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Our ref: 11220747

February 09, 2022

New Mexico Oil Conservation Division  
District 1  
1625 N. French Drive  
Hobbs, New Mexico 88240

Groundwater Closure Request Report  
Flamenco Federal #1 Release Site  
EOG Resources Inc.  
RP #s: 1RP-2281, 1 RP-2784, 1RP-2790, 1RP-4800 and 1RP-4801  
L-7-22S-32E, Lea County, New Mexico

To Whom It May Concern:

## 1. Introduction

GHD Services, Inc. (GHD), on behalf of EOG Resources (EOG), submits this Groundwater Closure Request Report to the New Mexico Oil Conservation Division (NMOCD) District 1 Office. This Report provides documentation of the April 2021 perched water sampling event at the EOG Flamenco Federal #1 Release Site (Site). Additionally, the report summarizes additional soils investigative work conducted at the site which is covered in more detail under separate cover, Site Characterization and Soil Work Plan. This report provides evidence that the water found in the on-site monitoring wells is perched produced water from the spills that occurred rather than groundwater that should be protected. The Site is located in Unit Letter L Section 7 of Township 22 South and Range 32 East in Lea County, New Mexico. The GPS coordinates for the release site are 32.40333 N latitude and 103.72034 W longitude. The release occurred on land that is managed by the Bureau of Land Management (BLM). Figure 1 depicts the Site location. The EOG production facility and other site details are depicted on Figure 2, Site Details Map.

## 2. Background Information

### 2.1 Tin Horn Area Releases

- **1RP-2784** – The C-141 stated the release was due to a water line connection failure within the tin horn. The release occurred on July 12, 2011 and resulted in 150 barrels of produced water being released. A vacuum truck was call and approximately 100 barrels of produced water was recovered. Yates Petroleum Corporation (Yates), the operator at the time, submitted an initial C-141 to the NMOCD on July 22, 2011.
- **1RP-2790** – According to the initial C-141 the release was caused by a water line connection within the tin horn failing. The release occurred on October 21, 2011 and resulted in 275 barrels of produced water

being released. Approximately 260 barrels of produced water was recovered with the utilization of a vacuum truck. Yates submitted an initial C-141 to the NMOCD on November 2, 2011.

- **1RP-4800** – The initial C-141 stated the release was due to a failure of the water line connection at the tin horn. The release resulted in the release of 200 barrels of produced water and occurred on June 12, 2013. Nothing was recovered. An initial C-141 was prepared and submitted to the NMOCD on January 31, 2014.
- **1RP-4801** – According to the initial C-141 the release was due to a water line connection failure at the tin horn. The release occurred on August 4, 2013. The connection failure resulted in the release of 600 barrels of produced water with none being recovered. Yates prepared and submitted an initial C-141 to the NMOCD on January 31, 2014.

The four releases mentioned above resulted in approximately 865 barrels of produced water being unrecovered. The initial C-141s are provided as Attachment A.

## 2.2 Battery Area Release

- **1RP-2281** – According to the initial C-141, lightning struck a 750-barrel fiberglass gun barrel tank which caused a release and fire to occur. Four other tanks that were on location were also destroyed. The fire department was called, and the main water line was shut in. Approximately 100 barrels of oil and 600 barrels of produced water were released with none being recovered. The release occurred on August 11, 2009. The C-141 also stated the fluids broke through the battery berm and released to the west of the battery, off pad. The tank battery at the time was located at the west end of the battery and was rebuilt on east end of the battery. Yates submitted an initial C-141 on August 20, 2009.

This release resulted in approximately 600 barrels of produced water being unrecovered. The initial C-141 for this release is provided as Attachment A.

Ten (10) soil borings were completed at the Site during 2018 in order to assess the vertical and horizontal extent of the chloride contaminated soil (locations are shown on Figure 4). Depths of the soil borings ranged from 25 to 65 ft bgs. A hard caliche layer was encountered in soil boring MW-5 at 25 ft bgs and it was terminated. Soil borings that did not encounter water were grouted. In five soil borings where perched produced water was encountered, a monitor well was installed. Monitor wells MW-1, MW-2 and MW-3 were installed in January 2018 by White Drilling Company, Inc. of Clyde, Texas and monitor wells MW-8 and MW-9 were installed in August 2018 by Authentic Drilling, Inc. of Castle Rock, Colorado. All borings were advanced utilizing an air rotary drill rig. Monitor well locations can be found on Figure 2, Site Details Map.

Historical perched water sampling events were conducted on February 23, 2018, June 21, 2018, October 19, 2018, and January 11, 2019. Monitor wells MW-8 and MW-9 were not sampled due to a lack of perched water for sampling during the October 2018 and January 2019 sampling events. Sample results for monitor wells MW-1, MW-2, and MW-3 indicated high chloride and TDS concentrations. Chloride concentrations ranged from 6,900 mg/L in MW-2 on June 21, 2018, to 49,000 mg/L in MW-3 on October 19, 2018. TDS concentrations ranged from 15,300 in MW-2 on June 21, 2018, to 100,000 mg/l in MW-3 on January 11, 2019. There are more details in the 2018 Annual Groundwater Monitoring Report provided as Attachment E.

## 3. April 2021 Perched Water Sampling Event

Prior to gauging activity, fluid levels were gauged with an oil-water interface probe to the nearest hundredth of a foot. After recording all fluid levels, perched water samples were collected using low-flow sampling techniques. During the low purging process, geochemical field parameters including pH, conductivity, temperature, dissolved oxygen (DO), total dissolved solids (TDS) and oxidation-reduction potential (ORP) were recorded. Purging continued until these parameters stabilized or the well went dry. One duplicate sample was collected during the sampling event. Laboratory-supplied sample containers were filled directly from the low flow tubing. Groundwater samples were placed on ice and chilled to a temperature of approximately 4°C (40°F). Proper

chain-of-custody documentation accompanied the samples to Eurofins Xenco Environment testing in Carlsbad, New Mexico for analysis of BTEX by EPA Method 8021B, chloride by Method 300.0 and TDS.

On April 6, 2021, GHD went to the site and conducted a perched water sampling event. Samples were collected from monitor wells MW-1, MW-2, MW-3, MW-8 and MW-9. Low flow sampling could not be completed in MW-8 and MW-9 due to a lack of water. Grab samples were collected using disposable bailers. Analytical results indicate that all of the wells at the site have chloride and TDS concentrations over the New Mexico Water Quality Control Commission (NMWQCC) standards of 250 mg/L and 1,000 mg/L, respectively. Chloride concentrations ranged from 765 mg/L in MW-8 to 39,400 mg/L in MW-3 and TDS concentrations ranged from 2,630 mg/L in MW-8 to 72,500 mg/L in MW-3. No benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) concentrations were detected in any of the wells. Laboratory reports and chain-of-custody documentation are provided as Attachment D.

## 4. 2021 Site Assessment Summary

From July 25, 2021, through August 18, 2021, two soil borings (MW-10 and MW-11) were installed to a depth of 105 feet below ground surface (bgs.) to determine depth to groundwater at the site. MW-10 was up gradient of the monitor wells and MW-11 was down gradient of MW-3 which is the well with the highest chloride and TDS concentrations. The borings were left open for seventy-two (72) hours and then were gauged with an interface probe to determine the presence or absence of groundwater. There was no water detected and the borings were plugged. Additionally, thirty-two (32) soil borings were installed to delineate soil impacts.

During the April 6, 2021, perched water sampling event the depth to water was measured in each well along with total depth. When the depth to water measurement is adjusted for the three (3) foot stick up the depth to water ranged from 52.83 feet in MW-1 to 63.83 feet in MW-8 from ground surface. The total depths of the wells ranged from 58.09 feet in MW-3 to 67.01 in MW-8 from ground surface. The soil borings had total depths that ranged from fifteen (15) feet to eighty (80) feet. Soil borings SB-12, SB-18, SB-21A, SB-33, SB-35, SB-36, SB-37, SB-38, MW-10, and MW-11, which are depicted on Figure 7, Boreholes  $\geq 60$  Feet, were all installed to a depth of sixty feet or greater and no water was detected in any of the borings. These deeper borings and wells support that naturally occurring groundwater is not present at the sampled locations and the perched water zone is discontinuous and of limited areal extent.

As mentioned in Section 2, Background Information, the four (4) releases that occurred at the tin horn area resulted in 865 barrels of produced water being unrecovered and the release at the battery area resulted in 600 barrels of produced water being unrecovered. A total of 1,485 barrels of produced water was left unrecovered at the site. If there was protectable groundwater shallower than 105 feet bgs at the site it would have been encountered during soil boring installation. The water that is present in the monitor wells is perched produced water that wasn't recovered from the five (5) releases that occurred at the site.

GHD and Cascade Drilling well logs and plugging reports are provided as Attachment B. The New Mexico State of Engineer (NMSOE) well permits, and the Bureau of Land Management (BLM) Sundry Notice are provided as Attachment C. The soils evaluation of the 2021 Site Assessment is covered in more detail under separate cover, Site Characterization and Soil Work Plan.

## 5. Site Hydrogeological Setting

GHD conducted research to evaluate the Site hydrogeological framework using both published literature and information derived from soil and groundwater assessment activities performed at this location. The objective of the studies are to properly document Site groundwater and hydrogeological conditions in this report for closure considerations.

In this remote part of Eddy-Lea County, New Mexico, the land is sparsely populated and sparingly utilized outside of oil and gas extraction and Potash mining activities. However, the Flamenco site is situated approximately two miles northeast of United States Department of Energy (DOE), Waste Isolation Pilot Plant (WIPP). As required by federal regulations, extensive WIPP Site Suitability Studies, including Environmental Impact Statement (EIS) processes and public hearings were conducted and included evaluation of the local hydrogeology and environmental risks associated with storing radioactive waste in the Permian Salado (salt) Formation approximately 3,500 feet below the ground surface. The installation of mine shafts through any significant groundwater bearing units were particularly scrutinized along with their risk potential as routes of exposure to radiation by human, health and the environment. Ultimately, the WIPP site was approved and has been operational in the storage of low-level radioactive waste since 1999. This approval signals any potential shallow groundwater at the Site is of very low significance for environmental impacts.

GHD reviewed several DOE publications including: *Summary Evaluation of the Waste Isolation Pilot Plant (WIPP) Site Suitability*, Wendall D. Weart (1983); *Geohydrology of the Proposed Waste Isolation Pilot Plant Site, Los Medanos Area, Southeastern New Mexico*, Jerry W. Mercer, (1983) USGS Water Resources Investigations Report 83-4016; *Geological Characterization Report, Waste Isolation Pilot Plant Site, Southeastern New Mexico*, SAND78-1596 (1978); and *Department of Energy, Environmental Impact Statement (EIS), Waste Isolation Pilot Plant* (October 1980) for this report. The following is a summary of findings of the literature review in association with proposed closure activities associated with groundwater management at the Site:

- The Culebra Dolomite Member of the (Permian) Rustler Formation is the most persistent and productive hydrologic unit in the vicinity of the WIPP site. This unit was studied in detail and is projected to be situated at a depth of approximately 750 to 900 feet below ground surface (bgs) at the Flamenco site. Total dissolved solids (TDS) for groundwater in the Culebra in the vicinity ranges from 3,200 mg/L to 420,000 mg/L.
- Ten well locations (H-1 through H-10) were drilled into the Culebra and completed for hydrologic testing as part of the WIPP groundwater evaluations for environmental site suitability studies. Lithologic and stratigraphic details from location H-5B were utilized to construct the Site Hydrogeology cross section on Figure 8. Attachment F provides selected excerpts from the referenced publications and a well report from the New Mexico Office of the State Engineer.
- The 1983 report notes that no groundwater was observed in WIPP hydrologic test holes from rocks above the Permian Rustler Formation – i.e., Dewey Lake, Triassic Dockum Group and Quaternary Alluvium. Furthermore, the 1980 EIS states that “no significant groundwater occurs in rocks above the Rustler Formation” in the WIPP and surrounding areas. No significant use of groundwater from these shallow units was ascertained at part of these hydrogeological studies.
- The publication’s evaluation of the hydrology of strata above the Rustler Formation indicate that groundwater may be present sparsely in small volumes in limited areal extent. These units were evaluated to be thin and discontinuous and are not persistent or mappable in the area in and around the WIPP site. Most of the shallow water is derived from meteoric sources and subsurface movement is restricted by the discontinuous nature of ‘perched zones’ having limited areal extent. Accumulation and recharge of groundwater in these shallow zones are also affected by low rainfall with relatively high evapotranspiration rates.

Detailed hydrogeological studies by the Department of Energy and other federal agencies support the finding that any shallow groundwater above the Rustler Formation is of very low consequence for environmental impacts – based on suitability evaluations of the (active) WIPP site and surrounding areas. Site-specific hydrogeological data from the Flamenco location shows that groundwater found at the site is not from meteoric or surface waters sources, but rather from the release of elevated TDS waters from oilfield produced water facilities. These pockets of released fluids occur in limited, discontinuous perched water zones. Naturally occurring groundwater was not found in soil borings advanced at this location and is assessed to be greater than 105 feet bgs at the Flamenco site.



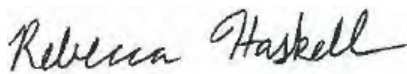
## 6. Groundwater Closure Request

GHD, on behalf of EOG, requests that the NMOCD grant closure to the perched groundwater portion of the releases and allow the wells to be plugged and abandoned based on the evidence presented in this report. The two soil borings, MW-10 and MW-11 installed to a depth of 105 feet bgs, were dry after 72 hours and have been plugged and abandoned. Numerous soil borings (Figure 7) installed outside of the perched groundwater area and within similar or deeper depths – were dry and support the limited nature of the occurrence of the shallow, perched zone and the absence of naturally occurring groundwater at the evaluated locations

Monitor wells MW-1, MW-2, MW-3, MW-8 and MW-9 are completed in shallow zones with high TDS concentrations. The water present at the site is discontinuous, perched produced water and the limited occurrence most likely is the result of the five (5) releases in the Tin Horn and Tank Battery areas which resulted in 1,485 barrels of produced water being unrecovered. Once the NMOCD grants permission, EOG will have the remaining five (5) wells plugged and abandoned.

If you have any questions or comments concerning this Groundwater Closure Request Report, please do not hesitate to contact our Midland office at (432) 686-0086.

Regards,



Becky Haskell  
Senior Project Manager



Tom Larson  
Project Director

BH/TL/1

Encl. Figure 1 – Site Location Map  
Figure 2 – Site Details Map  
Figure 3 – April 2021 Perched Water Concentrations Map  
Figure 4 – Perched Water Zone Elevation – April 2021  
Figure 5 – April 2021 Chloride Isoconcentration Map  
Figure 6 – April 2021 TDS Isoconcentration Map  
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Table 3 – Historical Perched Produced Water Natural Attenuation Parameters  
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Attachment B – GHD and Cascade Drilling Soil Boring Logs  
Attachment C – NMSOE Well Permits and BLM Sundry  
Attachment D – Laboratory Reports and Chain-of-Custody Documentation  
Attachment E – 2018 Annual Groundwater Monitoring Report  
Attachment F – Excerpts from Referenced WIPP Hydrogeological Studies

cc: James Kennedy

# Figures







Source: Image © 2017 Google - Imagery Date: November 2, 2017

Lat/Long: 32.402374° North, 103.722648° West

060120ft

Coordinate System:  
NAD 1983 (2011) StatePlane-  
New Mexico East (US Feet)

**NOTES:**

- MW-10 and MW-11, TD 105' were dry and plugged in August 2021.
- Plugging reports and boring log details provided in Attachment B.

EOG RESOURCES  
LEA COUNTY, NEW MEXICO  
FLAMENCO FEDERAL No.1

SITE DETAILS MAP

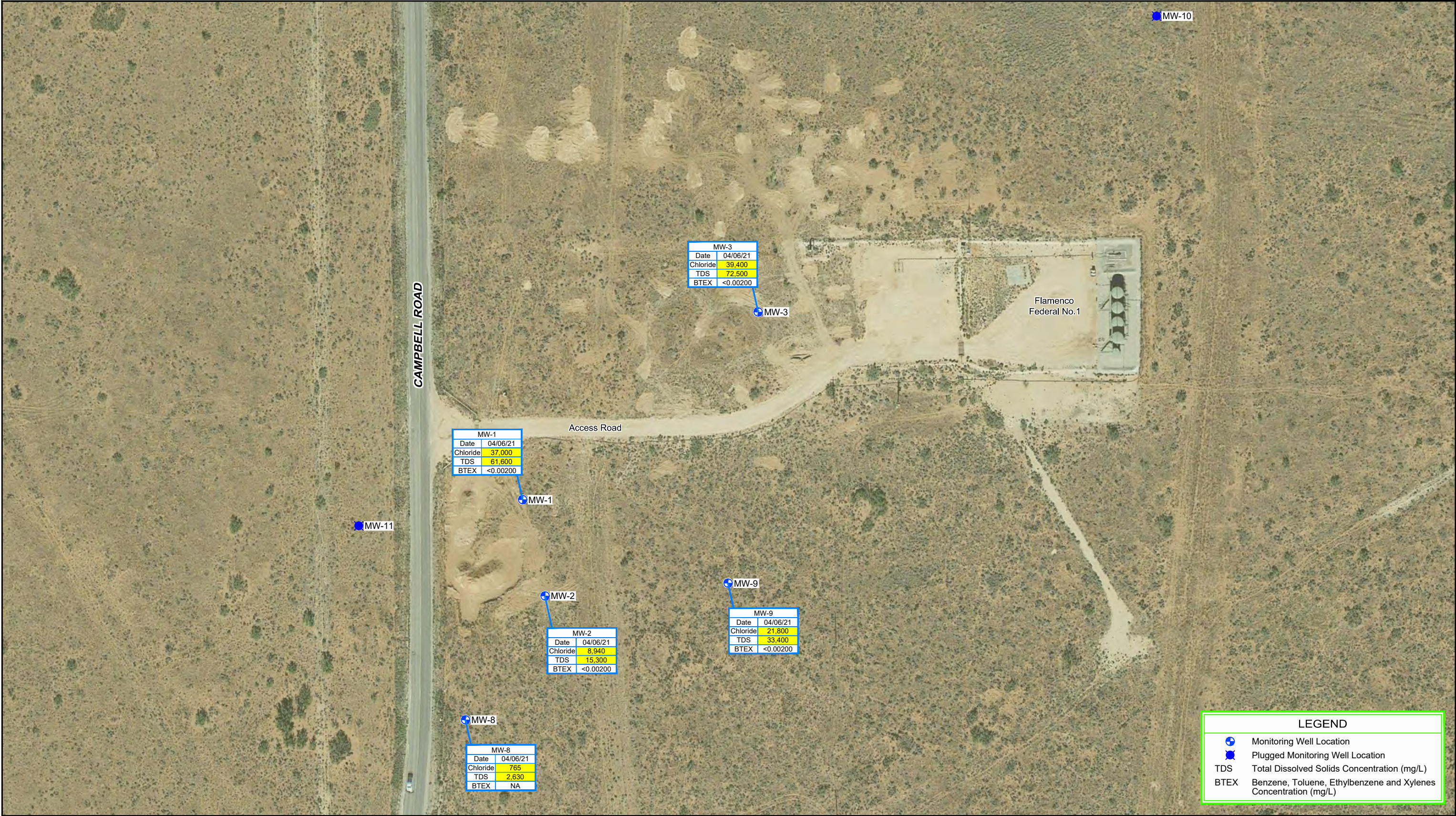
11220747  
Jan 19, 2022

FIGURE 2

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Source: Image © 2017 Google - Imagery Date: November 2, 2017

Lat/Long: 32.402374° North, 103.722648° West

NOTES:

- 1. Chloride groundwater sample results in milligrams/liter (mg/L).
- 2. TDS groundwater sample results in milligrams/liter (mg/L).
- 3. Yellow shaded cells exceed NMOCD RRAL.
- 4. Locations are approximate.
- 5. MW-10 and MW-11, TD 105' were dry and plugged on August 5, 2021. Plugging report on Attachment B.



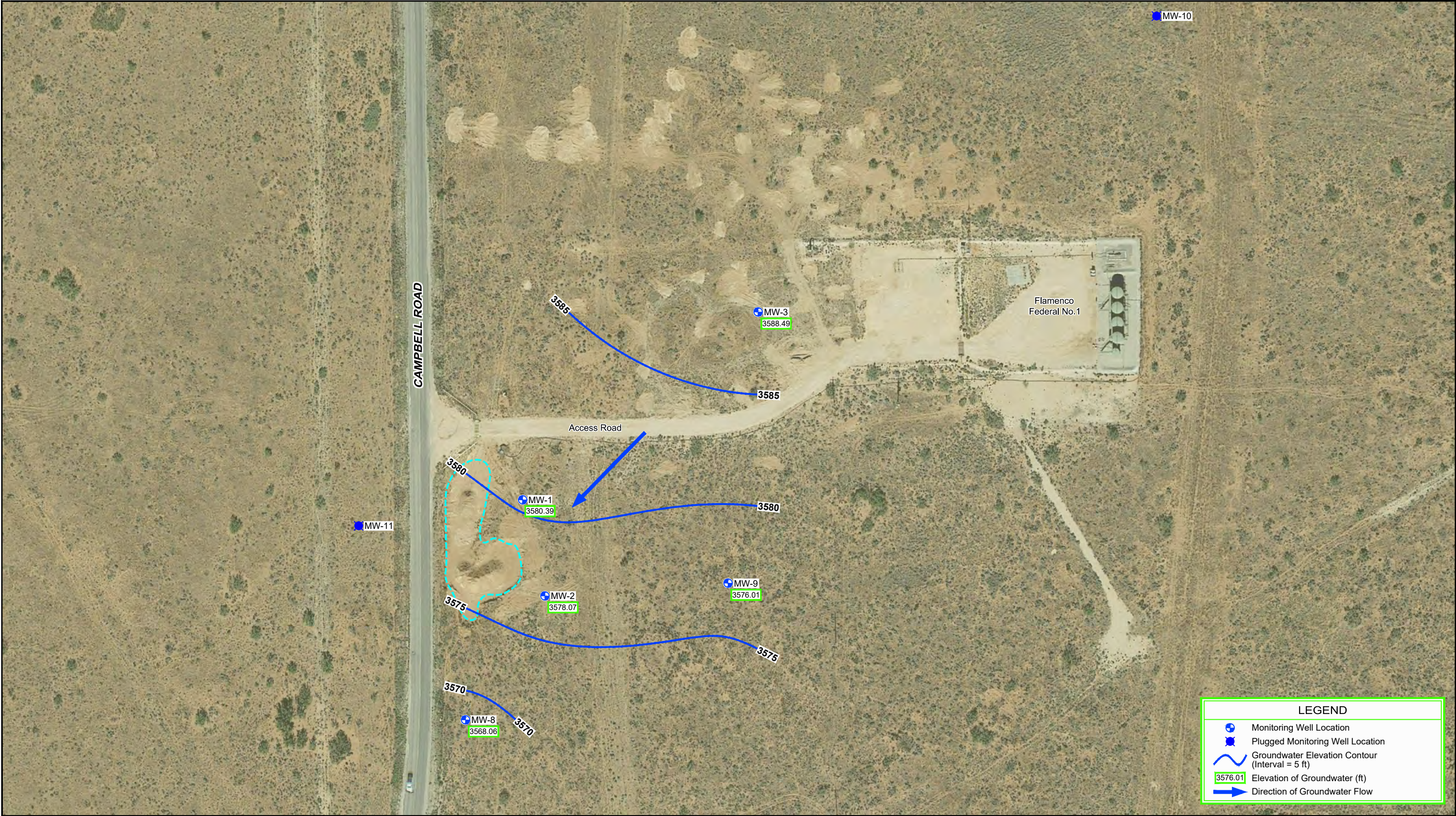
EOG RESOURCES  
LEA COUNTY, NEW MEXICO  
FLAMENCO FEDERAL No.1

11220747  
Jan 19, 2022

APRIL 2021 PERCHED WATER CONCENTRATIONS MAP

FIGURE 3



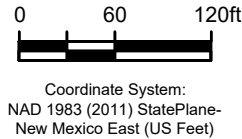


Source: Image © 2017 Google - Imagery Date: November 2, 2017

Lat/Long: 32.402374° North, 103.722648° West

NOTES:

1. Groundwater elevations indicated are from measurements obtained on April 6, 2021.
2. The apparent groundwater gradient and direction of flow were determined to be approximately 0.025 ft/ft to the southwest.
3. MW-10 and MW-11, TD 105' were dry and plugged on August 5, 2021. Plugging report on Attachment B.



Coordinate System:  
NAD 1983 (2011) StatePlane-  
New Mexico East (US Feet)



EOG RESOURCES  
LEA COUNTY, NEW MEXICO  
FLAMENCO FEDERAL No.1

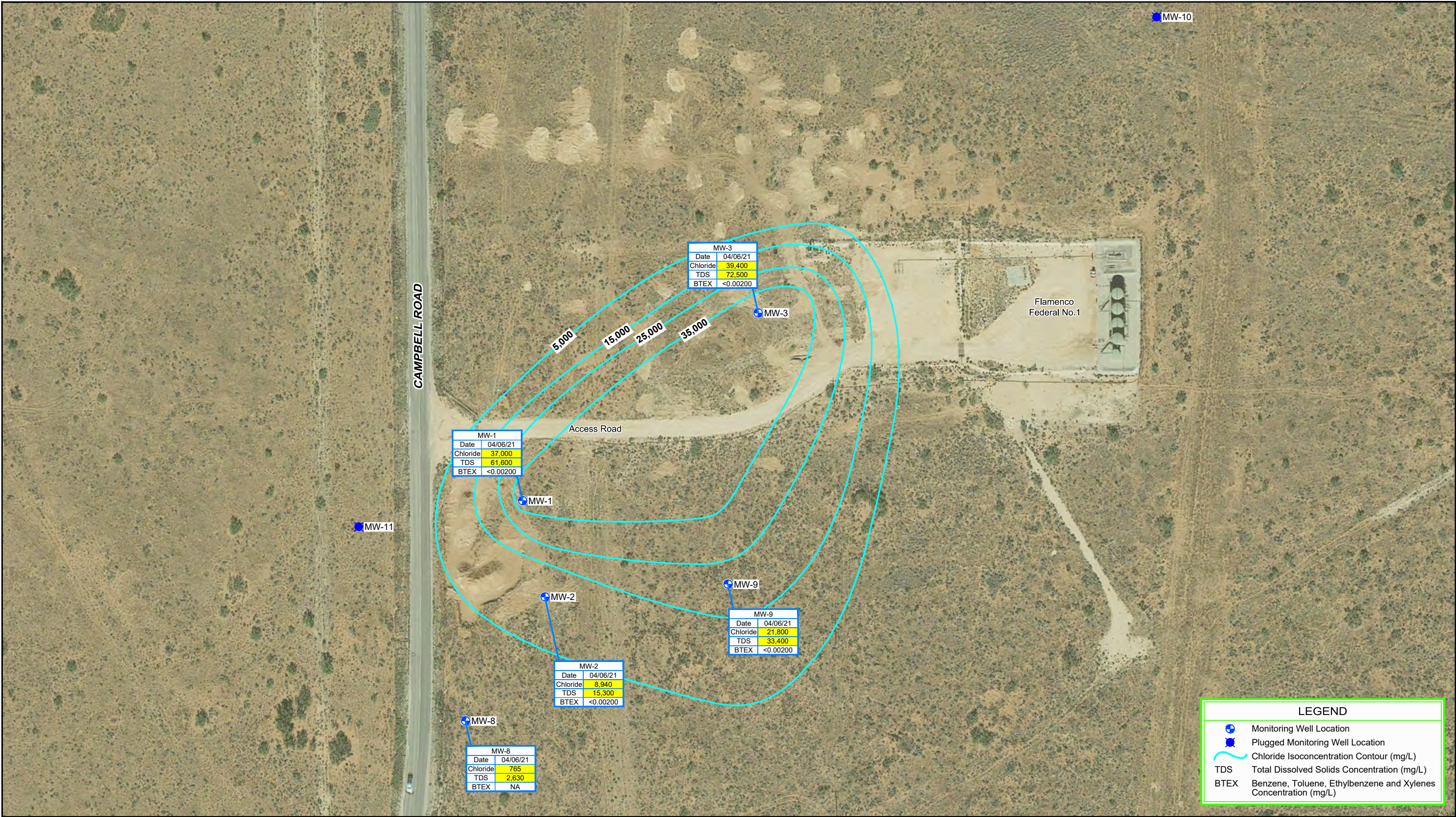
PERCHED WATER ZONE ELEVATION - APRIL 2021

11220747

Jan 19, 2022

FIGURE 4





Source: Image © 2017 Google - Imagery Date: November 2, 2017

Lat/Long: 32.402374° North, 103.722648° West

NOTES:

1. Chloride groundwater sample results in milligrams/liter (mg/L).
2. TDS groundwater sample results in milligrams/liter (mg/L).
3. Yellow shaded cells exceed NMOCD RRAL.
4. Locations are approximate.
5. MW-10 and MW-11, TD 105' were dry and plugged on August 5, 2021. Plugging report on Attachment B.



EOG RESOURCES  
LEA COUNTY, NEW MEXICO  
FLAMENCO FEDERAL No.1

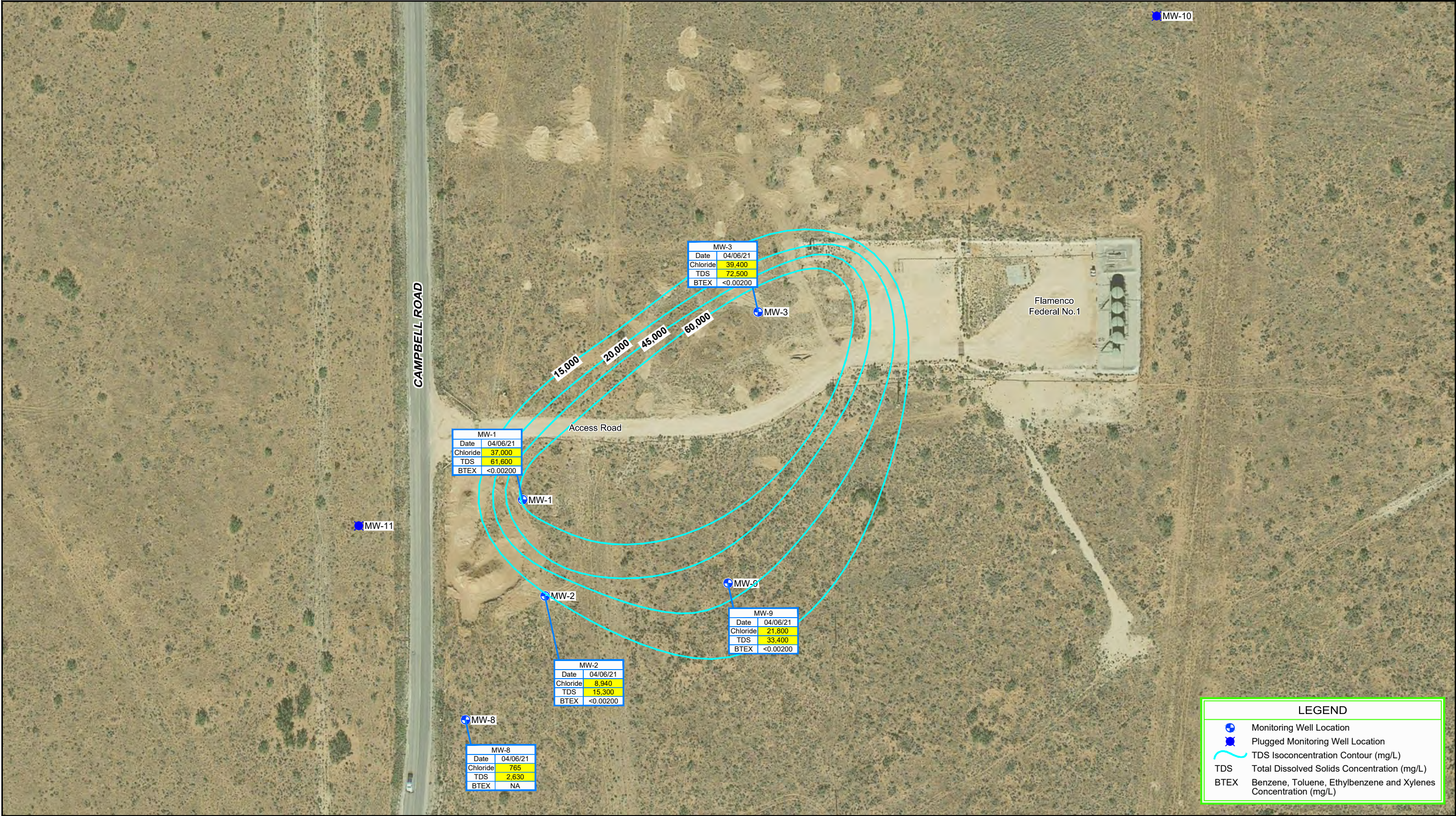
APRIL 2021 CHLORIDE ISOCONCENTRATION MAP

11220747

Jan 19, 2022

FIGURE 5





Source: Image © 2017 Google - Imagery Date: November 2, 2017

Lat/Long: 32.402374° North, 103.722648° West

NOTES:

1. Chloride groundwater sample results in milligrams/liter (mg/L).
2. TDS groundwater sample results in milligrams/liter (mg/L).
3. Yellow shaded cells exceed NMOCD RRAL.
4. Locations are approximate.
5. MW-10 and MW-11, TD 105' were dry and plugged on August 5, 2021. Plugging report on Attachment B.



