ENSOLUM

CLOSURE REPORT

Property:

Carlsbad West 12" Launcher

Eddy County, New Mexico
32.281529 N, 104.287475 W
NMOCD Incident # NAPP2117254270
NM OGRID # 329971

July 8, 2021
Ensolum Project No. 03B1206021

Prepared for:

Oryx Delaware Oil Transport LLC
4000 N. Big Spring Street, Suite 500
Midland, TX 79705
Attn: Mr. Garrett Huitt

Prepared by:

Beaux Jennings
Senior Project Manager

Liz Scaggs, PG
Principal

ENSOLUM

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ENSOLUM

CLOSURE REPORT

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Eddy County, New Mexico
32.281529 N, 104.287475 W
NMOCD Incident # NAPP2117254270
NM OGRID # 329971
Ensolum Project No. 03B1206021

1.0 INTRODUCTION

1.1 Executive Summary

- On May 27, 2021, a fire was reported at the Carlsbad West 12" Launcher Station (the Site). A truck and trailer caught on fire and discharged less than five (5) barrels (bbls) of crude oil onto the ground. The fire was contained in the immediate vicinity of the truck and trailer and the pipeline was not damaged. The discharged crude oil was unrecoverable due to fire consumption. The Site was then excavated by Lighthouse Environmental Services, Inc. (Lighthouse) and all impacted soil was taken off-Site for proper disposal.

- On June 1, 2021, Lighthouse collected four (4) soil samples (BH-1 through BH-4) at a depth of six (6) to 12 inches below ground surface (bgs) in the release area.

- Subsequent to additional excavation activities by Lighthouse, two additional soil samples were collected (BH-2 RE and BH-4 RE) at a depth of 12 to 15 inches bgs on June 14, 2021.

- The primary objective of the closure activities was to reduce chemicals of concern (COC) in the on-Site soils to below the applicable New Mexico Energy, Minerals and Natural Resources Department (EMNRD) Oil Conservation Division (OCD) Closure Criteria for Soils Impacted by a Release using the New Mexico EMNRD OCD's New Mexico Administrative Code (NMAC) 19.15.29 *Releases* as guidance.

- A total of six (6) soil samples from four (4) locations were collected from the excavation area. Based on the final soil sample analytical results, the final soil samples (BH-1, BH-2 RE, BH-3 and BH-4 RE) are below the applicable NMOCD Closure Criteria.

Based on field observations and laboratory analytical results, no additional investigation or corrective action appears warranted at this time.

1.2 Site Description & Background

Operator:	Oryx Delaware Oil Transport LLC (Oryx)
Site Name:	Carlsbad West 12" Launcher
Location:	32.281529 N, 104.287475 Section 27, Township 23 South, Range 26 East Eddy County, New Mexico
Property:	New Mexico State Trust Lands
Regulatory:	New Mexico Energy, Minerals and Natural Resources Department (EMNRD) Oil Conservation Division (OCD)

On May 27, 2021, a fire was reported at the Carlsbad West 12" Launcher Station. A truck and trailer caught on fire and discharged less than 5 barrels (bbls) of crude oil onto the ground. The fire was contained in the immediate vicinity of the truck and trailer and the pipeline was not damaged. The discharged crude oil was unrecoverable due to fire consumption.

The Topographic Map depicting the location of the Site is included as **Figure 1**, the Site Vicinity Map is included as **Figure 2,** and the Site Map indicating the locations of soil samples is included as **Figure 3** in **Appendix A**.

1.3 Project Objective

The primary objective of the closure activities was to reduce constituent of concern (COC) concentrations in the on-Site soils to below the applicable New Mexico EMNRD OCD closure criteria concentrations.

2.0 CLOSURE CRITERIA

The Site is subject to regulatory oversight by the New Mexico EMNRD OCD. In order to address activities related to exempt oil and gas releases, the New Mexico EMNRD OCD references NMAC 19.15.29 *Releases,* which establishes investigation and abatement action requirements for sites subject to reporting and/or corrective action. Ensolum, LLC (Ensolum) utilized information provided by Oryx, the general site characteristics, and information available from the New Mexico Office of the State Engineer (OSE) and the New Mexico EMNRD OCD Imaging database to determine the appropriate closure criteria for the Site.

Supporting documentation associated with the following bullets are provided in **Appendix B**. No water wells were identified within a half-mile of the Site. However, two (2) water wells were identified within 1.0-mile of the Site; water well C-01463 is located approximately 0.57-mile northeast of the Site and water well C-01022 is located approximately 0.82-mile northeast of the Site on the OSE Water Rights Reporting System (WRRS) database. The reported depths to water are 90 to 265 feet bgs. Due to the distance to the closest water well, and the reported depth to water, the closure criteria for groundwater depth of 51 feet to 100 feet below the release will be utilized.

- The Site is not located within 300 feet of a New Mexico ENMRD OCD-defined continuously flowing watercourse or any other significant watercourse.
- The Site is not located within 200 feet of a lakebed, sinkhole or playa lake.
- The Site is not located within 300 feet from an occupied permanent residence, school, hospital, institution or church.
- According to the OSE WRSS database there are no private, domestic freshwater wells used by less than five (5) households for domestic or stock water purposes identified within 500 feet of the Site.
- According to the OSE WRSS database there are no freshwater wells identified within 1,000 feet of the Site as declared in the previous bullet.
- The Site is not located within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3.
- The Site is not located within 300 feet of a wetland.
- Based on information identified on the New Mexico Mining and Minerals Division's GIS, Maps and Mine Data database, the Site is not located within an area overlying a subsurface mine.

- The Site is not located within an unstable area.
- The Site is not located within a 100-year floodplain.

Based on the identified siting criteria, cleanup goals for soils remaining in place at the Site include:

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

3.0 SOIL REMEDIATION ACTIVITIES

On May 27, 2021, a fire was reported at the Carlsbad West 12" Launcher Station. A truck and trailer caught on fire and discharged less than five (5) barrels (bbls) of crude oil onto the ground. The fire was contained in the immediate vicinity of the truck and trailer and the pipeline was not damaged. The discharged crude oil was unrecoverable due to fire consumption. The Site was then excavated by Lighthouse and all impacted soil was taken off-Site for proper disposal.

On June 1, 2021, Lighthouse collected four (4) soil samples (BH-1 through BH-4) at a depth of six (6) to 12 inches bgs in the release area which were analyzed for benzene, toluene, ethylbenzene, and xylene (BTEX), total petroleum hydrocarbons (TPH) and chloride in accordance with NMOCD Closure Criteria for Soils Impacted by a Release (NMOCD Closure Criteria). Based on laboratory analytical results, additional soils needed to be removed in the areas of soil sample locations BH-2 and BH-4.

Subsequent to additional excavation activities by Lighthouse, two additional soil samples were collected (BH-2 RE and BH-4 RE) at a depth of 12 to 15 inches bgs on June 14, 2021, and analyzed for BTEX, TPH and chloride in accordance with NMOCD Closure Criteria.

The final impacted area measured approximately 135 feet long and 25 feet wide at the maximum extents. The maximum depth of the excavation measured approximately 15 inches bgs.

The lithology encountered during the completion of sampling activities consisted primarily of unconsolidated caliche.

Figure 3 identifies approximate composite soil sample locations and approximate dimensions of the excavation with respect to the Site (**Appendix A**). Photographic documentation of the field activities is included in **Appendix C**.

4.0 SOIL SAMPLING PROGRAM

Lighthouse's soil sampling program included the collection of a total of six (6) soil samples from four (4) locations in the release area.

The samples were collected and placed in laboratory prepared glassware, labeled/sealed using laboratory supplied labels and custody seals, and stored on ice in a cooler. The samples were relinquished to Eurofins Xenco, LLC in Midland, Texas for an expedited laboratory analysis.

5.0 SOIL LABORATORY ANALYTICAL METHODS

The soil samples were analyzed for BTEX utilizing Environmental Protection Agency (EPA) SW-846 Method 8021B, TPH gasoline range organics (GRO), diesel range organics (DRO), and motor oil/lube oil range organics (MRO) utilizing EPA SW-846 Method 8015M, and chloride utilizing EPA Method 300.0.

Laboratory analytical results are summarized in **Table 1** in **Appendix D**. The executed chain-of-custody forms and laboratory analytical reports are provided in **Appendix E**.

6.0 DATA EVALUATION

Ensolum compared the BTEX, TPH GRO/DRO/MRO, and chloride concentrations associated with the final soil samples collected by Lighthouse (BH-1, BH-2 RE, BH-3 and BH-4 RE) to the applicable NMOCD Closure Criteria.

- Laboratory analytical results indicate benzene concentrations for the final soil samples are below the laboratory sample detection limits (SDLs) and the applicable NMOCD Closure Criteria of 10 milligrams per kilogram (mg/kg).
- Laboratory analytical results indicate that total BTEX concentrations for the final soil samples are below the laboratory SDLs and the applicable NMOCD Closure Criteria of 50 mg/kg.
- Laboratory analytical results indicate combined TPH GRO/DRO concentrations for the final soil samples are below the applicable NMOCD Closure Criteria of 1,000 mg/kg.
- Laboratory analytical results indicate combined TPH GRO/DRO/MRO concentrations for the final soil samples are below the applicable NMOCD Closure Criteria of 2,500 mg/kg.
- Laboratory analytical results indicate chloride concentrations for the final soil samples are below the applicable NMOCD Closure Criteria of 10,000 mg/kg.

Laboratory analytical results are summarized in **Table 1** in **Appendix D.**

7.0 RECLAMATION

During the completion of response action activities, approximately 20 cubic yards (cy) of impacted soil was excavated and stockpiled on-Site. The soil stockpile was taken off-Site for proper disposal in accordance with local, state and federal regulations. Based on correspondence with Lighthouse, the excavated area was backfilled with clean fill material and then contoured to the original surrounding grade. The release area is located on the caliche pad of an active station; therefore, Lighthouse has compacted and backfilled excavation area in order to minimize dust and erosion.

8.0 FINDINGS AND RECOMMENDATION

- On May 27, 2021, a fire was reported at the Carlsbad West 12" Launcher Station. A truck and trailer caught on fire and discharged less than five (5) bbls of crude oil onto the ground. The fire was contained in the immediate vicinity of the truck and trailer and the pipeline was not damaged. The discharged crude oil was unrecoverable due to fire consumption. The Site was then excavated by Lighthouse and all impacted soil was taken off-Site for proper disposal.

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Based on field observations and laboratory analytical results, no additional investigation or corrective action appears warranted at this time.

9.0 STANDARDS OF CARE, LIMITATIONS, AND RELIANCE

9.1 Standard of Care

Ensolum's services were performed in accordance with standards customarily provided by a firm rendering the same or similar services in the area during the same time period. Ensolum makes no warranties, express or implied, as to the services performed hereunder. Additionally, Ensolum does not warrant the work of third parties supplying information used in the report (e.g. laboratories, regulatory agencies, or other third parties). This scope of services was performed in accordance with the scope of work agreed with the client, as detailed in our proposal.

9.2 Limitations

Findings, conclusions, and recommendations resulting from these services are based upon information derived from the on-site activities and other services performed under this scope of work and it should be noted that this information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, or not present during these services, and Ensolum cannot represent that the Site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during the investigation. Environmental conditions at other areas or portions of the Site may vary from those encountered at actual sample locations. Ensolum's findings, and recommendations are based solely upon data available to Ensolum at the time of these services.

