FORM
27
Rev 6/99

State of Colorado
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303)894-2100 Fax:(303)894-2109

FOR OGCC USE ONLY

OGCC Employee:
☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV
Tracking No:

SITE INVESTIGATION AND REMEDIATION WORKPLAN

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. Form 27 is intended to be used whenever possible. Additional documentation will be required when large volumes of soil and groundwater have been impacted or involve large facilities with multiple source areas. See Rule 910. Attach as many pages as needed to fully describe the proposed work.

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

☑ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☐ Site/Facility Closure ☐ Other (describe): _____

OGCC Operator Number: 10311
Name of Operator: Synergy Resources Corporation
Address: 20203 Highway 60
City: Platteville State: CO Zip: 80651

Contact Name and Telephone:
Jerry Brian
No: 970-518-2062
Fax:

API Number: NA
County: Weld
Facility Name: Coyle 34C
Facility Number: 428716
Well Name:
Well Number:
Location: (QtrQtr, Sec, Twp, Rng, Meridian): CNE 34 4N 68W 6 PM
Latitude: 40.273327 Longitude: -104.984382

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Crude Oil

Site Conditions: Is location within a sensitive area (according to Rule 901e)? ☐ Y ☑ N If yes, attach evaluation.

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): Agricultural

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Sand, gravel, clay, and clayey sand.

Potential receptors (water wells within 1/4 mi, surface waters, etc.): Ide & Starboard Ditch located 0.64 miles northwest

Description of Impact (if previously provided, refer to that form or document):

Impacted Media (check):	Extent of Impact:	How Determined:
☑ Soils	69' x 40', depth ranged from 2' to 3' bgs	Excavation soil samples
☐ Vegetation		
☐ Groundwater		
☐ Surface Water		

REMEDIATION WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document):

Between October 31 and November 17, 2016, field-screening and soil sampling activities were conducted to assess the potential presence of petroleum hydrocarbon impact associated with a crude oil spill within the tank battery. Please refer to COGCC Document # 401144420 and the attached report for additional details.

Describe how source is to be removed:

Potentially impacted soil was removed via excavation activities.

Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.:

The excavated soil was disposed of at a licensed disposal facility; no impacts remain in place.

Submit Page 2 with Page 1

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Page 2

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Tracking Number: _____
Name of Operator: _____
OGCC Operator No: _____
Received Date: _____
Well Name & No: _____
Facility Name & No: Coyle 34C 428716

REMEDIATION WORKPLAN (Cont.)

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):

Groundwater was not encountered during the site investigation activities.

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing. Use additional sheet for description if required.

Reclamation activies will be compliant with COGCC Rule 1004 upon final closure of the tank battery facility.

Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing.

Is further site investigation required? ☐ Y ☑ N If yes, describe:

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):

Transported to a licensed facility for final disposal.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: 10/31/2016	Date Site Investigation Completed: 11/17/2016	Date Remediation Plan Submitted: NA
Remediation Start Date: 10/31/2016	Anticipated Completion Date: 11/17/2016	Actual Completion Date: 11/27/2016

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: Jerry Brian Signed: Jerry Brian

Title: Manager of Environmental and Health Date: _____

OGCC Approved: _____ Title: _____ Date: _____

COMPLIANCE / ENGINEERING / REMEDIATION

LT Environmental Inc.
4600 West 60th Avenue
Arvada, Colorado 80003
T 303.433.9788 / F 303.433.1432

December 28, 2016

Mr. Chris Canfield
Environmental Protection Specialist
Colorado Oil and Gas Conservation Commission
1120 Lincoln Street, Suite 801
Denver, Colorado 80203

RE: Coyle 34C Tank Battery (Facility ID 428716)
Excavation Report and Closure Request
Synergy Resources Corporation
Weld County, Colorado

Dear Mr. Canfield:

LT Environmental, Inc. (LTE) has prepared this report of behalf of Synergy Resources Corporation (Synergy), to provide the Colorado Oil and Gas Commission (COGCC) with documentation of the site investigation activities conducted at the Coyle 34C Tank Battery (Site). The Site is located approximately 0.2 miles west of United States Interstate 25 and 0.73 miles north of Weld County Road 38 in Weld County, Colorado. The legal Site description is the center of the northeast quarter of Section 34, Township 4 North, Range 68 West, 6th Principal Meridian. The Site Location Map is provided as Figure 1.

