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

January 21, 2020

#5E27950-BG30

NMOCD District 2
811 S. First St.
Artesia, NM 88210

SUBJECT: Remediation Closure Report for the Taylor Deep 12 Federal #006 Release (2RP-TBD Receipt No. Y423L-191029-C-14010), Eddy County, New Mexico

To Whom It May Concern:

On behalf of Marathon Oil Permian LLC, Souder, Miller & Associates (SMA) has prepared this Remediation Closure Report that describes the remediation of a release of liquids related to oil and gas production activities at the Taylor Deep 12 Federal #006 site. The site is in Unit A, Section 12, Township 18S, Range 31E, Eddy County, New Mexico, on Federal land. Figure 1 illustrates the vicinity and site location on an USGS 7.5 minute quadrangle map.

Table 1 summarizes release information and Closure Criteria.

Table 1: Release Information and Closure Criteria			
Name	Taylor Deep 12 Federal #006	Company	Marathon Oil Permian LLC
API Number	30-015-38143	Location	32.7682724 -103.8161163
Incident Number	2RP-TBD Receipt No. Y423L-191029-C-14010		
Estimated Date of Release	11/21/2019	Date Reported to NMOCD	11/21/2019
Land Owner	Federal	Reported To	NMOCD
Source of Release	Flow line from well head		
Released Volume	32.92 bbls	Released Material	Crude Oil
Recovered Volume	30 bbls	Net Release	2.92
NMOCD Closure Criteria	>100 feet to groundwater		
SMA Response Dates	11/24/2019, 1/6/2020		

1.0 Background

On November 21, 2019, a release was discovered at the Taylor Deep 12 Federal #006 site due to a flow line failure connecting to the well head. Initial response activities were conducted by Marathon Oil, and included source elimination, containment and site stabilization activities. A vacuum truck was dispatched, which recovered approximately thirty (30) barrels of fluid, which was hauled to and disposed of at R360 Environmental Solutions near Hobbs, NM. Figures 1 and 2 illustrate the vicinity and site location, Figure 3 illustrates the release location. The C-141 forms are included in Appendix A.

2.0 Site Information and Closure Criteria

The Taylor Deep 12 Federal #006 is located approximately ten (10) miles southeast of Loco Hills, New Mexico on Federal (BLM) land at an elevation of approximately 3,796 feet above mean sea level (amsl).

Based upon New Mexico Office of the State Engineer (Appendix B), depth to groundwater in the area is estimated to be four hundred forty-five (445) feet below grade surface (bgs). There are no known water well sources within ½-mile of the location, according to the New Mexico Office of the State Engineer (NMOSE) online water well database (https://gis.ose.state.nm.us/gisapps/ose_pod_locations/; accessed 1/16/2020). However, based on the United States Geological Survey, there is one water well source located within ½-mile of the location. The nearest significant watercourse is a water line, located approximately 3,400 feet to the northwest. Figure 2 illustrates the site with 200 and 300-foot radii to indicate that it does not lie within a sensitive area as described in 19.15.29.12.C(4) NMAC.

Based on the information presented herein, the applicable NMOCD Closure Criteria for this site is for a groundwater depth of greater than 100 feet bgs. The site has been restored to meet the standards of Table I of 19.15.29.12 NMAC.

Table 2 demonstrates the Closure Criteria applicable to this location. Pertinent well data is attached in Appendix B.

3.0 Release Characterization and Remediation Activities

On November 24, 2019, SMA personnel arrived on site in response to the release associated with the Taylor Deep 12 Federal #006. SMA performed site delineation activities by collecting soil samples around the release site and throughout the visibly stained area. Soil samples were field-screened for chloride using an electrical conductivity (EC) meter and for hydrocarbon impacts using a calibrated MiniRAE 3000 photoionization detector (PID) equipped with a 10.6 eV lamp.

A total of two (2) sample locations (L1,L2) were investigated using a hand-auger, to depths up to two and a half (2.5) feet bgs. Two samples were collected at each sampling location and field-screened using the methods above. A total of four (4) samples were collected for laboratory analysis for total chloride using EPA Method 300.0; benzene, toluene, ethylbenzene and total xylenes (BTEX) using EPA Method 8021B; and motor, diesel and gasoline range organics (MRO, DRO, and GRO) by EPA Method 8015D.

As summarized in Table 3, results indicated that an area approximately 10 feet by 20 feet by 2.5 feet deep had been impacted.

NMOCD was notified on January 3, 2020 that closure samples were expected to be collected. On January 6, 2020, SMA returned to the site to guide the excavation of contaminated soil. SMA guided the excavation activities by collecting soil samples for field screening.

Samples were screened for chloride using an electrical conductivity (EC) meter and for hydrocarbon impacts using a calibrated MiniRAE 3000 photoionization detector (PID) equipped with a 10.6 eV lamp. The walls and base were excavated until field screening results indicated that the NMOCD Closure Criteria would be met.

On January 6, 2020, SMA conducted confirmation sampling of the walls and base of the excavation, which measured approximately 10 X 11 X 2.5 feet deep. Confirmation samples were comprised of five-point composites of the base (BH1) and walls (CSW1 and CSW2).

A total of three (3) samples were collected for laboratory analysis for total chloride using EPA Method 300.0; benzene, toluene, ethylbenzene and total xylenes (BTEX) using EPA Method 8021B; and motor, diesel and gasoline range organics (MRO, DRO, and GRO) by EPA Method 8015D. Samples were placed into laboratory supplied glassware, labeled, and maintained on ice until delivery to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico (Appendix D).

Figure 3 shows the initial sample locations and Figure 3A shows the extent of the excavation and closure samples. Laboratory results are summarized in Table 3. Laboratory reports are included in Appendix D.

Contaminated soils were removed and replaced with clean backfill material to return the surface to previous contours. The contaminated soil was transported and disposed of at R360 Environmental Solutions near Hobbs, NM, an NMOCD permitted disposal facility.

4.0 Scope and Limitations

The scope of our services included: assessment sampling; verifying release stabilization; regulatory liaison; remediation; and preparing 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 Ashley Maxwell at 505-320-8975 or Shawna Chubbuck at 505-325-7535.

