District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company **Elm Ridge Exploration CO LLC**	Contact **Amy Archuleta**
Address **PO BOX 156 Bloomfield NM 87413**	Telephone No. **505-632-3476 x 201**
Facility Name **CBU #8**	Facility Type **Flowline leak. This is the closest well to the leak.**

Surface Owner: **NAVAJO NATION**	Mineral Owner **NAVAJO NATION**	API No. **30-045-05547**

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
K	**5**	**25N**	**12W**	**1980**	**NORTH**	**1980**	**WEST**	**SAN JUAN**

Latitude__36.4282_____ Longitude__-108.13659___

NATURE OF RELEASE

Type of Release: **Flow Line Leak**	Volume of Release: **Approx 10 bbls of oil and 10 bbls of water.**	Volume Recovered **All of it was recovered.**
Source of Release **A leaking line.**	Date and Hour of Occurrence: **12:00 AM 12-30-14**	Date and Hour of Discovery **11:30 AM 12-30-14**
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? **Brandon Powell and Cory Smith**	
By Whom? **Tim Duggan**	Date and Hour **12:00 PM on 12-30-14**	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

RECEIVED
FEB 13 2015
NMOCD
DISTRICT III

If a Watercourse was Impacted, Describe Fully.*

N/A

Describe Cause of Problem and Remedial Action Taken.*

There was a hole in the pipeline and it leaked to the surface. All the contaminated soil was removed and tested by Animas Environmental.

Describe Area Affected and Cleanup Action Taken.*

There was approximately an area of 150' approximately 3' down was affected. In the NW/SW Sec 5-T25N-R12W. The contaminated dirt was piled on plastic and repaired the line. Tests were done by Animas Environmental. On 1-2-15 we installed the new pipe. On 1-5-15 Emilee with Animas Environmental stated that Cory Smith approved using the dirt that was on location to backfill. The contaminated soil to Envirotech's Landfarm. We hauled clean dirt back for every contaminated load that was taken. I have attached all documents from Animas Environmental.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD 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.

Signature:	OIL CONSERVATION DIVISION Approved by Environmental Specialist:	
Printed Name: **Amy Archuleta**		
Title: **Sr. Regulatory Supervisor**	Approval Date: 4/13/15	Expiration Date:
E-mail Address: **aarchuleta@elmridge.net**	Conditions of Approval:	Attached ☒ Animas Environmental
Date: **1-28-14** Phone: **505-632-3476 x201**		

* Attach Additional Sheets If Necessary

#NCS 1510349261

23

Amy Archuleta

From: Emilee Skyles [eskyles@animasenvironmental.com]
Sent: Wednesday, January 21, 2015 1:29 PM
To: Amy Archuleta
Subject: CBU Main Flowline Release Assessment Results

Hi Amy,

Below are the field and laboratory results from the sampling event at the Elm Ridge CBU Main Flowline Release. Samples SC-1, S-1, S-2 and S-3 were submitted for laboratory analysis of BTEX and TPH (non-rush).

Sample ID	Sample Location	OVM (ppm)	Field TPH (mg/kg)
NMOCD Action Level		*100*	*100*
SC-1	Excavation Composite	10.1	NA
SC-2	North Wall	5.5	24.4
SC-3	South Wall	94.3	39.6
SC-4	East Wall	**175**	94.9
SC-5	West Wall	5.7	13.4
SC-6	Base	33.1	31.4
S-1	Top of Release Pathway (nearest excavation)	**173**	47.9
S-2	Midpoint of Release Pathway	**304**	38.3
S-3	Toe of Release Pathway (furthest from excavation)	6.5	12.0
SP-1*	Stockpile on eastern side of excavation	**113**	**207**
SP-2*	Stockpile on western side of excavation	**1,413**	**374**

*Removed from the location and disposed of at the landfarm.

Sample ID	Sample Location	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH – GRO (mg/kg)	TPH – DRO (mg/kg)
NMOCD Action Level		*10*	*50*	*100*	
SC-1	Excavation Composite	<0.047	<0.234	<4.7	81
S-1	Top of Release Pathway (nearest excavation)	<0.048	<0.45	4.9	19
S-2	Midpoint of Release	<0.048	<0.241	<4.8	<9.9

S-3	Pathway Toe of Release Pathway (furthest from excavation)	<0.048	<0.24	<4.8	<10

If there is anything else you need, please don't hesitate to ask.

Emilee Skyles

Geologist and Project Manager

Email: eskyles@animasenvironmental.com

Cell: (505) 419-1660

Animas Environmental Services, LLC

604 W. Piñon St.

Farmington, NM 87401

Office: (505) 564-2281

Fax: (505) 324-2022

1911 N. Main St., Suite 280

Durango, CO 81301

Office: (970) 403-3084

Woman-owned small business.

www.animasenvironmental.com

February 9, 2015

Amy Archuleta
Elm Ridge Resources
20 Road 5060
Bloomfield, New Mexico 87413

Via electronic mail to:
aarchuleta@elmridge.net

RE: Final Excavation Report
CBU Main Flowline Release
San Juan County, New Mexico

Dear Ms. Archuleta:

On January 2, 2015, Animas Environmental Services, LLC (AES) completed a release assessment and environmental clearance of the final excavation limits at the Elm Ridge Resources (Elm Ridge) CBU Main Flowline release, located in San Juan County, New Mexico. The release was discovered on December 30, 2014, by an Elm Ridge employee during routine inspections. The final excavation was completed by Elm Ridge contractors prior to AES' arrival at the location on January 2, 2015.

