

Incident ID	nAPP2129146666
District RP	
Facility ID	
Application ID	

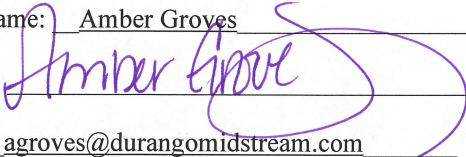
Closure

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: Amber Groves Title: Remediation Specialist
Signature:  Date: 3/16/2022
email: agroves@durangomidstream.com Telephone: 575-703-7992

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: 06/14/2022
Printed Name: Jennifer Nobui Title: Environmental Specialist A



CLOSURE REQUEST

PENASCO 10-INCH PIPELINE RELEASE
INCIDENT NUMBER NAPP2129146666
EDDY COUNTY, NEW MEXICO

COORDINATES: 32.700078, -104.471731
UNIT LETTER O, SECTION 34, TOWNSHIP 18 SOUTH,
RANGE 25 EAST

FRONTIER FIELD SERVICES, LLC.
10077 GROGANS MILL ROAD, SUITE 300
THE WOODLANDS, TEXAS 77380

DATE: MARCH 17, 2022

WSP
508 WEST STEVENS STREET
CARLSBAD, NEW MEXICO 88220



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Attachments:

Figure 1	Site Location Map
Figure 2	Excavation Soil Sample Locations
Figure 3	Delineation Soil Sample Locations
Table 1	Soil Analytical Results
Attachment 1	Initial C-141 Form
Attachment 2	Referenced Well Records
Attachment 3	Photographic Log
Attachment 4	Laboratory Analytical Reports
Attachment 5	Lithologic/Sampling Logs



March 17, 2022

District II
New Mexico Oil Conservation Division
811 South First Street
Artesia, New Mexico 88210

**RE: Closure Request
Penasco 10-inch Pipeline Release
Incident Number nAPP2129146666
Coordinates: 32.700078, -104.471731
Unit Letter O, Section 34, Township 18 South, Range 25 East
Eddy County, New Mexico**

To Whom it May Concern:

WSP USA Inc. (WSP), on behalf of Frontier Field Services, LLC (Frontier), presents the following Closure Request detailing site assessment, excavation, and soil sampling activities at the Penasco 10-inch Pipeline Release (Site) located in Unit O, Section 34, Township 18 South, Range 25 East, in Eddy County, New Mexico (Figure 1). The purpose of the site assessment, excavation, and soil sampling activities was to address impacts to soil following the release of pipeline liquid from a natural gas line at the Site. Based on the excavation activities and soil analytical results, Frontier is submitting this Closure Request, and requesting no further action (NFA) for Incident Number nAPP2129146666.

It should be noted, the original responsible party for the release was Lucid Artesia Company (Lucid – OGRID #147831). Lucid and the Site have been acquired by Frontier following the release. As a result, remedial actions discussed in the Closure Request was initiated by Lucid and completed by Frontier. Frontier is submitting this NFA request under OGRID #221115.

RELEASE BACKGROUND

On October 7, 2021, corrosion on a 10-inch main line resulted in a pinhole leak leading to the release of 1,185 thousand cubic feet (MCF) of natural gas and an unknown volume of natural gas pipeline liquid onto the pipeline Right of Way (ROW), located on private land. Immediate notice was not provided to New Mexico Oil Conservation Division (NMOCD), until an accurate volume calculation of the loss could be provided. Lucid, the owner and operator of the Site at the time, reported the release to the NMOCD on a Release Notification Form C-141 (Form C-141) on October 21, 2021. The release was assigned Incident Number nAPP2129146666. Attachment 1 includes a copy of Lucid's initial C-141.



Following the release, Lucid contracted a third-party excavation company and began to excavate soil impacts based on visual observations. Impacted soil was properly disposed of at an NMOCD permitted landfill under Lucid manifests.

SITE CHARACTERIZATION

WSP characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Depth to groundwater at the Site is estimated to be less than 50 feet below ground surface (bgs) based on the nearest groundwater well with available data. The nearest permitted water well with depth to water data is New Mexico Office of the State Engineer (NMOSE) file number RA 04722, located approximately 0.81 miles southeast of the Site. The NMOSE water well has a reported depth to groundwater of 42 feet bgs and a total depth of 200 feet bgs. The referenced well record is included as Attachment 2.

The closest continuously flowing or significant watercourse to the Site is an intermittent stream, located approximately 900 feet west of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (low potential karst designation area). Site receptors are identified on Figure 1.

CLOSURE CRITERIA

Based on the results of the Site Characterization, the following NMOCD Table 1 Closure Criteria (Closure Criteria) apply:

- Benzene: 10 milligrams per kilogram (mg/kg)
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg
- Total Petroleum Hydrocarbons (TPH): 100 mg/kg
- Chloride: 600 mg/kg

SITE ASSESSMENT, CONFIRMATION SAMPLING, AND ANALYTICAL RESULTS

At the direction of Frontier, WSP personnel visited the Site on November 29, 2021 to evaluate the release extent and subsequent excavation activities that were conducted by Lucid based on information provided on the Form C-141 and visual observations. WSP collected floor confirmation soil samples FS01 through FS07 within the excavation at a depth of approximately 8 feet bgs to determine whether initial excavation activities conducted during initial response efforts by Lucid were sufficient to fully remediate impacted soil at the Site. Soil from the sampling event was field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated photo-ionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. The release extent, excavation extent, and soil sample locations were mapped utilizing a handheld



Global Positioning System (GPS) unit and are depicted on Figure 2. Photographic documentation was completed during the Site visits and a photographic log is included in Attachment 3.

WSP collected 5-point composite soil samples every 200 square feet from the floor of the excavation. The 5-point composite samples were collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were transported at or below 4 degrees Celsius (°C) under strict chain-of-custody (COC) procedures to Eurofins Laboratories (Eurofins) in Carlsbad, New Mexico, for analysis of BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0.

Laboratory analytical results for confirmation floor soil samples FS02, FS03, FS04, and FS06 indicated TPH exceeded the Closure Criteria. The chloride concentration in confirmation floor soil sample FS03 exceeded the Closure Criteria. Based on field screening activities and laboratory analytical results for the initial confirmation soil samples, additional excavation and supplemental delineation activities appeared warranted. Figure 2 depicts confirmation soil analytical results and are also summarized on Table 1. The laboratory analytical report is included as Attachment 4.

DELINEATION ACTIVITIES AND ANALYTICAL RESULTS

On December 13 and 14, 2021, WSP personnel returned to the Site to oversee delineation activities as indicated by visual observations, field screening activities, and laboratory analytical results from the initial confirmation soil samples.

Potholes PH01 through PH08 were advanced via backhoe within and surrounding the release extent to a depth of approximately 12 feet bgs to assess the vertical and lateral extents of impacted soil. Discrete delineation samples were collected for lateral delineation with potholes PH01 through PH06 from ground surface to approximately 12 feet bgs around the parameter of the excavation and vertically from potholes PH07 and PH08, located inside the existing excavation, from approximately 8 feet to 12 feet bgs. Soil from the potholes was field screened for volatile aromatic hydrocarbons and chloride. Field screening results and observations were logged on lithologic/soil sampling logs, which are included in Attachment 5. The delineation soil sample locations are depicted on Figure 3. The delineation soil samples were collected, handled, and analyzed as described above at Eurofins in Carlsbad, New Mexico for analysis of BTEX, TPH, and chloride.

Laboratory analytical results for all pothole delineation samples indicated benzene, BTEX, TPH, and chloride concentrations were compliant with the Site Closure Criteria. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Attachment 4.



ADDITIONAL EXCAVATION ACTIVITIES AND ANALYTICAL RESULTS

On February 9, 2022, WSP personnel returned to the Site to oversee excavation activities in the vicinity of confirmation floor soil samples FS02, FS03, FS04, and FS06. Excavation activities were performed using a backhoe and hydro-vacuum. To direct excavation activities, WSP screened soil for volatile aromatic hydrocarbons and chloride. The additional excavation was completed to an approximate depth of 9 feet to 10 feet bgs.

Following removal of the additional impacted soil in the vicinity of soil samples FS02, FS03, FS04, and FS06 and to the southwest (FS08), WSP collected 5-point composite soil samples from areas of approximately 200 square feet in each location. Confirmation soil samples SW01 through SW08 were taken for the sidewalls of the excavation on a frequency of one sample per 200 square feet. The excavation sidewall soil samples were collected, handled, and analyzed following the same procedures as described above. The excavation extent and excavation soil sample locations are presented on Figure 2.

Laboratory analytical results for subsequent confirmation floor soil samples FS02A, FS03A, FS04A, FS06A, and FS08 as well as sidewall samples SW01 through SW08 indicated benzene, BTEX, TPH, and chloride concentrations were compliant with the Closure Criteria. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Attachment 4.

The final excavation area measured approximately 1,558 square feet in lateral extent and a total depth ranging between 8 feet and 10 feet bgs. A total of approximately 577 cubic yards of impacted soil was removed during excavation activities. The impacted soil was transported and properly disposed of at the R360 Facility in Hobbs, New Mexico. After completion of confirmation sampling, the excavation area was backfilled.

CLOSURE REQUEST

Site assessment and excavation activities were conducted at the Site to address the October 7, 2021 release of natural gas pipeline liquid. Laboratory analytical results for the excavation soil samples, collected from the initial and final excavation extent of the floor and sidewalls, indicated benzene, BTEX, TPH, and chloride concentrations were compliant with the Closure Criteria. Additionally, the release extent was laterally delineated and excavated to below the most stringent Table 1 Closure Criteria. Based on soil sample analytical results, no further remediation appears warranted at this time. Frontier backfilled the excavation with locally sourced, non-waste containing material and re-contoured the Site to match pre-existing site conditions.

Initial response efforts and excavation of impacted soil have mitigated impacts at the Site. Depth to groundwater has been determined to be less than 50 feet bgs and no other sensitive receptors were identified near the release extent. WSP and Frontier respectively request closure of nAPP2129146666 based on analytical results described in this report, since they are protective of human health, the environment, and groundwater.



If you have any questions or comments, please do not hesitate to contact Mr. Daniel R. Moir, P.G. at (303) 887-2946.

Sincerely,

WSP USA Inc.

A handwritten signature in black ink, appearing to read 'Travis Casey'.

Travis Casey
Consultant, Environmental scientist

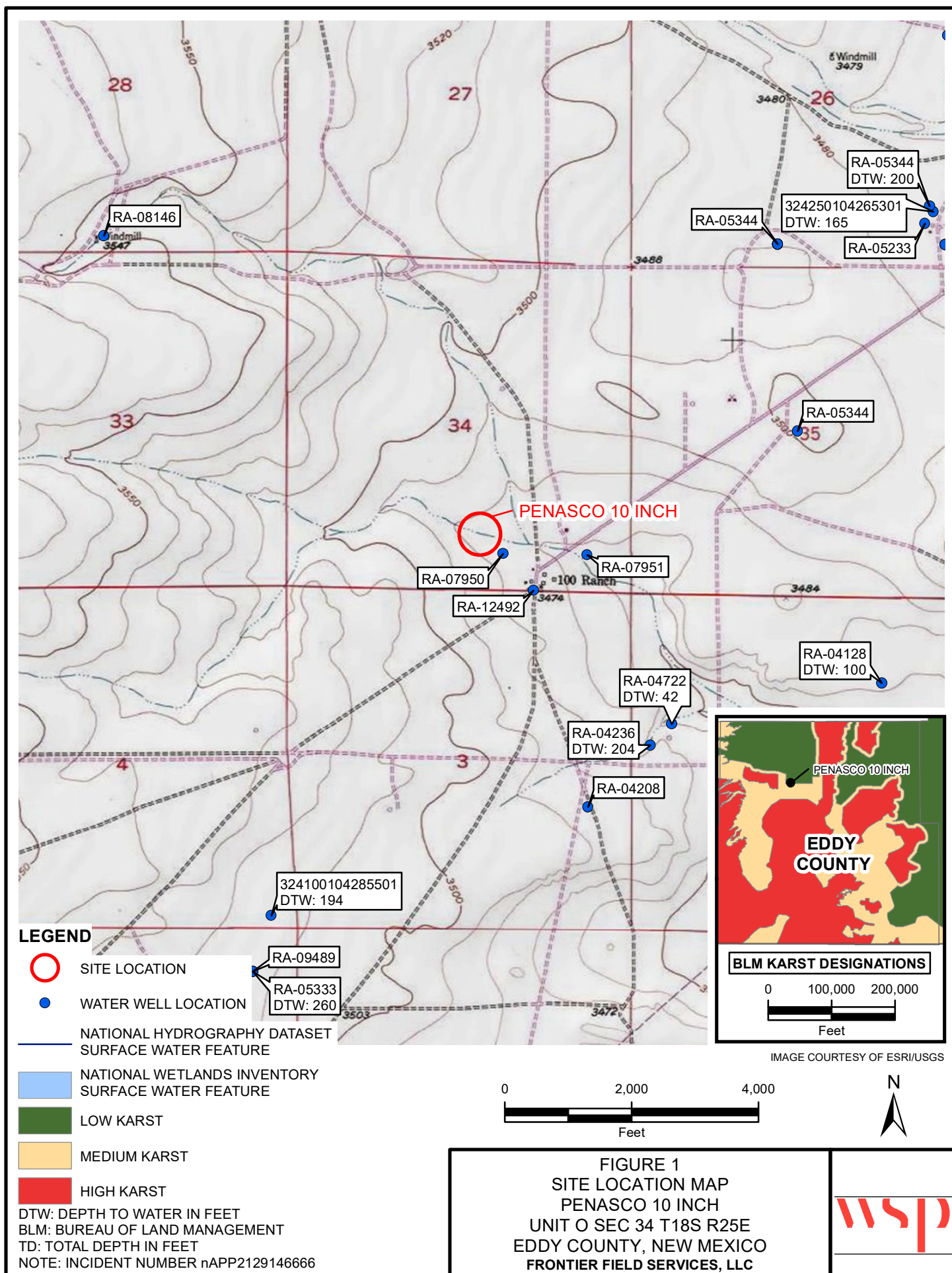
A handwritten signature in black ink, appearing to read 'Daniel R. Moir'.