Submitted by:
SOUDER, MILLER & ASSOCIATES

Reviewed by:

Ashley Maxwell
Project Scientist

Shawna Chubbuck
Senior Scientist

Figures:

Figure 1: Vicinity and Well Head Protection Map
Figure 2: Surface Water Radius Map
Figure 3: Site and Initial Sample Location Map
Figure 3a: Excavation and Closure Sample Map

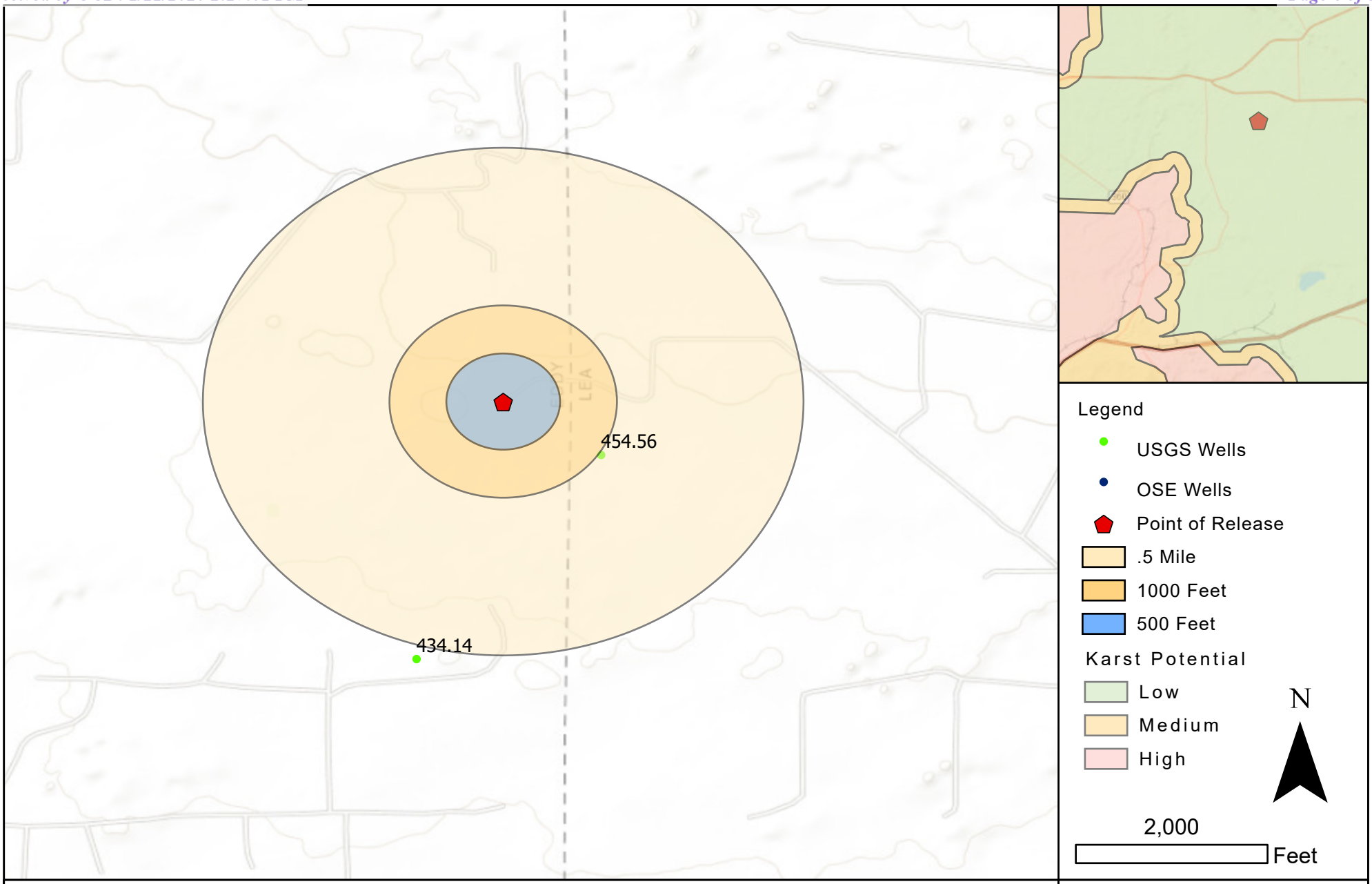
Tables:

Table 2: NMOCD Closure Criteria Justification
Table 3: Summary of Sample Results

Appendices:

Appendix A: Form C141
Appendix B: NMOSE Wells Report
Appendix C: Excavation Photo Log and Field Notes
Appendix D: Laboratory Analytical Reports

FIGURES



Regional Vicinity & Wellhead Protection Map
Taylor Deep 12 Fed #6 - Marathon Oil
UL: A S: 12 T: 18S R: 31E Eddy County, New Mexico

Figure 1

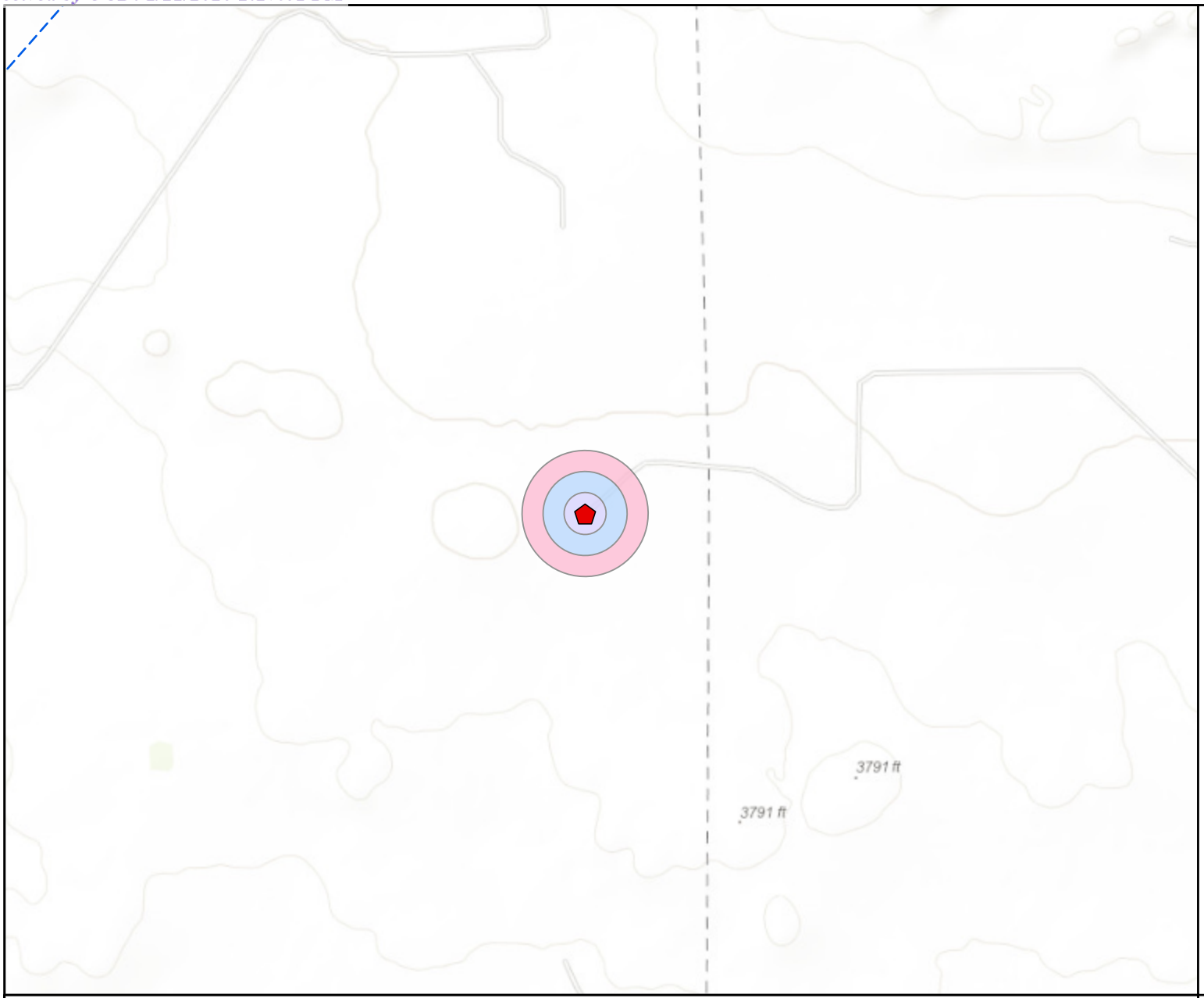
P:\5-Marathon 2019 MSA (5E27950)\GIS\ARC\GSMARATHON_MIT.aprx

