

State of Colorado Oil and Gas Conservation Commission

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



Document Number:

401098322

Date Received:

SPILL/RELEASE REPORT (SUPPLEMENTAL)

This form is to be submitted by the party responsible for the oil and gas spill or release. Any spill or release which may impact waters of the State must be reported as soon as practicable; any spill over 20 bbls must be reported within 24 hours and all spills over five bbls must be reported within ten days. Submit a Site Investigation and Remediation Workplan (Form 27) when requested by the Director.

Spill report taken by:

CANFIELD, CHRIS

Spill/Release Point ID:

447261

OPERATOR INFORMATION

Name of Operator: 8 NORTH LLC Operator No: 10575 Address: 370 17TH STREET SUITE 5300 City: DENVER State: CO Zip: 80202 Contact Person: Josh Carlisle Phone Numbers: Phone: (720) 281-2372 Mobile: (720) 281-2372 Email: jcarlisle@extractionog.com

INITIAL SPILL/RELEASE REPORT

Initial Spill/Release Report Doc# 401086328

Initial Report Date: 07/29/2016 Date of Discovery: 07/29/2016 Spill Type: Historical Release

Spill/Release Point Location:

Location of Spill/Release: QTRQTR NWSW SEC 15 TWP 1N RNG 69W MERIDIAN 6

Latitude: 40.048300 Longitude: -105.100450

Municipality (if within municipal boundaries): Erie County: BOULDER

Reference Location:

Facility Type: TANK BATTERY Facility/Location ID No: 321264 No Existing Facility or Location ID No. Well API No. (Only if the reference facility is well) 05-

Fluid(s) Spilled/Released (please answer Yes/No):

Was one (1) barrel or more spilled outside of berms or secondary containment? Yes Secondary containment, including walls & floor regardless of construction material, must be sufficiently impervious to contain any discharge from primary containment until cleanup occurs.

Were Five (5) barrels or more spilled? No

Estimated Total Spill Volume: use same ranges as others for values

Estimated Oil Spill Volume(bbl): Unknown Estimated Condensate Spill Volume(bbl): 0 Estimated Flow Back Fluid Spill Volume(bbl): 0 Estimated Produced Water Spill Volume(bbl): 0 Estimated Other E&P Waste Spill Volume(bbl): 0 Estimated Drilling Fluid Spill Volume(bbl): 0

Specify:

Land Use:

Current Land Use: CROP LAND Other(Specify): Weather Condition: Sunny Surface Owner: OTHER (SPECIFY) Other(Specify): Boulder County Open Space

Check if impacted or threatened by spill/Release (please answer Yes/No to all that apply):

Waters of the State Residence/Occupied Structure Livestock Public Byway Surface Water Supply Area As defined in COGCC 100-Series Rules

Describe what is known about the spill/release event (what happened -- including how it was stopped, contained, and recovered):

During pressure testing a dump line leak was discovered at the Leyner 61N69W15NWSE location. Excavation and repair activities commenced and hydrocarbon impacted soil was encountered in the excavation. Groundwater was not encountered in the excavation. Soil samples were collected from the excavation area and submitted for laboratory analysis of benzene, toluene, ethylbenzene and total xylenes (BTEX) by USEPA Method 8260 and total petroleum hydrocarbons (TPH) by USEPA Method 8015. Site assessment activities are ongoing at this location.

List Agencies and Other Parties Notified:

OTHER NOTIFICATIONS

Date	Agency/Party	Contact	Phone	Response
7/29/2016	Boulder County Open Space	Mindy Carson Hatcher	-- email	
7/29/2016	City of Erie	Marty Ostholthoff	-- email	

SPILL/RELEASE DETAIL REPORTS

#1 Supplemental Report Date: 08/24/2016

FLUIDS	BBL's SPILLED	BBL's RECOVERED	Unknown
OIL	_____	_____	<input checked="" type="checkbox"/>
CONDENSATE	0	0	<input type="checkbox"/>
PRODUCED WATER	0	0	<input type="checkbox"/>
DRILLING FLUID	0	0	<input type="checkbox"/>
FLOW BACK FLUID	0	0	<input type="checkbox"/>
OTHER E&P WASTE	0	0	<input type="checkbox"/>

specify: _____

Was spill/release completely contained within berms or secondary containment? NO Was an Emergency Pit constructed? NO

Secondary containment, including walls & floor regardless of construction material, must be sufficiently impervious to contain any discharge from primary containment until cleanup occurs.

A Form 15 Pit Report shall be submitted within 30 calendar days after the construction of an emergency pit

Impacted Media (Check all that apply) Soil Groundwater Surface Water Dry Drainage Feature

Surface Area Impacted: Length of Impact (feet): 70 Width of Impact (feet): 8

Depth of Impact (feet BGS): 8 Depth of Impact (inches BGS): _____

How was extent determined?

During pressure testing two dump line leaks were discovered at the Leyner 61N69W15NWSE location. Excavation and repair activities commenced and hydrocarbon impacts were discovered. Excavation activities were guided in the field by screening for volatile organic compound (VOC) concentrations using a photoionization detector (PID). Nine soil samples were collected from the sidewalls and base of the final extent of the excavation between 4 and 8 feet below ground surface (bgs). Soil samples were submitted to Summit Scientific Laboratory, in Golden, Colorado for analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), total petroleum hydrocarbons (TPH) - gasoline range organics (GRO) by United States Environmental Protection Agency (USEPA) Method 8260B, and TPH - diesel range organics (DRO) by USEPA Method 8015. Analytical results indicate that constituent concentrations in the soil samples collected from the final extent of the excavation area were below the applicable COGCC Table 910-1 soil standards. Groundwater was not encountered in the excavation. Soil analytical results are summarized in Table 1 and sample locations are illustrated on Figure 2. Laboratory analytical reports are included as Attachment A.

Soil/Geology Description:

Sandy Clay

Depth to Groundwater (feet BGS) 10 Number Water Wells within 1/2 mile radius: 20

If less than 1 mile, distance in feet to nearest

Water Well	<u>780</u>	None <input type="checkbox"/>	Surface Water	<u>310</u>	None <input type="checkbox"/>
Wetlands	_____	None <input checked="" type="checkbox"/>	Springs	_____	None <input checked="" type="checkbox"/>
Livestock	_____	None <input checked="" type="checkbox"/>	Occupied Building	_____	None <input checked="" type="checkbox"/>

Additional Spill Details Not Provided Above:

Empty box for additional spill details.

