	Toluene	Ethyl-Benzene	Xylenes	GRO	DRO	TPH
COGCC Table 910-1 Concentration Levels				**0.17**	**85**	**100**	**175**	**NA**	**NA**	**500**
Samples Collected by Olsson Associates										
CS-1 - 4-6"	Confirmation Sample northeast of tank battery area following observed staining	X408183-01	8/19/2014	<0.0500	<0.0500	<0.0500	<0.0500	108.0	299.0	407
CS-4 - 4-6"		X408183-02	8/19/2014	<0.002	<0.002	<0.002	0.0071	1.2	<50	<50
CS-5 - 4-6"		X408183-03	8/19/2014	<0.002	0.0023	0.0027	0.0314	4.02	111	115
CS-6 - 4-6"		X408183-04	8/19/2014	<0.002	0.0044	<0.002	0.0416	2.57	113	116
CS-7 - 4-6"		X408183-05	8/19/2014	<0.0500	0.167	0.097	0.906	113	323	436
Samples Collected by Whiting Petroleum Corporation										
CS7-8'	Confirmation Sample northeast of	1503463-1	3/18/2015	0.016	0.33	0.58	4.3	97	95	192
CS8-3'	Confirmation Sample northeast of	1503463-2	3/18/2015	0.1	2.6	0.85	9	230	100	330
CS9-2'	Confirmation Sample northeast of	1503463-3	3/18/2015	0.061	0.0061	0.084	0.61	26	18	44
CS10-7'	Confirmation Sample northeast of	1503463-4	3/18/2015	<0.0057	0.028	0.3	9	380	120	500
CS11-4'	Confirmation Sample northeast of	1503463-5	3/18/2015	0.068	2.5	2.1	16	240	230	470
CS12-9'	Confirmation Sample northeast of	1503463-6	3/18/2015	12	170	42	270	6300	1200	7500
SP-1	Stockpile	1503463-7	3/18/2015	0.064	0.42	0.1	1.4	48	10	58
Samples Collected by Talon/LPE										
SB-1 - 0-5'	Investigative Soil Boring	1504425-1	04/14/15	0.25	31	19	150	3200	290	3490
SB-1 - 10-15'	Investigative Soil Boring	1504425-2	04/14/15	<0.0052	<0.0052	<0.0052	<0.005	0.77	66	66.77
SB-1 - 15-20'	Investigative Soil Boring	1504425-3	04/14/15	<0.0052	<0.0052	<0.0052	<0.005	<0.52	<5.2	<5.2
SB-1 - 25-30'	Investigative Soil Boring	1504425-4	04/14/15	<0.0057	<0.0057	<0.0057	<0.005	<0.54	<5.9	<5.9
SB-2 - 10-15'	Investigative Soil Boring	1504425-5	04/15/15	<0.053	0.1	0.49	4.9	15	250	265
SB-2 - 20-25'	Investigative Soil Boring	1504425-6	04/15/15	<0.0055	0.08	0.018	0.12	1.2	27	28.2
SB-2 - 30-35'	Investigative Soil Boring	1504425-7	04/15/15	<0.0052	<0.0052	<0.0052	0.0054	<0.56	<5.7	<5.7
SB-3 - 10-15'	Investigative Soil Boring	1504425-8	04/15/15	<0.006	<0.006	<0.006	<0.005	<0.61	<5.7	<5.7
SB-3 - 20-25'	Investigative Soil Boring	1504425-9	04/15/15	<0.0064	<0.0064	<0.0064	<0.005	<0.58	<6.7	<6.7
SB-4 - 0-5'	Investigative Soil Boring	1504425-10	04/15/15	<0.0059	<0.0059	<0.0059	<0.005	35	43	78
SB-4 - 10-15'	Investigative Soil Boring	1504425-11	04/15/15	<0.0049	<0.0049	<0.0049	<0.005	<0.49	<5.4	<5.4
SB-4 - 20-25'	Investigative Soil Boring	1504425-12	04/15/15	<0.0055	0.02	<0.0055	0.032	<0.51	<5.7	<5.7
SB-4 - 30-35'	Investigative Soil Boring	1504425-13	04/15/15	<0.0058	<0.0058	<0.0058	<0.005	<0.56	<5.8	<5.8
SB-5 - 10-15'	Investigative Soil Boring	1504425-14	04/15/15	<0.0054	<0.0054	<0.0054	<0.005	<0.53	<5.6	<5.6
SB-5 - 25-30'	Investigative Soil Boring	1504425-15	04/15/15	<0.006	<0.006	<0.006	<0.005	<0.36	<6.1	<6.1
SB-6 - 10-15'	Investigative Soil Boring	1504425-16	04/16/15	<0.0057	<0.0057	<0.0057	0.021	13	68	81
SB-6 -10-15'	Investigative Soil Boring	1504425-17	04/16/15	<0.005	<0.005	<0.005	<0.005	<0.46	<5.1	<5.1
SB-6 - 20-25'	Investigative Soil Boring	1504425-18	04/16/15	<0.0054	<0.0054	<0.0054	<0.005	<0.47	<5.8	<5.8
SB-6 - 30-35'	Investigative Soil Boring	1504425-19	04/16/15	<0.0059	<0.0059	<0.0059	<0.005	<0.56	<6.1	<6.1
SB-7 - 10-15'	Investigative Soil Boring	1504425-20	04/16/15	<0.0052	<0.0052	<0.0052	<0.005	<0.54	<5.3	<5.3
SB-7 - 25-30'	Investigative Soil Boring	1504425-21	04/16/15	<0.0056	<0.0056	<0.0056	<0.005	<0.43	<5.7	<5.7
FS-1 - 8'	Excavation floor	1506113-1	06/04/15	0.42	2	0.31	2.2	79	65	144
F-2 - 6'	Excavation floor	1506113-2	06/04/15	<0.061	0.057	0.72	3.4	54	110	164

Table 1 - Soil Analytical Data

Whiting Oil and Gas Corporation
Nelson A6 A7
Weld County, Colorado

Sample ID	Comment	Lab ID	Date Sampled	Concentration (mg/kg)						
				Benzene	Toluene	Ethyl-Benzene	Xylenes	GRO	DRO	TPH
COGCC Table 910-1 Concentration Levels				**0.17**	**85**	**100**	**175**	**NA**	**NA**	**500**
FS-3 - 12'	Excavation floor	1506466-1	06/24/15	0.02	0.063	0.0092	0.069	<0.58	<5.7	<5.7
Stockpile-A	Post-shredding confirmation	1507015-1	07/01/15	<0.005	<0.005	<0.005	<0.005	0.46	60	60.46
Stockpile-B	Post-shredding confirmation	1507015-2	07/01/15	<0.0047	<0.0047	<0.0047	<0.005	0.4	61	61.4
SW-1 @ 8'	Excavation Sidewall	1509119-1	09/03/15	<0.0058	<0.0058	<0.0058	<0.005	<0.56	<5.9	<5.9
SW-2 @ 8'	Excavation Sidewall	1509119-2	09/03/15	30	580	68	750	12000	2200	14200
SW-3 @ 8'	Excavation Sidewall	1509119-3	09/03/15	<0.049	<0.0064	0.72	3.5	25	76	101
SW-4 @ 8'	Excavation Sidewall	1509119-4	09/03/15	<0.0067	<0.0067	<0.0067	0.079	11	77	88
BH-01 @ 12'	Bottom of Hole (Excavation Floor)	1509473-1	09/29/15	<0.0051	<0.0051	<0.0051	<0.005	6.1	37	43.1
SW-3 @ 8'	North Sidewall	1509473-2	09/29/15	0.76	31	15	100	2000	1100	3100
SW-4 @ 8'	East Sidewall	1509473-3	09/29/15	<0.0054	<0.0054	<0.0054	<0.005	<0.5	<5.3	<5.3
SW-3A @ 8'	North Sidewall	15090039-01	10/06/15	<0.0020	<0.005	<0.005	<0.005	<0.5	<50	<50
SP-1	Excavation Stockpile	1511117-01	11/13/15	<0.0020	<0.0050	<0.0050	<0.0050	<0.50	<50	<50
SP-2	Excavation Stockpile	1511117-02	11/13/15	<0.0020	<0.0050	<0.0050	<0.0050	<0.50	<50	<50
SP-3	Excavation Stockpile	1511117-03	11/13/15	<0.0020	<0.0050	<0.0050	<0.0050	<0.50	<50	<50

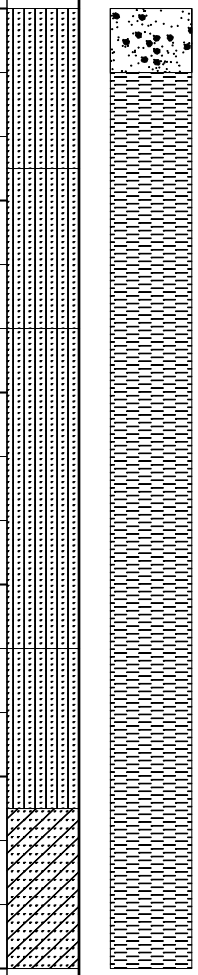
mg/kg - milligrams per kilogram
< - Analytical result is less than the reporting limit
COGCC - Colorado Oil and Gas Conservation Commisssion
GRO - Gasoline Range Organics
DRO - Diesel Range Organics
TPH - Total Petroleum Hydrocarbons (Combined GRO/DRO)

Attachment 3
Boring Logs

SOIL BORING / MONITORING WELL LOG

PROJECT: Nelson A-6/A-7
PROJECT NUMBER: 701530.024.01
CLIENT: Whiting Oil & Gas Corporation
BORING / WELL NUMBER: SB-1
TOTAL DEPTH: 30
SURFACE ELEVATION:
GEOLOGIST: Tim Wilhelm

DRILLING COMPANY: Talon/LPE
DRILLER: Ronnie Rodriguez
DRILLING METHOD: Hollow Stem Auger
BORE HOLE DIAMETER: 7 7/8"
SCREEN: Diam. _____ Length _____ Slot Size _____
CASING: Diam. _____ Length _____ Type _____
DATE DRILLED: April 14, 2015



Depth (FT.)	PID Readings	Description Interval	Description of Stratum	Depth (FT.)
0				0
		5'	90% Fine Grained Sand, Poorly Graded, No Moisture, Strong Odor, No Plasticity, 10YR 7/1 Light Grey	
6	1,645			6
		10'	90% Fine Grained, Sand, Poorly Graded, No Moisture, Moderate Odor, No Plasticity, 10YR 7/3 Very Pale Brown	
	1,217			
12			90% Fine Grained Sand, Poorly Graded, No Moisture, Moderate Odor, No Plasticity, GLEY1 7/1 Light Greenish Grey	12
	1,450			
18				18
		20'		
	133.7		80% Fine Grained Sand & Silt, Poorly Graded Clay, No Moisture, No Odor, 5Y 8/3 Pale Yellow	
24		25'		24
	32.5		80% Fine Grained Sand & Silt, Poorly Graded Clay, Rock Fragments, No Moisture, No Odor, 5Y 7/3 Pale Yellow	
		30'		
30	11.4		Bottom of Hole	30
36				36

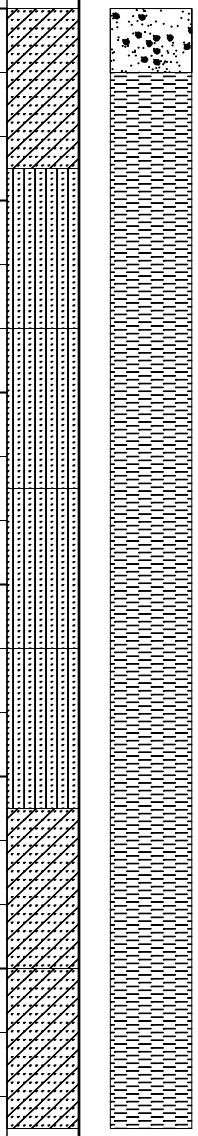
REMARKS:

THIS BORING LOG AND WELL DIAGRAM SHOULD NOT BE USED SEPARATE FROM THE ORIGINAL REPORT

SOIL BORING / MONITORING WELL LOG

PROJECT: Nelson A-6/A-7
PROJECT NUMBER: 701530.024.01
CLIENT: Whiting Oil & Gas Corporation
BORING / WELL NUMBER: SB-2
TOTAL DEPTH: 35
SURFACE ELEVATION:
GEOLOGIST: Tim Wilhelm

DRILLING COMPANY: Talon/LPE
DRILLER: Ronnie Rodriguez
DRILLING METHOD: Hollow Stem Auger
BORE HOLE DIAMETER: 7 7/8"
SCREEN: Diam. _____ Length _____ Slot Size _____
CASING: Diam. _____ Length _____ Type _____
DATE DRILLED: April 15, 2015



Depth (FT.)	PID Readings	Description Interval	Description of Stratum	Depth (FT.)
0				0
		5'	70% Fine Grained Sand & Silt, Rock Fragments, No Moisture, Slight Odor, Clay, Odor is that of Old, 10YR 4/3 Brown	
6	1.1	10'	90% Fine Grained Sand & Sit, Poorly Graded, Slight Moisture, Old Odor, No Plasticity, GLEY 5/1 Greenish Grey	6
	1,549	15'	95% Fine Grained Sand, Poorly Graded, No Moisture, Strong Odor, NO Plasticity, GLEY 6/1 Greenish Grey	12
12	1,681	20'	95% Fine Grained Sand, Poorly Graded, No Moisture, Strong Odor, No Plasticity, 10YR 7/2 Light Grey	18
18	975	25'	90% Fine Grained Sand & Silt, Poorly Graded, No Moisture, Odor, No Plasticity, 2.5Y 6/4 Light Yellowish Brown	24
24	1,541	30'	80% Fine Grained Sand & Silt, Poorly Graded, No Moisture, Slight Odor, No Plasticity, 2.5Y 6/3 Light Yellowish Brown/ Also has Strands of 5YR 4/3 Reddish Brown	30
30	178.4	35'	80% Fine Grained Sand & Silt, Poorly Graded, No Moisture, No Plasticity, GLEY 6/1 Greenish Grey w/5YR 4/3 Reddish Brown	
36	37.5		Bottom of Hole	36

REMARKS:

THIS BORING LOG AND WELL DIAGRAM SHOULD NOT BE USED SEPARATE FROM THE ORIGINAL REPORT

SOIL BORING / MONITORING WELL LOG

PROJECT: Nelson A-6/A-7
PROJECT NUMBER: 701530.024.01
CLIENT: Whiting Oil & Gas Corporation
BORING / WELL NUMBER: SB-3
TOTAL DEPTH: 25
SURFACE ELEVATION:
GEOLOGIST: Tim Wilhelm

DRILLING COMPANY: Talon/LPE
DRILLER: Ronnie Rodriguez
DRILLING METHOD: Hollow Stem Auger
BORE HOLE DIAMETER: 7 7/8"
SCREEN: Diam. _____ Length _____ Slot Size _____
CASING: Diam. _____ Length _____ Type _____
DATE DRILLED: April 15, 2015

Depth (FT.)	Soil Symbol	Well Construction	PID Readings	Samples	Sample Interval	Description Interval	Description of Stratum	Depth (FT.)
0								0
						5'	90% Fine Grained Sand, No Moisture, No Odor, No Plasticity, Soft, 10YR 6/2 Light Brownish Grey	
			17.5					
6						10'	90% Fine Grained Sand, No Moisture, No Odor, Soft, 10YR 6/3 Pale Brown	6
			35.3					
						15'	90% Fine Grained Sand, No Moisture, Slight Odor, No Plasticity, Soft, 10YR 7/1 Light Grey	
12								12
			218.7					
						20'	90% Fine Grained Sand, No MOisture, No Odor, No Plasticity, Soft, 10YR 5/4 Yellowish Brown	
18								18
			13.1					
						25'	90% Fine Grained Sand, No Moisture, No Odor, Soft, 10YR 5/4 Yellowish Brown	
24								24
			5.3				Bottom of Hole	
30								30
36								36

REMARKS:

THIS BORING LOG AND WELL DIAGRAM SHOULD NOT BE USED SEPARATE FROM THE ORIGINAL REPORT

TALON LPE

SOIL BORING / MONITORING WELL LOG

PROJECT: Nelson A-6/A-7
PROJECT NUMBER: 701530.024.01
CLIENT: Whiting Oil & Gas Corporation
BORING / WELL NUMBER: SB-4
TOTAL DEPTH: 35
SURFACE ELEVATION:
GEOLOGIST: Tim Wilhelm

DRILLING COMPANY: Talon/LPE
DRILLER: Ronnie Rodriguez
DRILLING METHOD: Hollow Stem Auger
BORE HOLE DIAMETER: 7 7/8"
SCREEN: Diam. _____ Length _____ Slot Size _____
CASING: Diam. _____ Length _____ Type _____
DATE DRILLED: April 15, 2015

Depth (FT.)	Soil Symbol	Well Construction	PID Readings	Samples	Sample Interval	Description Interval	Description of Stratum	Depth (FT.)
0								0
						5'	90% Fine Grained Sand, Slight Moisture, Strong Odor, No Plasticity, Soft, 10YR 5/1 Gray	
			1,386					
6								6
						10'	90% Fine Grained Sand, Moisture, Strong Odor, No Plasticity, Soft, 5YR 5/3 Reddish Brown	
			110.5					
12								12
						15'	90% Fine Grained Sand, Moisture, No Odor, No Plasticity, Soft, 2.5Y 6/4 Light Yellowish Brown	
			21.8					
18								18
						20'	90% Fine Grained Sand, No Moisture, Slight Odor - Old, No Plasticity, 2.5Y 5/3 Light Olive Brown	
			13.5					
24								24
						25'	90% Fine Grained Sand & Silt, No Moisture, Odor, No Plasticity, Soft, 2.5Y 6/2 Light Brownish Grey	
			555.6					
						30'	90% Fine Grained Sand & Silt, No Moisture, No Odor, Soft, 2.5Y 5/3 Light Olive Grey	
30								30
			18.1					
						35'	90% Fine Grained Sand & Silt, No Moisture, No Odor, No Plasticity, Soft, 2.5Y 6/3 Pale Olive	
			0.5					
36							Bottom of Hole	36

REMARKS:

THIS BORING LOG AND WELL DIAGRAM SHOULD NOT BE USED SEPARATE FROM THE ORIGINAL REPORT

TALON LPE

SOIL BORING / MONITORING WELL LOG

PROJECT: Nelson A-6/A-7
PROJECT NUMBER: 701530.024.01
CLIENT: Whiting Oil & Gas Corporation
BORING / WELL NUMBER: SB-5
TOTAL DEPTH: 30
SURFACE ELEVATION:
GEOLOGIST: Tim Wilhelm

DRILLING COMPANY: Talon/LPE
DRILLER: Ronnie Rodriguez
DRILLING METHOD: Hollow Stem Auger
BORE HOLE DIAMETER: 7 7/8"
SCREEN: Diam. _____ Length _____ Slot Size _____
CASING: Diam. _____ Length _____ Type _____
DATE DRILLED: April 15, 2015

Depth (FT.)	Soil Symbol	Well Construction	PID Readings	Samples	Sample Interval	Description Interval	Description of Stratum	Depth (FT.)
0								0
						5'	90% Fine Grained Sand & Silt, No Moisture, No Odor, No Plasticity, Soft, 10YR 6/6 Brownish Yellow	
			1.3					
6						10'	85% Fine Grained Sand & Silt, No Moisture, No Odor, No Plasticity, Soft, 2.5Y 6/3 Light Yellowish Brown	6
			1.0					
12						15'	90% Fine Grained Sand & Silt, No Moisture, No Odor, No Plasticity, Soft, 2.5Y 5/4 Light Olive Brown	12
			13.1					
18						20'	90% Fine Grained Sand & Silt, No Moisture, No Odor, No Plasticity, Soft, 2.5Y 6/4 Light Yellowish Brown	18
			4.1					
24						25'	85% Fine Grained Sand & Silt, No Moisture, No Odor, No Plasticity, Soft, 5Y 6/2 Light Olive Grey	24
			32.3					
						30'	85% Fine Grained Sand & Silt, No Moisture, No Odor, No Plasticity, Soft, 2.5Y 6/3 Light Yellowish Brown	
30			1.3				Bottom of Hole	30
36								36

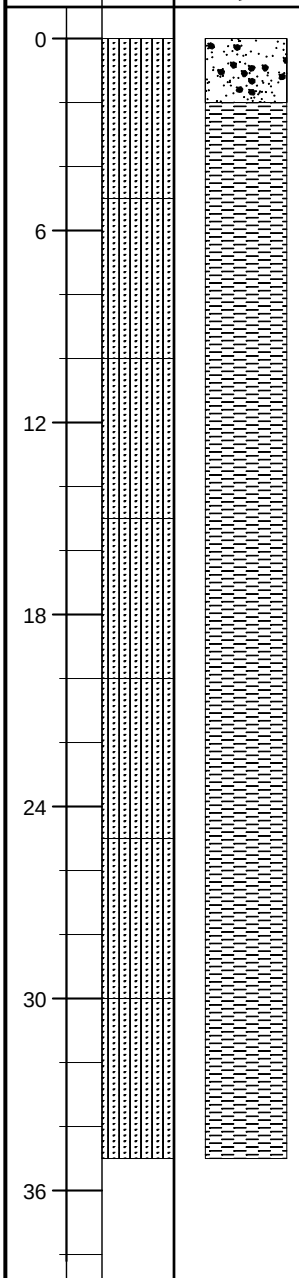
REMARKS:

THIS BORING LOG AND WELL DIAGRAM SHOULD NOT BE USED SEPARATE FROM THE ORIGINAL REPORT

SOIL BORING / MONITORING WELL LOG

PROJECT: Nelson A-6/A-7
PROJECT NUMBER: 701530.024.01
CLIENT: Whiting Oil & Gas Corporation
BORING / WELL NUMBER: SB-6
TOTAL DEPTH: 35
SURFACE ELEVATION:
GEOLOGIST: Tim Wilhelm

DRILLING COMPANY: Talon/LPE
DRILLER: Ronnie Rodriguez
DRILLING METHOD: Hollow Stem Auger
BORE HOLE DIAMETER: 7 7/8"
SCREEN: Diam. _____ Length _____ Slot Size _____
CASING: Diam. _____ Length _____ Type _____
DATE DRILLED: April 16, 2015



Depth (FT.)	PID Readings	Description Interval	Description of Stratum	Depth (FT.)
0				0
		5'	90% Fine Grained Sand & Silt, Poorly Graded, No Moisture, No Plasticity, 2.5Y 6/3 Light Yellowish Brown	
6	524.1	10'	90% Fine Grained Sand & Silt, Poorly Graded, No Moisture, Strong Odor, No Plasticity, 10YR 5/6 Yellowish Brown	6
	1,950	15'	80% Fine Grained Sand, Rock Fragments, No Moisture, Odor, No Plasticity, 5Y 6/2 Light Olive Grey	12
12	49.5	20'	90% Fine Grained Sand, Poorly Graded, No Moisture, Strong Odor - Old, No Plasticity, 5Y 5/4 Olive	18
18	41	25'	85% Fine Grained Sand & Silt, Poorly Graded, Odor, No Moisture, No Plasticity, GLEY1 5/1 Greenish Gray	24
24	495	30'	85% Fine Grained Sand, Poorly Graded, No Odor, No Moisture, No Plasticity, 5Y 6/2 Light Olive Green	30
30	18.5	35'	85% Fine Grained Sand & Silt, Poorly Graded, No Odor, No Moisture, No Plasticity, 5Y 5/4 Olive	
36	5.3		Bottom of Hole	36

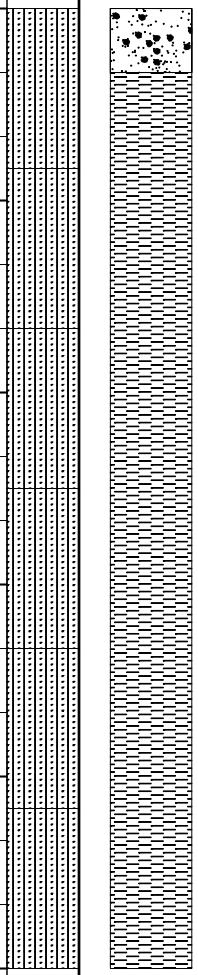
REMARKS:

THIS BORING LOG AND WELL DIAGRAM SHOULD NOT BE USED SEPARATE FROM THE ORIGINAL REPORT

SOIL BORING / MONITORING WELL LOG

PROJECT: Nelson A-6/A-7
PROJECT NUMBER: 701530.024.01
CLIENT: Whiting Oil & Gas Corporation
BORING / WELL NUMBER: SB-7
TOTAL DEPTH: 30
SURFACE ELEVATION:
GEOLOGIST: Tim Wilhelm

DRILLING COMPANY: Talon/LPE
DRILLER: Ronnie Rodriguez
DRILLING METHOD: Hollow Stem Auger
BORE HOLE DIAMETER: 7 7/8"
SCREEN: Diam. _____ Length _____ Slot Size _____
CASING: Diam. _____ Length _____ Type _____
DATE DRILLED: April 16, 2015



Depth (FT.)	PID Readings	Description Interval	Description of Stratum
0			
		5'	80% Fine Grained Sand, No Odor, No Moisture, No Plasticity, Soft, 2.5Y 6/3 Light Yellowish Brown
6	0.8	10'	90% Fine Grained Sand & Silt, No Moisture, No Odor, No Plasticity, Soft, 5Y 6/3 Pale Yellow
	1.1	15'	80% Fine Grained Sand & Silt, No Moisture, No Odor, No Plasticity, Soft, 5Y 5/3 Olive
12	0.6	20'	90% Fine Grained Sand & Silt, No Moisture, No Odor, No Plasticity, Soft, 5Y 6/3 Pale Yellow
18	1.0	25'	90% Fine Grained Sand & Silt, No Moisture, No Odor, No Plasticity, Soft, 5Y 4/4 Olive
24	1.1	30'	85% Fine Grained Sand & Silt, No Moisture, No Odor, No Plasticity, Soft, 5Y 6/2 Light Olive Gray
30	1.2		Bottom of Hole
36			

REMARKS:

THIS BORING LOG AND WELL DIAGRAM SHOULD NOT BE USED SEPARATE FROM THE ORIGINAL REPORT

KEY TO SYMBOLS

Symbol Description

Strata symbols

 **Silty sand**

 **Clayey sand**

Monitor Well Details

 **Concrete Filler**

 **Plugged soil boring.**

Attachment 4
Analytical Reports

ORIGINS LABORATORY, INC

August 21, 2014

Olsson Associates

James Hix

4690 Table Mountain Drive

Golden CO 80403

Project Name - Nelson - Whiting Antelope Field Spill **Project Number - 014 -**

Attached are your analytical results for Nelson - Whiting Antelope Field Spill received by Origins Laboratory, Inc. August 20, 2014. This project is associated with Origins project number X408183-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.
303.433.1322
o-squad@oelabinc.com

ACCREDITED
TESTING CERT # 3494.01

ORIGINS LABORATORY, INC

Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

James Hix
Project Number: 014 -
Project: Nelson - Whiting Antelope Field Spill

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CS-1	X408183-01	Soil	August 19, 2014 8:30	08/20/2014 12:00
CS-4	X408183-02	Soil	August 19, 2014 8:42	08/20/2014 12:00
CS-5	X408183-03	Soil	August 19, 2014 8:47	08/20/2014 12:00
CS-6	X408183-04	Soil	August 19, 2014 8:53	08/20/2014 12:00
CS-7	X408183-05	Soil	August 19, 2014 8:59	08/20/2014 12:00

J. Hix ok'ed that GRO be reported by 8260. ndm

Origins Laboratory, Inc.