Excavation Activities

On October 27, 2016, approximately 15 barrels (bbl) of crude oil were released from a tank when a tank valve was left open. Approximately 68 cubic yards of impacted soil were excavated from within the berm and disposed of offsite.

On October 31, 2016, under the direction of Synergy, LTE personnel conducted soil-screening activities to determine the potential extent of petroleum hydrocarbon impacts. Twenty-one soil samples were field-screened for volatile organic compounds (VOC's) using a photo-ionization detector (PID). Based on the field-screening results, six production tanks were emptied and removed from the bermed area. Additional impacted soil from beneath the removed production tanks was removed and disposed of offsite.

On November 17, 2016, LTE conducted additional field-screening activities. Six confirmation soil samples were collected, field screened for VOC's using a PID, and submitted for laboratory analysis. Groundwater was not encountered during the excavation.

Soil Sampling

Six soil samples (SB38@2', SB39@2', SB40@2', SB41@3', SB42@2', and SB43@2') were collected from beneath the former tank footprints at various depths. All samples were collected, placed on ice, then submitted with a completed chain-of-custody form to eAnalytics Laboratory of

Loveland, Colorado, for laboratory analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) and total petroleum hydrocarbons (TPH) as gasoline range organics by United States Environmental Protection Agency (EPA) Method 8260, and TPH as diesel range organics by EPA Method 8015. The soil sample locations are depicted on Figure 2.

Soil Analytical Results

The COGCC Table 910-1 standards for BTEX and TPH in soil are 0.17 milligrams per kilogram (mg/kg), 85 mg/kg, 100 mg/kg, 175 mg/kg, and 500 mg/kg, respectively. Laboratory soil analytical results indicated that all six soil samples were in compliance with applicable COGCC Table 910-1 standards. The laboratory soil analytical results are presented on Figure 2 and summarized in Table 1. The laboratory analytical report is included as Attachment 1.

Summary and Conclusions

Following an initial excavation, LTE conducted field-screening activities which identified potential petroleum hydrocarbon impacts associated with a spill of crude oil within the tank battery berm. On November 17, 2016, following additional excavation, LTE collected six confirmation soil samples. Laboratory soil analytical results indicate that all six soil samples are in compliance with COGCC Table 910-1 standards.

Based on these findings, LTE and Synergy respectfully request that the COGCC grant a decision of No Further Action status for the Coyle 34C Tank Battery. LTE appreciates the opportunity to provide environmental services to Synergy. Should you have any questions or comments, please feel free to contact the undersigned at 303-433-9788.

Sincerely,

LT Environmental, Inc.