CORRECTIVE ACTIONS

#1 Supplemental Report Date: 08/24/2016

Cause of Spill (Check all that apply) Human Error Equipment Failure Historical-Unknown
 Other (specify) _____

Describe Incident & Root Cause (include specific equipment and point of failure)

Pressure testing indicated a potential leak in the oil dumpline. The dumpline was excavated and found to be corroded, creating a release.

Describe measures taken to prevent the problem(s) from reoccurring:

The both the corroded oil dumpline and the water dumpline were removed and replaced. The new replacement dumplines were pressure tested to ensure line integrity. The pressure test results are included as Attachment B.

Volume of Soil Excavated (cubic yards): 60

Disposition of Excavated Soil (attach documentation) Offsite Disposal Onsite Treatment
 Other (specify) _____

Volume of Impacted Ground Water Removed (bbls): 0

Volume of Impacted Surface Water Removed (bbls): 0

REQUEST FOR CLOSURE

Spill/Release Reports should be closed when impacts have been remediated or when further investigation and corrective actions will take place under an approved Form 27.

Basis for Closure: Corrective Actions Completed (documentation attached)

Work proceeding under an approved Form 27

Form 27 Remediation Project No: _____

OPERATOR COMMENTS:

Empty box for operator comments.

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

Signed: _____ Print Name: Josh Carlisle

Title: Environmental Supervisor Date: _____ Email: jcarlisle@extractionog.com

COA Type Description

COA Type	Description

Attachment Check List

Att Doc Num Name

401098370	OTHER
-----------	-------

Total Attach: 1 Files

General Comments

User Group

Comment

Comment Date

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>

Total: 0 comment(s)

FIGURES

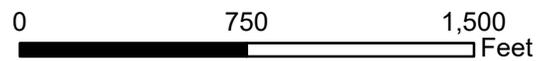
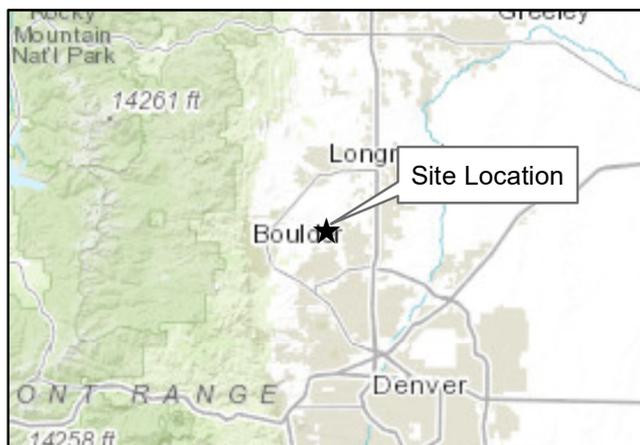
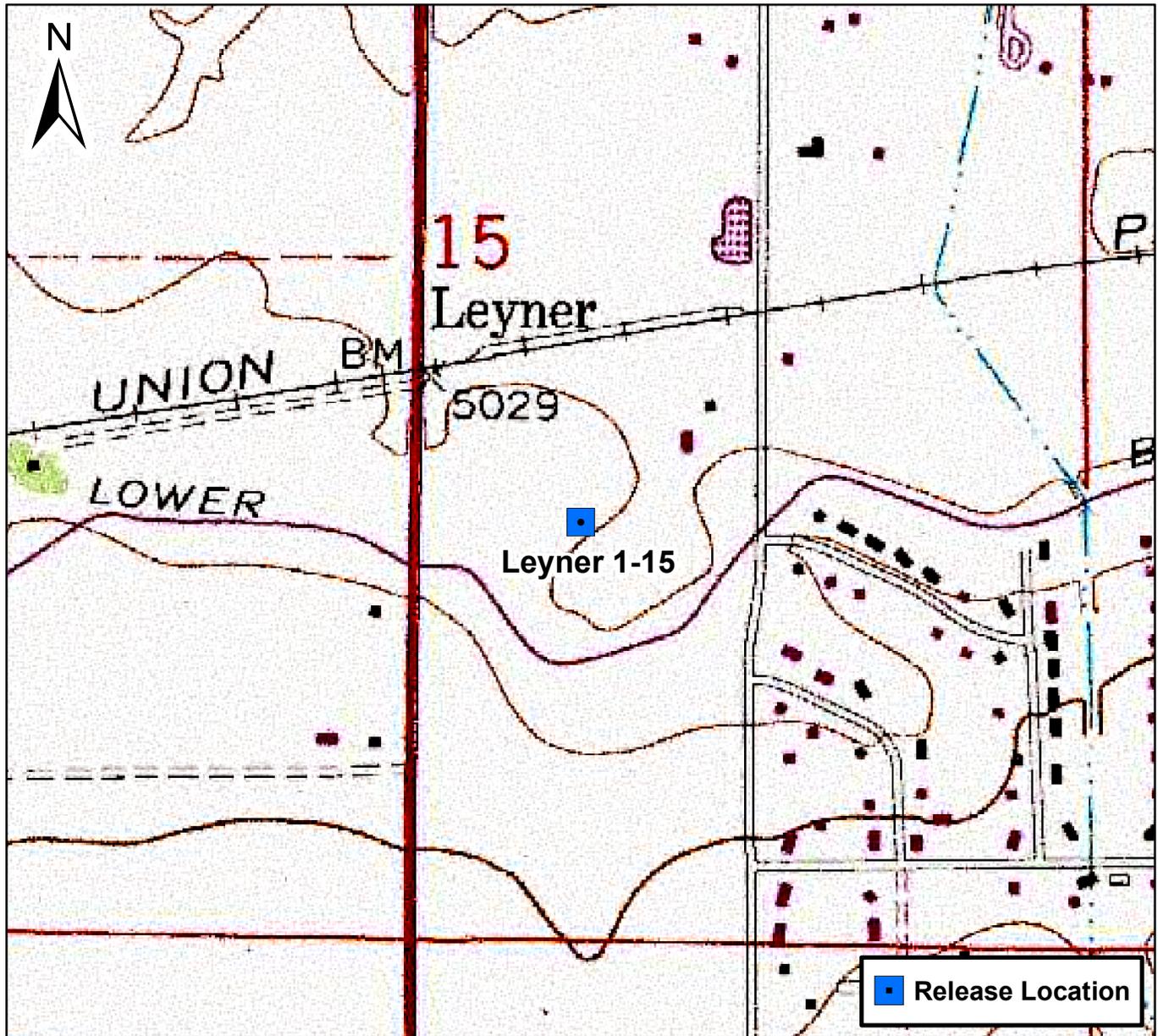
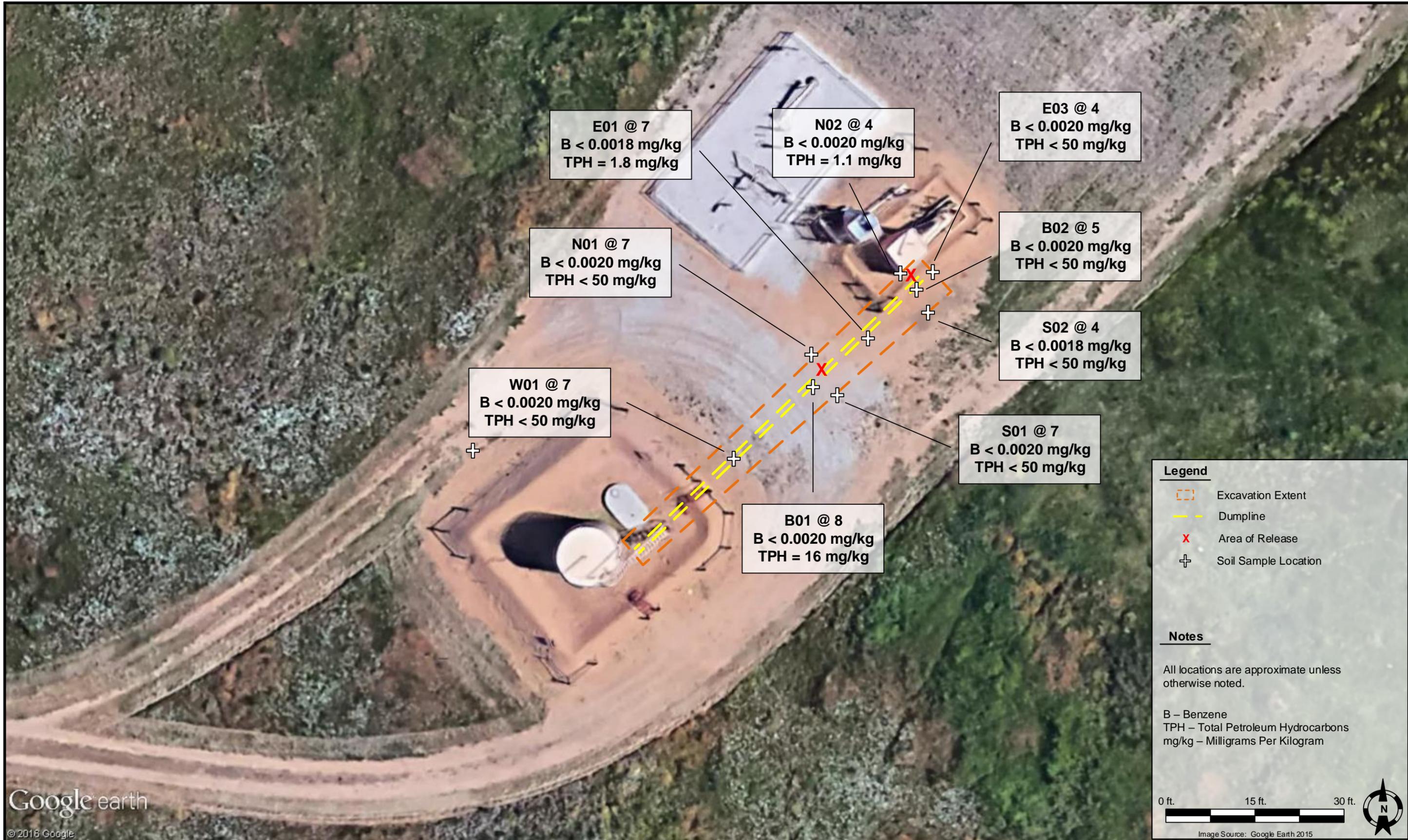


