Raybaw Operating, LLC.
2626 Cole Ave., Suite 300
Dallas, TX 75204
214-800-2301

May 18, 2023

RE: Site Assessment, Remediation, and Closure Report
Cannonball #001H
API No. 30-01538569
GPS: Latitude 32.734333 Longitude -104.3966675
UL "H", Section 20, Township 18S, Range 26E,
Eddy County, NM
NMOCD Reference No. nAB1819057637

Raybaw Operating, LLC (Raybaw) has contracted Pima Environmental Services, LLC (Pima) to perform a site assessment, remediation, and prepare this closure report for a crude oil release that happened at the Cannonball #001H (Cannonball). An initial C-141 was submitted on June 29, 2018, and can be found in Appendix C. This incident was assigned Incident ID NAB1819057637, by the New Mexico Oil Conservation Division (NMOCD).

Site Information and Site Characterization

The Cannonball is located approximately seven (7) miles south of Artesia, NM. This spill site is in Unit H, Section 20, Township 18S, Range 26E, Latitude 32.734333 Longitude -104.3966675, Eddy County, NM. A Location Map can be found in Figure 1.

Per the New Mexico Bureau of Geology and Mineral Resources, the geology is Piedmont alluvial deposits. Includes deposits of higher gradient tributaries bordering major stream valleys, alluvial veneers of the piedmont slope, and alluvial fans. May locally include uppermost Pliocene deposits. The soil in this area is made up of Reagan loam, 1 to 3 percent slopes according to the United States Department of Agriculture Natural Resources Conservation Service soil survey (Appendix B). The drainage courses in this area are well drained. There is a low potential for karst geology to be present around the Cannonball (Figure 3).

According to the New Mexico Office of the State Engineer, depth to the nearest groundwater in this area is 166 feet below grade surface (BGS). According to the United States Geological Survey well water data, depth to the nearest groundwater in this area is 52 feet BGS. See Appendix A for referenced water surveys.

Table 1 NMAC and Closure Criteria 19.15.29					
Depth to Groundwater (Appendix A)	Constituent & Limits				
	Chlorides	Total TPH	GRO+DRO	BTEX	Benzene
<50'	600 mg/kg	100 mg/kg		50 mg/kg	10 mg/kg
51-100'	10,000 mg/kg	2,500 mg/kg	1,000 mg/kg	50 mg/kg	10 mg/kg
>100'	20,000 mg/kg	2,500 mg/kg	1,000 mg/kg	50 mg/kg	10 mg/kg

Reference Figure 2 for a Topographic Map.

Release Information

nAB1819057637: On June 12, 2018, following removal of an oil tank from the battery, light staining on rock and the liner was observed. Staining also breached the liner. The affected area is confined in containment within the footprint of the tank; however, the liner was breached. The release is currently being assessed by SMA and pending lab analysis results to develop a work plan for delineation. An unknown amount of crude oil was released onto the pad and no fluids were recovered.

Site Assessment & Remediation Activities

On June 26, 2018, SMA performed an initial site assessment for Marathon Oil Company who was the operator at that time.

On July 17, 2018, SMA oversaw excavation activities at the site. Approximately 30 cubic yards of contaminated soil were removed and hauled to an approved, lined disposal facility. A closure report was drafted and submitted to the NMOCD.

On March 31, 2023, the submitted closure report was denied by the NMOCD citing:

Closure is not approved. Please continue to horizontally delineate in the top 4' to the closure criteria for depth to ground water <50 in Table I of 19.15.29.12 NMAC and soils below 4' to the closure criteria for depth to ground water >100'. Sample point SW3 exceeds all limits for DRO and Total TPH. Please include sample points in your next report after closure criteria limits have been met. Please revise your closure report and resubmit it by 06/29/2023.

The rejected closure report can be found in Appendix F.

On April 12, 2023, Pima personnel mobilized personnel and equipment to the site to excavate the areas surrounding sample points SW2 and SW3 to a depth 1' bgs. We then took 5-point composite samples of the base and sidewalls of each excavated area. The results of this sampling event can be found in the following data table. Approximately 8 cubic yards of contaminated soil was hauled to an approved, lined disposal facility and clean like material was hauled in for backfill. A New Site Map can be found in Figure 4. Photographic Documentation can be found in Appendix D. An Excavation Map can be found in Figure 5.

4/12/2023 Soil Sample Results

NMOCD Table 1 Closure Criteria 19.15.29 NMAC (Depth to Groundwater is >100')								
Raybaw Operating - CANNONBALL 1H								
Date: 4/12/2023		NM Approved Laboratory Results						
Sample ID	Depth (BGS)	BTEX mg/kg	Benzene mg/kg	GRO mg/kg	DRO mg/kg	MRO mg/kg	Total TPH mg/kg	Cl mg/kg
SW 2-COMP	1'	ND	ND	ND	ND	ND	ND	48.7
SW 3-COMP	1'	ND	ND	ND	ND	ND	ND	50.1

ND – Non Detect

Complete laboratory reports can be found in Appendix E.

Closure Request

After careful review, the collected samples are below the closure criteria according to Table 1 of NMAC 19.15.29. On behalf of Raybaw, Pima requests that this incident, NAB1819057637 be closed. Raybaw has complied with the applicable closure requirements.

Should you have any questions or need additional information, please feel free to contact:
Raybaw Operating – Nancy Winn at 281-793-5452 or nwinn@sbcglobal.net.
Pima Environmental – Tom Bynum at 580-748-1613 or tom@pimaoil.com.

Attachments

Figures:
1- Location Map
2- Topographic Map
3- Karst Map
4- New Site Map
5- Excavation Map

Appendices:
Appendix A – Referenced Water Surveys
Appendix B – Soil Survey and Geological Data
Appendix C – C-141 Form
Appendix D – Photographic Documentation
Appendix E – Laboratory Reports
Appendix F – NMOCD-rejected Closure Report

Pima Environmental Services

Figures:

1 - Location Map

2 - Topographic Map

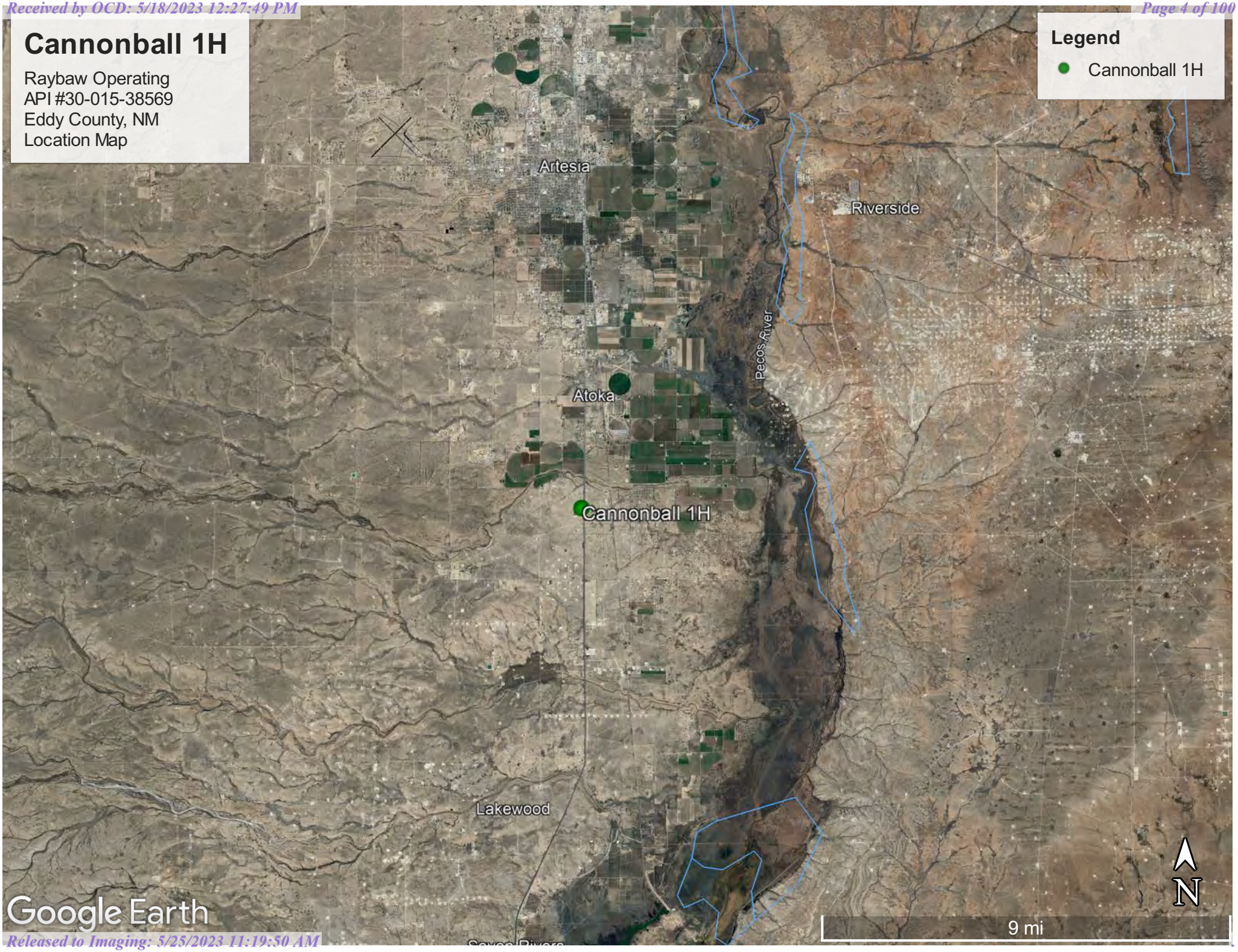
3 - Karst Map

4 - New Site Map

5 - Excavation Map

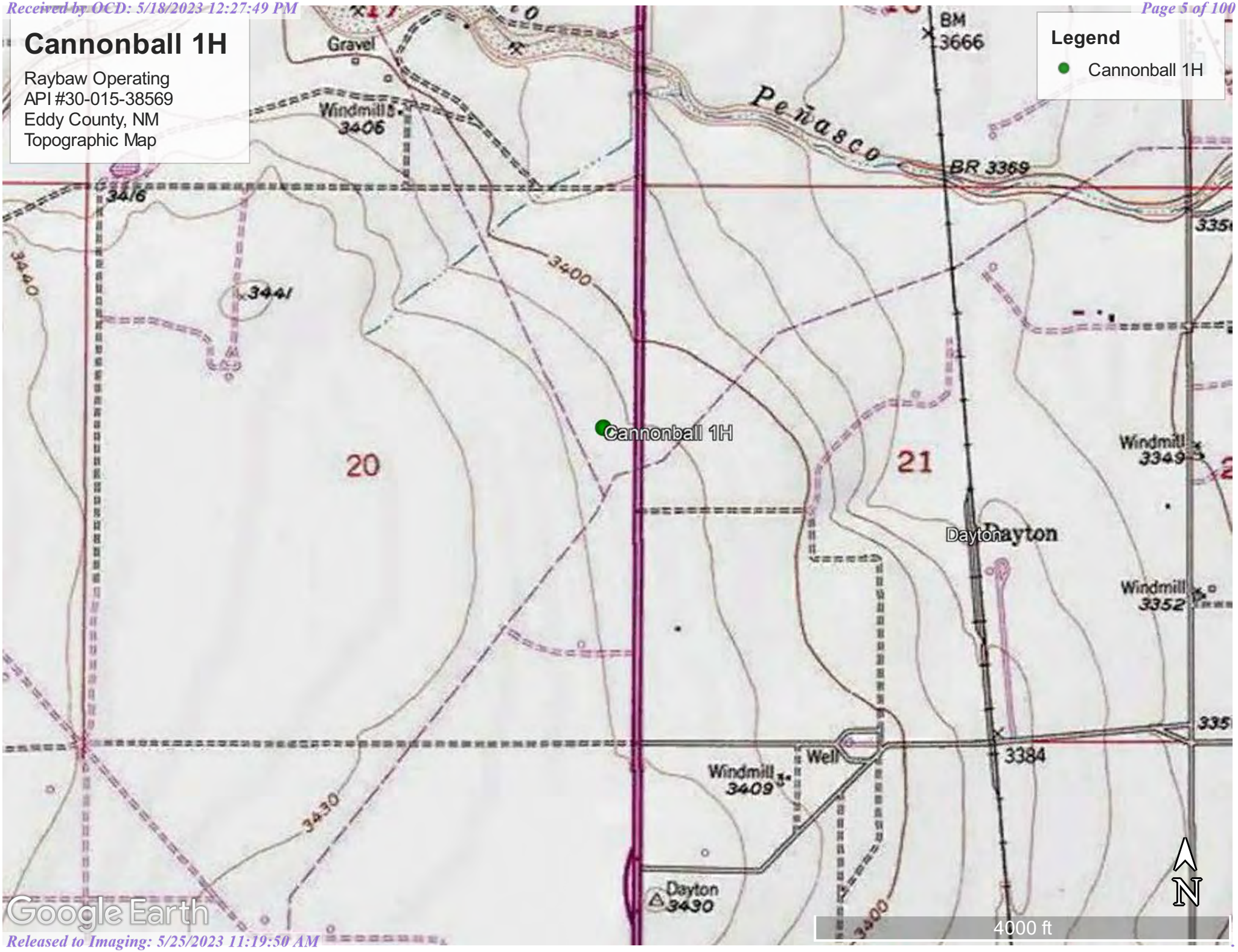
Cannonball 1H

Raybaw Operating
API #30-015-38569
Eddy County, NM
Location Map



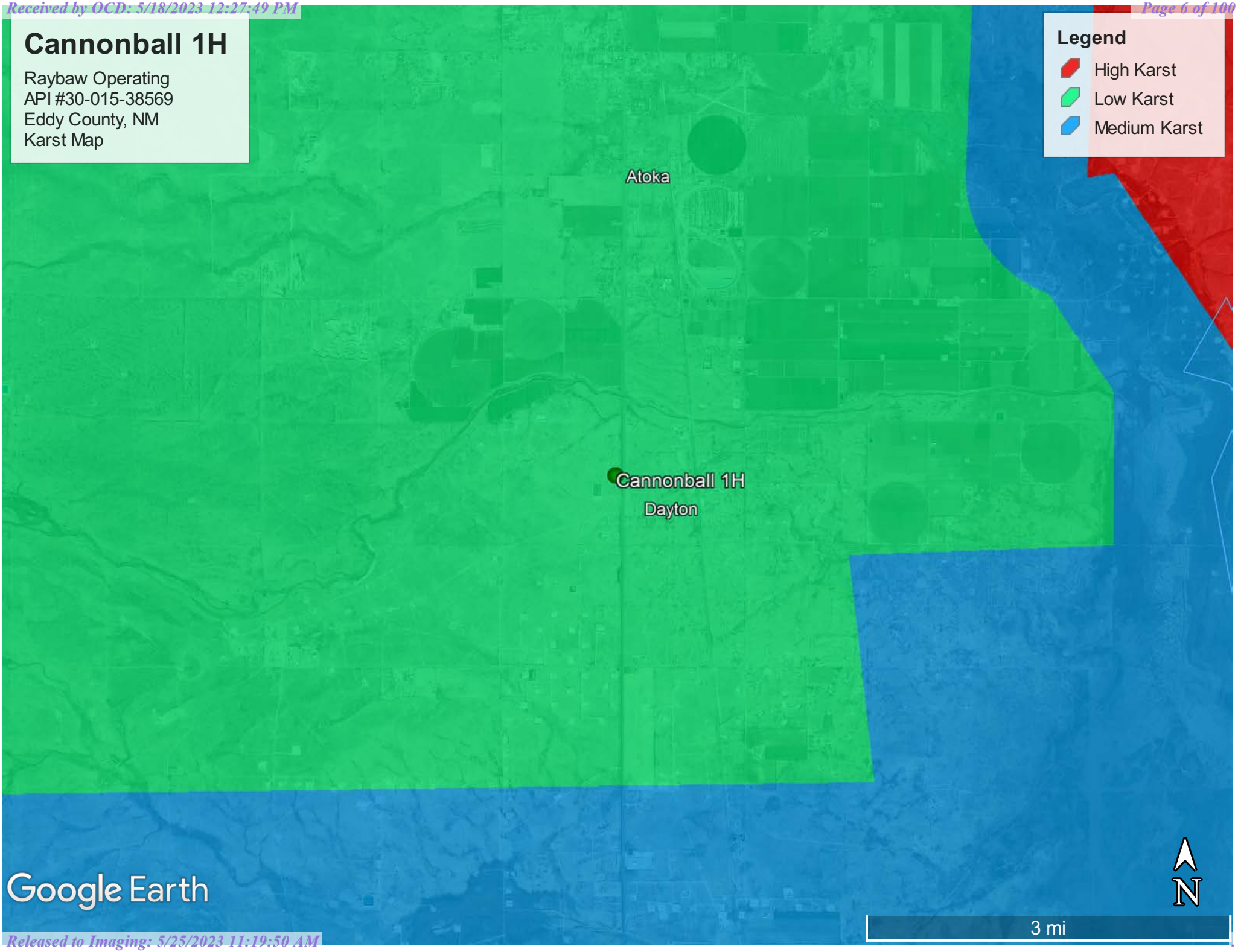
Cannonball 1H

Raybaw Operating
API #30-015-38569
Eddy County, NM
Topographic Map



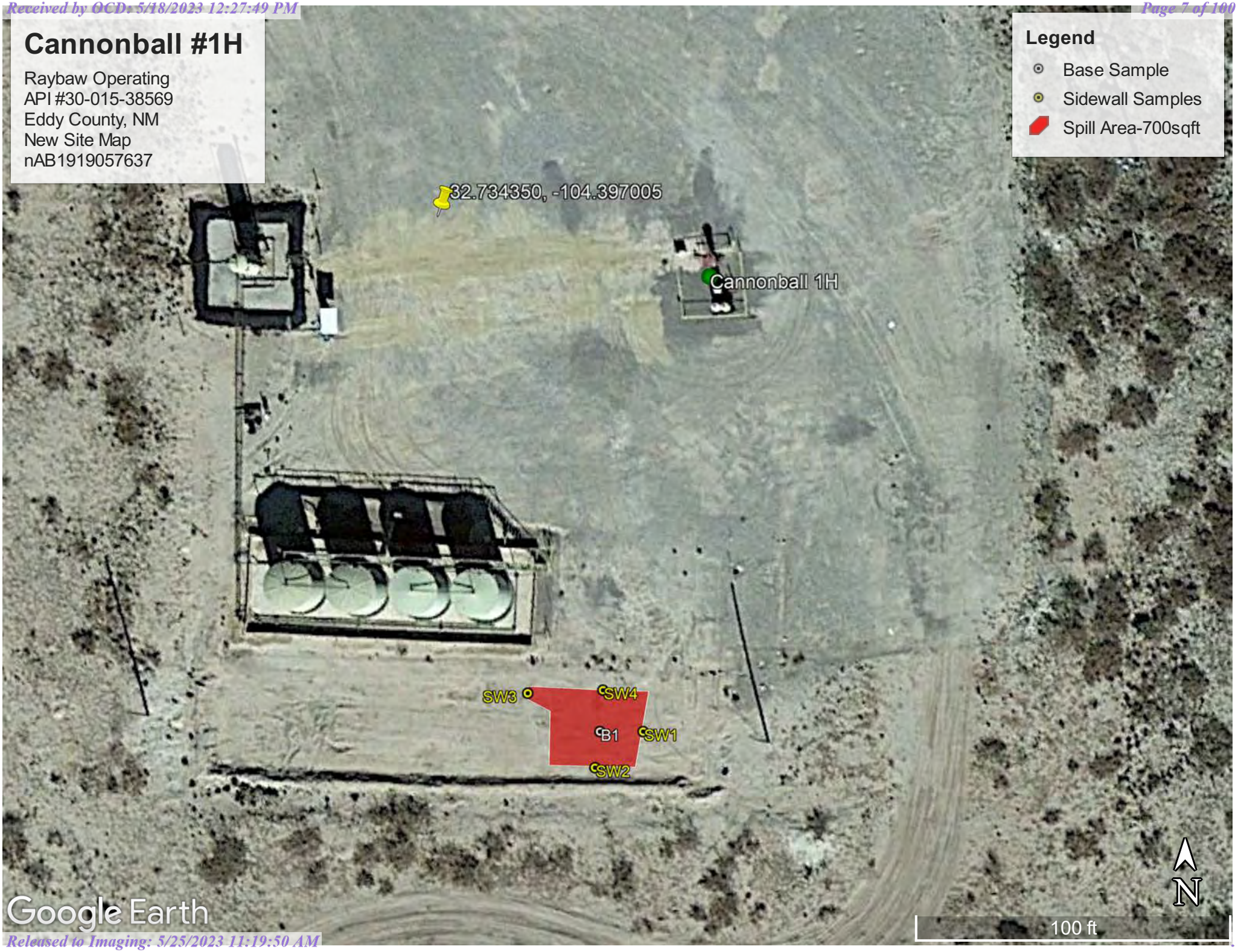
Cannonball 1H

Raybaw Operating
API #30-015-38569
Eddy County, NM
Karst Map



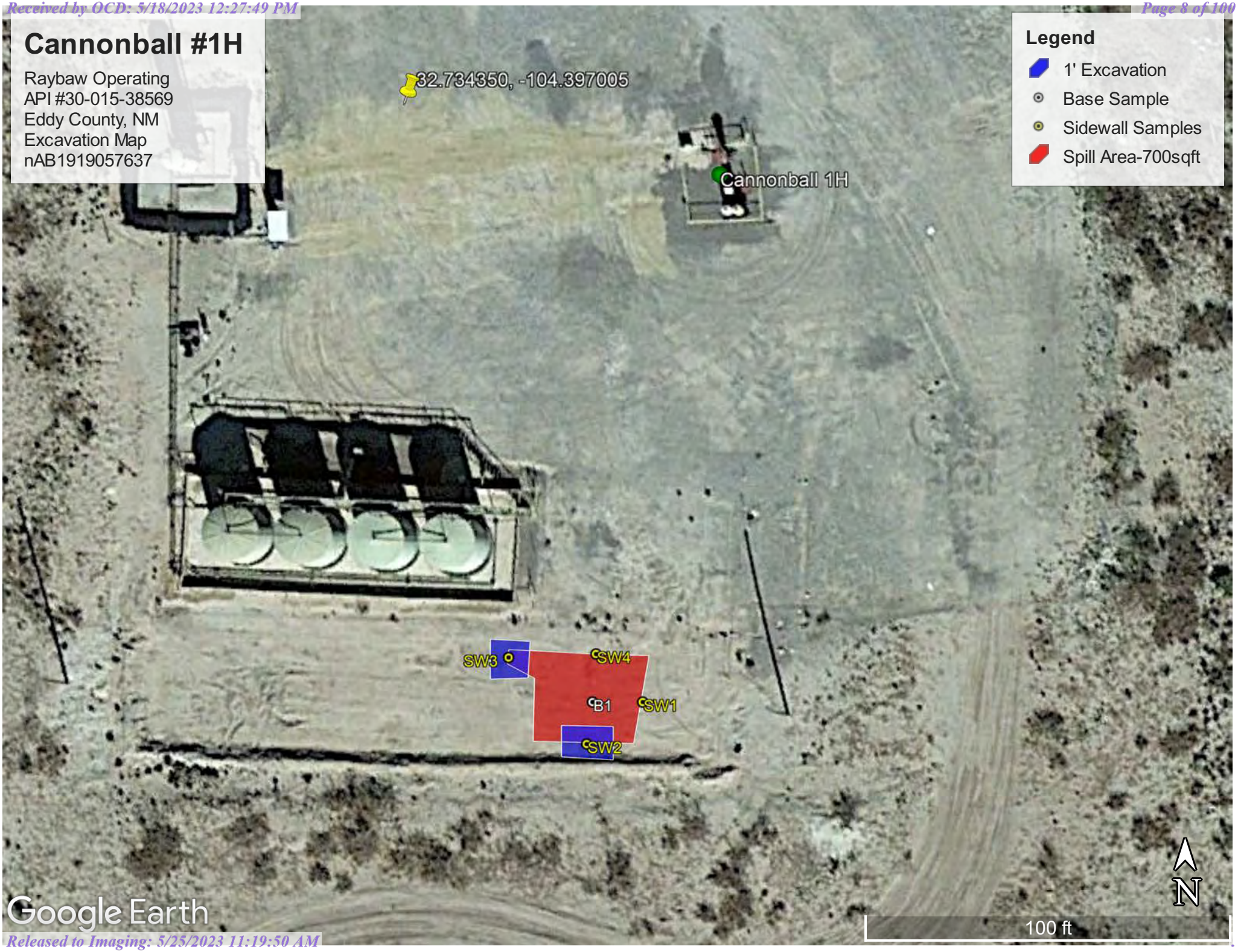
Cannonball #1H

Raybaw Operating
API #30-015-38569
Eddy County, NM
New Site Map
nAB1919057637



Cannonball #1H

Raybaw Operating
API #30-015-38569
Eddy County, NM
Excavation Map
nAB1919057637



Pima Environmental Services

Appendix A

Water Surveys:

OSE

USGS

Surface Water Map

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

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

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

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Twn	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
RA 01884		RA	ED	1	1	3	21	18S	26E	556741	3621792*	317	127		
RA 03618		RA	ED		3	2	20	18S	26E	556037	3622093*	471	1838		
RA 13107 POD1		RA	ED	4	2	4	20	18S	26E	556595	3621516	490	185	166	19
RA 11480 POD1		RA	ED	2	1	3	21	18S	26E	556958	3621808	496	199	175	24
RA 12706 POD1		RA	ED	4	1	3	21	18S	26E	556871	3621549	582	210	140	70
RA 12897 POD1		RA	ED	1	4	1	21	18S	26E	557046	3622199	583	180	120	60
RA 04309		RA	ED			1	21	18S	26E	557041	3622297*	619	180		
RA 08976		RA	ED	2	3	3	21	18S	26E	556943	3621389*	753	225	120	105
RA 06029		RA	ED		3	3	21	18S	26E	556844	3621290*	787	183	140	43
RA 06102		RA	ED				21	18S	26E	557447	3621893*	953	202	136	66
RA 04283		RA	LE	1	4	3	20	18S	26E	555538	3621384*	1140	158	125	33
RA 02786		RA	CH	1	2	1	28	18S	26E	557148	3620987*	1201	250	60	190
RA 09763		RA	ED	4	1	4	21	18S	26E	557748	3621592*	1313	240	140	100
RA 03181		RA	ED	4	2	3	17	18S	26E	555726	3623199*	1428	200		
RA 06828		RA	CH			4	21	18S	26E	557851	3621491*	1444	130	105	25
RA 05241		RA	ED		3	4	16	18S	26E	557644	3622903*	1459	200	100	100
RA 04287		RA	ED	1	2	4	21	18S	26E	557951	3621792*	1466	170	140	30

Average Depth to Water: **128 feet**
Minimum Depth: **60 feet**
Maximum Depth: **175 feet**

Record Count: 17

UTMNAD83 Radius Search (in meters):

Easting (X): 556498.79 **Northing (Y):** 3621997.75 **Radius:** 1500

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

New Mexico Office of the State Engineer
Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

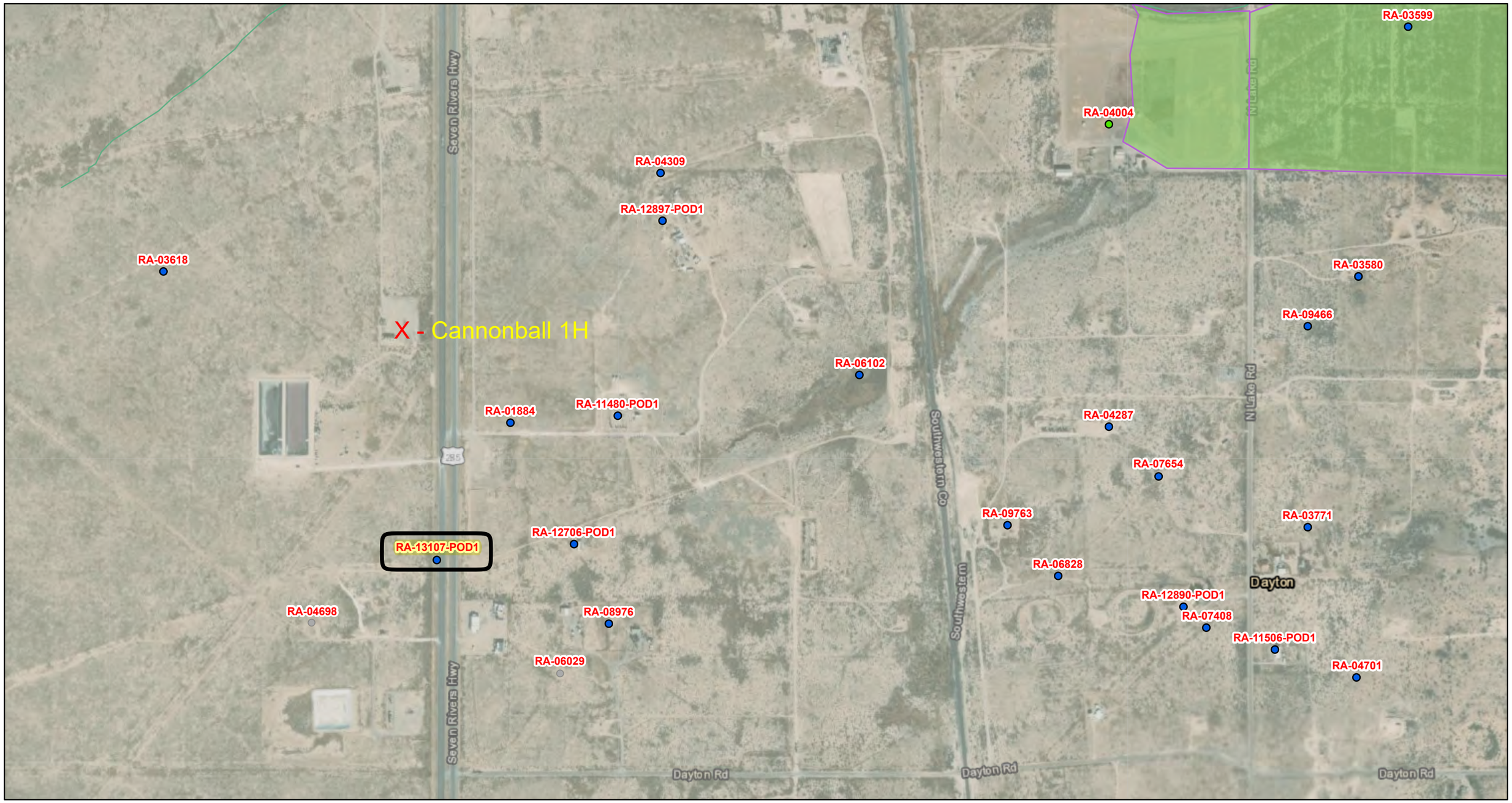
Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
NA	RA 13107 POD1	4	2	4	20	18S	26E	556595	3621516

Driller License:	1706	**Driller Company:**	ELITE DRILLERS CORPORATION		
Driller Name:	WALLACE, BRYCE J.LEE.NER				
Drill Start Date:	11/03/2021	**Drill Finish Date:**	11/05/2021	**Plug Date:**	
Log File Date:	11/22/2021	**PCW Rcv Date:**		**Source:**	Shallow
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	10 GPM
Casing Size:	4.00	**Depth Well:**	185 feet	**Depth Water:**	166 feet

Water Bearing Stratifications:	Top	Bottom	Description
	65	185	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	165	185

OSE POD Locations Map



4/23/2023, 10:21:24 AM

GIS WATERS PODs
- Active
- Pending

OSE District Boundary

Water Right Regulations
- Negative Easement Area
- Closure Area

NHD Flowlines
- Stream River

SiteBoundaries

1:9,028

0 0.07 0.15 0.3 mi

0 0.15 0.3 0.6 km

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

Web Generated Map
Map is generated by web users.

