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	NRM2032954682
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party Marathon Oil Permian LLC	OGRID 372098
Contact Name Melodie Sanjari	Contact Telephone 575-988-8753
Contact email msanjari@marathonoil.com	Incident # *(assigned by OCD)*
Contact mailing address 4111 S. Tidwell Rd., Carlsbad, NM 8220	

Location of Release Source

Latitude 32.29896924 Longitude -104.13084921
(NAD 83 in decimal degrees to 5 decimal places)

Site Name GRAVEL GRINDER FEE 23 28 18 WXY #010H	Site Type: Oil & Gas Facility
Date Release Discovered 11/13/2020	API# *(if applicable)* *30-015-44630*

Unit Letter	Section	Township	Range	County
N	18	23S	28E	Eddy

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

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)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 213.8	Volume Recovered (bbls) 50
	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

MOC received a notification of a 4" valve failure on the San Mateo custody transfer that resulted in the release of approx.. 214 bbl. of produced water onto the pasture around the connect. The source was immediately isolated for repairs and initial response included the recovery of all standing fluids and the surficial scrape of the area most impacted. The impacted area will be remediated as detailed by 19.15.29.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

Incident ID	NRM2032954682
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? Volume

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?

On the evening of 11/13 OCD was notified via email of the release. The landowner was also notified.

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: Melodie Sanjari Title: Environmental Professional

Signature: Melodie Sanjari Date: 11/16/2020

email: msanjari@marathonoil.com Telephone: 575-988-8753

OCD Only

Received by: _____ Date: _____

Incident ID	NRM2032954682
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?	70 (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.

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	NRM2032954682
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: 1/18/2021

email: msanjari@marathonoil.com Telephone: 575-988-8753

OCD Only

Received by: Cristina Eads Date: 01/18/2021

State of New Mexico
Oil Conservation Division

Incident ID	NRM2032954682
District RP	
Facility ID	
Application ID	

Remediation Plan

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

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

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

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

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

Printed Name: Melodie Sanjari Title: Environmental Professional

Signature: Melodie Sanjari Date: 1/18/2021

email: msanjari@marathonoil.com Telephone: 575-988-8753

OCD Only

Received by: Cristina Eads Date: 01/18/2021

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

Signature: Cristina Eads Date: 04/12/2021

Souder, Miller & Associates♦201 S. Halagueno St.♦Carlsbad, NM 88220

January 14, 2021

#5E28980-BG14

NMOCD District 2
811 S. First St
Artesia, New Mexico 88210

SUBJECT: Remediation Plan for the Gravel Grinder Fee 23 28 18 WXY #010H Release (NRM2032954682), Eddy County, New Mexico

To Whom It May Concern:

On behalf of Marathon Oil, Permian LLC, Souder, Miller & Associates (SMA) has prepared this Remediation Plan that describes the delineation and proposed remediation for a release of liquids related to oil and gas production activities at the Gravel Grinder Fee 23 28 18 WXY #010H header. The site is in Unit N, Section 18, Township 23S, Range 28E, Eddy County, New Mexico, on private land. Figure 1 illustrates the vicinity and site location on an USGS 7.5 minute quadrangle map.

Table 1, summarizes information regarding the release.

Table 1: Release Information and Closure Criteria			
Name	Gravel Grinder Fee 23 28 18 WXY #010H	Company	Marathon Oil, Permian LLC
API Number	30-015-44630	Location	32.29896924 -104.13084921
Tracking Number	NRM2032954682		
Estimated Date of Release	November 13, 2020	Date Reported to NMOCD	November 13, 2020
Land Owner	Private	Reported To	NMOCD
Source of Release	Valve failure on Marathon/San Mateo produced water header		
Released Volume	213.8 bbls	Released Material	Produced Water
Recovered Volume	50 bbls	Net Release	163.8 bbls
NMOCD Closure Criteria	<50 feet to groundwater		
SMA Response Dates	11/13, 11/17/2020		

1.0 Background

On November 13, 2020, a release was discovered at the header that is fed by the Gravel Grinder Fee 23 28 18 WXY #010H facility. Initial response activities were conducted by Marathon Oil, and included source elimination and containment activities, including the excavation of the top 3-6 inches of impacted soil within the release area and the recovery of 50 bbl. of produced water. Figure 1 illustrates the vicinity and site location, Figures 2, and 3A illustrate the release location. The C-141 form is included in Appendix A.

2.0 Site Information and Closure Criteria

The Gravel Grinder Fee 23 28 18 WXY #010H is an active production facility located approximately 2 miles northwest of Loving, New Mexico on privately-owned land at an elevation of approximately 3,701 feet above mean sea level (amsl).

Depth to Groundwater
Based upon New Mexico Office of the State Engineer data (Appendix B), the average depth to groundwater at the release site is estimated to be between 70-80 feet bgs.

Wellhead Protection Area
There are six (6) known water sources within ½-mile of the location, according to the New Mexico Office of the State Engineer (NMOSE) online water well database. The average depth to groundwater for these wells is 87 feet bgs, with the nearest well (C-04289 POD1) located 724 feet to the southeast with a depth to groundwater recorded at 78 feet bgs.

Distance to Nearest Significant Watercourse
The nearest significant watercourse is an unnamed canal, located directly 90 feet to the south of the release.

Based on the information presented herein, the applicable NMOCD Closure Criteria for this site is for a groundwater depth of less than 50 feet bgs.

3.0 Release Characterization Activities and Findings

On November 13, 2020 and December 17, 2020 SMA personnel guided the initial response activities and additional delineation activities. SMA collected soil samples around the release site and throughout the visibly stained area. The area of visual impact was located entirely outside the boundary of any production or storage facilities; however, much of the release is encompassed by an active produced water tie-in that is used by Marathon and San Mateo personnel on a daily basis.

During initial response activities, soil samples were field screened for chloride using an electrical conductivity (EC) meter.

A total of six (6) vertical delineation sample locations (SL1-SL6) within the established release area along with five (5) additional sidewall sample locations (SW1-SW5) were investigated using a direct-push drill rig, to depths up to thirteen (13) feet bgs. A minimum of two samples were collected at each sampling location and field-screened using the methods above. Sidewall samples SW1-SW5 came back elevated, so the "-1" designation represents the horizontal extent of the release area being moved out laterally 1 foot. A total of forty-nine (49) 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.

An additional twelve (12) samples were collected from two background sample locations (BG1, BG2). Also note that due to no detection of hydrocarbon impacts in shallow samples, deeper samples were not sampled for 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.

Laboratory results are summarized in Table 3.

4.0 Proposed Soil Remediation Work Plan

As the release area is within in an active Marathon Oil ROW lease, SMA proposes a hydrocarbon targeted excavation of the top four feet of impact in the release area. SMA will guide the excavation by collecting soil samples for field screening for chloride using an EC meter.

Laboratory results from initial response activities indicate the presence of elevated chlorides in background samples. Based on these background samples, SMA is requesting that the RRAL for chloride be adjusted to 1400 mg/Kg. Trace amounts of chloride impact will remain in place and be addressed during ROW reclamation activities.

Confirmation samples will be comprised of representative wall and base 5-point composite samples. SMA is proposing the collection of six (6) sample locations (BH1-BH6) at the base of the excavation and four (4) sidewall samples (SW1-SW4). Samples will be submitted 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. The proposed sample locations can be found on Figure 3B.

Approximately 420 cubic yards of contaminated soil is projected to be removed and replaced with clean backfill material in order to return the surface to previous contours. The contaminated soil will be transported for disposal at R360 Environmental Solutions near Hobbs, NM, an NMOCD-permitted disposal facility. Upon approval by NMOCD, the projected timeline for completion of remediation activities is approximately 90 days.

5.0 Scope and Limitations

The scope of our services included: assessment sampling; verifying release stabilization, regulatory liaison, and preparing this remediation plan. 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

Ashley Maxwell
Project Scientist

Reviewed by:

Shawna Chubbuck
Senior Scientist

ATTACHMENTS:

Figures:

Figure 1: Site Map
Figure 2: Surface Water Radius Map
Figure 3A: Initial Site and Sample Location Map
Figure 3B: Proposed Excavation and Confirmation Sample Map

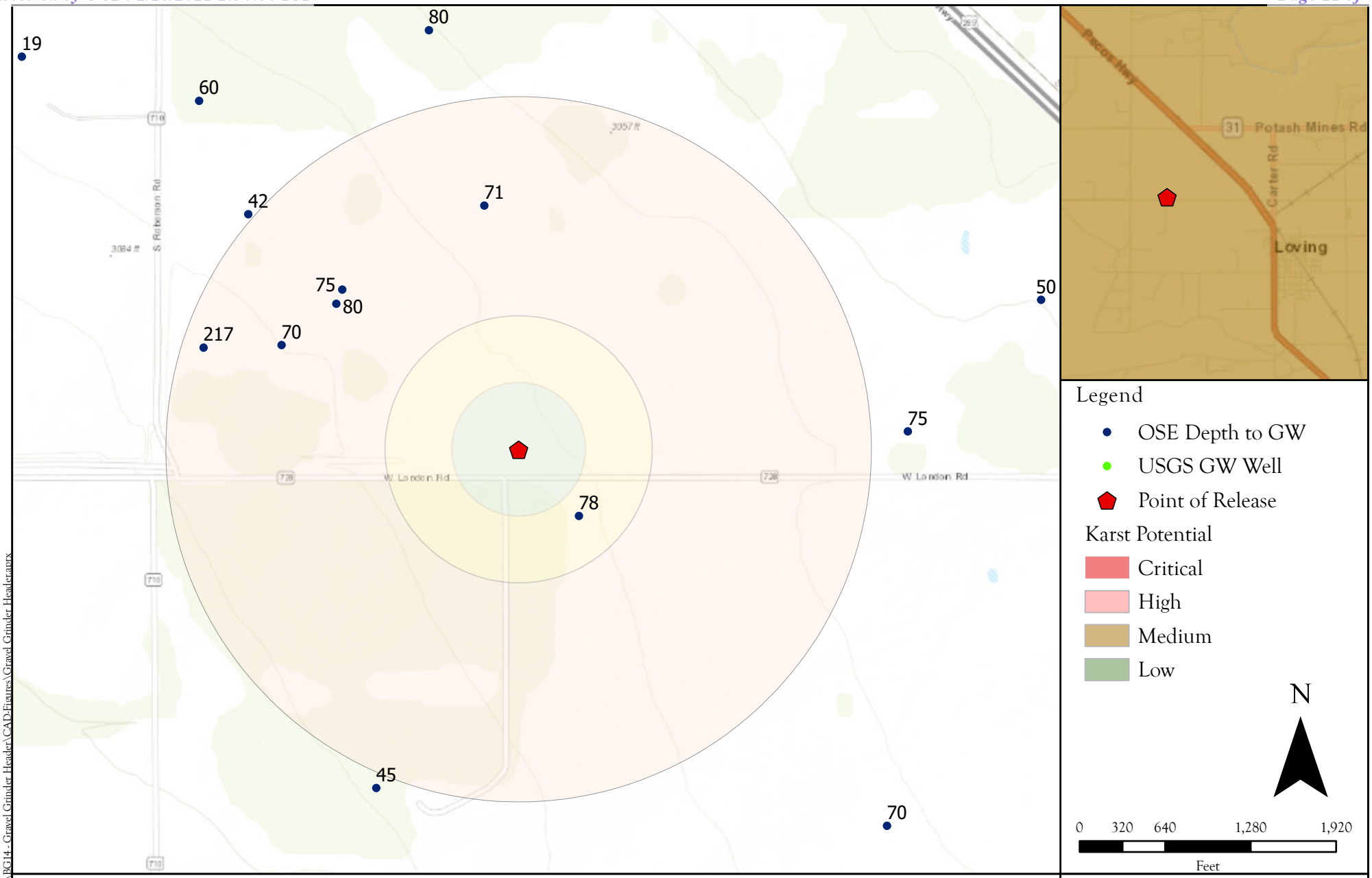
Tables:

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

Appendices:

Appendix A: Form C141
Appendix B: NMOSE Wells Report
Appendix C: Sampling Protocol
Appendix D: Laboratory Analytical Reports

FIGURES



Site Map

Gravel Grinder Fee 23 28 18 WXY #010H - Marathon Oil,
UL: N S: 18 T:23S R: 28E Eddy County, New Mexico

Figure 1

P:\5-Marathon MSA 2020 (5F28980)\BG14 - Gravel Grinder Header\CAD-Figures\Gravel Grinder Header.mxd
Date Saved: 1/2/2021

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

Drawn Lynn A. Acosta
Date 1/2/2021
Checked
Approved

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Carlsbad, New Mexico 88221
(575) 689-7040
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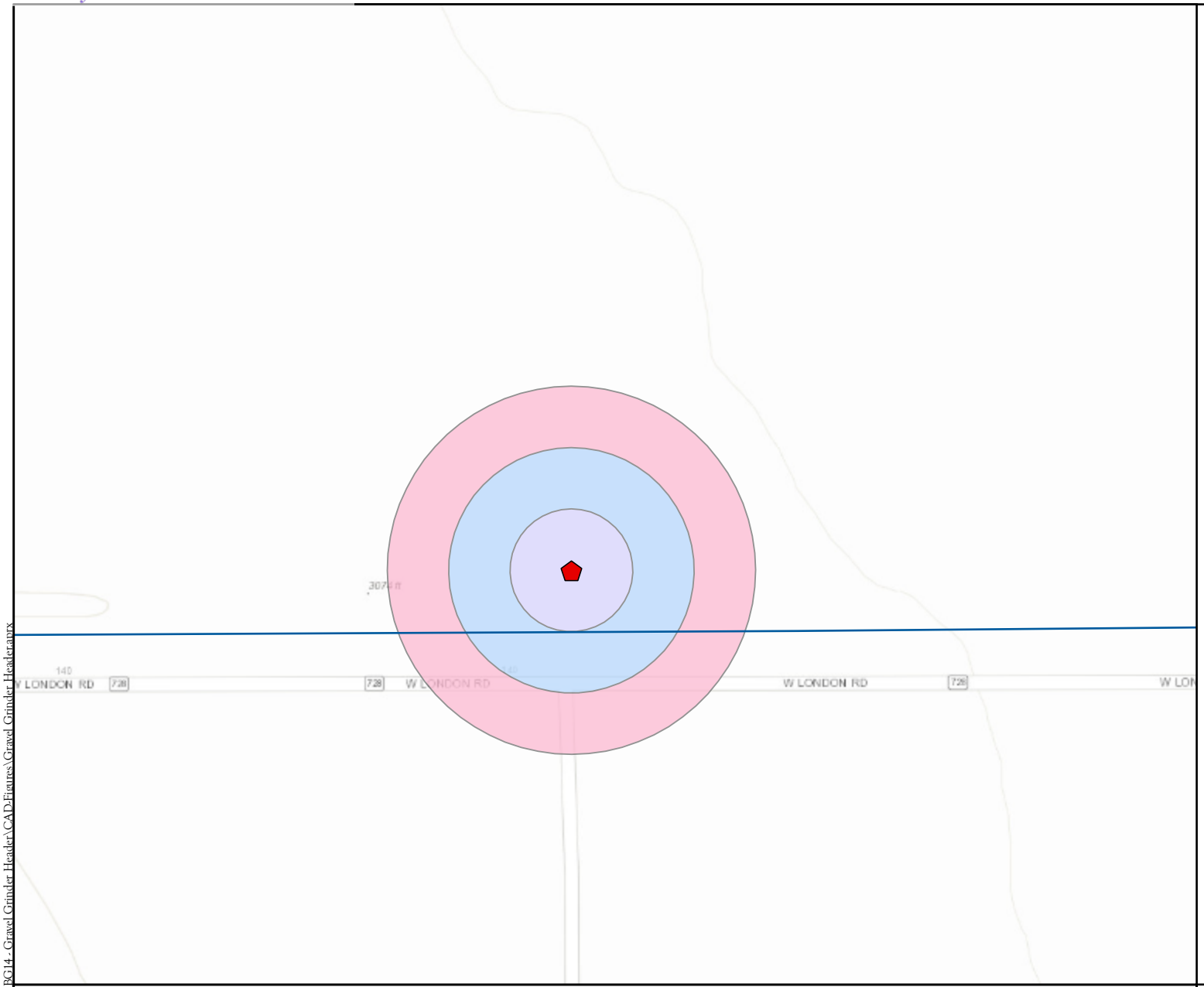

Buffer Distance
- 300 Feet
- 200 Feet
- 100 Feet
- Springs & Seeps
- Streams & Canals
- Rivers
- NM Wetlands
- Lakes & Playas
- FEMA Flood Zones 2011
- Point of Release

N

0 80 160 320 480

Feet

Surface Water Protection Map
Gravel Grinder Fee 23 28 18 WXY #010H - Marathon Oil
UL: N S: 18 T: 23S R: 28E, Eddy County, New Mexico

Figure 2

P:\5-Marathon MSA 2020 (5F28980)\BG14 - Gravel Grinder Header\CAD Figures\Gravel Grinder Header.mxd
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Date 1/2/2021
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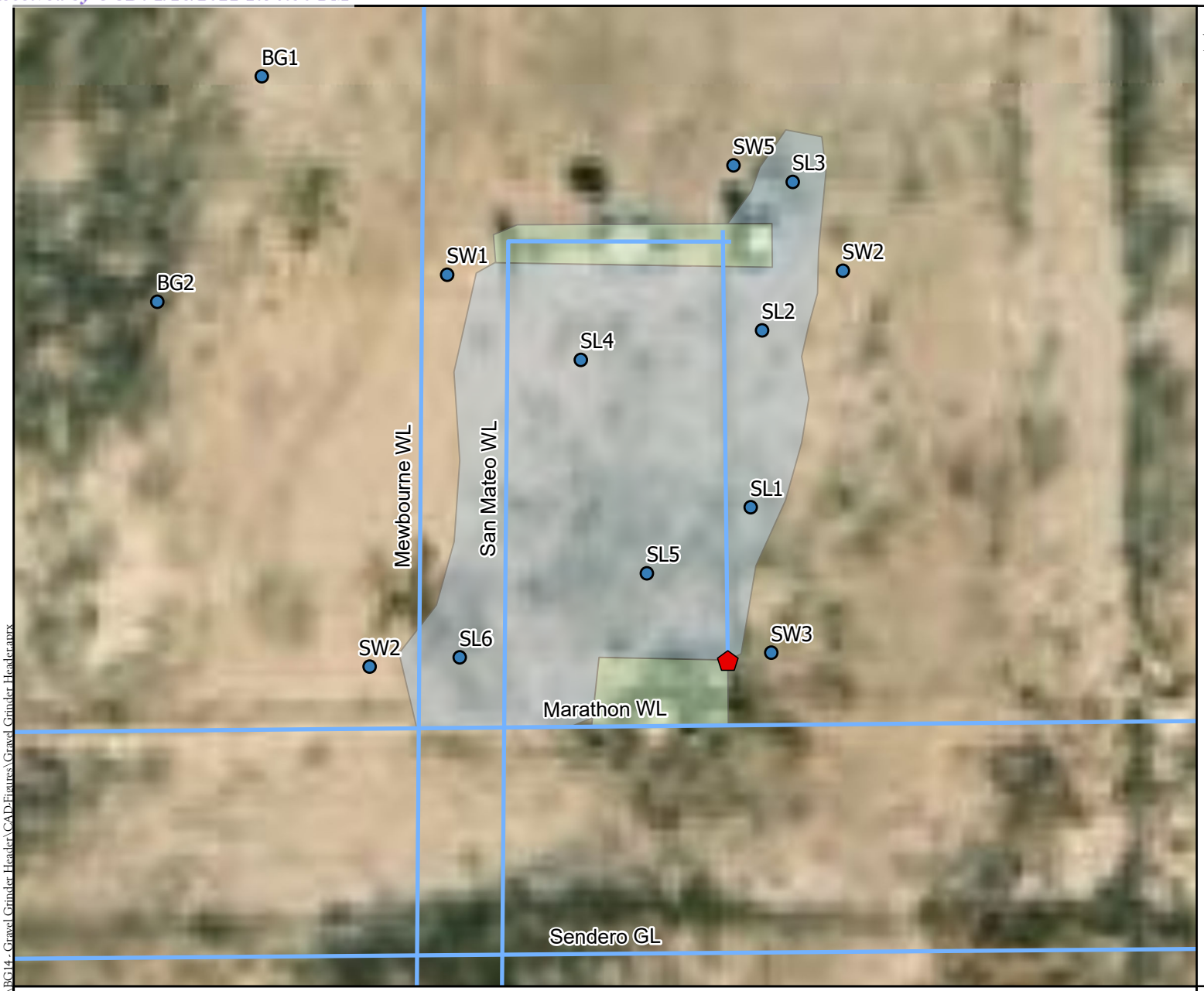

Legend

Point of Release

Boundaries

Release Area

Equipment

Line Features

PW Pipeline

Sample Locations

Initial Soil Sample

N

0 5 10 20 30

Feet

Site and Sample Location Map
Gravel Grinder Fee 23 28 18 WXY #010H - Marathon Oil
UL: N S: 18 T: 23S R: 28E Eddy County, New Mexico