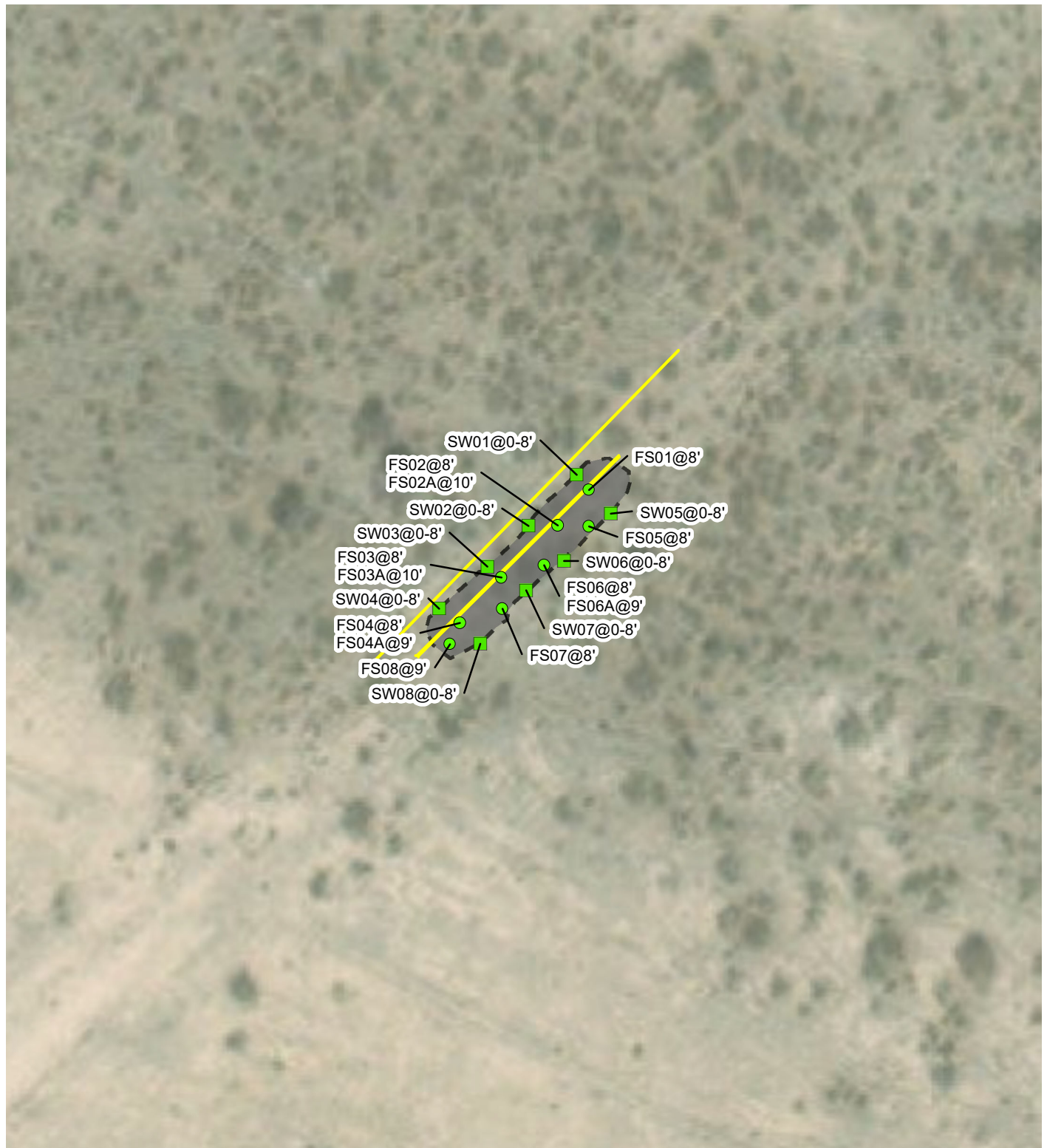
Daniel, R. Moir, P.G.
Sr. Lead Consultant, Geologist

cc: Ms. Amber Groves, Frontier Field Services, LLC.
Bureau of Land Management



FIGURES



**LEGEND**

- FLOOR SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA
- SIDEWALL SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA

— GAS LINE

EXCAVATION EXTENT

NOTE: INCIDENT NUMBER nAPP2129146666
SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)

IMAGE COURTESY OF ESRI

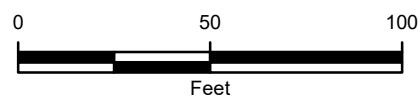


FIGURE 2
EXCAVATION SOIL SAMPLE LOCATIONS
PENASCO 10 INCH
UNIT O SEC 34 T18S R25E
EDDY COUNTY, NEW MEXICO
FRONTIER FIELD SERVICES, LLC



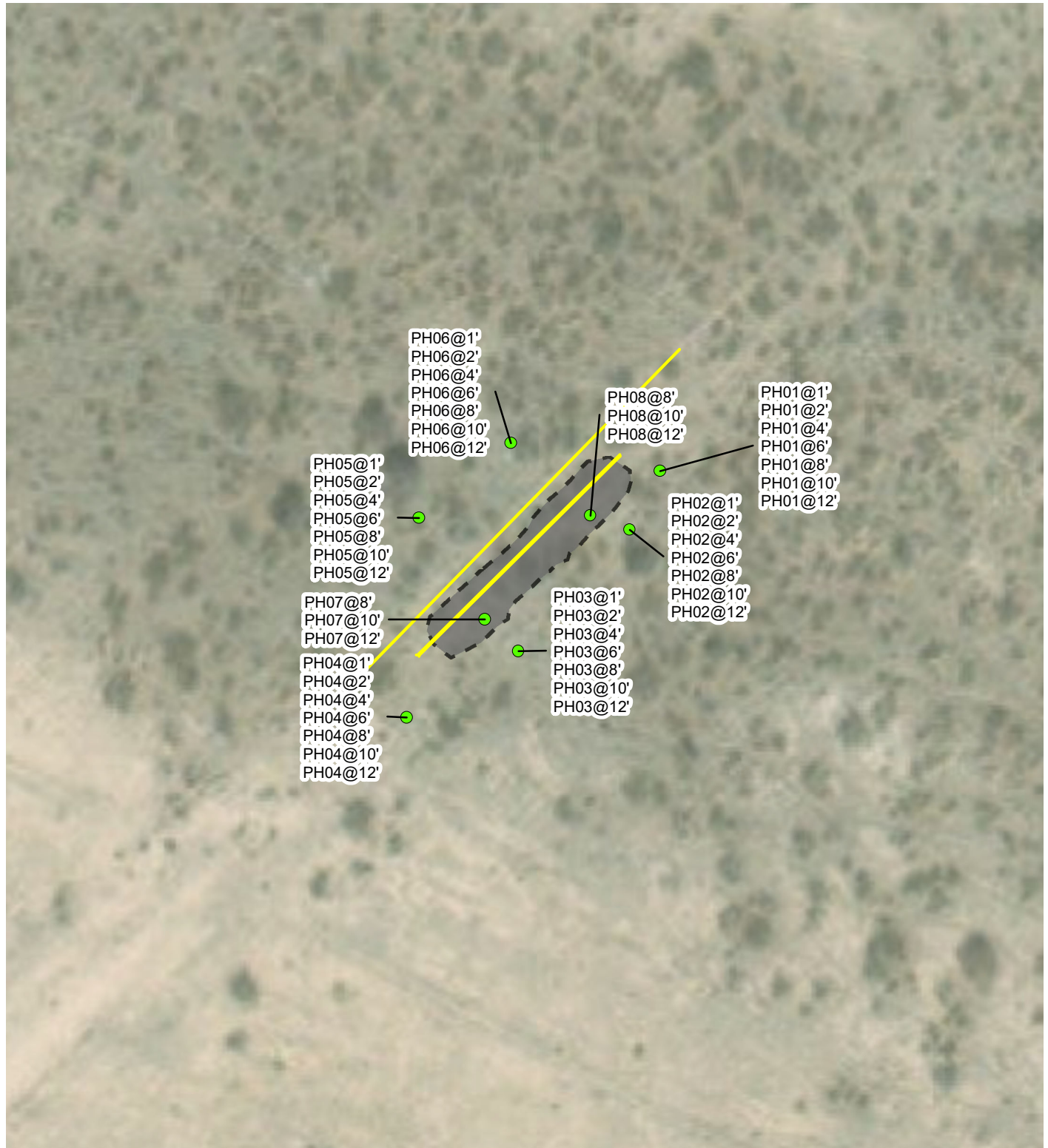


IMAGE COURTESY OF ESRI

LEGEND

● DELINEATION SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA

— GAS LINE

▬ EXCAVATION EXTENT

0 50 100
Feet



NOTE: INCIDENT NUMBER nAPP2129146666
SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)

FIGURE 3
DELINEATION SOIL SAMPLE LOCATIONS
PENASCO 10 INCH
UNIT O SEC 34 T18S R25E
EDDY COUNTY, NEW MEXICO
FRONTIER FIELD SERVICES, LLC

wsp

P:\Frontier Field Services\GIS\31403665.013_PENASCO 10 INCH\MXD\31403665.013_FIG02_DELINEATION_2022.mxd



TABLES

TABLE 1
SOIL ANALYTICAL RESULTS
PENASCO 10-INCH PIPELINE RELEASE
INCIDENT NUMBER nAPP2129146666
EDDY COUNTY, NEW MEXICO

Sample ID	Sample Date	Sample Depth (ft bgs)	Benzene (mg/kg)	BTEX (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	NE	100	600
Delineation Soil Samples										
PH01	12/13/2021	1	<0.020	<0.08	<4.0	<9.8	<49	<9.8	<49	<61
PH01	12/13/2021	2	<0.023	<0.09	<4.6	<9.7	<49	<9.7	<49	<60
PH01	12/13/2021	4	<0.018	<0.07	<3.7	<9.5	<48	<9.5	<48	<60
PH01	12/13/2021	6	<0.022	<0.09	<4.3	<9.7	<48	<9.7	<48	<60
PH01	12/13/2021	8	<0.017	<0.07	<3.4	<10	<50	<10	<50	<60
PH01	12/13/2021	10	<0.025	<0.10	<5.0	<8.6	<43	<8.6	<43	<61
PH01	12/13/2021	12	<0.025	<0.10	<5.0	<10	<50	<10	<50	<59
PH02	12/13/2021	1	<0.023	<0.09	<4.7	<9.8	<49	<9.8	<49	<60
PH02	12/13/2021	2	<0.021	<0.08	<4.2	<9.7	<48	<9.7	<48	<60
PH02	12/13/2021	4	<0.020	<0.08	<3.9	<9.8	<49	<9.8	<49	<60
PH02	12/13/2021	6	<0.019	<0.08	<3.8	<9.6	<48	<9.6	<48	<60
PH02	12/13/2021	8	<0.026	<0.10	<5.2	<9.9	<50	<9.9	<50	98
PH02	12/13/2021	10	<0.020	<0.08	<3.9	<9.8	<49	<9.8	<49	120
PH02	12/13/2021	12	<0.021	<0.08	<4.2	<9.3	<47	<9.3	<47	140

TABLE 1
SOIL ANALYTICAL RESULTS
PENASCO 10-INCH PIPELINE RELEASE
INCIDENT NUMBER nAPP2129146666
EDDY COUNTY, NEW MEXICO

Sample ID	Sample Date	Sample Depth (ft bgs)	Benzene (mg/kg)	BTEX (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	NE	100	600
PH03	12/13/2021	1	<0.021	<0.09	<4.3	<9.5	<48	<9.5	<48	<60
PH03	12/13/2021	2	<0.020	<0.08	<4.0	<9.9	<49	<9.9	<49	<61
PH03	12/13/2021	4	<0.026	<0.11	<5.3	<9.3	<46	<9.3	<46	<60
PH03	12/13/2021	6	<0.018	<0.07	<3.6	<9.4	<47	<9.4	<47	<60
PH03	12/13/2021	8	<0.016	<0.07	<3.3	<9.9	<50	<9.9	<50	<60
PH03	12/13/2021	10	<0.017	<0.07	<3.5	<9.3	<47	<9.3	<47	<61
PH03	12/13/2021	12	<0.022	<0.09	<4.4	<9.6	<48	<9.6	<48	<59
PH04	12/13/2021	1	<0.024	<0.10	<4.8	<9.8	<49	<9.8	<49	<60
PH04	12/13/2021	2	<0.029	<0.12	<5.8	<9.8	<49	<9.8	<49	<60
PH04	12/13/2021	4	<0.025	<0.10	<5.0	<9.9	<50	<9.9	<50	<60
PH04	12/13/2021	6	<0.020	<0.08	<4.0	<9.9	<49	<9.9	<49	<60
PH04	12/13/2021	8	<0.018	<0.07	<3.5	<9.7	<49	<9.7	<49	<60
PH04	12/13/2021	10	<0.019	<0.07	<3.7	<9.7	<49	<9.7	<49	<60
PH04	12/13/2021	12	<0.019	<0.08	<3.8	<9.5	<47	<9.5	<47	<60

TABLE 1
SOIL ANALYTICAL RESULTS
PENASCO 10-INCH PIPELINE RELEASE
INCIDENT NUMBER nAPP2129146666
EDDY COUNTY, NEW MEXICO

Sample ID	Sample Date	Sample Depth (ft bgs)	Benzene (mg/kg)	BTEX (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	NE	100	600
PH05	12/14/2021	1	<0.024	<0.09	<4.7	<9.9	<49	<9.9	<49	<60
PH05	12/14/2021	2	<0.022	<0.09	<4.5	<9.6	<48	<9.6	<48	<60
PH05	12/14/2021	4	<0.025	<0.10	<5.1	<10	<50	<10	<50	<60
PH05	12/14/2021	6	<0.021	<0.08	<4.1	<9.6	<48	<9.6	<48	<59
PH05	12/14/2021	8	<0.018	<0.07	<3.7	<9.4	<47	<9.4	<47	<60
PH05	12/14/2021	10	<0.022	<0.09	<4.5	<9.9	<49	<9.9	<49	<60
PH05	12/14/2021	12	<0.024	<0.09	<4.7	<9.7	<48	<9.7	<48	<60
PH06	12/14/2021	1	<0.023	<0.09	<4.6	<9.7	<48	<9.7	<48	<60
PH06	12/14/2021	2	<0.022	<0.09	<4.4	<9.9	<49	<9.9	<49	<60
PH06	12/14/2021	4	<0.018	<0.07	<3.6	<9.8	<49	<9.8	<49	<60
PH06	12/14/2021	6	<0.021	<0.08	<4.1	<10	<50	<10	<50	<60
PH06	12/14/2021	8	<0.020	<0.08	<3.9	<9.3	<46	<9.3	<46	<59
PH06	12/14/2021	10	<0.020	<0.08	<4.0	<9.7	<48	<9.7	<48	<60
PH06	12/14/2021	12	<0.019	<0.08	<3.8	<9.4	<47	<9.4	<47	<60
PH07	12/14/2021	8	<0.021	<0.08	<4.2	<10	<50	<10	<50	<60
PH07	12/14/2021	10	<0.021	<0.08	<4.2	<9.7	<48	<9.7	<48	85
PH07	12/14/2021	12	<0.020	<0.08	<4.1	<9.6	<48	<9.6	<48	110

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SOIL ANALYTICAL RESULTS
PENASCO 10-INCH PIPELINE RELEASE
INCIDENT NUMBER nAPP2129146666
EDDY COUNTY, NEW MEXICO