National Water Information System: Web Interface

USGS Water Resources

Data Category: Groundwater | Geographic Area: United States | GO

Click to hideNews Bulletins

- Explore the *NEW* USGS National Water Dashboard interactive map to access real-time water data from over 13,500 stations nationwide.
- Full News

Groundwater levels for the Nation

Important: Next Generation Monitoring Location Page

Search Results -- 1 sites found

site_no list =

- 324406104233701

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

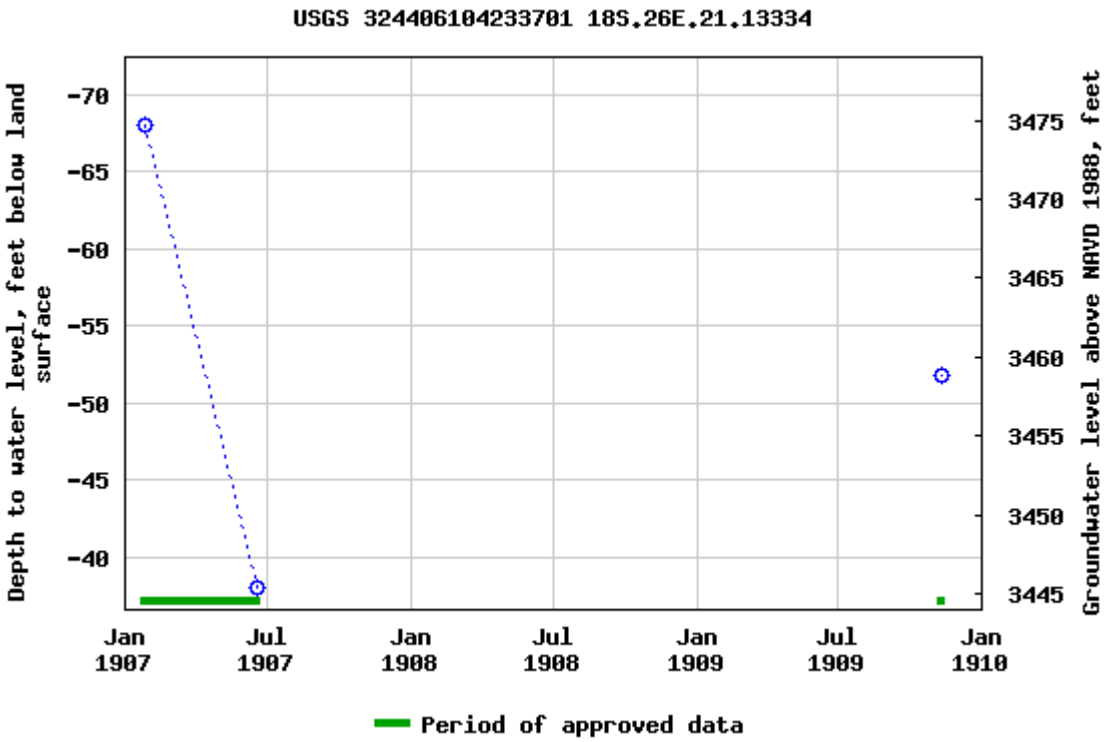
USGS 324406104233701 18S.26E.21.13334

Available data for this site | Groundwater: Field measurements | GO

Eddy County, New Mexico
Hydrologic Unit Code 13060010
Latitude 32°44'06", Longitude 104°23'37" NAD27
Land-surface elevation 3,407 feet above NAVD88
The depth of the well is 780 feet below land surface.
This well is completed in the Roswell Basin aquifer system (S400RSWLBS) national aquifer.
This well is completed in the Grayburg Formation of Artesia Group (313GRBG) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period



Breaks in the plot represent a gap of at least one year between field measurements.
Download a presentation-quality graph

Questions about sites/data?
Feedback on this web site
Automated retrievals
Help
Data Tips
Explanation of terms
Subscribe for system changes
News

Title: Groundwater for USA: Water Levels
URL: https://nwis.waterdata.usgs.gov/nwis/gwlevels?

Page Contact Information: USGS Water Data Support Team
Page Last Modified: 2023-04-23 12:13:12 EDT
0.58 0.51 nadww02

Cannonball 1H

Raybaw Operating
API #30-015-38569
Eddy County, NM
Surface Water Map

Pima Environmental Services

Appendix B

Soil Survey & Geological Data

FEMA Flood Map

Wetlands Map

Eddy Area, New Mexico

Rd—Reagan loam, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 1w5m
Elevation: 1,100 to 4,400 feet
Mean annual precipitation: 7 to 15 inches
Mean annual air temperature: 60 to 70 degrees F
Frost-free period: 200 to 240 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Reagan and similar soils: 98 percent
Minor components: 2 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Reagan

Setting

Landform: Fan remnants, alluvial fans
Landform position (three-dimensional): Rise
Down-slope shape: Convex, linear
Across-slope shape: Linear
Parent material: Alluvium and/or eolian deposits

Typical profile

H1 - 0 to 8 inches: loam
H2 - 8 to 82 inches: loam

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Maximum salinity: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Moderate (about 8.2 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B

Ecological site: R070BC007NM - Loamy
Hydric soil rating: No

Minor Components

Upton
Percent of map unit: 1 percent
Ecological site: R070BC025NM - Shallow
Hydric soil rating: No

Reagan
Percent of map unit: 1 percent
Ecological site: R070BC007NM - Loamy
Hydric soil rating: No

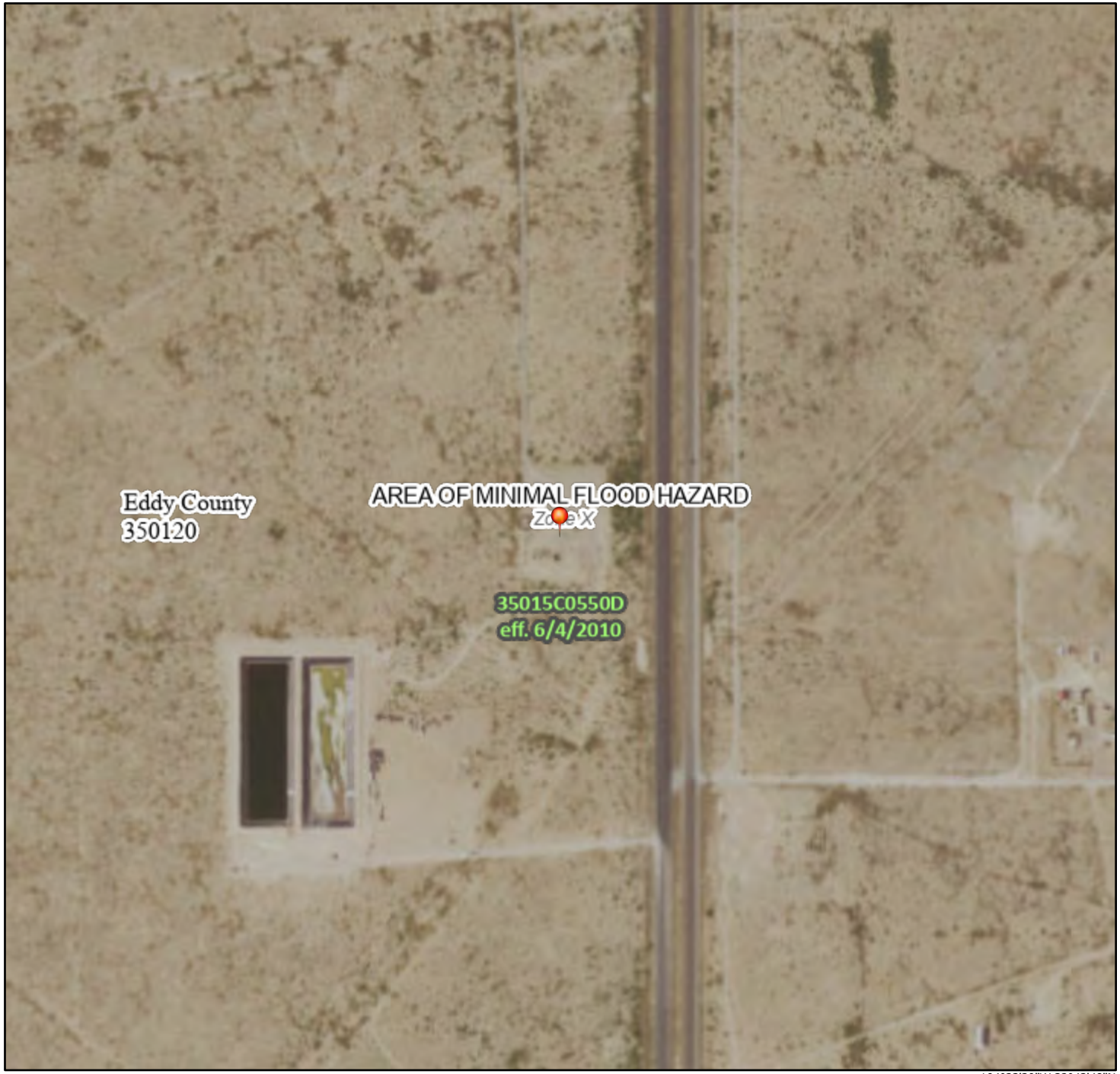
Data Source Information

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 18, Sep 8, 2022

National Flood Hazard Layer FIRMette

FEMA

104°24'7"W 32°44'18"N



104°23'30"W 32°43'48"N

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

1:6,000

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
- 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 4/23/2023 at 12:19 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

Wetlands Map

April 23, 2023

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

Pima Environmental Services

Appendix C

C-141 Form

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

State of New Mexico
Energy Minerals and Natural Resources

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

JUN 29 2018
DISTRICT II-ARTESIA O.C.D.

Form C-141
Revised April 3, 2017

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

Release Notification and Corrective Action

nAB1819057637 3/2/2018

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Marathon Oil Permian LLC	Contact Callie Karrigan
Address 5555 San Felipe Street, Houston, Texas 77056	Telephone No. 405-202-1028 (cell) 575-297-0956 (office)
Facility Name: Cannonball 1H	Facility Type Oil and gas production facilities

Surface: Owner: private	Mineral: Owner: private	API No. : 30-015-38569

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
H	20	18S	26E	1980	North	330	east	Eddy

Latitude 32.734131 **.Longitude** -104.396216

NATURE OF RELEASE

Type of Release: oil	Volume of Release: unknown	Volume Recovered: none
Source of Release: oil tank	Date and Hour of Occurrence unknown	Date and Hour of Discovery 06/12/2018
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Eddy County – Mike Bratcher	
By Whom? Callie Karrigan	Date and Hour 06/13/2018 3:50 pm 06/13/18	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*
Not applicable.

Describe Cause of Problem and Remedial Action Taken.*
Following removal of an oil tank from the battery, light staining on rock and the liner was observed. Staining also breached the liner.

Describe Area Affected and Cleanup Action Taken.*
The affected area is confined in containment within the foot print of the tank; however, the liner was breached. The release is currently being assessed by SMA and pending lab analysis results to develop a work plan for delineation.

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

Callie Karrigan Signature:	OIL CONSERVATION DIVISION Approved by Environmental Specialist: Signed By	
Printed Name: Callie Karrigan		
Title: HES Environmental Professional	Approval Date: 7/9/18	Expiration Date: N/A
E-mail Address: cnkarrigan@marathonoil.com	Conditions of Approval: See attached	Attached ☐ 2RP-4842
Date: 06/29/2018 Phone: 405-202-1028(cell) 575-297-0956 (office)		

* Attach Additional Sheets If Necessary

Form C-141
Page 3

State of New Mexico
Oil Conservation Division

Incident ID	nAB1819057637
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?	>100 (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 I of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	nAB1819057637
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: Nancy J. Winn Title: Geoscience Analyst

Signature: Nancy J. Winn Date: 5/18/2023

email: nwinn@sbcglobal.net Telephone: 281-793-5452

OCD Only

Received by: Jocelyn Harimon Date: 05/19/2023

Form C-141
Page 6

State of New Mexico
Oil Conservation Division

Incident ID	nAB1819057637
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: Nancy J. Winn Title: Geoscience Analyst

Signature: Nancy J. Winn Date: 5/18/2023

email: nwinn@sbcglobal.net Telephone: 281-793-5452

OCD Only

Received by: Jocelyn Harimon Date: 05/19/2023

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: Jocelyn Harimon Date: 05/25/2023

Printed Name: Jocelyn Harimon Title: Environmental Specialist

Pima Environmental Services

Appendix D

Photographic Documentation


32.73486405N 104.3972093W
Cannonball 1h
pre treatment
Dig and haul
Raybaw
RAYBAW
IN CASE OF EMERGENCY CALL (866) 506-9892
Property Name & Well Number:
CANNONBALL #1H
Location:
2310' FNL & 330' FEL of Unit Letter "H"
Section 20, T-18S, R-26E
API #: 30-015-38569
Eddy County, New Mexico
Emergency Contact: 1-866-662-2378
EMERGENCY NUMBER 1-866-662-2378
REQUIRED PPE
NO CELL PHONE USE OUTSIDE OF VEHICLES
NO SMOKING OR OPEN FLAMES
NO DRUGS OR ALCOHOL
AUTHORIZED PERSONNEL ONLY
HAVE A SAFE DAY
Marathon Oil


32.73405815N 104.39674932W
Cannonball 1h
pre treatment
Dig and haul
Raybaw


32.73397509N 104.39669587W
Cannonball 1h
pre treatment
Dig and haul
Raybaw
32.73387873N 104.3967994W
Cannonball 1h
pre treatment
Dig and haul
Raybaw
32.73397509N 104.39669587W
Cannonball 1h
Dig & Haul
Raybaw
32.73397509N 104.39669587W
Cannonball 1h
Dig & Haul
Raybaw
32.73397509N 104.39669587W
Cannonball 1h
Dig & Haul
Raybaw
32.73399615N 104.39672886W
Cannonball 1h
post treatment
Dig and haul
Raybaw


32.73391775N 104.39681783W
Cannonball 1h
post treatment
Dig and haul
Raybaw


32.73397229N 104.39692061W
Cannonball 1h
post treatment
Dig and haul
Raybaw


32.73405026N 104.3968005W
Cannonball 1h
post treatment
Dig and haul
Raybaw

Pima Environmental Services

Appendix E

Laboratory Reports

Report to:

Tom Bynum

5796 U.S. Hwy 64
Farmington, NM 87401

Phone: (505) 632-1881
Envirotech-inc.com

envirotech

Practical Solutions for a Better Tomorrow

Analytical Report

Pima Environmental Services-Carlsbad

Project Name:	Cannonball 1H
Work Order:	E304090
Job Number:	21064-0001
Received:	4/19/2023

Revision: 1

Report Reviewed By:

Walter Hinchman
Laboratory Director
4/25/23

Date Reported: 4/25/23

Tom Bynum
PO Box 247
Plains, TX 79355-0247

Project Name: Cannonball 1H
Workorder: E304090
Date Received: 4/19/2023 7:00:00AM

Tom Bynum,

Thank you for choosing Envirotech, Inc. as your analytical testing laboratory for the sample(s) received on, 4/19/2023 7:00:00AM, under the Project Name: Cannonball 1H.

The analytical test results summarized in this report with the Project Name: Cannonball 1H apply to the individual samples collected, identified and submitted bearing the project name on the enclosed chain-of-custody. Subcontracted sample analyses not conducted by Envirotech, Inc., are attached in full as issued by the subcontract laboratory.

Please review the Chain-of-Custody (COC) and Sample Receipt Checklist (SRC) for any issues reguarding sample receipt temperature, containers, preservation etc. To best understand your test results, review the entire report summarizing your sample data and the associated quality control batch data.

All reported data in this analytical report were analyzed according to the referenced method(s) and are in compliance with the latest NELAC/TNI standards, unless otherwise noted. Samples or analytical quality control parameters not meeting specific QC criteria are qualified with a data flag. Data flag definitions are located in the Notes and Definitions section of this analytical report.

If you have any questions concerning this report, please feel free to contact Envirotech, Inc.

Respectfully,

Walter Hinchman
Laboratory Director
Office: 505-632-1881
Cell: 775-287-1762
whinchman@envirotech-inc.com

Raina Schwanz
Laboratory Administrator
Office: 505-632-1881
rainaschwanz@envirotech-inc.com

Alexa Michaels
Sample Custody Officer
Office: 505-632-1881
labadmin@envirotech-inc.com

Field Offices:

Southern New Mexico Area
Lynn Jarboe
Technical Representative/Client Services
Office: 505-421-LABS(5227)
Cell: 505-320-4759
ljarboe@envirotech-inc.com

West Texas Midland/Odessa Area
Rayny Hagan
Technical Representative
Office: 505-421-LABS(5227)

Envirotech Web Address: www.envirotech-inc.com

Table of Contents

Sample Summary

Pima Environmental Services-Carlsbad	Project Name:	Cannonball 1H	**Reported:**
PO Box 247	Project Number:	21064-0001	
Plains TX, 79355-0247	Project Manager:	Tom Bynum	04/25/23 10:10

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
SW2 - Comp	E304090-01A	Soil	04/12/23	04/19/23	Glass Jar, 2 oz.
SW3 - Comp	E304090-02A	Soil	04/12/23	04/19/23	Glass Jar, 2 oz.