1.0 Site Information

1.1 Location

Site Name – CBU Main Flowline
Location – NE¼ SW¼, Section 5, T25N, R12W, San Juan County, New Mexico
Release Location Latitude/Longitude – N36.42893 and W108.13538, respectively
Land Jurisdiction – Navajo Nation Allotment
Figure 1. Topographic Site Location Map
Figure 2. Aerial Site Map, Sample Locations and Results, January 2015

604 W. Piñon St.
Farmington, NM 87401
505-564-2281

1911 Main, Ste 280
Durango, CO
970-403-3084

www.animasenvironmental.com

1.2 NMOCD Ranking

The CBU Main Flowline release is located within Navajo Nation Allotment lands. Navajo Nation Environmental Protection Agency (NNEPA) currently adheres to action levels for releases and spills as established by the New Mexico Oil Conservation Division (NMOCD).

In accordance with New Mexico Oil Conservation Division (NMOCD) release protocols, action levels were established per NMOCD *Guidelines for Remediation of Leaks, Spills, and Releases* (August 1993) prior to site work. The release was given a ranking score of 20 based on the following factors:

- **Depth to Groundwater:** Based on elevation, topographic interpretation and visual reconnaissance, depth to groundwater is interpreted to be 50 to 100 feet below ground surface (bgs). (10 points)
- **Wellhead Protection Area:** The release location is not within a wellhead protection area. (0 points)
- **Distance to Surface Water Body:** Approximately 800 feet to the northeast is an unnamed drainage that ultimately flows into Gallegos Canyon wash. (10 points)

1.3 Assessment

AES was initially contacted by Tim Dugan of Elm Ridge on December 31, 2014, and on January 2, 2015, Emilee Skyles of AES completed release assessment and excavation field work. Field sampling activities included collection of five confirmation composite soil samples from the walls and base of the excavation, one composite sample of the excavation, two composite samples from stockpiled soils, and three discrete soil samples from the release pathway. The area of the final excavation measured approximately 14 feet by 8 feet by 4 to 5 feet in depth. The excavation was backfilled with clean, imported material, and the stockpiled impacted soil was transported for proper disposal. Sample locations and final excavation extents are presented on Figure 2.

2.0 Soil Sampling

A total of 6 composite samples (SC-1 through SC-6), three discrete samples (S-1 through S-3) and two composite stockpile samples (SP-1 and SP-2) were collected during the assessment. All soil samples were field screened for volatile organic compounds (VOCs) and analyzed for total petroleum hydrocarbons (TPH). One composite sample (SC-1) and three discrete samples (S-1 through S-3) collected during the excavation clearance were also submitted for confirmation laboratory analysis.

2.1 Field Sampling

2.1.1 Volatile Organic Compounds

Field screening for VOC vapors was conducted with a photo-ionization detector (PID) organic vapor meter (OVM). Before beginning field screening, the PID-OVM was first calibrated with 100 parts per million (ppm) isobutylene gas.

2.1.2 Total Petroleum Hydrocarbons

TPH samples were field-analyzed per U.S. Environmental Protection Agency (USEPA) Method 418.1 using a Buck Scientific Model HC-404 Total Hydrocarbon Analyzer Infrared Spectrometer (Buck). A 3-point calibration was completed prior to conducting soil analyses. Field analytical protocol followed AES's *Standard Operating Procedure: Field Analysis Total Petroleum Hydrocarbons per EPA Method 418.1*.

2.2 Laboratory Analyses

The soil samples collected for laboratory analysis were placed into new, clean, laboratory-supplied containers, which were then labeled, placed on ice, and logged onto a sample chain of custody record. Samples were maintained on ice until delivery to the analytical laboratory, Hall Environmental Analysis Laboratory (Hall) in Albuquerque, New Mexico. Soil samples SC-1 and S-1 through S-3 were laboratory analyzed for:

- Benzene, toluene, ethylbenzene, and xylene (BTEX) per USEPA Method 8021B; *and*
- TPH for gasoline range organics (GRO) and diesel range organics (DRO) per USEPA Method 8015D.

2.3 Field and Laboratory Analytical Results

On January 2, 2015, final excavation field screening results for VOCs via OVM ranged from 5.5 ppm in SC-2 up to 175 ppm in SC-4. Field TPH concentrations ranged from less than 20.0 mg/kg in SC-5 up to 94.9 mg/kg in SC-4.

Along the release pathway, field screening results for VOCs via OVM ranged from 6.5 ppm in S-3 up to 304 ppm in S-2. Field TPH concentrations ranged from less than 20.0 mg/kg in S-3 up to 47.9 mg/kg in S-1.

Composite samples from the two stockpiles yielded field screening results for VOCs via OVM that ranged from 113 ppm up to 1,413 ppm. Field TPH concentrations ranged from 207 mg/kg up to 374 mg/kg. Results are included below in Table 1 and on Figure 2. The AES Field Sampling Report is attached.