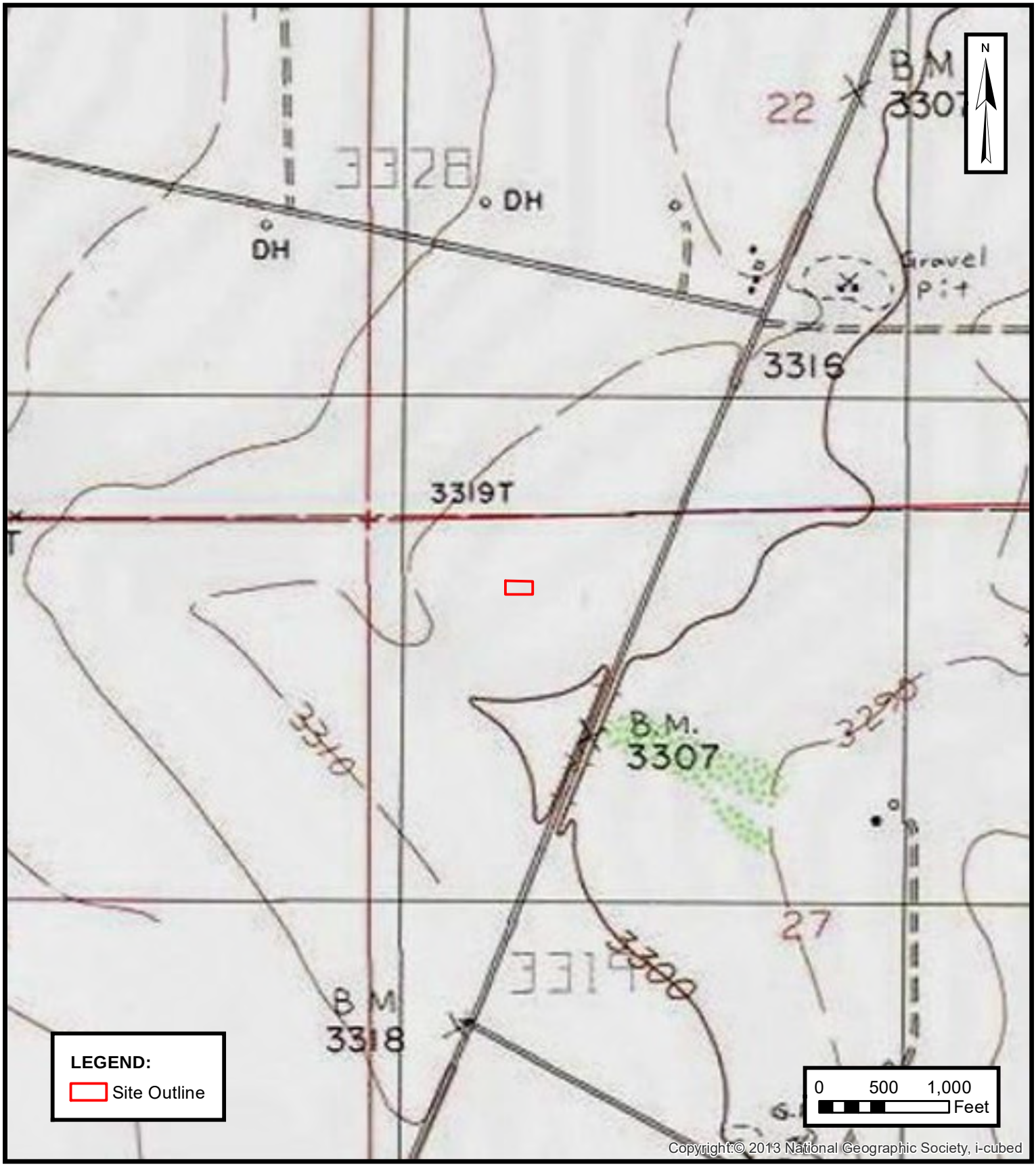
9.3 Reliance

This report has been prepared for the exclusive use of Oryx Delaware Oil Transport LLC, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the Site) is prohibited without the express written authorization Oryx Delaware Oil Transport LLC and Ensolum. Any unauthorized distribution or reuse is at the client's sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions and limitations stated in the Closure Report, and Ensolum's Master Services Agreement. The limitation of liability defined in the agreement is the aggregate limit of Ensolum's liability to the client.

ENSOLUM

APPENDIX A

Figures



ENSOLUM
Environmental & Hydrogeologic Consultants

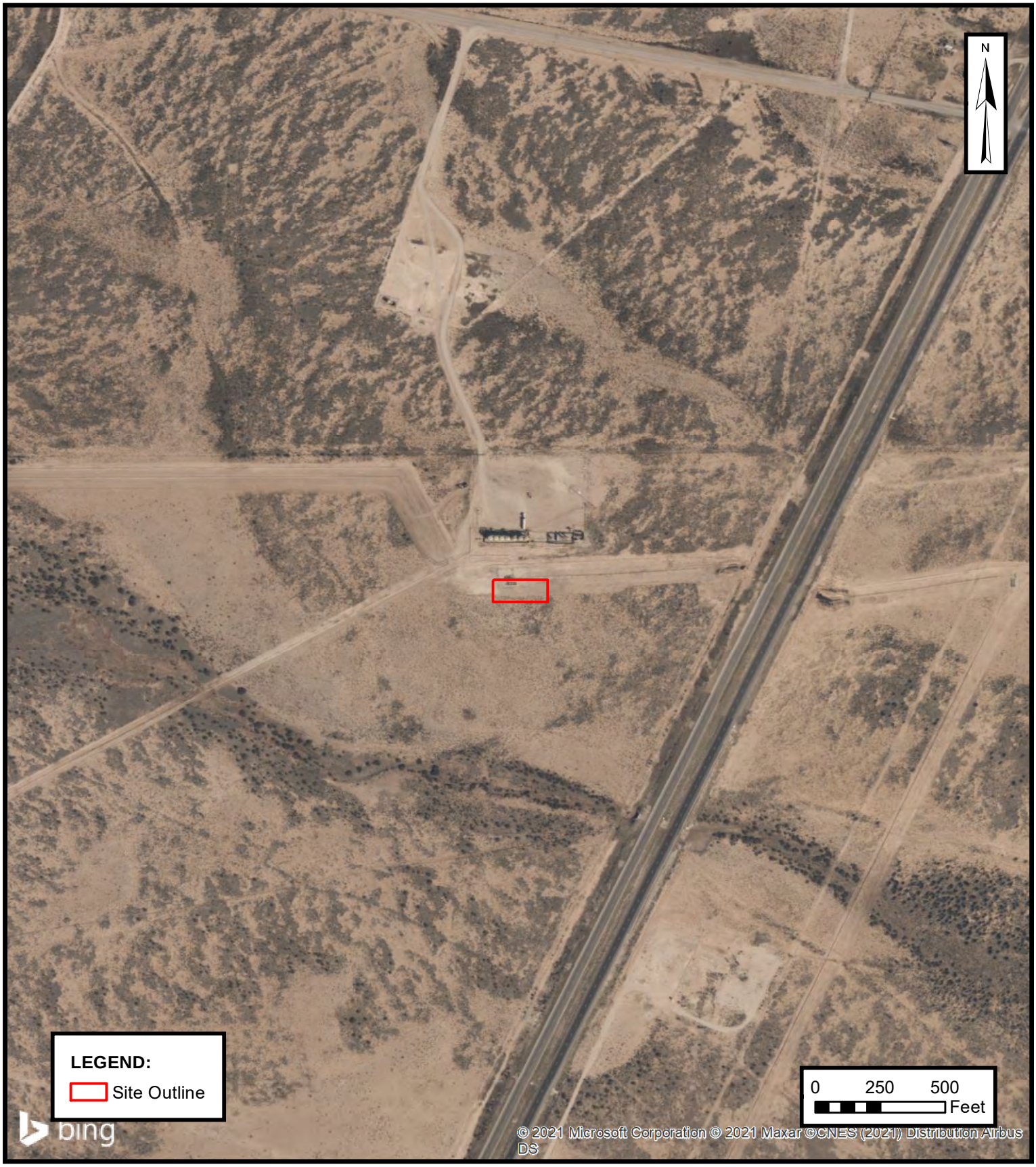
TOPOGRAPHIC MAP

ORYX DELAWARE OIL TRANSPORT LLC
CARLSBAD WEST 12" LAUNCHER
Eddy County, New Mexico
32.281529° N, 104.287475° W

PROJECT NUMBER: 03B1206021

FIGURE

1



ENSOLUM
Environmental & Hydrogeologic Consultants

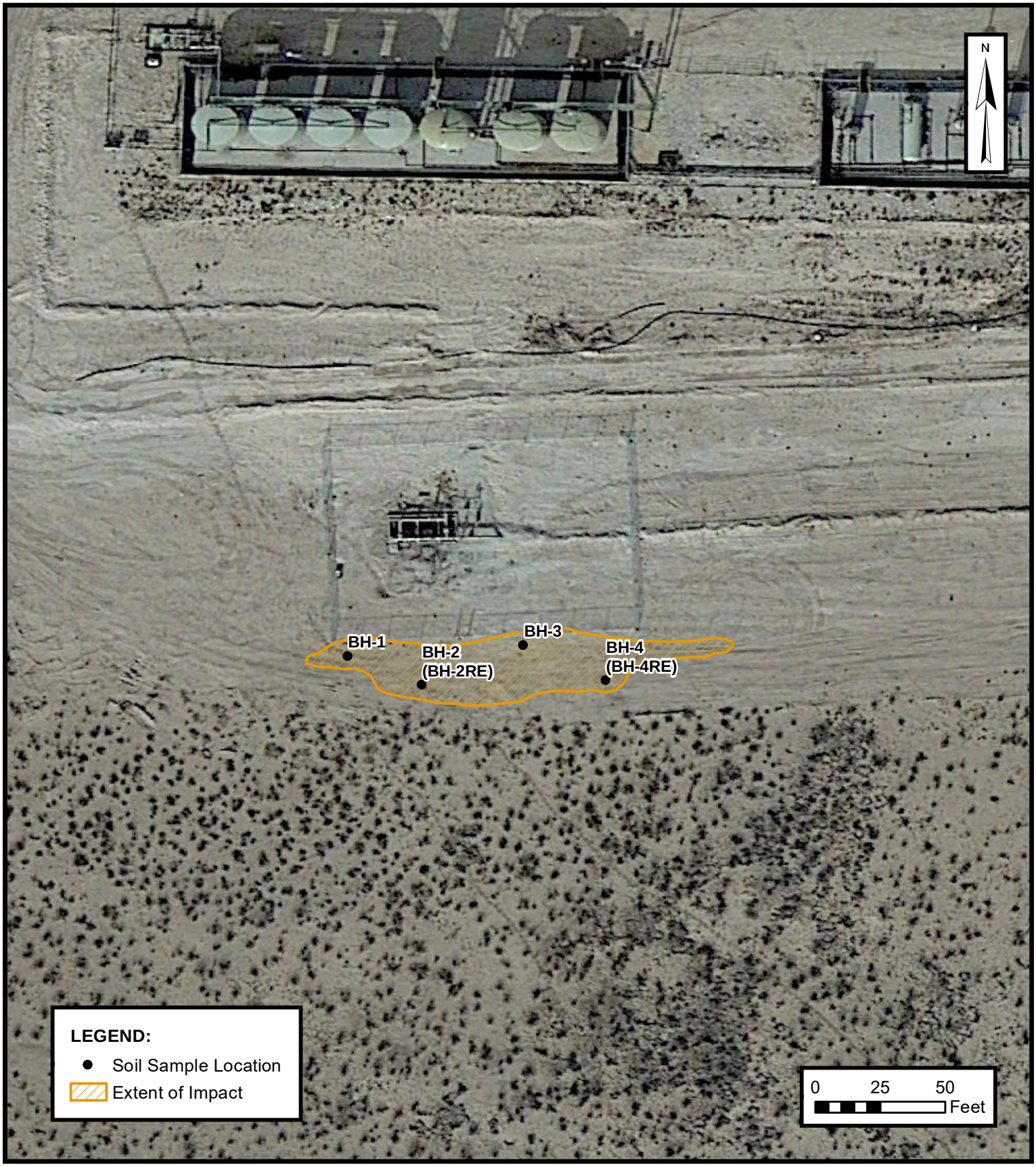
SITE VICINITY MAP

ORYX DELAWARE OIL TRANSPORT LLC
CARLSBAD WEST 12" LAUNCHER
Eddy County, New Mexico
32.281529° N, 104.287475° W

PROJECT NUMBER: 03B1206021

FIGURE

2



ENSOLUM
Environmental & Hydrogeologic Consultants

SITE MAP

ORYX DELAWARE OIL TRANSPORT LLC
CARLSBAD WEST 12" LAUNCHER
Eddy County, New Mexico
32.281529° N, 104.287475° W