Sample Data

Pima Environmental Services-Carlsbad	Project Name:	Cannonball 1H	
PO Box 247	Project Number:	21064-0001	**Reported:**
Plains TX, 79355-0247	Project Manager:	Tom Bynum	4/25/2023 10:10:47AM

SW2 - Comp

E304090-01

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: IY			Batch: 2316030
Benzene	ND	0.0250	1	04/19/23	04/19/23	
Ethylbenzene	ND	0.0250	1	04/19/23	04/19/23	
Toluene	ND	0.0250	1	04/19/23	04/19/23	
o-Xylene	ND	0.0250	1	04/19/23	04/19/23	
p,m-Xylene	ND	0.0500	1	04/19/23	04/19/23	
Total Xylenes	ND	0.0250	1	04/19/23	04/19/23	
Surrogate: Bromofluorobenzene		*99.2 %*	*70-130*	*04/19/23*	*04/19/23*	
Surrogate: 1,2-Dichloroethane-d4		*103 %*	*70-130*	*04/19/23*	*04/19/23*	
Surrogate: Toluene-d8		*99.9 %*	*70-130*	*04/19/23*	*04/19/23*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2316030
Gasoline Range Organics (C6-C10)	ND	20.0	1	04/19/23	04/19/23	
Surrogate: Bromofluorobenzene		*99.2 %*	*70-130*	*04/19/23*	*04/19/23*	
Surrogate: 1,2-Dichloroethane-d4		*103 %*	*70-130*	*04/19/23*	*04/19/23*	
Surrogate: Toluene-d8		*99.9 %*	*70-130*	*04/19/23*	*04/19/23*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: JL			Batch: 2316042
Diesel Range Organics (C10-C28)	ND	25.0	1	04/20/23	04/21/23	
Oil Range Organics (C28-C36)	ND	50.0	1	04/20/23	04/21/23	
Surrogate: n-Nonane		*99.6 %*	*50-200*	*04/20/23*	*04/21/23*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: RAS			Batch: 2316027
Chloride	**48.7**	20.0	1	04/19/23	04/19/23	

Sample Data

Pima Environmental Services-Carlsbad	Project Name:	Cannonball 1H	
PO Box 247	Project Number:	21064-0001	**Reported:**
Plains TX, 79355-0247	Project Manager:	Tom Bynum	4/25/2023 10:10:47AM

SW3 - Comp

E304090-02

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: IY			Batch: 2316030
Benzene	ND	0.0250	1	04/19/23	04/19/23	
Ethylbenzene	ND	0.0250	1	04/19/23	04/19/23	
Toluene	ND	0.0250	1	04/19/23	04/19/23	
o-Xylene	ND	0.0250	1	04/19/23	04/19/23	
p,m-Xylene	ND	0.0500	1	04/19/23	04/19/23	
Total Xylenes	ND	0.0250	1	04/19/23	04/19/23	
Surrogate: Bromofluorobenzene		*99.4 %*	*70-130*	*04/19/23*	*04/19/23*	
Surrogate: 1,2-Dichloroethane-d4		*104 %*	*70-130*	*04/19/23*	*04/19/23*	
Surrogate: Toluene-d8		*99.4 %*	*70-130*	*04/19/23*	*04/19/23*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2316030
Gasoline Range Organics (C6-C10)	ND	20.0	1	04/19/23	04/19/23	
Surrogate: Bromofluorobenzene		*99.4 %*	*70-130*	*04/19/23*	*04/19/23*	
Surrogate: 1,2-Dichloroethane-d4		*104 %*	*70-130*	*04/19/23*	*04/19/23*	
Surrogate: Toluene-d8		*99.4 %*	*70-130*	*04/19/23*	*04/19/23*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: JL			Batch: 2316042
Diesel Range Organics (C10-C28)	ND	25.0	1	04/20/23	04/21/23	
Oil Range Organics (C28-C36)	ND	50.0	1	04/20/23	04/21/23	
Surrogate: n-Nonane		*104 %*	*50-200*	*04/20/23*	*04/21/23*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: RAS			Batch: 2316027
Chloride	**50.1**	20.0	1	04/19/23	04/19/23	

QC Summary Data

Pima Environmental Services-Carlsbad	Project Name:	Cannonball 1H	**Reported:**
PO Box 247	Project Number:	21064-0001	
Plains TX, 79355-0247	Project Manager:	Tom Bynum	4/25/2023 10:10:47AM

Volatile Organic Compounds by EPA 8260B

Analyst: IY

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2316030-BLK1)									Prepared: 04/19/23 Analyzed: 04/19/23
Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
p,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
Surrogate: Bromofluorobenzene	*0.481*		*0.500*		*96.1*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.558*		*0.500*		*112*	*70-130*			
Surrogate: Toluene-d8	*0.503*		*0.500*		*101*	*70-130*			
LCS (2316030-BS1)									Prepared: 04/19/23 Analyzed: 04/19/23
Benzene	2.43	0.0250	2.50		97.1	70-130			
Ethylbenzene	2.37	0.0250	2.50		95.0	70-130			
Toluene	2.41	0.0250	2.50		96.5	70-130			
o-Xylene	2.37	0.0250	2.50		94.8	70-130			
p,m-Xylene	4.76	0.0500	5.00		95.2	70-130			
Total Xylenes	7.13	0.0250	7.50		95.0	70-130			
Surrogate: Bromofluorobenzene	*0.541*		*0.500*		*108*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.568*		*0.500*		*114*	*70-130*			
Surrogate: Toluene-d8	*0.512*		*0.500*		*102*	*70-130*			
Matrix Spike (2316030-MS1)				**Source: E304089-02**					Prepared: 04/19/23 Analyzed: 04/19/23
Benzene	2.48	0.0250	2.50	ND	99.3	48-131			
Ethylbenzene	2.44	0.0250	2.50	ND	97.6	45-135			
Toluene	2.44	0.0250	2.50	ND	97.7	48-130			
o-Xylene	2.44	0.0250	2.50	ND	97.5	43-135			
p,m-Xylene	4.83	0.0500	5.00	ND	96.6	43-135			
Total Xylenes	7.27	0.0250	7.50	ND	96.9	43-135			
Surrogate: Bromofluorobenzene	*0.549*		*0.500*		*110*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.565*		*0.500*		*113*	*70-130*			
Surrogate: Toluene-d8	*0.497*		*0.500*		*99.4*	*70-130*			
Matrix Spike Dup (2316030-MSD1)				**Source: E304089-02**					Prepared: 04/19/23 Analyzed: 04/19/23
Benzene	2.49	0.0250	2.50	ND	99.7	48-131	0.442	23	
Ethylbenzene	2.43	0.0250	2.50	ND	97.1	45-135	0.493	27	
Toluene	2.47	0.0250	2.50	ND	98.7	48-130	1.04	24	
o-Xylene	2.43	0.0250	2.50	ND	97.2	43-135	0.370	27	
p,m-Xylene	4.82	0.0500	5.00	ND	96.5	43-135	0.114	27	
Total Xylenes	7.25	0.0250	7.50	ND	96.7	43-135	0.200	27	
Surrogate: Bromofluorobenzene	*0.531*		*0.500*		*106*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.587*		*0.500*		*117*	*70-130*			
Surrogate: Toluene-d8	*0.499*		*0.500*		*99.8*	*70-130*			

QC Summary Data

Pima Environmental Services-Carlsbad	Project Name:	Cannonball 1H	**Reported:**
PO Box 247	Project Number:	21064-0001	
Plains TX, 79355-0247	Project Manager:	Tom Bynum	4/25/2023 10:10:47AM

Nonhalogenated Organics by EPA 8015D - GRO

Analyst: IY

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2316030-BLK1)									Prepared: 04/19/23 Analyzed: 04/19/23
Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: Bromofluorobenzene	*0.481*		*0.500*		*96.1*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.558*		*0.500*		*112*	*70-130*			
Surrogate: Toluene-d8	*0.503*		*0.500*		*101*	*70-130*			
LCS (2316030-BS2)									Prepared: 04/19/23 Analyzed: 04/19/23
Gasoline Range Organics (C6-C10)	50.9	20.0	50.0		102	70-130			
Surrogate: Bromofluorobenzene	*0.514*		*0.500*		*103*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.545*		*0.500*		*109*	*70-130*			
Surrogate: Toluene-d8	*0.513*		*0.500*		*103*	*70-130*			
Matrix Spike (2316030-MS2)				**Source: E304089-02**					Prepared: 04/19/23 Analyzed: 04/19/23
Gasoline Range Organics (C6-C10)	51.2	20.0	50.0	ND	102	70-130			
Surrogate: Bromofluorobenzene	*0.500*		*0.500*		*100*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.550*		*0.500*		*110*	*70-130*			
Surrogate: Toluene-d8	*0.525*		*0.500*		*105*	*70-130*			
Matrix Spike Dup (2316030-MSD2)				**Source: E304089-02**					Prepared: 04/19/23 Analyzed: 04/19/23
Gasoline Range Organics (C6-C10)	48.0	20.0	50.0	ND	96.1	70-130	6.39	20	
Surrogate: Bromofluorobenzene	*0.505*		*0.500*		*101*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.551*		*0.500*		*110*	*70-130*			
Surrogate: Toluene-d8	*0.522*		*0.500*		*104*	*70-130*			

QC Summary Data

Pima Environmental Services-Carlsbad	Project Name:	Cannonball 1H	**Reported:**
PO Box 247	Project Number:	21064-0001	
Plains TX, 79355-0247	Project Manager:	Tom Bynum	4/25/2023 10:10:47AM

Nonhalogenated Organics by EPA 8015D - DRO/ORO

Analyst: JL

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2316042-BLK1)									Prepared: 04/20/23 Analyzed: 04/20/23
Diesel Range Organics (C10-C28)	ND	25.0							
Oil Range Organics (C28-C36)	ND	50.0							
Surrogate: n-Nonane	*51.1*		*50.0*		*102*	*50-200*			
LCS (2316042-BS1)									Prepared: 04/20/23 Analyzed: 04/20/23
Diesel Range Organics (C10-C28)	260	25.0	250		104	38-132			
Surrogate: n-Nonane	*52.6*		*50.0*		*105*	*50-200*			
Matrix Spike (2316042-MS1)				**Source: E304092-01**					Prepared: 04/20/23 Analyzed: 04/20/23
Diesel Range Organics (C10-C28)	268	25.0	250	ND	107	38-132			
Surrogate: n-Nonane	*52.3*		*50.0*		*105*	*50-200*			
Matrix Spike Dup (2316042-MSD1)				**Source: E304092-01**					Prepared: 04/20/23 Analyzed: 04/20/23
Diesel Range Organics (C10-C28)	281	25.0	250	ND	112	38-132	4.75	20	
Surrogate: n-Nonane	*54.0*		*50.0*		*108*	*50-200*			

QC Summary Data

Pima Environmental Services-Carlsbad	Project Name:	Cannonball 1H	**Reported:**
PO Box 247	Project Number:	21064-0001	
Plains TX, 79355-0247	Project Manager:	Tom Bynum	4/25/2023 10:10:47AM

Anions by EPA 300.0/9056A

Analyst: RAS

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2316027-BLK1)									Prepared: 04/19/23 Analyzed: 04/19/23
Chloride	ND	20.0							
LCS (2316027-BS1)									Prepared: 04/19/23 Analyzed: 04/19/23
Chloride	247	20.0	250		99.0	90-110			
Matrix Spike (2316027-MS1)				**Source: E304089-01**					Prepared: 04/19/23 Analyzed: 04/19/23
Chloride	249	20.0	250	ND	99.4	80-120			
Matrix Spike Dup (2316027-MSD1)				**Source: E304089-01**					Prepared: 04/19/23 Analyzed: 04/19/23
Chloride	249	20.0	250	ND	99.6	80-120	0.190	20	

QC Summary Report Comment:
Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

Definitions and Notes

Pima Environmental Services-Carlsbad	Project Name:	Cannonball 1H	
PO Box 247	Project Number:	21064-0001	**Reported:**
Plains TX, 79355-0247	Project Manager:	Tom Bynum	04/25/23 10:10

ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
RPD	Relative Percent Difference
DNI	Did Not Ignite

Note (1): Methods marked with ** are non-accredited methods.

Note (2): Soil data is reported on an "as received" weight basis, unless reported otherwise.

Project Information

Chain of Custody

Client: Pima Environmental Services
Project: Cannonball 1H
Project Manager: Tom Bynum
Address: 5614 N. Lovington Hwy.
City, State, Zip Hobbs, NM. 88240
Phone: 580-748-1613
Email: tom@pimaoil.com
Report due by:

Bill To
Attention: Pima
Address:
City, State, Zip
Phone:
Email:
Pima Project # 26-8

Lab Use Only
Lab WO# E304090
Job Number 21064-0001

TAT: 1D | 2D | 3D | Standard X

EPA Program: CWA | SDWA | RCRA

State: NM X | CO | UT | AZ | TX

Analysis and Method

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	DRO/ORO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	BGDOC NM	BGDOC TX	Remarks
10:45 am	4/17/23	S	1	SW2-Comp	1							X		
10:55 am	"	"	"	SW3-Comp	2							X		

Additional Instructions: Bill to Pima

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action. Sampled by: Dominick Gonzales

Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	4/18/23	200	Michelle Gonzales	4-18-23	1400
Michelle Gonzales	4-18-23	1700	Andrew Musso	4/18/23	1700
Andrew Musso	4/18/23	2300	[signature]	4-19-23	0700

Lab Use Only
Received on ice: Y / N
T1 T2 T3
AVG Temp °C 4

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other
Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.

envirotech

Envirotech Analytical Laboratory

Printed: 4/19/2023 8:26:44AM

Sample Receipt Checklist (SRC)

Instructions: Please take note of any NO checkmarks.
If we receive no response concerning these items within 24 hours of the date of this notice, all the samples will be analyzed as requested.

Client:	Pima Environmental Services-Carlsbad	Date Received:	04/19/23 07:00	Work Order ID:	E304090
Phone:	(575) 631-6977	Date Logged In:	04/18/23 15:54	Logged In By:	Caitlin Christian
Email:	tom@pimaoil.com	Due Date:	04/25/23 17:00 (4 day TAT)		

Chain of Custody (COC)

1. Does the sample ID match the COC?	Yes	
2. Does the number of samples per sampling site location match the COC	Yes	
3. Were samples dropped off by client or carrier?	Yes	Carrier: Courier
4. Was the COC complete, i.e., signatures, dates/times, requested analyses?	Yes	
5. Were all samples received within holding time? Note: Analysis, such as pH which should be conducted in the field, i.e, 15 minute hold time, are not included in this disucssion.	Yes	

Comments/Resolution

Sample Turn Around Time (TAT)

6. Did the COC indicate standard TAT, or Expedited TAT?	Yes

Sample Cooler

7. Was a sample cooler received?	Yes
8. If yes, was cooler received in good condition?	Yes
9. Was the sample(s) received intact, i.e., not broken?	Yes
10. Were custody/security seals present?	No
11. If yes, were custody/security seals intact?	NA
12. Was the sample received on ice? If yes, the recorded temp is 4°C, i.e., 6°±2°C Note: Thermal preservation is not required, if samples are received w/i 15 minutes of sampling	Yes
13. If no visible ice, record the temperature. Actual sample temperature: 4°C	

Sample Container

14. Are aqueous VOC samples present?	No
15. Are VOC samples collected in VOA Vials?	NA
16. Is the head space less than 6-8 mm (pea sized or less)?	NA
17. Was a trip blank (TB) included for VOC analyses?	NA
18. Are non-VOC samples collected in the correct containers?	Yes
19. Is the appropriate volume/weight or number of sample containers collected?	Yes

Field Label

20. Were field sample labels filled out with the minimum information:	
Sample ID?	Yes
Date/Time Collected?	Yes
Collectors name?	No

Sample Preservation

21. Does the COC or field labels indicate the samples were preserved?	No
22. Are sample(s) correctly preserved?	NA
24. Is lab filteration required and/or requested for dissolved metals?	No

Multiphase Sample Matrix

26. Does the sample have more than one phase, i.e., multiphase?	No
27. If yes, does the COC specify which phase(s) is to be analyzed?	NA

Subcontract Laboratory

28. Are samples required to get sent to a subcontract laboratory?	No	
29. Was a subcontract laboratory specified by the client and if so who?	NA	Subcontract Lab: NA

Client Instruction

Signature of client authorizing changes to the COC or sample disposition.