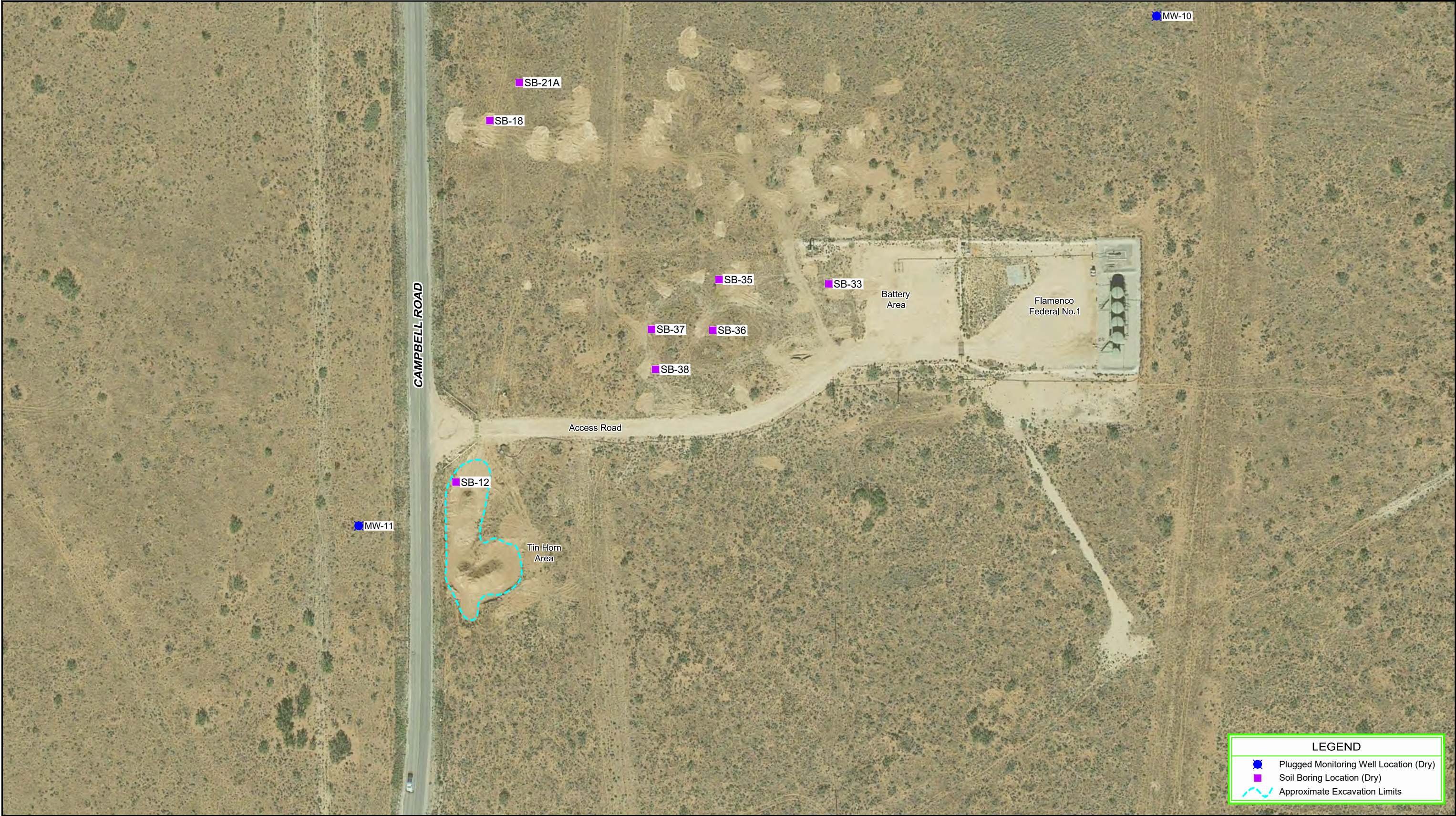
EOG RESOURCES  
LEA COUNTY, NEW MEXICO  
FLAMENCO FEDERAL No.1

APRIL 2021 TDS ISOCONCENTRATION MAP

11220747  
Jan 19, 2022

FIGURE 6

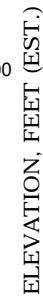




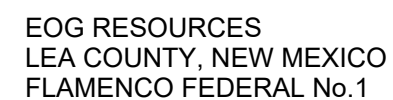
| LEGEND |  |
|--------|--|
|        | Plugged Monitoring Well Location (Dry) |
|        | Soil Boring Location (Dry)             |
|        | Approximate Excavation Limits          |

|   |   |  |
|---|---|--|
| <div> <p>Coordinate System:<br/>NAD 1983 (2011) StatePlane-<br/>New Mexico East (US Feet)</p> </div> <div> </div> | <p><b>NOTES:</b></p> <ol style="list-style-type: none"> <li>MW-10 and MW-11, TD 105' were dry and plugged after 72 hours on August 5, 2021.</li> <li>All soil borings ≥60 feet deep were dry and plugged.</li> <li>Plugging reports and boring log details provided in Attachment B.</li> </ol> | <div> <p>EOG RESOURCES<br/>LEA COUNTY, NEW MEXICO<br/>FLAMENCO FEDERAL No.1</p> <p><b>DRY BOREHOLES ≥60 FEET</b></p> </div> <div> <p>11220747<br/>Jan 19, 2022</p> <p><b>FIGURE 7</b></p> </div> |
|---|---|--|





1. Horizontal scale is approximate.
2. Cross section modified after Figure 5 Mercer (1983) and Figure 4.3-1 and 4.4-1 Sandia Laboratories, Sand 78-1596 (1978).



## SITE HYDROGEOLOGY

Feb 1, 2022

FIGURE 8



# Tables

Table 1

**Historical Perched Produced Water Elevations**  
**EOG Resources Inc.**  
**Flamenco Federal #1**  
**Lea County, New Mexico**  
**1RP-2281, 2784, 2790, 4800 & 4801**

| Monitoring Well ID | Measurement Date | Top-of-Casing Elevation (Feet, NAVD88) | Depth to Water (feet BTOC) | Corrected Groundwater Elevation (Feet, NAVD88) | Total Depth of Well (feet BTOC) |
|--------------------|------------------|--|----------------------------|--|---------------------------------|
| MW-1               | 2/23/2018        | 3636.22                                | 54.42                      | 3581.80  | --                              |
| MW-1               | 6/21/2018        | 3636.22                                | 55.19                      | 3581.03  | --                              |
| MW-1               | 10/19/2018       | 3636.22                                | 55.63                      | 3580.59  | --                              |
| MW-1               | 01/11/19         | 3636.22                                | 55.17                      | 3581.05  | --                              |
| MW-1               | 04/06/21         | 3636.22                                | 55.83                      | 3580.39  | 63.64                           |
|                    |                  |  |                            |  |                                 |
| MW-2               | 2/23/2018        | 3636.08                                | 47.38                      | 3588.70  | --                              |
| MW-2               | 6/21/2018        | 3636.08                                | 57.36                      | 3578.72  | --                              |
| MW-2               | 10/19/2018       | 3636.08                                | 57.54                      | 3578.54  | --                              |
| MW-2               | 01/11/19         | 3636.08                                | 57.21                      | 3578.87  | --                              |
| MW-2               | 04/06/21         | 3636.08                                | 58.01                      | 3578.07  | 63.2                            |
|                    |                  |  |                            |  |                                 |
| MW-3               | 2/23/2018        | 3642.27                                | 51.83                      | 3590.44  | --                              |
| MW-3               | 6/21/2018        | 3642.27                                | 52.22                      | 3590.05  | --                              |
| MW-3               | 10/19/2018       | 3642.27                                | 52.57                      | 3589.70  | --                              |
| MW-3               | 01/11/19         | 3642.27                                | 52.44                      | 3589.83  | --                              |
| MW-3               | 04/06/21         | 3642.27                                | 53.78                      | 3588.49  | 61.09                           |
|                    |                  |  |                            |  |                                 |
| MW-8               | 10/19/2018       | 3634.889                               | 65.04                      | 3569.85  | --                              |
| MW-8               | 1/11/2019        | 3634.889                               | DRY                        | --   | --                              |
| MW-8               | 4/6/2021         | 3634.889                               | 66.83                      | 3568.06  | 70.01                           |
|                    |                  |  |                            |  |                                 |
| MW-9               | 10/19/2018       | 3641.13                                | 66.87                      | 3574.26  | --                              |
| MW-9               | 1/11/2019        | 3641.13                                | DRY                        | --   | --                              |
| MW-9               | 4/6/2021         | 3641.13                                | 65.12                      | 3576.01  | 66.29                           |

**Notes:**

1. BTOC - Below Top-of-Casing

Table 2

**Historical Perched Produced Water Analytical Results**  
**EOG Resources Inc.**  
**Flamenco Federal #1**  
**Lea County, New Mexico**  
**1RP-2281, 2784, 2790, 4800 & 4801**

| Sample I.D. | Sample Date | Chloride (mg/L) | TDS (mg/L) | BTEX     |
|-------------|-------------|-----------------|------------|----------|
|             |             | 250             | 1,000.0    |          |
| MW-1        | 2/23/2018   | 36,000          | --         | --       |
| MW-1        | 6/21/2018   | 38,000          | 73,200     | --       |
| MW-1        | 10/19/2018  | 47,000          | 82,000     | --       |
| MW-1        | 1/11/2019   | 44,000          | 85,300     | --       |
| MW-1        | 4/6/2021    | 37,000          | 61,600     | <0.00200 |
|             |             |                 |            |          |
| MW-2        | 2/23/2018   | 7,200           | --         | --       |
| MW-2        | 6/21/2018   | 6,900           | 15,300     | --       |
| MW-2        | 10/19/2018  | 8,000           | 15,800     | --       |
| MW-2        | 1/11/2019   | 8,000           | 18,400     | --       |
| MW-2        | 4/6/2021    | 8,940           | 15,300     | <0.00200 |
|             |             |                 |            |          |
| MW-3        | 2/23/2018   | 38,000          | --         | --       |
| MW-3        | 6/21/2018   | 43,000          | 82,700     | --       |
| MW-3        | 10/19/2018  | 49,000          | 97,600     | --       |
| MW-3        | 1/11/2019   | 47,000          | 100,000    | --       |
| MW-3        | 4/6/2021    | 39,400          | 72,500     | <0.00200 |
|             |             |                 |            |          |
| MW-8        | 4/6/2021    | 765             | 2,630      | --       |
|             |             |                 |            |          |
| MW-9        | 4/6/2021    | 21,800          | 33,400     | <0.00200 |
|             |             |                 |            |          |
| Dup-1       | 4/6/2021    | 788             | 2,820      | <0.00200 |

**Notes:**

1. mg/L- milligrams per Liter
2. - Not Analyzed
10. Yellow shaded cells indicate results exceeding NMWQCC Standards
11. **Bold font Indicates laboratory detection.**

Table 3

## Historical Perched Produced Water Natural Attenuation Parameters

EOG Resources Inc.  
Flamenco Federal #1  
Lea County, New Mexico

| Monitoring Well ID | Measurement Date | Temperature | pH   | Dissolved Oxygen | TDS (g/l) | Oxidation Reduction Potential | Conductivity |
|--------------------|------------------|-------------|------|------------------|-----------|-------------------------------|--------------|
|                    |                  |             |      |                  |           |                               |              |
|                    |                  | (°Celsius)  |      | (mg/L)           |           | (mV)                          | (µS/cm)      |
| MW-1               | 2/23/2018        | 18.58       | N/A  | 10.92            | 51.14     | 315.00                        | 78,692       |
| MW-1               | 6/21/2018        | 21.48       | 6.07 | 25.67            | 0.745     | --                            | 1,142        |
| MW-1               | 10/19/2018       | 18.10       | 6.38 | 9.22             | 63.61     | 213.00                        | 97,859       |
| MW-1               | 1/11/2019        | 16.76       | 6.15 | 4.52             | 69.44     | 146.40                        | 90,049       |
| MW-1               | 4/6/2021         | 22.1        | 6.87 | 4.78             | --        | 107.00                        | 91,000       |
|                    |                  |             |      |                  |           |                               |              |
| MW-2               | 2/23/2018        | 18.07       | N/A  | 13.38            | 12.55     | 294.3                         | 19,260       |
| MW-2               | 6/21/2018        | 20.15       | 6.73 | 19.39            | 7.418     | --                            | 11,406       |
| MW-2               | 10/19/2018       | 18.37       | 6.82 | 12.96            | 13.98     | -21.90                        | 21,524       |
| MW-2               | 1/11/2019        | 17.27       | 6.6  | 6.8              | 15.09     | 30.2                          | 19,849       |
| MW-2               | 4/6/2021         | 22.1        | 7.12 | 6.32             | --        | 53.1                          | 24,270       |
|                    |                  |             |      |                  |           |                               |              |
| MW-3               | 2/23/2018        | 18.35       | N/A  | 6.79             | 55.3      | 330.5                         | 85,075       |
| MW-3               | 6/21/2018        | 19.2        | 6.21 | 6.6              | 69.75     | --                            | 107,268      |
| MW-3               | 10/19/2018       | 17.83       | 6.26 | 4.4              | 68.62     | 7.4                           | 105,520      |
| MW-3               | 1/11/2019        | 17.2        | 5.83 | 2.83             | 77.89     | 3.3                           | 101,192      |
| MW-3               | 4/6/2021         | 22.7        | 6.48 | 3.44             | --        | 70.7                          | 99,200       |
|                    |                  |             |      |                  |           |                               |              |
| MW-8               | 4/6/2021         | DRY         | DRY  | DRY              | DRY       | DRY                           | DRY          |
|                    |                  |             |      |                  |           |                               |              |
| MW-9               | 4/6/2021         | DRY         | DRY  | DRY              | DRY       | DRY                           | DRY          |
|                    |                  |             |      |                  |           |                               |              |

**Notes:**

mg/L - milligrams per Liter

mV - millivolts

µS/cm - microsiemens/centimeter

-- not analyzed

NS - Not sampled

# Attachments



# Attachment A

**Initial C-141s for 1RP-2281, 1RP-2784,  
1RP- 2790, 1RP-4800 & 1RP-4801**

District I  
1625 N French Dr, Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, 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**  
AUG 24 2009  
HOBBSCOCD

Form C-141  
Revised October 10, 2003

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<br>Yates Petroleum Corporation | OGRID Number<br>25575      | Contact<br>Robert Asher       |
| Address<br>104 S. 4 <sup>TH</sup> Street       |                            | Telephone No.<br>505-748-1471 |
| Facility Name<br>Flamenco Federal #1           | API Number<br>30-025-31076 | Facility Type<br>SWD Battery  |

|                          |                          |                       |
|--------------------------|--------------------------|-----------------------|
| Surface Owner<br>Federal | Mineral Owner<br>Federal | Lease No.<br>NM-84890 |
|--------------------------|--------------------------|-----------------------|

### LOCATION OF RELEASE

API# 30-025-31076-00-00

|                  |              |                 |              |                       |                           |                      |                        |               |
|------------------|--------------|-----------------|--------------|-----------------------|---------------------------|----------------------|------------------------|---------------|
| Unit Letter<br>L | Section<br>7 | Township<br>22S | Range<br>32E | Feet from the<br>1650 | North/South Line<br>South | Feet from the<br>660 | East/West Line<br>West | County<br>Lea |
|------------------|--------------|-----------------|--------------|-----------------------|---------------------------|----------------------|------------------------|---------------|

Latitude 32.40333 Longitude 103.72034

### NATURE OF RELEASE

|  |   |   |
|--|---|---|
| Type of Release<br>Oil & Produced Water  | Volume of Release<br>100 B/O & 600 B/PW                             | Volume Recovered<br>0 B/O & 0 B/PW          |
| Source of Release<br>Gun Barrel  | Date and Hour of Occurrence<br>8/11/2009, PM                        | Date and Hour of Discovery<br>8/11/2009, AM |
| Was Immediate Notice Given?<br><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required | If YES, To Whom?<br>Larry Johnson/NMOCD Hobbs (Voice mail & e-mail) |   |
| By Whom?<br>Robert Asher/YPC Environmental   | Date and Hour<br>8/12/2009, AM                                      |   |
| Was a Watercourse Reached?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  | If YES, Volume Impacting the Watercourse.<br>N/A                    |   |
| If a Watercourse was Impacted, Describe Fully.*<br>N/A   |   |   |

WATER @ 280'


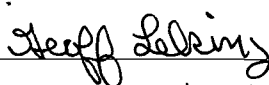
#### Describe Cause of Problem and Remedial Action Taken.\*

Lightning struck 750 barrel fiberglass gun barrel tank, causing release and fire that destroyed 4 other tanks on location. Fire department called and main water line shut.

#### Describe Area Affected and Cleanup Action Taken.\*

An approximate area of 120' X 120'. Produced water released from gun barrel broke through bermed tank battery and released in area west of the battery off location. Backhoe equipment started removing damaged tanks/equipment; impacted soils were excavated and taken to an NMOCD approved facility. Vertical and horizontal delineation samples will be taken and analysis ran for TPH & BTEX to determine next course of action taken. **Depth to Ground Water: >100' (approx. 280', per New Mexico Office of the State Engineer), 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:  | <b>OIL CONSERVATION DIVISION</b>   |   |
| Printed Name: Robert Asher   | ENV ENGINEER:<br>Approved by  |   |
| Title: Environmental Regulatory Agent  | Approval Date: 08/24/09  | Expiration Date: 10/26/09                           |
| E-mail Address: boba@ypcnm.com   | Conditions of Approval: DELINEATE TO CLEANUP, SUBMIT FINAL C-141 BY 11P-09-09-2281                                 |   |
| Date: Thursday, August 20, 2009  | Phone: 505-748-4217  | Attached <input type="checkbox"/><br>11P-09-09-2281 |

\* Attach Additional Sheets If Necessary

SAMPLING MUST INCLUDE  
CHLORIDES.

|                |          |
|----------------|----------|
| Incident ID    |          |
| District RP    | 1RP-2281 |
| 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?   | >100 (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.

|                |          |
|----------------|----------|
| Incident ID    |          |
| District RP    | 1RP-2281 |
| 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: James F. Kennedy Title: Environmental Specialist  
Signature: James F Kennedy Date: 2/9/22  
email: James\_Kennedy@eogresources.com Telephone: 432-848-9146

**OCD Only**

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

|                |          |
|----------------|----------|
| Incident ID    |          |
| District RP    | 1RP-2281 |
| 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: James F. Kennedy Title: Environmental Specialist  
Signature: James F Kennedy Date: 2/9/22  
email: James\_Kennedy@eogresources.com Telephone: 432-848-9146

**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: Jennifer Nobui Date: 05/02/2022  
Printed Name: Jennifer Nobui Title: Environmental Specialist A



District I  
1625 N. French Dr., Hobbs, NM 88241  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87414  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

HOBBS OCD  
JUL 26 2011  
RECEIVED

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

Form C-141  
Revised October 10, 2003

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<br>Yates Petroleum Corporation | OGRID Number<br>25575         | Contact<br>Robert Asher      |
| Address<br>104 S. 4 <sup>TH</sup> Street       | Telephone No.<br>575-748-1471 |                              |
| Facility Name<br>Flamenco Federal #1           | API Number<br>30-025-31076    | Facility Type<br>SWD Battery |
| Surface Owner<br>Federal                       | Mineral Owner<br>Federal      | Lease No.<br>NM-84890        |

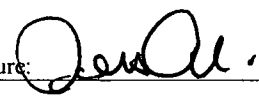
### LOCATION OF RELEASE API# 30-025-31076

|                  |              |                 |              |                       |                           |                      |                        |               |
|------------------|--------------|-----------------|--------------|-----------------------|---------------------------|----------------------|------------------------|---------------|
| Unit Letter<br>L | Section<br>7 | Township<br>22S | Range<br>32E | Feet from the<br>1650 | North/South Line<br>South | Feet from the<br>660 | East/West Line<br>West | County<br>Lea |
|------------------|--------------|-----------------|--------------|-----------------------|---------------------------|----------------------|------------------------|---------------|

Latitude 32.40333 Longitude 103.72034

### NATURE OF RELEASE

|  |  |   |
|--|--|---|
| Type of Release<br>Produced Water  | Volume of Release<br>150 B/PW                    | Volume Recovered<br>100 B/PW                |
| Source of Release<br>Water line  | Date and Hour of Occurrence<br>7/12/2011, AM     | Date and Hour of Discovery<br>7/12/2011, AM |
| Was Immediate Notice Given?<br><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required   | If YES, To Whom?<br>Maxey Brown/NMOCD II         |   |
| By Whom?<br>Robert Asher/Yates Petroleum Corporation   | Date and Hour<br>7/13/2011; PM                   |   |
| Was a Watercourse Reached?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  | If YES, Volume Impacting the Watercourse.<br>N/A |   |
| If a Watercourse was Impacted, Describe Fully.*<br>N/A   |  |   |
| Describe Cause of Problem and Remedial Action Taken.*<br>Water line connection in tin horn failed, causing release. Vacuum truck called.   |  |   |
| Describe Area Affected and Cleanup Action Taken.*<br>An approximate area of 45' X 45'. Vacuum truck picked up remaining produced water. Impacted soils being excavated and taken to an NMOCD approved facility. 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 a Final Report, C-141 will be submitted to the OCD requesting closure. If the analytical results are above the RRAL a work plan will be submitted to the OCD. <b>Depth to Ground Water: &gt;100' (approx. 280', Section 14, T22S-R32E, NMOSE and approx 200' per the ChevronTexaco trend map), Wellhead Protection Area: No, Distance to Surface Water Body: &gt;1000', SITE RANKING IS 0.</b>                          |  |   |
| 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:  | <b>OIL CONSERVATION DIVISION</b><br><b>Accepted for Record Only</b> |                                   |
| Printed Name: Robert Asher   | Approved by District Supervisor: <u>03/06/12</u>                    |                                   |
| Title: Senior Environmental Regulatory Agent   | Approval Date:  | Expiration Date:                  |
| E-mail Address: boba@yatespetroleum.com  | Conditions of Approval:   | Attached <input type="checkbox"/> |
| Date: Friday, July 22, 2011 Phone: 575-748-4217  | IRP- <u>3-12-2784</u>   |                                   |

\* Attach Additional Sheets If Necessary

|                |          |
|----------------|----------|
| Incident ID    |          |
| District RP    | 1RP-2784 |
| 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?   | >100 (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.

|                |          |
|----------------|----------|
| Incident ID    |          |
| District RP    | 1RP-2784 |
| 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: James F. Kennedy Title: Environmental Specialist  
Signature: James F Kennedy Date: 2/9/22  
email: James\_Kennedy@eogresources.com Telephone: 432-848-9146

**OCD Only**

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

|                |          |
|----------------|----------|
| Incident ID    |          |
| District RP    | 1RP-2784 |
| 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: James F. Kennedy Title: Environmental Specialist  
Signature: James F Kennedy Date: 2/9/22  
email: James\_Kennedy@eogresources.com Telephone: 432-848-9146

**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: \_\_\_\_\_

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, 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

HOBBS OCD

NOV 03 2011

RECEIVED

Form C-141  
Revised October 10, 2003

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<br>Yates Petroleum Corporation | OGRID Number<br>25575         | Contact<br>Robert Asher      |
| Address<br>104 S. 4 <sup>TH</sup> Street       | Telephone No.<br>575-748-1471 |                              |
| Facility Name<br>Flamenco Federal #1           | API Number<br>30-025-31076    | Facility Type<br>SWD Battery |
| Surface Owner<br>Federal                       | Mineral Owner<br>Federal      | Lease No.<br>NM-84890        |


## LOCATION OF RELEASE

|                  |              |                 |              |                       |                           |                      |                        |               |
|------------------|--------------|-----------------|--------------|-----------------------|---------------------------|----------------------|------------------------|---------------|
| Unit Letter<br>L | Section<br>7 | Township<br>22S | Range<br>32E | Feet from the<br>1650 | North/South Line<br>South | Feet from the<br>660 | East/West Line<br>West | County<br>Lea |
|------------------|--------------|-----------------|--------------|-----------------------|---------------------------|----------------------|------------------------|---------------|

Latitude 32.40333 Longitude 103.72034

## NATURE OF RELEASE

|  |  |  |
|--|--|--|
| Type of Release<br>Produced Water  | Volume of Release<br>275 B/PW                    | Volume Recovered<br>260 B/PW                 |
| Source of Release<br>Water line  | Date and Hour of Occurrence<br>10/21/2011, AM    | Date and Hour of Discovery<br>10/21/2011, AM |
| Was Immediate Notice Given?<br><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required   | If YES, To Whom?<br>Geoffrey Leking/NMOCD II     |  |
| By Whom?<br>Robert Asher/Yates Petroleum Corporation   | Date and Hour<br>10/24/2011; PM                  |  |
| Was a Watercourse Reached?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  | If YES, Volume Impacting the Watercourse.<br>N/A |  |
| If a Watercourse was Impacted, Describe Fully.*<br>N/A   |  |  |
| Describe Cause of Problem and Remedial Action Taken.*<br>Water line connection in tin horn failed, causing release. Vacuum truck called.   |  |  |
| Describe Area Affected and Cleanup Action Taken.*<br>Initial release amount was miscalculated when reported on 10/24/2011, correct amount released/recovered per this C-141 report. An approximate area of 60 X 75'. Vacuum truck picked up remaining produced water. Impacted soils being excavated and taken to an NMOCD approved facility. Vertical and horizontal delineation samples will be taken and analysis ran for TPH & BTEX (Chlorides in soils for documentation). If initial analytical results for TPH & BTEX are under RRAL's a Final Report, C-141 will be submitted to the OCD requesting closure. If the analytical results are above the RRAL a work plan will be submitted to the OCD. <b>Depth to Ground Water: &gt;100' (approx. 280', Section 14, T22S-R32E, NMOSE and approx 200' per the ChevronTexaco trend map), Wellhead Protection Area: No, Distance to Surface Water Body: &gt;1000', SITE RANKING IS 0.</b> |  |  |
| 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:  | <b>OIL CONSERVATION DIVISION</b>         |                                   |
| Printed Name: Robert Asher   | <b>Accepted for Record Only</b>          |                                   |
| Title: Senior Environmental Regulatory Agent   | Approved by District Supervisor: 3/30/12 |                                   |
| E-mail Address: boba@yatespetroleum.com  | Approval Date:                           | Expiration Date:                  |
| Date: Wednesday, November 02, 2011 Phone: 575-748-4217   | Conditions of Approval:                  | Attached <input type="checkbox"/> |
|  | 1RP- 3-12-2790                           |                                   |

\* Attach Additional Sheets If Necessary

|                |          |
|----------------|----------|
| Incident ID    |          |
| District RP    | 1RP-2790 |
| 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?   | >100 (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.

|                |          |
|----------------|----------|
| Incident ID    |          |
| District RP    | 1RP-2790 |
| 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: James F. Kennedy Title: Environmental Specialist  
Signature: James F Kennedy Date: 2/9/22  
email: James\_Kennedy@eogresources.com Telephone: 432-848-9146

**OCD Only**

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



|                |          |
|----------------|----------|
| Incident ID    |          |
| District RP    | 1RP-2790 |
| 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: James F. Kennedy Title: Environmental Specialist  
Signature: James F Kennedy Date: 2/9/22  
email: James\_Kennedy@eogresources.com Telephone: 432-848-9146

**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: \_\_\_\_\_



District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

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

Form C-141  
Revised October 10, 2003

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

## Release Notification and Corrective Action

Initial

## OPERATOR

☐ Initial Report ☒ Final Report

|  |                               |                              |
|--|-------------------------------|------------------------------|
| Name of Company<br>Yates Petroleum Corporation | OGRID Number<br>25575         | Contact<br>Robert Asher      |
| Address<br>104 S. 4 <sup>TH</sup> Street       | Telephone No.<br>575-748-1471 |                              |
| Facility Name<br>Flamenco Federal #1           | API Number<br>30-025-31076    | Facility Type<br>SWD Battery |
| Surface Owner<br>Federal                       | Mineral Owner<br>Federal      | Lease No.<br>NM-84890        |

## LOCATION OF RELEASE

|                  |              |                 |              |                       |                           |                      |                        |               |
|------------------|--------------|-----------------|--------------|-----------------------|---------------------------|----------------------|------------------------|---------------|
| Unit Letter<br>L | Section<br>7 | Township<br>22S | Range<br>32E | Feet from the<br>1650 | North/South Line<br>South | Feet from the<br>660 | East/West Line<br>West | County<br>Lea |
|------------------|--------------|-----------------|--------------|-----------------------|---------------------------|----------------------|------------------------|---------------|

Latitude 32.40333 Longitude 103.72034

## NATURE OF RELEASE

|  |  |   |
|--|--|---|
| Type of Release<br>Produced Water  | Volume of Release<br>200 B/PW                    | Volume Recovered<br>0 B/PW                  |
| Source of Release<br>Water line  | Date and Hour of Occurrence<br>6/12/2013, AM     | Date and Hour of Discovery<br>6/12/2013, AM |
| Was Immediate Notice Given?<br><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required | If YES, To Whom?<br>Geoffrey Leking/NMOCD II     |   |
| By Whom?<br>Robert Asher/Yates Petroleum Corporation   | Date and Hour<br>6/20/2013; PM                   |   |
| Was a Watercourse Reached?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  | If YES, Volume Impacting the Watercourse.<br>N/A |   |

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

Describe Cause of Problem and Remedial Action Taken.\*  
Water line connection at tin horn failed, causing release. Vacuum truck called.



Describe Area Affected and Cleanup Action Taken.\*

An approximate area of 60 X 75'. Vertical and horizontal delineation samples will be taken and analysis ran for TPH & BTEX (Chlorides in soils for documentation). If initial analytical results for TPH & BTEX are under RRAL's a Final Report, C-141 will be submitted to the OCD requesting closure. If the analytical results are above the RRAL a work plan will be submitted to the OCD. **Depth to Ground Water: >100' (approx. 280', Section 14, T22S-R32E, NMOSE and approx 200' per the ChevronTexaco trend map), Wellhead Protection Area: No, Distance to Surface Water Body: >1000', SITE RANKING IS 0. Based on scope of work completed per the 10/18/2013 Work Plan (this release area was impacted by the 8/4/2013 release), Yates Petroleum Corporation requests closure.**

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.

RECEIVED

By Olivia Yu at 8:47 am, Sep 06, 2017

|  |   |  |
|--|---|--|
| Signature:  | OIL CONSERVATION DIVISION   |  |
| Printed Name: Robert Asher   | Approved by  |  |
| Title: NM Environmental Regulatory Supervisor  | Approval Date: 9/6/2017   | Expiration Date:                             |
| E-mail Address: boba@yatespetroleum.com  | Conditions of Approval:<br>see attached directive   | Attached <input checked="" type="checkbox"/> |
| Date: Friday, January 31, 2014 Phone: 575-748-4217   |   |  |

\* Attach Additional Sheets If Necessary

1RP-4800

nOY1724932244

pOY1724941406

|                |          |
|----------------|----------|
| Incident ID    |          |
| District RP    | 1RP-4800 |
| 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?   | >100 (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.

|                |          |
|----------------|----------|
| Incident ID    |          |
| District RP    | 1RP-4800 |
| 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: James F. Kennedy Title: Environmental Specialist  
Signature: James F Kennedy Date: 2/9/22  
email: James\_Kennedy@eogresources.com Telephone: 432-848-9146

**OCD Only**

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

|                |          |
|----------------|----------|
| Incident ID    |          |
| District RP    | 1RP-4800 |
| 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

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Printed Name: James F. Kennedy Title: Environmental Specialist  
Signature: James F Kennedy Date: 2/9/22  
email: James\_Kennedy@eogresources.com Telephone: 432-848-9146

**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: \_\_\_\_\_

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

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

Form C-141  
Revised October 10, 2003

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

## Release Notification and Corrective Action

Initial

## OPERATOR

☐ Initial Report ☒ Final Report

|  |                               |                              |
|--|-------------------------------|------------------------------|
| Name of Company<br>Yates Petroleum Corporation | OGRID Number<br>25575         | Contact<br>Robert Asher      |
| Address<br>104 S. 4 <sup>TH</sup> Street       | Telephone No.<br>575-748-1471 |                              |
| Facility Name<br>Flamenco Federal #1           | API Number<br>30-025-31076    | Facility Type<br>SWD Battery |
| Surface Owner<br>Federal                       | Mineral Owner<br>Federal      | Lease No.<br>NM-84890        |

## LOCATION OF RELEASE

| Unit Letter | Section | Township | Range | Feet from the | North/South Line | Feet from the | East/West Line | County |
|-------------|---------|----------|-------|---------------|------------------|---------------|----------------|--------|
| L           | 7       | 22S      | 32E   | 1650          | South            | 660           | West           | Lea    |

Latitude 32.40333 Longitude 103.72034

## NATURE OF RELEASE

|  |  |  |
|--|--|--|
| Type of Release<br>Produced Water  | Volume of Release<br>600 B/PW                    | Volume Recovered<br>0 B/PW                 |
| Source of Release<br>Water line  | Date and Hour of Occurrence<br>8/4/2013, AM      | Date and Hour of Discovery<br>8/4/2013, AM |
| Was Immediate Notice Given?<br><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required | If YES, To Whom?<br>Geoffrey Leking/NMOCD II     |  |
| By Whom?<br>Robert Asher/Yates Petroleum Corporation   | Date and Hour<br>8/5/2013; PM                    |  |
| Was a Watercourse Reached?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  | If YES, Volume Impacting the Watercourse.<br>N/A |  |

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

Describe Cause of Problem and Remedial Action Taken.\*

Water line connection at tin horn failed, causing release. Vacuum truck called.