Table 1. Field Sampling VOCs and TPH Results
CBU Main Flowline Final Excavation and Assessment, January 2015

Sample ID	Date Sampled	Sample Depth (ft bgs)	VOCs via OVM (ppm)	TPH 418.1 (mg/kg)
*NMOCD Action Level**			*100*	*100*
SC-1	1/2/15	1 to 5	10.1	NA
SC-2	1/2/15	1 to 5	5.5	24.2
SC-3	1/2/15	1 to 5	94.3	39.6
SC-4	1/2/15	1 to 5	**175**	94.9
SC-5	1/2/15	1 to 5	5.7	<20.0
SC-6	1/2/15	4 to 5	33.1	31.4
S-1	1/2/15	surface	**173**	47.9
S-2	1/2/15	surface	**304**	38.3
S-3	1/2/15	surface	6.5	<20.0
SP-1	1/2/15	surface	**113**	**207**
SP-2	1/2/15	surface	**1,413**	**374**

NA - not analyzed
*Action level determined by the NMOCD ranking score per *NMOCD Guidelines for Remediation of Leaks, Spills, and Releases* (August 1993)

Laboratory analyses for SC-1 and S-1 through S-3 were used to confirm field sampling results from the release pathway and final excavation. Benzene and total BTEX concentrations in SC-1 were reported below laboratory detection limits of 0.048 mg/kg and 0.240 mg/kg, respectively. TPH concentrations as GRO/DRO in SC-1 were reported below the laboratory detection limit of 14.8 mg/kg. Along the release pathway, benzene concentrations were reported below detection limits in all samples (S-1 through S-3). Total BTEX concentrations ranged from below detection limits (S-1 and S-3) up to 0.45 mg/kg. TPH concentrations as GRO/DRO ranged from below detection limits (S-3) up to 81 mg/kg (S-1). Results are presented in Table 2 and on Figure 2. The laboratory analytical report is attached.

Table 2. Laboratory Analytical Results – Benzene, Total BTEX, and TPH
CBU Main Flowline Final Excavation and Assessment, January 2015

Sample ID	Date Sampled	Sample Depth (ft bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)
*NMOCD Action Level**			*10*	*50*	*100*	
SC-1	1/2/15	1 to 5	<0.048	<0.240	<4.8	<10
S-1	1/2/15	surface	<0.047	<0.234	<4.7	81
S-2	1/2/15	surface	<0.048	0.45	4.9	19
S-3	1/2/15	surface	<0.048	<0.241	<4.8	<9.9

*Action level determined by the NMOCD ranking score per *NMOCD Guidelines for Remediation of Leaks, Spills, and Releases* (August 1993)

3.0 Conclusions and Recommendations

On January 2, 2015, AES conducted an assessment of petroleum contaminated soils associated with a pipeline release at the CBU Main Flowline, located within Navajo Nation Allotment lands. NNEPA adheres to action levels for releases and spills as established by the NMOCD.

Action levels for releases are determined by the NMOCD ranking score per *NMOCD Guidelines for Remediation of Leaks, Spills, and Releases* (August 1993), and the site was assigned a rank of 20.

Field sampling results of the excavation extents showed that VOC concentrations were below applicable NMOCD action levels for the final walls and base of the excavation, except for SC-4 (east wall), which had a VOC concentration of 175 ppm. Field TPH concentrations were below the applicable NMOCD action level of 100 mg/kg for the final walls and base of the excavation. Laboratory analytical results reported benzene, total BTEX and TPH (as GRO/DRO) concentrations below NMOCD action levels in the excavation composite sample (SC-1).

Field sampling results of the release pathway showed that VOC concentrations were below applicable NMOCD action levels, except for S-1 and S-2, which had VOC concentrations of 173 ppm and 304 ppm, respectively. However, field TPH concentrations were below the applicable NMOCD action level of 100 mg/kg. Laboratory analytical results reported benzene, total BTEX, and TPH (as GRO/DRO) concentrations below NMOCD action levels in all samples.

Field sampling results from stockpiled soils showed that VOC concentrations were above applicable NMOCD action levels. Stockpiled soils were subsequently removed from the location and transported to an appropriate disposal facility.

Based on final field sampling and laboratory analytical results of the excavation of petroleum contaminated soils at the CBU Main Flowline, VOC, benzene, total BTEX, and TPH concentrations were below applicable NMOCD action levels for each of the sidewalls and base of the excavation, as well as along the release pathway. No further work is recommended.

If you have any questions about this report or site conditions, please do not hesitate to contact Emilee Skyles at (505) 564-2281.