PROJECT NUMBER: 03B1206021

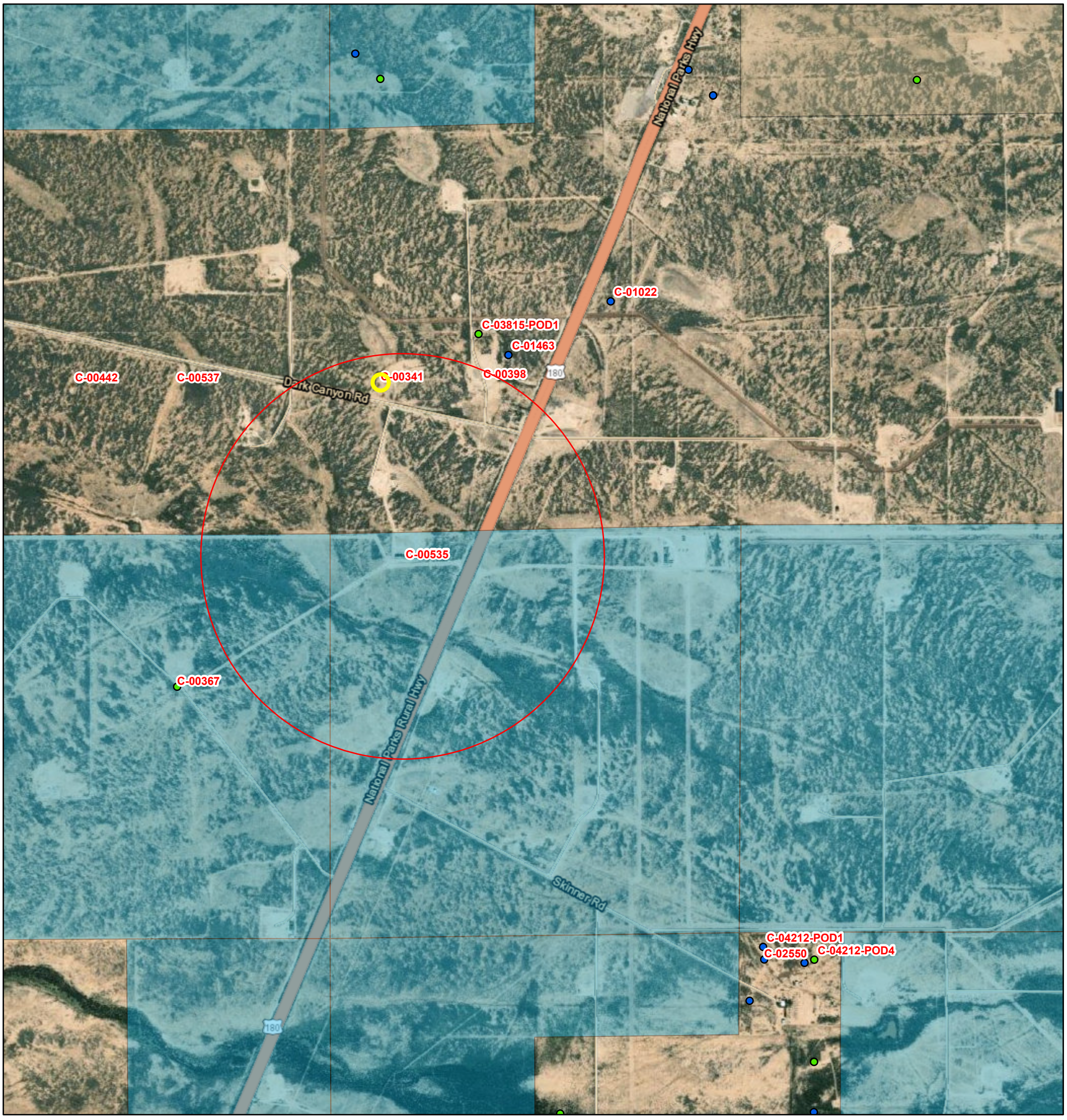
FIGURE
3

ENSOLUM

APPENDIX B

Supporting Documentation

OSE PUBLIC PRINT



7/2/2021, 1:17:28 PM

GIS WATERS PODs

- Active
- Pending
- OSE District Boundary

New Mexico State Trust Lands

- Subsurface Estate
- Both Estates
- SiteBoundaries

1:18,056

0 0.17 0.35 0.7 mi

0 0.28 0.55 1.1 km

Esri, HERE, iPC, U.S. Department of Energy Office of Legacy Management, Esri, HERE, Garmin, iPC, Maxar

Printed from Public Web Map
Unofficial Map from OSE POD Locations Web Application

Form WR-23

SANTA FE

STATE ENGINEER OFFICE

WELL RECORD

462731

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the nearest district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section 1A and Section 5 need be completed.

Section 1

(Plat of 640 acres)

(A) Owner of well L. D. Johns

Street and Number 3310 Old Cavern Hwy

City Carlsbad State New Mexico

Well was drilled under Permit No. C-1022 and is located in the SE ¼ SW ¼ NE ¼ of Section 22 Twp. 23S Rge. 26E

(B) Drilling Contractor A. H. Moreland License No. WD-113

Street and Number 728 Standpipe Road

City Carlsbad State New Mexico

Drilling was commenced December 28 19 61

Drilling was completed January 24 19 62

Elevation at top of casing in feet above sea level ____ Total depth of well 121

State whether well is shallow or artesian Shallow Depth to water upon completion 90

Section 2 PRINCIPAL WATER-BEARING STRATA

No.	Depth in Feet From	Depth in Feet To	Thickness in Feet	Description of Water-Bearing Formation
1	110	121	11	Blue Shale & SAND
2				
3				
4				
5				

STATE ENGINEER OFFICE SANTA FE, N.M. 1962 JAN 30 AM 8:29

Section 3 RECORD OF CASING

Dia in.	Pounds ft.	Threads in	Depth Top	Depth Bottom	Feet	Type Shoe	Perforations From	Perforations To
7 O.D.	18	10			121		100	121

Section 4 RECORD OF MUDDING AND CEMENTING

Depth in Feet From	Depth in Feet To	Diameter Hole in in.	Tons Clay	No. Sacks of Cement	Methods Used
0	121	8¼			

Section 5 PLUGGING RECORD

Name of Plugging Contractor ____ License No. ____

Street and Number ____ City ____ State ____

Tons of Clay used ____ Tons of Roughage used ____ Type of roughage ____

Plugging method used ____ Date Plugged ____ 19 ____

Plugging approved by:

Basin Supervisor

Cement Plugs were placed as follows:

No.	Depth of Plug From	Depth of Plug To	No. of Sacks Used

FOR USE OF STATE ENGINEER ONLY

Date Received ____

STATE ENGINEER OFFICE DISTRICT II ROSWELL, N.M. 1962 JAN 29 AM 8:21

File No. C-1022 Use Dom Location No. 23.26.22.234

C-1022

Section 6

LOG OF WELL

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color	Type of Material Encountered
0	2	2	BROWN	Top Soil
2	25	23	White	Caliche
25	45	20	Yellow	Yellow Clay
45	57	12	Red	Red Clay
57	83	26	Yellow	Yellow Clay
83	95	12	Red	Red Clay
95	110	15	Blue	Blue Clay
110	121	11	Blue	Blue Shale + Sand

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described well.

G. J. Moreland
Well Driller

Form WR-23

STATE ENGINEER OFFICE

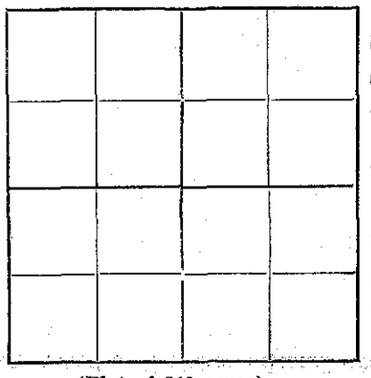
SANTA FE

WELL RECORD

19705 463375

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the nearest district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section 1A and Section 5 need be completed.

Section 1



(Plat of 640 acres)

(A) Owner of well R.J. Avary

Street and Number 1109 W. Ural Drive

City Carlsbad State N.M. 88220

Well was drilled under Permit No. 1463 and is located in the NE ¼ NE ¼ SW ¼ of Section 22 Twp. 23 Rge. 26

(B) Drilling Contractor Emmett Barron License No. 30

Street and Number 307 south Tenth St.

City Carlsbad State N.M. 88220

Drilling was commenced Oct. 17 19 71

Drilling was completed Nov. 1 19 71

Elevation at top of casing in feet above sea level ____ Total depth of well 295'

State whether well is shallow or artesian SHALLOW Depth to water upon completion 285'

Section 2 PRINCIPAL WATER-BEARING STRATA

No.	Depth in Feet From	Depth in Feet To	Thickness in Feet	Description of Water-Bearing Formation
1	270	290	20	Yellow limestone
2	290	295	5	Caliche and gravel
3				295 Red bed
4				
5				

Section 3 RECORD OF CASING

Dia in.	Pounds ft.	Threads in	Depth Top	Depth Bottom	Feet	Type Shoe	Perforations From	Perforations To
7" OD	23	8	0	141	141	NONE	NONE	NONE
5½" OD	18	10	0	290	290		270	295
Liner on bottom.								

Section 4 RECORD OF MUDDING AND CEMENTING

Depth in Feet From	Depth in Feet To	Diameter Hole in in.	Tons Clay	No. Sacks of Cement	Methods Used

1972 JAN 26 AM 11:32
STATE ENGINEER OFFICE
SANTA FE, N.M.

Section 5 PLUGGING RECORD

Name of Plugging Contractor ____ License No. ____

Street and Number ____ City ____ State ____

Tons of Clay used ____ Tons of Roughage used ____ Type of roughage ____

Plugging method used ____ Date Plugged ____ 19 ____

Plugging approved by:

Basin Supervisor

Cement Plugs were placed as follows:

No.	Depth of Plug From	Depth of Plug To	No. of Sacks Used

FOR USE OF STATE ENGINEER ONLY

Date Received ____

STATE ENGINEER OFFICE
1971 NOV 10 AM 8:28

File No. C-1463 Use Dom Location No. 23.26.22.3421

Section 6

LOG OF WELL

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color	Type of Material Encountered
1	2	2	Brown	Topsoil
2	60	58	White	Boulders
60	105	45	Pink	Clay
105	130	25	Gray	Clay and limestone
130	160	30	Pink	Clay and limestone
160	230	70	Brown	Clay and gravel
230	240	10	White	Lime
240	250	10	White	Broken lime
250	255	5	Brown	Clay
255	270	15	Yellow	Yellow Lime
270	290	20	Gray	Caliche gravel
290	295	5	Red	Red bed - Water bearing.

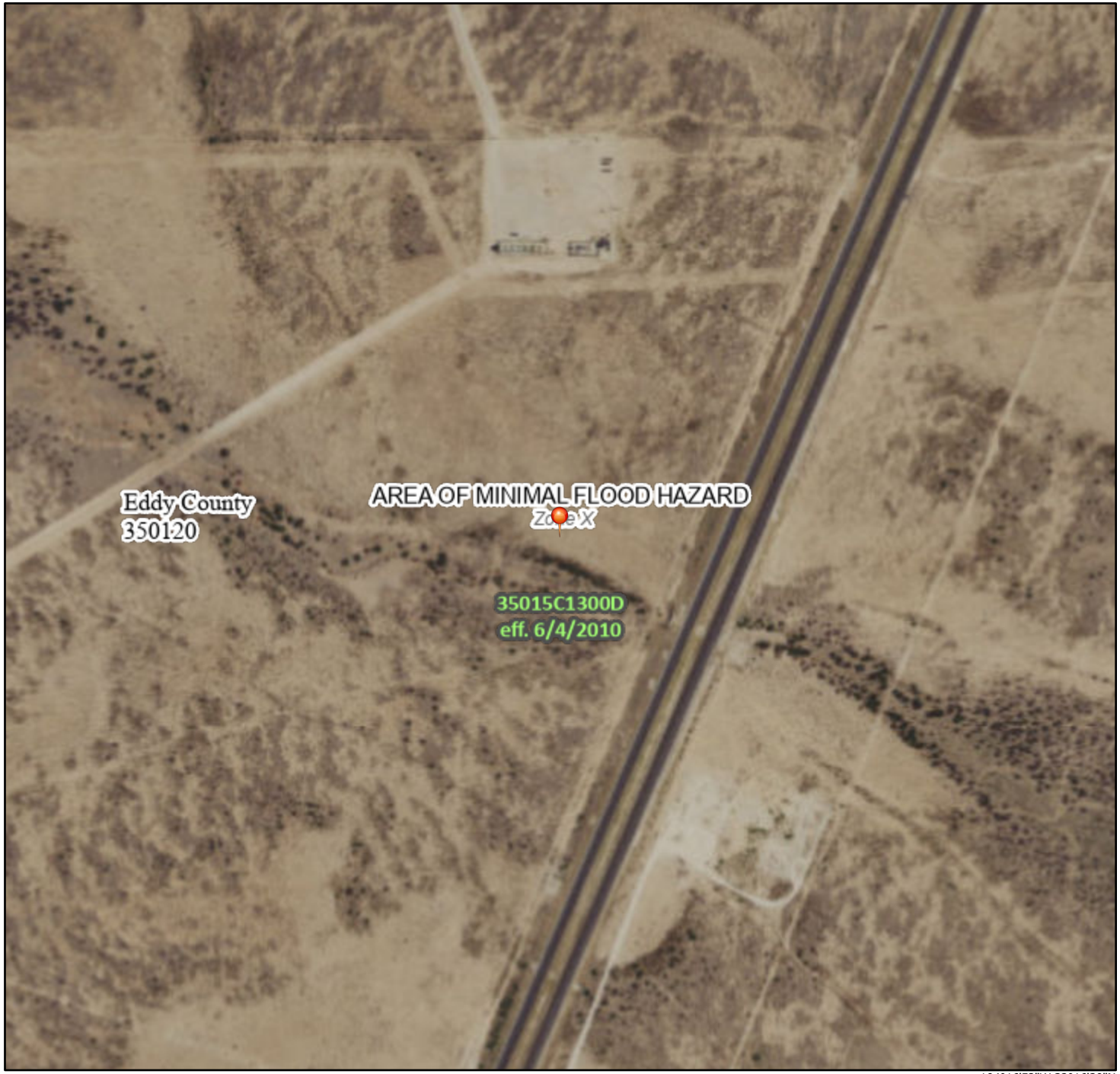
The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described well.