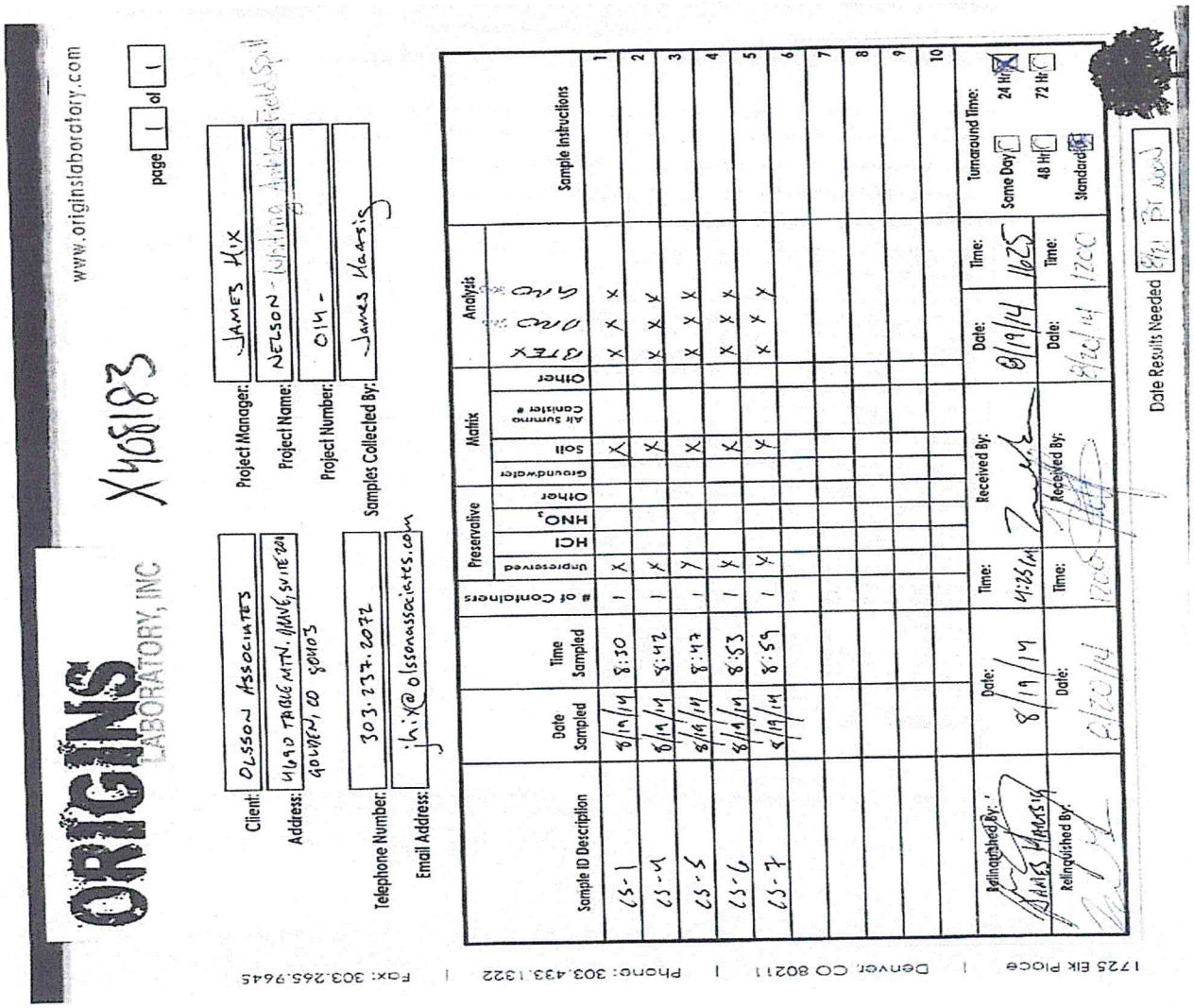
Noelle Doyle Mathis, President

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.

ORIGINS LABORATORY, INC

Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

James Hix
Project Number: 014 -
Project: Nelson - Whiting Antelope Field Spill



Origins Laboratory, Inc.

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.

Noelle Doyle Mathis, President

ORIGINS LABORATORY, INC

Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

James Hix
Project Number: 014 -
Project: Nelson - Whiting Antelope Field Spill

Origins Laboratory

F-012207-01-R1
Effective Date: 01/09/12

Sample Receipt Checklist

Origins Work Order: X408183

Client: Olsson
Client Project ID: Nelson - Whiting Antelope Field Spill

Checklist Completed by: Jessie Smith
Date/time completed: 5/20/14 1200

Shipped Via: HAND (UPS, FedEx, Hand Delivered, Pick up, etc.)
Airbill #: NA

Matrix(s) Received: (Check all that apply): X Soil/Solid ____ Water ____ Other: ____ (Describe)

Cooler Number/Temperature: 1 / 1.2 °C ____ / ____ °C ____ / ____ °C ____ / ____ °C

Thermometer ID: TD03

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C[1]?	X			
Is there ice present (document if blue ice is used)	X			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		X		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		X		
Were all samples received intact[1]?	X			
Was adequate sample volume provided[1]?	X			
Are short holding time analytes or samples with HTs due within 48 hours present[1]?		X		
Is a chain-of-custody (COC) present and filled out completely[1]?	X			
Does the COC agree with the number and type of sample bottles received[1]?	X			
Do the sample IDs on the bottle labels match the COC[1]?	X			
Is the COC properly relinquished by the client with date and time recorded[1]?	X			
For volatiles in water – is there headspace (> ¼ inch bubble) present? **If yes, contact client and note in narrative.**			X	
Are samples preserved that require preservation and was it checked[1]? *(note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO3, HCL, H2SO4) / (pH >10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH)*			X	

Additional Comments (if any):

[1]If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by (Project Manager)

05-21-14 1246
Date/Time Reviewed

Origins Laboratory, Inc.

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.

Noelle Doyle Mathis, President

ORIGINS LABORATORY, INC

Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

James Hix
Project Number: 014 -
Project: Nelson - Whiting Antelope Field Spill

CS-1
8/19/2014 8:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes

Origins Laboratory, Inc.
X408183-01 (Soil)

Diesel Range Organics (DRO/TEPH) by EPA 8015C

Diesel (C10-C28)	**299**	50.0	mg/kg	1	4H20012	08/20/2014	08/21/2014
Surrogate: o-Terphenyl	*93.9 %*	*59-131*			"	"	"

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	**108**	5.00	mg/kg	25	4H20011	08/20/2014	08/21/2014
Benzene	ND	0.0500	"	"	"	"	"
Toluene	ND	0.0500	"	"	"	"	"
Ethylbenzene	ND	0.0500	"	"	"	"	"
Xylenes, total	ND	0.0500	"	"	"	"	"
Surrogate: 1,2-Dichloroethane-d4	*114 %*	*70-130*			"	"	"
Surrogate: Toluene-d8	*119 %*	*70-130*			"	"	"
Surrogate: 4-Bromofluorobenzene	*106 %*	*70-130*			"	"	"

Origins Laboratory, Inc.

Noelle Doyle Mathis, President

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.

ORIGINS LABORATORY, INC

Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

James Hix
Project Number: 014 -
Project: Nelson - Whiting Antelope Field Spill

CS-4
8/19/2014 8:42:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes

Origins Laboratory, Inc.
X408183-02 (Soil)

Diesel Range Organics (DRO/TEPH) by EPA 8015C

Diesel (C10-C28)	ND	50.0	mg/kg	1	4H20012	08/20/2014	08/21/2014
Surrogate: o-Terphenyl	*92.0 %*	*59-131*			"	"	"

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	**1.20**	0.200	mg/kg	1	4H20011	08/20/2014	08/21/2014
Benzene	ND	0.0020	"	"	"	"	"
Toluene	ND	0.0020	"	"	"	"	"
Ethylbenzene	ND	0.0020	"	"	"	"	"
Xylenes, total	**0.0071**	0.0020	"	"	"	"	"
Surrogate: 1,2-Dichloroethane-d4	*99.0 %*	*70-130*			"	"	*08/21/2014*
Surrogate: Toluene-d8	*108 %*	*70-130*			"	"	"
Surrogate: 4-Bromofluorobenzene	*105 %*	*70-130*			"	"	"

Origins Laboratory, Inc.

Noelle Doyle Mathis, President

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.

ORIGINS LABORATORY, INC

Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

James Hix
Project Number: 014 -
Project: Nelson - Whiting Antelope Field Spill

CS-5
8/19/2014 8:47:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes

Origins Laboratory, Inc.
X408183-03 (Soil)

Diesel Range Organics (DRO/TEPH) by EPA 8015C

Diesel (C10-C28)	**111**	50.0	mg/kg	1	4H20012	08/20/2014	08/21/2014
Surrogate: o-Terphenyl	*88.5 %*	*59-131*			"	"	"

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	**4.02**	0.200	mg/kg	1	4H20011	08/20/2014	08/21/2014
Benzene	ND	0.0020	"	"	"	"	"
Toluene	**0.0023**	0.0020	"	"	"	"	"
Ethylbenzene	**0.0027**	0.0020	"	"	"	"	"
Xylenes, total	**0.0314**	0.0020	"	"	"	"	"
Surrogate: 1,2-Dichloroethane-d4	*98.9 %*	*70-130*			"	"	*08/21/2014*
Surrogate: Toluene-d8	*103 %*	*70-130*			"	"	"
Surrogate: 4-Bromofluorobenzene	*101 %*	*70-130*			"	"	"

Origins Laboratory, Inc.

Noelle Doyle Mathis, President

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.

ORIGINS LABORATORY, INC

Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

James Hix
Project Number: 014 -
Project: Nelson - Whiting Antelope Field Spill

CS-6
8/19/2014 8:53:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes

Origins Laboratory, Inc.
X408183-04 (Soil)

Diesel Range Organics (DRO/TEPH) by EPA 8015C

Diesel (C10-C28)	**113**	50.0	mg/kg	1	4H20012	08/20/2014	08/21/2014
Surrogate: o-Terphenyl	*89.4 %*	*59-131*			"	"	"

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	**2.57**	0.200	mg/kg	1	4H20011	08/20/2014	08/21/2014
Benzene	ND	0.0020	"	"	"	"	"
Toluene	**0.0044**	0.0020	"	"	"	"	"
Ethylbenzene	ND	0.0020	"	"	"	"	"
Xylenes, total	**0.0416**	0.0020	"	"	"	"	"
Surrogate: 1,2-Dichloroethane-d4	*105 %*	*70-130*			"	"	"
Surrogate: Toluene-d8	*110 %*	*70-130*			"	"	"
Surrogate: 4-Bromofluorobenzene	*106 %*	*70-130*			"	"	"

Origins Laboratory, Inc.

Noelle Doyle Mathis, President

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.

ORIGINS LABORATORY, INC

Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

James Hix
Project Number: 014 -
Project: Nelson - Whiting Antelope Field Spill

CS-7
8/19/2014 8:59:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes

Origins Laboratory, Inc.
X408183-05 (Soil)

Diesel Range Organics (DRO/TEPH) by EPA 8015C

Diesel (C10-C28)	**323**	50.0	mg/kg	1	4H20012	08/20/2014	08/21/2014
Surrogate: o-Terphenyl	*90.0 %*	*59-131*			"	"	"

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	**113**	5.00	mg/kg	25	4H20011	08/20/2014	08/21/2014
Benzene	ND	0.0500	"	"	"	"	"
Toluene	**0.167**	0.0500	"	"	"	"	"
Ethylbenzene	**0.0970**	0.0500	"	"	"	"	"
Xylenes, total	**0.906**	0.0500	"	"	"	"	"
Surrogate: 1,2-Dichloroethane-d4	*110 %*	*70-130*			"	"	"
Surrogate: Toluene-d8	*115 %*	*70-130*			"	"	"
Surrogate: 4-Bromofluorobenzene	*101 %*	*70-130*			"	"	"

Origins Laboratory, Inc.

Noelle Doyle Mathis, President

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ORIGINS LABORATORY, INC

Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

James Hix
Project Number: 014 -
Project: Nelson - Whiting Antelope Field Spill

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4H20011 - EPA 5030 (soil)										
Blank (4H20011-BLK1)						Prepared: 08/20/2014 Analyzed: 08/20/2014				
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0020	"							
Ethylbenzene	ND	0.0020	"							
Xylenes, total	ND	0.0020	"							
Surrogate: 1,2-Dichloroethane-d4	*66.0*		*ug/kg*	*62.5*		*106*	*70-130*			
Surrogate: Toluene-d8	*64.9*		*"*	*62.5*		*104*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*63.0*		*"*	*62.5*		*101*	*70-130*			

Origins Laboratory, Inc.

Noelle Doyle Mathis, President

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ORIGINS LABORATORY, INC

Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

James Hix
Project Number: 014 -
Project: Nelson - Whiting Antelope Field Spill

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4H20011 - EPA 5030 (soil)										
LCS (4H20011-BS1)					Prepared: 08/20/2014 Analyzed: 08/20/2014					
Benzene	0.0928	0.0020	mg/kg	0.100		92.8	77.1-124			
Toluene	0.0933	0.0020	"	0.100		93.3	74.5-128			
Ethylbenzene	0.0824	0.0020	"	0.100		82.4	66.4-127			
m,p-Xylene	0.167	0.0040	"	0.200		83.3	76.6-124			
o-Xylene	0.0823	0.0020	"	0.100		82.3	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	*67.0*		*ug/kg*	*62.5*		*107*	*70-130*			
Surrogate: Toluene-d8	*65.7*		*"*	*62.5*		*105*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*64.3*		*"*	*62.5*		*103*	*70-130*			

Origins Laboratory, Inc.

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Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

James Hix
Project Number: 014 -
Project: Nelson - Whiting Antelope Field Spill

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4H20011 - EPA 5030 (soil)										
LCS Dup (4H20011-BSD1)					Prepared: 08/20/2014 Analyzed: 08/20/2014					
Benzene	0.107	0.0020	mg/kg	0.100		107	77.1-124	14.5	20	
Toluene	0.109	0.0020	"	0.100		109	74.5-128	15.2	20	
Ethylbenzene	0.0944	0.0020	"	0.100		94.4	66.4-127	13.6	20	
m,p-Xylene	0.186	0.0040	"	0.200		93.1	76.6-124	11.1	20	
o-Xylene	0.0948	0.0020	"	0.100		94.8	76.6-124	14.1	20	
Surrogate: 1,2-Dichloroethane-d4	*65.4*		*ug/kg*	*62.5*		*105*	*70-130*			
Surrogate: Toluene-d8	*65.8*		*"*	*62.5*		*105*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*64.5*		*"*	*62.5*		*103*	*70-130*			

Origins Laboratory, Inc.

Noelle Doyle Mathis, President

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Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

James Hix
Project Number: 014 -
Project: Nelson - Whiting Antelope Field Spill

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

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

Extractable Petroleum Hydrocarbons by 8015M - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4H20012 - EPA 3580										
Blank (4H20012-BLK1)						Prepared: 08/20/2014 Analyzed: 08/20/2014				
Diesel (C10-C28)	ND	50.0	mg/kg							
Surrogate: o-Terphenyl	*43*		*g*	*50.0*		*85.1*	*59-131*			
LCS (4H20012-BS1)						Prepared: 08/20/2014 Analyzed: 08/20/2014				
Diesel (C10-C28)	947	50.0	mg/kg	1000		94.7	64-121			
Surrogate: o-Terphenyl	*44*		*g*	*50.0*		*88.8*	*59-131*			
LCS Dup (4H20012-BSD1)						Prepared: 08/20/2014 Analyzed: 08/20/2014				
Diesel (C10-C28)	914	50.0	mg/kg	1000		91.4	64-121	3.53	20	
Surrogate: o-Terphenyl	*43*		*g*	*50.0*		*86.0*	*59-131*			

Origins Laboratory, Inc.

Noelle Doyle Mathis, President

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ORIGINS LABORATORY, INC

Olsson Associates
4690 Table Mountain Drive
Golden CO 80403

James Hix
Project Number: 014 -
Project: Nelson - Whiting Antelope Field Spill

Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.

Noelle Doyle Mathis, President

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.

Monday, May 04, 2015

Colby Sterling
Talon LPE
921 N Bivins
Amarillo, TX 79107

Re: ALS Workorder: 1504425
Project Name: Nelson A6 A7
Project Number: 701530.024.01

Dear Mr. Sterling:

Twenty one soil samples were received from Talon LPE, on 4/22/2015. The samples were scheduled for the following analyses:

GC/MS Volatiles
Total Extractable Petroleum Hydrocarbons (Diesel)
Total Volatile Petroleum Hydrocarbons (Gasoline)

The results for these analyses are contained in the enclosed reports.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

ALS Environmental
Amy R. Wolf
Project Manager

ALS Environmental – Fort Collins is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

ALS Environmental – Fort Collins	
Accreditation Body	License or Certification Number
Alaska (AK)	UST-086
Alaska (AK)	CO01099
Arizona (AZ)	AZ0742
California (CA)	06251CA
Colorado (CO)	CO01099
Connecticut (CT)	PH-0232
Florida (FL)	E87914
Idaho (ID)	CO01099
Kansas (KS)	E-10381
Kentucky (KY)	90137
L-A-B (DoD ELAP/ISO 170250)	L2257
Maryland (MD)	285
Missouri (MO)	175
Nebraska(NE)	NE-OS-24-13
Nevada (NV)	CO000782008A
New Jersey (NJ)	CO003
New York (NY)	12036
North Dakota (ND)	R-057
Oklahoma (OK)	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	2976
Texas (TX)	T104704241
Utah (UT)	CO01099
Washington (WA)	C1280

1504425

GC/MS Volatiles:
The samples were analyzed using GC/MS following the current revision of SOP 525 based on SW-846 Method 8260C.

All surrogate recoveries were within acceptance criteria with the following exception:

Surrogate	Sample	Direction
Toluene-d8	-1	High

Analysis of the sample at a 500x dilution showed all surrogate recoveries passing. This suggests that the outliers were due to matrix effects. No further action was taken.

All remaining acceptance criteria were met.

GRO:
The samples were analyzed following the current revision of SOP 425 generally based on SW-846 Methods 8000C and 8015D. TVPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C6 to C10.

All surrogate recoveries were within acceptable limits with the following exception:

Surrogate	Sample	Direction
2,3,4-Trifluorotoluene	1504425-10	High

Inspection of the chromatogram indicated co-elution of the surrogate peak with a target component peak, biasing the surrogate result high. No further action was taken.

All remaining acceptance criteria were met.

DRO:
The samples were analyzed following the current revision of SOP 406 generally based on SW-846 Methods 8000C and 8015D. TEPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C10 to C28.

All acceptance criteria were met.

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1504425
Client Name: Talon LPE
Client Project Name: Nelson A6 A7
Client Project Number: 701530.024.01
Client PO Number:

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
SB1 0'-5'	1504425-1		SOIL	14-Apr-15	16:31
SB1 10'-15'	1504425-2		SOIL	14-Apr-15	16:54
SB1 15'-20'	1504425-3		SOIL	14-Apr-15	17:00
SB1 25'-30'	1504425-4		SOIL	14-Apr-15	17:30
SB2 10'-15'	1504425-5		SOIL	15-Apr-15	9:35
SB2 20'-25'	1504425-6		SOIL	15-Apr-15	9:59
SB2 30'-35'	1504425-7		SOIL	15-Apr-15	10:20
SB3 10'-15'	1504425-8		SOIL	15-Apr-15	11:20
SB3 20'-25'	1504425-9		SOIL	15-Apr-15	11:42
SB4 0'-5'	1504425-10		SOIL	15-Apr-15	13:07
SB4 10'-15'	1504425-11		SOIL	15-Apr-15	13:38
SB4 20'-25'	1504425-12		SOIL	15-Apr-15	13:47
SB4 30'-35'	1504425-13		SOIL	15-Apr-15	14:02
SB5 10'-15'	1504425-14		SOIL	15-Apr-15	15:18
SB5 25'-30'	1504425-15		SOIL	15-Apr-15	15:35
SB6 5'-10'	1504425-16		SOIL	16-Apr-15	9:09
SB6 10'-15'	1504425-17		SOIL	16-Apr-15	9:20
SB6 20'-25'	1504425-18		SOIL	16-Apr-15	9:40
SB6 30'-35'	1504425-19		SOIL	16-Apr-15	10:00
SB7 10'-15'	1504425-20		SOIL	16-Apr-15	10:40
SB7 25'-30'	1504425-21		SOIL	16-Apr-15	11:15

ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524
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Chain-of-Custody

Form 202r8

WORKORDER # 1504425

PAGE of

DISPOSAL By Lab or Return to Client

PROJECT NAME	Nelson A6A7	SAMPLER	Tim Wilhelm
PROJECT No.	761530.024.01	SITE ID	
		EDD FORMAT	
		PURCHASE ORDER	
COMPANY NAME	Talon LPE	BILL TO COMPANY	Whiting
SEND REPORT TO	Colby Sterling	INVOICE ATTN TO	Kyle Waggoner
ADDRESS	921 N Bivins	ADDRESS	
CITY / STATE / ZIP	Amarillo TX 79107	CITY / STATE / ZIP	
PHONE		PHONE	
FAX		FAX	
E-MAIL	CSterling@talonlpe.com	E-MAIL	

DATE 4/20/15

TURNAROUND

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	BTEX	GRO	DRO
1	SB1 0'-5'	S	4/14/15	16:31	2	ICE		X	X	X
2	SB1 10'-15'	S	"	16:54	"	"		"	"	"
3	SB1 15'-20'	S	"	17:00	"	"		"	"	"
4	SB1 25'-30'	S	"	17:30				"	"	"

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:	QC PACKAGE (check below)
	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	Tim Wilhelm	Tim Wilhelm	4/21/15	5:53
RECEIVED BY	Erin Peterson	Erin Peterson	4/22/15	0950
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

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WORKORDER # 1504425

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DISPOSAL By Lab or Return to Client

PROJECT NAME	Nelson A6 A7	SAMPLER	Tim Wilkes
PROJECT No.	701530.024.01	SITE ID	
		EDD FORMAT	
		PURCHASE ORDER	
COMPANY NAME	Talon LPE	BILL TO COMPANY	Whiting
SEND REPORT TO	Colby Sterling	INVOICE ATTN TO	Kyle Waggoner
ADDRESS	921 N Bivins	ADDRESS	
CITY / STATE / ZIP	Amarillo TX 79107	CITY / STATE / ZIP	
PHONE		PHONE	
FAX		FAX	
E-MAIL	CSterling@talonlpe.com	E-MAIL	

DATE 4/20/15

TURNAROUND

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	BTEX	DRO	GRO
(5)	SB2 10'-15'	S	4/15/15	9:35	2	Ice		X	X	X
(6)	SB2 20'-25'	SS	SS	9:59	S	S		X	X	X
(7)	SB2 30'-35'	SS	SS	10:20	S	S		X	X	X

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:

QC PACKAGE (check below)

- LEVEL II (Standard QC)
- LEVEL III (Std QC + forms)
- LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	Tim Wilkes	Tim Wilkes	4/21/15	8:53
RECEIVED BY	Erin Peterson	Erin Peterson	4/21/15	0950
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

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PROJECT NAME	Nelson A6 A7	SAMPLER	Tim Wilhelm	DATE	4/20/15
PROJECT No.	701530.024.01	SITE ID		TURNAROUND	
		EDD FORMAT			
		PURCHASE ORDER			
COMPANY NAME	Talon LPE	BILL TO COMPANY	Whiting		
SEND REPORT TO	Colby Sterling	INVOICE ATTN TO	Kyle Waggoner		
ADDRESS	921 N Bivins	ADDRESS			
CITY / STATE / ZIP	Amarillo TX 79107	CITY / STATE / ZIP			
PHONE		PHONE			
FAX		FAX			
E-MAIL	CSterling@talonlpe.com	E-MAIL			

WORKORDER #	1504425
PAGE	of
DISPOSAL	By Lab or Return to Client

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	BTEX	DRO	GRO
(8)	SB3 10'-15'	S	4/15/15	11:20	2	ICE		X	X	X
(9)	SB3 20'-25'	S	4/15/15	11:42	2	ICE		X	X	X

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:

QC PACKAGE (check below)	
	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	Tim Wilhelm	Tim Wilhelm	4/21/15	8:53
RECEIVED BY	Erin Peterson	Erin Peterson	4/22/15	0950
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

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WORKORDER #	1504425				
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DISPOSAL	By Lab or Return to Client				

PROJECT NAME	Nelson A6 A7	SAMPLER	Tim Wilhelm
PROJECT No.	701530.024.01	SITE ID	
		EDD FORMAT	
		PURCHASE ORDER	
COMPANY NAME	Talon LPE	BILL TO COMPANY	Whiting
SEND REPORT TO	Colby Sterling	INVOICE ATTN TO	Kyle Waggoner
ADDRESS	921 N Bivins	ADDRESS	
CITY / STATE / ZIP	Amarillo TX 79109	CITY / STATE / ZIP	
PHONE		PHONE	
FAX		FAX	
E-MAIL	csterling@talonlpe.com	E-MAIL	

DATE: 4/20/15

TURNAROUND

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	BTEX	DRO	GRO
10	SB4 0'-5'	S	4/15/15	13:07	2	Ice		X	X	X
11	SB4 10'-15'	"	"	13:38	"	"		X	X	X
12	SB4 20'-25'	"	"	13:47	"	"		X	X	X
13	SB4 30'-35'	"	"	14:02	"	"		X	X	X

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:

8 of 45

QC PACKAGE (check below)	
	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	Tim Wilhelm	Tim Wilhelm	4/21/15	8:54
RECEIVED BY	Erin Peterson	Erin Peterson	4/22/15	0950
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

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WORKORDER # 1504425

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DISPOSAL By Lab or Return to Client

PROJECT NAME	Nelson A6 A7	SAMPLER	Tim Wilde
PROJECT No.	701530.024.01	SITE ID	
		EDD FORMAT	
		PURCHASE ORDER	
COMPANY NAME	Talon LPE	BILL TO COMPANY	Whiting
SEND REPORT TO	Colby Sterling	INVOICE ATTN TO	Kyle Waggoner
ADDRESS	92 N Bivins	ADDRESS	
CITY / STATE / ZIP	Amarillo TX 79107	CITY / STATE / ZIP	
PHONE		PHONE	
FAX		FAX	
E-MAIL	Cstorling@talonlpe.com	E-MAIL	

DATE

TURNAROUND

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	BTEX	DRO	GRO
(14)	SB5 10'-15'	S	4/15/15	15:18	2	ICE		X	X	X
(15)	SB5 25'-30'	S	4/15/15	15:35	2	ICE		X	X	X

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:

QC PACKAGE (check below)	
	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	Tim Wilde	Tim Wilde	4/21/15	8:54
RECEIVED BY	Erin Peterson	Erin Peterson	4/22/15	0950
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

ALS Laboratory Group
225 Commerce Drive, Fort Collins, Colorado 80524
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

Chain-of-Custody

Form 202r8

WORKORDER #	1504425
PAGE	of
DISPOSAL	By Lab or Return to Client

PROJECT NAME	Nelson A6 A7	SAMPLER	Tim Willela
PROJECT No.	701530.024.01	SITE ID	
		EDD FORMAT	
		PURCHASE ORDER	
COMPANY NAME	Talon LPE	BILL TO COMPANY	Whiting
SEND REPORT TO	Colby Sterling	INVOICE ATTN TO	Kyle Waggoner
ADDRESS	921 N Bivins	ADDRESS	
CITY / STATE / ZIP	Amarillo TX 79109	CITY / STATE / ZIP	
PHONE		PHONE	
FAX		FAX	
E-MAIL	csterling@talonlpe.com	E-MAIL	

DATE: 4/20/15
TURNAROUND:

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	BTEX	DRO	GRO
16	SB6 5'-10'	S	~~9:09~~ 4/16/15	9:09	2	2CF		X	X	X
17	SB6 10'-15'	S	9:20	9:20				X	X	X
18	~~20~~ SB6 20-25'		~~9:40~~	9:40				X	X	X
19	SB6 30-35		10:00	10:00				X	X	X

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:

QC PACKAGE (check below)	
	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	Tim Willela	Tim Willela	4/21/15	8:55
RECEIVED BY	Erin Peterson	Erin Peterson	4/22/15	0950
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

Chain-of-Custody

Form 202r8

WORKORDER # 1504425

PAGE of

DISPOSAL By Lab or Return to Client

PROJECT NAME	Nelson Ab A7	SAMPLER	Tim Wilder
PROJECT No.	701530.024.01	SITE ID	
		EDD FORMAT	
COMPANY NAME	Talon LPE	PURCHASE ORDER	
SEND REPORT TO	Colby Sterling	BILL TO COMPANY	Whiting
ADDRESS	921 N Bivins	INVOICE ATTN TO	Kyle Waggoner
CITY / STATE / ZIP	Amarillo TX 79109	ADDRESS	
PHONE		CITY / STATE / ZIP	
FAX		PHONE	
E-MAIL	CSterling@talonlpe.com	FAX	
		E-MAIL	
		DATE	
		TURNAROUND	

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	BTEX	DRO	GRO
(20)	SB7 10-15'	S	4/16/16	10:40	2	ICE		X	X	X
(21)	SB7 25-30'	S	4/16/16	11:15	2	ICE		X	X	X

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:

QC PACKAGE (check below)	
	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	Tim Wilder	Tim Wilder	4/21/15	9:54
RECEIVED BY	Erin Peterson	Erin Peterson	4/22/15	0950
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: Talon Workorder No: 1504425

Project Manager: ARW Initials: ECP Date: 4/22/15

1. Does this project require any special handling in addition to standard ALS procedures?		YES	(NO)
2. Are custody seals on shipping containers intact?	(NONE)	YES	NO
3. Are Custody seals on sample containers intact?	(NONE)	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		(YES)	NO
5. Are the COC and bottle labels complete and legible?		(YES)	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		(YES)	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF	(YES)	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	(N/A)	YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	(N/A)	YES	NO
10. Is there sufficient sample for the requested analyses?		(YES)	NO
11. Were all samples placed in the proper containers for the requested analyses?		(YES)	NO
12. Are all samples within holding times for the requested analyses?		(YES)	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		(YES)	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ____ < green pea ____ > green pea	(N/A)	YES	NO
15. Do any water samples contain sediment? Amount Amount of sediment: ____ dusting ____ moderate ____ heavy	(N/A)	YES	NO
16. Were the samples shipped on ice?		(YES)	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 (#4)	RAD ONLY	(YES)	NO

Cooler #:	1							
Temperature (°C):	3.2°							
No. of custody seals on cooler:	0							
DOT Survey/ Acceptance Information — External µR/hr reading:	11							
Background µR/hr reading:	11							

Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? (YES) NO / NA (If no, see Form 008.)

Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

If applicable, was the client contacted? YES / NO / (NA) Contact: _____ Date/Time: _____

Project Manager Signature / Date: [signature] 4/24/15

*IR Gun #2: Oakton, SN 29922500201-0066
*IR Gun #4: Oakton, SN 2372220101-0002

150445

MUR 1

FedEx Express Package US Airbill

FedEx Tracking Number 8062 8382 5019

Form ID No. 0215

1 From

Date 4/21/15

Sender's Name ~~Talon LPE~~ T. m Wilhelm Phone 806 467 0607

Company Talon LPE

Address 921 N Bivins Dept./Floor/Suite/Room

City Amarillo State TX ZIP 79107

2 Your Internal Billing Reference

3 To

Recipient's Name Phone 970 420-1511

Company

Address We cannot deliver to P.O. boxes or P.O. ZIP codes. Dept./Floor/Suite/Room

Address Use this line for the HOLD location address or for continuation of your shipping address.

City State CO ZIP 80524-2262

HOLD Weekday FedEx location address REQUIRED. NOT available for FedEx First Overnight.

HOLD Saturday FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

0115203875

8062 8382 5019

4 Express Package Service * To most locations.

NOTE: Service order has changed. Please select carefully.

Packages up to 150 lbs. For packages over 150 lbs., use the FedEx Express Freight US Airbill.

Next Business Day

- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [X] FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

- [ ] Second business morning.* Saturday Delivery NOT available.
- [ ] FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

11.0

5 Packaging * Declared value limit $500.

- [ ] FedEx Envelope*
- [ ] FedEx Pak*
- [ ] FedEx Box
- [X] FedEx Tube
- [ ] Other

6 Special Handling and Delivery Signature Options

- [ ] SATURDAY Delivery — NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

- [ ] No Signature Required — Package may be left without obtaining a signature for delivery.
- [ ] Direct Signature — Someone at recipient's address may sign for delivery. Fee applies.
- [ ] Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. Fee applies.

3.20

Does this shipment contain dangerous goods? One box must be checked.

- [X] No
- [ ] Yes — As per attached Shipper's Declaration.
- [ ] Yes — Shipper's Declaration not required.
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box.

- [ ] Cargo Aircraft Only

7 Payment *Bill to:*

Enter FedEx Acct. No. or Credit Card No. below.

- [ ] Sender — Acct. No. in Section 1 will be billed.
- [X] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

[redacted]

Total Packages ____ Total Weight ____ lbs. Credit Card Auth. ____

†Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

611

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Client: Talon LPE
Project: 701530.024.01 Nelson A6 A7
Sample ID: SB1 0'-5'
Legal Location:
Collection Date: 4/14/2015 16:31

Date: *04-May-15*
Work Order: 1504425
Lab ID: 1504425-1
Matrix: SOIL
Percent Moisture: 24.8

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Diesel Range Organics			**SW8015M**	Prep Date: **4/23/2015**		PrepBy: **JFN**
Diesel Range Organics	**290**	4,5,8,M	**6.4**	**MG/KG**	1	4/23/2015 17:38
Surr: O-TERPHENYL	*85*		*53-116*	*%REC*	1	4/23/2015 17:38
Gasoline Range Organics			**SW8015**	Prep Date: **4/24/2015**		PrepBy: **JFN**
GASOLINE RANGE ORGANICS	**3200**	GZ	**130**	**MG/KG**	1000	4/24/2015 09:46
Surr: 2,3,4-TRIFLUOROTOLUENE	*123*		*76-126*	*%REC*	1000	4/24/2015 09:46
GC/MS Volatiles			**SW8260**	Prep Date: **4/28/2015**		PrepBy: **TWK**
BENZENE	**0.25**		**0.048**	**MG/KG**	1	4/28/2015 14:31
TOLUENE	**31**		**3**	**MG/KG**	500	4/28/2015 19:47
ETHYLBENZENE	**19**		**3**	**MG/KG**	500	4/28/2015 19:47
M+P-XYLENE	**110**		**3**	**MG/KG**	500	4/28/2015 19:47
O-XYLENE	**40**		**3**	**MG/KG**	500	4/28/2015 19:47
TOTAL XYLENES	**150**		**0.005**	**MG/KG**	1	4/28/2015 14:31
Surr: DIBROMOFLUOROMETHANE	*98*		*61-134*	*%REC*	1	4/28/2015 14:31
Surr: DIBROMOFLUOROMETHANE	*100*		*61-134*	*%REC*	500	4/28/2015 19:47
Surr: TOLUENE-D8	*110*		*57-135*	*%REC*	500	4/28/2015 19:47
Surr: TOLUENE-D8	*255*	*	*57-135*	*%REC*	1	4/28/2015 14:31
Surr: 4-BROMOFLUOROBENZENE	*97*		*52-151*	*%REC*	500	4/28/2015 19:47
Surr: 4-BROMOFLUOROBENZENE	*108*		*52-151*	*%REC*	1	4/28/2015 14:31

Client: Talon LPE
Project: 701530.024.01 Nelson A6 A7
Sample ID: SB1 10'-15'
Legal Location:
Collection Date: 4/14/2015 16:54

Date: *04-May-15*
Work Order: 1504425
Lab ID: 1504425-2
Matrix: SOIL
Percent Moisture: 6.0

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Diesel Range Organics			**SW8015M**	Prep Date: **4/23/2015**		PrepBy: **JFN**
Diesel Range Organics	**66**	5,8,M	**5.2**	**MG/KG**	1	4/23/2015 18:16
Surr: O-TERPHENYL	*96*		*53-116*	*%REC*	1	4/23/2015 18:16
Gasoline Range Organics			**SW8015**	Prep Date: **4/23/2015**		PrepBy: **JFN**
GASOLINE RANGE ORGANICS	**0.77**	H	**0.53**	**MG/KG**	1	4/23/2015 11:31
Surr: 2,3,4-TRIFLUOROTOLUENE	*99*		*76-126*	*%REC*	1	4/23/2015 11:31
GC/MS Volatiles			**SW8260**	Prep Date: **4/28/2015**		PrepBy: **TWK**
BENZENE	ND		0.0052	MG/KG	1	4/28/2015 19:23
TOLUENE	ND		0.0052	MG/KG	1	4/28/2015 19:23
ETHYLBENZENE	ND		0.0052	MG/KG	1	4/28/2015 19:23
M+P-XYLENE	ND		0.0052	MG/KG	1	4/28/2015 19:23
O-XYLENE	ND		0.0052	MG/KG	1	4/28/2015 19:23
TOTAL XYLENES	ND		0.005	MG/KG	1	4/28/2015 19:23
Surr: DIBROMOFLUOROMETHANE	*102*		*61-134*	*%REC*	1	4/28/2015 19:23
Surr: TOLUENE-D8	*97*		*57-135*	*%REC*	1	4/28/2015 19:23
Surr: 4-BROMOFLUOROBENZENE	*99*		*52-151*	*%REC*	1	4/28/2015 19:23

Client: Talon LPE
Project: 701530.024.01 Nelson A6 A7
Sample ID: SB1 15'-20'
Legal Location:
Collection Date: 4/14/2015 17:00

Date: *04-May-15*
Work Order: 1504425
Lab ID: 1504425-3
Matrix: SOIL
Percent Moisture: 6.6

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Diesel Range Organics		**SW8015M**		Prep Date: **4/23/2015**		PrepBy: **JFN**
Diesel Range Organics	ND		5.2	MG/KG	1	4/23/2015 18:52
Surr: O-TERPHENYL	*93*		*53-116*	*%REC*	1	4/23/2015 18:52
Gasoline Range Organics		**SW8015**		Prep Date: **4/23/2015**		PrepBy: **JFN**
GASOLINE RANGE ORGANICS	ND		0.52	MG/KG	1	4/23/2015 11:51
Surr: 2,3,4-TRIFLUOROTOLUENE	*99*		*76-126*	*%REC*	1	4/23/2015 11:51
GC/MS Volatiles		**SW8260**		Prep Date: **4/28/2015**		PrepBy: **TWK**
BENZENE	ND		0.0052	MG/KG	1	4/28/2015 18:37
TOLUENE	ND		0.0052	MG/KG	1	4/28/2015 18:37
ETHYLBENZENE	ND		0.0052	MG/KG	1	4/28/2015 18:37
M+P-XYLENE	ND		0.0052	MG/KG	1	4/28/2015 18:37
O-XYLENE	ND		0.0052	MG/KG	1	4/28/2015 18:37
TOTAL XYLENES	ND		0.005	MG/KG	1	4/28/2015 18:37
Surr: DIBROMOFLUOROMETHANE	*100*		*61-134*	*%REC*	1	4/28/2015 18:37
Surr: TOLUENE-D8	*97*		*57-135*	*%REC*	1	4/28/2015 18:37
Surr: 4-BROMOFLUOROBENZENE	*99*		*52-151*	*%REC*	1	4/28/2015 18:37

Client: Talon LPE **Date:** *04-May-15*
Project: 701530.024.01 Nelson A6 A7 **Work Order:** 1504425
Sample ID: SB1 25'-30' **Lab ID:** 1504425-4
Legal Location: **Matrix:** SOIL
Collection Date: 4/14/2015 17:30 **Percent Moisture:** 16.4

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Diesel Range Organics		**SW8015M**		Prep Date: **4/23/2015**		PrepBy: **JFN**
Diesel Range Organics	ND		5.9	MG/KG	1	4/23/2015 20:04
Surr: O-TERPHENYL	*97*		*53-116*	*%REC*	1	4/23/2015 20:04
Gasoline Range Organics		**SW8015**		Prep Date: **4/23/2015**		PrepBy: **JFN**
GASOLINE RANGE ORGANICS	ND		0.54	MG/KG	1	4/23/2015 12:13
Surr: 2,3,4-TRIFLUOROTOLUENE	*105*		*76-126*	*%REC*	1	4/23/2015 12:13
GC/MS Volatiles		**SW8260**		Prep Date: **4/28/2015**		PrepBy: **TWK**
BENZENE	ND		0.0057	MG/KG	1	4/28/2015 19:00
TOLUENE	ND		0.0057	MG/KG	1	4/28/2015 19:00
ETHYLBENZENE	ND		0.0057	MG/KG	1	4/28/2015 19:00
M+P-XYLENE	ND		0.0057	MG/KG	1	4/28/2015 19:00
O-XYLENE	ND		0.0057	MG/KG	1	4/28/2015 19:00
TOTAL XYLENES	ND		0.005	MG/KG	1	4/28/2015 19:00
Surr: DIBROMOFLUOROMETHANE	*102*		*61-134*	*%REC*	1	4/28/2015 19:00
Surr: TOLUENE-D8	*97*		*57-135*	*%REC*	1	4/28/2015 19:00
Surr: 4-BROMOFLUOROBENZENE	*98*		*52-151*	*%REC*	1	4/28/2015 19:00

Client: Talon LPE
Project: 701530.024.01 Nelson A6 A7
Sample ID: SB2 10'-15'
Legal Location:
Collection Date: 4/15/2015 09:35

Date: *04-May-15*
Work Order: 1504425
Lab ID: 1504425-5
Matrix: SOIL
Percent Moisture: 7.4

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Diesel Range Organics			**SW8015M**	Prep Date: **4/23/2015**		PrepBy: **JFN**
Diesel Range Organics	**250**	5,8,M	**5.4**	**MG/KG**	1	4/23/2015 20:39
Surr: O-TERPHENYL	*97*		*53-116*	*%REC*	1	4/23/2015 20:39
Gasoline Range Organics			**SW8015**	Prep Date: **4/23/2015**		PrepBy: **JFN**
GASOLINE RANGE ORGANICS	**15**	H	**1.1**	**MG/KG**	1	4/23/2015 12:33
Surr: 2,3,4-TRIFLUOROTOLUENE	*110*		*76-126*	*%REC*	1	4/23/2015 12:33
GC/MS Volatiles			**SW8260**	Prep Date: **4/28/2015**		PrepBy: **TWK**
BENZENE	ND		0.053	MG/KG	1	4/28/2015 15:45
TOLUENE	**0.1**		**0.053**	**MG/KG**	1	4/28/2015 15:45
ETHYLBENZENE	**0.49**		**0.053**	**MG/KG**	1	4/28/2015 15:45
M+P-XYLENE	**3.4**		**0.053**	**MG/KG**	1	4/28/2015 15:45
O-XYLENE	**1.5**		**0.053**	**MG/KG**	1	4/28/2015 15:45
TOTAL XYLENES	**4.9**		**0.005**	**MG/KG**	1	4/28/2015 15:45
Surr: DIBROMOFLUOROMETHANE	*100*		*61-134*	*%REC*	1	4/28/2015 15:45
Surr: TOLUENE-D8	*131*		*57-135*	*%REC*	1	4/28/2015 15:45
Surr: 4-BROMOFLUOROBENZENE	*104*		*52-151*	*%REC*	1	4/28/2015 15:45

Client: Talon LPE
Project: 701530.024.01 Nelson A6 A7
Sample ID: SB2 20'-25'
Legal Location:
Collection Date: 4/15/2015 09:59

Date: *04-May-15*
Work Order: 1504425
Lab ID: 1504425-6
Matrix: SOIL
Percent Moisture: 15.9

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Diesel Range Organics			**SW8015M**	Prep Date: **4/23/2015**		PrepBy: **JFN**
Diesel Range Organics	**27**	4,5,8,M	**5.8**	**MG/KG**	1	4/23/2015 21:15
Surr: O-TERPHENYL	*97*		*53-116*	*%REC*	1	4/23/2015 21:15
Gasoline Range Organics			**SW8015**	Prep Date: **4/24/2015**		PrepBy: **JFN**
GASOLINE RANGE ORGANICS	**1.2**	GZ	**0.58**	**MG/KG**	1	4/24/2015 10:06
Surr: 2,3,4-TRIFLUOROTOLUENE	*104*		*76-126*	*%REC*	1	4/24/2015 10:06
GC/MS Volatiles			**SW8260**	Prep Date: **4/28/2015**		PrepBy: **TWK**
BENZENE	ND		0.0055	MG/KG	1	4/28/2015 22:53
TOLUENE	**0.08**		**0.0055**	**MG/KG**	1	4/28/2015 22:53
ETHYLBENZENE	**0.018**		**0.0055**	**MG/KG**	1	4/28/2015 22:53
M+P-XYLENE	**0.074**		**0.0055**	**MG/KG**	1	4/28/2015 22:53
O-XYLENE	**0.048**		**0.0055**	**MG/KG**	1	4/28/2015 22:53
TOTAL XYLENES	**0.12**		**0.005**	**MG/KG**	1	4/28/2015 22:53
Surr: DIBROMOFLUOROMETHANE	*100*		*61-134*	*%REC*	1	4/28/2015 22:53
Surr: TOLUENE-D8	*97*		*57-135*	*%REC*	1	4/28/2015 22:53
Surr: 4-BROMOFLUOROBENZENE	*97*		*52-151*	*%REC*	1	4/28/2015 22:53

Client: Talon LPE
Project: 701530.024.01 Nelson A6 A7
Sample ID: SB2 30'-35'
Legal Location:
Collection Date: 4/15/2015 10:20

Date: *04-May-15*
Work Order: 1504425
Lab ID: 1504425-7
Matrix: SOIL
Percent Moisture: 15.1

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Diesel Range Organics			**SW8015M**	Prep Date: **4/23/2015**		PrepBy: **JFN**
Diesel Range Organics	ND		5.7	MG/KG	1	4/23/2015 21:50
Surr: O-TERPHENYL	*96*		*53-116*	*%REC*	1	4/23/2015 21:50
Gasoline Range Organics			**SW8015**	Prep Date: **4/23/2015**		PrepBy: **JFN**
GASOLINE RANGE ORGANICS	ND		0.56	MG/KG	1	4/23/2015 14:15
Surr: 2,3,4-TRIFLUOROTOLUENE	*104*		*76-126*	*%REC*	1	4/23/2015 14:15
GC/MS Volatiles			**SW8260**	Prep Date: **4/28/2015**		PrepBy: **TWK**
BENZENE	ND		0.0052	MG/KG	1	4/28/2015 09:53
TOLUENE	ND		0.0052	MG/KG	1	4/28/2015 09:53
ETHYLBENZENE	ND		0.0052	MG/KG	1	4/28/2015 09:53
M+P-XYLENE	ND		0.0052	MG/KG	1	4/28/2015 09:53
O-XYLENE	**0.0054**		**0.0052**	**MG/KG**	1	4/28/2015 09:53
TOTAL XYLENES	**0.0054**		**0.005**	**MG/KG**	1	4/28/2015 09:53
Surr: DIBROMOFLUOROMETHANE	*100*		*61-134*	*%REC*	1	4/28/2015 09:53
Surr: TOLUENE-D8	*98*		*57-135*	*%REC*	1	4/28/2015 09:53
Surr: 4-BROMOFLUOROBENZENE	*100*		*52-151*	*%REC*	1	4/28/2015 09:53

Client: Talon LPE **Date:** *04-May-15*
Project: 701530.024.01 Nelson A6 A7 **Work Order:** 1504425
Sample ID: SB3 10'-15' **Lab ID:** 1504425-8
Legal Location: **Matrix:** SOIL
Collection Date: 4/15/2015 11:20 **Percent Moisture:** 20.3

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Diesel Range Organics		**SW8015M**		Prep Date: **4/23/2015**		PrepBy: **JFN**
Diesel Range Organics	ND		5.7	MG/KG	1	4/24/2015 10:52
Surr: O-TERPHENYL	*94*		*53-116*	*%REC*	1	4/24/2015 10:52
Gasoline Range Organics		**SW8015**		Prep Date: **4/24/2015**		PrepBy: **JFN**
GASOLINE RANGE ORGANICS	ND		0.61	MG/KG	1	4/24/2015 10:28
Surr: 2,3,4-TRIFLUOROTOLUENE	*100*		*76-126*	*%REC*	1	4/24/2015 10:28
GC/MS Volatiles		**SW8260**		Prep Date: **4/28/2015**		PrepBy: **TWK**
BENZENE	ND		0.006	MG/KG	1	4/28/2015 22:07
TOLUENE	ND		0.006	MG/KG	1	4/28/2015 22:07
ETHYLBENZENE	ND		0.006	MG/KG	1	4/28/2015 22:07
M+P-XYLENE	ND		0.006	MG/KG	1	4/28/2015 22:07
O-XYLENE	ND		0.006	MG/KG	1	4/28/2015 22:07
TOTAL XYLENES	ND		0.005	MG/KG	1	4/28/2015 22:07
Surr: DIBROMOFLUOROMETHANE	*100*		*61-134*	*%REC*	1	4/28/2015 22:07
Surr: TOLUENE-D8	*95*		*57-135*	*%REC*	1	4/28/2015 22:07
Surr: 4-BROMOFLUOROBENZENE	*96*		*52-151*	*%REC*	1	4/28/2015 22:07

Client:	Talon LPE	**Date:**	*04-May-15*
Project:	701530.024.01 Nelson A6 A7	**Work Order:**	1504425
Sample ID:	SB3 20'-25'	**Lab ID:**	1504425-9
Legal Location:		**Matrix:**	SOIL
Collection Date:	4/15/2015 11:42	**Percent Moisture:**	26.4

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Diesel Range Organics		**SW8015M**		Prep Date: **4/23/2015**		PrepBy: **JFN**
Diesel Range Organics	ND		6.7	MG/KG	1	4/24/2015 11:27
Surr: O-TERPHENYL	*93*		*53-116*	*%REC*	1	4/24/2015 11:27
Gasoline Range Organics		**SW8015**		Prep Date: **4/24/2015**		PrepBy: **JFN**
GASOLINE RANGE ORGANICS	ND		0.58	MG/KG	1	4/24/2015 10:48
Surr: 2,3,4-TRIFLUOROTOLUENE	*98*		*76-126*	*%REC*	1	4/24/2015 10:48
GC/MS Volatiles		**SW8260**		Prep Date: **4/28/2015**		PrepBy: **TWK**
BENZENE	ND		0.0064	MG/KG	1	4/28/2015 10:16
TOLUENE	ND		0.0064	MG/KG	1	4/28/2015 10:16
ETHYLBENZENE	ND		0.0064	MG/KG	1	4/28/2015 10:16
M+P-XYLENE	ND		0.0064	MG/KG	1	4/28/2015 10:16
O-XYLENE	ND		0.0064	MG/KG	1	4/28/2015 10:16
TOTAL XYLENES	ND		0.005	MG/KG	1	4/28/2015 10:16
Surr: DIBROMOFLUOROMETHANE	*99*		*61-134*	*%REC*	1	4/28/2015 10:16
Surr: TOLUENE-D8	*98*		*57-135*	*%REC*	1	4/28/2015 10:16
Surr: 4-BROMOFLUOROBENZENE	*98*		*52-151*	*%REC*	1	4/28/2015 10:16

Client:	Talon LPE	**Date:**	*04-May-15*
Project:	701530.024.01 Nelson A6 A7	**Work Order:**	1504425
Sample ID:	SB4 0'-5'	**Lab ID:**	1504425-10
Legal Location:		**Matrix:**	SOIL
Collection Date:	4/15/2015 13:07	**Percent Moisture:**	17.9

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Diesel Range Organics			**SW8015M**	Prep Date: **4/23/2015**		PrepBy: **JFN**
Diesel Range Organics	**43**	4,5,8,M	**5.9**	**MG/KG**	1	4/24/2015 12:03
Surr: O-TERPHENYL	*97*		*53-116*	*%REC*	1	4/24/2015 12:03
Gasoline Range Organics			**SW8015**	Prep Date: **4/23/2015**		PrepBy: **JFN**
GASOLINE RANGE ORGANICS	**35**	GZ	**0.59**	**MG/KG**	1	4/23/2015 15:18
Surr: 2,3,4-TRIFLUOROTOLUENE	*144*	*	*76-126*	*%REC*	1	4/23/2015 15:18
GC/MS Volatiles			**SW8260**	Prep Date: **4/29/2015**		PrepBy: **TWK**
BENZENE	ND		0.0059	MG/KG	1	4/29/2015 10:31
TOLUENE	ND		0.0059	MG/KG	1	4/29/2015 10:31
ETHYLBENZENE	ND		0.0059	MG/KG	1	4/29/2015 10:31
M+P-XYLENE	ND		0.0059	MG/KG	1	4/29/2015 10:31
O-XYLENE	ND		0.0059	MG/KG	1	4/29/2015 10:31
TOTAL XYLENES	ND		0.005	MG/KG	1	4/29/2015 10:31
Surr: DIBROMOFLUOROMETHANE	*97*		*61-134*	*%REC*	1	4/29/2015 10:31
Surr: TOLUENE-D8	*109*		*57-135*	*%REC*	1	4/29/2015 10:31
Surr: 4-BROMOFLUOROBENZENE	*97*		*52-151*	*%REC*	1	4/29/2015 10:31

Client: Talon LPE
Project: 701530.024.01 Nelson A6 A7
Sample ID: SB4 10'-15'
Legal Location:
Collection Date: 4/15/2015 13:38

Date: *04-May-15*
Work Order: 1504425
Lab ID: 1504425-11
Matrix: SOIL
Percent Moisture: 7.9

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Diesel Range Organics			**SW8015M**	Prep Date: **4/23/2015**		PrepBy: **JFN**
Diesel Range Organics	ND		5.4	MG/KG	1	4/24/2015 12:39
Surr: O-TERPHENYL	*95*		*53-116*	*%REC*	1	4/24/2015 12:39
Gasoline Range Organics			**SW8015**	Prep Date: **4/24/2015**		PrepBy: **JFN**
GASOLINE RANGE ORGANICS	ND		0.49	MG/KG	1	4/24/2015 11:08
Surr: 2,3,4-TRIFLUOROTOLUENE	*98*		*76-126*	*%REC*	1	4/24/2015 11:08
GC/MS Volatiles			**SW8260**	Prep Date: **4/28/2015**		PrepBy: **TWK**
BENZENE	ND		0.0049	MG/KG	1	4/28/2015 10:39
TOLUENE	ND		0.0049	MG/KG	1	4/28/2015 10:39
ETHYLBENZENE	ND		0.0049	MG/KG	1	4/28/2015 10:39
M+P-XYLENE	ND		0.0049	MG/KG	1	4/28/2015 10:39
O-XYLENE	ND		0.0049	MG/KG	1	4/28/2015 10:39
TOTAL XYLENES	ND		0.005	MG/KG	1	4/28/2015 10:39
Surr: DIBROMOFLUOROMETHANE	*99*		*61-134*	*%REC*	1	4/28/2015 10:39
Surr: TOLUENE-D8	*97*		*57-135*	*%REC*	1	4/28/2015 10:39
Surr: 4-BROMOFLUOROBENZENE	*96*		*52-151*	*%REC*	1	4/28/2015 10:39

Client: Talon LPE
Project: 701530.024.01 Nelson A6 A7
Sample ID: SB4 20'-25'
Legal Location:
Collection Date: 4/15/2015 13:47

Date: *04-May-15*
Work Order: 1504425
Lab ID: 1504425-12
Matrix: SOIL
Percent Moisture: 13.0

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Diesel Range Organics		**SW8015M**		Prep Date: **4/23/2015**		PrepBy: **JFN**
Diesel Range Organics	ND		5.7	MG/KG	1	4/24/2015 13:15
Surr: O-TERPHENYL	*96*		*53-116*	*%REC*	1	4/24/2015 13:15
Gasoline Range Organics		**SW8015**		Prep Date: **4/24/2015**		PrepBy: **JFN**
GASOLINE RANGE ORGANICS	ND		0.51	MG/KG	1	4/24/2015 12:11
Surr: 2,3,4-TRIFLUOROTOLUENE	*102*		*76-126*	*%REC*	1	4/24/2015 12:11
GC/MS Volatiles		**SW8260**		Prep Date: **4/28/2015**		PrepBy: **TWK**
BENZENE	ND		0.0055	MG/KG	1	4/28/2015 11:02
TOLUENE	**0.02**		**0.0055**	**MG/KG**	1	4/28/2015 11:02
ETHYLBENZENE	ND		0.0055	MG/KG	1	4/28/2015 11:02
M+P-XYLENE	**0.012**		**0.0055**	**MG/KG**	1	4/28/2015 11:02
O-XYLENE	**0.021**		**0.0055**	**MG/KG**	1	4/28/2015 11:02
TOTAL XYLENES	**0.032**		**0.005**	**MG/KG**	1	4/28/2015 11:02
Surr: DIBROMOFLUOROMETHANE	*101*		*61-134*	*%REC*	1	4/28/2015 11:02
Surr: TOLUENE-D8	*98*		*57-135*	*%REC*	1	4/28/2015 11:02
Surr: 4-BROMOFLUOROBENZENE	*96*		*52-151*	*%REC*	1	4/28/2015 11:02

Client: Talon LPE
Project: 701530.024.01 Nelson A6 A7
Sample ID: SB4 30'-35'
Legal Location:
Collection Date: 4/15/2015 14:02

Date: *04-May-15*
Work Order: 1504425
Lab ID: 1504425-13
Matrix: SOIL
Percent Moisture: 17.1

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Diesel Range Organics		**SW8015M**		Prep Date: **4/23/2015**		PrepBy: **JFN**
Diesel Range Organics	ND		5.8	MG/KG	1	4/24/2015 13:50
Surr: O-TERPHENYL	*97*		*53-116*	*%REC*	1	4/24/2015 13:50
Gasoline Range Organics		**SW8015**		Prep Date: **4/24/2015**		PrepBy: **JFN**
GASOLINE RANGE ORGANICS	ND		0.56	MG/KG	1	4/24/2015 12:32
Surr: 2,3,4-TRIFLUOROTOLUENE	*101*		*76-126*	*%REC*	1	4/24/2015 12:32
GC/MS Volatiles		**SW8260**		Prep Date: **4/28/2015**		PrepBy: **TWK**
BENZENE	ND		0.0058	MG/KG	1	4/28/2015 11:24
TOLUENE	ND		0.0058	MG/KG	1	4/28/2015 11:24
ETHYLBENZENE	ND		0.0058	MG/KG	1	4/28/2015 11:24
M+P-XYLENE	ND		0.0058	MG/KG	1	4/28/2015 11:24
O-XYLENE	ND		0.0058	MG/KG	1	4/28/2015 11:24
TOTAL XYLENES	ND		0.005	MG/KG	1	4/28/2015 11:24
Surr: DIBROMOFLUOROMETHANE	*101*		*61-134*	*%REC*	1	4/28/2015 11:24
Surr: TOLUENE-D8	*97*		*57-135*	*%REC*	1	4/28/2015 11:24
Surr: 4-BROMOFLUOROBENZENE	*100*		*52-151*	*%REC*	1	4/28/2015 11:24

Client: Talon LPE
Project: 701530.024.01 Nelson A6 A7
Sample ID: SB5 10'-15'
Legal Location:
Collection Date: 4/15/2015 15:18

Date: *04-May-15*
Work Order: 1504425
Lab ID: 1504425-14
Matrix: SOIL
Percent Moisture: 11.6