Describe Area Affected and Cleanup Action Taken.\*

An approximate area of 60 X 75'. Vertical and horizontal delineation samples will be taken and analysis ran for TPH & BTEX (Chlorides in soils for documentation). If initial analytical results for TPH & BTEX are under RRAL's a Final Report, C-141 will be submitted to the OCD requesting closure. If the analytical results are above the RRAL a work plan will be submitted. Depth to Ground Water: >100' (approx. 280', Section 14, T22S-R32E, NMOSE and approx 200' per the ChevronTexaco trend map), Wellhead Protection Area: No, Distance to Surface Water Body: >1000', SITE RANKING IS 0. Based on scope of work completed per the 10/18/2013 Work Plan, Yates Petroleum Corporation requests closure.

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.

RECEIVED

By Olivia Yu at 8:47 am, Sep 06, 2017

|  |  |  |
|--|--|--|
| Signature:  | OIL CONSERVATION DIVISION  |  |
| Printed Name: Robert Asher   | Approved by:  |  |
| Title: NM Environmental Regulatory Supervisor  | Approval Date: 9/6/2017  | Expiration Date:                             |
| E-mail Address: boba@yatespetroleum.com  | Conditions of Approval:<br>see attached directive  | Attached <input checked="" type="checkbox"/> |
| Date: Friday, January 31, 2014 Phone: 575-748-4217   |  |  |

\* Attach Additional Sheets If Necessary

1RP-4801

nOY1724941773

pOY1724942051

|                |          |
|----------------|----------|
| Incident ID    |          |
| District RP    | 1RP-4801 |
| 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?   | >100 (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.

|                |          |
|----------------|----------|
| Incident ID    |          |
| District RP    | 1RP-4801 |
| 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: James F. Kennedy Title: Environmental Specialist  
Signature: James F Kennedy Date: 2/9/22  
email: James\_Kennedy@eogresources.com Telephone: 432-848-9146

**OCD Only**

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



|                |          |
|----------------|----------|
| Incident ID    |          |
| District RP    | 1RP-4801 |
| 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: James F. Kennedy Title: Environmental Specialist  
Signature: James F Kennedy Date: 2/9/22  
email: James\_Kennedy@eogresources.com Telephone: 432-848-9146

**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: \_\_\_\_\_



# Attachment B

## GHD and Cascade Drilling Soil Boring Logs



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 2

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: MW-10

PROJECT NUMBER: 11220747

DATE COMPLETED: August 3, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS                     | DEPTH<br>BGS | SOIL BORING | SAMPLE |          |          |          |           |
|-----------------|---|--------------|-------------|--------|----------|----------|----------|-----------|
|                 |   |              |             | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, red/brown, dry             | 4.00         |             |        |          |          | <120     | 4.7       |
|                 | CALICHE   |              |             |        |          |          | <120     | 2.8       |
|                 |   |              |             |        |          |          | <120     | 1.4       |
|                 |   |              |             |        |          |          | <120     | 1.8       |
| 10              | SC-CLAYEY SAND, fine grained, brown, dry                | 10.00        |             |        |          |          | <120     | 6.8       |
| 15              | SANDSTONE, fine to medium grained, tan, dry             | 15.00        |             |        |          |          | <120     | 75.1      |
| 20              |   |              |             |        |          |          | <120     | 1.6       |
| 25              | SILTY SANDSTONE, fine grained, brown, dry               | 25.00        |             |        |          |          | <120     | 54.9      |
| 30              |   |              |             |        |          |          | <120     | 5.0       |
| 35              |   |              |             |        |          |          | <120     | 4.3       |
| 40              |   |              |             |        |          |          | <120     | 78.4      |
| 45              |   |              |             |        |          |          | <120     | 2.7       |
| 50              |   |              |             |        |          |          | <120     | 5.4       |
| 55              |   |              |             |        |          |          | <120     | 6.4       |
| 60              |   |              |             |        |          |          | <120     | 8.1       |
| 65              | SANDSTONE, medium grained, gray/tan, dry                | 65.00        |             |        |          |          | <120     | 21.3      |
| 70              | SILTY SANDSTONE, fine to medium grained, brown/red, dry | 70.00        |             |        |          |          | <120     | 7.2       |

Cement-Bentonite Grout

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

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# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 2 of 2

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: MW-10

PROJECT NUMBER: 11220747

DATE COMPLETED: August 3, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

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| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS  | DEPTH<br>BGS | SOIL BORING | SAMPLE |          |          |          |           |
|-----------------|--|--------------|-------------|--------|----------|----------|----------|-----------|
|                 |  |              |             | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 80              | SANDSTONE, caliche powder, medium grained, white, dry  | 80.00        |             |        |          |          | <120     | 7.1       |
| 85              | CH-CLAY, fat, brown, dry   | 85.00        |             |        |          |          | <120     | 11.1      |
| 90              | SANDSTONE, fine to medium grained, tan/brown, dry  | 90.00        |             |        |          |          | <120     | 3.0       |
| 95              |  |              |             |        |          |          | <120     | 0.4       |
| 100             |  |              |             |        |          |          | <120     | 3.4       |
| 105             | END OF BOREHOLE @ 105.00ft BGS   | 105.00       |             |        |          |          | <120     | 4.1       |
| 110             | Boring was left open for 72 hours and then a water probe was used to determine the presence or absence of groundwater. No groundwater was detected and the boring was plugged. |              |             |        |          |          | <120     | 2.8       |
| 115             |  |              |             |        |          |          |          |           |
| 120             |  |              |             |        |          |          |          |           |
| 125             |  |              |             |        |          |          |          |           |
| 130             |  |              |             |        |          |          |          |           |
| 135             |  |              |             |        |          |          |          |           |
| 140             |  |              |             |        |          |          |          |           |
| 145             |  |              |             |        |          |          |          |           |

**NOTES:** MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 2

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: MW-11

PROJECT NUMBER: 11220747

DATE COMPLETED: August 5, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS         | DEPTH<br>BGS | SOIL BORING | SAMPLE |          |          |          |           |
|-----------------|---|--------------|-------------|--------|----------|----------|----------|-----------|
|                 |   |              |             | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, brown, dry     |              |             |        |          |          | <120     | 6.4       |
|                 |   |              |             |        |          |          | <120     | 0.8       |
|                 | CALICHE                                     | 6.00         |             |        |          |          | <120     | 1.1       |
|                 |   |              |             |        |          |          | <120     | 2.3       |
| 10              | SM-SILTY SAND, fine grained, brown, dry     | 10.00        |             |        |          |          | <120     | 0.7       |
| 15              |   |              |             |        |          |          | <120     | 2.0       |
| 20              |   |              |             |        |          |          | <120     | 1.3       |
| 25              | CL-SANDY CLAY, fine grained, brown, dry     | 25.00        |             |        |          |          | <120     | 0.8       |
| 30              | SANDSTONE, fine to medium grained, tan, dry | 30.00        |             |        |          |          | 148      | 6.9       |
| 35              | CH-CLAY, fat, brown, dry                    | 35.00        |             |        |          |          | <120     | 3.4       |
| 40              |   |              |             |        |          |          | <120     | 2.1       |
| 45              |   |              |             |        |          |          | <120     | 2.0       |
| 50              |   |              |             |        |          |          | <120     | 1.7       |
| 55              |   |              |             |        |          |          | <120     | 2.3       |
| 60              |   |              |             |        |          |          | <120     | 1.3       |
| 65              | SANDSTONE, fine grained, gray/white, dry    | 65.00        |             |        |          |          | <120     | 2.3       |
| 70              | CH-CLAY, fat, brown/red, dry                | 70.00        |             |        |          |          | <120     | 1.6       |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

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## STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 2 of 2

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: MW-11

PROJECT NUMBER: 11220747

DATE COMPLETED: August 5, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

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| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS  | DEPTH<br>BGS | SOIL BORING | SAMPLE |          |          |          |           |
|-----------------|--|--------------|-------------|--------|----------|----------|----------|-----------|
|                 |  |              |             | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 80              | CLAYEY SANDSTONE, fine to medium grained, brown, dry   | 80.00        |             |        |          |          | <120     | 22.9      |
| 85              | SANDSTONE, medium grained, gray/white, dry   | 85.00        |             |        |          |          | <120     | 38.8      |
| 90              |  |              |             |        |          |          | <120     | 30.9      |
| 95              |  |              |             |        |          |          | <120     | 20.3      |
| 100             |  |              |             |        |          |          | <120     | 28.1      |
| 105             | END OF BOREHOLE @ 105.00ft BGS   | 105.00       |             |        |          |          | <120     | 87.1      |
| 110             | Boring was left open for 72 hours and then a water probe was used to determine the presence or absence of groundwater. No groundwater was detected and the boring was plugged. |              |             |        |          |          | <120     | 78.1      |
| 115             |  |              |             |        |          |          |          |           |
| 120             |  |              |             |        |          |          |          |           |
| 125             |  |              |             |        |          |          |          |           |
| 130             |  |              |             |        |          |          |          |           |
| 135             |  |              |             |        |          |          |          |           |
| 140             |  |              |             |        |          |          |          |           |
| 145             |  |              |             |        |          |          |          |           |

**NOTES:** MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-12

PROJECT NUMBER: 11220747

DATE COMPLETED: August 18, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

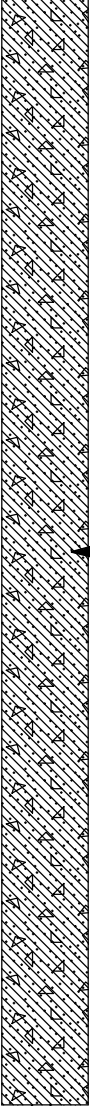
LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

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| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS                       | DEPTH<br>BGS | SOIL BORING   | SAMPLE    |          |          |          |           |
|-----------------|---|--------------|---|-----------|----------|----------|----------|-----------|
|                 |   |              |   | NUMBER    | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, brown, dry                   | 2.00         |  | 2         |          |          | <120     | 11.2      |
|                 | CALICHE   |              |   | 4         |          |          | >2604    | 0.4       |
|                 | SM-SILTY SAND, fine grained, brown, dry                   | 6.00         |   |           |          |          | >2604    | 23.3      |
|                 | CL-SANDY CLAY, fine grained, brown, dry                   | 8.00         |   |           |          |          | >2604    | 33.3      |
| 10              | SM-SILTY SAND, fine grained, brown, dry                   | 10.00        |   |           |          |          | 2400     | 36.6      |
| 15              |   |              |   |           |          |          | >2604    | 33.4      |
| 20              |   |              |   | 20'       |          |          | >2604    | 32.1      |
| 25              | SANDSTONE, fine to medium grained, tan, dry               | 25.00        |   |           |          |          | >2604    | 27.6      |
| 30              |   |              |   |           |          |          | 1648     | 55.2      |
| 35              | CH-CLAY, fat, brown, dry                                  | 35.00        |   |           |          |          | 542      | 79.0      |
| 40              |   |              |   | 40'       |          |          | 108      | 54.0      |
| 45              | SANDSTONE, fine to medium grained, brown, dry             | 45.00        |   | 45<br>45' |          |          | 284      | 23.1      |
| 50              | SANDSTONE, fine grained, brown, dry                       | 50.00        |   |           |          |          | 310      | 19.4      |
| 55              |   |              |   | 55'       |          |          | 130      | 14.3      |
| 60              | END OF BOREHOLE @ 60.00ft BGS<br><br>This boring was dry. | 60.00        |   | 60'       |          |          | 160      | 16.1      |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-13

PROJECT NUMBER: 11220747

DATE COMPLETED: July 25, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

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| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS          | DEPTH<br>BGS | SOIL BORING | SAMPLE |          |          |          |           |
|-----------------|--|--------------|-------------|--------|----------|----------|----------|-----------|
|                 |  |              |             | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, brown, dry      |              |             | 2      |          |          |          |           |
|                 |  |              |             | 4      |          |          | <108     | 1.8       |
|                 | CALICHE                                      | 6.00         |             |        |          |          | <108     | 38.7      |
|                 |  | 8.00         |             |        |          |          | <108     | 29.8      |
| 10              | SM-SILTY SAND, fine grained, brown, dry      |              |             | 10'    |          |          | <108     | 154.2     |
|                 | - with fine gravel from 14.00 to 20.00ft BGS |              |             |        |          |          | <108     | 16.8      |
| 15              |  |              |             |        |          |          | <108     | 23.8      |
|                 |  |              |             | 18'    |          |          | <108     | 20.9      |
| 20              |  |              |             |        |          |          | <108     | 219.8     |
|                 |  |              |             |        |          |          | <108     | 143       |
| 25              | - with fine gravel from 25.00 to 30.00ft BGS |              |             |        |          |          | 160      | 61.4      |
| 30              | END OF BOREHOLE @ 30.00ft BGS                | 30.00        |             | 30'    |          |          | <108     | 86.4      |
| 35              | This boring was dry.                         |              |             |        |          |          |          |           |
| 40              |  |              |             |        |          |          |          |           |
| 45              |  |              |             |        |          |          |          |           |
| 50              |  |              |             |        |          |          |          |           |
| 55              |  |              |             |        |          |          |          |           |
| 60              |  |              |             |        |          |          |          |           |
| 65              |  |              |             |        |          |          |          |           |
| 70              |  |              |             |        |          |          |          |           |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-14

PROJECT NUMBER: 11220747

DATE COMPLETED: August 6, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic


LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

File: I:\LOG DATABASE\8-CHAR\11-1122-11220747 FLAMENCO\11220747-CO.GPJ Library File: GHD\_ENV\RO\_V06.GLB Report: OVERBURDEN LOG Date: 10/27/21

| BRIEFING DOCUMENT: Caddis |   |              | BRIEFING DOCUMENT: Caddis   |        |          |          |          |           |
|---------------------------|---|--------------|---|--------|----------|----------|----------|-----------|
| DEPTH<br>ft BGS           | STRATIGRAPHIC DESCRIPTION & REMARKS           | DEPTH<br>BGS | SOIL BORING   | SAMPLE |          |          |          |           |
|                           |   |              |   | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
|                           |   |              |   |        |          |          |          |           |
| 5                         | SM-SILTY SAND, fine grained, brown/red, dry   | 2.00         |  | 2      |          |          | <120     | 2.8       |
|                           | 4   |              |   |        |          | 1136     | 50.8     |           |
|                           | SM-SILTY SAND, fine grained, brown, dry       | 6.00         |   |        |          |          | <120     | 2.7       |
|                           |   |              |   |        |          | <120     | 1.3      |           |
|                           |   |              |   |        |          | <120     | 19.2     |           |
|                           |   |              |   |        |          |          |          |           |
| 15                        |   |              |   |        |          |          | 1140     | 36.4      |
| 20                        | CH-CLAY, fat, brown, dry                      | 20.00        |   |        |          |          | 1760     | 37.0      |
| 25                        |   |              |   | 25'    |          |          | >2572    | 19.5      |
| 30                        | SANDSTONE, fine to medium grained, white, dry | 30.00        |   | 30'    |          |          | 136      | 34.3      |
| 35                        | END OF BOREHOLE @ 35.00ft BGS                 | 35.00        |   | 35'    |          |          | 136      | 54.4      |
| 40                        | This boring was dry.                          |              |   |        |          |          |          |           |
| 45                        |   |              |   |        |          |          |          |           |
| 50                        |   |              |   |        |          |          |          |           |
| 55                        |   |              |   |        |          |          |          |           |
| 60                        |   |              |   |        |          |          |          |           |
| 65                        |   |              |   |        |          |          |          |           |
| 70                        |   |              |   |        |          |          |          |           |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS 





# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-15

PROJECT NUMBER: 11220747

DATE COMPLETED: August 6, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

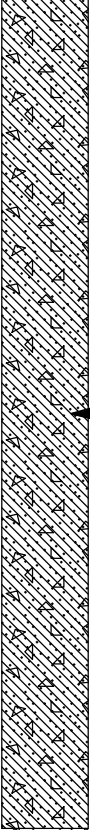
LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

File: I:\LOG DATABASE\8-CHAR\11-1122-11220747 FLAMENCO\11220747-CO.GPJ Library File: GHD\_ENV\RO\_V06.GLB Report: OVERBURDEN LOG Date: 10/27/21

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS                 | DEPTH<br>BGS | SOIL BORING   | SAMPLE |          |          |          |           |
|-----------------|---|--------------|---|--------|----------|----------|----------|-----------|
|                 |   |              |   | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, brown, dry             | 2.00         |  | 2      |          |          | <120     | 2.6       |
|                 | CALICHE   | 4.00         |   | 4      |          |          | 420      | 2.6       |
|                 | SM-SILTY SAND, fine grained, brown, dry             | 8.00         |   | 6      |          |          | >2460    | 16.2      |
| 10              | CH-CLAY, fat, brown, dry                            | 10.00        |   |        |          |          | >2460    | 11.1      |
|                 | SM-SILTY SAND, fine grained, brown, dry             | 25.00        |   |        |          |          | >2460    | 8.3       |
| 15              |   | 30.00        |   |        |          |          | >2460    | 9.3       |
| 20              |   | 35.00        |   |        |          |          | 2112     | 10.0      |
| 25              | SILTY SANDSTONE, fine to medium grained, tan, dry   | 40.00        |   |        |          |          | 2112     | 12.3      |
| 30              | SILTY SANDSTONE, fine to medium grained, white, dry | 45.00        |   |        |          |          | 1716     | 13.1      |
| 35              |   |              |   | 35'    |          |          | 508      | 11.9      |
| 40              | CH-CLAY, fat, brown, dry                            |              |   | 40'    |          |          | <120     | 3.2       |
| 45              | END OF BOREHOLE @ 45.00ft BGS                       |              |   | 45'    |          |          | <120     | 4.3       |
| 50              | This boring was dry.                                |              |   |        |          |          |          |           |
| 55              |   |              |   |        |          |          |          |           |
| 60              |   |              |   |        |          |          |          |           |
| 65              |   |              |   |        |          |          |          |           |
| 70              |   |              |   |        |          |          |          |           |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-16

PROJECT NUMBER: 11220747

DATE COMPLETED: August 6, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

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| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS     | DEPTH<br>BGS | SOIL BORING | SAMPLE |          |          |          |           |
|-----------------|---|--------------|-------------|--------|----------|----------|----------|-----------|
|                 |   |              |             | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, brown, dry | 2.00         |             | 2      |          |          | <120     | 1.3       |
|                 | CALICHE                                 | 4.00         |             | 4      |          |          | 164      | 2.0       |
|                 | SM-SILTY SAND, fine grained, brown, dry |              |             |        |          |          | <120     | 1.3       |
| 10              |   |              |             | 10'    |          |          | <120     | 1.0       |
| 15              |   |              |             |        |          |          | <120     | 1.3       |
| 20              | END OF BOREHOLE @ 20.00ft BGS           | 20.00        |             | 20'    |          |          | <120     | 15.6      |
| 25              | This boring was dry.                    |              |             |        |          |          |          |           |
| 30              |   |              |             |        |          |          |          |           |
| 35              |   |              |             |        |          |          |          |           |
| 40              |   |              |             |        |          |          |          |           |
| 45              |   |              |             |        |          |          |          |           |
| 50              |   |              |             |        |          |          |          |           |
| 55              |   |              |             |        |          |          |          |           |
| 60              |   |              |             |        |          |          |          |           |
| 65              |   |              |             |        |          |          |          |           |
| 70              |   |              |             |        |          |          |          |           |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-17

PROJECT NUMBER: 11220747

DATE COMPLETED: July 26, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

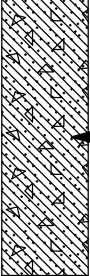
LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

File: I:\LOG DATABASE\8-CHAR\11-1122-11220747 FLAMENCO\11220747-CO.GPJ Library File: GHD\_ENV\RO\_V06.GLB Report: OVERBURDEN LOG Date: 10/27/21

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS         | DEPTH<br>BGS | SOIL BORING   | SAMPLE |          |          |          |           |
|-----------------|---|--------------|---|--------|----------|----------|----------|-----------|
|                 |   |              |   | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, red/brown, dry | 5.00         |  Cement-Bentonite Grout | 2      |          |          | <108     | 1.8       |
|                 |   |              |   | 4      |          |          | <108     | 0.8       |
| 10              | SM-SILTY SAND, fine grained, brown, dry     |              |   | 10'    |          |          | <108     | 13.8      |
| 15              | END OF BOREHOLE @ 15.00ft BGS               | 15.00        |   | 15'    |          |          | <108     | 6.1       |
| 20              | This boring was dry.                        |              |   |        |          |          |          |           |
| 25              |   |              |   |        |          |          |          |           |
| 30              |   |              |   |        |          |          |          |           |
| 35              |   |              |   |        |          |          |          |           |
| 40              |   |              |   |        |          |          |          |           |
| 45              |   |              |   |        |          |          |          |           |
| 50              |   |              |   |        |          |          |          |           |
| 55              |   |              |   |        |          |          |          |           |
| 60              |   |              |   |        |          |          |          |           |
| 65              |   |              |   |        |          |          |          |           |
| 70              |   |              |   |        |          |          |          |           |

**NOTES:** MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS 



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-18

PROJECT NUMBER: 11220747

DATE COMPLETED: August 11, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

File: I:\LOG DATABASE\8-CHAR\11-1122-11220747 FLAMENCO\11220747-CO.GPJ Library File: GHD\_ENV\RO\_V06.GLB Report: OVERBURDEN LOG Date: 10/27/21

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS           | DEPTH<br>BGS | SOIL BORING | SAMPLE |          |          |          |           |
|-----------------|---|--------------|-------------|--------|----------|----------|----------|-----------|
|                 |   |              |             | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, brown, dry       |              |             | 2      |          |          | <120     | 4.9       |
|                 |   |              |             | 4      |          |          | <120     | 3.0       |
| 10              |   |              |             |        |          |          | 572      | 57.4      |
|                 |   |              |             |        |          |          | 852      | 22.9      |
|                 |   |              |             |        |          |          | 1772     | 23.6      |
| 15              | SANDY CALICHE                                 | 15.00        |             |        |          |          | >2604    | 5.2       |
| 20              | SANDSTONE, fine to medium grained, brown, dry | 20.00        |             |        |          |          | >2604    | 12.6      |
| 25              | SANDSTONE, medium grained, brown, dry         | 25.00        |             |        |          |          | >2604    | 11.3      |
| 30              |   |              |             | 30'    |          |          | >2604    | 12.6      |
| 35              | CH-CLAY, fat, brown, dry                      | 35.00        |             |        |          |          | 1772     | 14.1      |
| 40              | SANDSTONE, fine to medium grained, tan, dry   | 40.00        |             |        |          |          | >2604    | 13.0      |
| 45              |   |              |             |        |          |          | 1424     | 26.7      |
| 50              | CH-CLAY, fat, brown, dry                      | 50.00        |             |        |          |          | 792      | 24.8      |
| 55              |   |              |             | 55'    |          |          | 252      | 63.1      |
| 60              |   |              |             | 60'    |          |          | 188      | 25.7      |
| 65              |   |              |             | 65'    |          |          | <120     | 8.5       |
| 70              | END OF BOREHOLE @ 70.00ft BGS                 | 70.00        |             | 70'    |          |          | <120     | 11.3      |
|                 | This boring was dry.                          |              |             |        |          |          |          |           |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS





# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-19

PROJECT NUMBER: 11220747

DATE COMPLETED: August 11, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

File: I:\LOG DATABASE\8-CHAR\11-1122-11220747 FLAMENCO\11220747-CO.GPJ Library File: GHD\_ENV\RO\_V06.GLB Report: OVERBURDEN LOG Date: 10/27/21

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS         | DEPTH<br>BGS | SOIL BORING | SAMPLE |          |          |          |           |
|-----------------|---|--------------|-------------|--------|----------|----------|----------|-----------|
|                 |   |              |             | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, brown, dry     | 4.00         |             | 2      |          |          | <120     | 5.3       |
|                 | SANDY CALICHE                               |              |             | 4      |          |          | <120     | 1.6       |
|                 |   |              |             |        |          |          | 732      | 5.6       |
| 10              | SM-SILTY SAND, fine grained, brown, dry     | 8.00         |             |        |          |          | 732      | 6.1       |
|                 |   |              |             |        |          |          | 732      | 3.9       |
| 15              |   |              |             |        |          |          | 1772     | 25.5      |
| 20              | SANDSTONE, fine to medium grained, tan, dry | 20.00        |             | 20'    |          |          | 2604     | 30.0      |
| 25              | SANDSTONE, medium grained, tan/yellow, dry  | 25.00        |             |        |          |          | 852      | 28.0      |
| 30              | CH-CLAY, fat, brown, dry                    | 30.00        |             |        |          |          | 852      | 36.4      |
| 35              |   |              |             |        |          |          | 1772     | 41.7      |
| 40              | SANDSTONE, medium grained, brown, dry       | 40.00        |             |        |          |          | 1068     | 5.1       |
| 45              | SANDSTONE, fine to medium grained, tan, dry | 45.00        |             | 45'    |          |          | 160      | 57.0      |
| 50              | END OF BOREHOLE @ 50.00ft BGS               | 50.00        |             | 50'    |          |          | <120     | 5.4       |
| 55              | This boring was dry.                        |              |             |        |          |          |          |           |
| 60              |   |              |             |        |          |          |          |           |
| 65              |   |              |             |        |          |          |          |           |
| 70              |   |              |             |        |          |          |          |           |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-20

PROJECT NUMBER: 11220747

DATE COMPLETED: July 27, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

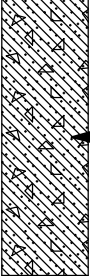
LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

File: I:\LOG DATABASE\8-CHAR\11-1122-11220747 FLAMENCO\11220747-CO.GPJ Library File: GHD\_ENV\RO\_V06.GLB Report: OVERBURDEN LOG Date: 10/27/21

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS         | DEPTH<br>BGS | SOIL BORING  | SAMPLE |          |          |          |           |
|-----------------|---|--------------|--|--------|----------|----------|----------|-----------|
|                 |   |              |  | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, red/brown, dry |              |  | 2      |          |          | <120     | 0.5       |
|                 |   |              |  | 4      |          |          | <120     | 0.2       |
| 10              |   |              |  | 10'    |          |          | <120     | 6.9       |
| 15              | END OF BOREHOLE @ 15.00ft BGS               | 15.00        |  | 15'    |          |          | 180      | 13.2      |
| 20              | This boring was dry.                        |              |  |        |          |          |          |           |
| 25              |   |              |  |        |          |          |          |           |
| 30              |   |              |  |        |          |          |          |           |
| 35              |   |              |  |        |          |          |          |           |
| 40              |   |              |  |        |          |          |          |           |
| 45              |   |              |  |        |          |          |          |           |
| 50              |   |              |  |        |          |          |          |           |
| 55              |   |              |  |        |          |          |          |           |
| 60              |   |              |  |        |          |          |          |           |
| 65              |   |              |  |        |          |          |          |           |
| 70              |   |              |  |        |          |          |          |           |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS 



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-21

PROJECT NUMBER: 11220747

DATE COMPLETED: July 27, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

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| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS          | DEPTH<br>BGS | SOIL BORING | SAMPLE |          |          |          |          |
|-----------------|--|--------------|-------------|--------|----------|----------|----------|----------|
|                 |  |              |             | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PI (ppm) |
| 5               | SM-SILTY SAND, fine grained, red/brown, dry  |              |             | 2      |          |          | <120     | 0.4      |
|                 |  |              |             | 4      |          |          | 352      | 0.4      |
| 10              |  |              |             | 10'    |          |          | >2492    | 70.5     |
| 15              | SANDSTONE, fine to medium grained, tan/brown | 15.00        |             |        |          |          | >2492    | 30.0     |
| 20              | END OF BOREHOLE @ 20.00ft BGS                | 20.00        |             | 20'    |          |          | 1380     | 47.6     |
| 25              | This boring was dry.                         |              |             |        |          |          |          |          |
| 30              |  |              |             |        |          |          |          |          |
| 35              |  |              |             |        |          |          |          |          |
| 40              |  |              |             |        |          |          |          |          |
| 45              |  |              |             |        |          |          |          |          |
| 50              |  |              |             |        |          |          |          |          |
| 55              |  |              |             |        |          |          |          |          |
| 60              |  |              |             |        |          |          |          |          |
| 65              |  |              |             |        |          |          |          |          |
| 70              |  |              |             |        |          |          |          |          |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS





# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-21A

PROJECT NUMBER: 11220747

DATE COMPLETED: August 11, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

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| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS                       | DEPTH<br>BGS | SOIL BORING | SAMPLE |          |          |          |           |
|-----------------|---|--------------|-------------|--------|----------|----------|----------|-----------|
|                 |   |              |             | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, brown, dry                   | 4.00         |             | 2      |          |          | <120     | 3.6       |
|                 | CALICHE   |              |             | 4      |          |          | <120     | 6.1       |
|                 |   |              |             |        |          |          | >2604    | 53.7      |
| 10              | SANDSTONE, fine to medium grained, tan, dry               | 10.00        |             |        |          |          | >2604    | 39.9      |
|                 |   |              |             |        |          |          | >2604    | 36.2      |
| 15              |   |              |             | 15'    |          |          | 2056     | 64.6      |
| 20              | SANDSTONE, medium grained, tan/yellow, dry                | 20.00        |             |        |          |          | >2604    | 31.7      |
| 25              |   |              |             |        |          |          | >2604    | 16.7      |
| 30              | SANDSTONE, medium grained, brown, dry                     | 30.00        |             |        |          |          | 1424     | 21.8      |
| 35              |   |              |             | 35'    |          |          | >2604    | 26.7      |
| 40              |   |              |             |        |          |          | 2400     | 30.3      |
| 45              | CH-CLAY, fat, brown, dry                                  | 45.00        |             |        |          |          | <120     | 5.6       |
| 50              |   |              |             |        |          |          | 676      | 36.2      |
| 55              |   |              |             | 55'    |          |          | 160      | 34.1      |
| 60              | END OF BOREHOLE @ 60.00ft BGS<br><br>This boring was dry. | 60.00        |             | 60'    |          |          | <120     | 12.1      |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS





# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-21B

PROJECT NUMBER: 11220747

DATE COMPLETED: August 12, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS         | DEPTH<br>BGS | SOIL BORING | SAMPLE |          |          |          |           |
|-----------------|---|--------------|-------------|--------|----------|----------|----------|-----------|
|                 |   |              |             | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, brown, dry     | 4.00         |             | 2      |          |          | <120     | 5.3       |
|                 | CALICHE                                     | 8.00         |             | 4      |          |          | <120     | 0.9       |
|                 |   |              |             | 6      |          |          | 920      | 31.2      |
| 10              | SANDSTONE, fine to medium grained, tan, dry | 15.00        |             |        |          |          | 356      | 28.5      |
|                 |   |              |             |        |          |          | 188      | 23.7      |
| 15              | SANDSTONE, medium grained, brown, dry       | 20.00        |             | 15'    |          |          | <120     | 9.6       |
| 20              | END OF BOREHOLE @ 20.00ft BGS               |              |             | 20'    |          |          | <120     | 10.8      |
| 25              | This boring was dry.                        |              |             |        |          |          |          |           |
| 30              |   |              |             |        |          |          |          |           |
| 35              |   |              |             |        |          |          |          |           |
| 40              |   |              |             |        |          |          |          |           |
| 45              |   |              |             |        |          |          |          |           |
| 50              |   |              |             |        |          |          |          |           |
| 55              |   |              |             |        |          |          |          |           |
| 60              |   |              |             |        |          |          |          |           |
| 65              |   |              |             |        |          |          |          |           |
| 70              |   |              |             |        |          |          |          |           |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS

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# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-21C

PROJECT NUMBER: 11220747

DATE COMPLETED: August 12, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

File: I:\LOG DATABASE\8-CHAR\11-1122-11220747 FLAMENCO\11220747-CO.GPJ Library File: GHD\_ENV\RO\_V06.GLB Report: OVERBURDEN LOG Date: 10/27/21

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS         | DEPTH<br>BGS | SOIL BORING | SAMPLE |          |          |          |           |
|-----------------|---|--------------|-------------|--------|----------|----------|----------|-----------|
|                 |   |              |             | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, brown, dry     |              |             | 2      |          |          | <120     | 5.8       |
|                 |   |              |             | 4      |          |          | <120     | 4.7       |
|                 |   |              |             | 6      |          |          | <120     | 19.3      |
|                 | CALICHE                                     | 6.00         |             |        |          |          | <120     | 15.6      |
|                 | SANDY CALICHE                               | 8.00         |             |        |          |          | <120     | 14.7      |
| 10              | SANDSTONE, fine to medium grained, tan, dry | 10.00        |             |        |          |          | <120     | 22.7      |
| 15              |   |              |             | 15'    |          |          | <120     | 5.7       |
| 20              | END OF BOREHOLE @ 20.00ft BGS               | 20.00        |             | 20'    |          |          | <120     |           |
| 25              | This boring was dry.                        |              |             |        |          |          |          |           |
| 30              |   |              |             |        |          |          |          |           |
| 35              |   |              |             |        |          |          |          |           |
| 40              |   |              |             |        |          |          |          |           |
| 45              |   |              |             |        |          |          |          |           |
| 50              |   |              |             |        |          |          |          |           |
| 55              |   |              |             |        |          |          |          |           |
| 60              |   |              |             |        |          |          |          |           |
| 65              |   |              |             |        |          |          |          |           |
| 70              |   |              |             |        |          |          |          |           |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS





# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-22

PROJECT NUMBER: 11220747

DATE COMPLETED: August 11, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

File: I:\LOG DATABASE\8-CHAR\11-1122-11220747 FLAMENCO\11220747-CO.GPJ Library File: GHD\_ENV\RO\_V06.GLB Report: OVERBURDEN LOG Date: 10/27/21

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS                | DEPTH<br>BGS | SOIL BORING                | SAMPLE |          |          |          |           |
|-----------------|--|--------------|----------------------------|--------|----------|----------|----------|-----------|
|                 |  |              |                            | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, brown, dry            | 4.00         | <br>Cement-Bentonite Grout | 2      |          |          | 120      | 4.7       |
|                 | SANDY CALICHE                                      |              |                            | 4      |          |          | 120      | 0.8       |
|                 |  |              |                            |        |          |          | 356      | 11.2      |
|                 |  |              |                            |        |          |          | 1648     | 13.1      |
| 10              | SM-SILTY SAND, fine grained, brown, dry            | 10.00        |                            |        |          |          | >2604    | 23.0      |
| 15              | SANDSTONE, fine to medium grained, gray/tan, dry   | 15.00        |                            | 15'    |          |          | >2604    | 5.7       |
| 20              | SANDSTONE, fine to medium grained, brown, dry      | 20.00        |                            |        |          |          | >2604    | 6.3       |
| 25              | SANDSTONE, fine to medium grained, tan/yellow, dry | 25.00        |                            |        |          |          | 2056     | 11.2      |
| 30              | SANDSTONE, fine to medium grained, brown, dry      | 30.00        |                            | 30'    |          |          | 1148     | 43.9      |
| 35              |  |              |                            |        |          |          | <120     | 9.5       |
| 40              |  |              |                            |        |          |          | 572      | 4.0       |
| 45              | SANDSTONE, fine to medium grained, tan, dry        | 45.00        |                            | 45'    |          |          | 160      | 5.8       |
| 50              | END OF BOREHOLE @ 50.00ft BGS                      | 50.00        |                            | 50'    |          |          | <120     | 6.9       |
| 55              | This boring was dry.                               |              |                            |        |          |          |          |           |
| 60              |  |              |                            |        |          |          |          |           |
| 65              |  |              |                            |        |          |          |          |           |
| 70              |  |              |                            |        |          |          |          |           |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-23

PROJECT NUMBER: 11220747

DATE COMPLETED: July 27, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS         | DEPTH<br>BGS | SOIL BORING | SAMPLE |          |          |          |           |
|-----------------|---|--------------|-------------|--------|----------|----------|----------|-----------|
|                 |   |              |             | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, red/brown, dry |              |             | 2      |          |          | <120     | 1.1       |
|                 |   |              |             | 4      |          |          |          |           |
| 10              | SANDSTONE, fine to medium grained, tan, dry | 10.00        |             | 10'    |          |          | <120     | 0.6       |
| 13              | - refusal at 13.00ft BGS                    | 13.00        |             |        |          |          | <120     | 29.2      |
| 15              | END OF BOREHOLE @ 13.00ft BGS               |              |             |        |          |          |          |           |
| 20              | This boring was dry.                        |              |             |        |          |          |          |           |
| 25              |   |              |             |        |          |          |          |           |
| 30              |   |              |             |        |          |          |          |           |
| 35              |   |              |             |        |          |          |          |           |
| 40              |   |              |             |        |          |          |          |           |
| 45              |   |              |             |        |          |          |          |           |
| 50              |   |              |             |        |          |          |          |           |
| 55              |   |              |             |        |          |          |          |           |
| 60              |   |              |             |        |          |          |          |           |
| 65              |   |              |             |        |          |          |          |           |
| 70              |   |              |             |        |          |          |          |           |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS

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# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-24

PROJECT NUMBER: 11220747

DATE COMPLETED: August 10, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

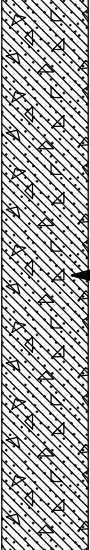
LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

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| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS               | DEPTH<br>BGS | SOIL BORING   | SAMPLE |          |          |          |           |
|-----------------|---|--------------|---|--------|----------|----------|----------|-----------|
|                 |   |              |   | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, brown, dry           |              |  | 2      |          |          | <120     | 3.3       |
|                 | CALICHE   | 4.00         |   | 4      |          |          | <120     | 2.0       |
|                 | SANDY CALICHE                                     | 6.00         |   |        |          |          | 1148     | 32.6      |
|                 | SM-SILTY SAND, fine to medium grained, brown, dry | 8.00         |   |        |          |          | 1148     | 28.7      |
|                 | SANDSTONE, medium grained, tan, dry               | 10.00        |   |        |          |          | 1148     | 30.0      |
| 10              |   |              |   |        |          |          |          |           |
| 15              |   |              |   | 15'    |          |          | 1772     | 52.9      |
| 20              |   |              |   |        |          |          | 356      | 52.0      |
| 25              |   |              |   | 25'    |          |          | <120     | 36.5      |
| 30              | END OF BOREHOLE @ 30.00ft BGS                     | 30.00        |   | 30'    |          |          | <120     | 61.1      |
| 35              | This boring was dry.                              |              |   |        |          |          |          |           |
| 40              |   |              |   |        |          |          |          |           |
| 45              |   |              |   |        |          |          |          |           |
| 50              |   |              |   |        |          |          |          |           |
| 55              |   |              |   |        |          |          |          |           |
| 60              |   |              |   |        |          |          |          |           |
| 65              |   |              |   |        |          |          |          |           |
| 70              |   |              |   |        |          |          |          |           |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS 



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-25

PROJECT NUMBER: 11220747

DATE COMPLETED: August 10, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

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| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS           | DEPTH<br>BGS | SOIL BORING | SAMPLE |          |          |          |           |
|-----------------|---|--------------|-------------|--------|----------|----------|----------|-----------|
|                 |   |              |             | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, brown, dry       | 4.00         |             | 2      |          |          | <120     | 3.4       |
|                 | CALICHE                                       | 6.00         |             | 4      |          |          | <120     | 1.1       |
| 10              | SM-SILTY SAND, fine grained, brown, dry       |              |             |        |          |          | >2472    | 13.9      |
|                 |   |              |             |        |          |          | >2472    | 16.8      |
| 15              |   |              |             | 15'    |          |          | >2472    | 6.9       |
|                 |   |              |             |        |          |          | >2472    | 5.3       |
| 20              | SANDSTONE, fine to medium grained, brown, dry | 20.00        |             |        |          |          | 1648     | 57.3      |
| 25              |   |              |             |        |          |          | 1772     | 40.6      |
| 30              |   |              |             | 30'    |          |          | 2008     | 62.2      |
| 35              |   |              |             |        |          |          | 356      | 40.5      |
| 40              |   |              |             | 40'    |          |          | <120     | 89.6      |
| 45              | END OF BOREHOLE @ 45.00ft BGS                 | 45.00        |             | 45'    |          |          | <120     | 49.6      |
| 50              | This boring was dry.                          |              |             |        |          |          |          |           |
| 55              |   |              |             |        |          |          |          |           |
| 60              |   |              |             |        |          |          |          |           |
| 65              |   |              |             |        |          |          |          |           |
| 70              |   |              |             |        |          |          |          |           |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-26

PROJECT NUMBER: 11220747

DATE COMPLETED: August 10, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

File: I:\LOG DATABASE\8-CHAR\11-1122-11220747 FLAMENCO\11220747-CO.GPJ Library File: GHD\_ENV\RO\_V06.GLB Report: OVERBURDEN LOG Date: 10/27/21

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS              | DEPTH<br>BGS | SOIL BORING | SAMPLE |          |          |          |           |
|-----------------|--|--------------|-------------|--------|----------|----------|----------|-----------|
|                 |  |              |             | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, brown, dry          |              |             | 2      |          |          | <120     | 3.2       |
|                 | CALICHE  | 4.00         |             | 4      |          |          | <120     | 1.6       |
|                 | SANDY CALICHE                                    | 6.00         |             |        |          |          | >2472    | 47.0      |
| 10              | SM-SILTY SAND, fine grained, brown, dry          | 8.00         |             |        |          |          | >2472    | 50.6      |
|                 |  |              |             |        |          |          | >2472    | 58.8      |
| 15              | SANDSTONE, fine to medium grained, tan/gray, dry | 15.00        |             | 15'    |          |          | >2472    | 71.1      |
| 20              | CH-CLAY, fat, brown, dry                         | 20.00        |             |        |          |          | 456      | 14.1      |
| 25              |  |              |             | 25'    |          |          | 160      | 39.7      |
| 30              | END OF BOREHOLE @ 30.00ft BGS                    | 30.00        |             | 30'    |          |          | 176      | 42.1      |
| 35              | This boring was dry.                             |              |             |        |          |          |          |           |
| 40              |  |              |             |        |          |          |          |           |
| 45              |  |              |             |        |          |          |          |           |
| 50              |  |              |             |        |          |          |          |           |
| 55              |  |              |             |        |          |          |          |           |
| 60              |  |              |             |        |          |          |          |           |
| 65              |  |              |             |        |          |          |          |           |
| 70              |  |              |             |        |          |          |          |           |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-27

PROJECT NUMBER: 11220747

DATE COMPLETED: July 26, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

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| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS         | DEPTH<br>BGS | SOIL BORING | SAMPLE |          |          |          |           |
|-----------------|---|--------------|-------------|--------|----------|----------|----------|-----------|
|                 |   |              |             | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, red/brown, dry |              |             | 2      |          |          | <120     | 1.2       |
|                 |   |              |             | 4      |          |          | <120     | 0.8       |
| 10              |   |              |             | 10'    |          |          | 1136     | 5.8       |
| 15              | CALICHE                                     | 15.00        |             | 15'    |          |          | <120     | 11.8      |
| 20              | END OF BOREHOLE @ 20.00ft BGS               | 20.00        |             |        |          |          | 140      | 19.4      |
| 25              | This boring was dry.                        |              |             |        |          |          |          |           |
| 30              |   |              |             |        |          |          |          |           |
| 35              |   |              |             |        |          |          |          |           |
| 40              |   |              |             |        |          |          |          |           |
| 45              |   |              |             |        |          |          |          |           |
| 50              |   |              |             |        |          |          |          |           |
| 55              |   |              |             |        |          |          |          |           |
| 60              |   |              |             |        |          |          |          |           |
| 65              |   |              |             |        |          |          |          |           |
| 70              |   |              |             |        |          |          |          |           |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS







# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-27A

PROJECT NUMBER: 11220747

DATE COMPLETED: August 12, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

File: I:\LOG DATABASE\8-CHAR\11-1122-11220747 FLAMENCO\11220747-CO.GPJ Library File: GHD\_ENV\RO\_V06.GLB Report: OVERBURDEN LOG Date: 10/27/21

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS     | DEPTH<br>BGS | SOIL BORING | SAMPLE |          |          |          |           |
|-----------------|---|--------------|-------------|--------|----------|----------|----------|-----------|
|                 |   |              |             | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, brown, dry | 4.00         |             | 2      |          |          | <120     | 6.2       |
|                 | CALICHE                                 |              |             | 4      |          |          | <120     | 5.9       |
|                 |   |              |             |        |          |          | <120     | 15.1      |
| 10              | SM-SILTY SAND, fine grained, brown, dry | 8.00         |             | 10'    |          |          | <120     | 9.8       |
| 15              |   |              |             | 15'    |          |          | <120     | 17.3      |
| 20              | END OF BOREHOLE @ 20.00ft BGS           | 20.00        |             | 20'    |          |          | 188      | 17.1      |
| 25              | This boring was dry.                    |              |             |        |          |          | 160      | 21.2      |
| 30              |   |              |             |        |          |          |          |           |
| 35              |   |              |             |        |          |          |          |           |
| 40              |   |              |             |        |          |          |          |           |
| 45              |   |              |             |        |          |          |          |           |
| 50              |   |              |             |        |          |          |          |           |
| 55              |   |              |             |        |          |          |          |           |
| 60              |   |              |             |        |          |          |          |           |
| 65              |   |              |             |        |          |          |          |           |
| 70              |   |              |             |        |          |          |          |           |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-28

PROJECT NUMBER: 11220747

DATE COMPLETED: August 10, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

File: I:\LOG DATABASE\8-CHAR\11-1122-11220747 FLAMENCO\11220747-CO.GPJ Library File: GHD\_ENV\RO\_V06.GLB Report: OVERBURDEN LOG Date: 10/27/21

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS              | DEPTH<br>BGS | SOIL BORING | SAMPLE |          |          |          |           |
|-----------------|--|--------------|-------------|--------|----------|----------|----------|-----------|
|                 |  |              |             | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, brown, dry          | 4.00         |             | 2      |          |          | <120     | 3.8       |
|                 | CALICHE  | 8.00         |             | 4      |          |          | <120     | 1.7       |
|                 |  |              |             |        |          |          | >2472    | 2.8       |
| 10              | SANDY CALICHE                                    | 10.00        |             |        |          |          | >2472    | 3.5       |
|                 | SM-SILTY SAND, fine grained, brown, dry          | 15.00        |             |        |          |          | >2472    | 3.1       |
| 15              | SANDSTONE, fine to medium grained, tan/gray, dry |              |             |        |          |          | 2472     | 5.3       |
| 20              |  |              |             | 20'    |          |          | >2472    | 10.2      |
| 25              |  |              |             | 25'    |          |          | 1328     | 91.7      |
| 30              | SANDSTONE, medium grained, brown, dry            | 30.00        |             |        |          |          | 612      | 44.3      |
| 35              |  |              |             |        |          |          | 256      | 5.0       |
| 40              |  |              |             | 40'    |          |          | 216      | 61.4      |
| 45              | END OF BOREHOLE @ 45.00ft BGS                    | 45.00        |             | 45'    |          |          | 196      | 79.3      |
| 50              | This boring was dry.                             |              |             |        |          |          |          |           |
| 55              |  |              |             |        |          |          |          |           |
| 60              |  |              |             |        |          |          |          |           |
| 65              |  |              |             |        |          |          |          |           |
| 70              |  |              |             |        |          |          |          |           |

Cement-Bentonite Grout

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-29

PROJECT NUMBER: 11220747

DATE COMPLETED: August 10, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

File: I:\LOG DATABASE\8-CHAR\11-1122-11220747 FLAMENCO\11220747-CO.GPJ Library File: GHD\_ENV\RO\_V06.GLB Report: OVERBURDEN LOG Date: 10/27/21

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS           | DEPTH<br>BGS | SOIL BORING | SAMPLE |          |          |          |           |
|-----------------|---|--------------|-------------|--------|----------|----------|----------|-----------|
|                 |   |              |             | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, brown, dry       |              |             | 2      |          |          | <120     | 3.2       |
|                 | CALICHE                                       | 4.00         |             | 4      |          |          | <120     | 2.9       |
|                 |   |              |             |        |          |          | 620      | 28.3      |
| 10              | SANDY CALICHE                                 | 8.00         |             |        |          |          | 572      | 30.9      |
|                 | SANDSTONE, fine to medium grained, brown, dry | 10.00        |             | 10'    |          |          | 732      | 39.4      |
| 15              |   |              |             | 15'    |          |          | <120     | 39.2      |
| 20              |   |              |             |        |          |          | <120     | 14.6      |
| 25              | END OF BOREHOLE @ 25.00ft BGS                 | 25.00        |             | 25'    |          |          | 188      | 69.3      |
| 30              | This boring was dry.                          |              |             |        |          |          |          |           |
| 35              |   |              |             |        |          |          |          |           |
| 40              |   |              |             |        |          |          |          |           |
| 45              |   |              |             |        |          |          |          |           |
| 50              |   |              |             |        |          |          |          |           |
| 55              |   |              |             |        |          |          |          |           |
| 60              |   |              |             |        |          |          |          |           |
| 65              |   |              |             |        |          |          |          |           |
| 70              |   |              |             |        |          |          |          |           |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS





# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-30

PROJECT NUMBER: 11220747

DATE COMPLETED: August 9, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

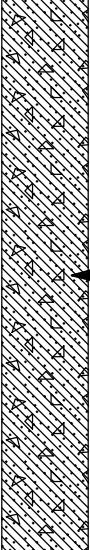

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

File: I:\LOG DATABASE\8-CHAR\11-1122-11220747 FLAMENCO\11220747-CO.GPJ Library File: GHD\_ENV\RO\_V06.GLB Report: OVERBURDEN LOG Date: 10/27/21

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS         | DEPTH<br>BGS | SOIL BORING  | SAMPLE |          |          |          |           |
|-----------------|---|--------------|--|--------|----------|----------|----------|-----------|
|                 |   |              |  | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, brown, dry     | 4.00         |  Cement-Bentonite Grout | 2      |          |          | <120     | 3.5       |
|                 | CALICHE                                     |              |  | 4      |          |          | <120     | 1.7       |
|                 |   |              |  |        |          |          | 2296     | 13.8      |
| 10              | SM-SILTY SAND, fine grained, brown, dry     | 10.00        |  | 8      |          |          | 2296     | 27.0      |
|                 |   |              |  |        |          |          | 2296     | 25.3      |
| 15              |   |              |  |        |          |          |          |           |
| 20              | SANDSTONE, fine to medium grained, tan, dry | 20.00        |  |        |          |          | 608      | 12.2      |
|                 |   |              |  |        |          |          | 728      | 14.1      |
| 25              | CH-CLAY, fat, brown, dry                    | 25.00        |                          | 25'    |          |          | 212      | 55.4      |
| 30              | END OF BOREHOLE @ 30.00ft BGS               | 30.00        |  | 30'    |          |          | 144      | 23.0      |
|                 | This boring was dry.                        |              |  |        |          |          |          |           |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS 



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-31

PROJECT NUMBER: 11220747

DATE COMPLETED: August 9, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

File: I:\LOG DATABASE\8-CHAR\11-1122-11220747 FLAMENCO\11220747-CO.GPJ Library File: GHD\_ENV\RO\_V06.GLB Report: OVERBURDEN LOG Date: 10/27/21

| DRILLING CONTRACTOR: C&S&S |                                     |              | DRILLER: C&S |        |          |          |          |           |
|----------------------------|-------------------------------------|--------------|--------------|--------|----------|----------|----------|-----------|
| DEPTH<br>ft BGS            | STRATIGRAPHIC DESCRIPTION & REMARKS | DEPTH<br>BGS | SOIL BORING  | SAMPLE |          |          |          |           |
|                            |                                     |              |              | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
|                            |                                     |              |              |        |          |          |          |           |
|                            |                                     |              |              | 2      |          |          | <120     | 7.1       |
|                            |                                     |              |              | 4'     |          |          | <120     | 1.3       |
|                            |                                     |              |              |        |          |          | >2472    | 14.6      |
|                            |                                     |              |              |        |          |          | >2472    | 12.9      |
|                            |                                     |              |              |        |          |          | >2472    | 36.8      |
|                            |                                     |              |              |        |          |          |          |           |
|                            |                                     |              |              | 15'    |          |          | >2472    | 21.3      |
|                            |                                     |              |              |        |          |          | 1240     | 17.0      |
|                            |                                     |              |              |        |          |          |          |           |
|                            |                                     |              |              | 25'    |          |          | 168      | 49.8      |
|                            |                                     |              |              |        |          |          |          |           |
|                            |                                     |              |              | 30'    |          |          | 168      | 14.5      |
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NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS





# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-32

PROJECT NUMBER: 11220747

DATE COMPLETED: July 27, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

File: I:\LOG DATABASE\8-CHAR\11-1122-11220747 FLAMENCO\11220747-CO.GPJ Library File: GHD\_ENV\RO\_V06.GLB Report: OVERBURDEN LOG Date: 10/27/21

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS         | DEPTH<br>BGS | SOIL BORING | SAMPLE |          |          |          |           |
|-----------------|---|--------------|-------------|--------|----------|----------|----------|-----------|
|                 |   |              |             | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, red/brown, dry |              |             | 2      |          |          | <120     | 1.6       |
|                 |   |              |             | 4      |          |          | <120     | 0.8       |
| 10              |   |              |             | 10'    |          |          | 180      | 7.8       |
| 15              | CALICHE                                     | 15.00        |             | 15'    |          |          | 540      | 8.1       |
| 20              | END OF BOREHOLE @ 20.00ft BGS               | 20.00        |             |        |          |          | 415      | 63.8      |
| 25              | This boring was dry.                        |              |             |        |          |          |          |           |
| 30              |   |              |             |        |          |          |          |           |
| 35              |   |              |             |        |          |          |          |           |
| 40              |   |              |             |        |          |          |          |           |
| 45              |   |              |             |        |          |          |          |           |
| 50              |   |              |             |        |          |          |          |           |
| 55              |   |              |             |        |          |          |          |           |
| 60              |   |              |             |        |          |          |          |           |
| 65              |   |              |             |        |          |          |          |           |
| 70              |   |              |             |        |          |          |          |           |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS





# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-33

PROJECT NUMBER: 11220747

DATE COMPLETED: August 8, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic


LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

File: I:\LOG DATABASE\8-CHAR\11-1122-11220747 FLAMENCO\11220747-CO.GPJ Library File: GHD\_ENV\RO\_V06.GLB Report: OVERBURDEN LOG Date: 10/27/21

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS              | DEPTH<br>BGS | SOIL BORING   | SAMPLE |          |          |          |           |
|-----------------|--|--------------|---|--------|----------|----------|----------|-----------|
|                 |  |              |   | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, brown, dry          | 4.00         |  | 2      |          |          | <108     | 4.3       |
|                 | CALICHE  | 6.00         |   | 4      |          |          | <108     | 8.5       |
|                 | SM-SILTY SAND, fine grained, brown, dry          |              |   |        |          |          | <108     | 14.7      |
| 10              |  |              |   |        |          |          | 1648     | 24.3      |
|                 |  |              |   |        |          |          | 1908     | 22.0      |
| 15              |  |              |   |        |          |          | 1532     | 13.3      |
| 20              | SANDSTONE, fine to medium grained, gray/tan, dry | 20.00        |   | 20'    |          |          | 1908     | 15.5      |
| 25              |  |              |   |        |          |          | 1232     | 6.4       |
| 30              | CH-CLAY, fat, brown, dry                         | 30.00        |   |        |          |          | 1648     | 10.2      |
| 35              | SANDSTONE, fine to medium grained, brown, dry    | 35.00        |   |        |          |          | 572      | 5.7       |
| 40              |  |              |   |        |          |          | 1740     | 13.0      |
| 45              | CH-CLAY, fat, brown, dry                         | 45.00        |   |        |          |          | 1864     | 15.2      |
| 50              | SANDSTONE, fine to medium grained, brown, dry    | 50.00        |   |        |          |          | 256      | 40.7      |
| 55              |  |              |   | 55'    |          |          | 560      | 78.5      |
| 60              | CH-CLAY, brown, dry                              | 60.00        |   | 60'    |          |          | 144      | 67.0      |
| 65              | END OF BOREHOLE @ 65.00ft BGS                    | 65.00        |   | 65'    |          |          | 292      | 20.0      |
| 70              | This boring was dry.                             |              |   |        |          |          |          |           |

Cement-Bentonite Grout

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-34

PROJECT NUMBER: 11220747

DATE COMPLETED: August 8, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

File: I:\LOG DATABASE\8-CHAR\11-1122-11220747 FLAMENCO\11220747-CO.GPJ Library File: GHD\_ENV\RO\_V06.GLB Report: OVERBURDEN LOG Date: 10/27/21

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS     | DEPTH<br>BGS | SOIL BORING | SAMPLE |          |          |          |           |
|-----------------|---|--------------|-------------|--------|----------|----------|----------|-----------|
|                 |   |              |             | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, brown, dry | 4.00         |             | 2      |          |          | <120     | 2.6       |
|                 | CALICHE                                 |              |             | 4      |          |          | <120     | 5.1       |
|                 |   |              |             | 6      |          |          | 572      | 28.2      |
| 10              | SM-SILTY SAND, fine grained, brown, dry | 8.00         |             |        |          |          | 284      | 26.9      |
| 15              |   |              |             | 15     |          |          | 356      | 33.5      |
| 20              |   |              |             |        |          |          | 188      | 29.0      |
| 25              | END OF BOREHOLE @ 25.00ft BGS           | 25.00        |             | 25     |          |          | 188      | 18.4      |
| 30              | This boring was dry.                    |              |             |        |          |          | <108     | 10.0      |
| 35              |   |              |             |        |          |          |          |           |
| 40              |   |              |             |        |          |          |          |           |
| 45              |   |              |             |        |          |          |          |           |
| 50              |   |              |             |        |          |          |          |           |
| 55              |   |              |             |        |          |          |          |           |
| 60              |   |              |             |        |          |          |          |           |
| 65              |   |              |             |        |          |          |          |           |
| 70              |   |              |             |        |          |          |          |           |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 2

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-35

PROJECT NUMBER: 11220747

DATE COMPLETED: August 17, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

File: I:\LOG DATABASE\8-CHAR\11-1122-11220747 FLAMENCO\11220747-CO.GPJ Library File: GHD\_ENV\RO\_V06.GLB Report: OVERBURDEN LOG Date: 10/27/21

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS            | DEPTH<br>BGS | SOIL BORING | SAMPLE |          |          |          |           |
|-----------------|--|--------------|-------------|--------|----------|----------|----------|-----------|
|                 |  |              |             | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, brown, dry        | 4.00         |             | 2      |          |          | <120     | 1.4       |
|                 | CALICHE  | 6.00         |             | 4      |          |          | 156      | 0.9       |
|                 | SM-SILTY SAND, fine grained, brown, dry        |              |             |        |          |          | 1792     | 3.8       |
| 10              |  |              |             |        |          |          | 1792     | 4.5       |
|                 |  |              |             |        |          |          | 1328     | 3.1       |
| 15              |  |              |             |        |          |          | 1648     | 23.8      |
| 20              |  |              |             |        |          |          | 1648     | 28.5      |
| 25              | SANDSTONE, SANDSTONE, medium grained, tan, dry | 25.00        |             | 25'    |          |          | 1648     | 31.0      |
| 30              | CH-CLAY, fat, brown, dry                       | 30.00        |             |        |          |          | 2048     | 18.6      |
| 35              | SANDSTONE, fine to medium grained, brown, dry  | 35.00        |             |        |          |          | 2048     | 23.4      |
| 40              | SANDSTONE, medium grained, tan/gray, dry       | 40.00        |             | 40'    |          |          | 320      | 45.0      |
| 45              | SANDSTONE, fine to medium grained, tan, dry    | 45.00        |             | 45'    |          |          | <120     | 26.4      |
| 50              | SANDSTONE, fine to medium grained, brown, dry  | 50.00        |             |        |          |          | 188      | 2.8       |
| 55              |  |              |             | 55'    |          |          | 1068     | 5.8       |
| 60              | CH-CLAY, fat, brown, dry                       | 60.00        |             |        |          |          | <120     | 76.2      |
| 65              |  |              |             |        |          |          | 160      | 38.6      |
| 70              | SANDSTONE, medium grained, tan, dry            | 70.00        |             |        |          |          | 320      | 16.4      |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 2 of 2

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-35

PROJECT NUMBER: 11220747

DATE COMPLETED: August 17, 2021

CLIENT: EOG Resources


DRILLING METHOD: Sonic

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS           | DEPTH<br>BGS | SOIL BORING  | SAMPLE |          |          |          |           |
|-----------------|---|--------------|--|--------|----------|----------|----------|-----------|
|                 |   |              |  | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
|                 |   |              |  | 75'    |          |          | <120     | 19.6      |
| 80              | SANDSTONE, fine to medium grained, brown, dry | 75.00        |  |        |          |          |          |           |
|                 | END OF BOREHOLE @ 80.00ft BGS                 | 80.00        |  | 80'    |          |          | <120     | 4.9       |
|                 | This boring was dry.                          |              |  |        |          |          |          |           |
| 85              |   |              |  |        |          |          |          |           |
| 90              |   |              |  |        |          |          |          |           |
| 95              |   |              |  |        |          |          |          |           |
| 100             |   |              |  |        |          |          |          |           |
| 105             |   |              |  |        |          |          |          |           |
| 110             |   |              |  |        |          |          |          |           |
| 115             |   |              |  |        |          |          |          |           |
| 120             |   |              |  |        |          |          |          |           |
| 125             |   |              |  |        |          |          |          |           |
| 130             |   |              |  |        |          |          |          |           |
| 135             |   |              |  |        |          |          |          |           |
| 140             |   |              |  |        |          |          |          |           |
| 145             |   |              |  |        |          |          |          |           |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS 

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# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 2

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-36

PROJECT NUMBER: 11220747

DATE COMPLETED: August 8, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

File: I:\LOG DATABASE\8-CHAR\11-1122-11220747 FLAMENCO\11220747-CO.GPJ Library File: GHD\_ENV\RO\_V06.GLB Report: OVERBURDEN LOG Date: 10/27/21

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS           | DEPTH<br>BGS | SOIL BORING | SAMPLE |          |          |          |           |
|-----------------|---|--------------|-------------|--------|----------|----------|----------|-----------|
|                 |   |              |             | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, brown, dry       | 4.00         |             | 2      |          |          | <108     | 2.1       |
|                 | CALICHE                                       |              |             | 4      |          |          | <108     | 3.4       |
|                 |   |              |             |        |          |          | 2056     | 13.3      |
| 10              | SM-SILTY SAND, fine grained, brown, dry       | 8.00         |             |        |          |          | 1648     | 10.4      |
|                 |   |              |             |        |          |          | 1232     | 11.1      |
| 15              |   |              |             | 15'    |          |          | 2400     | 19.3      |
| 20              |   |              |             |        |          |          | 1648     | 13.0      |
| 25              | SANDSTONE, fine to medium grained, tan, dry   | 25.00        |             |        |          |          | 1648     | 29.3      |
| 30              | CH-CLAY, fat, brown, dry                      | 30.00        |             |        |          |          | 572      | 5.4       |
| 35              | SANDSTONE, fine to medium grained, tan, dry   | 35.00        |             |        |          |          | 848      | 95.4      |
| 40              |   |              |             |        |          |          | 1148     | 142       |
| 45              | SANDSTONE, fine to medium grained, brown, dry | 45.00        |             |        |          |          | 1068     | 38.6      |
| 50              | CH-CLAY, fat, brown, dry                      | 50.00        |             | 50'    |          |          | >2604    | 208.6     |
| 55              | SANDSTONE, fine grained, gray, dry            | 55.00        |             |        |          |          | 480      | 85.9      |
| 60              | CH-CLAY, fat, brown, dry                      | 60.00        |             | 60'    |          |          | <120     | 20.2      |
| 65              |   |              |             | 65'    |          |          | 320      | 49.8      |
| 70              | MUDSTONE, very fine grained, brown/red, dry   | 70.00        |             |        |          |          | 420      | 3.7       |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 2 of 2

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-36

PROJECT NUMBER: 11220747

DATE COMPLETED: August 8, 2021

CLIENT: EOG Resources


DRILLING METHOD: Sonic

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS | DEPTH<br>BGS | SOIL BORING  | SAMPLE |          |          |          |           |
|-----------------|-------------------------------------|--------------|--|--------|----------|----------|----------|-----------|
|                 |                                     |              |  | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
|                 | SANDSTONE, medium grained, tan, dry | 75.00        |  | 75     |          |          | <120     | 11.4      |
| 80              | END OF BOREHOLE @ 80.00ft BGS       | 80.00        |  | 80     |          |          | <120     | 5.4       |
|                 | This boring was dry.                |              |  |        |          |          |          |           |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS 

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# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-37

PROJECT NUMBER: 11220747

DATE COMPLETED: August 8, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic


LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

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| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS             | DEPTH<br>BGS | SOIL BORING   | SAMPLE |          |          |          |           |
|-----------------|---|--------------|---|--------|----------|----------|----------|-----------|
|                 |   |              |   | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, brown, dry         | 4.00         |  | 2      |          |          | <120     | 1.2       |
|                 | CALICHE   |              |   | 4      |          |          | 572      | 2.1       |
|                 |   |              |   |        |          |          | 1232     | 7.3       |
|                 |   |              |   |        |          |          | 1648     | 4.5       |
| 10              | SM-SILTY SAND, fine grained, brown, dry         | 10.00        |   |        |          |          | 1908     | 4.5       |
| 15              | SP-SILTY CALICHE SAND, medium grained, tan, dry | 15.00        |   |        |          |          | 852      | 5.2       |
| 20              | SM-SILTY SAND, fine grained, brown, dry         | 20.00        |   |        |          |          | 920      | 3.6       |
| 25              |   |              |   |        |          |          | 436      | 3.7       |
| 30              | CH-CLAY, fat, brown, dry                        | 30.00        |   | 30'    |          |          | 1908     | 53.0      |
| 35              | SANDSTONE, fine to medium grained, tan, dry     | 35.00        |   |        |          |          | 1324     | 68.0      |
| 40              |   |              |   |        |          |          | 1908     | 67.0      |
| 45              | CH-CLAY, fat, brown, dry                        | 45.00        |   | 45'    |          |          | 732      | 86.7      |
| 50              |   |              |   |        |          |          | 1772     | 37.1      |
| 55              | CL-SANDY CLAY, fine grained, gray, dry          | 55.00        |   |        |          |          | 1068     | 17.1      |
| 60              | CH-CLAY, fat, brown, dry                        | 60.00        |   | 60'    |          |          | 108      | 13.1      |
| 65              | END OF BOREHOLE @ 65.00ft BGS                   | 65.00        |   | 65'    |          |          | <108     | 19.3      |
| 70              | This boring was dry.                            |              |   |        |          |          |          |           |