Sample ID	Sample Date	Sample Depth (ft bgs)	Benzene (mg/kg)	BTEX (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	NE	100	600
PH08	12/14/2021	8	<0.019	<0.07	<3.7	<8.5	<42	<8.5	<42	<60
PH08	12/14/2021	10	<0.018	<0.07	<3.5	12	<44	12	12	<60
PH08	12/14/2021	12	<0.019	<0.07	<3.7	<9.0	<45	<9.0	<45	110
Excavation Confirmation Soil Samples										
FS01	11/29/2021	8	<0.018	<0.07	<3.6	20	<46	20	20	<60
FS02	11/29/2021	8	<0.019	<0.08	<3.9	220	140	220	350	<60
FS02A	2/9/2022	10	<0.0399	<0.0798	<49.9	<49.9	<49.9	<49.9	<49.9	15.8
FS03	11/29/2021	8	<0.090	<0.36	<18	1,300	370	1,300	1,700	2,500
FS03A	2/9/2022	10	<0.0397	<0.0794	<50.0	<50.0	<50.0	<50.0	<50.0	25.9
FS04	11/29/2021	8	<0.017	<0.07	<3.4	910	600	910	1,500	76
FS04A	2/9/2022	9	<0.0398	<0.0795	<50.0	<50.0	<50.0	<50.0	<50.0	6.51
FS05	11/29/2021	8	<0.018	<0.07	<3.5	35	<48	35	35	<60
FS06	11/29/2021	8	<0.11	<0.45	<23	560	<49	560	560	<60
FS06A	2/9/2022	9	<0.0398	<0.0795	<50.0	<50.0	<50.0	<50.0	<50.0	7.80
FS07	11/29/2021	8	<0.020	<0.08	<4.1	18	<47	18	18	<59
FS08	2/9/2022	9	<0.0396	<0.0792	<49.9	<49.9	<49.9	<49.9	<49.9	7

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SOIL ANALYTICAL RESULTS
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Sample ID	Sample Date	Sample Depth (ft bgs)	Benzene (mg/kg)	BTEX (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	NE	100	600
SW01	11/29/2021	0-8	<0.020	<0.08	<4.1	<9.2	<46	<9.2	<46	<61
SW02	11/29/2021	0-8	<0.021	<0.08	<4.2	28	<45	28	28	<61
SW03	11/29/2021	0-8	<0.023	<0.09	<4.5	<10	<50	<10	<50	<60
SW04	11/29/2021	0-8	<0.019	<0.08	<3.9	<9.6	<48	<9.6	<48	<60
SW05	11/29/2021	0-8	<0.019	<0.08	<3.8	<9.3	<47	<9.3	<47	<60
SW06	11/29/2021	0-8	<0.018	<0.07	<3.6	<9.9	<50	<9.9	<50	<60
SW07	11/29/2021	0-8	<0.021	<0.08	<4.1	10	<47	9.7	9.7	<60
SW08	11/29/2021	0-8	<0.020	<0.08	<4.1	<9.8	<49	<9.8	<49	<60

Notes

ft - feet/foot

mg/kg - milligrams per kilograms

BTEX - benzene, toluene, ethylbenzene, and total xylenes

TPH - total petroleum hydrocarbons

DRO - diesel range organics

GRO - gasoline range organics

PH - Potholes (discrete)

FS - Floor Samples (composite)

ORO - motor oil range organics

NMOCD - New Mexico Oil Conservation Division

NMAC - New Mexico Administrative Code

< - indicates result is less than the stated laboratory method practical quantitation limit

NE - Not Established

BOLD - indicates results exceed the higher of the background sample result or applicable regulatory standard

Greyed data represents sample locations that were excavated

SW - Sidewall Samples (composite)



ATTACHMENT 1: INITIAL C-141 FORM

Oil Conservation Division

Incident ID	nAPP2129146666
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? This is considered a major release due to the total lost volume of natural gas of >500 MCF.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Immediate notice was not provided to OCD, as Lucid did not have immediate and accurate volume calculations of the loss. Once volume loss had been confirmed Lucid EHSR immediately notified OCD on 10/18/2021 via OCD online NOR form.	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why: 	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
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: <u>Michael Gant</u>	Title: <u>Environmental Coordinator</u>
Signature: <u></u>	Date: <u>10/21/2021</u>
email: <u>MGant@lucid-energy.com</u>	Telephone: <u>3143307876</u>
<u>OCD Only</u> Received by: _____ Date: _____	

District I

1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720

District II

811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720

District III

1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170

District IV

1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

QUESTIONS

Action 55024

QUESTIONS

Operator: Lucid Artesia Company 201 S. Fourth Street Artesia, NM 88210	OGRID: 147831
	Action Number: 55024
	Action Type: [NOTIFY] Notification Of Release (NOR)

QUESTIONS

Location of Release Source	
<i>Please answer all of the questions in this group.</i>	
Site Name	Penasco 10inch Pipeline 10.7.2021
Date Release Discovered	10/07/2021
Surface Owner	Private

Incident Details	
<i>Please answer all of the questions in this group.</i>	
Incident Type	Natural Gas Release
Did this release result in a fire or is the result of a fire	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	Yes
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release	
<i>Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.</i>	
Crude Oil Released (bbls) Details	Not answered.
Produced Water Released (bbls) Details	Not answered.
Is the concentration of dissolved chloride in the produced water >10,000 mg/l	Not answered.
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Cause: Corrosion Pipeline (Any) Natural Gas Vented Released: 1,080 Mcf Recovered: 0 Mcf Lost: 1,080 Mcf]
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Cause: Corrosion Pipeline (Any) Natural Gas Liquids Released: 0 BBL (Unknown Released Amount) Recovered: 0 BBL Lost: 0 BBL]
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Not answered.
Is this a gas only submission (i.e. only significant Mcf values reported)	No, according to supplied volumes this does not appear to be a "gas only" report.
Was this a major release as defined by 19.15.29.7(A) NMAC	Yes, major release.
Reasons why this would be considered a submission for a notification of a major release	<ul style="list-style-type: none"> Unauthorized release of an unknown volume (TBD), excluding gases, of 25 barrels or more This release reached or has a reasonable probability of reaching a watercourse Unauthorized release of gases exceeding 500 Mcf
If YES, was immediate notice given to the OCD, by whom	Not answered.
If YES, was immediate notice given to the OCD, to whom	Not answered.
If YES, was immediate notice given to the OCD, when	Not answered.
If YES, was immediate notice given to the OCD, by what means (phone, email, etc.)	Not answered.
<i>With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.</i>	

Initial Response	
<i>The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury.</i>	
The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True

All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	Not answered.
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.	

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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

ACKNOWLEDGMENTS

Action 55024

ACKNOWLEDGMENTS

Operator: Lucid Artesia Company 201 S. Fourth Street Artesia, NM 88210	OGRID: 147831
	Action Number: 55024
	Action Type: [NOTIFY] Notification Of Release (NOR)

ACKNOWLEDGMENTS

<input checked="" type="checkbox"/>	I acknowledge that I am authorized to submit notification of a releases on behalf of my operator.
<input checked="" type="checkbox"/>	I acknowledge that upon submitting this application, I will be creating a new incident file (assigned to my operator) to track the notification(s) and corrective action(s) for a release, pursuant to NMAC 19.15.29.
<input checked="" type="checkbox"/>	I acknowledge that creating a new incident file will require my operator to file subsequent submission(s) of form "C-141, Application for administrative approval of a release notification and corrective action", pursuant to NMAC 19.15.29.
<input checked="" type="checkbox"/>	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.
<input checked="" type="checkbox"/>	I acknowledge the fact that 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.
<input checked="" type="checkbox"/>	I acknowledge the fact that, 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.

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Santa Fe, NM 87505

CONDITIONS

Action 55024

CONDITIONS

Operator: Lucid Artesia Company 201 S. Fourth Street Artesia, NM 88210	OGRID: 147831
	Action Number: 55024
	Action Type: [NOTIFY] Notification Of Release (NOR)

CONDITIONS

Created By	Condition	Condition Date
michaelgant	When submitting future reports regarding this release, please submit the calculations used or specific justification for the volumes reported on the initial C-141.	10/18/2021

District I
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1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural
Resources Department

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

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	NAPP2129146666
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party Lucid Artesia Company	OGRID 147831
Contact Name Michael Gant	Contact Telephone 3143307876
Contact email MGant@lucid-energy.com	Incident # (assigned by OCD)
Contact mailing address 201 South 4th Street Artesia NM 88210	

Location of Release Source

Latitude 32.700078° Longitude -104.471731°
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Penasco 10" Pipeline release	Site Type Natural gas pipeline
Date Release Discovered 10/07/2021	API# (if applicable)

Unit Letter	Section	Township	Range	County
O	34	18S	25E	Eddy

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (Name: _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Natural Gas	Volume Released (Mcf) 1185 MCF	Volume Recovered (Mcf) 0 MCF
<input checked="" type="checkbox"/> Other (describe) Pipeline liquids	Volume/Weight Released (provide units) unknown volume	Volume/Weight Recovered (provide units) 0 GAL


Cause of Release The release was caused by corrosion in the pipe which led to a pinhole leak forming on the bottom of the pipe.

Incident ID	NAPP2129146666
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? This is considered a major release due to the total lost volume of natural gas of >500 MCF.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Immediate notice was not provided to OCD, as Lucid did not have immediate and accurate volume calculations of the loss. Once volume loss had been confirmed Lucid EHSR immediately notified OCD on 10/18/2021 via OCD online NOR form.	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why: 	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
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: <u>Michael Gant</u>	Title: <u>Environmental Coordinator</u>
Signature: <u></u>	Date: <u>10/21/2021</u>
email: <u>MGant@lucid-energy.com</u>	Telephone: <u>3143307876</u>
<u>OCD Only</u>	
Received by: <u>Ramona Marcus</u>	Date: <u>11/9/2021</u>

Please submit this form by the 5th business day of the month following the month the vent/blowdown occurred. Please submit a separate form for each site. All sections should be filled out by field personnel. All red fields per event must be entered to calculate volumes correctly! All yellow fields should be entered if known for increased accuracy.

Month Blowdown Occurred

August

Year

2021

Site

Employee Name

Calculated (Pipeline) Volumes

Blowdown(s)				Purge/Vent			
Reference Meter Number		Blowdown (MCF)		Reference Meter Number		Volume Lost (MCF)	1,185.14
Pipe ID (in)		Length (Feet)		Beginning Date & Time	10/04/2021 0000	Vent Duration (Hours)	72.00
Begin Press. (PSIG)		End Press. (PSIG)		Ending Date & Time	10/07/2021 0000	Gas Temp	
Gas Temp.		Specific Gravity		Pipe ID (in)	10in Sch. 80	Specific Gravity	
Elevation (ft)				Orifice Size (in)	0.5	Elevation (ft)	
				Avg Pressure	60.00		
Reference Meter Number		Blowdown (MCF)		Reference Meter Number		Volume Lost (MCF)	
Pipe ID (in)		Length (Feet)		Beginning Date & Time		Vent Duration (Hours)	
Begin Press. (PSIG)		End Press. (PSIG)		Ending Date & Time		Gas Temp	
Gas Temp.		Specific Gravity		Pipe ID (in)		Specific Gravity	
Elevation (ft)				Orifice Size (in)		Elevation (ft)	
				Avg Pressure			
Reference Meter Number		Blowdown (MCF)		Reference Meter Number		Volume Lost (MCF)	
Pipe ID (in)		Length (Feet)		Beginning Date & Time		Vent Duration (Hours)	
Begin Press. (PSIG)		End Press. (PSIG)		Ending Date & Time		Gas Temp	
Gas Temp.		Specific Gravity		Pipe ID (in)		Specific Gravity	
Elevation (ft)				Orifice Size (in)		Elevation (ft)	
				Avg Pressure			

Known (Station) Volumes

Volumes must be known to calculate correctly!

Type of Blowdown	Number of Occurrences		Known Volume (MCF) Blowdown		Volume (MCF)
		Multiplied by		Equals	
		Multiplied by		Equals	
		Multiplied by		Equals	

Total Volume (MCF):

1,185.14

Comments:

District I
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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 56552

CONDITIONS

Operator: Lucid Artesia Company 201 S. Fourth Street Artesia, NM 88210	OGRID: 147831
	Action Number: 56552
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
marcus	None	11/9/2021




ATTACHMENT 2: REFERENCED WELL RECORD



New Mexico Office of the State Engineer

Point of Diversion Summary

		(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest)						(NAD83 UTM in meters)	
Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
	RA 04722	3	1	02	19S	25E		550436	3617246* 
x									
Driller License: 62		Driller Company:				BEATTY, J.R.			
Driller Name: J.R.BEATY									
Drill Start Date: 11/06/1962		Drill Finish Date:				11/07/1962		Plug Date:	
Log File Date: 02/18/1963		PCW Rcv Date:				Source:			
Pump Type:		Pipe Discharge Size:				Estimated Yield:			
Casing Size: 7.00		Depth Well:				200 feet		Depth Water: 42 feet	
x									

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/TSC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

3/16/22 11:31 AM

POINT OF DIVERSION SUMMARY



ATTACHMENT 3: PHOTOGRAPHIC LOG


**PHOTOGRAPHIC LOG****FRONTIER FIELD
SERVICES, LLC.****PENASCO 10-INCH PIPELINE RELEASE
Eddy County, NM****NAPP2129146666**

Photo No.	Date	
1	February 8, 2022	
Start of excavation.		 A photograph showing the start of an excavation. A yellow excavator is on the left, and a white concrete pump truck with a long articulated arm is on the right. A green and black pipeline is visible in the foreground, running through a deep, rectangular excavation pit. The ground is dry and rocky, and the sky is clear blue.

Photo No.	Date	
2	February 8, 2022	
Excavation extent prior to benching.		 A photograph showing the extent of an excavation prior to benching. The image shows a deep, rectangular excavation pit with a green and black pipeline running through it. The ground is dry and rocky, and the sky is clear blue. In the background, there are some buildings and a fence line.

**PHOTOGRAPHIC LOG****FRONTIER FIELD
SERVICES, LLC.****PENASCO 10-INCH PIPELINE RELEASE
Eddy County, NM****NAPP2129146666**

Photo No.	Date	
3	February 9, 2022	
Excavation completion. View of step out and benching.		

Photo No.	Date	
4	February 9, 2022	
Excavation completion. View of step out and benching.		



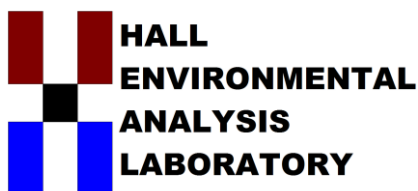
PHOTOGRAPHIC LOG		
FRONTIER FIELD SERVICES, LLC.	PENASCO 10-INCH PIPELINE RELEASE Eddy County, NM	NAPP2129146666

Photo No.	Date	
3	March 8, 2022	
Backfill completion.		

Photo No.	Date	
4	March 8, 2022	
Backfill completion.		