Sincerely,

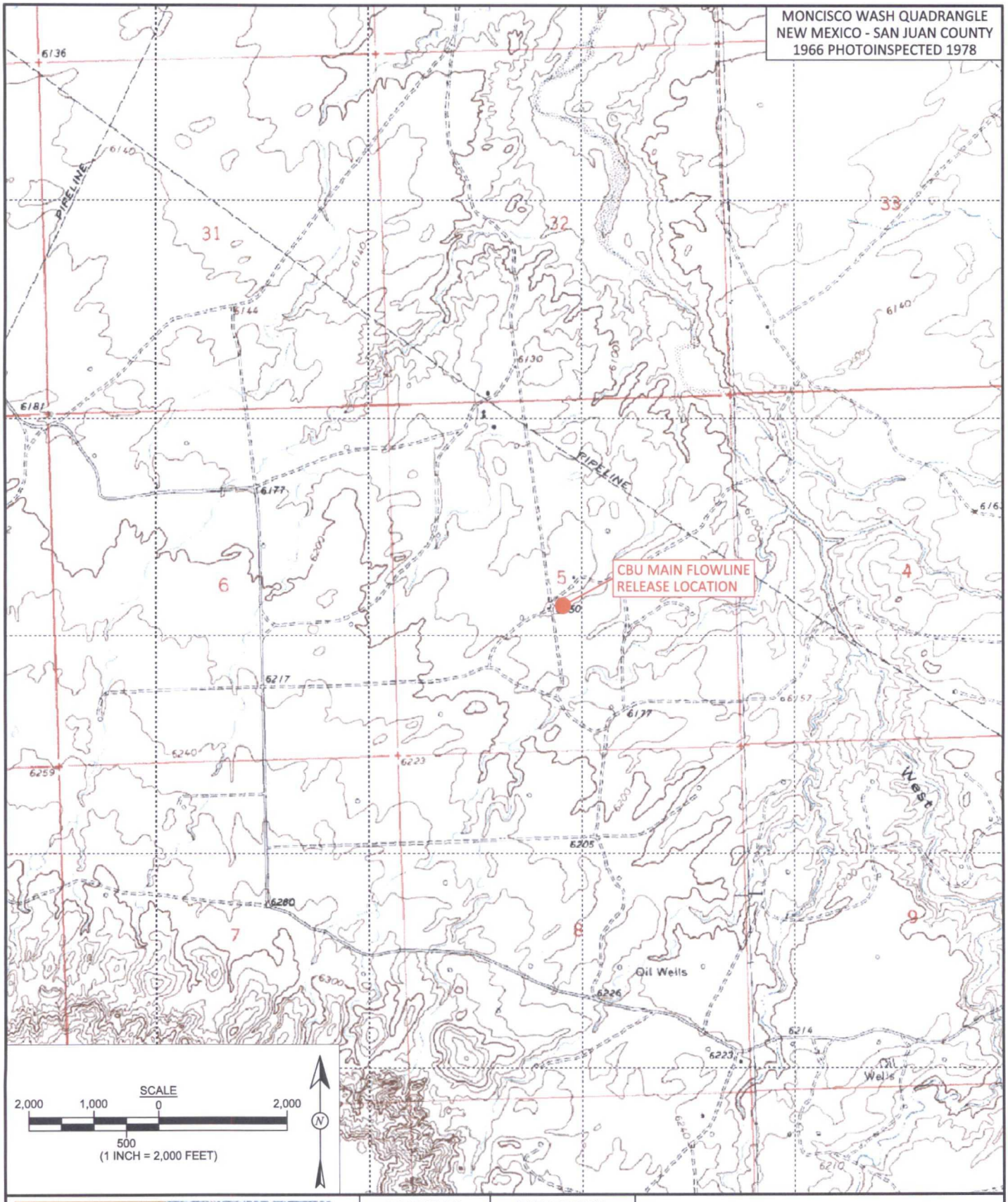
Emilee Skyles
Staff Geologist

Elizabeth McNally, PE

Attachments:

Figure 1. Topographic Site Location Map
Figure 2. Aerial Site Map, Sample Locations and Results, January 2015
AES Field Sampling Report 010215
Hall Laboratory Analytical Report 1501056

C:\Users\emcnally\Dropbox (Animas Environmental)\0000 Animas Server Dropbox EM\2015 Projects\Elm Ridge Resources\CBU Main Flowline Release\Final Excavation Report 020915.docx