Well Driller

National Flood Hazard Layer FIRMette

FEMA

104°17'29"W 32°17'1"N



0 250 500 1,000 1,500 2,000 Feet

1:6,000

104°16'52"W 32°16'30"N

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

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

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

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

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 7/2/2021 at 3:01 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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

U.S. Fish and Wildlife Service

National Wetlands Inventory

Oryx Carlsbad West Wetlands Map

July 2, 2021

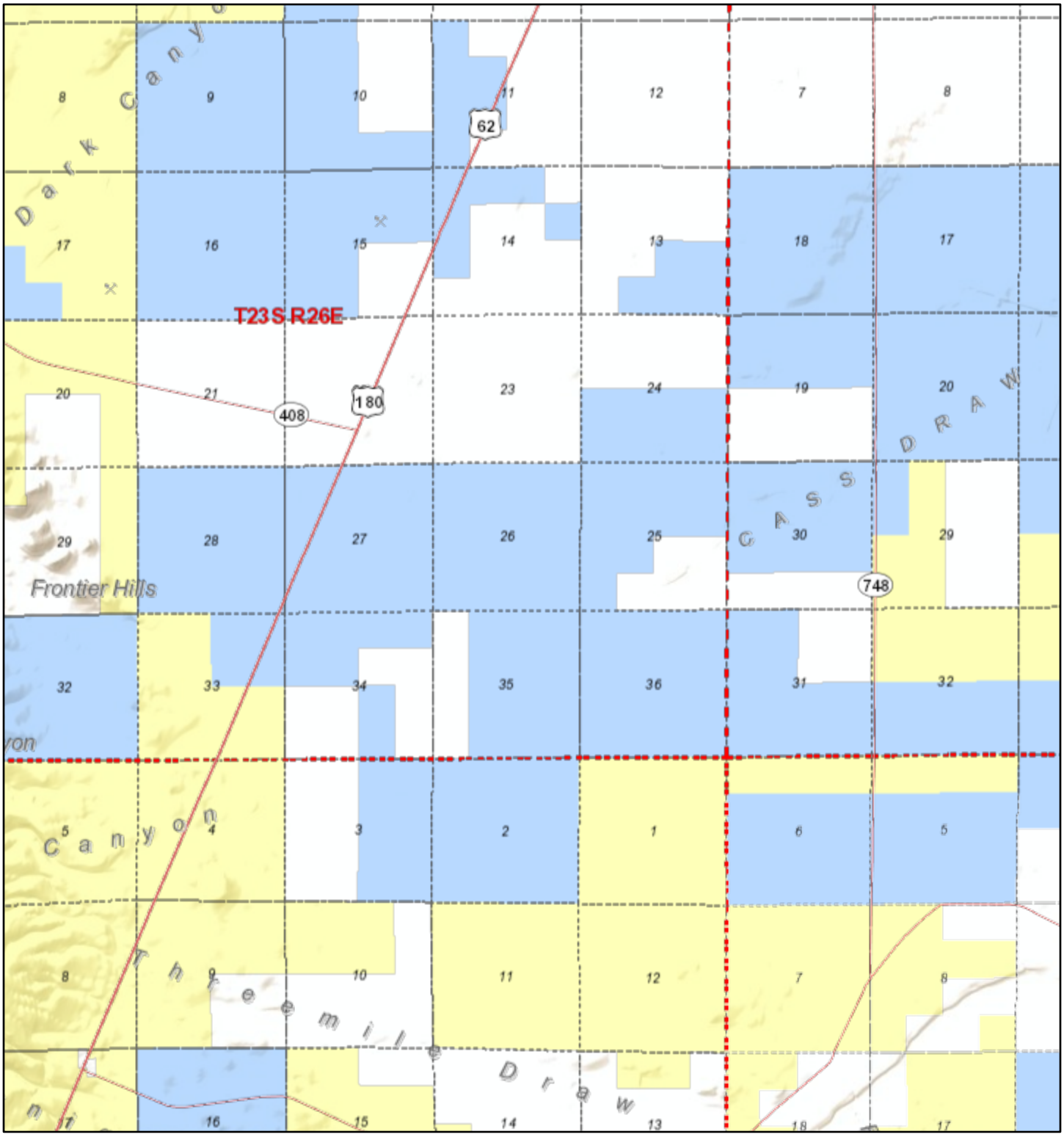
Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

Active Mines in New Mexico



7/2/2021, 2:06:20 PM

1:72,224

0 0.5 1 2 mi

0 0.75 1.5 3 km

Township / Range
Sections

Land Ownership

Bureau of Land Management
Bureau of Reclamation
Department of Agriculture
Department of Defense
Department of Energy
National Park Service
Private Land
State Game and Fish
State Land
State Parks
Tribal

U.S. Bureau of Land Management - New Mexico State Office, Sources: Esri, USGS, NOAA, Sources: Esri, Garmin, USGS, NPS

EMNRD MMD GIS Coordinator

New Energy, Minerals and Natural Resources Department (http://nm-emnrd.maps.arcgis.com/apps/webappviewer/index.html?id=1b5e577974664d689b47790897ca2795)

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APPENDIX C

Photographic Documentation

View of spill area prior to remediation activities, facing north.

View of spill area prior to remediation activities, facing north.

View of spill area subsequent to remediation activities, facing west.

View of spill area during remediation activities, facing east.

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APPENDIX D

Table

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TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
Oryx Delaware Oil Transport LLC - Carlsbad West 12" Launcher
Eddy County, New Mexico

Ensolum Project No. 03B1206021

Sample I.D.	Sample Date	Sample Depth (inches bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH MRO (mg/kg)	Total TPH (GRO+DRO+MRO) (mg/kg)	Chloride (mg/kg)
New Mexico Oil Conservation Division Closure Criteria for Soils Impacted by a Release (51 feet to 100 feet)			**10**	**NE**	**NE**	**NE**	**50**	**1,000**		**NE**	**2,500**	**10,000**
Confirmation Soil Sample Analytical Results												
BH-1	6/1/2021	6 - 12	<0.00199	<0.00199	<0.00199	<0.00398	<0.00398	**405**		**55.5**	**461**	**9.56**
BH-2	6/1/2021	6 - 12	<0.00198	<0.00198	<0.00198	<0.00397	<0.00397	**1,160**		**165**	**1,330**	**98.0**
BH-2 RE	6/14/2021	12 - 15	<0.00198	<0.00198	<0.00198	<0.00396	<0.00396	**425**		**52.4**	**477**	**166**
BH-3	6/1/2021	6 - 12	<0.00199	<0.00199	<0.00199	<0.00398	<0.00398	**56.1**		<49.7	**56.1**	**6.30**
BH-4	6/1/2021	6 - 12	<0.00199	<0.00199	<0.00199	<0.00398	<0.00398	**1,050**		**134**	**1,180**	**45.0**
BH-4 RE	6/14/2021	12 - 15	<0.00200	<0.00200	**0.00383**	<0.00400	<0.00400	**248**		<49.9	**248**	**79.0**

Concentrations in bold and yellow exceed the New Mexico Oil Conservation Division Closure Criteria for Soils Impacted by a Release (51 feet to 100 feet)

Indicates Additional Ecavation and/or Re-Sample

bgs: below ground surface

mg/kg: milligrams per kilogram

NE: Not Established

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

MRO: Motor Oil/Lube Oil Range Organics

TPH: Total Petroleum Hydrocarbon

ENSOLUM

APPENDIX E

Laboratory Data Sheets & Chain-of-Custody Documentation

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Xenco, Midland
1211 W. Florida Ave
Midland, TX 79701
Tel: (432)704-5440

Laboratory Job ID: 880-2665-1
Laboratory Sample Delivery Group: 32.281529, -104.287475
Client Project/Site: Carlsbad West 12" Launcher

For:
Lighthouse Environmental Services, Inc
4218 Pasadena Blvd
Pasadena, Texas 77503

Attn: Simon Hudgens

Holly Taylor

Authorized for release by:
6/4/2021 1:16:00 PM

Holly Taylor, Project Manager
(806)794-1296
holly.taylor@eurofinset.com

Client: Lighthouse Environmental Services, Inc
Project/Site: Carlsbad West 12" Launcher

Laboratory Job ID: 880-2665-1
SDG: 32.281529, -104.287475

Table of Contents

Definitions/Glossary

Client: Lighthouse Environmental Services, Inc
Project/Site: Carlsbad West 12" Launcher

Job ID: 880-2665-1
SDG: 32.281529, -104.287475

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

Qualifier	Qualifier Description
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.
¤	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: Lighthouse Environmental Services, Inc
Project/Site: Carlsbad West 12" Launcher

Job ID: 880-2665-1
SDG: 32.281529, -104.287475

Job ID: 880-2665-1

Laboratory: Eurofins Xenco, Midland

Narrative

Job Narrative
880-2665-1

Comments
No additional comments.

Receipt
The samples were received on 6/2/2021 1:33 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 was 4.9º 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
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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

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

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

Client Sample Results

Client: Lighthouse Environmental Services, Inc
Project/Site: Carlsbad West 12" Launcher

Job ID: 880-2665-1
SDG: 32.281529, -104.287475

Client Sample ID: BH-1

Lab Sample ID: 880-2665-1
Matrix: Solid
Date Collected: 06/01/21 11:20
Date Received: 06/02/21 13:33
Sample Depth: 6 - 12"

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		06/02/21 14:35	06/02/21 20:24	1
Toluene	<0.00199	U	0.00199		mg/Kg		06/02/21 14:35	06/02/21 20:24	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		06/02/21 14:35	06/02/21 20:24	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		06/02/21 14:35	06/02/21 20:24	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		06/02/21 14:35	06/02/21 20:24	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		06/02/21 14:35	06/02/21 20:24	1
Total BTEX	<0.00398	U	0.00398		mg/Kg		06/02/21 14:35	06/02/21 20:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*	*06/02/21 14:35*	*06/02/21 20:24*	*1*
1,4-Difluorobenzene (Surr)	*128*		*70 - 130*	*06/02/21 14:35*	*06/02/21 20:24*	*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 *1	49.9		mg/Kg		06/02/21 15:00	06/02/21 18:33	1
Diesel Range Organics (Over C10-C28)	**405**		49.9		mg/Kg		06/02/21 15:00	06/02/21 18:33	1
Oil Range Organics (Over C28-C36)	**55.5**		49.9		mg/Kg		06/02/21 15:00	06/02/21 18:33	1
Total TPH	**461**		49.9		mg/Kg		06/02/21 15:00	06/02/21 18:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*118*		*70 - 130*	*06/02/21 15:00*	*06/02/21 18:33*	*1*
o-Terphenyl	*108*		*70 - 130*	*06/02/21 15:00*	*06/02/21 18:33*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**9.56**		5.05		mg/Kg			06/03/21 16:09	1

Client Sample ID: BH-2

Lab Sample ID: 880-2665-2
Matrix: Solid
Date Collected: 06/01/21 11:25
Date Received: 06/02/21 13:33
Sample Depth: 6 - 12"

