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

DENIED

Cory Smith 3/13/19 Environmental Spec.

February 26, 2019

#5E26442 BG9

NMOCD District 1
Environmental Division
1625 N. French Drive
Hobbs, New Mexico 88240

SUBJECT: Remediation Closure Report for the QPQASU Tank Battery #1 Release (1RP-5122), Lea County, New Mexico

To whom it concerns,

On behalf of Mewbourne Oil Company, Souder, Miller & Associates (SMA) has prepared this Remediation Closure Report that describes the remediation of a release of liquids related to oil and gas production activities at the QPQASU Tank Battery #1 site. The site is in Unit M, Section 23, Township 18S, Range 32E, Lea County, New Mexico, on Federal land. Figure 1 illustrates the vicinity and site location on an USGS 7.5-minute quadrangle map.

Table 1 summarizes release information and Closure Criteria.

Table 1: Release Information and Closure Criteria			
Name	QPQASU Tank Battery #1	Company	Mewbourne Oil Company
API Number	30-025-29537	Location	32.727224 -103.743528
Incident Number	1RP-5122		
Estimated Date of Release	Unknown	Date Reported to NMOCD	6/14/18
Land Owner	BLM	Reported To	NMOCD District 1
Source of Release	Line Failure		
Released Volume	Unknown	Released Material	Produced Water
Recovered Volume	0 bbls	Net Release	Unknown
NMOCD Closure Criteria	>100 feet to groundwater		
SMA Response Dates	September, October and December, 2018 and January, 2019		

Accepted as additional information (Pages 72-81)
06/11/2020

Smith, Cory, EMNRD

From: Smith, Cory, EMNRD
Sent: Wednesday, March 13, 2019 7:31 AM
To: 'Jacqui Harris'; Billings, Bradford, EMNRD; EMNRD-OCD-District1spills
Cc: Fields, Vanessa, EMNRD; 'zthomas@mewbourne.com'
Subject: RE: Mewbourne *QPQASU Tank Battery #1 (1RP-5122)_CLOSURE REPORT

Jacqui,

OCD denies Mewbourne Oil Company's request for deferment. The site has not been fully delineated across the pipeline access, and pipelines can be excavated around safety.

The denial will be placed into 1RP 5122, Mewbourne needs to fully delineate the site per the previous approved initial C-141 or 19.15.29.11 NMAC and resubmit the request for deferment or complete the remediation.

Please submit the complete delineation or remediation no later then June 14, 2019 to OCD District 1 Office.

If you have any additional questions.

OCD denial does not relive Mewbourne of any other requirements imposed by other regulatory agencies.

Thanks,

Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext 115
cory.smith@state.nm.us

From: Jacqui Harris <jacqui.harris@soudermiller.com>
Sent: Tuesday, March 12, 2019 12:41 PM
To: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>; Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>; EMNRD-OCD-District1spills <EMNRD-OCD-District1spills@state.nm.us>
Cc: Fields, Vanessa, EMNRD <Vanessa.Fields@state.nm.us>
Subject: [EXT] Re: Mewbourne *QPQASU Tank Battery #1 (1RP-5122)_CLOSURE REPORT

SW 23 is over the limit and we asked for a deferral in that area due to multiple pipelines that prevent further evacuation.

Get Outlook for iOS

From: Smith, Cory, EMNRD <cory.smith@state.nm.us>
Sent: Monday, March 11, 2019 2:27 PM
To: Jacqui Harris; Billings, Bradford, EMNRD; EMNRD-OCD-District1spills

Cc: Fields, Vanessa, EMNRD
Subject: RE: Mewbourne *QPQASU Tank Battery #1 (1RP-5122)_CLOSURE REPORT

Jacqui,

Looking at the results SW23 is over the limits for TPH was there another sampling event in that area?

Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext 115
cory.smith@state.nm.us

From: Jacqui Harris <jacqui.harris@soudermiller.com>
Sent: Monday, March 11, 2019 8:38 AM
To: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>; Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>; EMNRD-OCD-District1spills <EMNRD-OCD-District1spills@state.nm.us>
Subject: [EXT] RE: Mewbourne *QPQASU Tank Battery #1 (1RP-5122)_CLOSURE REPORT

*RE: Mewbourne *QPQASU Tank Battery #1 (1RP-5122)_CLOSURE REPORT*

Here is the report with the correct table inserted.

Jacqui Harris
Project Scientist

Souder, Miller & Associates
Engineering ♦ Environmental ♦ Surveying
201 S Halagueno Street
Carlsbad, NM 88220
www.soudermiller.com
(575) 689-8801 ext. 2205
(575) 496-0780 (mobile)

From: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>
Sent: Monday, March 11, 2019 7:12 AM
To: Jacqui Harris <jacqui.harris@soudermiller.com>; Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>; EMNRD-OCD-District1spills <EMNRD-OCD-District1spills@state.nm.us>
Subject: RE: Mewbourne *QPQASU Tank Battery #1 (1RP-5122)_CLOSURE REPORT

Jacqui,

Can you please remove/add the correct table and submit the document again please.

Thanks,

Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext 115
cory.smith@state.nm.us

From: Jacqui Harris <jacqui.harris@soudermiller.com>
Sent: Friday, March 8, 2019 3:32 PM
To: Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>; EMNRD-OCD-District1spills <EMNRD-OCD-District1spills@state.nm.us>
Subject: [EXT] RE: Mewbourne *QPQASU Tank Battery #1 (1RP-5122)_CLOSURE REPORT

I discovered one of the tables in the report had the chloride totals omitted. Attached is the corrected table (to replace Table 3: Bottom Hole Closure Samples pg 13). Please let me know if anything else is needed.

Jacqui

From: Jacqui Harris
Sent: Friday, March 8, 2019 10:09 AM
To: bradford.billings@state.nm.us; emnrd-ocd-district1spills@state.nm.us
Cc: Zack Thomas <zthomas@mewbourne.com>; Shawna Chubbuck <shawna.chubbuck@soudermiller.com>; Ashley Maxwell <ashley.maxwell@soudermiller.com>; Austin Weyant <austin.weyant@soudermiller.com>
Subject: Mewbourne *QPQASU Tank Battery #1 (1RP-5122)_CLOSURE REPORT

*RE: Mewbourne *QPQASU Tank Battery #1 (1RP-5122)_CLOSURE REPORT*

Please find the attached Closure Report for the above mentioned site . If you have any questions please don't hesitate to call.

Sincerely,

Jacqui Harris
Project Scientist

1.0 Background

A release was discovered at the QPQASU site due to a line failure. Initial response activities were conducted by the operator and included source elimination and line repair. During initial Action included the excavation of the visual staining to various depths. When SMA arrived on site the excavated areas ranged from one to four feet bgs. Figures 1 and 2 illustrate the vicinity and site location and Figure 3 illustrates the release location. The C-141 forms are included in Appendix A.

2.0 Site Information and Closure Criteria

The QPQASU tank battery is located approximately 35 miles west of Hobbs, New Mexico on BLM land at an elevation of approximately 3767 feet above mean sea level (amsl).

Based upon the New Mexico Office of the State Engineer (NMOSE) online water well database (Appendix B), depth to groundwater in the area is estimated to be greater than 100 feet below grade surface (bgs). There is one known water source within ½-mile of the location, according to the New Mexico Office of the State Engineer (NMOSE) online water well database (https://gis.ose.state.nm.us/gisapps/ose_pod_locations/; accessed 10/24/2018). The nearest significant watercourse is Taylor Draw, located approximately 8 miles to the northwest. Figure 2 illustrates the site with 200 and 300-foot radii to indicate that it does not lie within a sensitive area as described in 19.15.29.12.C(4) NMAC.

Based on the information presented herein, the applicable NMOCD Closure Criteria for this site is for a groundwater depth of greater than 100 feet bgs. The release area will be excavated to the NMOCD Closure Criteria as demonstrated in the attached Table 2. In addition, the top four (4) feet of impacted areas off of the well pad will meet the Reclamation requirement of 19.15.29.13(D)(1). Pertinent well data is attached in Appendix B.

3.0 Release Characterization Activities and Findings

Between September 13 and October 3, 2018, SMA personnel performed site characterization and delineation activities at the QPQASU Tank Battery release site. Field-screening for chloride was conducted using an electrical conductivity (EC) meter, and selected soil samples were collected for laboratory analysis as described below.

Three borehole locations were established to vertically characterize the release in the pooling and visibly stained areas to depths up to 50 feet bgs (BH1-BH3). A total of ten (10) samples were submitted for laboratory analysis from these locations. Eleven other sample locations were established in addition to the boreholes to further characterize the release to depths up to 7.5 feet bgs (SP1A - SP1G, SP2A - SP2F and SP3A - SP3C). Soil samples from these locations were field-screened for chloride only, no laboratory samples were collected. An additional six (6) sample locations were also established in an area of potential historic impact to depths up to 10 feet bgs (OP1-OP5). A total of nineteen (19) samples were submitted for laboratory analysis from these locations.

A total of 29 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. Table 3A itemizes the samples and field-screening results as well as identifying any variances from the typical specification of two samples per boring. Locations for all samples are depicted on Figure 3A.

Laboratory samples were collected in accordance with the sampling protocol included in Appendix C. Samples were placed into laboratory supplied glassware, labeled, and maintained on ice until delivery to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico (Appendix D).

Based on the results, SMA estimated approximately 3,326 cubic yards of contaminated material to be excavated and replaced with clean backfill in the impacted area, to a depth of approximately 4 feet bgs.

4.0 Soil Remediation Summary

On December 11, 2018 and January 8 and 15, 2019, SMA returned to the site to guide and oversee the excavation of contaminated soil. After approval from area utilities via 811, SMA guided the excavation activities by collecting soil samples for field screening as the excavation was taken to 4 feet bgs. Samples were screened for chloride using an electrical conductivity (EC) meter. The walls and base were excavated until field screening results indicated that the NMOCD Closure Criteria would be met. NMOCD was notified on December 7, 2018 that closure samples were expected to be collected in two (2) business days.

The release area was excavated to depths ranging from 4 to 10 feet bgs. The confirmation samples were collected from within the excavation in accordance with a systematic sampling approach as defined by SW846 using Gilbert, 1987 equation 5.2.3 for Stratified Random Sampling which is detailed in Appendix C. This systematic method meets the EPA's data quality assessment standards (DQA) for composite sampling as defined by (Myers 1997). Confirmation samples were comprised of five-point composites of the base (BH1-B17) and walls (SW1-SW25).

Laboratory results from the December samples indicated that the excavation area represented by BH4, BH6, BH9, BH10 and BH11 would need to be advanced due to levels of TPH above the sites closure criteria. On January 8 and 15, 2019, SMA further guided the continued excavation of the remaining contaminated areas. Confirmation samples were collected at 5 feet bgs at BH4 and BH6, at 6 feet bgs at BH9, at 8 feet bgs at BH10 and 8 and 10 feet bgs at BH11. Samples from January 15 were analyzed for MRO, DRO, and GRO by EPA Method 8015D only; all other samples were submitted for all analyses listed 3.0 above.

Figure 3 shows the extent of the excavation and sample locations. All field screening and laboratory results are summarized in Table 3. Laboratory reports are included in Appendix D.

Results demonstrate that the release has been remediated to the Closure Criteria standards in all locations except the eastern sidewall, which borders the QPQASU tank battery location, represented by sample SW23. SMA and Mewbourne are requesting a deferment until site abandonment for this location, as it directly borders multiple pipelines and cannot be further advanced due to health and human safety concerns.

In addition to meeting the Closure Criteria, the top four (4) feet of impacted areas meet the Reclamation requirement of 19.15.29.13(D)(1). Contaminated soils were removed and replaced with clean backfill material to return the surface to previous contours. The contaminated soil was transported and disposed of at R360 which is a NMOCD permitted disposal facility.

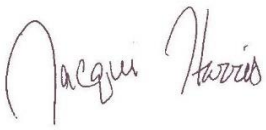
5.0 Scope and Limitations

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

If there are any questions regarding this report, please contact either Jacqui Harris at 575-496-0780 or Shawna Chubbuck at 505-325-7535.