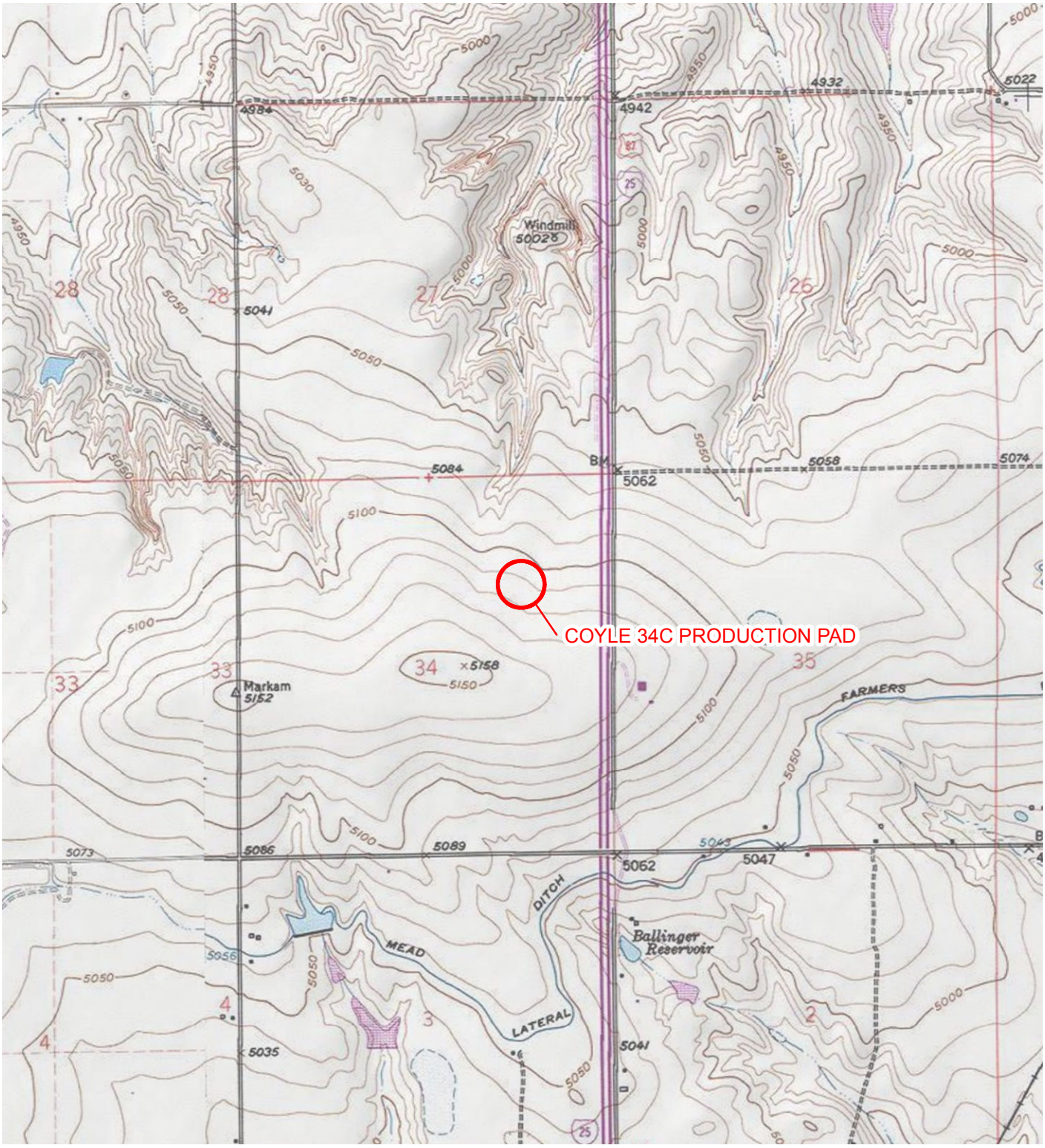
Katharine Howe, E.I.T.
Staff Engineer

Chris Roy
Project Environmental Scientist

Attachments

Figure 1	Site Location Map
Figure 2	Site Map
Table 1	Soil Analytical Results
Attachment 1	Laboratory Analytical Report