Date Saved: 1/16/2020

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

Drawn Lynn A. Acosta
Date 1/16/2020
Checked
Approved

SMA
201 South Halaguena Street
Carlsbad, New Mexico 88221
(575) 689-7040
Serving the Southwest & Rocky Mountains



Legend
- Point of Release
- Streams Canals
- Springs Seeps
- Rivers
- Flowlines SENM
- NM Wetlands
- Lakes Playas
- FEMA Flood Zones 2011
- 100 Feet
- 200 Feet
- 300 Feet

N

1,000 Feet

Surface Water Protection Map
Taylor Deep 12 Fed #6 - Marathon Oil
UL: A S: 12 T: 18S R: 31E Eddy County, New Mexico

Figure 2

P:\5-Marathon 2019 MSA (5E27950)\GIS\ARC\GSMARATHON_MIT.aprx

Date Saved: 1/16/2020

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

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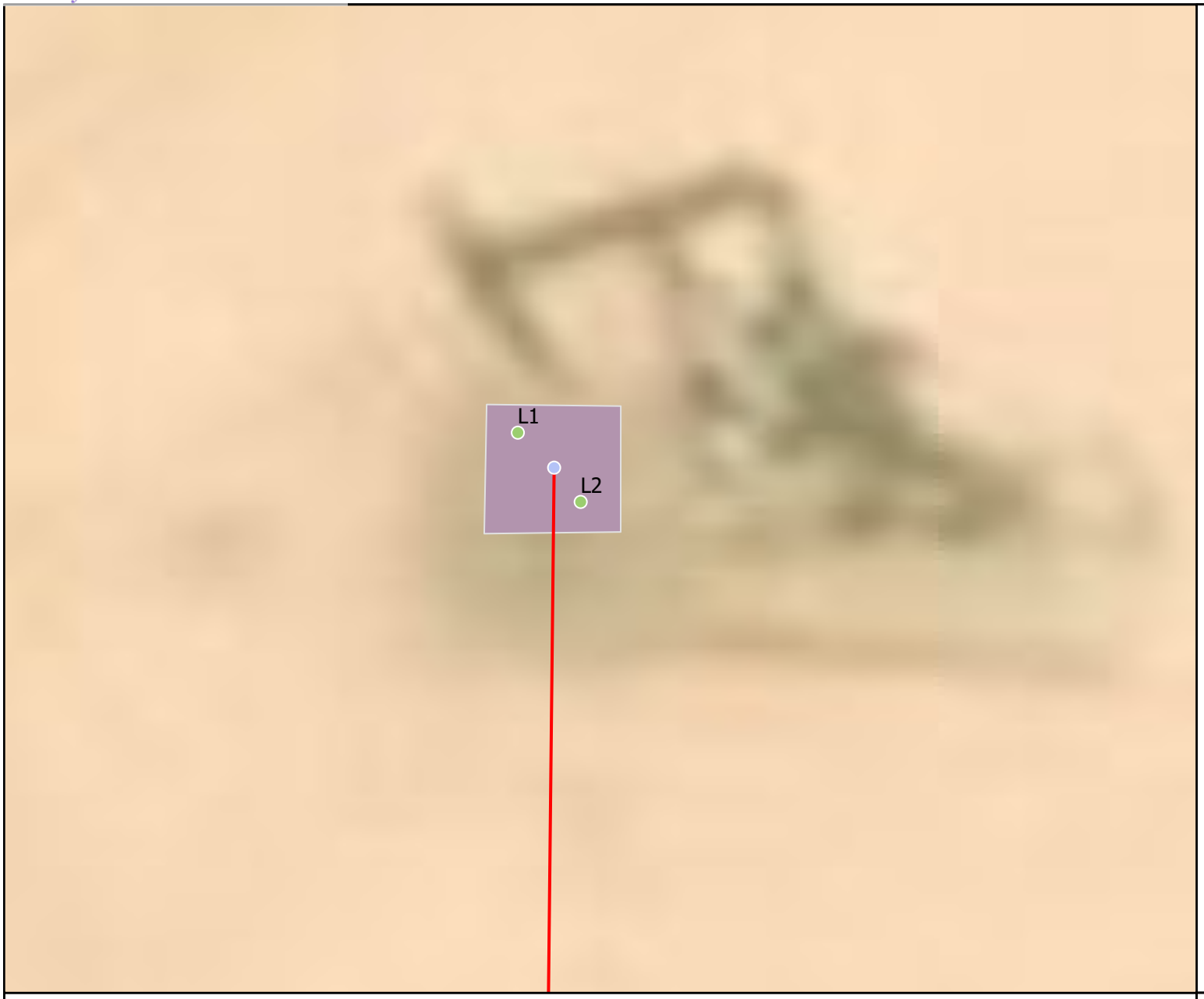

Legend
- Point of Release
- Sample Locations
- Release Area
- Pipelines

N

0 6.25 12.5 25
Feet

Site and Sample Location Map
Taylor Deep 12 Fed #6 - Marathon Oil LLC
UL: A S: 12 T: 18S R: 31E Eddy County, New Mexico

Figure 3

\\192.168.22.10\Projects\5-Marathon MSA 2019 (5E27950)\GIS\ARCGIS\MARATHON_MIT.aprx

Date Saved: 1/16/2020

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

Drawn Lynn A. Acosta
Date 1/16/2020
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SMA