Submitted by:
SOUDER, MILLER & ASSOCIATES

Reviewed by:



Jacqui Harris
Staff Scientist

Shawna Chubbuck
Senior Scientist

ATTACHMENTS:

Figures:

Figure 1: Vicinity and Well Head Protection Map
Figure 2: Surface Water Map
Figure 3: Site and Sample Location Map

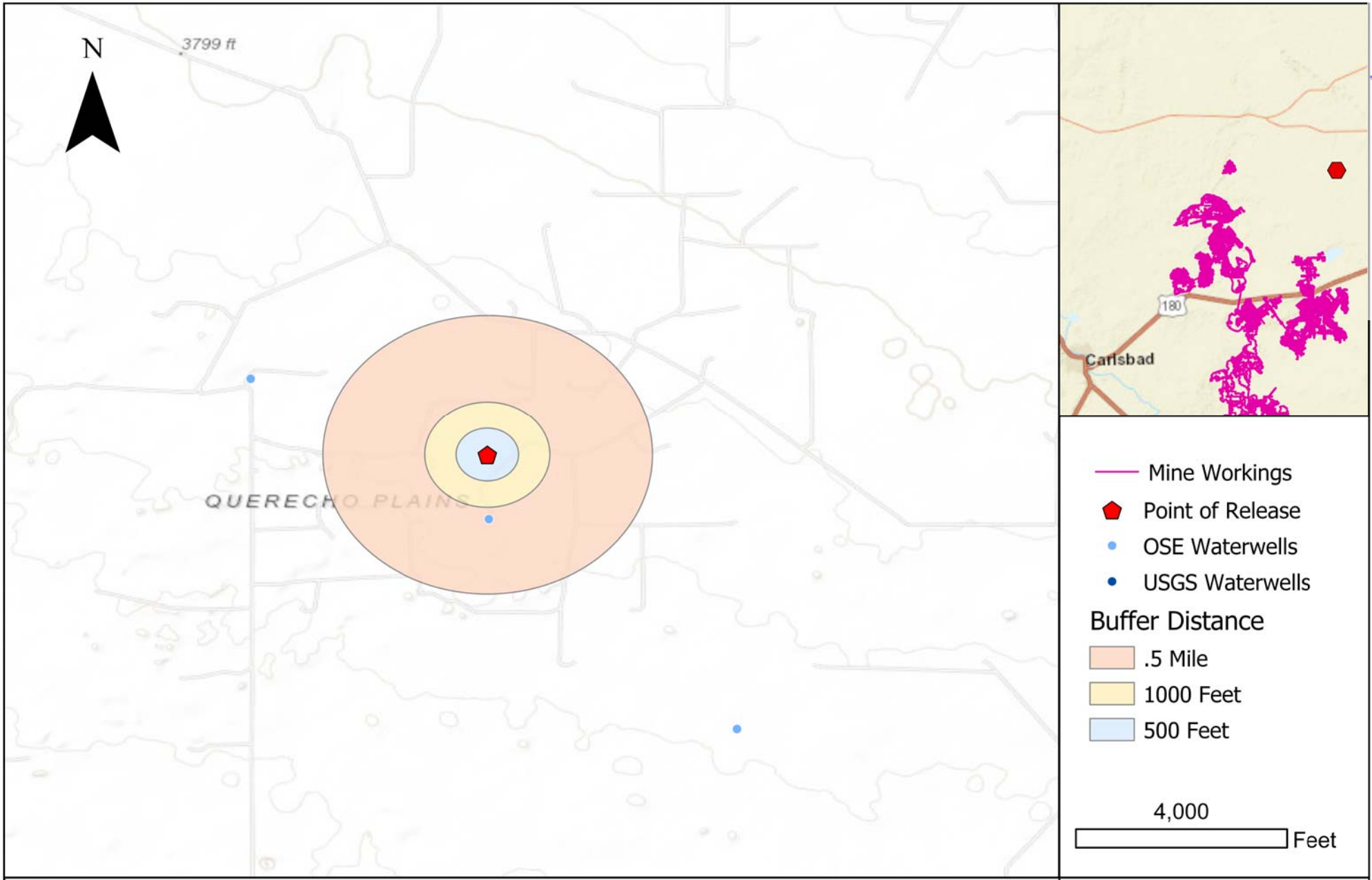
Tables:

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

Appendices:

Appendix A: Initial & Final C141
Appendix B: NMOSE Wells Report
Appendix C: Sampling Method
Appendix D: Laboratory Analytical Reports
Appendix E: Photo Log

FIGURES



Regional Vicinity & Wellhead Protection Map
QPQASU Tank Battery #1- Mewbourne

Figure 1

P:\5-Mewbourne 2019 MSA (5E27962)\GIS\ARCGIS\MEWBOURNE_MIT.aprx

Date Saved: 2/21/2019

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

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Date 2/22/2019
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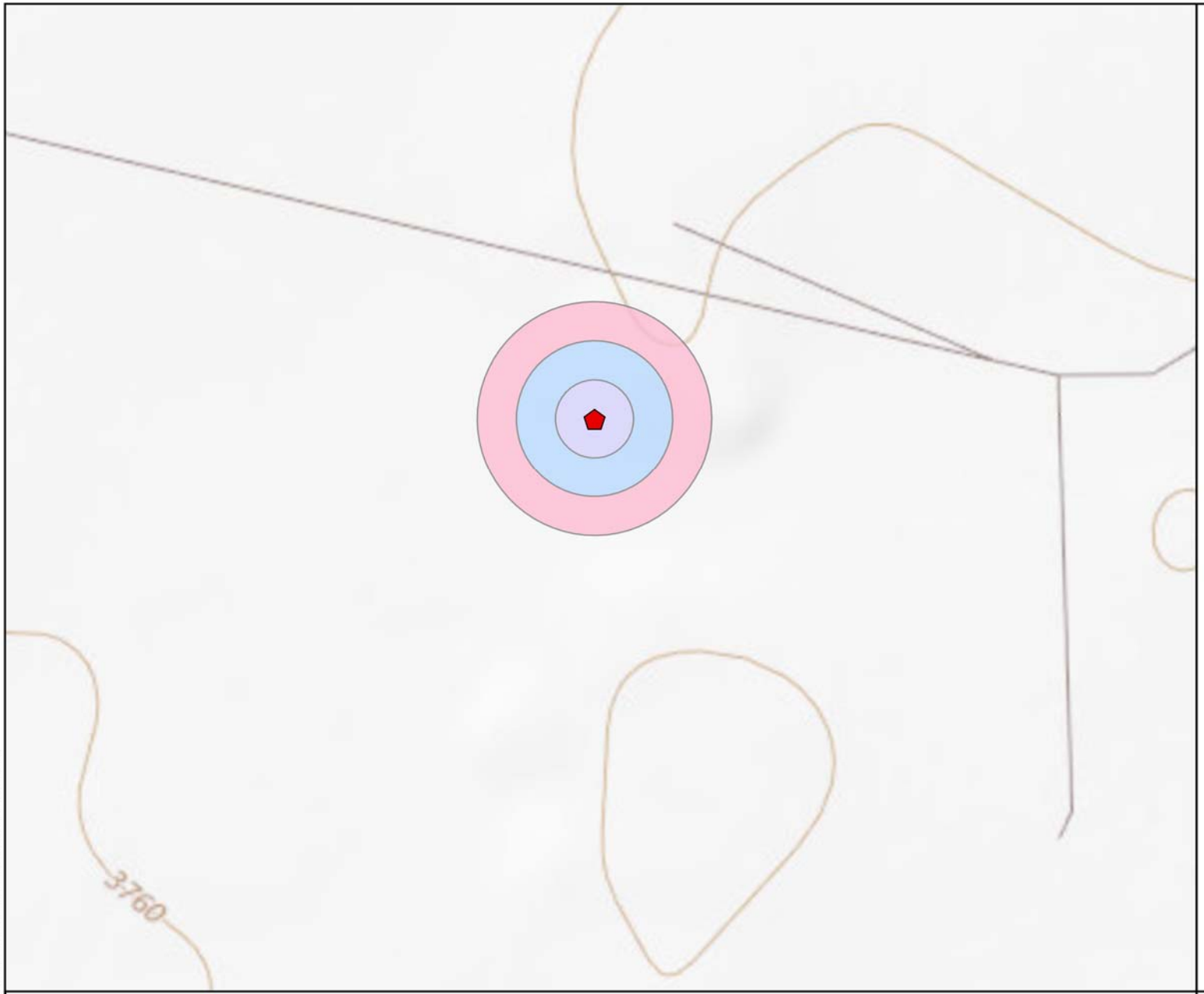

Point of Release
Springs Seeps
Streams Canals
Rivers
NM Wetlands
Lakes Playas
FEMA Flood Zones 2011

Buffer Distance
100 Feet
200 Feet
300 Feet

N

590
Feet

Surface Water Protection Map
QPQASU Tank Battery #1- Mewbourne
Lea County, NM

Figure 2

P:\5-Mewbourne 2019 MSA (5E27962)\GIS\ARCGIS\MEWBOURNE_MIT.aprx

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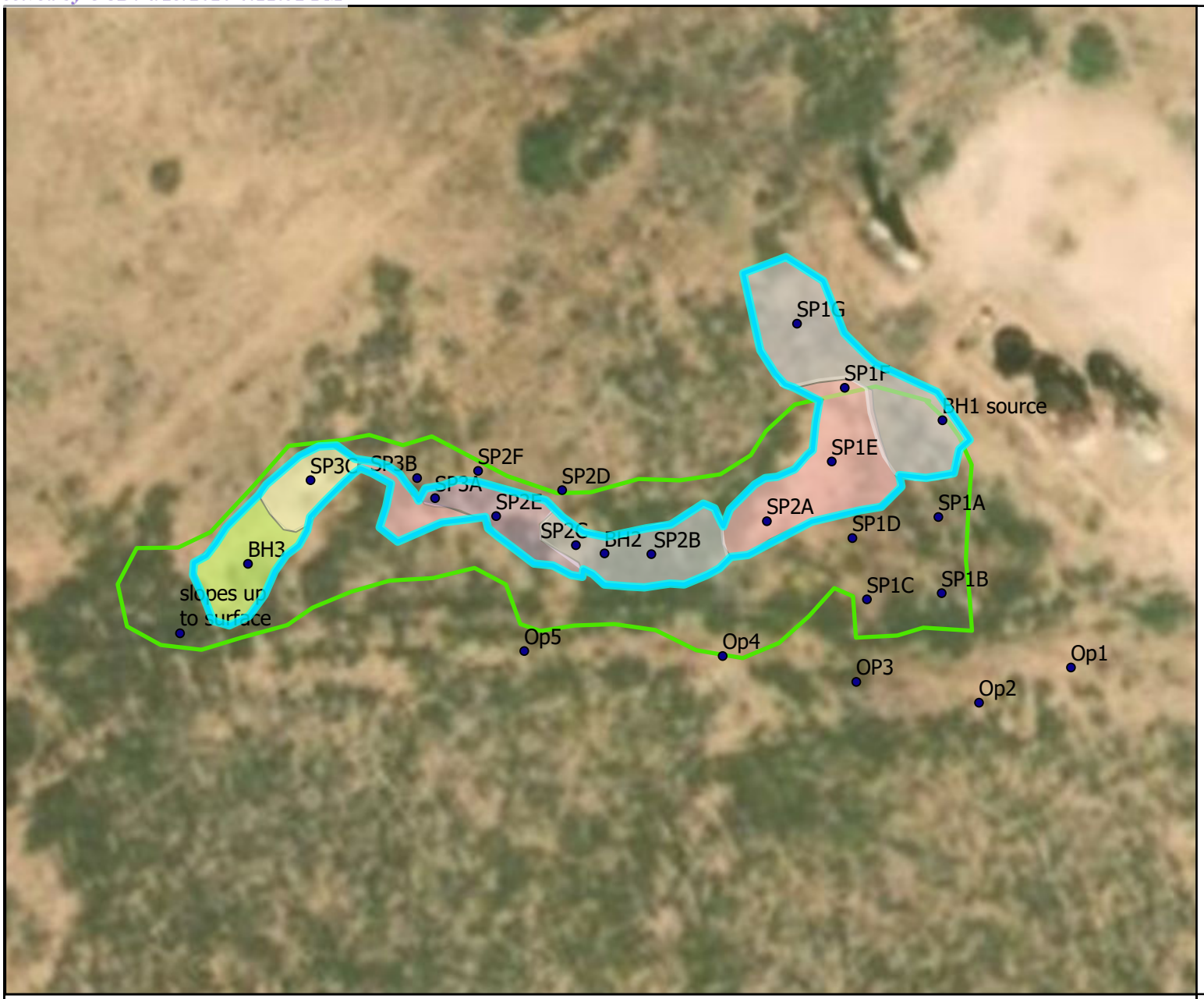

QPQASU Tank Battery #1

Legend

- Release Area
- Sample Point
- 1' Excav.
- 1.5'Excav
- 4' Excav.
- 3' Excav.
- 2' Excav.
- Potential Historic