FIGURES



LEGEND

SITE LOCATION

IMAGE COURTESY OF ESRI/USGS

0 2,000 4,000

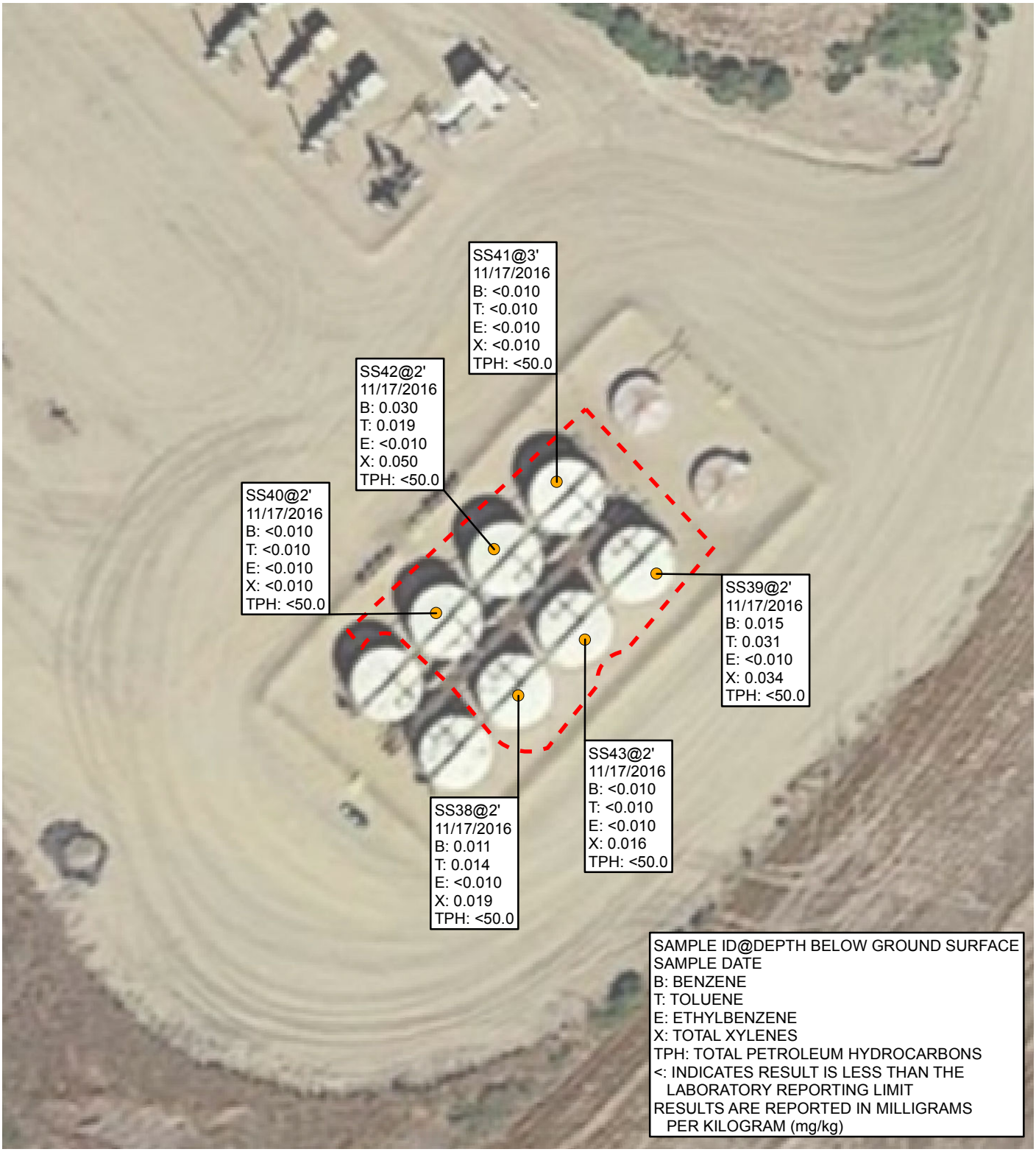
Feet

N

COLORADO

FIGURE 1
SITE LOCATION MAP
COYLE 34C PRODUCTION PAD
CNE SECTION 34-T4N-R68W
WELD COUNTY, COLORADO
SYNERGY RESOURCES CORPORATION

P:\Synergy\GIS\MXD\041716048_COYLE_34C_PRODUCTION PAD\041716048_FIG01_SL.mxd



LEGEND

SOIL SAMPLE

EXCAVATION EXTENT

IMAGE COURTESY OF GOOGLE EARTH 2016

0 30 60

Feet

N

FIGURE 2
SITE MAP
COYLE 34C PRODUCTION PAD
CNE SECTION 34-T4N-R68W
WELD COUNTY, COLORADO
SYNERGY RESOURCES CORPORATION

P:\Synergy\GIS\MXD\041716048_COYLE_34C_PRODUCTION PAD\041716048_FIG02_SITE_122116.mxd

