



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

EOG Y Resources, Inc.

Characterization Plan

Patrick API Battery

30-015-28592

Section 10, T19S-R25E

Eddy County, New Mexico

January 30, 2018

2RP-4522

I. Location

Drive South of Artesia on highway 285 to West Kincaid Ranch Road. Follow Kincaid Ranch Road west for 5.8 miles, then turn south on the lease road for 0.68 mile to the location.

II. Background

On December 14, 2017, EOG Y Resources, Inc. submitted to the NMOCD District II office a Form C-141 for the release of 13 B/PW with 1 B/PW recovered. The affected area impacted by the 2RP-4522 release is approximately 140 feet by 10 feet within the battery berm. The release was caused by the failure of a pipe coupling on the downstream side of the pump that caused the release. A vacuum truck was dispatched to recover the standing fluid and a backhoe crew was contracted to excavate visually impacted soils, approximately 6 inches of soil was excavated and sent to a NMOCD approved disposal facility during these activities.

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 10, T19S-R25E), depth to groundwater is approximately 195 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 7.8 miles away.

IV. NMOCD Ranking Criteria

The ranking for this site is zero (0) 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	5,000 ppm
Chlorides	No established RRAL

V. Sampling Procedure

Vertical delineation samples will be collected at 3 sample points (V1-V3) 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 6 sample points (H1-H6) 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 off location to the south in an area that has not been impacted by any known releases.


