

EOG Y Resources, Inc.

Characterization Plan

Kleeman PD & Platt Battery

30-015-00253

Section 26, T18S-R26E

Eddy County, New Mexico

October 23, 2017

2RP-4422

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I. Location

Take US 285 north for 9 miles and turn left on E Kincaid Ranch Road and drive 2.1 miles, location will be on the left.

II. Background

On September 28, 2017, EOG Y Resources, Inc. submitted to the NMOCD District II office a Form C-141 for the release of 27 B/O, 110 B/PW with 1 B/O, 0 B/PW recovered. The affected area is The release was caused by a hole in the bottom of the production tank.

III. Surface and Ground Water

Area surface geology is Paleozoic Permian. Based on information from the New Mexico Office of the State Engineer (NMOSE) database and United States Geological Survey National Water Information System (USGS) regarding this location (Section 26, T18S-R26E), depth to groundwater is approximately 58' 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 the Pecos River at 3 miles away.

IV. NMOCD Ranking Criteria

The ranking for this site is zero (10) based on the following:

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

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

Benzene	10 ppm
BTEX	50 ppm
TPH	1,000 ppm
Chlorides	No established RRAL

V. Sampling Procedure

Vertical delineation samples will be collected at 5 sample points (S1-S5) within the release area. Samples will be collected at 1', 2', 3', and 4' below grade surface (bgs). Due to the nature of the release (produced water), the first set of vertical delineation hole soil samples (1' and 2' bgs) will be analyzed for Benzene, BTEX, TPH extended, and chlorides. If these samples are below RRALs for Benzene, BTEX, and TPH extended, no further sampling for these constituents will occur, only chloride will be analyzed with any further soil sampling if the initial sample analyses warrant further delineation. All samples will be sent to a NMOCD approved laboratory for analysis. Based on those results, additional vertical samples may be collected at the same sample points until the RRAL for a site ranking 0 has been met.

Horizontal delineation samples will be collected at 8 sample points (H1-H8) at what is believed to be the outer edge of the release area. Samples will be collected at 1' bgs and analysis will be run for the identified constituents determined from vertical delineation sampling to have caused impaction to the soil at the site. If a sample point is determined to be impacted by the release, a new sample will be collected moving out further until an area without impaction is located. Once located, samples will be taken to collaborate the impaction path to the next sample point in the sequence.

As a baseline for all sampling analytical data, background samples will be collected from a point northeast of release which remains on the production pad in an area that has no known release impaction. This creates less damage to the landowner's private surface by keeping the activities on the production pad and reduces the vegetative damage that would otherwise be created by moving off of location to collect background samples in the adjoining pasture.