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		06/02/21 14:35	06/02/21 20:44	1
Toluene	<0.00198	U	0.00198		mg/Kg		06/02/21 14:35	06/02/21 20:44	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		06/02/21 14:35	06/02/21 20:44	1
m-Xylene & p-Xylene	<0.00397	U	0.00397		mg/Kg		06/02/21 14:35	06/02/21 20:44	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		06/02/21 14:35	06/02/21 20:44	1
Xylenes, Total	<0.00397	U	0.00397		mg/Kg		06/02/21 14:35	06/02/21 20:44	1
Total BTEX	<0.00397	U	0.00397		mg/Kg		06/02/21 14:35	06/02/21 20:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*	*06/02/21 14:35*	*06/02/21 20:44*	*1*
1,4-Difluorobenzene (Surr)	*123*		*70 - 130*	*06/02/21 14:35*	*06/02/21 20:44*	*1*

Client Sample Results

Client: Lighthouse Environmental Services, Inc
Project/Site: Carlsbad West 12" Launcher

Job ID: 880-2665-1
SDG: 32.281529, -104.287475

Client Sample ID: BH-2

Date Collected: 06/01/21 11:25
Date Received: 06/02/21 13:33
Sample Depth: 6 - 12"

Lab Sample ID: 880-2665-2

Matrix: Solid

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 *1	50.0		mg/Kg		06/02/21 15:00	06/02/21 18:54	1
Diesel Range Organics (Over C10-C28)	**1160**		50.0		mg/Kg		06/02/21 15:00	06/02/21 18:54	1
Oil Range Organics (Over C28-C36)	**165**		50.0		mg/Kg		06/02/21 15:00	06/02/21 18:54	1
Total TPH	**1330**		50.0		mg/Kg		06/02/21 15:00	06/02/21 18:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*125*		*70 - 130*	*06/02/21 15:00*	*06/02/21 18:54*	*1*
o-Terphenyl	*104*		*70 - 130*	*06/02/21 15:00*	*06/02/21 18:54*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**98.0**		4.97		mg/Kg			06/03/21 16:14	1

Client Sample ID: BH-3

Date Collected: 06/01/21 11:30
Date Received: 06/02/21 13:33
Sample Depth: 6 - 12"

Lab Sample ID: 880-2665-3

Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		06/02/21 14:35	06/02/21 21:05	1
Toluene	<0.00199	U	0.00199		mg/Kg		06/02/21 14:35	06/02/21 21:05	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		06/02/21 14:35	06/02/21 21:05	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		06/02/21 14:35	06/02/21 21:05	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		06/02/21 14:35	06/02/21 21:05	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		06/02/21 14:35	06/02/21 21:05	1
Total BTEX	<0.00398	U	0.00398		mg/Kg		06/02/21 14:35	06/02/21 21:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*	*06/02/21 14:35*	*06/02/21 21:05*	*1*
1,4-Difluorobenzene (Surr)	*118*		*70 - 130*	*06/02/21 14:35*	*06/02/21 21:05*	*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	<49.7	U *1	49.7		mg/Kg		06/02/21 15:00	06/02/21 19:15	1
Diesel Range Organics (Over C10-C28)	**56.1**		49.7		mg/Kg		06/02/21 15:00	06/02/21 19:15	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7		mg/Kg		06/02/21 15:00	06/02/21 19:15	1
Total TPH	**56.1**		49.7		mg/Kg		06/02/21 15:00	06/02/21 19:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*116*		*70 - 130*	*06/02/21 15:00*	*06/02/21 19:15*	*1*
o-Terphenyl	*108*		*70 - 130*	*06/02/21 15:00*	*06/02/21 19:15*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**6.30**		4.99		mg/Kg			06/03/21 16:20	1

Eurofins Xenco, Midland

Client Sample Results

Client: Lighthouse Environmental Services, Inc
Project/Site: Carlsbad West 12" Launcher

Job ID: 880-2665-1
SDG: 32.281529, -104.287475

Client Sample ID: BH-4

Date Collected: 06/01/21 11:25
Date Received: 06/02/21 13:33
Sample Depth: 6 - 12"

Lab Sample ID: 880-2665-4

Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		06/02/21 14:35	06/02/21 21:26	1
Toluene	<0.00199	U	0.00199		mg/Kg		06/02/21 14:35	06/02/21 21:26	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		06/02/21 14:35	06/02/21 21:26	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		06/02/21 14:35	06/02/21 21:26	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		06/02/21 14:35	06/02/21 21:26	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		06/02/21 14:35	06/02/21 21:26	1
Total BTEX	<0.00398	U	0.00398		mg/Kg		06/02/21 14:35	06/02/21 21:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*	*06/02/21 14:35*	*06/02/21 21:26*	*1*
1,4-Difluorobenzene (Surr)	*114*		*70 - 130*	*06/02/21 14:35*	*06/02/21 21:26*	*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	<49.8	U *1	49.8		mg/Kg		06/02/21 15:00	06/02/21 19:36	1
Diesel Range Organics (Over C10-C28)	**1050**		49.8		mg/Kg		06/02/21 15:00	06/02/21 19:36	1
Oil Range Organics (Over C28-C36)	**134**		49.8		mg/Kg		06/02/21 15:00	06/02/21 19:36	1
Total TPH	**1180**		49.8		mg/Kg		06/02/21 15:00	06/02/21 19:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*116*		*70 - 130*	*06/02/21 15:00*	*06/02/21 19:36*	*1*
o-Terphenyl	*102*		*70 - 130*	*06/02/21 15:00*	*06/02/21 19:36*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**45.0**		4.95		mg/Kg			06/03/21 16:36	1

Surrogate Summary

Client: Lighthouse Environmental Services, Inc
Project/Site: Carlsbad West 12" Launcher

Job ID: 880-2665-1
SDG: 32.281529, -104.287475

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-2660-A-1-A MS	Matrix Spike	101	117
880-2660-A-1-B MSD	Matrix Spike Duplicate	104	124
880-2665-1	BH-1	102	128
880-2665-2	BH-2	96	123
880-2665-3	BH-3	105	118
880-2665-4	BH-4	96	114
LCS 880-3723/1-A	Lab Control Sample	86	111
LCSD 880-3723/2-A	Lab Control Sample Dup	87	115
MB 880-3723/5-A	Method Blank	104	97

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)	
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-2660-A-10-D MS	Matrix Spike	106	96
880-2660-A-10-E MSD	Matrix Spike Duplicate	90	77
880-2665-1	BH-1	118	108
880-2665-2	BH-2	125	104
880-2665-3	BH-3	116	108
880-2665-4	BH-4	116	102
LCS 880-3729/2-A	Lab Control Sample	96	89
LCSD 880-3729/3-A	Lab Control Sample Dup	112	97
MB 880-3729/1-A	Method Blank	103	102

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Lighthouse Environmental Services, Inc
Project/Site: Carlsbad West 12" Launcher

Job ID: 880-2665-1
SDG: 32.281529, -104.287475

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-3723/5-A
Matrix: Solid
Analysis Batch: 3724

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 3723

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		06/02/21 09:58	06/02/21 13:28	1
Toluene	<0.00200	U	0.00200		mg/Kg		06/02/21 09:58	06/02/21 13:28	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		06/02/21 09:58	06/02/21 13:28	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		06/02/21 09:58	06/02/21 13:28	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		06/02/21 09:58	06/02/21 13:28	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		06/02/21 09:58	06/02/21 13:28	1
Total BTEX	<0.00400	U	0.00400		mg/Kg		06/02/21 09:58	06/02/21 13:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*	*06/02/21 09:58*	*06/02/21 13:28*	*1*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*	*06/02/21 09:58*	*06/02/21 13:28*	*1*

Lab Sample ID: LCS 880-3723/1-A
Matrix: Solid
Analysis Batch: 3724

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 3723

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			0.100	0.09336		mg/Kg		93	70 - 130		
Toluene			0.100	0.1000		mg/Kg		100	70 - 130		
Ethylbenzene			0.100	0.09503		mg/Kg		95	70 - 130		
m-Xylene & p-Xylene			0.200	0.1889		mg/Kg		94	70 - 130		
o-Xylene			0.100	0.08837		mg/Kg		88	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*86*		*70 - 130*
1,4-Difluorobenzene (Surr)	*111*		*70 - 130*

Lab Sample ID: LCSD 880-3723/2-A
Matrix: Solid
Analysis Batch: 3724

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 3723

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			0.100	0.09741		mg/Kg		97	70 - 130	4	35
Toluene			0.100	0.09669		mg/Kg		97	70 - 130	3	35
Ethylbenzene			0.100	0.09925		mg/Kg		99	70 - 130	4	35
m-Xylene & p-Xylene			0.200	0.1872		mg/Kg		94	70 - 130	1	35
o-Xylene			0.100	0.09006		mg/Kg		90	70 - 130	2	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*87*		*70 - 130*
1,4-Difluorobenzene (Surr)	*115*		*70 - 130*

Lab Sample ID: 880-2660-A-1-A MS
Matrix: Solid
Analysis Batch: 3724

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 3723

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene	<0.00200	U F1	0.0990	0.05626	F1	mg/Kg		55	70 - 130		

QC Sample Results

Client: Lighthouse Environmental Services, Inc
Project/Site: Carlsbad West 12" Launcher

Job ID: 880-2665-1
SDG: 32.281529, -104.287475

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

Lab Sample ID: 880-2660-A-1-A MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 3724 — **Prep Batch: 3723**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Toluene	<0.00200	U F1	0.0990	0.04975	F1	mg/Kg		50	70 - 130
Ethylbenzene	<0.00200	U F1	0.0990	0.03801	F1	mg/Kg		38	70 - 130
m-Xylene & p-Xylene	<0.00400	U F1	0.198	0.07225	F1	mg/Kg		36	70 - 130
o-Xylene	<0.00200	U F1	0.0990	0.03541	F1	mg/Kg		36	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
1,4-Difluorobenzene (Surr)	*117*		*70 - 130*

Lab Sample ID: 880-2660-A-1-B MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 3724 — **Prep Batch: 3723**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	<0.00200	U F1	0.0994	0.05662	F1	mg/Kg		55	70 - 130	1	35
Toluene	<0.00200	U F1	0.0994	0.04692	F1	mg/Kg		47	70 - 130	6	35
Ethylbenzene	<0.00200	U F1	0.0994	0.03576	F1	mg/Kg		36	70 - 130	6	35
m-Xylene & p-Xylene	<0.00400	U F1	0.199	0.06354	F1	mg/Kg		32	70 - 130	13	35
o-Xylene	<0.00200	U F1	0.0994	0.03336	F1	mg/Kg		34	70 - 130	6	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*
1,4-Difluorobenzene (Surr)	*124*		*70 - 130*

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

Lab Sample ID: MB 880-3729/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 3737 — **Prep Batch: 3729**

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		06/02/21 10:57	06/02/21 12:42	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		06/02/21 10:57	06/02/21 12:42	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		06/02/21 10:57	06/02/21 12:42	1
Total TPH	<50.0	U	50.0	mg/Kg		06/02/21 10:57	06/02/21 12:42	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*103*		*70 - 130*	*06/02/21 10:57*	*06/02/21 12:42*	*1*
o-Terphenyl	*102*		*70 - 130*	*06/02/21 10:57*	*06/02/21 12:42*	*1*

Lab Sample ID: LCS 880-3729/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 3737 — **Prep Batch: 3729**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO)-C6-C10	1000	859.2		mg/Kg		86	70 - 130

Eurofins Xenco, Midland

QC Sample Results

Client: Lighthouse Environmental Services, Inc
Project/Site: Carlsbad West 12" Launcher

Job ID: 880-2665-1
SDG: 32.281529, -104.287475

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

Lab Sample ID: LCS 880-3729/2-A
Matrix: Solid
Analysis Batch: 3737

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 3729

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Diesel Range Organics (Over C10-C28)			1000	956.3		mg/Kg		96	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*96*		*70 - 130*
o-Terphenyl	*89*		*70 - 130*

Lab Sample ID: LCSD 880-3729/3-A
Matrix: Solid
Analysis Batch: 3737

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 3729

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1080	*1	mg/Kg		108	70 - 130	23	20
Diesel Range Organics (Over C10-C28)			1000	1076		mg/Kg		108	70 - 130	12	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*112*		*70 - 130*
o-Terphenyl	*97*		*70 - 130*

Lab Sample ID: 880-2660-A-10-D MS
Matrix: Solid
Analysis Batch: 3737

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 3729

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics (GRO)-C6-C10	<49.8	U *1	999	934.5		mg/Kg		91	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.8	U F2	999	1126		mg/Kg		109	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*106*		*70 - 130*
o-Terphenyl	*96*		*70 - 130*