Cement-Bentonite Grout

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-38

PROJECT NUMBER: 11220747

DATE COMPLETED: August 7, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

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| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS                  | DEPTH<br>BGS | SOIL BORING | SAMPLE |          |          |          |           |
|-----------------|--|--------------|-------------|--------|----------|----------|----------|-----------|
|                 |  |              |             | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, brown, dry              | 4.00         |             | 2      |          |          | <120     | 0.3       |
|                 | CALICHE  | 6.00         |             | 4      |          |          | >1604    | 1.7       |
|                 | SM-SILTY SAND, fine grained, brown, dry              |              |             |        |          |          | >1604    | 12.5      |
| 10              |  |              |             |        |          |          | >1604    | 9.7       |
|                 |  |              |             |        |          |          | 1232     | 11.0      |
| 15              | CL-SANDY CLAY, fine grained, brown, dry              | 15.00        |             |        |          |          | 920      | 38.1      |
| 20              | SM-SILTY SAND, fine grained, brown, dry              | 20.00        |             | 20'    |          |          | 2052     | 17.4      |
| 25              |  |              |             |        |          |          | 1424     | 33.0      |
| 30              | SANDSTONE, fine to medium grained, tan to white, dry | 30.00        |             |        |          |          | 856      | 19.7      |
| 35              |  |              |             |        |          |          | 856      | 67.3      |
| 40              | SANDSTONE, medium grained, brown, dry                | 40.00        |             | 40'    |          |          | 676      | 105.3     |
| 45              |  |              |             |        |          |          | 1224     | 34.7      |
| 50              | CH-CLAY, fat, brown, dry                             | 50.00        |             |        |          |          | 1760     | 5.0       |
| 55              | CLAYEY SANDSTONE, fine grained, brown, dry           | 55.00        |             |        |          |          | 1224     | 14.5      |
| 60              |  |              |             | 60'    |          |          | 252      | 19.3      |
| 65              | END OF BOREHOLE @ 65.00ft BGS                        | 65.00        |             | 65'    |          |          | 188      | 10.5      |
| 70              | This boring was dry.                                 |              |             |        |          |          |          |           |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-39

PROJECT NUMBER: 11220747

DATE COMPLETED: July 26, 2021

CLIENT: EOG Resources

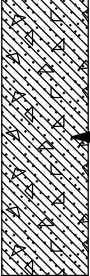
DRILLING METHOD: Sonic

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS         | DEPTH<br>BGS | SOIL BORING  | SAMPLE |          |          |          |           |
|-----------------|---|--------------|--|--------|----------|----------|----------|-----------|
|                 |   |              |  | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, red/brown, dry |              |  | 2      |          |          | <120     | 0.8       |
|                 |   |              |  | 4      |          |          | <120     | 0.5       |
| 10              |   |              |  | 10'    |          |          | <120     | 7.3       |
| 15              | END OF BOREHOLE @ 15.00ft BGS               | 15.00        |  | 15'    |          |          | <120     | 20.1      |
| 20              | This boring was dry.                        |              |  |        |          |          |          |           |
| 25              |   |              |  |        |          |          |          |           |
| 30              |   |              |  |        |          |          |          |           |
| 35              |   |              |  |        |          |          |          |           |
| 40              |   |              |  |        |          |          |          |           |
| 45              |   |              |  |        |          |          |          |           |
| 50              |   |              |  |        |          |          |          |           |
| 55              |   |              |  |        |          |          |          |           |
| 60              |   |              |  |        |          |          |          |           |
| 65              |   |              |  |        |          |          |          |           |
| 70              |   |              |  |        |          |          |          |           |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



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# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-40

PROJECT NUMBER: 11220747

DATE COMPLETED: July 26, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

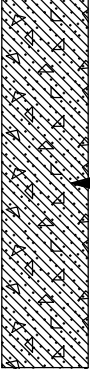
LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

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| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS         | DEPTH<br>BGS | SOIL BORING  | SAMPLE |          |          |          |           |
|-----------------|---|--------------|--|--------|----------|----------|----------|-----------|
|                 |   |              |  | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, red/brown, dry | 4.00         |  | 2      |          |          | <120     | 0.6       |
|                 | SANDY CALICHE, fine grained, tan, dry       |              |  | 4      |          |          | <120     | 0.5       |
| 10              |   |              |  | 10'    |          |          | <120     | 5.1       |
| 15              | SANDSTONE, fine to medium grained, gray     | 15.00        |  | 15'    |          |          | 1600     | 12.6      |
| 20              | END OF BOREHOLE @ 20.00ft BGS               | 20.00        |  |        |          |          | 1604     | 5.6       |
| 25              | This boring was dry.                        |              |  |        |          |          |          |           |
| 30              |   |              |  |        |          |          |          |           |
| 35              |   |              |  |        |          |          |          |           |
| 40              |   |              |  |        |          |          |          |           |
| 45              |   |              |  |        |          |          |          |           |
| 50              |   |              |  |        |          |          |          |           |
| 55              |   |              |  |        |          |          |          |           |
| 60              |   |              |  |        |          |          |          |           |
| 65              |   |              |  |        |          |          |          |           |
| 70              |   |              |  |        |          |          |          |           |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-40A

PROJECT NUMBER: 11220747

DATE COMPLETED: August 12, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

File: I:\LOG DATABASE\8-CHAR\11-1122-11220747 FLAMENCO\11220747-CO.GPJ Library File: GHD\_ENV\RO\_V06.GLB Report: OVERBURDEN LOG Date: 10/27/21

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS         | DEPTH<br>BGS | SOIL BORING | SAMPLE |          |          |          |           |
|-----------------|---|--------------|-------------|--------|----------|----------|----------|-----------|
|                 |   |              |             | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, brown, dry     | 4.00         |             | 2      |          |          | <120     | 6.1       |
|                 | CALICHE                                     | 8.00         |             | 4      |          |          | <120     | 2.8       |
|                 |   |              |             |        |          |          | <120     | 5.0       |
| 10              | SM-SILTY SAND, fine grained, brown, dry     |              |             | 10'    |          |          | <120     | 6.1       |
|                 |   |              |             |        |          |          | <120     | 7.1       |
| 15              |   |              |             |        |          |          | <120     | 6.3       |
| 20              | SANDSTONE, fine to medium grained, tan, dry | 20.00        |             | 20'    |          |          | 187      | 6.3       |
| 25              | END OF BOREHOLE @ 25.00ft BGS               | 25.00        |             | 25'    |          |          | 108      | 2.1       |
| 30              | This boring was dry.                        |              |             |        |          |          |          |           |
| 35              |   |              |             |        |          |          |          |           |
| 40              |   |              |             |        |          |          |          |           |
| 45              |   |              |             |        |          |          |          |           |
| 50              |   |              |             |        |          |          |          |           |
| 55              |   |              |             |        |          |          |          |           |
| 60              |   |              |             |        |          |          |          |           |
| 65              |   |              |             |        |          |          |          |           |
| 70              |   |              |             |        |          |          |          |           |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-41

PROJECT NUMBER: 11220747

DATE COMPLETED: July 27, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

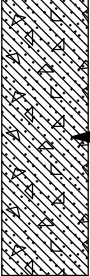
LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

File: I:\LOG DATABASE\8-CHAR\11-1122-11220747 FLAMENCO\11220747-CO.GPJ Library File: GHD\_ENV\RO\_V06.GLB Report: OVERBURDEN LOG Date: 10/27/21

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS         | DEPTH<br>BGS | SOIL BORING  | SAMPLE |          |          |          |           |
|-----------------|---|--------------|--|--------|----------|----------|----------|-----------|
|                 |   |              |  | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, red/brown, dry |              |  | 2      |          |          | <120     | 0.8       |
|                 |   |              |  | 4      |          |          | <120     | 0.5       |
| 10              |   |              |  | 10'    |          |          | <120     | 27.6      |
| 15              | END OF BOREHOLE @ 15.00ft BGS               | 15.00        |  | 15'    |          |          | <120     | 43.0      |
| 20              | This boring was dry.                        |              |  |        |          |          |          |           |
| 25              |   |              |  |        |          |          |          |           |
| 30              |   |              |  |        |          |          |          |           |
| 35              |   |              |  |        |          |          |          |           |
| 40              |   |              |  |        |          |          |          |           |
| 45              |   |              |  |        |          |          |          |           |
| 50              |   |              |  |        |          |          |          |           |
| 55              |   |              |  |        |          |          |          |           |
| 60              |   |              |  |        |          |          |          |           |
| 65              |   |              |  |        |          |          |          |           |
| 70              |   |              |  |        |          |          |          |           |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS 



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-42

PROJECT NUMBER: 11220747

DATE COMPLETED: July 27, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

File: I:\LOG DATABASE\8-CHAR\11-1122-11220747 FLAMENCO\11220747-CO.GPJ Library File: GHD\_ENV\RO\_V06.GLB Report: OVERBURDEN LOG Date: 10/27/21

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS               | DEPTH<br>BGS | SOIL BORING | SAMPLE |          |          |          |            |
|-----------------|---|--------------|-------------|--------|----------|----------|----------|------------|
|                 |   |              |             | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PI/D (ppm) |
| 5               | SM-SILTY SAND, fine grained, red/brown, dry       | 4.00         |             | 2      |          |          | <120     | 0.8        |
|                 | CALICHE   |              |             | 4      |          |          | <120     | 0.6        |
| 10              | SANDSTONE, fine to medium grained, tan brown, dry | 10.00        |             | 10'    |          |          | <120     | 34.2       |
| 15              | END OF BOREHOLE @ 15.00ft BGS                     | 15.00        |             | 15'    |          |          | <120     | 18.9       |
| 20              | This boring was dry.                              |              |             |        |          |          |          |            |
| 25              |   |              |             |        |          |          |          |            |
| 30              |   |              |             |        |          |          |          |            |
| 35              |   |              |             |        |          |          |          |            |
| 40              |   |              |             |        |          |          |          |            |
| 45              |   |              |             |        |          |          |          |            |
| 50              |   |              |             |        |          |          |          |            |
| 55              |   |              |             |        |          |          |          |            |
| 60              |   |              |             |        |          |          |          |            |
| 65              |   |              |             |        |          |          |          |            |
| 70              |   |              |             |        |          |          |          |            |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-43

PROJECT NUMBER: 11220747

DATE COMPLETED: August 18, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

File: I:\LOG DATABASE\8-CHAR\11-1122-11220747 FLAMENCO\11220747-CO.GPJ Library File: GHD\_ENV\RO\_V06.GLB Report: OVERBURDEN LOG Date: 10/27/21

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS           | DEPTH<br>BGS | SOIL BORING | SAMPLE |          |          |          |           |
|-----------------|---|--------------|-------------|--------|----------|----------|----------|-----------|
|                 |   |              |             | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, brown, dry       |              |             | 2      |          |          | >2604    | 3.2       |
|                 |   |              |             | 4      |          |          | >2604    | 3.0       |
|                 |   |              |             |        |          |          | >2604    | 11.0      |
|                 |   |              |             |        |          |          | >2604    | 17.4      |
|                 |   |              |             |        |          |          | >2604    | 32.6      |
| 15              | CH-CLAY, fat, brown, dry                      | 15.00        |             |        |          |          | >2604    | 32.0      |
| 20              | SM-SILTY SAND, fine grained, brown, dry       | 20.00        |             |        |          |          | >2604    | 27.7      |
| 25              | SANDSTONE, fine to medium grained, white, dry | 25.00        |             | 25'    |          |          | 1648     | 38.3      |
| 30              |   |              |             |        |          |          | 792      | 37.2      |
| 35              | CH-CLAY, fat, brown, dry                      | 35.00        |             | 35'    |          |          | 2406     | 7.2       |
| 40              |   |              |             | 40'    |          |          | 160      | 13.3      |
| 45              | SANDSTONE, medium grained, tan/yellow, dry    | 45.00        |             | 45'    |          |          | 160      | 38.3      |
| 50              | CLAYEY SANDSTONE, brown, dry                  | 50.00        |             | 50'    |          |          | 138      | 21.5      |
| 55              | END OF BOREHOLE @ 55.00ft BGS                 | 55.00        |             | 55'    |          |          | <120     | 10.3      |
| 60              | This boring was dry.                          |              |             |        |          |          |          |           |
| 65              |   |              |             |        |          |          |          |           |
| 70              |   |              |             |        |          |          |          |           |

Cement-Bentonite Grout

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS





# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Flamenco Federal #1

HOLE DESIGNATION: SB-44

PROJECT NUMBER: 11220747

DATE COMPLETED: August 6, 2021

CLIENT: EOG Resources

DRILLING METHOD: Sonic

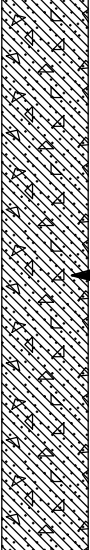
LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: C. Neligh

DRILLING CONTRACTOR: Cascade

DRILLER: Cole

File: I:\LOG DATABASE\8-CHAR\11-1122-11220747 FLAMENCO\11220747-CO.GPJ Library File: GHD\_ENV\RO\_V06.GLB Report: OVERBURDEN LOG Date: 10/27/21

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS              | DEPTH<br>BGS | SOIL BORING  | SAMPLE |          |          |          |           |
|-----------------|--|--------------|--|--------|----------|----------|----------|-----------|
|                 |  |              |  | NUMBER | INTERVAL | REC (ft) | Cl (ppm) | PID (ppm) |
| 5               | SM-SILTY SAND, fine grained, brown, dry          | 4.00         |  Cement-Bentonite Grout | 2      |          |          | <120     | 2.1       |
|                 | SANDY CALICHE, fine grained                      |              |  | 4      |          |          | <120     | 0.9       |
|                 |  |              |  |        |          |          | 1676     | 10.2      |
| 10              | SM-SILTY SAND, fine grained, brown, dry          | 8.00         |  | 8      |          |          | 2176     | 7.8       |
|                 |  |              |  |        |          |          | 1472     | 4.5       |
| 15              | CH-CLAY, brown, dry                              | 15.00        |  |        |          |          | 436      | 14.1      |
| 20              |  |              |  |        |          |          | 735      | 11.5      |
| 25              | SANDSTONE, fine to medium grained, gray/tan, dry | 25.00        |  | 25'    |          |          | <120     | 14.5      |
| 30              | END OF BOREHOLE @ 30.00ft BGS                    | 30.00        |  | 30'    |          |          | <120     | 9.5       |
| 35              | This boring was dry.                             |              |  |        |          |          |          |           |
| 40              |  |              |  |        |          |          |          |           |
| 45              |  |              |  |        |          |          |          |           |
| 50              |  |              |  |        |          |          |          |           |
| 55              |  |              |  |        |          |          |          |           |
| 60              |  |              |  |        |          |          |          |           |
| 65              |  |              |  |        |          |          |          |           |
| 70              |  |              |  |        |          |          |          |           |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS 



# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER


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|  |   |                          |  |   |   |   |                                      |                          |
|--|---|--------------------------|--|---|---|---|--------------------------------------|--------------------------|
| 1. GENERAL AND WELL LOCATION   | OSE POD NO. (WELL NO.)<br>POD 12  |                          | WELL TAG ID NO.<br>PMW-10              |   | OSE FILE NO(S)<br>C-4144                                |   |                                      |                          |
|  | WELL OWNER NAME(S)<br>EOG Resources   |                          |  |   | PHONE (OPTIONAL)<br>432-848-9146                        |   |                                      |                          |
|  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive  |                          |  |   | CITY<br>Midland   | STATE<br>Texas                                    | ZIP<br>79706                         |                          |
|  | WELL LOCATION<br>(FROM GPS)   | DEGREES<br>LATITUDE      | MINUTES<br>32                          | SECONDS<br>24   | 15.17   | N   |                                      |                          |
|  |   | LONGITUDE                | -103                                   | 43  | 11.00   | W   |                                      |                          |
| * ACCURACY REQUIRED ONE TENTH OF A SECOND<br>* DATUM REQUIRED WGS 84   |   |                          |  |   |   |   |                                      |                          |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180 |   |                          |  |   |   |   |                                      |                          |
| 2. DRILLING & CASING INFORMATION   | LICENSE NO.<br>1664   |                          | NAME OF LICENSED DRILLER<br>Shawn Cain |   |   | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling |                                      |                          |
|  | DRILLING STARTED<br>8/3/21  | DRILLING ENDED<br>8/3/21 | DEPTH OF COMPLETED WELL (FT)<br>NA     |   | BORE HOLE DEPTH (FT)<br>105                             | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA          |                                      |                          |
|  | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)  |                          |  |   |   | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA   |                                      |                          |
|  | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES SPECIFY:  |                          |  |   |   |   |                                      |                          |
|  | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY Roto Sonic |                          |  |   |   |   |                                      |                          |
|  | DEPTH (feet bgl)<br>FROM TO   |                          | BORE HOLE<br>DIAM (inches)             | CASING MATERIAL AND/OR<br>GRADE<br>(include each casing string, and<br>note sections of screen) | CASING<br>CONNECTION<br>TYPE<br>(add coupling diameter) | CASING<br>INSIDE DIAM.<br>(inches)                | CASING WALL<br>THICKNESS<br>(inches) | SLOT<br>SIZE<br>(inches) |
|  |   |                          |  |   |   |   |                                      |                          |
|  |   |                          |  |   |   |   |                                      |                          |
|  |   |                          |  |   |   |   |                                      |                          |
|  |   |                          |  |   |   |   |                                      |                          |
| 3. ANNULAR MATERIAL  | DEPTH (feet bgl)<br>FROM TO   |                          | BORE HOLE<br>DIAM (inches)             | LIST ANNULAR SEAL MATERIAL AND<br>GRAVEL PACK SIZE-RANGE BY INTERVAL                            |   | AMOUNT<br>(cubic feet)                            | METHOD OF<br>PLACEMENT               |                          |
|  | 0 105   |                          | 6                                      | Cement with 5% Bentonite  |   | 23  | Trimie Pumped                        |                          |
|  |   |                          |  |   |   |   |                                      |                          |
|  |   |                          |  |   |   |   |                                      |                          |
|  |   |                          |  |   |   |   |                                      |                          |
|  |   |                          |  |   |   |   |                                      |                          |

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 04/30/19)

|          |                 |             |
|----------|-----------------|-------------|
| FILE NO  | POD NO.         | TRN NO.     |
| LOCATION | WELL TAG ID NO. | PAGE 1 OF 2 |

| 4. HYDROGEOLOGIC LOG OF WELL  | DEPTH (feet bgl)   |   | THICKNESS<br>(feet) | COLOR AND TYPE OF MATERIAL ENCOUNTERED -<br>INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES<br>(attach supplemental sheets to fully describe all units) | WATER<br>BEARING?<br>(YES / NO)           | ESTIMATED<br>YIELD FOR<br>WATER-<br>BEARING<br>ZONES (gpm) |
|---|--|---|---------------------|--|---|--|
|   | FROM   | TO  |                     |  |   |  |
|   | 0  | 6   | 6                   | Fine Silty Sand Red/Brown  | Y ✓ N                                     |  |
|   | 6  | 10  | 4                   | Caliche  | Y ✓ N                                     |  |
|   | 10   | 15  | 5                   | Fine Clayey sand brown   | Y ✓ N                                     |  |
|   | 15   | 25  | 10                  | Fine sandstone brown   | Y ✓ N                                     |  |
|   | 25   | 65  | 40                  | Fine silty sandstone Brown   | Y ✓ N                                     |  |
|   | 65   | 70  | 5                   | Medium Sandstone Gray  | Y ✓ N                                     |  |
|   | 70   | 85  | 15                  | Fine silty sandstone Brown   | Y ✓ N                                     |  |
|   | 85   | 90  | 5                   | Fine to Medium Sandstone   | Y ✓ N                                     |  |
|   | 90   | 95  | 5                   | Fine - Very fine Fat Clay Brown  | Y N                                       |  |
|   | 95   | 105   | 10                  | Fine to medium sandstone   | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
| METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:  |  |   |                     |  | TOTAL ESTIMATED<br>WELL YIELD (gpm): 0.00 |  |
| <input type="checkbox"/> PUMP <input type="checkbox"/> AIR LIFT <input type="checkbox"/> BAILER <input type="checkbox"/> OTHER - SPECIFY: |  |   |                     |  |   |  |
| 5. TEST; RIG SUPERVISION  | WELL TEST  | TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD. |                     |  |   |  |
|   | MISCELLANEOUS INFORMATION:   |   |                     |  |   |  |
|   | PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:<br>Jason Camp  |   |                     |  |   |  |
| 6. SIGNATURE  | BY SIGNING BELOW, I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED WELL. I ALSO CERTIFY THAT THE WELL TAG, IF REQUIRED, HAS BEEN INSTALLED AND THAT THIS WELL RECORD WILL ALSO BE FILED WITH THE PERMIT HOLDER WITHIN 30 DAYS AFTER THE COMPLETION OF WELL DRILLING. |   |                     |  |   |  |
|   | <br>SIGNATURE OF DRILLER / PRINT SIGNED NAME  |   |                     |  | 11/19/21<br>DATE                          |  |

FOR OSE INTERNAL USE

WR-20 WELL RECORD &amp; LOG (Version 04/30/2019)

|          |                 |             |
|----------|-----------------|-------------|
| FILE NO. | POD NO.         | TRN NO.     |
| LOCATION | WELL TAG ID NO. | PAGE 2 OF 2 |





# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: PMW-10

Well owner: EOG Resources

Phone No.: 432-848-9146

Mailing address: 5509 Champions Drive

City: Midland

State: Texas

Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Cliff Hillman
- 4) Date well plugging began: 8/3/2021 Date well plugging concluded: 8/3/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 15.17 sec  
Longitude: -103 deg, 43 min, 11.00 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 105 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

- For each interval plugged, describe within the following columns:**

| MULTIPLY    |   | BY     | AND OBTAIN |
|-------------|---|--------|------------|
| cubic feet  | x | 7.4805 | = gallons  |
| cubic yards | x | 201.97 | = gallons  |

I, Shawn Cain, say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

**Signature of Well Driller**

Date \_\_\_\_\_



# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

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|  |  |                           |  |   |  |   |                                      |                          |
|--|--|---------------------------|--|---|--|---|--------------------------------------|--------------------------|
| 1. GENERAL AND WELL LOCATION   | OSE POD NO. (WELL NO.)<br>POD 13   |                           | WELL TAG ID NO.<br>PMW-11              |   | OSE FILE NO(S).<br>C-4144  |   |                                      |                          |
|  | WELL OWNER NAME(S)<br>EOG Resources  |                           |  |   | PHONE (OPTIONAL)<br>432-848-9146                                       |   |                                      |                          |
|  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive   |                           |  |   | CITY<br>Midland  | STATE<br>Texas                                    | ZIP<br>79706                         |                          |
|  | WELL LOCATION (FROM GPS)   | DEGREES<br>LATITUDE<br>32 | MINUTES<br>24                          | SECONDS<br>08.61<br>N   | * ACCURACY REQUIRED: ONE TENTH OF A SECOND<br>* DATUM REQUIRED: WGS 84 |   |                                      |                          |
|  |  | LONGITUDE<br>-103         | 43                                     | 23.28<br>W  |  |   |                                      |                          |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180 |  |                           |  |   |  |   |                                      |                          |
| 2. DRILLING & CASING INFORMATION   | LICENSE NO.<br>1664  |                           | NAME OF LICENSED DRILLER<br>Shawn Cain |   |  | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling |                                      |                          |
|  | DRILLING STARTED<br>8/5/21   | DRILLING ENDED<br>8/5/21  | DEPTH OF COMPLETED WELL (FT)<br>NA     | BORE HOLE DEPTH (FT)<br>105   | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA                               |   |                                      |                          |
|  | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input checked="" type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)                                      |                           |  |   |  | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA   |                                      |                          |
|  | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:   |                           |  |   |  |   |                                      |                          |
|  | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Roto Sonic |                           |  |   |  |   |                                      |                          |
|  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM.<br>(inches)         | CASING MATERIAL AND/OR<br>GRADE<br>(include each casing string, and<br>note sections of screen) | CASING<br>CONNECTION<br>TYPE<br>(add coupling diameter)                | CASING<br>INSIDE DIAM.<br>(inches)                | CASING WALL<br>THICKNESS<br>(inches) | SLOT<br>SIZE<br>(inches) |
|  |  |                           |  |   |  |   |                                      |                          |
|  |  |                           |  |   |  |   |                                      |                          |
|  |  |                           |  |   |  |   |                                      |                          |
|  |  |                           |  |   |  |   |                                      |                          |
| 3. ANNULAR MATERIAL  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM. (inches)            | LIST ANNULAR SEAL MATERIAL AND<br>GRAVEL PACK SIZE-RANGE BY INTERVAL                            | AMOUNT<br>(cubic feet)   | METHOD OF<br>PLACEMENT                            |                                      |                          |
|  | 0 105  |                           | 6                                      | Cement with 5% Bentonite  | 23   | Trimie Pumped                                     |                                      |                          |
|  |  |                           |  |   |  |   |                                      |                          |
|  |  |                           |  |   |  |   |                                      |                          |
|  |  |                           |  |   |  |   |                                      |                          |
|  |  |                           |  |   |  |   |                                      |                          |

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 04/30/19)


|          |                 |             |
|----------|-----------------|-------------|
| FILE NO. | POD NO.         | TRN NO.     |
| LOCATION | WELL TAG ID NO. | PAGE 1 OF 2 |

| 4. HYDROGEOLOGIC LOG OF WELL  | DEPTH (feet bgl) |     | THICKNESS<br>(feet) | COLOR AND TYPE OF MATERIAL ENCOUNTERED -<br>INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES<br>(attach supplemental sheets to fully describe all units) | WATER<br>BEARING?<br>(YES / NO)           | ESTIMATED<br>YIELD FOR<br>WATER-<br>BEARING<br>ZONES (gpm) |
|---|------------------|-----|---------------------|--|---|--|
|   | FROM             | TO  |                     |  |   |  |
|   | 0                | 6   | 6                   | Fine Silty Sand Red/Brown  | Y <input checked="" type="checkbox"/> N   |  |
|   | 6                | 10  | 4                   | Caliche  | Y <input checked="" type="checkbox"/> N   |  |
|   | 10               | 15  | 5                   | Fine Clayey sand brown   | Y <input checked="" type="checkbox"/> N   |  |
|   | 15               | 25  | 10                  | Fine sandstone brown   | Y <input checked="" type="checkbox"/> N   |  |
|   | 25               | 60  | 35                  | Fine silty sandstone Brown   | Y <input checked="" type="checkbox"/> N   |  |
|   | 60               | 70  | 10                  | Fat Clay Brown   | Y <input checked="" type="checkbox"/> N   |  |
|   | 70               | 85  | 15                  | Fine silty sandstone Brown   | Y <input checked="" type="checkbox"/> N   |  |
|   | 85               | 105 | 20                  | Fine to Medium Sandstone   | Y <input checked="" type="checkbox"/> N   |  |
|   |                  |     |                     |  | Y N                                       |  |
|   |                  |     |                     |  | Y N                                       |  |
|   |                  |     |                     |  | Y N                                       |  |
|   |                  |     |                     |  | Y N                                       |  |
|   |                  |     |                     |  | Y N                                       |  |
|   |                  |     |                     |  | Y N                                       |  |
|   |                  |     |                     |  | Y N                                       |  |
|   |                  |     |                     |  | Y N                                       |  |
|   |                  |     |                     |  | Y N                                       |  |
|   |                  |     |                     |  | Y N                                       |  |
|   |                  |     |                     |  | Y N                                       |  |
|   |                  |     |                     |  | Y N                                       |  |
|   |                  |     |                     |  | Y N                                       |  |
| METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:<br><input type="checkbox"/> PUMP <input type="checkbox"/> AIR LIFT <input type="checkbox"/> BAILER <input type="checkbox"/> OTHER - SPECIFY: |                  |     |                     |  | TOTAL ESTIMATED<br>WELL YIELD (gpm): 0.00 |  |

|                          |   |   |
|--------------------------|---|---|
| 5. TEST, RIG SUPERVISION | WELL TEST   | TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD. |
|                          | MISCELLANEOUS INFORMATION:  |   |
|                          | PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:<br>Jason Camp |   |

|              |  |          |
|--------------|--|----------|
| 6. SIGNATURE | BY SIGNING BELOW, I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED WELL. I ALSO CERTIFY THAT THE WELL TAG, IF REQUIRED, HAS BEEN INSTALLED AND THAT THIS WELL RECORD WILL ALSO BE FILED WITH THE PERMIT HOLDER WITHIN 30 DAYS AFTER THE COMPLETION OF WELL DRILLING. |          |
|              | <br>Shawn Cain  | 11/19/21 |
|              | SIGNATURE OF DRILLER / PRINT SIGNEE NAME   | DATE     |

FOR USE INTERNAL USE

WR-20 WELL RECORD &amp; LOG (Version 04/30/2019)

|          |                 |             |
|----------|-----------------|-------------|
| FILE NO. | POD NO.         | TRN NO.     |
| LOCATION | WELL TAG ID NO. | PAGE 2 OF 2 |





# PLUGGING RECORD



NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: PMW-11  
Well owner: EOG Resources Phone No.: 432-848-9146  
Mailing address: 5509 Champions Drive  
City: Midland State: Texas Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Cliff Hillman
- 4) Date well plugging began: 8/5/2021 Date well plugging concluded: 8/5/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 8.61 sec  
Longitude: -103 deg, 43 min, 23.28 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 105 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

- 10) Log of Plugging Activities - Label vertical scale with depths, and indicate separate plugging intervals with horizontal lines as necessary to illustrate material or methodology changes. Attach additional pages if necessary.

**For each interval plugged, describe within the following columns:**

[illegible]

| MULTIPLY    |   | BY     | AND OBTAIN |
|-------------|---|--------|------------|
| cubic feet  | x | 7.4805 | = gallons  |
| cubic yards | x | 201.97 | = gallons  |

**III. SIGNATURE:**

I, Shawn Cain, say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Sh C.

