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TALON LPE

Closure Report

Lonesome Dove 25 Federal #001
API# 30-015-31698, 2RP-5541
Talon Project # 702513.001.01

Prepared For:

Rubicon Oil and Gas, LLC.
508 West Wall St., Suite 500
Midland, TX 79701

Prepared By:

TALON/LPE
408 W. Texas Avenue
Artesia, New Mexico 88210

August 26, 2019

Mr. Mike Bratcher
NMOCD District 2
811 S. 1st Street
Artesia, NM 88210

Subject: **Soil Remediation and Closure Report**
Lonesome Dove 25 Federal #001
Eddy County, NM
API# 30-015-31698, 2RP-5541

Dear Mr. Bratcher,

Rubicon Oil and Gas, LLC. has contracted Talon/LPE (Talon) to perform soil assessment and remediation services at the above referenced location. The results of our site assessment, completed remediation activities and closure request are contained herein.

Site Data and Closure Criteria

The Lonesome Dove 25 Federal #001 is located approximately twenty-two (22) miles east of Artesia, New Mexico. The legal location for this release is Unit Letter G, Section 25, Township 16 South and Range 29 East in Eddy County, New Mexico. More specifically the latitude and longitude for the release are 32.8958244 North and -104.0261078 West. A site plan is presented in Appendix I.

According to the soil survey provided by the United States Department of Agriculture Natural Resources Conservation Service, the soil in this area is made up of Berino complex, 0 to 3 percent slopes, eroded. Per the New Mexico Bureau of Geology and Mineral Resources, the local surface and shallow geology is Holocene to middle Pleistocene in age and is comprised of eolian and piedmont deposits. Drainage courses in this area are typically dry.

The New Mexico Office of the State Engineer web site indicates that the nearest groundwater is 110' below ground surface (BGS). See Appendix II for the referenced groundwater data.

Analysis of site characterization data set forth in New Mexico Oil Conservation Division (NMOCD) Rule 19.15.29 indicate no potential receptors (water wells, water courses, lake beds, playa lakes, wetlands, flood plains or karst topography) are located within the specific distances set forth for each by rule. Therefore closure criteria for soils impacted by a release from oil or gas development and production for this site are as follows.

Table I Closure Criteria for Soils Impacted by a Release			
Minimum depth below any point within the horizontal boundary of the release to ground water less than 10,000 mg/l TDS	Constituent	Method*	Limit**
>100 feet	Total Chlorides***	EPA 300.0 or SM4500 Cl B	20,000 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015M	2,500 mg/kg
	GRO+DRO	EPA SW-846 Method 8015M	1,000 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg

*Or other methods set forth by Division.
**Numerical limits or natural background levels, whichever are greater.
***Applies to release of produced water or other fluids containing chlorides.

Incident Description

On June 18, 2019, a lightning-induced fire caused 197 barrels (bbls) of crude oil and 402 bbls of produced water to be released within the tank battery. 120 bbls of the produced water were recovered. The crude oil was volatilized.

Site Assessment

On June 26, 2019, Talon mobilized personnel to begin the site assessment and soil sampling activities for the construction of a work plan. Grab soil samples were collected within and around the impacted area utilizing a hand auger. Results from our sampling event are presented in the following data table. A complete laboratory report can be found in Appendix IV.

Sample ID	Depth (ft.)	BTEX mg/kg	Benzene mg/kg	GRO mg/kg	DRO mg/kg	MRO mg/kg	Total TPH mg/kg	Cl mg/kg
Closure Criteria 19.15.29.12 NMAC		50 mg/kg	10 mg/kg	DRO + GRO combined = 1000 mg/kg			2500 mg/kg	20,000 mg/kg
S-1	0-1	ND	ND	ND	77	170	247	120
S-2	0-1	ND	ND	ND	24	64	88	ND
S-3	0-1	ND	ND	ND	9.8	ND	9.8	260
S-4	0-1	ND	ND	ND	19	49	68	520
S-5	0-1	0.14	ND	ND	1900	2300	4200	3000
	2	ND	ND	ND	ND	ND	0	280
S-6	0-1	0.11	ND	ND	2300	2600	4900	8400
	2	ND	ND	ND	ND	ND	0	9600
SP-1	Comp	0.11	ND	ND	4200	7300	11500	5700
SP-2	Comp	ND	ND	ND	3100	7300	10400	8300

ND= Not Detected
Comp= Composite Sample

Remedial Actions Taken:

- The impacted area in the vicinity of sample locations S-5 and S-6 (tank battery area) was excavated to a depth of 1.0-feet BGS.
- The spoil piles initially excavated from the tank battery, denoted SP-1 and SP-2, were removed and disposed of.
- All of the excavated material and stockpiles were hauled to Lea Land, LLC, a NMOCD approved solid waste disposal facility.
- The excavated area was backfilled with new caliche and contoured to match the surrounding location.
- A Final C-141 formally documenting the remedial actions is attached in Appendix III.

Closure

On behalf of Rubicon Oil and Gas, LLC., we respectfully request that no further actions be required and that closure with regard to this incident be granted.

Should you have any questions or if further information is required, please do not hesitate to contact our office at 575-746-8768.