Lab Sample ID: 880-2660-A-10-E MSD
Matrix: Solid
Analysis Batch: 3737

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 3729

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	<49.8	U *1	998	854.2		mg/Kg		83	70 - 130	9	20
Diesel Range Organics (Over C10-C28)	<49.8	U F2	998	913.4	F2	mg/Kg		88	70 - 130	21	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*90*		*70 - 130*
o-Terphenyl	*77*		*70 - 130*

QC Sample Results

Client: Lighthouse Environmental Services, Inc
Project/Site: Carlsbad West 12" Launcher

Job ID: 880-2665-1
SDG: 32.281529, -104.287475

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-3747/1-A
Matrix: Solid
Analysis Batch: 3774

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			06/03/21 13:36	1

Lab Sample ID: LCS 880-3747/2-A
Matrix: Solid
Analysis Batch: 3774

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride			250	242.6		mg/Kg		97	90 - 110		

Lab Sample ID: LCSD 880-3747/3-A
Matrix: Solid
Analysis Batch: 3774

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	241.9		mg/Kg		97	90 - 110	0	20

Lab Sample ID: 880-2665-3 MS
Matrix: Solid
Analysis Batch: 3774

Client Sample ID: BH-3
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	6.30		250	243.6		mg/Kg		95	90 - 110		

Lab Sample ID: 880-2665-3 MSD
Matrix: Solid
Analysis Batch: 3774

Client Sample ID: BH-3
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	6.30		250	243.7		mg/Kg		95	90 - 110	0	20

QC Association Summary

Client: Lighthouse Environmental Services, Inc
Project/Site: Carlsbad West 12" Launcher

Job ID: 880-2665-1
SDG: 32.281529, -104.287475

GC VOA

Prep Batch: 3723

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-2665-1	BH-1	Total/NA	Solid	5035	
880-2665-2	BH-2	Total/NA	Solid	5035	
880-2665-3	BH-3	Total/NA	Solid	5035	
880-2665-4	BH-4	Total/NA	Solid	5035	
MB 880-3723/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-3723/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-3723/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-2660-A-1-A MS	Matrix Spike	Total/NA	Solid	5035	
880-2660-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 3724

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-2665-1	BH-1	Total/NA	Solid	8021B	3723
880-2665-2	BH-2	Total/NA	Solid	8021B	3723
880-2665-3	BH-3	Total/NA	Solid	8021B	3723
880-2665-4	BH-4	Total/NA	Solid	8021B	3723
MB 880-3723/5-A	Method Blank	Total/NA	Solid	8021B	3723
LCS 880-3723/1-A	Lab Control Sample	Total/NA	Solid	8021B	3723
LCSD 880-3723/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	3723
880-2660-A-1-A MS	Matrix Spike	Total/NA	Solid	8021B	3723
880-2660-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	3723

GC Semi VOA

Prep Batch: 3729

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-2665-1	BH-1	Total/NA	Solid	8015NM Prep	
880-2665-2	BH-2	Total/NA	Solid	8015NM Prep	
880-2665-3	BH-3	Total/NA	Solid	8015NM Prep	
880-2665-4	BH-4	Total/NA	Solid	8015NM Prep	
MB 880-3729/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-3729/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-3729/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-2660-A-10-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-2660-A-10-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 3737

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-2665-1	BH-1	Total/NA	Solid	8015B NM	3729
880-2665-2	BH-2	Total/NA	Solid	8015B NM	3729
880-2665-3	BH-3	Total/NA	Solid	8015B NM	3729
880-2665-4	BH-4	Total/NA	Solid	8015B NM	3729
MB 880-3729/1-A	Method Blank	Total/NA	Solid	8015B NM	3729
LCS 880-3729/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	3729
LCSD 880-3729/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	3729
880-2660-A-10-D MS	Matrix Spike	Total/NA	Solid	8015B NM	3729
880-2660-A-10-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	3729

QC Association Summary

Client: Lighthouse Environmental Services, Inc
Project/Site: Carlsbad West 12" Launcher

Job ID: 880-2665-1
SDG: 32.281529, -104.287475

HPLC/IC

Leach Batch: 3747

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-2665-1	BH-1	Soluble	Solid	DI Leach	
880-2665-2	BH-2	Soluble	Solid	DI Leach	
880-2665-3	BH-3	Soluble	Solid	DI Leach	
880-2665-4	BH-4	Soluble	Solid	DI Leach	
MB 880-3747/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-3747/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-3747/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-2665-3 MS	BH-3	Soluble	Solid	DI Leach	
880-2665-3 MSD	BH-3	Soluble	Solid	DI Leach	

Analysis Batch: 3774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-2665-1	BH-1	Soluble	Solid	300.0	3747
880-2665-2	BH-2	Soluble	Solid	300.0	3747
880-2665-3	BH-3	Soluble	Solid	300.0	3747
880-2665-4	BH-4	Soluble	Solid	300.0	3747
MB 880-3747/1-A	Method Blank	Soluble	Solid	300.0	3747
LCS 880-3747/2-A	Lab Control Sample	Soluble	Solid	300.0	3747
LCSD 880-3747/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	3747
880-2665-3 MS	BH-3	Soluble	Solid	300.0	3747
880-2665-3 MSD	BH-3	Soluble	Solid	300.0	3747

Lab Chronicle

Client: Lighthouse Environmental Services, Inc
Project/Site: Carlsbad West 12" Launcher

Job ID: 880-2665-1
SDG: 32.281529, -104.287475

Client Sample ID: BH-1
Date Collected: 06/01/21 11:20
Date Received: 06/02/21 13:33

Lab Sample ID: 880-2665-1
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			5.02 g	5 mL	3723	06/02/21 14:35	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	3724	06/02/21 20:24	KL	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	3729	06/02/21 15:00	DM	XEN MID
Total/NA	Analysis	8015B NM		1			3737	06/02/21 18:33	AM	XEN MID
Soluble	Leach	DI Leach			4.95 g	50 mL	3747	06/02/21 14:51	CH	XEN MID
Soluble	Analysis	300.0		1			3774	06/03/21 16:09	SC	XEN MID

Client Sample ID: BH-2
Date Collected: 06/01/21 11:25
Date Received: 06/02/21 13:33

Lab Sample ID: 880-2665-2
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	3723	06/02/21 14:35	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	3724	06/02/21 20:44	KL	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	3729	06/02/21 15:00	DM	XEN MID
Total/NA	Analysis	8015B NM		1			3737	06/02/21 18:54	AM	XEN MID
Soluble	Leach	DI Leach			5.03 g	50 mL	3747	06/02/21 14:51	CH	XEN MID
Soluble	Analysis	300.0		1			3774	06/03/21 16:14	SC	XEN MID

Client Sample ID: BH-3
Date Collected: 06/01/21 11:30
Date Received: 06/02/21 13:33

Lab Sample ID: 880-2665-3
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			5.02 g	5 mL	3723	06/02/21 14:35	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	3724	06/02/21 21:05	KL	XEN MID
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	3729	06/02/21 15:00	DM	XEN MID
Total/NA	Analysis	8015B NM		1			3737	06/02/21 19:15	AM	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	3747	06/02/21 14:51	CH	XEN MID
Soluble	Analysis	300.0		1			3774	06/03/21 16:20	SC	XEN MID

Client Sample ID: BH-4
Date Collected: 06/01/21 11:25
Date Received: 06/02/21 13:33

Lab Sample ID: 880-2665-4
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	3723	06/02/21 14:35	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	3724	06/02/21 21:26	KL	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	3729	06/02/21 15:00	DM	XEN MID
Total/NA	Analysis	8015B NM		1			3737	06/02/21 19:36	AM	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	3747	06/02/21 14:51	CH	XEN MID
Soluble	Analysis	300.0		1			3774	06/03/21 16:36	SC	XEN MID

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

Eurofins Xenco, Midland

Accreditation/Certification Summary

Client: Lighthouse Environmental Services, Inc
Job ID: 880-2665-1
Project/Site: Carlsbad West 12" Launcher
SDG: 32.281529, -104.287475

Laboratory: Eurofins Xenco, Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-20-21	06-30-21

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
8015B NM	8015NM Prep	Solid	Total TPH
8021B	5035	Solid	Total BTEX

Method Summary

Client: Lighthouse Environmental Services, Inc
Project/Site: Carlsbad West 12" Launcher

Job ID: 880-2665-1
SDG: 32.281529, -104.287475

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (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.

Laboratory References:

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

Sample Summary

Client: Lighthouse Environmental Services, Inc
Project/Site: Carlsbad West 12" Launcher

Job ID: 880-2665-1
SDG: 32.281529, -104.287475

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
880-2665-1	BH-1	Solid	06/01/21 11:20	06/02/21 13:33	
880-2665-2	BH-2	Solid	06/01/21 11:25	06/02/21 13:33	
880-2665-3	BH-3	Solid	06/01/21 11:30	06/02/21 13:33	
880-2665-4	BH-4	Solid	06/01/21 11:25	06/02/21 13:33	

eurofins | Environment Testing Xenco

Chai
Houston TX (281)
Midland TX (432) 704
EL Paso TX (915) 5
Hobbs NM (575) 39.

880-2665 Chain of Custody

880-2665

6/4/2021

www.xenco.com Page 1 of 1

Project Manager	Trey Sawyer	Bill to (if different)	Same as previous
Company Name	Lighthouse Environmental Services, Inc	Company Name	
Address	4904 Fuqua St	Address	
City, State ZIP	Houston, Texas 77048	City State ZIP	
Phone	713-987-0400	Email	shudgens@lighthouseenv.com, tsawyer@lighthouseenv.com, mmedina@lighthouseenv.com

Work Order Comments

Program UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project: ~~Texas~~ New Mexico
Reporting Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables EDD ☐ ADaPT ☐ Other

Project Name	Carlsbad West 12" Launcher	Turn Around	
Project Number	2229-5507	☑ Routine ☐ Rush	Pres. Code
Project Location	32.281529, -104.287475	Due Date	
Sampler's Name	Trey Sawyer	TAT starts the day received by the lab if received by 4:30pm	
PO #:	2229-5507		

SAMPLE RECEIPT			
Temp Blank.	Yes (No)	Wet Ice	(Yes) No
Samples Received Intact.	(Yes) No	Thermometer ID	IR8
Cooler Custody Seals	Yes No (N/A)	Correction Factor	+0.5
Sample Custody Seals.	Yes No (N/A)	Temperature Reading	4.4
Total Containers.	4	Corrected Temperature	4.9

Preservative Codes

None NO — DI Water H_2O
Cool Cool — MeOH Me
HCL HC — HNO_3 HN
H_2S0_4 H_2 — NaOH Na
H_3PO_4 HP
$NaHSO_4$ NABIS
$Na_2S_2O_3$ $NaSO_3$
Zn Acetate+NaOH Zn
NaOH+Ascorbic Acid SAPC

ANALYSIS REQUEST

Parameters: TPH TX-1005, Extended Ranges | TCLP BTEX | TCLP RCRA 8 Metals | Total Sulfur | BTEX 8021B | TPH Method 8015 GRO/DRO/ORO | RCI | Chlorides EPA 300.0 | Sodium Absorption Rate | pH

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	BTEX 8021B	TPH Method 8015 GRO/DRO/ORO	Chlorides EPA 300.0
BH-1	Soil	6-1-21	1120	6-12"	Grab	1	X	X	X
BH-2	Soil	6-1-21	1125	6-12"	Grab	1	X	X	X
BH-3	Soil	6-1-21	1130	6-12"	Grab	1	X	X	X
BH-4	Soil	6-1-21	1135	6-12"	Grab	1	X	X	X

Sample Comments

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 SiO_2 Na Sr Tl 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 Tl U Hg 1631 / 245 1 / 7470 / 7471

Relinquished by (Signature)	Received by (Signature)	Date/Time	Relinquished by (Signature)	Received by (Signature)	Date/Time
1		6/2/21 1333	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev 2020 2

Login Sample Receipt Checklist

Client: Lighthouse Environmental Services, Inc

Job Number: 880-2665-1
SDG Number: 32.281529, -104.287475

Login Number: 2665
List Number: 1
Creator: Teel, Brianna

List Source: Eurofins Xenco, Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
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	

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ANALYTICAL REPORT

Eurofins Xenco, Midland
1211 W. Florida Ave
Midland, TX 79701
Tel: (432)704-5440

Laboratory Job ID: 880-3213-1
Laboratory Sample Delivery Group: 2229-5507
Client Project/Site: Carlsbad West 12" Launcher

For:
Lighthouse Environmental Services, Inc
4218 Pasadena Blvd
Pasadena, Texas 77503

Attn: Simon Hudgens

Holly Taylor

Authorized for release by:
6/22/2021 4:18:33 PM

Holly Taylor, Project Manager
(806)794-1296
holly.taylor@eurofinset.com

Client: Lighthouse Environmental Services, Inc
Project/Site: Carlsbad West 12" Launcher

Laboratory Job ID: 880-3213-1
SDG: 2229-5507

Table of Contents

Definitions/Glossary

Client: Lighthouse Environmental Services, Inc
Project/Site: Carlsbad West 12" Launcher

Job ID: 880-3213-1
SDG: 2229-5507

Qualifiers

GC VOA

Qualifier	Qualifier Description
*1	LCS/LCSD RPD exceeds control limits.
F1	MS and/or MSD recovery exceeds control limits.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
S1-	Surrogate recovery exceeds control limits, low biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
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.
¤	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: Lighthouse Environmental Services, Inc
Project/Site: Carlsbad West 12" Launcher

Job ID: 880-3213-1
SDG: 2229-5507

Job ID: 880-3213-1

Laboratory: Eurofins Xenco, Midland

Narrative

Job Narrative
880-3213-1

Comments
No additional comments.

