

**Environmental Site Remediation Work Plan**

**General Information**

NMOCD District:	District 2	Incident ID:	nMCS0124838636
Landowner:	Private	RP Reference:	N/A
Client:	EOG Resources, Inc.	Site Location:	Federal AB-B Battery
Date:	May 25, 2023	Project #:	22E-00123-15
Client Contact:	Chase Settle	Phone #:	575.748.4171
Vertex PM:	Chance Dixon	Phone #:	575.988.1472

**Objective**

The objective of the Environmental Site Remediation Work Plan is to identify areas of exceedance for areas of concern delineated during assessment and site characterization activities, and propose appropriate remediation techniques to address the release for the Federal AB-B Battery (hereafter referred to as “Federal AB-B”). The incident occurred when lightning struck part of the tank battery causing the release of approximately 10 barrels (bbls) of basic sediment and water. The lightning strike caused fluids to ignite and affected an area west of the lease road (4 x 50 ft). Closure criteria has been selected as per New Mexico Administrative Code (NMAC) 19.15.29.12. The closure criteria for the site is presented below (Table 1).

Minimum depth below any point within the horizontal boundary of the release to groundwater less than 10,000 mg/l TDS	Constituent	Limit
< 50 feet	Chloride	600 mg/kg
	TPH (GRO+DRO+MRO)	100 mg/kg
	BTEX	50 mg/kg
	Benzene	10 mg/kg

TDS – Total dissolved solids

TPH – Total petroleum hydrocarbons = gasoline range organics (GRO) + diesel range organics (DRO) + motor oil range organics (MRO),

BTEX - Benzene, toluene, ethylbenzene, and xylenes

**Site Assessment/Characterization**

Site characterization was initiated on November 5, 2021, and a request for closure was submitted to NMOCD due to the site meeting Recommended Remediation Action Levels in effect at the time of release. The closure was denied, as the excavation did not encompass the entire extent of the contamination discovered in the area (BH21-02). Characterization was resumed and was completed on March 17, 2023. A total of 17 sample points (boreholes and test pits) were established during the delineation events in 2021 and 2023. They were obtained at various depths for horizontal and vertical delineation. Samples collected at the deepest vertical distance and horizontal distance below closure criteria were submitted to the laboratory for analysis. In total, 11 samples were submitted to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico for analysis. The characterization sampling locations are presented in Figure 1 (Attachment 2). Laboratory analyses were compared to the above-noted closure criteria and the results from the characterization activity are presented in Table 2 (Attachment 3).

## Environmental Site Remediation Work Plan

### Previous Remediation Completed

In 2019 and early 2020, Resources, Inc. (EOG) performed remediation at Federal AB-B. An area within the containment was excavated until the wall samples and base samples met the criteria as determined in 19.15.29.13 NMAC. The excavation in the containment was backfilled with clean sediments. NMOCD approved Closure of the incident (nRM1932255004) on May 28, 2020.

Site assessment was initiated by Vertex Resource Services Inc. (Vertex) on November 5, 2021, and a request for closure was submitted to New Mexico Oil Conservation Division (NMOCD) due to the site meeting Recommended Remediation Action Levels in effect at the time of release (2001). The closure was denied by NMOCD with the stipulation that the remaining impacted area meet the requirements of 19.15.29.12 NMAC. Characterization was resumed and was completed in March 2023 to vertically and horizontally delineate BH21-02. Due to the previous remediation being completed by the requirements set forth in 19.15.29.12 NMAC, no delineation points were collected from the area addressed in the completion of that remediation as all confirmation samples fell within the required criteria prior to backfill with clean, non-impacted soil. Vertex and EOG have proposed additional remedial activities below.

### Remedial Activities

Areas identified with contaminant concentrations above closure criteria of the current Spill Rule (19.15.29.12 NMAC) will be remediated through excavation. Laboratory results from the site assessment/characterization have been referenced to estimate both the vertical and horizontal limits of the impacts and the volume of soil to be removed. The soil will be excavated to the extent of the known contamination with field screening utilized to confirm the removal of contaminated soil below the applicable closure criteria. Once the excavation is complete, confirmatory samples will be collected from the bottom and sidewalls of the excavation to meet the one sample per 200 square feet requirement and analysis will be completed to confirm closure criteria guidelines are met. Excavations will be backfilled with clean soil sourced locally.

Exceedances to closure criteria were found at sample points BH21-02, TP23-06 to TP23-09, TP23-11, and TP23-14 to TP23-19. Mechanical excavation equipment will be used to complete the excavation at these boreholes. The estimated volume to be excavated is 300 yards.

Sample Point	Excavation Depth	Remediation Method
BH21-02	6'	Backhoe
TP23-06	2'	Backhoe
TP23-07	2'	Backhoe
TP23-08	2'	Backhoe
TP23-09	2'	Backhoe
TP23-10	2'	Backhoe
TP23-11	2'	Backhoe
TP23-14	2'	Backhoe
TP23-15	2'	Backhoe
TP23-16	2'	Backhoe
TP23-17	2'	Backhoe
TP23-18	2'	Backhoe
TP23-19	2'	Backhoe

**Environmental Site Remediation Work Plan**

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Should you have any questions or concerns, please do not hesitate to contact the undersigned at 575.988.1472 or cdixon@vertex.ca.

*Sally Carttar*

5/25/2023

Sally Carttar, B.A.

Date

INTERMEDIATE ENVIRONMENTAL TECHNOLOGIST, REPORTING

*Chance Dixon*

5/25/2023

Chance Dixon, B.Sc.

Date

PROJECT MANAGER, REPORT REVIEW

**Attachments**

Attachment 1. NMOCD C-141 Report

Attachment 2. Figure

Attachment 3. Table

Attachment 4. Denied Closure Report by EOG

# ATTACHMENT 1

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

State of New Mexico  
Energy Minerals and Natural  
Resources Department

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

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

Incident ID	nMCS0124838636
District RP	
Facility ID	
Application ID	

## Release Notification

### Responsible Party

Responsible Party <b>EOG Resources, Inc.</b>	OGRID <b>7377</b>
Contact Name <b>Chase Settle</b>	Contact Telephone <b>575-748-1471</b>
Contact email <b>Chase_Settle@eogresources.com</b>	Incident # (assigned by OCD) <b>nMCS0124838636</b>
Contact mailing address <b>104 S. 4th Street, Artesia, NM 88210</b>	

### Location of Release Source

Latitude 32.69833 Longitude -104.51331  
*(NAD 83 in decimal degrees to 5 decimal places)*

Site Name <b>Federal AB-B Battery</b>	Site Type <b>Battery</b>
Date Release Discovered <b>08/16/2001</b>	API# (if applicable) <b>30-015-23643</b>

Unit Letter	Section	Township	Range	County
<b>M</b>	<b>32</b>	<b>18S</b>	<b>25E</b>	<b>Eddy</b>

Surface Owner:  State  Federal  Tribal  Private (Name: 4-Dinkus Ranch)

### Nature and Volume of Release

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

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input checked="" type="checkbox"/> Other (describe) BS&W & Produced Water Mix	Volume/Weight Released (provide units) <b>10 Bbls</b>	Volume/Weight Recovered (provide units) <b>0 bbls</b>
Cause of Release <b>Please refer to the original C-141 for details of nMCS0124838636.</b>		

State of New Mexico  
Oil Conservation Division

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Was this a major release as defined by 19.15.29.7(A) NMAC?  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? <b>Due to the lightning causing a fire, the release is considered a major.</b>
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? <b>Yes, by Darrell Atkins to Van Barton- OCD and Jim Amos- BLM on 8/17/01 at 14:30.</b>	

### Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.
If all the actions described above have <u>not</u> been undertaken, explain why:  
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.
Printed Name: <u>Chase Settle</u> Title: <u>Rep Safety &amp; Environmental Sr</u> Signature: <u>Chase Settle</u> Date: <u>08/31/2022</u> email: <u>Chase_Settle@eogresources.com</u> Telephone: <u>575-748-1471</u>
<b><u>OCD Only</u></b> Received by: _____ Date: _____

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## Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>&lt;50</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

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

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

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

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

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

Printed Name: Chase Settle Title: Rep Safety & Environmental Sr  
 Signature: *Chase Settle* Date: 05/25/2023  
 email: Chase\_Settle@eogresources.com Telephone: 575-748-1471

**OCD Only**

Received by: Jocelyn Harimon Date: 05/26/2023

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Application ID	

## Remediation Plan

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

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

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

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

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

Printed Name: Chase Settle Title: Rep Safety & Environmental Sr  
 Signature: Chase Settle Date: 05/25/2023  
 email: Chase\_Settle@eogresources.com Telephone: 575-748-1471

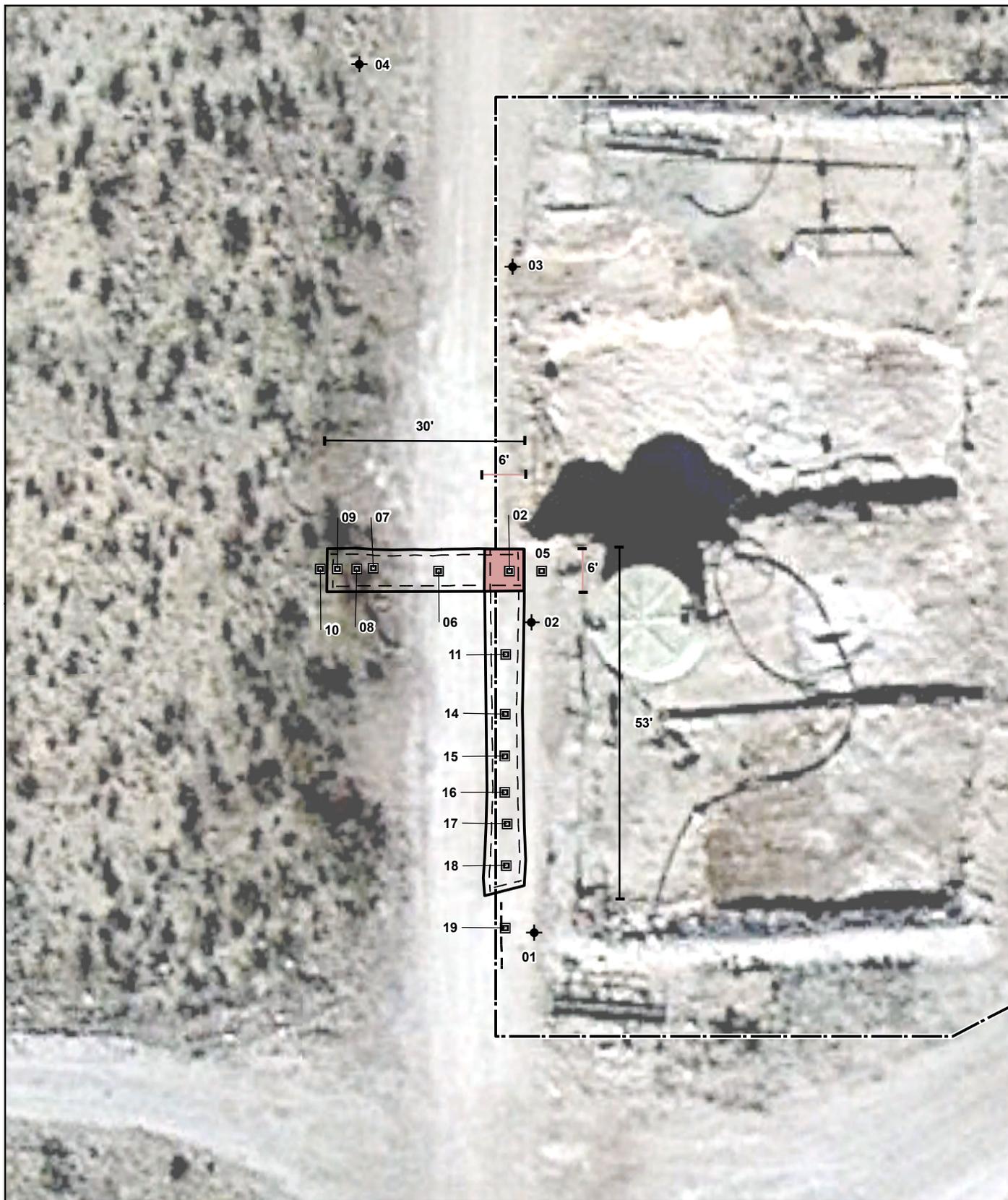
**OCD Only**

Received by: Jocelyn Harimon Date: 05/26/2023

- Approved       Approved with Attached Conditions of Approval       Denied       Deferral Approved

Signature: Ashley Maxwell Date: 5/30/2023

# ATTACHMENT 1



- ◆ Borehole (Prefixed by "BH21-")
- ▣ Sample Points (Prefixed by "TP23-")
- Pipeline (Underground)
- Approximate Lease Boundary
- ▭ Proposed 2' Excavation (~449 sq. ft)
- ▭ Proposed 6' Excavation (~38 sq. ft)

Document Path: G:\1-Projects\US PROJECTS\EOG Resources Inc\22E-00 23015 - Federal AB-B Battery\Figure 1 Characterization Schematic (22E-00123).mxd



0 4.25 8.5 17 ft.  
 NAD 1983 UTM Zone 13N  
 Date: Apr 18/23

Map Center:  
 Lat: 32.698413,  
 Long: -104.513487



### Characterization Schematic Federal AB-B Battery

FIGURE:

1



Geospatial data presented in this figure may be derived from external sources and Vertex does not assume any liability for inaccuracies. This figure is intended for reference use only and is not certified for legal, survey, or engineering purposes.

Note: Imagery from Google Earth, 2023 georeferenced by Vertex. Borehole locations from GPS, Vertex Professional Services, Ltd., 2023.

## ATTACHMENT 3

Client Name: EOG Resources  
 Site Name: Federal AB-B Battery  
 NMOCD Tracking #: nMCS0124838636  
 Project #: 22E-00123-15  
 Lab Report(sX): 2303966, 2303A35, 2303966, 2303A35, 2111431

Table 2. Initial Characterization Sample Field Screen and Laboratory Results - Depth to Groundwater <50 feet bgs

Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFlag)	Chloride Concentration (ppm)	Volatile		Extractable					Chloride Concentration (mg/kg)
						Benzene (mg/kg)	BTEX (Total) (mg/kg)	Gasoline Range Organics (GRO) (mg/kg)	Diesel Range Organics (DRO) (mg/kg)	Motor Oil Range Organics (MRO) (mg/kg)	(GRO + DRO) (mg/kg)	Total Petroleum Hydrocarbons (TPH) (mg/kg)	
BH21-01	1	11/05/2021	0	494	243	ND	ND	ND	20	78	20	98	67
BH21-02	1	11/05/2021	0	6,930	1,694	ND	ND	ND	<b>920</b>	<b>1200</b>	<b>920</b>	<b>2120</b>	<b>1100</b>
BH21-02	1.5	11/05/2021	0	678	1,987	ND	ND	ND	<b>120</b>	<b>180</b>	<b>120</b>	<b>300</b>	<b>1300</b>
TP23-02	2	03/16/2023	-	-	1,350	-	-	-	-	-	-	-	-
TP23-02	4	03/16/2023	-	-	1,453	-	-	-	-	-	-	-	-
TP23-02	6	03/16/2023	-	30	538	ND	ND	ND	ND	ND	ND	ND	510
BH21-03	1	11/05/2021	0	21	971	ND	ND	ND	ND	ND	ND	ND	440
BH21-03	1.75	11/05/2021	0	31	855	ND	ND	ND	ND	ND	ND	ND	440
BH21-04	1	11/05/2021	0	36	99	ND	ND	ND	ND	ND	ND	ND	ND
TP23-05	0	03/16/2023	-	92	510	ND	ND	ND	ND	ND	ND	ND	360
TP23-05	2	03/16/2023	-	15	398	ND	ND	ND	ND	ND	ND	ND	400
TP23-06	0	03/16/2023	-	-	1,530	-	-	-	-	-	-	-	-
TP23-06	2	03/16/2023	-	-	1,240	-	-	-	-	-	-	-	-
TP23-07	0	03/16/2023	-	1,072	150	-	-	-	-	-	-	-	-
TP23-07	2	03/16/2023	-	86	188	-	-	-	-	-	-	-	-
TP23-08	0	03/16/2023	-	2,000	140	-	-	-	-	-	-	-	-
TP23-08	2	03/16/2023	-	263	113	-	-	-	-	-	-	-	-
TP23-09	0	03/16/2023	-	1,175	63	-	-	-	-	-	-	-	-
TP23-09	2	03/16/2023	-	65	80	-	-	-	-	-	-	-	-
TP23-10	0	03/16/2023	-	77	35	ND	ND	ND	ND	ND	ND	ND	ND
TP23-10	2	03/16/2023	-	25	63	ND	ND	ND	ND	ND	ND	ND	ND
TP23-11	0	03/16/2023	-	599	220	-	-	-	-	-	-	-	-
TP23-11	2	03/16/2023	-	126	330	-	-	-	-	-	-	-	-
TP23-14	0	03/17/2023	-	2,000	565	-	-	-	-	-	-	-	-
TP23-14	2	03/17/2023	-	1,147	548	-	-	-	-	-	-	-	-
TP23-15	0	03/17/2023	-	-	828	-	-	-	-	-	-	-	-
TP23-15	2	03/17/2023	-	-	1,128	-	-	-	-	-	-	-	-
TP23-16	0	03/17/2023	-	464	308	-	-	-	-	-	-	-	-
TP23-16	2	03/17/2023	-	87	330	-	-	-	-	-	-	-	-
TP23-17	0	03/17/2023	-	206	355	-	-	-	-	-	-	-	-
TP23-17	2	03/17/2023	-	83	290	-	-	-	-	-	-	-	-
TP23-18	0	03/17/2023	-	-	1,337	-	-	-	-	-	-	-	-
TP23-18	2	03/17/2023	-	-	493	-	-	-	-	-	-	-	-
TP23-19	0	03/17/2023	-	423	185	-	-	-	-	-	-	-	-

"ND" Not Detected at the Reporting Limit

"-" indicates not analyzed/assessed

**Bold and grey shaded indicates exceedance outside of NMOCD Closure Criteria (on-pad)**



## ATTACHMENT 4



**EOG Resources, Inc.**  
Artesia Division Office  
104 S. 4<sup>th</sup> Street  
Artesia, N. M. 88210

August 31, 2022

Bradford Billings  
EMNRD  
1220 South St. Francis Drive  
Santa Fe, NM 87505

Re: Federal AB-B Battery  
30-015-23643  
M-32-18S-25E  
Eddy County, NM  
nMCS0124838636

EOG Resources, Inc. is submitting the enclosed Closure Report for the above referenced site which currently has an open incident on the NMOCD E-Permitting website. The report is being submitted in reference to the C-141 Final dated and submitted August 17, 2001. EOG Resources, Inc. has included a C-141 Closure on the most current form within this Closure Report, and hereby requests closure of the open incident.