TABLES

TABLE 1

SOIL ANALYTICAL RESULTS
COYLE 34C PRODUCTION PAD
WELD COUNTY, COLORADO
SYNERGY RESOURCES CORPORATION

Soil Sample	Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	TPH (mg/kg)
SB38@2'	11/17/2016	0.011	0.014	<0.010	0.019	<50.0	<50.0	<50.0
SB39@2'	11/17/2016	0.015	0.031	<0.010	0.034	<50.0	<50.0	<50.0
SB40@2'	11/17/2016	<0.010	<0.010	<0.010	<0.010	<50.0	<50.0	<50.0
SB41@3'	11/17/2016	<0.010	<0.010	<0.010	<0.010	<50.0	<50.0	<50.0
SB42@2'	11/17/2016	0.030	0.019	<0.010	0.050	<50.0	<50.0	<50.0
SB43@2'	11/17/2016	<0.010	<0.010	<0.010	0.016	<50.0	<50.0	<50.0
COGCC Table 910-1 Standards		**0.17**	**85**	**100**	**175**	--	--	**500**

NOTES:
COGCC - Colorado Oil and Gas Conservation Commission
DRO - diesel range organics analyzed by EPA Method 8015
GRO - gasoline range organics analyzed by EPA Method 8260
mg/kg - milligrams per kilogram
TPH - total petroleum hydrocarbons is the sum of GRO and DRO
-- - indicates there is no standard or the sample was not analyzed for the parameter
< - indicates result is less than the stated laboratory reporting limit
Benzene, toluene, ethylbenzene, and total xylenes analyzed by EPA Method 8260

ATTACHMENT 1

LABORATORY ANALYTICAL REPORT

Test Report

eANALYTICS
LABORATORY

November 23, 2016

Client:	LT Environmental
Project:	Coyle 34C Pad
Lab ID:	6117
Date Samples Received:	11/17/2016
Number of Samples:	6
Sample Condition:	Samples arrived intact and in appropriate sample containers
Sample Temperature:	Samples arrived within the acceptable temperature range as specified in the test method

Comments:

Thank you for allowing eAnalytics Laboratory to provide laboratory services for you.

Christopher Dieken
Quality Assurance Manager

Todd Rhea
Laboratory Manager

Chain of Custody

eANALYTICS LABORATORY

Chain of Custody Form

eANALYTICS LABORATORY

1767 Rocky Mountain Avenue Loveland CO 80538 | Phone: (970) 667-6975 | Fax: (970) 669-0941 | www.eAnalyticsLab.com

CLIENT INFORMATION
(*New Clients please fill out completely)

Company: LT Environmental
Project: Coyle 34C Pad
Project Manager: Chris Roy
Sampler: Glenn Thompson
Phone/Email: croy@ltenv.com
Address: 4600 West 60th Avenue, Aravada, CO 80003

ANALYSIS INFORMATION
(Select analysis by checking box on corresponding sample line)

Lab ID	Sample Name	Sampling Date/Time	Number of Containers	Matrix (S) Soil (W) Water (V) Vapor (O) Other	BTEX	GRO, DRO	Other Instructions
1	5538 @ 2'	11/17/16 1120 AM/PM	1	S	X	X	
2	5539 @ 2'	11/17/16 1130 AM/PM	1	S	X	X	
3	5540 @ 2'	11/17/16 1155 AM/PM	1	S	X	X	
4	5541 @ 3'	11/17/16 1203 AM/PM	1	S	X	X	
5	5542 @ 2'	11/17/16 1213 AM/PM	1	S	X	X	
6	5543 @ 2'	11/17/16 1221 AM/PM	1	S	X	X	
		AM/PM					
		AM/PM					
		AM/PM					
		AM/PM					
		AM/PM					
		AM/PM					
		AM/PM					
		AM/PM					

Comments:

Turnaround Time (Business Days)
TAT begins when sample is received by eANALYTICS

- (X) Normal (5-10 Days)
- ( ) 3 Day (25%)
- ( ) 2 Day (50%)
- ( ) 1 Day (100%)
- ( ) Same Day (300%)

Rush analysis requires an extra charge. If possible please inform eANALYTICS in advance for rush analysis.