140 Feet

Sect. 23, T18S, R32E
Lea County, NM

Figure 3A

Q:\Staff\Scott\JACQUI_TEST_PRO_PACKAGE\MARK\WEST.aprx

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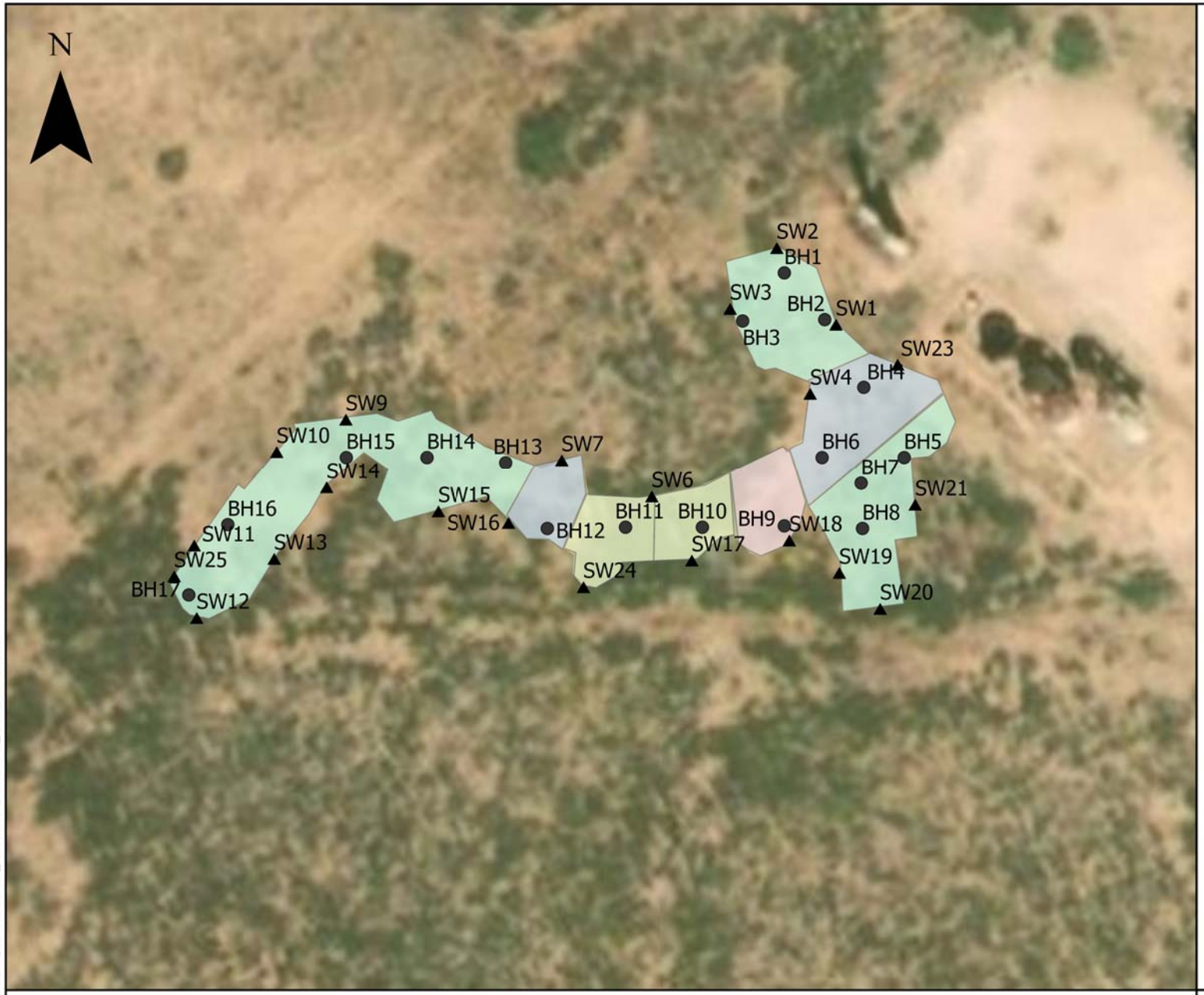

BH

Sidewall

Excavation Depth

4'

5'

6'

8'

0 25 50 100 Feet

Site and Sample location Map
QPQASU Tank Battery #1-Mewbourne

Figure 3

Revisions

By:_____ Date:_____ Descr:_____

By:_____ Date:_____ Descr:_____

Date Saved: 2/22/2019

Drawn JVH

Date 2/22/2019

Checked

Approved

SMA

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C:\Users\jvh.SMA\Documents\ArcGIS\Projects\QPQASU_Mewbourne\QPQASU_Mewbourne.aprx

TABLES

Table 2:
NMOCD Closure Criteria

Mewbourne
QPQASU Tank Battery

Site Information (19.15.29.11.A(2, 3, and 4) NMAC)		Source/Notes
Depth to Groundwater (feet bgs)	>100	
Hortizontal Distance From All Water Sources Within 1/2 Mile (ft)	NA	None within 1/2 Mile
Hortizontal Distance to Nearest Significant Watercourse (ft)	8 miles	Taylor Draw is 8 miles to the northwest.

Closure Criteria (19.15.29.12.B(4) and Table 1 NMAC)						
Depth to Groundwater		**Closure Criteria (units in mg/kg)**				
		Chloride *numerical limit or background, whichever is greater	**TPH**	**GRO + DRO**	**BTEX**	**Benzene**
< 50' BGS		600	100		50	10
51' to 100'		10000	2500	1000	50	10
>100'	**X**	20000	2500	1000	50	10
Surface Water	**yes or no**	**if yes, then**				
<300' from continuously flowing watercourse or other significant watercourse?	**NO**					
<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		600	100		50	10
<300' from an occupied permanent residence, school, hospital, institution or church?	**NO**					
within incorporated municipal boundaries or within a defined municipal fresh water well field?	**NO**					
<100' from wetland?	**NO**					
within area overlying a subsurface mine	**NO**					
within an unstable area?	**NO**					
within a 100-year floodplain?	**NO**					

Table 3A:
Summary of Sample Results

MEWBOURNE
QPQASU Tank Battery #1 (1RP-5122)

Sample ID	Sample Date	Depth (feet bgs)	BTEX mg/Kg	Benzene mg/Kg	GRO mg/Kg	DRO mg/Kg	MRO mg/Kg	**Total TPH** mg/Kg	Cl- mg/Kg	Field screening
			50	10	1000			2500	20000	
BH1	9/13/2018	3	<.208	<.023	<4.6	220	380	600	33	<237
		5	---	---	---	---	---	---	---	<238
		8	---	---	---	---	---	---	---	4400
		13	<.208	<.023	<4.6	<9.7	<48	<62.3	12000	14685
		18	---	---	---	---	---	---	---	9500
		23	---	---	---	---	---	---	---	9460
		28	---	---	---	---	---	---	---	10460
		33	---	---	---	---	---	---	---	10550
		38	---	---	---	---	---	---	---	6300
		43	---	---	---	---	---	---	---	2430
		48	<.208	<.023	<4.6	<9.7	<48	<62.3	560	360
BH2	9/20/2018	15	<.208	<.023	<4.6	<9.7	<48	<62.3	14000	13324
		25	---	---	---	---	---	---	---	10900
		30	---	---	---	---	---	---	---	9950
		35	<.208	<.023	<4.6	<9.7	<48	<62.3	12000	10600
	10/3/2018	40	<.208	<.023	<4.6	<9.7	<48	<62.3	3500	3408
		45	<.208	<.023	<4.6	<9.7	<48	<62.3	540	654
		50	<.208	<.023	<4.6	<9.7	<48	<62.3	340	332
BH3	9/19/2018	7	<.208	<.023	<4.8	140	74	214	8600	7525
		10	---	---	---	---	---	---	---	5900
		13	---	---	---	---	---	---	---	6285
		15	---	---	---	---	---	---	---	7627
		20	---	---	---	---	---	---	---	7410
		23	---	---	---	---	---	---	---	6660
		30	---	---	---	---	---	---	---	6320
		35	---	---	---	---	---	---	---	3420
		40	---	---	---	---	---	---	---	970
		45	<.208	<.023	<4.6	<9.7	<48	<62.3	33	<237
OP1	9/13/2018	1	---	---	---	---	---	---	---	<236
		2	---	---	---	---	---	---	---	<237
		4	---	---	---	---	---	---	---	<237
OP2	10/3/2018	0	<.208	<.023	<4.6	10	59	69	<30	---
		1	<.208	<.023	<4.6	<10	<50	<64.6	<30	---
		2	<.208	<.023	<4.6	<10	<50	<64.6	<30	---
		3	<.208	<.023	<4.6	<10	<50	<64.6	<30	---
		4	<.208	<.023	<4.6	<10	<50	<64.6	<30	---
		5	<.208	<.023	<4.6	<10	<50	<64.6	<30	<237
		10	<.208	<.023	<4.6	<10	<50	<64.6	<30	<237
OP3	9/13/2018	1	---	---	---	---	---	---	---	<237
		2	---	---	---	---	---	---	---	<237
		4	---	---	---	---	---	---	---	<237
OP4	10/3/2018	0	<.208	<.023	<4.8	59	160	219	<30	---
		1	<.208	<.023	<4.6	<9.5	<48	<62.1	<30	---
		2	<.208	<.023	<4.6	<9.5	<48	<62.1	<30	---
		3	<.208	<.023	<4.6	<9.5	<48	<62.1	<30	---
		4	<.208	<.023	<4.6	<9.5	<48	<62.1	<30	---
		5	<.208	<.023	<4.6	<9.5	<48	<62.1	<30	<237
OP5	10/3/2018	0	<.208	<.023	<4.8	24	59	83	<30	---
		1	<.208	<.023	<4.6	<9.5	<48	<62.1	<30	---
		2	<.208	<.023	<4.6	<9.5	<48	<62.1	<30	---
		3	<.208	<.023	<4.6	<9.5	<48	<62.1	<30	---
		4	<.208	<.023	<4.6	<9.5	<48	<62.1	<30	---
		5	<.208	<.023	<4.6	<9.5	<48	<62.1	<30	<237

Table 3: Mewbourne
Bottom Hole Closure Samples QPQASU Tank Battery

Sample ID	Sample Date	Depth (feet bgs)	Excavated	BTEX mg/Kg	Benzene mg/Kg	GRO mg/Kg	DRO mg/Kg	MRO mg/Kg	**Total TPH** mg/Kg	Cl- mg/Kg
				50	10	1000			2500	20000
BH1	12/11/2018	4	excavated	0.18	<0.025	5.8	320	620	945.8	32
BH2	12/11/2018	4	excavated	<0.225	<0.025	8.8	730	850	1588.8	55
BH3	12/11/2018	4	excavated	<0.225	<0.025	<5.0	95	87	182	140
BH4	12/11/2018	4	excavated	<0.225	<0.025	59	3400	2000	5459	920
	1/8/2019	5	excavated	<0.216	<0.024	<4.8	<9.5	<4.7	<61.3	920
BH5	12/11/2018	4	excavated	<0.225	<0.025	<5.0	130	98	228	350
BH6	12/11/2018	4	excavated	<0.225	<0.025	65	6700	3400	10165	1100
	1/8/2019	5	excavated	<0.217	<0.024	<4.8	<9.3	<47	<61.1	1100
BH7	12/11/2018	4	excavated	<0.225	<0.025	<5.0	420	330	750	250
BH8	12/11/2018	4	excavated	<0.225	<0.025	<5.0	110	100	210	230
BH9	12/11/2018	4	excavated	<0.225	<0.025	150	3600	1600	5350	1700
	1/8/2019	6	excavated	5.65	<0.025	<5.0	<9.8	<49	<63.8	1700
BH10	12/11/2018	4	excavated	2.9	<0.025	97	1900	780	2777	1300
	1/15/2019	8	excavated	-	-	<5.0	57	<4.7	57	9900
BH11	12/11/2018	4	excavated	<0.225	<0.025	39	4000	2100	6139	540
	1/15/2019	8	excavated	-	-	46	910	420	1376	8400
	1/15/2019	10	In-Situ	-	-	7.7	280	130	417.7	13000
BH12	12/11/2018	5	excavated	<0.225	<0.025	<5.0	<10	<50	<63.8	<30
BH13	12/11/2018	4	excavated	<0.225	<0.025	<5.0	450	260	710	1800
BH14	12/11/2018	4	excavated	<0.225	<0.025	<5.0	<10	<50	<63.8	760
BH15	12/11/2018	4	excavated	<0.225	<0.025	<5.0	510	370	880	1400
BH16	12/11/2018	4	excavated	<0.225	<0.025	17	820	410	1247	370
BH17	12/11/2018	4	excavated	<0.225	<0.025	<5.0	31	<50	31	310

Table 3:
Side Wall Closure Samples

Mewbourne
QPQASU Tank Battery

Sample ID	Sample Date	Depth (feet bgs)	BTEX mg/Kg	Benzene mg/Kg	GRO mg/Kg	DRO mg/Kg	MRO mg/Kg	**Total TPH** mg/Kg	Cl- mg/Kg
			50	10	1000			2500	20000
SW1	12/11/2018	0-4'	<0.225	<0.025	<5.0	32	59	91	140
SW2	12/11/2018	0-4'	<0.225	<0.025	<5.0	32	59	91	46
SW3	12/11/2018	0-4'	<0.225	<0.025	<5.0	<10	<50	<65	<30
SW4	12/11/2018	0-5'	<0.225	<0.025	<5.0	710	540	1250	400
SW6	12/11/2018	0-8'	<0.225	<0.025	<5.0	<10	<50	<65	<30
SW7	12/11/2018	0-5'	<0.225	<0.025	<5.0	430	350	780	310
SW9	12/11/2018	0-4'	<0.225	<0.025	<5.0	<10	<50	<65	<30
SW10	12/11/2018	0-4'	<0.225	<0.025	<5.0	<10	<50	<65	<30
SW11	12/11/2018	0-4'	<0.225	<0.025	<5.0	<10	<50	<65	35
SW12	12/11/2018	0-4'	<0.225	<0.025	<5.0	<10	<50	<65	<30
SW13	12/11/2018	0-4'	<0.225	<0.025	<5.0	<10	<50	<65	59
SW14	12/11/2018	0-4'	<0.225	<0.025	<5.0	<10	<50	<65	<30
SW15	12/11/2018	0-4'	<0.225	<0.025	<5.0	11	<50	11	400
SW16	12/11/2018	0-5'	<0.225	<0.025	<5.0	89	83	172	380
SW17	12/11/2018	0-8'	<0.225	<0.025	<5.0	<10	<50	<65	<30
SW18	12/11/2018	0-6'	<0.225	<0.025	<5.0	63	79	142	<30
SW19	12/11/2018	0-4'	<0.225	<0.025	<5.0	<10	<50	<65	120
SW20	12/11/2018	0-4'	<0.225	<0.025	<5.0	<10	<50	<65	<30
SW21	12/11/2018	0-4'	<0.225	<0.025	<5.0	12	94	106	<30
SW23	12/11/2018	0-5'	0.051	<0.025	<5.0	2500	3600	6100	1500
SW24	12/11/2018	0-8'	<0.225	<0.025	<5.0	<10	<50	<65	330
SW25	12/11/2018	0-4'	<0.225	<0.025	<5.0	<10	<50	<65	200

APPENDIX A
INITIAL & FINAL 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

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: Mewbourne Oil Company	Contact: Zack Thomas
Address: PO Box 5270 Hobbs NM 88240	Telephone No. 575-393-5905
Facility Name: QPQASU Tank Battery #1	Facility Type: Water Transfer Line

Surface Owner: BLM	Mineral Owner:	API No. 30-025-29537

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
M	23	18S	32E	500'	South	660'	West	Lea

Latitude 32.727224 **Longitude** -103.743528

NATURE OF RELEASE

Type of Release: produced water	Volume of Release: unknown	Volume Recovered: 0
Source of Release: 2 inch poly steel transition	Date and Hour of Occurrence N/A	Date and Hour of Discovery 6-14-18
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

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

RECEIVED
By Olivia Yu at 2:36 pm, Jul 11, 2018

Describe Cause of Problem and Remedial Action Taken.*

Line failure. Shut valves on both ends of the line to isolate failure point.