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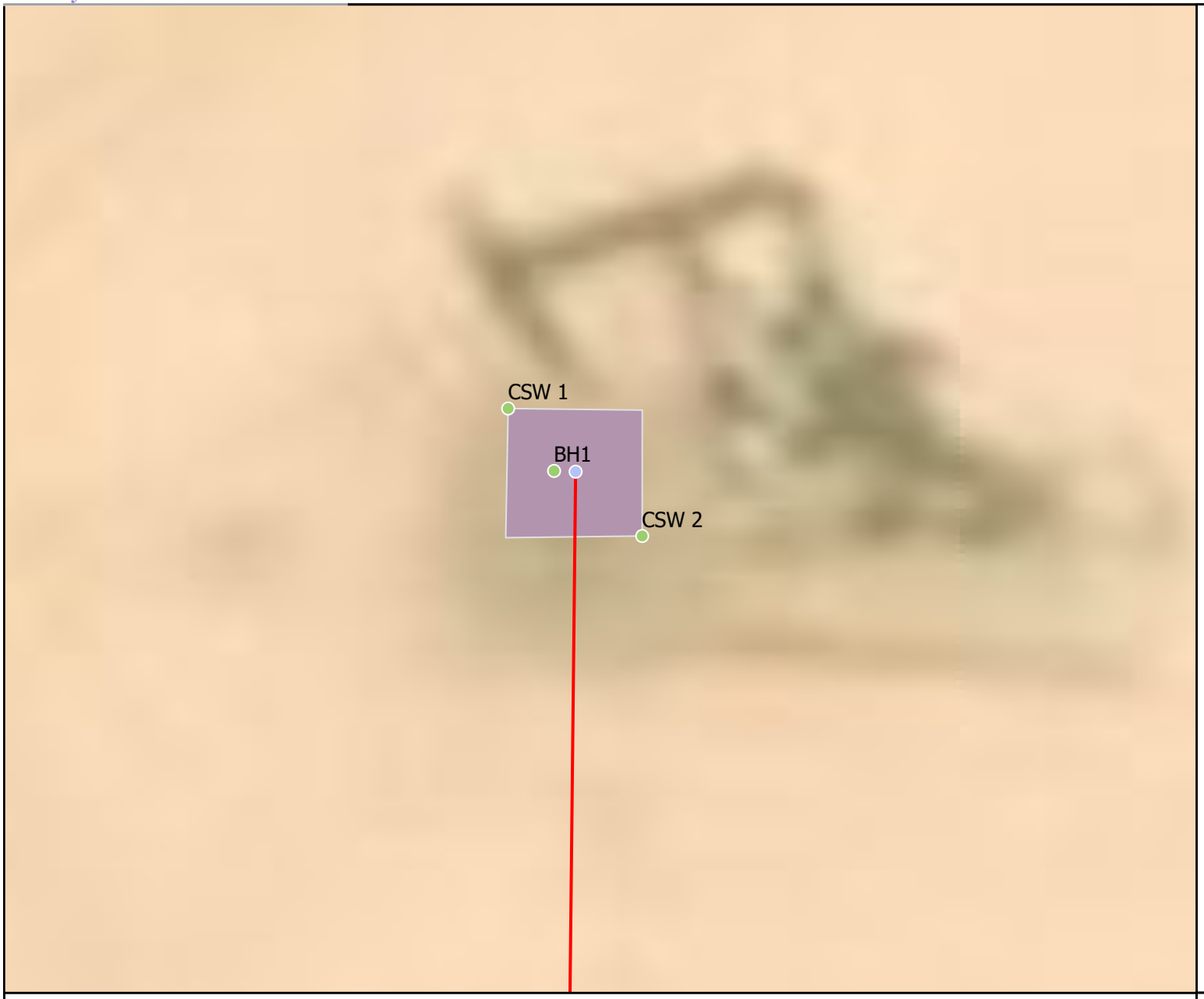

Legend
- Point of Release
- Sample Locations
- Release Area
- Pipelines

N

0 6.25 12.5 25
Feet

Site and Sample Location Map
Taylor Deep 12 Fed #6 - Marathon Oil LLC
UL: A S: 12 T: 18S R: 31E Eddy County, New Mexico

Figure 3A

\\192.168.22.10\Projects\5-Marathon MSA 2019 (5E27950)\GIS\ARCGIS\MARATHON_MIT.aprx

Date Saved: 1/16/2020

Revisions
By: Date: Descr:
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Drawn Lynn A. Acosta
Date 1/16/2020
Checked
Approved

SMA

201 South Halagueno Street
Carlsbad, New Mexico 88220
(575) 689-7040
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TABLES

Table 2:
NMOCD Closure Criteria

Marathon Oil Permian LLC
Taylor Deep 12 Federal #6 (2RP-TBD)

Site Information (19.15.29.11.A(2, 3, and 4) NMAC)		Source/Notes
Depth to Groundwater (feet bgs)	445, 454	New Mexico Office of The State Engineer, USGS
Hortizontal Distance From All Water Sources Within 1/2 Mile (ft)	-	
Hortizontal Distance to Nearest Significant Watercourse (ft)	3,400	USGS Topographic Map

Closure Criteria (19.15.29.12.B(4) and Table 1 NMAC)						
Depth to Groundwater		**Closure Criteria (units in mg/kg)**				
		Chloride *numerical limit or background, whichever is greater	**TPH**	**GRO + DRO**	**BTEX**	**Benzene**
< 50' BGS		600	100		50	10
51' to 100'		10000	2500	1000	50	10
>100'	x	20000	2500	1000	50	10
Surface Water	**yes or no**	**if yes, then**				
<300' from continuously flowing watercourse or other significant watercourse?	No	600	100		50	10
<200' from lakebed, sinkhole or playa lake?	No					
Water Well or Water Source						
<500 feet from spring or a private, domestic fresh water well used by less than 5 households for domestic or stock watering purposes?	No					
<1000' from fresh water well or spring?	No					
Human and Other Areas						
<300' from an occupied permanent residence, school, hospital, institution or church?	No					
within incorporated municipal boundaries or within a defined municipal fresh water well field?	No					
<100' from wetland?	No					
within area overlying a subsurface mine	No					
within an unstable area?	No					
within a 100-year floodplain?	No					

Table 3:
Summary of Sample Results

Marathon Oil Permian LLC
Taylor Deep 12 Federal #6 (2RP-TBD)

Sample ID	Sample Date	Depth (feet bgs)	Proposed Action/ Action Taken	BTEX mg/Kg	Benzene mg/Kg	GRO mg/Kg	DRO mg/Kg	MRO mg/Kg	**Total TPH** mg/Kg	Cl- mg/Kg
NMOCD Closure Criteria				50	10				2500	20000
L1	11/24/2019	1.5	excavated	0.304	<0.023	<4.7	96	58	154	620
		2.5	in-situ	<0.219	<0.024	<4.9	230	130	360	170
L2	11/24/2019	2	excavated	<0.207	<0.023	<4.6	49	<49	49	440
		2.5	in-situ	<0.221	<0.025	<4.9	<9.7	<49	<63.6	180
Closure Sampling										
BH1	1/6/2020	2.5	in-situ	<0.221	<0.025	<4.9	<10	<50	<64.9	160
SW1	1/6/2020	0-2.5	in-situ	<0.215	<0.024	<4.8	11	<46	11	390
SW2	1/6/2020	0-2.5	in-situ	<0.212	<0.024	<4.7	<9.6	<48	<62.3	310

"--" = Not Analyzed

APPENDIX A

FORM C141

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

State of New Mexico
Energy Minerals and Natural Resources Department

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

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

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party Marathon Oil Permian LLC	OGRID 372098
Contact Name Isaac Castro	Contact Telephone 575-988-0561
Contact email icastro@marathonoil.com	Incident # *(assigned by OCD)*
Contact mailing address 4111 S. Tidwell Rd., Carlsbad, NM 8220	

Location of Release Source

Latitude 32.7682724 Longitude - 103.8161163
(NAD 83 in decimal degrees to 5 decimal places)

Site Name TAYLOR DEEP 12 FEDERAL #006	Site Type Oil and gas drilling facility
Date Release Discovered 11/21/19	API# *(if applicable)* 30-015-38143

Unit Letter	Section	Township	Range	County
A	12	18S	31E	Eddy

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

Nature and Volume of Release

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

☒ Crude Oil	Volume Released (bbls) 32.92 bbls	Volume Recovered (bbls) 30 bbls
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

Production reported a spill due to a failure on the flow line from the well head. 32.92 bbls of oil were released onto the pad. Initial response was to shut in the well to immediately to stop the flow of oil to the pipe and get a vacuum truck to recover fluids on surface (recovered 30bbls).

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? This was a major release as defined by NMAC 19.15.29.7(A) based on volume of material released.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Yes, to Mike Bratcher, Victoria Venegas, Robert Hamlet, Jim Griswold, blm_nm_cfo_spill@blm.gov	

Initial Response

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

☒ The source of the release has been stopped.

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

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

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

If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

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

Printed Name: Isaac Castro Title: Environmental Professional

Signature: Isaac Castro Date: 11/26/19

email: icastro@marathonoil.com Telephone: 575-988-0561

OCD Only

Received by: _____ Date: _____

Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	445 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

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

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

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

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

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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

Printed Name: Melodie Sanjari

Title: Environmental Professional

Signature: Melodie Sanjari

Date: 1/20/2020

email: msanjari@marathonoil.com

Telephone: 575-988-0561

OCD Only

Received by: _____

Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

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

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

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

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

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

☒ Description of remediation activities

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

Printed Name: Melodie Sanjari Title: Environmental Professional

Signature: Melodie Sanjari Date: 1/20/2020

email: msanjari@marathonoil.com Telephone: 575-988-0561

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

APPENDIX 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	Code	POD Sub-basin	County	Q Q Q 64 16 4	Sec	Tws	Rng	X	Y		Distance	Depth Well	Depth Water	Water Column
CP 00672		CP	LE	4 4 4	07	18S	32E	612475	3624947*	•	2036	524	430	94
CP 00672 CLW475398	O	CP	LE	4 4 4	07	18S	32E	612475	3624947*	•	2036	540	460	80
CP 00814 POD1		CP	LE	2 2 4	08	18S	32E	614074	3626168*	•	3190	480		

Average Depth to Water: **445 feet**

Minimum Depth: **430 feet**

Maximum Depth: **460 feet**

Record Count: 3

UTMNAD83 Radius Search (in meters):

Easting (X): 610884 **Northing (Y):** 3626218 **Radius:** 4000

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

1/15/20 11:43 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER

Click to hideNews Bulletins

- Please see news on new formats
- Full News

Groundwater levels for the Nation

Search Results -- 1 sites found

Agency code = usgs
site_no list =
- 324539103490501

Minimum number of levels = 1
Save file of selected sites to local disk for future upload

USGS 324539103490501 18S.31E.12.23144

Eddy County, New Mexico
Latitude 32°45'39", Longitude 103°49'05" NAD27
Land-surface elevation 3,775 feet above NAVD88
The depth of the well is 600 feet below land surface.
This well is completed in the Santa Rosa Sandstone (231SNRS) local aquifer.

Output formats

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

Date	Time	? Water-level date-time accuracy	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Water-level accuracy	? Status	? Method of measurement	? Measuring agency	? Source o measure
1968-03-07		D	435.54			2		U		
1971-04-07		D	435.34			2		U		
1976-05-27		D	434.45			2		U		
1983-04-11		D	433.76			2		U		
1987-01-26		D	377.06			2		S		
1990-09-25		D	433.04			2		S		
1994-03-17		D	434.14			2		S		

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Water-level accuracy	2	Water level accuracy to nearest hundredth of a foot
Status		The reported water-level measurement represents a static level
Method of measurement	S	Steel-tape measurement.
Method of measurement	U	Unknown method.
Measuring agency		Not determined
Source of measurement	U	Source is unknown.
Water-level approval status	A	Approved for publication -- Processing and review completed.

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

U.S. Department of the Interior | U.S. Geological Survey
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: 2019-01-29 16:54:41 EST
0.66 0.57 nadww01

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- Please see news on new formats
- Full News

Groundwater levels for the Nation

Search Results -- 1 sites found

Agency code = usgs
site_no list =
- 324600103484601

Minimum number of levels = 1
Save file of selected sites to local disk for future upload

USGS 324600103484601 18S.31E.01.44432

Eddy County, New Mexico
Latitude 32°46'00", Longitude 103°48'46" NAD27
Land-surface elevation 3,790 feet above NAVD88
This well is completed in the Santa Rosa Sandstone (231SNRS) local aquifer.

Output formats

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

Date	Time	? Water-level date-time accuracy	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Water-level accuracy	? Status	? Method of measurement	? Measuring agency	? Source o measure
1971-04-07		D	460.42			2	S	U		
1976-05-27		D	454.56			2		U		
1986-01-26		D	454.29			2		S		
1990-09-25		D	453.62			2		S		
1994-03-17		D	454.25			2		S		

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Water-level accuracy	2	Water level accuracy to nearest hundredth of a foot
Status		The reported water-level measurement represents a static level
Status	S	Nearby site that taps the same aquifer was being pumped.
Method of measurement	S	Steel-tape measurement.
Method of measurement	U	Unknown method.
Measuring agency		Not determined
Source of measurement	U	Source is unknown.
Water-level approval status	A	Approved for publication -- Processing and review completed.

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

U.S. Department of the Interior | U.S. Geological Survey
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: 2019-01-29 16:59:01 EST
21.75 0.43 nadww01

APPENDIX C
EXCAVATION PHOTO LOG
&
FIELD NOTES


S
180
210
SW
240
W
270
229°SW (T)
32°46'5"N, 103°48'57"W ±16ft
3808ft
Taylor Deep 12 Fed #6
Lynn A. Acosta
Marathon Oil
06 Jan 2020, 15:31:21


E
SE
S
60
90
120
150
180
125°SE (T)
32°46'5"N, 103°48'57"W ±16ft
3802ft
Taylor Deep 12 Fed #6
Lynn A. Acosta
Marathon Oil
06 Jan 2020, 15:30:51


N
NE
E
330
0
30
60
90
30°NE (T)
32°46'5"N, 103°48'57"W ±16ft
3801ft
Taylor Deep 12 Fes #6
Lynn A. Acosta
Marathon Oil
06 Jan 2020, 15:29:45

SMA Field Screening

Location Name: Taylor Deep 12 Fed #6

Date: 11/24/19

Sample Name:	Soil Type:	Depth (BGS)	Collection Time:	EC (ppm)	Temp (°C)	PID Reading	PF
L1-1.5'	Sand	1.5'	1418	0.42	14.2	311	
L1-2'	Sand	2'	1423	0.46	14.2	112	
L1-2.5'	Sand	2.5'	1432	0.18	13.9	50.1	
L2-2'	Sand	2	1450	0.42	14.5	127	
L2-2.5'	Sand	2.5	1456	0.21	14.5	46.2	

SMA Field Screening

Location Name: Taylor Deep 12 Fed #6

Date: 1/6/2020

Sample Name:	Soil Type:	Depth (BGS)	Collection Time:	EC (ppm)	Temp (°C)	PID Reading	PF
BH 1	Sand, caliche	2.5'	3:30	0.21	14.5	46.7	—
SW 1	caliche/sand	0-2.5'	3:35	0.42	14.5	12.1	—
SW 2	"	"	3:45	0.37	14.4	8.7	—

APPENDIX D

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

December 04, 2019

Ashley Maxwell
Souder, Miller & Associates
201 S Halagueno
Carlsbad, NM 88221
TEL: (575) 689-8801
FAX

RE: Taylor Deep 12 Fed 6 OrderNo.: 1911B75

Dear Ashley Maxwell:

Hall Environmental Analysis Laboratory received 4 sample(s) on 11/26/2019 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 **1911B75**
Date Reported: **12/4/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L1-1.5'
Project: Taylor Deep 12 Fed 6
Collection Date: 11/24/2019 2:18:00 PM
Lab ID: 1911B75-001 **Matrix:** SOIL **Received Date:** 11/26/2019 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	620	60		mg/Kg	20	12/3/2019 2:30:38 PM	49115
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	96	9.6		mg/Kg	1	11/27/2019 5:56:40 PM	49026
Motor Oil Range Organics (MRO)	58	48		mg/Kg	1	11/27/2019 5:56:40 PM	49026
Surr: DNOP	110	70-130		%Rec	1	11/27/2019 5:56:40 PM	49026
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/27/2019 10:27:13 PM	49037
Surr: BFB	110	77.4-118		%Rec	1	11/27/2019 10:27:13 PM	49037
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	11/27/2019 10:27:13 PM	49037
Toluene	0.092	0.047		mg/Kg	1	11/27/2019 10:27:13 PM	49037
Ethylbenzene	0.082	0.047		mg/Kg	1	11/27/2019 10:27:13 PM	49037
Xylenes, Total	0.13	0.094		mg/Kg	1	11/27/2019 10:27:13 PM	49037
Surr: 4-Bromofluorobenzene	98.1	80-120		%Rec	1	11/27/2019 10:27:13 PM	49037

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

Qualifiers:

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

Analytical Report
Lab Order **1911B75**
Date Reported: **12/4/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L1-2.5'
Project: Taylor Deep 12 Fed 6
Collection Date: 11/24/2019 2:32:00 PM
Lab ID: 1911B75-002 **Matrix:** SOIL
Received Date: 11/26/2019 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	170	60		mg/Kg	20	12/3/2019 2:42:58 PM	49115
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	230	9.7		mg/Kg	1	12/2/2019 12:22:58 PM	49026
Motor Oil Range Organics (MRO)	130	49		mg/Kg	1	12/2/2019 12:22:58 PM	49026
Surr: DNOP	116	70-130		%Rec	1	12/2/2019 12:22:58 PM	49026
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/27/2019 11:36:40 PM	49037
Surr: BFB	112	77.4-118		%Rec	1	11/27/2019 11:36:40 PM	49037
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/27/2019 11:36:40 PM	49037
Toluene	ND	0.049		mg/Kg	1	11/27/2019 11:36:40 PM	49037
Ethylbenzene	ND	0.049		mg/Kg	1	11/27/2019 11:36:40 PM	49037
Xylenes, Total	ND	0.097		mg/Kg	1	11/27/2019 11:36:40 PM	49037
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	11/27/2019 11:36:40 PM	49037

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

Qualifiers:

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

Analytical Report
Lab Order **1911B75**
Date Reported: **12/4/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L2-2'
Project: Taylor Deep 12 Fed 6
Collection Date: 11/24/2019 2:50:00 PM
Lab ID: 1911B75-003 **Matrix:** SOIL **Received Date:** 11/26/2019 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	440	60		mg/Kg	20	12/3/2019 3:20:00 PM	49115
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	49	9.7		mg/Kg	1	11/27/2019 6:14:59 PM	49026
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/27/2019 6:14:59 PM	49026
Surr: DNOP	110	70-130		%Rec	1	11/27/2019 6:14:59 PM	49026
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/28/2019 12:45:56 AM	49037
Surr: BFB	103	77.4-118		%Rec	1	11/28/2019 12:45:56 AM	49037
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	11/28/2019 12:45:56 AM	49037
Toluene	ND	0.046		mg/Kg	1	11/28/2019 12:45:56 AM	49037
Ethylbenzene	ND	0.046		mg/Kg	1	11/28/2019 12:45:56 AM	49037
Xylenes, Total	ND	0.092		mg/Kg	1	11/28/2019 12:45:56 AM	49037
Surr: 4-Bromofluorobenzene	98.6	80-120		%Rec	1	11/28/2019 12:45:56 AM	49037

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

Qualifiers:

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

Analytical Report
Lab Order **1911B75**
Date Reported: **12/4/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L2-2.5'
Project: Taylor Deep 12 Fed 6
Collection Date: 11/24/2019 2:56:00 PM
Lab ID: 1911B75-004 **Matrix:** SOIL **Received Date:** 11/26/2019 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	180	60		mg/Kg	20	12/3/2019 3:32:21 PM	49115
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	11/27/2019 6:24:06 PM	49026
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/27/2019 6:24:06 PM	49026
Surr: DNOP	111	70-130		%Rec	1	11/27/2019 6:24:06 PM	49026
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/28/2019 1:08:59 AM	49037
Surr: BFB	101	77.4-118		%Rec	1	11/28/2019 1:08:59 AM	49037
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	11/28/2019 1:08:59 AM	49037
Toluene	ND	0.049		mg/Kg	1	11/28/2019 1:08:59 AM	49037
Ethylbenzene	ND	0.049		mg/Kg	1	11/28/2019 1:08:59 AM	49037
Xylenes, Total	ND	0.098		mg/Kg	1	11/28/2019 1:08:59 AM	49037
Surr: 4-Bromofluorobenzene	96.7	80-120		%Rec	1	11/28/2019 1:08:59 AM	49037

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1911B75**

04-Dec-19

Client: Souder, Miller & Associates

Project: Taylor Deep 12 Fed 6

Sample ID: **MB-49115**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **49115**	RunNo: **64888**							
Prep Date: **12/3/2019**	Analysis Date: **12/3/2019**	SeqNo: **2226023**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-49115**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **49115**	RunNo: **64888**							
Prep Date: **12/3/2019**	Analysis Date: **12/3/2019**	SeqNo: **2226024**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.8	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1911B75**

04-Dec-19

Client: Souder, Miller & Associates

Project: Taylor Deep 12 Fed 6

Sample ID: **LCS-49026** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **49026** RunNo: **64812**

Prep Date: **11/26/2019** Analysis Date: **11/27/2019** SeqNo: **2222660** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	10	50.00	0	104	63.9	124			
Surr: DNOP	4.3		5.000		85.4	70	130			

Sample ID: **MB-49026** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **49026** RunNo: **64812**

Prep Date: **11/26/2019** Analysis Date: **11/27/2019** SeqNo: **2222661** 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	9.1		10.00		91.1	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1911B75**

04-Dec-19

Client: Souder, Miller & Associates

Project: Taylor Deep 12 Fed 6

Sample ID: **MB-49037** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **PBS** Batch ID: **49037** RunNo: **64830**

Prep Date: **11/26/2019** Analysis Date: **11/27/2019** SeqNo: **2222438** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1100		1000		108	77.4	118			

Sample ID: **LCS-49037** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **LCSS** Batch ID: **49037** RunNo: **64830**

Prep Date: **11/26/2019** Analysis Date: **11/27/2019** SeqNo: **2222439** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	103	80	120			
Surr: BFB	1200		1000		122	77.4	118			S