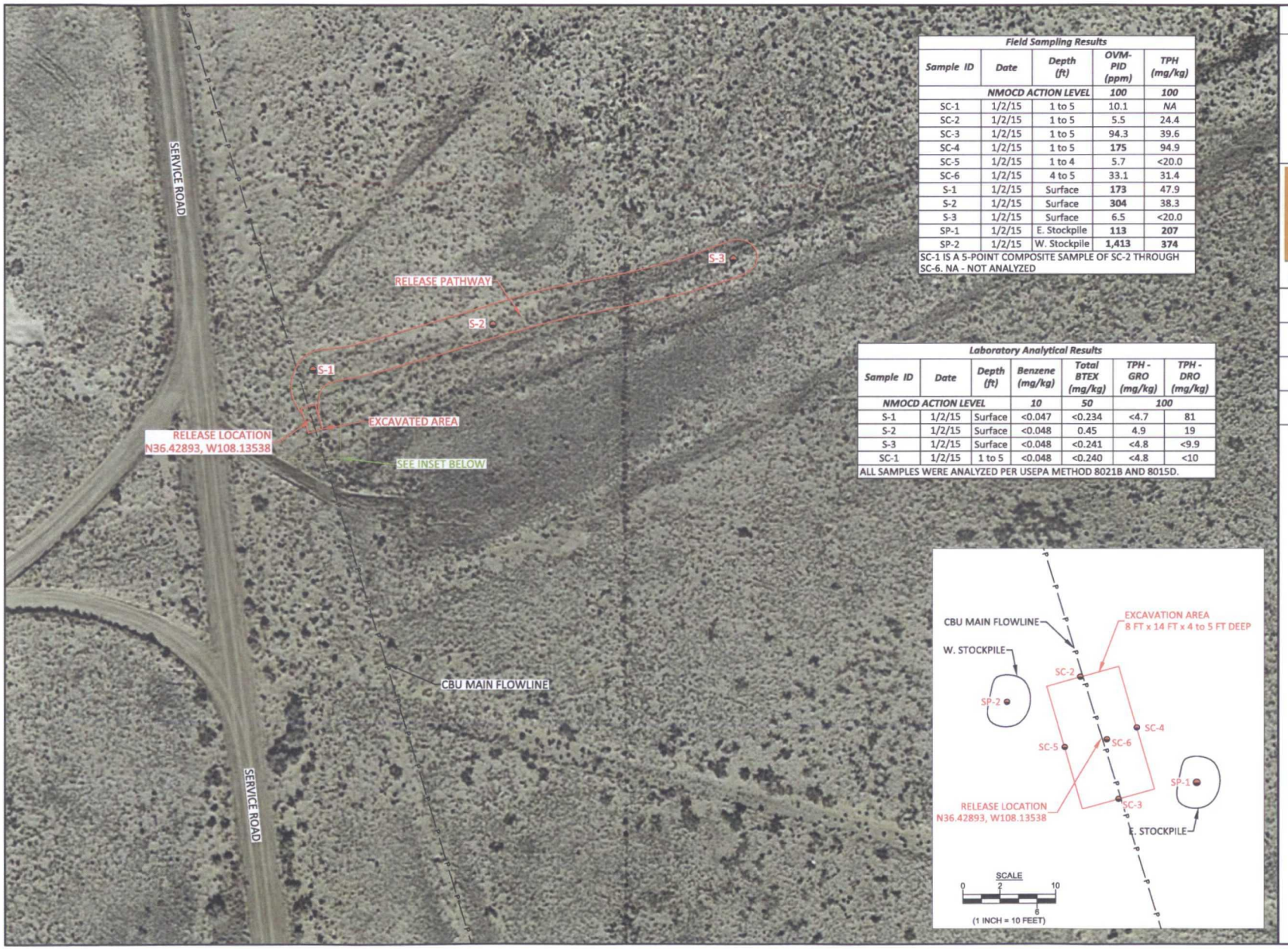


AES Animas Environmental Services, LLC		
DRAWN BY: C. Lameman	**DATE DRAWN:** January 13, 2015	**FIGURE 1**
REVISIONS BY: C. Lameman	**DATE REVISED:** January 13, 2015	**TOPOGRAPHIC SITE LOCATION MAP**
CHECKED BY: E. Skyles	**DATE CHECKED:** January 13, 2015	ELM RIDGE RESOURCES CBU MAIN FLOWLINE 2015 RELEASE NE¼ SW¼, SECTION 5, T25N, R12W SAN JUAN COUNTY, NEW MEXICO N36.42893, W108.13538
APPROVED BY: E. McNally	**DATE APPROVED:** January 13, 2015	

FIGURE 2

AERIAL SITE MAP
SAMPLE LOCATIONS AND RESULTS
JANUARY 2015

ELM RIDGE RESOURCES
CBU MAIN FLOWLINE 2015 RELEASE
NE¼ SW¼, SECTION 5, T25N, R12W
SAN JUAN COUNTY, NEW MEXICO
N36.42893, W108.13538



Field Sampling Results

Sample ID	Date	Depth (ft)	OVM-PID (ppm)	TPH (mg/kg)
NMOCD ACTION LEVEL			100	100
SC-1	1/2/15	1 to 5	10.1	NA
SC-2	1/2/15	1 to 5	5.5	24.4
SC-3	1/2/15	1 to 5	94.3	39.6
SC-4	1/2/15	1 to 5	**175**	94.9
SC-5	1/2/15	1 to 4	5.7	<20.0
SC-6	1/2/15	4 to 5	33.1	31.4
S-1	1/2/15	Surface	**173**	47.9
S-2	1/2/15	Surface	**304**	38.3
S-3	1/2/15	Surface	6.5	<20.0
SP-1	1/2/15	E. Stockpile	**113**	**207**
SP-2	1/2/15	W. Stockpile	**1,413**	**374**

SC-1 IS A 5-POINT COMPOSITE SAMPLE OF SC-2 THROUGH SC-6. NA - NOT ANALYZED

Laboratory Analytical Results

Sample ID	Date	Depth (ft)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH - GRO (mg/kg)	TPH - DRO (mg/kg)
NMOCD ACTION LEVEL			10	50	100	
S-1	1/2/15	Surface	<0.047	<0.234	<4.7	81
S-2	1/2/15	Surface	<0.048	0.45	4.9	19
S-3	1/2/15	Surface	<0.048	<0.241	<4.8	<9.9
SC-1	1/2/15	1 to 5	<0.048	<0.240	<4.8	<10

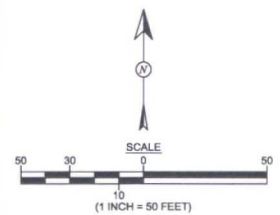
ALL SAMPLES WERE ANALYZED PER USEPA METHOD 8021B AND 8015D.