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Diesel Range Organics		**SW8015M**		Prep Date: **4/23/2015**		PrepBy: **JFN**
Diesel Range Organics	ND		5.6	MG/KG	1	4/24/2015 14:26
Surr: O-TERPHENYL	*96*		*53-116*	*%REC*	1	4/24/2015 14:26
Gasoline Range Organics		**SW8015**		Prep Date: **4/24/2015**		PrepBy: **JFN**
GASOLINE RANGE ORGANICS	ND		0.53	MG/KG	1	4/24/2015 12:53
Surr: 2,3,4-TRIFLUOROTOLUENE	*95*		*76-126*	*%REC*	1	4/24/2015 12:53
GC/MS Volatiles		**SW8260**		Prep Date: **4/28/2015**		PrepBy: **TWK**
BENZENE	ND		0.0054	MG/KG	1	4/28/2015 11:47
TOLUENE	ND		0.0054	MG/KG	1	4/28/2015 11:47
ETHYLBENZENE	ND		0.0054	MG/KG	1	4/28/2015 11:47
M+P-XYLENE	ND		0.0054	MG/KG	1	4/28/2015 11:47
O-XYLENE	ND		0.0054	MG/KG	1	4/28/2015 11:47
TOTAL XYLENES	ND		0.005	MG/KG	1	4/28/2015 11:47
Surr: DIBROMOFLUOROMETHANE	*100*		*61-134*	*%REC*	1	4/28/2015 11:47
Surr: TOLUENE-D8	*97*		*57-135*	*%REC*	1	4/28/2015 11:47
Surr: 4-BROMOFLUOROBENZENE	*98*		*52-151*	*%REC*	1	4/28/2015 11:47

Client: Talon LPE
Project: 701530.024.01 Nelson A6 A7
Sample ID: SB5 25'-30'
Legal Location:
Collection Date: 4/15/2015 15:35

Date: *04-May-15*
Work Order: 1504425
Lab ID: 1504425-15
Matrix: SOIL
Percent Moisture: 19.3

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Diesel Range Organics		**SW8015M**		Prep Date: **4/23/2015**		PrepBy: **JFN**
Diesel Range Organics	ND		6.1	MG/KG	1	4/24/2015 15:01
Surr: O-TERPHENYL	*98*		*53-116*	*%REC*	1	4/24/2015 15:01
Gasoline Range Organics		**SW8015**		Prep Date: **4/24/2015**		PrepBy: **JFN**
GASOLINE RANGE ORGANICS	ND		0.36	MG/KG	1	4/24/2015 13:14
Surr: 2,3,4-TRIFLUOROTOLUENE	*99*		*76-126*	*%REC*	1	4/24/2015 13:14
GC/MS Volatiles		**SW8260**		Prep Date: **4/28/2015**		PrepBy: **TWK**
BENZENE	ND		0.006	MG/KG	1	4/28/2015 12:10
TOLUENE	ND		0.006	MG/KG	1	4/28/2015 12:10
ETHYLBENZENE	ND		0.006	MG/KG	1	4/28/2015 12:10
M+P-XYLENE	ND		0.006	MG/KG	1	4/28/2015 12:10
O-XYLENE	ND		0.006	MG/KG	1	4/28/2015 12:10
TOTAL XYLENES	ND		0.005	MG/KG	1	4/28/2015 12:10
Surr: DIBROMOFLUOROMETHANE	*101*		*61-134*	*%REC*	1	4/28/2015 12:10
Surr: TOLUENE-D8	*98*		*57-135*	*%REC*	1	4/28/2015 12:10
Surr: 4-BROMOFLUOROBENZENE	*98*		*52-151*	*%REC*	1	4/28/2015 12:10

Client: Talon LPE
Project: 701530.024.01 Nelson A6 A7
Sample ID: SB6 5'-10'
Legal Location:
Collection Date: 4/16/2015 09:09

Date: *04-May-15*
Work Order: 1504425
Lab ID: 1504425-16
Matrix: SOIL
Percent Moisture: 16.2

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Diesel Range Organics			**SW8015M**	Prep Date: **4/23/2015**		PrepBy: **JFN**
Diesel Range Organics	**68**	4,5,8,M	**5.9**	**MG/KG**	1	4/24/2015 15:37
Surr: O-TERPHENYL	*96*		*53-116*	*%REC*	1	4/24/2015 15:37
Gasoline Range Organics			**SW8015**	Prep Date: **4/24/2015**		PrepBy: **JFN**
GASOLINE RANGE ORGANICS	**13**	GZ	**1.1**	**MG/KG**	1	4/24/2015 13:35
Surr: 2,3,4-TRIFLUOROTOLUENE	*109*		*76-126*	*%REC*	1	4/24/2015 13:35
GC/MS Volatiles			**SW8260**	Prep Date: **4/28/2015**		PrepBy: **TWK**
BENZENE	ND		0.0057	MG/KG	1	4/28/2015 22:30
TOLUENE	ND		0.0057	MG/KG	1	4/28/2015 22:30
ETHYLBENZENE	ND		0.0057	MG/KG	1	4/28/2015 22:30
M+P-XYLENE	**0.021**		**0.0057**	**MG/KG**	1	4/28/2015 22:30
O-XYLENE	ND		0.0057	MG/KG	1	4/28/2015 22:30
TOTAL XYLENES	**0.021**		**0.005**	**MG/KG**	1	4/28/2015 22:30
Surr: DIBROMOFLUOROMETHANE	*104*		*61-134*	*%REC*	1	4/28/2015 22:30
Surr: TOLUENE-D8	*101*		*57-135*	*%REC*	1	4/28/2015 22:30
Surr: 4-BROMOFLUOROBENZENE	*98*		*52-151*	*%REC*	1	4/28/2015 22:30

Client: Talon LPE
Project: 701530.024.01 Nelson A6 A7
Sample ID: SB6 10'-15'
Legal Location:
Collection Date: 4/16/2015 09:20

Date: *04-May-15*
Work Order: 1504425
Lab ID: 1504425-17
Matrix: SOIL
Percent Moisture: 5.5

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Diesel Range Organics		**SW8015M**		Prep Date: **4/23/2015**		PrepBy: **JFN**
Diesel Range Organics	ND		5.1	MG/KG	1	4/24/2015 16:13
Surr: O-TERPHENYL	*93*		*53-116*	*%REC*	1	4/24/2015 16:13
Gasoline Range Organics		**SW8015**		Prep Date: **4/24/2015**		PrepBy: **JFN**
GASOLINE RANGE ORGANICS	ND		0.46	MG/KG	1	4/24/2015 13:55
Surr: 2,3,4-TRIFLUOROTOLUENE	*94*		*76-126*	*%REC*	1	4/24/2015 13:55
GC/MS Volatiles		**SW8260**		Prep Date: **4/28/2015**		PrepBy: **TWK**
BENZENE	ND		0.005	MG/KG	1	4/28/2015 12:33
TOLUENE	ND		0.005	MG/KG	1	4/28/2015 12:33
ETHYLBENZENE	ND		0.005	MG/KG	1	4/28/2015 12:33
M+P-XYLENE	ND		0.005	MG/KG	1	4/28/2015 12:33
O-XYLENE	ND		0.005	MG/KG	1	4/28/2015 12:33
TOTAL XYLENES	ND		0.005	MG/KG	1	4/28/2015 12:33
Surr: DIBROMOFLUOROMETHANE	*99*		*61-134*	*%REC*	1	4/28/2015 12:33
Surr: TOLUENE-D8	*100*		*57-135*	*%REC*	1	4/28/2015 12:33
Surr: 4-BROMOFLUOROBENZENE	*102*		*52-151*	*%REC*	1	4/28/2015 12:33

Client: Talon LPE
Project: 701530.024.01 Nelson A6 A7
Sample ID: SB6 20'-25'
Legal Location:
Collection Date: 4/16/2015 09:40

Date: *04-May-15*
Work Order: 1504425
Lab ID: 1504425-18
Matrix: SOIL
Percent Moisture: 15.7

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Diesel Range Organics		**SW8015M**		Prep Date: **4/23/2015**		PrepBy: **JFN**
Diesel Range Organics	ND		5.8	MG/KG	1	4/24/2015 16:49
Surr: O-TERPHENYL	*97*		*53-116*	*%REC*	1	4/24/2015 16:49
Gasoline Range Organics		**SW8015**		Prep Date: **4/24/2015**		PrepBy: **JFN**
GASOLINE RANGE ORGANICS	ND		0.47	MG/KG	1	4/24/2015 14:16
Surr: 2,3,4-TRIFLUOROTOLUENE	*92*		*76-126*	*%REC*	1	4/24/2015 14:16
GC/MS Volatiles		**SW8260**		Prep Date: **4/28/2015**		PrepBy: **TWK**
BENZENE	ND		0.0054	MG/KG	1	4/28/2015 12:57
TOLUENE	ND		0.0054	MG/KG	1	4/28/2015 12:57
ETHYLBENZENE	ND		0.0054	MG/KG	1	4/28/2015 12:57
M+P-XYLENE	ND		0.0054	MG/KG	1	4/28/2015 12:57
O-XYLENE	ND		0.0054	MG/KG	1	4/28/2015 12:57
TOTAL XYLENES	ND		0.005	MG/KG	1	4/28/2015 12:57
Surr: DIBROMOFLUOROMETHANE	*99*		*61-134*	*%REC*	1	4/28/2015 12:57
Surr: TOLUENE-D8	*98*		*57-135*	*%REC*	1	4/28/2015 12:57
Surr: 4-BROMOFLUOROBENZENE	*97*		*52-151*	*%REC*	1	4/28/2015 12:57

Client:	Talon LPE	**Date:**	*04-May-15*
Project:	701530.024.01 Nelson A6 A7	**Work Order:**	1504425
Sample ID:	SB6 30'-35'	**Lab ID:**	1504425-19
Legal Location:		**Matrix:**	SOIL
Collection Date:	4/16/2015 10:00	**Percent Moisture:**	19.1

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Diesel Range Organics		**SW8015M**		Prep Date: **4/23/2015**		PrepBy: **JFN**
Diesel Range Organics	ND		6.1	MG/KG	1	4/24/2015 17:24
Surr: O-TERPHENYL	*98*		*53-116*	*%REC*	1	4/24/2015 17:24
Gasoline Range Organics		**SW8015**		Prep Date: **4/24/2015**		PrepBy: **JFN**
GASOLINE RANGE ORGANICS	ND		0.56	MG/KG	1	4/24/2015 14:37
Surr: 2,3,4-TRIFLUOROTOLUENE	*94*		*76-126*	*%REC*	1	4/24/2015 14:37
GC/MS Volatiles		**SW8260**		Prep Date: **4/28/2015**		PrepBy: **TWK**
BENZENE	ND		0.0059	MG/KG	1	4/28/2015 13:20
TOLUENE	ND		0.0059	MG/KG	1	4/28/2015 13:20
ETHYLBENZENE	ND		0.0059	MG/KG	1	4/28/2015 13:20
M+P-XYLENE	ND		0.0059	MG/KG	1	4/28/2015 13:20
O-XYLENE	ND		0.0059	MG/KG	1	4/28/2015 13:20
TOTAL XYLENES	ND		0.005	MG/KG	1	4/28/2015 13:20
Surr: DIBROMOFLUOROMETHANE	*100*		*61-134*	*%REC*	1	4/28/2015 13:20
Surr: TOLUENE-D8	*97*		*57-135*	*%REC*	1	4/28/2015 13:20
Surr: 4-BROMOFLUOROBENZENE	*97*		*52-151*	*%REC*	1	4/28/2015 13:20

Client: Talon LPE
Project: 701530.024.01 Nelson A6 A7
Sample ID: SB7 10'-15'
Legal Location:
Collection Date: 4/16/2015 10:40

Date: *04-May-15*
Work Order: 1504425
Lab ID: 1504425-20
Matrix: SOIL
Percent Moisture: 12.2

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Diesel Range Organics		**SW8015M**		Prep Date: **4/23/2015**		PrepBy: **JFN**
Diesel Range Organics	ND		5.3	MG/KG	1	4/24/2015 18:00
Surr: O-TERPHENYL	*94*		*53-116*	*%REC*	1	4/24/2015 18:00
Gasoline Range Organics		**SW8015**		Prep Date: **4/24/2015**		PrepBy: **JFN**
GASOLINE RANGE ORGANICS	ND		0.54	MG/KG	1	4/24/2015 15:19
Surr: 2,3,4-TRIFLUOROTOLUENE	*92*		*76-126*	*%REC*	1	4/24/2015 15:19
GC/MS Volatiles		**SW8260**		Prep Date: **4/28/2015**		PrepBy: **TWK**
BENZENE	ND		0.0052	MG/KG	1	4/28/2015 13:43
TOLUENE	ND		0.0052	MG/KG	1	4/28/2015 13:43
ETHYLBENZENE	ND		0.0052	MG/KG	1	4/28/2015 13:43
M+P-XYLENE	ND		0.0052	MG/KG	1	4/28/2015 13:43
O-XYLENE	ND		0.0052	MG/KG	1	4/28/2015 13:43
TOTAL XYLENES	ND		0.005	MG/KG	1	4/28/2015 13:43
Surr: DIBROMOFLUOROMETHANE	*101*		*61-134*	*%REC*	1	4/28/2015 13:43
Surr: TOLUENE-D8	*96*		*57-135*	*%REC*	1	4/28/2015 13:43
Surr: 4-BROMOFLUOROBENZENE	*98*		*52-151*	*%REC*	1	4/28/2015 13:43

Client:	Talon LPE	**Date:**	*04-May-15*
Project:	701530.024.01 Nelson A6 A7	**Work Order:**	1504425
Sample ID:	SB7 25'-30'	**Lab ID:**	1504425-21
Legal Location:		**Matrix:**	SOIL
Collection Date:	4/16/2015 11:15	**Percent Moisture:**	15.1

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Diesel Range Organics		**SW8015M**		Prep Date: **4/25/2015**		PrepBy: **JFN**
Diesel Range Organics	ND		5.7	MG/KG	1	4/26/2015 17:11
Surr: O-TERPHENYL	*92*		*53-116*	*%REC*	1	4/26/2015 17:11
Gasoline Range Organics		**SW8015**		Prep Date: **4/24/2015**		PrepBy: **JFN**
GASOLINE RANGE ORGANICS	ND		0.43	MG/KG	1	4/24/2015 15:40
Surr: 2,3,4-TRIFLUOROTOLUENE	*95*		*76-126*	*%REC*	1	4/24/2015 15:40
GC/MS Volatiles		**SW8260**		Prep Date: **4/28/2015**		PrepBy: **TWK**
BENZENE	ND		0.0056	MG/KG	1	4/28/2015 14:07
TOLUENE	ND		0.0056	MG/KG	1	4/28/2015 14:07
ETHYLBENZENE	ND		0.0056	MG/KG	1	4/28/2015 14:07
M+P-XYLENE	ND		0.0056	MG/KG	1	4/28/2015 14:07
O-XYLENE	ND		0.0056	MG/KG	1	4/28/2015 14:07
TOTAL XYLENES	ND		0.005	MG/KG	1	4/28/2015 14:07
Surr: DIBROMOFLUOROMETHANE	*99*		*61-134*	*%REC*	1	4/28/2015 14:07
Surr: TOLUENE-D8	*97*		*57-135*	*%REC*	1	4/28/2015 14:07
Surr: 4-BROMOFLUOROBENZENE	*97*		*52-151*	*%REC*	1	4/28/2015 14:07

Client:	Talon LPE	**Date:**	*04-May-15*
Project:	701530.024.01 Nelson A6 A7	**Work Order:**	1504425
Sample ID:	SB7 25'-30'	**Lab ID:**	1504425-21
Legal Location:		**Matrix:**	SOIL
Collection Date:	4/16/2015 11:15	**Percent Moisture:**	15.1

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed

Explanation of Qualifiers

Radiochemistry:

U or ND - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

G - Sample density differs by more than 15% of LCS density.

D - DER is greater than Control Limit

M - Requested MDC not met.

LT - Result is less than requested MDC but greater than achieved MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).

U or ND - Indicates that the compound was analyzed for but not detected.

E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.

M - Duplicate injection precision was not met.

N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.

Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.

* - Duplicate analysis (relative percent difference) not within control limits.

S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.

Organics:

U or ND - Indicates that the compound was analyzed for but not detected.

B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.

E - Analyte concentration exceeds the upper level of the calibration range.

J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).

A - A tentatively identified compound is a suspected aldol-condensation product.

X - The analyte was diluted below an accurate quantitation level.

* - The spike recovery is equal to or outside the control criteria used.

+ - The relative percent difference (RPD) equals or exceeds the control criteria.

G - A pattern resembling gasoline was detected in this sample.

D - A pattern resembling diesel was detected in this sample.

M - A pattern resembling motor oil was detected in this sample.

C - A pattern resembling crude oil was detected in this sample.

4 - A pattern resembling JP-4 was detected in this sample.

5 - A pattern resembling JP-5 was detected in this sample.

H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.

L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.

Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:
- gasoline
- JP-8
- diesel
- mineral spirits
- motor oil
- Stoddard solvent
- bunker C

Batch ID: **HC150423-61-1** Instrument ID **FUELS-1** Method: **SW8015**

LCS Sample ID: **HC150423-61** Units: **MG/KG** Analysis Date: **4/23/2015 09:25**

Client ID: Run ID: **HC150423-6A** Prep Date: **4/23/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	2.36	0.5	2.5		94	79-118				20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.553		0.5		111	76-126					

LCSD Sample ID: **HC150423-61** Units: **MG/KG** Analysis Date: **4/23/2015 16:00**

Client ID: Run ID: **HC150423-6A** Prep Date: **4/23/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	2.56	0.5	2.5		103	79-118		2.36	8	20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.535		0.5		107	76-126			3		

MB Sample ID: **HC150423-61** Units: **MG/KG** Analysis Date: **4/23/2015 09:45**

Client ID: Run ID: **HC150423-6A** Prep Date: **4/23/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	ND	0.5									
Surr: 2,3,4-TRIFLUOROTOLUENE	0.501		0.5		100	76-126					

The following samples were analyzed in this batch:

1504425-2	1504425-3	1504425-4
1504425-5	1504425-7	1504425-10

Client: Talon LPE
Work Order: 1504425
Project: 701530.024.01 Nelson A6 A7

QC BATCH REPORT

Batch ID: **HC150423-100-1** Instrument ID **FUELS-1** Method: **SW8015M**

LCS Sample ID: **HC150423-100** Units: **MG/KG** Analysis Date: **4/23/2015 17:03**
Client ID: Run ID: **HC150423-8AAA** Prep Date: **4/23/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	126	5	125		101	76-124				20	
Surr: O-TERPHENYL	5.37		6.25		86	53-116					

MB Sample ID: **HC150423-100** Units: **MG/KG** Analysis Date: **4/23/2015 15:52**
Client ID: Run ID: **HC150423-8AAA** Prep Date: **4/23/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	ND	5									
Surr: O-TERPHENYL	5.47		6.25		88	53-116					

MS Sample ID: **1504425-3** Units: **MG/KG** Analysis Date: **4/23/2015 19:28**
Client ID: **SB1 15'-20'** Run ID: **HC150423-8AAA** Prep Date: **4/23/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	128	5.24	131	5.2	98	76-124				20	
Surr: O-TERPHENYL	6.02		6.56		92	53-116					

The following samples were analyzed in this batch:

1504425-1	1504425-2	1504425-3
1504425-4	1504425-5	1504425-6
1504425-7		

QC BATCH REPORT

Batch ID: **HC150424-61-1** Instrument ID **FUELS-1** Method: **SW8015**

LCS Sample ID: **HC150424-61** Units: **MG/KG** Analysis Date: **4/24/2015 08:43**
Client ID: Run ID: **HC150424-6A** Prep Date: **4/24/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	2.37	0.5	2.5		95	79-118				20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.55		0.5		110	76-126					

LCSD Sample ID: **HC150424-61** Units: **MG/KG** Analysis Date: **4/24/2015 14:58**
Client ID: Run ID: **HC150424-6A** Prep Date: **4/24/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	2.28	0.5	2.5		91	79-118		2.37	4	20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.54		0.5		108	76-126			2		

MB Sample ID: **HC150424-61** Units: **MG/KG** Analysis Date: **4/24/2015 09:04**
Client ID: Run ID: **HC150424-6A** Prep Date: **4/24/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	ND	0.5									
Surr: 2,3,4-TRIFLUOROTOLUENE	0.51		0.5		102	76-126					

MB Sample ID: **HC150424-61M** Units: **MG/KG** Analysis Date: **4/24/2015 09:25**
Client ID: Run ID: **HC150424-6A** Prep Date: **4/24/2015** DF: **50**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	ND	5									
Surr: 2,3,4-TRIFLUOROTOLUENE	5.47		5		109	76-126					

MS Sample ID: **1504425-11** Units: **MG/KG** Analysis Date: **4/24/2015 11:29**
Client ID: **SB4 10'-15'** Run ID: **HC150424-6A** Prep Date: **4/24/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	1.99	0.489	2.44	0.49	81	79-118				40	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.516		0.489		105	76-126					

QC BATCH REPORT

Batch ID: **HC150424-61-1** Instrument ID **FUELS-1** Method: **SW8015**

MSD Sample ID: **1504425-11** Units: **MG/KG** Analysis Date: **4/24/2015 11:50**

Client ID: **SB4 10'-15'** Run ID: **HC150424-6A** Prep Date: **4/24/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	1.87	0.464	2.32	0.49	81	79-118		1.99	6	40	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.479		0.464		103	76-126			7		

The following samples were analyzed in this batch:

1504425-1	1504425-6	1504425-8
1504425-9	1504425-11	1504425-12
1504425-13	1504425-14	1504425-15
1504425-16	1504425-17	1504425-18
1504425-19	1504425-20	1504425-21

Client: Talon LPE
Work Order: 1504425
Project: 701530.024.01 Nelson A6 A7

QC BATCH REPORT

Batch ID: **HC150426-100-1** Instrument ID **FUELS-1** Method: **SW8015M**

LCS Sample ID: **HC150426-100** Units: **MG/KG** Analysis Date: **4/26/2015 15:25**
Client ID: Run ID: **HC150426-8A** Prep Date: **4/25/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	126	5	125		101	76-124				20	
Surr: O-TERPHENYL	9.4		12.5		75	53-116					

MB Sample ID: **HC150426-100** Units: **MG/KG** Analysis Date: **4/26/2015 14:13**
Client ID: Run ID: **HC150426-8A** Prep Date: **4/25/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	ND	5									
Surr: O-TERPHENYL	10.2		12.5		81	53-116					

The following samples were analyzed in this batch: 1504425-21

QC BATCH REPORT

Batch ID: **VL150428-4-1** Instrument ID **HPV1** Method: **SW8260**

LCS Sample ID: **VL150428-4** Units: **MG/KG** Analysis Date: **4/28/2015 08:45**

Client ID: Run ID: **VL150428-4A** Prep Date: **4/28/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.0379	0.005	0.04		95	73-126				30	
TOLUENE	0.0363	0.005	0.04		91	71-127				30	
ETHYLBENZENE	0.0358	0.005	0.04		90	74-127				30	
M+P-XYLENE	0.0708	0.005	0.08		88	79-126				30	
O-XYLENE	0.0353	0.005	0.04		88	77-125				30	
Surr: DIBROMOFLUOROMETHANE	0.0512		0.05		102	61-134					
Surr: TOLUENE-D8	0.0491		0.05		98	57-135					
Surr: 4-BROMOFLUOROBENZENE	0.0489		0.05		98	52-151					

LCSD Sample ID: **VL150428-4** Units: **MG/KG** Analysis Date: **4/28/2015 09:07**

Client ID: Run ID: **VL150428-4A** Prep Date: **4/28/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.0402	0.005	0.04		100	73-126		0.0379	6	30	
TOLUENE	0.04	0.005	0.04		100	71-127		0.0363	10	30	
ETHYLBENZENE	0.04	0.005	0.04		100	74-127		0.0358	11	30	
M+P-XYLENE	0.0787	0.005	0.08		98	79-126		0.0708	11	30	
O-XYLENE	0.0401	0.005	0.04		100	77-125		0.0353	13	30	
Surr: DIBROMOFLUOROMETHANE	0.0508		0.05		102	61-134			1		
Surr: TOLUENE-D8	0.0496		0.05		99	57-135			1		
Surr: 4-BROMOFLUOROBENZENE	0.0477		0.05		95	52-151			2		

MB Sample ID: **VL150428-4** Units: **MG/KG** Analysis Date: **4/28/2015 09:30**

Client ID: Run ID: **VL150428-4A** Prep Date: **4/28/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	ND	0.005									
TOLUENE	ND	0.005									
ETHYLBENZENE	ND	0.005									
M+P-XYLENE	ND	0.005									
O-XYLENE	ND	0.005									
TOTAL XYLENES	ND	0.005									
Surr: DIBROMOFLUOROMETHANE	0.0496		0.05		99	61-134					
Surr: TOLUENE-D8	0.0509		0.05		102	57-135					
Surr: 4-BROMOFLUOROBENZENE	0.0496		0.05		99	52-151					

QC BATCH REPORT

The following samples were analyzed in this batch:

1504425-1	1504425-5	1504425-7
1504425-9	1504425-11	1504425-12
1504425-13	1504425-14	1504425-15
1504425-17	1504425-18	1504425-19
1504425-20	1504425-21	

QC BATCH REPORT

Batch ID: **VL150428-7-1** Instrument ID **HPV1** Method: **SW8260**

LCS Sample ID: **VL150428-7** Units: **MG/KG** Analysis Date: **4/28/2015 16:40**

Client ID: Run ID: **VL150428-7A** Prep Date: **4/28/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.0387	0.005	0.04		97	73-126				30	
TOLUENE	0.0367	0.005	0.04		92	71-127				30	
ETHYLBENZENE	0.0365	0.005	0.04		91	74-127				30	
M+P-XYLENE	0.0711	0.005	0.08		89	79-126				30	
O-XYLENE	0.0358	0.005	0.04		89	77-125				30	
Surr: DIBROMOFLUOROMETHANE	0.052		0.05		104	61-134					
Surr: TOLUENE-D8	0.0487		0.05		97	57-135					
Surr: 4-BROMOFLUOROBENZENE	0.0486		0.05		97	52-151					

LCSD Sample ID: **VL150428-7** Units: **MG/KG** Analysis Date: **4/28/2015 17:04**

Client ID: Run ID: **VL150428-7A** Prep Date: **4/28/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.0389	0.005	0.04		97	73-126		0.0387	1	30	
TOLUENE	0.0371	0.005	0.04		93	71-127		0.0367	1	30	
ETHYLBENZENE	0.0368	0.005	0.04		92	74-127		0.0365	1	30	
M+P-XYLENE	0.0718	0.005	0.08		90	79-126		0.0711	1	30	
O-XYLENE	0.036	0.005	0.04		90	77-125		0.0358	1	30	
Surr: DIBROMOFLUOROMETHANE	0.0528		0.05		106	61-134			2		
Surr: TOLUENE-D8	0.0489		0.05		98	57-135			0		
Surr: 4-BROMOFLUOROBENZENE	0.0497		0.05		99	52-151			2		

MB Sample ID: **VL150428-7** Units: **MG/KG** Analysis Date: **4/28/2015 17:28**

Client ID: Run ID: **VL150428-7A** Prep Date: **4/28/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	ND	0.005									
TOLUENE	ND	0.005									
ETHYLBENZENE	ND	0.005									
M+P-XYLENE	ND	0.005									
O-XYLENE	ND	0.005									
TOTAL XYLENES	ND	0.005									
Surr: DIBROMOFLUOROMETHANE	0.0487		0.05		97	61-134					
Surr: TOLUENE-D8	0.0491		0.05		98	57-135					
Surr: 4-BROMOFLUOROBENZENE	0.0491		0.05		98	52-151					

QC BATCH REPORT

Batch ID: **VL150428-7-1** Instrument ID **HPV1** Method: **SW8260**

MB Sample ID: **VL150428-7M** Units: **MG/KG** Analysis Date: **4/28/2015 17:51**

Client ID: Run ID: **VL150428-7A** Prep Date: **4/28/2015** DF: **50**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	ND	0.25									
TOLUENE	ND	0.25									
ETHYLBENZENE	ND	0.25									
M+P-XYLENE	ND	0.25									
O-XYLENE	ND	0.25									
TOTAL XYLENES	ND	0.005									
Surr: DIBROMOFLUOROMETHANE	2.42		2.5		97	61-134					
Surr: TOLUENE-D8	2.53		2.5		101	57-135					
Surr: 4-BROMOFLUOROBENZENE	2.51		2.5		100	52-151					

The following samples were analyzed in this batch:

1504425-1	1504425-2	1504425-3
1504425-4	1504425-6	1504425-8
1504425-16		

Client: Talon LPE
Work Order: 1504425
Project: 701530.024.01 Nelson A6 A7

QC BATCH REPORT

Batch ID: **VL150429-4-1** Instrument ID **HPV1** Method: **SW8260**

LCS Sample ID: **VL150429-4** Units: **MG/KG** Analysis Date: **4/29/2015 06:58**
Client ID: Run ID: **VL150429-4A** Prep Date: **4/29/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.041	0.005	0.04		102	73-126				30	
TOLUENE	0.0409	0.005	0.04		102	71-127				30	
ETHYLBENZENE	0.0405	0.005	0.04		101	74-127				30	
M+P-XYLENE	0.0797	0.005	0.08		100	79-126				30	
O-XYLENE	0.039	0.005	0.04		98	77-125				30	
Surr: DIBROMOFLUOROMETHANE	0.0495		0.05		99	61-134					
Surr: TOLUENE-D8	0.0493		0.05		99	57-135					
Surr: 4-BROMOFLUOROBENZENE	0.049		0.05		98	52-151					

LCSD Sample ID: **VL150429-4** Units: **MG/KG** Analysis Date: **4/29/2015 07:21**
Client ID: Run ID: **VL150429-4A** Prep Date: **4/29/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.0404	0.005	0.04		101	73-126		0.041	1	30	
TOLUENE	0.0401	0.005	0.04		100	71-127		0.0409	2	30	
ETHYLBENZENE	0.0398	0.005	0.04		99	74-127		0.0405	2	30	
M+P-XYLENE	0.0788	0.005	0.08		98	79-126		0.0797	1	30	
O-XYLENE	0.0391	0.005	0.04		98	77-125		0.039	0	30	
Surr: DIBROMOFLUOROMETHANE	0.0494		0.05		99	61-134			0		
Surr: TOLUENE-D8	0.0494		0.05		99	57-135			0		
Surr: 4-BROMOFLUOROBENZENE	0.049		0.05		98	52-151			0		

MB Sample ID: **VL150429-4** Units: **MG/KG** Analysis Date: **4/29/2015 07:45**
Client ID: Run ID: **VL150429-4A** Prep Date: **4/29/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	ND	0.005									
TOLUENE	ND	0.005									
ETHYLBENZENE	ND	0.005									
M+P-XYLENE	ND	0.005									
O-XYLENE	ND	0.005									
TOTAL XYLENES	ND	0.005									
Surr: DIBROMOFLUOROMETHANE	0.0478		0.05		96	61-134					
Surr: TOLUENE-D8	0.0501		0.05		100	57-135					
Surr: 4-BROMOFLUOROBENZENE	0.0498		0.05		100	52-151					

The following samples were analyzed in this batch: 1504425-10

Friday, June 12, 2015

Colby Sterling
Talon LPE
921 N Bivins
Amarillo, TX 79107

Re: ALS Workorder: 1506113
Project Name: Nelson A6/A7
Project Number: 701530.024.01

Dear Mr. Sterling:

Two soil samples were received from Talon LPE, on 6/5/2015. The samples were scheduled for the following analyses:

GC/MS Volatiles
Total Extractable Petroleum Hydrocarbons (Diesel)
Total Volatile Petroleum Hydrocarbons (Gasoline)

The results for these analyses are contained in the enclosed reports.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

ALS Environmental
Amy R. Wolf
Project Manager

ALS Environmental – Fort Collins is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

ALS Environmental – Fort Collins	
Accreditation Body	License or Certification Number
Alaska (AK)	UST-086
Alaska (AK)	CO01099
Arizona (AZ)	AZ0742
California (CA)	06251CA
Colorado (CO)	CO01099
Connecticut (CT)	PH-0232
Florida (FL)	E87914
Idaho (ID)	CO01099
Kansas (KS)	E-10381
Kentucky (KY)	90137
L-A-B (DoD ELAP/ISO 170250)	L2257
Maryland (MD)	285
Missouri (MO)	175
Nebraska(NE)	NE-OS-24-13
Nevada (NV)	CO000782008A
New Jersey (NJ)	CO003
New York (NY)	12036
North Dakota (ND)	R-057
Oklahoma (OK)	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	2976
Texas (TX)	T104704241
Utah (UT)	CO01099
Washington (WA)	C1280

1506113

GC/MS Volatiles:
The samples were analyzed using GC/MS following the current revision of SOP 525 based on SW-846 Method 8260C.