Figure 1

Site Map

Kleeman PB Battery

2RP-4422

Legend

 Release Outline

32 71539 -104 35735

32 71539 -104 35732

32 71526 -104 35731

32 71526 -104 35724

32 71523 -104 35734

32 71523 -104 35730

32 71515 -104 35729

32 71514 -104 35723



60 ft

Google Earth

Figure 2

Vertical Sample Points

Kleeman PB Battery

2RP-4422

Legend

- Release Outline
- Vertical Sample Points



60 ft

Google Earth

Figure 3

Horizontal Sample Points

Kleeman PB Battery

2RP-4422

Legend

- Horizontal Sample Points
- Release Outline



Google Earth

60 ft

Figure 4

Background Sample Point

Kleeman Battery

2RP-4422

Legend

Background Sample

Background Sample

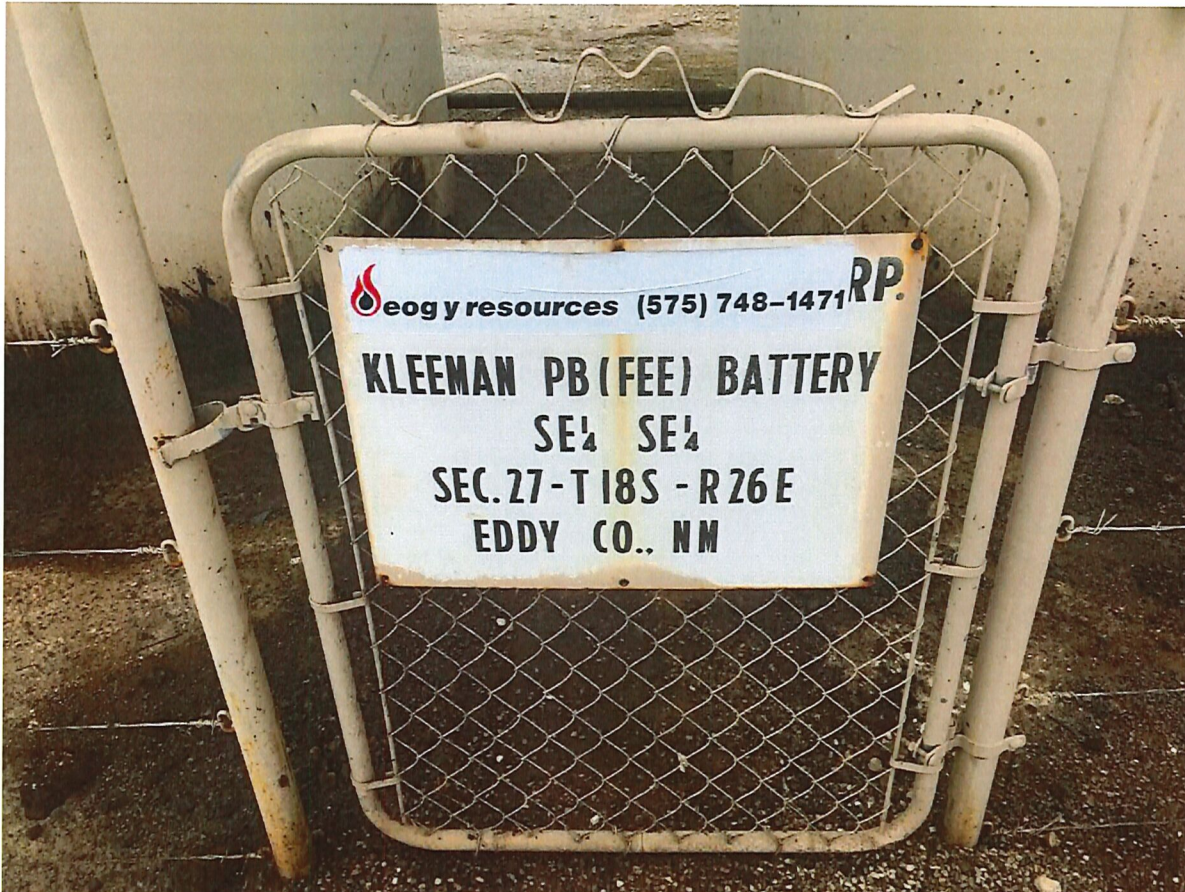


100 ft

Google Earth



Photos









Appendix A

NMOSE Well Log



New Mexico Office of the State Engineer

Wells with Well Log Information

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

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

(quarters are 1=NE 2=NE 3=SW 4=SE)
(quarters are smallest to largest)

(NAD83 UTM in meters)

(in feet)

POD Number	Code	Subbasin	County	Source	64 16 4	Sec	Tws	Rng	X	Y	Distance	Start Date	Finish Date	Log File Date	Depth Well	Depth Water	Driller	License Number
RA 04023			CH	Artesian	2	1	35	18S 26E	560465	3619281*	661			07/22/1960			CAMPBELL	289
RA 07242 -EXPL			ED	Shallow	3	4	26	18S 26E	560863	3619682*	667	09/20/1983	10/30/1983	11/08/1983	102	55	KUGHES DRILLING COMPANY	749
RA 07242 EXP			ED	Shallow	3	4	26	18S 26E	560863	3619682*	667	09/20/1983	10/30/1983	11/08/1983	102	55		749
RA 07243 -EXPL			ED	Shallow	3	4	26	18S 26E	560863	3619682*	667	07/01/1984	07/25/1984	07/27/1984	110	50	HUGHES DRILLING COMPANY	749
RA 07243 EXP			ED	Shallow	3	4	26	18S 26E	560863	3619682*	667	07/01/1984	07/25/1984	07/27/1984	110	50		749
RA 07243 EXPL			ED	Shallow	3	4	26	18S 26E	560863	3619682*	667	07/01/1984	07/25/1984	07/27/1984	110	50		749

Record Count: 6

UTM NAD83 Radius Search (in meters):

Easting (X): 560232

Northing (Y): 3619899.76

Radius: 750

*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.

10/23/17 11:03 AM

WELLS WITH WELL LOG INFORMATION

Appendix B

USGS Groundwater Level Information



National Water Information System: Web Interface

USGS Water Resources

Data Category: Geographic Area:

Click to hideNews Bulletins

- [Please see news on new formats](#)
- [Full News](#)

Groundwater levels for the Nation

Search Results -- 1 sites found

Agency code = usgs

site_no list =

- 324249104220601

Minimum number of levels = 1

Date range = 07/01/1993 . 10/23/2017

[Save file of selected sites](#) to local disk for future upload

USGS 324249104220601 18S.26E.27.433333

Eddy County, New Mexico

Latitude 32°42'49", Longitude 104°22'06" NAD27

Land-surface elevation 3,351 feet above NAVD88

The depth of the well is 744 feet below land surface.

This well is completed in the Grayburg Formation (313GRBG) local aquifer.

Output formats

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

Date	Time	? Water-level date-time accuracy	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Water-level accuracy	? Status	? Method of measurement	? Measuring agency	? Source of measurement	? Water-level approval status
1993-07-01		D	104.67			2		S			A
1993-08-02		D	105.03			2		S			A
1993-09-01		D	110.27			2		S			A
1994-02-08		D	44.65			2		S			A
1999-01-07		D	51.70			2		S			A
2003-01-23		D	57.61			2		S	USGS		A
2004-01-30		D	58.10			2		S	USGS		A
2005-01-26	10:49 MST	m	50.72			2		S	NM001		A

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Water-level date-time accuracy	m	Date is accurate to the Minute
Water-level accuracy	2	Water level accuracy to nearest hundredth of a foot
Status		The reported water-level measurement represents a static level
Method of measurement	S	Steel-tape measurement.
Measuring agency		Not determined
Measuring agency	NM001	New Mexico State Engineers Office
Measuring agency	USGS	U.S. Geological Survey
Source of measurement	A	Reported by another government agency (do not use "A" if reported by owner, use "O").
Source of measurement	R	Reported by person other than the owner, driller, or another government agency.
Source of measurement	S	Measured by personnel of reporting agency.
Source of measurement	U	Source is unknown.
Water-level approval status	A	Approved for publication -- Processing and review completed.

[Questions about sites/data?](#)

[Feedback on this web site](#)

[Automated retrievals](#)

[Help](#)

Appedix C

Form C-141 Initial

NM OIL CONSERVATION

ARTESIA DISTRICT

SEP 28 2017

Form C-141
Revised April 3, 2017

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

State of New Mexico
Energy Minerals and Natural Resources

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

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

Release Notification and Corrective Action

OPERATOR

NAB1727254031

☒ Initial Report ☐ Final Report

Name of Company EOG Y Resources, Inc.	25575	Contact Chase Settle
Address 104 S. 4 th Street Artesia NM 88210		Telephone No. 575-748-1471
Facility Name Kleeman PD & Platt PA Battery		Facility Type Battery

Surface Owner Private	Mineral Owner Private	API No. 30-015-00253
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LOCATION OF RELEASE

Unit Letter L	Section 26	Township 18S	Range 26E	Feet from the 1950	North/South Line South	Feet from the 990	East/West Line West	County Eddy
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Latitude 32.71563 Longitude -104.35731 NAD83

NATURE OF RELEASE

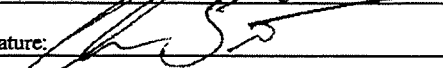
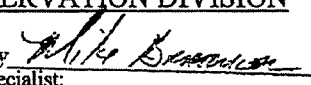
Type of Release Crude Oil/Produced Water	Volume of Release 27 B/O, 110 B/PW	Volume Recovered 1 B/O, 0 B/PW
Source of Release Tank	Date and Hour of Occurrence 9/12/2017; 7:42 AM	Date and Hour of Discovery 9/12/2017; 7:42 AM
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mike Bratcher and Crystal Weaver	
By Whom? Robert Asher	Date and Hour September 12, 2017, 1:40 PM	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

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

Describe Cause of Problem and Remedial Action Taken.*
The cause of the release was determined to be from a hole in the bottom of the production tank.

Describe Area Affected and Cleanup Action Taken.*
The release occurred within the battery berm the exact area impacted will be reported when the characterization plan is submitted to NMOCD. Vertical and horizontal delineation samples will be taken and analysis ran for TPH & BTEX (chlorides for documentation). If initial analytical results for TPH & BTEX are under RRAL's (site ranking is 10) a Final Report, C-141 will be submitted to the OCD requesting closure. If the analytical results are above the RRAL's a work plan will be submitted to the OCD. Depth to Ground Water: >50 -99' (58', Section 26, T18S, R26E, per NMOSE & USGS), Wellhead Protection Area: No, Distance to Surface Water Body: >1000', SITE RANKING IS 10.

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: 	OIL CONSERVATION DIVISION	
Printed Name: Chase Settle	Signed By  Approved by Environmental Specialist:	
Title: Rep Safety & Environmental II	Approval Date: 9/29/17	Expiration Date: N/A
E-mail Address: chase_settle@eogresources.com	Conditions of Approval: See attached	
Date: September 28, 2017	Phone: 575-748-4171	Attached: ARP-4422

* Attach Additional Sheets If Necessary

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 9/28/2017 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number RRP-4422 has been assigned. **Please refer to this case number in all future correspondence.**

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

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

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District 2 office in ARTESIA on or before 10/28/2017. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

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

- Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.
- Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.
- Nominal detection limits for field and laboratory analyses must be provided.
- Composite sampling is not generally allowed.
- Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

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

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

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

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

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

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

Bratcher, Mike, EMNRD

From: Darlene Chavarria <Darlene_Chavarria@eogresources.com>
Sent: Thursday, September 28, 2017 3:14 PM
To: Bratcher, Mike, EMNRD; Weaver, Crystal, EMNRD
Cc: Chase Settle; Bob Asher; Yvette Moore
Subject: Emailing: Kleeman PB Battery C-141
Attachments: Kleeman PB Battery C-141.pdf

Ladies & Gentlemen,
Attached is the Initial C-141 regarding the Kleeman PB Battery. Thank you.

EOG Resources

Darlene Chavarria
Safety & Environmental
Office 575-748-4368
Extension 54368
Darlene_chavarria@eogresources.com

Your message is ready to be sent with the following file or link attachments:

Kleeman PB Battery C-141

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.