ATTACHMENT 4: LABORATORY ANALYTICAL REPORTS



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

December 06, 2021

Joseph S. Hernandez

Lucid Energy
201 South 4th St.
Artesia, NM 88210
TEL:
FAX

RE: Penasco 10 inch nAPP2129146666

OrderNo.: 2112003

Dear Joseph S. Hernandez:

Hall Environmental Analysis Laboratory received 2 sample(s) on 12/1/2021 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 qualifiers 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 #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order 2112003

Date Reported: 12/6/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy

Client Sample ID: FS03

Project: Penasco 10 inch nAPP2129146666

Collection Date: 11/29/2021 10:50:00 AM

Lab ID: 2112003-001

Matrix: MEOH (SOIL)

Received Date: 12/1/2021 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	1300	49		mg/Kg	5	12/2/2021 12:11:51 PM
Motor Oil Range Organics (MRO)	370	240		mg/Kg	5	12/2/2021 12:11:51 PM
Surr: DNOP	73.4	70-130		%Rec	5	12/2/2021 12:11:51 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	18		mg/Kg	5	12/1/2021 12:18:21 PM
Surr: BFB	104	70-130		%Rec	5	12/1/2021 12:18:21 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.090		mg/Kg	5	12/1/2021 12:18:21 PM
Toluene	ND	0.18		mg/Kg	5	12/1/2021 12:18:21 PM
Ethylbenzene	ND	0.18		mg/Kg	5	12/1/2021 12:18:21 PM
Xylenes, Total	ND	0.36		mg/Kg	5	12/1/2021 12:18:21 PM
Surr: 4-Bromofluorobenzene	97.5	70-130		%Rec	5	12/1/2021 12:18:21 PM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	2500	150		mg/Kg	50	12/3/2021 10:42:11 AM

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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 1 of 6

Analytical Report

Lab Order 2112003

Date Reported: 12/6/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy

Client Sample ID: FS06

Project: Penasco 10 inch nAPP2129146666

Collection Date: 11/29/2021 11:25:00 AM

Lab ID: 2112003-002

Matrix: MEOH (SOIL)

Received Date: 12/1/2021 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	560	9.7		mg/Kg	1	12/1/2021 4:56:33 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/1/2021 4:56:33 PM
Surr: DNOP	102	70-130		%Rec	1	12/1/2021 4:56:33 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	23		mg/Kg	5	12/1/2021 12:41:56 PM
Surr: BFB	120	70-130		%Rec	5	12/1/2021 12:41:56 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.11		mg/Kg	5	12/1/2021 12:41:56 PM
Toluene	ND	0.23		mg/Kg	5	12/1/2021 12:41:56 PM
Ethylbenzene	ND	0.23		mg/Kg	5	12/1/2021 12:41:56 PM
Xylenes, Total	ND	0.45		mg/Kg	5	12/1/2021 12:41:56 PM
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	5	12/1/2021 12:41:56 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	60		mg/Kg	20	12/1/2021 7:27:58 PM

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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 2 of 6

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2112003

06-Dec-21

Client: Lucid Energy**Project:** Penasco 10 inch nAPP2129146666

Sample ID: MB-64250	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 64250	RunNo: 83213								
Prep Date: 12/1/2021	Analysis Date: 12/1/2021	SeqNo: 2957146	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-64250	SampType: lcs	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 64250	RunNo: 83213								
Prep Date: 12/1/2021	Analysis Date: 12/1/2021	SeqNo: 2957147	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.7	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 Quantitative Limit
S % Recovery outside of range due to dilution or matrix interference

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#: 2112003

06-Dec-21

Client: Lucid Energy**Project:** Penasco 10 inch nAPP2129146666

Sample ID: 2111D23-025AMS	SampType: MS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: BatchQC	Batch ID: 64239	RunNo: 83211								
Prep Date: 12/1/2021	Analysis Date: 12/1/2021	SeqNo: 2956885 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	9.0	44.76	7.452	73.8	39.3	155			
Surr: DNOP	3.5		4.476		77.1	70	130			

Sample ID: 2111D23-025AMSD	SampType: MSD	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: BatchQC	Batch ID: 64239	RunNo: 83211								
Prep Date: 12/1/2021	Analysis Date: 12/1/2021	SeqNo: 2956886 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	9.7	48.50	7.452	74.5	39.3	155	7.45	23.4	
Surr: DNOP	3.9		4.850		80.2	70	130	0	0	

Sample ID: LCS-64239	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 64239	RunNo: 83211								
Prep Date: 12/1/2021	Analysis Date: 12/1/2021	SeqNo: 2956909 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	10	50.00	0	81.0	68.9	135			
Surr: DNOP	3.8		5.000		76.0	70	130			

Sample ID: MB-64239	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 64239	RunNo: 83211								
Prep Date: 12/1/2021	Analysis Date: 12/1/2021	SeqNo: 2956912 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	11		10.00		113	70	130			

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 Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2112003

06-Dec-21

Client: Lucid Energy**Project:** Penasco 10 inch nAPP2129146666

Sample ID: mb	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBS	Batch ID: B83216		RunNo: 83216							
Prep Date:	Analysis Date: 12/1/2021		SeqNo: 2956534		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		102	70	130			

Sample ID: 2.5ug gro lcs	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSS	Batch ID: B83216		RunNo: 83216							
Prep Date:	Analysis Date: 12/1/2021		SeqNo: 2956535		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	102	78.6	131			
Surr: BFB	1100		1000		111	70	130			

Sample ID: 2112003-001ams	SampType: MS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: FS03	Batch ID: B83216		RunNo: 83216							
Prep Date:	Analysis Date: 12/1/2021		SeqNo: 2956551		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	96	18	89.74	0	107	61.3	114			
Surr: BFB	4200		3589		116	70	130			

Sample ID: 2112003-001amsd	SampType: MSD		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: FS03	Batch ID: B83216		RunNo: 83216							
Prep Date:	Analysis Date: 12/1/2021		SeqNo: 2956552		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	96	18	89.74	0	107	61.3	114	0.710	20	
Surr: BFB	4700		3589		130	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 Quantitative Limit
S % Recovery outside of range due to dilution or matrix interference

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#: 2112003

06-Dec-21

Client: Lucid Energy**Project:** Penasco 10 inch nAPP2129146666

Sample ID: mb	SampType: MBLK			TestCode: EPA Method 8021B: Volatiles						
Client ID: PBS	Batch ID: D83216			RunNo: 83216						
Prep Date:	Analysis Date: 12/1/2021			SeqNo: 2956625		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	1.0		1.000		102	70	130			

Sample ID: 100ng btex lcs	SampType: LCS			TestCode: EPA Method 8021B: Volatiles						
Client ID: LCSS	Batch ID: D83216			RunNo: 83216						
Prep Date:	Analysis Date: 12/1/2021			SeqNo: 2956626		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.025	1.000	0	95.8	80	120			
Toluene	0.96	0.050	1.000	0	96.3	80	120			
Ethylbenzene	0.96	0.050	1.000	0	95.8	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.7	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		103	70	130			

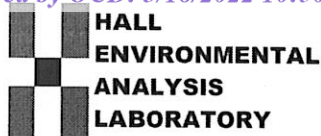
Sample ID: 2112003-002ams	SampType: MS			TestCode: EPA Method 8021B: Volatiles						
Client ID: FS06	Batch ID: D83216			RunNo: 83216						
Prep Date:	Analysis Date: 12/1/2021			SeqNo: 2956644		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	3.8	0.11	4.504	0	83.3	80	120			
Toluene	3.7	0.23	4.504	0	83.2	80	120			
Ethylbenzene	3.7	0.23	4.504	0	82.0	80	120			
Xylenes, Total	11	0.45	13.51	0	82.1	80	120			
Surr: 4-Bromofluorobenzene	4.7		4.504		105	70	130			

Sample ID: 2112003-002amsd	SampType: MSD			TestCode: EPA Method 8021B: Volatiles						
Client ID: FS06	Batch ID: D83216			RunNo: 83216						
Prep Date:	Analysis Date: 12/1/2021			SeqNo: 2956645		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	4.3	0.11	4.504	0	94.7	80	120	12.8	20	
Toluene	4.3	0.23	4.504	0	95.6	80	120	13.9	20	
Ethylbenzene	4.2	0.23	4.504	0	93.9	80	120	13.5	20	
Xylenes, Total	13	0.45	13.51	0	93.6	80	120	13.0	20	
Surr: 4-Bromofluorobenzene	4.8		4.504		107	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 Quantitative Limit
S % Recovery outside of range due to dilution or matrix interference

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
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: Lucid Energy

Work Order Number: 2112003

RcptNo: 1

Received By: Sean Livingston

12/1/2021 8:00:00 AM

Completed By: Sean Livingston

12/1/2021 8:28:07 AM

Reviewed By:

12/1/21

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 $>0^{\circ}\text{C}$ 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. Received at least 1 vial with headspace $<1/4$ " for AQ VOA? Yes ☐ No ☐ NA ☒
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
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 ☐

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

Adjusted? _____

Checked by: JR 12/1/21

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

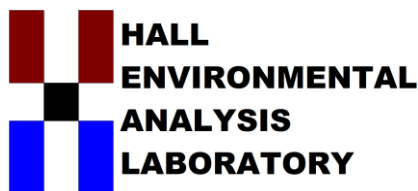
Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.6	Good				



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

December 06, 2021

Joseph S. Hernandez

Lucid Energy

201 South 4th St.

Artesia, NM 88210

TEL:

FAX:

RE: Penasco 10 inch nAPP2129146666

OrderNo.: 2112004

Dear Joseph S. Hernandez:

Hall Environmental Analysis Laboratory received 8 sample(s) on 12/1/2021 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 qualifiers 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 #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 2112004

Date Reported: 12/6/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy

Client Sample ID: SW01

Project: Penasco 10 inch nAPP2129146666

Collection Date: 11/29/2021 12:50:00 PM

Lab ID: 2112004-001

Matrix: MEOH (SOIL)

Received Date: 12/1/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	12/1/2021 5:07:18 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	12/1/2021 5:07:18 PM
Surr: DNOP	74.7	70-130		%Rec	1	12/1/2021 5:07:18 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.1		mg/Kg	1	12/1/2021 1:52:21 PM
Surr: BFB	98.0	70-130		%Rec	1	12/1/2021 1:52:21 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.020		mg/Kg	1	12/1/2021 1:52:21 PM
Toluene	ND	0.041		mg/Kg	1	12/1/2021 1:52:21 PM
Ethylbenzene	ND	0.041		mg/Kg	1	12/1/2021 1:52:21 PM
Xylenes, Total	ND	0.081		mg/Kg	1	12/1/2021 1:52:21 PM
Surr: 4-Bromofluorobenzene	98.9	70-130		%Rec	1	12/1/2021 1:52:21 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	61		mg/Kg	20	12/1/2021 7:40:20 PM

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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report

Lab Order 2112004

Date Reported: 12/6/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy

Client Sample ID: SW02

Project: Penasco 10 inch nAPP2129146666

Collection Date: 11/29/2021 12:55:00 PM

Lab ID: 2112004-002

Matrix: MEOH (SOIL)

Received Date: 12/1/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	28	9.0		mg/Kg	1	12/1/2021 5:18:03 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	12/1/2021 5:18:03 PM
Surr: DNOP	80.4	70-130		%Rec	1	12/1/2021 5:18:03 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.2		mg/Kg	1	12/1/2021 6:33:24 PM
Surr: BFB	97.7	70-130		%Rec	1	12/1/2021 6:33:24 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.021		mg/Kg	1	12/1/2021 6:33:24 PM
Toluene	ND	0.042		mg/Kg	1	12/1/2021 6:33:24 PM
Ethylbenzene	ND	0.042		mg/Kg	1	12/1/2021 6:33:24 PM
Xylenes, Total	ND	0.084		mg/Kg	1	12/1/2021 6:33:24 PM
Surr: 4-Bromofluorobenzene	98.8	70-130		%Rec	1	12/1/2021 6:33:24 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	61		mg/Kg	20	12/1/2021 7:52:41 PM

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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report

Lab Order 2112004

Date Reported: 12/6/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy

Client Sample ID: SW03

Project: Penasco 10 inch nAPP2129146666

Collection Date: 11/29/2021 1:00:00 PM

Lab ID: 2112004-003

Matrix: MEOH (SOIL)

Received Date: 12/1/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/1/2021 5:28:47 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/1/2021 5:28:47 PM
Surr: DNOP	83.1	70-130		%Rec	1	12/1/2021 5:28:47 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.5		mg/Kg	1	12/1/2021 6:56:43 PM
Surr: BFB	97.1	70-130		%Rec	1	12/1/2021 6:56:43 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	12/1/2021 6:56:43 PM
Toluene	ND	0.045		mg/Kg	1	12/1/2021 6:56:43 PM
Ethylbenzene	ND	0.045		mg/Kg	1	12/1/2021 6:56:43 PM
Xylenes, Total	ND	0.091		mg/Kg	1	12/1/2021 6:56:43 PM
Surr: 4-Bromofluorobenzene	99.9	70-130		%Rec	1	12/1/2021 6:56:43 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	60		mg/Kg	20	12/1/2021 8:05:01 PM

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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report

Lab Order 2112004

Date Reported: 12/6/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy

Client Sample ID: SW04

Project: Penasco 10 inch nAPP2129146666

Collection Date: 11/29/2021 1:05:00 PM

Lab ID: 2112004-004

Matrix: MEOH (SOIL)

Received Date: 12/1/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	12/1/2021 5:39:30 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/1/2021 5:39:30 PM
Surr: DNOP	94.8	70-130		%Rec	1	12/1/2021 5:39:30 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	12/1/2021 7:20:06 PM
Surr: BFB	98.1	70-130		%Rec	1	12/1/2021 7:20:06 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.019		mg/Kg	1	12/1/2021 7:20:06 PM
Toluene	ND	0.039		mg/Kg	1	12/1/2021 7:20:06 PM
Ethylbenzene	ND	0.039		mg/Kg	1	12/1/2021 7:20:06 PM
Xylenes, Total	ND	0.077		mg/Kg	1	12/1/2021 7:20:06 PM
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	12/1/2021 7:20:06 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	60		mg/Kg	20	12/1/2021 8:42:04 PM

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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report

Lab Order 2112004

Date Reported: 12/6/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy

Client Sample ID: SW05

Project: Penasco 10 inch nAPP2129146666

Collection Date: 11/29/2021 1:35:00 PM

Lab ID: 2112004-005

Matrix: MEOH (SOIL)