Signature of Well Driller

11/20/21

Date \_\_\_\_\_



# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER


[www.ose.state.nm.us](http://www.ose.state.nm.us)

|                                  |  |                           |  |   |  |   |                                      |                          |
|----------------------------------|--|---------------------------|--|---|--|---|--------------------------------------|--------------------------|
| 1. GENERAL AND WELL LOCATION     | OSE POD NO. (WELL NO.)<br>POD 14   |                           | WELL TAG ID NO.<br>SB-12               |   | OSE FILE NO(S).<br>C-4144  |   |                                      |                          |
|                                  | WELL OWNER NAME(S)<br>EOG Resources  |                           |  |   | PHONE (OPTIONAL)<br>432-848-9146                                       |   |                                      |                          |
|                                  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive   |                           |  |   | CITY<br>Midland  | STATE<br>Texas                                    | ZIP<br>79706                         |                          |
|                                  | WELL LOCATION (FROM GPS)   | DEGREES<br>LATITUDE<br>32 | MINUTES<br>24                          | SECONDS<br>09.24<br>N   | * ACCURACY REQUIRED: ONE TENTH OF A SECOND<br>* DATUM REQUIRED: WGS 84 |   |                                      |                          |
|                                  | DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180         |                           |  |   |  |   |                                      |                          |
| 2. DRILLING & CASING INFORMATION | LICENSE NO.<br>1664  |                           | NAME OF LICENSED DRILLER<br>Shawn Cain |   |  | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling |                                      |                          |
|                                  | DRILLING STARTED<br>8/7/21   | DRILLING ENDED<br>8/7/21  | DEPTH OF COMPLETED WELL (FT)<br>NA     | BORE HOLE DEPTH (FT)<br>60  | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA                               |   |                                      |                          |
|                                  | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input checked="" type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)                                      |                           |  |   | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA                        |   |                                      |                          |
|                                  | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:   |                           |  |   |  |   |                                      |                          |
|                                  | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Roto Sonic |                           |  |   |  |   |                                      |                          |
|                                  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM.<br>(inches)         | CASING MATERIAL AND/OR<br>GRADE<br>(include each casing string, and<br>note sections of screen) | CASING<br>CONNECTION<br>TYPE<br>(add coupling diameter)                | CASING<br>INSIDE DIAM.<br>(inches)                | CASING WALL<br>THICKNESS<br>(inches) | SLOT<br>SIZE<br>(inches) |
|                                  |  |                           |  |   |  |   |                                      |                          |
|                                  |  |                           |  |   |  |   |                                      |                          |
|                                  |  |                           |  |   |  |   |                                      |                          |
|                                  |  |                           |  |   |  |   |                                      |                          |
| 3. ANNULAR MATERIAL              | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM. (inches)            | LIST ANNULAR SEAL MATERIAL AND<br>GRAVEL PACK SIZE-RANGE BY INTERVAL                            | AMOUNT<br>(cubic feet)   | METHOD OF<br>PLACEMENT                            |                                      |                          |
|                                  | 0 60   |                           | 6                                      | Cement with 5% Bentonite  | 14   | Trimie Pumped                                     |                                      |                          |
|                                  |  |                           |  |   |  |   |                                      |                          |
|                                  |  |                           |  |   |  |   |                                      |                          |
|                                  |  |                           |  |   |  |   |                                      |                          |
|                                  |  |                           |  |   |  |   |                                      |                          |

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 04/30/19)

|          |                 |             |
|----------|-----------------|-------------|
| FILE NO. | POD NO.         | TRN NO.     |
| LOCATION | WELL TAG ID NO. | PAGE 1 OF 2 |

| 4. HYDROGEOLOGIC LOG OF WELL  | DEPTH (feet bgl)   |    | THICKNESS<br>(feet) | COLOR AND TYPE OF MATERIAL ENCOUNTERED -<br>INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES<br>(attach supplemental sheets to fully describe all units) | WATER<br>BEARING?<br>(YES / NO)           | ESTIMATED<br>YIELD FOR<br>WATER-<br>BEARING<br>ZONES (gpm) |
|---|--|----|---------------------|--|---|--|
|   | FROM   | TO |                     |  |   |  |
|   | 0  | 2  | 2                   | Fine Silty Sand Red/Brown  | Y ✓ N                                     |  |
|   | 2  | 6  | 4                   | Caliche  | Y ✓ N                                     |  |
|   | 6  | 8  | 2                   | Fine silty sand brown  | Y ✓ N                                     |  |
|   | 8  | 10 | 2                   | Fine Sandy Clay Brown  | Y ✓ N                                     |  |
|   | 10   | 30 | 20                  | Fine silty sand Brown  | Y ✓ N                                     |  |
|   | 30   | 40 | 10                  | Fine to medium sandstone Brown   | Y ✓ N                                     |  |
|   | 40   | 50 | 10                  | Very fat clay Brown  | Y ✓ N                                     |  |
|   | 50   | 60 | 10                  | Fine to Medium Sandstone   | Y ✓ N                                     |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
| METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:  |  |    |                     |  | TOTAL ESTIMATED<br>WELL YIELD (gpm): 0.00 |  |
| <input type="checkbox"/> PUMP <input type="checkbox"/> AIR LIFT <input type="checkbox"/> BAILER <input type="checkbox"/> OTHER - SPECIFY: |  |    |                     |  |   |  |
| 5. TEST; RIG SUPERVISION  | WELL TEST    TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.   |    |                     |  |   |  |
|   | MISCELLANEOUS INFORMATION:   |    |                     |  |   |  |
|   | PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:<br>Jason Camp  |    |                     |  |   |  |
| 6. SIGNATURE  | BY SIGNING BELOW, I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED WELL. I ALSO CERTIFY THAT THE WELL TAG, IF REQUIRED, HAS BEEN INSTALLED AND THAT THIS WELL RECORD WILL ALSO BE FILED WITH THE PERMIT HOLDER WITHIN 30 DAYS AFTER THE COMPLETION OF WELL DRILLING. |    |                     |  |   |  |
|   | <br>SIGNATURE OF DRILLER / PRINT SIGNED NAME  |    |                     |  | 11/19/21<br>DATE                          |  |

FOR USE INTERNAL USE

WR-20 WELL RECORD &amp; LOG (Version 04/30/2019)

|          |                 |             |
|----------|-----------------|-------------|
| FILE NO. | POD NO.         | TRN NO.     |
| LOCATION | WELL TAG ID NO. | PAGE 2 OF 2 |





# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: SB-12

Well owner: EOG Resources

Phone No.: 432-848-9146

Mailing address: 5509 Champions Drive

City: Midland

State: Texas

Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Cliff Hillman
- 4) Date well plugging began: 8/7/2021 Date well plugging concluded: 8/7/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 9.24 sec  
Longitude: -103 deg, 43 min, 21.72 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 60 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

- For each interval plugged, describe within the following columns:**

**III. SIGNATURE:**

Signature of Well Driller

Date \_\_\_\_\_



# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER


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|  |  |                           |  |   |  |   |                                      |                          |
|--|--|---------------------------|--|---|--|---|--------------------------------------|--------------------------|
| 1. GENERAL AND WELL LOCATION   | OSE POD NO. (WELL NO.)<br>POD 16   |                           | WELL TAG ID NO.<br>SB-14               |   | OSE FILE NO(S).<br>C-4144  |   |                                      |                          |
|  | WELL OWNER NAME(S)<br>EOG Resources  |                           |  |   | PHONE (OPTIONAL)<br>432-848-9146                                       |   |                                      |                          |
|  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive   |                           |  |   | CITY<br>Midland  | STATE<br>Texas                                    | ZIP<br>79706                         |                          |
|  | WELL LOCATION (FROM GPS)   | DEGREES<br>LATITUDE<br>32 | MINUTES<br>24                          | SECONDS<br>08.65<br>N   | * ACCURACY REQUIRED: ONE TENTH OF A SECOND<br>* DATUM REQUIRED: WGS 84 |   |                                      |                          |
|  |  | LONGITUDE<br>-103         | 43                                     | 21.85<br>W  |  |   |                                      |                          |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180 |  |                           |  |   |  |   |                                      |                          |
| 2. DRILLING & CASING INFORMATION   | LICENSE NO.<br>1664  |                           | NAME OF LICENSED DRILLER<br>Shawn Cain |   |  | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling |                                      |                          |
|  | DRILLING STARTED<br>8/6/21   | DRILLING ENDED<br>8/6/21  | DEPTH OF COMPLETED WELL (FT)<br>NA     |   | BORE HOLE DEPTH (FT)<br>35   | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA          |                                      |                          |
|  | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)   |                           |  |   |  | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA   |                                      |                          |
|  | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:   |                           |  |   |  |   |                                      |                          |
|  | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Roto Sonic |                           |  |   |  |   |                                      |                          |
|  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM.<br>(inches)         | CASING MATERIAL AND/OR<br>GRADE<br>(include each casing string, and<br>note sections of screen) | CASING<br>CONNECTION<br>TYPE<br>(add coupling diameter)                | CASING<br>INSIDE DIAM.<br>(inches)                | CASING WALL<br>THICKNESS<br>(inches) | SLOT<br>SIZE<br>(inches) |
|  |  |                           |  |   |  |   |                                      |                          |
|  |  |                           |  |   |  |   |                                      |                          |
|  |  |                           |  |   |  |   |                                      |                          |
|  |  |                           |  |   |  |   |                                      |                          |
|  |  |                           |  |   |  |   |                                      |                          |
| 3. ANNULAR MATERIAL  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM. (inches)            | LIST ANNULAR SEAL MATERIAL AND<br>GRAVEL PACK SIZE-RANGE BY INTERVAL                            | AMOUNT<br>(cubic feet)   | METHOD OF<br>PLACEMENT                            |                                      |                          |
|  | 0  | 35                        | 6                                      | Cement with 5% Bentonite  | 7.5  | Trimie Pumped                                     |                                      |                          |
|  |  |                           |  |   |  |   |                                      |                          |
|  |  |                           |  |   |  |   |                                      |                          |
|  |  |                           |  |   |  |   |                                      |                          |
|  |  |                           |  |   |  |   |                                      |                          |

FOR OSE INTERNAL USE

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| LOCATION | WELL TAG ID NO. | PAGE 1 OF 2 |

|  |  |           |   |  |                              |   |  |
|--|--|-----------|---|--|------------------------------|---|--|
| 4. HYDROGEOLOGIC LOG OF WELL   | DEPTH (feet bgl)   |           | THICKNESS<br>(feet)   | COLOR AND TYPE OF MATERIAL ENCOUNTERED -<br>INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES<br>(attach supplemental sheets to fully describe all units) | WATER BEARING?<br>(YES / NO) |   | ESTIMATED<br>YIELD FOR<br>WATER-<br>BEARING<br>ZONES (gpm) |
|  | FROM   | TO        |   |  |                              |   |  |
|  | 0  | 2         | 2   | Fine Silty Sand Red/Brown  | Y                            | ✓ N                                       |  |
|  | 2  | 6         | 4   | Caliche  | Y                            | ✓ N                                       |  |
|  | 6  | 20        | 14  | Fine silty sand brown  | Y                            | ✓ N                                       |  |
|  | 20   | 30        | 10  | Fat Clay Brown   | Y                            | ✓ N                                       |  |
|  | 30   | 35        | 5   | Medium sandstone White   | Y                            | ✓ N                                       |  |
|  |  |           |   |  | Y                            | N   |  |
|  |  |           |   |  | Y                            | N   |  |
|  |  |           |   |  | Y                            | N   |  |
|  |  |           |   |  | Y                            | N   |  |
|  |  |           |   |  | Y                            | N   |  |
|  |  |           |   |  | Y                            | N   |  |
|  |  |           |   |  | Y                            | N   |  |
|  |  |           |   |  | Y                            | N   |  |
|  |  |           |   |  | Y                            | N   |  |
|  |  |           |   |  | Y                            | N   |  |
|  |  |           |   |  | Y                            | N   |  |
|  | METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:<br><input type="checkbox"/> PUMP <input type="checkbox"/> AIR LIFT <input type="checkbox"/> BAILER <input type="checkbox"/> OTHER - SPECIFY:  |           |   |  |                              | TOTAL ESTIMATED<br>WELL YIELD (gpm): 0.00 |  |
|  | 5. TEST; RIG SUPERVISION   | WELL TEST | TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD. |  |                              |   |  |
| MISCELLANEOUS INFORMATION:   |  |           |   |  |                              |   |  |
| PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:<br>Cliff Hillman |  |           |   |  |                              |   |  |
| 6. SIGNATURE   | BY SIGNING BELOW, I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED WELL. I ALSO CERTIFY THAT THE WELL TAG, IF REQUIRED, HAS BEEN INSTALLED AND THAT THIS WELL RECORD WILL ALSO BE FILED WITH THE PERMIT HOLDER WITHIN 30 DAYS AFTER THE COMPLETION OF WELL DRILLING. |           |   |  |                              |   |  |
|  |   |           |   | Shawn Cain   | 11/19/21                     |   |  |
|  | SIGNATURE OF DRILLER / PRINT SIGNEE NAME   |           |   |  | DATE                         |   |  |

|                      |         |                 |  |  |  |
|----------------------|---------|-----------------|--|--|--|
| FOR USE INTERNAL USE |         |                 | WR-20 WELL RECORD & LOG (Version 04/30/2019) |  |  |
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| LOCATION             |         | WELL TAG ID NO. | PAGE 2 OF 2                                  |  |  |





# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: SB-14

Well owner: EOG Resources

Phone No.: 432-848-9146

Mailing address: 5509 Champions Drive

City: Midland

State: Texas

Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s):  
Cliff Hillman
- 4) Date well plugging began: 8/6/2021 Date well plugging concluded: 8/6/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 8.65 sec  
Longitude: -103 deg, 43 min, 21.85 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 35 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

- For each interval plugged, describe within the following columns:**

| MULTIPLY    |   | BY     | AND OBTAIN |         |
|-------------|---|--------|------------|---------|
| cubic feet  | x | 7.4805 | =          | gallons |
| cubic yards | x | 201.97 | =          | gallons |

I, Shawn Cain, say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Signature of Well Driller

Date \_\_\_\_\_



# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

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|  |  |                           |                          |                  |                                  |  |
|--|--|---------------------------|--------------------------|------------------|----------------------------------|--|
| 1. GENERAL AND WELL LOCATION   | OSE POD NO. (WELL NO.)<br>POD 17                   |                           | WELL TAG ID NO.<br>SB-15 |                  | OSE FILE NO(S).<br>C-4144        |  |
|  | WELL OWNER NAME(S)<br>EOG Resources                |                           |                          |                  | PHONE (OPTIONAL)<br>432-848-9146 |  |
|  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive |                           |                          |                  | CITY<br>Midland                  | STATE<br>Texas                             |
|  |  |                           |                          |                  | ZIP<br>79706                     |  |
|  | WELL LOCATION (FROM GPS)                           | DEGREES<br>LATITUDE<br>32 | MINUTES<br>24            | SECONDS<br>08.09 | N                                | * ACCURACY REQUIRED: ONE TENTH OF A SECOND |
|  | LONGITUDE<br>-103                                  | 43                        | 21.79                    | W                | * DATUM REQUIRED: WGS 84         |  |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180 |  |                           |                          |                  |                                  |  |

|                                  |  |                          |  |   |   |   |                                |                    |
|----------------------------------|--|--------------------------|--|---|---|---|--------------------------------|--------------------|
| 2. DRILLING & CASING INFORMATION | LICENSE NO.<br>1664  |                          | NAME OF LICENSED DRILLER<br>Shawn Cain |   |   | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling |                                |                    |
|                                  | DRILLING STARTED<br>8/6/21   | DRILLING ENDED<br>8/6/21 | DEPTH OF COMPLETED WELL (FT)<br>NA     | BORE HOLE DEPTH (FT)<br>45  | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA          |   |                                |                    |
|                                  | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)   |                          |  |   |   | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA   |                                |                    |
|                                  | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:   |                          |  |   |   |   |                                |                    |
|                                  | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Roto Sonic |                          |  |   |   |   |                                |                    |
|                                  | DEPTH (feet bgl)<br>FROM TO  |                          | BORE HOLE DIAM (inches)                | CASING MATERIAL AND/OR GRADE<br>(include each casing string, and note sections of screen) | CASING CONNECTION TYPE<br>(add coupling diameter) | CASING INSIDE DIAM (inches)                       | CASING WALL THICKNESS (inches) | SLOT SIZE (inches) |
|                                  |  |                          |  |   |   |   |                                |                    |
|                                  |  |                          |  |   |   |   |                                |                    |
|                                  |  |                          |  |   |   |   |                                |                    |
|                                  |  |                          |  |   |   |   |                                |                    |

|                     |                             |    |                          |   |                     |                     |
|---------------------|-----------------------------|----|--------------------------|---|---------------------|---------------------|
| 3. ANNULAR MATERIAL | DEPTH (feet bgl)<br>FROM TO |    | BORE HOLE DIAM. (inches) | LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL | AMOUNT (cubic feet) | METHOD OF PLACEMENT |
|                     | 0                           | 45 | 6                        | Cement with 5% Bentonite  | 10                  | Trimie Pumped       |
|                     |                             |    |                          |   |                     |                     |
|                     |                             |    |                          |   |                     |                     |
|                     |                             |    |                          |   |                     |                     |
|                     |                             |    |                          |   |                     |                     |

|                      |  |         |                 |  |             |
|----------------------|--|---------|-----------------|--|-------------|
| FOR OSE INTERNAL USE |  |         |                 | WR-20 WELL RECORD & LOG (Version 04/30/19) |             |
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| LOCATION             |  |         | WELL TAG ID NO. |  | PAGE 1 OF 2 |

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WR-20 WELL RECORD &amp; LOG (Version 04/30/2019)

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| FILE NO. |  | POD NO.         | TRN NO.     |
| LOCATION |  | WELL TAG ID NO. | PAGE 2 OF 2 |





# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: SB-15

Well owner: EOG Resources

Phone No.: 432-848-9146

Mailing address: 5509 Champions Drive

City: Midland

State: Texas

Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Cliff Hillman
- 4) Date well plugging began: 8/6/2021 Date well plugging concluded: 8/6/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 8.09 sec  
Longitude: -103 deg, 43 min, 21.79 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 45 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

- For each interval plugged, describe within the following columns:**

**III. SIGNATURE:**

SLC  
Signature of Well Driller

Date \_\_\_\_\_



# WELL RECORD & LOG

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|  |  |                           |  |   |   |   |                                      |
|--|--|---------------------------|--|---|---|---|--------------------------------------|
| 1. GENERAL AND WELL LOCATION   | OSE POD NO. (WELL NO.)<br>POD 18   |                           | WELL TAG ID NO.<br>SB-16               |   | OSE FILE NO(S)<br>C-4144                                |   |                                      |
|  | WELL OWNER NAME(S)<br>EOG Resources  |                           |  |   | PHONE (OPTIONAL)<br>432-848-9146                        |   |                                      |
|  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive   |                           |  |   | CITY<br>Midland   | STATE<br>Texas                                    |                                      |
|  |  |                           |  |   | ZIP<br>79706  |   |                                      |
|  | WELL LOCATION (FROM GPS)   | DEGREES<br>LATITUDE<br>32 | MINUTES<br>24                          | SECONDS<br>08.03  | N   | * ACCURACY REQUIRED: ONE TENTH OF A SECOND        |                                      |
|  | LONGITUDE<br>-103  | 43                        | 20.99                                  | W   | * DATUM REQUIRED: WGS 84                                |   |                                      |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180 |  |                           |  |   |   |   |                                      |
| 2. DRILLING & CASING INFORMATION   | LICENSE NO.<br>1664  |                           | NAME OF LICENSED DRILLER<br>Shawn Cain |   |   | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling |                                      |
|  | DRILLING STARTED<br>8/6/21   | DRILLING ENDED<br>8/6/21  | DEPTH OF COMPLETED WELL (FT)<br>NA     | BORE HOLE DEPTH (FT)<br>20  | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA                |   |                                      |
|  | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)   |                           |  |   | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA         |   |                                      |
|  | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:   |                           |  |   |   |   |                                      |
|  | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Roto Sonic |                           |  |   |   |   |                                      |
|  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM.<br>(inches)         | CASING MATERIAL AND/OR<br>GRADE<br>(include each casing string, and<br>note sections of screen) | CASING<br>CONNECTION<br>TYPE<br>(add coupling diameter) | CASING<br>INSIDE DIAM.<br>(inches)                | CASING WALL<br>THICKNESS<br>(inches) |
|  |  |                           |  |   |   |   |                                      |
|  |  |                           |  |   |   |   |                                      |
|  |  |                           |  |   |   |   |                                      |
|  |  |                           |  |   |   |   |                                      |
| 3. ANNULAR MATERIAL  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM. (inches)            | LIST ANNULAR SEAL MATERIAL AND<br>GRAVEL PACK SIZE-RANGE BY INTERVAL                            | AMOUNT<br>(cubic feet)                                  | METHOD OF<br>PLACEMENT                            |                                      |
|  | 0 20   |                           | 6                                      | Cement with 5% Bentonite  | 5   | Trimie Pumped                                     |                                      |
|  |  |                           |  |   |   |   |                                      |
|  |  |                           |  |   |   |   |                                      |
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FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 04/30/19)

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| FOR USE INTERNAL USE |         | WR-20 WELL RECORD & LOG (Version 04/30/2019) |             |
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| LOCATION             |         | WELL TAG ID NO.                              | PAGE 2 OF 2 |





# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: SB-16  
 Well owner: EOG Resources Phone No.: 432-848-9146  
 Mailing address: 5509 Champions Drive  
 City: Midland State: Texas Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s):  
Cliff Hillman
- 4) Date well plugging began: 8/6/2021 Date well plugging concluded: 8/6/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 8.03 sec  
 Longitude: -103 deg, 43 min, 20.99 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 20 ft below ground level (bgl),  
 by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

- For each interval plugged, describe within the following columns:**

**III. SIGNATURE:**

  
Signature of Well Driller

Date \_\_\_\_\_



# WELL RECORD & LOG

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|  |  |                           |  |   |  |   |                                |                    |
|--|--|---------------------------|--|---|--|---|--------------------------------|--------------------|
| 1. GENERAL AND WELL LOCATION   | OSE POD NO. (WELL NO.)<br>POD 19   |                           | WELL TAG ID NO.<br>SB-17               |   | OSE FILE NO(S).<br>C-4144  |   |                                |                    |
|  | WELL OWNER NAME(S)<br>EOG Resources  |                           |  |   | PHONE (OPTIONAL)<br>432-848-9146                                       |   |                                |                    |
|  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive   |                           |  |   | CITY<br>Midland  | STATE<br>Texas                                    | ZIP<br>79706                   |                    |
|  | WELL LOCATION (FROM GPS)   | DEGREES<br>LATITUDE<br>32 | MINUTES<br>24                          | SECONDS<br>08.04<br>N   | * ACCURACY REQUIRED: ONE TENTH OF A SECOND<br>* DATUM REQUIRED: WGS 84 |   |                                |                    |
|  |  | LONGITUDE<br>-103         | 43                                     | 20.64<br>W  |  |   |                                |                    |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180 |  |                           |  |   |  |   |                                |                    |
| 2. DRILLING & CASING INFORMATION   | LICENSE NO.<br>1664  |                           | NAME OF LICENSED DRILLER<br>Shawn Cain |   |  | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling |                                |                    |
|  | DRILLING STARTED<br>7/26/21  | DRILLING ENDED<br>7/26/21 | DEPTH OF COMPLETED WELL (FT)<br>NA     | BORE HOLE DEPTH (FT)<br>15  | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA                               |   |                                |                    |
|  | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)   |                           |  |   | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA                        |   |                                |                    |
|  | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:   |                           |  |   |  |   |                                |                    |
|  | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Roto Sonic |                           |  |   |  |   |                                |                    |
|  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE DIAM (inches)                | CASING MATERIAL AND/OR GRADE<br>(include each casing string, and note sections of screen) | CASING CONNECTION TYPE<br>(add coupling diameter)                      | CASING INSIDE DIAM. (inches)                      | CASING WALL THICKNESS (inches) | SLOT SIZE (inches) |
|  |  |                           |  |   |  |   |                                |                    |
|  |  |                           |  |   |  |   |                                |                    |
|  |  |                           |  |   |  |   |                                |                    |
|  |  |                           |  |   |  |   |                                |                    |
| 3. ANNULAR MATERIAL  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE DIAM. (inches)               | LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL                         | AMOUNT (cubic feet)  | METHOD OF PLACEMENT                               |                                |                    |
|  | 0 15   |                           | 6                                      | Cement with 5% Bentonite  | 4  | Trimie Pumped                                     |                                |                    |
|  |  |                           |  |   |  |   |                                |                    |
|  |  |                           |  |   |  |   |                                |                    |
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FOR USE INTERNAL USE

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|          |                 |             |
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| LOCATION | WELL TAG ID NO. | PAGE 1 OF 2 |

FOR OSE INTERNAL USE

|          |  |                 |             |
|----------|--|-----------------|-------------|
| FILE NO. |  | POD NO.         | TRN NO.     |
| LOCATION |  | WELL TAG ID NO. | PAGE 2 OF 2 |





# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: SB-17

Well owner: EOG Resources

Phone No.: 432-848-9146

Mailing address: 5509 Champions Drive

City: Midland

State: Texas

Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s) rig supervisor(s):  
Cliff Hillman
- 4) Date well plugging began: 7/26/2021 Date well plugging concluded: 7/26/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 8.04 sec  
Longitude: -103 deg, 43 min, 20.64 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 15 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

- For each interval plugged, describe within the following columns:**

**III. SIGNATURE:**

Sh C.

11/20/21

Date \_\_\_\_\_



# WELL RECORD & LOG

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|  |  |                           |  |   |  |   |                                |                    |
|--|--|---------------------------|--|---|--|---|--------------------------------|--------------------|
| 1. GENERAL AND WELL LOCATION   | OSE POD NO. (WELL NO.)<br>POD 20   |                           | WELL TAG ID NO.<br>SB-18               |   | OSE FILE NO(S)<br>C-4144   |   |                                |                    |
|  | WELL OWNER NAME(S)<br>EOG Resources  |                           |  |   | PHONE (OPTIONAL)<br>432-848-9146                                       |   |                                |                    |
|  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive   |                           |  |   | CITY<br>Midland  | STATE<br>Texas                                    | ZIP<br>79706                   |                    |
|  | WELL LOCATION (FROM GPS)   | DEGREES<br>LATITUDE<br>32 | MINUTES<br>24                          | SECONDS<br>13.89<br>N   | * ACCURACY REQUIRED: ONE TENTH OF A SECOND<br>* DATUM REQUIRED: WGS 84 |   |                                |                    |
|  |  | LONGITUDE<br>-103         | 43                                     | 21.20<br>W  |  |   |                                |                    |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180 |  |                           |  |   |  |   |                                |                    |
| 2. DRILLING & CASING INFORMATION   | LICENSE NO.<br>1664  |                           | NAME OF LICENSED DRILLER<br>Shawn Cain |   |  | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling |                                |                    |
|  | DRILLING STARTED<br>8/11/21  | DRILLING ENDED<br>8/11/21 | DEPTH OF COMPLETED WELL (FT)<br>NA     | BORE HOLE DEPTH (FT)<br>70  | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA                               |   |                                |                    |
|  | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)   |                           |  |   |  | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA   |                                |                    |
|  | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:   |                           |  |   |  |   |                                |                    |
|  | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Roto Sonic |                           |  |   |  |   |                                |                    |
|  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE DIAM. (inches)               | CASING MATERIAL AND/OR GRADE<br>(include each casing string, and note sections of screen) | CASING CONNECTION TYPE<br>(add coupling diameter)                      | CASING INSIDE DIAM. (inches)                      | CASING WALL THICKNESS (inches) | SLOT SIZE (inches) |
|  |  |                           |  |   |  |   |                                |                    |
|  |  |                           |  |   |  |   |                                |                    |
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|  |  |                           |  |   |  |   |                                |                    |
| 3. ANNULAR MATERIAL  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE DIAM. (inches)               | LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL                         | AMOUNT (cubic feet)  | METHOD OF PLACEMENT                               |                                |                    |
|  | 0  | 70                        | 6                                      | Cement with 5% Bentonite  | 15   | Trimie Pumped                                     |                                |                    |
|  |  |                           |  |   |  |   |                                |                    |
|  |  |                           |  |   |  |   |                                |                    |
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FOR OSE INTERNAL USE

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FOR OSE INTERNAL USE





# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: SB-18

Well owner: EOG Resources

Phone No.: 432-848-9146

Mailing address: 5509 Champions Drive

City: Midland

State: Texas

Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Cliff Hillman
- 4) Date well plugging began: 7/26/2021 Date well plugging concluded: 7/26/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 13.89 sec  
Longitude: -103 deg, 43 min, 21.20 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 70 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

- For each interval plugged, describe within the following columns:**

| MULTIPLY    |   | BY     | AND OBTAIN |
|-------------|---|--------|------------|
| cubic feet  | x | 7.4805 | = gallons  |
| cubic yards | x | 201.97 | = gallons  |

I, Shawn Cain, say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Date \_\_\_\_\_



# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

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|  |  |                           |  |   |   |   |                                      |
|--|--|---------------------------|--|---|---|---|--------------------------------------|
| 1. GENERAL AND WELL LOCATION   | OSE POD NO. (WELL NO.)<br>POD 21   |                           | WELL TAG ID NO.<br>SB-19               |   | OSE FILE NO(S).<br>C-4144                               |   |                                      |
|  | WELL OWNER NAME(S)<br>EOG Resources  |                           |  |   | PHONE (OPTIONAL)<br>432-848-9146                        |   |                                      |
|  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive   |                           |  |   | CITY<br>Midland   | STATE<br>Texas                                    | ZIP<br>79706                         |
|  | WELL LOCATION (FROM GPS)   | DEGREES<br>LATITUDE<br>32 | MINUTES<br>24                          | SECONDS<br>13.69<br>N   | * ACCURACY REQUIRED: ONE TENTH OF A SECOND              |   |                                      |
|  |  | LONGITUDE<br>-103         | 43                                     | 20.43<br>W  | * DATUM REQUIRED: WGS 84                                |   |                                      |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180 |  |                           |  |   |   |   |                                      |
| 2. DRILLING & CASING INFORMATION   | LICENSE NO.<br>1664  |                           | NAME OF LICENSED DRILLER<br>Shawn Cain |   |   | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling |                                      |
|  | DRILLING STARTED<br>8/11/21  | DRILLING ENDED<br>8/11/21 | DEPTH OF COMPLETED WELL (FT)<br>NA     | BORE HOLE DEPTH (FT)<br>50  | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA                |   |                                      |
|  | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)                                     |                           |  |   | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA         |   |                                      |
|  | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:   |                           |  |   |   |   |                                      |
|  | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY |                           |  |   | Roto Sonic  |   |                                      |
|  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM (inches)             | CASING MATERIAL AND/OR<br>GRADE<br>(include each casing string, and<br>note sections of screen) | CASING<br>CONNECTION<br>TYPE<br>(add coupling diameter) | CASING<br>INSIDE DIAM.<br>(inches)                | CASING WALL<br>THICKNESS<br>(inches) |
|  |  |                           |  |   |   |   |                                      |
|  |  |                           |  |   |   |   |                                      |
|  |  |                           |  |   |   |   |                                      |
|  |  |                           |  |   |   |   |                                      |
| 3. ANNULAR MATERIAL  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM. (inches)            | LIST ANNULAR SEAL MATERIAL AND<br>GRAVEL PACK SIZE-RANGE BY INTERVAL                            | AMOUNT<br>(cubic feet)                                  | METHOD OF<br>PLACEMENT                            |                                      |
|  | 0 50   |                           | 6                                      | Cement with 5% Bentonite  | 11  | Trimie Pumped                                     |                                      |
|  |  |                           |  |   |   |   |                                      |
|  |  |                           |  |   |   |   |                                      |
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FOR OSE INTERNAL USE

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| LOCATION | WELL TAG ID NO. | PAGE 1 OF 2 |

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| FILE NO. |  | POD NO.         | TRN NO.     |
| LOCATION |  | WELL TAG ID NO. | PAGE 2 OF 2 |





# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: SB-19

Well owner: EOG Resources

Phone No.: 432-848-9146

Mailing address: 5509 Champions Drive

City: Midland

State: Texas

Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s):  
Cliff Hillman
- 4) Date well plugging began: 8/11/2021 Date well plugging concluded: 8/11/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 13.69 sec  
Longitude: -103 deg, 43 min, 20.43 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 50 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

- For each interval plugged, describe within the following columns:**

| MULTIPLY    |   | BY     | AND OBTAIN |         |
|-------------|---|--------|------------|---------|
| cubic feet  | x | 7.4805 | =          | gallons |
| cubic yards | x | 201.97 | =          | gallons |

I, Shawn Cain, say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Signature of Well Driller

Date \_\_\_\_\_



# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

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|  |  |                           |  |   |  |   |                                |                    |
|--|--|---------------------------|--|---|--|---|--------------------------------|--------------------|
| 1. GENERAL AND WELL LOCATION   | OSE POD NO. (WELL NO.)<br>POD 22   |                           | WELL TAG ID NO.<br>SB-20               |   | OSE FILE NO(S)<br>C-4144   |   |                                |                    |
|  | WELL OWNER NAME(S)<br>EOG Resources  |                           |  |   | PHONE (OPTIONAL)<br>432-848-9146                                       |   |                                |                    |
|  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive   |                           |  |   | CITY<br>Midland  | STATE<br>Texas                                    | ZIP<br>79706                   |                    |
|  | WELL LOCATION (FROM GPS)   | DEGREES<br>LATITUDE<br>32 | MINUTES<br>24                          | SECONDS<br>13.25 N  | * ACCURACY REQUIRED: ONE TENTH OF A SECOND<br>* DATUM REQUIRED: WGS 84 |   |                                |                    |
| LONGITUDE<br>-103 43 21.14 W   |  |                           |  |   |  |   |                                |                    |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180 |  |                           |  |   |  |   |                                |                    |
| 2. DRILLING & CASING INFORMATION   | LICENSE NO.<br>1664  |                           | NAME OF LICENSED DRILLER<br>Shawn Cain |   |  | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling |                                |                    |
|  | DRILLING STARTED<br>7/27/21  | DRILLING ENDED<br>7/27/21 | DEPTH OF COMPLETED WELL (FT)<br>NA     | BORE HOLE DEPTH (FT)<br>15  | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA                               |   |                                |                    |
|  | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)   |                           |  |   | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA                        |   |                                |                    |
|  | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:   |                           |  |   |  |   |                                |                    |
|  | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Roto Sonic |                           |  |   |  |   |                                |                    |
|  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE DIAM. (inches)               | CASING MATERIAL AND/OR GRADE<br>(include each casing string, and note sections of screen) | CASING CONNECTION TYPE<br>(add coupling diameter)                      | CASING INSIDE DIAM. (inches)                      | CASING WALL THICKNESS (inches) | SLOT SIZE (inches) |
|  |  |                           |  |   |  |   |                                |                    |
|  |  |                           |  |   |  |   |                                |                    |
|  |  |                           |  |   |  |   |                                |                    |
|  |  |                           |  |   |  |   |                                |                    |
|  |  |                           |  |   |  |   |                                |                    |
| 3. ANNULAR MATERIAL  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE DIAM. (inches)               | LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL                         | AMOUNT (cubic feet)  | METHOD OF PLACEMENT                               |                                |                    |
|  | 0  | 15                        | 6                                      | Cement with 5% Bentonite  | 4  | Trimie Pumped                                     |                                |                    |
|  |  |                           |  |   |  |   |                                |                    |
|  |  |                           |  |   |  |   |                                |                    |
|  |  |                           |  |   |  |   |                                |                    |
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FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 04/30/19)

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FOR OSE INTERNAL USE

|          |                 |             |
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| LOCATION | WELL TAG ID NO. | PAGE 2 OF 2 |





# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: SB-20

Well owner: EOG Resources

Phone No.: 432-848-9146

Mailing address: 5509 Champions Drive

City: Midland

State: Texas

Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Cliff Hillman
- 4) Date well plugging began: 7/27/2021 Date well plugging concluded: 7/27/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 13.25 sec  
Longitude: -103 deg, 43 min, 21.14 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 15 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

- For each interval plugged, describe within the following columns:**

| MULTIPLY    |   | BY     | AND OBTAIN |         |
|-------------|---|--------|------------|---------|
| cubic feet  | x | 7.4805 | =          | gallons |
| cubic yards | x | 201.97 | =          | gallons |

I, Shawn Cain, say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Date \_\_\_\_\_



# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

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|  |  |                           |  |   |   |   |                                |
|--|--|---------------------------|--|---|---|---|--------------------------------|
| 1. GENERAL AND WELL LOCATION   | OSE POD NO. (WELL NO.)<br>POD 23   |                           | WELL TAG ID NO.<br>SB-21               |   | OSE FILE NO(S).<br>C-4144                         |   |                                |
|  | WELL OWNER NAME(S)<br>EOG Resources  |                           |  |   | PHONE (OPTIONAL)<br>432-848-9146                  |   |                                |
|  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive   |                           |  |   | CITY<br>Midland                                   | STATE<br>Texas                                    |                                |
|  |  |                           |  |   | ZIP<br>79706                                      |   |                                |
|  | WELL LOCATION (FROM GPS)   | DEGREES<br>LATITUDE<br>32 | MINUTES<br>24                          | SECONDS<br>14.08  | N   | * ACCURACY REQUIRED: ONE TENTH OF A SECOND        |                                |
|  |  | LONGITUDE<br>-103         | 43                                     | 20.80   | W   | * DATUM REQUIRED: WGS 84                          |                                |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180 |  |                           |  |   |   |   |                                |
| 2. DRILLING & CASING INFORMATION   | LICENSE NO.<br>1664  |                           | NAME OF LICENSED DRILLER<br>Shawn Cain |   |   | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling |                                |
|  | DRILLING STARTED<br>7/27/21  | DRILLING ENDED<br>7/27/21 | DEPTH OF COMPLETED WELL (FT)<br>NA     |   | BORE HOLE DEPTH (FT)<br>20                        | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA          |                                |
|  | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)   |                           |  |   |   | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA   |                                |
|  | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:   |                           |  |   |   |   |                                |
|  | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Roto Sonic |                           |  |   |   |   |                                |
|  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE DIAM (inches)                | CASING MATERIAL AND/OR GRADE<br>(include each casing string, and note sections of screen) | CASING CONNECTION TYPE<br>(add coupling diameter) | CASING INSIDE DIAM. (inches)                      | CASING WALL THICKNESS (inches) |
|  |  |                           |  |   |   |   |                                |
|  |  |                           |  |   |   |   |                                |
|  |  |                           |  |   |   |   |                                |
|  |  |                           |  |   |   |   |                                |
| 3. ANNULAR MATERIAL  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE DIAM. (inches)               | LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL                         | AMOUNT (cubic feet)                               | METHOD OF PLACEMENT                               |                                |
|  | 0 20   |                           | 6                                      | Cement with 5% Bentonite  | 4.5   | Trimie Pumped                                     |                                |
|  |  |                           |  |   |   |   |                                |
|  |  |                           |  |   |   |   |                                |
|  |  |                           |  |   |   |   |                                |
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FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 04/30/19)

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| LOCATION             | WELL TAG ID NO. |  | PAGE 2 OF 2 |





# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: SB-21

Well owner: EOG Resources

Phone No.: 432-848-9146

Mailing address: 5509 Champions Drive

City: Midland

State: Texas

Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Cliff Hillman
- 4) Date well plugging began: 7/27/2021 Date well plugging concluded: 7/27/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 14.08 sec  
Longitude: -103 deg, 43 min, 20.80 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 20 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

- For each interval plugged, describe within the following columns:**

| MULTIPLY    |   | BY     | AND OBTAIN |
|-------------|---|--------|------------|
| cubic feet  | x | 7.4805 | = gallons  |
| cubic yards | x | 201.97 | = gallons  |

I, Shawn Cain, say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

11/20/21  
Date



# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

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|  |  |                           |  |   |   |   |                                      |
|--|--|---------------------------|--|---|---|---|--------------------------------------|
| 1. GENERAL AND WELL LOCATION   | OSE POD NO. (WELL NO.)<br>POD 23   |                           | WELL TAG ID NO.<br>SB-21A              |   | OSE FILE NO(S)<br>C-4144                                |   |                                      |
|  | WELL OWNER NAME(S)<br>EOG Resources  |                           |  |   | PHONE (OPTIONAL)<br>432-848-9146                        |   |                                      |
|  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive   |                           |  |   | CITY<br>Midland   | STATE<br>Texas                                    |                                      |
|  |  |                           |  |   | ZIP<br>79706  |   |                                      |
|  | WELL LOCATION (FROM GPS)   | DEGREES<br>LATITUDE<br>32 | MINUTES<br>24                          | SECONDS<br>14.35  | N   | * ACCURACY REQUIRED: ONE TENTH OF A SECOND        |                                      |
|  | LONGITUDE<br>-103  | 43                        | 20.80                                  | W   | * DATUM REQUIRED: WGS 84                                |   |                                      |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180 |  |                           |  |   |   |   |                                      |
| 2. DRILLING & CASING INFORMATION   | LICENSE NO.<br>1664  |                           | NAME OF LICENSED DRILLER<br>Shawn Cain |   |   | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling |                                      |
|  | DRILLING STARTED<br>8/11/21  | DRILLING ENDED<br>8/11/21 | DEPTH OF COMPLETED WELL (FT)<br>NA     | BORE HOLE DEPTH (FT)<br>60  | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA                |   |                                      |
|  | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)   |                           |  |   | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA         |   |                                      |
|  | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:   |                           |  |   |   |   |                                      |
|  | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Roto Sonic |                           |  |   |   |   |                                      |
|  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM. (inches)            | CASING MATERIAL AND/OR<br>GRADE<br>(include each casing string, and<br>note sections of screen) | CASING<br>CONNECTION<br>TYPE<br>(add coupling diameter) | CASING<br>INSIDE DIAM.<br>(inches)                | CASING WALL<br>THICKNESS<br>(inches) |
|  |  |                           |  |   |   |   |                                      |
|  |  |                           |  |   |   |   |                                      |
|  |  |                           |  |   |   |   |                                      |
|  |  |                           |  |   |   |   |                                      |
| 3. ANNULAR MATERIAL  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM. (inches)            | LIST ANNULAR SEAL MATERIAL AND<br>GRAVEL PACK SIZE RANGE BY INTERVAL                            | AMOUNT<br>(cubic feet)                                  | METHOD OF<br>PLACEMENT                            |                                      |
|  | 0 60   |                           | 6                                      | Cement with 5% Bentonite  | 13  | Trimie Pumped                                     |                                      |
|  |  |                           |  |   |   |   |                                      |
|  |  |                           |  |   |   |   |                                      |
|  |  |                           |  |   |   |   |                                      |
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FOR OSE INTERNAL USE

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| LOCATION | WELL TAG ID NO. | PAGE 1 OF 2 |

|  | DEPTH (feet bgl)   |   | THICKNESS<br>(feet) | COLOR AND TYPE OF MATERIAL ENCOUNTERED -<br>INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES<br>(attach supplemental sheets to fully describe all units) | WATER<br>BEARING?<br>(YES / NO) | ESTIMATED<br>YIELD FOR<br>WATER-<br>BEARING<br>ZONES (gpm) |
|--|--|---|---------------------|--|---------------------------------|--|
|  | FROM   | TO  |                     |  |                                 |  |
| 4. HYDROGEOLOGIC LOG OF WELL   | 0  | 4   | 4                   | Fine Silty Sand Brown  | Y    ✓ N                        |  |
|  | 4  | 10  | 6                   | Caliche  | Y    ✓ N                        |  |
|  | 10   | 45  | 35                  | Medium to fine Sandstone   | Y    ✓ N                        |  |
|  | 45   | 60  | 15                  | Fat Clay Brown   | Y    ✓ N                        |  |
|  |  |   |                     |  | Y    N                          |  |
|  |  |   |                     |  | Y    N                          |  |
|  |  |   |                     |  | Y    N                          |  |
|  |  |   |                     |  | Y    N                          |  |
|  |  |   |                     |  | Y    N                          |  |
|  |  |   |                     |  | Y    N                          |  |
|  |  |   |                     |  | Y    N                          |  |
|  |  |   |                     |  | Y    N                          |  |
|  |  |   |                     |  | Y    N                          |  |
|  |  |   |                     |  | Y    N                          |  |
|  |  |   |                     |  | Y    N                          |  |
|  |  |   |                     |  | Y    N                          |  |
|  |  |   |                     |  | Y    N                          |  |
|  |  |   |                     |  | Y    N                          |  |
|  |  |   |                     |  | Y    N                          |  |
|  | METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:   |   |                     |  |                                 | TOTAL ESTIMATED<br>WELL YIELD (gpm):        0.00           |
| <input type="checkbox"/> PUMP <input type="checkbox"/> AIR LIFT <input type="checkbox"/> BAILER <input type="checkbox"/> OTHER - SPECIFY:  |  |   |                     |  |                                 |  |
| 5. TEST; RIG SUPERVISION   | WELL TEST  | TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD. |                     |  |                                 |  |
|  | MISCELLANEOUS INFORMATION: Step out boring   |   |                     |  |                                 |  |
|  | PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:<br>Cliff Hillman   |   |                     |  |                                 |  |
| 6. SIGNATURE   | BY SIGNING BELOW, I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED WELL. I ALSO CERTIFY THAT THE WELL TAG, IF REQUIRED, HAS BEEN INSTALLED AND THAT THIS WELL RECORD WILL ALSO BE FILED WITH THE PERMIT HOLDER WITHIN 30 DAYS AFTER THE COMPLETION OF WELL DRILLING. |   |                     |  |                                 |  |
| <div style="display: flex; justify-content: space-between; align-items: flex-end;"> <div style="text-align: center;"> <br/>                         SIGNATURE OF DRILLER / PRINT SIGNEE NAME                     </div> <div style="text-align: center;">                         Shawn Cain<br/>                         DATE                     </div> <div style="text-align: center;">                         11/20/21                     </div> </div> |  |   |                     |  |                                 |  |

|                      |                 |  |             |
|----------------------|-----------------|--|-------------|
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# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: SB-21A

Well owner: EOG Resources

Phone No.: 432-848-9146

Mailing address: 5509 Champions Drive

City: Midland

State: Texas

Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Cliff Hillman
- 4) Date well plugging began: 8/11/2021 Date well plugging concluded: 8/11/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 14.35 sec  
Longitude: -103 deg, 43 min, 20.80 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 60 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

- For each interval plugged, describe within the following columns:**

| MULTIPLY    |   | BY     | AND OBTAIN |         |
|-------------|---|--------|------------|---------|
| cubic feet  | x | 7.4805 | =          | gallons |
| cubic yards | x | 201.97 | =          | gallons |

I, Shawn Cain, say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

11/20/21  
Date



# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

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|  |  |                           |                           |                  |                                  |  |
|--|--|---------------------------|---------------------------|------------------|----------------------------------|--|
| 1. GENERAL AND WELL LOCATION   | OSE POD NO. (WELL NO.)<br>POD 23                   |                           | WELL TAG ID NO.<br>SB-21B |                  | OSE FILE NO(S).<br>C-4144        |  |
|  | WELL OWNER NAME(S)<br>EOG Resources                |                           |                           |                  | PHONE (OPTIONAL)<br>432-848-9146 |  |
|  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive |                           |                           |                  | CITY<br>Midland                  | STATE<br>Texas                             |
|  |  |                           |                           |                  | ZIP<br>79706                     |  |
|  | WELL LOCATION (FROM GPS)                           | DEGREES<br>LATITUDE<br>32 | MINUTES<br>24             | SECONDS<br>14.90 | N                                | * ACCURACY REQUIRED: ONE TENTH OF A SECOND |
|  | LONGITUDE<br>-103                                  | 43                        | 20.47                     | W                | * DATUM REQUIRED: WGS 84         |  |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180 |  |                           |                           |                  |                                  |  |

|                                  |  |    |  |   |   |   |  |                          |
|----------------------------------|--|----|--|---|---|---|--|--------------------------|
| 2. DRILLING & CASING INFORMATION | LICENSE NO.<br>1664  |    | NAME OF LICENSED DRILLER<br>Shawn Cain |   |   | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling |  |                          |
|                                  | DRILLING STARTED<br>8/12/21  |    | DRILLING ENDED<br>8/12/21              |   | DEPTH OF COMPLETED WELL (FT)<br>NA                      | BORE HOLE DEPTH (FT)<br>20                        | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA |                          |
|                                  | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)   |    |  |   |   | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA   |  |                          |
|                                  | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:   |    |  |   |   |   |  |                          |
|                                  | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Roto Sonic |    |  |   |   |   |  |                          |
|                                  | DEPTH (feet bgl)   |    | BORE HOLE<br>DIAM.<br>(inches)         | CASING MATERIAL AND/OR<br>GRADE<br>(include each casing string, and<br>note sections of screen) | CASING<br>CONNECTION<br>TYPE<br>(add coupling diameter) | CASING<br>INSIDE DIAM.<br>(inches)                | CASING WALL<br>THICKNESS<br>(inches)     | SLOT<br>SIZE<br>(inches) |
|                                  | FROM   | TO |  |   |   |   |  |                          |
|                                  |  |    |  |   |   |   |  |                          |
|                                  |  |    |  |   |   |   |  |                          |
|                                  |  |    |  |   |   |   |  |                          |
|                                  |  |    |  |   |   |   |  |                          |

|                     |                  |    |                             |  |                        |                        |
|---------------------|------------------|----|-----------------------------|--|------------------------|------------------------|
| 3. ANNULAR MATERIAL | DEPTH (feet bgl) |    | BORE HOLE<br>DIAM. (inches) | LIST ANNULAR SEAL MATERIAL AND<br>GRAVEL PACK SIZE-RANGE BY INTERVAL | AMOUNT<br>(cubic feet) | METHOD OF<br>PLACEMENT |
|                     | FROM             | TO |                             |  |                        |                        |
|                     | 0                | 20 | 6                           | Cement with 5% Bentonite   | 4.5                    | Trimie Pumped          |
|                     |                  |    |                             |  |                        |                        |
|                     |                  |    |                             |  |                        |                        |
|                     |                  |    |                             |  |                        |                        |
|                     |                  |    |                             |  |                        |                        |

FOR OSE INTERNAL USE

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|                      |                 |  |             |
|----------------------|-----------------|--|-------------|
| FOR USE INTERNAL USE |                 | WR-20 WELL RECORD & LOG (Version 04/30/2019) |             |
| FILE NO.             | POD NO.         | TRN NO.                                      |             |
| LOCATION             | WELL TAG ID NO. |  | PAGE 2 OF 2 |



# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: SB-21B

Well owner: EOG Resources

Phone No.: 432-848-9146

Mailing address: 5509 Champions Drive

City: Midland

State: Texas

Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s):  
Cliff Hillman
- 4) Date well plugging began: 8/12/2021 Date well plugging concluded: 8/12/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 14.90 sec  
Longitude: -103 deg, 43 min, 20.47 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 20 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):



- For each interval plugged, describe within the following columns:**

| MULTIPLY    |   | BY     | AND OBTAIN |
|-------------|---|--------|------------|
| cubic feet  | x | 7.4805 | = gallons  |
| cubic yards | x | 201.97 | = gallons  |

I, Shawn Cain, say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Signature of Well Driller

Date \_\_\_\_\_



# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

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|  |  |                           |  |  |  |   |                                |                    |
|--|--|---------------------------|--|--|--|---|--------------------------------|--------------------|
| 1. GENERAL AND WELL LOCATION   | OSE POD NO. (WELL NO.)<br>POD 24   |                           | WELL TAG ID NO.<br>SB-22               |  | OSE FILE NO(S).<br>C-4144                      |   |                                |                    |
|  | WELL OWNER NAME(S)<br>EOG Resources  |                           |  |  | PHONE (OPTIONAL)<br>432-848-9146               |   |                                |                    |
|  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive   |                           |  |  | CITY<br>Midland                                | STATE<br>Texas                                    | ZIP<br>79706                   |                    |
|  | WELL LOCATION (FROM GPS)   | DEGREES<br>LATITUDE<br>32 |  | MINUTES<br>24  | SECONDS<br>13.57                               | N   |                                |                    |
|  |  | LONGITUDE<br>-103         |  | 43   | 19.89  | W   |                                |                    |
| * ACCURACY REQUIRED: ONE TENTH OF A SECOND<br>* DATUM REQUIRED: WGS 84   |  |                           |  |  |  |   |                                |                    |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180 |  |                           |  |  |  |   |                                |                    |
| 2. DRILLING & CASING INFORMATION   | LICENSE NO.<br>1664  |                           | NAME OF LICENSED DRILLER<br>Shawn Cain |  |  | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling |                                |                    |
|  | DRILLING STARTED<br>8/11/21  | DRILLING ENDED<br>8/11/21 | DEPTH OF COMPLETED WELL (FT)<br>NA     |  | BORE HOLE DEPTH (FT)<br>50                     | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA          |                                |                    |
|  | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)   |                           |  |  |  | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA   |                                |                    |
|  | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:   |                           |  |  |  |   |                                |                    |
|  | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Roto Sonic |                           |  |  |  |   |                                |                    |
|  | DEPTH (feet bgl)   |                           | BORE HOLE DIAM (inches)                | CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen) | CASING CONNECTION TYPE (add coupling diameter) | CASING INSIDE DIAM. (inches)                      | CASING WALL THICKNESS (inches) | SLOT SIZE (inches) |
|  | FROM   | TO                        |  |  |  |   |                                |                    |
|  |  |                           |  |  |  |   |                                |                    |
|  |  |                           |  |  |  |   |                                |                    |
|  |  |                           |  |  |  |   |                                |                    |
|  |  |                           |  |  |  |   |                                |                    |
|  |  |                           |  |  |  |   |                                |                    |
|  |  |                           |  |  |  |   |                                |                    |
|  |  |                           |  |  |  |   |                                |                    |
| 3. ANNULAR MATERIAL  | DEPTH (feet bgl)   |                           | BORE HOLE DIAM. (inches)               | LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL                      | AMOUNT (cubic feet)                            | METHOD OF PLACEMENT                               |                                |                    |
|  | FROM   | TO                        |  |  |  |   |                                |                    |
|  | 0  | 50                        | 6                                      | Cement with 5% Bentonite   | 11   | Trimie Pumped                                     |                                |                    |
|  |  |                           |  |  |  |   |                                |                    |
|  |  |                           |  |  |  |   |                                |                    |
|  |  |                           |  |  |  |   |                                |                    |

FOR USE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 04/30/19)

|          |                 |             |
|----------|-----------------|-------------|
| FILE NO. | POD NO.         | TRN NO.     |
| LOCATION | WELL TAG ID NO. | PAGE 1 OF 2 |

|                                     | DEPTH (feet bgl)   |   | THICKNESS<br>(feet) | COLOR AND TYPE OF MATERIAL ENCOUNTERED -<br>INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES<br>(attach supplemental sheets to fully describe all units) | WATER<br>BEARING?<br>(YES / NO) | ESTIMATED<br>YIELD FOR<br>WATER-<br>BEARING<br>ZONES (gpm) |      |
|-------------------------------------|--|---|---------------------|--|---------------------------------|--|------|
|                                     | FROM   | TO  |                     |  |                                 |  |      |
| <b>4. HYDROGEOLOGIC LOG OF WELL</b> | 0  | 4   | 4                   | Fine Silty Sand Brown  | Y    ✓ N                        |  |      |
|                                     | 4  | 15  | 7                   | Caliche  | Y    ✓ N                        |  |      |
|                                     | 15   | 20  | 5                   | Fine silly sand Brown  | Y    ✓ N                        |  |      |
|                                     | 20   | 50  | 30                  | Medium sandstone Brown   | Y    ✓ N                        |  |      |
|                                     |  |   |                     |  | Y    N                          |  |      |
|                                     |  |   |                     |  | Y    N                          |  |      |
|                                     |  |   |                     |  | Y    N                          |  |      |
|                                     |  |   |                     |  | Y    N                          |  |      |
|                                     |  |   |                     |  | Y    N                          |  |      |
|                                     |  |   |                     |  | Y    N                          |  |      |
|                                     |  |   |                     |  | Y    N                          |  |      |
|                                     |  |   |                     |  | Y    N                          |  |      |
|                                     |  |   |                     |  | Y    N                          |  |      |
|                                     |  |   |                     |  | Y    N                          |  |      |
|                                     |  |   |                     |  | Y    N                          |  |      |
|                                     |  |   |                     |  | Y    N                          |  |      |
|                                     |  |   |                     |  | Y    N                          |  |      |
|                                     |  |   |                     |  | Y    N                          |  |      |
|                                     | METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:   |   |                     |  |                                 | TOTAL ESTIMATED<br>WELL YIELD (gpm):                       | 0.00 |
|                                     | <input type="checkbox"/> PUMP <input type="checkbox"/> AIR LIFT <input type="checkbox"/> BAILER <input type="checkbox"/> OTHER – SPECIFY: _____  |   |                     |  |                                 |  |      |
| <b>5. TEST; RIG SUPERVISION</b>     | WELL TEST  | TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD. |                     |  |                                 |  |      |
|                                     | MISCELLANEOUS INFORMATION:   |   |                     |  |                                 |  |      |
|                                     | PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:<br>Cliff Hillman   |   |                     |  |                                 |  |      |
| <b>6. SIGNATURE</b>                 | BY SIGNING BELOW, I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED WELL. I ALSO CERTIFY THAT THE WELL TAG, IF REQUIRED, HAS BEEN INSTALLED AND THAT THIS WELL RECORD WILL ALSO BE FILED WITH THE PERMIT HOLDER WITHIN 30 DAYS AFTER THE COMPLETION OF WELL DRILLING. |   |                     |  |                                 |  |      |
|                                     | SIGNATURE OF DRILLER / PRINT SIGNEE NAME   |   |                     |  | DATE                            |  |      |

|                      |         |  |             |
|----------------------|---------|--|-------------|
| FOR OSE INTERNAL USE |         | WR-20 WELL RECORD & LOG (Version 04/30/2019) |             |
| FILE NO.             | POD NO. | TRN NO.                                      |             |
| LOCATION             |         | WELL TAG ID NO.                              | PAGE 2 OF 2 |



# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: SB- 22

Well owner: EOG Resources

Phone No.: 432-848-9146

Mailing address: 5509 Champions Drive

City: Midland

State: Texas

Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Cliff Hillman
- 4) Date well plugging began: 8/11/2021 Date well plugging concluded: 8/11/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 13.57 sec  
Longitude: -103 deg, 43 min, 19.89 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 50 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

- For each interval plugged, describe within the following columns:**

**III. SIGNATURE:**

SHC

11/20/21

Date \_\_\_\_\_





# WELL RECORD & LOG

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|  |  |                           |  |   |   |  |                                      |
|--|--|---------------------------|--|---|---|--|--------------------------------------|
| 1. GENERAL AND WELL LOCATION   | OSE POD NO. (WELL NO.)<br>POD 25   |                           | WELL TAG ID NO.<br>SB-23               |   | OSE FILE NO(S)<br>C-4144                                |  |                                      |
|  | WELL OWNER NAME(S)<br>EOG Resources  |                           |  |   | PHONE (OPTIONAL)<br>432-848-9146                        |  |                                      |
|  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive   |                           |  |   | CITY<br>Midland   | STATE<br>Texas   |                                      |
|  |  |                           |  |   | ZIP<br>79706  |  |                                      |
|  | WELL LOCATION (FROM GPS)   | DEGREES<br>LATITUDE<br>32 | MINUTES<br>24                          | SECONDS<br>15.26  | N   | * ACCURACY REQUIRED: ONE TENTH OF A SECOND<br>* DATUM REQUIRED: WGS 84 |                                      |
|  |  | LONGITUDE<br>-103         | 43                                     | 18.14   | W   |  |                                      |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180 |  |                           |  |   |   |  |                                      |
| 2. DRILLING & CASING INFORMATION   | LICENSE NO.<br>1664  |                           | NAME OF LICENSED DRILLER<br>Shawn Cain |   |   | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling                      |                                      |
|  | DRILLING STARTED<br>7/27/21  | DRILLING ENDED<br>7/27/21 | DEPTH OF COMPLETED WELL (FT)<br>NA     |   | BORE HOLE DEPTH (FT)<br>13                              | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA                               |                                      |
|  | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)   |                           |  |   |   | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA                        |                                      |
|  | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:   |                           |  |   |   |  |                                      |
|  | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Roto Sonic |                           |  |   |   |  |                                      |
|  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM.<br>(inches)         | CASING MATERIAL AND/OR<br>GRADE<br>(include each casing string, and<br>note sections of screen) | CASING<br>CONNECTION<br>TYPE<br>(add coupling diameter) | CASING<br>INSIDE DIAM.<br>(inches)                                     | CASING WALL<br>THICKNESS<br>(inches) |
|  |  |                           |  |   |   |  |                                      |
|  |  |                           |  |   |   |  |                                      |
|  |  |                           |  |   |   |  |                                      |
|  |  |                           |  |   |   |  |                                      |
| 3. ANNULAR MATERIAL  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM. (inches)            | LIST ANNULAR SEAL MATERIAL AND<br>GRAVEL PACK SIZE-RANGE BY INTERVAL                            | AMOUNT<br>(cubic feet)                                  | METHOD OF<br>PLACEMENT   |                                      |
|  | 0 13   |                           | 6                                      | Cement with 5% Bentonite  | 3   | Trimie Pumped  |                                      |
|  |  |                           |  |   |   |  |                                      |
|  |  |                           |  |   |   |  |                                      |
|  |  |                           |  |   |   |  |                                      |
|  |  |                           |  |   |   |  |                                      |

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 04/30/19)

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|----------|-----------------|-------------|
| FILE NO. | POD NO.         | TRN NO.     |
| LOCATION | WELL TAG ID NO. | PAGE 1 OF 2 |

|                      |                 |  |             |
|----------------------|-----------------|--|-------------|
| FOR USE INTERNAL USE |                 | WR-20 WELL RECORD & LOG (Version 04/30/2019) |             |
| FILE NO.             | POD NO.         | TRN NO.                                      |             |
| LOCATION             | WELL TAG ID NO. |  | PAGE 2 OF 2 |



# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: SB-23

Well owner: EOG Resources

Phone No.: 432-848-9146

Mailing address: 5509 Champions Drive

City: Midland

State: Texas


Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Cliff Hillman
- 4) Date well plugging began: 7/27/2021 Date well plugging concluded: 7/27/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 15.26 sec  
Longitude: -103 deg, 43 min, 18.14 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 13 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

- For each interval plugged, describe within the following columns:**

**III. SIGNATURE:**

  
Signature of Well Driller

Version: September 8, 2009  
Page 2 of 2



# WELL RECORD & LOG

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|  |  |                           |  |   |   |  |                                   |
|--|--|---------------------------|--|---|---|--|-----------------------------------|
| 1. GENERAL AND WELL LOCATION   | OSE POD NO. (WELL NO.)<br>POD 26   |                           | WELL TAG ID NO.<br>SB-24               |   | OSE FILE NO(S)<br>C-4144                          |  |                                   |
|  | WELL OWNER NAME(S)<br>EOG Resources  |                           |  |   | PHONE (OPTIONAL)<br>432-848-9146                  |  |                                   |
|  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive   |                           |  |   | CITY<br>Midland                                   | STATE<br>Texas   |                                   |
|  |  |                           |  |   | ZIP<br>79706                                      |  |                                   |
|  | WELL LOCATION (FROM GPS)   | DEGREES<br>LATITUDE<br>32 | MINUTES<br>24                          | SECONDS<br>14.62  | N   | * ACCURACY REQUIRED: ONE TENTH OF A SECOND<br>* DATUM REQUIRED: WGS 84 |                                   |
|  |  | LONGITUDE<br>-103         | 43                                     | 18.21   | W   |  |                                   |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180 |  |                           |  |   |   |  |                                   |
| 2. DRILLING & CASING INFORMATION   | LICENSE NO.<br>1664  |                           | NAME OF LICENSED DRILLER<br>Shawn Cain |   |   | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling                      |                                   |
|  | DRILLING STARTED<br>7/27/21  | DRILLING ENDED<br>7/27/21 | DEPTH OF COMPLETED WELL (FT)<br>NA     | BORE HOLE DEPTH (FT)<br>30  | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA          |  |                                   |
|  | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)   |                           |  |   |   | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA                        |                                   |
|  | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:   |                           |  |   |   |  |                                   |
|  | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Roto Sonic |                           |  |   |   |  |                                   |
|  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE DIAM.<br>(inches)            | CASING MATERIAL AND/OR GRADE<br>(include each casing string, and note sections of screen) | CASING CONNECTION TYPE<br>(add coupling diameter) | CASING INSIDE DIAM.<br>(inches)  | CASING WALL THICKNESS<br>(inches) |
|  |  |                           |  |   |   |  |                                   |
|  |  |                           |  |   |   |  |                                   |
|  |  |                           |  |   |   |  |                                   |
|  |  |                           |  |   |   |  |                                   |
| 3. ANNULAR MATERIAL  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE DIAM. (inches)               | LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL                         | AMOUNT (cubic feet)                               | METHOD OF PLACEMENT  |                                   |
|  | 0 30   |                           | 6                                      | Cement with 5% Bentonite  | 7   | Trimie Pumped  |                                   |
|  |  |                           |  |   |   |  |                                   |
|  |  |                           |  |   |   |  |                                   |
|  |  |                           |  |   |   |  |                                   |
|  |  |                           |  |   |   |  |                                   |
|  |  |                           |  |   |   |  |                                   |

FOR OSE INTERNAL USE

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| FILE NO. | POD NO.         | TRN NO.     |
| LOCATION | WELL TAG ID NO. | PAGE 1 OF 2 |



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| FILE NO. | POD NO.         | TRN NO.     |
| LOCATION | WELL TAG ID NO. | PAGE 2 OF 2 |



# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: SB-24

Well owner: EOG Resources

Phone No.: 432-848-9146

Mailing address: 5509 Champions Drive

City: Midland

State: Texas

Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Cliff Hillman
- 4) Date well plugging began: 7/27/2021 Date well plugging concluded: 7/27/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 14.62 sec  
Longitude: -103 deg, 43 min, 18.21 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 30 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

- For each interval plugged, describe within the following columns:**

| MULTIPLY    |   | BY     | AND OBTAIN |
|-------------|---|--------|------------|
| cubic feet  | x | 7.4805 | = gallons  |
| cubic yards | x | 201.97 | = gallons  |

I, Shawn Cain, say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Signature of Well Driller

Date \_\_\_\_\_



# WELL RECORD & LOG

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|  |  |               |  |   |   |   |  |                          |
|--|--|---------------|--|---|---|---|--|--------------------------|
| 1. GENERAL AND WELL LOCATION   | OSE POD NO. (WELL NO.)<br>POD 27   |               | WELL TAG ID NO.<br>SB-25               |   | OSE FILE NO(S).<br>C-4144                               |   |  |                          |
|  | WELL OWNER NAME(S)<br>EOG Resources  |               |  |   | PHONE (OPTIONAL)<br>432-848-9146                        |   |  |                          |
|  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive   |               |  |   | CITY<br>Midland   | STATE<br>Texas                                    | ZIP<br>79706                             |                          |
|  | WELL LOCATION<br>(FROM GPS)  | DEGREES<br>32 |  | MINUTES<br>24   | SECONDS<br>14.17  | N   |  |                          |
|  |  | LATITUDE      |  | LONGITUDE   |   | -103 43 18.40 W                                   |  |                          |
| * ACCURACY REQUIRED: ONE TENTH OF A SECOND<br>* DATUM REQUIRED: WGS 84   |  |               |  |   |   |   |  |                          |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180 |  |               |  |   |   |   |  |                          |
| 2. DRILLING & CASING INFORMATION   | LICENSE NO.<br>1664  |               | NAME OF LICENSED DRILLER<br>Shawn Cain |   |   | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling |  |                          |
|  | DRILLING STARTED<br>8/10/21  |               | DRILLING ENDED<br>8/10/21              |   | DEPTH OF COMPLETED WELL (FT)<br>NA                      | BORE HOLE DEPTH (FT)<br>45                        | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA |                          |
|  | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)   |               |  |   |   | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA   |  |                          |
|  | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:   |               |  |   |   |   |  |                          |
|  | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Roto Sonic |               |  |   |   |   |  |                          |
|  | DEPTH (feet bgl)   |               | BORE HOLE<br>DIAM.<br>(inches)         | CASING MATERIAL AND/OR<br>GRADE<br>(include each casing string, and<br>note sections of screen) | CASING<br>CONNECTION<br>TYPE<br>(add coupling diameter) | CASING<br>INSIDE DIAM.<br>(inches)                | CASING WALL<br>THICKNESS<br>(inches)     | SLOT<br>SIZE<br>(inches) |
|  | FROM   | TO            |  |   |   |   |  |                          |
|  |  |               |  |   |   |   |  |                          |
|  |  |               |  |   |   |   |  |                          |
|  |  |               |  |   |   |   |  |                          |
|  |  |               |  |   |   |   |  |                          |
|  |  |               |  |   |   |   |  |                          |
|  |  |               |  |   |   |   |  |                          |
|  |  |               |  |   |   |   |  |                          |
| 3. ANNULAR MATERIAL  | DEPTH (feet bgl)   |               | BORE HOLE<br>DIAM. (inches)            | LIST ANNULAR SEAL MATERIAL AND<br>GRAVEL PACK SIZE-RANGE BY INTERVAL                            | AMOUNT<br>(cubic feet)                                  | METHOD OF<br>PLACEMENT                            |  |                          |
|  | FROM   | TO            |  |   |   |   |  |                          |
|  | 0  | 45            | 6                                      | Cement with 5% Bentonite  | 10  | Tremie Pumped                                     |  |                          |
|  |  |               |  |   |   |   |  |                          |
|  |  |               |  |   |   |   |  |                          |
|  |  |               |  |   |   |   |  |                          |

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 04/30/19)

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# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:


State Engineer Well Number: SB-25  
 Well owner: EOG Resources Phone No.: 432-848-9146  
 Mailing address: 5509 Champions Drive  
 City: Midland State: Texas Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s):  
Cliff Hillman
- 4) Date well plugging began: 8/10/2021 Date well plugging concluded: 8/10/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 14.17 sec  
 Longitude: -103 deg, 43 min, 18.40 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 45 ft below ground level (bgl),  
 by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