Respectfully submitted,

TALON/LPE

Brandon Sinclair
Environmental Scientist

David J. Adkins
District Manager

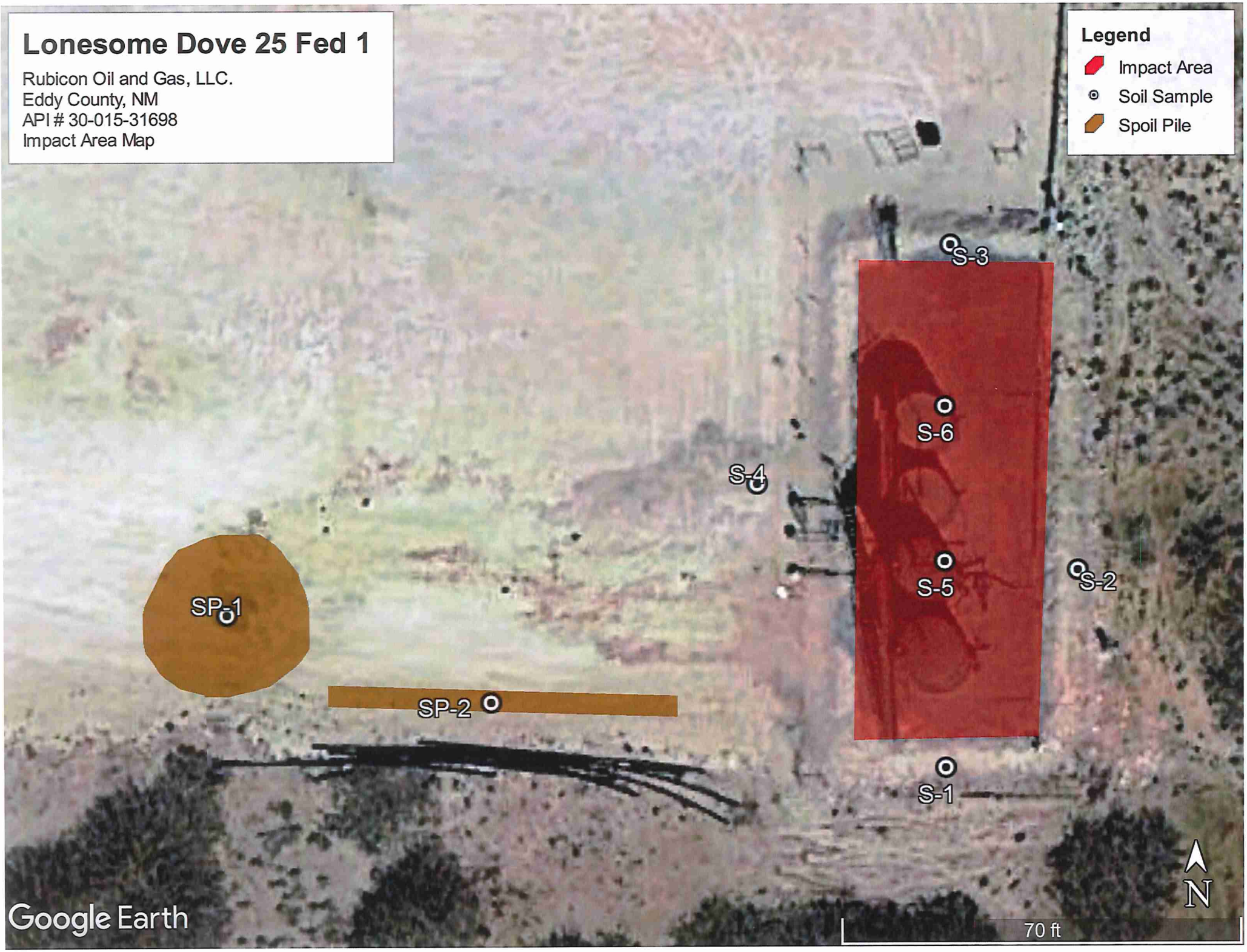
Attachments:
Appendix I Site Plan
Appendix II Soil Survey, Groundwater Data, FEMA Flood Map
Appendix III Final C-141
Appendix IV Laboratory Data
Appendix V Photographic Documentation