Describe Area Affected and Cleanup Action Taken.*

Affected area- Release flowed Southwest an estimated 370 feet. Backhoe performed an initial scrape of contaminated soil. A full delineation report and work plan will be submitted for approval.

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

Signature: Z. Thomas	OIL CONSERVATION DIVISION
Printed Name: Zack Thomas	Approved by Environmental Specialist:
Title: Environmental Rep.	Approval Date: 7/11/2018 Expiration Date:
E-mail Address: zthomas@mewbourne.com	Conditions of Approval: see attached directive Attached ☑
Date: 7-6-18 Phone: 575-602-2188	

1RP-5122 nOY1819252942

pOY1819253976

Operator/Responsible Party,

The OCD has received the form C-141 you provided on _7/9/2018_ regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number _1RP-5122__ has been assigned. **Please refer to this case number in all future correspondence.**

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

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

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District _1_ office in __Hobbs____ on or before _8/11/2018_. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

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

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

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

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

● Composite sampling is not generally allowed.

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

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

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

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

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

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

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

Form C-141
Page 6

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	1RP-5122
Facility ID	
Application ID	

Closure

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

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

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

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

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

☒ Description of remediation activities

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

Printed Name: Zack Thomas Title: Environmental Rep

Signature: Z. Thomas Date: 3-8-19

email: zthomas@mewbourne.com Telephone: 575-602-2188

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: DENIED Date: _____

Printed Name: _____ Title: _____

APPENDIX B
USGS &
NMOSE WELLS REPORT

National Water Information System: Web Interface

Click to hideNews Bulletins

- Introducing The Next Generation of USGS Water Data for the Nation
- Full News

Groundwater levels for the Nation

Search Results -- 1 sites found

site_no list =

- 324600103484601

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

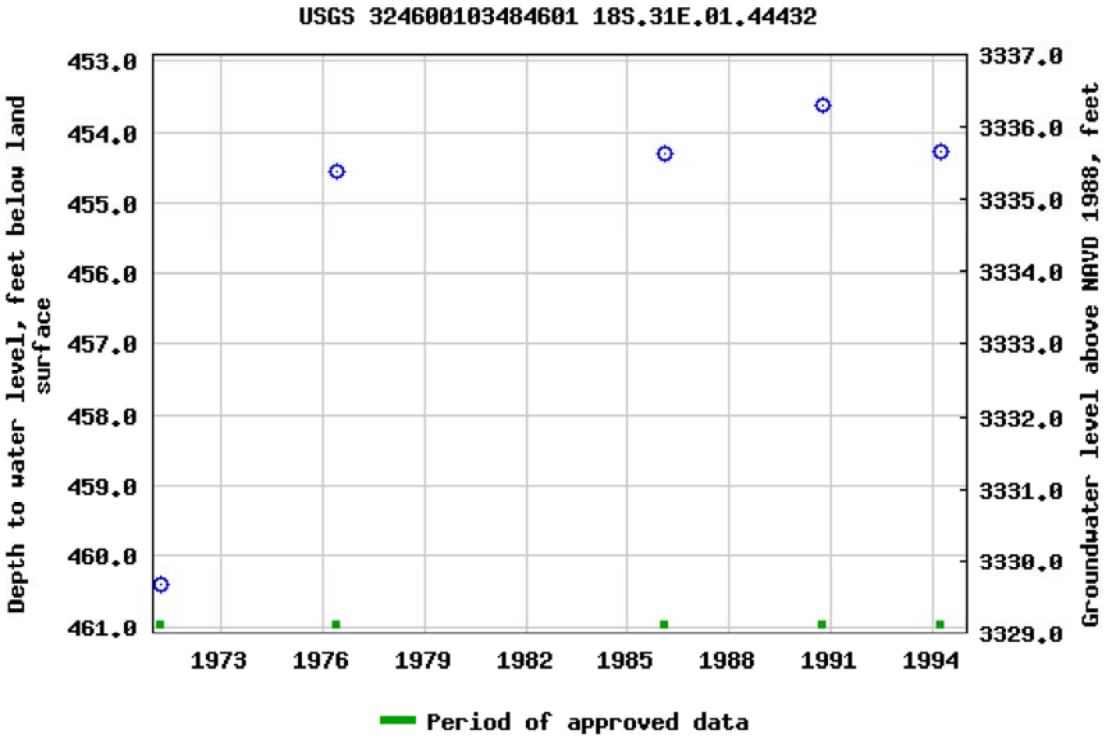
USGS 324600103484601 18S.31E.01.44432

Available data for this site Groundwater: Field measurements | GO

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

Output formats

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



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

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

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

Page Contact Information: USGS Water Data Support Team
Page Last Modified: 2019-02-22 15:48:13 EST
1.2 1.04 nadww01

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

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

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

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

POD Number	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
CP 00677	CP	LE	1	1	26	18S	32E		617750	3621373*	372	700		

Average Depth to Water: --

Minimum Depth: --

Maximum Depth: --

Record Count: 1

UTMNAD83 Radius Search (in meters):

Easting (X): 617738.2 **Northing (Y):** 3621745.7 **Radius:** 4000

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

APPENDIX C
SAMPLING DESIGN REPORT

VSP Sample Design Report for Using Stratified Sampling to Estimate the Population Proportion

Summary

This report summarizes the stratified sampling design used, associated statistical assumptions, as well as general guidelines for conducting post-sampling data analysis. Sampling plan components presented here include how many sampling locations to choose and where within the sampling area to collect those samples. The type of medium to sample (i.e., soil, groundwater, etc.) and how to analyze the samples (in-situ, fixed laboratory, etc.) are addressed in other sections of the sampling plan. It is important to note that the decision for sample size calculation is determined for the combined strata, rather than any individual strata.

The following table summarizes the proportion stratified sampling design developed. A figure that shows sampling locations in the field and a table that lists sampling location coordinates are also provided below.

SUMMARY OF SAMPLING DESIGN	
Primary Objective of Design	Estimate the population proportion of all strata combined
Criteria for Determining Total Number of Samples	Achieve pre-specified precision of the estimated proportion for specified stratum costs, but no restriction on total costs
Sample Placement (Location) in the Field	Systematic sampling with a random start location within each stratum
Formula for calculating number of sampling locations	From Gilbert (1987, page 51)
Method for calculating number of sampling locations in each stratum	Optimal Allocation
Calculated total number of samples	16
Stratum 1	16 [b]
Total area of all strata	15933.50 ft^2

[b] The actual number of samples placed in the sample area may differ from the calculated number because of grid edge effects.

Area: Area 1						
X Coord	**Y Coord**	**Label**	**Value**	**Type**	**Historical**	**Sample Area**
722403.2196	628702.0121			Systematic		
722420.1747	628731.3792			Systematic		
722555.8154	628731.3792			Systematic		
722589.7256	628731.3792			Systematic		
722623.6358	628731.3792			Systematic		
722657.5460	628731.3792			Systematic		
722691.4562	628731.3792			Systematic		
722471.0399	628760.7463			Systematic		
722504.9501	628760.7463			Systematic		
722538.8603	628760.7463			Systematic		
722674.5011	628760.7463			Systematic		
722708.4113	628760.7463			Systematic		
722691.4562	628790.1134			Systematic		
722640.5909	628819.4805			Systematic		
722674.5011	628819.4805			Systematic		
722657.5460	628848.8476			Systematic		

Primary Sampling Objective
The primary purpose of sampling at this site is to estimate the proportion for the entire site, i.e., for all strata combined, such that the estimated proportion has the minimum possible standard deviation under the condition that the sampling and measurement costs cannot exceed a specified amount. Preexisting information was used to divide the site into 1 non-overlapping strata that were expected to be more homogeneous internally than for the entire site (all strata combined). The expected variability of values within each stratum was estimated or approximated, and the stratum weights, W_h, were determined so that the total number of samples could be allocated appropriately among the strata.

Number of Total Samples: Calculation Equation and Inputs
The total number of samples is computed to achieve the pre-specified precision of the estimated population proportion for specified stratum costs, but no restriction on total costs. *Note that the calculation is for the total number of samples, i.e., for combined strata, rather than individual strata.*

The formula used to calculate the total number of samples is:

$$n = \frac{\left(\sum_{h=1}^{L} W_h \sqrt{P_h(1-P_h)}\sqrt{c_h}\right)\sum_{h=1}^{L}\frac{W_h\sqrt{P_h(1-P_h)}}{\sqrt{c_h}}}{V + \frac{1}{N}\sum_{h=1}^{L} W_h P_h(1-P_h)}$$

where
L is the number of strata, $h=1,2,...,L$,
P_h is the estimated proportion of measurements in stratum h,
$W_h = N_h / N$ is the weight associated with stratum h,
N_h is the total number of possible sampling locations (units) in stratum h,
N is the total number of possible units in all strata combined, $N = \sum_{h=1}^{L} N_h$
V is the pre-specified variance or precision, and
c_h is the cost of collecting and measuring a sample in stratum h.

The values of these inputs that result in the calculated number of sampling locations are:

Parameter	Stratum
	1
P_h	0.2

Allocation of Samples to Strata
The total number of samples is allocated to the individual strata on an optimal basis using the formula:

$$n_h = n \frac{N_h \sqrt{P_h(1-P_h)} / \sqrt{c_h}}{\sum_{h=1}^{L} N_h \sqrt{P_h(1-P_h)} / \sqrt{c_h}}$$

where
n_h is the number of samples allocated to stratum h,
L is the number of strata,
N_h is the total number of units in stratum h,
P_h is the proportion in stratum h,
c_h is the cost per population unit in stratum h.

n is the total number of units sampled in all strata, $n = \sum_{h=1}^{L} n_h$

Using this formula, the number of samples allocated to each stratum is:

Stratum	Number of Samples
1	16
Total Samples	16

Method for Determining Sampling Locations
Five methods for determining sample locations are provided in VSP: 1) simple random sampling, 2) random sampling within grids, 3) systematic sampling with a random start, 4) systematic sampling with a fixed start and 5) adaptive grid sampling. One may use a different method for each stratum, based on the conceptual site model and decision to be made for a given stratum. For this site, sample locations were chosen using a systematic grid in each stratum.

Locating the sample points over a systematic grid with a random start ensures a uniform spatial coverage of each stratum and the entire site. Statistical analyses of systematically collected data may be acceptable for making decisions. One disadvantage of collecting samples on a systematic grid is that spatial variability or patterns of data may not be discovered if the grid spacing is large relative to the spatial patterns. Also, if a spatial pattern of population values corresponds to the systematic spacing of sample locations, then the estimated proportion may be very biased.

Statistical Assumptions
The assumptions associated with the formulas for computing the number of samples are:
1. The estimated stratum proportions, P_h, are reasonable and representative of the stratum populations being sampled.
2. The sampling locations are selected using simple random sampling.
3. The stratum costs, C_h, and the fixed cost C_0, are accurate.

The first and third assumptions will be assessed in a post data collection analysis. The second assumption, although not

strictly valid because systematic grid sampling was used rather than simple random sampling, is not expected to significantly affect conclusions of the study because (1) the gridded sample locations were selected based on a random start and (2) any patterns of contamination in the field that may exist are not expected to coincide with the regularity of the grid sampling pattern.

Recommended Data Analysis Activities

Post data collection activities generally follow those outlined in EPA's Guidance for Data Quality Assessment (EPA, 2000). The data analysts will become familiar with the context of the problem and goals for data collection and assessment. The data will be verified and validated before being subjected to statistical or other analyses. Graphical and analytical tools will be used to verify to the extent possible the assumptions of any statistical analyses that are performed as well as to achieve a general understanding of the data. The data will be assessed to determine whether they are adequate in both quality and quantity to support the primary objective of sampling.

Estimates for the proportion of the population values will be calculated using the formulas appropriate for stratified sampling; these formulas are found in EPA QA/G-5S (EPA, 2001). Results of the exploratory and quantitative assessments of the data will be reported, along with conclusions that may be supported by them.

APPENDIX D

LABORATORY ANALYTICAL REPORTS

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

December 26, 2018

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

RE: QPQASU OrderNo.: 1812914

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 17 sample(s) on 12/15/2018 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1812914**
Date Reported: **12/26/2018**

CLIENT: Souder, Miller & Associates
Client Sample ID: BH 1
Project: QPQASU
Collection Date: 12/11/2018 10:30:00 AM
Lab ID: 1812914-001 **Matrix:** SOIL **Received Date:** 12/15/2018 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	32	30		mg/Kg	20	12/20/2018 2:25:00 PM	42231
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	320	9.7		mg/Kg	1	12/20/2018 2:33:34 PM	42177
Motor Oil Range Organics (MRO)	620	49		mg/Kg	1	12/20/2018 2:33:34 PM	42177
Surr: DNOP	106	50.6-138		%Rec	1	12/20/2018 2:33:34 PM	42177
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	5.8	4.8		mg/Kg	1	12/18/2018 3:12:48 PM	42158
Surr: BFB	151	73.8-119	S	%Rec	1	12/18/2018 3:12:48 PM	42158
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	12/18/2018 3:12:48 PM	42158
Toluene	ND	0.048		mg/Kg	1	12/18/2018 3:12:48 PM	42158
Ethylbenzene	ND	0.048		mg/Kg	1	12/18/2018 3:12:48 PM	42158
Xylenes, Total	0.18	0.096		mg/Kg	1	12/18/2018 3:12:48 PM	42158
Surr: 4-Bromofluorobenzene	108	80-120		%Rec	1	12/18/2018 3:12:48 PM	42158

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

Qualifiers:

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

Analytical Report
Lab Order **1812914**
Date Reported: **12/26/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BH 2
Project: QPQASU
Collection Date: 12/11/2018 10:40:00 AM
Lab ID: 1812914-002 **Matrix:** SOIL **Received Date:** 12/15/2018 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	55	30		mg/Kg	20	12/20/2018 2:37:25 PM	42231
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**lrm**
Diesel Range Organics (DRO)	730	10		mg/Kg	1	12/20/2018 3:17:56 PM	42177
Motor Oil Range Organics (MRO)	850	51		mg/Kg	1	12/20/2018 3:17:56 PM	42177
Surr: DNOP	108	50.6-138		%Rec	1	12/20/2018 3:17:56 PM	42177
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	8.8	4.8		mg/Kg	1	12/18/2018 5:11:27 PM	42158
Surr: BFB	205	73.8-119	S	%Rec	1	12/18/2018 5:11:27 PM	42158
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.024		mg/Kg	1	12/18/2018 5:11:27 PM	42158
Toluene	ND	0.048		mg/Kg	1	12/18/2018 5:11:27 PM	42158
Ethylbenzene	ND	0.048		mg/Kg	1	12/18/2018 5:11:27 PM	42158
Xylenes, Total	ND	0.096		mg/Kg	1	12/18/2018 5:11:27 PM	42158
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	1	12/18/2018 5:11:27 PM	42158

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

Qualifiers:

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

Analytical Report
Lab Order **1812914**
Date Reported: **12/26/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BH 3
Project: QPQASU
Collection Date: 12/11/2018 10:50:00 AM
Lab ID: 1812914-003 **Matrix:** SOIL **Received Date:** 12/15/2018 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	140	30		mg/Kg	20	12/20/2018 2:49:50 PM	42231
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**lrm**
Diesel Range Organics (DRO)	95	9.2		mg/Kg	1	12/20/2018 2:09:53 PM	42177
Motor Oil Range Organics (MRO)	87	46		mg/Kg	1	12/20/2018 2:09:53 PM	42177
Surr: DNOP	80.8	50.6-138		%Rec	1	12/20/2018 2:09:53 PM	42177
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/18/2018 5:35:07 PM	42158
Surr: BFB	98.0	73.8-119		%Rec	1	12/18/2018 5:35:07 PM	42158
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.024		mg/Kg	1	12/18/2018 5:35:07 PM	42158
Toluene	ND	0.049		mg/Kg	1	12/18/2018 5:35:07 PM	42158
Ethylbenzene	ND	0.049		mg/Kg	1	12/18/2018 5:35:07 PM	42158
Xylenes, Total	ND	0.097		mg/Kg	1	12/18/2018 5:35:07 PM	42158
Surr: 4-Bromofluorobenzene	98.3	80-120		%Rec	1	12/18/2018 5:35:07 PM	42158

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

Qualifiers:

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

Analytical Report
Lab Order **1812914**
Date Reported: **12/26/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BH 4
Project: QPQASU
Collection Date: 12/11/2018 11:00:00 AM
Lab ID: 1812914-004 **Matrix:** SOIL **Received Date:** 12/15/2018 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	920	30		mg/Kg	20	12/20/2018 3:02:15 PM	42231
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**lrm**
Diesel Range Organics (DRO)	3400	91		mg/Kg	10	12/20/2018 5:09:55 PM	42177
Motor Oil Range Organics (MRO)	2000	460		mg/Kg	10	12/20/2018 5:09:55 PM	42177
Surr: DNOP	0	50.6-138	S	%Rec	10	12/20/2018 5:09:55 PM	42177
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	59	5.0		mg/Kg	1	12/18/2018 5:58:47 PM	42158
Surr: BFB	530	73.8-119	S	%Rec	1	12/18/2018 5:58:47 PM	42158
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.025		mg/Kg	1	12/18/2018 5:58:47 PM	42158
Toluene	ND	0.050		mg/Kg	1	12/18/2018 5:58:47 PM	42158
Ethylbenzene	ND	0.050		mg/Kg	1	12/18/2018 5:58:47 PM	42158
Xylenes, Total	ND	0.099		mg/Kg	1	12/18/2018 5:58:47 PM	42158
Surr: 4-Bromofluorobenzene	110	80-120		%Rec	1	12/18/2018 5:58:47 PM	42158

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

Qualifiers:

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

Analytical Report
Lab Order **1812914**
Date Reported: **12/26/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BH 5
Project: QPQASU
Collection Date: 12/11/2018 11:30:00 AM
Lab ID: 1812914-005 **Matrix:** SOIL **Received Date:** 12/15/2018 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	350	30		mg/Kg	20	12/20/2018 3:14:40 PM	42231
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	130	9.7		mg/Kg	1	12/20/2018 6:16:23 PM	42177
Motor Oil Range Organics (MRO)	98	48		mg/Kg	1	12/20/2018 6:16:23 PM	42177
Surr: DNOP	102	50.6-138		%Rec	1	12/20/2018 6:16:23 PM	42177
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/18/2018 6:22:21 PM	42158
Surr: BFB	113	73.8-119		%Rec	1	12/18/2018 6:22:21 PM	42158
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	12/18/2018 6:22:21 PM	42158
Toluene	ND	0.050		mg/Kg	1	12/18/2018 6:22:21 PM	42158
Ethylbenzene	ND	0.050		mg/Kg	1	12/18/2018 6:22:21 PM	42158
Xylenes, Total	ND	0.099		mg/Kg	1	12/18/2018 6:22:21 PM	42158
Surr: 4-Bromofluorobenzene	98.3	80-120		%Rec	1	12/18/2018 6:22:21 PM	42158

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1812914**
Date Reported: **12/26/2018**

CLIENT: Souder, Miller & Associates
Client Sample ID: BH 6
Project: QPQASU
Collection Date: 12/11/2018 11:40:00 AM
Lab ID: 1812914-006 **Matrix:** SOIL **Received Date:** 12/15/2018 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	1100	75		mg/Kg	50	12/23/2018 5:51:18 PM	42231
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	6700	97		mg/Kg	10	12/20/2018 7:00:20 PM	42177
Motor Oil Range Organics (MRO)	3400	490		mg/Kg	10	12/20/2018 7:00:20 PM	42177
Surr: DNOP	0	50.6-138	S	%Rec	10	12/20/2018 7:00:20 PM	42177
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	65	4.8		mg/Kg	1	12/18/2018 6:45:57 PM	42158
Surr: BFB	571	73.8-119	S	%Rec	1	12/18/2018 6:45:57 PM	42158
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	12/18/2018 6:45:57 PM	42158
Toluene	ND	0.048		mg/Kg	1	12/18/2018 6:45:57 PM	42158
Ethylbenzene	ND	0.048		mg/Kg	1	12/18/2018 6:45:57 PM	42158
Xylenes, Total	0.16	0.096		mg/Kg	1	12/18/2018 6:45:57 PM	42158
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	12/18/2018 6:45:57 PM	42158

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

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

Analytical Report
Lab Order **1812914**
Date Reported: **12/26/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BH 7
Project: QPQASU
Collection Date: 12/11/2018 11:50:00 AM
Lab ID: 1812914-007 **Matrix:** SOIL **Received Date:** 12/15/2018 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	250	30		mg/Kg	20	12/20/2018 3:39:29 PM	42231
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	420	9.9		mg/Kg	1	12/20/2018 8:06:11 PM	42177
Motor Oil Range Organics (MRO)	330	49		mg/Kg	1	12/20/2018 8:06:11 PM	42177
Surr: DNOP	108	50.6-138		%Rec	1	12/20/2018 8:06:11 PM	42177
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/18/2018 7:09:27 PM	42158
Surr: BFB	137	73.8-119	S	%Rec	1	12/18/2018 7:09:27 PM	42158
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	12/18/2018 7:09:27 PM	42158
Toluene	ND	0.050		mg/Kg	1	12/18/2018 7:09:27 PM	42158
Ethylbenzene	ND	0.050		mg/Kg	1	12/18/2018 7:09:27 PM	42158
Xylenes, Total	ND	0.10		mg/Kg	1	12/18/2018 7:09:27 PM	42158
Surr: 4-Bromofluorobenzene	100	80-120		%Rec	1	12/18/2018 7:09:27 PM	42158

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

Qualifiers:

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

Analytical Report
Lab Order **1812914**
Date Reported: **12/26/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BH 8
Project: QPQASU
Collection Date: 12/11/2018 11:55:00 AM
Lab ID: 1812914-008 **Matrix:** SOIL **Received Date:** 12/15/2018 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	230	30		mg/Kg	20	12/20/2018 4:16:41 PM	42231
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	110	9.2		mg/Kg	1	12/20/2018 8:50:00 PM	42177
Motor Oil Range Organics (MRO)	100	46		mg/Kg	1	12/20/2018 8:50:00 PM	42177
Surr: DNOP	105	50.6-138		%Rec	1	12/20/2018 8:50:00 PM	42177
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/18/2018 7:32:55 PM	42158
Surr: BFB	98.0	73.8-119		%Rec	1	12/18/2018 7:32:55 PM	42158
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	12/18/2018 7:32:55 PM	42158
Toluene	ND	0.048		mg/Kg	1	12/18/2018 7:32:55 PM	42158
Ethylbenzene	ND	0.048		mg/Kg	1	12/18/2018 7:32:55 PM	42158
Xylenes, Total	ND	0.095		mg/Kg	1	12/18/2018 7:32:55 PM	42158
Surr: 4-Bromofluorobenzene	98.6	80-120		%Rec	1	12/18/2018 7:32:55 PM	42158

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1812914**
Date Reported: **12/26/2018**

CLIENT: Souder, Miller & Associates
Client Sample ID: BH 9
Project: QPQASU
Collection Date: 12/11/2018 12:00:00 PM
Lab ID: 1812914-009 **Matrix:** SOIL **Received Date:** 12/15/2018 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	1700	75		mg/Kg	50	12/23/2018 6:03:42 PM	42231
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	3600	91		mg/Kg	10	12/20/2018 9:33:42 PM	42177
Motor Oil Range Organics (MRO)	1600	460		mg/Kg	10	12/20/2018 9:33:42 PM	42177
Surr: DNOP	0	50.6-138	S	%Rec	10	12/20/2018 9:33:42 PM	42177
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	150	4.7		mg/Kg	1	12/18/2018 7:56:20 PM	42158
Surr: BFB	1380	73.8-119	S	%Rec	1	12/18/2018 7:56:20 PM	42158
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	12/18/2018 7:56:20 PM	42158
Toluene	ND	0.047		mg/Kg	1	12/18/2018 7:56:20 PM	42158
Ethylbenzene	0.55	0.047		mg/Kg	1	12/18/2018 7:56:20 PM	42158
Xylenes, Total	5.1	0.095		mg/Kg	1	12/18/2018 7:56:20 PM	42158
Surr: 4-Bromofluorobenzene	260	80-120	S	%Rec	1	12/18/2018 7:56:20 PM	42158

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1812914**
Date Reported: **12/26/2018**

CLIENT: Souder, Miller & Associates
Client Sample ID: BH 10
Project: QPQASU
Collection Date: 12/11/2018 12:10:00 PM
Lab ID: 1812914-010 **Matrix:** SOIL **Received Date:** 12/15/2018 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	1300	75		mg/Kg	50	12/23/2018 6:16:07 PM	42231
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	1900	100		mg/Kg	10	12/19/2018 9:49:51 AM	42188
Motor Oil Range Organics (MRO)	780	500		mg/Kg	10	12/19/2018 9:49:51 AM	42188
Surr: DNOP	0	50.6-138	S	%Rec	10	12/19/2018 9:49:51 AM	42188
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	97	4.8		mg/Kg	1	12/19/2018 9:59:17 AM	42176
Surr: BFB	813	73.8-119	S	%Rec	1	12/19/2018 9:59:17 AM	42176
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	12/19/2018 9:59:17 AM	42176
Toluene	ND	0.048		mg/Kg	1	12/19/2018 9:59:17 AM	42176
Ethylbenzene	ND	0.048		mg/Kg	1	12/19/2018 9:59:17 AM	42176
Xylenes, Total	2.9	0.096		mg/Kg	1	12/19/2018 9:59:17 AM	42176
Surr: 4-Bromofluorobenzene	173	80-120	S	%Rec	1	12/19/2018 9:59:17 AM	42176