Date

envirotech Inc.

Pima Environmental Services

Appendix F

NMOCD-rejected Closure Report

Souder, Miller & Associates♦201 S. Halagueno St.♦Carlsbad, NM 88220
(575) 689-8801

August 7, 2018

#5E27408-BG10

NMOCD District II
Mike Bratcher
811 S. First St.
Artesia, NM 88210

SUBJECT: SOIL REMEDIATION CLOSURE REPORT FOR THE INCIDENTS AT THE CANNONBALL 1H (2RP-4842, 2RP-2568), EDDY COUNTY, NEW MEXICO

Dear Mr. Bratcher:

On behalf of Marathon Oil Permian LLC, Souder, Miller & Associates (SMA) has prepared this CLOSURE REPORT that describes the assessment and remediation activities for two releases associated with the Cannonball 1H. The site is in UNIT H, SECTION 20, TOWNSHIP 18S, RANGE 26E, NMPM, Eddy County, New Mexico, on State land. Figure 1 illustrates the vicinity and location of the site. Table 1 summarizes information regarding the releases.

Table 1: Release information and Site Ranking	
Name	Cannonball 1H
Company	Marathon Oil Permian LLC
Incident Number	2RP-4842, 2RP-2568
API Number	30-015-38569
Location	32.734131, -104.396216
Estimated Date of Release	unknown
Date Reported to NMOCD	June 12, 2018
Land Owner	Private
Reported To	NMOCD District II
Source of Release	Oil storage tank
Released Material	oil
Released Volume	Unknown
Recovered Volume	None
Net Release	Unknown
Nearest Waterway	Rio Penasco is 3500 feet north of location
Depth to Groundwater	Estimated to be 175 feet
Nearest Domestic Water Source	Greater than 1,000 feet
NMOCD Ranking	0
SMA Response Dates	June 26, 2018 and July 17, 018

1.0 Background

On June 12, 2018, the oil tank at the Cannonball #1H was removed for inspection. At that time, light staining was discovered in the gravel and on the liner. Upon further inspection, the liner was determined to be breached. The tank and the liner were then removed to allow soil delineation.

In addition to the current release, an historic release (2RP-2568) is still open at this location for the same tank. This historic release was reported on October 31, 2014 by Nadal and Gussman Heyco, LLC, the previous owner of the site, with a report seven barrels (bbls) of oil lost and five recovered.

2.0 Site Ranking and Land Jurisdiction

The release site is located near Artesia, New Mexico with an elevation of approximately 3,415 feet above sea level. SMA searched the New Mexico State Engineer's Office (NMOSE) online water well database for water wells in the vicinity of the release. Several wells are located in the vicinity, including one newly drilled well located approximately ¼ mile from the site. The logs of this well (RA 11480) indicates that groundwater was first encountered at approximately 175 feet. After evaluation of the site using aerial photography and topographic maps, depth to groundwater is estimated to be approximately 175 feet below ground surface (bgs).

Recommended Remediation Action Levels (RRALs) are determined by the site ranking according to the NMOCD *Guidelines for Remediation of Leaks, Spills, and Releases* (1993). Below in Table 2 are the remediation standards and the site ranking for this location. Justification for this site ranking is found in Figure 1 and Appendix B.

Table 2.

Soil Remediation Standards	0 to 9	10 to 19	>19
Benzene	10 PPM	10 PPM	10 PPM
BTEX	50 PPM	50 PPM	50 PPM
TPH	5000 PPM	1000 PPM	100 PPM

Depth to Groundwater	NMOCD Numeric Rank
< 50 BGS = 20	
50' to 99' = 10	
>100' = 0	0
Distance to Nearest Surface Water	**NMOCD Numeric Rank**
< 200' = 20	
200' - 1000' = 10	
>1000' = 0	0
Well Head Protection	**NMOCD Numeric Rank**
<1000' (or <200' domestic) = 20	
> 1000' = 0	0
Total Site Ranking	**0**

3.0 Release Characterization

On June 26, 2018, SMA field personnel oversaw installation of a soil boring to assess the vertical extent of the releases. Surficial staining was observed surrounding the former footprint of the tank, and the soil boring was located centrally in that area. Soil samples were collected at every 2.5 feet from the soil boring, from the surface to the final depth of 27.5 feet. The samples were field-screened for chloride using a mobile EC unit (EPA Method 4500).

The samples were sent under chain-of-custody protocols to Hall Environmental Analysis Laboratory (HEAL) in Albuquerque, NM for analysis for MRO, DRO, and GRO by EPA Method 8015D, BTEX by EPA Method 8021B, and Chlorides by Method 300.

Sample results indicate that chloride and hydrocarbon impacts are below RRAL's for this site.

4.0 Soil Remediation

On July 17, 2018, SMA oversaw removal of visually impacted soils with the aid of a backhoe service. The total excavation depth ranged from approximately 3 inches bgs to 10 inches bgs. Four sidewall samples (SW1-SW4) were collected to demonstrate horizontal delineation. Sidewall samples were field screened for hydrocarbon impact using a Dexsil® PetroFLAG TPH Analyzer and sent to HEAL for confirmation analysis of TPH (EPA Method 8015D). Visually stained soils were removed and replaced with clean backfill material to return the surface to previous contours. The contaminated soil was transported for proper disposal at an NMOCD permitted disposal facility. No further action is recommended at this time. Sample locations are depicted on Figure 2. All laboratory results are summarized in Table 3. Laboratory reports are included in Appendix C.

5.0 Scope and Limitations

The scope of our services consisted of the performance of assessment sampling, verification of release stabilization, regulatory liaison, remediation, and preparation of this closure report. All work has been performed in accordance with generally accepted professional environmental consulting practices for oil and gas releases in the Permian Basin in New Mexico.

If there are any questions regarding this report, please contact either Austin Weyant at 575-689-8801 or Shawna Chubbuck at 505-325-7535.

Submitted by:
SOUDER, MILLER & ASSOCIATES

J. Austin Weyant

Austin Weyant
Project Scientist

Reviewed by:

Shawna Chubbuck

Shawna Chubbuck
Senior Scientist

ATTACHMENTS:

Figures:

Figure 1: Vicinity and Well Head Protection Map
Figure 2: Site and Sample Location Map

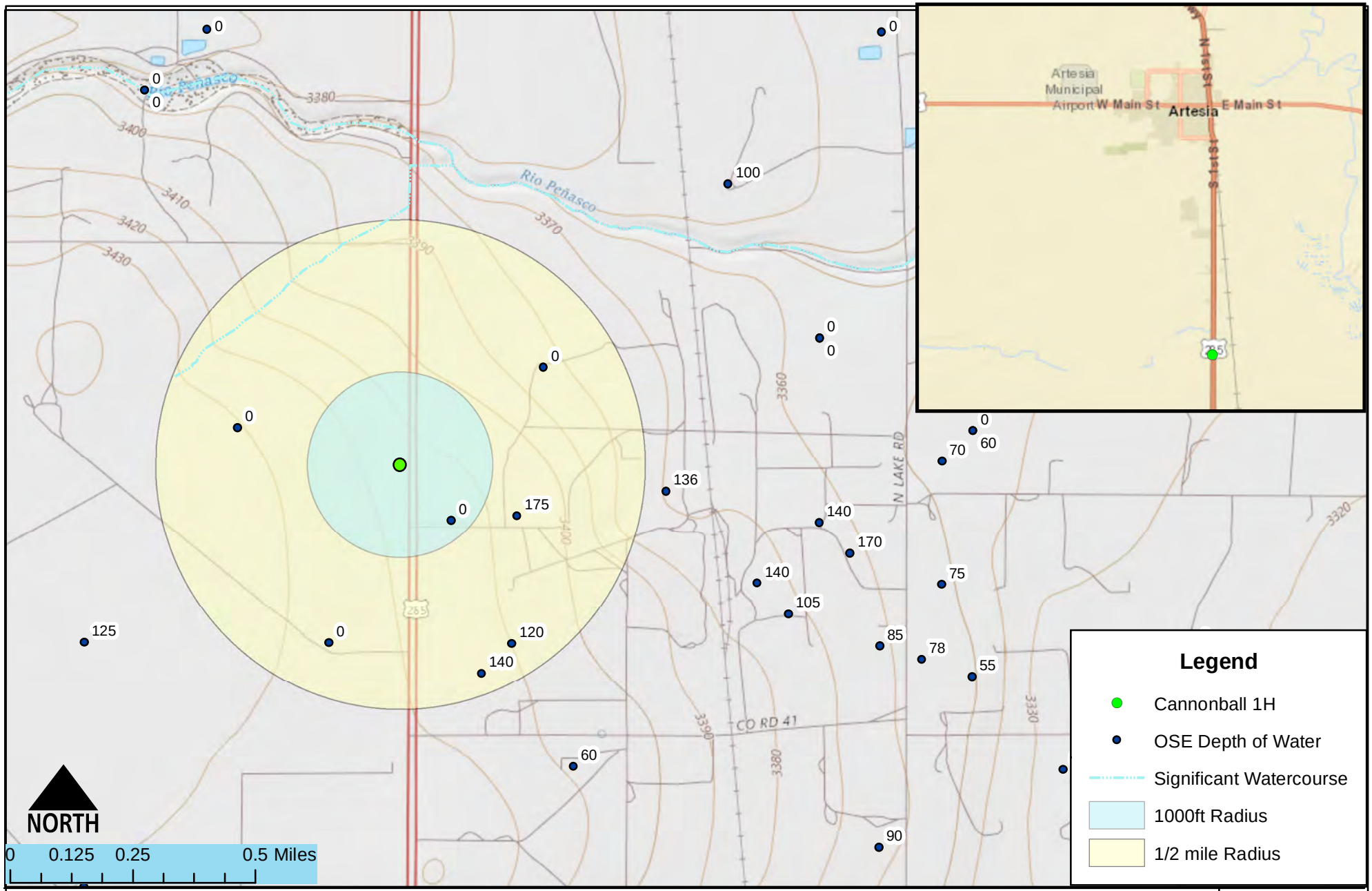
Tables:

Table 3: Summary of Sample Results

Appendices:

Appendix A: Form C141 Initial and Final
Appendix B: NMOSE Wells Report
Appendix C: Laboratory Analytical Reports

FIGURE 1
VICINITY AND NMOSE DATA MAP



Vicinty and Well Head Protection Map
Cannonball 1H - Marathon
S 20-T18S-R26E, New Mexico

Figure 1

Revisions
By: Date: Descr:
By: Date: Descr:

Date Saved: 7/6/2018

Drawn Heather Patterson
Checked
Approved

SMA
201 South Halagueña Street
Carlsbad, New Mexico 88221
(575) 689-7040
www.soudermiller.com
Serving the Southwest & Rocky Mountains

FIGURE 2
SITE AND SAMPLE
LOCATION MAP

Site and Sample Location Map
Cannonball 1H - Marathon
S 20-T18S-R26E, New Mexico

Figure 2

Revisions
By: Date: Descr:
By: Date: Descr:

Date Saved: 7/31/2018

Drawn Heather Patterson
Checked
Approved

SMA
201 South Halaguena Street
Carlsbad, New Mexico 88221
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TABLE 3
SUMMARY SAMPLE RESULTS

Cannonball 1H

Table 3.

Sample Number on Figure 2	Sample Date	Depth (feet bgs)	Action	BTEX mg/Kg	Benzene mg/Kg	GRO mg/Kg	DRO mg/Kg	MRO mg/Kg	**Total TPH** mg/Kg	Cl- Laboratory mg/Kg
NMOCD RRAL's for Site Ranking 0				50 mg/Kg	10 mg/Kg				5000 mg/Kg	
B1	6/26/2018	surface	excavated	0.13	<0.023	<4.6	360	340	700	370
	6/26/2018	2.5	in-situ	--	--	<4.8	<9.9	<50	<65	89
	6/26/2018	5	in-situ	<0.23	<0.023	<4.7	<10	<50	<65	75
	6/26/2018	7.5	in-situ	--	--	<4.6	<10	<50	<65	--
	6/26/2018	10	in-situ	--	--	<4.8	<10	<50	<65	--
	6/26/2018	12.5	in-situ	--	--	<4.9	<10	<50	<65	--
	6/26/2018	15	in-situ	--	--	<4.8	<9.9	<50	<65	360
	6/26/2018	17.5	in-situ	--	--	<4.9	<10	<50	<65	--
	6/26/2018	20	in-situ	--	--	<4.8	<9.9	<49	<64	--
	6/26/2018	22.5	in-situ	--	--	<4.9	<10	<50	<65	140
	6/26/2018	25	in-situ	--	--	<5.0	<10	<50	<65	--
	6/26/2018	27.5	in-situ	--	--	<4.6	<9.9	<49	<64	--
SW1	7/17/2018	sidewall	in-situ	--	--	<4.7	<10	<50	<65	--
SW2	7/17/2018	sidewall	in-situ	--	--	<4.9	63	54	117	--
SW3	7/17/2018	sidewall	in-situ	--	--	<4.9	1700	890	2590	--
SW4	7/17/2018	sidewall	in-situ	--	--	<5.0	45	<48	45	--

"--" = Not Analyzed

APPENDIX A
FORM C141 INITIAL AND FINAL

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised April 3, 2017

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company Marathon Oil Company	Contact Callie Karrigan
Address 5555 San Felipe St, Houston TX, 77056	Telephone No. 405-202-1028 (cell) 575-297-0956 (office)
Facility Name Cannonball #1H	Facility Type Oil and Gas production facilities

Surface Owner State	Mineral Owner	API No. 30-015-38569

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
H	20	18S	26E	1980	North	330	East	Eddy

Latitude 32.734131 **Longitude** -104.396216 NAD83

NATURE OF RELEASE

Type of Release oil	Volume of Release unknown	Volume Recovered none
Source of Release tank	Date and Hour of Occurrence unknown	Date and Hour of Discovery 6/12/2018
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher - NMOCD	
By Whom? Callie Karrigan	Date and Hour 6/13/2018 3:50 pm	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.* N/A

Describe Cause of Problem and Remedial Action Taken.*
Following removal of an oil tank from the battery, light staining on rock and the liner was observed. Staining also breached the liner

Describe Area Affected and Cleanup Action Taken.*
Base material was removed from battery. Tank and liner was removed from battery and area remediated as per attached closure report.

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

Signature: *Callie Karrigan*	OIL CONSERVATION DIVISION	
Printed Name: Callie Karrigan	Approved by Environmental Specialist:	
Title: HES Professional	Approval Date:	Expiration Date:
E-mail Address: cnkarrigan@marathonoil.com	Conditions of Approval:	Attached ☐
Date: 7/31/18 Phone: 405-202-1028		

* Attach Additional Sheets If Necessary

2RP-4842

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised April 3, 2017

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company Marathon Oil Company	Contact Callie Karrigan
Address 5555 San Felipe St, Houston TX, 77056	Telephone No. 405-202-1028 (cell) 575-297-0956 (office)
Facility Name Cannonball #1H	Facility Type Oil and Gas production facilities

Surface Owner State	Mineral Owner	API No. 30-015-38569

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
H	20	18S	26E	1980	North	330	East	Eddy

Latitude 32.734131 **Longitude** -104.396216 NAD83

NATURE OF RELEASE

Type of Release oil	Volume of Release 7 bbls	Volume Recovered 5 bbls
Source of Release tank	Date and Hour of Occurrence unknown	Date and Hour of Discovery 10/29/2014 8:30 am
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.* N/A

Describe Cause of Problem and Remedial Action Taken.*
Hole in bottom of the tank

Describe Area Affected and Cleanup Action Taken.*
Base material was removed from battery. Tank and liner was removed from battery and area remediated as per attached closure report.

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

Signature: *Callie Karrigan*	OIL CONSERVATION DIVISION	
Printed Name: Callie Karrigan	Approved by Environmental Specialist:	
Title: HES Professional	Approval Date:	Expiration Date:
E-mail Address: cnkarrigan@marathonoil.com	Conditions of Approval: Closure not approved	Attached ☐
Date: 7/31/18 Phone: 405-202-1028		

* Attach Additional Sheets If Necessary

2RP-2568

RECEIVED

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

State of New Mexico
Energy Minerals and Natural Resources

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

JUN 29 2018

DISTRICT II-ARTESIA O.C.D.