Figure 3A

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Date 1/13/2021
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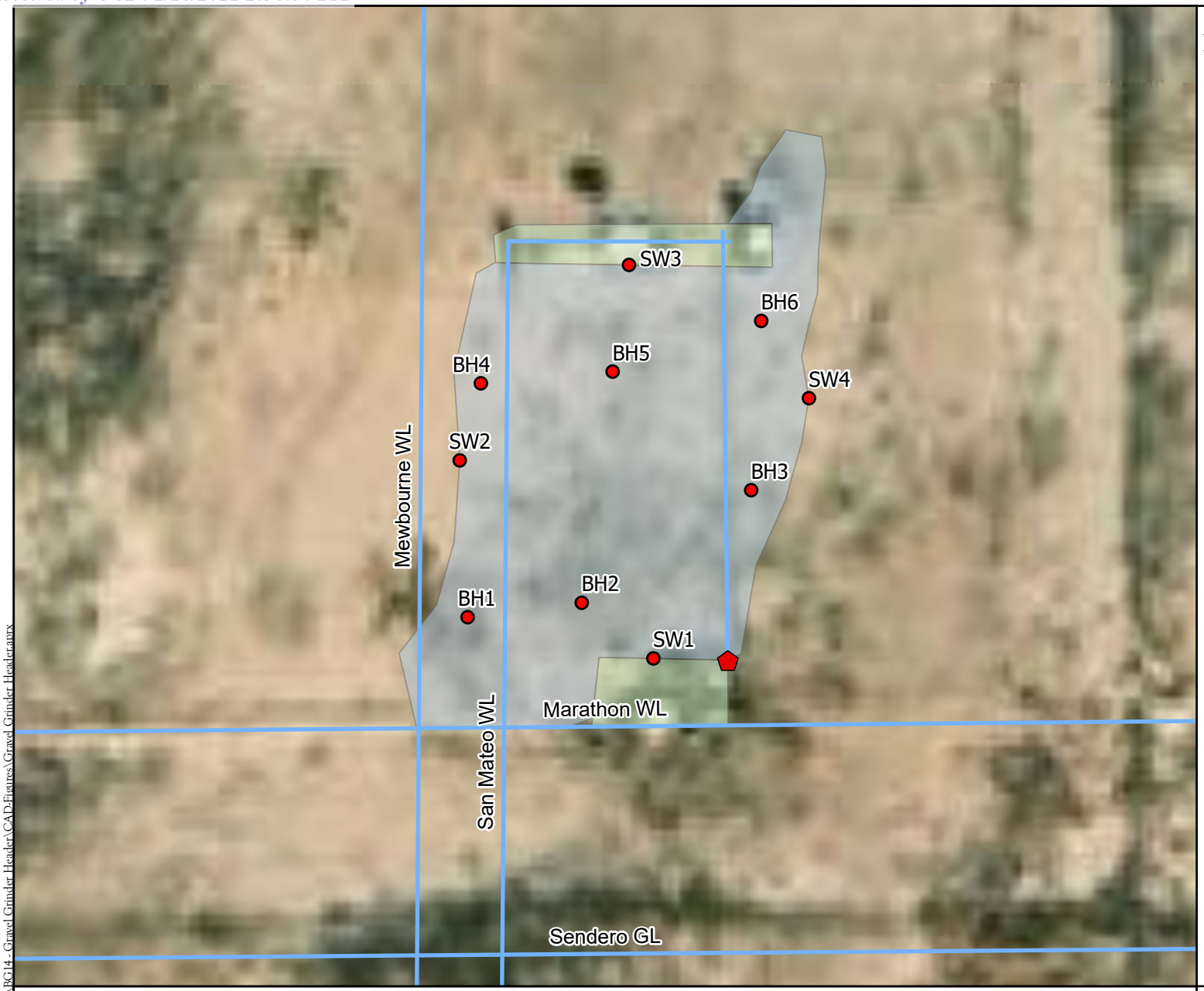

Legend

Point of Release

Boundaries

Release Area

Equipment

Line Features

PW Pipeline

Sample Locations

Proposed Sample Locations

N

0 5 10 20 30

Feet

Site and Proposed Sample Location Map
Gravel Grinder Fee 23 28 18 WXY #010H - Marathon Oil
UL: N S: 18 T: 23S R: 28E Eddy County, New Mexico

Figure 3B

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Date Saved: 1/13/2021

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

Drawn P.R. Smith
Date 1/15/2021
Checked
Approved

SMA

201 South Halaguena Street
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TABLES

Table 2:
NMOCD Closure Criteria

Marathon Oil, Permian LLC
Graver Grinder Fee 23 28 18 WXY #010H
NRM2032954682

Site Information (19.15.29.11.A(2, 3, and 4) NMAC)		Source/Notes
Depth to Groundwater (feet bgs)	70	New Mexico Office of the State Engineer
Hortizontal Distance From All Water Sources Within 1/2 Mile (ft)	724	United States Geological Survey
Hortizontal Distance to Nearest Significant Watercourse (ft)	90	United States Geological Survey

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'	X	10000	2500	1000	50	10
>100'		20000	2500	1000	50	10
Surface Water	**yes or no**	**if yes, then**				
<300' from continuously flowing watercourse or other significant watercourse?	Yes	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(Med.Karst)					
within a 100-year floodplain?	No					

SMA #

Table 3:
Summary of Sample Results

Marathon Oil, Permian LLC
Gravel Grinder Header
NRM2032954682

Sample ID	Sample Date	Depth of Sample (feet bgs)	Action Taken	Method 8021B		Method 8015D				Method 300.0
				BTEX	Benzene	GRO	DRO	MRO	Total TPH	Cl-
				mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
NMOCD Closure Criteria (50-100)				50	10	100			100	600
BG1	11/16/20	1	in-situ	<0.225	<0.025	<5.0	<9.5	<48	<62.5	800
	11/16/20	2	in-situ	<0.225	<0.025	<5.0	<9.4	<47	<61.4	620
	11/16/20	3	in-situ	<0.210	<0.023	<4.7	<9.5	<48	<62.6	660
	12/17/20	4	in-situ	-	-	-	-	-	-	820
	12/17/20	6	in-situ	-	-	-	-	-	-	940
	12/17/20	8	in-situ	-	-	-	-	-	-	680
	12/17/20	10	in-situ	-	-	-	-	-	-	910
BG2	11/16/20	2	in-situ	<0.220	<0.024	<4.9	<9.3	<47	<61.2	3200
	11/16/20	3	in-situ	<0.215	<0.024	<4.8	<9.4	<47	<61.2	1100
	12/17/20	4	in-situ	-	-	-	-	-	-	1400
	12/17/20	8	in-situ	-	-	-	-	-	-	380
	12/17/20	10	in-situ	-	-	-	-	-	-	130
SL1	11/16/20	6	in-situ	<0.224	<0.025	<5.0	<9.6	<48	<62.6	4000
	11/16/20	7	in-situ	<0.216	<0.024	<4.8	<9.1	<46	<59.9	3200
	12/17/20	8	in-situ	-	-	-	-	-	-	2200
	12/17/20	12	in-situ	-	-	-	-	-	-	850
	12/28/20	13	in-situ	-	-	-	-	-	-	490
SL2	11/16/20	1.5	excavate	<0.219	<0.024	<4.9	<9.9	<50	<64.8	12000
	11/16/20	2.5	excavate	<0.221	<0.025	<4.9	<9.7	<48	<62.6	520
	11/16/20	3.5	excavate	<0.225	<0.025	<5.0	<9.3	<47	<61.3	1800
	12/17/20	4	excavate	-	-	-	-	-	-	3600
	12/17/20	8	in-situ	-	-	-	-	-	-	1800
	12/17/20	10	in-situ	-	-	-	-	-	-	580
	12/17/20	11.5	in-situ	-	-	-	-	-	-	400
SL3	11/16/20	1.5	excavate	<0.213	<0.024	<4.7	<9.4	<47	<61.1	6700
	11/16/20	2.5	excavate	<0.222	<0.025	<4.9	<9.9	<50	<64.8	810
	11/16/20	3.5	excavate	<0.225	<0.025	<5.0	<9.7	<49	<63.7	1100
	12/17/20	4	excavate	-	-	-	-	-	-	3200
	12/17/20	6	in-situ	-	-	-	-	-	-	1800
	12/17/20	8	in-situ	-	-	-	-	-	-	3700
	12/17/20	10	in-situ	-	-	-	-	-	-	1100
	12/28/20	12	in-situ	-	-	-	-	-	-	480
SL4	12/17/20	2	excavate	-	-	-	-	-	-	11000
	12/17/20	4	excavate	-	-	-	-	-	-	7000
	12/17/20	6	in-situ	-	-	-	-	-	-	6200
	12/17/20	8	in-situ	-	-	-	-	-	-	3000
	12/17/20	10	in-situ	-	-	-	-	-	-	880
	12/17/20	12	in-situ	-	-	-	-	-	-	450
SL5	12/17/20	2	excavate	-	-	-	-	-	-	11000
	12/17/20	4	excavate	-	-	-	-	-	-	6200
	12/17/20	6	in-situ	-	-	-	-	-	-	2400
	12/17/20	8	in-situ	-	-	-	-	-	-	2200
	12/17/20	10	in-situ	-	-	-	-	-	-	480
	12/17/20	12	in-situ	-	-	-	-	-	-	410
SL6	12/17/20	2	excavate	-	-	-	-	-	-	9600
	12/17/20	4	excavate	-	-	-	-	-	-	3300
	12/17/20	6	in-situ	-	-	-	-	-	-	4900
	12/17/20	8	in-situ	-	-	-	-	-	-	740
	12/17/20	10	in-situ	-	-	-	-	-	-	1800
	12/17/20	12	in-situ	-	-	-	-	-	-	680
	12/28/20	13	in-situ	-	-	-	-	-	-	380
SW1	12/17/20	0-4	excavate	-	-	-	-	-	-	1500
SW1-1	12/28/20	0-4	in-situ	-	-	-	-	-	-	460
SW2	12/17/20	0-4	excavate	-	-	-	-	-	-	3700
SW2-1	12/28/20	0-4	in-situ	-	-	-	-	-	-	560
SW3	12/17/20	0-4	excavate	-	-	-	-	-	-	1700
SW3-1	12/28/20	0-4	in-situ	-	-	-	-	-	-	460
SW4	12/17/20	0-4	excavate	-	-	-	-	-	-	3400
SW4-1	12/28/20	0-4	in-situ	-	-	-	-	-	-	440
SW5	12/17/20	0-4	excavate	-	-	-	-	-	-	2400
SW5-1	12/28/20	0-4	in-situ	-	-	-	-	-	-	290

"--" = Not Analyzed
BG: Background sample

APPENDIX A
INITIAL 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	NRM2032954682
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party Marathon Oil Permian LLC	OGRID 372098
Contact Name Melodie Sanjari	Contact Telephone 575-988-8753
Contact email msanjari@marathonoil.com	Incident # *(assigned by OCD)*
Contact mailing address 4111 S. Tidwell Rd., Carlsbad, NM 8220	

Location of Release Source

Latitude 32.29896924 Longitude -104.13084921
(NAD 83 in decimal degrees to 5 decimal places)

Site Name GRAVEL GRINDER FEE 23 28 18 WXY #010H	Site Type: Oil & Gas Facility
Date Release Discovered 11/13/2020	API# *(if applicable)* 30-015-44630

Unit Letter	Section	Township	Range	County
N	18	23S	28E	Eddy

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

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)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 213.8	Volume Recovered (bbls) 50
	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

MOC received a notification of a 4" valve failure on the San Mateo custody transfer that resulted in the release of approx.. 214 bbl. of produced water onto the pasture around the connect. The source was immediately isolated for repairs and initial response included the recovery of all standing fluids and the surficial scrape of the area most impacted. The impacted area will be remediated as detailed by 19.15.29.