All acceptance criteria were met.

GRO:
The samples were analyzed following the current revision of SOP 425 generally based on SW-846 Methods 8000C and 8015D. TVPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C6 to C10.

Samples -1 and -2 had elevated surrogate recoveries (above the upper control limit). Inspection of the chromatograms for both samples indicates col-elution of the surrogate with target component peaks, giving a high bias to the surrogate recovery. No further action was taken.

All remaining acceptance criteria were met.

DRO:
The samples were analyzed following the current revision of SOP 406 generally based on SW-846 Methods 8000C and 8015D. TEPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C10 to C28.

All acceptance criteria were met.

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1506113
Client Name: Talon LPE
Client Project Name: Nelson A6/A7
Client Project Number: 701530.024.01
Client PO Number:

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
FS-1 @ 8'	1506113-1		SOIL	04-Jun-15	11:20
F-2 @ 6'	1506113-2		SOIL	04-Jun-15	11:10

ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

Chain-of-Custody

Form 202r8

WORKORDER # 1506113

PAGE 1 of 1

DISPOSAL By Lab or Return to Client

PROJECT NAME	Nelson AG/AT	SAMPLER	T.T Gaisel
PROJECT No.	701530.024.01	SITE ID	
		EDD FORMAT	
		PURCHASE ORDER	
COMPANY NAME	Talon/LPE	BILL TO COMPANY	Whiting
SEND REPORT TO	Colby Sterling	INVOICE ATTN TO	Kyle Waggoner
ADDRESS	1811 E. Mulberry St	ADDRESS	
CITY / STATE / ZIP	Ft Collins, CO 80524	CITY / STATE / ZIP	
PHONE	970-818-5330	PHONE	
FAX		FAX	
E-MAIL	csterling@talonlpe.com	E-MAIL	Kyle.waggoner@whiting.com

DATE 6-5-15

TURNAROUND

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	BETX	GRO/DRO
1	FS-1 @ 8'	Soil	6-4-15	1120	1	NA	NA	X	X
2	FS-2 @ 6'	Soil	6-4-15	1110	1	NA	NA	X	X

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:	QC PACKAGE (check below)	
		LEVEL II (Standard QC)
		LEVEL III (Std QC + forms)
		LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		T.T Gaisel	6-5-15	1215
RECEIVED BY		E Peterson	6/5/15	1215
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: TALON Workorder No: 1506113

Project Manager: ARW Initials: SDM Date: 06-05-15

1. Does this project require any special handling in addition to standard ALS procedures?		YES	(NO)
2. Are custody seals on shipping containers intact?	(NONE)	YES	NO
3. Are Custody seals on sample containers intact?	(NONE)	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		(YES)	NO
5. Are the COC and bottle labels complete and legible?		(YES)	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		(YES)	NO
7. Were airbills / shipping documents present and/or removable?	(DROP OFF)	YES	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	(N/A)	YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	(N/A)	YES	NO
10. Is there sufficient sample for the requested analyses?		(YES)	NO
11. Were all samples placed in the proper containers for the requested analyses?		(YES)	NO
12. Are all samples within holding times for the requested analyses?		(YES)	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		(YES)	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ____ < green pea ____ > green pea	(N/A)	YES	NO
15. Do any water samples contain sediment? Amount Amount of sediment: ____ dusting ____ moderate ____ heavy	(N/A)	YES	NO
16. Were the samples shipped on ice?		(YES)	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 (#4)	RAD ONLY	(YES)	NO

Cooler #:	1							
Temperature (°C):	1.4							
No. of custody seals on cooler:	0							
DOT Survey/ Acceptance Information — External µR/hr reading:	NA							
Background µR/hr reading:	12							

Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? **YES / NO / (NA)** (If no, see Form 008.)

Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

If applicable, was the client contacted? **YES / NO / (NA)** Contact: _____ Date/Time: _____

Project Manager Signature / Date: 6/8/15

*IR Gun #2: Oakton, SN 29922500201-0066
*IR Gun #4: Oakton, SN 2372220101-0002

Client: Talon LPE
Project: 701530.024.01 Nelson A6/A7
Sample ID: FS-1 @ 8'
Legal Location:
Collection Date: 6/4/2015 11:20

Date: *12-Jun-15*
Work Order: 1506113
Lab ID: 1506113-1
Matrix: SOIL
Percent Moisture: 20.8

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Diesel Range Organics			**SW8015M**	Prep Date: **6/9/2015**		PrepBy: **JFN**
Diesel Range Organics	**65**	ZL	**6.1**	**MG/KG**	1	6/10/2015 15:02
Surr: O-TERPHENYL	*95*		*53-116*	*%REC*	1	6/10/2015 15:02
Gasoline Range Organics			**SW8015**	Prep Date: **6/8/2015**		PrepBy: **JFN**
GASOLINE RANGE ORGANICS	**79**	GZ	**1.1**	**MG/KG**	1	6/8/2015 17:02
Surr: 2,3,4-TRIFLUOROTOLUENE	*141*	*	*76-126*	*%REC*	1	6/8/2015 17:02
GC/MS Volatiles			**SW8260**	Prep Date: **6/8/2015**		PrepBy: **TWK**
BENZENE	**0.42**		**0.048**	**MG/KG**	1	6/8/2015 15:16
TOLUENE	**2**		**0.26**	**MG/KG**	50	6/9/2015 16:38
ETHYLBENZENE	**0.31**		**0.048**	**MG/KG**	1	6/8/2015 15:16
M+P-XYLENE	**1.6**		**0.048**	**MG/KG**	1	6/8/2015 15:16
O-XYLENE	**0.62**		**0.048**	**MG/KG**	1	6/8/2015 15:16
TOTAL XYLENES	**2.2**		**0.005**	**MG/KG**	1	6/8/2015 15:16
Surr: DIBROMOFLUOROMETHANE	*98*		*61-134*	*%REC*	1	6/8/2015 15:16
Surr: DIBROMOFLUOROMETHANE	*96*		*61-134*	*%REC*	50	6/9/2015 16:38
Surr: TOLUENE-D8	*94*		*57-135*	*%REC*	50	6/9/2015 16:38
Surr: TOLUENE-D8	*93*		*57-135*	*%REC*	1	6/8/2015 15:16
Surr: 4-BROMOFLUOROBENZENE	*97*		*52-151*	*%REC*	50	6/9/2015 16:38
Surr: 4-BROMOFLUOROBENZENE	*95*		*52-151*	*%REC*	1	6/8/2015 15:16

Client: Talon LPE
Project: 701530.024.01 Nelson A6/A7
Sample ID: F-2 @ 6'
Legal Location:
Collection Date: 6/4/2015 11:10

Date: *12-Jun-15*
Work Order: 1506113
Lab ID: 1506113-2
Matrix: SOIL
Percent Moisture: 17.8

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Diesel Range Organics			**SW8015M**	Prep Date: **6/9/2015**		PrepBy: **JFN**
Diesel Range Organics	**110**	ZL	**6**	**MG/KG**	1	6/10/2015 16:35
Surr: O-TERPHENYL	*88*		*53-116*	*%REC*	1	6/10/2015 16:35
Gasoline Range Organics			**SW8015**	Prep Date: **6/8/2015**		PrepBy: **JFN**
GASOLINE RANGE ORGANICS	**54**	GZ	**0.96**	**MG/KG**	1	6/8/2015 18:06
Surr: 2,3,4-TRIFLUOROTOLUENE	*136*	*	*76-126*	*%REC*	1	6/8/2015 18:06
GC/MS Volatiles			**SW8260**	Prep Date: **6/8/2015**		PrepBy: **TWK**
BENZENE	ND		0.061	MG/KG	1	6/8/2015 16:34
TOLUENE	**0.057**		**0.049**	**MG/KG**	1	6/8/2015 15:44
ETHYLBENZENE	**0.72**		**0.049**	**MG/KG**	1	6/8/2015 15:44
M+P-XYLENE	**2.9**		**0.061**	**MG/KG**	1	6/8/2015 16:34
O-XYLENE	**0.71**		**0.049**	**MG/KG**	1	6/8/2015 15:44
TOTAL XYLENES	**3.4**		**0.005**	**MG/KG**	1	6/8/2015 16:34
Surr: DIBROMOFLUOROMETHANE	*103*		*61-134*	*%REC*	1	6/8/2015 15:44
Surr: DIBROMOFLUOROMETHANE	*99*		*61-134*	*%REC*	1	6/8/2015 16:34
Surr: TOLUENE-D8	*94*		*57-135*	*%REC*	1	6/8/2015 16:34
Surr: TOLUENE-D8	*91*		*57-135*	*%REC*	1	6/8/2015 15:44
Surr: 4-BROMOFLUOROBENZENE	*93*		*52-151*	*%REC*	1	6/8/2015 16:34
Surr: 4-BROMOFLUOROBENZENE	*96*		*52-151*	*%REC*	1	6/8/2015 15:44

Client:	Talon LPE	**Date:**	*12-Jun-15*
Project:	701530.024.01 Nelson A6/A7	**Work Order:**	1506113
Sample ID:	F-2 @ 6'	**Lab ID:**	1506113-2
Legal Location:		**Matrix:**	SOIL
Collection Date:	6/4/2015 11:10	**Percent Moisture:**	17.8

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed

Explanation of Qualifiers

Radiochemistry:

U or ND - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

G - Sample density differs by more than 15% of LCS density.

D - DER is greater than Control Limit

M - Requested MDC not met.

LT - Result is less than requested MDC but greater than achieved MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).

U or ND - Indicates that the compound was analyzed for but not detected.

E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.

M - Duplicate injection precision was not met.

N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.

Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.

* - Duplicate analysis (relative percent difference) not within control limits.

S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.

Organics:

U or ND - Indicates that the compound was analyzed for but not detected.

B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.

E - Analyte concentration exceeds the upper level of the calibration range.

J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).

A - A tentatively identified compound is a suspected aldol-condensation product.

X - The analyte was diluted below an accurate quantitation level.

* - The spike recovery is equal to or outside the control criteria used.

+ - The relative percent difference (RPD) equals or exceeds the control criteria.

G - A pattern resembling gasoline was detected in this sample.

D - A pattern resembling diesel was detected in this sample.

M - A pattern resembling motor oil was detected in this sample.

C - A pattern resembling crude oil was detected in this sample.

4 - A pattern resembling JP-4 was detected in this sample.

5 - A pattern resembling JP-5 was detected in this sample.

H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.

L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.

Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:
- gasoline
- JP-8
- diesel
- mineral spirits
- motor oil
- Stoddard solvent
- bunker C

Batch ID: **HC150608-61-1** Instrument ID **FUELS-1** Method: **SW8015**

LCS Sample ID: **HC150608-61** Units: **MG/KG** Analysis Date: **6/8/2015 09:26**

Client ID: Run ID: **HC150608-6A** Prep Date: **6/8/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	2.37	0.5	2.5		95	79-118				20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.503		0.5		101	76-126					

LCSD Sample ID: **HC150608-61** Units: **MG/KG** Analysis Date: **6/8/2015 15:41**

Client ID: Run ID: **HC150608-6A** Prep Date: **6/8/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	2.45	0.5	2.5		98	79-118		2.37	3	20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.519		0.5		104	76-126			3		

MB Sample ID: **HC150608-61** Units: **MG/KG** Analysis Date: **6/8/2015 09:47**

Client ID: Run ID: **HC150608-6A** Prep Date: **6/8/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	ND	0.5									
Surr: 2,3,4-TRIFLUOROTOLUENE	0.449		0.5		90	76-126					

The following samples were analyzed in this batch: 1506113-1 1506113-2

Client: Talon LPE
Work Order: 1506113
Project: 701530.024.01 Nelson A6/A7

QC BATCH REPORT

Batch ID: **HC150609-101-1** Instrument ID **FUELS-1** Method: **SW8015M**

LCS Sample ID: **HC150609-101** Units: **MG/KG** Analysis Date: **6/10/2015 10:55**
Client ID: Run ID: **HC150610-7A** Prep Date: **6/9/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	126	5	125		100	76-124				20	
Surr: O-TERPHENYL	9.79		12.5		78	53-116					

MB Sample ID: **HC150609-101** Units: **MG/KG** Analysis Date: **6/10/2015 10:25**
Client ID: Run ID: **HC150610-7A** Prep Date: **6/9/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	ND	5									
Surr: O-TERPHENYL	10.3		12.5		82	53-116					

MS Sample ID: **1506113-1** Units: **MG/KG** Analysis Date: **6/10/2015 15:33**
Client ID: **FS-1 @ 8'** Run ID: **HC150610-7A** Prep Date: **6/9/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	193	6.11	153	65	84	76-124				20	
Surr: O-TERPHENYL	14		15.3		92	53-116					

MSD Sample ID: **1506113-1** Units: **MG/KG** Analysis Date: **6/10/2015 16:04**
Client ID: **FS-1 @ 8'** Run ID: **HC150610-7A** Prep Date: **6/9/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	184	6.07	152	65	78	76-124		193	5	20	
Surr: O-TERPHENYL	14.1		15.2		93	53-116			1		

The following samples were analyzed in this batch: 1506113-1 1506113-2

Client: Talon LPE
Work Order: 1506113
Project: 701530.024.01 Nelson A6/A7

QC BATCH REPORT

Batch ID: **VL150608-2-1** Instrument ID **HPV1** Method: **SW8260**

LCS Sample ID: **VL150608-2** Units: **MG/KG** Analysis Date: **6/8/2015 11:34**
Client ID: Run ID: **VL150608-2A** Prep Date: **6/8/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.0373	0.005	0.04		93	73-126				30	
TOLUENE	0.035	0.005	0.04		87	71-127				30	
ETHYLBENZENE	0.0349	0.005	0.04		87	74-127				30	
M+P-XYLENE	0.072	0.005	0.08		90	79-126				30	
O-XYLENE	0.036	0.005	0.04		90	77-125				30	
Surr: DIBROMOFLUOROMETHANE	0.0494		0.05		99	61-134					
Surr: TOLUENE-D8	0.046		0.05		92	57-135					
Surr: 4-BROMOFLUOROBENZENE	0.0508		0.05		102	52-151					

LCSD Sample ID: **VL150608-2** Units: **MG/KG** Analysis Date: **6/8/2015 11:59**
Client ID: Run ID: **VL150608-2A** Prep Date: **6/8/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.0391	0.005	0.04		98	73-126		0.0373	5	30	
TOLUENE	0.0377	0.005	0.04		94	71-127		0.035	7	30	
ETHYLBENZENE	0.037	0.005	0.04		93	74-127		0.0349	6	30	
M+P-XYLENE	0.0761	0.005	0.08		95	79-126		0.072	6	30	
O-XYLENE	0.038	0.005	0.04		95	77-125		0.036	5	30	
Surr: DIBROMOFLUOROMETHANE	0.0491		0.05		98	61-134			1		
Surr: TOLUENE-D8	0.0472		0.05		94	57-135			3		
Surr: 4-BROMOFLUOROBENZENE	0.0497		0.05		99	52-151			2		

MB Sample ID: **VL150608-2** Units: **MG/KG** Analysis Date: **6/8/2015 12:27**
Client ID: Run ID: **VL150608-2A** Prep Date: **6/8/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	ND	0.005									
TOLUENE	ND	0.005									
ETHYLBENZENE	ND	0.005									
M+P-XYLENE	ND	0.005									
O-XYLENE	ND	0.005									
TOTAL XYLENES	ND	0.005									
Surr: DIBROMOFLUOROMETHANE	0.0501		0.05		100	61-134					
Surr: TOLUENE-D8	0.0466		0.05		93	57-135					
Surr: 4-BROMOFLUOROBENZENE	0.0487		0.05		97	52-151					

The following samples were analyzed in this batch: 1506113-1 1506113-2

QC BATCH REPORT

Batch ID: **VL150609-2-2** Instrument ID **HPV1** Method: **SW8260**

LCS Sample ID: **VL150609-2** Units: **MG/KG** Analysis Date: **6/9/2015 09:59**

Client ID: Run ID: **VL150609-2A** Prep Date: **6/9/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.0418	0.005	0.04		105	73-126				30	
TOLUENE	0.0395	0.005	0.04		99	71-127				30	
ETHYLBENZENE	0.0383	0.005	0.04		96	74-127				30	
M+P-XYLENE	0.079	0.005	0.08		99	79-126				30	
O-XYLENE	0.0394	0.005	0.04		98	77-125				30	
Surr: DIBROMOFLUOROMETHANE	0.0488		0.05		98	61-134					
Surr: TOLUENE-D8	0.048		0.05		96	57-135					
Surr: 4-BROMOFLUOROBENZENE	0.0497		0.05		99	52-151					

LCSD Sample ID: **VL150609-2** Units: **MG/KG** Analysis Date: **6/9/2015 10:22**

Client ID: Run ID: **VL150609-2A** Prep Date: **6/9/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.0411	0.005	0.04		103	73-126		0.0418	2	30	
TOLUENE	0.0394	0.005	0.04		98	71-127		0.0395	0	30	
ETHYLBENZENE	0.0378	0.005	0.04		95	74-127		0.0383	1	30	
M+P-XYLENE	0.0784	0.005	0.08		98	79-126		0.079	1	30	
O-XYLENE	0.0387	0.005	0.04		97	77-125		0.0394	2	30	
Surr: DIBROMOFLUOROMETHANE	0.0502		0.05		100	61-134			3		
Surr: TOLUENE-D8	0.047		0.05		94	57-135			2		
Surr: 4-BROMOFLUOROBENZENE	0.049		0.05		98	52-151			1		

MB Sample ID: **VL150609-2** Units: **MG/KG** Analysis Date: **6/9/2015 12:27**

Client ID: Run ID: **VL150609-2A** Prep Date: **6/9/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	ND	0.005									
TOLUENE	ND	0.005									
ETHYLBENZENE	ND	0.005									
M+P-XYLENE	ND	0.005									
O-XYLENE	ND	0.005									
TOTAL XYLENES	ND	0.005									
Surr: DIBROMOFLUOROMETHANE	0.0494		0.05		99	61-134					
Surr: TOLUENE-D8	0.0466		0.05		93	57-135					
Surr: 4-BROMOFLUOROBENZENE	0.0484		0.05		97	52-151					

QC BATCH REPORT

Batch ID: **VL150609-2-2** Instrument ID **HPV1** Method: **SW8260**

MB Sample ID: **VL150609-2M** Units: **MG/KG** Analysis Date: **6/9/2015 12:53**

Client ID: Run ID: **VL150609-2A** Prep Date: **6/9/2015** DF: **50**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	ND	0.25									
TOLUENE	ND	0.25									
ETHYLBENZENE	ND	0.25									
M+P-XYLENE	ND	0.25									
O-XYLENE	ND	0.25									
TOTAL XYLENES	ND	0.005									
Surr: DIBROMOFLUOROMETHANE	2.45		2.5		98	61-134					
Surr: TOLUENE-D8	2.38		2.5		95	57-135					
Surr: 4-BROMOFLUOROBENZENE	2.44		2.5		98	52-151					

The following samples were analyzed in this batch: 1506113-1

Friday, June 26, 2015

Colby Sterling
Talon LPE
921 N Bivins
Amarillo, TX 79107

Re: ALS Workorder: 1506466
Project Name: Nelson A6/A7
Project Number: 701530.024.01

Dear Mr. Sterling:

One soil sample was received from Talon LPE, on 6/24/2015. The sample was scheduled for the following analyses:

GC/MS Volatiles
Total Extractable Petroleum Hydrocarbons (Diesel)
Total Volatile Petroleum Hydrocarbons (Gasoline)

The results for these analyses are contained in the enclosed reports.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

ALS Environmental
Amy R. Wolf
Project Manager

ALS Environmental – Fort Collins is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

ALS Environmental – Fort Collins	
Accreditation Body	License or Certification Number
Alaska (AK)	UST-086
Alaska (AK)	CO01099
Arizona (AZ)	AZ0742
California (CA)	06251CA
Colorado (CO)	CO01099
Connecticut (CT)	PH-0232
Florida (FL)	E87914
Idaho (ID)	CO01099
Kansas (KS)	E-10381
Kentucky (KY)	90137
L-A-B (DoD ELAP/ISO 170250)	L2257
Maryland (MD)	285
Missouri (MO)	175
Nebraska(NE)	NE-OS-24-13
Nevada (NV)	CO000782008A
New Jersey (NJ)	CO003
New York (NY)	12036
North Dakota (ND)	R-057
Oklahoma (OK)	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	2976
Texas (TX)	T104704241
Utah (UT)	CO01099
Washington (WA)	C1280

1506466

GC/MS Volatiles:
The sample was analyzed using GC/MS following the current revision of SOP 525 based on SW-846 Method 8260C.

All acceptance criteria were met.

GRO:
The sample was analyzed following the current revision of SOP 425 generally based on SW-846 Methods 8000C and 8015D. TVPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C6 to C10.

All acceptance criteria were met.

DRO:
The sample was analyzed following the current revision of SOP 406 generally based on SW-846 Methods 8000C and 8015D. TEPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C10 to C28.

All acceptance criteria were met.

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1506466
Client Name: Talon LPE
Client Project Name: Nelson A6/A7
Client Project Number: 701530.024.01
Client PO Number:

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
FS-3@12'	1506466-1		SOIL	24-Jun-15	9:30

ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

Chain-of-Custody

Form 202r8

WORKORDER # 1506464

PAGE 1 of 1

DISPOSAL By Lab or Return to Client

PROJECT NAME	Nelson AG/AZ	SAMPLER	TJ Gaisl
PROJECT No.	701530.024.01	SITE ID	
		EDD FORMAT	
		PURCHASE ORDER	
COMPANY NAME	Talon/LPE	BILL TO COMPANY	Whiting
SEND REPORT TO	Colby Sterling	INVOICE ATTN TO	Kyle Waggoner
ADDRESS	1811 E. Mulberry St	ADDRESS	
CITY / STATE / ZIP	Ft Collins, CO 80524	CITY / STATE / ZIP	
PHONE	970-818-5330	PHONE	
FAX		FAX	
E-MAIL	csterling@talonlpe.com	E-MAIL	kyle.waggoner@whiting.com

DATE 6.24.15

TURNAROUND 24 hr

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	BETX	DRO/GRO
(1)	FS-3 @ 13'	So. 1	6.24.15	~~0930~~ 0940	1	NA	NA	X	X

*Time Zone (Circle): EST CST (MST) PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:	QC PACKAGE (check below)
	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		TJ Gaisl	6.24.15	1612
RECEIVED BY	C Trimble	C Trimble	6-24-15	1612
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

5 of 11

ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: Talon Workorder No: 1506466

Project Manager: AW Initials: CDS Date: 6-24-15

1. Does this project require any special handling in addition to standard ALS procedures?		YES	(NO)
2. Are custody seals on shipping containers intact?	(NONE)	YES	NO
3. Are Custody seals on sample containers intact?	(NONE)	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		(YES)	NO
5. Are the COC and bottle labels complete and legible?		(YES)	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		(YES)	NO
7. Were airbills / shipping documents present and/or removable?	(DROP OFF)	YES	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	(N/A)	YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	(N/A)	YES	NO
10. Is there sufficient sample for the requested analyses?		(YES)	NO
11. Were all samples placed in the proper containers for the requested analyses?		(YES)	NO
12. Are all samples within holding times for the requested analyses?		(YES)	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		(YES)	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ____ < green pea ____ > green pea	(N/A)	YES	NO
15. Do any water samples contain sediment? Amount Amount of sediment: ____ dusting ____ moderate ____ heavy	(N/A)	YES	NO
16. Were the samples shipped on ice?		(YES)	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: (#2) #4	RAD ONLY	YES	(NO)

Cooler #:	1							
Temperature (°C):	0.2 (*)							
No. of custody seals on cooler:	0							
DOT Survey/Acceptance Information — External µR/hr reading:	NA							
Background µR/hr reading:	NA							

Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? **YES / NO / (NA)** (If no, see Form 008.)

Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

(*) Delivered same day as collected.

If applicable, was the client contacted? **YES / NO / (NA)** Contact: _____ Date/Time: _____

Project Manager Signature / Date: 6/24/15

*IR Gun #2: Oakton, SN 29922500201-0066
*IR Gun #4: Oakton, SN 2372220101-0002

Client: Talon LPE
Project: 701530.024.01 Nelson A6/A7
Sample ID: FS-3@12'
Legal Location:
Collection Date: 6/24/2015 09:30

Date: *26-Jun-15*
Work Order: 1506466
Lab ID: 1506466-1
Matrix: SOIL
Percent Moisture: 13.0

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Diesel Range Organics		**SW8015M**		Prep Date: **6/25/2015**		PrepBy: **DMS**
Diesel Range Organics	ND		5.7	MG/KG	1	6/25/2015 18:32
Surr: O-TERPHENYL	*98*		*53-116*	*%REC*	1	6/25/2015 18:32
Gasoline Range Organics		**SW8015**		Prep Date: **6/25/2015**		PrepBy: **JFN**
GASOLINE RANGE ORGANICS	ND		0.58	MG/KG	1	6/25/2015 10:09
Surr: 2,3,4-TRIFLUOROTOLUENE	*103*		*76-126*	*%REC*	1	6/25/2015 10:09
GC/MS Volatiles		**SW8260**		Prep Date: **6/24/2015**		PrepBy: **SDW**
BENZENE	**0.02**		**0.0051**	**MG/KG**	1	6/24/2015 22:02
TOLUENE	**0.063**		**0.0051**	**MG/KG**	1	6/24/2015 22:02
ETHYLBENZENE	**0.0092**		**0.0051**	**MG/KG**	1	6/24/2015 22:02
M+P-XYLENE	**0.046**		**0.0051**	**MG/KG**	1	6/24/2015 22:02
O-XYLENE	**0.023**		**0.0051**	**MG/KG**	1	6/24/2015 22:02
TOTAL XYLENES	**0.069**		**0.005**	**MG/KG**	1	6/24/2015 22:02
Surr: DIBROMOFLUOROMETHANE	*94*		*61-134*	*%REC*	1	6/24/2015 22:02
Surr: TOLUENE-D8	*102*		*57-135*	*%REC*	1	6/24/2015 22:02
Surr: 4-BROMOFLUOROBENZENE	*94*		*52-151*	*%REC*	1	6/24/2015 22:02

Client:	Talon LPE	**Date:**	*26-Jun-15*
Project:	701530.024.01 Nelson A6/A7	**Work Order:**	1506466
Sample ID:	FS-3@12'	**Lab ID:**	1506466-1
Legal Location:		**Matrix:**	SOIL
Collection Date:	6/24/2015 09:30	**Percent Moisture:**	13.0

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed

Explanation of Qualifiers

Radiochemistry:

U or ND - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

G - Sample density differs by more than 15% of LCS density.