If you have any questions, feel free to call me at (575) 748-1471.

Respectfully,

*Chase Settle*

Chase Settle  
Rep Safety & Environmental Sr  
EOG Resources, Inc.

Federal AB-B Battery  
Closure Report  
#nMCS0124838636



August 31, 2022

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**Federal AB-B Battery**

**Closure Report**

**30-015-23643**

**M-32-18S-25E**

**Eddy County, NM**

**August 31, 2022**

**nMCS0124838636**

Federal AB-B Battery  
Closure Report  
#nMCS0124838636



August 31, 2022

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**Figures**

Figure 1: Comprehensive Site Map

**Table**

Table 1: Comprehensive Analytical Table

**Appendices:**

Appendix A: Current C-141 Closure

Appendix B: Original C-141 Final

Appendix C: Internal YPC Spill Report/Photos

Appendix D: 2019 Remediation Photos

Appendix E: 2019 Remediation Closure Report

Appendix F: 2021 Laboratory Analytical Report

Appendix G: 2021 Vertex Field Notes

Federal AB-B Battery  
Closure Report  
#nMCS0124838636



August 31, 2022

## I. Location

The site is located in Eddy County, New Mexico approximately 8.6 miles southwest of Atoka.

## II. Background

On August 16, 2001, Yates Petroleum Corporation (YPC) had a release of 10 barrels of BS & W and produced water mix at the Federal AB-B Battery when a lightning strike occurred, causing a fiberglass gun-barrel and a fiberglass storage tank to become engulfed in flames. Local fire authorities responded to extinguish the fire, which unavoidably spread ash, fire debris, and some remaining produced fluids across the facility and pad. Areas impacted included a four (4) foot wide by fifty (50) foot long area adjacent to the west side of the battery along the lease road, approximately thirty (30) feet by fifty (50) feet on the east side of the pad, and areas around the facility equipment. Pictures included in Appendix C demonstrate the extent of the impacts created by the fire and activities in extinguishing the fire.

Once the fire was extinguished, according to the C-141 Final (Appendix B) submitted August 17, 2001, the fire debris and residue was to be excavated/removed from location with any remaining water residue disced into the site for in situ treatment.

## III. Scope of Work Completed

During divestiture activities in early 2021, it was discovered through a search of the NMOCD E-Permitting system that this open Incident existed for this site. EOG Resources, Inc. (EOG) could not locate the C-141 or any further documentation through the NMOCD system but were fortunate in finding the original release documents within our internal filing system. EOG realized almost immediately that a large portion of the impacted area had overlapped with a recent remediation that had concluded in early 2020.

In 2019, EOG began remediation at the site for a 20 barrel release when high winds caused a pvc water leg to break on a 3-Phase Vertical Separator. Initial pictures of the release area indicated impacts were isolated to the east of the separator before flowing south remaining entirely within the battery berm. These initial pictures, as well as final excavation pictures are included as Appendix D. Through the course of the initial assessment, it became obvious that some historical impacts were being encountered, which increased the footprint of the remediation area far beyond the area impacted by the recent release. Note that with the release occurring in 2019, the current Spill Rule (NMAC 19.15.29) was in effect, so the remediation limits had become more stringent than they were in the early 2000's. During the remediation of the 2019 release, the site was excavated until confirmation samples indicated Table 1 thresholds had been achieved, then a Closure Report was submitted to NMOCD for review, with approval coming May 28, 2020. A Comprehensive Site Map and the 2019 Closure Report are included with this report as Figure 1 and Appendix E to provide illustration and detail of the overlap involved with the release areas, as well as the remediation efforts completed in 2019 which address both areas. Note that the 2001 impacted area depicted on the Figure 1 Comprehensive Site Map is approximate, and based on the initial pictures included with the report in Appendix C.

EOG also retained Vertex to perform assessment samples along the lease road to determine if impacts from that area appeared to have been addressed appropriately during the initial activities in 2001. Vertex mobilized to the site on November 5, 2021, to collect samples at 4 discrete sample points within areas believed to have been impacted during the 2001 incident. BH21-01 through BH21-04 were spread out on the west side of the battery in an area which the initial photos appear to show had been impacted, which had not been addressed by the remediation activities completed for the 2019 release. The points are depicted on the Figure 1 map. Samples were collected for laboratory analysis following NMOCD soil sampling procedures, then submitted to Hall Environmental Analysis Laboratory under strict chain-of-custody (COC) protocols for

Federal AB-B Battery  
Closure Report  
#nMCS0124838636



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analysis of BTEX (EPA Method 8021B), TPH (EPA Method 8015D) and chloride (EPA Method 300.0). Notes of the Vertex activities are included as Appendix G.

Once analytical data (Appendix F) returned from the laboratory, a review was conducted to determine if the results fell within the Recommended Remediation Action Levels (RRAL) according to the *New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases*, dated August 13, 1993, as these were the operating standards for that time period. Based on the results, provided in Table 1 Comprehensive Analytical Table, it demonstrates that the release was address appropriately for era, as all BTEX and TPH results are below the RRAL listed in the 1993 Guidelines provided by NMOCD. There is one sample that displays chloride concentrations above the thresholds of the current Spill Rule (NMAC 19.15.29), however prior to 2018 chloride did not have a RRAL, and during this time period, early 2000's, there are a number of instances of sites receiving approved closure with concentrations well above the current results by thousands of parts per million. Since the sample results indicated that remediation was completed appropriately for the time, and that the soil still adheres to the RRALs which were in effect based on the NMOCD Guidelines distributed in 1993, no further work was completed for this small portion of road area.

#### IV. **Closure Request**

This release, remediation work, and original C-141 Final submission occurred prior to the passage of the current Spill Rule (NMAC 19.15.29), and therefore must be reviewed by the standards required during the time period in which that release was initially addressed. With the available site remediation information, the area addressed by the 2019 remediation activities and the current 2021 soil analytical results indicating the road portion to be within the RRALs from that time period, EOG Resources, Inc. believes enough evidence exists to substantiate that remedial activities were completed appropriately for this site, and requests Closure of nMCS0124838636. The current C-141 Closure Form is included with this Closure Report as Appendix A.

Federal AB-B Battery  
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# Figure

# Comprehensive Site Map



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# Table

# Comprehensive Analytical Table

Sample ID	Depth (ft. bgs)	Date	Benzene	Toluene	Ethylbenzene	Xylenes	BTEX	TPH (GRO)	TPH (DRO)	TPH EXT DRO	Total TPH	Chlorides
BH21-01-1'	1	11/05/21	ND	ND	ND	ND	ND	ND	20	78	98	67
BH21-02-1'	1	11/05/21	ND	ND	ND	ND	ND	ND	920	1200	2120	1100
BH21-02-1.5'	1.5	11/05/21	ND	ND	ND	ND	ND	ND	120	180	300	1300
BH21-03-1'	1	11/05/21	ND	ND	ND	ND	ND	ND	ND	ND	ND	440
BH21-03-1.75'	1.75	11/05/21	ND	ND	ND	ND	ND	ND	ND	ND	ND	440
BH21-04-1'	1	11/05/21	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
V1C-3.5'	3.5'	11/14/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	32
V2C-3.5'	3.5'	11/14/19	<0.050	<0.050	0.060	0.165	<0.300	60.8	7360	1740	9160.8	96
V2C-4'	4'	12/12/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	1500	572	2072	144
V2C-4.5'	4.5'	01/09/20	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	736
V3C-2'	2'	11/14/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	524	177	701	128
V4C-1.5'	1.5'	11/14/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	277	127	404	448
V5C-2.5'	2.5'	11/14/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	22.6	<10.0	22.6	432
V6C-2.5'	2.5'	11/14/19	<0.100	1.28	3.19	9.88	14.3	253	1660	239	2152	720
V6C-3'	3'	12/12/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	197	176	373	336
V7C-7.5'	7.5'	11/14/19	9.83	93.4	85.0	192	379	4440	16200	2270	22910	80
V7C-9'	9'	12/12/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	416
V8C-7.5'	7.5'	11/14/19	<0.100	1.04	3.24	8.34	12.6	146	1190	167	1503	48
V8C-9'	9'	12/12/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	15.2	<10.0	15.2	576
H1	0-7.5	11/14/19	<0.050	<0.050	0.089	0.290	0.379	13.1	1250	298	1561.1	480
H1-2	0-9	12/12/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	560
H2	0-7.5	11/14/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	10.2	<10.0	10.2	224
H3	0-3.5	11/14/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	965	384	1349	720
H3-2	0-4	12/12/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	432
H4	0-1.5	11/14/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	149	74.8	223.8	1170
H4-2	0-1.5	12/12/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	32
H5	0-2.5	11/14/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	98.8	50.9	149.7	448
H6	0-2.5	11/14/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	150	36.9	186.9	384
H7	0-2.5	11/14/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	432	341	773	736
H7-2	0-2.5	12/12/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	80
H8	0-2	11/14/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	104	47.8	151.8	192
H9	0-3.5	11/14/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	664	372	1036	624
H9-2	0-4	12/12/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	656
H9-3	0-4.5	01/09/20	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	528
H10	0-7.5	11/14/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	123	40.2	163.2	112

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# Appendix A

## Current C-141 Closure

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

State of New Mexico  
Energy Minerals and Natural  
Resources Department  
  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

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

Incident ID	nMCS0124838636
District RP	
Facility ID	
Application ID	

## Release Notification

### Responsible Party

Responsible Party <b>EOG Resources, Inc.</b>	OGRID <b>7377</b>
Contact Name <b>Chase Settle</b>	Contact Telephone <b>575-748-1471</b>
Contact email <b>Chase_Settle@eogresources.com</b>	Incident # (assigned by OCD) <b>nMCS0124838636</b>
Contact mailing address <b>104 S. 4th Street, Artesia, NM 88210</b>	

### Location of Release Source

Latitude 32.69833 Longitude -104.51331  
*(NAD 83 in decimal degrees to 5 decimal places)*

Site Name <b>Federal AB-B Battery</b>	Site Type <b>Battery</b>
Date Release Discovered <b>08/16/2001</b>	API# (if applicable) <b>30-015-23643</b>

Unit Letter	Section	Township	Range	County
<b>M</b>	<b>32</b>	<b>18S</b>	<b>25E</b>	<b>Eddy</b>

Surface Owner:  State  Federal  Tribal  Private (Name: 4-Dinkus Ranch)

### Nature and Volume of Release

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

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input checked="" type="checkbox"/> Other (describe) BS&W & Produced Water Mix	Volume/Weight Released (provide units) <b>10 Bbls</b>	Volume/Weight Recovered (provide units) <b>0 bbls</b>
Cause of Release <b>Please refer to the original C-141 for details of nMCS0124838636.</b>		

Incident ID	nMCS0124838636
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? <b>Due to the lightning causing a fire, the release is considered a major.</b>
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? <b>Yes, by Darrell Atkins to Van Barton- OCD and Jim Amos- BLM on 8/17/01 at 14:30.</b>	

### Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:  	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Chase Settle</u>	Title: <u>Rep Safety &amp; Environmental Sr</u>
Signature: <u>Chase Settle</u>	Date: <u>08/31/2022</u>
email: <u>Chase_Settle@eogresources.com</u>	Telephone: <u>575-748-1471</u>
<b><u>OCD Only</u></b>  Received by: _____ Date: _____	

Incident ID	nMCS0124838636
District RP	
Facility ID	
Application ID	

## Closure

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

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

- A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- Description of remediation activities

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

Printed Name: Chase Settle Title: Rep Safety & Environmental Sr  
 Signature: Chase Settle Date: 08/31/2022  
 email: Chase\_Settle@eogresources.com Telephone: 575-748-1471

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

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

Closure Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name: \_\_\_\_\_ Title: \_\_\_\_\_

Federal AB-B Battery  
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# Appendix B

## Original C-141 Final

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 South First, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources  
Oil Conservation Division  
2040 South Pacheco  
Santa Fe, NM 87505

Form C-141  
Revised March 17, 1999

Submit 2 Copies to appropriate  
District Office in accordance  
with Rule 116 on back  
side of form

### Release Notification and Corrective Action

#### OPERATOR

Initial Report     Final Report

Name of Company	Yates Petroleum Corporation	Contact	Jerry Fanning, Jr.
Address	105 South Fourth Street Artesia, NM 88210	Telephone No.	(505) 748-1471
Facility Name	FEDERAL AB -B BATTERY	Facility Type	Tank Battery

Surface Owner	Mineral Owner	Federal	Lease No.	NM0487738
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#### LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
O	32	18S	25E					Eddy

#### NATURE OF RELEASE

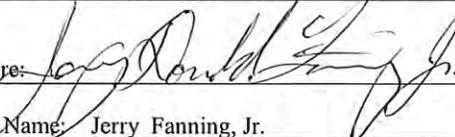
Type of Release	Volume of Release	Volume Recovered
BS & W / Produced Water	10 BBL WATER	0 BO 0 BW
Source of Release	Date and Hour of Occurance	Date and Hour of Discovery
Tanks	8-16-01, 14:00	8-16-01, 14:00
Was Immediate Notice Given?	If YES, To Whom?	
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	Van Barton-OCD Artesia, Jim Amos-BLM Carlsbad	
By Whom?	Date and Hour	
Darrel Atkins	8-17-01, 14:30	
Was a Watercourse Reached?	If YES, Volume Impacting the Watercourse.	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*  
**Lightning struck and burned tank battery. Area secured to insure safety of personnel and public. Atoka volunteer fire department responded. Fire controlled and extinguished .**

Describe Area Affected and Cleanup Action Taken.\*  
**Area affected included lease road on the west side of tank battery and approximately a 4 foot x 50 foot area adjacent to west side of the lease road.  
This area had a thin surface layer and spray of BS & W which came from the burned gun barrel. Water and residue as a result of the fire departments efforts covered an area approximately 30 feet x 50 feet along and just outside the east fence around the battery . All of this residue contained on location.  
Fire debris and residue will be removed from location. Remaining water residue will be disced and treated on location.**

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: 	<u>OIL CONSERVATION DIVISION</u>		
Printed Name: Jerry Fanning, Jr.	Approved by District Supervisor:		
Title: Environmental Field Technician	Approval Date:	Expiration Date:	
Date: August 17, 2001      Phone: (505) 748-1471	Conditions of Approval:		Attached <input type="checkbox"/>

New Mexico Office of the State Engineer  
Well Reports and Downloads

Township:  Range:  Sections:

NAD27 X:  Y:  Zone:  Search Radius:

County:  Basin:  Number:  Suffix:

Owner Name: (First)  (Last)   Non-Domestic  Domestic  
 All

Well / Surface Data Report	Avg Depth to Water Report
Water Column Report	
Clear Form	WATERS Menu
Help	

AVERAGE DEPTH OF WATER REPORT 10/17/2001

Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	(Depth Water in Feet)		
								Min	Max	Avg
RA	18S	25E	32				1	300	300	300