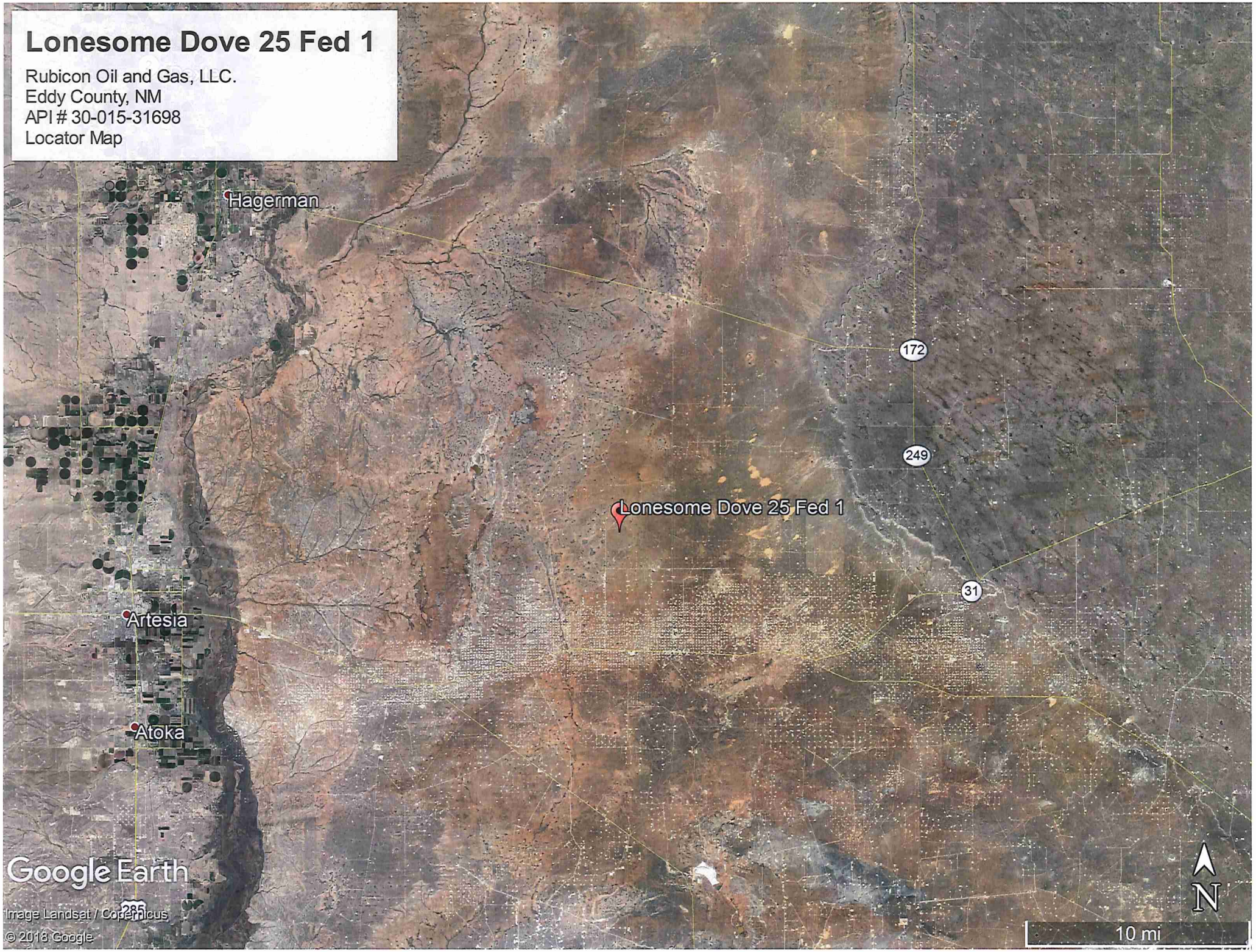
APPENDIX I

SITE PLAN

Lonesome Dove 25 Fed 1

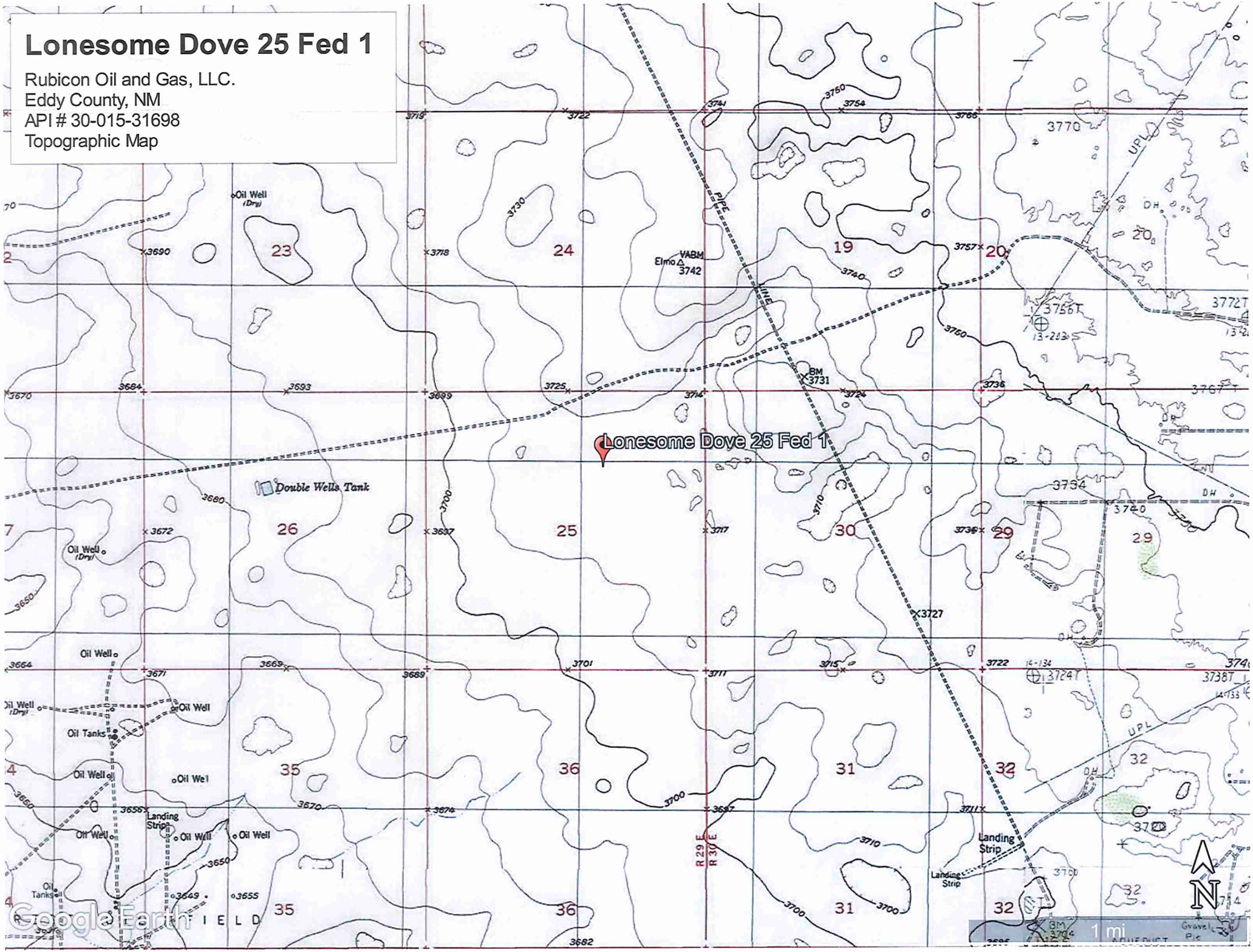
Rubicon Oil and Gas, LLC.
Eddy County, NM
API # 30-015-31698
Impact Area Map

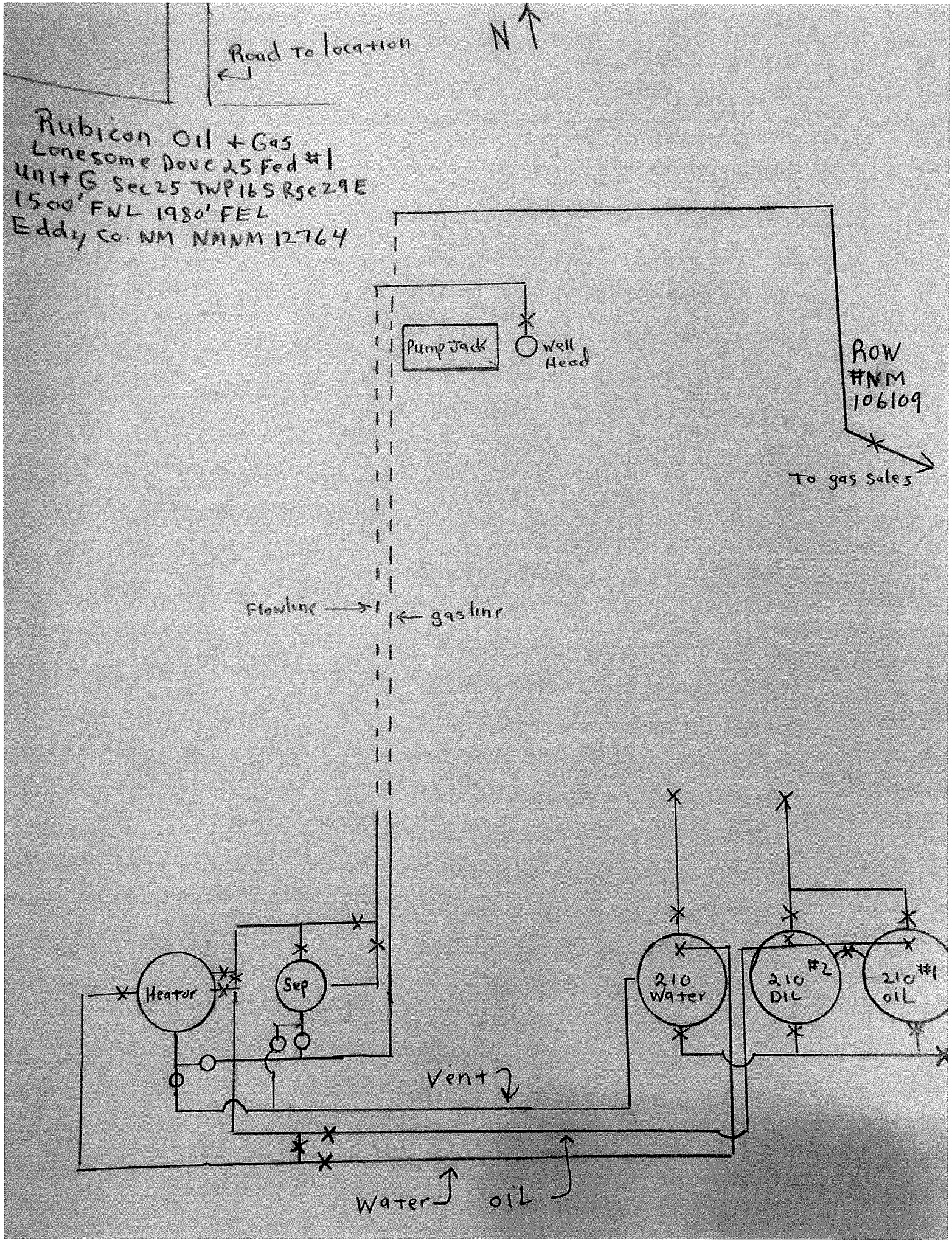



Lonesome Dove 25 Fed 1
Rubicon Oil and Gas, LLC.
Eddy County, NM
API # 30-015-31698
Locator Map
Hagerman
Artesia
Atoka
Lonesome Dove 25 Fed 1
172
249
31
285
Google Earth
Image Landsat / Copernicus
© 2018 Google
N
10 mi

Lonesome Dove 25 Fed 1

Rubicon Oil and Gas, LLC.
Eddy County, NM
API # 30-015-31698
Topographic Map




Road to location
N
Rubicon Oil + Gas
Lonesome Dove 25 Fed #1
Unit G Sec 25 TWP 16S Rge 29E
1500' FNL 1980' FEL
Eddy Co. NM NMNM 12764
Pump Jack
well Head
ROW
#NM
106109
To gas sales
Flowline
gas line
Heater
Sep
210 Water
210 Oil #2
210 oil #1
Vent
Water
oil

APPENDIX II

SOIL SURVEY

GROUNDWATER DATA

FEMA FLOOD ZONE

Eddy Area, New Mexico

BB—Berino complex, 0 to 3 percent slopes, eroded

Map Unit Setting

National map unit symbol: 1w43
Elevation: 2,000 to 5,700 feet
Mean annual precipitation: 5 to 15 inches
Mean annual air temperature: 57 to 70 degrees F
Frost-free period: 180 to 260 days
Farmland classification: Not prime farmland

Map Unit Composition

Berino and similar soils: 60 percent
Pajarito and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Berino

Setting

Landform: Fan piedmonts, plains
Landform position (three-dimensional): Riser
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Mixed alluvium and/or eolian sands

Typical profile

H1 - 0 to 17 inches: fine sand
H2 - 17 to 58 inches: sandy clay loam
H3 - 58 to 60 inches: loamy sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Salinity, maximum in profile: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 1.0
Available water storage in profile: Moderate (about 8.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B

Ecological site: Loamy Sand (R042XC003NM)
Hydric soil rating: No

Description of Pajarito

Setting

Landform: Interdunes, dunes, plains
Landform position (three-dimensional): Side slope
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Parent material: Mixed alluvium and/or eolian sands

Typical profile

H1 - 0 to 9 inches: loamy fine sand
H2 - 9 to 72 inches: fine sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 1.0
Available water storage in profile: Moderate (about 8.0 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: Loamy Sand (R042XC003NM)
Hydric soil rating: No

Minor Components

Cacique

Percent of map unit:
Ecological site: Sandy (R042XC004NM)
Hydric soil rating: No

Pajarito

Percent of map unit:
Ecological site: Loamy Sand (R042XC003NM)
Hydric soil rating: No

Wink

Percent of map unit:
Ecological site: Loamy Sand (R042XC003NM)
Hydric soil rating: No

Kermit

Percent of map unit:
Ecological site: Deep Sand (R042XC005NM)
Hydric soil rating: No

Data Source Information

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 14, Sep 12, 2018

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Code	Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
RA 09342		RA	ED	4	4	3	19	16S	29E	582737	3640640*	8361	220	110	110
RA 11914 POD1		RA	ED	2	4	2	20	17S	30E	594801	3632002	8962	85	80	5
RA 11807 POD1		RA	ED	1	2	3	22	17S	29E	587360	3631585	9346	131	76	55

Average Depth to Water: **88 feet**

Minimum Depth: **76 feet**

Maximum Depth: **110 feet**

Record Count: 3

UTMNAD83 Radius Search (in meters):

Easting (X): 591085 **Northing (Y):** 3640158 **Radius:** 10000

***UTM location was derived from PLSS - see Help**

7/9/19 3:03 PM

WATER COLUMN/ AVERAGE DEPTH TO WATER

National Flood Hazard Layer FIRMette

FEMA

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- SPECIAL FLOOD HAZARD AREAS
  - Without Base Flood Elevation (BFE) *Zone A, V, A99*
  - With BFE or Depth *Zone AE, AO, AH, VE, AR*
  - Regulatory Floodway
- OTHER AREAS OF FLOOD HAZARD
  - 0.2% Annual Chance Flood Hazard, Area of 1% annual chance flood with average depth less than one foot or with drainag areas of less than one square mile *Zone*
  - Future Conditions 1% Annual Chance Flood Hazard *Zone X*
  - Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
  - Area with Flood Risk due to Levee *Zone D*
- OTHER AREAS
  - NO SCREEN Area of Minimal Flood Hazard *Zone X*
  - Effective LOMRs
  - Area of Undetermined Flood Hazard *Zone*
- GENERAL STRUCTURES
  - Channel, Culvert, or Storm Sewer
  - Levee, Dike, or Floodwall
- OTHER FEATURES
  - 20.2 Cross Sections with 1% Annual Chance
  - 17.5 Water Surface Elevation
  - Coastal Transect
  - 513 Base Flood Elevation Line (BFE)
  - Limit of Study
  - Jurisdiction Boundary
  - Coastal Transect Baseline
  - Profile Baseline
  - Hydrographic Feature
- MAP PANELS
  - Digital Data Available
  - No Digital Data Available
  - Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represe an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 7/9/2019 at 6:47:12 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

APPENDIX III

FINAL C-141

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	110 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas not on an exploration, development, production, or storage site?	☐ Yes ☒ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: *Each of the following items must be included in the report.*

- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☒ Field data
- ☒ Data table of soil contaminant concentration data
- ☒ Depth to water determination
- ☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☐ Boring or excavation logs
- ☒ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: **Landon Goodgion** Title: **Operations**

Signature: Landon Goodgion Date: **6-28-19**

email: **landon@adventure-energy.com** Telephone: **432.813.1668**

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: ***Each of the following items must be included in the closure report.***

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: **Landon Goodgion** Title: **Operations**

Signature: Landon Goodgion Date: **8-23-19**

email: **landon@adventure-energy.com** Telephone: **432.813.1668**

OCD Only

Received by: _____ Date: _____

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

APPENDIX IV

LABORATORY DATA

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

July 09, 2019

David Adkins
Talon Artesia
408 West Texas Ave
Artesia, NM 88210
TEL:
FAX:

RE: Lonesome Dove 25 Fed 1 OrderNo.: 1906G18

Dear David Adkins:

Hall Environmental Analysis Laboratory received 10 sample(s) on 6/28/2019 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued July 08, 2019.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Talon Artesia
Client Sample ID: S-1 0-1'
Project: Lonesome Dove 25 Fed 1
Collection Date: 6/26/2019
Lab ID: 1906G18-001 **Matrix:** SOIL **Received Date:** 6/28/2019 10:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	120	60		mg/Kg	20	7/3/2019 3:29:22 PM	45997
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	77	9.7		mg/Kg	1	7/6/2019 4:19:28 AM	45967
Motor Oil Range Organics (MRO)	170	48		mg/Kg	1	7/6/2019 4:19:28 AM	45967
Surr: DNOP	78.8	70-130		%Rec	1	7/6/2019 4:19:28 AM	45967
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/3/2019 5:55:50 PM	45955
Surr: BFB	99.4	73.8-119		%Rec	1	7/3/2019 5:55:50 PM	45955
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	7/3/2019 5:55:50 PM	45955
Toluene	ND	0.049		mg/Kg	1	7/3/2019 5:55:50 PM	45955
Ethylbenzene	ND	0.049		mg/Kg	1	7/3/2019 5:55:50 PM	45955
Xylenes, Total	ND	0.099		mg/Kg	1	7/3/2019 5:55:50 PM	45955
Surr: 4-Bromofluorobenzene	89.2	80-120		%Rec	1	7/3/2019 5:55:50 PM	45955

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Talon Artesia
Client Sample ID: S-2 0-1'
Project: Lonesome Dove 25 Fed 1
Collection Date: 6/26/2019
Lab ID: 1906G18-002 **Matrix:** SOIL **Received Date:** 6/28/2019 10:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	7/3/2019 3:41:47 PM	45997
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	24	9.5		mg/Kg	1	7/4/2019 11:20:25 AM	45967
Motor Oil Range Organics (MRO)	64	47		mg/Kg	1	7/4/2019 11:20:25 AM	45967
Surr: DNOP	63.6	70-130	S	%Rec	1	7/4/2019 11:20:25 AM	45967
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/3/2019 6:18:37 PM	45955
Surr: BFB	103	73.8-119		%Rec	1	7/3/2019 6:18:37 PM	45955
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	7/3/2019 6:18:37 PM	45955
Toluene	ND	0.050		mg/Kg	1	7/3/2019 6:18:37 PM	45955
Ethylbenzene	ND	0.050		mg/Kg	1	7/3/2019 6:18:37 PM	45955
Xylenes, Total	ND	0.099		mg/Kg	1	7/3/2019 6:18:37 PM	45955
Surr: 4-Bromofluorobenzene	94.5	80-120		%Rec	1	7/3/2019 6:18:37 PM	45955

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Talon Artesia
Client Sample ID: S-3 0-1'
Project: Lonesome Dove 25 Fed 1
Collection Date: 6/26/2019
Lab ID: 1906G18-003 **Matrix:** SOIL **Received Date:** 6/28/2019 10:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	260	60		mg/Kg	20	7/3/2019 4:19:00 PM	45997
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	9.8	9.6		mg/Kg	1	7/4/2019 12:04:30 PM	45967
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/4/2019 12:04:30 PM	45967
Surr: DNOP	45.8	70-130	S	%Rec	1	7/4/2019 12:04:30 PM	45967
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/3/2019 6:41:22 PM	45955
Surr: BFB	102	73.8-119		%Rec	1	7/3/2019 6:41:22 PM	45955
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	7/3/2019 6:41:22 PM	45955
Toluene	ND	0.049		mg/Kg	1	7/3/2019 6:41:22 PM	45955
Ethylbenzene	ND	0.049		mg/Kg	1	7/3/2019 6:41:22 PM	45955
Xylenes, Total	ND	0.097		mg/Kg	1	7/3/2019 6:41:22 PM	45955
Surr: 4-Bromofluorobenzene	93.2	80-120		%Rec	1	7/3/2019 6:41:22 PM	45955

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Talon Artesia
Client Sample ID: S-4 0-1'
Project: Lonesome Dove 25 Fed 1
Collection Date: 6/26/2019
Lab ID: 1906G18-004 **Matrix:** SOIL **Received Date:** 6/28/2019 10:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	520	60		mg/Kg	20	7/3/2019 4:31:25 PM	45997
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	19	9.4		mg/Kg	1	7/4/2019 12:48:48 PM	45967
Motor Oil Range Organics (MRO)	49	47		mg/Kg	1	7/4/2019 12:48:48 PM	45967
Surr: DNOP	57.5	70-130	S	%Rec	1	7/4/2019 12:48:48 PM	45967
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/3/2019 7:04:08 PM	45955
Surr: BFB	101	73.8-119		%Rec	1	7/3/2019 7:04:08 PM	45955
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	7/3/2019 7:04:08 PM	45955
Toluene	ND	0.049		mg/Kg	1	7/3/2019 7:04:08 PM	45955
Ethylbenzene	ND	0.049		mg/Kg	1	7/3/2019 7:04:08 PM	45955
Xylenes, Total	ND	0.098		mg/Kg	1	7/3/2019 7:04:08 PM	45955
Surr: 4-Bromofluorobenzene	91.8	80-120		%Rec	1	7/3/2019 7:04:08 PM	45955

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Talon Artesia
Client Sample ID: S-5 0-1'
Project: Lonesome Dove 25 Fed 1
Collection Date: 6/26/2019
Lab ID: 1906G18-005 **Matrix:** SOIL **Received Date:** 6/28/2019 10:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	3000	150		mg/Kg	50	7/5/2019 1:26:10 PM	46014
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	1900	96		mg/Kg	10	7/6/2019 4:41:38 AM	45967
Motor Oil Range Organics (MRO)	2300	480		mg/Kg	10	7/6/2019 4:41:38 AM	45967
Surr: DNOP	0	70-130	S	%Rec	10	7/6/2019 4:41:38 AM	45967
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/3/2019 7:26:51 PM	45955
Surr: BFB	133	73.8-119	S	%Rec	1	7/3/2019 7:26:51 PM	45955
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	7/3/2019 7:26:51 PM	45955
Toluene	ND	0.049		mg/Kg	1	7/3/2019 7:26:51 PM	45955
Ethylbenzene	0.055	0.049		mg/Kg	1	7/3/2019 7:26:51 PM	45955
Xylenes, Total	0.14	0.098		mg/Kg	1	7/3/2019 7:26:51 PM	45955
Surr: 4-Bromofluorobenzene	99.2	80-120		%Rec	1	7/3/2019 7:26:51 PM	45955