D - DER is greater than Control Limit

M - Requested MDC not met.

LT - Result is less than requested MDC but greater than achieved MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).

U or ND - Indicates that the compound was analyzed for but not detected.

E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.

M - Duplicate injection precision was not met.

N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.

Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.

* - Duplicate analysis (relative percent difference) not within control limits.

S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.

Organics:

U or ND - Indicates that the compound was analyzed for but not detected.

B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.

E - Analyte concentration exceeds the upper level of the calibration range.

J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).

A - A tentatively identified compound is a suspected aldol-condensation product.

X - The analyte was diluted below an accurate quantitation level.

* - The spike recovery is equal to or outside the control criteria used.

+ - The relative percent difference (RPD) equals or exceeds the control criteria.

G - A pattern resembling gasoline was detected in this sample.

D - A pattern resembling diesel was detected in this sample.

M - A pattern resembling motor oil was detected in this sample.

C - A pattern resembling crude oil was detected in this sample.

4 - A pattern resembling JP-4 was detected in this sample.

5 - A pattern resembling JP-5 was detected in this sample.

H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.

L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.

Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:
- gasoline
- JP-8
- diesel
- mineral spirits
- motor oil
- Stoddard solvent
- bunker C

Batch ID: **HC150625-61-1** Instrument ID: **FUELS-1** Method: **SW8015**

LCS Sample ID: **HC150625-61** Units: **MG/KG** Analysis Date: **6/25/2015 09:26**

Client ID: Run ID: **HC150625-6A** Prep Date: **6/25/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	2.12	0.5	2.5		85	79-118				20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.495		0.5		99	76-126					

LCSD Sample ID: **HC150625-61** Units: **MG/KG** Analysis Date: **6/25/2015 15:02**

Client ID: Run ID: **HC150625-6A** Prep Date: **6/25/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	2.26	0.5	2.5		90	79-118		2.12	6	20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.533		0.5		107	76-126			7		

MB Sample ID: **HC150625-61** Units: **MG/KG** Analysis Date: **6/25/2015 09:48**

Client ID: Run ID: **HC150625-6A** Prep Date: **6/25/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	ND	0.5									
Surr: 2,3,4-TRIFLUOROTOLUENE	0.43		0.5		86	76-126					

MS Sample ID: **1506466-1** Units: **MG/KG** Analysis Date: **6/25/2015 10:30**

Client ID: **FS-3@12'** Run ID: **HC150625-6A** Prep Date: **6/25/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	4.63	0.537	5.37	0.58	82	79-118				40	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.598		0.537		111	76-126					

MSD Sample ID: **1506466-1** Units: **MG/KG** Analysis Date: **6/25/2015 10:51**

Client ID: **FS-3@12'** Run ID: **HC150625-6A** Prep Date: **6/25/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	5.45	0.528	5.28	0.58	99	79-118		4.63	16	40	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.608		0.528		115	76-126			2		

The following samples were analyzed in this batch: 1506466-1

QC BATCH REPORT

Batch ID: **HC150625-111-1** Instrument ID: **FUELS-1** Method: **SW8015M**

LCS Sample ID: **HC150625-111** Units: **MG/KG** Analysis Date: **6/25/2015 17:57**

Client ID: Run ID: **HC150625-8A** Prep Date: **6/25/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	134	5	125		108	76-124				20	
Surr: O-TERPHENYL	5.31		6.25		85	53-116					

MB Sample ID: **HC150625-111** Units: **MG/KG** Analysis Date: **6/25/2015 17:21**

Client ID: Run ID: **HC150625-8A** Prep Date: **6/25/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	ND	5									
Surr: O-TERPHENYL	5.61		6.25		90	53-116					

The following samples were analyzed in this batch: 1506466-1

Client: Talon LPE
Work Order: 1506466
Project: 701530.024.01 Nelson A6/A7

QC BATCH REPORT

Batch ID: **VL150624-2-2** Instrument ID: **HPV1** Method: **SW8260**

LCS Sample ID: **VL150624-2** Units: **MG/KG** Analysis Date: **6/24/2015 11:23**

Client ID: Run ID: **VL150624-2A** Prep Date: **6/24/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.0369	0.005	0.04		92	73-126				30	
TOLUENE	0.0414	0.005	0.04		103	71-127				30	
ETHYLBENZENE	0.0407	0.005	0.04		102	74-127				30	
M+P-XYLENE	0.0844	0.005	0.08		106	79-126				30	
O-XYLENE	0.0426	0.005	0.04		106	77-125				30	
Surr: DIBROMOFLUOROMETHANE	0.048		0.05		96	61-134					
Surr: TOLUENE-D8	0.0505		0.05		101	57-135					
Surr: 4-BROMOFLUOROBENZENE	0.0478		0.05		96	52-151					

LCSD Sample ID: **VL150624-2** Units: **MG/KG** Analysis Date: **6/24/2015 11:45**

Client ID: Run ID: **VL150624-2A** Prep Date: **6/24/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.0305	0.005	0.04		76	73-126		0.0369	19	30	
TOLUENE	0.0346	0.005	0.04		86	71-127		0.0414	18	30	
ETHYLBENZENE	0.0339	0.005	0.04		85	74-127		0.0407	18	30	
M+P-XYLENE	0.0694	0.005	0.08		87	79-126		0.0844	20	30	
O-XYLENE	0.0349	0.005	0.04		87	77-125		0.0426	20	30	
Surr: DIBROMOFLUOROMETHANE	0.0481		0.05		96	61-134			0		
Surr: TOLUENE-D8	0.0501		0.05		100	57-135			1		
Surr: 4-BROMOFLUOROBENZENE	0.0468		0.05		94	52-151			2		

MB Sample ID: **VL150624-2** Units: **MG/KG** Analysis Date: **6/24/2015 12:08**

Client ID: Run ID: **VL150624-2A** Prep Date: **6/24/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	ND	0.005									
TOLUENE	ND	0.005									
ETHYLBENZENE	ND	0.005									
M+P-XYLENE	ND	0.005									
O-XYLENE	ND	0.005									
TOTAL XYLENES	ND	0.005									
Surr: DIBROMOFLUOROMETHANE	0.0454		0.05		91	61-134					
Surr: TOLUENE-D8	0.0511		0.05		102	57-135					
Surr: 4-BROMOFLUOROBENZENE	0.0468		0.05		94	52-151					

The following samples were analyzed in this batch: 1506466-1

Monday, July 06, 2015

Colby Sterling
Talon LPE
921 N Bivins
Amarillo, TX 79107

Re: ALS Workorder: 1507015
Project Name: Nelson A6/A7
Project Number: 701530.026.02

Dear Mr. Sterling:

Two soil samples were received from Talon LPE, on 7/1/2015. The samples were scheduled for the following analyses:

GC/MS Volatiles
Total Extractable Petroleum Hydrocarbons (Diesel)
Total Volatile Petroleum Hydrocarbons (Gasoline)

The results for these analyses are contained in the enclosed reports.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

ALS Environmental
Amy R. Wolf
Project Manager

ALS Environmental – Fort Collins is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

ALS Environmental – Fort Collins	
Accreditation Body	License or Certification Number
Alaska (AK)	UST-086
Alaska (AK)	CO01099
Arizona (AZ)	AZ0742
California (CA)	06251CA
Colorado (CO)	CO01099
Connecticut (CT)	PH-0232
Florida (FL)	E87914
Idaho (ID)	CO01099
Kansas (KS)	E-10381
Kentucky (KY)	90137
L-A-B (DoD ELAP/ISO 170250)	L2257
Maryland (MD)	285
Missouri (MO)	175
Nebraska(NE)	NE-OS-24-13
Nevada (NV)	CO000782008A
New York (NY)	12036
North Dakota (ND)	R-057
Oklahoma (OK)	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	2976
Texas (TX)	T104704241
Utah (UT)	CO01099
Washington (WA)	C1280

1507015

GC/MS Volatiles:
The samples were analyzed using GC/MS following the current revision of SOP 525 based on SW-846 Method 8260C.

All matrix spike and matrix spike duplicate recoveries and RPDs were within acceptance criteria with the following exceptions:

Spiked Compound	QC Sample	Direction
Benzene	MS/MSD	Low
Ethylbenzene	MS/MSD	Low
M+P-Xylene	MS	Low
O-Xylene	MS	Low

The recoveries of these compounds in the laboratory control sample and laboratory control sample duplicate were within control limits, which suggest the outliers in the matrix spikes may have been due to matrix effects. No further action was taken.

All remaining acceptance criteria were met.

GRO:
The samples were analyzed following the current revision of SOP 425 generally based on SW-846 Methods 8000C and 8015D. TVPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C6 to C10.

All matrix spike and matrix spike duplicate recoveries and RPDs were within the acceptance criteria with the following exceptions:

Spiked Compound	QC Sample	Direction
Gasoline range organics	MS/MSD	Low

The recoveries for gasoline range organics in the laboratory control sample and laboratory control sample duplicate were within control limits, which suggest the outlier in the matrix spikes may have been due to matrix effects. No further action was taken. Laboratory control sample and laboratory control sample duplicate results have been included.

All remaining acceptance criteria were met.

DRO:
The samples were analyzed following the current revision of SOP 406 generally based on SW-846 Methods 8000C and 8015D. TEPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C10 to C28.

All acceptance criteria were met.

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1507015
Client Name: Talon LPE
Client Project Name: Nelson A6/A7
Client Project Number: 701530.026.02
Client PO Number:

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
Stockpile-A	1507015-1		SOIL	01-Jul-15	13:00
Stockpile-B	1507015-2		SOIL	01-Jul-15	13:05

ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

Chain-of-Custody

Form 202r8

WORKORDER # 1507015

PAGE 1 of 1

DISPOSAL By Lab or Return to Client

PROJECT NAME	701530.026.02	SAMPLER	T. J Grisel
PROJECT No.	Nelson AG/AT	SITE ID	
		EDD FORMAT	
COMPANY NAME	Talon/LPE	PURCHASE ORDER	
SEND REPORT TO	Colby Sterling	BILL TO COMPANY	Whiting
ADDRESS	1811 E Mulberry St	INVOICE ATTN TO	Kyle Chessmore
CITY / STATE / ZIP	Ft Collins, CO 80524	ADDRESS	
PHONE	970-818-5330	CITY / STATE / ZIP	
FAX		PHONE	
E-MAIL	CSterling@talonlpe.com	FAX	
		E-MAIL	

DATE 7-1-15

TURNAROUND 24 hr TAT

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	BTEX	DRO/GRO
1	Stockpile - A	Soil	7-1-15	1300	1	-	-	X	X
2	Stockpile - B	Soil	7-1-15	1305	1	-	-	X	X

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:

QC PACKAGE (check below)	
	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		T. J Grisel	7-1-15	1640
RECEIVED BY	C Trimble	C Trimble	7-1-15	1640
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: Talon Workorder No: 1507015

Project Manager: JE Initials: COT Date: 7-1-15

1. Does this project require any special handling in addition to standard ALS procedures?		YES	(NO)
2. Are custody seals on shipping containers intact?	(NONE)	YES	NO
3. Are Custody seals on sample containers intact?	(NONE)	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		(YES)	NO
5. Are the COC and bottle labels complete and legible?		(YES)	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		(YES)	NO
7. Were airbills / shipping documents present and/or removable?	(DROP OFF)	YES	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	(N/A)	YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	(N/A)	YES	NO
10. Is there sufficient sample for the requested analyses?		(YES)	NO
11. Were all samples placed in the proper containers for the requested analyses?		(YES)	NO
12. Are all samples within holding times for the requested analyses?		(YES)	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		(YES)	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ____ < green pea ____ > green pea	(N/A)	YES	NO
15. Do any water samples contain sediment? Amount Amount of sediment: ____ dusting ____ moderate ____ heavy	(N/A)	YES	NO
16. Were the samples shipped on ice?		(YES)	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: (#2) #4	RAD ONLY	(YES)	NO

Cooler #:	1							
Temperature (°C):	0.6							
No. of custody seals on cooler:	0							
DOT Survey/ Acceptance Information: External µR/hr reading:	NA							
Background µR/hr reading:	NA							

Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? **YES / NO / (NA)** If no, see Form 008.)

Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

If applicable, was the client contacted? **YES / NO / (NA)** Contact: _____ Date/Time: _____

Project Manager Signature / Date: 7/2/15

*IR Gun #2: Oakton, SN 29922500201-0066
*IR Gun #4: Oakton, SN 2372220101-0002

Client: Talon LPE
Project: 701530.026.02 Nelson A6/A7
Sample ID: Stockpile-A
Legal Location:
Collection Date: 7/1/2015 13:00

Date: *06-Jul-15*
Work Order: 1507015
Lab ID: 1507015-1
Matrix: SOIL
Percent Moisture: 4.3

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Diesel Range Organics			**SW8015M**	Prep Date: **7/2/2015**		PrepBy: **JFN**
Diesel Range Organics	**60**	DM	**5.1**	**MG/KG**	1	7/2/2015 14:31
Surr: O-TERPHENYL	*90*		*49-114*	*%REC*	1	7/2/2015 14:31
Gasoline Range Organics			**SW8015**	Prep Date: **7/2/2015**		PrepBy: **JFN**
GASOLINE RANGE ORGANICS	**0.46**	Z	**0.43**	**MG/KG**	1	7/2/2015 11:37
Surr: 2,3,4-TRIFLUOROTOLUENE	*101*		*76-126*	*%REC*	1	7/2/2015 11:37
GC/MS Volatiles			**SW8260**	Prep Date: **7/2/2015**		PrepBy: **SDW**
BENZENE	ND		0.005	MG/KG	1	7/2/2015 14:38
TOLUENE	ND		0.005	MG/KG	1	7/2/2015 14:38
ETHYLBENZENE	ND		0.005	MG/KG	1	7/2/2015 14:38
M+P-XYLENE	ND		0.005	MG/KG	1	7/2/2015 14:38
O-XYLENE	ND		0.005	MG/KG	1	7/2/2015 14:38
TOTAL XYLENES	ND		0.005	MG/KG	1	7/2/2015 14:38
Surr: DIBROMOFLUOROMETHANE	*99*		*61-134*	*%REC*	1	7/2/2015 14:38
Surr: TOLUENE-D8	*98*		*57-135*	*%REC*	1	7/2/2015 14:38
Surr: 4-BROMOFLUOROBENZENE	*94*		*52-151*	*%REC*	1	7/2/2015 14:38

Client:	Talon LPE	**Date:**	*06-Jul-15*
Project:	701530.026.02 Nelson A6/A7	**Work Order:**	1507015
Sample ID:	Stockpile-B	**Lab ID:**	1507015-2
Legal Location:		**Matrix:**	SOIL
Collection Date:	7/1/2015 13:05	**Percent Moisture:**	4.4

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Diesel Range Organics			**SW8015M**	Prep Date: **7/2/2015**		PrepBy: **JFN**
Diesel Range Organics	**61**	DM	**5.1**	**MG/KG**	1	7/2/2015 15:02
Surr: O-TERPHENYL	*91*		*49-114*	*%REC*	1	7/2/2015 15:02
Gasoline Range Organics			**SW8015**	Prep Date: **7/2/2015**		PrepBy: **JFN**
GASOLINE RANGE ORGANICS	**0.4**	Z	**0.37**	**MG/KG**	1	7/2/2015 11:58
Surr: 2,3,4-TRIFLUOROTOLUENE	*98*		*76-126*	*%REC*	1	7/2/2015 11:58
GC/MS Volatiles			**SW8260**	Prep Date: **7/2/2015**		PrepBy: **SDW**
BENZENE	ND		0.0047	MG/KG	1	7/2/2015 15:02
TOLUENE	ND		0.0047	MG/KG	1	7/2/2015 15:02
ETHYLBENZENE	ND		0.0047	MG/KG	1	7/2/2015 15:02
M+P-XYLENE	ND		0.0047	MG/KG	1	7/2/2015 15:02
O-XYLENE	ND		0.0047	MG/KG	1	7/2/2015 15:02
TOTAL XYLENES	ND		0.005	MG/KG	1	7/2/2015 15:02
Surr: DIBROMOFLUOROMETHANE	*99*		*61-134*	*%REC*	1	7/2/2015 15:02
Surr: TOLUENE-D8	*98*		*57-135*	*%REC*	1	7/2/2015 15:02
Surr: 4-BROMOFLUOROBENZENE	*95*		*52-151*	*%REC*	1	7/2/2015 15:02

Client:	Talon LPE	**Date:**	*06-Jul-15*
Project:	701530.026.02 Nelson A6/A7	**Work Order:**	1507015
Sample ID:	Stockpile-B	**Lab ID:**	1507015-2
Legal Location:		**Matrix:**	SOIL
Collection Date:	7/1/2015 13:05	**Percent Moisture:**	4.4

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed

Explanation of Qualifiers

Radiochemistry:

U or ND - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

G - Sample density differs by more than 15% of LCS density.

D - DER is greater than Control Limit

M - Requested MDC not met.

LT - Result is less than requested MDC but greater than achieved MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).

U or ND - Indicates that the compound was analyzed for but not detected.

E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.

M - Duplicate injection precision was not met.

N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.

Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.

* - Duplicate analysis (relative percent difference) not within control limits.

S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.

Organics:

U or ND - Indicates that the compound was analyzed for but not detected.

B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.

E - Analyte concentration exceeds the upper level of the calibration range.

J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).

A - A tentatively identified compound is a suspected aldol-condensation product.

X - The analyte was diluted below an accurate quantitation level.

* - The spike recovery is equal to or outside the control criteria used.

+ - The relative percent difference (RPD) equals or exceeds the control criteria.

G - A pattern resembling gasoline was detected in this sample.

D - A pattern resembling diesel was detected in this sample.

M - A pattern resembling motor oil was detected in this sample.

C - A pattern resembling crude oil was detected in this sample.

4 - A pattern resembling JP-4 was detected in this sample.

5 - A pattern resembling JP-5 was detected in this sample.

H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.

L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.

Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:
- gasoline
- JP-8
- diesel
- mineral spirits
- motor oil
- Stoddard solvent
- bunker C

Batch ID: **HC150702-61-1** Instrument ID **FUELS-1** Method: **SW8015**

LCS Sample ID: **HC150702-61** Units: **MG/KG** Analysis Date: **7/2/2015 10:33**

Client ID: Run ID: **HC150702-6A** Prep Date: **7/2/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	2.32	0.5	2.5		93	79-118				20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.547		0.5		109	76-126					

LCSD Sample ID: **HC150702-61** Units: **MG/KG** Analysis Date: **7/2/2015 17:34**

Client ID: Run ID: **HC150702-6A** Prep Date: **7/2/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	2.55	0.5	2.5		102	79-118		2.32	9	20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.585		0.5		117	76-126			7		

MB Sample ID: **HC150702-61** Units: **MG/KG** Analysis Date: **7/2/2015 10:55**

Client ID: Run ID: **HC150702-6A** Prep Date: **7/2/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	ND	0.5									
Surr: 2,3,4-TRIFLUOROTOLUENE	0.521		0.5		104	76-126					

MB Sample ID: **HC150702-61M** Units: **MG/KG** Analysis Date: **7/2/2015 16:49**

Client ID: Run ID: **HC150702-6A** Prep Date: **7/2/2015** DF: **50**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	ND	5									
Surr: 2,3,4-TRIFLUOROTOLUENE	5.51		5		110	76-126					

MS Sample ID: **1507015-2** Units: **MG/KG** Analysis Date: **7/2/2015 12:20**

Client ID: **Stockpile-B** Run ID: **HC150702-6A** Prep Date: **7/2/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	1.64	0.385	1.92	0.4	65	79-118				40	*
Surr: 2,3,4-TRIFLUOROTOLUENE	0.388		0.385		101	76-126					

Client: Talon LPE
Work Order: 1507015
Project: 701530.026.02 Nelson A6/A7

QC BATCH REPORT

Batch ID: **HC150702-61-1** Instrument ID **FUELS-1** Method: **SW8015**

MSD Sample ID: **1507015-2** Units: **MG/KG** Analysis Date: **7/2/2015 12:41**

Client ID: **Stockpile-B** Run ID: **HC150702-6A** Prep Date: **7/2/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	1.55	0.363	1.82	0.4	63	79-118		1.64	6	40	*
Surr: 2,3,4-TRIFLUOROTOLUENE	0.377		0.363		104	76-126			3		

The following samples were analyzed in this batch: 1507015-1 1507015-2

QC BATCH REPORT

Batch ID: **HC150702-100-1** Instrument ID **FUELS-1** Method: **SW8015M**

LCS Sample ID: **HC150702-100** Units: **MG/KG** Analysis Date: **7/2/2015 15:32**
Client ID: Run ID: **HC150702-7A** Prep Date: **7/2/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	67.4	5	62.5		108	76-124				20	
Surr: O-TERPHENYL	5.27		6.25		84	49-114					

MB Sample ID: **HC150702-100** Units: **MG/KG** Analysis Date: **7/2/2015 14:00**
Client ID: Run ID: **HC150702-7A** Prep Date: **7/2/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	ND	5									
Surr: O-TERPHENYL	5.26		6.25		84	49-114					

The following samples were analyzed in this batch: 1507015-1 1507015-2

QC BATCH REPORT

Batch ID: **VL150702-2-1** Instrument ID **HPV1** Method: **SW8260**

LCS Sample ID: **VL150702-2** Units: **MG/KG** Analysis Date: **7/2/2015 13:08**

Client ID: Run ID: **VL150702-2A** Prep Date: **7/2/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.0402	0.005	0.04		100	73-126				30	
TOLUENE	0.046	0.005	0.04		115	71-127				30	
ETHYLBENZENE	0.0452	0.005	0.04		113	74-127				30	
M+P-XYLENE	0.0916	0.005	0.08		115	79-126				30	
O-XYLENE	0.0454	0.005	0.04		113	77-125				30	
Surr: DIBROMOFLUOROMETHANE	0.0484		0.05		97	61-134					
Surr: TOLUENE-D8	0.0516		0.05		103	57-135					
Surr: 4-BROMOFLUOROBENZENE	0.0482		0.05		96	52-151					

LCSD Sample ID: **VL150702-2** Units: **MG/KG** Analysis Date: **7/2/2015 13:30**

Client ID: Run ID: **VL150702-2A** Prep Date: **7/2/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.0366	0.005	0.04		91	73-126		0.0402	9	30	
TOLUENE	0.0398	0.005	0.04		99	71-127		0.046	15	30	
ETHYLBENZENE	0.0393	0.005	0.04		98	74-127		0.0452	14	30	
M+P-XYLENE	0.0811	0.005	0.08		101	79-126		0.0916	12	30	
O-XYLENE	0.0408	0.005	0.04		102	77-125		0.0454	11	30	
Surr: DIBROMOFLUOROMETHANE	0.0484		0.05		97	61-134			0		
Surr: TOLUENE-D8	0.0495		0.05		99	57-135			4		
Surr: 4-BROMOFLUOROBENZENE	0.0466		0.05		93	52-151			3		

MB Sample ID: **VL150702-2** Units: **MG/KG** Analysis Date: **7/2/2015 13:52**

Client ID: Run ID: **VL150702-2A** Prep Date: **7/2/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	ND	0.005									
TOLUENE	ND	0.005									
ETHYLBENZENE	ND	0.005									
M+P-XYLENE	ND	0.005									
O-XYLENE	ND	0.005									
TOTAL XYLENES	ND	0.005									
Surr: DIBROMOFLUOROMETHANE	0.0464		0.05		93	61-134					
Surr: TOLUENE-D8	0.0498		0.05		100	57-135					
Surr: 4-BROMOFLUOROBENZENE	0.0482		0.05		96	52-151					

Client: Talon LPE
Work Order: 1507015
Project: 701530.026.02 Nelson A6/A7

QC BATCH REPORT

Batch ID: **VL150702-2-1** Instrument ID **HPV1** Method: **SW8260**

MS Sample ID: **1507015-2** Units: **MG/KG** Analysis Date: **7/2/2015 15:27**

Client ID: **Stockpile-B** Run ID: **VL150702-2A** Prep Date: **7/2/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.0278	0.00488	0.039	0.0047	71	73-126				30	*
TOLUENE	0.0303	0.00488	0.039	0.0047	78	71-127				30	
ETHYLBENZENE	0.0281	0.00488	0.039	0.0047	72	74-127				30	*
M+P-XYLENE	0.06	0.00488	0.0781	0.0047	77	79-126				30	*
O-XYLENE	0.0291	0.00488	0.039	0.0047	75	77-125				30	*
Surr: DIBROMOFLUOROMETHANE	0.0475		0.0488		97	61-134					
Surr: TOLUENE-D8	0.048		0.0488		98	57-135					
Surr: 4-BROMOFLUOROBENZENE	0.0469		0.0488		96	52-151					

MSD Sample ID: **1507015-2** Units: **MG/KG** Analysis Date: **7/2/2015 15:50**

Client ID: **Stockpile-B** Run ID: **VL150702-2A** Prep Date: **7/2/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.0252	0.0046	0.0368	0.0047	69	73-126		0.0278	10	30	*
TOLUENE	0.0323	0.0046	0.0368	0.0047	88	71-127		0.0303	6	30	
ETHYLBENZENE	0.0258	0.0046	0.0368	0.0047	70	74-127		0.0281	9	30	*
M+P-XYLENE	0.062	0.0046	0.0735	0.0047	84	79-126		0.06	3	30	
O-XYLENE	0.0298	0.0046	0.0368	0.0047	81	77-125		0.0291	2	30	
Surr: DIBROMOFLUOROMETHANE	0.0452		0.046		98	61-134			5		
Surr: TOLUENE-D8	0.045		0.046		98	57-135			7		
Surr: 4-BROMOFLUOROBENZENE	0.0445		0.046		97	52-151			5		

The following samples were analyzed in this batch: 1507015-1 1507015-2

Tuesday, September 15, 2015

Colby Sterling
Talon LPE
921 N Bivins
Amarillo, TX 79107

Re: ALS Workorder: 1509119
Project Name: Nelson A6/A7
Project Number: 701530.024.02

Dear Mr. Sterling:

Four soil samples were received from Talon LPE, on 9/8/2015. The samples were scheduled for the following analyses:

GC/MS Volatiles
Total Extractable Petroleum Hydrocarbons (Diesel)
Total Volatile Petroleum Hydrocarbons (Gasoline)

The results for these analyses are contained in the enclosed reports.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

ALS Environmental
Amy R. Wolf
Project Manager

ALS Environmental – Fort Collins is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

ALS Environmental – Fort Collins	
Accreditation Body	License or Certification Number
Alaska (AK)	UST-086
Alaska (AK)	CO01099
Arizona (AZ)	AZ0742
California (CA)	06251CA
Colorado (CO)	CO01099
Connecticut (CT)	PH-0232
Florida (FL)	E87914
Idaho (ID)	CO01099
Kansas (KS)	E-10381
Kentucky (KY)	90137
L-A-B (DoD ELAP/ISO 170250)	L2257
Louisiana (LA)	05057
Maryland (MD)	285
Missouri (MO)	175
Nebraska(NE)	NE-OS-24-13
Nevada (NV)	CO000782008A
New York (NY)	12036
North Dakota (ND)	R-057
Oklahoma (OK)	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	2976
Texas (TX)	T104704241
Utah (UT)	CO01099
Washington (WA)	C1280

1509119

GC/MS Volatiles:
The samples were analyzed using GC/MS following the current revision of SOP 525 based on SW-846 Method 8260C.

All acceptance criteria were met.

GRO:
The samples were analyzed following the current revision of SOP 425 generally based on SW-846 Methods 8000C and 8015D. TVPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C6 to C10.

The surrogate recoveries for sample 1509119-2 and -3 were outside control limits (high). Inspection of the chromatograms indicated co-elution of the surrogate peaks with target component peaks, biasing the surrogate results high. No further action was taken

All remaining acceptance criteria were met.

DRO:
The samples were analyzed following the current revision of SOP 406 generally based on SW-846 Methods 8000C and 8015D. TEPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C10 to C28.