State of New Mexico
Oil Conservation Division

Incident ID	NRM2032954682
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? Volume

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?

On the evening of 11/13 OCD was notified via email of the release. The landowner was also notified.

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: Melodie Sanjari Title: Environmental Professional

Signature: Melodie Sanjari Date: 11/16/2020

email: msanjari@marathonoil.com Telephone: 575-988-8753

OCD Only

Received by: Ramona Marcus Date: 11/24/2020

NRM2032954682

Spill Calculation Tool

Marathon Oil

Standing Liquid Inputs:

	Length (ft.)	Width (ft.)	Avg. Liquid Depth (in.)	% Oil	Total Volume (bbls)	Water Volume (bbls)	Oil Volume (bbls)
Rectangle Area #1					0.00	0.00	0.00
Rectangle Area #2					0.00	0.00	0.00
Rectangle Area #3					0.00	0.00	0.00
Rectangle Area #4					0.00	0.00	0.00
Rectangle Area #5					0.00	0.00	0.00
Rectangle Area #6					0.00	0.00	0.00
Rectangle Area #7					0.00	0.00	0.00
Rectangle Area #8					0.00	0.00	0.00
				Liquid Volume:	**0.00**	**0.00**	**0.00**

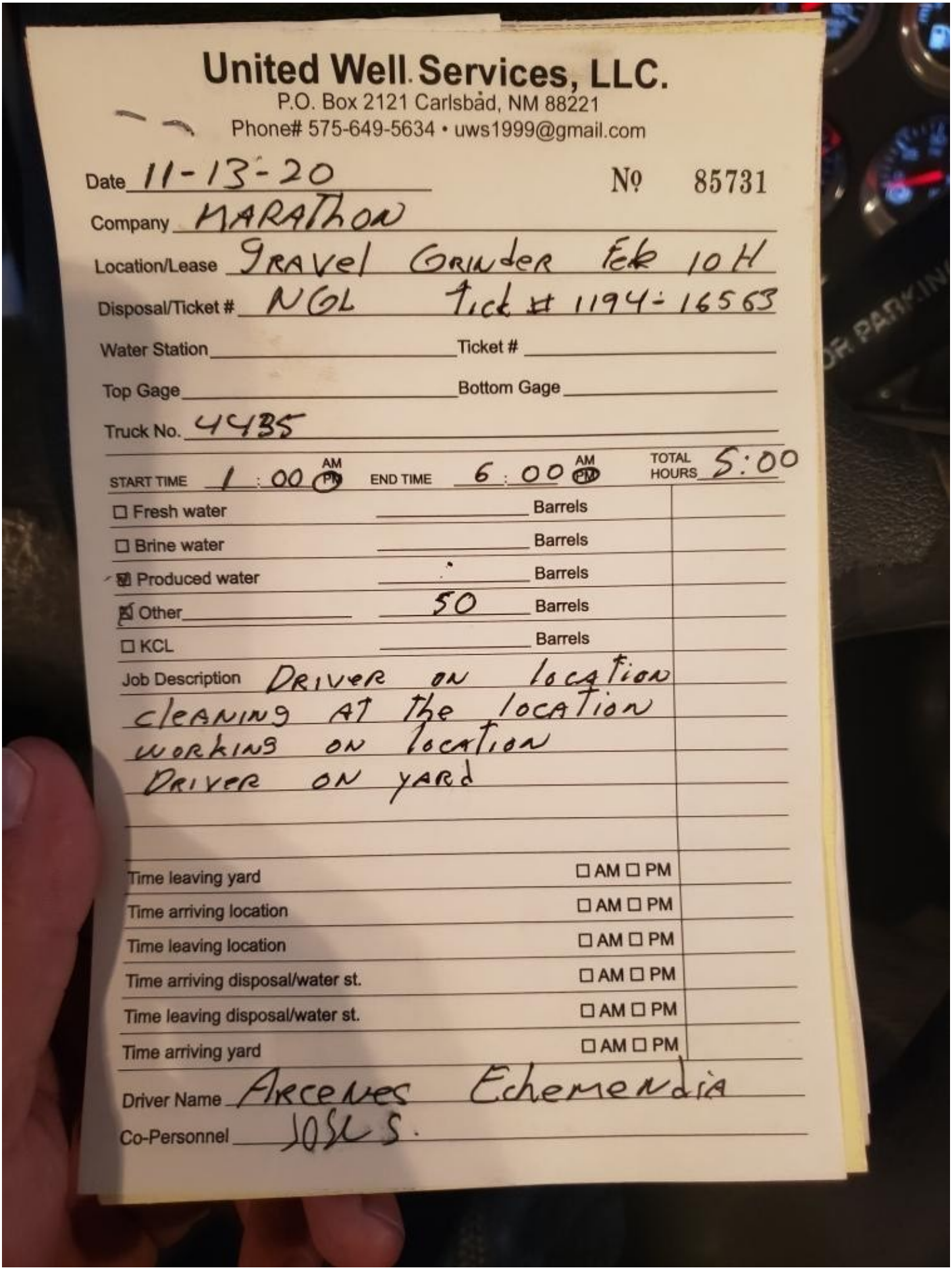
Saturated Soil Inputs: Soil Type: Sandy

	Length (ft.)	Width (ft.)	Avg. Saturated Depth (in.)	% Oil	Total Volume (bbls)	Water Volume (bbls)	Oil Volume (bbls)
Rectangle Area #1		4446.48	36	0%	213.83	213.83	0.00
Rectangle Area #2				0%	0.00	0.00	0.00
Rectangle Area #3				0%	0.00	0.00	0.00
Rectangle Area #4				0%	0.00	0.00	0.00
Rectangle Area #5				0%	0.00	0.00	0.00
Rectangle Area #6				0%	0.00	0.00	0.00
Rectangle Area #7					0.00	0.00	0.00
Rectangle Area #8					0.00	0.00	0.00
				Saturated Volume	**213.83**	**213.83**	**0.00**

Volume Recovered *and not included in Standing Liquid Inputs* :

% Oil	Total Volume (bbls)	Water Volume (bbls)	Oil Volume (bbls)

	Total Volume (bbls)	Water Volume (bbls)	Oil Volume (bbls)
Total Spill Volume (bbls):	**213.83**	**213.83**	**0.00**



United Well Services, LLC.

P.O. Box 2121 Carlsbad, NM 88221
Phone# 575-649-5634 • uws1999@gmail.com

Date 11-13-20 No 85731

Company MARATHON

Location/Lease Gravel Grinder Fed 10H

Disposal/Ticket # NGL Tick # 1194-16563

Water Station _____ Ticket # _____

Top Gage _____ Bottom Gage _____

Truck No. 4435

START TIME 1:00 AM PM END TIME 6:00 AM PM TOTAL HOURS 5:00

☐ Fresh water	_____ Barrels	
☐ Brine water	_____ Barrels	
☑ Produced water	_____ Barrels	
☒ Other _____	50 Barrels	
☐ KCL	_____ Barrels	

Job Description DRIVER ON location
CLEANING AT the location
WORKING ON location
DRIVER ON YARD

Time leaving yard	☐ AM ☐ PM
Time arriving location	☐ AM ☐ PM
Time leaving location	☐ AM ☐ PM
Time arriving disposal/water st.	☐ AM ☐ PM
Time leaving disposal/water st.	☐ AM ☐ PM
Time arriving yard	☐ AM ☐ PM

Driver Name ARCENES Echemendia

Co-Personnel JOSE S.

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 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 04289 POD1		C	ED	1	1	2	19	23S	28E	582387	3573717	200	91	78	13
C 02180		C	ED			3	18	23S	28E	581831	3574198*	537	140	80	60
C 03922 POD1		C	ED	3	2	3	18	23S	28E	581844	3574230	547	138	75	63
C 04225 POD1		C	ED	2	2	3	18	23S	28E	582167	3574424	562	120	71	49
C 03779 POD1		C	ED	2	3	3	18	23S	28E	581707	3574103	597	110	70	40
C 03082		C	ED	1	3	3	18	23S	28E	581529	3574096*	761	220	217	3

Average Depth to Water: **98 feet**

Minimum Depth: **70 feet**

Maximum Depth: **217 feet**

Record Count: 6

UTMNAD83 Radius Search (in meters):

Easting (X): 582256 **Northing (Y):** 3573869 **Radius:** 806

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

12/17/20 6:44 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER

APPENDIX C
SAMPLING PROTOCOL

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

Sampling Protocol

Representatives from SMA chose the Judgmental Sampling Method as described in EPA's Final Sampling Guidance for SW-846, 2002 to adequately quantify contaminant concentrations Graver Grinder Fee 23 28 18 WXY #010H Location. The utility of this particular method functions on the sufficient knowledge of the contaminant, which we possess. This design is also useful when identifying the composition of a release, which we have documented. In addition, this sampling design was chosen for this project because of the locations uniform soil type, and the several operational considerations (such as the liner within the battery and the construction of a new facility) that precluded the implementation of a different statistical design.

The soil samples were collected in laboratory supplied containers in accordance with this sampling protocol, immediately placed on ice and sent under standard chain-of-custody protocols to Hall Environmental Analysis Laboratory (HEAL) in Albuquerque, New Mexico for analysis. A total of 61 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.