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

Qualifiers:

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

Analytical Report
Lab Order **1812914**
Date Reported: **12/26/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BH 12
Project: QPQASU
Collection Date: 12/11/2018 12:20:00 PM
Lab ID: 1812914-011 **Matrix:** SOIL **Received Date:** 12/15/2018 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	12/20/2018 4:53:56 PM	42231
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	12/19/2018 10:15:53 AM	42188
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/19/2018 10:15:53 AM	42188
Surr: DNOP	81.8	50.6-138		%Rec	1	12/19/2018 10:15:53 AM	42188
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/19/2018 11:30:40 AM	42176
Surr: BFB	90.1	73.8-119		%Rec	1	12/19/2018 11:30:40 AM	42176
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	12/19/2018 11:30:40 AM	42176
Toluene	ND	0.047		mg/Kg	1	12/19/2018 11:30:40 AM	42176
Ethylbenzene	ND	0.047		mg/Kg	1	12/19/2018 11:30:40 AM	42176
Xylenes, Total	ND	0.095		mg/Kg	1	12/19/2018 11:30:40 AM	42176
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	12/19/2018 11:30:40 AM	42176

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

Qualifiers:

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

Analytical Report
Lab Order **1812914**
Date Reported: **12/26/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BH 13
Project: QPQASU
Collection Date: 12/11/2018 12:40:00 PM
Lab ID: 1812914-012 **Matrix:** SOIL **Received Date:** 12/15/2018 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	1800	75		mg/Kg	50	12/23/2018 6:28:31 PM	42231
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	450	9.7		mg/Kg	1	12/19/2018 10:40:14 AM	42188
Motor Oil Range Organics (MRO)	260	49		mg/Kg	1	12/19/2018 10:40:14 AM	42188
Surr: DNOP	98.7	50.6-138		%Rec	1	12/19/2018 10:40:14 AM	42188
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/19/2018 12:39:05 PM	42176
Surr: BFB	138	73.8-119	S	%Rec	1	12/19/2018 12:39:05 PM	42176
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	12/19/2018 12:39:05 PM	42176
Toluene	ND	0.047		mg/Kg	1	12/19/2018 12:39:05 PM	42176
Ethylbenzene	ND	0.047		mg/Kg	1	12/19/2018 12:39:05 PM	42176
Xylenes, Total	ND	0.094		mg/Kg	1	12/19/2018 12:39:05 PM	42176
Surr: 4-Bromofluorobenzene	108	80-120		%Rec	1	12/19/2018 12:39:05 PM	42176

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1812914**
Date Reported: **12/26/2018**

CLIENT: Souder, Miller & Associates
Client Sample ID: BH 14
Project: QPQASU
Collection Date: 12/11/2018 12:50:00 PM
Lab ID: 1812914-013 **Matrix:** SOIL **Received Date:** 12/15/2018 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	760	30		mg/Kg	20	12/20/2018 5:18:46 PM	42231
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	12/19/2018 11:29:01 AM	42188
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/19/2018 11:29:01 AM	42188
Surr: DNOP	90.4	50.6-138		%Rec	1	12/19/2018 11:29:01 AM	42188
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/19/2018 1:01:54 PM	42176
Surr: BFB	88.1	73.8-119		%Rec	1	12/19/2018 1:01:54 PM	42176
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	12/19/2018 1:01:54 PM	42176
Toluene	ND	0.047		mg/Kg	1	12/19/2018 1:01:54 PM	42176
Ethylbenzene	ND	0.047		mg/Kg	1	12/19/2018 1:01:54 PM	42176
Xylenes, Total	ND	0.095		mg/Kg	1	12/19/2018 1:01:54 PM	42176
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	12/19/2018 1:01:54 PM	42176

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

Qualifiers:

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

Analytical Report
Lab Order **1812914**
Date Reported: **12/26/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BH 15
Project: QPQASU
Collection Date: 12/11/2018 1:00:00 PM
Lab ID: 1812914-014 **Matrix:** SOIL **Received Date:** 12/15/2018 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	1400	75		mg/Kg	50	12/23/2018 6:40:56 PM	42243
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	510	9.7		mg/Kg	1	12/19/2018 11:53:20 AM	42188
Motor Oil Range Organics (MRO)	370	48		mg/Kg	1	12/19/2018 11:53:20 AM	42188
Surr: DNOP	97.8	50.6-138		%Rec	1	12/19/2018 11:53:20 AM	42188
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/19/2018 1:24:40 PM	42176
Surr: BFB	136	73.8-119	S	%Rec	1	12/19/2018 1:24:40 PM	42176
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	12/19/2018 1:24:40 PM	42176
Toluene	ND	0.047		mg/Kg	1	12/19/2018 1:24:40 PM	42176
Ethylbenzene	ND	0.047		mg/Kg	1	12/19/2018 1:24:40 PM	42176
Xylenes, Total	ND	0.094		mg/Kg	1	12/19/2018 1:24:40 PM	42176
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	12/19/2018 1:24:40 PM	42176

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

Qualifiers:

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

Analytical Report
Lab Order **1812914**
Date Reported: **12/26/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BH 16
Project: QPQASU
Collection Date: 12/11/2018 1:10:00 PM
Lab ID: 1812914-015 **Matrix:** SOIL **Received Date:** 12/15/2018 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	370	30		mg/Kg	20	12/20/2018 8:24:57 PM	42243
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	820	9.3		mg/Kg	1	12/19/2018 12:42:04 PM	42188
Motor Oil Range Organics (MRO)	410	47		mg/Kg	1	12/19/2018 12:42:04 PM	42188
Surr: DNOP	99.2	50.6-138		%Rec	1	12/19/2018 12:42:04 PM	42188
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	17	4.8		mg/Kg	1	12/19/2018 1:47:14 PM	42176
Surr: BFB	248	73.8-119	S	%Rec	1	12/19/2018 1:47:14 PM	42176
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	12/19/2018 1:47:14 PM	42176
Toluene	ND	0.048		mg/Kg	1	12/19/2018 1:47:14 PM	42176
Ethylbenzene	ND	0.048		mg/Kg	1	12/19/2018 1:47:14 PM	42176
Xylenes, Total	ND	0.097		mg/Kg	1	12/19/2018 1:47:14 PM	42176
Surr: 4-Bromofluorobenzene	110	80-120		%Rec	1	12/19/2018 1:47:14 PM	42176

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

Qualifiers:

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

Analytical Report
Lab Order **1812914**
Date Reported: **12/26/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BH 17
Project: QPQASU
Collection Date: 12/11/2018 1:15:00 PM
Lab ID: 1812914-016 **Matrix:** SOIL **Received Date:** 12/15/2018 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	310	30		mg/Kg	20	12/20/2018 8:37:21 PM	42243
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	31	9.5		mg/Kg	1	12/19/2018 1:55:55 PM	42188
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/19/2018 1:55:55 PM	42188
Surr: DNOP	88.3	50.6-138		%Rec	1	12/19/2018 1:55:55 PM	42188
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/19/2018 2:32:43 PM	42176
Surr: BFB	86.0	73.8-119		%Rec	1	12/19/2018 2:32:43 PM	42176
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	12/19/2018 2:32:43 PM	42176
Toluene	ND	0.049		mg/Kg	1	12/19/2018 2:32:43 PM	42176
Ethylbenzene	ND	0.049		mg/Kg	1	12/19/2018 2:32:43 PM	42176
Xylenes, Total	ND	0.098		mg/Kg	1	12/19/2018 2:32:43 PM	42176
Surr: 4-Bromofluorobenzene	99.4	80-120		%Rec	1	12/19/2018 2:32:43 PM	42176

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

Qualifiers:

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

Analytical Report
Lab Order **1812914**
Date Reported: **12/26/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BH 11
Project: QPQASU
Collection Date: 12/11/2018 12:20:00 PM
Lab ID: 1812914-017 **Matrix:** SOIL **Received Date:** 12/15/2018 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	540	30		mg/Kg	20	12/20/2018 9:14:35 PM	42243
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	4000	94		mg/Kg	10	12/19/2018 2:20:29 PM	42188
Motor Oil Range Organics (MRO)	2100	470		mg/Kg	10	12/19/2018 2:20:29 PM	42188
Surr: DNOP	0	50.6-138	S	%Rec	10	12/19/2018 2:20:29 PM	42188
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	39	4.6		mg/Kg	1	12/19/2018 2:55:24 PM	42176
Surr: BFB	343	73.8-119	S	%Rec	1	12/19/2018 2:55:24 PM	42176
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	12/19/2018 2:55:24 PM	42176
Toluene	ND	0.046		mg/Kg	1	12/19/2018 2:55:24 PM	42176
Ethylbenzene	ND	0.046		mg/Kg	1	12/19/2018 2:55:24 PM	42176
Xylenes, Total	0.13	0.092		mg/Kg	1	12/19/2018 2:55:24 PM	42176
Surr: 4-Bromofluorobenzene	109	80-120		%Rec	1	12/19/2018 2:55:24 PM	42176

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1812914**

26-Dec-18

Client: Souder, Miller & Associates

Project: QPQASU

Sample ID	**MB-42231**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**42231**	RunNo:	**56495**					
Prep Date:	**12/20/2018**	Analysis Date:	**12/20/2018**	SeqNo:	**1890343**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-42231**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**42231**	RunNo:	**56495**					
Prep Date:	**12/20/2018**	Analysis Date:	**12/20/2018**	SeqNo:	**1890344**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.3	90	110			

Sample ID	**MB-42243**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**42243**	RunNo:	**56495**					
Prep Date:	**12/20/2018**	Analysis Date:	**12/20/2018**	SeqNo:	**1890382**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-42243**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**42243**	RunNo:	**56495**					
Prep Date:	**12/20/2018**	Analysis Date:	**12/20/2018**	SeqNo:	**1890383**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	96.9	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1812914**

26-Dec-18

Client: Souder, Miller & Associates

Project: QPQASU

Sample ID	**LCS-42188**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**42188**		RunNo:	**56437**				
Prep Date:	**12/18/2018**	Analysis Date:	**12/19/2018**		SeqNo:	**1887450**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	41	10	50.00	0	81.7	70	130			
Surr: DNOP	4.0		5.000		80.3	50.6	138			

Sample ID	**MB-42188**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**42188**		RunNo:	**56437**				
Prep Date:	**12/18/2018**	Analysis Date:	**12/19/2018**		SeqNo:	**1887451**	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	8.6		10.00		85.5	50.6	138			

Sample ID	**MB-42209**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**42209**		RunNo:	**56431**				
Prep Date:	**12/19/2018**	Analysis Date:	**12/20/2018**		SeqNo:	**1890230**	Units:	**%Rec**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	12		10.00		118	50.6	138			

Sample ID	**LCS-42209**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**42209**		RunNo:	**56431**				
Prep Date:	**12/19/2018**	Analysis Date:	**12/20/2018**		SeqNo:	**1890231**	Units:	**%Rec**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.4		5.000		109	50.6	138			

Sample ID	**LCS-42209**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**42209**		RunNo:	**56431**				
Prep Date:	**12/19/2018**	Analysis Date:	**12/21/2018**		SeqNo:	**1890696**	Units:	**%Rec**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.9		5.000		118	50.6	138			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1812914**

26-Dec-18

Client: Souder, Miller & Associates

Project: QPQASU

Sample ID	**MB-42158**	SampType:	**MBLK**		TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**42158**		RunNo:	**56429**					
Prep Date:	**12/17/2018**	Analysis Date:	**12/18/2018**		SeqNo:	**1886718**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	ND	5.0									
Surr: BFB	1000		1000		101	73.8	119				

Sample ID	**LCS-42158**	SampType:	**LCS**		TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**42158**		RunNo:	**56429**					
Prep Date:	**12/17/2018**	Analysis Date:	**12/18/2018**		SeqNo:	**1886719**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	27	5.0	25.00	0	108	80.1	123				
Surr: BFB	1200		1000		119	73.8	119				S

Sample ID	**MB-42176**	SampType:	**MBLK**		TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**42176**		RunNo:	**56474**					
Prep Date:	**12/18/2018**	Analysis Date:	**12/19/2018**		SeqNo:	**1888431**	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	900		1000		90.4	73.8	119				

Sample ID	**LCS-42176**	SampType:	**LCS**		TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**42176**		RunNo:	**56474**					
Prep Date:	**12/18/2018**	Analysis Date:	**12/19/2018**		SeqNo:	**1888432**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	24	5.0	25.00	0	96.5	80.1	123				
Surr: BFB	1100		1000		110	73.8	119				

Sample ID	**1812914-010AMS**	SampType:	**MS**		TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**BH 10**	Batch ID:	**42176**		RunNo:	**56474**					
Prep Date:	**12/18/2018**	Analysis Date:	**12/19/2018**		SeqNo:	**1888434**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	110	5.0	24.75	96.78	63.0	77.8	128				S
Surr: BFB	7300		990.1		740	73.8	119				S

Sample ID	**1812914-010AMSD**	SampType:	**MSD**		TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**BH 10**	Batch ID:	**42176**		RunNo:	**56474**					
Prep Date:	**12/18/2018**	Analysis Date:	**12/19/2018**		SeqNo:	**1888435**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1812914**