Received Date: 12/1/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	12/1/2021 5:50:11 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/1/2021 5:50:11 PM
Surr: DNOP	87.6	70-130		%Rec	1	12/1/2021 5:50:11 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	12/1/2021 7:43:27 PM
Surr: BFB	99.1	70-130		%Rec	1	12/1/2021 7:43:27 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.019		mg/Kg	1	12/1/2021 7:43:27 PM
Toluene	ND	0.038		mg/Kg	1	12/1/2021 7:43:27 PM
Ethylbenzene	ND	0.038		mg/Kg	1	12/1/2021 7:43:27 PM
Xylenes, Total	ND	0.076		mg/Kg	1	12/1/2021 7:43:27 PM
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	12/1/2021 7:43:27 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	60		mg/Kg	20	12/1/2021 8:54:26 PM

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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report

Lab Order 2112004

Date Reported: 12/6/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy

Client Sample ID: SW06

Project: Penasco 10 inch nAPP2129146666

Collection Date: 11/29/2021 1:40:00 PM

Lab ID: 2112004-006

Matrix: MEOH (SOIL)

Received Date: 12/1/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	12/1/2021 6:00:52 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/1/2021 6:00:52 PM
Surr: DNOP	90.9	70-130		%Rec	1	12/1/2021 6:00:52 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	12/1/2021 8:06:40 PM
Surr: BFB	97.7	70-130		%Rec	1	12/1/2021 8:06:40 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.018		mg/Kg	1	12/1/2021 8:06:40 PM
Toluene	ND	0.036		mg/Kg	1	12/1/2021 8:06:40 PM
Ethylbenzene	ND	0.036		mg/Kg	1	12/1/2021 8:06:40 PM
Xylenes, Total	ND	0.071		mg/Kg	1	12/1/2021 8:06:40 PM
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	12/1/2021 8:06:40 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	60		mg/Kg	20	12/1/2021 9:06:47 PM

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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report

Lab Order 2112004

Date Reported: 12/6/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy

Client Sample ID: SW07

Project: Penasco 10 inch nAPP2129146666

Collection Date: 11/29/2021 1:45:00 PM

Lab ID: 2112004-007

Matrix: MEOH (SOIL)

Received Date: 12/1/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	9.7	9.5		mg/Kg	1	12/1/2021 6:11:32 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/1/2021 6:11:32 PM
Surr: DNOP	91.0	70-130		%Rec	1	12/1/2021 6:11:32 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.1		mg/Kg	1	12/1/2021 8:30:12 PM
Surr: BFB	93.9	70-130		%Rec	1	12/1/2021 8:30:12 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.021		mg/Kg	1	12/1/2021 8:30:12 PM
Toluene	ND	0.041		mg/Kg	1	12/1/2021 8:30:12 PM
Ethylbenzene	ND	0.041		mg/Kg	1	12/1/2021 8:30:12 PM
Xylenes, Total	ND	0.083		mg/Kg	1	12/1/2021 8:30:12 PM
Surr: 4-Bromofluorobenzene	96.7	70-130		%Rec	1	12/1/2021 8:30:12 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	60		mg/Kg	20	12/1/2021 9:19:08 PM

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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report

Lab Order 2112004

Date Reported: 12/6/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy

Client Sample ID: SW08

Project: Penasco 10 inch nAPP2129146666

Collection Date: 11/29/2021 1:50:00 PM

Lab ID: 2112004-008

Matrix: MEOH (SOIL)

Received Date: 12/1/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	12/1/2021 6:22:10 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/1/2021 6:22:10 PM
Surr: DNOP	87.0	70-130		%Rec	1	12/1/2021 6:22:10 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.1		mg/Kg	1	12/1/2021 8:53:41 PM
Surr: BFB	98.4	70-130		%Rec	1	12/1/2021 8:53:41 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.020		mg/Kg	1	12/1/2021 8:53:41 PM
Toluene	ND	0.041		mg/Kg	1	12/1/2021 8:53:41 PM
Ethylbenzene	ND	0.041		mg/Kg	1	12/1/2021 8:53:41 PM
Xylenes, Total	ND	0.082		mg/Kg	1	12/1/2021 8:53:41 PM
Surr: 4-Bromofluorobenzene	98.4	70-130		%Rec	1	12/1/2021 8:53:41 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	60		mg/Kg	20	12/1/2021 9:31:30 PM

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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2112004

06-Dec-21

Client: Lucid Energy**Project:** Penasco 10 inch nAPP2129146666

Sample ID: MB-64250	SampType: mblk		TestCode: EPA Method 300.0: Anions							
Client ID: PBS	Batch ID: 64250		RunNo: 83213							
Prep Date: 12/1/2021	Analysis Date: 12/1/2021		SeqNo: 2957146		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-64250	SampType: lcs		TestCode: EPA Method 300.0: Anions							
Client ID: LCSS	Batch ID: 64250		RunNo: 83213							
Prep Date: 12/1/2021	Analysis Date: 12/1/2021		SeqNo: 2957147		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.7	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 Quantitative Limit
S % Recovery outside of range due to dilution or matrix interference

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#: 2112004

06-Dec-21

Client: Lucid Energy**Project:** Penasco 10 inch nAPP2129146666

Sample ID: LCS-64215	SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: LCSS	Batch ID: 64215		RunNo: 83211							
Prep Date: 11/30/2021	Analysis Date: 12/2/2021		SeqNo: 2956906		Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	3.9		5.000		78.4	70	130			

Sample ID: LCS-64225	SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: LCSS	Batch ID: 64225		RunNo: 83211							
Prep Date: 11/30/2021	Analysis Date: 12/1/2021		SeqNo: 2956908		Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.5		5.000		89.3	70	130			

Sample ID: LCS-64239	SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: LCSS	Batch ID: 64239		RunNo: 83211							
Prep Date: 12/1/2021	Analysis Date: 12/1/2021		SeqNo: 2956909		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	10	50.00	0	81.0	68.9	135			
Surr: DNOP	3.8		5.000		76.0	70	130			

Sample ID: MB-64225	SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: PBS	Batch ID: 64225		RunNo: 83211							
Prep Date: 11/30/2021	Analysis Date: 12/1/2021		SeqNo: 2956911		Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	10		10.00		104	70	130			

Sample ID: MB-64239	SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: PBS	Batch ID: 64239		RunNo: 83211							
Prep Date: 12/1/2021	Analysis Date: 12/1/2021		SeqNo: 2956912		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	11		10.00		113	70	130			

Sample ID: MB-64215	SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: PBS	Batch ID: 64215		RunNo: 83242							
Prep Date: 11/30/2021	Analysis Date: 12/2/2021		SeqNo: 2957749		Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	12		10.00		124	70	130			

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 Quantitative Limit
S % Recovery outside of range due to dilution or matrix interference

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

Page 10 of 12

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2112004

06-Dec-21

Client: Lucid Energy**Project:** Penasco 10 inch nAPP2129146666

Sample ID: mb	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBS	Batch ID: B83216		RunNo: 83216							
Prep Date:	Analysis Date: 12/1/2021		SeqNo: 2956534		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		102	70	130			

Sample ID: 2.5ug gro lcs	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSS	Batch ID: B83216		RunNo: 83216							
Prep Date:	Analysis Date: 12/1/2021		SeqNo: 2956535		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	102	78.6	131			
Surr: BFB	1100		1000		111	70	130			

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 Quantitative Limit
S % Recovery outside of range due to dilution or matrix interference

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#: 2112004

06-Dec-21

Client: Lucid Energy**Project:** Penasco 10 inch nAPP2129146666

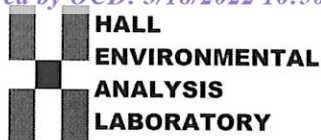
Sample ID: mb	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: D83216		RunNo: 83216							
Prep Date:	Analysis Date: 12/1/2021		SeqNo: 2956625		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		102	70	130			

Sample ID: 100ng btex lcs	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: D83216		RunNo: 83216							
Prep Date:	Analysis Date: 12/1/2021		SeqNo: 2956626		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.025	1.000	0	95.8	80	120			
Toluene	0.96	0.050	1.000	0	96.3	80	120			
Ethylbenzene	0.96	0.050	1.000	0	95.8	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.7	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		103	70	130			

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 Quantitative Limit
S % Recovery outside of range due to dilution or matrix interference

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
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: Lucid Energy

Work Order Number: 2112004

RcptNo: 1

Received By: Sean Livingston

12/1/2021 8:00:00 AM

Completed By: Sean Livingston

12/1/2021 8:32:58 AM

Reviewed By:

12/1/21

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 $>0^{\circ}\text{C}$ 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. Received at least 1 vial with headspace $<1/4$ " for AQ VOA? Yes ☐ No ☐ NA ☒
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
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 ☐

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted? _____

Checked by: 12/1/21

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

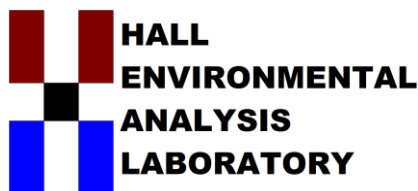
Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.6	Good				



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

December 06, 2021

Joseph S. Hernandez

Lucid Energy

201 South 4th St.

Artesia, NM 88210

TEL:

FAX:

RE: Penasco 10 inch nAPP2129146666

OrderNo.: 2112005

Dear Joseph S. Hernandez:

Hall Environmental Analysis Laboratory received 5 sample(s) on 12/1/2021 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 qualifiers 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 #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", with a stylized flourish at the end.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 2112005

Date Reported: 12/6/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy

Client Sample ID: FS01

Project: Penasco 10 inch nAPP2129146666

Collection Date: 11/29/2021 10:40:00 AM

Lab ID: 2112005-001

Matrix: MEOH (SOIL)

Received Date: 12/1/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	20	9.3		mg/Kg	1	12/2/2021 11:08:34 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	12/2/2021 11:08:34 AM
Surr: DNOP	87.2	70-130		%Rec	1	12/2/2021 11:08:34 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	12/1/2021 9:16:55 PM
Surr: BFB	101	70-130		%Rec	1	12/1/2021 9:16:55 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.018		mg/Kg	1	12/1/2021 9:16:55 PM
Toluene	ND	0.036		mg/Kg	1	12/1/2021 9:16:55 PM
Ethylbenzene	ND	0.036		mg/Kg	1	12/1/2021 9:16:55 PM
Xylenes, Total	ND	0.072		mg/Kg	1	12/1/2021 9:16:55 PM
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	12/1/2021 9:16:55 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	60		mg/Kg	20	12/1/2021 9:43:52 PM

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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report

Lab Order 2112005

Date Reported: 12/6/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy

Client Sample ID: FS02

Project: Penasco 10 inch nAPP2129146666

Collection Date: 11/29/2021 10:45:00 AM

Lab ID: 2112005-002

Matrix: MEOH (SOIL)

Received Date: 12/1/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	220	9.0		mg/Kg	1	12/2/2021 11:19:03 AM
Motor Oil Range Organics (MRO)	140	45		mg/Kg	1	12/2/2021 11:19:03 AM
Surr: DNOP	98.2	70-130		%Rec	1	12/2/2021 11:19:03 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	12/1/2021 9:40:25 PM
Surr: BFB	96.2	70-130		%Rec	1	12/1/2021 9:40:25 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.019		mg/Kg	1	12/1/2021 9:40:25 PM
Toluene	ND	0.039		mg/Kg	1	12/1/2021 9:40:25 PM
Ethylbenzene	ND	0.039		mg/Kg	1	12/1/2021 9:40:25 PM
Xylenes, Total	ND	0.078		mg/Kg	1	12/1/2021 9:40:25 PM
Surr: 4-Bromofluorobenzene	96.8	70-130		%Rec	1	12/1/2021 9:40:25 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	60		mg/Kg	20	12/1/2021 9:56:13 PM

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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report

Lab Order 2112005

Date Reported: 12/6/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy

Client Sample ID: FS04

Project: Penasco 10 inch nAPP2129146666

Collection Date: 11/29/2021 10:55:00 AM

Lab ID: 2112005-003

Matrix: MEOH (SOIL)

Received Date: 12/1/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	910	88		mg/Kg	10	12/2/2021 12:22:29 PM
Motor Oil Range Organics (MRO)	600	440		mg/Kg	10	12/2/2021 12:22:29 PM
Surr: DNOP	0	70-130	S	%Rec	10	12/2/2021 12:22:29 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.4		mg/Kg	1	12/1/2021 10:03:51 PM
Surr: BFB	97.0	70-130		%Rec	1	12/1/2021 10:03:51 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.017		mg/Kg	1	12/1/2021 10:03:51 PM
Toluene	ND	0.034		mg/Kg	1	12/1/2021 10:03:51 PM
Ethylbenzene	ND	0.034		mg/Kg	1	12/1/2021 10:03:51 PM
Xylenes, Total	ND	0.069		mg/Kg	1	12/1/2021 10:03:51 PM
Surr: 4-Bromofluorobenzene	97.8	70-130		%Rec	1	12/1/2021 10:03:51 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	76	60		mg/Kg	20	12/1/2021 10:08:34 PM

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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report

Lab Order 2112005

Date Reported: 12/6/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy

Client Sample ID: FS05

Project: Penasco 10 inch nAPP2129146666

Collection Date: 11/29/2021 11:20:00 AM

Lab ID: 2112005-004

Matrix: MEOH (SOIL)

Received Date: 12/1/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	35	9.5		mg/Kg	1	12/2/2021 11:40:04 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/2/2021 11:40:04 AM
Surr: DNOP	110	70-130		%Rec	1	12/2/2021 11:40:04 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	12/1/2021 10:50:50 PM
Surr: BFB	99.9	70-130		%Rec	1	12/1/2021 10:50:50 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.018		mg/Kg	1	12/1/2021 10:50:50 PM
Toluene	ND	0.035		mg/Kg	1	12/1/2021 10:50:50 PM
Ethylbenzene	ND	0.035		mg/Kg	1	12/1/2021 10:50:50 PM
Xylenes, Total	ND	0.070		mg/Kg	1	12/1/2021 10:50:50 PM
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	12/1/2021 10:50:50 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	60		mg/Kg	20	12/1/2021 10:20:56 PM

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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report

Lab Order 2112005

Date Reported: 12/6/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy

Client Sample ID: FS07

Project: Penasco 10 inch nAPP2129146666

Collection Date: 11/29/2021 11:30:00 AM

Lab ID: 2112005-005

Matrix: MEOH (SOIL)

Received Date: 12/1/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	18	9.3		mg/Kg	1	12/2/2021 11:50:39 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/2/2021 11:50:39 AM
Surr: DNOP	88.5	70-130		%Rec	1	12/2/2021 11:50:39 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.1		mg/Kg	1	12/1/2021 11:14:11 PM
Surr: BFB	99.0	70-130		%Rec	1	12/1/2021 11:14:11 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.020		mg/Kg	1	12/1/2021 11:14:11 PM
Toluene	ND	0.041		mg/Kg	1	12/1/2021 11:14:11 PM
Ethylbenzene	ND	0.041		mg/Kg	1	12/1/2021 11:14:11 PM
Xylenes, Total	ND	0.081		mg/Kg	1	12/1/2021 11:14:11 PM
Surr: 4-Bromofluorobenzene	99.1	70-130		%Rec	1	12/1/2021 11:14:11 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	59		mg/Kg	20	12/1/2021 10:33:17 PM