Form C-141
Revised April 3, 2017

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

Release Notification and Corrective Action

nAB1819057637

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Marathon Oil Permian LLC 372098	Contact Callie Karrigan
Address 5555 San Felipe Street, Houston, Texas 77056	Telephone No. 405-202-1028 (cell) 575-297-0956 (office)
Facility Name: Cannonball 1H	Facility Type Oil and gas production facilities

Surface: Owner: private	Mineral: Owner: private	API No. : 30-015-38569

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
H	20	18S	26E	1980	North	330	east	Eddy

Latitude 32.734131 **.Longitude** -104.396216

NATURE OF RELEASE

Type of Release: oil	Volume of Release: unknown	Volume Recovered: none
Source of Release: oil tank	Date and Hour of Occurrence unknown	Date and Hour of Discovery 06/12/2018
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Eddy County – Mike Bratcher	
By Whom? Callie Karrigan	Date and Hour 06/13/2018 3:50 pm 06/13/18	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*
Not applicable.

Describe Cause of Problem and Remedial Action Taken.*
Following removal of an oil tank from the battery, light staining on rock and the liner was observed. Staining also breached the liner.

Describe Area Affected and Cleanup Action Taken.*
The affected area is confined in containment within the foot print of the tank; however, the liner was breached. The release is currently being assessed by SMA and pending lab analysis results to develop a work plan for delineation.

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

Callie Karrigan Signature:	OIL CONSERVATION DIVISION Approved by Environmental Specialist: Signed By	
Printed Name: Callie Karrigan		
Title: HES Environmental Professional	Approval Date: 7/9/18	Expiration Date: N/A
E-mail Address: cnkarrigan@marathonoil.com	Conditions of Approval: See attached	Attached ☐ 2RP-4842
Date: 06/29/2018 Phone: 405-202-1028(cell) 575-297-0956 (office)		

* Attach Additional Sheets If Necessary

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 6/29/2018 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number 2RP-4842 has been assigned. **Please refer to this case number in all future correspondence.**

It is the Division's obligation under both the Oil & Gas Act and Water Quality Act to provide for the protection of public health and the environment. Our regulations (19.15.29.11 NMAC) state the following,

> *The responsible person shall complete division-approved corrective action for releases that endanger public health or the environment. The responsible person shall address releases in accordance with a remediation plan submitted to and approved by the division or with an abatement plan submitted in accordance with 19.15.30 NMAC.* [emphasis added]

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District 2 office in ARTESIA on or before 7/29/2018. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

The goals of a characterization effort are: 1) determination of the lateral and vertical extents along with the magnitude of soil contamination. 2) determine if groundwater or surface waters have been impacted. 3) If groundwater or surface waters have been impacted, what are the extents and magnitude of that impact. 4) The characterization of any other adverse impacts that may have occurred (examples: impacts on vegetation, impacts on wildlife, air quality, loss of use of property, etc.). To meet these goals as quickly as possible, the following items must, at a minimum, be addressed in the release characterization workplan and subsequent reporting:

- Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C_6 thru C_{36}), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.

- Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C_6 thru C_{36}), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.

- Nominal detection limits for field and laboratory analyses must be provided.

- Composite sampling is not generally allowed.

- Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

for laboratory analysis from each borehole or test pit (highest observed contamination and deepest depth investigated). Copies of the actual laboratory results must be provided including chain of custody documentation.

•Probable depth to shallowest protectable groundwater and lateral distance to nearest surface water. If there is an estimate of groundwater depth, the information used to arrive at that estimate must be provided. If there is a reasonable assumption that the depth to protectable water is 50 feet or less, the responsible party should anticipate the need for at least one groundwater monitoring well to be installed in the area of likely maximum contamination.

• If groundwater contamination is encountered, an additional investigation workplan may be required to determine the extents of that contamination. Groundwater and/or surface water samples, if any, must be analyzed by a competent laboratory for volatile organic hydrocarbons (typically Method 8260 full list), total dissolved solids, pH, major anions and cations including chloride and sulfate, dissolved iron, and dissolved manganese. The investigation workplan must provide the groundwater sampling method(s) and sample handling protocols. To the fullest extent possible, aqueous analyses must be undertaken using nominal method detection limits. As with the soil analyses, copies of the actual laboratory results must be provided including chain of custody documentation.

• Accurately scaled and well-drafted site maps must be provided providing the location of borings, test pits, monitoring wells, potentially impacted areas, and significant surface features including roads and site infrastructure that might limit either the release characterization or remedial efforts. Field sketches may be included in subsequent reporting, but should not be considered stand-alone documentation of the site's layout. Digital photographic documentation of the location and fieldwork is recommended, especially if unusual circumstances are encountered.

Nothing herein should be interpreted to preclude emergency response actions or to imply immediate remediation by removal cannot proceed as warranted. Nonetheless, characterization of impacts and confirmation of the effectiveness of remedial efforts must still be provided to the OCD before any release incident will be closed.

Jim Griswold
OCD Environmental Bureau Chief
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
505-476-3465
jim.griswold@state.nm.us

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
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State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

nAB1430728086

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company- Nadel and Gussman HEYCO, LLC 258462	Contact- Tammy R. Link
Address – P.O. Box 1936, Roswell, NM 88201-1936	Telephone No. 575-623-6601
Facility Name – Cannonball #1H	Facility Type – API #30-015-38569 * ? Well
Surface Owner - State	Mineral Owner

*API No. 30-015-38569

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
H	20	18S	26E	1980'	N	330'	E	Eddy

Latitude_____ **Longitude**_____

NATURE OF RELEASE

Type of Release – Oil Spill	Volume of Release – 7 bbls	Volume Recovered 5 bbls
Source of Release	Date and Hour of Occurrence N/A	Date and Hour of Discovery-10/29/14 8:30 am
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

NM OIL CONSERVATION
ARTESIA DISTRICT
OCT 31 2014
RECEIVED

Describe Cause of Problem and Remedial Action Taken.*

Hole in bottom of tank.

Describe Area Affected and Cleanup Action Taken.*

Vacuumed oil up and back into tank, clean up area inside of dike put fresh gravel around area.

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

Signature: Tammy R. Link

Printed Name: Tammy R. Link

Title: Engineering Tech

E-mail Address: tlink@heycoenergy.com

Date: 10/29/2014 Phone: 575-623-6601

OIL CONSERVATION DIVISION

Signed By Mike Bratcher

Approved by Environmental Specialist:

Approval Date: 11/3/14 Expiration Date:

Conditions of Approval:

Remediation per O.C.D. Rules & Guidelines
SUBMIT REMEDIATION PROPOSAL NO LATER THAN: 12/3/14

Attached ☐

* Attach Additional Sheets If Necessary

2RP-2568

APPENDIX B
NMOSE WELLS REPORT

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

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

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

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
RA 01884			ED	1	1	3	21	18S	26E	556741	3621792*	269	127		
RA 11480 POD1			ED	2	1	3	21	18S	26E	556958	3621808	454	199	175	24
RA 03618			ED		3	2	20	18S	26E	556037	3622093*	509	1838		
RA 04309			ED			1	21	18S	26E	557041	3622297*	615	180		
RA 08976			ED	2	3	3	21	18S	26E	556943	3621389*	703	225	120	105
RA 06029			ED		3	3	21	18S	26E	556844	3621290*	738	183	140	43
RA 06102			ED				21	18S	26E	557447	3621893*	921	202	136	66
RA 04283			LE	1	4	3	20	18S	26E	555538	3621384*	1143	158	125	33
RA 02786			CH	1	2	1	28	18S	26E	557148	3620987*	1151	250	60	190
RA 09763			ED	4	1	4	21	18S	26E	557748	3621592*	1273	240	140	100
RA 06828			CH			4	21	18S	26E	557851	3621491*	1402	130	105	25
RA 04287			ED	1	2	4	21	18S	26E	557951	3621792*	1432	170	140	30
RA 05241			ED		3	4	16	18S	26E	557644	3622903*	1463	200	100	100
RA 03181			ED	4	2	3	17	18S	26E	555726	3623199*	1478	200		
RA 04004			ED	3	2	2	21	18S	26E	557948	3622399*	1487	140		
RA 07654			ED		2	4	21	18S	26E	558052	3621693*	1546	180	170	10
RA 03181 REPAR-3	O		ED	1	1	4	17	18S	26E	555929	3623401*	1563	309	100	209
RA 03181 SUP	O		ED	1	1	4	17	18S	26E	555929	3623401*	1563	290	60	230
RA 03181 COMB	O		ED		2	3	17	18S	26E	555627	3623300*	1617	229	55	174
RA 04160			ED	1	4	1	29	18S	26E	555542	3620580*	1693	160	100	60
RA 07408			ED	2	4	4	21	18S	26E	558152	3621389*	1720	155	85	70
RA 09466			ED	3	3	1	22	18S	26E	558353	3621996*	1825	160	70	90
RA 03771			ED	3	1	3	22	18S	26E	558354	3621592*	1862	110	75	35
RA 11506 POD1			ED	1	3	3	22	18S	26E	558290	3621345	1865	160	78	82
RA 03340			ED		3	1	22	18S	26E	558454	3622097*	1931	100	60	40
RA 03580			ED		3	1	22	18S	26E	558454	3622097*	1931	1700		

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

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

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

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	POD Sub-basin Code	County	Q 64	Q 16	Q 4	Sec	Twn	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
RA 11952 POD1		ED	4	2	2	28	18S	26E	558153	3620727	2038	170	90	80
RA 04701		ED		3	3	22	18S	26E	558456	3621290*	2040	80	55	25
RA 01296 S3		ED	1	3	3	15	18S	26E	558351	3623003*	2101	230	70	160
RA 01296 S5		ED	1	3	3	15	18S	26E	558351	3623003*	2101	223	35	188
RA 01446 CLW		ED	1	3	3	15	18S	26E	558351	3623003*	2101	165	42	123
RA 02800		ED	1	3	3	15	18S	26E	558351	3623003*	2101	102	30	72
RA 03599		ED	2	1	1	22	18S	26E	558552	3622599*	2123	1765		
RA 09709		ED		2	2	17	18S	26E	556428	3624113*	2158	235	110	125
RA 09286		ED	2	4	4	29	18S	26E	556550	3619778*	2179	300		
RA 03181 CLW	O	ED			1	17	18S	26E	555422	3623902*	2237	250	92	158
RA 02013		ED	2	2	2	17	18S	26E	556527	3624212*	2254	136		
RA 12265 POD1		ED	2	2	2	17	18S	26E	556509	3624232	2275	330	185	145
RA 08812 REPAR		ED		4	4	29	18S	26E	556451	3619679*	2279	350	150	200
RA 01446		ED		1	3	15	18S	26E	558450	3623307*	2348	175		
RA 11179 POD2	RA	ED	4	4	2	16	18S	26E	558180	3623696	2399	71	60	11
RA 03055		ED	1	2	1	27	18S	26E	558757	3620986*	2431	146	85	61
RA 04046		ED			4	28	18S	26E	557859	3619879*	2467	125		
RA 11179 POD1	RA	ED	2	3	2	16	18S	26E	558172	3623807	2475	74	60	14
RA 01462 #3		ED		3	3	09	18S	26E	556830	3624520*	2580	230		
RA 06131		ED		3	3	09	18S	26E	556830	3624520*	2580	225	90	135
RA 01474 REPAR		ED	1	1	1	33	18S	26E	556754	3619377*	2589	200		
RA 01474 SUP		ED	1	1	1	33	18S	26E	556754	3619377*	2589	210		
RA 11682 POD2		ED	4	2	2	16	18S	26E	558236	3623959	2631	98		
RA 03181 SUP REPAR	O	ED	1	1	4	18	18S	26E	554320	3623397*	2635	315	115	200
RA 03598		ED	1	3	2	22	18S	26E	559154	3622198*	2637	1815		
RA 04479		ED	2	4	4	08	18S	26E	556525	3624616*	2658	215	120	95
RA 10386	R	ED	2	4	4	08	18S	26E	556525	3624616*	2658	210	70	140
RA 03421		ED	1	2	2	16	18S	26E	557942	3624213*	2662	665	130	535
RA 03049		ED	1	4	4	08	18S	26E	556325	3624616*	2666	129	60	69

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

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

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

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

(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	POD Sub-basin Code	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
RA 03382		ED	1	3	3	09	18S	26E	556729	3624619*	2669	129		
RA 03181 CLW-3	O	ED		3	2	18	18S	26E	554417	3623702*	2738	334	134	200
RA 05425		ED		4	4	28	18S	26E	558060	3619677*	2746	160	90	70
RA 03181 CLW-2	O	ED		2	2	18	18S	26E	554816	3624106*	2747	258	115	143
RA 04101		ED	3	3	3	08	18S	26E	555114	3624407*	2828	210		
RA 04784		ED				30	18S	26E	554252	3620259*	2839	205	190	15
RA 03732		ED	4	2	4	08	18S	26E	556523	3624820*	2862	200	175	25
RA 05162		ED	3	1	3	09	18S	26E	556727	3624823*	2872	220	120	100
RA 01508		ED	3	2	3	18	18S	26E	553918	3623197*	2889	235		
RA 04136		ED		1	1	32	18S	26E	555246	3619273*	2974	152	90	62
RA 03326		ED		4	4	09	18S	26E	558041	3624518*	2974	75	40	35
RA 01469 2		ED	2	3	3	18	18S	26E	553733	3622993*	2980	300	150	150
RA 01469 REPAR		ED	2	3	3	18	18S	26E	553733	3622993*	2980	230	160	70
RA 01469 SUP		ED	2	3	3	18	18S	26E	553733	3622993*	2980	225	90	135
RA 01508 CLW		ED	2	3	3	18	18S	26E	553733	3622993*	2980	300		
RA 01462		ED		1	3	09	18S	26E	556828	3624924*	2982	163		

Average Depth to Water: **101 feet**

Minimum Depth: **30 feet**

Maximum Depth: **190 feet**

Record Count: 71

UTMNAD83 Radius Search (in meters):

Easting (X): 556527.94 **Northing (Y):** 3621957 **Radius:** 3000

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

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2009 NOV -3 A 8:21

1. GENERAL AND WELL LOCATION

POD NUMBER (WELL NUMBER)	OSE FILE NUMBER(S)
RA-11480	
WELL OWNER NAME(S)	**PHONE (OPTIONAL)**
George n.+Elizabeth J. Bergstrom	
WELL OWNER MAILING ADDRESS	**CITY / STATE / ZIP**
526 Coleman	Carlsbad / NM / 88220

WELL LOCATION (FROM GPS)		DEGREES	MINUTES	SECONDS	
	LATITUDE	32	43	57.40	N
	LONGITUDE	104	23	31.60	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND
* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS
Well is about 1/4 mile off of the Artesia Hywy north of the old Branding Iron Steakhouse.

2. OPTIONAL

(2.5 ACRE)	(10 ACRE)	(40 ACRE)	(160 ACRE)	SECTION	TOWNSHIP	RANGE
¼	¼	¼	¼	21	18 ☐ NORTH ☑ SOUTH	26 ☑ EAST ☐ WEST

SUBDIVISION NAME	LOT NUMBER	BLOCK NUMBER	UNIT/TRACT

HYDROGRAPHIC SURVEY	MAP NUMBER	TRACT NUMBER

3. DRILLING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD-1348	Clinton Taylor	Taylor Water Well Service

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
7/12/09	7/15/09	199	210	175

COMPLETED WELL IS: ☐ ARTESIAN ☐ DRY HOLE ☑ SHALLOW (UNCONFINED) — STATIC WATER LEVEL IN COMPLETED WELL (FT): 140

DRILLING FLUID: ☐ AIR ☑ MUD ☐ ADDITIVES – SPECIFY:

DRILLING METHOD: ☑ ROTARY ☐ HAMMER ☐ CABLE TOOL ☐ OTHER – SPECIFY:

DEPTH (FT) FROM	DEPTH (FT) TO	BORE HOLE DIA. (IN)	CASING MATERIAL	CONNECTION TYPE (CASING)	INSIDE DIA. CASING (IN)	CASING WALL THICKNESS (IN)	SLOT SIZE (IN)
0	179	8 3/4	PVC	Spline	4 1/2	SDR 17	
179	199	8 3/4"	PVC	Spline	4 1/2	SCH 40	.032

4. WATER BEARING STRATA

DEPTH (FT) FROM	DEPTH (FT) TO	THICKNESS (FT)	FORMATION DESCRIPTION OF PRINCIPAL WATER-BEARING STRATA (INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES)	YIELD (GPM)
175	199	24	Conglomerate+Layers of Sand+Gravel	+100

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA	TOTAL ESTIMATED WELL YIELD (GPM)
Air lift while developing.	More than 100.