Record Count: 1

\*\*\*\*\*  
 \*\*\* ACTIVITY REPORT \*\*\*  
 \*\*\*\*\*

TRANSMISSION OK

TX/RX NO.	8442
CONNECTION TEL	915052345927
CONNECTION ID	
START TIME	08/17 14:17
USAGE TIME	01'57
PAGES	2
RESULT	OK

# YATES PETROLEUM CORPORATION

105 S. 4th Street  
Artesia, NM 88210

# FAX

DATE: 8-17-01

NUMBER OF PAGES INCLUDING COVER SHEET: 2

TO: Jim Amos  
Carlsbad - BLM

PHONE: 234-5909

FAX: 234-5927

CC:

FROM: JERRY FANNING JR.  
YATES PETROLEUM CORP.  
ENVIRONMENTAL Field Technician  
105 S. 4th  
ARTESIA, N.M. 88210

PHONE: 505-748-4195

FAX: 505-748-4654

REMARKS:  Urgent  For Your Review  Reply ASAP  Please Comment

~~Sent closure notice~~  
Sent final report

\*\*\*\*\*  
 \*\*\* ACTIVITY REPORT \*\*\*  
 \*\*\*\*\*

TRANSMISSION OK

TX/RX NO.	8444	
CONNECTION TEL		97489720
CONNECTION ID		
START TIME	08/17 14:21	
USAGE TIME	03'07	
PAGES	2	
RESULT	OK	

**YATES PETROLEUM CORPORATION**  
105 S. 4th Street  
Artesia, NM 88210

# FAX

DATE: 8-17-01

NUMBER OF PAGES INCLUDING COVER SHEET: 2

TO: Mike Stubblefield  
ARTESIA OCD

PHONE: 748-1283

FAX: 748-9720

CC:

FROM: Jerry Fanning Jr.  
YATES Petroleum Corp.  
ENVIRONMENTAL Field Technician  
105 S. 4th  
ARTESIA, N.M. 88210

PHONE: 505-748-4195

FAX: 505-748-4654

REMARKS:  Urgent  For Your Review  Reply ASAP  Please Comment

sent final report

Federal AB-B Battery  
Closure Report  
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# Appendix C

## Internal YPC Spill Report/Photos



# BREAKS, SPILLS AND LEAKS REPORT

PERSON REPORTING DARRRELL / RON Jim Amos - BLM  
VAN BARTON - OCD

**1. LOCATION:**

Name of well or facility: FED "AB" "ABB" TANK BATTERY  
Location: SW SW Section 32 Township 18S Range 25E County: EDDY  
Surface owner: \_\_\_\_\_ Mineral owner: Fee  Federal  State

**2. TIME OF INCIDENT:**

Date: 8/16/01 Time: 2:00 am / pm Time Reported: 2:30 am / pm  
Supervisor's Name (Person Incident was Report to) \_\_\_\_\_

**3. SOURCE AND CAUSE:**

LIGHTNING

**4. TYPE OF DISCHARGE:**

Crude Oil  Condensate  Produced Water  Gas  Other BS&W

**5. QUANTITY:**

Estimated Volumes Discharged: \_\_\_\_\_ Barrels of Oil 10 Barrels of Water  
\_\_\_\_\_ Barrels of \_\_\_\_\_  
\_\_\_\_\_ MCF Gas  
Estimated Volumes Recovered: -0- Barrels of Oil -0- Barrels of Water  
-0- Barrels of \_\_\_\_\_

**6. SITE CHARACTERISTICS:**

Weather Conditions: Rain & Lightning  
Soil Type and Condition: Caliche  
Distance and Direction to fresh water wells or watercourse: \_\_\_\_\_  
Secondary Containment type and condition: \_\_\_\_\_  
Miscellaneous: \_\_\_\_\_

**7. IMMEDIATE CORRECTIVE ACTION:**

Action and time taken to control incident: FIRE DEPARTMENT RESPONDED & EXTINGUISHED FIRE



FEDERAL AB-B BATTERY  
8-17-01



















Federal AB-B Battery  
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# Appendix D

## 2019 Remediation Photos

# 2019 Release Images

## Initial Images



# Excavation Images







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# Appendix E

## 2019 Remediation Closure Report

## Hamlet, Robert, EMNRD

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**From:** Hamlet, Robert, EMNRD  
**Sent:** Thursday, May 28, 2020 1:45 PM  
**To:** Katie Jamison  
**Cc:** Bratcher, Mike, EMNRD; Venegas, Victoria, EMNRD; Eads, Cristina, EMNRD; CFO\_Spill, BLM\_NM  
**Subject:** Closure Approval - EOG - Federal AB B Battery - (Incident #NRM1932255004) (2RP-5701)  
**Attachments:** Closure Approval - EOG - Federal AB B Battery.pdf

Katie,

We have received your closure report and final C-141 for **Incident #NRM1932255004 Federal AB B Battery**, thank you. This closure is approved.

Please let me know if you have any further questions.

Regards,

Robert J Hamlet  
State of New Mexico  
Energy, Minerals, and Natural Resources  
Oil Conservation Division  
811 S. First St., Artesia NM 88210  
(575) 748-1283  
[Robert.Hamlet@state.nm.us](mailto:Robert.Hamlet@state.nm.us)

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to groundwater, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.



EOG Resources, Inc.  
Artesia Division Office  
104 S. 4<sup>th</sup> Street  
Artesia, N. M. 88210

January 17, 2020

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

Re: Federal AB B Battery  
M-32-18S-25E  
Eddy County, NM  
2RP-5701

EOG Resources, Inc. is submitting the enclosed Closure Report for the above referenced site. The report is being submitted accompanying the C-141 Final.

**EOG Resources Inc. requests closure.**

If you have any questions, feel free to call me at (575) 748-1471.

Respectfully,

A handwritten signature in cursive script that reads "Chase Settle".

Chase Settle  
Rep Safety & Environmental II  
EOG Resources, Inc.



**EOG Resources, Inc.**  
**Federal AB B Battery**  
**Closure Report**  
**M-32-18S-25E**  
**Eddy County, NM**  
**January 17, 2020**  
**2RP-5701**



---

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Appendix D: Laboratory Soil Data

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**I. Location**

From the intersection of Hwy 285 and West Kincaid Ranch Road (CR 38), head west for 8 miles, then take the lease road north and follow main lease road for 2,870 feet to the location.

**II. Background**

On October 18, 2019, EOG Resources, Inc. submitted to the NMOCD District II office a Form C-141 for the release of 1 B/CO and 19 B/PW with 1 B/CO recovered, which occurred on October 11, 2019. This release was caused by high winds breaking the water leg on a 40 barrel capacity 3-Phase Vertical Separator. A vacuum truck was called to recover the standing fluid and a backhoe crew was contracted to excavate visually impacted soils. Excavated soils were sent to a NMOCD approved disposal facility during the initial excavation activities. Initial soil sampling was conducted October 17, 2019, after providing notice of sampling to NMOCD and BLM on October 14, 2019. Based on sample results from the third party laboratory used for analysis, further excavation of the site was undertaken on November 14, 2019, with notification provided to NMOCD and BLM on November 12, 2019. Following this sampling event, the excavation depth and size was again increased based on the laboratory results. Sampling again occurred on December 12, 2019, with notification provided to NMOCD and BLM on December 9, 2019. Further excavation work was completed based on the results of the December 12, 2019, sampling activities. On January 7, 2020, notification of sampling was provided to NMOCD and BLM for January 9, 2020. Also on January 7, 2020, EOG requested an extension from NMOCD for the Closure Report, which was approved the same day. All soil samples were sent to a third party laboratory for analysis and laboratory reports are included as Appendix D.

**III. Surface and Ground Water**

Area geology is Cenozoic Quaternary. Based on information from the New Mexico Office of the State Engineer, there wasn't sufficient data from the United States Geological Survey National Water Information System (USGS), regarding this location (Section 32, T18S-R25E), depth to groundwater was determined to be 303 feet with the nearest water wells being approximately 0.85 mile to the north and 0.77 mile to the southeast. The site sits between the 2 water well sites, with the north well having a groundwater depth of 300 feet. The southeast well has a groundwater depth of 305 feet.

Watercourses in the area are dry except for infrequent flows in response to major precipitation events, with the nearest body of surface water being Brantley Lake at approximately 9.5 miles away. The site is located outside of critical karst areas and outside of the 100-year floodplain.

**IV. NMOCD Assessment Criteria**

The site assessment criteria is as follows:

- Depth to ground water > 100'
- Wellhead Protection Area > 1000'
- Distance to surface water body > 1000'

Based on the assessment criteria, the NMOCD established RRALs for this site are:

- Benzene 10 mg/kg
- BTEX 50 mg/kg
- TPH 2,500 mg/kg
- GRO + DRO 1,000 mg/kg
- Chlorides 20,000 mg/kg

---

**V. Soils**

USDA Natural Resources Conservation Service (NRCS) classifies soil in the area as Upton-Reagan, with 0-9% slopes.

**VII. Remediation Work**

Initial excavation of the site began on October 11, 2019. Activities included the removal of saturated and visibly impacted soils with those soils being hauled to a NMOCD approved disposal facility. The site was excavated to a depth of two (2) to three (3) feet with initial horizontal edges also determined by the initial excavation. Vertical delineation sampling was then conducted within the release area, which provided further vertical excavation guidance, including the removal of the production tanks and equipment within the battery once staining was discovered re-emerging from below the tanks between excavation activities. Confirmation vertical and horizontal sampling was then conducted after those excavation activities were complete. These samples displayed that there was need for more excavation vertically, as well as horizontally. Sample activities conducted December 12, 2019, identified that only 2 areas required further excavation. One horizontal area had not met the guidance of 19.15.29.13 NMAC with a resulting chloride concentration of 656 mg/kg, and one area needed further vertical excavation due to DRO concentration of 1500 mg/kg. The sidewall excavation was extended an additional foot and the vertical area was excavated an additional half foot. The confirmation samples collected on January 9, 2020, confirmed that all vertical sample results had achieved the Table 1 standards, and horizontal sample results confirmed that all sidewalls were within the guidelines for 19.15.29.13. All horizontal samples were collected by way of 5-point composite samples, and no vertical or horizontal samples were representative of more than 200 square feet.

All excavated soils were hauled to an NMOCD approved facility for disposal and the backfill for the site consists of locally sourced, clean, non-contaminated caliche soils of a similar type as was removed. This release occurred within the berm of an active production facility, therefore no revegetation efforts will be undertaken in the remediation of this release.

The C-141 Final is included with this closure report, EOG Resources, Inc. requests closure.

# Table 1

## Soil Analytical Data



# Soil Analytical Data

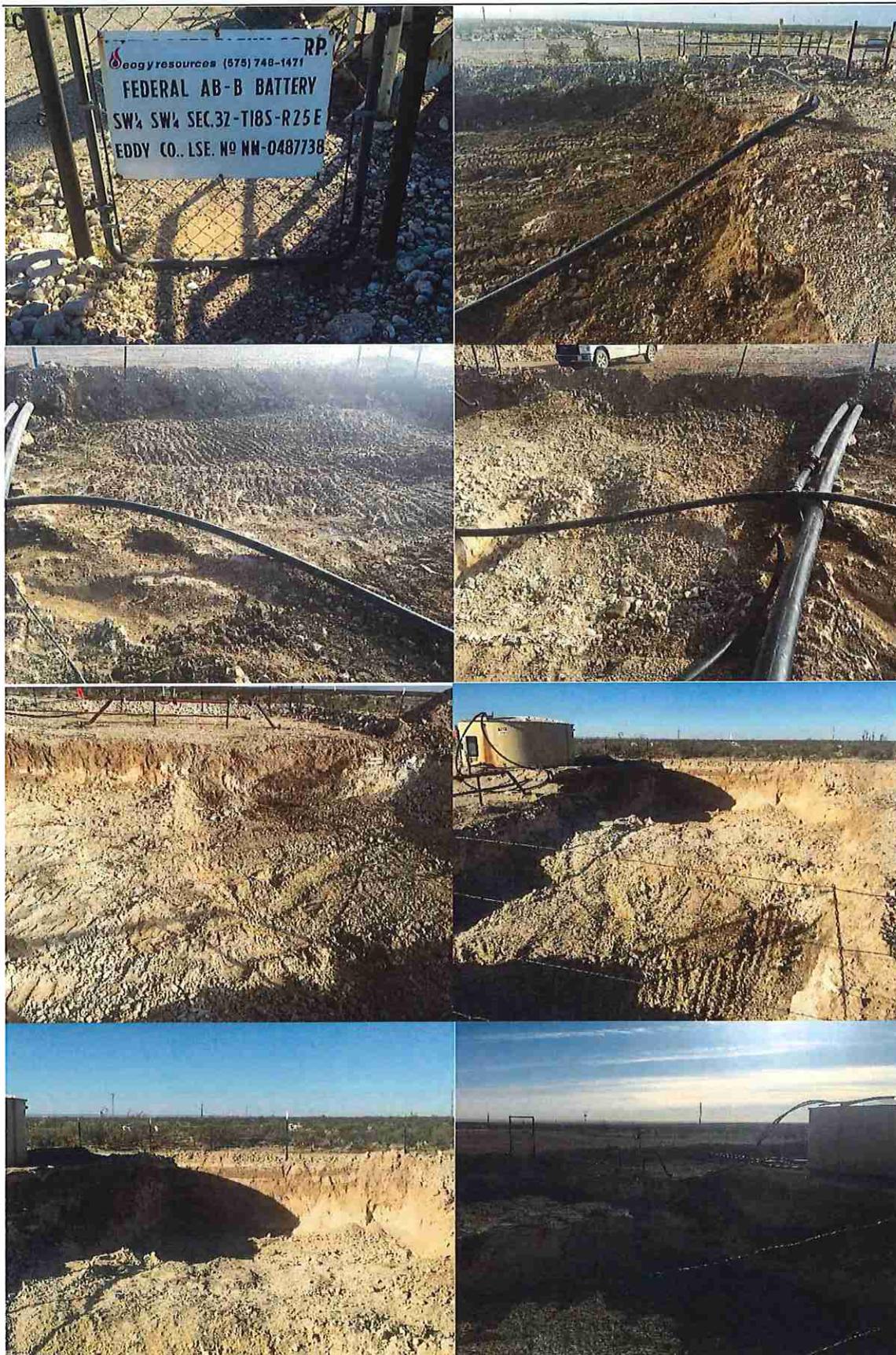
Sample ID	Depth (ft. bgs)	Date	Benzene	Toluene	Ethylbenzene	Xylenes	BTEX	TPH (GRO)	TPH (DRO)	TPH EXT DRO	Total TPH	Chlorides
V1-2'	2'	10/17/19	<2.00	11.5	38.3	90	140	2760	12900	2320	17980	112
V1-3'	3'	10/17/19	<2.00	15.7	43.6	117	176	2750	11800	2170	16720	208
V1-4'	4'	10/17/19	<0.050	<0.050	0.057	<0.150	<0.300	<10.0	10.2	12.4	22.6	352
V1C-3.5'	3.5'	11/14/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	32
V2-3'	3'	10/17/19	<0.500	1.74	8.51	23.9	34.2	1180	14400	5130	20710	1410
V2-4'	4'	10/17/19	<0.050	<0.050	<0.050	0.194	<0.300	96.6	2960	1060	4116.6	128
V3-1'	1'	10/17/19	<0.050	<0.050	0.219	1.26	1.48	82.3	3320	685	4087.3	2840
V3-2'	2'	10/17/19	<0.050	<0.050	0.544	0.620	1.16	<10.0	398	105	503	240
V3-2.5'	2.5'	10/17/19	<0.050	<0.050	0.171	0.340	0.511	29.8	554	165	748.8	48
V4-1'	1'	10/17/19	<0.500	4.38	10.1	25.1	39.5	746	17900	3510	22156	10800
V4-1.25'	1.25'	10/17/19	<0.500	<0.500	9.76	22.9	32.6	609	4060	599	5268	1330
V5-2'	2'	10/17/19	<0.500	7.97	19.2	41.9	69	933	11600	2060	14593	7360
V5-2.25'	2.25'	10/17/19	<0.050	<0.050	0.071	0.173	<0.300	<10.0	27.4	<10.0	27.4	80
V6-2'	2'	10/17/19	9.29	189	158	274	631	3740	10100	1400	15240	5440
V6-2.25'	2.25	10/17/19	0.070	0.962	0.992	1.93	3.96	66.9	488	64.5	619.4	752
V1C-3.5'	3.5'	11/14/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	32
V2C-3.5'	3.5'	11/14/19	<0.050	<0.050	0.060	0.165	<0.300	60.8	7360	1740	9160.8	96
V2C-4'	4'	12/12/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	1500	572	2072	144
V2C-4.5'	4.5'	01/09/20	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	736
V3C-2'	2'	11/14/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	524	177	701	128
V4C-1.5	1.5'	11/14/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	277	127	404	448
V5C-2.5'	2.5'	11/14/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	22.6	<10.0	22.6	432
V6C-2.5'	2.5'	11/14/19	<0.100	1.28	3.19	9.88	14.3	253	1660	239	2152	720
V6C-3'	3'	12/12/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	197	176	373	336
V7C-7.5'	7.5'	11/14/19	9.83	93.1	85.0	192	379	4440	16200	2270	22910	80
V7C-9'	9'	12/12/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	416
V8C-7.5'	7.5'	11/14/19	<0.100	1.01	3.21	8.34	12.6	146	1190	167	1503	48
V8C-9'	9'	12/12/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	15.2	<10.0	15.2	576
H1	0-7.5	11/14/19	<0.050	<0.050	0.089	0.290	0.379	13.1	1250	298	1561.1	480
H1-2	0-9	12/12/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	560
H2	0-7.5	11/14/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	10.2	<10.0	10.2	224
H3	0-3.5	11/14/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	965	384	1349	720
H3-2	0-4	12/12/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	432
H4	0-1.5	11/14/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	149	74.8	223.8	1170
H4-2	0-1.5	12/12/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	32
H5	0-2.5	11/14/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	98.8	50.9	149.7	448
H6	0-2.5	11/14/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	150	36.9	186.9	384
H7	0-2.5	11/14/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	432	341	773	736
H7-2	0-2.5	12/12/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	80
H8	0-2	11/14/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	104	47.8	151.8	192
H9	0-3.5	11/14/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	664	372	1036	624
H9-2	0-4	12/12/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	656
H9-3	0-4.5	01/09/20	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	528
H10	0-7.5	11/14/19	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	123	40.2	163.2	112