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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2112005

06-Dec-21

Client: Lucid Energy**Project:** Penasco 10 inch nAPP2129146666

Sample ID: MB-64250	SampType: mblk		TestCode: EPA Method 300.0: Anions							
Client ID: PBS	Batch ID: 64250		RunNo: 83213							
Prep Date: 12/1/2021	Analysis Date: 12/1/2021		SeqNo: 2957146		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-64250	SampType: lcs		TestCode: EPA Method 300.0: Anions							
Client ID: LCSS	Batch ID: 64250		RunNo: 83213							
Prep Date: 12/1/2021	Analysis Date: 12/1/2021		SeqNo: 2957147		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.7	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 Quantitative Limit
 S % Recovery outside of range due to dilution or matrix interference

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

Page 6 of 9

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2112005

06-Dec-21

Client: Lucid Energy**Project:** Penasco 10 inch nAPP2129146666

Sample ID: LCS-64215	SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: LCSS	Batch ID: 64215		RunNo: 83211							
Prep Date: 11/30/2021	Analysis Date: 12/2/2021		SeqNo: 2956906		Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	3.9		5.000		78.4	70	130			

Sample ID: LCS-64225	SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: LCSS	Batch ID: 64225		RunNo: 83211							
Prep Date: 11/30/2021	Analysis Date: 12/1/2021		SeqNo: 2956908		Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.5		5.000		89.3	70	130			

Sample ID: LCS-64239	SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: LCSS	Batch ID: 64239		RunNo: 83211							
Prep Date: 12/1/2021	Analysis Date: 12/1/2021		SeqNo: 2956909		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	10	50.00	0	81.0	68.9	135			
Surr: DNOP	3.8		5.000		76.0	70	130			

Sample ID: MB-64225	SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: PBS	Batch ID: 64225		RunNo: 83211							
Prep Date: 11/30/2021	Analysis Date: 12/1/2021		SeqNo: 2956911		Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	10		10.00		104	70	130			

Sample ID: MB-64239	SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: PBS	Batch ID: 64239		RunNo: 83211							
Prep Date: 12/1/2021	Analysis Date: 12/1/2021		SeqNo: 2956912		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	11		10.00		113	70	130			

Sample ID: MB-64215	SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: PBS	Batch ID: 64215		RunNo: 83242							
Prep Date: 11/30/2021	Analysis Date: 12/2/2021		SeqNo: 2957749		Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	12		10.00		124	70	130			

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 Quantitative Limit
S % Recovery outside of range due to dilution or matrix interference

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#: 2112005

06-Dec-21

Client: Lucid Energy**Project:** Penasco 10 inch nAPP2129146666

Sample ID: mb	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBS	Batch ID: B83216		RunNo: 83216							
Prep Date:	Analysis Date: 12/1/2021		SeqNo: 2956534		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		102	70	130			

Sample ID: 2.5ug gro lcs	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSS	Batch ID: B83216		RunNo: 83216							
Prep Date:	Analysis Date: 12/1/2021		SeqNo: 2956535		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	102	78.6	131			
Surr: BFB	1100		1000		111	70	130			

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 Quantitative Limit
S % Recovery outside of range due to dilution or matrix interference

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#: 2112005

06-Dec-21

Client: Lucid Energy**Project:** Penasco 10 inch nAPP2129146666

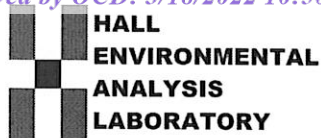
Sample ID: mb	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: D83216		RunNo: 83216							
Prep Date:	Analysis Date: 12/1/2021		SeqNo: 2956625		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		102	70	130			

Sample ID: 100ng btex lcs	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: D83216		RunNo: 83216							
Prep Date:	Analysis Date: 12/1/2021		SeqNo: 2956626		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.025	1.000	0	95.8	80	120			
Toluene	0.96	0.050	1.000	0	96.3	80	120			
Ethylbenzene	0.96	0.050	1.000	0	95.8	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.7	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		103	70	130			

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 Quantitative Limit
S % Recovery outside of range due to dilution or matrix interference

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
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: Lucid Energy

Work Order Number: 2112005

RcptNo: 1

Received By: Sean Livingston

12/1/2021 8:00:00 AM

Completed By: Sean Livingston

12/1/2021 8:38:17 AM

Reviewed By:

12/1/21

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 $>0^{\circ}\text{C}$ 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. Received at least 1 vial with headspace $<1/4"$ for AQ VOA? Yes ☐ No ☐ NA ☒
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
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 ☐

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

Adjusted? _____

Checked by: JR 12/1/21

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 $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.6	Good				



Environment Testing America

ANALYTICAL REPORT

Eurofins Carlsbad
1089 N Canal St.
Carlsbad, NM 88220
Tel: (575)988-3199

Laboratory Job ID: 890-1928-1

Laboratory Sample Delivery Group: 31403665.01

Client Project/Site: Penasco 10" Pipeline Release
Revision: 1

For:

WSP USA Inc.
2777 N. Stemmons Freeway
Suite 1600
Dallas, Texas 75207

Attn: Joseph Hernandez

Authorized for release by:
2/14/2022 2:30:40 PM

Jessica Kramer, Project Manager
(432)704-5440
jessica.kramer@eurofinset.com

LINKS

Review your project
results through

TotalAccess

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: WSP USA Inc.
Project/Site: Penasco 10" Pipeline Release

Laboratory Job ID: 890-1928-1
SDG: 31403665.01

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Definitions/Glossary

Client: WSP USA Inc.
Project/Site: Penasco 10" Pipeline Release

Job ID: 890-1928-1
SDG: 31403665.01

Qualifiers

GC VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
F2	MS/MSD RPD exceeds control limits
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: WSP USA Inc.
Project/Site: Penasco 10" Pipeline Release

Job ID: 890-1928-1
SDG: 31403665.01

Job ID: 890-1928-1**Laboratory: Eurofins Carlsbad****Narrative****Job Narrative
890-1928-1**REVISION

The report being provided is a revision of the original report sent on 2/14/2022. The report (revision 1) is being revised due to Chloride not on final report, revision needed.

Report revision history

Receipt

The samples were received on 2/9/2022 3:28 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.4°C

GC VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-19033 and analytical batch 880-19108 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-19200 and analytical batch 880-19215 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: WSP USA Inc.
Project/Site: Penasco 10" Pipeline Release

Job ID: 890-1928-1
SDG: 31403665.01

Client Sample ID: FS02A

Lab Sample ID: 890-1928-1

Date Collected: 02/08/22 13:10

Matrix: Solid

Date Received: 02/09/22 15:28

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.0399	U	0.0399	mg/Kg		02/11/22 07:30	02/11/22 13:04	20
Toluene	<0.0399	U	0.0399	mg/Kg		02/11/22 07:30	02/11/22 13:04	20
Ethylbenzene	<0.0399	U	0.0399	mg/Kg		02/11/22 07:30	02/11/22 13:04	20
m-Xylene & p-Xylene	<0.0798	U	0.0798	mg/Kg		02/11/22 07:30	02/11/22 13:04	20
o-Xylene	<0.0399	U	0.0399	mg/Kg		02/11/22 07:30	02/11/22 13:04	20
Xylenes, Total	<0.0798	U	0.0798	mg/Kg		02/11/22 07:30	02/11/22 13:04	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	78		70 - 130	02/11/22 07:30	02/11/22 13:04	20
1,4-Difluorobenzene (Surr)	96		70 - 130	02/11/22 07:30	02/11/22 13:04	20

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.0798	U	0.0798	mg/Kg			02/11/22 13:37	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			02/11/22 13:45	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		02/10/22 10:52	02/11/22 13:27	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		02/10/22 10:52	02/11/22 13:27	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		02/10/22 10:52	02/11/22 13:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	77		70 - 130	02/10/22 10:52	02/11/22 13:27	1
o-Terphenyl	71		70 - 130	02/10/22 10:52	02/11/22 13:27	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	15.8	F1	4.98	mg/Kg			02/14/22 13:06	1

Client Sample ID: FS03A

Lab Sample ID: 890-1928-2

Date Collected: 02/09/22 12:25

Matrix: Solid

Date Received: 02/09/22 15:28

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.0397	U	0.0397	mg/Kg		02/11/22 07:30	02/11/22 13:25	20
Toluene	<0.0397	U	0.0397	mg/Kg		02/11/22 07:30	02/11/22 13:25	20
Ethylbenzene	<0.0397	U	0.0397	mg/Kg		02/11/22 07:30	02/11/22 13:25	20
m-Xylene & p-Xylene	<0.0794	U	0.0794	mg/Kg		02/11/22 07:30	02/11/22 13:25	20
o-Xylene	<0.0397	U	0.0397	mg/Kg		02/11/22 07:30	02/11/22 13:25	20
Xylenes, Total	<0.0794	U	0.0794	mg/Kg		02/11/22 07:30	02/11/22 13:25	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	82		70 - 130	02/11/22 07:30	02/11/22 13:25	20
1,4-Difluorobenzene (Surr)	112		70 - 130	02/11/22 07:30	02/11/22 13:25	20

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Client Sample Results

Client: WSP USA Inc.
Project/Site: Penasco 10" Pipeline Release

Job ID: 890-1928-1
SDG: 31403665.01

Client Sample ID: FS03A

Lab Sample ID: 890-1928-2

Date Collected: 02/09/22 12:25

Matrix: Solid

Date Received: 02/09/22 15:28

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.0794	U	0.0794	mg/Kg			02/11/22 13:37	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			02/11/22 13:45	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		02/10/22 10:52	02/11/22 13:48	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		02/10/22 10:52	02/11/22 13:48	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		02/10/22 10:52	02/11/22 13:48	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	72		70 - 130			02/10/22 10:52	02/11/22 13:48	1
o-Terphenyl	70		70 - 130			02/10/22 10:52	02/11/22 13:48	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	25.9		4.99	mg/Kg			02/14/22 13:24	1

Client Sample ID: FS04A

Lab Sample ID: 890-1928-3

Date Collected: 02/09/22 09:52

Matrix: Solid

Date Received: 02/09/22 15:28

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.0398	U	0.0398	mg/Kg		02/11/22 07:30	02/11/22 13:45	20
Toluene	<0.0398	U	0.0398	mg/Kg		02/11/22 07:30	02/11/22 13:45	20
Ethylbenzene	<0.0398	U	0.0398	mg/Kg		02/11/22 07:30	02/11/22 13:45	20
m-Xylene & p-Xylene	<0.0795	U	0.0795	mg/Kg		02/11/22 07:30	02/11/22 13:45	20
o-Xylene	<0.0398	U	0.0398	mg/Kg		02/11/22 07:30	02/11/22 13:45	20
Xylenes, Total	<0.0795	U	0.0795	mg/Kg		02/11/22 07:30	02/11/22 13:45	20
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	74		70 - 130			02/11/22 07:30	02/11/22 13:45	20
1,4-Difluorobenzene (Surr)	98		70 - 130			02/11/22 07:30	02/11/22 13:45	20

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.0795	U	0.0795	mg/Kg			02/11/22 13:37	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			02/11/22 13:45	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		02/10/22 10:52	02/11/22 14:09	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		02/10/22 10:52	02/11/22 14:09	1

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Client Sample Results

Client: WSP USA Inc.
Project/Site: Penasco 10" Pipeline Release

Job ID: 890-1928-1
SDG: 31403665.01

Client Sample ID: FS04A

Date Collected: 02/09/22 09:52

Date Received: 02/09/22 15:28

Lab Sample ID: 890-1928-3

Matrix: Solid

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		02/10/22 10:52	02/11/22 14:09	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	82		70 - 130			02/10/22 10:52	02/11/22 14:09	1
o-Terphenyl	78		70 - 130			02/10/22 10:52	02/11/22 14:09	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.51		4.98	mg/Kg			02/14/22 13:31	1

Client Sample ID: FS06A

Date Collected: 02/08/22 13:12

Date Received: 02/09/22 15:28

Lab Sample ID: 890-1928-4

Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.0398	U	0.0398	mg/Kg		02/11/22 07:30	02/11/22 14:05	20
Toluene	<0.0398	U	0.0398	mg/Kg		02/11/22 07:30	02/11/22 14:05	20
Ethylbenzene	<0.0398	U	0.0398	mg/Kg		02/11/22 07:30	02/11/22 14:05	20
m-Xylene & p-Xylene	<0.0795	U	0.0795	mg/Kg		02/11/22 07:30	02/11/22 14:05	20
o-Xylene	<0.0398	U	0.0398	mg/Kg		02/11/22 07:30	02/11/22 14:05	20
Xylenes, Total	<0.0795	U	0.0795	mg/Kg		02/11/22 07:30	02/11/22 14:05	20
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	124		70 - 130			02/11/22 07:30	02/11/22 14:05	20
1,4-Difluorobenzene (Surr)	109		70 - 130			02/11/22 07:30	02/11/22 14:05	20

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.0795	U	0.0795	mg/Kg			02/11/22 13:37	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			02/11/22 13:45	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		02/10/22 10:52	02/11/22 14:30	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		02/10/22 10:52	02/11/22 14:30	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		02/10/22 10:52	02/11/22 14:30	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	80		70 - 130			02/10/22 10:52	02/11/22 14:30	1
o-Terphenyl	80		70 - 130			02/10/22 10:52	02/11/22 14:30	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.80		4.97	mg/Kg			02/14/22 13:37	1

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Client Sample Results

Client: WSP USA Inc.
Project/Site: Penasco 10" Pipeline Release

Job ID: 890-1928-1
SDG: 31403665.01

Client Sample ID: FS08

Lab Sample ID: 890-1928-5

Date Collected: 02/09/22 09:54

Matrix: Solid

Date Received: 02/09/22 15:28

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.0396	U	0.0396	mg/Kg		02/11/22 07:30	02/11/22 14:26	20
Toluene	<0.0396	U	0.0396	mg/Kg		02/11/22 07:30	02/11/22 14:26	20
Ethylbenzene	<0.0396	U	0.0396	mg/Kg		02/11/22 07:30	02/11/22 14:26	20
m-Xylene & p-Xylene	<0.0792	U	0.0792	mg/Kg		02/11/22 07:30	02/11/22 14:26	20
o-Xylene	<0.0396	U	0.0396	mg/Kg		02/11/22 07:30	02/11/22 14:26	20
Xylenes, Total	<0.0792	U	0.0792	mg/Kg		02/11/22 07:30	02/11/22 14:26	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	116		70 - 130	02/11/22 07:30	02/11/22 14:26	20
1,4-Difluorobenzene (Surr)	106		70 - 130	02/11/22 07:30	02/11/22 14:26	20