Receipt
The samples were received on 6/18/2021 3:51 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 was 4.0º C.

GC VOA
Method 8021B: Surrogate recovery for the following sample was outside control limits: BH-4 RE (880-3213-2). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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

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

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

Client Sample Results

Client: Lighthouse Environmental Services, Inc
Project/Site: Carlsbad West 12" Launcher

Job ID: 880-3213-1
SDG: 2229-5507

Client Sample ID: BH-2 RE

Lab Sample ID: 880-3213-1
Matrix: Solid
Date Collected: 06/14/21 13:30
Date Received: 06/18/21 15:51
Sample Depth: 12 - 15"

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		06/18/21 16:30	06/19/21 03:55	1
Toluene	<0.00198	U	0.00198		mg/Kg		06/18/21 16:30	06/19/21 03:55	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		06/18/21 16:30	06/19/21 03:55	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		06/18/21 16:30	06/19/21 03:55	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		06/18/21 16:30	06/19/21 03:55	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		06/18/21 16:30	06/19/21 03:55	1
Total BTEX	<0.00396	U *1	0.00396		mg/Kg		06/18/21 16:30	06/19/21 03:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*70 - 130*	*06/18/21 16:30*	*06/19/21 03:55*	*1*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*	*06/18/21 16:30*	*06/19/21 03:55*	*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	**110**		49.9		mg/Kg		06/18/21 17:18	06/21/21 08:03	1
Diesel Range Organics (Over C10-C28)	**315**		49.9		mg/Kg		06/18/21 17:18	06/21/21 08:03	1
Oil Range Organics (Over C28-C36)	**52.4**		49.9		mg/Kg		06/18/21 17:18	06/21/21 08:03	1
Total TPH	**477**		49.9		mg/Kg		06/18/21 17:18	06/21/21 08:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*38*	*S1-*	*70 - 130*	*06/18/21 17:18*	*06/21/21 08:03*	*1*
o-Terphenyl	*30*	*S1-*	*70 - 130*	*06/18/21 17:18*	*06/21/21 08:03*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**166**		4.99		mg/Kg			06/21/21 20:55	1

Client Sample ID: BH-4 RE

Lab Sample ID: 880-3213-2
Matrix: Solid
Date Collected: 06/14/21 13:35
Date Received: 06/18/21 15:51
Sample Depth: 12 - 15"

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		06/18/21 16:30	06/19/21 04:16	1
Toluene	<0.00200	U	0.00200		mg/Kg		06/18/21 16:30	06/19/21 04:16	1
Ethylbenzene	**0.00383**		0.00200		mg/Kg		06/18/21 16:30	06/19/21 04:16	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		06/18/21 16:30	06/19/21 04:16	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		06/18/21 16:30	06/19/21 04:16	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		06/18/21 16:30	06/19/21 04:16	1
Total BTEX	<0.00400	U *1	0.00400		mg/Kg		06/18/21 16:30	06/19/21 04:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*146*	*S1+*	*70 - 130*	*06/18/21 16:30*	*06/19/21 04:16*	*1*
1,4-Difluorobenzene (Surr)	*117*		*70 - 130*	*06/18/21 16:30*	*06/19/21 04:16*	*1*

Client Sample Results

Client: Lighthouse Environmental Services, Inc
Project/Site: Carlsbad West 12" Launcher

Job ID: 880-3213-1
SDG: 2229-5507

Client Sample ID: BH-4 RE

Date Collected: 06/14/21 13:35
Date Received: 06/18/21 15:51
Sample Depth: 12 - 15"

Lab Sample ID: 880-3213-2

Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	124		49.9		mg/Kg		06/18/21 17:18	06/21/21 08:24	1
Diesel Range Organics (Over C10-C28)	124		49.9		mg/Kg		06/18/21 17:18	06/21/21 08:24	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		06/18/21 17:18	06/21/21 08:24	1
Total TPH	248		49.9		mg/Kg		06/18/21 17:18	06/21/21 08:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*30*	*S1-*	*70 - 130*	*06/18/21 17:18*	*06/21/21 08:24*	*1*
o-Terphenyl	*23*	*S1-*	*70 - 130*	*06/18/21 17:18*	*06/21/21 08:24*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	79.0		5.02		mg/Kg			06/21/21 21:12	1

Surrogate Summary

Client: Lighthouse Environmental Services, Inc
Project/Site: Carlsbad West 12" Launcher

Job ID: 880-3213-1
SDG: 2229-5507

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)
880-3187-A-1-A MS	Matrix Spike	86	72
880-3187-A-1-B MSD	Matrix Spike Duplicate	128	94
880-3213-1	BH-2 RE	89	93
880-3213-2	BH-4 RE	146 S1+	117
LCS 880-4322/1-A	Lab Control Sample	83	90
LCSD 880-4322/2-A	Lab Control Sample Dup	115	118
MB 880-4322/5-A	Method Blank	104	75

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)
880-3213-1	BH-2 RE	38 S1-	30 S1-
880-3213-2	BH-4 RE	30 S1-	23 S1-
890-835-A-4-D MS	Matrix Spike	84	70
890-835-A-4-E MSD	Matrix Spike Duplicate	85	68 S1-
LCS 880-4331/2-A	Lab Control Sample	111	89
LCSD 880-4331/3-A	Lab Control Sample Dup	94	76
MB 880-4331/1-A	Method Blank	97	84

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Lighthouse Environmental Services, Inc
Project/Site: Carlsbad West 12" Launcher

Job ID: 880-3213-1
SDG: 2229-5507

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-4322/5-A
Matrix: Solid
Analysis Batch: 4330

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 4322

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		06/18/21 14:55	06/18/21 20:19	1
Toluene	<0.00200	U	0.00200		mg/Kg		06/18/21 14:55	06/18/21 20:19	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		06/18/21 14:55	06/18/21 20:19	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		06/18/21 14:55	06/18/21 20:19	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		06/18/21 14:55	06/18/21 20:19	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		06/18/21 14:55	06/18/21 20:19	1
Total BTEX	<0.00400	U	0.00400		mg/Kg		06/18/21 14:55	06/18/21 20:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*	*06/18/21 14:55*	*06/18/21 20:19*	*1*
1,4-Difluorobenzene (Surr)	*75*		*70 - 130*	*06/18/21 14:55*	*06/18/21 20:19*	*1*

Lab Sample ID: LCS 880-4322/1-A
Matrix: Solid
Analysis Batch: 4330

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 4322

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			0.100	0.09567		mg/Kg		96	70 - 130		
Toluene			0.100	0.09157		mg/Kg		92	70 - 130		
Ethylbenzene			0.100	0.09769		mg/Kg		98	70 - 130		
m-Xylene & p-Xylene			0.200	0.1786		mg/Kg		89	70 - 130		
o-Xylene			0.100	0.09724		mg/Kg		97	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*83*		*70 - 130*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*

Lab Sample ID: LCSD 880-4322/2-A
Matrix: Solid
Analysis Batch: 4330

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 4322

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			0.100	0.1185		mg/Kg		118	70 - 130	21	35
Toluene			0.100	0.1233		mg/Kg		123	70 - 130	30	35
Ethylbenzene			0.100	0.1174		mg/Kg		117	70 - 130	18	35
m-Xylene & p-Xylene			0.200	0.2185		mg/Kg		109	70 - 130	20	35
o-Xylene			0.100	0.1222		mg/Kg		122	70 - 130	23	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*115*		*70 - 130*
1,4-Difluorobenzene (Surr)	*118*		*70 - 130*

Lab Sample ID: 880-3187-A-1-A MS
Matrix: Solid
Analysis Batch: 4330

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 4322

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene	<0.00227	U F1	0.100	0.04268	F1	mg/Kg		42	70 - 130		

QC Sample Results

Client: Lighthouse Environmental Services, Inc
Project/Site: Carlsbad West 12" Launcher

Job ID: 880-3213-1
SDG: 2229-5507

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

Lab Sample ID: 880-3187-A-1-A MS
Matrix: Solid
Analysis Batch: 4330

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 4322

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Toluene	<0.00227	U F1	0.100	0.05366	F1	mg/Kg		53	70 - 130
Ethylbenzene	<0.00227	U F1	0.100	0.03897	F1	mg/Kg		39	70 - 130
m-Xylene & p-Xylene	<0.00453	U F1	0.201	0.08662	F1	mg/Kg		42	70 - 130
o-Xylene	<0.00227	U F1	0.100	0.04318	F1	mg/Kg		43	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*86*		*70 - 130*
1,4-Difluorobenzene (Surr)	*72*		*70 - 130*

Lab Sample ID: 880-3187-A-1-B MSD
Matrix: Solid
Analysis Batch: 4330

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 4322

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	<0.00227	U F1	0.0994	0.05729	F1	mg/Kg		57	70 - 130	29	35
Toluene	<0.00227	U F1	0.0994	0.06624	F1	mg/Kg		67	70 - 130	21	35
Ethylbenzene	<0.00227	U F1	0.0994	0.05293	F1	mg/Kg		53	70 - 130	30	35
m-Xylene & p-Xylene	<0.00453	U F1	0.199	0.09271	F1	mg/Kg		46	70 - 130	7	35
o-Xylene	<0.00227	U F1	0.0994	0.05585	F1	mg/Kg		56	70 - 130	26	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*128*		*70 - 130*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*

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

Lab Sample ID: MB 880-4331/1-A
Matrix: Solid
Analysis Batch: 4362

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 4331

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		06/18/21 17:18	06/21/21 08:03	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		06/18/21 17:18	06/21/21 08:03	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		06/18/21 17:18	06/21/21 08:03	1
Total TPH	<50.0	U	50.0	mg/Kg		06/18/21 17:18	06/21/21 08:03	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*97*		*70 - 130*	*06/18/21 17:18*	*06/21/21 08:03*	*1*
o-Terphenyl	*84*		*70 - 130*	*06/18/21 17:18*	*06/21/21 08:03*	*1*

Lab Sample ID: LCS 880-4331/2-A
Matrix: Solid
Analysis Batch: 4362

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 4331

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1012		mg/Kg		101	70 - 130

QC Sample Results

Client: Lighthouse Environmental Services, Inc
Project/Site: Carlsbad West 12" Launcher

Job ID: 880-3213-1
SDG: 2229-5507

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

Lab Sample ID: LCS 880-4331/2-A
Matrix: Solid
Analysis Batch: 4362

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 4331

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Diesel Range Organics (Over C10-C28)			1000	1051		mg/Kg		105	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*111*		*70 - 130*
o-Terphenyl	*89*		*70 - 130*

Lab Sample ID: LCSD 880-4331/3-A
Matrix: Solid
Analysis Batch: 4362

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 4331

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	986.1		mg/Kg		99	70 - 130	3	20
Diesel Range Organics (Over C10-C28)			1000	898.4		mg/Kg		90	70 - 130	16	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*94*		*70 - 130*
o-Terphenyl	*76*		*70 - 130*

Lab Sample ID: 890-835-A-4-D MS
Matrix: Solid
Analysis Batch: 4362

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 4331

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics (GRO)-C6-C10	<49.7	U	999	795.1		mg/Kg		80	70 - 130		
Diesel Range Organics (Over C10-C28)	108		999	853.1		mg/Kg		75	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*84*		*70 - 130*
o-Terphenyl	*70*		*70 - 130*

Lab Sample ID: 890-835-A-4-E MSD
Matrix: Solid
Analysis Batch: 4362

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 4331

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	<49.7	U	997	736.9		mg/Kg		74	70 - 130	8	20
Diesel Range Organics (Over C10-C28)	108		997	828.9		mg/Kg		72	70 - 130	3	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*85*		*70 - 130*
o-Terphenyl	*68*	*S1-*	*70 - 130*