1/31/10

FOR OSE INTERNAL USE — WELL RECORD & LOG (Version 6/9/08)

FILE NUMBER	POD NUMBER	TRN NUMBER
LOCATION 185.26E.21.312		PAGE 1 OF 2

5. SEAL AND PUMP

TYPE OF PUMP: ☑ SUBMERSIBLE ☐ JET ☐ NO PUMP – WELL NOT EQUIPPED ☐ TURBINE ☐ CYLINDER ☐ OTHER – SPECIFY:

ANNULAR SEAL AND GRAVEL PACK	DEPTH (FT) FROM	DEPTH (FT) TO	BORE HOLE DIA. (IN)	MATERIAL TYPE AND SIZE	AMOUNT (CUBIC FT)	METHOD OF PLACEMENT
	199	20	8 3/4	3/8" Pea Gravel	3 Yards	Dump
	20	Surface	8 3/4	20 percent Bentonite Slurry	2 Sacks	Tremie

6. GEOLOGIC LOG OF WELL

DEPTH (FT) FROM	DEPTH (FT) TO	THICKNESS (FT)	COLOR AND TYPE OF MATERIAL ENCOUNTERED (INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES)	WATER BEARING?
0	1	1	Soil	☐ YES ☑ NO
1	20	19	Caliche	☐ YES ☑ NO
20	37	17	Clay:pnk,sme fn gravel	☐ YES ☑ NO
37	40	3	Conglomerate:gry,tn,lt brn,calc	☐ YES ☑ NO
40	68	28	Clay:wht,slty,sndy in prt	☐ YES ☑ NO
68	84	16	Clay:off wht-sht,sme fn gravel	☐ YES ☑ NO
84	124	40	Clay:dull rd,pnk,sndy	☐ YES ☑ NO
124	130	6	Conglomerate:yel brn,lt brn,lmy	☐ YES ☑ NO
130	160	30	Clay:brn,slty-sndy	☐ YES ☑ NO
160	175	15	Clay:rd brn,vry sndy,small gravel	☐ YES ☑ NO
175	210	35	Layers of Conglomerate:brn,gry,tn,pnk,lmy with fn grn clr-rd sand	☑ YES ☐ NO
			and 1/8"-1/4" gravel	☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO

ATTACH ADDITIONAL PAGES AS NEEDED TO FULLY DESCRIBE THE GEOLOGIC LOG OF THE WELL

7. TEST & ADDITIONAL INFO

WELL TEST: METHOD: ☐ BAILER ☐ PUMP ☑ AIR LIFT ☐ OTHER – SPECIFY:

TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

ADDITIONAL STATEMENTS OR EXPLANATIONS:

Drilled to 210'. Started losing returns at 175'. Lost all returns at 190' and mixed more mud. Lost all returns again at 210'. Ran casing to 199' and gravel packed and grouted well. Developed with air.

8. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 20 DAYS AFTER COMPLETION OF WELL DRILLING:

SIGNATURE OF DRILLER — DATE: 11/2/04

FOR OSE INTERNAL USE — WELL RECORD & LOG (Version 6/9/08)

FILE NUMBER	POD NUMBER	TRN NUMBER
LOCATION		PAGE 2 OF 2

APPENDIX C

LABORATORY ANALYTICAL REPORTS

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

July 09, 2018

Austin Weyant
Souder, Miller & Associates
201 S Halagueno
Carlsbad, NM 88221
TEL: (575) 689-7040
FAX

RE: Cannonball OrderNo.: 1806H75

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 12 sample(s) on 6/29/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1806H75**
Date Reported: **7/9/2018**

CLIENT: Souder, Miller & Associates
Client Sample ID: B1-0
Project: Cannonball
Collection Date: 6/26/2018 11:20:00 AM
Lab ID: 1806H75-001 **Matrix:** SOIL **Received Date:** 6/29/2018 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	370	30		mg/Kg	20	7/3/2018 11:59:20 PM	39040
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**lrm**
Diesel Range Organics (DRO)	360	10		mg/Kg	1	7/2/2018 11:19:03 PM	38981
Motor Oil Range Organics (MRO)	340	50		mg/Kg	1	7/2/2018 11:19:03 PM	38981
Surr: DNOP	104	70-130		%Rec	1	7/2/2018 11:19:03 PM	38981
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	7/2/2018 7:10:47 PM	38979
Surr: BFB	124	15-316		%Rec	1	7/2/2018 7:10:47 PM	38979
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.023		mg/Kg	1	7/2/2018 7:10:47 PM	38979
Toluene	ND	0.046		mg/Kg	1	7/2/2018 7:10:47 PM	38979
Ethylbenzene	ND	0.046		mg/Kg	1	7/2/2018 7:10:47 PM	38979
Xylenes, Total	0.13	0.093		mg/Kg	1	7/2/2018 7:10:47 PM	38979
Surr: 4-Bromofluorobenzene	109	80-120		%Rec	1	7/2/2018 7:10:47 PM	38979

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

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

Analytical Report
Lab Order **1806H75**
Date Reported: **7/9/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: B1-2.5
Project: Cannonball
Collection Date: 6/26/2018 11:30:00 AM
Lab ID: 1806H75-002 **Matrix:** SOIL **Received Date:** 6/29/2018 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	89	30		mg/Kg	20	7/5/2018 1:58:24 PM	39059
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	7/2/2018 11:41:16 PM	38981
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/2/2018 11:41:16 PM	38981
Surr: DNOP	96.5	70-130		%Rec	1	7/2/2018 11:41:16 PM	38981
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/2/2018 7:34:25 PM	38979
Surr: BFB	94.5	15-316		%Rec	1	7/2/2018 7:34:25 PM	38979

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

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

Analytical Report
Lab Order **1806H75**
Date Reported: **7/9/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: B1-5
Project: Cannonball
Collection Date: 6/26/2018 11:40:00 AM
Lab ID: 1806H75-003 **Matrix:** SOIL **Received Date:** 6/29/2018 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	75	30		mg/Kg	20	7/5/2018 2:10:48 PM	39059
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	7/3/2018 12:03:37 AM	38981
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/3/2018 12:03:37 AM	38981
Surr: DNOP	85.2	70-130		%Rec	1	7/3/2018 12:03:37 AM	38981
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	7/2/2018 7:58:01 PM	38979
Surr: BFB	91.2	15-316		%Rec	1	7/2/2018 7:58:01 PM	38979
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	7/2/2018 7:58:01 PM	38979
Toluene	ND	0.047		mg/Kg	1	7/2/2018 7:58:01 PM	38979
Ethylbenzene	ND	0.047		mg/Kg	1	7/2/2018 7:58:01 PM	38979
Xylenes, Total	ND	0.093		mg/Kg	1	7/2/2018 7:58:01 PM	38979
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	1	7/2/2018 7:58:01 PM	38979

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

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

Analytical Report
Lab Order **1806H75**
Date Reported: **7/9/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: B1-7.5
Project: Cannonball
Collection Date: 6/26/2018 11:50:00 AM
Lab ID: 1806H75-004 **Matrix:** SOIL **Received Date:** 6/29/2018 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	7/3/2018 12:25:55 AM	38981
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/3/2018 12:25:55 AM	38981
Surr: DNOP	83.6	70-130		%Rec	1	7/3/2018 12:25:55 AM	38981
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	7/2/2018 8:21:36 PM	38979
Surr: BFB	93.3	15-316		%Rec	1	7/2/2018 8:21:36 PM	38979

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

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

Analytical Report
Lab Order **1806H75**
Date Reported: **7/9/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: B1-10
Project: Cannonball
Collection Date: 6/26/2018 12:00:00 PM
Lab ID: 1806H75-005 **Matrix:** SOIL **Received Date:** 6/29/2018 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	7/3/2018 12:48:26 AM	38981
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/3/2018 12:48:26 AM	38981
Surr: DNOP	88.3	70-130		%Rec	1	7/3/2018 12:48:26 AM	38981
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/2/2018 8:45:08 PM	38979
Surr: BFB	94.6	15-316		%Rec	1	7/2/2018 8:45:08 PM	38979

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

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

Analytical Report
Lab Order **1806H75**
Date Reported: **7/9/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: B1-12.5
Project: Cannonball
Collection Date: 6/26/2018 12:10:00 PM
Lab ID: 1806H75-006 **Matrix:** SOIL **Received Date:** 6/29/2018 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	7/3/2018 1:10:49 AM	38981
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/3/2018 1:10:49 AM	38981
Surr: DNOP	97.5	70-130		%Rec	1	7/3/2018 1:10:49 AM	38981
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/2/2018 9:08:36 PM	38979
Surr: BFB	91.7	15-316		%Rec	1	7/2/2018 9:08:36 PM	38979

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

Qualifiers:

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

Analytical Report
Lab Order **1806H75**
Date Reported: **7/9/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: B1-15
Project: Cannonball
Collection Date: 6/26/2018 12:20:00 PM
Lab ID: 1806H75-007 **Matrix:** SOIL **Received Date:** 6/29/2018 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	360	30		mg/Kg	20	7/5/2018 2:23:13 PM	39059
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	7/3/2018 1:33:07 AM	38981
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/3/2018 1:33:07 AM	38981
Surr: DNOP	94.2	70-130		%Rec	1	7/3/2018 1:33:07 AM	38981
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/2/2018 9:32:06 PM	38979
Surr: BFB	91.1	15-316		%Rec	1	7/2/2018 9:32:06 PM	38979

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

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

Analytical Report
Lab Order **1806H75**
Date Reported: **7/9/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: B1-17.5
Project: Cannonball
Collection Date: 6/26/2018 12:30:00 PM
Lab ID: 1806H75-008 **Matrix:** SOIL **Received Date:** 6/29/2018 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	7/3/2018 1:55:28 AM	38981
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/3/2018 1:55:28 AM	38981
Surr: DNOP	92.0	70-130		%Rec	1	7/3/2018 1:55:28 AM	38981
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/2/2018 9:55:32 PM	38979
Surr: BFB	93.4	15-316		%Rec	1	7/2/2018 9:55:32 PM	38979

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

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

Analytical Report
Lab Order **1806H75**
Date Reported: **7/9/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: B1-20
Project: Cannonball
Collection Date: 6/26/2018 12:40:00 PM
Lab ID: 1806H75-009 **Matrix:** SOIL **Received Date:** 6/29/2018 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	7/2/2018 3:56:15 PM	38983
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/2/2018 3:56:15 PM	38983
Surr: DNOP	106	70-130		%Rec	1	7/2/2018 3:56:15 PM	38983
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/2/2018 10:18:58 PM	38982
Surr: BFB	92.6	15-316		%Rec	1	7/2/2018 10:18:58 PM	38982

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

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

Analytical Report
Lab Order **1806H75**
Date Reported: **7/9/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: B1-22.5
Project: Cannonball
Collection Date: 6/26/2018 12:50:00 PM
Lab ID: 1806H75-010 **Matrix:** SOIL **Received Date:** 6/29/2018 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	140	30		mg/Kg	20	7/5/2018 2:35:38 PM	39059
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**TOM**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	7/2/2018 5:10:28 PM	38983
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/2/2018 5:10:28 PM	38983
Surr: DNOP	108	70-130		%Rec	1	7/2/2018 5:10:28 PM	38983
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/2/2018 10:42:26 PM	38982
Surr: BFB	94.7	15-316		%Rec	1	7/2/2018 10:42:26 PM	38982

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

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

Analytical Report
Lab Order **1806H75**
Date Reported: **7/9/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: B1-25
Project: Cannonball
Collection Date: 6/26/2018 1:00:00 PM
Lab ID: 1806H75-011 **Matrix:** SOIL **Received Date:** 6/29/2018 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	7/2/2018 5:35:27 PM	38983
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/2/2018 5:35:27 PM	38983
Surr: DNOP	109	70-130		%Rec	1	7/2/2018 5:35:27 PM	38983
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/2/2018 11:05:52 PM	38982
Surr: BFB	93.8	15-316		%Rec	1	7/2/2018 11:05:52 PM	38982

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

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

Analytical Report
Lab Order **1806H75**
Date Reported: **7/9/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: B1-27.5
Project: Cannonball
Collection Date: 6/26/2018 1:10:00 PM
Lab ID: 1806H75-012 **Matrix:** SOIL **Received Date:** 6/29/2018 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	7/2/2018 6:00:19 PM	38983
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/2/2018 6:00:19 PM	38983
Surr: DNOP	107	70-130		%Rec	1	7/2/2018 6:00:19 PM	38983
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	7/2/2018 11:29:13 PM	38982
Surr: BFB	92.6	15-316		%Rec	1	7/2/2018 11:29:13 PM	38982

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1806H75**

09-Jul-18

Client: Souder, Miller & Associates

Project: Cannonball

Sample ID	**MB-39040**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**39040**	RunNo:	**52452**					
Prep Date:	**7/3/2018**	Analysis Date:	**7/3/2018**	SeqNo:	**1720818**	Units:	**mg/Kg**			

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

Sample ID	**LCS-39040**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**39040**	RunNo:	**52452**					
Prep Date:	**7/3/2018**	Analysis Date:	**7/3/2018**	SeqNo:	**1720819**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	98.2	90	110			

Sample ID	**MB-39059**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**39059**	RunNo:	**52494**					
Prep Date:	**7/5/2018**	Analysis Date:	**7/5/2018**	SeqNo:	**1721495**	Units:	**mg/Kg**			

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

Sample ID	**LCS-39059**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**39059**	RunNo:	**52494**					
Prep Date:	**7/5/2018**	Analysis Date:	**7/5/2018**	SeqNo:	**1721496**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	97.1	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1806H75**

09-Jul-18

Client: Souder, Miller & Associates

Project: Cannonball

Sample ID	**1806H75-009AMS**	SampType:	**MS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**B1-20**	Batch ID:	**38983**		RunNo:	**52394**				
Prep Date:	**6/29/2018**	Analysis Date:	**7/2/2018**		SeqNo:	**1718735**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	49.75	3.255	96.9	62	120			
Surr: DNOP	4.9		4.975		97.6	70	130			

Sample ID	**1806H75-009AMSD**	SampType:	**MSD**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**B1-20**	Batch ID:	**38983**		RunNo:	**52394**				
Prep Date:	**6/29/2018**	Analysis Date:	**7/2/2018**		SeqNo:	**1718736**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	10	49.95	3.255	93.7	62	120	2.78	20	
Surr: DNOP	5.0		4.995		99.7	70	130	0	0	

Sample ID	**LCS-38983**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**38983**		RunNo:	**52394**				
Prep Date:	**6/29/2018**	Analysis Date:	**7/2/2018**		SeqNo:	**1718754**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	50.00	0	106	70	130			
Surr: DNOP	5.0		5.000		100	70	130			

Sample ID	**MB-38981**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**38981**		RunNo:	**52397**				
Prep Date:	**6/29/2018**	Analysis Date:	**7/2/2018**		SeqNo:	**1719410**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		102	70	130			

Sample ID	**LCS-38981**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**38981**		RunNo:	**52397**				
Prep Date:	**6/29/2018**	Analysis Date:	**7/2/2018**		SeqNo:	**1719411**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	93.9	70	130			
Surr: DNOP	4.7		5.000		94.2	70	130			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1806H75**
09-Jul-18

Client: Souder, Miller & Associates
Project: Cannonball

Sample ID	**MB-38983**	SampType:	**MBLK**	TestCode:	**EPA Method 8015M/D: Diesel Range Organics**					
Client ID:	**PBS**	Batch ID:	**38983**	RunNo:	**52471**					
Prep Date:	**6/29/2018**	Analysis Date:	**7/5/2018**	SeqNo:	**1720546**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	12		10.00		117	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1806H75**

09-Jul-18

Client: Souder, Miller & Associates

Project: Cannonball

Sample ID	**MB-38979**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**38979**	RunNo:	**52429**					
Prep Date:	**6/29/2018**	Analysis Date:	**7/2/2018**	SeqNo:	**1718661**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	950		1000		94.5	15	316			

Sample ID	**LCS-38979**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**38979**	RunNo:	**52429**					
Prep Date:	**6/29/2018**	Analysis Date:	**7/2/2018**	SeqNo:	**1718662**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	103	75.9	131			
Surr: BFB	1000		1000		103	15	316			