Sampling Analysis Field Quality Assurance Procedures

A unique sample numbering was used to identify each sample collected and designated for on-site and off-site laboratory analysis. The purpose of this numbering scheme was to provide a tracking system for the retrieval of analytical and field data on each sample. Sample identification numbers were recorded on sample labels or tags, field notes, chain-of-custody records (COC) and all other applicable documentation used during the project. Sample labels were affixed to all sample containers during sampling activities. Information was recorded on each sample container label at the time of sample collection. The information recorded on the labels were as follows: sample identification number; sample type (discrete or composite); site name and area/location number; analysis to be performed; type of chemical preservative present in container; date and time of sample collection; and sample collector's name and initials. All samples were packed in ice in an approved rigid body container, custody sealed signed and shipped to the appropriate laboratory via insured currier service.

COC procedures implemented for the project provided documentation of the handling of each sample from the time of collection until completion of laboratory analysis. A COC form serves as a legal record of possession of the sample. A sample is considered to be under custody if one or more of the following criteria are met: the sample is in the sampler's possession; the sample is in the sampler's view after being in possession; the sample was in the sampler's possession and then was placed into a locked area to prevent tampering; and/or the sample is in a designated secure area. Custody was documented throughout the project field sampling activities by a chain-of custody form initiated each day during which samples are collected. Container custody seals placed on either individual samples or on the rigid body container were used to ensure that no sample tampering occurs between the time the samples are placed into the containers and the time the containers are opened for analysis at the laboratory. Container custody seals were signed and dated by the individual responsible for completing the COC form contained within the container.

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: clients.hallenvironmental.com

November 20, 2020

Ashley Maxwell

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

RE: Gravel Grinder Header OrderNo.: 2011831

Dear Ashley Maxwell:

Hall Environmental Analysis Laboratory received 13 sample(s) on 11/17/2020 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 **2011831**
Date Reported: **11/20/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SL1-7'
Project: Gravel Grinder Header
Collection Date: 11/16/2020
Lab ID: 2011831-001 **Matrix:** SOIL **Received Date:** 11/17/2020 10:44:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	3200	150		mg/Kg	50	11/18/2020 10:23:36 AM	56508
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	11/17/2020 5:13:17 PM	56505
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	11/17/2020 5:13:17 PM	56505
Surr: DNOP	89.0	30.4-154		%Rec	1	11/17/2020 5:13:17 PM	56505
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/18/2020 10:48:28 AM	56503
Surr: BFB	93.1	75.3-105		%Rec	1	11/18/2020 10:48:28 AM	56503
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/18/2020 10:48:28 AM	56503
Toluene	ND	0.048		mg/Kg	1	11/18/2020 10:48:28 AM	56503
Ethylbenzene	ND	0.048		mg/Kg	1	11/18/2020 10:48:28 AM	56503
Xylenes, Total	ND	0.096		mg/Kg	1	11/18/2020 10:48:28 AM	56503
Surr: 4-Bromofluorobenzene	97.7	80-120		%Rec	1	11/18/2020 10:48:28 AM	56503

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

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

Analytical Report
Lab Order **2011831**
Date Reported: **11/20/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SL1-6'
Project: Gravel Grinder Header
Collection Date: 11/16/2020
Lab ID: 2011831-002 **Matrix:** SOIL **Received Date:** 11/17/2020 10:44:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	4000	150		mg/Kg	50	11/18/2020 10:36:00 AM	56508
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	11/17/2020 5:22:54 PM	56505
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/17/2020 5:22:54 PM	56505
Surr: DNOP	90.4	30.4-154		%Rec	1	11/17/2020 5:22:54 PM	56505
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/18/2020 11:12:08 AM	56503
Surr: BFB	95.3	75.3-105		%Rec	1	11/18/2020 11:12:08 AM	56503
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	11/18/2020 11:12:08 AM	56503
Toluene	ND	0.050		mg/Kg	1	11/18/2020 11:12:08 AM	56503
Ethylbenzene	ND	0.050		mg/Kg	1	11/18/2020 11:12:08 AM	56503
Xylenes, Total	ND	0.099		mg/Kg	1	11/18/2020 11:12:08 AM	56503
Surr: 4-Bromofluorobenzene	100	80-120		%Rec	1	11/18/2020 11:12:08 AM	56503

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 **2011831**
Date Reported: **11/20/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SL2-3.5'
Project: Gravel Grinder Header
Collection Date: 11/16/2020
Lab ID: 2011831-003 **Matrix:** SOIL **Received Date:** 11/17/2020 10:44:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	1800	60		mg/Kg	20	11/18/2020 1:17:48 AM	56508
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	11/17/2020 5:32:32 PM	56505
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/17/2020 5:32:32 PM	56505
Surr: DNOP	82.9	30.4-154		%Rec	1	11/17/2020 5:32:32 PM	56505
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/18/2020 11:35:40 AM	56503
Surr: BFB	94.1	75.3-105		%Rec	1	11/18/2020 11:35:40 AM	56503
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	11/18/2020 11:35:40 AM	56503
Toluene	ND	0.050		mg/Kg	1	11/18/2020 11:35:40 AM	56503
Ethylbenzene	ND	0.050		mg/Kg	1	11/18/2020 11:35:40 AM	56503
Xylenes, Total	ND	0.10		mg/Kg	1	11/18/2020 11:35:40 AM	56503
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	11/18/2020 11:35:40 AM	56503

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 **2011831**
Date Reported: **11/20/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SL2-2.5'
Project: Gravel Grinder Header
Collection Date: 11/16/2020
Lab ID: 2011831-004 **Matrix:** SOIL **Received Date:** 11/17/2020 10:44:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	520	60		mg/Kg	20	11/18/2020 1:30:12 AM	56508
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	11/17/2020 5:42:11 PM	56505
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/17/2020 5:42:11 PM	56505
Surr: DNOP	89.4	30.4-154		%Rec	1	11/17/2020 5:42:11 PM	56505
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/18/2020 11:59:06 AM	56503
Surr: BFB	93.2	75.3-105		%Rec	1	11/18/2020 11:59:06 AM	56503
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	11/18/2020 11:59:06 AM	56503
Toluene	ND	0.049		mg/Kg	1	11/18/2020 11:59:06 AM	56503
Ethylbenzene	ND	0.049		mg/Kg	1	11/18/2020 11:59:06 AM	56503
Xylenes, Total	ND	0.098		mg/Kg	1	11/18/2020 11:59:06 AM	56503
Surr: 4-Bromofluorobenzene	98.6	80-120		%Rec	1	11/18/2020 11:59:06 AM	56503

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 **2011831**
Date Reported: **11/20/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SL2-1.5'
Project: Gravel Grinder Header
Collection Date: 11/16/2020
Lab ID: 2011831-005 **Matrix:** SOIL **Received Date:** 11/17/2020 10:44:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	12000	600		mg/Kg	200	11/18/2020 10:48:24 AM	56508
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	11/17/2020 5:51:50 PM	56505
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/17/2020 5:51:50 PM	56505
Surr: DNOP	111	30.4-154		%Rec	1	11/17/2020 5:51:50 PM	56505
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/18/2020 12:22:31 PM	56503
Surr: BFB	95.0	75.3-105		%Rec	1	11/18/2020 12:22:31 PM	56503
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/18/2020 12:22:31 PM	56503
Toluene	ND	0.049		mg/Kg	1	11/18/2020 12:22:31 PM	56503
Ethylbenzene	ND	0.049		mg/Kg	1	11/18/2020 12:22:31 PM	56503
Xylenes, Total	ND	0.097		mg/Kg	1	11/18/2020 12:22:31 PM	56503
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	1	11/18/2020 12:22:31 PM	56503

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 **2011831**
Date Reported: **11/20/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SL3-3.5'
Project: Gravel Grinder Header
Collection Date: 11/16/2020
Lab ID: 2011831-006 **Matrix:** SOIL **Received Date:** 11/17/2020 10:44:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	1100	60		mg/Kg	20	11/18/2020 1:55:01 AM	56508
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	11/17/2020 6:01:28 PM	56505
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/17/2020 6:01:28 PM	56505
Surr: DNOP	96.8	30.4-154		%Rec	1	11/17/2020 6:01:28 PM	56505
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/18/2020 12:45:51 PM	56503
Surr: BFB	94.0	75.3-105		%Rec	1	11/18/2020 12:45:51 PM	56503
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	11/18/2020 12:45:51 PM	56503
Toluene	ND	0.050		mg/Kg	1	11/18/2020 12:45:51 PM	56503
Ethylbenzene	ND	0.050		mg/Kg	1	11/18/2020 12:45:51 PM	56503
Xylenes, Total	ND	0.10		mg/Kg	1	11/18/2020 12:45:51 PM	56503
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	11/18/2020 12:45:51 PM	56503

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 **2011831**
Date Reported: **11/20/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SL3-2.5'
Project: Gravel Grinder Header
Collection Date: 11/16/2020
Lab ID: 2011831-007 **Matrix:** SOIL **Received Date:** 11/17/2020 10:44:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	810	60		mg/Kg	20	11/18/2020 2:07:26 AM	56508
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	11/17/2020 6:11:08 PM	56505
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/17/2020 6:11:08 PM	56505
Surr: DNOP	94.2	30.4-154		%Rec	1	11/17/2020 6:11:08 PM	56505
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/18/2020 1:09:11 PM	56503
Surr: BFB	92.7	75.3-105		%Rec	1	11/18/2020 1:09:11 PM	56503
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	11/18/2020 1:09:11 PM	56503
Toluene	ND	0.049		mg/Kg	1	11/18/2020 1:09:11 PM	56503
Ethylbenzene	ND	0.049		mg/Kg	1	11/18/2020 1:09:11 PM	56503
Xylenes, Total	ND	0.099		mg/Kg	1	11/18/2020 1:09:11 PM	56503
Surr: 4-Bromofluorobenzene	99.3	80-120		%Rec	1	11/18/2020 1:09:11 PM	56503

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 **2011831**
Date Reported: **11/20/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SL3-1.5'
Project: Gravel Grinder Header
Collection Date: 11/16/2020
Lab ID: 2011831-008 **Matrix:** SOIL **Received Date:** 11/17/2020 10:44:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	6700	300		mg/Kg	100	11/18/2020 11:00:49 AM	56508
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	11/17/2020 6:20:46 PM	56505
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/17/2020 6:20:46 PM	56505
Surr: DNOP	99.7	30.4-154		%Rec	1	11/17/2020 6:20:46 PM	56505
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/18/2020 2:19:28 PM	56503
Surr: BFB	89.9	75.3-105		%Rec	1	11/18/2020 2:19:28 PM	56503
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/18/2020 2:19:28 PM	56503
Toluene	ND	0.047		mg/Kg	1	11/18/2020 2:19:28 PM	56503
Ethylbenzene	ND	0.047		mg/Kg	1	11/18/2020 2:19:28 PM	56503
Xylenes, Total	ND	0.095		mg/Kg	1	11/18/2020 2:19:28 PM	56503
Surr: 4-Bromofluorobenzene	98.0	80-120		%Rec	1	11/18/2020 2:19:28 PM	56503