QC Sample Results

Client: Lighthouse Environmental Services, Inc
Project/Site: Carlsbad West 12" Launcher

Job ID: 880-3213-1
SDG: 2229-5507

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-4411/1-A
Matrix: Solid
Analysis Batch: 4444

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			06/21/21 20:05	1

Lab Sample ID: LCS 880-4411/2-A
Matrix: Solid
Analysis Batch: 4444

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride			250	238.2		mg/Kg		95	90 - 110		

Lab Sample ID: LCSD 880-4411/3-A
Matrix: Solid
Analysis Batch: 4444

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	237.9		mg/Kg		95	90 - 110	0	20

Lab Sample ID: 880-3210-A-1-B MS
Matrix: Solid
Analysis Batch: 4444

Client Sample ID: Matrix Spike
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	598		1260	1810		mg/Kg		96	90 - 110		

Lab Sample ID: 880-3210-A-1-C MSD
Matrix: Solid
Analysis Batch: 4444

Client Sample ID: Matrix Spike Duplicate
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	598		1260	1812		mg/Kg		97	90 - 110	0	20

QC Association Summary

Client: Lighthouse Environmental Services, Inc
Project/Site: Carlsbad West 12" Launcher

Job ID: 880-3213-1
SDG: 2229-5507

GC VOA

Prep Batch: 4322

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-3213-1	BH-2 RE	Total/NA	Solid	5035	
880-3213-2	BH-4 RE	Total/NA	Solid	5035	
MB 880-4322/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-4322/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-4322/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-3187-A-1-A MS	Matrix Spike	Total/NA	Solid	5035	
880-3187-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 4330

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-3213-1	BH-2 RE	Total/NA	Solid	8021B	4322
880-3213-2	BH-4 RE	Total/NA	Solid	8021B	4322
MB 880-4322/5-A	Method Blank	Total/NA	Solid	8021B	4322
LCS 880-4322/1-A	Lab Control Sample	Total/NA	Solid	8021B	4322
LCSD 880-4322/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	4322
880-3187-A-1-A MS	Matrix Spike	Total/NA	Solid	8021B	4322
880-3187-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	4322

GC Semi VOA

Prep Batch: 4331

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-3213-1	BH-2 RE	Total/NA	Solid	8015NM Prep	
880-3213-2	BH-4 RE	Total/NA	Solid	8015NM Prep	
MB 880-4331/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-4331/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-4331/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-835-A-4-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-835-A-4-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 4362

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-4331/1-A	Method Blank	Total/NA	Solid	8015B NM	4331
LCS 880-4331/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	4331
LCSD 880-4331/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	4331
890-835-A-4-D MS	Matrix Spike	Total/NA	Solid	8015B NM	4331
890-835-A-4-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	4331

Analysis Batch: 4364

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-3213-1	BH-2 RE	Total/NA	Solid	8015B NM	4331
880-3213-2	BH-4 RE	Total/NA	Solid	8015B NM	4331

HPLC/IC

Leach Batch: 4411

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-3213-1	BH-2 RE	Soluble	Solid	DI Leach	
880-3213-2	BH-4 RE	Soluble	Solid	DI Leach	
MB 880-4411/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-4411/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-4411/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

QC Association Summary

Client: Lighthouse Environmental Services, Inc
Project/Site: Carlsbad West 12" Launcher

Job ID: 880-3213-1
SDG: 2229-5507

HPLC/IC (Continued)

Leach Batch: 4411 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-3210-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-3210-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 4444

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-3213-1	BH-2 RE	Soluble	Solid	300.0	4411
880-3213-2	BH-4 RE	Soluble	Solid	300.0	4411
MB 880-4411/1-A	Method Blank	Soluble	Solid	300.0	4411
LCS 880-4411/2-A	Lab Control Sample	Soluble	Solid	300.0	4411
LCSD 880-4411/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	4411
880-3210-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	4411
880-3210-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	4411

Lab Chronicle

Client: Lighthouse Environmental Services, Inc
Project/Site: Carlsbad West 12" Launcher

Job ID: 880-3213-1
SDG: 2229-5507

Client Sample ID: BH-2 RE
Date Collected: 06/14/21 13:30
Date Received: 06/18/21 15:51

Lab Sample ID: 880-3213-1
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			5.05 g	5 mL	4322	06/18/21 16:30	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	4330	06/19/21 03:55	KL	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	4331	06/18/21 17:18	DM	XEN MID
Total/NA	Analysis	8015B NM		1			4364	06/21/21 08:03	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	4411	06/21/21 12:18	SC	XEN MID
Soluble	Analysis	300.0		1			4444	06/21/21 20:55	CH	XEN MID

Client Sample ID: BH-4 RE
Date Collected: 06/14/21 13:35
Date Received: 06/18/21 15:51

Lab Sample ID: 880-3213-2
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			5.00 g	5 mL	4322	06/18/21 16:30	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	4330	06/19/21 04:16	KL	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	4331	06/18/21 17:18	DM	XEN MID
Total/NA	Analysis	8015B NM		1			4364	06/21/21 08:24	AJ	XEN MID
Soluble	Leach	DI Leach			4.98 g	50 mL	4411	06/21/21 12:18	SC	XEN MID
Soluble	Analysis	300.0		1			4444	06/21/21 21:12	CH	XEN MID

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

Accreditation/Certification Summary

Client: Lighthouse Environmental Services, Inc
Job ID: 880-3213-1
Project/Site: Carlsbad West 12" Launcher
SDG: 2229-5507

Laboratory: Eurofins Xenco, Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-20-21	06-30-21

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
8015B NM	8015NM Prep	Solid	Total TPH
8021B	5035	Solid	Total BTEX

Method Summary

Client: Lighthouse Environmental Services, Inc
Project/Site: Carlsbad West 12" Launcher

Job ID: 880-3213-1
SDG: 2229-5507

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (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.

Laboratory References:

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

Sample Summary

Client: Lighthouse Environmental Services, Inc
Project/Site: Carlsbad West 12" Launcher

Job ID: 880-3213-1
SDG: 2229-5507

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
880-3213-1	BH-2 RE	Solid	06/14/21 13:30	06/18/21 15:51	
880-3213-2	BH-4 RE	Solid	06/14/21 13:35	06/18/21 15:51	

eurofins

Environment Testing Xenco

Chain of Custody

Houston, TX (281) 240-4200, Dallas TX (214) 9(
Midland, TX (432) 704-5440, San Antonio, TX (210)
EL Paso, TX (915) 585-3443, Lubbock, TX (806) 7
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 98

880-3213 Chain of Custody

880-3213

6/22/2021

www.xenco.com Page 1 of 1

Project Manager:	Simon Hudgens	Bill to. (if different)	Attn Sandy Roberts
Company Name:	Lighthouse Environmental Services, Inc.	Company Name:	Lighthouse Environmental Services, Inc.
Address.	4904 Fuqua Street	Address.	P O Box 84152
City, State ZIP	Houston, TX 77048	City, State ZIP	Pearland, TX 77584
Phone:	713-987-0400 Email.	shudgens@lighthouseenv.com; ap@lighthouseenv.com; tsawyer@lighthouseenv.com	

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project: NM
Reporting Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables. EDD ☐ ADaPT ☐ Other:

Project Name:	Carlsbad West 12" Launcher	Turn Around	
Project Number:	2229-5507	☐ Routine ☑ Rush 3 day	
Project Location	32.281529, -104 287475	Due Date.	
Sampler's Name:	Trey Sawyer	TAT starts the day received by the lab, if received by 4:30pm	
PO #:	2229-5507		

SAMPLE RECEIPT				
Temp Blank.	Yes (No)	Wet Ice.	(Yes) No	
Samples Received Intact:	(Yes) No	Thermometer ID:	IR8	
Cooler Custody Seals.	Yes No (N/A)	Correction Factor:	+0.5	
Sample Custody Seals.	Yes No N/A	Temperature Reading	3.5	
Total Containers:	2	Corrected Temperature.	4.0	

Preservative Codes

None: NO DI Water: H_2O
Cool. Cool MeOH Me
HCL. HC HNO_3. HN
H_2S0_4. H_2 NaOH Na
H_3PO_4 HP
$NaHSO_4$. NABIS
$Na_2S_2O_3$. $NaSO_3$
Zn Acetate+NaOH Zn
NaOH+Ascorbic Acid SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	TPH TX-1005, Extended Ranges	TCLP BTEX	TCLP RCRA 8 Metals	Total Sulfur	BTEX 8021B	RCI	pH	TPH 8015 GRO, DRO, MRO	Chloride EPA 300.0	Sample Comments
BH-2 RE	Soil	6 14.21	1330	12-15"	Grab	1						X			X	X	
BH-4 RE	Soil	6 14.21	1335	12-15"	Grab	1						X			X	X	

ANALYSIS REQUEST

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 SiO_2 Na Sr Tl 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 Tl U Hg 1631 / 245 1 / 7470 / 7471

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		6/18/21 1551	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Lighthouse Environmental Services, Inc

Job Number: 880-3213-1
SDG Number: 2229-5507

Login Number: 3213
List Number: 1
Creator: Phillips, Kerianna

List Source: Eurofins Xenco, Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
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").	N/A	

ENSOLUM

APPENDIX F

C-141 Documentation

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

State of New Mexico
Energy Minerals and Natural Resources 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	NAPP2117254270
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: Oryx Delaware Oil Transport LLC	OGRID: 329971
Contact Name: Garrett Huitt	Contact Telephone: 432-254-2238
Contact email: garrett@oryxmidstream.com	Incident # NAPP2117254270
Contact mailing address: 4000. N Big Spring Street, Suite 500| Midland, TX 79705	

Location of Release Source

Latitude 32.281529 Longitude -104.287475
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Carlsbad West 12" Launcher	Site Type: Oil and Gas Storage/Transport Facility
Date Release Discovered: 5/27/21	API# *(if applicable)*

Unit Letter	Section	Township	Range	County
D	S27	T23S	R26E	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)

☒ Crude Oil	Volume Released (bbls): <5	Volume Recovered (bbls): 0
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release: Fire causing a release of less than 5 barrels of crude oil from a transport truck.

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2117254270
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? Fire causing a release of less than 5 barrels of crude oil from a transport truck.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Yes, notice was given immediately by Mr. Garrett Huitt on 5/27/21 to Brandon Powell, Mike Bratcher, Tiffany Polak, Gabriel Wade, Emily Hernandez, and Adrienne Sandoval by email.	

Initial Response

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

☒ The source of the release has been stopped.

☒ The impacted area has been secured to protect human health and the environment.

☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.

☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not 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: Garrett Huitt

Title: Regulatory Compliance Manager

Signature: _____

Date: 7/7/21

email: garrett@oryxmidstream.com

Telephone: 432-254-2238

OCD Only

Received by: _____

Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2117254270
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	92 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

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

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

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

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

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2117254270
District RP	
Facility ID	
Application ID	

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

Printed Name: Garrett Huitt

Title: Regulatory Compliance Manager

Signature: 

Date: 7/7/21

email: garrett@oryxmidstream.com

Telephone: 432-254-2238

OCD Only

Received by: _____

Date: _____

Form C-141
Page 5

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2117254270
District RP	
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be included in the plan.***

- ☐ Detailed description of proposed remediation technique
- ☐ Scaled sitemap with GPS coordinates showing delineation points
- ☐ Estimated volume of material to be remediated
- ☐ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☐ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

- ☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☐ Extents of contamination must be fully delineated.
- ☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2117254270
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: Garrett Huitt

Title: Regulatory Compliance Manager

Signature: 

Date: 7/7/21

email: garrett@oryxmidstream.com

Telephone: 432-254-2238

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2117254270
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.

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Printed Name: Garrett Huitt
Title: Regulatory Compliance Manager

Signature: 
Date: 7/7/21

email: garrett@oryxmidstream.com
Telephone: 432-254-2238

OCD Only

Received by: Robert Hamlet
Date: 9/24/2021

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: Robert Hamlet
Date: 9/24/2021

Printed Name: Robert Hamlet
Title: Environmental Specialist - Advanced

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 35488

CONDITIONS

Operator: Oryx Delaware Oil Transport LLC 4000 N. Big Spring Street Midland, TX 79705	OGRID: 329971
	Action Number: 35488
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
rhamlet	We have received your closure report and final C-141 for Incident #NAPP2117254270 CARLSBAD WEST 12" LAUNCHER, thank you. This closure is approved.	9/24/2021