Figure 1

Site Location Map
 Leyner 1-15
 NWSE S15 T1N R69W
 Boulder County, Colorado





DATE:	August 1, 2016
DESIGNED BY:	R. Bruner
DRAWN BY:	R. Bruner



Extraction Oil & Gas LLC
LEYNER 61N69W15NWSE
 NWSE, Section 15, Township 1 North, Range 69 West
 Weld County, Colorado

Excavation Extent and
 Sample Location Map

FIGURE
 2

**ANALYTICAL
TABLES**

TABLE 1
LEYNER 61N69W15NWSE
SOIL SAMPLE RESULTS SUMMARY TABLE
EXTRACTION OIL AND GAS LLC

Sample ID	Date	Depth (ft. bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	TVPH-GRO (mg/kg)	TEPH-DRO (mg/kg)
COGCC standards for soil (mg/kg) ⁽¹⁾			0.17	85	100	175	500	
B01 @8	07/29/16	8	< 0.0020	< 0.0050	< 0.0050	0.054	16	< 50
N01 @7	08/01/16	7	< 0.0020	< 0.0050	< 0.0050	0.035	< 0.50	< 50
E01 @7	08/01/16	7	< 0.0018	< 0.0045	< 0.0045	< 0.0045	1.8	< 50
S01 @7	08/01/16	7	< 0.0020	< 0.0050	< 0.0050	< 0.0050	< 0.50	< 50
W01 @7	08/01/16	7	< 0.0020	< 0.0050	< 0.0050	< 0.0050	< 0.50	< 50
B02 @5	08/08/16	5	< 0.0020	< 0.0050	< 0.0050	< 0.0050	< 0.50	< 50
N02 @4	08/08/16	4	< 0.0020	< 0.0050	< 0.0050	< 0.0050	1.1	< 50
E03 @4	08/08/16	4	< 0.0020	< 0.0050	< 0.0050	< 0.0050	< 0.50	< 50
S02 @4	08/08/16	4	< 0.0020	< 0.0050	< 0.0050	< 0.0050	< 0.50	< 50

Notes:

1. Standards for soil are taken from 2 CCR 404-1, Table 910-1, effective March 16, 2016.

COGCC = Colorado Oil and Gas Conservation Commission

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

TVPH - GRO = Total volatile petroleum hydrocarbons - gasoline range organics

TEPH - DRO = Total extractable petroleum hydrocarbons - diesel range organics

mg/kg = Milligrams per kilogram.

ft. bgs = Feet below ground surface.

BOLD = Analytical result is in exceedance of COGCC Table 910-1 soil standards.