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 **2011831**
Date Reported: **11/20/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BG2-2'
Project: Gravel Grinder Header
Collection Date: 11/16/2020
Lab ID: 2011831-009 **Matrix:** SOIL **Received Date:** 11/17/2020 10:44:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	3200	150		mg/Kg	50	11/18/2020 11:13:13 AM	56508
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	11/17/2020 6:30:24 PM	56505
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/17/2020 6:30:24 PM	56505
Surr: DNOP	97.6	30.4-154		%Rec	1	11/17/2020 6:30:24 PM	56505
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/18/2020 2:43:12 PM	56503
Surr: BFB	93.2	75.3-105		%Rec	1	11/18/2020 2:43:12 PM	56503
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/18/2020 2:43:12 PM	56503
Toluene	ND	0.049		mg/Kg	1	11/18/2020 2:43:12 PM	56503
Ethylbenzene	ND	0.049		mg/Kg	1	11/18/2020 2:43:12 PM	56503
Xylenes, Total	ND	0.098		mg/Kg	1	11/18/2020 2:43:12 PM	56503
Surr: 4-Bromofluorobenzene	100	80-120		%Rec	1	11/18/2020 2:43:12 PM	56503

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 **2011831**
Date Reported: **11/20/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BG2-3'
Project: Gravel Grinder Header
Collection Date: 11/16/2020
Lab ID: 2011831-010 **Matrix:** SOIL **Received Date:** 11/17/2020 10:44:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	2800	150		mg/Kg	50	11/18/2020 12:52:31 PM	56508
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	11/17/2020 6:40:03 PM	56505
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/17/2020 6:40:03 PM	56505
Surr: DNOP	98.9	30.4-154		%Rec	1	11/17/2020 6:40:03 PM	56505
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/18/2020 3:06:29 PM	56503
Surr: BFB	93.5	75.3-105		%Rec	1	11/18/2020 3:06:29 PM	56503
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/18/2020 3:06:29 PM	56503
Toluene	ND	0.048		mg/Kg	1	11/18/2020 3:06:29 PM	56503
Ethylbenzene	ND	0.048		mg/Kg	1	11/18/2020 3:06:29 PM	56503
Xylenes, Total	ND	0.095		mg/Kg	1	11/18/2020 3:06:29 PM	56503
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	11/18/2020 3:06:29 PM	56503

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 **2011831**
Date Reported: **11/20/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BG1-3'
Project: Gravel Grinder Header
Collection Date: 11/16/2020
Lab ID: 2011831-011 **Matrix:** SOIL **Received Date:** 11/17/2020 10:44:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	660	59		mg/Kg	20	11/18/2020 3:21:54 AM	56508
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	11/17/2020 6:49:42 PM	56505
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/17/2020 6:49:42 PM	56505
Surr: DNOP	98.9	30.4-154		%Rec	1	11/17/2020 6:49:42 PM	56505
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/18/2020 3:29:48 PM	56503
Surr: BFB	92.5	75.3-105		%Rec	1	11/18/2020 3:29:48 PM	56503
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	11/18/2020 3:29:48 PM	56503
Toluene	ND	0.047		mg/Kg	1	11/18/2020 3:29:48 PM	56503
Ethylbenzene	ND	0.047		mg/Kg	1	11/18/2020 3:29:48 PM	56503
Xylenes, Total	ND	0.093		mg/Kg	1	11/18/2020 3:29:48 PM	56503
Surr: 4-Bromofluorobenzene	99.4	80-120		%Rec	1	11/18/2020 3:29:48 PM	56503

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 **2011831**
Date Reported: **11/20/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BG1-2'
Project: Gravel Grinder Header
Collection Date: 11/16/2020
Lab ID: 2011831-012 **Matrix:** SOIL **Received Date:** 11/17/2020 10:44:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	620	60		mg/Kg	20	11/18/2020 3:34:19 AM	56508
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	11/17/2020 6:59:22 PM	56505
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/17/2020 6:59:22 PM	56505
Surr: DNOP	100	30.4-154		%Rec	1	11/17/2020 6:59:22 PM	56505
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/18/2020 3:53:09 PM	56503
Surr: BFB	93.8	75.3-105		%Rec	1	11/18/2020 3:53:09 PM	56503
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	11/18/2020 3:53:09 PM	56503
Toluene	ND	0.050		mg/Kg	1	11/18/2020 3:53:09 PM	56503
Ethylbenzene	ND	0.050		mg/Kg	1	11/18/2020 3:53:09 PM	56503
Xylenes, Total	ND	0.10		mg/Kg	1	11/18/2020 3:53:09 PM	56503
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	11/18/2020 3:53:09 PM	56503

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 **2011831**
Date Reported: **11/20/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BG1-1'
Project: Gravel Grinder Header
Collection Date: 11/16/2020
Lab ID: 2011831-013 **Matrix:** SOIL **Received Date:** 11/17/2020 10:44:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	800	60		mg/Kg	20	11/18/2020 3:46:43 AM	56508
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	11/17/2020 7:09:02 PM	56505
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/17/2020 7:09:02 PM	56505
Surr: DNOP	95.8	30.4-154		%Rec	1	11/17/2020 7:09:02 PM	56505
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/18/2020 4:16:28 PM	56503
Surr: BFB	93.7	75.3-105		%Rec	1	11/18/2020 4:16:28 PM	56503
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	11/18/2020 4:16:28 PM	56503
Toluene	ND	0.050		mg/Kg	1	11/18/2020 4:16:28 PM	56503
Ethylbenzene	ND	0.050		mg/Kg	1	11/18/2020 4:16:28 PM	56503
Xylenes, Total	ND	0.10		mg/Kg	1	11/18/2020 4:16:28 PM	56503
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	11/18/2020 4:16:28 PM	56503

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#: **2011831**
20-Nov-20

Client: Souder, Miller & Associates
Project: Gravel Grinder Header

Sample ID: **MB-56508** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **56508** RunNo: **73414**
Prep Date: **11/17/2020** Analysis Date: **11/17/2020** SeqNo: **2585833** Units: **mg/Kg**

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

Sample ID: **LCS-56508** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **56508** RunNo: **73414**
Prep Date: **11/17/2020** Analysis Date: **11/17/2020** SeqNo: **2585834** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.3	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 Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2011831**

20-Nov-20

Client: Souder, Miller & Associates

Project: Gravel Grinder Header

Sample ID: **LCS-56505**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **56505**	RunNo: **73426**
Prep Date: **11/17/2020**	Analysis Date: **11/17/2020**	SeqNo: **2585499** 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	94.1	70	130			
Surr: DNOP	4.6		5.000		92.2	30.4	154			

Sample ID: **MB-56505**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **56505**	RunNo: **73426**
Prep Date: **11/17/2020**	Analysis Date: **11/17/2020**	SeqNo: **2585500** 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	9.7		10.00		96.7	30.4	154			

Sample ID: **MB-56518**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **56518**	RunNo: **73443**
Prep Date: **11/18/2020**	Analysis Date: **11/18/2020**	SeqNo: **2586506** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	10		10.00		103	30.4	154			

Sample ID: **LCS-56518**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **56518**	RunNo: **73443**
Prep Date: **11/18/2020**	Analysis Date: **11/18/2020**	SeqNo: **2586507** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.9		5.000		97.0	30.4	154			

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#: **2011831**

20-Nov-20

Client: Souder, Miller & Associates

Project: Gravel Grinder Header

Sample ID: **MB-56503**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **56503**	RunNo: **73447**
Prep Date: **11/17/2020**	Analysis Date: **11/19/2020**	SeqNo: **2586929** 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	930		1000		92.7	75.3	105			

Sample ID: **lcs-56503**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **56503**	RunNo: **73447**
Prep Date: **11/17/2020**	Analysis Date: **11/19/2020**	SeqNo: **2586930** 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	89.8	72.5	106			
Surr: BFB	1000		1000		104	75.3	105			

Sample ID: **mb-56536**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **56536**	RunNo: **73491**
Prep Date: **11/18/2020**	Analysis Date: **11/19/2020**	SeqNo: **2588062** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	920		1000		91.9	75.3	105			

Sample ID: **lcs-56536**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **56536**	RunNo: **73491**
Prep Date: **11/18/2020**	Analysis Date: **11/19/2020**	SeqNo: **2588063** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		100	75.3	105			

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#: **2011831**

20-Nov-20

Client: Souder, Miller & Associates

Project: Gravel Grinder Header

Sample ID: **LCS-56503** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSS** Batch ID: **56503** RunNo: **73447**

Prep Date: **11/17/2020** Analysis Date: **11/19/2020** SeqNo: **2586977** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.025	1.000	0	90.9	80	120			
Toluene	0.94	0.050	1.000	0	93.9	80	120			
Ethylbenzene	0.94	0.050	1.000	0	93.6	80	120			
Xylenes, Total	2.8	0.10	3.000	0	93.4	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	80	120			

Sample ID: **MB-56503** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **56503** RunNo: **73447**

Prep Date: **11/17/2020** Analysis Date: **11/19/2020** SeqNo: **2586993** 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		100	80	120			

Sample ID: **mb-56536** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **56536** RunNo: **73491**

Prep Date: **11/18/2020** Analysis Date: **11/19/2020** SeqNo: **2588108** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.98		1.000		98.2	80	120			

Sample ID: **LCS-56536** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSS** Batch ID: **56536** RunNo: **73491**

Prep Date: **11/18/2020** Analysis Date: **11/19/2020** SeqNo: **2588109** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.98		1.000		97.9	80	120			

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: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: **Souder, Miller & Associates** Work Order Number: **2011831** RcptNo: **1**

Received By: **Cheyenne Cason** **11/17/2020 10:44:00 AM**

Completed By: **Emily Mocho** **11/17/2020 10:56:35 AM**

Reviewed By: SGL 11/17/20

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

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

Adjusted?