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.0792	U	0.0792	mg/Kg			02/11/22 13:37	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			02/11/22 13:45	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		02/10/22 10:52	02/11/22 14:51	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		02/10/22 10:52	02/11/22 14:51	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		02/10/22 10:52	02/11/22 14:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	78		70 - 130	02/10/22 10:52	02/11/22 14:51	1
o-Terphenyl	77		70 - 130	02/10/22 10:52	02/11/22 14:51	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.87		5.05	mg/Kg			02/14/22 13:43	1

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Surrogate Summary

Client: WSP USA Inc.
Project/Site: Penasco 10" Pipeline Release

Job ID: 890-1928-1
SDG: 31403665.01

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
880-11145-A-11-A MS	Matrix Spike	111	77
880-11145-A-11-B MSD	Matrix Spike Duplicate	104	111
890-1928-1	FS02A	78	96
890-1928-2	FS03A	82	112
890-1928-3	FS04A	74	98
890-1928-4	FS06A	124	109
890-1928-5	FS08	116	106
LCS 880-19014/1-A	Lab Control Sample	96	99
LCSD 880-19014/2-A	Lab Control Sample Dup	107	107
MB 880-19014/5-A	Method Blank	103	99

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-11137-A-1-E MS	Matrix Spike	77	78
880-11137-A-1-F MSD	Matrix Spike Duplicate	93	78
890-1928-1	FS02A	77	71
890-1928-2	FS03A	72	70
890-1928-3	FS04A	82	78
890-1928-4	FS06A	80	80
890-1928-5	FS08	78	77

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	1CO2 (70-130)	OTPH2 (70-130)
LCSD 880-19033/3-A	Lab Control Sample Dup	96	100
MB 880-19033/1-A	Method Blank	78	79

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

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QC Sample Results

Client: WSP USA Inc.
Project/Site: Penasco 10" Pipeline Release

Job ID: 890-1928-1
SDG: 31403665.01

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-19014/5-A

Matrix: Solid

Analysis Batch: 19116

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 19014

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/11/22 07:30	02/11/22 11:21	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/11/22 07:30	02/11/22 11:21	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/11/22 07:30	02/11/22 11:21	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		02/11/22 07:30	02/11/22 11:21	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/11/22 07:30	02/11/22 11:21	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		02/11/22 07:30	02/11/22 11:21	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		70 - 130	02/11/22 07:30	02/11/22 11:21	1
1,4-Difluorobenzene (Surr)	99		70 - 130	02/11/22 07:30	02/11/22 11:21	1

Lab Sample ID: LCS 880-19014/1-A

Matrix: Solid

Analysis Batch: 19116

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 19014

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.100	0.09577		mg/Kg		96	70 - 130
Toluene	0.100	0.09188		mg/Kg		92	70 - 130
Ethylbenzene	0.100	0.1025		mg/Kg		102	70 - 130
m-Xylene & p-Xylene	0.200	0.1899		mg/Kg		95	70 - 130
o-Xylene	0.100	0.09565		mg/Kg		96	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		70 - 130
1,4-Difluorobenzene (Surr)	99		70 - 130

Lab Sample ID: LCSD 880-19014/2-A

Matrix: Solid

Analysis Batch: 19116

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 19014

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Benzene	0.100	0.09957		mg/Kg		100	70 - 130	4	35
Toluene	0.100	0.1050		mg/Kg		105	70 - 130	13	35
Ethylbenzene	0.100	0.1190		mg/Kg		119	70 - 130	15	35
m-Xylene & p-Xylene	0.200	0.2265		mg/Kg		113	70 - 130	18	35
o-Xylene	0.100	0.1147		mg/Kg		115	70 - 130	18	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	107		70 - 130
1,4-Difluorobenzene (Surr)	107		70 - 130

Lab Sample ID: 880-11145-A-11-A MS

Matrix: Solid

Analysis Batch: 19116

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 19014

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	<0.00199	U	0.101	0.07702		mg/Kg		76	70 - 130
Toluene	<0.00199	U	0.101	0.08506		mg/Kg		84	70 - 130

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QC Sample Results

Client: WSP USA Inc.
Project/Site: Penasco 10" Pipeline Release

Job ID: 890-1928-1
SDG: 31403665.01

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 880-11145-A-11-A MS

Matrix: Solid

Analysis Batch: 19116

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 19014

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	<0.00199	U	0.101	0.09681		mg/Kg		96	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.202	0.1833		mg/Kg		91	70 - 130
o-Xylene	<0.00199	U	0.101	0.09888		mg/Kg		98	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	111		70 - 130
1,4-Difluorobenzene (Surr)	77		70 - 130

Lab Sample ID: 880-11145-A-11-B MSD

Matrix: Solid

Analysis Batch: 19116

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 19014

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Benzene	<0.00199	U	0.0990	0.08817		mg/Kg		89	70 - 130	14	35
Toluene	<0.00199	U	0.0990	0.08850		mg/Kg		89	70 - 130	4	35
Ethylbenzene	<0.00199	U	0.0990	0.1002		mg/Kg		101	70 - 130	3	35
m-Xylene & p-Xylene	<0.00398	U	0.198	0.1881		mg/Kg		95	70 - 130	3	35
o-Xylene	<0.00199	U	0.0990	0.09531		mg/Kg		96	70 - 130	4	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	104		70 - 130
1,4-Difluorobenzene (Surr)	111		70 - 130

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 880-19033/1-A

Matrix: Solid

Analysis Batch: 19108

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 19033

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		02/10/22 10:52	02/11/22 11:21	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		02/10/22 10:52	02/11/22 11:21	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		02/10/22 10:52	02/11/22 11:21	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	78		70 - 130	02/10/22 10:52	02/11/22 11:21	1
o-Terphenyl	79		70 - 130	02/10/22 10:52	02/11/22 11:21	1

Lab Sample ID: LCSD 880-19033/3-A

Matrix: Solid

Analysis Batch: 19108

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 19033

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Gasoline Range Organics (GRO)-C6-C10	1000	994.8		mg/Kg		99	70 - 130	4	20
Diesel Range Organics (Over C10-C28)	1000	932.0		mg/Kg		93	70 - 130	1	20

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QC Sample Results

Client: WSP USA Inc.
Project/Site: Penasco 10" Pipeline Release

Job ID: 890-1928-1
SDG: 31403665.01

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCSD 880-19033/3-A

Matrix: Solid

Analysis Batch: 19108

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 19033

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	96		70 - 130
o-Terphenyl	100		70 - 130

Lab Sample ID: 880-11137-A-1-E MS

Matrix: Solid

Analysis Batch: 19108

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 19033

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO)-C6-C10	<50.0	U F2	1000	869.0		mg/Kg		85	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U	1000	934.4		mg/Kg		93	70 - 130

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	77		70 - 130
o-Terphenyl	78		70 - 130

Lab Sample ID: 880-11137-A-1-F MSD

Matrix: Solid

Analysis Batch: 19108

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 19033

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U F2	998	1101	F2	mg/Kg		108	70 - 130	24	20
Diesel Range Organics (Over C10-C28)	<50.0	U	998	1046		mg/Kg		105	70 - 130	11	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	93		70 - 130
o-Terphenyl	78		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-19200/1-A

Matrix: Solid

Analysis Batch: 19215

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			02/14/22 12:27	1

Lab Sample ID: LCS 880-19200/2-A

Matrix: Solid

Analysis Batch: 19215

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	250	242.4		mg/Kg		97	90 - 110

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QC Sample Results

Client: WSP USA Inc.
Project/Site: Penasco 10" Pipeline Release

Job ID: 890-1928-1
SDG: 31403665.01

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 880-19200/3-A

Matrix: Solid

Analysis Batch: 19215

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride			250	263.4		mg/Kg		105	90 - 110	8	20

Lab Sample ID: 890-1928-1 MS

Matrix: Solid

Analysis Batch: 19215

Client Sample ID: FS02A

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	15.8	F1	249	333.9	F1	mg/Kg		128	90 - 110		

Lab Sample ID: 890-1928-1 MSD

Matrix: Solid

Analysis Batch: 19215

Client Sample ID: FS02A

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	15.8	F1	249	295.1	F1	mg/Kg		112	90 - 110	12	20

QC Association Summary

Client: WSP USA Inc.
Project/Site: Penasco 10" Pipeline Release

Job ID: 890-1928-1
SDG: 31403665.01

GC VOA

Prep Batch: 19014

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1928-1	FS02A	Total/NA	Solid	5035	
890-1928-2	FS03A	Total/NA	Solid	5035	
890-1928-3	FS04A	Total/NA	Solid	5035	
890-1928-4	FS06A	Total/NA	Solid	5035	
890-1928-5	FS08	Total/NA	Solid	5035	
MB 880-19014/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-19014/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-19014/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-11145-A-11-A MS	Matrix Spike	Total/NA	Solid	5035	
880-11145-A-11-B MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 19116

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1928-1	FS02A	Total/NA	Solid	8021B	19014
890-1928-2	FS03A	Total/NA	Solid	8021B	19014
890-1928-3	FS04A	Total/NA	Solid	8021B	19014
890-1928-4	FS06A	Total/NA	Solid	8021B	19014
890-1928-5	FS08	Total/NA	Solid	8021B	19014
MB 880-19014/5-A	Method Blank	Total/NA	Solid	8021B	19014
LCS 880-19014/1-A	Lab Control Sample	Total/NA	Solid	8021B	19014
LCSD 880-19014/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	19014
880-11145-A-11-A MS	Matrix Spike	Total/NA	Solid	8021B	19014
880-11145-A-11-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	19014

Analysis Batch: 19173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1928-1	FS02A	Total/NA	Solid	Total BTEX	
890-1928-2	FS03A	Total/NA	Solid	Total BTEX	
890-1928-3	FS04A	Total/NA	Solid	Total BTEX	
890-1928-4	FS06A	Total/NA	Solid	Total BTEX	
890-1928-5	FS08	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 19033

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1928-1	FS02A	Total/NA	Solid	8015NM Prep	
890-1928-2	FS03A	Total/NA	Solid	8015NM Prep	
890-1928-3	FS04A	Total/NA	Solid	8015NM Prep	
890-1928-4	FS06A	Total/NA	Solid	8015NM Prep	
890-1928-5	FS08	Total/NA	Solid	8015NM Prep	
MB 880-19033/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCSD 880-19033/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-11137-A-1-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-11137-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 19108

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1928-1	FS02A	Total/NA	Solid	8015B NM	19033
890-1928-2	FS03A	Total/NA	Solid	8015B NM	19033
890-1928-3	FS04A	Total/NA	Solid	8015B NM	19033

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QC Association Summary

Client: WSP USA Inc.
Project/Site: Penasco 10" Pipeline Release

Job ID: 890-1928-1
SDG: 31403665.01

GC Semi VOA (Continued)

Analysis Batch: 19108 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1928-4	FS06A	Total/NA	Solid	8015B NM	19033
890-1928-5	FS08	Total/NA	Solid	8015B NM	19033
MB 880-19033/1-A	Method Blank	Total/NA	Solid	8015B NM	19033
LCSD 880-19033/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	19033
880-11137-A-1-E MS	Matrix Spike	Total/NA	Solid	8015B NM	19033
880-11137-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	19033

Analysis Batch: 19174

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1928-1	FS02A	Total/NA	Solid	8015 NM	
890-1928-2	FS03A	Total/NA	Solid	8015 NM	
890-1928-3	FS04A	Total/NA	Solid	8015 NM	
890-1928-4	FS06A	Total/NA	Solid	8015 NM	
890-1928-5	FS08	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 19200

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1928-1	FS02A	Soluble	Solid	DI Leach	
890-1928-2	FS03A	Soluble	Solid	DI Leach	
890-1928-3	FS04A	Soluble	Solid	DI Leach	
890-1928-4	FS06A	Soluble	Solid	DI Leach	
890-1928-5	FS08	Soluble	Solid	DI Leach	
MB 880-19200/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-19200/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-19200/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-1928-1 MS	FS02A	Soluble	Solid	DI Leach	
890-1928-1 MSD	FS02A	Soluble	Solid	DI Leach	

Analysis Batch: 19215

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1928-1	FS02A	Soluble	Solid	300.0	19200
890-1928-2	FS03A	Soluble	Solid	300.0	19200
890-1928-3	FS04A	Soluble	Solid	300.0	19200
890-1928-4	FS06A	Soluble	Solid	300.0	19200
890-1928-5	FS08	Soluble	Solid	300.0	19200
MB 880-19200/1-A	Method Blank	Soluble	Solid	300.0	19200
LCS 880-19200/2-A	Lab Control Sample	Soluble	Solid	300.0	19200
LCSD 880-19200/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	19200
890-1928-1 MS	FS02A	Soluble	Solid	300.0	19200
890-1928-1 MSD	FS02A	Soluble	Solid	300.0	19200

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Lab Chronicle

Client: WSP USA Inc.
Project/Site: Penasco 10" Pipeline Release

Job ID: 890-1928-1
SDG: 31403665.01

Client Sample ID: FS02A

Date Collected: 02/08/22 13:10

Date Received: 02/09/22 15:28

Lab Sample ID: 890-1928-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	19014	02/11/22 07:30	KL	XEN MID
Total/NA	Analysis	8021B		20	5 mL	5 mL	19116	02/11/22 13:04	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			19173	02/11/22 13:37	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			19174	02/11/22 13:45	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	19033	02/10/22 10:52	DM	XEN MID
Total/NA	Analysis	8015B NM		1			19108	02/11/22 13:27	AJ	XEN MID
Soluble	Leach	DI Leach			5.02 g	50 mL	19200	02/11/22 16:28	SC	XEN MID
Soluble	Analysis	300.0		1			19215	02/14/22 13:06	CH	XEN MID

Client Sample ID: FS03A

Date Collected: 02/09/22 12:25

Date Received: 02/09/22 15:28

Lab Sample ID: 890-1928-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	19014	02/11/22 07:30	KL	XEN MID
Total/NA	Analysis	8021B		20	5 mL	5 mL	19116	02/11/22 13:25	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			19173	02/11/22 13:37	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			19174	02/11/22 13:45	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	19033	02/10/22 10:52	DM	XEN MID
Total/NA	Analysis	8015B NM		1			19108	02/11/22 13:48	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	19200	02/11/22 16:28	SC	XEN MID
Soluble	Analysis	300.0		1			19215	02/14/22 13:24	CH	XEN MID

Client Sample ID: FS04A

Date Collected: 02/09/22 09:52

Date Received: 02/09/22 15:28

Lab Sample ID: 890-1928-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	19014	02/11/22 07:30	KL	XEN MID
Total/NA	Analysis	8021B		20	5 mL	5 mL	19116	02/11/22 13:45	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			19173	02/11/22 13:37	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			19174	02/11/22 13:45	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	19033	02/10/22 10:52	DM	XEN MID
Total/NA	Analysis	8015B NM		1			19108	02/11/22 14:09	AJ	XEN MID
Soluble	Leach	DI Leach			5.02 g	50 mL	19200	02/11/22 16:28	SC	XEN MID
Soluble	Analysis	300.0		1			19215	02/14/22 13:31	CH	XEN MID