Sample ID: **1911B75-001AMS** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **L1-1.5'** Batch ID: **49037** RunNo: **64830**

Prep Date: **11/26/2019** Analysis Date: **11/27/2019** SeqNo: **2222441** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	4.9	24.30	0	112	69.1	142			
Surr: BFB	1300		971.8		134	77.4	118			S

Sample ID: **1911B75-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **L1-1.5'** Batch ID: **49037** RunNo: **64830**

Prep Date: **11/26/2019** Analysis Date: **11/27/2019** SeqNo: **2222442** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	5.0	24.78	0	112	69.1	142	2.07	20	
Surr: BFB	1400		991.1		140	77.4	118	0	0	S

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1911B75**

04-Dec-19

Client: Souder, Miller & Associates

Project: Taylor Deep 12 Fed 6

Sample ID: **MB-49037** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **49037** RunNo: **64830**

Prep Date: **11/26/2019** Analysis Date: **11/27/2019** SeqNo: **2222488** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		103	80	120			

Sample ID: **LCS-49037** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSS** Batch ID: **49037** RunNo: **64830**

Prep Date: **11/26/2019** Analysis Date: **11/27/2019** SeqNo: **2222489** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	106	80	120			
Toluene	1.1	0.050	1.000	0	108	80	120			
Ethylbenzene	1.1	0.050	1.000	0	108	80	120			
Xylenes, Total	3.3	0.10	3.000	0	108	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		107	80	120			

Sample ID: **1911B75-002AMS** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **L1-2.5'** Batch ID: **49037** RunNo: **64830**

Prep Date: **11/26/2019** Analysis Date: **11/27/2019** SeqNo: **2222492** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.023	0.9285	0.01081	107	76	123			
Toluene	1.0	0.046	0.9285	0.01714	109	80.3	127			
Ethylbenzene	1.0	0.046	0.9285	0.02064	108	80.2	131			
Xylenes, Total	3.0	0.093	2.786	0.03973	107	78	133			
Surr: 4-Bromofluorobenzene	0.95		0.9285		103	80	120			

Sample ID: **1911B75-002AMSD** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **L1-2.5'** Batch ID: **49037** RunNo: **64830**

Prep Date: **11/26/2019** Analysis Date: **11/28/2019** SeqNo: **2222493** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.025	0.9881	0.01081	93.1	76	123	7.81	20	
Toluene	0.95	0.049	0.9881	0.01714	94.4	80.3	127	7.90	20	
Ethylbenzene	0.95	0.049	0.9881	0.02064	94.2	80.2	131	7.51	20	
Xylenes, Total	2.8	0.099	2.964	0.03973	94.6	78	133	6.44	20	
Surr: 4-Bromofluorobenzene	0.95		0.9881		96.0	80	120	0	0	

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **SMA-CARLSBAD** Work Order Number: **1911B75** RcptNo: **1**

Received By: Juan Rojas **11/26/2019 9:00:00 AM**

Completed By: **Erin Melendrez** **11/26/2019 9:08:41 AM**

Reviewed By: DM 11/26/19

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
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: ENM 11/26/19

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

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

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.3	Good	Yes			

Chain-of-Custody Record

Client: SMA- Carlsbad

Mailing Address:

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

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

Project Name: Taylor Deep 12 Fed #6

Project #:

Project Manager: Ashley Maxwell

Sampler: CAA

On Ice: ☑ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 3.3-0=3.3

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 Name	Container Type and #	Preservative Type	HEAL No. 1911375	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
11/24/19	1418	Soil	CL-1.5'	4oz		-001	X	X					X			
	1432		CL-2.5'			-002	X	X					X			
	1450		CL2-2'			-003	X	X					X			
	1456		CL2-2.5'			-004	X	X					X			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
11/25	7:00				11/25/19	0900
11/25/19	1940			carrier	11/26/19	9:00

Remarks: Marathon Oil

Direct Bill

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

January 14, 2020

Ashley Maxwell

Souder, Miller & Associates
201 S Halagueno
Carlsbad, NM 88221
TEL: (575) 689-8801
FAX:

RE: Taylor Deep 12 OrderNo.: 2001226

Dear Ashley Maxwell:

Hall Environmental Analysis Laboratory received 3 sample(s) on 1/8/2020 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 **2001226**
Date Reported: **1/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BH1
Project: Taylor Deep 12
Collection Date: 1/6/2020 3:30:00 PM
Lab ID: 2001226-001 **Matrix:** SOIL **Received Date:** 1/8/2020 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	160	60		mg/Kg	20	1/10/2020 6:00:23 PM	49749
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	1/10/2020 9:52:12 AM	49717
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/10/2020 9:52:12 AM	49717
Surr: DNOP	107	55.1-146		%Rec	1	1/10/2020 9:52:12 AM	49717
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	1/9/2020 9:45:51 AM	49708
Surr: BFB	86.4	66.6-105		%Rec	1	1/9/2020 9:45:51 AM	49708
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	1/9/2020 9:45:51 AM	49708
Toluene	ND	0.049		mg/Kg	1	1/9/2020 9:45:51 AM	49708
Ethylbenzene	ND	0.049		mg/Kg	1	1/9/2020 9:45:51 AM	49708
Xylenes, Total	ND	0.098		mg/Kg	1	1/9/2020 9:45:51 AM	49708
Surr: 4-Bromofluorobenzene	98.0	80-120		%Rec	1	1/9/2020 9:45:51 AM	49708

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

Qualifiers:

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

Analytical Report
Lab Order **2001226**
Date Reported: **1/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW1
Project: Taylor Deep 12
Collection Date: 1/6/2020 3:35:00 PM
Lab ID: 2001226-002 **Matrix:** SOIL **Received Date:** 1/8/2020 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	390	60		mg/Kg	20	1/10/2020 6:37:26 PM	49749
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	11	9.2		mg/Kg	1	1/10/2020 10:58:15 AM	49717
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	1/10/2020 10:58:15 AM	49717
Surr: DNOP	110	55.1-146		%Rec	1	1/10/2020 10:58:15 AM	49717
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	1/9/2020 10:56:53 AM	49708
Surr: BFB	79.1	66.6-105		%Rec	1	1/9/2020 10:56:53 AM	49708
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	1/9/2020 10:56:53 AM	49708
Toluene	ND	0.048		mg/Kg	1	1/9/2020 10:56:53 AM	49708
Ethylbenzene	ND	0.048		mg/Kg	1	1/9/2020 10:56:53 AM	49708
Xylenes, Total	ND	0.095		mg/Kg	1	1/9/2020 10:56:53 AM	49708
Surr: 4-Bromofluorobenzene	89.2	80-120		%Rec	1	1/9/2020 10:56:53 AM	49708

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

Qualifiers:

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

Analytical Report
Lab Order **2001226**
Date Reported: **1/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW2
Project: Taylor Deep 12
Collection Date: 1/6/2020 3:45:00 PM
Lab ID: 2001226-003 **Matrix:** SOIL **Received Date:** 1/8/2020 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	310	60		mg/Kg	20	1/10/2020 6:49:47 PM	49749
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	1/10/2020 11:20:13 AM	49717
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	1/10/2020 11:20:13 AM	49717
Surr: DNOP	109	55.1-146		%Rec	1	1/10/2020 11:20:13 AM	49717
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	1/9/2020 12:07:45 PM	49708
Surr: BFB	81.8	66.6-105		%Rec	1	1/9/2020 12:07:45 PM	49708
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	1/9/2020 12:07:45 PM	49708
Toluene	ND	0.047		mg/Kg	1	1/9/2020 12:07:45 PM	49708
Ethylbenzene	ND	0.047		mg/Kg	1	1/9/2020 12:07:45 PM	49708
Xylenes, Total	ND	0.094		mg/Kg	1	1/9/2020 12:07:45 PM	49708
Surr: 4-Bromofluorobenzene	91.6	80-120		%Rec	1	1/9/2020 12:07:45 PM	49708

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001226**

14-Jan-20

Client: Souder, Miller & Associates

Project: Taylor Deep 12

Sample ID: **MB-49749** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBS** Batch ID: **49749** RunNo: **65712**

Prep Date: **1/10/2020** Analysis Date: **1/10/2020** SeqNo: **2257076** Units: **mg/Kg**

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

Sample ID: **LCS-49749** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**

Client ID: **LCSS** Batch ID: **49749** RunNo: **65712**

Prep Date: **1/10/2020** Analysis Date: **1/10/2020** SeqNo: **2257077** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.0	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001226**

14-Jan-20

Client: Souder, Miller & Associates

Project: Taylor Deep 12

Sample ID: **LCS-49717** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **49717** RunNo: **65691**

Prep Date: **1/9/2020** Analysis Date: **1/10/2020** SeqNo: **2256625** 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	63.9	124			
Surr: DNOP	4.8		5.000		95.9	55.1	146			

Sample ID: **MB-49717** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **49717** RunNo: **65691**

Prep Date: **1/9/2020** Analysis Date: **1/10/2020** SeqNo: **2256626** 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		105	55.1	146			

Sample ID: **2001226-001AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **BH1** Batch ID: **49717** RunNo: **65691**

Prep Date: **1/9/2020** Analysis Date: **1/10/2020** SeqNo: **2256689** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	9.6	47.80	0	106	47.4	136			
Surr: DNOP	4.8		4.780		99.6	55.1	146			

Sample ID: **2001226-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **BH1** Batch ID: **49717** RunNo: **65691**

Prep Date: **1/9/2020** Analysis Date: **1/10/2020** SeqNo: **2256690** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	9.8	49.16	0	105	47.4	136	1.58	43.4	
Surr: DNOP	4.9		4.916		99.4	55.1	146	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001226**

14-Jan-20

Client: Souder, Miller & Associates

Project: Taylor Deep 12

Sample ID: **mb-49708** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **PBS** Batch ID: **49708** RunNo: **65680**

Prep Date: **1/8/2020** Analysis Date: **1/9/2020** SeqNo: **2256104** 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	940		1000		93.6	66.6	105			

Sample ID: **lcs-49708** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **LCSS** Batch ID: **49708** RunNo: **65680**

Prep Date: **1/8/2020** Analysis Date: **1/9/2020** SeqNo: **2256105** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	89.1	80	120			
Surr: BFB	990		1000		99.3	66.6	105			

Sample ID: **2001226-001ams** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **BH1** Batch ID: **49708** RunNo: **65680**

Prep Date: **1/8/2020** Analysis Date: **1/9/2020** SeqNo: **2256107** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	4.6	23.17	0	109	69.1	142			
Surr: BFB	890		926.8		95.8	66.6	105			

Sample ID: **2001226-001amsd** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **BH1** Batch ID: **49708** RunNo: **65680**

Prep Date: **1/8/2020** Analysis Date: **1/9/2020** SeqNo: **2256108** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	4.9	24.44	0	111	69.1	142	6.74	20	
Surr: BFB	980		977.5		100	66.6	105	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001226**

14-Jan-20

Client: Souder, Miller & Associates

Project: Taylor Deep 12

Sample ID: **mb-49708** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **49708** RunNo: **65680**

Prep Date: **1/8/2020** Analysis Date: **1/9/2020** SeqNo: **2256130** 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		107	80	120			

Sample ID: **LCS-49708** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSS** Batch ID: **49708** RunNo: **65680**

Prep Date: **1/8/2020** Analysis Date: **1/9/2020** SeqNo: **2256131** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.025	1.000	0	89.2	80	120			
Toluene	0.93	0.050	1.000	0	93.0	80	120			
Ethylbenzene	0.92	0.050	1.000	0	91.9	80	120			
Xylenes, Total	2.8	0.10	3.000	0	93.9	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	80	120			

Sample ID: **2001226-002ams** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **SW1** Batch ID: **49708** RunNo: **65680**

Prep Date: **1/8/2020** Analysis Date: **1/9/2020** SeqNo: **2256134** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	0.9950	0	102	78.5	119			
Toluene	1.0	0.050	0.9950	0.01229	104	75.7	123			
Ethylbenzene	1.0	0.050	0.9950	0	105	74.3	126			
Xylenes, Total	3.2	0.10	2.985	0.01752	106	72.9	130			
Surr: 4-Bromofluorobenzene	0.96		0.9950		96.4	80	120			

Sample ID: **2001226-002amsd** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **SW1** Batch ID: **49708** RunNo: **65680**

Prep Date: **1/8/2020** Analysis Date: **1/9/2020** SeqNo: **2256135** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.025	0.9911	0	94.9	78.5	119	8.13	20	
Toluene	0.95	0.050	0.9911	0.01229	94.7	75.7	123	9.78	20	
Ethylbenzene	0.95	0.050	0.9911	0	96.0	74.3	126	9.49	20	
Xylenes, Total	2.9	0.099	2.973	0.01752	96.7	72.9	130	9.11	20	
Surr: 4-Bromofluorobenzene	0.93		0.9911		94.1	80	120	0	0	

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: SMA-CARLSBAD Work Order Number: 2001226 RcptNo: 1

Received By: **Daniel Marquez** 1/8/2020 10:30:00 AM

Completed By: **Erin Melendrez** 1/8/2020 11:03:15 AM

Reviewed By: DAD 1/8/20

Chain of Custody

1. Is Chain of Custody sufficiently 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. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

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

Adjusted? _____

Checked by: DM 1/8/20

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	0.9	Good				

Chain-of-Custody Record

Client: SMA- Carlsbad

Mailing Address:

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other
☐ EDD (Type)

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

Project Name: Taylor Deep 12

Project #:

Project Manager: Ashley Maxwell

Sampler: LAA

On Ice: ☐ Yes ☐ No

# of Coolers: (1) 0.8 + 0.1 = 0.9

Cooler Temp(including CF): ☺ (°C)

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
1/6/20	15:30	Soil	BH1	4oz		2001226-001	X	X					X			
"	15:35	"	SW1	"		-002	X	X					X			
"	15:45	"	SW2	"		-003	X	X					X			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
					1/7/20	1500
Date: 1/7/20	Time: 1900	Relinquished by:	Received by:	Via: Courier	Date 1/8/20	Time 1030

Remarks: Direct Bill: Marathon 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.