Checked by: JR 11/17/20

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	1.8	Good	Yes			
2	0.0	Good	Yes			

Chain-of-Custody Record

Client: SMA - Carlsbad

Mailing Address: 201 S. Halagueno
Carlsbad, NM 88220

Phone #: (505) 516-7469

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: data 11/18
☐ Standard ☑ Rush 2 day TAT

Project Name: Gravel Grinder Header

Project #:

Project Manager: Ashley Maxwell

Sampler: LAA

On Ice: ☑ Yes ☐ No

# of Coolers: 2

Cooler Temp(including CF): 1.8+0=1.8 0.0+0=0.0 (°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. 2011831	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)
11/16/20		Soil	SL1 - 7'	4oz	Ice	001	X	X					X			
			SL1 - 6'			002										
			SL2 - 3.5'			003										
			SL2 - 2.5'			004										
			SL2 - 1.5'			005										
			SL3 - 3.5'			006										
			SL3 - 2.5'			007										
			SL3 - 1.5'			008										
			BG2 - 2'			009										
			BG2 - 3'			010										
			BG1 - 3'			011										
			BG1 - 2'			012										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
					11/16/20	1300
Date: 11/16/20	Time: 1900	Relinquished by:	Received by:	Via:	Date	Time
				courier	11/17/20	1044

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.

Chain-of-Custody Record

Client: SMA - Carlsbad

Mailing Address: 201 S. Halaquero
Carlsbad, NM 88220

Phone #: (505) 516-7469

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: data 11/18
☐ Standard ☑ Rush 2 day TAT

Project Name: Gravel Grinder Header

Project #:

Project Manager: Ashley Maxwell

Sampler: LAA

On Ice: ☒ Yes ☐ No

# of Coolers: 2

Cooler Temp (including CF): 1.4+0=1.8 0.0+0=0.0 (°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)
11/16/2020		Soil	BG1-1'	4oz	Ice	013	X	X					X			

Relinquished by:	Received by:	Via:	Date	Time
			11/16/20	1300
	Ana Cano		11/17/20	1044

Remarks: Direct Bill: Marathon 0.1

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: clients.hallenvironmental.com

December 24, 2020

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

RE: Gravel Grinder OrderNo.: 2012A09

Dear Ashley Maxwell:

Hall Environmental Analysis Laboratory received 40 sample(s) on 12/19/2020 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: **2012A09**
Date Reported: **12/24/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates **Lab Order:** 2012A09
Project: Gravel Grinder

Lab ID: 2012A09-001 **Collection Date:** 12/17/2020
Client Sample ID: BG1-4' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	820	60		mg/Kg	20	12/22/2020 5:33:03 AM	57136

Lab ID: 2012A09-002 **Collection Date:** 12/17/2020
Client Sample ID: BG1-6' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	940	60		mg/Kg	20	12/22/2020 5:45:28 AM	57136

Lab ID: 2012A09-003 **Collection Date:** 12/17/2020
Client Sample ID: BG1-8' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	680	60		mg/Kg	20	12/22/2020 5:57:52 AM	57136

Lab ID: 2012A09-004 **Collection Date:** 12/17/2020
Client Sample ID: BG1-10' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	910	60		mg/Kg	20	12/22/2020 6:10:17 AM	57136

Lab ID: 2012A09-005 **Collection Date:** 12/17/2020
Client Sample ID: BG2-4' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	1400	59		mg/Kg	20	12/22/2020 6:47:32 AM	57136

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

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

Analytical Report
Lab Order: **2012A09**
Date Reported: **12/24/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates **Lab Order:** 2012A09
Project: Gravel Grinder

Lab ID: 2012A09-006 **Collection Date:** 12/17/2020
Client Sample ID: BG2-8' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	380	61		mg/Kg	20	12/22/2020 6:59:56 AM	57136

Lab ID: 2012A09-007 **Collection Date:** 12/17/2020
Client Sample ID: BG2-10' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	130	60		mg/Kg	20	12/22/2020 1:29:42 PM	57158

Lab ID: 2012A09-008 **Collection Date:** 12/17/2020
Client Sample ID: SL1-8' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	2200	60		mg/Kg	20	12/22/2020 2:06:56 PM	57158

Lab ID: 2012A09-009 **Collection Date:** 12/17/2020
Client Sample ID: SL1-12' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	850	60		mg/Kg	20	12/22/2020 3:09:00 PM	57158

Lab ID: 2012A09-010 **Collection Date:** 12/17/2020
Client Sample ID: SL2-4' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	3600	150		mg/Kg	50	12/23/2020 11:45:48 AM	57158

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

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

Analytical Report
Lab Order: **2012A09**
Date Reported: **12/24/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates **Lab Order:** 2012A09
Project: Gravel Grinder

Lab ID: 2012A09-011 **Collection Date:** 12/17/2020
Client Sample ID: SL2-8' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	1800	60		mg/Kg	20	12/22/2020 3:33:48 PM	57158

Lab ID: 2012A09-012 **Collection Date:** 12/17/2020
Client Sample ID: SL2-10' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	580	60		mg/Kg	20	12/22/2020 3:46:13 PM	57158

Lab ID: 2012A09-013 **Collection Date:** 12/17/2020
Client Sample ID: SL2-11.5' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	400	60		mg/Kg	20	12/22/2020 3:58:38 PM	57158

Lab ID: 2012A09-014 **Collection Date:** 12/17/2020
Client Sample ID: SL3-4' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	3200	150		mg/Kg	50	12/23/2020 11:58:12 AM	57158

Lab ID: 2012A09-015 **Collection Date:** 12/17/2020
Client Sample ID: SL3-6' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	1800	60		mg/Kg	20	12/22/2020 4:23:27 PM	57158

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

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

Analytical Report
Lab Order: **2012A09**
Date Reported: **12/24/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates **Lab Order:** 2012A09
Project: Gravel Grinder

Lab ID: 2012A09-016 **Collection Date:** 12/17/2020
Client Sample ID: SL3-8' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	3700	150		mg/Kg	50	12/23/2020 12:10:37 PM	57158

Lab ID: 2012A09-017 **Collection Date:** 12/17/2020
Client Sample ID: SL3-10' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	1100	60		mg/Kg	20	12/22/2020 5:13:04 PM	57158

Lab ID: 2012A09-018 **Collection Date:** 12/17/2020
Client Sample ID: SL4-2' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	11000	600		mg/Kg	200	12/23/2020 12:23:02 PM	57158

Lab ID: 2012A09-019 **Collection Date:** 12/17/2020
Client Sample ID: SL4-4' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	7000	300		mg/Kg	100	12/23/2020 12:35:27 PM	57158

Lab ID: 2012A09-020 **Collection Date:** 12/17/2020
Client Sample ID: SL4-6' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	6200	300		mg/Kg	100	12/23/2020 12:47:52 PM	57158

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

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

Analytical Report
Lab Order: **2012A09**
Date Reported: **12/24/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates **Lab Order:** 2012A09
Project: Gravel Grinder

Lab ID: 2012A09-021 **Collection Date:** 12/17/2020
Client Sample ID: SL4-8' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	3000	150		mg/Kg	50	12/23/2020 1:00:16 PM	57158

Lab ID: 2012A09-022 **Collection Date:** 12/17/2020
Client Sample ID: SL4-10' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	880	60		mg/Kg	20	12/22/2020 6:15:08 PM	57158

Lab ID: 2012A09-023 **Collection Date:** 12/17/2020
Client Sample ID: SL4-12' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	450	60		mg/Kg	20	12/22/2020 6:27:32 PM	57158

Lab ID: 2012A09-024 **Collection Date:** 12/17/2020
Client Sample ID: SL5-2' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	11000	600		mg/Kg	200	12/23/2020 1:12:41 PM	57158

Lab ID: 2012A09-025 **Collection Date:** 12/17/2020
Client Sample ID: SL5-4' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	6200	300		mg/Kg	100	12/23/2020 1:25:05 PM	57163

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

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

Analytical Report
Lab Order: **2012A09**
Date Reported: **12/24/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates **Lab Order:** 2012A09
Project: Gravel Grinder

Lab ID: 2012A09-026 **Collection Date:** 12/17/2020
Client Sample ID: SL5-6' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	2400	60		mg/Kg	20	12/22/2020 7:54:25 PM	57163

Lab ID: 2012A09-027 **Collection Date:** 12/17/2020
Client Sample ID: SL5-8' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	2200	150		mg/Kg	50	12/23/2020 2:02:19 PM	57163

Lab ID: 2012A09-028 **Collection Date:** 12/17/2020
Client Sample ID: SL5-10' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	480	59		mg/Kg	20	12/22/2020 8:19:14 PM	57163

Lab ID: 2012A09-029 **Collection Date:** 12/17/2020
Client Sample ID: SL5-12' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	410	60		mg/Kg	20	12/22/2020 8:31:38 PM	57163

Lab ID: 2012A09-030 **Collection Date:** 12/17/2020
Client Sample ID: SL6-2' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	9600	300		mg/Kg	100	12/23/2020 2:14:43 PM	57163

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

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

Analytical Report
Lab Order: **2012A09**
Date Reported: **12/24/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates **Lab Order:** 2012A09
Project: Gravel Grinder

Lab ID: 2012A09-031 **Collection Date:** 12/17/2020
Client Sample ID: SL6-4' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	3300	300		mg/Kg	100	12/23/2020 2:27:08 PM	57163

Lab ID: 2012A09-032 **Collection Date:** 12/17/2020
Client Sample ID: SL6-6' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	4900	150		mg/Kg	50	12/23/2020 2:39:32 PM	57163

Lab ID: 2012A09-033 **Collection Date:** 12/17/2020
Client Sample ID: SL6-8' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	740	60		mg/Kg	20	12/22/2020 9:21:17 PM	57163

Lab ID: 2012A09-034 **Collection Date:** 12/17/2020
Client Sample ID: SL6-10' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	1800	59		mg/Kg	20	12/22/2020 9:33:41 PM	57163

Lab ID: 2012A09-035 **Collection Date:** 12/17/2020
Client Sample ID: SL6-12' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	680	60		mg/Kg	20	12/22/2020 10:10:54 PM	57163

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

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

Analytical Report
Lab Order: **2012A09**
Date Reported: **12/24/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates **Lab Order:** 2012A09
Project: Gravel Grinder

Lab ID: 2012A09-036 **Collection Date:** 12/17/2020
Client Sample ID: SW1 0-4' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	1500	60		mg/Kg	20	12/22/2020 10:23:19 PM	57163

Lab ID: 2012A09-037 **Collection Date:** 12/17/2020
Client Sample ID: SW2 0-4' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	3700	150		mg/Kg	50	12/23/2020 2:51:57 PM	57163

Lab ID: 2012A09-038 **Collection Date:** 12/17/2020
Client Sample ID: SW3 0-4' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	1700	60		mg/Kg	20	12/22/2020 10:48:08 PM	57163

Lab ID: 2012A09-039 **Collection Date:** 12/17/2020
Client Sample ID: SW4 0-4' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	3400	150		mg/Kg	50	12/23/2020 3:04:21 PM	57163