**ATTACHMENT A
LABORATORY
ANALYTICAL REPORTS**

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

July 31, 2016

Ryan Bruner
Extraction Oil & Gas
570 17th St. Suite 550
Denver, CO 80202
RE: Leyner 15-1

Enclosed are the results of analyses for samples received by Summit Scientific on 07/29/16 13:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury
President



Extraction Oil & Gas
570 17th St. Suite 550
Denver CO, 80202

Project: Leyner 15-1

Project Number: [none]
Project Manager: Ryan Bruner

Reported:
07/31/16 12:55

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B01@8'	1607237-01	Soil	07/29/16 12:02	07/29/16 13:20

Summit Scientific

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



Extraction Oil & Gas
570 17th St. Suite 550
Denver CO, 80202

Project: Leyner 15-1

Project Number: [none]
Project Manager: Ryan Bruner

Reported:
07/31/16 12:55

Summit Scientific 1607237

S₂

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

Client: EXTRACT.OIL Project Manager: RYAN BRUNER Page 1 of 1
 Address: _____ E-Mail: _____
 City/State/Zip: _____
 Phone: _____ Fax: _____ Project Name: LEYNER 15-1
 Sampler Name: RYAN BRUNER Project Number: _____

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested				Special Instructions	
					HCl	HNO3	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	GB/EI	DRO/GCO			
1	B0308	7/29/16	12:02	1						X							
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Relinquished by: <u>Ryan Bruner</u>	Date/Time: <u>13:20 7/29/16</u>	Received by: <u>[Signature]</u>	Date/Time: <u>7/29/16 13:20</u>	Turn Around Time (Check)	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day <input checked="" type="checkbox"/> 72 hours <input type="checkbox"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours <input type="checkbox"/> Standard <input type="checkbox"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	48 hours <input type="checkbox"/>	
				Sample Integrity:	
				Temperature Upon Receipt: <u>33.0C</u>	
				Intact: Yes No	

www.s2scientific.com

S₂

Extraction Oil & Gas
570 17th St. Suite 550
Denver CO, 80202

Project: Leyner 15-1

Project Number: [none]
Project Manager: Ryan Bruner

Reported:
07/31/16 12:55

Sample Receipt Checklist

S2 Work Order: 1657237

Client: Extraction Client Project ID: Leyner 15-1

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

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

Cooler ID				
Temp (°C)	<u>33</u>			

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature just above 0°C to ≤ 6°C ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present?	<input checked="" type="checkbox"/>			
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

Loren S
Custodian Printed Name

[Signature]
Signature or Initials of Custodian

7-29-16
Date/Time

[Signature]



Extraction Oil & Gas
570 17th St. Suite 550
Denver CO, 80202

Project: Leyner 15-1

Project Number: [none]
Project Manager: Ryan Bruner

Reported:
07/31/16 12:55

B01@8'
1607237-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/29/16 12:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1607308	07/29/16	07/29/16	8015M	

Date Sampled: **07/29/16 12:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		94.6 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/29/16 12:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1607309	07/29/16	07/29/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.054	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	16	0.50	"	"	"	"	"	"	

Date Sampled: **07/29/16 12:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		98.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %	21-167		"	"	"	"	

Summit Scientific

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



Extraction Oil & Gas
570 17th St. Suite 550
Denver CO, 80202

Project: Leyner 15-1

Project Number: [none]
Project Manager: Ryan Bruner

Reported:
07/31/16 12:55

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1607308 - EPA 3550A

Blank (1607308-BLK1)				Prepared & Analyzed: 07/29/16							
C10-C28 (DRO)	ND	50	mg/kg								
Surrogate: <i>o</i> -Terphenyl	12.2		"	12.5		97.2	30-150				
LCS (1607308-BS1)				Prepared & Analyzed: 07/29/16							
C10-C28 (DRO)	438	50	mg/kg	499		87.7	73-134				
Surrogate: <i>o</i> -Terphenyl	12.4		"	12.5		99.2	30-150				
Matrix Spike (1607308-MS1)				Source: 1607237-01		Prepared & Analyzed: 07/29/16					
C10-C28 (DRO)	396	50	mg/kg	456	15.5	83.5	50-148				
Surrogate: <i>o</i> -Terphenyl	11.2		"	11.4		98.1	30-150				
Matrix Spike Dup (1607308-MSD1)				Source: 1607237-01		Prepared & Analyzed: 07/29/16					
C10-C28 (DRO)	402	50	mg/kg	465	15.5	83.1	50-148	1.45		20	
Surrogate: <i>o</i> -Terphenyl	11.4		"	11.7		97.8	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.



Extraction Oil & Gas
570 17th St. Suite 550
Denver CO, 80202

Project: Leyner 15-1

Project Number: [none]
Project Manager: Ryan Bruner

Reported:
07/31/16 12:55

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch 1607309 - EPA 5030 Soil MS

Blank (1607309-BLK1)

Prepared & Analyzed: 07/29/16

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	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0357</i>		<i>"</i>	<i>0.0400</i>		<i>89.2</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0399</i>		<i>"</i>	<i>0.0400</i>		<i>99.8</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0374</i>		<i>"</i>	<i>0.0400</i>		<i>93.6</i>	<i>21-167</i>			

LCS (1607309-BS1)

Prepared & Analyzed: 07/29/16

Benzene	0.0886	0.0020	mg/kg	0.100		88.6	58-130			
Toluene	0.103	0.0050	"	0.100		103	61-134			
Ethylbenzene	0.110	0.0050	"	0.0992		110	74-139			
m,p-Xylene	0.222	0.010	"	0.200		111	73-137			
o-Xylene	0.104	0.0050	"	0.0980		106	73-141			
Xylenes (total)	0.326	0.0050	"				30-150			
Gasoline Range Hydrocarbons	2.78	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0366</i>		<i>"</i>	<i>0.0400</i>		<i>91.5</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0394</i>		<i>"</i>	<i>0.0400</i>		<i>98.4</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0385</i>		<i>"</i>	<i>0.0400</i>		<i>96.2</i>	<i>21-167</i>			

Matrix Spike (1607309-MS1)

Source: 1607237-01

Prepared & Analyzed: 07/29/16

Benzene	0.0845	0.0020	mg/kg	0.0921	ND	91.8	30-131			
Toluene	0.0982	0.0050	"	0.0921	0.00370	103	30-134			
Ethylbenzene	0.101	0.0050	"	0.0913	0.00342	107	22-153			
m,p-Xylene	0.211	0.010	"	0.184	0.0459	89.6	10-159			
o-Xylene	0.102	0.0050	"	0.0902	0.00844	103	31-151			
Xylenes (total)	0.312	0.0050	"		0.0543		30-150			
Gasoline Range Hydrocarbons	10.1	0.50	"		16.4		30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0376</i>		<i>"</i>	<i>0.0368</i>		<i>102</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0361</i>		<i>"</i>	<i>0.0368</i>		<i>98.1</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0380</i>		<i>"</i>	<i>0.0368</i>		<i>103</i>	<i>21-167</i>			

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.