Colorado OPS Project : Yes / No

For eANALYTICS Use

Samples Received Intact: (Yes) No
Received Within Temperature Range (2-6°C) (Yes) No
Sample Preservative: (Ice) None (No) Acid Other

Record of Custody

Relinquished by: [signature] Date 11/17/16 Time 1305 AM/PM
Company: LTE
Received by: Date Time AM/PM
Company:
Relinquished by: Date Time AM/PM
Company:
Received by: [signature] Date 11-17-16 Time 1305 AM/PM
Company: eANALYTICS

WO # 6117 eANALYTICS: Environmental testing made Easy Page 1 of 1

Soil
Sample Analysis

eANALYTICS LABORATORY

Client:	LT Environmental	Lab ID:	6117
Project:	Coyle 34C Pad		
Analysis:	Volatile Organics TPH-GRO/DRO	Method:	EPA8260 EPA8260/8015

Sample Name	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-GRO	TPH-DRO	Date Sampled	Date Analyzed	Lab ID	
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg				
SS38 @ 2'	0.011	0.014	<0.010	0.019	<50.0	<50.0	11/17/16	11/17/16	6117	1
SS39 @ 2'	0.015	0.031	<0.010	0.034	<50.0	<50.0	11/17/16	11/17/16	6117	2
SS40 @ 2'	<0.010	<0.010	<0.010	<0.010	<50.0	<50.0	11/17/16	11/17/16	6117	3
SS41 @ 3'	<0.010	<0.010	<0.010	<0.010	<50.0	<50.0	11/17/16	11/17/16	6117	4
SS42 @ 2'	0.030	0.019	<0.010	0.050	<50.0	<50.0	11/17/16	11/17/16	6117	5
SS43 @ 2'	<0.010	<0.010	<0.010	0.016	<50.0	<50.0	11/17/16	11/17/16	6117	6

Soil
Quality Control - Surrogate Recoveries

eANALYTICS LABORATORY

Client:	LT Environmental	Lab ID:	6117
Project:	Coyle 34C Pad	Method:	EPA8260

Sample Name	Dibromo-fluoromethane % Recovery	1,2 Dichloro-ethane-D4 % Recovery	Toluene-D8 % Recovery	Bromo-fluorobenzene % Recovery	Date Sampled	Date Analyzed	Lab ID	
SS38 @ 2'	91	86	100	95	11/17/16	11/17/16	6117	1
SS39 @ 2'	90	86	101	95	11/17/16	11/17/16	6117	2
SS40 @ 2'	90	88	100	96	11/17/16	11/17/16	6117	3
SS41 @ 3'	90	89	99	95	11/17/16	11/17/16	6117	4
SS42 @ 2'	89	86	101	95	11/17/16	11/17/16	6117	5
SS43 @ 2'	90	85	103	91	11/17/16	11/17/16	6117	6

Soil
Quality Control - Analyses

eANALYTICS LABORATORY

Client:	LT Environmental	Lab ID:	6117
Project:	Coyle 34C Pad		
Analysis:	Volatile Organics TPH-GRO/DRO	Method:	EPA8260 EPA8260/8015

Sample Name	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-GRO	TPH-DRO	Date Analyzed		Lab ID
	% Rec	% Rec	% Rec	% Rec	% Rec	% Rec			
Laboratory Control Sample	91	92	91	90	92	86	11/17/16	LCS	6117 1
(70-130%)									
Method Blank	<0.010	<0.010	<0.010	<0.010	<50.0	<50.0	11/17/16	MB	6117 1
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg			