



September 10, 2018

#5E25868-BG42

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

SUBJECT: Remediation Plan for the John AGU #1 Battery Release (2RP-4694), Eddy County, New Mexico

Dear Mr. Bratcher:

On behalf of EOG Resources (EOG), Souder, Miller & Associates (SMA) has prepared this Remediation Plan that describes the delineation and proposed remediation for a release of liquids related to oil and gas production activities at the John AGU#1 Battery site. The site is in Unit C, Section 14, Township 20S, Range 24E, Eddy County, New Mexico, on private land. Figure 1 illustrates the vicinity and site location on an USGS 7.5 minute quadrangle map.

Table 1 summarizes information regarding the release.

Table 1: Release Information and Closure Criteria			
Name	John AGU #1 Battery	Company	EOG Resources
API Number	fAB1810139472	Location	32.57897° -104.56104°
Incident Number	2RP-4694		
Estimated Date of Release	3/22/2018	Date Reported to NMOCD	4/6/2018
Land Owner	Private	Reported To	NMOCD District II
Source of Release	Discharge Line		
Released Volume	14 bbls	Released Material	Produced Water
Recovered Volume	12 bbls	Net Release	2 bbls
NMOCD Closure Criteria	51-100 feet to groundwater		
SMA Response Dates	7/3/2018		

## **1.0 Background**

On March 22, 2018, a release was discovered at the John AGU #1 Battery site due to a failure in the discharge line on the water pump. Initial response activities were conducted by EOG, and included the recovery of twelve (12) bbls of the released produced water. Figure 1 illustrates the site vicinity and wellhead protection area, Figure 2 illustrates surface water and other ranking criteria within a 300-foot radius in the vicinity, and Figure 3 illustrates the site and sample locations. The initial C-141 form is included in Appendix A.

## **2.0 Site Information and Closure Criteria**

The John AGU #1 Battery is located approximately twenty-two (22) miles northwest of Carlsbad, New Mexico on privately-owned land.

As summarized in Table 2 and illustrated in Figure 1, depth to groundwater in the area is estimated to be ninety (90) feet below grade surface (bgs). There is one (1) 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/](https://gis.ose.state.nm.us/gisapps/ose_pod_locations/); accessed 7/2/2018). The nearest significant watercourse is a finger of the Middle Seven Rivers, located approximately 1,026 feet to the north

Based on the information presented herein, the applicable NMOCD Closure Criteria for this site is for groundwater depth of between 51-100 feet bgs. Table 2 demonstrates the Closure Criteria applicable to this location. Pertinent well data is attached in Appendix B.

## **3.0 Release Characterization Activities and Findings**

An initial sampling event was conducted by EOG on March 27, 2018. A total of 6 sample locations (V1-V6) were investigated around the release site and throughout the visibly stained area to a maximum depth of 4 feet bgs.

On July 3, 2018, SMA personnel arrived onsite to continue the vertical delineation by collecting soil samples to a maximum depth of 10 feet bgs. A minimum of two samples were collected at each sampling location. A total of thirty-five (35) 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 3 itemizes the sample results as well as identifying any variances from the typical specification of two samples per boring. Locations for all samples are depicted on Figure 3. 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).

Results indicate that all sample locations have met the Closure Criteria listed in Table 2; however, in order to achieve the reclamation requirements of 19.15.29.13 NMAC, chloride concentrations must be less than 600 mg/kg in the top four feet. None of the sample locations meet these criteria at this time.

## **4.0 Proposed Soil Remediation Work Plan**

In order to achieve the reclamation requirements noted above, SMA proposes excavation and the installation of a clay liner, in the area illustrated in Figure 3. The impacted area will be excavated to approximately four (4) feet bgs for reclamation. Approximately 850 cubic yards of contaminated soil are projected to be removed and replaced with clean backfill material in order to return the surface to previous

contours. Before liner placement and backfill, we propose the collection of confirmation samples comprised of representative wall 5-point samples based on SW-846, 2002. This would require the collection of two sidewall samples on the both the north and south boundaries of the excavation and one sidewall sample on west and east boundaries. This also meets the requirements of NMOCD's alternative method for closure sampling as there is no area of linear sidewall collected that represent over 200 square feet. The contaminated soil will be transported for disposal at Lea Land, in Eddy County, NM, an NMOCD permitted disposal facility. Upon approval by NMOCD, the projected timeline for completion of remediation activities is approximately three to five days.

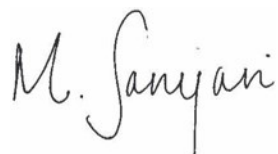
## **5.0 Scope and Limitations**

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

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

Submitted by:  
SOUDER, MILLER & ASSOCIATES

Reviewed by:

A handwritten signature in black ink that reads "M. Sanjari".

Melodie Sanjari  
Staff Scientist

A handwritten signature in blue ink that reads "Shawna Chubbuck".

Shawna Chubbuck  
Senior Scientist

**ATTACHMENTS:**

**Figures:**

Figure 1: Site Vicinity and Wellhead 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

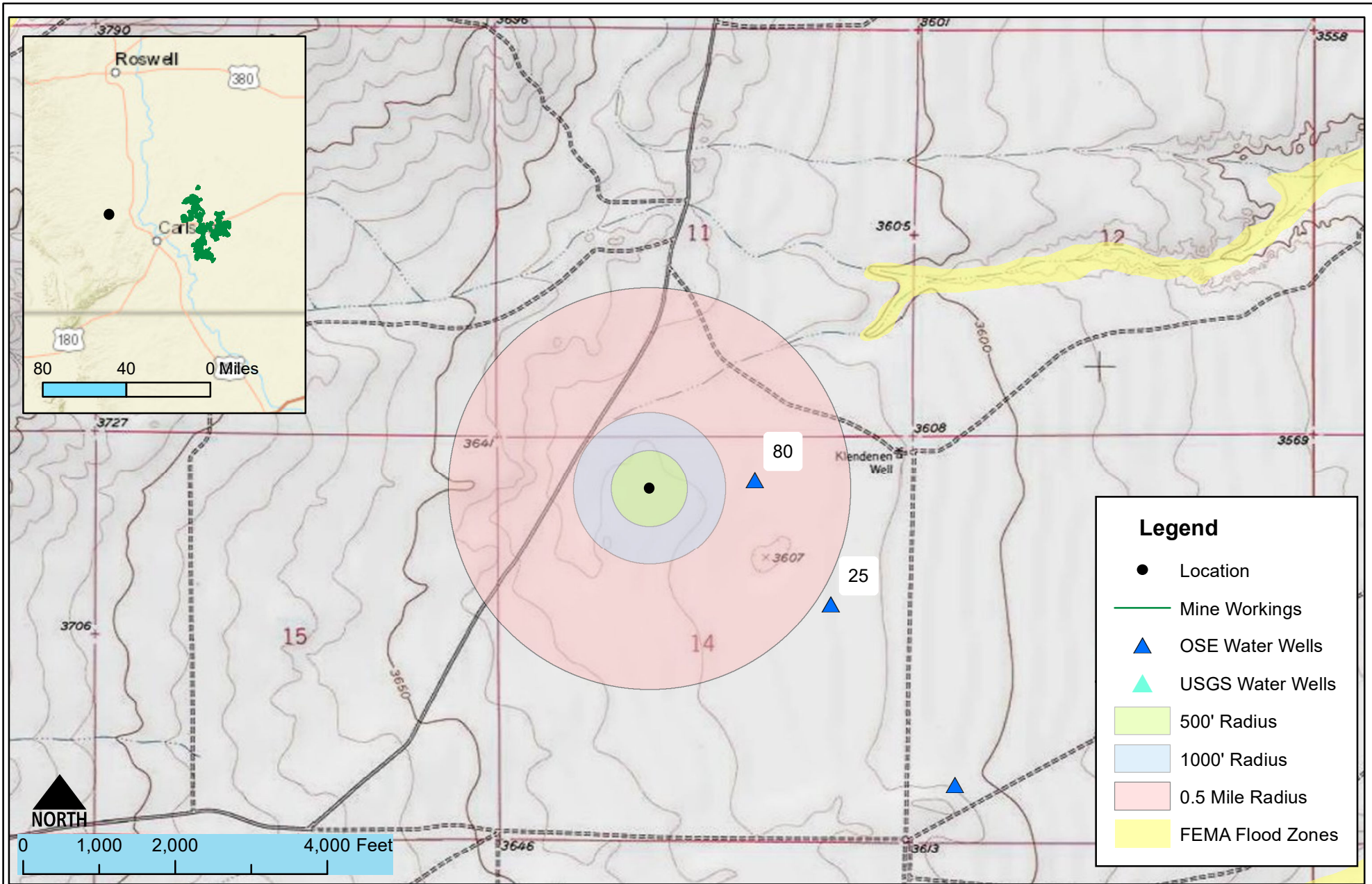
**Appendices:**

Appendix A: Form C141 Initial

Appendix B: NMOSE Wells Report

Appendix C: Laboratory Analytical Reports

# FIGURES



**Legend**

- Location
- Mine Workings
- ▲ OSE Water Wells
- ▲ USGS Water Wells
- 500' Radius
- 1000' Radius
- 0.5 Mile Radius
- FEMA Flood Zones

Vicinity & Wellhead Protection Map  
 John AGU #1 Battery - EOG Resources Sec. 14,  
 T20S, R24E Eddy County, New Mexico

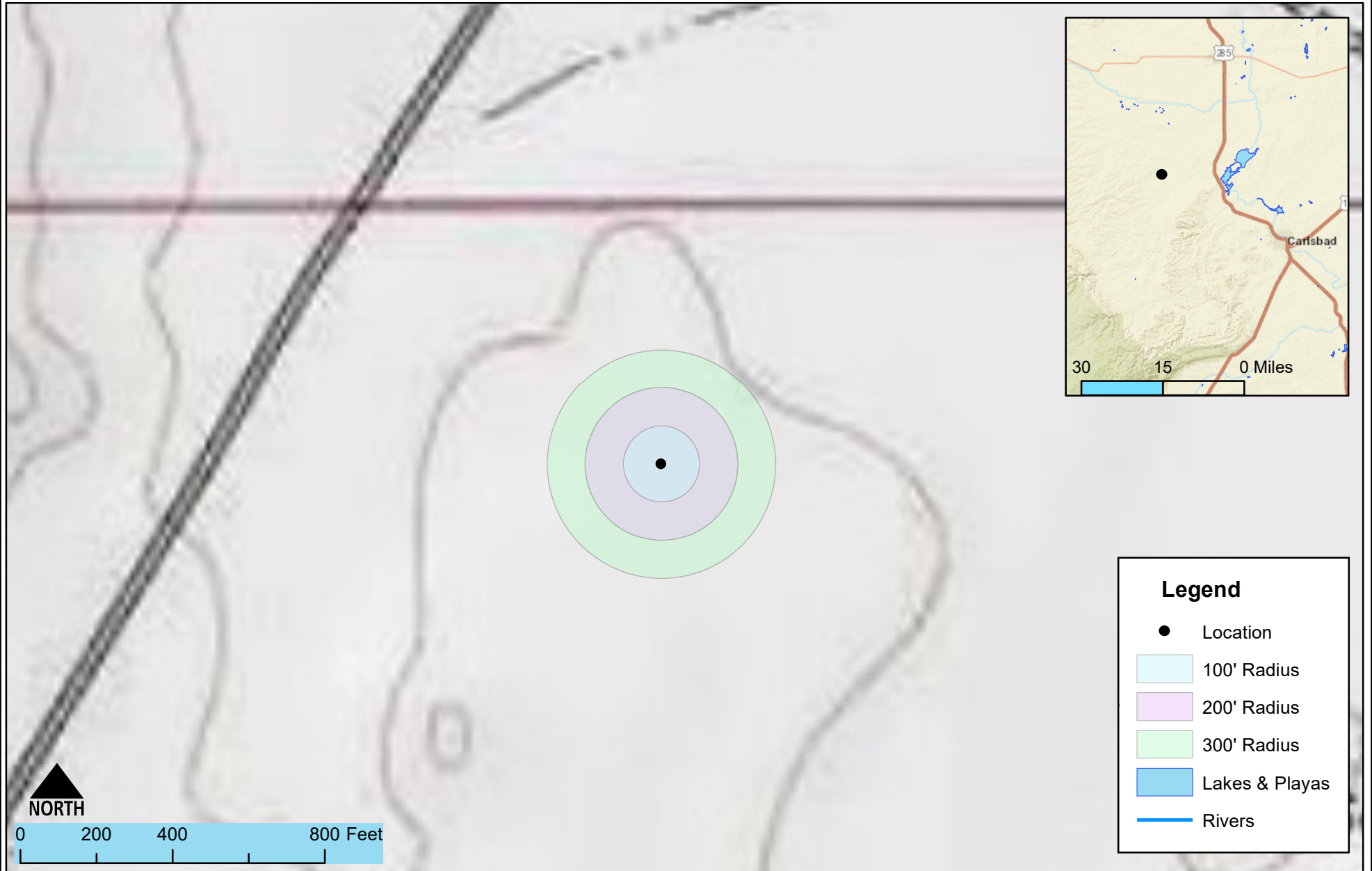
Figure 1

Date Saved: 9/7/2018	By: _____	Date: _____	Revisions	Descr: _____	Drawn	Melodie Sanjari
	By: _____	Date: _____		Descr: _____	Checked	_____
	Copyright 2015 Souder, Miller & Associates - All Rights Reserved				Approved	_____



201 South Halaguena Street  
 Carlsbad, New Mexico 88221  
 (575) 689-7040  
 www.soudermiller.com  
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Surface Water Map  
John AGU #1 Battery - EOG Resources  
Sec. 14, T20S, R24E Eddy County, New Mexico

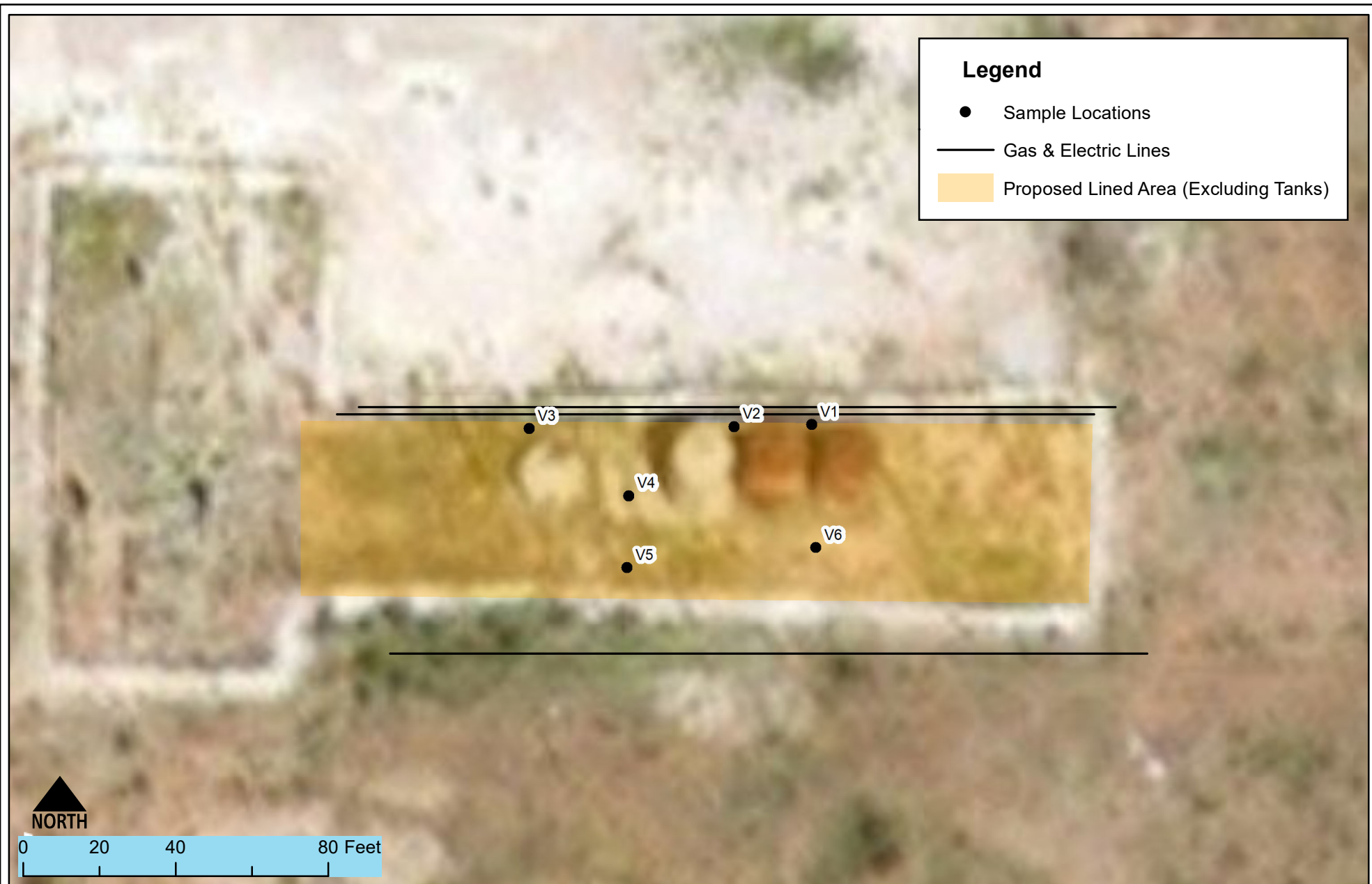
Figure 2

Date Saved: 9/7/2018	Revisions		
	By: _____	Date: _____	Descr: _____
	By: _____	Date: _____	Descr: _____
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Drawn	_____	Melodie Sanjari
Checked	_____	
Approved	_____	



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Site and Sample Location Map  
 John AGU #1 Battery - EOG Resources  
 Sec. 14, T20S, R24E Eddy County, New Mexico

Figure 3

Date Saved: 9/7/2018	By: _____	Date: _____	Revisions	Descr: _____
	By: _____	Date: _____		Descr: _____
Copyright 2015 Souder, Miller & Associates - All Rights Reserved				

Drawn	<u>Melodie Sanjari</u>
Checked	_____
Approved	_____



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# TABLES

Table 2:  
NMOCD Closure Criteria

EOG Resources  
John AGU #1 Battery (2RP-4694)

Site Information (19.15.29.11.A(2, 3, and 4) NMAC)		Source/Notes
Depth to Groundwater (feet bgs)	89	OSE
Horizontal Distance From All Water Sources Within 1/2 Mile (ft)	1,026 & 1,318	USGS 7.5 minute quadrangle map & OSE, respectively
Horizontal Distance to Nearest Significant Watercourse (ft)	1,026	USGS 7.5 minute quadrangle map

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

**Table 3: John AGU #1 Battery Sample Summary**

Sample Number on Figure 2	Sample Date	Depth (feet bgs)	Proposed Action	BTEX ppm	Benzene mg/Kg	GRO mg/Kg	DRO mg/Kg	MRO mg/Kg	Total TPH mg/Kg	Cl- Lab mg/Kg
NMOCD RRAL's for Site Ranking 10				50 mg/Kg	10 mg/Kg				2500 mg/Kg	10000 mg/kg
V1	3/27/2018	1	excavate	<0.300	<0.050	<10.0	<10.0	<10.0	<30.0	7460
	3/27/2018	2	excavate	<0.300	<0.050	<10.0	<10.0	<10.0	<30.0	5330
	3/27/2018	3	excavate	<0.300	<0.050	<10.0	<10.0	<10.0	<30.0	7730
	3/27/2018	4	excavate	<0.300	<0.050	<10.0	<10.0	<10.0	<30.0	1920
	7/3/2018	6	in-situ	--	--	--	--	--	--	720
	7/3/2018	8	in-situ	--	--	--	--	--	--	1500
	7/3/2018	8.5	in-situ	<0.207	<0.023	<4.6	<10	<50	<64.6	300
V2	3/27/2018	1	excavate	3.42	0.151	<10.0	<10.0	<10.0	<30.0	8000
	7/3/2018	2	excavate	--	--	--	--	--	--	6000
	7/3/2018	4	excavate	--	--	--	--	--	--	4300
	7/3/2018	6	in-situ	--	--	--	--	--	--	4000
	7/3/2018	8	in-situ	<0.207	<0.023	<4.6	9.9	<49	9.9	2400
V3	3/27/2018	1	excavate	4.34	0.874	<10.0	<10.0	<10.0	<30.0	8260
	7/3/2018	2	excavate	--	--	--	--	--	--	8700
	7/3/2018	3	excavate	--	--	--	--	--	--	8700
	7/3/2018	4	excavate	<0.216	<0.024	<4.8	73	120	193	8600
V4	3/27/2018	1	excavate	<0.300	<0.050	<10.0	<10.0	<10.0	<30.0	8000
	3/27/2018	2	excavate	<0.300	<0.050	<10.0	<10.0	<10.0	<10.0	4160
	3/27/2018	3	excavate	0.731	0.353	<10.0	64.8	<10.0	64.8	9200
	7/3/2018	6	in-situ	--	--	--	--	--	--	6600
	7/3/2018	8	in-situ	--	--	--	--	--	--	2300
	7/3/2018	10	in-situ	<0.216	<0.024	<4.8	160	250	410	2400
V5	3/27/2018	1	excavate	<0.300	<0.050	<10.0	18.0	10.1	28.1	3040
	3/27/2018	2	excavate	<0.300	<0.050	<10.0	<10.0	<10.0	<30.0	8530
	7/3/2018	4	excavate	--	--	--	--	--	--	5700
	7/3/2018	6	in-situ	--	--	--	--	--	--	5100
	7/3/2018	8	in-situ	--	--	--	--	--	--	6700
	7/3/2018	9	in-situ	<0.219	<0.024	<4.9	<9.0	<45	<58.9	1100
V6	3/27/2018	1	excavate	0.665	0.251	<10.0	<10.0	<10.0	<30.0	11600
	3/27/2018	2	excavate	0.454	0.286	<10.0	17.7	16.2	33.9	5920
	3/27/2018	3	excavate	<0.300	<0.050	<10.0	12.3	<10	12.3	7600
	7/3/2018	4	excavate	--	--	--	--	--	--	4300
	7/3/2018	6	in-situ	--	--	--	--	--	--	4300
	7/3/2018	8	in-situ	--	--	--	--	--	--	2200
	7/3/2018	8.5	in-situ	<0.213	<0.024	<4.7	<9.1	<45	<58.8	2800

to be excavated

"--" = Not Analyzed

orange line denotes liner placement

APPENDIX A  
FORM C141 INITIAL

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

NM OIL CONSERVATION

ARTESIA DISTRICT

APR 06 2018

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

RECEIVED

Form C-141  
Revised April 3, 2017

PAB1810139472

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company EOG Y Resources, Inc.	OGRID Number 25575	Contact Chase Settle
Address 104 S. 4 <sup>th</sup> Street Artesia NM 88210	Telephone No. 575-748-1471	
Facility Name John AGU #1 Battery	Facility Type Battery	

Surface Owner Private	Mineral Owner Fee	API No.
--------------------------	----------------------	---------

LOCATION OF RELEASE

Unit Letter C	Section 14	Township 20S	Range 24E	Feet from the 660	North/South Line North	Feet from the 1980	East/West Line West	County Eddy
------------------	---------------	-----------------	--------------	----------------------	---------------------------	-----------------------	------------------------	----------------

Latitude 32.57897 Longitude -104.56104 NAD83

NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 14 B/PW	Volume Recovered 12 B/PW
Source of Release Discharge Line	Date and Hour of Occurrence 03/22/2018; 3:30 PM	Date and Hour of Discovery 03/22/2018; PM
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

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

Describe Cause of Problem and Remedial Action Taken.\*  
Discharge line on water pump had a failure.

Describe Area Affected and Cleanup Action Taken.\*

The impacted area was approximately 230 feet by 10 feet within the berm of the battery.

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: <i>Chase Settle</i>	OIL CONSERVATION DIVISION	
Printed Name: Chase Settle	Approved by Environmental Specialist: <i>Crystal W...</i>	
Title: Rep Safety & Environmental II	Approval Date: 4/10/18	Expiration Date: N/A
E-mail Address: chase_settle@eogresources.com	Conditions of Approval: <i>see attached</i>	Attached: <i>APP-4114</i>
Date: April 5, 2018	Phone: 575-748-4171	

\* Attach Additional Sheets If Necessary

4/9/18 AB



Operator/Responsible Party,

The OCD has received the form C-141 you provided on **4/6/18** regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number 2RP-4694 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 II office in Artesia on or before 5/6/18. 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<sub>6</sub> thru C<sub>36</sub>), 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<sub>6</sub> thru C<sub>36</sub>), 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



## **Weaver, Crystal, EMNRD**

---

**From:** Yvette Moore <Yvette\_Moore@eogresources.com>  
**Sent:** Friday, April 6, 2018 12:11 PM  
**To:** Weaver, Crystal, EMNRD; Bratcher, Mike, EMNRD  
**Cc:** Bob Asher; Chase Settle  
**Subject:** John AGU Battery C-141  
**Attachments:** John AGU Battery\_032618\_Initial.pdf

Please find the attached C-141 Initial for the location listed below:

John AGU #1 Battery  
660' FNL & 1980' FWL  
Section 14, T20S-R24E  
Eddy County, New Mexico

Thanks,



**Yvette Moore**

Rep Safety & Environmental II  
Safety & Environmental Department  
Artesia Division  
(575)748-4223  
yvette\_moore@eogresources.com

# APPENDIX B

## NMOSE WELLS REPORT



# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

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

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

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
<a href="#">RA 05146</a>			ED	1	2	14	20S	24E		541600	3604734*	401	300	80	220
<a href="#">RA 02906 CLW</a>			CH	3	4	2	14	20S	24E	541907	3604238*	843	145	25	120
<a href="#">RA 04742</a>			ED	3	3	13	20S	24E		542408	3603517*	1689	300		
<a href="#">RA 07771</a>			ED	4	1	4	22	20S	24E	540073	3602194*	2745			
<a href="#">RA 05424</a>			ED	4	2	3	22	20S	24E	539669	3602194*	2934	1000	400	600
<a href="#">RA 03085</a>			CH		1	01	20S	24E		542613	3607799*	3407	465	300	165
<a href="#">RA 03084</a>			ED		1	03	20S	24E		539366	3607752*	3562	330	268	62
<a href="#">RA 10139</a>			ED	3	3	2	21	20S	24E	538285	3602597*	3592	308		
<a href="#">RA 04245</a>			ED	4	4	35	19S	24E		542005	3608363*	3752	300		
<a href="#">RA 05284</a>			ED	1	2	01	20S	24E		543220	3607973*	3847	282	273	9
<a href="#">RA 04956</a>			ED	1	1	21	20S	24E		537605	3603101*	3933	1013		
<a href="#">RA 04502</a>			ED	2	2	25	20S	24E		543656	3601480*	4048	300	268	32
<a href="#">RA 04502 REPAR</a>			ED	2	2	25	20S	24E		543656	3601480*	4048	275	268	7
<a href="#">RA 05723</a>			ED	3	3	34	19S	24E		539170	3608353*	4180	310	270	40
<a href="#">RA 02775</a>			CH	1	4	3	21	20S	24E	537899	3601986*	4271	140	31	109
<a href="#">RA 10140</a>			ED	2	1	1	35	20S	24E	540938	3599981*	4724	295		
<a href="#">RA 03265</a>			ED	1	2	3	08	20S	25E	545972	3605636*	4863	150		
<a href="#">RA 05478</a>			ED	3	2	3	08	20S	24E	536272	3605389*	4975	550	500	50

Average Depth to Water: **243 feet**

Minimum Depth: **25 feet**

Maximum Depth: **500 feet**

Record Count: 18

**UTMNAD83 Radius Search (in meters):**

**Easting (X):** 541199.63

**Northing (Y):** 3604698

**Radius:** 5000

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.



APPENDIX C  
LABORATORY ANALYTICAL  
REPORTS

April 06, 2018

CHASE SETTLE

EOG Y RESOURCES, INC

105 SOUTH 4TH STREET

ARTESIA, NM 88210

RE: JOHN AGU BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 03/28/18 14:10.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

EOG Y RESOURCES, INC  
CHASE SETTLE  
105 SOUTH 4TH STREET  
ARTESIA NM, 88210  
Fax To: (575) 748-4131

Received: 03/28/2018  
Reported: 04/06/2018  
Project Name: JOHN AGU BATTERY  
Project Number: NONE GIVEN  
Project Location: JOHN AGU BATTERY

Sampling Date: 03/27/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: V1 - 1' (H800879-01)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/02/2018	ND	1.98	98.9	2.00	1.09	
Toluene*	<0.050	0.050	04/02/2018	ND	1.98	98.9	2.00	0.657	
Ethylbenzene*	<0.050	0.050	04/02/2018	ND	1.95	97.7	2.00	0.566	
Total Xylenes*	<0.150	0.150	04/02/2018	ND	6.04	101	6.00	0.461	
Total BTEx	<0.300	0.300	04/02/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	7460	16.0	04/02/2018	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/04/2018	ND	198	99.0	200	2.19	
DRO >C10-C28*	<10.0	10.0	04/04/2018	ND	208	104	200	2.23	
EXT DRO >C28-C36	<10.0	10.0	04/04/2018	ND					

Surrogate: 1-Chlorooctane 88.3 % 41-142

Surrogate: 1-Chlorooctadecane 72.8 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

EOG Y RESOURCES, INC  
CHASE SETTLE  
105 SOUTH 4TH STREET  
ARTESIA NM, 88210  
Fax To: (575) 748-4131

Received: 03/28/2018  
Reported: 04/06/2018  
Project Name: JOHN AGU BATTERY  
Project Number: NONE GIVEN  
Project Location: JOHN AGU BATTERY

Sampling Date: 03/27/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: V1 - 2' (H800879-02)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/02/2018	ND	1.98	98.9	2.00	1.09	
Toluene*	<0.050	0.050	04/02/2018	ND	1.98	98.9	2.00	0.657	
Ethylbenzene*	<0.050	0.050	04/02/2018	ND	1.95	97.7	2.00	0.566	
Total Xylenes*	<0.150	0.150	04/02/2018	ND	6.04	101	6.00	0.461	
Total BTEX	<0.300	0.300	04/02/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5330	16.0	04/02/2018	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/04/2018	ND	198	99.0	200	2.19	
DRO >C10-C28*	<10.0	10.0	04/04/2018	ND	208	104	200	2.23	
EXT DRO >C28-C36	<10.0	10.0	04/04/2018	ND					

Surrogate: 1-Chlorooctane 94.0 % 41-142

Surrogate: 1-Chlorooctadecane 82.8 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

EOG Y RESOURCES, INC  
CHASE SETTLE  
105 SOUTH 4TH STREET  
ARTESIA NM, 88210  
Fax To: (575) 748-4131

Received: 03/28/2018  
Reported: 04/06/2018  
Project Name: JOHN AGU BATTERY  
Project Number: NONE GIVEN  
Project Location: JOHN AGU BATTERY

Sampling Date: 03/27/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: V1 - 3' (H800879-03)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/02/2018	ND	1.98	98.9	2.00	1.09	
Toluene*	<0.050	0.050	04/02/2018	ND	1.98	98.9	2.00	0.657	
Ethylbenzene*	<0.050	0.050	04/02/2018	ND	1.95	97.7	2.00	0.566	
Total Xylenes*	<0.150	0.150	04/02/2018	ND	6.04	101	6.00	0.461	
Total BTEX	<0.300	0.300	04/02/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	7730	16.0	04/02/2018	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/06/2018	ND	236	118	200	4.81	
DRO >C10-C28*	<10.0	10.0	04/06/2018	ND	211	105	200	5.19	
EXT DRO >C28-C36	<10.0	10.0	04/06/2018	ND					

Surrogate: 1-Chlorooctane 84.7 % 41-142

Surrogate: 1-Chlorooctadecane 76.4 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

EOG Y RESOURCES, INC  
CHASE SETTLE  
105 SOUTH 4TH STREET  
ARTESIA NM, 88210  
Fax To: (575) 748-4131

Received: 03/28/2018  
Reported: 04/06/2018  
Project Name: JOHN AGU BATTERY  
Project Number: NONE GIVEN  
Project Location: JOHN AGU BATTERY

Sampling Date: 03/27/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: V1 - 4' (H800879-04)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/02/2018	ND	1.98	98.9	2.00	1.09	
Toluene*	<0.050	0.050	04/02/2018	ND	1.98	98.9	2.00	0.657	
Ethylbenzene*	<0.050	0.050	04/02/2018	ND	1.95	97.7	2.00	0.566	
Total Xylenes*	<0.150	0.150	04/02/2018	ND	6.04	101	6.00	0.461	
Total BTEX	<0.300	0.300	04/02/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1920	16.0	04/02/2018	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/06/2018	ND	236	118	200	4.81	
DRO >C10-C28*	<10.0	10.0	04/06/2018	ND	211	105	200	5.19	
EXT DRO >C28-C36	<10.0	10.0	04/06/2018	ND					

Surrogate: 1-Chlorooctane 89.3 % 41-142

Surrogate: 1-Chlorooctadecane 87.8 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

EOG Y RESOURCES, INC  
CHASE SETTLE  
105 SOUTH 4TH STREET  
ARTESIA NM, 88210  
Fax To: (575) 748-4131

Received: 03/28/2018  
Reported: 04/06/2018  
Project Name: JOHN AGU BATTERY  
Project Number: NONE GIVEN  
Project Location: JOHN AGU BATTERY

Sampling Date: 03/27/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: V2 - 1' (H800879-05)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>0.151</b>	0.100	04/03/2018	ND	1.98	98.9	2.00	1.09	
<b>Toluene*</b>	<b>0.938</b>	0.100	04/03/2018	ND	1.98	98.9	2.00	0.657	
<b>Ethylbenzene*</b>	<b>0.323</b>	0.100	04/03/2018	ND	1.95	97.7	2.00	0.566	
<b>Total Xylenes*</b>	<b>2.01</b>	0.300	04/03/2018	ND	6.04	101	6.00	0.461	
<b>Total BTEX</b>	<b>3.42</b>	0.600	04/03/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>8000</b>	16.0	04/02/2018	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/06/2018	ND	236	118	200	4.81	
DRO >C10-C28*	<10.0	10.0	04/06/2018	ND	211	105	200	5.19	
EXT DRO >C28-C36	<10.0	10.0	04/06/2018	ND					

Surrogate: 1-Chlorooctane 84.2 % 41-142

Surrogate: 1-Chlorooctadecane 83.7 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

EOG Y RESOURCES, INC  
CHASE SETTLE  
105 SOUTH 4TH STREET  
ARTESIA NM, 88210  
Fax To: (575) 748-4131

Received: 03/28/2018  
Reported: 04/06/2018  
Project Name: JOHN AGU BATTERY  
Project Number: NONE GIVEN  
Project Location: JOHN AGU BATTERY

Sampling Date: 03/27/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: V3 - 1' (H800879-06)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.874	0.500	04/03/2018	ND	1.98	98.9	2.00	1.09	
Toluene*	3.46	0.500	04/03/2018	ND	1.98	98.9	2.00	0.657	
Ethylbenzene*	<0.500	0.500	04/03/2018	ND	1.95	97.7	2.00	0.566	
Total Xylenes*	<1.50	1.50	04/03/2018	ND	6.04	101	6.00	0.461	
Total BTEX	4.34	3.00	04/03/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.9 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	8260	16.0	04/02/2018	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/06/2018	ND	236	118	200	4.81	
DRO >C10-C28*	<10.0	10.0	04/06/2018	ND	211	105	200	5.19	
EXT DRO >C28-C36	<10.0	10.0	04/06/2018	ND					

Surrogate: 1-Chlorooctane 76.9 % 41-142

Surrogate: 1-Chlorooctadecane 75.1 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

EOG Y RESOURCES, INC  
CHASE SETTLE  
105 SOUTH 4TH STREET  
ARTESIA NM, 88210  
Fax To: (575) 748-4131

Received: 03/28/2018  
Reported: 04/06/2018  
Project Name: JOHN AGU BATTERY  
Project Number: NONE GIVEN  
Project Location: JOHN AGU BATTERY

Sampling Date: 03/27/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: V4 - 1' (H800879-07)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/03/2018	ND	1.98	98.9	2.00	1.09		
Toluene*	0.052	0.050	04/03/2018	ND	1.98	98.9	2.00	0.657		
Ethylbenzene*	<0.050	0.050	04/03/2018	ND	1.95	97.7	2.00	0.566		
Total Xylenes*	<0.150	0.150	04/03/2018	ND	6.04	101	6.00	0.461		
Total BTEX	<0.300	0.300	04/03/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	8000	16.0	04/02/2018	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/06/2018	ND	236	118	200	4.81	
DRO >C10-C28*	<10.0	10.0	04/06/2018	ND	211	105	200	5.19	
EXT DRO >C28-C36	<10.0	10.0	04/06/2018	ND					

Surrogate: 1-Chlorooctane 88.5 % 41-142

Surrogate: 1-Chlorooctadecane 81.0 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

EOG Y RESOURCES, INC  
CHASE SETTLE  
105 SOUTH 4TH STREET  
ARTESIA NM, 88210  
Fax To: (575) 748-4131

Received: 03/28/2018  
Reported: 04/06/2018  
Project Name: JOHN AGU BATTERY  
Project Number: NONE GIVEN  
Project Location: JOHN AGU BATTERY

Sampling Date: 03/27/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: V4 - 2' (H800879-08)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/03/2018	ND	2.04	102	2.00	2.98	
Toluene*	<0.050	0.050	04/03/2018	ND	2.04	102	2.00	3.12	
Ethylbenzene*	<0.050	0.050	04/03/2018	ND	2.04	102	2.00	2.49	
Total Xylenes*	<0.150	0.150	04/03/2018	ND	6.34	106	6.00	2.24	
Total BTEX	<0.300	0.300	04/03/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4160	16.0	04/03/2018	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/06/2018	ND	236	118	200	4.81	
DRO >C10-C28*	<10.0	10.0	04/06/2018	ND	211	105	200	5.19	
EXT DRO >C28-C36	<10.0	10.0	04/06/2018	ND					

Surrogate: 1-Chlorooctane 86.9 % 41-142

Surrogate: 1-Chlorooctadecane 85.0 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

EOG Y RESOURCES, INC  
CHASE SETTLE  
105 SOUTH 4TH STREET  
ARTESIA NM, 88210  
Fax To: (575) 748-4131

Received: 03/28/2018  
Reported: 04/06/2018  
Project Name: JOHN AGU BATTERY  
Project Number: NONE GIVEN  
Project Location: JOHN AGU BATTERY

Sampling Date: 03/27/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: V4 - 3' (H800879-09)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>0.353</b>	0.050	04/03/2018	ND	2.04	102	2.00	2.98	
<b>Toluene*</b>	<b>0.378</b>	0.050	04/03/2018	ND	2.04	102	2.00	3.12	
Ethylbenzene*	<0.050	0.050	04/03/2018	ND	2.04	102	2.00	2.49	
Total Xylenes*	<0.150	0.150	04/03/2018	ND	6.34	106	6.00	2.24	
<b>Total BTEX</b>	<b>0.731</b>	0.300	04/03/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.4 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>9200</b>	16.0	04/03/2018	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/06/2018	ND	236	118	200	4.81	
<b>DRO &gt;C10-C28*</b>	<b>64.8</b>	10.0	04/06/2018	ND	211	105	200	5.19	
EXT DRO >C28-C36	<10.0	10.0	04/06/2018	ND					

Surrogate: 1-Chlorooctane 81.6 % 41-142

Surrogate: 1-Chlorooctadecane 87.4 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

EOG Y RESOURCES, INC  
CHASE SETTLE  
105 SOUTH 4TH STREET  
ARTESIA NM, 88210  
Fax To: (575) 748-4131

Received: 03/28/2018  
Reported: 04/06/2018  
Project Name: JOHN AGU BATTERY  
Project Number: NONE GIVEN  
Project Location: JOHN AGU BATTERY

Sampling Date: 03/27/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: V4 - 4' (H800879-10)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/03/2018	ND	2.04	102	2.00	2.98	
Toluene*	<0.050	0.050	04/03/2018	ND	2.04	102	2.00	3.12	
Ethylbenzene*	<0.050	0.050	04/03/2018	ND	2.04	102	2.00	2.49	
Total Xylenes*	<0.150	0.150	04/03/2018	ND	6.34	106	6.00	2.24	
Total BTEX	<0.300	0.300	04/03/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	7120	16.0	04/03/2018	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/06/2018	ND	236	118	200	4.81	
DRO >C10-C28*	229	10.0	04/06/2018	ND	211	105	200	5.19	
EXT DRO >C28-C36	74.1	10.0	04/06/2018	ND					

Surrogate: 1-Chlorooctane 81.5 % 41-142

Surrogate: 1-Chlorooctadecane 92.5 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

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EOG Y RESOURCES, INC  
CHASE SETTLE  
105 SOUTH 4TH STREET  
ARTESIA NM, 88210  
Fax To: (575) 748-4131

Received: 03/28/2018  
Reported: 04/06/2018  
Project Name: JOHN AGU BATTERY  
Project Number: NONE GIVEN  
Project Location: JOHN AGU BATTERY

Sampling Date: 03/27/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: V5 - 1' (H800879-11)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/03/2018	ND	2.04	102	2.00	2.98	
Toluene*	<0.050	0.050	04/03/2018	ND	2.04	102	2.00	3.12	
Ethylbenzene*	<0.050	0.050	04/03/2018	ND	2.04	102	2.00	2.49	
Total Xylenes*	<0.150	0.150	04/03/2018	ND	6.34	106	6.00	2.24	
Total BTEX	<0.300	0.300	04/03/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3040	16.0	04/03/2018	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/06/2018	ND	236	118	200	4.81	
DRO >C10-C28*	18.0	10.0	04/06/2018	ND	211	105	200	5.19	
EXT DRO >C28-C36	10.1	10.0	04/06/2018	ND					

Surrogate: 1-Chlorooctane 81.2 % 41-142

Surrogate: 1-Chlorooctadecane 83.2 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

EOG Y RESOURCES, INC  
CHASE SETTLE  
105 SOUTH 4TH STREET  
ARTESIA NM, 88210  
Fax To: (575) 748-4131

Received: 03/28/2018  
Reported: 04/06/2018  
Project Name: JOHN AGU BATTERY  
Project Number: NONE GIVEN  
Project Location: JOHN AGU BATTERY

Sampling Date: 03/27/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: V5 - 2' (H800879-12)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/03/2018	ND	2.04	102	2.00	2.98		
Toluene*	<0.050	0.050	04/03/2018	ND	2.04	102	2.00	3.12		
Ethylbenzene*	<0.050	0.050	04/03/2018	ND	2.04	102	2.00	2.49		
Total Xylenes*	<0.150	0.150	04/03/2018	ND	6.34	106	6.00	2.24		
Total BTEX	<0.300	0.300	04/03/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	8530	16.0	04/03/2018	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/06/2018	ND	236	118	200	4.81	
DRO >C10-C28*	<10.0	10.0	04/06/2018	ND	211	105	200	5.19	
EXT DRO >C28-C36	<10.0	10.0	04/06/2018	ND					

Surrogate: 1-Chlorooctane 82.1 % 41-142

Surrogate: 1-Chlorooctadecane 75.8 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

EOG Y RESOURCES, INC  
CHASE SETTLE  
105 SOUTH 4TH STREET  
ARTESIA NM, 88210  
Fax To: (575) 748-4131

Received: 03/28/2018  
Reported: 04/06/2018  
Project Name: JOHN AGU BATTERY  
Project Number: NONE GIVEN  
Project Location: JOHN AGU BATTERY

Sampling Date: 03/27/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: V6 - 1' (H800879-13)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	0.251	0.050	04/03/2018	ND	2.04	102	2.00	2.98		
Toluene*	0.414	0.050	04/03/2018	ND	2.04	102	2.00	3.12		
Ethylbenzene*	<0.050	0.050	04/03/2018	ND	2.04	102	2.00	2.49		
Total Xylenes*	<0.150	0.150	04/03/2018	ND	6.34	106	6.00	2.24		
Total BTEX	0.665	0.300	04/03/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	11600	16.0	04/03/2018	ND	448	112	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/06/2018	ND	236	118	200	4.81	
DRO >C10-C28*	<10.0	10.0	04/06/2018	ND	211	105	200	5.19	
EXT DRO >C28-C36	<10.0	10.0	04/06/2018	ND					

Surrogate: 1-Chlorooctane 86.3 % 41-142

Surrogate: 1-Chlorooctadecane 84.6 % 37.6-147

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EOG Y RESOURCES, INC  
CHASE SETTLE  
105 SOUTH 4TH STREET  
ARTESIA NM, 88210  
Fax To: (575) 748-4131

Received: 03/28/2018  
Reported: 04/06/2018  
Project Name: JOHN AGU BATTERY  
Project Number: NONE GIVEN  
Project Location: JOHN AGU BATTERY

Sampling Date: 03/27/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: V6 - 2' (H800879-14)**

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.286	0.050	04/03/2018	ND	2.04	102	2.00	2.98	
Toluene*	0.168	0.050	04/03/2018	ND	2.04	102	2.00	3.12	
Ethylbenzene*	<0.050	0.050	04/03/2018	ND	2.04	102	2.00	2.49	
Total Xylenes*	<0.150	0.150	04/03/2018	ND	6.34	106	6.00	2.24	
Total BTX	0.454	0.300	04/03/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.7 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	5920	16.0	04/03/2018	ND	448	112	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/06/2018	ND	236	118	200	4.81	
DRO >C10-C28*	17.7	10.0	04/06/2018	ND	211	105	200	5.19	
EXT DRO >C28-C36	16.2	10.0	04/06/2018	ND					

Surrogate: 1-Chlorooctane 83.2 % 41-142

Surrogate: 1-Chlorooctadecane 82.8 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

EOG Y RESOURCES, INC  
CHASE SETTLE  
105 SOUTH 4TH STREET  
ARTESIA NM, 88210  
Fax To: (575) 748-4131

Received: 03/28/2018  
Reported: 04/06/2018  
Project Name: JOHN AGU BATTERY  
Project Number: NONE GIVEN  
Project Location: JOHN AGU BATTERY

Sampling Date: 03/27/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: V6 - 3' (H800879-15)**

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/03/2018	ND	2.04	102	2.00	2.98	
Toluene*	<0.050	0.050	04/03/2018	ND	2.04	102	2.00	3.12	
Ethylbenzene*	<0.050	0.050	04/03/2018	ND	2.04	102	2.00	2.49	
Total Xylenes*	<0.150	0.150	04/03/2018	ND	6.34	106	6.00	2.24	
Total BTX	<0.300	0.300	04/03/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	7600	16.0	04/03/2018	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/06/2018	ND	236	118	200	4.81	
DRO >C10-C28*	12.3	10.0	04/06/2018	ND	211	105	200	5.19	
EXT DRO >C28-C36	<10.0	10.0	04/06/2018	ND					

Surrogate: 1-Chlorooctane 80.6 % 41-142

Surrogate: 1-Chlorooctadecane 80.3 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



### Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager



ARDINAL LABORATORIES  
101 East Marland, Hobbs, NM 88240

(505) 393-2326 FAX (505) 393-2476

# CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Chase Settle

Company Name: EOG Y Resources Inc.

Company Address: 105 South 4th Street

City/State/Zip: Artesia, NM 88210

Telephone No: 575-748-4171

Fax No:

Sampler Signature:

e-mail:

[Chase.Settle@eoqresources.com](mailto:Chase.Settle@eoqresources.com)

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

PO #: 205-0750

Project Name: John AGU Battery

Project #:

Project Loc: John AGU Battery

(lab use only)

ORDER #: H800879 -

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Ice	HNO <sub>3</sub>	HCl	H <sub>2</sub> SO <sub>4</sub>	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	None	Other ( Specify)	DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	TPH: 8015B EXTENDED	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO <sub>4</sub> , Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg S	Volatiles	Semivolatiles	BTEX: 8021B	RCI	N.O.R.M.	Chlorides	SAR	RUSH TAT (Pre-Schedule) 24, 48	Standard TAT	
1	V1-1'			3/27/2018	12:57 PM		1	X								S	X									X					X	X
2	V1-2'			3/27/2018	1:00 PM		1	X								S	X									X					X	X
3	V1-3'			3/27/2018	1:03 PM		1	X								S	X									X					X	X
4	V1-4'			3/27/2018	1:06 PM		1	X								S	X									X					X	X
5	V2-1'			3/27/2018	1:12 PM		1	X								S	X									X					X	X
6	V3-1'			3/27/2018	1:15 PM		1	X								S	X									X					X	X
7	V4-1'			3/27/2018	1:20 PM		1	X								S	X									X					X	X
8	V4-2'			3/27/2018	1:22 PM		1	X								S	X									X					X	X
9	V4-3'			3/27/2018	1:27 PM		1	X								S	X									X					X	X
10	V4-4'			3/27/2018	1:29 PM		1	X								S	X									X					X	X

Special Instructions:

TPH EXTENDED NEEDED!

Relinquished by:

Date

Time

Received by:

Date

Time

Received by:

Date

Time

Received by:

Relinquished by:

Date

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Date

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(505) 393-2326 FAX (505) 393-2476

## CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Name: John AGU Battery

Project #1

Project Loc: John AGU Battery

**PO #: 205-0750**

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

[Chase.Settle@eogresources.com](mailto:Chase.Settle@eogresources.com)

Analyze For:

TCLP:					
TOTAL:					hrs

[illegible]

TPH EXTENDED NEEDED!

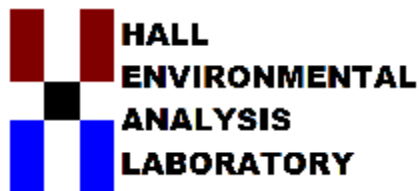
Laboratory/Comments:

Laboratory Comments.	
Sample Containers Intact?	Y
VOCs Free of Headspace?	Y
Shells on container(s)	Y

Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	Y	N

Temperature Upon Receipt:

८०



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

July 25, 2018

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

RE: John AGU Battery

OrderNo.: 1807276

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 21 sample(s) on 7/7/2018 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued July 18, 2018.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. 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. All samples are reported as received unless otherwise indicated.

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

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', with a stylized flourish at the end.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1807276**

Date Reported: **7/25/2018**

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** V1-6

**Project:** John AGU Battery

**Collection Date:** 7/3/2018 10:57:00 AM

**Lab ID:** 1807276-001

**Matrix:** SOIL

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>MRA</b>	
Chloride	720	30		mg/Kg	20	7/13/2018 4:28:57 PM	39196

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

<b>Qualifiers:</b>	*	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 Quantitative 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 **1807276**

Date Reported: **7/25/2018**

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** V1-8

**Project:** John AGU Battery

**Collection Date:** 7/3/2018 11:03:00 AM

**Lab ID:** 1807276-002

**Matrix:** SOIL

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	1500	75		mg/Kg	50	7/16/2018 7:01:25 AM	39196

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

<b>Qualifiers:</b>	*	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 Quantitative 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 **1807276**

Date Reported: **7/25/2018**

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** V1-8.5

**Project:** John AGU Battery

**Collection Date:** 7/3/2018 11:15:00 AM

**Lab ID:** 1807276-003

**Matrix:** SOLID

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	300	30		mg/Kg	20	7/13/2018 4:53:45 PM	39196
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>Irm</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	7/11/2018 12:12:12 PM	39125
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/11/2018 12:12:12 PM	39125
Surr: DNOP	89.2	70-130		%Rec	1	7/11/2018 12:12:12 PM	39125
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	7/10/2018 5:48:26 PM	39103
Surr: BFB	95.7	15-316		%Rec	1	7/10/2018 5:48:26 PM	39103
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Methyl tert-butyl ether (MTBE)	ND	0.092		mg/Kg	1	7/10/2018 5:48:26 PM	39103
Benzene	ND	0.023		mg/Kg	1	7/10/2018 5:48:26 PM	39103
Toluene	ND	0.046		mg/Kg	1	7/10/2018 5:48:26 PM	39103
Ethylbenzene	ND	0.046		mg/Kg	1	7/10/2018 5:48:26 PM	39103
Xylenes, Total	ND	0.092		mg/Kg	1	7/10/2018 5:48:26 PM	39103
Surr: 4-Bromofluorobenzene	108	80-120		%Rec	1	7/10/2018 5:48:26 PM	39103

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

<b>Qualifiers:</b>	*	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 Quantitative 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 **1807276**

Date Reported: **7/25/2018**

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** V2-2

**Project:** John AGU Battery

**Collection Date:** 7/3/2018 11:31:00 AM

**Lab ID:** 1807276-004

**Matrix:** SOIL

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	6000	300		mg/Kg	200	7/16/2018 7:13:49 AM	39196

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

<b>Qualifiers:</b>	*	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 Quantitative 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 **1807276**

Date Reported: **7/25/2018**

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** V2-4

**Project:** John AGU Battery

**Collection Date:** 7/3/2018 11:38:00 AM

**Lab ID:** 1807276-005

**Matrix:** SOIL

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	4300	300		mg/Kg	200	7/16/2018 7:26:13 AM	39196

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

<b>Qualifiers:</b>	*	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 Quantitative 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 **1807276**

Date Reported: **7/25/2018**

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** V2-6

**Project:** John AGU Battery

**Collection Date:** 7/3/2018 11:47:00 AM

**Lab ID:** 1807276-006

**Matrix:** SOIL

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	4000	150		mg/Kg	100	7/16/2018 7:38:37 AM	39196

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

<b>Qualifiers:</b>	*	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 Quantitative 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 **1807276**

Date Reported: **7/25/2018**

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** V2-8

**Project:** John AGU Battery

**Collection Date:** 7/3/2018 11:59:00 AM

**Lab ID:** 1807276-007

**Matrix:** SOLID

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	2400	75		mg/Kg	50	7/16/2018 7:51:02 AM	39196
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>Irm</b>
Diesel Range Organics (DRO)	9.9	9.8		mg/Kg	1	7/11/2018 1:26:21 PM	39125
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/11/2018 1:26:21 PM	39125
Surr: DNOP	93.0	70-130		%Rec	1	7/11/2018 1:26:21 PM	39125
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	7/10/2018 6:12:02 PM	39103
Surr: BFB	97.2	15-316		%Rec	1	7/10/2018 6:12:02 PM	39103
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Methyl tert-butyl ether (MTBE)	ND	0.092		mg/Kg	1	7/10/2018 6:12:02 PM	39103
Benzene	ND	0.023		mg/Kg	1	7/10/2018 6:12:02 PM	39103
Toluene	ND	0.046		mg/Kg	1	7/10/2018 6:12:02 PM	39103
Ethylbenzene	ND	0.046		mg/Kg	1	7/10/2018 6:12:02 PM	39103
Xylenes, Total	ND	0.092		mg/Kg	1	7/10/2018 6:12:02 PM	39103
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	7/10/2018 6:12:02 PM	39103

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

<b>Qualifiers:</b>	*	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 Quantitative 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 **1807276**

Date Reported: **7/25/2018**

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** V3-2

**Project:** John AGU Battery

**Collection Date:** 7/3/2018 1:30:00 PM

**Lab ID:** 1807276-008

**Matrix:** SOIL

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	8700	300		mg/Kg	200	7/16/2018 8:03:27 AM	39196

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

<b>Qualifiers:</b>	*	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 Quantitative 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 **1807276**

Date Reported: **7/25/2018**

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** V3-3

**Project:** John AGU Battery

**Collection Date:** 7/3/2018 1:45:00 PM

**Lab ID:** 1807276-009

**Matrix:** SOIL

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	8700	750		mg/Kg	500	7/16/2018 8:15:51 AM	39196

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

<b>Qualifiers:</b>	*	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 Quantitative 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 **1807276**

Date Reported: **7/25/2018**

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** V3-4

**Project:** John AGU Battery

**Collection Date:** 7/3/2018 1:55:00 PM

**Lab ID:** 1807276-010

**Matrix:** SOIL

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	8600	750		mg/Kg	500	7/16/2018 8:28:16 AM	39196
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>lrm</b>
Diesel Range Organics (DRO)	73	10		mg/Kg	1	7/11/2018 1:51:14 PM	39125
Motor Oil Range Organics (MRO)	120	50		mg/Kg	1	7/11/2018 1:51:14 PM	39125
Surr: DNOP	106	70-130		%Rec	1	7/11/2018 1:51:14 PM	39125
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/10/2018 6:35:42 PM	39103
Surr: BFB	97.5	15-316		%Rec	1	7/10/2018 6:35:42 PM	39103
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Methyl tert-butyl ether (MTBE)	ND	0.096		mg/Kg	1	7/10/2018 6:35:42 PM	39103
Benzene	ND	0.024		mg/Kg	1	7/10/2018 6:35:42 PM	39103
Toluene	ND	0.048		mg/Kg	1	7/10/2018 6:35:42 PM	39103
Ethylbenzene	ND	0.048		mg/Kg	1	7/10/2018 6:35:42 PM	39103
Xylenes, Total	ND	0.096		mg/Kg	1	7/10/2018 6:35:42 PM	39103
Surr: 4-Bromofluorobenzene	107	80-120		%Rec	1	7/10/2018 6:35:42 PM	39103

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

<b>Qualifiers:</b>	*	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 Quantitative 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 **1807276**

Date Reported: **7/25/2018**

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** V4-6

**Project:** John AGU Battery

**Collection Date:** 7/3/2018 7:36:00 AM

**Lab ID:** 1807276-011

**Matrix:** SOIL

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>CJS</b>
Chloride	6600	300		mg/Kg	200	7/17/2018 7:56:37 AM	39208

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

<b>Qualifiers:</b>	*	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 Quantitative 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 **1807276**

Date Reported: **7/25/2018**

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** V4-8

**Project:** John AGU Battery

**Collection Date:** 7/3/2018 7:54:00 AM

**Lab ID:** 1807276-012

**Matrix:** SOIL

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>CJS</b>
Chloride	2300	75		mg/Kg	50	7/17/2018 8:09:02 AM	39208

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

<b>Qualifiers:</b>	*	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 Quantitative 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 **1807276**

Date Reported: **7/25/2018**

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** V4-10

**Project:** John AGU Battery

**Collection Date:** 7/3/2018 8:15:00 AM

**Lab ID:** 1807276-013

**Matrix:** SOLID

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>CJS</b>
Chloride	2400	75		mg/Kg	50	7/17/2018 8:21:26 AM	39208
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	160	9.4	H	mg/Kg	1	7/23/2018 11:19:31 AM	39336
Motor Oil Range Organics (MRO)	250	47	H	mg/Kg	1	7/23/2018 11:19:31 AM	39336
Surr: DNOP	100	70-130	H	%Rec	1	7/23/2018 11:19:31 AM	39336
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8	H	mg/Kg	1	7/24/2018 11:54:21 AM	39352
Surr: BFB	93.7	15-316	H	%Rec	1	7/24/2018 11:54:21 AM	39352
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.024	H	mg/Kg	1	7/24/2018 11:54:21 AM	39352
Toluene	ND	0.048	H	mg/Kg	1	7/24/2018 11:54:21 AM	39352
Ethylbenzene	ND	0.048	H	mg/Kg	1	7/24/2018 11:54:21 AM	39352
Xylenes, Total	ND	0.096	H	mg/Kg	1	7/24/2018 11:54:21 AM	39352
Surr: 4-Bromofluorobenzene	103	80-120	H	%Rec	1	7/24/2018 11:54:21 AM	39352

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

<b>Qualifiers:</b>	*	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 Quantitative 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 **1807276**

Date Reported: **7/25/2018**

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** V5-4

**Project:** John AGU Battery

**Collection Date:** 7/3/2018 8:44:00 AM

**Lab ID:** 1807276-014

**Matrix:** SOIL

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>CJS</b>
Chloride	5700	300		mg/Kg	200	7/17/2018 8:33:51 AM	39208

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

<b>Qualifiers:</b>	*	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 Quantitative 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 **1807276**

Date Reported: **7/25/2018**

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** V5-6

**Project:** John AGU Battery

**Collection Date:** 7/3/2018 8:57:00 AM

**Lab ID:** 1807276-015

**Matrix:** SOIL

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>CJS</b>
Chloride	5100	300		mg/Kg	200	7/17/2018 8:46:16 AM	39208

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

<b>Qualifiers:</b>	*	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 Quantitative 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 **1807276**

Date Reported: **7/25/2018**

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** V5-8

**Project:** John AGU Battery

**Collection Date:** 7/3/2018 9:08:00 AM

**Lab ID:** 1807276-016

**Matrix:** SOIL

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>CJS</b>
Chloride	6700	300		mg/Kg	200	7/17/2018 8:58:40 AM	39208

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

<b>Qualifiers:</b>	*	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 Quantitative 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 **1807276**

Date Reported: **7/25/2018**

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** V5-9

**Project:** John AGU Battery

**Collection Date:** 7/3/2018 9:20:00 AM

**Lab ID:** 1807276-017

**Matrix:** SOLID

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	1100	30		mg/Kg	20	7/16/2018 2:16:01 AM	39208
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.0	H	mg/Kg	1	7/23/2018 10:35:20 AM	39336
Motor Oil Range Organics (MRO)	ND	45	H	mg/Kg	1	7/23/2018 10:35:20 AM	39336
Surr: DNOP	92.8	70-130	H	%Rec	1	7/23/2018 10:35:20 AM	39336
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9	H	mg/Kg	1	7/24/2018 12:17:48 PM	39352
Surr: BFB	89.7	15-316	H	%Rec	1	7/24/2018 12:17:48 PM	39352
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.024	H	mg/Kg	1	7/24/2018 12:17:48 PM	39352
Toluene	ND	0.049	H	mg/Kg	1	7/24/2018 12:17:48 PM	39352
Ethylbenzene	ND	0.049	H	mg/Kg	1	7/24/2018 12:17:48 PM	39352
Xylenes, Total	ND	0.097	H	mg/Kg	1	7/24/2018 12:17:48 PM	39352
Surr: 4-Bromofluorobenzene	99.3	80-120	H	%Rec	1	7/24/2018 12:17:48 PM	39352

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

<b>Qualifiers:</b>	*	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 Quantitative 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 **1807276**

Date Reported: **7/25/2018**

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** V6-4

**Project:** John AGU Battery

**Collection Date:** 7/3/2018 9:42:00 AM

**Lab ID:** 1807276-018

**Matrix:** SOIL

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>CJS</b>
Chloride	4300	150		mg/Kg	100	7/17/2018 9:35:54 AM	39208

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

<b>Qualifiers:</b>	*	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 Quantitative 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 **1807276**

Date Reported: **7/25/2018**

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** V6-6

**Project:** John AGU Battery

**Collection Date:** 7/3/2018 9:54:00 AM

**Lab ID:** 1807276-019

**Matrix:** SOIL

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>CJS</b>
Chloride	4300	150		mg/Kg	100	7/17/2018 9:48:19 AM	39208

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

<b>Qualifiers:</b>	*	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 Quantitative 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 **1807276**

Date Reported: **7/25/2018**

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** V6-8

**Project:** John AGU Battery

**Collection Date:** 7/3/2018 10:06:00 AM

**Lab ID:** 1807276-020

**Matrix:** SOIL

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>CJS</b>
Chloride	2200	150		mg/Kg	100	7/17/2018 10:00:44 AM	39208

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

<b>Qualifiers:</b>	*	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 Quantitative 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 **1807276**

Date Reported: **7/25/2018**

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** V6-8.5

**Project:** John AGU Battery

**Collection Date:** 7/3/2018 10:17:00 AM

**Lab ID:** 1807276-021

**Matrix:** SOLID

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>CJS</b>
Chloride	2800	150		mg/Kg	100	7/17/2018 10:13:09 AM	39208
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.1	H	mg/Kg	1	7/23/2018 10:13:25 AM	39336
Motor Oil Range Organics (MRO)	ND	45	H	mg/Kg	1	7/23/2018 10:13:25 AM	39336
Surr: DNOP	91.1	70-130	H	%Rec	1	7/23/2018 10:13:25 AM	39336
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7	H	mg/Kg	1	7/24/2018 12:41:20 PM	39352
Surr: BFB	92.5	15-316	H	%Rec	1	7/24/2018 12:41:20 PM	39352
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.024	H	mg/Kg	1	7/24/2018 12:41:20 PM	39352
Toluene	ND	0.047	H	mg/Kg	1	7/24/2018 12:41:20 PM	39352
Ethylbenzene	ND	0.047	H	mg/Kg	1	7/24/2018 12:41:20 PM	39352
Xylenes, Total	ND	0.095	H	mg/Kg	1	7/24/2018 12:41:20 PM	39352
Surr: 4-Bromofluorobenzene	102	80-120	H	%Rec	1	7/24/2018 12:41:20 PM	39352

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

<b>Qualifiers:</b>	*	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 Quantitative 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#: 1807276

25-Jul-18

Client: Souder, Miller &amp; Associates

Project: John AGU Battery

Sample ID	MB-39196		SampType: mblk		TestCode: EPA Method 300.0: Anions					
Client ID:	PBS		Batch ID: 39196		RunNo: 52688					
Prep Date:	7/13/2018		Analysis Date: 7/13/2018		SeqNo: 1729903		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-39196			SampType:	lcs		TestCode:	EPA Method 300.0: Anions			
Client ID:	LCSS			Batch ID:	39196		RunNo:	52688			
Prep Date:	7/13/2018			Analysis Date:	7/13/2018		SeqNo:	1729904		Units:	mg/Kg
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	14	1.5	15.00	0	95.2	90	110				

Sample ID	MB-39208		SampType:	mblk		TestCode:	EPA Method 300.0: Anions				
Client ID:	PBS		Batch ID:	39208		RunNo:	52708				
Prep Date:	7/15/2018		Analysis Date:	7/16/2018		SeqNo:	1730611		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	ND	1.5									

Sample ID	LCS-39208		SampType:	lcs		TestCode:	EPA Method 300.0: Anions				
Client ID:	LCSS		Batch ID:	39208		RunNo:	52708				
Prep Date:	7/15/2018		Analysis Date:	7/16/2018		SeqNo:	1730612		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	14	1.5	15.00	0	95.3	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 Quantitative 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 Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1807276

25-Jul-18

Client: Souder, Miller &amp; Associates

Project: John AGU Battery

Sample ID	MB-39125		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 39125		RunNo: 52618					
Prep Date:	7/10/2018		Analysis Date: 7/11/2018		SeqNo: 1726901		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		86.0	70	130			

Sample ID	LCS-39125		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 39125		RunNo: 52618					
Prep Date:	7/10/2018		Analysis Date: 7/11/2018		SeqNo: 1726902		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	10	50.00	0	103	70	130			
Surr: DNOP	4.1		5.000		82.3	70	130			

Sample ID	1807276-003AMS		SampType: MS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	V1-8.5		Batch ID: 39125		RunNo: 52618					
Prep Date:	7/10/2018		Analysis Date: 7/11/2018		SeqNo: 1727034		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	9.8	49.16	4.611	98.5	62	120			
Surr: DNOP	4.3		4.916		86.7	70	130			

Sample ID	1807276-003AMSD		SampType:	MSD		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	V1-8.5		Batch ID:	39125		RunNo:	52618				
Prep Date:	7/10/2018		Analysis Date:	7/11/2018		SeqNo:	1727035		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	53	9.9	49.36	4.611	98.6	62	120	0.459	20		
Surr: DNOP	4.3		4.936		87.8	70	130	0	0		

Sample ID	LCS-39336		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 39336		RunNo: 52903					
Prep Date:	7/23/2018		Analysis Date: 7/23/2018		SeqNo: 1738189		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	93.4	70	130			
Surr: DNOP	4.3		5.000		86.2	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 Quantitative 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 Detection Limit  
W Sample container temperature is out of limit as specified



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1807276

25-Jul-18

Client: Souder, Miller &amp; Associates

Project: John AGU Battery

Sample ID	MB-39336		SampType:	MBLK		TestCode:	EPA Method 8015M/D: Diesel Range Organics			
Client ID:	PBS		Batch ID:	39336		RunNo:	52903			
Prep Date:	7/23/2018		Analysis Date:	7/23/2018		SeqNo:	1738190		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	8.8		10.00		88.0	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 Quantitative 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 Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1807276

25-Jul-18

Client: Souder, Miller &amp; Associates

Project: John AGU Battery

Sample ID	MB-39103		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS		Batch ID: 39103		RunNo: 52591					
Prep Date:	7/9/2018		Analysis Date: 7/10/2018		SeqNo: 1725737		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	930		1000		93.0	15	316			

Sample ID	LCS-39103		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 39103		RunNo: 52591					
Prep Date:	7/9/2018		Analysis Date: 7/10/2018		SeqNo: 1725738		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	5.0	25.00	0	110	75.9	131			
Surr: BFB	1000		1000		102	15	316			

Sample ID	MB-39352		SampType:	MBLK		TestCode:	EPA Method 8015D: Gasoline Range				
Client ID:	PBS		Batch ID:	39352		RunNo:	52947				
Prep Date:	7/23/2018		Analysis Date:	7/24/2018		SeqNo:	1740075		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	ND	5.0									
Surr: BFB	950		1000		95.3	15	316				

Sample ID	LCS-39352		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 39352		RunNo: 52947					
Prep Date:	7/23/2018		Analysis Date: 7/24/2018		SeqNo: 1740076		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	5.0	25.00	0	112	75.9	131			
Surr: BFB	1000		1000		103	15	316			

### 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 Quantitative 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 Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1807276

25-Jul-18

Client: Souder, Miller &amp; Associates

Project: John AGU Battery

Sample ID	MB-39103		SampType: MBLK		TestCode: EPA Method 8021B: Volatiles					
Client ID:	PBS		Batch ID: 39103		RunNo: 52591					
Prep Date:	7/9/2018		Analysis Date: 7/10/2018		SeqNo: 1725764		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	0.10								
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		104	80	120			

Sample ID	LCS-39103		SampType: LCS		TestCode: EPA Method 8021B: Volatiles					
Client ID:	LCSS		Batch ID: 39103		RunNo: 52591					
Prep Date:	7/9/2018		Analysis Date: 7/10/2018		SeqNo: 1725765		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.90	0.10	1.000	0	90.4	70.1	121			
Benzene	0.97	0.025	1.000	0	96.8	77.3	128			
Toluene	1.0	0.050	1.000	0	100	79.2	125			
Ethylbenzene	0.98	0.050	1.000	0	98.0	80.7	127			
Xylenes, Total	3.0	0.10	3.000	0	100	81.6	129			
Surr: 4-Bromofluorobenzene	1.1		1.000		106	80	120			

Sample ID	MB-39352		SampType: MBLK		TestCode: EPA Method 8021B: Volatiles					
Client ID:	PBS		Batch ID: 39352		RunNo: 52947					
Prep Date:	7/23/2018		Analysis Date: 7/24/2018		SeqNo: 1740124		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		108	80	120			

Sample ID	LCS-39352			SampType:	LCS		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	LCSS			Batch ID:	39352		RunNo:	52947			
Prep Date:	7/23/2018			Analysis Date:	7/24/2018		SeqNo:	1740125		Units:	mg/Kg
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	0.94	0.025	1.000	0	93.8	77.3	128				
Toluene	0.97	0.050	1.000	0	97.2	79.2	125				
Ethylbenzene	0.95	0.050	1.000	0	94.6	80.7	127				
Xylenes, Total	2.9	0.10	3.000	0	97.1	81.6	129				
Surr: 4-Bromofluorobenzene	1.0		1.000		102	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 Quantitative 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  
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: 1807276

RcptNo: 1

Received By: Anne Thorne

7/7/2018 10:50:00 AM

Completed By: Isaiah Ortiz

7/9/2018 9:50:19 AM

Reviewed By: JO

7/9/18

*Anne Thorne*  
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CB: ENM 7/9/18

### Chain of Custody

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

### Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐  
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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? Yes ☒ No ☐  
(Note discrepancies on chain of custody)  
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? Yes ☒ No ☐  
(If no, notify customer for authorization.)

# of preserved bottles checked for pH: ENM 7/9/18  
( $\leq 2$  or  $\geq 12$  unless noted)  
Adjusted? \_\_\_\_\_  
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:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> 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	5.8	Good	Yes			
2	13.1	Good	Yes			