Extraction Oil & Gas
570 17th St. Suite 550
Denver CO, 80202

Project: Leyner 15-1

Project Number: [none]
Project Manager: Ryan Bruner

Reported:
07/31/16 12:55

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch 1607309 - EPA 5030 Soil MS

Matrix Spike Dup (1607309-MSD1)	Source: 1607237-01			Prepared & Analyzed: 07/29/16						
Benzene	0.0835	0.0020	mg/kg	0.0929	ND	89.9	30-131	1.19	34	
Toluene	0.0996	0.0050	"	0.0929	0.00370	103	30-134	1.35	30	
Ethylbenzene	0.105	0.0050	"	0.0922	0.00342	110	22-153	3.69	24	
m,p-Xylene	0.221	0.010	"	0.186	0.0459	94.5	10-159	4.90	68	
o-Xylene	0.109	0.0050	"	0.0911	0.00844	110	31-151	6.59	38	
Xylenes (total)	0.330	0.0050	"		0.0543		30-150	5.45	20	
Gasoline Range Hydrocarbons	14.3	0.50	"		16.4		30-150	34.1	20	QM-07
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0364</i>		<i>"</i>	<i>0.0372</i>		<i>97.8</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0359</i>		<i>"</i>	<i>0.0372</i>		<i>96.7</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0392</i>		<i>"</i>	<i>0.0372</i>		<i>105</i>	<i>21-167</i>			

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.



Extraction Oil & Gas
570 17th St. Suite 550
Denver CO, 80202

Project: Leyner 15-1

Project Number: [none]
Project Manager: Ryan Bruner

Reported:
07/31/16 12:55

Notes and Definitions

- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
- 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

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

August 02, 2016

Ryan Bruner
Extraction Oil & Gas
570 17th St. Suite 550
Denver, CO 80202
RE: Leyner 1-15

Enclosed are the results of analyses for samples received by Summit Scientific on 08/01/16 14:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury
President



Extraction Oil & Gas
570 17th St. Suite 550
Denver CO, 80202

Project: Leyner 1-15

Project Number: [none]
Project Manager: Ryan Bruner

Reported:
08/02/16 06:04

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N01@7	1608002-01	Soil	08/01/16 09:37	08/01/16 14:30
E01@7	1608002-02	Soil	08/01/16 09:44	08/01/16 14:30
S01@7	1608002-03	Soil	08/01/16 09:50	08/01/16 14:30
W01@7	1608002-04	Soil	08/01/16 09:55	08/01/16 14:30

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.



Extraction Oil & Gas
570 17th St. Suite 550
Denver CO, 80202

Project: Leyner 1-15

Project Number: [none]
Project Manager: Ryan Bruner

Reported:
08/02/16 06:04

Summit Scientific 1608002

S₂

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

Page 1 of 1

Client: EXTRACTION Project Manager: RYAN BRUNER
Address: 7899 PELLOS ST E-Mail: rbruner@tasman-geo.com
City/State/Zip: DENVER CO 80202
Phone: 303-552-6763 Fax: Project Name: LEYNER 1-15
Sampler Name: RYAN BRUNER Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested				Special Instructions	
					HCl	HNO3	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	CBTEX	DRO/GRO			
1	N0107	8/1/16	9:37	1						X			X	X			
2	E0107		9:44	1						X			X	X			
3	S0107		9:50	1						X			X	X			
4	W0107		9:55	1						X			X	X			
5																	
6																	
7																	
8																	
9																	
10																	

Relinquished by: <u>RYAN BRUNER</u>	Date/Time: <u>11:25 8/1/16</u>	Received by: <u>[Signature]</u>	Date/Time: <u>11:25 8/1/16</u>	Turn Around Time (Check)	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day <input checked="" type="checkbox"/> 72 hours	
				24 hours <input type="checkbox"/> Standard	
				48 hours <input type="checkbox"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:	
				Temperature Upon Receipt: <u>18.1</u>	
				Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

www.s2scientific.com

S₂

Extraction Oil & Gas
570 17th St. Suite 550
Denver CO, 80202

Project: Leyner 1-15

Project Number: [none]
Project Manager: Ryan Bruner

Reported:
08/02/16 06:04

Sample Receipt Checklist

S2 Work Order: _____

Client: Extraction Client Project ID: Leyner 1-15

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

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

Cooler ID					
Temp (°C)	18.1				

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature just above 0°C to ≤ 6°C ⁽¹⁾ ?				From <u>Kyle</u>
NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun.	✓			
Were all samples received intact ⁽¹⁾ ?	✓			
Was adequate sample volume provided ⁽¹⁾ ?	✓			
If custody seals are present, are they intact ⁽¹⁾ ?			✓	
Are short holding time analytes or samples with HT's due within 48 hours present?	✓			
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	✓			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	✓			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	✓			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	i			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			✓	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			✓	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			✓	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			✓	
Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

Custodian Printed Name _____

Signature or Initials of Custodian _____

Date/Time _____





Extraction Oil & Gas
570 17th St. Suite 550
Denver CO, 80202

Project: Leyner 1-15

Project Number: [none]
Project Manager: Ryan Bruner

Reported:
08/02/16 06:04

N01@7
1608002-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/01/16 09:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1608021	08/01/16	08/01/16	8015M	

Date Sampled: **08/01/16 09:37**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/01/16 09:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1608022	08/01/16	08/01/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.035	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **08/01/16 09:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		97.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		86.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	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.



Extraction Oil & Gas
570 17th St. Suite 550
Denver CO, 80202

Project: Leyner 1-15

Project Number: [none]
Project Manager: Ryan Bruner

Reported:
08/02/16 06:04

E01@7
1608002-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/01/16 09:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1608021	08/01/16	08/01/16	8015M	

Date Sampled: **08/01/16 09:44**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/01/16 09:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0018	mg/kg	1	1608022	08/01/16	08/01/16	EPA 8260B	
Toluene	ND	0.0045	"	"	"	"	"	"	
Ethylbenzene	ND	0.0045	"	"	"	"	"	"	
Xylenes (total)	ND	0.0045	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1.8	0.45	"	"	"	"	"	"	

Date Sampled: **08/01/16 09:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		99.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	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.



Extraction Oil & Gas
570 17th St. Suite 550
Denver CO, 80202

Project: Leyner 1-15

Project Number: [none]
Project Manager: Ryan Bruner

Reported:
08/02/16 06:04

S01@7

1608002-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/01/16 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1608021	08/01/16	08/01/16	8015M	

Date Sampled: **08/01/16 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		98.3 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/01/16 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1608022	08/01/16	08/01/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **08/01/16 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		98.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.5 %	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.