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Talon Artesia
Project: Lonesome Dove 25 Fed 1
Lab ID: 1906G18-006 **Matrix:** SOIL

Client Sample ID: S-5 2-0'
Collection Date: 6/26/2019
Received Date: 6/28/2019 10:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	280	60		mg/Kg	20	7/3/2019 9:54:01 PM	46014
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	7/4/2019 2:17:15 PM	45967
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/4/2019 2:17:15 PM	45967
Surr: DNOP	67.7	70-130	S	%Rec	1	7/4/2019 2:17:15 PM	45967
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/3/2019 8:12:14 PM	45955
Surr: BFB	103	73.8-119		%Rec	1	7/3/2019 8:12:14 PM	45955
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	7/3/2019 8:12:14 PM	45955
Toluene	ND	0.050		mg/Kg	1	7/3/2019 8:12:14 PM	45955
Ethylbenzene	ND	0.050		mg/Kg	1	7/3/2019 8:12:14 PM	45955
Xylenes, Total	ND	0.099		mg/Kg	1	7/3/2019 8:12:14 PM	45955
Surr: 4-Bromofluorobenzene	94.6	80-120		%Rec	1	7/3/2019 8:12:14 PM	45955

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Talon Artesia
Client Sample ID: S-6 0-1'
Project: Lonesome Dove 25 Fed 1
Collection Date: 6/26/2019
Lab ID: 1906G18-007 **Matrix:** SOIL **Received Date:** 6/28/2019 10:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	8400	300		mg/Kg	100	7/5/2019 1:38:34 PM	46014
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	2300	97		mg/Kg	10	7/6/2019 3:35:05 AM	45967
Motor Oil Range Organics (MRO)	2600	490		mg/Kg	10	7/6/2019 3:35:05 AM	45967
Surr: DNOP	0	70-130	S	%Rec	10	7/6/2019 3:35:05 AM	45967
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/3/2019 8:34:54 PM	45955
Surr: BFB	117	73.8-119		%Rec	1	7/3/2019 8:34:54 PM	45955
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	7/3/2019 8:34:54 PM	45955
Toluene	ND	0.049		mg/Kg	1	7/3/2019 8:34:54 PM	45955
Ethylbenzene	0.049	0.049		mg/Kg	1	7/3/2019 8:34:54 PM	45955
Xylenes, Total	0.11	0.097		mg/Kg	1	7/3/2019 8:34:54 PM	45955
Surr: 4-Bromofluorobenzene	98.9	80-120		%Rec	1	7/3/2019 8:34:54 PM	45955

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Talon Artesia
Project: Lonesome Dove 25 Fed 1
Lab ID: 1906G18-008 **Matrix:** SOIL

Client Sample ID: S-6 2-0'
Collection Date: 6/26/2019
Received Date: 6/28/2019 10:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	9600	600		mg/Kg	200	7/5/2019 1:50:59 PM	46014
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	7/3/2019 5:33:59 PM	45975
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/3/2019 5:33:59 PM	45975
Surr: DNOP	100	70-130		%Rec	1	7/3/2019 5:33:59 PM	45975
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/3/2019 10:05:40 PM	45962
Surr: BFB	106	73.8-119		%Rec	1	7/3/2019 10:05:40 PM	45962
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	7/3/2019 10:05:40 PM	45962
Toluene	ND	0.050		mg/Kg	1	7/3/2019 10:05:40 PM	45962
Ethylbenzene	ND	0.050		mg/Kg	1	7/3/2019 10:05:40 PM	45962
Xylenes, Total	ND	0.10		mg/Kg	1	7/3/2019 10:05:40 PM	45962
Surr: 4-Bromofluorobenzene	95.4	80-120		%Rec	1	7/3/2019 10:05:40 PM	45962

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Talon Artesia
Client Sample ID: SP-1 COMP
Project: Lonesome Dove 25 Fed 1
Collection Date: 6/26/2019
Lab ID: 1906G18-009 **Matrix:** SOIL **Received Date:** 6/28/2019 10:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	5700	150		mg/Kg	50	7/5/2019 2:03:24 PM	46014
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	4200	980		mg/Kg	100	7/3/2019 6:40:58 PM	45975
Motor Oil Range Organics (MRO)	7300	4900		mg/Kg	100	7/3/2019 6:40:58 PM	45975
Surr: DNOP	0	70-130	S	%Rec	100	7/3/2019 6:40:58 PM	45975
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/3/2019 11:14:04 PM	45962
Surr: BFB	117	73.8-119		%Rec	1	7/3/2019 11:14:04 PM	45962
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	7/3/2019 11:14:04 PM	45962
Toluene	ND	0.049		mg/Kg	1	7/3/2019 11:14:04 PM	45962
Ethylbenzene	ND	0.049		mg/Kg	1	7/3/2019 11:14:04 PM	45962
Xylenes, Total	0.11	0.099		mg/Kg	1	7/3/2019 11:14:04 PM	45962
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	7/3/2019 11:14:04 PM	45962

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Talon Artesia
Client Sample ID: SP2 COMP
Project: Lonesome Dove 25 Fed 1
Collection Date: 6/26/2019
Lab ID: 1906G18-010 **Matrix:** SOIL **Received Date:** 6/28/2019 10:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	8300	300		mg/Kg	100	7/5/2019 2:15:49 PM	46014
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	3100	980		mg/Kg	100	7/3/2019 7:25:31 PM	45975
Motor Oil Range Organics (MRO)	7300	4900		mg/Kg	100	7/3/2019 7:25:31 PM	45975
Surr: DNOP	0	70-130	S	%Rec	100	7/3/2019 7:25:31 PM	45975
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/4/2019 12:22:24 AM	45962
Surr: BFB	107	73.8-119		%Rec	1	7/4/2019 12:22:24 AM	45962
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	7/4/2019 12:22:24 AM	45962
Toluene	0.060	0.049		mg/Kg	1	7/4/2019 12:22:24 AM	45962
Ethylbenzene	ND	0.049		mg/Kg	1	7/4/2019 12:22:24 AM	45962
Xylenes, Total	ND	0.098		mg/Kg	1	7/4/2019 12:22:24 AM	45962
Surr: 4-Bromofluorobenzene	98.8	80-120		%Rec	1	7/4/2019 12:22:24 AM	45962

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1906G18**

09-Jul-19

Client: Talon Artesia

Project: Lonesome Dove 25 Fed 1

Sample ID: **MB-45997** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBS** Batch ID: **45997** RunNo: **61134**

Prep Date: **7/3/2019** Analysis Date: **7/3/2019** SeqNo: **2072914** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-45997** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**