Figure 1

Site Map

Patrick API Battery

Release Map w/ Lat and Long

Legend

 Release Area

32.68083, -104.47975

32.68085, -104.47936

32.68081, -104.47975

32.68082, -104.47936

Google Earth

100 ft



Figure 2

Vertical and Background Sample Points

Patrick API Battery
Release Map w/ Vertical Sampling Points

- Legend**
- Release Area
 - Vertical Background Point
 - Vertical Sample Points

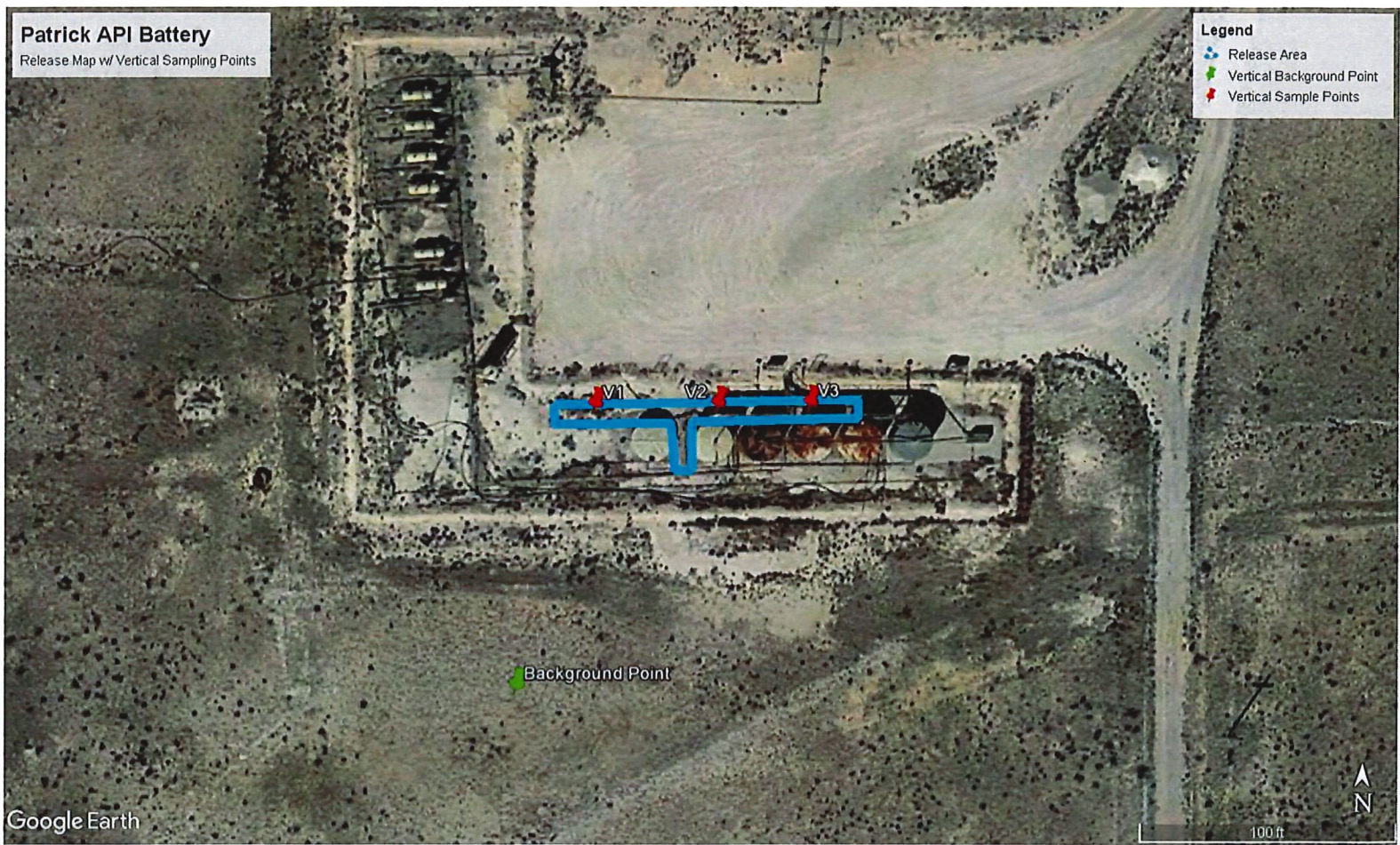


Figure 3

Horizontal Sample Points

Patrick API Battery
Release Map w/ Horizontal Sampling Points

Legend

- Background Point
- Horizontal Sampling Points
- Release Area



Google Earth

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

(NAD83 UTM in meters)

(in feet)

POD Number	Code	Subbasin	County	Source	6416.4	Sec	Tws	Rng	X	Y	Distance	Start Date	Finish Date	Log File Date	Depth Well	Depth Water	Driller	License Number
RA 05333			ED	Shallow	2	2	09	19S 25E	548430	3616046*	368	04/18/1967	05/05/1967	05/12/1967	315	260	EXISTING WELL	353

Record Count: 1

UTM/NAD83 Radius Search (in meters):

Easting (X): 548798.22 **Northing (Y):** 3616042.86 **Radius:** 1000

*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.

12/13/17 10:28 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 hide News 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 =
• 324100104285501

Minimum number of levels = 1

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

USGS 324100104285501 19S.25E.04.444341

Eddy County, New Mexico
Latitude 32°41'00", Longitude 104°28'55" NAD27
Land-surface elevation 3,515 feet above NGVD29
This well is completed in the San Andres Limestone (313SADR) 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
1994-02-10		D	194.24			2	Z	S		U	A

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Water-level accuracy	2	Water level accuracy to nearest hundredth of a foot
Status	Z	Other conditions existed that would affect the measured water level (explain in remarks).
Method of measurement	S	Steel-tape measurement.
Measuring agency		Not determined
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](#)

[Data Tips](#)

[Explanation of terms](#)

[Subscribe for system changes](#)

[News](#)

Accessibility Plug-Ins FOIA Privacy Policies and Notices

[U.S. Department of the Interior](#) | [U.S. Geological Survey](#)

Title: Groundwater for USA: Water Levels

URL: <https://nwls.waterdata.usgs.gov/nwls/gwlevels?>



Page Contact Information: [USGS Water Data Support Team](#)

Page Last Modified: 2017-12-13 12:33:53 EST

0.52 0.45 nadww01



National Water Information System: Map View

Sites

Map Layers

Search Results

Export Sites

Site Number	Site Name
3241001042855	19S.25E.04.444341
01	

Search Parameters

Explanation of Symbols



Appendix C

Form C-141 Initial

NM OIL CONSERVATION

ARTESIA DISTRICT

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

DEC 14 2017

Form C-141
Revised April 3, 2017

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

Release Notification and Corrective Action

OPERATOR

NAB17363345LD

Initial Report Final Report

Name of Company EOG Y Resources, Inc. <i>#25515</i>	Contact Chase Settle
Address 104 S. 4 th Street Artesia NM 88210	Telephone No. 575-748-1471
Facility Name Patrick API Battery	Facility Type Battery

Surface Owner Fee	Mineral Owner Fee	API No. 30-015-28592
----------------------	----------------------	-------------------------

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	10	19S	25E	660	North	660	West	Eddy

Latitude 32.68109 Longitude -104.47914 NAD83

NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 13 B/PW	Volume Recovered 1 B/PW
Source of Release Pipe Coupling by pump	Date and Hour of Occurrence 12/01/2017; AM	Date and Hour of Discovery 12/01/2017; 8:41 AM
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

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

Describe Cause of Problem and Remedial Action Taken.*

There was a failure of a pipe coupling on the downstream side of the pump that caused the release.

Describe Area Affected and Cleanup Action Taken.*

The impacted area was approximately 140 feet by 10 feet within the berm of the battery. 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 0) 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: >100' (19S, Section 10, T19S, R25E, per NMOSE), Wellhead Protection Area: No, Distance to Surface Water Body: >1000', SITE RANKING IS 0.

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

Signature: <i>Chase Settle</i>	OIL CONSERVATION DIVISION	
Printed Name: Chase Settle	Approved by Environmental Specialist: <i>Accepted for</i>	
Title: Rep Safety & Environmental II	Approval Date: <i>12/18/17</i>	Expiration Date: <i>NIA record</i>
E-mail Address: chase.settle@eogresources.com	Conditions of Approval: <i>See attached</i>	Attached <input checked="" type="checkbox"/> <i>only</i> <i>280-4522</i>
Date: December 13, 2017 Phone: 575-748-4171		

* Attach Additional Sheets If Necessary

12/15/17 AB