Animas Environmental Services, LLC

DRAWN BY:	DATE DRAWN:
C. Lameman	January 13, 2014
REVISIONS BY:	**DATE REVISED:**
C. Lameman	January 30, 2014
CHECKED BY:	**DATE CHECKED:**
E. Skyles	January 30, 2014
APPROVED BY:	**DATE APPROVED:**
E. McNally	January 30, 2014

LEGEND

- SAMPLE LOCATIONS
- —P— BURIED PIPELINE (APPROXIMATE)



AES Field Sampling Report

Animas Environmental Services, LLC

Client: Elm Ridge Resources

Project Location: CBU Main Flowline

Date: 1/2/2015

Matrix: Soil

Sample ID	Collection Date	Collection Time	Sample Location	OVM (ppm)	Field TPH* (mg/kg)	Field TPH Analysis Time	TPH PQL (mg/kg)	DF	TPH Analysts Initials
SC-1	1/2/2015	11:30	Excavation Composite	10.1	*Not Analyzed for TPH*				
SC-2	1/2/2015	10:59	North Wall	5.5	24.4	12:28	20.0	1	EMS
SC-3	1/2/2015	11:00	South Wall	94.3	39.6	12:30	20.0	1	EMS
SC-4	1/2/2015	11:05	East Wall	175	94.9	12:34	20.0	1	EMS
SC-5	1/2/2015	11:08	West Wall	5.7	13.4	12:37	20.0	1	EMS
SC-6	1/2/2015	11:10	Base	33.1	31.4	12:39	20.0	1	EMS
S-1	1/2/2015	11:16	W of Release Pathway	173	47.9	12:41	20.0	1	EMS
S-2	1/2/2015	11:20	Middle of Release Pathway	304	38.3	12:43	20.0	1	EMS
S-3	1/2/2015	11:25	E of Release Pathway	6.5	12.0	12:45	20.0	1	EMS
SP-1	1/2/2015	11:38	East Stockpile	113	207	13:25	20.0	1	EMS
SP-2	1/2/2015	11:40	West Stockpile	1,413	374	13:29	20.0	1	EMS

DF Dilution Factor

NA Not Analyzed

PQL Practical Quantitation Limit

**TPH concentrations recorded may be below PQL.*

Total Petroleum Hydrocarbons - USEPA 418.1

Analyst: Emily Sy L

Report Finalized: 1/2/15

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

January 09, 2015

Emilee Skyles

Animas Environmental Services
604 Pinon Street
Farmington, NM 87401
TEL: (505) 564-2281
FAX (505) 324-2022

RE: Elm Ridge CBU Main Flowline OrderNo.: 1501056

Dear Emilee Skyles:

Hall Environmental Analysis Laboratory received 4 sample(s) on 1/6/2015 for the analyses presented in the following report.

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. In order to properly interpret your results it is imperative that you review this report in its entirety. 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. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1501056**
Date Reported: **1/9/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services
Project: Elm Ridge CBU Main Flowline
Lab ID: 1501056-001 **Matrix:** SOIL

Client Sample ID: S-1
Collection Date: 1/2/2015 11:16:00 AM
Received Date: 1/6/2015 7:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **BCN**	
Diesel Range Organics (DRO)	81	10		mg/Kg	1	1/7/2015 2:50:14 PM	17083
Surr: DNOP	94.3	63.5-128		%REC	1	1/7/2015 2:50:14 PM	17083
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	1/7/2015 1:02:20 PM	17086
Surr: BFB	97.8	80-120		%REC	1	1/7/2015 1:02:20 PM	17086
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.047		mg/Kg	1	1/7/2015 1:02:20 PM	17086
Toluene	ND	0.047		mg/Kg	1	1/7/2015 1:02:20 PM	17086
Ethylbenzene	ND	0.047		mg/Kg	1	1/7/2015 1:02:20 PM	17086
Xylenes, Total	ND	0.093		mg/Kg	1	1/7/2015 1:02:20 PM	17086
Surr: 4-Bromofluorobenzene	106	80-120		%REC	1	1/7/2015 1:02:20 PM	17086

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
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
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services
Client Sample ID: S-2
Project: Elm Ridge CBU Main Flowline
Collection Date: 1/2/2015 11:20:00 AM
Lab ID: 1501056-002 **Matrix:** SOIL **Received Date:** 1/6/2015 7:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **BCN**	
Diesel Range Organics (DRO)	19	10		mg/Kg	1	1/7/2015 4:19:33 PM	17083
Surr: DNOP	95.4	63.5-128		%REC	1	1/7/2015 4:19:33 PM	17083
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	4.9	4.8		mg/Kg	1	1/7/2015 2:23:40 PM	17086
Surr: BFB	116	80-120		%REC	1	1/7/2015 2:23:40 PM	17086
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.048		mg/Kg	1	1/7/2015 2:23:40 PM	17086
Toluene	0.13	0.048		mg/Kg	1	1/7/2015 2:23:40 PM	17086
Ethylbenzene	0.058	0.048		mg/Kg	1	1/7/2015 2:23:40 PM	17086
Xylenes, Total	0.26	0.096		mg/Kg	1	1/7/2015 2:23:40 PM	17086
Surr: 4-Bromofluorobenzene	125	80-120	S	%REC	1	1/7/2015 2:23:40 PM	17086