Client ID: **LCSS** Batch ID: **45997** RunNo: **61134**

Prep Date: **7/3/2019** Analysis Date: **7/3/2019** SeqNo: **2072915** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.2	90	110			

Sample ID: **MB-46014** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBS** Batch ID: **46014** RunNo: **61134**

Prep Date: **7/3/2019** Analysis Date: **7/3/2019** SeqNo: **2072944** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-46014** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**

Client ID: **LCSS** Batch ID: **46014** RunNo: **61134**

Prep Date: **7/3/2019** Analysis Date: **7/3/2019** SeqNo: **2072945** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.1	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1906G18**

09-Jul-19

Client: Talon Artesia

Project: Lonesome Dove 25 Fed 1

Sample ID: **LCS-45990** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **45990** RunNo: **61129**
Prep Date: **7/3/2019** Analysis Date: **7/3/2019** SeqNo: **2071524** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.5		5.000		91.0	70	130			

Sample ID: **MB-45990** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **45990** RunNo: **61129**
Prep Date: **7/3/2019** Analysis Date: **7/3/2019** SeqNo: **2071525** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.5		10.00		95.3	70	130			

Sample ID: **MB-45975** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **45975** RunNo: **61135**
Prep Date: **7/2/2019** Analysis Date: **7/3/2019** SeqNo: **2072210** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.5		10.00		84.8	70	130			

Sample ID: **MB-45967** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **45967** RunNo: **61135**
Prep Date: **7/2/2019** Analysis Date: **7/3/2019** SeqNo: **2072211** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.9		10.00		89.2	70	130			

Sample ID: **LCS-45975** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **45975** RunNo: **61135**
Prep Date: **7/2/2019** Analysis Date: **7/3/2019** SeqNo: **2072212** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	10	50.00	0	85.7	63.9	124			
Surr: DNOP	4.2		5.000		84.7	70	130			

Sample ID: **LCS-45967** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **45967** RunNo: **61135**
Prep Date: **7/2/2019** Analysis Date: **7/3/2019** SeqNo: **2072213** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1906G18**

09-Jul-19

Client: Talon Artesia

Project: Lonesome Dove 25 Fed 1

Sample ID: **LCS-45967** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **45967** RunNo: **61135**

Prep Date: **7/2/2019** Analysis Date: **7/3/2019** SeqNo: **2072213** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	87.0	63.9	124			
Surr: DNOP	4.3		5.000		85.2	70	130			

Sample ID: **1906G18-008AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **S-6 2-0'** Batch ID: **45975** RunNo: **61129**

Prep Date: **7/2/2019** Analysis Date: **7/3/2019** SeqNo: **2073163** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	9.1	45.70	0	101	57	142			
Surr: DNOP	4.3		4.570		94.3	70	130			

Sample ID: **1906G18-008AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **S-6 2-0'** Batch ID: **45975** RunNo: **61129**

Prep Date: **7/2/2019** Analysis Date: **7/3/2019** SeqNo: **2073164** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	9.8	48.78	0	101	57	142	6.83	20	
Surr: DNOP	4.6		4.878		95.2	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1906G18**

09-Jul-19

Client: Talon Artesia

Project: Lonesome Dove 25 Fed 1

Sample ID: **MB-45955** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **PBS** Batch ID: **45955** RunNo: **61137**

Prep Date: **7/2/2019** Analysis Date: **7/3/2019** SeqNo: **2072109** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		103	73.8	119			

Sample ID: **LCS-45955** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **LCSS** Batch ID: **45955** RunNo: **61137**

Prep Date: **7/2/2019** Analysis Date: **7/3/2019** SeqNo: **2072110** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	96.6	80.1	123			
Surr: BFB	1200		1000		117	73.8	119			

Sample ID: **MB-45962** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **PBS** Batch ID: **45962** RunNo: **61137**

Prep Date: **7/2/2019** Analysis Date: **7/3/2019** SeqNo: **2072133** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1100		1000		106	73.8	119			

Sample ID: **LCS-45962** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **LCSS** Batch ID: **45962** RunNo: **61137**

Prep Date: **7/2/2019** Analysis Date: **7/3/2019** SeqNo: **2072134** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	103	80.1	123			
Surr: BFB	1200		1000		116	73.8	119			

Sample ID: **1906G18-008AMS** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **S-6 2-0'** Batch ID: **45962** RunNo: **61137**

Prep Date: **7/2/2019** Analysis Date: **7/3/2019** SeqNo: **2072136** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	24.80	0	111	69.1	142			
Surr: BFB	1300		992.1		129	73.8	119			S

Sample ID: **1906G18-008AMSD** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **S-6 2-0'** Batch ID: **45962** RunNo: **61137**

Prep Date: **7/2/2019** Analysis Date: **7/3/2019** SeqNo: **2072137** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1906G18**

09-Jul-19

Client: Talon Artesia

Project: Lonesome Dove 25 Fed 1

Sample ID: **1906G18-008AMSD** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **S-6 2-0'** Batch ID: **45962** RunNo: **61137**

Prep Date: **7/2/2019** Analysis Date: **7/3/2019** SeqNo: **2072137** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	4.9	24.70	0	108	69.1	142	3.11	20	
Surr: BFB	1200		988.1		126	73.8	119	0	0	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1906G18**

09-Jul-19

Client: Talon Artesia

Project: Lonesome Dove 25 Fed 1

Sample ID: **MB-45955**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **45955**	RunNo: **61137**
Prep Date: **7/2/2019**	Analysis Date: **7/3/2019**	SeqNo: **2072155** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.94		1.000		94.0	80	120			

Sample ID: **LCS-45955**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **45955**	RunNo: **61137**
Prep Date: **7/2/2019**	Analysis Date: **7/3/2019**	SeqNo: **2072156** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.025	1.000	0	95.2	80	120			
Toluene	0.93	0.050	1.000	0	92.8	80	120			
Ethylbenzene	0.92	0.050	1.000	0	92.4	80	120			
Xylenes, Total	2.7	0.10	3.000	0	90.2	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	80	120			

Sample ID: **MB-45962**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **45962**	RunNo: **61137**
Prep Date: **7/2/2019**	Analysis Date: **7/3/2019**	SeqNo: **2072179** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.96		1.000		96.3	80	120			

Sample ID: **LCS-45962**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **45962**	RunNo: **61137**
Prep Date: **7/2/2019**	Analysis Date: **7/3/2019**	SeqNo: **2072180** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	102	80	120			
Toluene	1.0	0.050	1.000	0	101	80	120			
Ethylbenzene	1.0	0.050	1.000	0	101	80	120			
Xylenes, Total	3.0	0.10	3.000	0	99.3	80	120			
Surr: 4-Bromofluorobenzene	0.99		1.000		99.1	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1906G18**