Extraction Oil & Gas
570 17th St. Suite 550
Denver CO, 80202

Project: Leyner 1-15

Project Number: [none]
Project Manager: Ryan Bruner

Reported:
08/02/16 06:04

W01@7
1608002-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/01/16 09:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1608021	08/01/16	08/01/16	8015M	

Date Sampled: **08/01/16 09:55**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/01/16 09:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1608022	08/01/16	08/01/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **08/01/16 09:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.9 %	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.



Extraction Oil & Gas
570 17th St. Suite 550
Denver CO, 80202

Project: Leyner 1-15

Project Number: [none]
Project Manager: Ryan Bruner

Reported:
08/02/16 06:04

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1608021 - EPA 3550A

Blank (1608021-BLK1)				Prepared & Analyzed: 08/01/16							
C10-C28 (DRO)	ND	50	mg/kg								
Surrogate: <i>o</i> -Terphenyl	12.5		"	12.5	100	30-150					
LCS (1608021-BS1)				Prepared & Analyzed: 08/01/16							
C10-C28 (DRO)	440	50	mg/kg	499	88.1	73-134					
Surrogate: <i>o</i> -Terphenyl	12.9		"	12.5	103	30-150					
Matrix Spike (1608021-MS1)				Source: 1608002-01		Prepared & Analyzed: 08/01/16					
C10-C28 (DRO)	411	50	mg/kg	469	9.55	85.5	50-148				
Surrogate: <i>o</i> -Terphenyl	11.7		"	11.7	99.8	30-150					
Matrix Spike Dup (1608021-MSD1)				Source: 1608002-01		Prepared & Analyzed: 08/01/16					
C10-C28 (DRO)	420	50	mg/kg	489	9.55	83.8	50-148	2.19	20		
Surrogate: <i>o</i> -Terphenyl	12.0		"	12.3	98.1	30-150					

Summit Scientific

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



Extraction Oil & Gas
570 17th St. Suite 550
Denver CO, 80202

Project: Leyner 1-15

Project Number: [none]
Project Manager: Ryan Bruner

Reported:
08/02/16 06:04

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch 1608022 - EPA 5030 Soil MS

Blank (1608022-BLK1)

Prepared & Analyzed: 08/01/16

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	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0390</i>		<i>"</i>	<i>0.0400</i>		<i>97.4</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0388</i>		<i>"</i>	<i>0.0400</i>		<i>96.9</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0392</i>		<i>"</i>	<i>0.0400</i>		<i>98.1</i>	<i>21-167</i>			

LCS (1608022-BS1)

Prepared & Analyzed: 08/01/16

Benzene	0.0942	0.0020	mg/kg	0.100		94.2	58-130			
Toluene	0.102	0.0050	"	0.100		102	61-134			
Ethylbenzene	0.100	0.0050	"	0.0992		101	74-139			
m,p-Xylene	0.196	0.010	"	0.200		98.1	73-137			
o-Xylene	0.0979	0.0050	"	0.0980		99.9	73-141			
Xylenes (total)	0.294	0.0050	"				30-150			
Gasoline Range Hydrocarbons	1.42	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0401</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0400</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0372</i>		<i>"</i>	<i>0.0400</i>		<i>93.0</i>	<i>21-167</i>			

Matrix Spike (1608022-MS1)

Source: 1608002-01

Prepared & Analyzed: 08/01/16

Benzene	0.0860	0.0020	mg/kg	0.0984	ND	87.4	30-131			
Toluene	0.0896	0.0050	"	0.0984	ND	91.0	30-134			
Ethylbenzene	0.0906	0.0050	"	0.0976	ND	92.8	22-153			
m,p-Xylene	0.196	0.010	"	0.196	0.0283	85.6	10-159			
o-Xylene	0.0958	0.0050	"	0.0965	0.00700	92.1	31-151			
Xylenes (total)	0.292	0.0050	"		0.0353		30-150			
Gasoline Range Hydrocarbons	1.40	0.50	"		0.284		30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0412</i>		<i>"</i>	<i>0.0394</i>		<i>105</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0392</i>		<i>"</i>	<i>0.0394</i>		<i>99.6</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0374</i>		<i>"</i>	<i>0.0394</i>		<i>95.0</i>	<i>21-167</i>			

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.



Extraction Oil & Gas
 570 17th St. Suite 550
 Denver CO, 80202

Project: Leyner 1-15

Project Number: [none]
 Project Manager: Ryan Bruner

Reported:
 08/02/16 06:04

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch 1608022 - EPA 5030 Soil MS

Matrix Spike Dup (1608022-MSD1)	Source: 1608002-01			Prepared & Analyzed: 08/01/16						
Benzene	0.0831	0.0020	mg/kg	0.0947	ND	87.8	30-131	3.45	34	
Toluene	0.0755	0.0050	"	0.0947	ND	79.7	30-134	17.1	30	
Ethylbenzene	0.0746	0.0050	"	0.0939	ND	79.4	22-153	19.5	24	
m,p-Xylene	0.183	0.010	"	0.189	0.0283	81.7	10-159	7.22	68	
o-Xylene	0.0883	0.0050	"	0.0928	0.00700	87.6	31-151	8.14	38	
Xylenes (total)	0.271	0.0050	"		0.0353		30-150	7.52	20	
Gasoline Range Hydrocarbons	1.22	0.50	"		0.284		30-150	13.6	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0399</i>		<i>"</i>	<i>0.0379</i>		<i>105</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0374</i>		<i>"</i>	<i>0.0379</i>		<i>98.8</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0372</i>		<i>"</i>	<i>0.0379</i>		<i>98.2</i>	<i>21-167</i>			

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.



Extraction Oil & Gas
570 17th St. Suite 550
Denver CO, 80202

Project: Leyner 1-15

Project Number: [none]
Project Manager: Ryan Bruner

Reported:
08/02/16 06:04

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

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

August 07, 2016

Ryan Bruner
Extraction Oil & Gas
570 17th St. Suite 550
Denver, CO 80202
RE: Leyner 15-1

Enclosed are the results of analyses for samples received by Summit Scientific on 08/05/16 13:28. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury
President



Extraction Oil & Gas
570 17th St. Suite 550
Denver CO, 80202

Project: Leyner 15-1

Project Number: [none]
Project Manager: Ryan Bruner

Reported:
08/07/16 13:35

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B02@5	1608045-01	Soil	08/05/16 09:12	08/05/16 13:28
NO2@4	1608045-02	Soil	08/05/16 09:15	08/05/16 13:28
E03@4	1608045-03	Soil	08/05/16 09:20	08/05/16 13:28
S02@4	1608045-04	Soil	08/05/16 09:25	08/05/16 13:28