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
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
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services
Client Sample ID: S-3
Project: Elm Ridge CBU Main Flowline
Collection Date: 1/2/2015 11:25:00 AM
Lab ID: 1501056-003 **Matrix:** SOIL **Received Date:** 1/6/2015 7:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **BCN**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	1/7/2015 4:49:15 PM	17083
Surr: DNOP	94.2	63.5-128		%REC	1	1/7/2015 4:49:15 PM	17083
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	1/7/2015 3:45:31 PM	17086
Surr: BFB	96.1	80-120		%REC	1	1/7/2015 3:45:31 PM	17086
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.048		mg/Kg	1	1/7/2015 3:45:31 PM	17086
Toluene	ND	0.048		mg/Kg	1	1/7/2015 3:45:31 PM	17086
Ethylbenzene	ND	0.048		mg/Kg	1	1/7/2015 3:45:31 PM	17086
Xylenes, Total	ND	0.097		mg/Kg	1	1/7/2015 3:45:31 PM	17086
Surr: 4-Bromofluorobenzene	117	80-120		%REC	1	1/7/2015 3:45:31 PM	17086

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
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
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services
Client Sample ID: SC-1
Project: Elm Ridge CBU Main Flowline
Collection Date: 1/2/2015 11:30:00 AM
Lab ID: 1501056-004 **Matrix:** SOIL **Received Date:** 1/6/2015 7:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **BCN**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	1/7/2015 5:19:16 PM	17083
Surr: DNOP	92.4	63.5-128		%REC	1	1/7/2015 5:19:16 PM	17083
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	1/8/2015 3:56:50 PM	17086
Surr: BFB	90.9	80-120		%REC	1	1/8/2015 3:56:50 PM	17086
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.048		mg/Kg	1	1/7/2015 4:12:47 PM	17086
Toluene	ND	0.048		mg/Kg	1	1/7/2015 4:12:47 PM	17086
Ethylbenzene	ND	0.048		mg/Kg	1	1/7/2015 4:12:47 PM	17086
Xylenes, Total	ND	0.096		mg/Kg	1	1/7/2015 4:12:47 PM	17086
Surr: 4-Bromofluorobenzene	90.1	80-120		%REC	1	1/7/2015 4:12:47 PM	17086

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
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
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1501056**

12-Jan-15

Client: Animas Environmental Services

Project: Elm Ridge CBU Main Flowline

Sample ID **1501056-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **S-1**	Batch ID: **17083**	RunNo: **23514**
Prep Date: **1/6/2015**	Analysis Date: **1/7/2015**	SeqNo: **694835** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	67	9.9	49.46	81.38	-29.9	29.2	176			S
Surr: DNOP	5.1		4.946		103	63.5	128			

Sample ID **1501056-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **S-1**	Batch ID: **17083**	RunNo: **23514**
Prep Date: **1/6/2015**	Analysis Date: **1/7/2015**	SeqNo: **694836** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	76	10	50.40	81.38	-11.0	29.2	176	12.9	23	S
Surr: DNOP	5.5		5.040		109	63.5	128	0	0	

Sample ID **LCS-17083**	SampType: **LCS**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **17083**	RunNo: **23514**
Prep Date: **1/6/2015**	Analysis Date: **1/7/2015**	SeqNo: **695443** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	55	10	50.00	0	110	67.8	130			
Surr: DNOP	4.9		5.000		97.3	63.5	128			

Sample ID **MB-17083**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **17083**	RunNo: **23514**
Prep Date: **1/6/2015**	Analysis Date: **1/7/2015**	SeqNo: **695946** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	8.0		10.00		79.9	63.5	128			

Qualifiers:

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- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1501056**

12-Jan-15

Client: Animas Environmental Services
Project: Elm Ridge CBU Main Flowline

Sample ID **MB-17086**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **17086**	RunNo: **23519**
Prep Date: **1/6/2015**	Analysis Date: **1/7/2015**	SeqNo: **694868** 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	920		1000		92.5	80	120			

Sample ID **LCS-17086**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **17086**	RunNo: **23519**
Prep Date: **1/6/2015**	Analysis Date: **1/7/2015**	SeqNo: **694869** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	18	5.0	25.00	0	73.6	65.8	139			
Surr: BFB	970		1000		96.9	80	120			

Sample ID **1501056-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **S-1**	Batch ID: **17086**	RunNo: **23519**
Prep Date: **1/6/2015**	Analysis Date: **1/7/2015**	SeqNo: **694875** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	4.7	23.36	0	90.3	47.9	144			
Surr: BFB	870		934.6		93.0	80	120			