Lab ID: 2012A09-040 **Collection Date:** 12/17/2020
Client Sample ID: SW5 0-4' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	2400	61		mg/Kg	20	12/22/2020 11:12:57 PM	57163

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

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#: **2012A09**

24-Dec-20

Client: Souder, Miller & Associates

Project: Gravel Grinder

Sample ID: **MB-57136** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBS** Batch ID: **57136** RunNo: **74164**

Prep Date: **12/21/2020** Analysis Date: **12/22/2020** SeqNo: **2617371** Units: **mg/Kg**

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

Sample ID: **LCS-57136** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**

Client ID: **LCSS** Batch ID: **57136** RunNo: **74164**

Prep Date: **12/21/2020** Analysis Date: **12/22/2020** SeqNo: **2617372** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.4	90	110			

Sample ID: **LCS-57158** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**

Client ID: **LCSS** Batch ID: **57158** RunNo: **74197**

Prep Date: **12/22/2020** Analysis Date: **12/22/2020** SeqNo: **2618987** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.6	90	110			

Sample ID: **MB-57158** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBS** Batch ID: **57158** RunNo: **74197**

Prep Date: **12/22/2020** Analysis Date: **12/22/2020** SeqNo: **2618988** Units: **mg/Kg**

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

Sample ID: **MB-57163** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBS** Batch ID: **57163** RunNo: **74197**

Prep Date: **12/22/2020** Analysis Date: **12/22/2020** SeqNo: **2619021** Units: **mg/Kg**

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

Sample ID: **LCS-57163** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**

Client ID: **LCSS** Batch ID: **57163** RunNo: **74197**

Prep Date: **12/22/2020** Analysis Date: **12/22/2020** SeqNo: **2619022** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.1	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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **Souder, Miller & Associates** Work Order Number: **2012A09** RcptNo: **1**

Received By: **Juan Rojas** **12/19/2020 9:50:00 AM**

Completed By: **Cheyenne Cason** **12/19/2020 10:14:39 AM**

Reviewed By: YR 12/19/20

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. 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: SPA 12.19.20

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	0.5	Good				
2	0.6	Good				
3	1.1	Good				
4	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 3 day TAT

Project Name:
Gravel Grinder 1/4

Project #:
NRM2052954682

Project Manager:
Ashley Maxwell

Sampler: CAA

On Ice: ☑ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): See checklist (°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. 2012A09	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)
11/17/20		Soil	BG1 - 4'	4oz	ice/cool	001							X			
			BG1 - 6'			002										
			BG1 - 8'			003										
			BG1 - 10'			004										
			BG2 - 4'			005										
			BG2 - 8'			006										
			BG2 - 10'			007										
			SL1 - 8'			008										
			SL1 - 12'			009										
			SL2 - 4'			010										
			SL2 - 8'			011										
			SL2 - 10'			012										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
					12/18/20	1220
Date: 12/18/20	Time: 1900	Relinquished by:	Received by:	Via: courier	Date 12/19/20	Time 9:10

Remarks: Direct Bill: Marathon Oil
Melodie Sanjari 1/4

PWO#: TA.20.02416.002

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.

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 3 day TAT

Project Name: Gravel Grinder 2/4

Project #:

Project Manager: Ashley Maxwell

Sampler: LAH

On Ice: ☑ Yes ☐ No

# of Coolers: 4

Cooler Temp(including CF): see checklist (°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. 2012409	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)
12/17/20		Soil	SL2 - 11.5'	4oz	Ice/cool	013							X			
			SL3 - 4'			014										
			SL3 - 6'			015										
			SL3 - 8'			016										
			SL3 - 10'			017										
			SL4 - 2'			018										
			SL4 - 4'			019										
			SL4 - 6'			020										
			SL4 - 8'			021										
			SL4 - 10'			022										
			SL4 - 12'			023										
			SL5 - 2'			024										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
					12/18/20	1220
12/18/20	1900			Courier	12/19/20	9:50

Remarks: Direct Bill: Marathon Oil
Mdodie Sanjari 2/4

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.

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 3 day TAT

Project Name: Gravel Grinder 3/4

Project #:

Project Manager: Ashley Maxwell

Sampler: LAA

On Ice: ☑ Yes ☐ No

# of Coolers: 4

Cooler Temp(including CF): see checklist (°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. 2012409	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)
12/17/20		soil	SL5 -4'	4oz	ice/cool	025							X			
			SL5 - 6'			026										
			SL5 - 8'			027										
			SL5 - 10'			028										
			SL5 - 12'			029										
			SL6 - 2'			030										
			SL6 -4'			031										
			SL6 -6'			032										
			SL6 - 8'			033										
			SL6 - 10'			034										
			SL6 - 12'			035										
			SW1 0-4'			036										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
					12/18/20	1220
12/18/20	1900			courier	12/19/20	9:50

Remarks: Direct Bill: Marathon Oil
Melodie Sanjeri 3/4

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.

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 3 day TAT

Project Name: Gravel Grinder 4/4

Project #:

Project Manager: Ashley Maxwell

Sampler: CHA

On Ice: ☑ Yes ☐ No

# of Coolers: 4

Cooler Temp(including CF): See checklist (°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. 2012A09	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)						
12/17/20		soil	SW2 0-4'	4oz ~~[illegible]~~	ice/cool	037							X									
|		|	SW3 0-4'	|	|	038							|									
|		|	SW4 0-4'	|	|	039							|									
|			SW5 0-4'	|	|	040							|									

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
12/1			[signature]		12/18/20	1200
12/18/20	1900	[signature]	[signature]	courier	12/19/20	9:50

Remarks: Direct Bill: Marathon Oil
Melodie Sanjari 4/4

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: clients.hallenvironmental.com

December 31, 2020

Ashley Maxwell
Souder, Miller & Associates
201 S Halagueno
Carlsbad, NM 88221
TEL:
FAX:

RE: Gravel Grinder OrderNo.: 2012C30

Dear Ashley Maxwell:

Hall Environmental Analysis Laboratory received 8 sample(s) on 12/29/2020 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 **2012C30**
Date Reported: **12/31/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SL1-13'
Project: Gravel Grinder
Collection Date: 12/28/2020
Lab ID: 2012C30-001 **Matrix:** SOIL **Received Date:** 12/29/2020 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	490	60		mg/Kg	20	12/30/2020 2:36:52 PM	57280

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 **2012C30**
Date Reported: **12/31/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SL3-12'
Project: Gravel Grinder
Collection Date: 12/28/2020
Lab ID: 2012C30-002 **Matrix:** SOIL **Received Date:** 12/29/2020 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	480	60		mg/Kg	20	12/30/2020 3:14:06 PM	57280

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 **2012C30**
Date Reported: **12/31/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SL6-13'
Project: Gravel Grinder
Collection Date: 12/28/2020
Lab ID: 2012C30-003 **Matrix:** SOIL **Received Date:** 12/29/2020 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	380	60		mg/Kg	20	12/30/2020 4:16:09 PM	57280

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

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

Analytical Report
Lab Order **2012C30**
Date Reported: **12/31/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW1-0-4'
Project: Gravel Grinder
Collection Date: 12/28/2020
Lab ID: 2012C30-004 **Matrix:** SOIL **Received Date:** 12/29/2020 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	460	59		mg/Kg	20	12/30/2020 4:28:34 PM	57280

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 **2012C30**
Date Reported: **12/31/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW2 0-4'
Project: Gravel Grinder
Collection Date: 12/28/2020
Lab ID: 2012C30-005 **Matrix:** SOIL **Received Date:** 12/29/2020 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	560	60		mg/Kg	20	12/30/2020 4:40:59 PM	57280

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 **2012C30**
Date Reported: **12/31/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW3 0-4'
Project: Gravel Grinder
Collection Date: 12/28/2020
Lab ID: 2012C30-006 **Matrix:** SOIL **Received Date:** 12/29/2020 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	460	60		mg/Kg	20	12/30/2020 4:53:23 PM	57280

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 **2012C30**
Date Reported: **12/31/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW4 0-4'
Project: Gravel Grinder
Collection Date: 12/28/2020
Lab ID: 2012C30-007 **Matrix:** SOIL **Received Date:** 12/29/2020 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	440	60		mg/Kg	20	12/30/2020 5:05:47 PM	57280

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 **2012C30**
Date Reported: **12/31/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW5 0-4'
Project: Gravel Grinder
Collection Date: 12/28/2020
Lab ID: 2012C30-008 **Matrix:** SOIL **Received Date:** 12/29/2020 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	290	60		mg/Kg	20	12/30/2020 5:18:11 PM	57280

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

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#: **2012C30**

31-Dec-20

Client: Souder, Miller & Associates

Project: Gravel Grinder

Sample ID: **MB-57280**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **57280**	RunNo: **74331**							
Prep Date: **12/30/2020**	Analysis Date: **12/30/2020**	SeqNo: **2624089**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-57280**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **57280**	RunNo: **74331**							
Prep Date: **12/30/2020**	Analysis Date: **12/30/2020**	SeqNo: **2624090**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.7	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical 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: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: **Souder, Miller & Associat** Work Order Number: **2012C30** RcptNo: **1**

Received By: **Isaiah Ortiz** **12/29/2020 7:35:00 AM** I-OX

Completed By: **Isaiah Ortiz** **12/29/2020 7:44:16 AM** I-OX

Reviewed By: EM 12/29/20

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

# of preserved bottles checked for pH: (<2 or >12 unless noted)
Adjusted?
Checked by: JR 12/29/20

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	0.8	Good	Not Present			
2	1.1	Good	Not Present			

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 3 @ day TAT

Project Name: Gravel Grinder

Project #: NRM2052954682

Project Manager: Ashley Maxwell

Sampler: LHA

On Ice: ☑ Yes ☐ No

# of Coolers: 2 0.8 ±0

Cooler Temp(including CF): 1.1 ±0 (°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. 2012C30	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)
12/28/20		Soil	SL1 -13'	4oz	Ice/cool	001							X			
			SL3 -12'			002										
			SL6 -13'			003										
			SW1 -0-4'			004										
			SW2 0-4'			005										
			SW3 0-4'			006										
			SW4 0-4'			007										
			SW5 0-4'			008										

Date	Time	Relinquished by	Received by	Via	Date	Time
12/28/20	1330				12/28/20	1330
12/28/20	1940				12/29/20	0735

Remarks:
Direct Bill: Marathon Oil
Melodie Sanjari
WO# TA.20.02416.002

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 14926

CONDITIONS OF APPROVAL

Operator:	OGRID:	Action Number:	Action Type:
MARATHON OIL PERMIAN LLC 5555 San Felipe St. Permian Regulatory Team Houston, TX77056	372098	14926	C-141

OCD Reviewer	Condition
ceads	None