Client Sample ID: FS06A

Date Collected: 02/08/22 13:12

Date Received: 02/09/22 15:28

Lab Sample ID: 890-1928-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	19014	02/11/22 07:30	KL	XEN MID
Total/NA	Analysis	8021B		20	5 mL	5 mL	19116	02/11/22 14:05	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			19173	02/11/22 13:37	AJ	XEN MID

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Lab Chronicle

Client: WSP USA Inc.
Project/Site: Penasco 10" Pipeline Release

Job ID: 890-1928-1
SDG: 31403665.01

Client Sample ID: FS06A

Date Collected: 02/08/22 13:12

Date Received: 02/09/22 15:28

Lab Sample ID: 890-1928-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			19174	02/11/22 13:45	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	19033	02/10/22 10:52	DM	XEN MID
Total/NA	Analysis	8015B NM		1			19108	02/11/22 14:30	AJ	XEN MID
Soluble	Leach	DI Leach			5.03 g	50 mL	19200	02/11/22 16:28	SC	XEN MID
Soluble	Analysis	300.0		1			19215	02/14/22 13:37	CH	XEN MID

Client Sample ID: FS08

Date Collected: 02/09/22 09:54

Date Received: 02/09/22 15:28

Lab Sample ID: 890-1928-5

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	19014	02/11/22 07:30	KL	XEN MID
Total/NA	Analysis	8021B		20	5 mL	5 mL	19116	02/11/22 14:26	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			19173	02/11/22 13:37	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			19174	02/11/22 13:45	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	19033	02/10/22 10:52	DM	XEN MID
Total/NA	Analysis	8015B NM		1			19108	02/11/22 14:51	AJ	XEN MID
Soluble	Leach	DI Leach			4.95 g	50 mL	19200	02/11/22 16:28	SC	XEN MID
Soluble	Analysis	300.0		1			19215	02/14/22 13:43	CH	XEN MID

Laboratory References:

XEN MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: WSP USA Inc.
Project/Site: Penasco 10" Pipeline Release

Job ID: 890-1928-1
SDG: 31403665.01

Laboratory: Eurofins Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-21-22	06-30-22
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: WSP USA Inc.
Project/Site: Penasco 10" Pipeline Release

Job ID: 890-1928-1
SDG: 31403665.01

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	XEN MID
Total BTEX	Total BTEX Calculation	TAL SOP	XEN MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	XEN MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	XEN MID
300.0	Anions, Ion Chromatography	MCAWW	XEN MID
5035	Closed System Purge and Trap	SW846	XEN MID
8015NM Prep	Microextraction	SW846	XEN MID
DI Leach	Deionized Water Leaching Procedure	ASTM	XEN MID

Protocol References:

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

XEN MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

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Sample Summary

Client: WSP USA Inc.
Project/Site: Penasco 10" Pipeline Release

Job ID: 890-1928-1
SDG: 31403665.01

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
890-1928-1	FS02A	Solid	02/08/22 13:10	02/09/22 15:28
890-1928-2	FS03A	Solid	02/09/22 12:25	02/09/22 15:28
890-1928-3	FS04A	Solid	02/09/22 09:52	02/09/22 15:28
890-1928-4	FS06A	Solid	02/08/22 13:12	02/09/22 15:28
890-1928-5	FS08	Solid	02/09/22 09:54	02/09/22 15:28

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- 11
- 12
- 13
- 14



Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
Midland, TX (432-704-5440) EL Paso, TX (915)585-3443 Lubbock, TX (806)794-1296
Hobbs, NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

Chain of Custody

Work Order No: _____

Project Manager:	Joseph S. Hernandez	Bill to: (if different)	Joseph S. Hernandez
Company Name:	WSP USA	Company Name:	WSP USA
Address:	3300 North A Street Building 1, unit 222	Address:	3300 North A Street Building 1, unit 222
City, State ZIP:	Midland, Texas 79705	City, State ZIP:	Midland, Texas 79705
Phone:	817-683-2503	Email:	Joe.Hernandez@wsp.com


Project Name:	Penasco 10" Pipeline release	Turn Around	Routine <input type="checkbox"/> Rush: 24 HOUR <input checked="" type="checkbox"/>
Project Number:	31403665.01		
P.O. Number:		Due Date:	
Sampler's Name:	Payton Benner		

SAMPLE RECEIPT

Temp Blank:	Yes <input checked="" type="radio"/> No <input type="radio"/>	Wet Ice:	Yes <input checked="" type="radio"/> No <input type="radio"/>
Temperature (°C):	2.6/2.4	Thermometer ID	770W007
Received Inact:	Yes <input checked="" type="radio"/> No <input type="radio"/>	Correction Factor:	0.2
Cooler Custody Seals:	Yes <input checked="" type="radio"/> No <input type="radio"/>	Total Containers:	
Sample Custody Seals:	Yes <input checked="" type="radio"/> No <input type="radio"/>		

ANALYSIS REQUEST

Number of Containers	TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)



890-1928 Chain of Custody


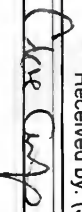
Work Order Notes

Program: <input checked="" type="checkbox"/> UST/PST <input type="checkbox"/> RP <input type="checkbox"/> Crowfields <input type="checkbox"/> RC <input type="checkbox"/> Spentfund
State of Project: <input type="checkbox"/> Level II <input type="checkbox"/> Level III <input type="checkbox"/> T/UST <input type="checkbox"/> RP <input type="checkbox"/> Level IV
Deliverables: EDD <input type="checkbox"/> ADaPT <input type="checkbox"/> Other: _____

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)	Sample Comments
FS02A	S	02/08/22	13:10	10	1	X	X	X	COMPOSITE
FS03A	S	02/09/22	12:25	10	1	X	X	X	COMPOSITE
FS04A	S	02/09/22	9:52	9	1	X	X	X	COMPOSITE
FS06A	S	02/08/22	13:12	9	1	X	X	X	COMPOSITE
FS08	S	02/09/22	9:54	9	1	X	X	X	COMPOSITE

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 1631 / 245.1 / 7470 / 7471 : Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		2900 1538			

Eurofins Carlsbad

1089 N Canal St
Carlsbad NM 88220
Phone. 575-988-3199 Fax 575-988-3199

Chain of Custody Record



Environment Testing America

[illegible]

Eurofins Carlsbad

1089 N Canal St.

Carlsbad, NM 88220

Phone: 575-988-3199 Fax: 575-988-3199

Chain of Custody Record

Environment Testing
America

Client Information (Sub Contract Lab)		Sampler:	Lab PVI:	Carrier Tracking No(s):	COC No:									
Client Contact:		Phone:	Kramer, Jessica		890-619-1									
Shipping/Receiving:		E-Mail:	Jessica.kramer@eurofins.com	State of Origin:	Page: 1 of 1									
Company:		Accreditations Required (See note):	NEW Mexico		Job #: 890-1928-1									
Eurofins Environment Testing South Cent			NELAP - Louisiana, NELAP - Texas											
Address:	1211 W. Florida Ave,	Due Date Requested:	2/11/2022	Analysis Requested										
City:	Midland	TAT Requested (days):												
State, Zip:	TX, 79701	PO #:												
Phone:	432-704-5440(Tel)	MO #:												
Email:		Project #:	89000048											
Project Name:	Pennasco 10" Pipeline Release	SSOW#:												
Site:														
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=soil, O=wastewater, BT=tissue, A=air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015MOD_NM/8015NM_S_Prep Full TPH	300_ORGFM_28D/DI_LEACH Chloride	8021B/6036FP_Calc BTEX	Total_BTEX_GCV	8015MOD_Calc	Total Number of containers	Special Instructions/Note:
FS02A (890-1928-1)	2/8/22	13:10	Mountain	Solid		X	X	X	X	X	X	1		
FS03A (890-1928-2)	2/9/22	12:25	Mountain	Solid		X	X	X	X	X	X	1		
FS04A (890-1928-3)	2/9/22	09:52	Mountain	Solid		X	X	X	X	X	X	1		
FS06A (890-1928-4)	2/8/22	13:12	Mountain	Solid		X	X	X	X	X	X	1		
FS08 (890-1928-5)	2/9/22	09:54	Mountain	Solid		X	X	X	X	X	X	1		
<p>Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Central, LLC.</p>														
Possible Hazard Identification														
Unconfirmed														
Deliverable Requested: I, II, III, IV, Other (specify) _____ Primary Deliverable Rank: 2														
Empty Kit Relinquished by: _____ Date: _____ Time: _____ Method of Shipment: _____														
Relinquished by: _____ Date/Time: _____ Company: _____ Received by: _____ Date/Time: _____ Company: _____														
Relinquished by: _____ Date/Time: _____ Company: _____ Received by: _____ Date/Time: _____ Company: _____														
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No.: _____ Cooler Temperature(s) °C and Other Remarks: _____														

Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-1928-1

SDG Number: 31403665.01

Login Number: 1928**List Number: 1****Creator: Clifton, Cloe****List Source: Eurofins Carlsbad**

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-1928-1

SDG Number: 31403665.01

Login Number: 1928**List Number: 2****Creator: Lowe, Katie****List Source: Eurofins Midland****List Creation: 02/11/22 12:07 PM**

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	





WSP USA Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

BH or PH Name:

PH01

Date: 12/13/21

Site Name: Penasco 10"

RP or Incident Number: nAPP2129146666

WPS Job Number: 31403665

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: AB

Method: Mechincal

Lat/Long:

Field Screening:

Hole Diameter:

Total Depth:

Chloride, PID

3'

12'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
###						0		
D	ND	5.5	N	PH01	1		SP-SM	Dry sp-sm, compacted, brown, track roots, no odor,non- Plastic
D	ND	0.2	N		2		SAA	
D	ND	0.3	N		4		GW-SP	Dry, tan, cobble gravel sized, mulitple sandy matrix
D	ND	0.2	N		6		SAA	
D	ND	0.4	N		8		SAA	
D	ND	0.3	Y		10		SP-SM-GW	Dry, Well consolidated silty claystone, Brown-black, muddled, odor
D	ND	0.4	Y		12		SAA	



WSP USA Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

BH or PH Name:

PH02

Date: 12/13/21

Site Name: Penasco 10"

RP or Incident Number: nAPP2129146666

WPS Job Number: 31403665

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: AB

Method: Mechincal

Lat/Long:

Field Screening:

Hole Diameter:

Total Depth:

Chloride, PID

3'

12'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
###						0		
D	ND	1.2	N	PH02	1		SP-SM	Dry sp-sm, dampened, brown, track roots, no odor,non- Plastic
D	ND	0.0	N		2		SAA	
D	ND	0.4	N		4		GW-SP	Dry, tan, cobble gravel sized, mulitple sandy matrix
D	ND	0.2	N		6		SAA	
D	ND	0.4	N		8		SAA	
D	ND	0.3	N		10		SP-SM-GW	Dry, Well consolidated silty claystone, Brown
D	ND	0.4	N		12		SAA	



WSP USA Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

BH or PH Name:

PH03

Date: 12/13/21

Site Name: Penasco 10"

RP or Incident Number: nAPP2129146666

WPS Job Number: 31403665

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: AB

Method: Mechincal

Lat/Long:

Field Screening:

Hole Diameter:

Total Depth:


Chloride, PID

3'

12'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
###						0		
M	ND	9.1	N	PH03	1		SP-SM	Moist sp-sm, damped, brown, track roots
M	ND	5.2	N		2		SAA	
M	ND	2.2	N		4		SW-SM	Dry, Light brown, cobble gravel sized, mulitple sandy matrix
M	ND	1.0	N		6		SAA	
M	ND	1.1	N		8		SAA	
M	ND	2.9	N		10		SW-SM	Dry, caliche, gravel sized SW Matrix
M	ND	4.1	N		12		SW-SC	Moist, brown SC/SW cohesive, low plasticity

 WSP USA Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation						BH or PH Name:		Date: 12/13/21
						PH04		
						Site Name: Penasco 10"		
						RP or Incident Number: nAPP2129146666		
						WPS Job Number: 31403665		
LITHOLOGIC / SOIL SAMPLING LOG						Logged By: AB		Method: Mechincal
Lat/Long:				Field Screening:		Hole Diameter:		Total Depth:
				Chloride, PID		3'		12'
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
###						0		
D	ND	0.5	N	PH04	1		SP-SM	Dry, sp-sm, clumped, brown, track roots
D	ND	1.2	N		2		SAA	
D	ND	1.6	N		4		SAA	
D	ND	1.7	N		6		GW-SP	Dry, GW, lightbrown-tan, moderately consolidated caliche
D	ND	1.4	N		8		SAA	
D	ND	3.3	N		10		GW-SP	Dry, well cemented caliche
D	ND	2.2	N		12		SAA	Light tan-pink hue



WSP USA Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

BH or PH Name:

PH05

Date: 12/14/21

Site Name: Penasco 10"

RP or Incident Number: nAPP2129146666

WPS Job Number: 31403665

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: AB

Method: Mechincal

Lat/Long:

Field Screening:

Hole Diameter:

Total Depth:

Chloride, PID

3'

12'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
###						0		
D	ND	39.3	N	PH05	1		SP-SM	Dry, sp-sm, clumped, brown, track roots, gravel, non-plastic, non-cohesive, no odor, compacted
D	ND	1.2	N		2		SAA	
M	ND	1.6	N		4		SAA	Moist,GW, light brown-tan, non-plastic, non-cohesive, low plasticity
D	ND	1.7	N		6		SM-SP	Dry, GW, lightbrown-tan, moderately consolidated caliche
M	ND	1.4	N		8		SAA	Caliche, moderatily cemented, pinkish hue, moist
D	ND	3.3	N		10		SAA	
D	ND	2.2	N		12		SAA	Dry



WSP USA Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

BH or PH Name:

PH06

Date: 12/14/21

Site Name: Penasco 10"

RP or Incident Number: nAPP2129146666

WPS Job Number: 31403665

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: AB

Method: Mechincal

Lat/Long:

Field Screening:

Hole Diameter:

Total Depth:

Chloride, PID

3'

12'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
###						0		
D	ND	5.3	N	PH06	1		SP-SM	Dry, sp-sm, clumped, brown, track roots, gravel, non-plastic, non-cohesive, no odor, compacted
D	ND	8.9	N		2		SAA	Light brown
D	ND	6.4	N		4		SAA	Dry, GW, light brown-tan, non-plastic, non-cohesive, low plasticity
M	ND	34.9	N		6		SM-SP	Moist, GW, brown-tan, moderately consolidated caliche
M	ND	12.4	N		8		SAA	
D	ND	17.5	N		10		SAA	Dry, sandy fine claystone, reddish-brown
D	ND	13.5	N		12		SAA	Dry

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 91289

CONDITIONS

Operator: FRONTIER FIELD SERVICES, LLC 10077 Grogans Mill Rd. The Woodlands, TX 77380	OGRID: 221115
	Action Number: 91289
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jnobui	Closure Report Approved.	6/14/2022