Sample ID **1501056-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **S-1**	Batch ID: **17086**	RunNo: **23519**
Prep Date: **1/6/2015**	Analysis Date: **1/7/2015**	SeqNo: **694876** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	4.7	23.36	0	93.9	47.9	144	3.95	29.9	
Surr: BFB	1000		934.6		110	80	120	0	0	

Sample ID **MB-17107**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **17107**	RunNo: **23541**
Prep Date: **1/7/2015**	Analysis Date: **1/8/2015**	SeqNo: **695642** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	920		1000		92.4	80	120			

Sample ID **LCS-17107**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **17107**	RunNo: **23541**
Prep Date: **1/7/2015**	Analysis Date: **1/8/2015**	SeqNo: **695643** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		101	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1501056**

12-Jan-15

Client: Animas Environmental Services

Project: Elm Ridge CBU Main Flowline

Sample ID **MB-17086**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **17086**	RunNo: **23519**
Prep Date: **1/6/2015**	Analysis Date: **1/7/2015**	SeqNo: **694896** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.2		1.000		116	80	120			

Sample ID **LCS-17086**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **17086**	RunNo: **23519**
Prep Date: **1/6/2015**	Analysis Date: **1/7/2015**	SeqNo: **694897** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	2.0	0.050	2.000	0	99.4	80	120			
Toluene	2.0	0.050	2.000	0	98.9	80	120			
Ethylbenzene	2.0	0.050	2.000	0	102	80	120			
Xylenes, Total	6.2	0.10	6.000	0	103	80	120			
Surr: 4-Bromofluorobenzene	1.2		1.000		120	80	120			S

Sample ID **1501056-002AMS**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **S-2**	Batch ID: **17086**	RunNo: **23519**
Prep Date: **1/6/2015**	Analysis Date: **1/7/2015**	SeqNo: **694904** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.048	0.9625	0.04339	94.0	69.2	126			
Toluene	1.1	0.048	0.9625	0.1300	101	65.6	128			
Ethylbenzene	1.1	0.048	0.9625	0.05824	107	65.5	138			
Xylenes, Total	3.4	0.096	2.887	0.2567	109	63	139			
Surr: 4-Bromofluorobenzene	0.83		0.9625		86.6	80	120			

Sample ID **1501056-002AMSD**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **S-2**	Batch ID: **17086**	RunNo: **23519**
Prep Date: **1/6/2015**	Analysis Date: **1/7/2015**	SeqNo: **694905** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.84	0.048	0.9643	0.04339	82.2	69.2	126	12.6	18.5	
Toluene	0.92	0.048	0.9643	0.1300	82.3	65.6	128	17.7	20.6	
Ethylbenzene	0.92	0.048	0.9643	0.05824	89.5	65.5	138	16.2	20.1	
Xylenes, Total	2.9	0.096	2.893	0.2567	92.4	63	139	14.9	21.1	
Surr: 4-Bromofluorobenzene	1.1		0.9643		118	80	120	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1501056**

12-Jan-15

Client: Animas Environmental Services

Project: Elm Ridge CBU Main Flowline

Sample ID **MB-17107**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **17107**	RunNo: **23541**
Prep Date: **1/7/2015**	Analysis Date: **1/8/2015**	SeqNo: **695657** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.2		1.000		116	80	120			

Sample ID **LCS-17107**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **17107**	RunNo: **23541**
Prep Date: **1/7/2015**	Analysis Date: **1/8/2015**	SeqNo: **695658** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.3		1.000		126	80	120			S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
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
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

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: Animas Environmental Work Order Number: 1501056 RcptNo: 1

Received by/date: 01/06/15

Logged By: **Lindsay Mangin** 1/6/2015 7:10:00 AM

Completed By: **Lindsay Mangin** 1/6/2015 8:01:27 AM

Reviewed By: 01/06/15

Chain of Custody

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

Log In

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

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. 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: _____

17. Additional remarks:

18. Cooler Information

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

Chain of Custody Record

Client: Animas Environmental Services, LLC	X Standard ☐ Rush
Mailing Address: 604 W. Piñon St., Farmington, NM 87401	Project Name: Elm Ridge CBU Main Flowline
Phone #: 505-564-2281	Project #:
email or Fax#: eskyles@animasenvironmental.com	Project Manager: E. Skyles
QA/QC Package: ☐ Standard ☐ Level 4 (Full Validation)	Sampler: E. Skyles
Accreditation: ☐ NELAP ☐ Other ☐ EDD (Type)	On Ice: X Yes ☐ No
	Sample Temperature: 1.8

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No 1501056	Method 8015D TPH (GRO/DRO/MRO)	Method 8021 B BTEX	Analysis Request
01/02/15	11:16	Soil	S-1	1 - 4 oz.	cool	-001	X	X	
01/02/15	11:20	Soil	S-2	1 - 4 oz.	cool	-002	X	X	
01/02/15	11:25	Soil	S-3	1 - 4 oz.	cool	-003	X	X	
01/02/15	11:30	Soil	SC-1	1 - 4 oz.	cool	-004	X	X	

Date	Time	Relinquished by	Received by	Date	Time
1/5/15	1544	Emily Skyles	Christie Walker	1/5/15	1544
1/5/15	1822	Christie Walker		01/06/15	0710

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.