09-Jul-19

Client: Talon Artesia

Project: Lonesome Dove 25 Fed 1

Sample ID: **1906G18-009AMS** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **SP-1 COMP** Batch ID: **45962** RunNo: **61137**

Prep Date: **7/2/2019** Analysis Date: **7/3/2019** SeqNo: **2072183** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	0.9970	0.006611	108	63.9	127			
Toluene	1.1	0.050	0.9970	0.04159	110	69.9	131			
Ethylbenzene	1.2	0.050	0.9970	0.04368	111	71	132			
Xylenes, Total	3.4	0.10	2.991	0.1109	110	71.8	131			
Surr: 4-Bromofluorobenzene	1.1		0.9970		107	80	120			

Sample ID: **1906G18-009AMSD** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **SP-1 COMP** Batch ID: **45962** RunNo: **61137**

Prep Date: **7/2/2019** Analysis Date: **7/3/2019** SeqNo: **2072184** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	0.9843	0.006611	110	63.9	127	1.28	20	
Toluene	1.2	0.049	0.9843	0.04159	114	69.9	131	2.06	20	
Ethylbenzene	1.2	0.049	0.9843	0.04368	115	71	132	2.27	20	
Xylenes, Total	3.4	0.098	2.953	0.1109	113	71.8	131	1.57	20	
Surr: 4-Bromofluorobenzene	1.1		0.9843		109	80	120	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: TALON ARTESIA Work Order Number: 1906G18 RcptNo: 1

Received By: Jevon Campisi 6/28/2019 10:40:00 AM Jevon Campisi

Completed By: Yazmine Garduno 6/28/2019 2:43:37 PM Yazmine Garduno

Reviewed By: DAD 6/28/19

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted) Adjusted?
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by:

Thm 6-28-19

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.8	Good	Yes			
2	1.4	Good	Yes			

Chain-of-Custody Record

Client: Talon / LPE

DAVID ADKINS

Mailing Address: 408 W. Texas Ave.

Artesia, NM 88210

Phone #: 575.441.4835

email or Fax#: dadkins@talonlpe.com

QA/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time: 5 day Rush

☒ Standard ☐ Rush _____

Project Name: Lonesome Dove 25 Fed 1

Project #: 702513.001.01

Project Manager: DAVID ADKINS

Sampler: D. ADKINS

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.9°C / 1.4°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1906618	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	BTEX 8021B	TOTAL chlorides			Air Bubbles (Y or N)
6/26/19		S	S-1 0-1'	1-4oz G	ice	-001			✓									✓	✓			
		S	S-2 0-1'			-002																
		S	S-3 0-1'			-003																
		S	S-4 0-1'			-004																
		S	S-5 0-1'			-005																
		S	S-5 2.0'			-006																
		S	S-6 0-1'			-007																
		S	S-6 2.0'			-008																
		S	SP-1 comp.			-009																
		S	SP-2 comp.			-010																

Date	Time	Relinquished by:	Received by:	Date	Time
6/27/19	1350			6/27/19	1350
6/27/19	1900		Courier	6-28-19	10:40

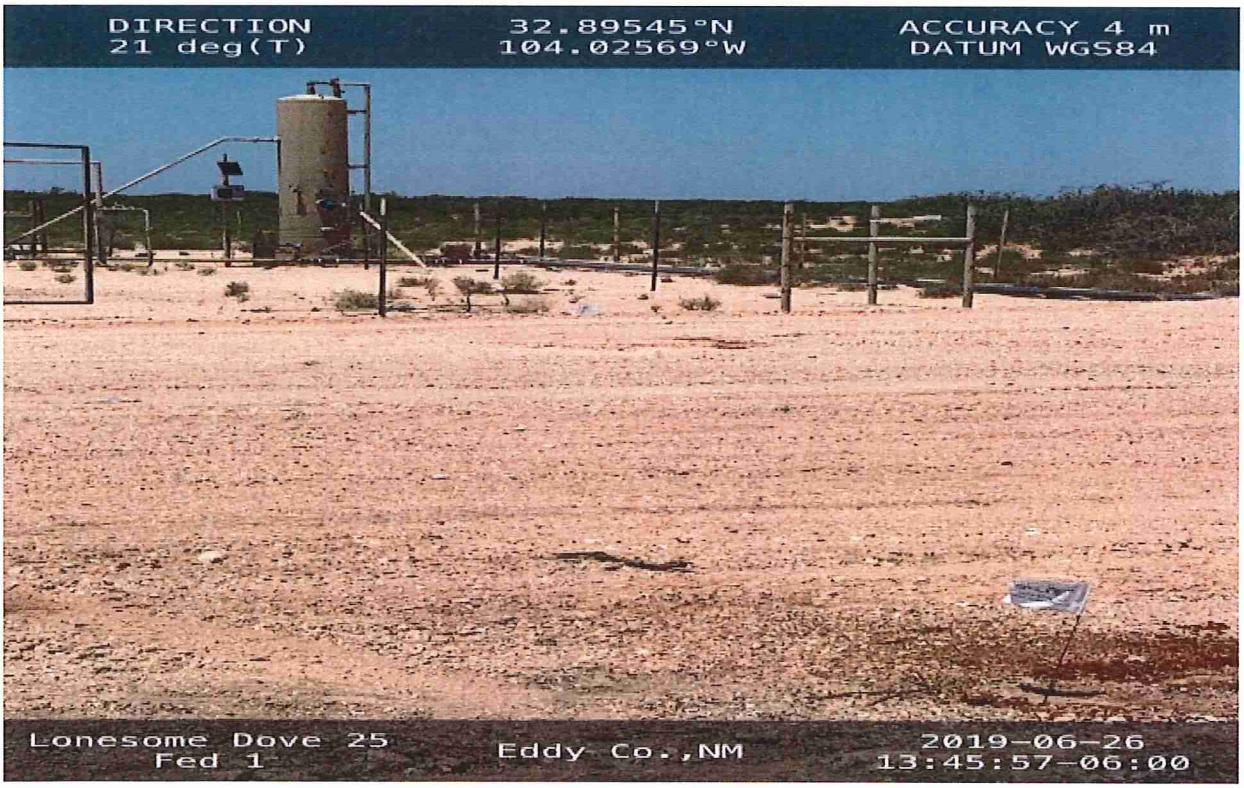
Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

APPENDIX V

PHOTOGRAPHIC DOCUMENTATION

Initial Photos, battery cleared and soil stockpiled




DIRECTION
221 deg(T)
32.89544°N
104.02605°W
ACCURACY 3 m
DATUM WGS84
Lonesome Dove 25
Fed 1
Eddy Co.,NM
2019-06-26
11:17:09-06:00

Excavation and Completion