Sample ID	**MB-38982**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**38982**	RunNo:	**52429**					
Prep Date:	**6/29/2018**	Analysis Date:	**7/2/2018**	SeqNo:	**1718684**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		99.8	15	316			

Sample ID	**LCS-38982**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**38982**	RunNo:	**52429**					
Prep Date:	**6/29/2018**	Analysis Date:	**7/2/2018**	SeqNo:	**1718685**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	103	75.9	131			
Surr: BFB	1000		1000		104	15	316			

Sample ID	**1806H75-009AMS**	SampType:	**MS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**B1-20**	Batch ID:	**38982**	RunNo:	**52429**					
Prep Date:	**6/29/2018**	Analysis Date:	**7/2/2018**	SeqNo:	**1718687**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	4.6	23.11	0	91.4	77.8	128			
Surr: BFB	1000		924.2		111	15	316			

Sample ID	**1806H75-009AMSD**	SampType:	**MSD**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**B1-20**	Batch ID:	**38982**	RunNo:	**52429**					
Prep Date:	**6/29/2018**	Analysis Date:	**7/2/2018**	SeqNo:	**1718688**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1806H75**

09-Jul-18

Client: Souder, Miller & Associates

Project: Cannonball

Sample ID	**1806H75-009AMSD**	SampType:	**MSD**		TestCode:	**EPA Method 8015D: Gasoline Range**				
Client ID:	**B1-20**	Batch ID:	**38982**		RunNo:	**52429**				
Prep Date:	**6/29/2018**	Analysis Date:	**7/2/2018**		SeqNo:	**1718688**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	101	77.8	128	17.4	20	
Surr: BFB	1100		1000		108	15	316	0	0	

Sample ID	**MB-39002**	SampType:	**MBLK**		TestCode:	**EPA Method 8015D: Gasoline Range**				
Client ID:	**PBS**	Batch ID:	**39002**		RunNo:	**52464**				
Prep Date:	**7/2/2018**	Analysis Date:	**7/3/2018**		SeqNo:	**1720243**	Units:	**%Rec**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	890		1000		89.0	15	316			

Sample ID	**LCS-39002**	SampType:	**LCS**		TestCode:	**EPA Method 8015D: Gasoline Range**				
Client ID:	**LCSS**	Batch ID:	**39002**		RunNo:	**52464**				
Prep Date:	**7/2/2018**	Analysis Date:	**7/3/2018**		SeqNo:	**1720244**	Units:	**%Rec**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		100	15	316			

Sample ID	**MB-39008**	SampType:	**MBLK**		TestCode:	**EPA Method 8015D: Gasoline Range**				
Client ID:	**PBS**	Batch ID:	**39008**		RunNo:	**52464**				
Prep Date:	**7/2/2018**	Analysis Date:	**7/3/2018**		SeqNo:	**1720264**	Units:	**%Rec**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	900		1000		90.2	15	316			

Sample ID	**LCS-39008**	SampType:	**LCS**		TestCode:	**EPA Method 8015D: Gasoline Range**				
Client ID:	**LCSS**	Batch ID:	**39008**		RunNo:	**52464**				
Prep Date:	**7/2/2018**	Analysis Date:	**7/3/2018**		SeqNo:	**1720265**	Units:	**%Rec**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		103	15	316			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1806H75**

09-Jul-18

Client: Souder, Miller & Associates

Project: Cannonball

Sample ID	**MB-38979**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**PBS**	Batch ID:	**38979**	RunNo:	**52429**					
Prep Date:	**6/29/2018**	Analysis Date:	**7/2/2018**	SeqNo:	**1718709**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		106	80	120			

Sample ID	**LCS-38979**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID:	**38979**	RunNo:	**52429**					
Prep Date:	**6/29/2018**	Analysis Date:	**7/2/2018**	SeqNo:	**1718710**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.025	1.000	0	95.3	77.3	128			
Toluene	0.98	0.050	1.000	0	97.6	79.2	125			
Ethylbenzene	0.98	0.050	1.000	0	97.6	80.7	127			
Xylenes, Total	3.0	0.10	3.000	0	99.3	81.6	129			
Surr: 4-Bromofluorobenzene	1.1		1.000		106	80	120			

Sample ID	**MB-38982**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**PBS**	Batch ID:	**38982**	RunNo:	**52429**					
Prep Date:	**6/29/2018**	Analysis Date:	**7/2/2018**	SeqNo:	**1718718**	Units:	**%Rec**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		107	80	120			

Sample ID	**LCS-38982**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID:	**38982**	RunNo:	**52429**					
Prep Date:	**6/29/2018**	Analysis Date:	**7/2/2018**	SeqNo:	**1718719**	Units:	**%Rec**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		104	80	120			

Sample ID	**1806H75-010AMS**	SampType:	**MS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**B1-22.5**	Batch ID:	**38982**	RunNo:	**52429**					
Prep Date:	**6/29/2018**	Analysis Date:	**7/2/2018**	SeqNo:	**1718721**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.92	0.098	0.9814	0	93.3	56.9	130			
Benzene	0.88	0.025	0.9814	0	89.2	68.5	133			
Toluene	0.91	0.049	0.9814	0	92.9	75	130			
Ethylbenzene	0.93	0.049	0.9814	0	94.8	79.4	128			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1806H75**

09-Jul-18

Client: Souder, Miller & Associates

Project: Cannonball

Sample ID	**1806H75-010AMS**	SampType:	**MS**		TestCode:	**EPA Method 8021B: Volatiles**				
Client ID:	**B1-22.5**	Batch ID:	**38982**		RunNo:	**52429**				
Prep Date:	**6/29/2018**	Analysis Date:	**7/2/2018**		SeqNo:	**1718721**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Xylenes, Total	2.8	0.098	2.944	0	95.5	77.3	131			
Surr: 4-Bromofluorobenzene	1.0		0.9814		106	80	120			

Sample ID	**1806H75-010AMSD**	SampType:	**MSD**		TestCode:	**EPA Method 8021B: Volatiles**				
Client ID:	**B1-22.5**	Batch ID:	**38982**		RunNo:	**52429**				
Prep Date:	**6/29/2018**	Analysis Date:	**7/2/2018**		SeqNo:	**1718722**	Units:	**%Rec**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		0.9699		108	80	120	0	0	

Sample ID	**MB-39002**	SampType:	**MBLK**		TestCode:	**EPA Method 8021B: Volatiles**				
Client ID:	**PBS**	Batch ID:	**39002**		RunNo:	**52464**				
Prep Date:	**7/2/2018**	Analysis Date:	**7/3/2018**		SeqNo:	**1720290**	Units:	**%Rec**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		99.9	80	120			

Sample ID	**LCS-39002**	SampType:	**LCS**		TestCode:	**EPA Method 8021B: Volatiles**				
Client ID:	**LCSS**	Batch ID:	**39002**		RunNo:	**52464**				
Prep Date:	**7/2/2018**	Analysis Date:	**7/3/2018**		SeqNo:	**1720291**	Units:	**%Rec**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		104	80	120			

Sample ID	**MB-39008**	SampType:	**MBLK**		TestCode:	**EPA Method 8021B: Volatiles**				
Client ID:	**PBS**	Batch ID:	**39008**		RunNo:	**52464**				
Prep Date:	**7/2/2018**	Analysis Date:	**7/3/2018**		SeqNo:	**1720312**	Units:	**%Rec**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		102	80	120			

Sample ID	**LCS-39008**	SampType:	**LCS**		TestCode:	**EPA Method 8021B: Volatiles**				
Client ID:	**LCSS**	Batch ID:	**39008**		RunNo:	**52464**				
Prep Date:	**7/2/2018**	Analysis Date:	**7/3/2018**		SeqNo:	**1720313**	Units:	**%Rec**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		104	80	120			

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: SMA-CARLSBAD Work Order Number: 1806H75 RcptNo: 1

Received By: **Erin Melendrez** 6/29/2018 8:45:00 AM

Completed By: **Erin Melendrez** 6/29/2018 10:06:57 AM

Reviewed By: ENM 6/29/18

LB: JAB 06/29/18

Chain of Custody

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

Log In

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

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)
Adjusted? _____
Checked by: JAB 06/29/18

Special Handling (if applicable)

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

Person Notified: _____ Date: _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.3	Good	Not Present			

Chain-of-Custody Record

Client: SNA-Carlsbad

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☑ Rush 5 days

Project Name:

Project #: Cunningham

Project Manager: Austin Weyant

Sampler: LCM

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.3-1.0(CF)=1.3

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
6/26/18		soil		4oz		1806H75
	11:20		BI-0			-001
	11:30		BI-2.5			-002
	11:40		BI-5			-003
	11:50		BI-7.5			-004
	12:00		BI-10			-005
	12:10		BI-12.5			-006
	12:20		BI-15			-007
	12:30		BI-17.5			-008
	12:40		BI-20			-009
	12:50		BI-22.5			-010
	1:00		BI-25			-011
	1:10		BI-27.5			-012

Analysis Request

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
X		X					X								
		X					X								
X		X					X								
		X													
		X													
		X													
		X					X								
		X													
		X													
		X					X								
		X													
		X													

Date:	Time:	Relinquished by:	Received by:	Date	Time
6/28/18	1300			6/28/18	1300
6/28/18	1900		courier	6/29/18	0845

Remarks: Meridian oil

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

July 26, 2018

Austin Weyant
Souder, Miller & Associates
201 S Halagueno
Carlsbad, NM 88221
TEL: (575) 689-7040
FAX

RE: Cannonball OrderNo.: 1807B45

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 4 sample(s) on 7/20/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1807B45**
Date Reported: **7/26/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW1
Project: Cannonball
Collection Date: 7/18/2018 8:40:00 AM
Lab ID: 1807B45-001 **Matrix:** SOIL **Received Date:** 7/20/2018 10:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	7/26/2018 1:55:26 AM	39346
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/26/2018 1:55:26 AM	39346
Surr: DNOP	78.2	50.6-138		%Rec	1	7/26/2018 1:55:26 AM	39346
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	7/24/2018 4:13:48 PM	39339
Surr: BFB	96.7	15-316		%Rec	1	7/24/2018 4:13:48 PM	39339

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

Qualifiers:

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

Analytical Report
Lab Order **1807B45**
Date Reported: **7/26/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW4
Project: Cannonball
Collection Date: 7/18/2018 9:11:00 AM
Lab ID: 1807B45-002 **Matrix:** SOIL **Received Date:** 7/20/2018 10:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	45	9.6		mg/Kg	1	7/26/2018 2:39:36 AM	39346
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/26/2018 2:39:36 AM	39346
Surr: DNOP	82.5	50.6-138		%Rec	1	7/26/2018 2:39:36 AM	39346
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/24/2018 4:37:29 PM	39339
Surr: BFB	95.0	15-316		%Rec	1	7/24/2018 4:37:29 PM	39339

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	
	D	Sample Diluted Due to Matrix	E	Value above quantitation range	
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	Page 2 of 6
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range	
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified	

Analytical Report
Lab Order **1807B45**
Date Reported: **7/26/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW2
Project: Cannonball
Collection Date: 7/17/2018 2:05:00 PM
Lab ID: 1807B45-003 **Matrix:** SOIL **Received Date:** 7/20/2018 10:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	63	9.4		mg/Kg	1	7/26/2018 3:23:53 AM	39346
Motor Oil Range Organics (MRO)	54	47		mg/Kg	1	7/26/2018 3:23:53 AM	39346
Surr: DNOP	87.0	50.6-138		%Rec	1	7/26/2018 3:23:53 AM	39346
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/24/2018 5:01:10 PM	39339
Surr: BFB	92.0	15-316		%Rec	1	7/24/2018 5:01:10 PM	39339

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

Qualifiers:

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

Analytical Report
Lab Order **1807B45**
Date Reported: **7/26/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW3
Project: Cannonball
Collection Date: 7/17/2018 2:10:00 PM
Lab ID: 1807B45-004 **Matrix:** SOIL **Received Date:** 7/20/2018 10:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	1700	92		mg/Kg	10	7/26/2018 4:08:06 AM	39346
Motor Oil Range Organics (MRO)	890	460		mg/Kg	10	7/26/2018 4:08:06 AM	39346
Surr: DNOP	0	50.6-138	S	%Rec	10	7/26/2018 4:08:06 AM	39346
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/24/2018 5:24:47 PM	39339
Surr: BFB	109	15-316		%Rec	1	7/24/2018 5:24:47 PM	39339

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1807B45**

26-Jul-18

Client: Souder, Miller & Associates

Project: Cannonball

Sample ID	**MB-39346**	SampType:	**MBLK**	TestCode:	**EPA Method 8015M/D: Diesel Range Organics**					
Client ID:	**PBS**	Batch ID:	**39346**	RunNo:	**52926**					
Prep Date:	**7/23/2018**	Analysis Date:	**7/24/2018**	SeqNo:	**1739730**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.3		10.00		93.4	50.6	138			

Sample ID	**LCS-39346**	SampType:	**LCS**	TestCode:	**EPA Method 8015M/D: Diesel Range Organics**					
Client ID:	**LCSS**	Batch ID:	**39346**	RunNo:	**52926**					
Prep Date:	**7/23/2018**	Analysis Date:	**7/24/2018**	SeqNo:	**1739734**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	90.0	70	130			
Surr: DNOP	4.1		5.000		81.8	50.6	138			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1807B45**

26-Jul-18

Client: Souder, Miller & Associates

Project: Cannonball

Sample ID	**MB-39339**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**39339**	RunNo:	**52947**					
Prep Date:	**7/23/2018**	Analysis Date:	**7/24/2018**	SeqNo:	**1740052**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	920		1000		92.1	15	316			

Sample ID	**LCS-39339**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**39339**	RunNo:	**52947**					
Prep Date:	**7/23/2018**	Analysis Date:	**7/24/2018**	SeqNo:	**1740053**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	5.0	25.00	0	114	75.9	131			
Surr: BFB	1000		1000		103	15	316			

Sample ID	**MB-39352**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**39352**	RunNo:	**52947**					
Prep Date:	**7/23/2018**	Analysis Date:	**7/24/2018**	SeqNo:	**1740075**	Units:	**%Rec**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	950		1000		95.3	15	316			

Sample ID	**LCS-39352**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**39352**	RunNo:	**52947**					
Prep Date:	**7/23/2018**	Analysis Date:	**7/24/2018**	SeqNo:	**1740076**	Units:	**%Rec**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		103	15	316			

Sample ID	**MB-39374**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**39374**	RunNo:	**52969**					
Prep Date:	**7/24/2018**	Analysis Date:	**7/25/2018**	SeqNo:	**1741357**	Units:	**%Rec**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	940		1000		94.4	15	316			

Sample ID	**LCS-39374**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**39374**	RunNo:	**52969**					
Prep Date:	**7/24/2018**	Analysis Date:	**7/25/2018**	SeqNo:	**1741358**	Units:	**%Rec**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1100		1000		110	15	316			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
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HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: SMA-CARLSBAD Work Order Number: 1807B45 RcptNo: 1

Received By: Isaiah Ortiz 7/20/2018 10:45:00 AM IO

Completed By: Erin Melendrez 7/20/2018 2:31:36 PM

Reviewed By: JAB 07/20/18

LB: IO 7/20/18

Chain of Custody

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

Log In

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

# of preserved bottles checked for pH: IO (<2 or >12 unless noted)
Adjusted? 7/20/18
Checked by: _____

Special Handling (if applicable)

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

Person Notified: _____ Date: _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.6	Good	Yes			

Chain-of-Custody Record

Client: SMA

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time: 5 day turn
☐ Standard ☐ Rush

Project Name: Cannonball

Project #:

Project Manager: Austin Weant

Sampler: Heather Patterson

On Ice: ☒ Yes ☐ No

Sample Temperature: 0.6

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1807B45	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
7/8/18	8:40	Soil	SW1	4oz		-001			X													
7/18/18	9:11		SW4			-002			X													
7/17/18	2:05		SW2			-003			X													
7/17/18	2:10		SW3			-004			X													

Date: 7/19/18 Time: ~~1420~~ 1920 Relinquished by:

Received by: Date: 7/19/18 Time: 1200

Date: 7/19/18 Time: 1900 Relinquished by:

Received by: FedEx courier Date: 7/20/18 Time: 1045

Remarks:

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

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 218195

CONDITIONS

Operator: RAYBAW Operating, LLC 2626 Cole Avenue Dallas, TX 75204	OGRID: 330220
	Action Number: 218195
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jharimon	None	5/25/2023