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

Extraction Oil & Gas
570 17th St. Suite 550
Denver CO, 80202

Project: Leyner 15-1

Project Number: [none]
Project Manager: Ryan Bruner

Reported:
08/07/16 13:35

Summit Scientific

1608045

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

Page 1 of 1

Client: EXTRACTION OIL + GAS Project Manager: RYAN BRUNER
Address: _____ E-Mail: (bruner@summit-sci.com)
City/State/Zip: _____
Phone: _____ Fax: _____ Project Name: LEYNER 15-1
Sampler Name: Ryan Bruner Project Number: _____

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested				Special Instructions	
					HCl	HNO3	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	CBTEX	DEO/GEO			
1	B0205	8/15/16	9:12	1						X							
2	N0204		9:15	1						X							
3	E0304		9:20	1						X							
4	S0204		9:25	1						X							
5																	
6																	
7																	
8																	
9																	
10																	

Relinquished by: <u>Ryan Bruner</u> Date/Time: <u>8/15/16 13:12</u>	Received by: <u>Kalena Ferguson</u> Date/Time: <u>8/15/16 13:12</u>	Turn Around Time (Check): Same Day <input checked="" type="checkbox"/> 72 hours 24 hours 48 hours	Notes: <u>on ice</u>
Relinquished by: _____ Date/Time: _____	Received by: _____ Date/Time: _____	Sample Integrity: Temperature Upon Receipt: <u>6.2°C</u> Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	
Relinquished by: _____ Date/Time: _____	Received by: _____ Date/Time: _____		

www.s2scientific.com

S₂

Extraction Oil & Gas
570 17th St. Suite 550
Denver CO, 80202

Project: Leyner 15-1

Project Number: [none]
Project Manager: Ryan Bruner

Reported:
08/07/16 13:35

Sample Receipt Checklist

S2 Work Order: 1608045

Client: Extraction Oil & Gas Client Project ID: Leyner 15-1

Shipped Via: hand delivered Airbill #: N/A
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

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

Cooler ID				
Temp (°C)	8.2°C			

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature just above 0°C to ≤ 6°C ⁽¹⁾ ?		<input checked="" type="checkbox"/>		on ice evidence of cooling
NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact ⁽¹⁾ ?			<input checked="" type="checkbox"/>	missing
Are short holding time analytes or samples with HTs due within 48 hours present?				
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

Custodian Printed Name: Renz A Ferguson Signature or Initials of Custodian: Renz A Ferguson Date/Time: 8/5/16 13:15





Extraction Oil & Gas
570 17th St. Suite 550
Denver CO, 80202

Project: Leyner 15-1

Project Number: [none]
Project Manager: Ryan Bruner

Reported:
08/07/16 13:35

B02@5
1608045-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/05/16 09:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1608069	08/05/16	08/05/16	8015M	

Date Sampled: **08/05/16 09:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		100 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/05/16 09:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1608068	08/05/16	08/05/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **08/05/16 09:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.7 %	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.



Extraction Oil & Gas
570 17th St. Suite 550
Denver CO, 80202

Project: Leyner 15-1

Project Number: [none]
Project Manager: Ryan Bruner

Reported:
08/07/16 13:35

NO2@4
1608045-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/05/16 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1608069	08/05/16	08/05/16	8015M	

Date Sampled: **08/05/16 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		101 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/05/16 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1608068	08/05/16	08/05/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1.1	0.50	"	"	"	"	"	"	

Date Sampled: **08/05/16 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	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.



Extraction Oil & Gas
570 17th St. Suite 550
Denver CO, 80202

Project: Leyner 15-1

Project Number: [none]
Project Manager: Ryan Bruner

Reported:
08/07/16 13:35

E03@4
1608045-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/05/16 09:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1608069	08/05/16	08/05/16	8015M	

Date Sampled: **08/05/16 09:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		100 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/05/16 09:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1608068	08/05/16	08/05/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **08/05/16 09:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	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.



Extraction Oil & Gas
570 17th St. Suite 550
Denver CO, 80202

Project: Leyner 15-1

Project Number: [none]
Project Manager: Ryan Bruner

Reported:
08/07/16 13:35

S02@4
1608045-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/05/16 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1608069	08/05/16	08/05/16	8015M	

Date Sampled: **08/05/16 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		97.7 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/05/16 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1608068	08/05/16	08/05/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **08/05/16 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	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.



Extraction Oil & Gas
570 17th St. Suite 550
Denver CO, 80202

Project: Leyner 15-1

Project Number: [none]
Project Manager: Ryan Bruner

Reported:
08/07/16 13:35

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1608069 - EPA 3550A

Blank (1608069-BLK1)

Prepared & Analyzed: 08/05/16

C10-C28 (DRO)	ND	50	mg/kg								
<i>Surrogate: o-Terphenyl</i>	12.1		"	12.5		96.8	30-150				

LCS (1608069-BS1)

Prepared & Analyzed: 08/05/16

C10-C28 (DRO)	442	50	mg/kg	499		88.7	73-134				
<i>Surrogate: o-Terphenyl</i>	15.3		"	12.5		122	30-150				

Matrix Spike (1608069-MS1)

Source: 1608045-01

Prepared & Analyzed: 08/05/16

C10-C28 (DRO)	430	50	mg/kg	474	13.9	87.7	50-148				
<i>Surrogate: o-Terphenyl</i>	12.0		"	11.9		101	30-150				

Matrix Spike Dup (1608069-MSD1)

Source: 1608045-01

Prepared & Analyzed: 08/05/16

C10-C28 (DRO)	455	50	mg/kg	495	13.9	89.2	50-148	5.81	20		
<i>Surrogate: o-Terphenyl</i>	13.4		"	12.4		108	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.