# Figure 1

## Site Map with Sample Points

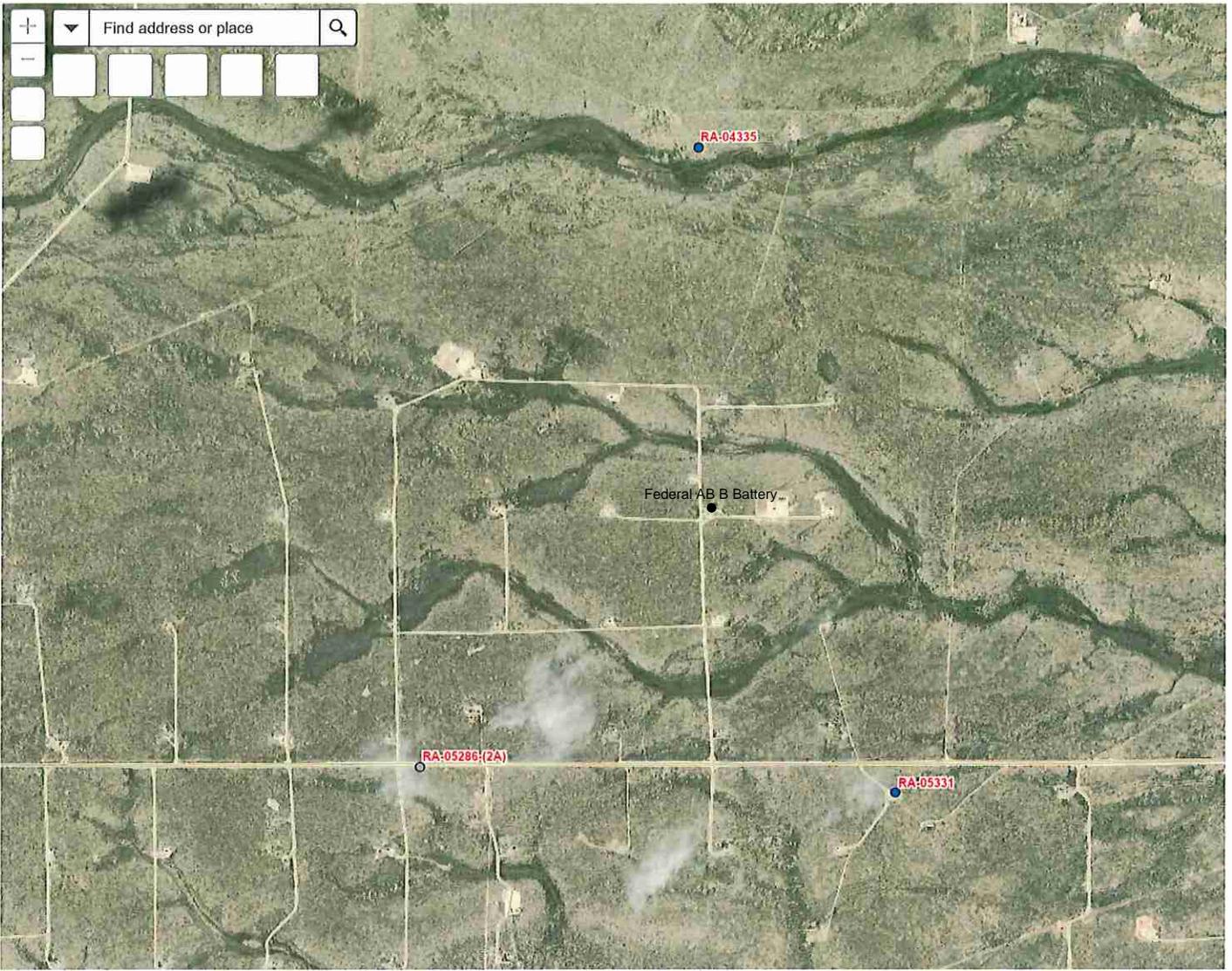


# Photos



# Appendix A

## Depth to Groundwater Information



1:18055  
 0.3mi  
 -104.51032696 Degrees



# 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	Q	Q	Sec	Tws	Rng	X	Y	Distance	WellDepth	WaterColumn
<a href="#">RA 05331</a>	RA	ED	1	1	4	05	19S	25E		546308	3616955	0	460	305 155

Average Depth to Water: 305 feet

Minimum Depth: 305 feet

Maximum Depth: 305 feet

Record Count: 1

**UTM NAD83 Radius Search (in meters):**

**Easting (X):** 546308

**Northing (Y):** 3616955

**Radius:** 100

\*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.

1/13/20 11:16 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER



# 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 Q Q	Sec	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	WaterColumn
<a href="#">RA 04335</a>	RA	CH		1 1 32	18S	25E		545580	3619275*	0	400	300	100
												Average Depth to Water:	300 feet
												Minimum Depth:	300 feet
												Maximum Depth:	300 feet

Record Count: 1

**UTM NAD83 Radius Search (in meters):**

**Easting (X):** 545580

**Northing (Y):** 3619275

**Radius:** 100

\*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.

1/13/20 11:19 AM

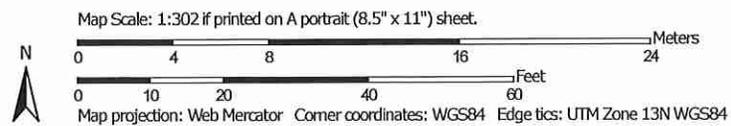
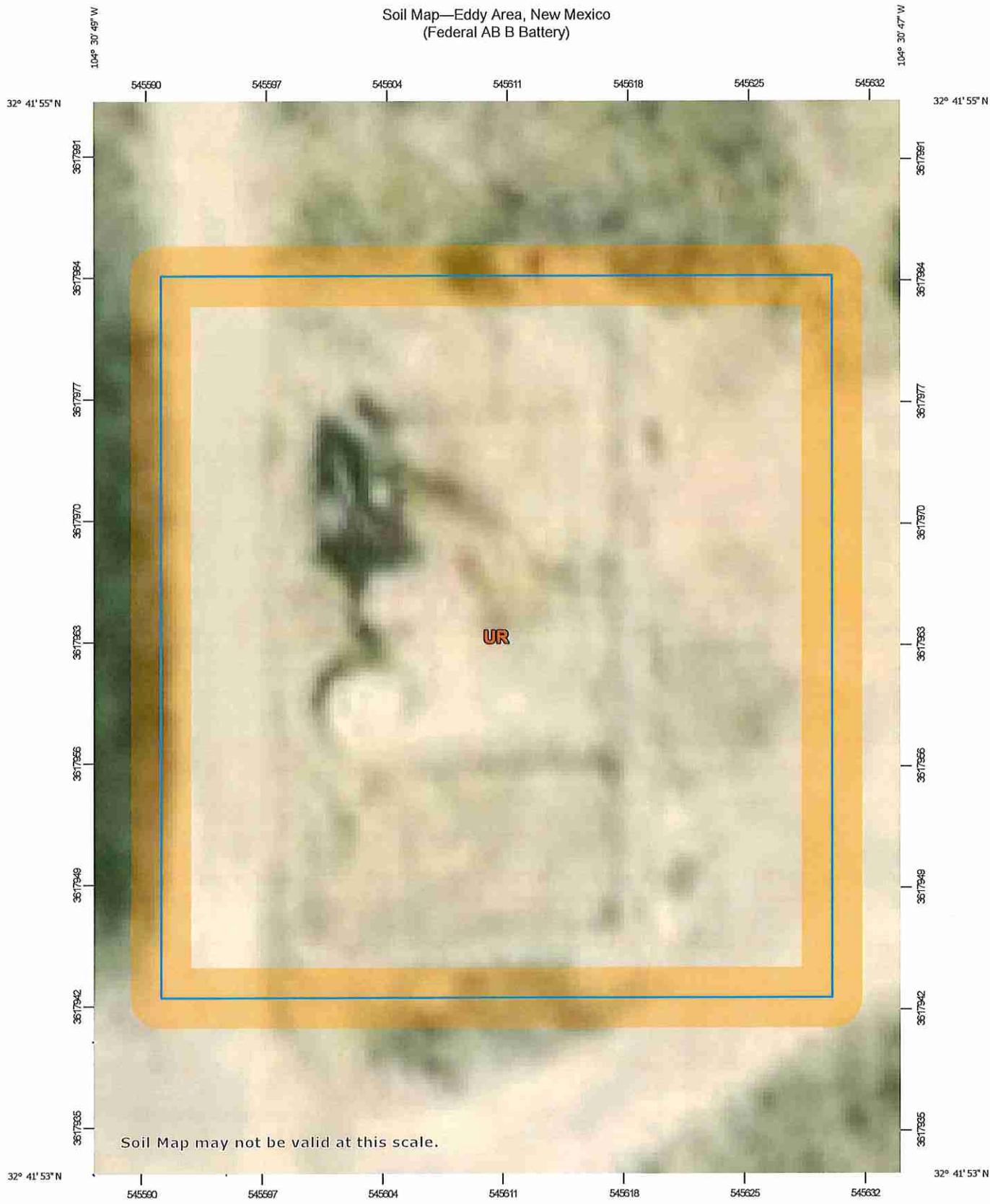
WATER COLUMN/ AVERAGE DEPTH TO WATER

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# Appendix B

## NRCS Soil Classification

Soil Map—Eddy Area, New Mexico  
(Federal AB B Battery)



Soil Map—Eddy Area, New Mexico  
(Federal AB B Battery)

MAP LEGEND

- Area of Interest (AOI)
  - Area of Interest (AOI)
- Soils
  - Soil Map Unit Polygons
  - Soil Map Unit Lines
  - Soil Map Unit Points
- Special Point Features
  - Blowout
  - Borrow Pit
  - Clay Spot
  - Closed Depression
  - Gravel Pit
  - Gravelly Spot
  - Landfill
  - Lava Flow
  - Marsh or swamp
  - Mine or Quarry
  - Miscellaneous Water
  - Perennial Water
  - Rock Outcrop
  - Saline Spot
  - Sandy Spot
  - Severely Eroded Spot
  - Sinkhole
  - Slide or Slip
  - Sodic Spot
- Spoil Area
  - Stony Spot
  - Very Stony Spot
  - Wet Spot
  - Other
  - Special Line Features
- Water Features
  - Streams and Canals
- Transportation
  - Rails
  - Interstate Highways
  - US Routes
  - Major Roads
  - Local Roads
- Background
  - Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL:  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Eddy Area, New Mexico  
Survey Area Data: Version 15, Sep 15, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Nov 30, 2015—Dec 15, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

### Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
UR	Upton-Reagan complex, 0 to 9 percent slopes	0.4	100.0%
<b>Totals for Area of Interest</b>		<b>0.4</b>	<b>100.0%</b>

# Appendix C

## 100 Year Floodplain Map

# FEMA Flood Map Service Center: Search By Address

Navigation

Search

Languages

MSC Home (portal/)

MSC Search by Address (portal/search)

MSC Search All Products (portal/advanceSearch)

MSC Products and Tools (portal/resources/productsandtools)

Hazus (portal/resources/hazus)

LOMC Batch Files (portal/resources/lomc)

Product Availability (portal/productAvailability)

MSC Frequently Asked Questions (FAQs) (portal/resources/faq)

MSC Email Subscriptions (portal/subscriptionHome)

Contact MSC Help (portal/resources/contact)

Enter an address, place, or coordinates: ?

Enter an address, place, or coordinates

Search

Users may experience download failures on the Flood Map Service Center (MSC) website when working with large files. If you are working with files larger than 100MB, try downloading during non-peak hours.

Whether you are in a high risk zone or not, you may need [flood insurance](https://www.fema.gov/national-flood-insurance-program) because most homeowners insurance doesn't cover flood damage. If you live in an area with low or moderate flood risk, you are 5 times more likely to experience flood than a fire in your home over the next 30 years. For many, a National Flood Insurance Program's Flood Insurance policy could cost less than \$400 per year. Call your insurance agent today and protect what you've built.

Learn more about [steps you can take](https://www.fema.gov/what-mitigation) to reduce flood risk damage.

## Search Results—Products for EDDY COUNTY UNINCORPORATED AREAS

Show ALL Products » (https://msc.fema.gov/portal/availabilitySearch?addcommunity=350120&communityName=EDDY COUNTY UNINCORPORATED AREAS#searchresultsanchor)

The flood map for the selected area is number **35015C0125D**, effective on **06/04/2010**

DYNAMIC MAP



MAP IMAGE



(https://msc.fema.gov/portal/downloadProduct?)

filepath=/35/P/Firm/35015C0125D.tif&productTypeID=FINAL\_PRODUCT&productSubTypeID=FIRM\_PANEL&productID=35015C0125D

Changes to this FIRM ?

- Revisions (0)
- Amendments (0)
- Revalidations (0)

You can choose a new flood map or move the location pin by selecting a different location on the locator map below or by entering a new location in the search field above. It may take a minute or more during peak hours to generate a dynamic FIRMeite. If you are a person with a disability, are blind, or have low vision, and need assistance, please contact a map specialist (https://msc.fema.gov/portal/resources/contact).

Go To NFHL Viewer » (https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5259aa9cd&extent=-104.85707620620396,32.519038647)



<p><b>PEU</b></p> <ul style="list-style-type: none"> <li>Approximate location based on user input and does not represent an authoritative property location</li> </ul> <p><b>MAP PANELS</b></p> <ul style="list-style-type: none"> <li>Related FloodMap Boundary</li> <li>Digital Data Available</li> <li>No Digital Data Available</li> <li>Unmapped</li> </ul> <p><b>OTHER AREAS</b></p> <ul style="list-style-type: none"> <li>Area of Minimal Flood Hazard (MFL)</li> <li>Special Flood Hazard Areas</li> <li>Area of Undetermined Flood Hazard (UFL)</li> <li>Other Areas of Flood Hazard</li> <li>Coastal Barrier Resources System Area</li> </ul>	<p><b>SPECIAL FLOOD HAZARD AREAS</b></p> <ul style="list-style-type: none"> <li>Without Base Flood Elevation (BFE) (Zone A, A:1, A:2, X, X:1, X:2, X:3)</li> <li>With BFE or Depth Regulatory Floodway (Zone AE, AE:1, AE:2, AE:3)</li> <li>0.2% Annual Chance Flood Hazard: Areas of 0.2% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile (Z-F1)</li> <li>Federal Condemned 1% Annual Chance Flood Hazard (Z-F2)</li> <li>Area with Reduced Flood Risk due to levee (Z-F3)</li> <li>Area with Flood Risk due to Levee (Z-F4)</li> </ul> <p><b>OTHER AREAS OF FLOOD HAZARD</b></p> <ul style="list-style-type: none"> <li>Area with Reduced Flood Risk due to levee (Z-F3)</li> <li>Area with Flood Risk due to Levee (Z-F4)</li> </ul>	<p><b>OTHER FEATURES</b></p> <ul style="list-style-type: none"> <li>Green Sections with 1% Annual Chance Water Surface Elevation</li> <li>Coastal Barrier</li> <li>Base Flood Elevation Line (BFE)</li> <li>Line of Study</li> <li>Jurisdiction Boundary</li> <li>Coastal to Nearest Baseline</li> <li>Profile Baseline</li> <li>Hydrographic Feature</li> </ul> <p><b>GENERAL STRUCTURES</b></p> <ul style="list-style-type: none"> <li>Channel, Culvert, or Storm Sewer</li> <li>Levee, Dam, or Floodwall</li> </ul>
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

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- Ready.gov (www.ready.gov)
- USA.gov (www.usa.gov)
- DisasterAssistance.gov (www.disasterassistance.gov/)

**OIG HOTLINE**  
Report Fraud, Waste & Abuse (https://www.oig.dhs.gov/hotline)

Official website of the Department of Homeland Security

# Appendix D

## Laboratory Soil Data



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

October 22, 2019

CHASE SETTLE  
EOG Y RESOURCES, INC  
105 SOUTH 4TH STREET  
ARTESIA, NM 88210

RE: FEDERAL AB - B BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 10/17/19 14:53.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

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

Received:	10/17/2019	Sampling Date:	10/17/2019
Reported:	10/22/2019	Sampling Type:	Soil
Project Name:	FEDERAL AB - B BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	FEDERAL AB-B BATTERY		

**Sample ID: V 1 - 2' (H903558-01)**

BTEX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<2.00	2.00	10/20/2019	ND	2.02	101	2.00	0.404		
Toluene*	11.5	2.00	10/20/2019	ND	2.09	104	2.00	0.633		
Ethylbenzene*	38.3	2.00	10/20/2019	ND	2.02	101	2.00	1.59		
Total Xylenes*	90.0	6.00	10/20/2019	ND	6.06	101	6.00	1.11		
<b>Total BTEX</b>	<b>140</b>	<b>12.0</b>	<b>10/20/2019</b>	<b>ND</b>						

Surrogate: 4-Bromofluorobenzene (PIL) 105 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	112	16.0	10/21/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS							S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
GRO C6-C10*	2760	50.0	10/18/2019	ND	208	104	200	3.40			
DRO >C10-C28*	12900	50.0	10/18/2019	ND	200	100	200	4.71			
EXT DRO >C28-C36	2320	50.0	10/18/2019	ND							

Surrogate: 1-Chlorooctane 457 % 41-142

Surrogate: 1-Chlorooctadecane 482 % 37.6-147

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\*=Accredited Analyte

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Caley D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 10/17/2019
Reported: 10/22/2019
Project Name: FEDERAL AB - B BATTERY
Project Number: NONE GIVEN
Project Location: FEDERAL AB-B BATTERY
Sampling Date: 10/17/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: V 1 - 3' (H903558-02)

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows include Benzene\*, Toluene\*, Ethylbenzene\*, Total Xylenes\*, and Total BTEX.