26-Dec-18

Client: Souder, Miller & Associates

Project: QPQASU

Sample ID	**1812914-010AMSD**	SampType:	**MSD**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**BH 10**	Batch ID:	**42176**	RunNo:	**56474**					
Prep Date:	**12/18/2018**	Analysis Date:	**12/19/2018**	SeqNo:	**1888435**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	100	4.7	23.43	96.78	28.6	77.8	128	8.23	20	S
Surr: BFB	6900		937.2		739	73.8	119	0	0	S

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1812914**

26-Dec-18

Client: Souder, Miller & Associates

Project: QPQASU

Sample ID	**MB-42158**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**PBS**	Batch ID:	**42158**	RunNo:	**56429**					
Prep Date:	**12/17/2018**	Analysis Date:	**12/18/2018**	SeqNo:	**1886748**	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		105	80	120			

Sample ID	**LCS-42158**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID:	**42158**	RunNo:	**56429**					
Prep Date:	**12/17/2018**	Analysis Date:	**12/18/2018**	SeqNo:	**1886749**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.025	1.000	0	95.3	80	120			
Toluene	1.0	0.050	1.000	0	100	80	120			
Ethylbenzene	1.0	0.050	1.000	0	101	80	120			
Xylenes, Total	3.1	0.10	3.000	0	103	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		105	80	120			

Sample ID	**MB-42176**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**PBS**	Batch ID:	**42176**	RunNo:	**56474**					
Prep Date:	**12/18/2018**	Analysis Date:	**12/19/2018**	SeqNo:	**1888469**	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	**LCS-42176**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID:	**42176**	RunNo:	**56474**					
Prep Date:	**12/18/2018**	Analysis Date:	**12/19/2018**	SeqNo:	**1888470**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.81	0.025	1.000	0	80.9	80	120			
Toluene	0.90	0.050	1.000	0	90.2	80	120			
Ethylbenzene	0.95	0.050	1.000	0	95.0	80	120			
Xylenes, Total	3.0	0.10	3.000	0	101	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		106	80	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1812914**

26-Dec-18

Client: Souder, Miller & Associates

Project: QPQASU

Sample ID	**1812914-011AMS**	SampType:	**MS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**BH 12**	Batch ID:	**42176**	RunNo:	**56474**					
Prep Date:	**12/18/2018**	Analysis Date:	**12/19/2018**	SeqNo:	**1888473**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.77	0.024	0.9615	0.01017	78.5	63.9	127			
Toluene	0.87	0.048	0.9615	0	90.4	69.9	131			
Ethylbenzene	0.92	0.048	0.9615	0.007388	94.9	71	132			
Xylenes, Total	2.9	0.096	2.885	0	101	71.8	131			
Surr: 4-Bromofluorobenzene	1.0		0.9615		105	80	120			

Sample ID	**1812914-011AMSD**	SampType:	**MSD**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**BH 12**	Batch ID:	**42176**	RunNo:	**56474**					
Prep Date:	**12/18/2018**	Analysis Date:	**12/19/2018**	SeqNo:	**1888474**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.84	0.025	1.000	0.01017	83.4	63.9	127	9.89	20	
Toluene	0.96	0.050	1.000	0	96.4	69.9	131	10.3	20	
Ethylbenzene	1.0	0.050	1.000	0.007388	102	71	132	10.7	20	
Xylenes, Total	3.2	0.10	3.000	0	106	71.8	131	8.36	20	
Surr: 4-Bromofluorobenzene	1.1		1.000		105	80	120	0	0	

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **SMA-CARLSBAD** Work Order Number: **1812914** RcptNo: **1**

Received By: **Erin Melendrez** **12/15/2018 9:40:00 AM**

Completed By: **Erin Melendrez** **12/17/2018 8:39:38 AM**

Reviewed By: JU 12.17.18
LB: DAD 12/17/18

Chain of Custody

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

Log In

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

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)
Adjusted? _____
Checked by: DAD 12/17/18

Special Handling (if applicable)

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

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

16. Additional remarks: Bill added to COC in Login. JU 12.17.18

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.6	Good	Yes			
2	2.7	Good	Yes			

Chain-of-Custody Record

Client: SMA CBAD

Mailing Address:

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: 5 day
☑ Standard ☐ Rush

Project Name: QPQASU

Project #: direct bill

Project Manager: Austin Weyant

Sampler: LM / JVH

On Ice: ☑ Yes ☐ No

# of Coolers: 2 (CF=0)

Cooler Temp (including CF): 1.8°C, 2.7°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 (ENM 12/17/18)	Sample Name	Container Type and #	Preservative Type	HEAL No. 1812914	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)
12/11/18	10:30	Soil	BH 1			-001	X	X					X			
	10:40		BH 2			-002	X	X								
	10:50		BH 3			-003	X	X								
	11:00		BH 4			-004	X	X								
	11:30		BH 5			-005	X	X								
	11:40		BH 6			-006	X	X								
	11:50		BH 7			-007	X	X								
	11:55		BH 8			-008	X	X								
	12:00		BH 9			-009	X	X								
	12:10		BH 10			-010	X	X								
	12:20		BH 12			-011	X	X								
	12:40		BH 13			-012	X	X								

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
12-14-18	0830	Jaequi Thurr			12/14/18	0830
12/14/18	1900			Courier	12/15/18	0940

Remarks:
Direct Bill to Newbourne ci
cc Zack Thomas

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 CBAD

Mailing Address:

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: 5 day
☑ Standard ☐ Rush

Project Name: QPQASU

Project #: direct bill

Project Manager: Austin Weyant

Sampler:

On Ice: ☑ Yes ☐ No

# of Coolers: 2 (CF=0)

Cooler Temp(including CF): 1.6°C, 2.7°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. 1812914	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)
12/11/18	12:50	Soil	BH 14			-013	X	X								
	1:00		BH 15			-014	X	X								
	1:10		BH 16			-015	X	X								
	1:15		BH 17			-016	X	X								
	12:20	soil	BH 11 DAD 12/17/18			-017	X	X								

ENH 12/18/18 > ENH 12/17/18

Remarks: Direct Bill to Meridian CC Zack Thomas

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
12-14-18	0830				12/14/18	0830
12/14/18	1900			Courier	12/15/18	0940

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.

Analytical Report
Lab Order **1901416**
Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BH 4
Project: QPQASU
Collection Date: 1/8/2019 8:00:00 AM
Lab ID: 1901416-001 **Matrix:** SOIL **Received Date:** 1/11/2019 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	1/14/2019 12:35:29 PM	42558
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	1/14/2019 12:35:29 PM	42558
Surr: DNOP	92.9	50.6-138		%Rec	1	1/14/2019 12:35:29 PM	42558
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	1/14/2019 1:18:05 PM	42555
Surr: BFB	94.7	73.8-119		%Rec	1	1/14/2019 1:18:05 PM	42555
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	1/14/2019 1:18:05 PM	42555
Toluene	ND	0.048		mg/Kg	1	1/14/2019 1:18:05 PM	42555
Ethylbenzene	ND	0.048		mg/Kg	1	1/14/2019 1:18:05 PM	42555
Xylenes, Total	ND	0.096		mg/Kg	1	1/14/2019 1:18:05 PM	42555
Surr: 4-Bromofluorobenzene	96.2	80-120		%Rec	1	1/14/2019 1:18:05 PM	42555

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

Qualifiers:

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

Analytical Report
Lab Order **1901416**
Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BH 6
Project: QPQASU
Collection Date: 1/8/2019 8:05:00 AM
Lab ID: 1901416-002 **Matrix:** SOIL **Received Date:** 1/11/2019 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	1/14/2019 12:57:34 PM	42558
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	1/14/2019 12:57:34 PM	42558
Surr: DNOP	90.1	50.6-138		%Rec	1	1/14/2019 12:57:34 PM	42558
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	1/14/2019 1:41:38 PM	42555
Surr: BFB	96.6	73.8-119		%Rec	1	1/14/2019 1:41:38 PM	42555
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	1/14/2019 1:41:38 PM	42555
Toluene	ND	0.048		mg/Kg	1	1/14/2019 1:41:38 PM	42555
Ethylbenzene	ND	0.048		mg/Kg	1	1/14/2019 1:41:38 PM	42555
Xylenes, Total	ND	0.097		mg/Kg	1	1/14/2019 1:41:38 PM	42555
Surr: 4-Bromofluorobenzene	97.9	80-120		%Rec	1	1/14/2019 1:41:38 PM	42555

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

Qualifiers:

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

Analytical Report
Lab Order **1901416**
Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BH 9
Project: QPQASU
Collection Date: 1/8/2019 8:10:00 AM
Lab ID: 1901416-003 **Matrix:** SOIL **Received Date:** 1/11/2019 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	1/14/2019 1:19:24 PM	42558
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	1/14/2019 1:19:24 PM	42558
Surr: DNOP	81.2	50.6-138		%Rec	1	1/14/2019 1:19:24 PM	42558
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/14/2019 2:05:19 PM	42555
Surr: BFB	94.5	73.8-119		%Rec	1	1/14/2019 2:05:19 PM	42555
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	1/14/2019 2:05:19 PM	42555
Toluene	ND	0.050		mg/Kg	1	1/14/2019 2:05:19 PM	42555
Ethylbenzene	ND	0.050		mg/Kg	1	1/14/2019 2:05:19 PM	42555
Xylenes, Total	ND	0.10		mg/Kg	1	1/14/2019 2:05:19 PM	42555
Surr: 4-Bromofluorobenzene	95.6	80-120		%Rec	1	1/14/2019 2:05:19 PM	42555

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

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

January 23, 2019

Austin Weyant

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

RE: QPQASU OrderNo.: 1901689

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 3 sample(s) on 1/17/2019 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order: **1901689**
Date Reported: **1/23/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates **Lab Order:** 1901689
Project: QPQASU

Lab ID: 1901689-001 **Collection Date:** 1/15/2019 4:30:00 PM
Client Sample ID: BH 10-8' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	9900	750		mg/Kg	500	1/21/2019 8:45:58 PM	42701

Lab ID: 1901689-002 **Collection Date:** 1/15/2019 4:45:00 PM
Client Sample ID: BH 11-8' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	8400	750		mg/Kg	500	1/21/2019 8:58:22 PM	42701

Lab ID: 1901689-003 **Collection Date:** 1/15/2019 4:50:00 PM
Client Sample ID: BH 11-12' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	13000	750		mg/Kg	500	1/21/2019 9:10:46 PM	42701

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1901689**

23-Jan-19

Client: Souder, Miller & Associates

Project: QPQASU

Sample ID	**MB-42701**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**42701**	RunNo:	**57105**					
Prep Date:	**1/18/2019**	Analysis Date:	**1/18/2019**	SeqNo:	**1910677**	Units:	**mg/Kg**			

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

Sample ID	**LCS-42701**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**42701**	RunNo:	**57105**					
Prep Date:	**1/18/2019**	Analysis Date:	**1/18/2019**	SeqNo:	**1910678**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.7	90	110			

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: SMA-CARLSBAD Work Order Number: 1901689 RcptNo: 1

Received By: **Victoria Zellar** 1/17/2019 8:50:00 AM Victoria Zellar

Completed By: **Erin Melendrez** 1/17/2019 10:27:49 AM

Reviewed By: VvZ 1/17/19

LB: DAD 1/17/19

Chain of Custody

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

Log In

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

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)
Adjusted? _____
Checked by: DAD 1/17/19

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 ☐

Special Handling (if applicable)

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

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

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.4	Good	Yes			
2	1.0	Good	Yes			

Chain-of-Custody Record

Client: SMA Carlsbad

Mailing Address:

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☒ Rush 5 day

Project Name: QPQASU

Project #:

Project Manager: Austin Weyant

Sampler: AA

On Ice: ☒ Yes ☐ No

# of Coolers: 2, CF = -0.0°C

Cooler Temp (including CF): 3.4°C, 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. 1901689	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
1/15/19	16:30	soil	BH10 - 8'	4oz		-001		X					X			
"	16:45	"	BH11 - 8'	↓		-002		X					X			
"	16:50	"	BH11 - 12'			-003		X					X			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
1/15/19	1430	Samantha Watson			1/16/19	1430
1/16/19	1902		Victoria Ballan	Courier	1/17/19	8:50

Remarks:
Newbourne
CHLORIDE DATA ON SEP. REPORT!

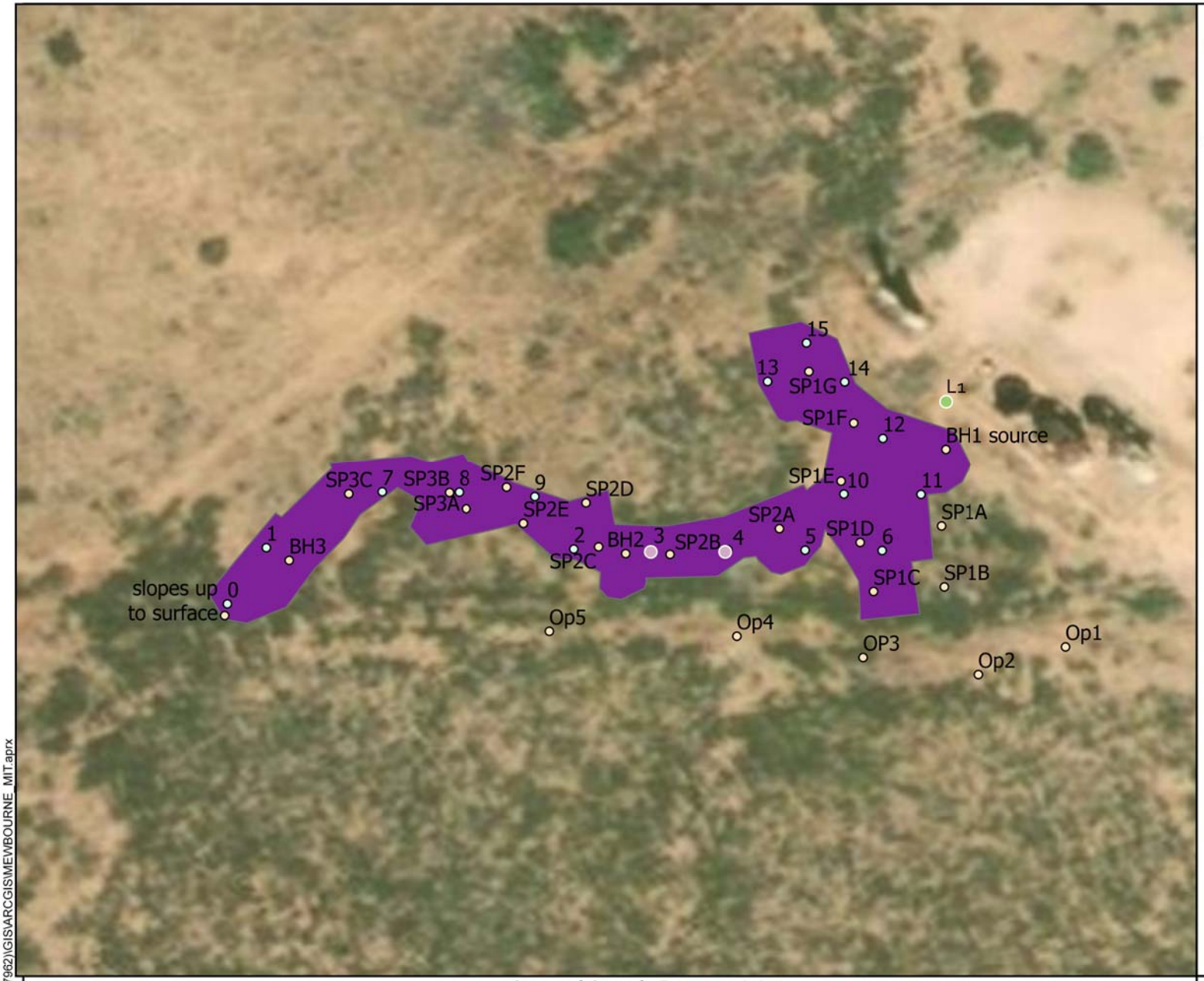
If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

APPENDIX E
PHOTO LOG

Photo 1: Standing at BH6 looking Southwest.

Photo 2: At BH2 looking Southeast.

Photo 3: Standing at BH 1 looking West.



Legend

- Sample Locations
- BH Proposed Sample Locations
- Mewbourne-Red Hills Pipeline Sample Locations

QPQASU

- Samples
- sample_point
- QPQASU_Excavation Area

N

140 Feet

Site and Sample Location Map
Mewbourne-QPQASU

Figure 3

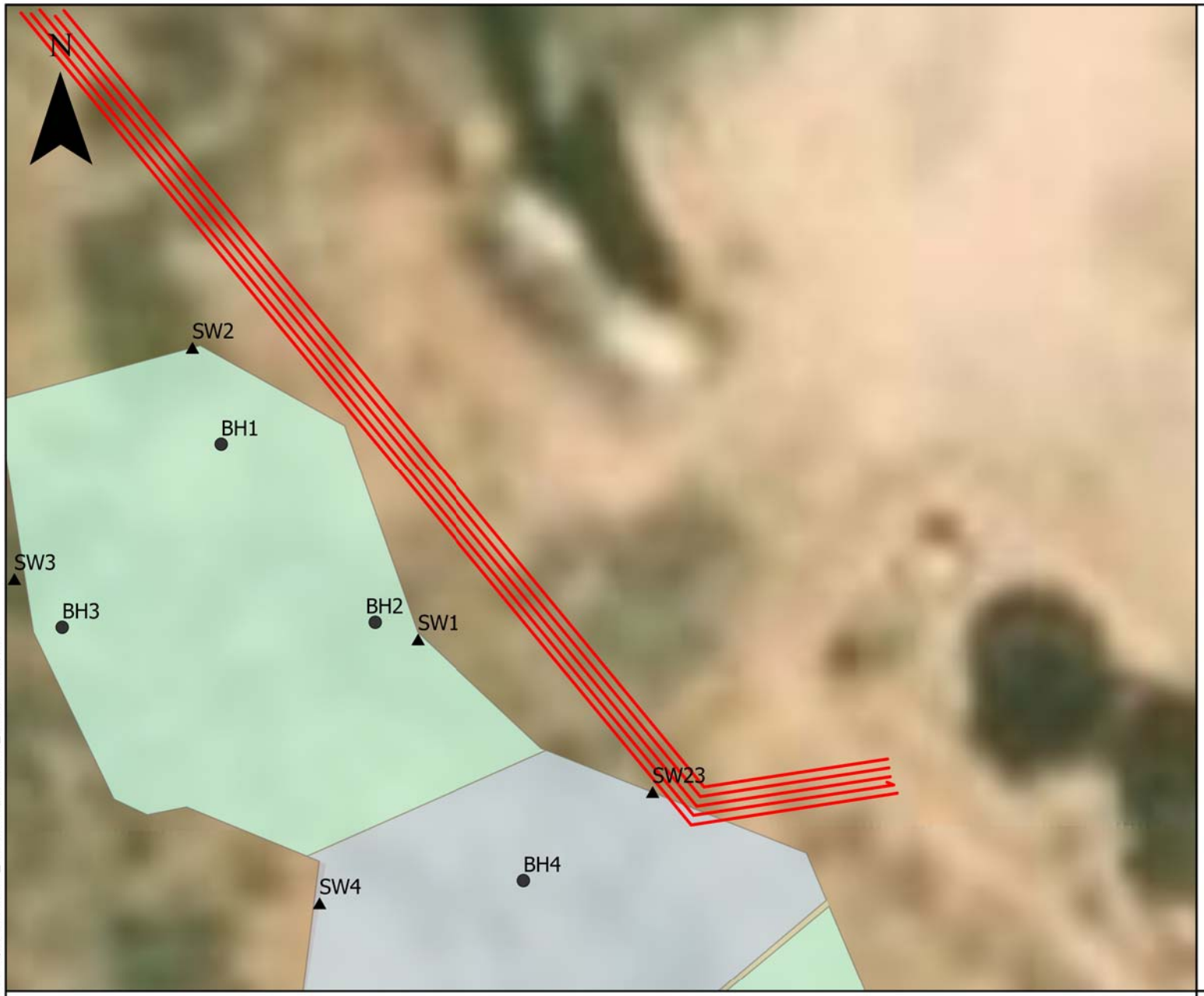
P:\5-Mewbourne 2019 MSA (5E27962)\GIS\ARCGIS\MEWBOURNE_MIT.aprx

Date Saved: 6/25/2019

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

Drawn LRB
Date 6/25/2019
Checked
Approved

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



BH
Sidewall

Excavation Depth

4'
5'
Pipelines

0 5 10 20 Feet

Site and Sample location Map
QPQASU Tank Battery #1-Mewbourne

Figure 3

C:\Users\jvh.SMA\Documents\ArcGIS\Projects\QPQASU_Mewbourne\QPQASU_Mewbourne.aprx

Date Saved: 2/22/2019

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

Drawn JVH
Date 3/18/2019
Checked
Approved

SMA
201 South Halaguena Street
Carlsbad, New Mexico 88221
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HALL ENVIRONMENTAL ANALYSIS LABORATORY

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4901 Hawkins NE
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TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

June 25, 2019

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

RE: QPQASU OrderNo.: 1906981

Dear Jacqui Haris:

Hall Environmental Analysis Laboratory received 1 sample(s) on 6/19/2019 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1906981**
Date Reported: **6/25/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L1
Project: QPQASU
Collection Date: 6/18/2019 9:00:00 AM
Lab ID: 1906981-001 **Matrix:** SOIL **Received Date:** 6/19/2019 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	ND	60		mg/Kg	20	6/24/2019 9:34:11 PM	45776
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	6/24/2019 5:49:31 PM	45707
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	6/24/2019 5:49:31 PM	45707
Surr: DNOP	104	70-130		%Rec	1	6/24/2019 5:49:31 PM	45707
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	6/20/2019 1:18:20 PM	45680
Surr: BFB	101	73.8-119		%Rec	1	6/20/2019 1:18:20 PM	45680
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	6/20/2019 1:18:20 PM	45680
Toluene	ND	0.050		mg/Kg	1	6/20/2019 1:18:20 PM	45680
Ethylbenzene	ND	0.050		mg/Kg	1	6/20/2019 1:18:20 PM	45680
Xylenes, Total	ND	0.099		mg/Kg	1	6/20/2019 1:18:20 PM	45680
Surr: 4-Bromofluorobenzene	96.4	80-120		%Rec	1	6/20/2019 1:18:20 PM	45680

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#: **1906981**

25-Jun-19

Client: Souder, Miller & Associates

Project: QPQASU

Sample ID: **MB-45776**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **45776**	RunNo: **60890**							
Prep Date: **6/24/2019**	Analysis Date: **6/24/2019**	SeqNo: **2061472**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-45776**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **45776**	RunNo: **60890**							
Prep Date: **6/24/2019**	Analysis Date: **6/24/2019**	SeqNo: **2061473**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.4	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1906981**

25-Jun-19

Client: Souder, Miller & Associates

Project: QPQASU

Sample ID: **MB-45707**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **45707**	RunNo: **60814**
Prep Date: **6/20/2019**	Analysis Date: **6/21/2019**	SeqNo: **2058544** 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	9.5		10.00		95.2	70	130			

Sample ID: **LCS-45707**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **45707**	RunNo: **60814**
Prep Date: **6/20/2019**	Analysis Date: **6/21/2019**	SeqNo: **2058545** 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	94.4	63.9	124			
Surr: DNOP	4.6		5.000		91.8	70	130			

Sample ID: **MB-45756**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **45756**	RunNo: **60854**
Prep Date: **6/24/2019**	Analysis Date: **6/24/2019**	SeqNo: **2060436** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.3		10.00		92.8	70	130			

Sample ID: **LCS-45756**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **45756**	RunNo: **60854**
Prep Date: **6/24/2019**	Analysis Date: **6/24/2019**	SeqNo: **2060559** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.5		5.000		89.1	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1906981**

25-Jun-19

Client: Souder, Miller & Associates

Project: QPQASU

Sample ID: **MB-45680**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **45680**	RunNo: **60804**
Prep Date: **6/19/2019**	Analysis Date: **6/20/2019**	SeqNo: **2058255** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		105	73.8	119			

Sample ID: **LCS-45680**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **45680**	RunNo: **60804**
Prep Date: **6/19/2019**	Analysis Date: **6/20/2019**	SeqNo: **2058256** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	101	80.1	123			
Surr: BFB	1200		1000		116	73.8	119			

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#: **1906981**

25-Jun-19

Client: Souder, Miller & Associates

Project: QPQASU

Sample ID: **MB-45680**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **45680**	RunNo: **60804**
Prep Date: **6/19/2019**	Analysis Date: **6/20/2019**	SeqNo: **2058268** 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		101	80	120			

Sample ID: **LCS-45680**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **45680**	RunNo: **60804**
Prep Date: **6/19/2019**	Analysis Date: **6/20/2019**	SeqNo: **2058269** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	100	80	120			
Toluene	1.0	0.050	1.000	0	103	80	120			
Ethylbenzene	1.0	0.050	1.000	0	102	80	120			
Xylenes, Total	3.0	0.10	3.000	0	101	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		112	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

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Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **SMA-CARLSBAD** Work Order Number: **1906981** RcptNo: **1**

Received By: **Isaiah Ortiz** **6/19/2019 8:45:00 AM** I-OK

Completed By: **Leah Baca** **6/19/2019 10:45:22 AM** Leah SBaca

Reviewed By: TMM 6-19-19

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	I O
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: 6/19/19 (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
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 ☐	Checked by:

Special Handling (if applicable)

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

Person Notified: Date

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

Regarding:

Client Instructions:

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.1	Good	Yes			

Chain-of-Custody Record

Client: SMA Carlsbad

Mailing Address: ☆Direct Bill Mewbourne ☆

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

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

Project Name: QPQASU

Project #:

Project Manager: Jacqui Harris

Sampler: LRB

On Ice: ~~☑ Yes~~ ☐ No

# of Coolers: ~~1.6-0.5 (CF) 1.1°C~~ 1 6/19/19

Cooler Temp(including CF): ~~1.6-0.5 (CF) 1.1°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. 1906981	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)
6/18/19	9:00	Soil	L1	4oz		-001	X	X					X			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
6/18/19	12:01	Lyndsey Bradley			6/18/19	1400
6/18/19	1910			Courier	6/19/19	0845

Remarks: ☆ Direct Bill Mewbourne ☆

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.