All acceptance criteria were met.

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1509119
Client Name: Talon LPE
Client Project Name: Nelson A6/A7
Client Project Number: 701530.024.02
Client PO Number:

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
SW-1 @ 8'	1509119-1		SOIL	03-Sep-15	10:55
SW-2 @ 8'	1509119-2		SOIL	03-Sep-15	11:20
SW-3 @ 8'	1509119-3		SOIL	03-Sep-15	12:30
SW-4 @ 8'	1509119-4		SOIL	03-Sep-15	11:50

ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

Chain-of-Custody

Form 202r8

WORKORDER # 1509119

PAGE 1 of 1

DISPOSAL: By Lab or Return to Client

PROJECT NAME	Nelson AG/A7	SAMPLER	T Grisel
PROJECT No.	701530.024.02	SITE ID	
		EDD FORMAT	
COMPANY NAME	Taylor/GPC	PURCHASE ORDER	
SEND REPORT TO	Colby Sterling	BILL TO COMPANY	Whiting Petroleum
ADDRESS		INVOICE ATTN TO	Kyle Waggoner
CITY / STATE / ZIP		ADDRESS	
PHONE		CITY / STATE / ZIP	
FAX		PHONE	
E-MAIL		FAX	
		E-MAIL	

DATE: 9-7-15

TURNAROUND: Standard

BTEX/DRO/GRO

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	
1	SW-1 @ 8'	Soil	9-3-15	1053	2	-	-	X
2	SW-2 @ 8'	Soil	9-3-15	1120	1	-	-	|
3	SW-3 @ 8'	Soil	9-3-15	1230	1	-	-	|
4	SW-4 @ 8'	Soil	9-3-15	1152	1	-	-	↓ aw 9/8/15

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:	QC PACKAGE (check below)
6.0	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		T Grisel	9-8-15	0910
RECEIVED BY		C Trimble	9-8-15	~~9/8/15~~ 09-10
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

5 of 6

ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: Talon Workorder No: 1509119

Project Manager: AW Initials: CDT Date: 9-8-15

1. Does this project require any special handling in addition to standard ALS procedures?		YES	(NO)
2. Are custody seals on shipping containers intact?	(NONE)	YES	NO
3. Are Custody seals on sample containers intact?	(NONE)	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		(YES)	NO
5. Are the COC and bottle labels complete and legible?		YES	(NO)
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		(YES)	NO
7. Were airbills / shipping documents present and/or removable?	(DROP OFF)	YES	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	(N/A)	YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	(N/A)	YES	NO
10. Is there sufficient sample for the requested analyses?		(YES)	NO
11. Were all samples placed in the proper containers for the requested analyses?		(YES)	NO
12. Are all samples within holding times for the requested analyses?		(YES)	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		(YES)	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ____ < green pea ____ > green pea	(N/A)	YES	NO
15. Do any water samples contain sediment? Amount Amount of sediment: ____ dusting ____ moderate ____ heavy	(N/A)	YES	NO
16. Were the samples shipped on ice?		(YES)	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: (#2) #4	RAD ONLY	(YES)	NO

Cooler #:	1							
Temperature (°C):	6.0							
No. of custody seals on cooler:	0							
DOT Survey Acceptance Information: External µR/hr reading:	NA							
Background µR/hr reading:	NA							

Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? **YES / NO** (NA) (If no, see Form 008.)

Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

If applicable, was the client contacted? **YES / NO** (NA) Contact: _____ Date/Time: _____

Project Manager Signature / Date: 9/8/15

*IR Gun #2: Oakton, SN 29922500201-0066
*IR Gun #4: Oakton, SN 2372220101-0002

Client: Talon LPE
Project: 701530.024.02 Nelson A6/A7
Sample ID: SW-1 @ 8'
Legal Location:
Collection Date: 9/3/2015 10:55

Date: *15-Sep-15*
Work Order: 1509119
Lab ID: 1509119-1
Matrix: SOIL
Percent Moisture: 16.1

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Diesel Range Organics		**SW8015M**		Prep Date: **9/11/2015**		PrepBy: **JFN**
Diesel Range Organics	ND		5.9	MG/KG	1	9/11/2015 17:20
Surr: O-TERPHENYL	*91*		*49-114*	*%REC*	1	9/11/2015 17:20
Gasoline Range Organics		**SW8015**		Prep Date: **9/10/2015**		PrepBy: **JFN**
GASOLINE RANGE ORGANICS	ND		0.56	MG/KG	1	9/10/2015 16:57
Surr: 2,3,4-TRIFLUOROTOLUENE	*105*		*76-126*	*%REC*	1	9/10/2015 16:57
GC/MS Volatiles		**SW8260**		Prep Date: **9/9/2015**		PrepBy: **SDW**
BENZENE	ND		0.0058	MG/KG	1	9/9/2015 12:47
TOLUENE	ND		0.0058	MG/KG	1	9/9/2015 12:47
ETHYLBENZENE	ND		0.0058	MG/KG	1	9/9/2015 12:47
M+P-XYLENE	ND		0.0058	MG/KG	1	9/9/2015 12:47
O-XYLENE	ND		0.0058	MG/KG	1	9/9/2015 12:47
TOTAL XYLENES	ND		0.005	MG/KG	1	9/9/2015 12:47
Surr: DIBROMOFLUOROMETHANE	*95*		*61-134*	*%REC*	1	9/9/2015 12:47
Surr: TOLUENE-D8	*97*		*57-135*	*%REC*	1	9/9/2015 12:47
Surr: 4-BROMOFLUOROBENZENE	*92*		*52-151*	*%REC*	1	9/9/2015 12:47

Client: Talon LPE
Project: 701530.024.02 Nelson A6/A7
Sample ID: SW-2 @ 8'
Legal Location:
Collection Date: 9/3/2015 11:20

Date: *15-Sep-15*
Work Order: 1509119
Lab ID: 1509119-2
Matrix: SOIL
Percent Moisture: 9.4

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Diesel Range Organics			**SW8015M**	Prep Date: **9/11/2015**		PrepBy: **JFN**
Diesel Range Organics	**2200**	L4	**110**	**MG/KG**	20	9/11/2015 17:51
Surr: O-TERPHENYL	*78*		*49-114*	*%REC*	20	9/11/2015 17:51
Gasoline Range Organics			**SW8015**	Prep Date: **9/14/2015**		PrepBy: **JFN**
GASOLINE RANGE ORGANICS	**12000**	ZGH	**220**	**MG/KG**	2000	9/14/2015 13:37
Surr: 2,3,4-TRIFLUOROTOLUENE	*137*	*	*76-126*	*%REC*	2000	9/14/2015 13:37
GC/MS Volatiles			**SW8260**	Prep Date: **9/9/2015**		PrepBy: **SDW**
BENZENE	**30**		**2.7**	**MG/KG**	500	9/9/2015 19:42
TOLUENE	**580**		**27**	**MG/KG**	5000	9/9/2015 19:17
ETHYLBENZENE	**68**		**2.7**	**MG/KG**	500	9/9/2015 19:42
M+P-XYLENE	**560**		**27**	**MG/KG**	5000	9/9/2015 19:17
O-XYLENE	**190**		**27**	**MG/KG**	5000	9/9/2015 19:17
TOTAL XYLENES	**750**		**0.005**	**MG/KG**	1	9/9/2015 19:17
Surr: DIBROMOFLUOROMETHANE	*94*		*61-134*	*%REC*	5000	9/9/2015 19:17
Surr: DIBROMOFLUOROMETHANE	*98*		*61-134*	*%REC*	500	9/9/2015 19:42
Surr: TOLUENE-D8	*98*		*57-135*	*%REC*	500	9/9/2015 19:42
Surr: TOLUENE-D8	*96*		*57-135*	*%REC*	5000	9/9/2015 19:17
Surr: 4-BROMOFLUOROBENZENE	*93*		*52-151*	*%REC*	500	9/9/2015 19:42
Surr: 4-BROMOFLUOROBENZENE	*96*		*52-151*	*%REC*	5000	9/9/2015 19:17

Client: Talon LPE
Project: 701530.024.02 Nelson A6/A7
Sample ID: SW-3 @ 8'
Legal Location:
Collection Date: 9/3/2015 12:30

Date: *15-Sep-15*
Work Order: 1509119
Lab ID: 1509119-3
Matrix: SOIL
Percent Moisture: 22.0

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Diesel Range Organics			**SW8015M**	Prep Date: **9/11/2015**		PrepBy: **JFN**
Diesel Range Organics	**76**	L45	**6.2**	**MG/KG**	1	9/11/2015 18:22
Surr: O-TERPHENYL	*98*		*49-114*	*%REC*	1	9/11/2015 18:22
Gasoline Range Organics			**SW8015**	Prep Date: **9/10/2015**		PrepBy: **JFN**
GASOLINE RANGE ORGANICS	**25**	Z	**0.53**	**MG/KG**	1	9/10/2015 19:47
Surr: 2,3,4-TRIFLUOROTOLUENE	*146*	*	*76-126*	*%REC*	1	9/10/2015 19:47
GC/MS Volatiles			**SW8260**	Prep Date: **9/9/2015**		PrepBy: **SDW**
BENZENE	ND		0.049	MG/KG	1	9/9/2015 18:01
TOLUENE	ND		0.0064	MG/KG	1	9/9/2015 18:26
ETHYLBENZENE	**0.72**		**0.049**	**MG/KG**	1	9/9/2015 18:01
M+P-XYLENE	**3.5**		**0.3**	**MG/KG**	50	9/9/2015 17:36
O-XYLENE	**0.17**		**0.049**	**MG/KG**	1	9/9/2015 18:01
TOTAL XYLENES	**3.5**		**0.005**	**MG/KG**	1	9/9/2015 18:01
Surr: DIBROMOFLUOROMETHANE	*94*		*61-134*	*%REC*	50	9/9/2015 17:36
Surr: DIBROMOFLUOROMETHANE	*97*		*61-134*	*%REC*	1	9/9/2015 18:26
Surr: DIBROMOFLUOROMETHANE	*94*		*61-134*	*%REC*	1	9/9/2015 18:01
Surr: TOLUENE-D8	*96*		*57-135*	*%REC*	1	9/9/2015 18:26
Surr: TOLUENE-D8	*98*		*57-135*	*%REC*	1	9/9/2015 18:01
Surr: TOLUENE-D8	*99*		*57-135*	*%REC*	50	9/9/2015 17:36
Surr: 4-BROMOFLUOROBENZENE	*94*		*52-151*	*%REC*	1	9/9/2015 18:26
Surr: 4-BROMOFLUOROBENZENE	*94*		*52-151*	*%REC*	1	9/9/2015 18:01
Surr: 4-BROMOFLUOROBENZENE	*96*		*52-151*	*%REC*	50	9/9/2015 17:36

Client: Talon LPE
Project: 701530.024.02 Nelson A6/A7
Sample ID: SW-4 @ 8'
Legal Location:
Collection Date: 9/3/2015 11:50

Date: *15-Sep-15*
Work Order: 1509119
Lab ID: 1509119-4
Matrix: SOIL
Percent Moisture: 27.3

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Diesel Range Organics			**SW8015M**	Prep Date: **9/11/2015**		PrepBy: **JFN**
Diesel Range Organics	**77**	L45	**6.8**	**MG/KG**	1	9/11/2015 18:53
Surr: O-TERPHENYL	*99*		*49-114*	*%REC*	1	9/11/2015 18:53
Gasoline Range Organics			**SW8015**	Prep Date: **9/10/2015**		PrepBy: **JFN**
GASOLINE RANGE ORGANICS	**11**	ZH	**0.61**	**MG/KG**	1	9/10/2015 21:59
Surr: 2,3,4-TRIFLUOROTOLUENE	*115*		*76-126*	*%REC*	1	9/10/2015 21:59
GC/MS Volatiles			**SW8260**	Prep Date: **9/9/2015**		PrepBy: **SDW**
BENZENE	ND		0.0067	MG/KG	1	9/9/2015 13:33
TOLUENE	ND		0.0067	MG/KG	1	9/9/2015 13:33
ETHYLBENZENE	ND		0.0067	MG/KG	1	9/9/2015 13:33
M+P-XYLENE	**0.079**		**0.0067**	**MG/KG**	1	9/9/2015 13:33
O-XYLENE	ND		0.0067	MG/KG	1	9/9/2015 13:33
TOTAL XYLENES	**0.079**		**0.005**	**MG/KG**	1	9/9/2015 13:33
Surr: DIBROMOFLUOROMETHANE	*99*		*61-134*	*%REC*	1	9/9/2015 13:33
Surr: TOLUENE-D8	*99*		*57-135*	*%REC*	1	9/9/2015 13:33
Surr: 4-BROMOFLUOROBENZENE	*88*		*52-151*	*%REC*	1	9/9/2015 13:33

Client:	Talon LPE	**Date:**	*15-Sep-15*
Project:	701530.024.02 Nelson A6/A7	**Work Order:**	1509119
Sample ID:	SW-4 @ 8'	**Lab ID:**	1509119-4
Legal Location:		**Matrix:**	SOIL
Collection Date:	9/3/2015 11:50	**Percent Moisture:**	27.3

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed

Explanation of Qualifiers

Radiochemistry:

U or ND - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

G - Sample density differs by more than 15% of LCS density.

D - DER is greater than Control Limit

M - Requested MDC not met.

LT - Result is less than requested MDC but greater than achieved MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).

U or ND - Indicates that the compound was analyzed for but not detected.

E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.

M - Duplicate injection precision was not met.

N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.

Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.

* - Duplicate analysis (relative percent difference) not within control limits.

S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.

Organics:

U or ND - Indicates that the compound was analyzed for but not detected.

B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.

E - Analyte concentration exceeds the upper level of the calibration range.

J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).

A - A tentatively identified compound is a suspected aldol-condensation product.

X - The analyte was diluted below an accurate quantitation level.

* - The spike recovery is equal to or outside the control criteria used.

+ - The relative percent difference (RPD) equals or exceeds the control criteria.

G - A pattern resembling gasoline was detected in this sample.

D - A pattern resembling diesel was detected in this sample.

M - A pattern resembling motor oil was detected in this sample.

C - A pattern resembling crude oil was detected in this sample.

4 - A pattern resembling JP-4 was detected in this sample.

5 - A pattern resembling JP-5 was detected in this sample.

H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.

L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.

Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:
- gasoline
- JP-8
- diesel
- mineral spirits
- motor oil
- Stoddard solvent
- bunker C

Batch ID: **HC150910-61-1** Instrument ID: **FUELS-1** Method: **SW8015**

LCS Sample ID: **HC150910-61** Units: **MG/KG** Analysis Date: **9/10/2015 08:23**

Client ID: Run ID: **HC150910-6A** Prep Date: **9/10/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	2.51	0.5	2.5		101	79-118				20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.568		0.5		114	76-126					

LCSD Sample ID: **HC150910-61** Units: **MG/KG** Analysis Date: **9/10/2015 14:48**

Client ID: Run ID: **HC150910-6A** Prep Date: **9/10/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	2.36	0.5	2.5		94	79-118		2.51	6	20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.559		0.5		112	76-126			2		

MB Sample ID: **HC150910-61** Units: **MG/KG** Analysis Date: **9/10/2015 08:44**

Client ID: Run ID: **HC150910-6A** Prep Date: **9/10/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	ND	0.5									
Surr: 2,3,4-TRIFLUOROTOLUENE	0.501		0.5		100	76-126					

MB Sample ID: **HC150910-61M** Units: **MG/KG** Analysis Date: **9/10/2015 12:40**

Client ID: Run ID: **HC150910-6A** Prep Date: **9/10/2015** DF: **50**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	ND	5									
Surr: 2,3,4-TRIFLUOROTOLUENE	5.66		5		113	76-126					

The following samples were analyzed in this batch: 1509119-1 1509119-3 1509119-4

QC BATCH REPORT

Batch ID: **HC150911-100-1** Instrument ID: **FUELS-1** Method: **SW8015M**

LCS Sample ID: **HC150911-100** Units: **MG/KG** Analysis Date: **9/11/2015 16:18**

Client ID: Run ID: **HC150911-7A** Prep Date: **9/11/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	139	5	125		111	76-124				20	
Surr: O-TERPHENYL	10.2		12.5		82	49-114					

MB Sample ID: **HC150911-100** Units: **MG/KG** Analysis Date: **9/11/2015 13:14**

Client ID: Run ID: **HC150911-7A** Prep Date: **9/11/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	ND	5									
Surr: O-TERPHENYL	10.8		12.5		86	49-114					

The following samples were analyzed in this batch: 1509119-1 1509119-2 1509119-3 1509119-4

QC BATCH REPORT

Batch ID: **HC150914-61-1** Instrument ID: **FUELS-1** Method: **SW8015**

LCS Sample ID: **HC150914-61** Units: **MG/KG** Analysis Date: **9/14/2015 09:38**
Client ID: Run ID: **HC150914-6A** Prep Date: **9/14/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	2.44	0.5	2.5		98	79-118				20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.559		0.5		112	76-126					

LCSD Sample ID: **HC150914-61** Units: **MG/KG** Analysis Date: **9/14/2015 17:24**
Client ID: Run ID: **HC150914-6A** Prep Date: **9/14/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	2.77	0.5	2.5		111	79-118		2.44	13	20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.534		0.5		107	76-126			5		

MB Sample ID: **HC150914-61** Units: **MG/KG** Analysis Date: **9/14/2015 09:59**
Client ID: Run ID: **HC150914-6A** Prep Date: **9/14/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	ND	0.5									
Surr: 2,3,4-TRIFLUOROTOLUENE	0.503		0.5		101	76-126					

MB Sample ID: **HC150914-61M** Units: **MG/KG** Analysis Date: **9/14/2015 12:55**
Client ID: Run ID: **HC150914-6A** Prep Date: **9/14/2015** DF: **50**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	ND	5									
Surr: 2,3,4-TRIFLUOROTOLUENE	5.24		5		105	76-126					

The following samples were analyzed in this batch: 1509119-2

Batch ID: **VL150909-2-4** Instrument ID: **HPV1** Method: **SW8260**

LCS Sample ID: **VL150909-2** Units: **MG/KG** Analysis Date: **9/9/2015 09:33**

Client ID: Run ID: **VL150909-2A** Prep Date: **9/9/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.0365	0.005	0.04		91	73-126				30	
TOLUENE	0.0394	0.005	0.04		98	71-127				30	
ETHYLBENZENE	0.0389	0.005	0.04		97	74-127				30	
M+P-XYLENE	0.0822	0.005	0.08		103	79-126				30	
O-XYLENE	0.0397	0.005	0.04		99	77-125				30	
Surr: DIBROMOFLUOROMETHANE	0.0469		0.05		94	61-134					
Surr: TOLUENE-D8	0.0483		0.05		97	57-135					
Surr: 4-BROMOFLUOROBENZENE	0.0473		0.05		95	52-151					

LCSD Sample ID: **VL150909-2** Units: **MG/KG** Analysis Date: **9/9/2015 09:55**

Client ID: Run ID: **VL150909-2A** Prep Date: **9/9/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.0388	0.005	0.04		97	73-126		0.0365	6	30	
TOLUENE	0.0415	0.005	0.04		104	71-127		0.0394	5	30	
ETHYLBENZENE	0.0413	0.005	0.04		103	74-127		0.0389	6	30	
M+P-XYLENE	0.0873	0.005	0.08		109	79-126		0.0822	6	30	
O-XYLENE	0.0424	0.005	0.04		106	77-125		0.0397	7	30	
Surr: DIBROMOFLUOROMETHANE	0.0472		0.05		94	61-134			1		
Surr: TOLUENE-D8	0.0492		0.05		98	57-135			2		
Surr: 4-BROMOFLUOROBENZENE	0.0478		0.05		96	52-151			1		

MB Sample ID: **VL150909-2** Units: **MG/KG** Analysis Date: **9/9/2015 10:20**

Client ID: Run ID: **VL150909-2A** Prep Date: **9/9/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	ND	0.005									
TOLUENE	ND	0.005									
ETHYLBENZENE	ND	0.005									
M+P-XYLENE	ND	0.005									
O-XYLENE	ND	0.005									
TOTAL XYLENES	ND	0.005									
Surr: DIBROMOFLUOROMETHANE	0.0459		0.05		92	61-134					
Surr: TOLUENE-D8	0.0488		0.05		98	57-135					
Surr: 4-BROMOFLUOROBENZENE	0.0464		0.05		93	52-151					

QC BATCH REPORT

Batch ID: **VL150909-2-4** Instrument ID: **HPV1** Method: **SW8260**

MB Sample ID: **VL150909-2M** Units: **MG/KG** Analysis Date: **9/9/2015 16:47**

Client ID: Run ID: **VL150909-2A** Prep Date: **9/9/2015** DF: **50**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	ND	0.25									
TOLUENE	ND	0.25									
ETHYLBENZENE	ND	0.25									
M+P-XYLENE	ND	0.25									
O-XYLENE	ND	0.25									
TOTAL XYLENES	ND	0.005									
Surr: DIBROMOFLUOROMETHANE	2.33		2.5		93	61-134					
Surr: TOLUENE-D8	2.42		2.5		97	57-135					
Surr: 4-BROMOFLUOROBENZENE	2.4		2.5		96	52-151					

The following samples were analyzed in this batch: 1509119-1 1509119-2 1509119-3 1509119-4

Friday, October 02, 2015

Colby Sterling
Talon LPE
921 N Bivins
Amarillo, TX 79107

Re: ALS Workorder: 1509473
Project Name: Nelson A6/A7
Project Number: 701530.024.02

Dear Mr. Sterling:

Three soil samples were received from Talon LPE, on 9/29/2015. The samples were scheduled for the following analyses:

GC/MS Volatiles
Total Extractable Petroleum Hydrocarbons (Diesel)
Total Volatile Petroleum Hydrocarbons (Gasoline)

The results for these analyses are contained in the enclosed reports.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

ALS Environmental
Amy R. Wolf
Project Manager

ALS Environmental – Fort Collins is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

ALS Environmental – Fort Collins	
Accreditation Body	License or Certification Number
Alaska (AK)	UST-086
Alaska (AK)	CO01099
Arizona (AZ)	AZ0742
California (CA)	06251CA
Colorado (CO)	CO01099
Connecticut (CT)	PH-0232
Florida (FL)	E87914
Idaho (ID)	CO01099
Kansas (KS)	E-10381
Kentucky (KY)	90137
L-A-B (DoD ELAP/ISO 170250)	L2257
Louisiana (LA)	05057
Maryland (MD)	285
Missouri (MO)	175
Nebraska(NE)	NE-OS-24-13
Nevada (NV)	CO000782008A
New York (NY)	12036
North Dakota (ND)	R-057
Oklahoma (OK)	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	2976
Texas (TX)	T104704241
Utah (UT)	CO01099
Washington (WA)	C1280

1509473

GC/MS Volatiles:
The samples were analyzed using GC/MS following the current revision of SOP 525 based on SW-846 Method 8260C.

All acceptance criteria were met.

GRO:
The samples were analyzed following the current revision of SOP 425 generally based on SW-846 Methods 8000C and 8015D. TVPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C6 to C10.

All matrix spike and matrix spike duplicate recoveries and RPDs were within the acceptance criteria with the following exceptions:

Spiked Compound	QC Sample	Direction
Gasoline range organics	MS	Low
Gasoline range organics	MSD	RPD

The recoveries for gasoline range organics in the laboratory control sample and laboratory control sample duplicate were within control limits, which suggest the outlier in the matrix spikes may have been due to matrix effects. No further action was taken. Laboratory control sample and laboratory control sample duplicate results have been included.

The surrogate recovery for sample 1509473-2 was outside control limits (high). Inspection of the chromatogram indicated co-elution of the surrogate peak with a target component peak, biasing the surrogate result high. Re-analysis of the sample confirmed a high surrogate recovery.

All remaining acceptance criteria were met.

DRO:
The sample was analyzed following the current revision of SOP 406 generally based on SW-846 Methods 8000C and 8015D. TEPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C10 to C28.

All acceptance criteria were met.

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1509473
Client Name: Talon LPE
Client Project Name: Nelson A6/A7
Client Project Number: 701530.024.02
Client PO Number:

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
BH-01 @ 12'	1509473-1		SOIL	29-Sep-15	10:18
SW-3 @ 8'	1509473-2		SOIL	29-Sep-15	10:25
SW-4 @ 8'	1509473-3		SOIL	29-Sep-15	10:30

ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

Chain-of-Custody

Form 202r8

WORKORDER # 1509473

PAGE 1 of 1

DISPOSAL: By Lab or Return to Client

PROJECT NAME	Nelson AG/AT	SAMPLER	T. Grisel
PROJECT No.	701530.024.02	SITE ID	
		EDD FORMAT	
		PURCHASE ORDER	
COMPANY NAME	Talon/LPE	BILL TO COMPANY	Whiting Petroleum
SEND REPORT TO	Colby Sterling	INVOICE ATTN TO	Kyle Waggoner
ADDRESS		ADDRESS	
CITY / STATE / ZIP		CITY / STATE / ZIP	
PHONE		PHONE	
FAX		FAX	
E-MAIL		E-MAIL	

DATE: 9-29-15

TURNAROUND: ~~24 hr~~

BTEX/GRO/DRO

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	BTEX/GRO/DRO
(1)	BH-01 @ 12'	Soil	9-29-15	1018	1	—	—	X
(2)	SW-3 @ 8'	Soil	↓	1625	1	—	—	X
(3)	SW-4 @ 8'	Soil	↓	1036	1	—	—	X

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:	QC PACKAGE (check below)	
5.0°C		LEVEL II (Standard QC)
		LEVEL III (Std QC + forms)
		LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		T. Grisel	9-29-15	1625
RECEIVED BY		Swift Melby	9-29-15	1625
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

5 of 15

ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: Talon Workorder No: 1509473

Project Manager: AW Initials: CDT Date: 9-29-15

1. Does this project require any special handling in addition to standard ALS procedures?		YES	(NO)
2. Are custody seals on shipping containers intact?	(NONE)	YES	NO
3. Are Custody seals on sample containers intact?	(NONE)	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		(YES)	NO
5. Are the COC and bottle labels complete and legible?		(YES)	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		(YES)	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF	(YES)	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	(N/A)	YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	(N/A)	YES	NO
10. Is there sufficient sample for the requested analyses?		(YES)	NO
11. Were all samples placed in the proper containers for the requested analyses?		(YES)	NO
12. Are all samples within holding times for the requested analyses?		(YES)	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		(YES)	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ____ < green pea ____ > green pea	(N/A)	YES	NO
15. Do any water samples contain sediment? Amount Amount of sediment: ____ dusting ____ moderate ____ heavy	(N/A)	YES	NO
16. Were the samples shipped on ice?		(YES)	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 (#4)	RAD ONLY	(YES)	NO

Cooler #:	1							
Temperature (°C):	5.0							
No. of custody seals on cooler:	0							
DOT Survey/ Acceptance Information — External µR/hr reading:	NA							
Background µR/hr reading:	NA							

Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? **YES / NO / (NA)** (If no, see Form 008.)

Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

If applicable, was the client contacted? **YES / NO / (NA)** Contact: _____ Date/Time: _____

Project Manager Signature / Date: 9/29/15

*IR Gun #2: Oakton, SN 29922500201-0066
*IR Gun #4: Oakton, SN 2372220101-0002

Client:	Talon LPE	**Date:**	*02-Oct-15*
Project:	701530.024.02 Nelson A6/A7	**Work Order:**	1509473
Sample ID:	BH-01 @ 12'	**Lab ID:**	1509473-1
Legal Location:		**Matrix:**	SOIL
Collection Date:	9/29/2015 10:18	**Percent Moisture:**	10.0

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Diesel Range Organics			**SW8015M**	Prep Date: **9/30/2015**		PrepBy: **JFN**
Diesel Range Organics	**37**	LDH	**5.4**	**MG/KG**	1	9/30/2015 23:06
Surr: O-TERPHENYL	*87*		*49-114*	*%REC*	1	9/30/2015 23:06
Gasoline Range Organics			**SW8015**	Prep Date: **9/30/2015**		PrepBy: **JFN**
GASOLINE RANGE ORGANICS	**6.1**	GZ	**0.42**	**MG/KG**	1	9/30/2015 14:02
Surr: 2,3,4-TRIFLUOROTOLUENE	*115*		*76-126*	*%REC*	1	9/30/2015 14:02
GC/MS Volatiles			**SW8260**	Prep Date: **9/30/2015**		PrepBy: **SDW**
BENZENE	ND		0.0051	MG/KG	1	9/30/2015 14:56
TOLUENE	ND		0.0051	MG/KG	1	9/30/2015 14:56
ETHYLBENZENE	ND		0.0051	MG/KG	1	9/30/2015 14:56
M+P-XYLENE	ND		0.0051	MG/KG	1	9/30/2015 14:56
O-XYLENE	ND		0.0051	MG/KG	1	9/30/2015 14:56
TOTAL XYLENES	ND		0.005	MG/KG	1	9/30/2015 14:56
Surr: DIBROMOFLUOROMETHANE	*99*		*61-134*	*%REC*	1	9/30/2015 14:56
Surr: TOLUENE-D8	*90*		*57-135*	*%REC*	1	9/30/2015 14:56
Surr: 4-BROMOFLUOROBENZENE	*92*		*52-151*	*%REC*	1	9/30/2015 14:56

Client: Talon LPE **Date:** *02-Oct-15*
Project: 701530.024.02 Nelson A6/A7 **Work Order:** 1509473
Sample ID: SW-3 @ 8' **Lab ID:** 1509473-2
Legal Location: **Matrix:** SOIL
Collection Date: 9/29/2015 10:25 **Percent Moisture:** 7.5

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Diesel Range Organics			**SW8015M**	Prep Date: **9/30/2015**		PrepBy: **JFN**
Diesel Range Organics	**1100**	L	**32**	**MG/KG**	6	10/1/2015 13:14
Surr: O-TERPHENYL	*100*		*49-114*	*%REC*	6	10/1/2015 13:14
Gasoline Range Organics			**SW8015**	Prep Date: **9/30/2015**		PrepBy: **JFN**
GASOLINE RANGE ORGANICS	**2000**	GZ	**54**	**MG/KG**	500	9/30/2015 13:41
Surr: 2,3,4-TRIFLUOROTOLUENE	*130*	*	*76-126*	*%REC*	500	9/30/2015 13:41
GC/MS Volatiles			**SW8260**	Prep Date: **9/30/2015**		PrepBy: **SDW**
BENZENE	**0.76**		**0.22**	**MG/KG**	50	9/30/2015 17:42
TOLUENE	**31**		**4.4**	**MG/KG**	1000	9/30/2015 17:13
ETHYLBENZENE	**15**		**4.4**	**MG/KG**	1000	9/30/2015 17:13
M+P-XYLENE	**75**		**4.4**	**MG/KG**	1000	9/30/2015 17:13
O-XYLENE	**28**		**4.4**	**MG/KG**	1000	9/30/2015 17:13
TOTAL XYLENES	**100**		**0.005**	**MG/KG**	1	9/30/2015 17:13
Surr: DIBROMOFLUOROMETHANE	*97*		*61-134*	*%REC*	1000	9/30/2015 17:13
Surr: DIBROMOFLUOROMETHANE	*103*		*61-134*	*%REC*	50	9/30/2015 17:42
Surr: TOLUENE-D8	*91*		*57-135*	*%REC*	50	9/30/2015 17:42
Surr: TOLUENE-D8	*95*		*57-135*	*%REC*	1000	9/30/2015 17:13
Surr: 4-BROMOFLUOROBENZENE	*92*		*52-151*	*%REC*	50	9/30/2015 17:42
Surr: 4-BROMOFLUOROBENZENE	*97*		*52-151*	*%REC*	1000	9/30/2015 17:13

Client: Talon LPE
Project: 701530.024.02 Nelson A6/A7
Sample ID: SW-4 @ 8'
Legal Location:
Collection Date: 9/29/2015 10:30

Date: *02-Oct-15*
Work Order: 1509473
Lab ID: 1509473-3
Matrix: SOIL
Percent Moisture: 8.6

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Diesel Range Organics		**SW8015M**		Prep Date: **9/30/2015**		PrepBy: **JFN**
Diesel Range Organics	ND		5.3	MG/KG	1	10/1/2015 00:07
Surr: O-TERPHENYL	*88*		*49-114*	*%REC*	1	10/1/2015 00:07
Gasoline Range Organics		**SW8015**		Prep Date: **9/30/2015**		PrepBy: **JFN**
GASOLINE RANGE ORGANICS	ND		0.5	MG/KG	1	9/30/2015 14:45
Surr: 2,3,4-TRIFLUOROTOLUENE	*104*		*76-126*	*%REC*	1	9/30/2015 14:45
GC/MS Volatiles		**SW8260**		Prep Date: **9/30/2015**		PrepBy: **SDW**
BENZENE	ND		0.0054	MG/KG	1	9/30/2015 16:46
TOLUENE	ND		0.0054	MG/KG	1	9/30/2015 16:46
ETHYLBENZENE	ND		0.0054	MG/KG	1	9/30/2015 16:46
M+P-XYLENE	ND		0.0054	MG/KG	1	9/30/2015 16:46
O-XYLENE	ND		0.0054	MG/KG	1	9/30/2015 16:46
TOTAL XYLENES	ND		0.005	MG/KG	1	9/30/2015 16:46
Surr: DIBROMOFLUOROMETHANE	*102*		*61-134*	*%REC*	1	9/30/2015 16:46
Surr: TOLUENE-D8	*91*		*57-135*	*%REC*	1	9/30/2015 16:46
Surr: 4-BROMOFLUOROBENZENE	*100*		*52-151*	*%REC*	1	9/30/2015 16:46

Client:	Talon LPE	**Date:**	*02-Oct-15*
Project:	701530.024.02 Nelson A6/A7	**Work Order:**	1509473
Sample ID:	SW-4 @ 8'	**Lab ID:**	1509473-3
Legal Location:		**Matrix:**	SOIL
Collection Date:	9/29/2015 10:30	**Percent Moisture:**	8.6

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed

Explanation of Qualifiers

Radiochemistry:

U or ND - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

G - Sample density differs by more than 15% of LCS density.

D - DER is greater than Control Limit

M - Requested MDC not met.

LT - Result is less than requested MDC but greater than achieved MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).

U or ND - Indicates that the compound was analyzed for but not detected.

E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.

M - Duplicate injection precision was not met.

N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.

Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.

* - Duplicate analysis (relative percent difference) not within control limits.

S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.

Organics:

U or ND - Indicates that the compound was analyzed for but not detected.

B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.

E - Analyte concentration exceeds the upper level of the calibration range.

J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).

A - A tentatively identified compound is a suspected aldol-condensation product.

X - The analyte was diluted below an accurate quantitation level.

* - The spike recovery is equal to or outside the control criteria used.

+ - The relative percent difference (RPD) equals or exceeds the control criteria.

G - A pattern resembling gasoline was detected in this sample.

D - A pattern resembling diesel was detected in this sample.

M - A pattern resembling motor oil was detected in this sample.

C - A pattern resembling crude oil was detected in this sample.

4 - A pattern resembling JP-4 was detected in this sample.

5 - A pattern resembling JP-5 was detected in this sample.

H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.

L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.

Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:
- gasoline
- JP-8
- diesel
- mineral spirits
- motor oil
- Stoddard solvent
- bunker C

Batch ID: **HC150930-61-1** Instrument ID: **FUELS-1** Method: **SW8015**

LCS Sample ID: **HC150930-61** Units: **MG/KG** Analysis Date: **9/30/2015 10:07**

Client ID: Run ID: **HC150930-6A** Prep Date: **9/30/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	2.29	0.5	2.5		92	79-118				20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.525		0.5		105	76-126					

LCSD Sample ID: **HC150930-61** Units: **MG/KG** Analysis Date: **9/30/2015 15:48**

Client ID: Run ID: **HC150930-6A** Prep Date: **9/30/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	2.37	0.5	2.5		95	79-118		2.29	3	20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.531		0.5		106	76-126			1		

MB Sample ID: **HC150930-61** Units: **MG/KG** Analysis Date: **9/30/2015 10:28**

Client ID: Run ID: **HC150930-6A** Prep Date: **9/30/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	ND	0.5									
Surr: 2,3,4-TRIFLUOROTOLUENE	0.508		0.5		102	76-126					

MB Sample ID: **HC150930-61M** Units: **MG/KG** Analysis Date: **9/30/2015 10:49**

Client ID: Run ID: **HC150930-6A** Prep Date: **9/30/2015** DF: **50**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	ND	5									
Surr: 2,3,4-TRIFLUOROTOLUENE	5.02		5		100	76-126					

MS Sample ID: **1509473-1** Units: **MG/KG** Analysis Date: **9/30/2015 15:06**

Client ID: **BH-01 @ 12'** Run ID: **HC150930-6A** Prep Date: **9/30/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	4.51	0.414	2.07	6.1	-78	79-118				40	*
Surr: 2,3,4-TRIFLUOROTOLUENE	0.402		0.414		97	76-126					

MSD Sample ID: **1509473-1** Units: **MG/KG** Analysis Date: **9/30/2015 15:26**

Client ID: **BH-01 @ 12'** Run ID: **HC150930-6A** Prep Date: **9/30/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	8.35	0.463	2.31	6.1	96	79-118		4.51	60	40	+
Surr: 2,3,4-TRIFLUOROTOLUENE	0.571		0.463		123	76-126			35		

The following samples were analyzed in this batch:	1509473-1	1509473-2	1509473-3

Client: Talon LPE
Work Order: 1509473
Project: 701530.024.02 Nelson A6/A7

QC BATCH REPORT

Batch ID: **HC150930-100-1** Instrument ID: **FUELS-1** Method: **SW8015M**

LCS Sample ID: **HC150930-100** Units: **MG/KG** Analysis Date: **9/30/2015 17:26**
Client ID: Run ID: **HC150930-7A** Prep Date: **9/30/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	130	5	125		104	76-124				20	
Surr: O-TERPHENYL	5.24		6.25		84	49-114					

MB Sample ID: **HC150930-100** Units: **MG/KG** Analysis Date: **9/30/2015 16:55**
Client ID: Run ID: **HC150930-7A** Prep Date: **9/30/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	ND	5									
Surr: O-TERPHENYL	4.7		6.25		75	49-114					

The following samples were analyzed in this batch: 1509473-1 1509473-3

Batch ID: **VL150930-2-1** Instrument ID: **HPV1** Method: **SW8260**

LCS Sample ID: **VL150930-2** Units: **MG/KG** Analysis Date: **9/30/2015 11:24**

Client ID: Run ID: **VL150930-2A** Prep Date: **9/30/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.0416	0.005	0.04		104	73-126				30	
TOLUENE	0.0423	0.005	0.04		106	71-127				30	
ETHYLBENZENE	0.0425	0.005	0.04		106	74-127				30	
M+P-XYLENE	0.0883	0.005	0.08		110	79-126				30	
O-XYLENE	0.0437	0.005	0.04		109	77-125				30	
Surr: DIBROMOFLUOROMETHANE	0.0485		0.05		97	61-134					
Surr: TOLUENE-D8	0.0466		0.05		93	57-135					
Surr: 4-BROMOFLUOROBENZENE	0.0476		0.05		95	52-151					

LCSD Sample ID: **VL150930-2** Units: **MG/KG** Analysis Date: **9/30/2015 11:51**

Client ID: Run ID: **VL150930-2A** Prep Date: **9/30/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.0436	0.005	0.04		109	73-126		0.0416	5	30	
TOLUENE	0.0425	0.005	0.04		106	71-127		0.0423	0	30	
ETHYLBENZENE	0.0423	0.005	0.04		106	74-127		0.0425	0	30	
M+P-XYLENE	0.0873	0.005	0.08		109	79-126		0.0883	1	30	
O-XYLENE	0.0437	0.005	0.04		109	77-125		0.0437	0	30	
Surr: DIBROMOFLUOROMETHANE	0.0485		0.05		97	61-134			0		
Surr: TOLUENE-D8	0.0458		0.05		92	57-135			2		
Surr: 4-BROMOFLUOROBENZENE	0.0488		0.05		98	52-151			2		

MB Sample ID: **VL150930-2** Units: **MG/KG** Analysis Date: **9/30/2015 12:17**

Client ID: Run ID: **VL150930-2A** Prep Date: **9/30/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	ND	0.005									
TOLUENE	ND	0.005									
ETHYLBENZENE	ND	0.005									
M+P-XYLENE	ND	0.005									
O-XYLENE	ND	0.005									
TOTAL XYLENES	ND	0.005									
Surr: DIBROMOFLUOROMETHANE	0.0481		0.05		96	61-134					
Surr: TOLUENE-D8	0.0454		0.05		91	57-135					
Surr: 4-BROMOFLUOROBENZENE	0.0479		0.05		96	52-151					

QC BATCH REPORT

Batch ID: **VL150930-2-1** Instrument ID: **HPV1** Method: **SW8260**

MB Sample ID: **VL150930-2M** Units: **MG/KG** Analysis Date: **9/30/2015 12:44**

Client ID: Run ID: **VL150930-2A** Prep Date: **9/30/2015** DF: **50**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	ND	0.25									
TOLUENE	ND	0.25									
ETHYLBENZENE	ND	0.25									
M+P-XYLENE	ND	0.25									
O-XYLENE	ND	0.25									
TOTAL XYLENES	ND	0.005									
Surr: DIBROMOFLUOROMETHANE	2.37		2.5		95	61-134					
Surr: TOLUENE-D8	2.3		2.5		92	57-135					
Surr: 4-BROMOFLUOROBENZENE	2.35		2.5		94	52-151					

The following samples were analyzed in this batch: 1509473-1 1509473-2 1509473-3

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

October 07, 2015

Colby Sterling
Talon/LPE
1811 E Mulberry
Ft Collins, CO 80524

RE: Nelson A6/A7

Enclosed are the results of analyses for samples received by Summit Scientific on 10/07/15 09:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Michelle Clements For Paul Shrewsbury
President

Talon/LPE 1811 E Mulberry Ft Collins CO, 80524	Project: Nelson A6/A7 Project Number: 701530.024.02 Project Manager: Colby Sterling	**Reported:** 10/07/15 17:33

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SW-3A@8'	1510039-01	Soil	10/06/15 09:45	10/07/15 09:20

Summit Scientific

1510039

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

Page 1 of 1

Client: Talon/LPE *Bill to Whiting
Address:
City/State/Zip:
Phone: Fax:
Sampler Name: TJ Griesl

Project Manager: Colby Sterling
E-Mail: csterling@talonlpe.com
Project Name: Nelson A6/A7
Project Number: 701530.024.02

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative: HCl	Preservative: HNO_3	Preservative: None	Preservative: Other (Specify)	Matrix: Groundwater	Matrix: Soil	Matrix: Air - Canister Serial #	Matrix: Other (Specify)	Analyze For: BTEX	Analyze For: GRO	Analyze For: DRO	Special Instructions
SW-3A @ 8'	10-6-15	945	1						X			X	X	X	

Relinquished by: Colby Sterling 10-7-15 Date/Time:
Received by: 10-7-15 9:20 Date/Time:
Relinquished by: 10-7-15 10:40 Date/Time:
Received by: 10/7/15 10:40 Date/Time:
Relinquished by: Date/Time:
Received in Lab by: Date/Time:

Turn Around Time (Check)
Same Day ✓ 72 Hours
24 Hours Standard
48 Hours

Sample Integrity:
Temperature Upon Receipt: 13.6°C
Intact: Yes ✓ No

Notes:

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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 A6/A7 Project Number: 701530.024.02 Project Manager: Colby Sterling	**Reported:** 10/07/15 17:33

SW-3A@8'
1510039-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/06/15 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1510053	10/07/15	10/07/15	8015M	

Date Sampled: **10/06/15 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*102 %*	*30-150*		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/06/15 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1510052	10/07/15	10/07/15	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/06/15 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*110 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*98.8 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*104 %*	*21-167*		"	"	"	"	

S2

Talon/LPE 1811 E Mulberry Ft Collins CO, 80524	Project: Nelson A6/A7 Project Number: 701530.024.02 Project Manager: Colby Sterling	**Reported:** 10/07/15 17:33

Extractable Petroleum Hydrocarbons by 8015 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1510053 - EPA 3550A										
Blank (1510053-BLK1)				Prepared & Analyzed: 10/07/15						
C10-C28 (DRO)	ND	50	mg/kg							
Surrogate: o-Terphenyl	*12.0*		*"*	*12.2*		*98.8*	*30-150*			
LCS (1510053-BS1)				Prepared & Analyzed: 10/07/15						
C10-C28 (DRO)	477	50	mg/kg	499		95.5	73-134			
Surrogate: o-Terphenyl	*12.4*		*"*	*12.2*		*102*	*30-150*			
Matrix Spike (1510053-MS1)	**Source: 1510031-01**			Prepared & Analyzed: 10/07/15						
C10-C28 (DRO)	424	50	mg/kg	441	14.7	92.8	50-148			
Surrogate: o-Terphenyl	*11.1*		*"*	*10.8*		*103*	*30-150*			
Matrix Spike Dup (1510053-MSD1)	**Source: 1510031-01**			Prepared & Analyzed: 10/07/15						
C10-C28 (DRO)	454	50	mg/kg	476	14.7	92.2	50-148	6.79	13	
Surrogate: o-Terphenyl	*11.8*		*"*	*11.6*		*101*	*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.

Talon/LPE 1811 E Mulberry Ft Collins CO, 80524	Project: Nelson A6/A7 Project Number: 701530.024.02 Project Manager: Colby Sterling	**Reported:** 10/07/15 17:33

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1510052 - EPA 5030 Soil MS										
Blank (1510052-BLK1)				Prepared: 10/07/15 Analyzed: 10/12/15						
Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.0050	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	*0.0444*		"	*0.0396*		*112*	*23-173*			
Surrogate: Toluene-d8	*0.0392*		"	*0.0400*		*97.9*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0419*		"	*0.0400*		*105*	*21-167*			
LCS (1510052-BS1)				Prepared: 10/07/15 Analyzed: 10/12/15						
Benzene	0.0977	0.0020	mg/kg	0.100		97.7	58-130			
Toluene	0.0891	0.0050	"	0.100		89.1	61-134			
Ethylbenzene	0.100	0.0050	"	0.0992		101	74-139			
m,p-Xylene	0.185	0.010	"	0.200		92.8	73-137			
o-Xylene	0.0924	0.0050	"	0.0984		93.9	73-141			
Xylenes (total)	0.278	0.0050	"				30-150			
Gasoline Range Hydrocarbons	1.96	0.50	"				30-150			
Surrogate: 1,2-Dichloroethane-d4	*0.0452*		"	*0.0396*		*114*	*23-173*			
Surrogate: Toluene-d8	*0.0407*		"	*0.0400*		*102*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0399*		"	*0.0400*		*99.7*	*21-167*			
Matrix Spike (1510052-MS1)	**Source: 1510039-01**			Prepared: 10/07/15 Analyzed: 10/12/15						
Benzene	0.0815	0.0020	mg/kg	0.0958	ND	85.1	30-131			
Toluene	0.0752	0.0050	"	0.0958	ND	78.5	30-134			
Ethylbenzene	0.0830	0.0050	"	0.0950	ND	87.3	22-153			
m,p-Xylene	0.154	0.010	"	0.191	ND	80.3	10-159			
o-Xylene	0.0750	0.0050	"	0.0943	ND	79.6	31-151			
Xylenes (total)	0.229	0.0050	"		ND		30-150			
Gasoline Range Hydrocarbons	1.59	0.50	"		ND		30-150			
Surrogate: 1,2-Dichloroethane-d4	*0.0462*		"	*0.0379*		*122*	*23-173*			
Surrogate: Toluene-d8	*0.0394*		"	*0.0383*		*103*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0377*		"	*0.0383*		*98.5*	*21-167*			

Talon/LPE 1811 E Mulberry Ft Collins CO, 80524	Project: Nelson A6/A7 Project Number: 701530.024.02 Project Manager: Colby Sterling	**Reported:** 10/07/15 17:33

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1510052 - EPA 5030 Soil MS										
Matrix Spike Dup (1510052-MSD1)		**Source: 1510039-01**		Prepared: 10/07/15 Analyzed: 10/12/15						
Benzene	0.0771	0.0020	mg/kg	0.0954	ND	80.8	30-131	5.59	34	
Toluene	0.0725	0.0050	"	0.0954	ND	76.0	30-134	3.68	30	
Ethylbenzene	0.0784	0.0050	"	0.0947	ND	82.8	22-153	5.71	24	
m,p-Xylene	0.144	0.010	"	0.190	ND	75.3	10-159	6.76	68	
o-Xylene	0.0699	0.0050	"	0.0939	ND	74.4	31-151	7.07	38	
Xylenes (total)	0.213	0.0050	"		ND		30-150	6.86	20	
Gasoline Range Hydrocarbons	1.55	0.50	"		ND		30-150	2.33	20	
Surrogate: 1,2-Dichloroethane-d4	*0.0468*		*"*	*0.0378*		*124*	*23-173*			
Surrogate: Toluene-d8	*0.0397*		*"*	*0.0382*		*104*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0370*		*"*	*0.0382*		*97.0*	*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.

S2

Talon/LPE	Project: Nelson A6/A7	
1811 E Mulberry	Project Number: 701530.024.02	**Reported:**
Ft Collins CO, 80524	Project Manager: Colby Sterling	10/07/15 17:33

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

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

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

November 20, 2015

Colby Sterling
Talon/LPE
1811 E Mulberry
Ft Collins, CO 80524

RE: Nelson A6/A7

Enclosed are the results of analyses for samples received by Summit Scientific on 11/13/15 15:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Paul Shrewsbury
President

Talon/LPE 1811 E Mulberry Ft Collins CO, 80524	Project: Nelson A6/A7 Project Number: 701530.024.02 Project Manager: Colby Sterling	**Reported:** 11/20/15 06:42

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SP-1	1511117-01	Soil	11/13/15 12:28	11/13/15 15:40
SP-2	1511117-02	Soil	11/13/15 12:30	11/13/15 15:40
SP-3	1511117-03	Soil	11/13/15 12:37	11/13/15 15:40

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 A6/A7 Project Number: 701530.024.02 Project Manager: Colby Sterling	**Reported:** 11/20/15 06:42

Summit Scientific

151117

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

Page 1 of 1

Client: Talon/LPE *Bill to Whiting
Address:
City/State/Zip:
Phone: 970-818-5330 Fax:
Sampler Name: Colby Sterling

Project Manager: Colby Sterling
E-Mail: csterling@talonlpe.com
Project Name: Nelson A6/A7
Project Number: 701530.024.02

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative: HCl	Preservative: HNO3	Preservative: None	Preservative: Other (Specify)	Matrix: Groundwater	Matrix: Soil	Matrix: Air - Canister Serial #	Matrix: Other (Specify)	Analyze For: GRO	Analyze For: DRO	Analyze For: BTEX	Special Instructions
SP-1	11-13-15	1226	1						X			X	X	X	
SP-2	1	1230	1						1			1	1	1	
SP-3		1237													

Relinquished by:	Date/Time:	Received by:	Date/Time:
	11-13-15 1540		11-13-15 15:40
	11-13-15 17:50		11/13/15 17:50

Turn Around Time (Check): Same Day ☐ 24 Hours ☐ 48 Hours ☐ 72 Hours ☐ Standard ☒

Sample Integrity:
Temperature Upon Receipt:
Intact: Yes ☐ No ☐

Notes:

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Talon/LPE 1811 E Mulberry Ft Collins CO, 80524	Project: Nelson A6/A7 Project Number: 701530.024.02 Project Manager: Colby Sterling	**Reported:** 11/20/15 06:42

SP-1
1511117-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/13/15 12:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1511145	11/16/15	11/17/15	8015M	

Date Sampled: **11/13/15 12:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*107 %*	*30-150*		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/13/15 12:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1511151	11/16/15	11/18/15	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **11/13/15 12:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*114 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*95.8 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*103 %*	*21-167*		"	"	"	"	

Talon/LPE 1811 E Mulberry Ft Collins CO, 80524	Project: Nelson A6/A7 Project Number: 701530.024.02 Project Manager: Colby Sterling	**Reported:** 11/20/15 06:42

SP-2
1511117-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/13/15 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1511145	11/16/15	11/17/15	8015M	

Date Sampled: **11/13/15 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*109 %*	*30-150*		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/13/15 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1511151	11/16/15	11/18/15	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **11/13/15 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*114 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*98.9 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*106 %*	*21-167*		"	"	"	"	

Talon/LPE 1811 E Mulberry Ft Collins CO, 80524	Project: Nelson A6/A7 Project Number: 701530.024.02 Project Manager: Colby Sterling	**Reported:** 11/20/15 06:42

SP-3
1511117-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/13/15 12:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1511145	11/16/15	11/17/15	8015M	

Date Sampled: **11/13/15 12:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*107 %*	*30-150*		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/13/15 12:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1511151	11/16/15	11/18/15	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **11/13/15 12:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*112 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*94.9 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*101 %*	*21-167*		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1511145 - EPA 3550A										
Blank (1511145-BLK1)				Prepared: 11/16/15 Analyzed: 11/17/15						
C10-C28 (DRO)	ND	50	mg/kg							
Surrogate: o-Terphenyl	*13.7*		"	*12.2*		*113*	*30-150*			
LCS (1511145-BS1)				Prepared: 11/16/15 Analyzed: 11/17/15						
C10-C28 (DRO)	470	50	mg/kg	499		94.3	73-134			
Surrogate: o-Terphenyl	*13.8*		"	*12.2*		*113*	*30-150*			
Matrix Spike (1511145-MS1)	**Source: 1511110-01**			Prepared: 11/16/15 Analyzed: 11/17/15						
C10-C28 (DRO)	488	50	mg/kg	491	25.8	94.2	50-148			
Surrogate: o-Terphenyl	*14.0*		"	*12.0*		*116*	*30-150*			
Matrix Spike Dup (1511145-MSD1)	**Source: 1511110-01**			Prepared: 11/16/15 Analyzed: 11/17/15						
C10-C28 (DRO)	480	50	mg/kg	494	25.8	91.9	50-148	1.71	13	
Surrogate: o-Terphenyl	*13.8*		"	*12.1*		*114*	*30-150*			

Talon/LPE 1811 E Mulberry Ft Collins CO, 80524	Project: Nelson A6/A7 Project Number: 701530.024.02 Project Manager: Colby Sterling	**Reported:** 11/20/15 06:42

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1511151 - EPA 5030 Soil MS										
Blank (1511151-BLK1)				Prepared: 11/16/15 Analyzed: 11/17/15						
Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.0050	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	*0.0469*		"	*0.0396*		*118*	*23-173*			
Surrogate: Toluene-d8	*0.0392*		"	*0.0400*		*98.0*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0401*		"	*0.0400*		*100*	*21-167*			
LCS (1511151-BS1)				Prepared: 11/16/15 Analyzed: 11/17/15						
Benzene	0.0830	0.0020	mg/kg	0.100		83.0	58-130			
Toluene	0.0919	0.0050	"	0.100		91.9	61-134			
Ethylbenzene	0.107	0.0050	"	0.0992		108	74-139			
m,p-Xylene	0.209	0.010	"	0.200		105	73-137			
o-Xylene	0.105	0.0050	"	0.0984		107	73-141			
Xylenes (total)	0.314	0.0050	"				30-150			
Gasoline Range Hydrocarbons	2.66	0.50	"				30-150			
Surrogate: 1,2-Dichloroethane-d4	*0.0483*		"	*0.0396*		*122*	*23-173*			
Surrogate: Toluene-d8	*0.0390*		"	*0.0400*		*97.5*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0382*		"	*0.0400*		*95.6*	*21-167*			
Matrix Spike (1511151-MS1)		**Source: 1511111-02**		Prepared: 11/16/15 Analyzed: 11/17/15						
Benzene	0.0828	0.0020	mg/kg	0.0980	ND	84.4	30-131			
Toluene	0.0903	0.0050	"	0.0980	ND	92.1	30-134			
Ethylbenzene	0.105	0.0050	"	0.0973	ND	108	22-153			
m,p-Xylene	0.202	0.010	"	0.196	ND	103	10-159			
o-Xylene	0.103	0.0050	"	0.0965	ND	107	31-151			
Xylenes (total)	0.306	0.0050	"		ND		30-150			
Gasoline Range Hydrocarbons	2.65	0.50	"		ND		30-150			
Surrogate: 1,2-Dichloroethane-d4	*0.0485*		"	*0.0388*		*125*	*23-173*			
Surrogate: Toluene-d8	*0.0385*		"	*0.0392*		*98.2*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0369*		"	*0.0392*		*94.0*	*21-167*			

Talon/LPE 1811 E Mulberry Ft Collins CO, 80524	Project: Nelson A6/A7 Project Number: 701530.024.02 Project Manager: Colby Sterling	**Reported:** 11/20/15 06:42

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1511151 - EPA 5030 Soil MS										
Matrix Spike Dup (1511151-MSD1)		**Source: 1511111-02**		Prepared: 11/16/15 Analyzed: 11/17/15						
Benzene	0.0783	0.0020	mg/kg	0.0975	ND	80.3	30-131	5.57	34	
Toluene	0.0869	0.0050	"	0.0975	ND	89.1	30-134	3.83	30	
Ethylbenzene	0.104	0.0050	"	0.0967	ND	108	22-153	0.418	24	
m,p-Xylene	0.204	0.010	"	0.195	ND	105	10-159	0.913	68	
o-Xylene	0.103	0.0050	"	0.0959	ND	107	31-151	0.131	38	
Xylenes (total)	0.307	0.0050	"		ND		30-150	0.562	20	
Gasoline Range Hydrocarbons	2.70	0.50	"		ND		30-150	1.83	20	
Surrogate: 1,2-Dichloroethane-d4	*0.0473*		"	*0.0386*		*122*	*23-173*			
Surrogate: Toluene-d8	*0.0373*		"	*0.0390*		*95.6*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0372*		"	*0.0390*		*95.4*	*21-167*			

Talon/LPE	Project: Nelson A6/A7	
1811 E Mulberry	Project Number: 701530.024.02	**Reported:**
Ft Collins CO, 80524	Project Manager: Colby Sterling	11/20/15 06:42

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