Extraction Oil & Gas
570 17th St. Suite 550
Denver CO, 80202

Project: Leyner 15-1

Project Number: [none]
Project Manager: Ryan Bruner

Reported:
08/07/16 13:35

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch 1608068 - EPA 5030 Soil MS

Blank (1608068-BLK1)

Prepared & Analyzed: 08/05/16

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	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0406</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0392</i>		<i>"</i>	<i>0.0400</i>		<i>98.0</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0391</i>		<i>"</i>	<i>0.0400</i>		<i>97.7</i>	<i>21-167</i>			

LCS (1608068-BS1)

Prepared & Analyzed: 08/05/16

Benzene	0.105	0.0020	mg/kg	0.100		105	58-130			
Toluene	0.114	0.0050	"	0.100		114	61-134			
Ethylbenzene	0.104	0.0050	"	0.0992		105	74-139			
m,p-Xylene	0.217	0.010	"	0.200		109	73-137			
o-Xylene	0.108	0.0050	"	0.0980		110	73-141			
Xylenes (total)	0.325	0.0050	"				30-150			
Gasoline Range Hydrocarbons	1.42	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0393</i>		<i>"</i>	<i>0.0400</i>		<i>98.3</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0442</i>		<i>"</i>	<i>0.0400</i>		<i>111</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0396</i>		<i>"</i>	<i>0.0400</i>		<i>98.9</i>	<i>21-167</i>			

Matrix Spike (1608068-MS1)

Source: 1608045-01

Prepared & Analyzed: 08/05/16

Benzene	0.105	0.0018	mg/kg	0.0904	ND	116	30-131			
Toluene	0.114	0.0045	"	0.0904	ND	126	30-134			
Ethylbenzene	0.112	0.0045	"	0.0897	ND	125	22-153			
m,p-Xylene	0.233	0.0090	"	0.180	ND	129	10-159			
o-Xylene	0.115	0.0045	"	0.0886	ND	129	31-151			
Xylenes (total)	0.348	0.0045	"		ND		30-150			
Gasoline Range Hydrocarbons	1.59	0.45	"		0.192		30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0385</i>		<i>"</i>	<i>0.0362</i>		<i>107</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0378</i>		<i>"</i>	<i>0.0362</i>		<i>105</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0356</i>		<i>"</i>	<i>0.0362</i>		<i>98.3</i>	<i>21-167</i>			

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.



Extraction Oil & Gas
570 17th St. Suite 550
Denver CO, 80202

Project: Leyner 15-1

Project Number: [none]
Project Manager: Ryan Bruner

Reported:
08/07/16 13:35

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch 1608068 - EPA 5030 Soil MS

Matrix Spike Dup (1608068-MSD1)	Source: 1608045-01			Prepared & Analyzed: 08/05/16						
Benzene	0.119	0.0020	mg/kg	0.0990	ND	120	30-131	12.2	34	
Toluene	0.129	0.0050	"	0.0990	ND	130	30-134	12.5	30	
Ethylbenzene	0.133	0.0050	"	0.0982	ND	136	22-153	16.8	24	
m,p-Xylene	0.277	0.010	"	0.198	ND	140	10-159	17.0	68	
o-Xylene	0.134	0.0050	"	0.0970	ND	138	31-151	15.8	38	
Xylenes (total)	0.411	0.0050	"		ND		30-150	16.6	20	
Gasoline Range Hydrocarbons	2.28	0.50	"		0.192		30-150	35.9	20	QM-07
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0435</i>		<i>"</i>	<i>0.0396</i>		<i>110</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0398</i>		<i>"</i>	<i>0.0396</i>		<i>100</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0378</i>		<i>"</i>	<i>0.0396</i>		<i>95.5</i>	<i>21-167</i>			

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.



Extraction Oil & Gas
570 17th St. Suite 550
Denver CO, 80202

Project: Leyner 15-1

Project Number: [none]
Project Manager: Ryan Bruner

Reported:
08/07/16 13:35

Notes and Definitions

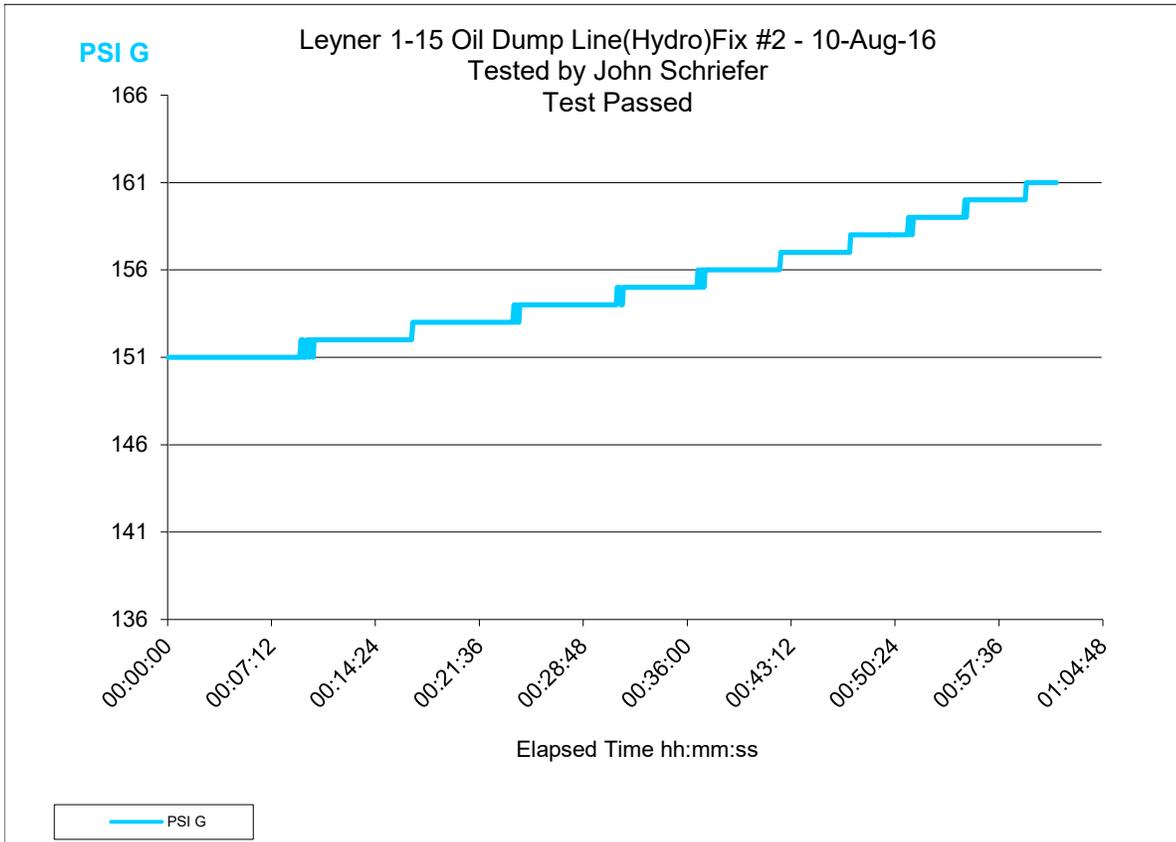
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

**ATTACHMENT B
PRESSURE
TESTING
REPORTS**

Data Collection Report

	Chassis	Left Scale	Right Scale
Serial Number	256550	254001	
Datatype		Lower	
Units		PSI G	

Lower



Data Collection Report

	Chassis	Left Scale	Right Scale
Serial Number	464177	573653	469208
Datatype		Lower	Upper
Units		PSI G	°F

Lower

Upper