Surrogate: 4-Bromofluorobenzene (PIL) 107% 73.3-129

Table for Chloride, SM4500Cl-B. Columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Row: Chloride.

Table for TPH 8015M. Columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows: GRO C6-C10\*, DRO >C10-C28\*, EXT DRO >C28-C36.

Surrogate: 1-Chlorooctane 448% 41-142

Surrogate: 1-Chlorooctadecane 443% 37.6-147

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\*=Accredited Analyte

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Celestine D. Keene (signature)

Celestine D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	10/17/2019	Sampling Date:	10/17/2019
Reported:	10/22/2019	Sampling Type:	Soil
Project Name:	FEDERAL AB - B BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	FEDERAL AB-B BATTERY		

**Sample ID: V 1 - 4' (H903558-03)**

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/20/2019	ND	2.02	101	2.00	0.404	
Toluene*	<0.050	0.050	10/20/2019	ND	2.09	104	2.00	0.633	
Ethylbenzene*	<b>0.057</b>	0.050	10/20/2019	ND	2.02	101	2.00	1.59	
Total Xylenes*	<0.150	0.150	10/20/2019	ND	6.06	101	6.00	1.11	
Total BTEX	<0.300	0.300	10/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 99.5 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<b>352</b>	16.0	10/21/2019	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	10/18/2019	ND	208	104	200	3.40	
DRO >C10-C28*	<b>10.2</b>	10.0	10/18/2019	ND	200	100	200	4.71	
EXT DRO >C28-C36	<b>12.4</b>	10.0	10/18/2019	ND					

Surrogate: 1-Chlorooctane 76.9 % 41-142

Surrogate: 1-Chlorooctadecane 86.4 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	10/17/2019	Sampling Date:	10/17/2019
Reported:	10/22/2019	Sampling Type:	Soil
Project Name:	FEDERAL AB - B BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	FEDERAL AB-B BATTERY		

**Sample ID: V 2 - 3' (H903558-04)**

BTEX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.500	0.500	10/20/2019	ND	2.02	101	2.00	0.404		
Toluene*	1.74	0.500	10/20/2019	ND	2.09	104	2.00	0.633		
Ethylbenzene*	8.51	0.500	10/20/2019	ND	2.02	101	2.00	1.59		
Total Xylenes*	23.9	1.50	10/20/2019	ND	6.06	101	6.00	1.11		
<b>Total BTEX</b>	<b>34.2</b>	<b>3.00</b>	<b>10/20/2019</b>	<b>ND</b>						

Surrogate: 4-Bromofluorobenzene (PIL) 108 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1410	16.0	10/21/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS							S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
GRO C6-C10*	1180	100	10/18/2019	ND	208	104	200	3.40			
DRO >C10-C28*	14400	100	10/18/2019	ND	200	100	200	4.71			
EXT DRO >C28-C36	5130	100	10/18/2019	ND							

Surrogate: 1-Chlorooctane 293 % 41-142

Surrogate: 1-Chlorooctadecane 637 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 10/17/2019 Sampling Date: 10/17/2019
Reported: 10/22/2019 Sampling Type: Soil
Project Name: FEDERAL AB - B BATTERY Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Jodi Henson
Project Location: FEDERAL AB-B BATTERY

Sample ID: V 2 - 4' (H903558-05)

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows include Benzene\*, Toluene\*, Ethylbenzene\*, Total Xylenes\*, and Total BTEX.

Surrogate: 4-Bromofluorobenzene (PII) 111 % 73.3-129

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Row includes Chloride.

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows include GRO C6-C10\*, DRO >C10-C28\*, and EXT DRO >C28-C36.

Surrogate: 1-Chlorooctane 110 % 41-142

Surrogate: 1-Chlorooctadecane 187 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	10/17/2019	Sampling Date:	10/17/2019
Reported:	10/22/2019	Sampling Type:	Soil
Project Name:	FEDERAL AB - B BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	FEDERAL AB-B BATTERY		

**Sample ID: V 3 - 1' (H903558-06)**

BTEX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/20/2019	ND	2.02	101	2.00	0.404		
Toluene*	<0.050	0.050	10/20/2019	ND	2.09	104	2.00	0.633		
Ethylbenzene*	<b>0.219</b>	0.050	10/20/2019	ND	2.02	101	2.00	1.59		
Total Xylenes*	<b>1.26</b>	0.150	10/20/2019	ND	6.06	101	6.00	1.11		
Total BTEX	<b>1.48</b>	0.300	10/20/2019	ND						

Surrogate: 4-Bromofluorobenzene (PIE) 115 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<b>2840</b>	16.0	10/21/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS							S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
GRO C6-C10*	<b>82.3</b>	50.0	10/18/2019	ND	208	104	200	3.40			
DRO >C10-C28*	<b>3320</b>	50.0	10/18/2019	ND	200	100	200	4.71			
EXT DRO >C28-C36	<b>685</b>	50.0	10/18/2019	ND							

Surrogate: 1-Chlorooctane 141 % 41-142

Surrogate: 1-Chlorooctadecane 222 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 10/17/2019
Reported: 10/22/2019
Project Name: FEDERAL AB - B BATTERY
Project Number: NONE GIVEN
Project Location: FEDERAL AB-B BATTERY

Sampling Date: 10/17/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: V 3 - 2' (H903558-07)

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows include Benzene\*, Toluene\*, Ethylbenzene\*, Total Xylenes\*, and Total BTEX.

Surrogate: 4-Bromofluorobenzene (PIL) 120 % 73.3-129

Table for Chloride, SM4500Cl-B. Columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Row: Chloride.

Table for TPH 8015M. Columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows: GRO C6-C10\*, DRO >C10-C28\*, EXT DRO >C28-C36.

Surrogate: 1-Chlorooctane 100 % 41-142

Surrogate: 1-Chlorooctadecane 119 % 37.6-147

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Celestine Keene (Signature)

Celestine D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 10/17/2019 Sampling Date: 10/17/2019
Reported: 10/22/2019 Sampling Type: Soil
Project Name: FEDERAL AB - B BATTERY Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Jodi Henson
Project Location: FEDERAL AB-B BATTERY

Sample ID: V 3 - 2.5' (H903558-08)

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows include Benzene\*, Toluene\*, Ethylbenzene\*, Total Xylenes\*, and Total BTEX.

Surrogate: 4-Bromofluorobenzene (PIE) 107% 73.3-129

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Row includes Chloride.

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows include GRO C6-C10\*, DRO >C10-C28\*, and EXT DRO >C28-C36.

Surrogate: 1-Chlorooctane 93.2% 41-142

Surrogate: 1-Chlorooctadecane 112% 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	10/17/2019	Sampling Date:	10/17/2019
Reported:	10/22/2019	Sampling Type:	Soil
Project Name:	FEDERAL AB - B BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	FEDERAL AB-B BATTERY		

**Sample ID: V 4 - 1' (H903558-09)**

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.500	0.500	10/20/2019	ND	2.02	101	2.00	0.404	
Toluene*	<b>4.38</b>	0.500	10/20/2019	ND	2.09	104	2.00	0.633	
Ethylbenzene*	<b>10.1</b>	0.500	10/20/2019	ND	2.02	101	2.00	1.59	
Total Xylenes*	<b>25.1</b>	1.50	10/20/2019	ND	6.06	101	6.00	1.11	
Total BTEX	<b>39.5</b>	3.00	10/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 106 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<b>10800</b>	16.0	10/21/2019	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<b>746</b>	50.0	10/18/2019	ND	208	104	200	3.40		
DRO >C10-C28*	<b>17900</b>	50.0	10/18/2019	ND	200	100	200	4.71		
EXT DRO >C28-C36	<b>3510</b>	50.0	10/18/2019	ND						

Surrogate: 1-Chlorooctane 292 % 41-142

Surrogate: 1-Chlorooctadecane 686 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 10/17/2019
Reported: 10/22/2019
Project Name: FEDERAL AB - B BATTERY
Project Number: NONE GIVEN
Project Location: FEDERAL AB-B BATTERY

Sampling Date: 10/17/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: V 4 - 1.25' (H903558-10)

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows include Benzene\*, Toluene\*, Ethylbenzene\*, Total Xylenes\*, and Total BTEX.

Surrogate: 4-Bromofluorobenzene (PIL) 112 % 73.3-129

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Row includes Chloride.

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows include GRO C6-C10\*, DRO >C10-C28\*, and EXT DRO >C28-C36.

Surrogate: 1-Chlorooctane 152 % 41-142

Surrogate: 1-Chlorooctadecane 212 % 37.6-147

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Celestine Keene (Signature)

Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 10/17/2019
Reported: 10/22/2019
Project Name: FEDERAL AB - B BATTERY
Project Number: NONE GIVEN
Project Location: FEDERAL AB-B BATTERY
Sampling Date: 10/17/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: V 5 - 2' (H903558-11)

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows include Benzene\*, Toluene\*, Ethylbenzene\*, Total Xylenes\*, and Total BTEX.

Surrogate: 4-Bromofluorobenzene (PIE) 109 % 73.3-129

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Row includes Chloride.

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows include GRO C6-C10\*, DRO >C10-C28\*, and EXT DRO >C28-C36.

Surrogate: 1-Chlorooctane 200 % 41-142

Surrogate: 1-Chlorooctadecane 418 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene (signature)

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

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

Received: 10/17/2019 Sampling Date: 10/17/2019
Reported: 10/22/2019 Sampling Type: Soil
Project Name: FEDERAL AB - B BATTERY Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Jodi Henson
Project Location: FEDERAL AB-B BATTERY

Sample ID: V 5 - 2.25' (H903558-12)

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows include Benzene\*, Toluene\*, Ethylbenzene\*, Total Xylenes\*, and Total BTEX.

Surrogate: 4-Bromofluorobenzene (PIE) 101 % 73.3-129

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Row includes Chloride.

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows include GRO C6-C10\*, DRO >C10-C28\*, and EXT DRO >C28-C36.

Surrogate: 1-Chlorooctane 100 % 41-142

Surrogate: 1-Chlorooctadecane 107 % 37.6-147

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 10/17/2019
Reported: 10/22/2019
Project Name: FEDERAL AB - B BATTERY
Project Number: NONE GIVEN
Project Location: FEDERAL AB-B BATTERY
Sampling Date: 10/17/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: V 6 - 2' (H903558-13)

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows include Benzene\*, Toluene\*, Ethylbenzene\*, Total Xylenes\*, Total BTEX.

Surrogate: 4-Bromofluorobenzene (PIL) 103 % 73.3-129

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Row includes Chloride.

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows include GRO C6-C10\*, DRO >C10-C28\*, EXT DRO >C28-C36.

Surrogate: 1-Chlorooctane 282 % 41-142

Surrogate: 1-Chlorooctadecane 358 % 37.6-147

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Signature of Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 10/17/2019
Reported: 10/22/2019
Project Name: FEDERAL AB - B BATTERY
Project Number: NONE GIVEN
Project Location: FEDERAL AB-B BATTERY

Sampling Date: 10/17/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: V 6 - 2.25' (H903558-14)

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows include Benzene\*, Toluene\*, Ethylbenzene\*, Total Xylenes\*, and Total BTEX.

Surrogate: 4-Bromofluorobenzene (PIC) 103 % 73.3-129

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Row includes Chloride.

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows include GRO C6-C10\*, DRO >C10-C28\*, and EXT DRO >C28-C36.

Surrogate: 1-Chlorooctane 116 % 41-142

Surrogate: 1-Chlorooctadecane 122 % 37.6-147

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Celestine Keene (signature)

Celestine D. Keene, Lab Director/Quality Manager



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Notes and Definitions

- S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- 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*

Celey D. Keene, Lab Director/Quality Manager







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November 25, 2019

CHASE SETTLE  
EOG Y RESOURCES, INC  
105 SOUTH 4TH STREET  
ARTESIA, NM 88210

RE: FEDERAL AB - B BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 11/18/19 13:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. 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,

Mike Snyder For Celey D. Keene  
Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

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

Received: 11/18/2019
Reported: 11/25/2019
Project Name: FEDERAL AB - B BATTERY
Project Number: NONE GIVEN
Project Location: FEDERAL AB-B BATTERY

Sampling Date: 11/14/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: V 1C - 3.5' (H903912-01)

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows include Benzene\*, Toluene\*, Ethylbenzene\*, Total Xylenes\*, and Total BTEX.

Surrogate: 4-Bromofluorobenzene (PIE) 101 % 73.3-129

Table for Chloride, SM4500Cl-B. Columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Row: Chloride 32.0 16.0 11/22/2019 ND 416 104 400 0.00

Table for TPH 8015M. Columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows: GRO C6-C10\*, DRO >C10-C28\*, EXT DRO >C28-C36.

Surrogate: 1-Chlorooctane 93.5 % 41-142

Surrogate: 1-Chlorooctadecane 98.3 % 37.6-147

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 11/18/2019
Reported: 11/25/2019
Project Name: FEDERAL AB - B BATTERY
Project Number: NONE GIVEN
Project Location: FEDERAL AB-B BATTERY

Sampling Date: 11/14/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: V 2C - 3.5' (H903912-02)

Table with 10 columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows include Benzene\*, Toluene\*, Ethylbenzene\*, Total Xylenes\*, and Total BTEX.

Surrogate: 4-Bromofluorobenzene (PIL) 134% 73.3-129

Table with 10 columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Row includes Chloride.

Table with 10 columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows include GRO C6-C10\*, DRO >C10-C28\*, and EXT DRO >C28-C36.

Surrogate: 1-Chlorooctane 129% 41-142

Surrogate: 1-Chlorooctadecane 313% 37.6-147

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	11/18/2019	Sampling Date:	11/14/2019
Reported:	11/25/2019	Sampling Type:	Soil
Project Name:	FEDERAL AB - B BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	FEDERAL AB-B BATTERY		

**Sample ID: V 3C - 2' (H903912-03)**

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	11/20/2019	ND	1.80	90.1	2.00	2.37	
Toluene*	<0.050	0.050	11/20/2019	ND	1.78	89.1	2.00	2.44	
Ethylbenzene*	<0.050	0.050	11/20/2019	ND	1.82	90.8	2.00	2.24	
Total Xylenes*	<0.150	0.150	11/20/2019	ND	5.46	91.0	6.00	2.79	
Total BTEX	<0.300	0.300	11/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 103 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	11/22/2019	ND	416	104	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	11/20/2019	ND	199	99.7	200	1.53	
DRO >C10-C28*	524	10.0	11/20/2019	ND	198	98.9	200	2.26	
EXT DRO >C28-C36	177	10.0	11/20/2019	ND					

Surrogate: 1-Chlorooctane 95.2 % 41-142

Surrogate: 1-Chlorooctadecane 117 % 37.6-147

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 11/18/2019 Sampling Date: 11/14/2019
Reported: 11/25/2019 Sampling Type: Soil
Project Name: FEDERAL AB - B BATTERY Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Tamara Oldaker
Project Location: FEDERAL AB-B BATTERY

Sample ID: V 4C - 1.5' (H903912-04)

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows include Benzene\*, Toluene\*, Ethylbenzene\*, Total Xylenes\*, Total BTEX.

Surrogate: 4-Bromofluorobenzene (PIL) 99.8 % 73.3-129

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Row includes Chloride.

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows include GRO C6-C10\*, DRO >C10-C28\*, EXT DRO >C28-C36.

Surrogate: 1-Chlorooctane 83.1 % 41-142

Surrogate: 1-Chlorooctadecane 100 % 37.6-147

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 11/18/2019 Sampling Date: 11/14/2019
Reported: 11/25/2019 Sampling Type: Soil
Project Name: FEDERAL AB - B BATTERY Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Tamara Oldaker
Project Location: FEDERAL AB-B BATTERY

Sample ID: V 5C - 2.5' (H903912-05)

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows include Benzene\*, Toluene\*, Ethylbenzene\*, Total Xylenes\*, Total BTEX.

Surrogate: 4-Bromofluorobenzene (PIE) 99.6% 73.3-129

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Row includes Chloride.

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows include GRO C6-C10\*, DRO >C10-C28\*, EXT DRO >C28-C36.

Surrogate: 1-Chlorooctane 84.9% 41-142

Surrogate: 1-Chlorooctadecane 90.0% 37.6-147

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	11/18/2019	Sampling Date:	11/14/2019
Reported:	11/25/2019	Sampling Type:	Soil
Project Name:	FEDERAL AB - B BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	FEDERAL AB-B BATTERY		

**Sample ID: V 6C - 2.5' (H903912-06)**

BTEX 8021B		mg/kg		Analyzed By: MS				S-04		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.100	0.100	11/20/2019	ND	1.79	89.3	2.00	7.20		
Toluene*	1.28	0.100	11/20/2019	ND	1.77	88.7	2.00	7.07		
Ethylbenzene*	3.19	0.100	11/20/2019	ND	1.80	90.2	2.00	7.55		
Total Xylenes*	9.88	0.300	11/20/2019	ND	5.44	90.6	6.00	7.98		
<b>Total BTEX</b>	<b>14.3</b>	<b>0.600</b>	<b>11/20/2019</b>	<b>ND</b>						

Surrogate: 4-Bromofluorobenzene (PIL) 140 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	720	16.0	11/22/2019	ND	400	100	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*	253	10.0	11/20/2019	ND	199	99.7	200	1.53		
DRO >C10-C28*	1660	10.0	11/20/2019	ND	198	98.9	200	2.26		
EXT DRO >C28-C36	239	10.0	11/20/2019	ND						

Surrogate: 1-Chlorooctane 126 % 41-142

Surrogate: 1-Chlorooctadecane 142 % 37.6-147

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 11/18/2019
Reported: 11/25/2019
Project Name: FEDERAL AB - B BATTERY
Project Number: NONE GIVEN
Project Location: FEDERAL AB-B BATTERY
Sampling Date: 11/14/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: V 7C - 7.5' (H903912-07)

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows include Benzene\*, Toluene\*, Ethylbenzene\*, Total Xylenes\*, and Total BTEX.

Surrogate: 4-Bromofluorobenzene (PIE) 119% 73.3-129

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Row includes Chloride.

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows include GRO C6-C10\*, DRO >C10-C28\*, and EXT DRO >C28-C36.

Surrogate: 1-Chlorooctane 334% 41-142

Surrogate: 1-Chlorooctadecane 502% 37.6-147

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Handwritten signature of Mike Snyder

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 11/18/2019
Reported: 11/25/2019
Project Name: FEDERAL AB - B BATTERY
Project Number: NONE GIVEN
Project Location: FEDERAL AB-B BATTERY

Sampling Date: 11/14/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: V 8C - 7.5' (H903912-08)

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows include Benzene\*, Toluene\*, Ethylbenzene\*, Total Xylenes\*, and Total BTEX.

Surrogate: 4-Bromofluorobenzene (PIE) 138 % 73.3-129

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Row includes Chloride.

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows include GRO C6-C10\*, DRO >C10-C28\*, and EXT DRO >C28-C36.

Surrogate: 1-Chlorooctane 122 % 41-142

Surrogate: 1-Chlorooctadecane 132 % 37.6-147

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Handwritten signature of Mike Snyder

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

- S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- 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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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager





PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

November 25, 2019

CHASE SETTLE  
EOG Y RESOURCES, INC  
105 SOUTH 4TH STREET  
ARTESIA, NM 88210

RE: FEDERAL AB - B BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 11/18/19 13:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. 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,

Mike Snyder For Celey D. Keene  
Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

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

Received:	11/18/2019	Sampling Date:	11/14/2019
Reported:	11/25/2019	Sampling Type:	Soil
Project Name:	FEDERAL AB - B BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	FEDERAL AB-B BATTERY		

**Sample ID: H 1 (H903913-01)**

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	11/20/2019	ND	1.79	89.3	2.00	7.20		
Toluene*	<0.050	0.050	11/20/2019	ND	1.77	88.7	2.00	7.07		
Ethylbenzene*	<b>0.089</b>	0.050	11/20/2019	ND	1.80	90.2	2.00	7.55		
<b>Total Xylenes*</b>	<b>0.290</b>	0.150	11/20/2019	ND	5.44	90.6	6.00	7.98		
<b>Total BTEX</b>	<b>0.379</b>	0.300	11/20/2019	ND						

Surrogate: 4-Bromofluorobenzene (PIE) 106 % 73.3-129

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>480</b>	16.0	11/22/2019	ND	400	100	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10*</b>	<b>13.1</b>	10.0	11/20/2019	ND	199	99.7	200	1.53		
<b>DRO &gt;C10-C28*</b>	<b>1250</b>	10.0	11/20/2019	ND	198	98.9	200	2.26		
<b>EXT DRO &gt;C28-C36</b>	<b>298</b>	10.0	11/20/2019	ND						

Surrogate: 1-Chlorooctane 103 % 41-142

Surrogate: 1-Chlorooctadecane 142 % 37.6-147

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	11/18/2019	Sampling Date:	11/14/2019
Reported:	11/25/2019	Sampling Type:	Soil
Project Name:	FEDERAL AB - B BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	FEDERAL AB-B BATTERY		

**Sample ID: H 2 (H903913-02)**

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	11/20/2019	ND	1.79	89.3	2.00	7.20	
Toluene*	<0.050	0.050	11/20/2019	ND	1.77	88.7	2.00	7.07	
Ethylbenzene*	<0.050	0.050	11/20/2019	ND	1.80	90.2	2.00	7.55	
Total Xylenes*	<0.150	0.150	11/20/2019	ND	5.44	90.6	6.00	7.98	
Total BTEX	<0.300	0.300	11/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 109 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	224	16.0	11/22/2019	ND	400	100	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	11/20/2019	ND	199	99.7	200	1.53	
DRO >C10-C28*	10.2	10.0	11/20/2019	ND	198	98.9	200	2.26	
EXT DRO >C28-C36	<10.0	10.0	11/20/2019	ND					

Surrogate: 1-Chlorooctane 101 % 41-142

Surrogate: 1-Chlorooctadecane 105 % 37.6-147

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	11/18/2019	Sampling Date:	11/14/2019
Reported:	11/25/2019	Sampling Type:	Soil
Project Name:	FEDERAL AB - B BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	FEDERAL AB-B BATTERY		

**Sample ID: H 3 (H903913-03)**

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	11/20/2019	ND	1.79	89.3	2.00	7.20		
Toluene*	<0.050	0.050	11/20/2019	ND	1.77	88.7	2.00	7.07		
Ethylbenzene*	<0.050	0.050	11/20/2019	ND	1.80	90.2	2.00	7.55		
Total Xylenes*	<0.150	0.150	11/20/2019	ND	5.44	90.6	6.00	7.98		
Total BTEX	<0.300	0.300	11/20/2019	ND						

Surrogate: 4-Bromofluorobenzene (PIE) 104 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	720	16.0	11/22/2019	ND	400	100	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	11/20/2019	ND	199	99.7	200	1.53		
DRO >C10-C28*	965	10.0	11/20/2019	ND	198	98.9	200	2.26		
EXT DRO >C28-C36	384	10.0	11/20/2019	ND						

Surrogate: 1-Chlorooctane 96.1 % 41-142

Surrogate: 1-Chlorooctadecane 132 % 37.6-147

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	11/18/2019	Sampling Date:	11/14/2019
Reported:	11/25/2019	Sampling Type:	Soil
Project Name:	FEDERAL AB - B BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	FEDERAL AB-B BATTERY		

**Sample ID: H 4 (H903913-04)**

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	11/20/2019	ND	1.79	89.3	2.00	7.20	
Toluene*	<0.050	0.050	11/20/2019	ND	1.77	88.7	2.00	7.07	
Ethylbenzene*	<0.050	0.050	11/20/2019	ND	1.80	90.2	2.00	7.55	
Total Xylenes*	<0.150	0.150	11/20/2019	ND	5.44	90.6	6.00	7.98	
Total BTEX	<0.300	0.300	11/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 103 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1170	16.0	11/22/2019	ND	400	100	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	11/20/2019	ND	199	99.7	200	1.53	
DRO >C10-C28*	149	10.0	11/20/2019	ND	198	98.9	200	2.26	
EXT DRO >C28-C36	74.8	10.0	11/20/2019	ND					

Surrogate: 1-Chlorooctane 101 % 41-142

Surrogate: 1-Chlorooctadecane 119 % 37.6-147

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	11/18/2019	Sampling Date:	11/14/2019
Reported:	11/25/2019	Sampling Type:	Soil
Project Name:	FEDERAL AB - B BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	FEDERAL AB-B BATTERY		

**Sample ID: H 5 (H903913-05)**

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	11/20/2019	ND	1.79	89.3	2.00	7.20	
Toluene*	<0.050	0.050	11/20/2019	ND	1.77	88.7	2.00	7.07	
Ethylbenzene*	<0.050	0.050	11/20/2019	ND	1.80	90.2	2.00	7.55	
Total Xylenes*	<0.150	0.150	11/20/2019	ND	5.44	90.6	6.00	7.98	
Total BTEX	<0.300	0.300	11/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	448	16.0	11/22/2019	ND	400	100	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	11/20/2019	ND	199	99.7	200	1.53	
DRO >C10-C28*	98.8	10.0	11/20/2019	ND	198	98.9	200	2.26	
EXT DRO >C28-C36	50.9	10.0	11/20/2019	ND					

Surrogate: 1-Chlorooctane 86.3 % 41-142

Surrogate: 1-Chlorooctadecane 98.1 % 37.6-147

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	11/18/2019	Sampling Date:	11/14/2019
Reported:	11/25/2019	Sampling Type:	Soil
Project Name:	FEDERAL AB - B BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	FEDERAL AB-B BATTERY		

**Sample ID: H 6 (H903913-06)**

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	11/20/2019	ND	1.79	89.3	2.00	7.20	
Toluene*	<0.050	0.050	11/20/2019	ND	1.77	88.7	2.00	7.07	
Ethylbenzene*	<0.050	0.050	11/20/2019	ND	1.80	90.2	2.00	7.55	
Total Xylenes*	<0.150	0.150	11/20/2019	ND	5.44	90.6	6.00	7.98	
Total BTEX	<0.300	0.300	11/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 101 % 73.3-129

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>384</b>	16.0	11/22/2019	ND	400	100	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	11/20/2019	ND	199	99.7	200	1.53	
<b>DRO &gt;C10-C28*</b>	<b>150</b>	10.0	11/20/2019	ND	198	98.9	200	2.26	
<b>EXT DRO &gt;C28-C36</b>	<b>36.9</b>	10.0	11/20/2019	ND					

Surrogate: 1-Chlorooctane 93.7 % 41-142

Surrogate: 1-Chlorooctadecane 109 % 37.6-147

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 11/18/2019
Reported: 11/25/2019
Project Name: FEDERAL AB - B BATTERY
Project Number: NONE GIVEN
Project Location: FEDERAL AB-B BATTERY

Sampling Date: 11/14/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: H 7 (H903913-07)

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows include Benzene\*, Toluene\*, Ethylbenzene\*, Total Xylenes\*, Total BTEX.

Surrogate: 4-Bromofluorobenzene (PIE) 102 % 73.3-129

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Row: Chloride 736 16.0 11/22/2019 ND 400 100 400 0.00

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows include GRO C6-C10\*, DRO >C10-C28\*, EXT DRO >C28-C36.

Surrogate: 1-Chlorooctane 93.2 % 41-142

Surrogate: 1-Chlorooctadecane 131 % 37.6-147

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Handwritten signature of Mike Snyder

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	11/18/2019	Sampling Date:	11/14/2019
Reported:	11/25/2019	Sampling Type:	Soil
Project Name:	FEDERAL AB - B BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	FEDERAL AB-B BATTERY		

**Sample ID: H 8 (H903913-08)**

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	11/20/2019	ND	1.79	89.3	2.00	7.20		
Toluene*	<0.050	0.050	11/20/2019	ND	1.77	88.7	2.00	7.07		
Ethylbenzene*	<0.050	0.050	11/20/2019	ND	1.80	90.2	2.00	7.55		
Total Xylenes*	<0.150	0.150	11/20/2019	ND	5.44	90.6	6.00	7.98		
Total BTEX	<0.300	0.300	11/20/2019	ND						

Surrogate: 4-Bromofluorobenzene (PIL) 102 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	192	16.0	11/22/2019	ND	400	100	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	11/20/2019	ND	199	99.7	200	1.53		
DRO >C10-C28*	104	10.0	11/20/2019	ND	198	98.9	200	2.26		
EXT DRO >C28-C36	47.8	10.0	11/20/2019	ND						

Surrogate: 1-Chlorooctane 90.8 % 41-142

Surrogate: 1-Chlorooctadecane 106 % 37.6-147

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	11/18/2019	Sampling Date:	11/14/2019
Reported:	11/25/2019	Sampling Type:	Soil
Project Name:	FEDERAL AB - B BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	FEDERAL AB-B BATTERY		

**Sample ID: H 9 (H903913-09)**

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	11/20/2019	ND	1.79	89.3	2.00	7.20		
Toluene*	<0.050	0.050	11/20/2019	ND	1.77	88.7	2.00	7.07		
Ethylbenzene*	<0.050	0.050	11/20/2019	ND	1.80	90.2	2.00	7.55		
Total Xylenes*	<0.150	0.150	11/20/2019	ND	5.44	90.6	6.00	7.98		
Total BTEX	<0.300	0.300	11/20/2019	ND						

Surrogate: 4-Bromofluorobenzene (PIE) 100 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	624	16.0	11/22/2019	ND	400	100	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	11/20/2019	ND	199	99.7	200	1.53		
DRO >C10-C28*	664	10.0	11/20/2019	ND	198	98.9	200	2.26		
EXT DRO >C28-C36	372	10.0	11/20/2019	ND						

Surrogate: 1-Chlorooctane 89.7 % 41-142

Surrogate: 1-Chlorooctadecane 136 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

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

Received:	11/18/2019	Sampling Date:	11/14/2019
Reported:	11/25/2019	Sampling Type:	Soil
Project Name:	FEDERAL AB - B BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	FEDERAL AB-B BATTERY		

**Sample ID: H 10 (H903913-10)**

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	11/20/2019	ND	1.79	89.3	2.00	7.20		
Toluene*	<0.050	0.050	11/20/2019	ND	1.77	88.7	2.00	7.07		
Ethylbenzene*	<0.050	0.050	11/20/2019	ND	1.80	90.2	2.00	7.55		
Total Xylenes*	<0.150	0.150	11/20/2019	ND	5.44	90.6	6.00	7.98		
Total BTEX	<0.300	0.300	11/20/2019	ND						

Surrogate: 4-Bromofluorobenzene (PIE) 102 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	112	16.0	11/22/2019	ND	400	100	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	11/20/2019	ND	199	99.7	200	1.53		
DRO >C10-C28*	123	10.0	11/20/2019	ND	198	98.9	200	2.26		
EXT DRO >C28-C36	40.2	10.0	11/20/2019	ND						

Surrogate: 1-Chlorooctane 75.9 % 41-142

Surrogate: 1-Chlorooctadecane 82.2 % 37.6-147

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\*=Accredited Analyte

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

- 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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\*=Accredited Analyte

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

December 20, 2019

CHASE SETTLE  
EOG Y RESOURCES, INC  
105 SOUTH 4TH STREET  
ARTESIA, NM 88210

RE: FEDERAL AB - B BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 12/16/19 11:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. 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



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

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

Received:	12/16/2019	Sampling Date:	12/12/2019
Reported:	12/20/2019	Sampling Type:	Soil
Project Name:	FEDERAL AB - B BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	FEDERAL AB-B BATTERY		

**Sample ID: V 2 C - 4' (H904193-01)**

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	12/19/2019	ND	1.71	85.5	2.00	10.4	
Toluene*	<0.050	0.050	12/19/2019	ND	1.71	85.4	2.00	10.3	
Ethylbenzene*	<0.050	0.050	12/19/2019	ND	1.67	83.7	2.00	12.1	
Total Xylenes*	<0.150	0.150	12/19/2019	ND	4.97	82.8	6.00	11.6	
Total BTEX	<0.300	0.300	12/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 111 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	12/17/2019	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
GR0 C6-C10*	<10.0	10.0	12/18/2019	ND	231	115	200	1.66	
DRO >C10-C28*	1500	10.0	12/18/2019	ND	227	113	200	2.47	
EXT DRO >C28-C36	572	10.0	12/18/2019	ND					

Surrogate: 1-Chlorooctane 95.6 % 41-142

Surrogate: 1-Chlorooctadecane 142 % 37.6-147

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\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	12/16/2019	Sampling Date:	12/12/2019
Reported:	12/20/2019	Sampling Type:	Soil
Project Name:	FEDERAL AB - B BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	FEDERAL AB-B BATTERY		

**Sample ID: V 6 C - 3' (H904193-02)**

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	12/19/2019	ND	1.71	85.5	2.00	10.4	
Toluene*	<0.050	0.050	12/19/2019	ND	1.71	85.4	2.00	10.3	
Ethylbenzene*	<0.050	0.050	12/19/2019	ND	1.67	83.7	2.00	12.1	
Total Xylenes*	<0.150	0.150	12/19/2019	ND	4.97	82.8	6.00	11.6	
Total BTEX	<0.300	0.300	12/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 110 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	336	16.0	12/17/2019	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	12/18/2019	ND	231	115	200	1.66	
DRO >C10-C28*	197	10.0	12/18/2019	ND	227	113	200	2.47	
EXT DRO >C28-C36	176	10.0	12/18/2019	ND					

Surrogate: 1-Chlorooctane 101 % 41-142

Surrogate: 1-Chlorooctadecane 119 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	12/16/2019	Sampling Date:	12/12/2019
Reported:	12/20/2019	Sampling Type:	Soil
Project Name:	FEDERAL AB - B BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	FEDERAL AB-B BATTERY		

**Sample ID: V 7 C - 9' (H904193-03)**

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	12/19/2019	ND	1.71	85.5	2.00	10.4	
Toluene*	<0.050	0.050	12/19/2019	ND	1.71	85.4	2.00	10.3	
Ethylbenzene*	<0.050	0.050	12/19/2019	ND	1.67	83.7	2.00	12.1	
Total Xylenes*	<0.150	0.150	12/19/2019	ND	4.97	82.8	6.00	11.6	
Total BTEX	<0.300	0.300	12/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 108 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	416	16.0	12/17/2019	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	12/18/2019	ND	231	115	200	1.66	
DRO >C10-C28*	<10.0	10.0	12/18/2019	ND	227	113	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	12/18/2019	ND					

Surrogate: 1-Chlorooctane 102 % 41-142

Surrogate: 1-Chlorooctadecane 109 % 37.6-147

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\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	12/16/2019	Sampling Date:	12/12/2019
Reported:	12/20/2019	Sampling Type:	Soil
Project Name:	FEDERAL AB - B BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	FEDERAL AB-B BATTERY		

**Sample ID: V 8 C - 9' (H904193-04)**

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	12/19/2019	ND	1.71	85.5	2.00	10.4	
Toluene*	<0.050	0.050	12/19/2019	ND	1.71	85.4	2.00	10.3	
Ethylbenzene*	<0.050	0.050	12/19/2019	ND	1.67	83.7	2.00	12.1	
Total Xylenes*	<0.150	0.150	12/19/2019	ND	4.97	82.8	6.00	11.6	
Total BTEX	<0.300	0.300	12/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 107 % 73.3-129

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>576</b>	16.0	12/17/2019	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	12/18/2019	ND	231	115	200	1.66	
<b>DRO &gt;C10-C28*</b>	<b>15.2</b>	10.0	12/18/2019	ND	227	113	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	12/18/2019	ND					

Surrogate: 1-Chlorooctane 94.8 % 41-142

Surrogate: 1-Chlorooctadecane 102 % 37.6-147

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\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

- 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

Cardinal Laboratories

\*=Accredited Analyte

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*Celey D. Keene*

Celey D. Keene, Lab Director/Quality Manager





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

December 20, 2019

CHASE SETTLE  
EOG Y RESOURCES, INC  
105 SOUTH 4TH STREET  
ARTESIA, NM 88210

RE: FEDERAL AB - B BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 12/16/19 11:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. 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



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

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

Received: 12/16/2019  
 Reported: 12/20/2019  
 Project Name: FEDERAL AB - B BATTERY  
 Project Number: NONE GIVEN  
 Project Location: FEDERAL AB-B BATTERY

Sampling Date: 12/12/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: H 1 - 2 (H904192-01)**

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	12/18/2019	ND	1.93	96.7	2.00	6.24	
Toluene*	<0.050	0.050	12/18/2019	ND	1.88	93.9	2.00	5.85	
Ethylbenzene*	<0.050	0.050	12/18/2019	ND	1.91	95.5	2.00	6.58	
Total Xylenes*	<0.150	0.150	12/18/2019	ND	5.58	93.0	6.00	6.58	
Total BTEX	<0.300	0.300	12/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 98.2 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	560	16.0	12/17/2019	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	12/18/2019	ND	231	115	200	1.66	
DRO >C10-C28*	<10.0	10.0	12/18/2019	ND	227	113	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	12/18/2019	ND					

Surrogate: 1-Chlorooctane 85.7 % 41-142

Surrogate: 1-Chlorooctadecane 90.4 % 37.6-147

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

**Analytical Results For:**

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

Received:	12/16/2019	Sampling Date:	12/12/2019
Reported:	12/20/2019	Sampling Type:	Soil
Project Name:	FEDERAL AB - B BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	FEDERAL AB-B BATTERY		

**Sample ID: H 3 - 2 (H904192-02)**

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	12/18/2019	ND	1.93	96.7	2.00	6.24	
Toluene*	<0.050	0.050	12/18/2019	ND	1.88	93.9	2.00	5.85	
Ethylbenzene*	<0.050	0.050	12/18/2019	ND	1.91	95.5	2.00	6.58	
Total Xylenes*	<0.150	0.150	12/18/2019	ND	5.58	93.0	6.00	6.58	
Total BTEX	<0.300	0.300	12/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 98.0 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	432	16.0	12/17/2019	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	12/18/2019	ND	231	115	200	1.66	
DRO >C10-C28*	<10.0	10.0	12/18/2019	ND	227	113	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	12/18/2019	ND					

Surrogate: 1-Chlorooctane 95.0 % 41-142

Surrogate: 1-Chlorooctadecane 99.9 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	12/16/2019	Sampling Date:	12/12/2019
Reported:	12/20/2019	Sampling Type:	Soil
Project Name:	FEDERAL AB - B BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	FEDERAL AB-B BATTERY		

**Sample ID: H 4 - 2 (H904192-03)**

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	12/19/2019	ND	1.71	85.5	2.00	10.4		
Toluene*	<0.050	0.050	12/19/2019	ND	1.71	85.4	2.00	10.3		
Ethylbenzene*	<0.050	0.050	12/19/2019	ND	1.67	83.7	2.00	12.1		
Total Xylenes*	<0.150	0.150	12/19/2019	ND	4.97	82.8	6.00	11.6		
Total BTEX	<0.300	0.300	12/19/2019	ND						

Surrogate: 4-Bromofluorobenzene (PIE) 109 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	12/17/2019	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	12/18/2019	ND	231	115	200	1.66		
DRO >C10-C28*	<10.0	10.0	12/18/2019	ND	227	113	200	2.47		
EXT DRO >C28-C36	<10.0	10.0	12/18/2019	ND						

Surrogate: 1-Chlorooctane 90.3 % 41-142

Surrogate: 1-Chlorooctadecane 94.6 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 12/16/2019
Reported: 12/20/2019
Project Name: FEDERAL AB - B BATTERY
Project Number: NONE GIVEN
Project Location: FEDERAL AB-B BATTERY
Sampling Date: 12/12/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: H 7 - 2 (H904192-04)

Table with 10 columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows include Benzene\*, Toluene\*, Ethylbenzene\*, Total Xylenes\*, and Total BTEX.

Surrogate: 4-Bromofluorobenzene (PIL) 106 % 73.3-129

Table with 10 columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Row includes Chloride.

Table with 10 columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows include GRO C6-C10\*, DRO >C10-C28\*, and EXT DRO >C28-C36.

Surrogate: 1-Chlorooctane 91.6 % 41-142

Surrogate: 1-Chlorooctadecane 93.9 % 37.6-147

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Celestine Keene (signature)

Celestine D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 12/16/2019 Sampling Date: 12/12/2019
Reported: 12/20/2019 Sampling Type: Soil
Project Name: FEDERAL AB - B BATTERY Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Tamara Oldaker
Project Location: FEDERAL AB-B BATTERY

Sample ID: H 9 - 2 (H904192-05)

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows include Benzene\*, Toluene\*, Ethylbenzene\*, Total Xylenes\*, Total BTEX.

Surrogate: 4-Bromofluorobenzene (PIE) 106% 73.3-129

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Row includes Chloride.

Table with columns: Analyte, Result, Reporting Limit, Analyzed, Method Blank, BS, % Recovery, True Value QC, RPD, Qualifier. Rows include GRO C6-C10\*, DRO >C10-C28\*, EXT DRO >C28-C36.

Surrogate: 1-Chlorooctane 97.0% 41-142

Surrogate: 1-Chlorooctadecane 102% 37.6-147

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\*=Accredited Analyte

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Celestine Keene (signature)

Celey D. Keene, Lab Director/Quality Manager



Notes and Definitions

- 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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\*=Accredited Analyte

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*Celey D. Keene*

Celey D. Keene, Lab Director/Quality Manager





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January 10, 2020

CHASE SETTLE  
EOG Y RESOURCES, INC  
105 SOUTH 4TH STREET  
ARTESIA, NM 88210

RE: FEDERAL AB - B BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 01/09/20 15:16.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. 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,

Caley D. Keene  
Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

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

Received:	01/09/2020	Sampling Date:	01/09/2020
Reported:	01/10/2020	Sampling Type:	Soil
Project Name:	FEDERAL AB - B BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	FEDERAL AB-B BATTERY		

**Sample ID: V 2 C - 4.5' (H00084-01)**

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	01/10/2020	ND	2.04	102	2.00	2.52	
Toluene*	<0.050	0.050	01/10/2020	ND	2.04	102	2.00	3.01	
Ethylbenzene*	<0.050	0.050	01/10/2020	ND	2.04	102	2.00	2.48	
Total Xylenes*	<0.150	0.150	01/10/2020	ND	6.11	102	6.00	1.58	
Total BTEX	<0.300	0.300	01/10/2020	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 118 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	736	16.0	01/10/2020	ND	400	100	400	7.69	

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	01/10/2020	ND	219	109	200	8.19	
DRO >C10-C28*	<10.0	10.0	01/10/2020	ND	236	118	200	3.78	
EXT DRO >C28-C36	<10.0	10.0	01/10/2020	ND					

Surrogate: 1-Chlorooctane 91.4 % 41-142

Surrogate: 1-Chlorooctadecane 98.0 % 37.6-147

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Celestine D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	01/09/2020	Sampling Date:	01/09/2020
Reported:	01/10/2020	Sampling Type:	Soil
Project Name:	FEDERAL AB - B BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	FEDERAL AB-B BATTERY		

**Sample ID: H 9 - 3 (H000084-02)**

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	01/10/2020	ND	2.04	102	2.00	2.52	
Toluene*	<0.050	0.050	01/10/2020	ND	2.04	102	2.00	3.01	
Ethylbenzene*	<0.050	0.050	01/10/2020	ND	2.04	102	2.00	2.48	
Total Xylenes*	<0.150	0.150	01/10/2020	ND	6.11	102	6.00	1.58	
Total BTEX	<0.300	0.300	01/10/2020	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 117 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	528	16.0	01/10/2020	ND	400	100	400	7.69	

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	01/10/2020	ND	219	109	200	8.19	
DRO >C10-C28*	<10.0	10.0	01/10/2020	ND	236	118	200	3.78	
EXT DRO >C28-C36	<10.0	10.0	01/10/2020	ND					

Surrogate: 1-Chlorooctane 85.8 % 41-142

Surrogate: 1-Chlorooctadecane 92.3 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



Notes and Definitions

- 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*

Celey D. Keene, Lab Director/Quality Manager



# Appendix E

## Form C-141

### (Initial and Closure)

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

State of New Mexico  
Energy Minerals and Natural  
Resources Department

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

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

Incident ID	
District RP	2RP-5701
Facility ID	
Application ID	

### Release Notification

#### Responsible Party

EOG Resources, Inc.	7377
Chase Settle	575-748-1471
Chase_Settle@eogresources.com	Incident # (assigned by OCD)
104 S. 4 <sup>th</sup> Street, Artesia, NM 88210	

#### Location of Release Source

Latitude 32.69853 Longitude -104.51345  
*(NAD 83 in decimal degrees to 5 decimal places)*

Site Name Federal AB B Battery	Site Type Battery
Date Release Discovered October 11, 2019	API# (if applicable)

Unit Letter	Section	Township	Range	County
M	32	18S	25E	Eddy

Surface Owner:  State  Federal  Tribal  Private (Name: \_\_\_\_\_)

#### Nature and Volume of Release

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

<input checked="" type="checkbox"/> Crude Oil	Volume Released (bbls) 1	Volume Recovered (bbls) 1
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 19	Volume Recovered (bbls) 0
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release  
High winds caused the pvc water leg to break on a 40 Bbl 3-phase vertical separation tank that was half full at the time of the release.

State of New Mexico  
Oil Conservation Division

Incident ID	
District RP	2RP-5701
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?  <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?   
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?   	

### Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.
If all the actions described above have <u>not</u> been undertaken, explain why:   
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.
Printed Name: <u>Chase Settle</u> Title: <u>Rep Safety &amp; Environmental II</u> Signature: <u><i>Chase Settle</i></u> Date: <u>10-18-2019</u> email: <u>Chase_Settle@eogresources.com</u> Telephone: <u>575-748-1471</u>
<b><u>OCD Only</u></b>  Received by: _____ Date: _____

Incident ID	
District RP	2RP-5701
Facility ID	
Application ID	

### Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	303 (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

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

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

- Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- Field data
- Data table of soil contaminant concentration data
- Depth to water determination
- Determination of water sources and significant watercourses within 1/2-mile of the lateral extents of the release
- Boring or excavation logs
- Photographs including date and GIS information
- Topographic/Aerial maps
- Laboratory data including chain of custody

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

State of New Mexico  
Oil Conservation Division

Incident ID	
District RP	2RP-5701
Facility ID	
Application ID	

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

Printed Name: Chase Settle Title: Rep Safety and Environmental II

Signature: *Chase Settle* Date: 01/17/2020

email: Chase\_Settle@eogresources.com Telephone: 575-748-1471

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

Incident ID	
District RP	
Facility ID	
Application ID	

## Remediation Plan

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

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

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

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

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

Printed Name: \_\_\_\_\_ Title: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

email: \_\_\_\_\_ Telephone: \_\_\_\_\_

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

- Approved     
 Approved with Attached Conditions of Approval     
 Denied     
 Deferral Approved

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Incident ID	
District RP	2RP-5701
Facility ID	
Application ID	

### Closure

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

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

- A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- Description of remediation activities

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

Printed Name: Chase Settle Title: Rep Safety and Environmental II  
 Signature: *Chase Settle* Date: 01/17/2020  
 email: Chase\_Settle@eogresources.com Telephone: 575-748-1471

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

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

Closure Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name: \_\_\_\_\_ Title: \_\_\_\_\_

Federal AB-B Battery  
Closure Report  
#nMCS0124838636



August 31, 2022

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# Appendix F

## 2021 Laboratory Analytical Report



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

November 15, 2021

Dennis Williams  
EOG  
105 South Fourth Street  
Artesia, NM 88210  
TEL:  
FAX

RE: Federal AB B

OrderNo.: 2111431

Dear Dennis Williams:

Hall Environmental Analysis Laboratory received 6 sample(s) on 11/9/2021 for the analyses presented in the following report.

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

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

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

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a white background.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

**Analytical Report**

Lab Order **2111431**

Date Reported: **11/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** EOG  
**Project:** Federal AB B  
**Lab ID:** 2111431-001

**Matrix:** SOIL

**Client Sample ID:** BH21-01 1'  
**Collection Date:** 11/5/2021 10:10:00 AM  
**Received Date:** 11/9/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LRN</b>
Chloride	67	60		mg/Kg	20	11/11/2021 10:48:54 AM	63887
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	20	9.6		mg/Kg	1	11/11/2021 3:10:58 PM	63846
Motor Oil Range Organics (MRO)	78	48		mg/Kg	1	11/11/2021 3:10:58 PM	63846
Surr: DNOP	71.2	70-130		%Rec	1	11/11/2021 3:10:58 PM	63846
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/10/2021 12:15:47 PM	63838
Surr: BFB	105	70-130		%Rec	1	11/10/2021 12:15:47 PM	63838
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	11/10/2021 12:15:47 PM	63838
Toluene	ND	0.049		mg/Kg	1	11/10/2021 12:15:47 PM	63838
Ethylbenzene	ND	0.049		mg/Kg	1	11/10/2021 12:15:47 PM	63838
Xylenes, Total	ND	0.099		mg/Kg	1	11/10/2021 12:15:47 PM	63838
Surr: 4-Bromofluorobenzene	105	70-130		%Rec	1	11/10/2021 12:15:47 PM	63838

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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

**Analytical Report**

Lab Order **2111431**

Date Reported: **11/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** EOG

**Client Sample ID:** BH21-02 1'

**Project:** Federal AB B

**Collection Date:** 11/5/2021 11:45:00 AM

**Lab ID:** 2111431-002

**Matrix:** SOIL

**Received Date:** 11/9/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LRN</b>
Chloride	1100	60		mg/Kg	20	11/11/2021 12:15:47 PM	63887
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	920	200		mg/Kg	20	11/10/2021 2:37:18 PM	63846
Motor Oil Range Organics (MRO)	1200	990		mg/Kg	20	11/10/2021 2:37:18 PM	63846
Surr: DNOP	0	70-130	S	%Rec	20	11/10/2021 2:37:18 PM	63846
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/10/2021 1:26:01 PM	63838
Surr: BFB	97.6	70-130		%Rec	1	11/10/2021 1:26:01 PM	63838
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	11/10/2021 1:26:01 PM	63838
Toluene	ND	0.049		mg/Kg	1	11/10/2021 1:26:01 PM	63838
Ethylbenzene	ND	0.049		mg/Kg	1	11/10/2021 1:26:01 PM	63838
Xylenes, Total	ND	0.098		mg/Kg	1	11/10/2021 1:26:01 PM	63838
Surr: 4-Bromofluorobenzene	97.4	70-130		%Rec	1	11/10/2021 1:26:01 PM	63838

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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

**Analytical Report**

Lab Order **2111431**

Date Reported: **11/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** EOG  
**Project:** Federal AB B  
**Lab ID:** 2111431-003

**Matrix:** SOIL

**Client Sample ID:** BH21-02 1.5'  
**Collection Date:** 11/5/2021 12:00:00 PM  
**Received Date:** 11/9/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LRN</b>
Chloride	1300	60		mg/Kg	20	11/11/2021 12:28:11 PM	63887
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	120	10		mg/Kg	1	11/11/2021 3:34:59 PM	63846
Motor Oil Range Organics (MRO)	180	50		mg/Kg	1	11/11/2021 3:34:59 PM	63846
Surr: DNOP	99.5	70-130		%Rec	1	11/11/2021 3:34:59 PM	63846
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/10/2021 3:00:27 PM	63838
Surr: BFB	98.1	70-130		%Rec	1	11/10/2021 3:00:27 PM	63838
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	11/10/2021 3:00:27 PM	63838
Toluene	ND	0.046		mg/Kg	1	11/10/2021 3:00:27 PM	63838
Ethylbenzene	ND	0.046		mg/Kg	1	11/10/2021 3:00:27 PM	63838
Xylenes, Total	ND	0.093		mg/Kg	1	11/10/2021 3:00:27 PM	63838
Surr: 4-Bromofluorobenzene	98.6	70-130		%Rec	1	11/10/2021 3:00:27 PM	63838

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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

**Analytical Report**

Lab Order 2111431

Date Reported: 11/15/2021

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** EOG  
**Project:** Federal AB B  
**Lab ID:** 2111431-004

**Matrix:** SOIL

**Client Sample ID:** BH21-03 1'  
**Collection Date:** 11/5/2021 12:15:00 PM  
**Received Date:** 11/9/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LRN</b>
Chloride	440	60		mg/Kg	20	11/11/2021 12:40:36 PM	63887
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	11/10/2021 3:25:40 PM	63846
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/10/2021 3:25:40 PM	63846
Surr: DNOP	121	70-130		%Rec	1	11/10/2021 3:25:40 PM	63846
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/10/2021 3:23:56 PM	63838
Surr: BFB	98.0	70-130		%Rec	1	11/10/2021 3:23:56 PM	63838
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	11/10/2021 3:23:56 PM	63838
Toluene	ND	0.050		mg/Kg	1	11/10/2021 3:23:56 PM	63838
Ethylbenzene	ND	0.050		mg/Kg	1	11/10/2021 3:23:56 PM	63838
Xylenes, Total	ND	0.10		mg/Kg	1	11/10/2021 3:23:56 PM	63838
Surr: 4-Bromofluorobenzene	98.8	70-130		%Rec	1	11/10/2021 3:23:56 PM	63838

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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

**Analytical Report**

Lab Order **2111431**

Date Reported: **11/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** EOG

**Client Sample ID:** BH21-03 1.75'

**Project:** Federal AB B

**Collection Date:** 11/5/2021 12:30:00 PM

**Lab ID:** 2111431-005

**Matrix:** SOIL

**Received Date:** 11/9/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LRN</b>
Chloride	440	60		mg/Kg	20	11/11/2021 12:53:01 PM	63887
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	11/10/2021 3:49:52 PM	63846
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/10/2021 3:49:52 PM	63846
Surr: DNOP	117	70-130		%Rec	1	11/10/2021 3:49:52 PM	63846
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/10/2021 3:47:30 PM	63838
Surr: BFB	102	70-130		%Rec	1	11/10/2021 3:47:30 PM	63838
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	11/10/2021 3:47:30 PM	63838
Toluene	ND	0.046		mg/Kg	1	11/10/2021 3:47:30 PM	63838
Ethylbenzene	ND	0.046		mg/Kg	1	11/10/2021 3:47:30 PM	63838
Xylenes, Total	ND	0.092		mg/Kg	1	11/10/2021 3:47:30 PM	63838
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	11/10/2021 3:47:30 PM	63838

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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

**Analytical Report**

Lab Order **2111431**

Date Reported: **11/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** EOG  
**Project:** Federal AB B  
**Lab ID:** 2111431-006

**Matrix:** SOIL

**Client Sample ID:** BH21-04 1'  
**Collection Date:** 11/5/2021 12:40:00 PM  
**Received Date:** 11/9/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LRN</b>
Chloride	ND	60		mg/Kg	20	11/11/2021 1:05:25 PM	63887
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	11/10/2021 4:14:02 PM	63846
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/10/2021 4:14:02 PM	63846
Surr: DNOP	92.6	70-130		%Rec	1	11/10/2021 4:14:02 PM	63846
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/10/2021 4:11:05 PM	63838
Surr: BFB	98.5	70-130		%Rec	1	11/10/2021 4:11:05 PM	63838
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	11/10/2021 4:11:05 PM	63838
Toluene	ND	0.049		mg/Kg	1	11/10/2021 4:11:05 PM	63838
Ethylbenzene	ND	0.049		mg/Kg	1	11/10/2021 4:11:05 PM	63838
Xylenes, Total	ND	0.098		mg/Kg	1	11/10/2021 4:11:05 PM	63838
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	11/10/2021 4:11:05 PM	63838

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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2111431

15-Nov-21

**Client:** EOG  
**Project:** Federal AB B

Sample ID: <b>MB-63887</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>63887</b>	RunNo: <b>82780</b>								
Prep Date: <b>11/11/2021</b>	Analysis Date: <b>11/11/2021</b>	SeqNo: <b>2939352</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-63887</b>	SampType: <b>ics</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>63887</b>	RunNo: <b>82780</b>								
Prep Date: <b>11/11/2021</b>	Analysis Date: <b>11/11/2021</b>	SeqNo: <b>2939353</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	90.5	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 interference
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2111431

15-Nov-21

**Client:** EOG  
**Project:** Federal AB B

Sample ID: <b>MB-63846</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>63846</b>	RunNo: <b>82729</b>								
Prep Date: <b>11/9/2021</b>	Analysis Date: <b>11/10/2021</b>	SeqNo: <b>2938788</b>	Units: <b>mg/Kg</b>							
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	11		10.00		106	70	130			

Sample ID: <b>LCS-63846</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>63846</b>	RunNo: <b>82729</b>								
Prep Date: <b>11/9/2021</b>	Analysis Date: <b>11/10/2021</b>	SeqNo: <b>2938789</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	10	50.00	0	100	68.9	135			
Surr: DNOP	5.5		5.000		109	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 interference
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2111431

15-Nov-21

**Client:** EOG  
**Project:** Federal AB B

Sample ID: <b>mb-63838</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>63838</b>	RunNo: <b>82755</b>								
Prep Date: <b>11/9/2021</b>	Analysis Date: <b>11/10/2021</b>	SeqNo: <b>2937740</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1100		1000		105	70	130			

Sample ID: <b>lcs-63838</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>63838</b>	RunNo: <b>82755</b>								
Prep Date: <b>11/9/2021</b>	Analysis Date: <b>11/10/2021</b>	SeqNo: <b>2937741</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.2	78.6	131			
Surr: BFB	1200		1000		118	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 interference
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2111431

15-Nov-21

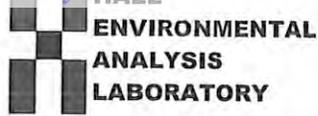
**Client:** EOG  
**Project:** Federal AB B

Sample ID: <b>mb-63838</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>63838</b>	RunNo: <b>82755</b>								
Prep Date: <b>11/9/2021</b>	Analysis Date: <b>11/10/2021</b>	SeqNo: <b>2937780</b>	Units: <b>mg/Kg</b>							
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		105	70	130			

Sample ID: <b>LCS-63838</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>63838</b>	RunNo: <b>82755</b>								
Prep Date: <b>11/9/2021</b>	Analysis Date: <b>11/10/2021</b>	SeqNo: <b>2937781</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.025	1.000	0	93.1	80	120			
Toluene	0.95	0.050	1.000	0	94.6	80	120			
Ethylbenzene	0.96	0.050	1.000	0	96.4	80	120			
Xylenes, Total	2.9	0.10	3.000	0	96.0	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		104	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 interference
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit



# Sample Log-In Check List

Client Name: EOG

Work Order Number: 2111431

RcptNo: 1

Received By: **Isaiah Ortiz** 11/9/2021 8:00:00 AM

Completed By: **Tracy Casarrubias** 11/9/2021 8:53:14 AM

Reviewed By: *Cmc* 11/9/21

*I-01*  
*[Signature]*

### Chain of Custody

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

### Log In

- 3. Was an attempt made to cool the samples? Yes  No  NA
- 4. Were all samples received at a temperature of >0° C to 6.0°C Yes  No  NA
- 5. Sample(s) in proper container(s)? Yes  No
- 6. Sufficient sample volume for indicated test(s)? Yes  No
- 7. Are samples (except VOA and ONG) properly preserved? Yes  No
- 8. Was preservative added to bottles? Yes  No  NA
- 9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes  No  NA
- 10. Were any sample containers received broken? Yes  No
- 11. Does paperwork match bottle labels? 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: \_\_\_\_\_  
(<2 or >12 unless noted)  
Adjusted? \_\_\_\_\_  
Checked by: *JMC 11/9/21*

### 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	3.3	Good	Not Present			

### Chain-of-Custody Record

Client: EOG  
 Mailing Address: Cher Soble  
 Phone #: \_\_\_\_\_  
 email or Fax#: \_\_\_\_\_  
 QA/QC Package:  Standard  Level 4 (Full Validation)  
 Accreditation:  Az Compliance  
 NELAC  Other \_\_\_\_\_  
 EDD (Type) \_\_\_\_\_

Turn-Around Time: 5 day  
 Standard  Rush  
 Project Name: Federal AB-B  
 Project #: 21E-03278  
 Project Manager: Dennis Williams  
 Sampler: JH  
 On Ice:  Yes  No  
 # of Coolers: 1  
 Cooler Temp (including CF): 3.4°-0.1° (F) / 3.3° (°C)

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.
11/5	10:10	soil	BHA1-01 1'	40Z ice	ice	2111431
	11:45		BHA1-02 1'			001
	12:00		BHA1-02 1.5'			002
	12:15		BHA1-03 1'			003
	12:30		BHA1-03 1.75'			004
	12:40		BHA1-04 1'			005
						006

Analysis Request	
<input checked="" type="checkbox"/> BTEX / MTBE / TMB's (8021)	
<input checked="" type="checkbox"/> TPH/8015D(GRO / DRO / MRO)	
<input checked="" type="checkbox"/> 8081 Pesticides/8082 PCB's	
<input checked="" type="checkbox"/> EDB (Method 504.1)	
<input checked="" type="checkbox"/> PAHs by 8310 or 8270SIMS	
<input checked="" type="checkbox"/> RCRA 8 Metals	
<input checked="" type="checkbox"/> Cl, F, Br, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub>	
<input checked="" type="checkbox"/> 8260 (VOA)	
<input checked="" type="checkbox"/> 8270 (Semi-VOA)	
<input checked="" type="checkbox"/> Total Coliform (Present/Absent)	

Received by: Williams Date: 11/8/21 Time: 12:45  
 Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Received by: Trina Cannon Date: 11-9-21 Time: 0800  
 Relinquished by: Williams Date: \_\_\_\_\_ Time: \_\_\_\_\_

Remarks: CC:

Monica Paffin / moffitt@vernetx.com

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

Federal AB-B Battery  
Closure Report  
#nMCS0124838636



August 31, 2022

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# Appendix G

## 2021 Vertex Field Notes



# Daily Site Visit Report

Client:	<u>EOG Resources Inc.</u>	Inspection Date:	<u>11/5/2021</u>
Site Location Name:	<u>Federal AB-B Battery</u>	Report Run Date:	<u>11/5/2021 9:03 PM</u>
Client Contact Name:	<u>Chase Settle</u>	API #:	<u></u>
Client Contact Phone #:	<u>575-703-6537</u>		
Unique Project ID	<u></u>	Project Owner:	<u></u>
Project Reference #	<u></u>	Project Manager:	<u></u>

## Summary of Times

Arrived at Site	<u>11/5/2021 9:33 AM</u>
Departed Site	<u>11/5/2021 2:09 PM</u>

## Field Notes

- 9:47** Tailgate/ flha and getting sample supplies ready
- 9:55** Collecting 4 sample points . Each point will have 1 foot and 2 foot collected and field screened.
- 10:04** Collecting of BH21-01
- 11:29** Had to stop work, an old pvc line was stuck. Nothing registered when line sweeping was done. Waiting on roustabout crew to come clamp line. Also waiting on Johnny with EOG to give the clear to continue the Boreholes.
- 12:36** Continuing with BH21-02. Hit refusal at 1.5'
- 12:36** Moved to BH21-03. Which is 50' from BH02 . BH03 hit refusal at 1.75'
- 12:37** Moved to BH21-04
- 12:45** BH21-04 refusal at 1'
- 13:16** Field screening all sample, EC, petro and pid
- 13:59** All samples are jarred and ready for lab.

# Daily Soil Sampling



**Client:** Client: EOG Resources Inc.

**Location:** Site: Federal AB-B Battery

**Date:** (SD: 11/5/21)

Sampling											
		Field Screening								Data Collection	
		Hydrocarbon		Chloride							
Sample ID	Depth (ft)	VOC (PID)	TPH (ppm)	EC Reading (mS/cm)	Temp (°C)	EC Chloride (ppm)	Chloride Titration (ppm)	Lab Analysis	Photo Taken	Marked on Sketch	Refusal Depth (ft)
BH21-01	1.0	0	494	0.21	20.1	243		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	✓	✓	
BH21-02	1.0	0	6930	1.23	20.6	1694		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	✓	✓	
BH21-02	1.5	0	678	1.43	20.5	1987		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	✓	✓	1.50
BH21-03	1.0	1	21	0.72	20.3	971		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	✓	✓	
BH21-03	1.8	1	31	0.64	20.3	855		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	✓	✓	1.75
BH21-04	1.0	0	36	0.11	20.1	99		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	✓	✓	1.00

# Daily Site Visit Report



Daily Site Visit Signature

**Inspector:** John Ramirez

**Signature:**

  
Signature

**District I**  
 1625 N. French Dr., Hobbs, NM 88240  
 Phone:(575) 393-6161 Fax:(575) 393-0720

**District II**  
 811 S. First St., Artesia, NM 88210  
 Phone:(575) 748-1283 Fax:(575) 748-9720

**District III**  
 1000 Rio Brazos Rd., Aztec, NM 87410  
 Phone:(505) 334-6178 Fax:(505) 334-6170

**District IV**  
 1220 S. St Francis Dr., Santa Fe, NM 87505  
 Phone:(505) 476-3470 Fax:(505) 476-3462

**State of New Mexico**  
**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

CONDITIONS

Action 220839

**CONDITIONS**

Operator: EOG RESOURCES INC P.O. Box 2267 Midland, TX 79702	OGRID: 7377
	Action Number: 220839
	Action Type: [C-141] Release Corrective Action (C-141)

**CONDITIONS**

Created By	Condition	Condition Date
amaxwell	Work plan approved. Submit a closure report via the OCD permitting portal by 10/8/2023.	5/30/2023