- For each interval plugged, describe within the following columns:**

**III. SIGNATURE:**

  
Signature of Well Driller

Date \_\_\_\_\_



# WELL RECORD & LOG

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|  |  |               |                          |               |                                  |                |  |
|--|--|---------------|--------------------------|---------------|----------------------------------|----------------|--|
| <b>1. GENERAL AND WELL LOCATION</b>  | OSE POD NO. (WELL NO.)<br>POD 28                   |               | WELL TAG ID NO.<br>SB-26 |               | OSE FILE NO(S).<br>C-4144        |                |  |
|  | WELL OWNER NAME(S)<br>EOG Resources                |               |                          |               | PHONE (OPTIONAL)<br>432-848-9146 |                |  |
|  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive |               |                          |               | CITY<br>Midland                  | STATE<br>Texas | ZIP<br>79706   |
|  | WELL<br>LOCATION<br>(FROM GPS)                     | DEGREES<br>32 |                          | MINUTES<br>24 | SECONDS<br>13.51                 | N              | * ACCURACY REQUIRED: ONE TENTH OF A SECOND<br>* DATUM REQUIRED: WGS 84 |
|  |  | LATITUDE      |                          | -103          | 43                               |                |  |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180 |  |               |                          |               |                                  |                |  |


|   |  |                           |  |   |   |   |                                      |                          |
|---|--|---------------------------|--|---|---|---|--------------------------------------|--------------------------|
| <b>2. DRILLING &amp; CASING INFORMATION</b> | LICENSE NO.<br>1664  |                           | NAME OF LICENSED DRILLER<br>Shawn Cain |   |   | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling |                                      |                          |
|   | DRILLING STARTED<br>8/10/21  | DRILLING ENDED<br>8/10/21 | DEPTH OF COMPLETED WELL (FT)<br>NA     |   | BORE HOLE DEPTH (FT)<br>30                              | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA          |                                      |                          |
|   | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)   |                           |  |   |   | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA   |                                      |                          |
|   | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:   |                           |  |   |   |   |                                      |                          |
|   | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Roto Sonic |                           |  |   |   |   |                                      |                          |
|   | DEPTH (feet bgl)   |                           | BORE HOLE<br>DIAM.<br>(inches)         | CASING MATERIAL AND/OR<br>GRADE<br>(include each casing string, and<br>note sections of screen) | CASING<br>CONNECTION<br>TYPE<br>(add coupling diameter) | CASING<br>INSIDE DIAM.<br>(inches)                | CASING WALL<br>THICKNESS<br>(inches) | SLOT<br>SIZE<br>(inches) |
|   | FROM   | TO                        |  |   |   |   |                                      |                          |
|   |  |                           |  |   |   |   |                                      |                          |
|   |  |                           |  |   |   |   |                                      |                          |
|   |  |                           |  |   |   |   |                                      |                          |
|   |  |                           |  |   |   |   |                                      |                          |
|   |  |                           |  |   |   |   |                                      |                          |

|                            |                  |    |                             |  |                        |                        |
|----------------------------|------------------|----|-----------------------------|--|------------------------|------------------------|
| <b>3. ANNULAR MATERIAL</b> | DEPTH (feet bgl) |    | BORE HOLE<br>DIAM. (inches) | LIST ANNULAR SEAL MATERIAL AND<br>GRAVEL PACK SIZE-RANGE BY INTERVAL | AMOUNT<br>(cubic feet) | METHOD OF<br>PLACEMENT |
|                            | FROM             | TO |                             |  |                        |                        |
|                            | 0                | 30 | 6                           | Cement with 5% Bentonite   | 6.6                    | Tremie Pumped          |
|                            |                  |    |                             |  |                        |                        |
|                            |                  |    |                             |  |                        |                        |
|                            |                  |    |                             |  |                        |                        |
|                            |                  |    |                             |  |                        |                        |

FOR OSE INTERNAL USE

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| 4. HYDROGEOLOGIC LOG OF WELL  | DEPTH (feet bgl)   |   | THICKNESS<br>(feet) | COLOR AND TYPE OF MATERIAL ENCOUNTERED -<br>INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES<br>(attach supplemental sheets to fully describe all units) | WATER<br>BEARING?<br>(YES / NO)           | ESTIMATED<br>YIELD FOR<br>WATER-<br>BEARING<br>ZONES (gpm) |
|---|--|---|---------------------|--|---|--|
|   | FROM   | TO  |                     |  |   |  |
|   | 0  | 6   | 6                   | Fine Silty Sand Brown  | Y ✓ N                                     |  |
|   | 6  | 10  | 4                   | Caliche  | Y ✓ N                                     |  |
|   | 10   | 20  | 10                  | Fine silty sand Brown  | Y ✓ N                                     |  |
|   | 20   | 25  | 5                   | Medium Sandstone   | Y ✓ N                                     |  |
|   | 25   | 30  | 5                   | Fat Clay Brown   | Y ✓ N                                     |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
| METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:  |  |   |                     |  | TOTAL ESTIMATED<br>WELL YIELD (gpm): 0.00 |  |
| <input type="checkbox"/> PUMP <input type="checkbox"/> AIR LIFT <input type="checkbox"/> BAILER <input type="checkbox"/> OTHER - SPECIFY: |  |   |                     |  |   |  |
| 5. TEST, RIG SUPERVISION  | WELL TEST  | TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD. |                     |  |   |  |
|   | MISCELLANEOUS INFORMATION:   |   |                     |  |   |  |
|   | PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:<br>Cliff Hillman   |   |                     |  |   |  |
| 6. SIGNATURE  | BY SIGNING BELOW, I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED WELL. I ALSO CERTIFY THAT THE WELL TAG, IF REQUIRED, HAS BEEN INSTALLED AND THAT THIS WELL RECORD WILL ALSO BE FILED WITH THE PERMIT HOLDER WITHIN 30 DAYS AFTER THE COMPLETION OF WELL DRILLING. |   |                     |  |   |  |
|   | <br>Shawn Cain  |   |                     |  | 11/20/21                                  |  |
|   | SIGNATURE OF DRILLER / PRINT SIGNEE NAME   |   |                     |  | DATE                                      |  |

FOR USE INTERNAL USE

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| LOCATION | WELL TAG ID NO. | PAGE 2 OF 2 |



# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: SB-26

Well owner: EOG Resources

Phone No.: 432-848-9146

Mailing address: 5509 Champions Drive

City: Midland

State: Texas

Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s):  
Cliff Hillman
- 4) Date well plugging began: 8/10/2021 Date well plugging concluded: 8/10/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 13.51 sec  
Longitude: -103 deg, 43 min, 18.62 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 30 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):



- For each interval plugged, describe within the following columns:**

| MULTIPLY    |   | BY     | AND OBTAIN |
|-------------|---|--------|------------|
| cubic feet  | x | 7.4805 | = gallons  |
| cubic yards | x | 201.97 | = gallons  |

I, Shawn Cain, say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

11/20/21  
Date



# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER


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|  |  |                           |  |   |   |   |                                |
|--|--|---------------------------|--|---|---|---|--------------------------------|
| 1. GENERAL AND WELL LOCATION   | OSE POD NO. (WELL NO.)<br>POD 29   |                           | WELL TAG ID NO.<br>SB-27               |   | OSE FILE NO(S).<br>C-4144                         |   |                                |
|  | WELL OWNER NAME(S)<br>EOG Resources  |                           |  |   | PHONE (OPTIONAL)<br>432-848-9146                  |   |                                |
|  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive   |                           |  |   | CITY<br>Midland                                   | STATE<br>Texas                                    |                                |
|  |  |                           |  |   | ZIP<br>79706                                      |   |                                |
|  | WELL LOCATION (FROM GPS)   | DEGREES<br>LATITUDE<br>32 | MINUTES<br>24                          | SECONDS<br>12.90  | N   | * ACCURACY REQUIRED: ONE TENTH OF A SECOND        |                                |
|  | LONGITUDE<br>-103  | 43                        | 18.85                                  | W   | * DATUM REQUIRED: WGS 84                          |   |                                |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180 |  |                           |  |   |   |   |                                |
| 2. DRILLING & CASING INFORMATION   | LICENSE NO.<br>1664  |                           | NAME OF LICENSED DRILLER<br>Shawn Cain |   |   | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling |                                |
|  | DRILLING STARTED<br>7/26/21  | DRILLING ENDED<br>7/26/21 | DEPTH OF COMPLETED WELL (FT)<br>NA     | BORE HOLE DEPTH (FT)<br>20  | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA          |   |                                |
|  | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)   |                           |  |   | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA   |   |                                |
|  | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:   |                           |  |   |   |   |                                |
|  | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Roto Sonic |                           |  |   |   |   |                                |
|  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE DIAM (inches)                | CASING MATERIAL AND/OR GRADE<br>(include each casing string, and note sections of screen) | CASING CONNECTION TYPE<br>(add coupling diameter) | CASING INSIDE DIAM. (inches)                      | CASING WALL THICKNESS (inches) |
|  |  |                           |  |   |   |   |                                |
|  |  |                           |  |   |   |   |                                |
|  |  |                           |  |   |   |   |                                |
|  |  |                           |  |   |   |   |                                |
| 3. ANNULAR MATERIAL  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE DIAM. (inches)               | LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL                         | AMOUNT (cubic feet)                               | METHOD OF PLACEMENT                               |                                |
|  | 0 20   |                           | 6                                      | Cement with 5% Bentonite  | 4.5   | Trimie Pumped                                     |                                |
|  |  |                           |  |   |   |   |                                |
|  |  |                           |  |   |   |   |                                |
|  |  |                           |  |   |   |   |                                |
|  |  |                           |  |   |   |   |                                |

FOR OSE INTERNAL USE

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|                                     | DEPTH (feet bgl)  |   | THICKNESS<br>(feet) | COLOR AND TYPE OF MATERIAL ENCOUNTERED -<br>INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES<br>(attach supplemental sheets to fully describe all units) | WATER BEARING?<br>(YES / NO) | ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)  |
|-------------------------------------|---|---|---------------------|--|------------------------------|--|
|                                     | FROM  | TO  |                     |  |                              |  |
| <b>4. HYDROGEOLOGIC LOG OF WELL</b> | 0   | 15  | 15                  | Fine Silty Sand Brown  | Y    ✓ N                     |  |
|                                     | 15  | 20  | 5                   | Caliche  | Y    ✓ N                     |  |
|                                     |   |   |                     |  | Y    N                       |  |
|                                     |   |   |                     |  | Y    N                       |  |
|                                     |   |   |                     |  | Y    N                       |  |
|                                     |   |   |                     |  | Y    N                       |  |
|                                     |   |   |                     |  | Y    N                       |  |
|                                     |   |   |                     |  | Y    N                       |  |
|                                     |   |   |                     |  | Y    N                       |  |
|                                     |   |   |                     |  | Y    N                       |  |
|                                     |   |   |                     |  | Y    N                       |  |
|                                     |   |   |                     |  | Y    N                       |  |
|                                     |   |   |                     |  | Y    N                       |  |
|                                     |   |   |                     |  | Y    N                       |  |
|                                     |   |   |                     |  | Y    N                       |  |
|                                     |   |   |                     |  | Y    N                       |  |
|                                     |   |   |                     |  | Y    N                       |  |
|                                     |   |   |                     |  | Y    N                       |  |
|                                     |   |   |                     |  | Y    N                       |  |
|                                     | METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:<br><input type="checkbox"/> PUMP <input type="checkbox"/> AIR LIFT <input type="checkbox"/> BAILER <input type="checkbox"/> OTHER – SPECIFY:   |   |                     |  |                              | TOTAL ESTIMATED WELL YIELD (gpm):         0.00 |
| <b>5. TEST; RIG SUPERVISION</b>     | WELL TEST   | TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD. |                     |  |                              |  |
|                                     | MISCELLANEOUS INFORMATION:  |   |                     |  |                              |  |
|                                     | PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:<br>Cliff Hillman  |   |                     |  |                              |  |
| <b>6. SIGNATURE</b>                 | BY SIGNING BELOW, I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED WELL. I ALSO CERTIFY THAT THE WELL TAG, IF REQUIRED, HAS BEEN INSTALLED AND THAT THIS WELL RECORD WILL ALSO BE FILED WITH THE PERMIT HOLDER WITHIN 30 DAYS AFTER THE COMPLETION OF WELL DRILLING.<br><br><div style="display: flex; justify-content: space-between;">  <span>Shawn Cain</span> <span>11/20/21</span> </div> <hr/> <div style="display: flex; justify-content: space-between;"> <span>SIGNATURE OF DRILLER / PRINT SIGNEE NAME</span> <span>DATE</span> </div> |   |                     |  |                              |  |

|                      |         |  |             |
|----------------------|---------|--|-------------|
| FOR USE INTERNAL USE |         | WR-20 WELL RECORD & LOG (Version 04/30/2019) |             |
| FILE NO.             | POD NO. | TRN NO.                                      |             |
| LOCATION             |         | WELL TAG ID NO.                              | PAGE 2 OF 2 |



# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: SB-27

Well owner: EOG Resources

Phone No.: 432-848-9146

Mailing address: 5509 Champions Drive

City: Midland

State: Texas

Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Cliff Hillman
- 4) Date well plugging began: 7/26/2021 Date well plugging concluded: 7/26/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 12.90 sec  
Longitude: -103 deg, 43 min, 18.85 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 20 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

- For each interval plugged, describe within the following columns:**

| MULTIPLY    |   | BY     | AND OBTAIN |         |
|-------------|---|--------|------------|---------|
| cubic feet  | x | 7.4805 | =          | gallons |
| cubic yards | x | 201.97 | =          | gallons |

I, Shawn Cain, say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

11/20/21  
Date





# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

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|  |  |                           |  |   |   |   |                                      |                          |
|--|--|---------------------------|--|---|---|---|--------------------------------------|--------------------------|
| 1. GENERAL AND WELL LOCATION   | OSE POD NO. (WELL NO.)<br>POD 29   |                           | WELL TAG ID NO.<br>SB-27A              |   | OSE FILE NO(S).<br>C-4144                               |   |                                      |                          |
|  | WELL OWNER NAME(S)<br>EOG Resources  |                           |  |   | PHONE (OPTIONAL)<br>432-848-9146                        |   |                                      |                          |
|  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive   |                           |  |   | CITY<br>Midland   | STATE<br>Texas                                    | ZIP<br>79706                         |                          |
|  | WELL LOCATION<br>(FROM GPS)  | DEGREES<br>LATITUDE<br>32 | MINUTES<br>24                          | SECONDS<br>12.57<br>N   | * ACCURACY REQUIRED: ONE TENTH OF A SECOND              |   |                                      |                          |
|  |  | LONGITUDE<br>-103         | 43                                     | 18.87<br>W  | * DATUM REQUIRED: WGS 84                                |   |                                      |                          |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180 |  |                           |  |   |   |   |                                      |                          |
| 2. DRILLING & CASING INFORMATION   | LICENSE NO.<br>1664  |                           | NAME OF LICENSED DRILLER<br>Shawn Cain |   |   | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling |                                      |                          |
|  | DRILLING STARTED<br>8/12/21  | DRILLING ENDED<br>8/12/21 | DEPTH OF COMPLETED WELL (FT)<br>NA     |   | BORE HOLE DEPTH (FT)<br>20                              | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA          |                                      |                          |
|  | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)   |                           |  |   |   | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA   |                                      |                          |
|  | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:   |                           |  |   |   |   |                                      |                          |
|  | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Roto Sonic |                           |  |   |   |   |                                      |                          |
|  | DEPTH (feet bgl)   |                           | BORE HOLE<br>DIAM.<br>(inches)         | CASING MATERIAL AND/OR<br>GRADE<br>(include each casing string, and<br>note sections of screen) | CASING<br>CONNECTION<br>TYPE<br>(add coupling diameter) | CASING<br>INSIDE DIAM.<br>(inches)                | CASING WALL<br>THICKNESS<br>(inches) | SLOT<br>SIZE<br>(inches) |
|  | FROM   | TO                        |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
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|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
| 3. ANNULAR MATERIAL  | DEPTH (feet bgl)   |                           | BORE HOLE<br>DIAM. (inches)            | LIST ANNULAR SEAL MATERIAL AND<br>GRAVEL PACK SIZE-RANGE BY INTERVAL                            | AMOUNT<br>(cubic feet)                                  | METHOD OF<br>PLACEMENT                            |                                      |                          |
|  | FROM   | TO                        |  |   |   |   |                                      |                          |
|  | 0  | 20                        | 6                                      | Cement with 5% Bentonite  | 4.5   | Tremie Pumped                                     |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
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FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 04/30/19)

|          |                 |             |
|----------|-----------------|-------------|
| FILE NO. | POD NO.         | TRN NO.     |
| LOCATION | WELL TAG ID NO. | PAGE 1 OF 2 |

|                      |                 |  |             |
|----------------------|-----------------|--|-------------|
| FOR USE INTERNAL USE |                 | WR-20 WELL RECORD & LOG (Version 04/30/2019) |             |
| FILE NO.             | POD NO.         | TRN NO.                                      |             |
| LOCATION             | WELL TAG ID NO. |  | PAGE 2 OF 2 |



# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: SB-27A

Well owner: EOG Resources

Phone No.: 432-848-9146

Mailing address: 5509 Champions Drive

City: Midland

State: Texas

Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s):  
Cliff Hillman
- 4) Date well plugging began: 8/12/2021 Date well plugging concluded: 8/12/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 12.57 sec  
Longitude: -103 deg, 43 min, 18.87 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 20 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

- For each interval plugged, describe within the following columns:**

| MULTIPLY    |   | BY     | AND OBTAIN |
|-------------|---|--------|------------|
| cubic feet  | x | 7.4805 | = gallons  |
| cubic yards | x | 201.97 | = gallons  |

I, Shawn Cain , say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

11/20/21  
Date



# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

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|  |  |                           |  |   |   |   |                                      |                          |
|--|--|---------------------------|--|---|---|---|--------------------------------------|--------------------------|
| 1. GENERAL AND WELL LOCATION   | OSE POD NO. (WELL NO.)<br>POD 30   |                           | WELL TAG ID NO.<br>SB-28               |   | OSE FILE NO(S).<br>C-4144                               |   |                                      |                          |
|  | WELL OWNER NAME(S)<br>EOG Resources  |                           |  |   | PHONE (OPTIONAL)<br>432-848-9146                        |   |                                      |                          |
|  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive   |                           |  |   | CITY<br>Midland   | STATE<br>Texas                                    | ZIP<br>79706                         |                          |
|  | WELL LOCATION<br>(FROM GPS)  | DEGREES<br>LATITUDE<br>32 | MINUTES<br>24                          | SECONDS<br>13.22<br>N   | * ACCURACY REQUIRED: ONE TENTH OF A SECOND              |   |                                      |                          |
|  |  | LONGITUDE<br>-103         | 43                                     | 18.11<br>W  | * DATUM REQUIRED: WGS 84                                |   |                                      |                          |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180 |  |                           |  |   |   |   |                                      |                          |
| 2. DRILLING & CASING INFORMATION   | LICENSE NO.<br>1664  |                           | NAME OF LICENSED DRILLER<br>Shawn Cain |   |   | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling |                                      |                          |
|  | DRILLING STARTED<br>8/10/21  | DRILLING ENDED<br>8/10/21 | DEPTH OF COMPLETED WELL (FT)<br>NA     |   | BORE HOLE DEPTH (FT)<br>45                              | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA          |                                      |                          |
|  | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)   |                           |  |   |   | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA   |                                      |                          |
|  | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:   |                           |  |   |   |   |                                      |                          |
|  | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Roto Sonic |                           |  |   |   |   |                                      |                          |
|  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM.<br>(inches)         | CASING MATERIAL AND/OR<br>GRADE<br>(include each casing string, and<br>note sections of screen) | CASING<br>CONNECTION<br>TYPE<br>(add coupling diameter) | CASING<br>INSIDE DIAM.<br>(inches)                | CASING WALL<br>THICKNESS<br>(inches) | SLOT<br>SIZE<br>(inches) |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
| 3. ANNULAR MATERIAL  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM. (inches)            | LIST ANNULAR SEAL MATERIAL AND<br>GRAVEL PACK SIZE-RANGE BY INTERVAL                            |   | AMOUNT<br>(cubic feet)                            | METHOD OF<br>PLACEMENT               |                          |
|  | 0  | 45                        | 6                                      | Cement with 5% Bentonite  |   | 10  | Tremie Pumped                        |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 04/30/19)

|          |                 |             |
|----------|-----------------|-------------|
| FILE NO. | POD NO.         | TRN NO.     |
| LOCATION | WELL TAG ID NO. | PAGE 1 OF 2 |



|                      |                 |  |             |
|----------------------|-----------------|--|-------------|
| FOR USE INTERNAL USE |                 | WR-20 WELL RECORD & LOG (Version 04/30/2019) |             |
| FILE NO.             | POD NO.         | TRN NO.                                      |             |
| LOCATION             | WELL TAG ID NO. |  | PAGE 2 OF 2 |



# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: SB-28

Well owner: EOG Resources

Phone No.: 432-848-9146

Mailing address: 5509 Champions Drive

City: Midland

State: Texas

Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Cliff Hillman
- 4) Date well plugging began: 8/10/2021 Date well plugging concluded: 8/10/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 13.22 sec  
Longitude: -103 deg, 43 min, 18.11 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 45 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

- For each interval plugged, describe within the following columns:**

| MULTIPLY    |   | BY     | AND OBTAIN |         |
|-------------|---|--------|------------|---------|
| cubic feet  | x | 7.4805 | =          | gallons |
| cubic yards | x | 201.97 | =          | gallons |

I, Shawn Cain, say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

11/20/21  
Date



# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

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|  |   |          |                                 |         |   |  |                     |
|--|---|----------|---------------------------------|---------|---|--|---------------------|
| <b>1. GENERAL AND WELL LOCATION</b>  | OSE POD NO. (WELL NO.)<br><b>POD 31</b>                   |          | WELL TAG ID NO.<br><b>SB-29</b> |         | OSE FILE NO(S).<br><b>C-4144</b>        |  |                     |
|  | WELL OWNER NAME(S)<br><b>EOG Resources</b>                |          |                                 |         | PHONE (OPTIONAL)<br><b>432-848-9146</b> |  |                     |
|  | WELL OWNER MAILING ADDRESS<br><b>5509 Champions Drive</b> |          |                                 |         | CITY<br><b>Midland</b>                  | STATE<br><b>Texas</b>  | ZIP<br><b>79706</b> |
|  | WELL LOCATION<br>(FROM GPS)                               | DEGREES  |                                 | MINUTES | SECONDS                                 | * ACCURACY REQUIRED: ONE TENTH OF A SECOND<br>* DATUM REQUIRED: WGS 84 |                     |
|  |   | LATITUDE |                                 | 24      | 14.40                                   |  |                     |
|  | LONGITUDE   |          | -103                            | 43      | 17.42                                   | W  |                     |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br><b>Aproximately 10.5 south of US Highway 62/180</b> |   |          |                                 |         |   |  |                     |

|   |   |                                  |   |   |   |  |                                      |                          |
|---|---|----------------------------------|---|---|---|--|--------------------------------------|--------------------------|
| <b>2. DRILLING &amp; CASING INFORMATION</b> | LICENSE NO.<br><b>1664</b>  |                                  | NAME OF LICENSED DRILLER<br><b>Shawn Cain</b> |   |   | NAME OF WELL DRILLING COMPANY<br><b>Cascade Drilling</b> |                                      |                          |
|   | DRILLING STARTED<br><b>8/10/21</b>  | DRILLING ENDED<br><b>8/10/21</b> | DEPTH OF COMPLETED WELL (FT)<br><b>NA</b>     |   | BORE HOLE DEPTH (FT)<br><b>30</b>                       | DEPTH WATER FIRST ENCOUNTERED (FT)<br><b>NA</b>          |                                      |                          |
|   | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)  |                                  |   |   |   | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br><b>NA</b>   |                                      |                          |
|   | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD    ADDITIVES - SPECIFY:   |                                  |   |   |   |  |                                      |                          |
|   | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: <b>Roto Sonic</b> |                                  |   |   |   |  |                                      |                          |
|   | DEPTH (feet bgl)  |                                  | BORE HOLE<br>DIAM.<br>(inches)                | CASING MATERIAL AND/OR<br>GRADE<br>(include each casing string, and<br>note sections of screen) | CASING<br>CONNECTION<br>TYPE<br>(add coupling diameter) | CASING<br>INSIDE DIAM.<br>(inches)                       | CASING WALL<br>THICKNESS<br>(inches) | SLOT<br>SIZE<br>(inches) |
|   | FROM  | TO                               |   |   |   |  |                                      |                          |
|   |   |                                  |   |   |   |  |                                      |                          |
|   |   |                                  |   |   |   |  |                                      |                          |
|   |   |                                  |   |   |   |  |                                      |                          |
|   |   |                                  |   |   |   |  |                                      |                          |
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|   |   |                                  |   |   |   |  |                                      |                          |


  

|                            |                  |    |                             |  |                        |                        |
|----------------------------|------------------|----|-----------------------------|--|------------------------|------------------------|
| <b>3. ANNULAR MATERIAL</b> | DEPTH (feet bgl) |    | BORE HOLE<br>DIAM. (inches) | LIST ANNULAR SEAL MATERIAL AND<br>GRAVEL PACK SIZE-RANGE BY INTERVAL | AMOUNT<br>(cubic feet) | METHOD OF<br>PLACEMENT |
|                            | FROM             | TO |                             |  |                        |                        |
|                            | 0                | 30 | 6                           | Cement with 5% Bentonite   | 6.5                    | Tremie Pumped          |
|                            |                  |    |                             |  |                        |                        |
|                            |                  |    |                             |  |                        |                        |
|                            |                  |    |                             |  |                        |                        |
|                            |                  |    |                             |  |                        |                        |

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 04/30/19)

|          |  |                 |             |
|----------|--|-----------------|-------------|
| FILE NO. |  | POD NO.         | TRN NO.     |
| LOCATION |  | WELL TAG ID NO. | PAGE 1 OF 2 |

| 4. HYDROGEOLOGIC LOG OF WELL  | DEPTH (feet bgl)   |    | THICKNESS<br>(feet) | COLOR AND TYPE OF MATERIAL ENCOUNTERED -<br>INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES<br>(attach supplemental sheets to fully describe all units) | WATER<br>BEARING?<br>(YES / NO)      | ESTIMATED<br>YIELD FOR<br>WATER-<br>BEARING<br>ZONES (gpm) |
|---|--|----|---------------------|--|--------------------------------------|--|
|   | FROM   | TO |                     |  |                                      |  |
|   | 0  | 4  | 4                   | Fine Silty Sand Brown  | Y    ✓ N                             |  |
|   | 4  | 8  | 4                   | Caliche  | Y    ✓ N                             |  |
|   | 8  | 30 | 22                  | Medium Sandstone Brown   | Y    ✓ N                             |  |
|   |  |    |                     |  | Y    N                               |  |
|   |  |    |                     |  | Y    N                               |  |
|   |  |    |                     |  | Y    N                               |  |
|   |  |    |                     |  | Y    N                               |  |
|   |  |    |                     |  | Y    N                               |  |
|   |  |    |                     |  | Y    N                               |  |
|   |  |    |                     |  | Y    N                               |  |
|   |  |    |                     |  | Y    N                               |  |
|   |  |    |                     |  | Y    N                               |  |
|   |  |    |                     |  | Y    N                               |  |
|   |  |    |                     |  | Y    N                               |  |
|   |  |    |                     |  | Y    N                               |  |
|   |  |    |                     |  | Y    N                               |  |
|   |  |    |                     |  | Y    N                               |  |
|   |  |    |                     |  | Y    N                               |  |
|   |  |    |                     |  | Y    N                               |  |
|   |  |    |                     |  | Y    N                               |  |
| METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:  |  |    |                     |  | TOTAL ESTIMATED<br>WELL YIELD (gpm): |  |
| <input type="checkbox"/> PUMP <input type="checkbox"/> AIR LIFT <input type="checkbox"/> BAILER <input type="checkbox"/> OTHER - SPECIFY: |  |    |                     |  | 0.00                                 |  |
| 5. TEST; RIG SUPERVISION  | WELL TEST    TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.   |    |                     |  |                                      |  |
|   | MISCELLANEOUS INFORMATION:   |    |                     |  |                                      |  |
| PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:<br>Cliff Hillman      |  |    |                     |  |                                      |  |
| 6. SIGNATURE  | BY SIGNING BELOW, I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED WELL. I ALSO CERTIFY THAT THE WELL TAG, IF REQUIRED, HAS BEEN INSTALLED AND THAT THIS WELL RECORD WILL ALSO BE FILED WITH THE PERMIT HOLDER WITHIN 30 DAYS AFTER THE COMPLETION OF WELL DRILLING. |    |                     |  |                                      |  |
|   |  Shawn Cain   |    |                     |  | 11/20/21                             |  |
|   | SIGNATURE OF DRILLER / PRINT SIGNEE NAME   |    |                     |  | DATE                                 |  |

FOR USE INTERNAL USE

WR-20 WELL RECORD &amp; LOG (Version 04/30/2019)

|          |                 |             |
|----------|-----------------|-------------|
| FILE NO. | POD NO.         | TRN NO.     |
| LOCATION | WELL TAG ID NO. | PAGE 2 OF 2 |





# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: SB-29

Well owner: EOG Resources

Phone No.: 432-848-9146

Mailing address: 5509 Champions Drive

City: Midland

State: Texas

Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s):  
Cliff Hillman
- 4) Date well plugging began: 8/10/2021 Date well plugging concluded: 8/10/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 14.40 sec  
Longitude: -103 deg, 43 min, 17.42 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 30 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

- For each interval plugged, describe within the following columns:**

| MULTIPLY    |   | BY     | AND OBTAIN |
|-------------|---|--------|------------|
| cubic feet  | x | 7.4805 | = gallons  |
| cubic yards | x | 201.97 | = gallons  |

I, Shawn Cain, say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

11/20/21  
Date



# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

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|  |  |                           |  |   |   |   |                                      |                          |
|--|--|---------------------------|--|---|---|---|--------------------------------------|--------------------------|
| 1. GENERAL AND WELL LOCATION   | OSE POD NO. (WELL NO.)<br>POD 32   |                           | WELL TAG ID NO.<br>SB-30               |   | OSE FILE NO(S)<br>C-4144                                |   |                                      |                          |
|  | WELL OWNER NAME(S)<br>EOG Resources  |                           |  |   | PHONE (OPTIONAL)<br>432-848-9146                        |   |                                      |                          |
|  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive   |                           |  |   | CITY<br>Midland   | STATE<br>Texas                                    | ZIP<br>79706                         |                          |
|  | WELL LOCATION (FROM GPS)   | DEGREES<br>LATITUDE<br>32 | MINUTES<br>24                          | SECONDS<br>12.85 N  | * ACCURACY REQUIRED: ONE TENTH OF A SECOND              |   |                                      |                          |
|  |  | LONGITUDE<br>-103         | 43                                     | 16.97 W   | * DATUM REQUIRED: WGS 84                                |   |                                      |                          |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180 |  |                           |  |   |   |   |                                      |                          |
| 2. DRILLING & CASING INFORMATION   | LICENSE NO.<br>1664  |                           | NAME OF LICENSED DRILLER<br>Shawn Cain |   |   | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling |                                      |                          |
|  | DRILLING STARTED<br>8/9/21   | DRILLING ENDED<br>8/9/21  | DEPTH OF COMPLETED WELL (FT)<br>NA     |   | BORE HOLE DEPTH (FT)<br>30                              | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA          |                                      |                          |
|  | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)   |                           |  |   |   | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA   |                                      |                          |
|  | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:   |                           |  |   |   |   |                                      |                          |
|  | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Roto Sonic |                           |  |   |   |   |                                      |                          |
|  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM. (inches)            | CASING MATERIAL AND/OR<br>GRADE<br>(include each casing string, and<br>note sections of screen) | CASING<br>CONNECTION<br>TYPE<br>(add coupling diameter) | CASING<br>INSIDE DIAM.<br>(inches)                | CASING WALL<br>THICKNESS<br>(inches) | SLOT<br>SIZE<br>(inches) |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
| 3. ANNULAR MATERIAL  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM. (inches)            | LIST ANNULAR SEAL MATERIAL AND<br>GRAVEL PACK SIZE-RANGE BY INTERVAL                            | AMOUNT<br>(cubic feet)                                  | METHOD OF<br>PLACEMENT                            |                                      |                          |
|  | 0  | 30                        | 6                                      | Cement with 5% Bentonite  | 6.5   | Tremie Pumped                                     |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
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FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 04/30/19)

|          |                 |             |
|----------|-----------------|-------------|
| FILE NO. | POD NO.         | TRN NO.     |
| LOCATION | WELL TAG ID NO. | PAGE 1 OF 2 |

|                      |         |  |             |
|----------------------|---------|--|-------------|
| FOR OSE INTERNAL USE |         | WR-20 WELL RECORD & LOG (Version 04/30/2019) |             |
| FILE NO.             | POD NO. | TRN NO.                                      |             |
| LOCATION             |         | WELL TAG ID NO.                              | PAGE 2 OF 2 |



# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: SB-30

Well owner: EOG Resources

Phone No.: 432-848-9146

Mailing address: 5509 Champions Drive

City: Midland

State: Texas

Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Cliff Hillman
- 4) Date well plugging began: 8/9/2021 Date well plugging concluded: 8/9/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 12.85 sec  
Longitude: -103 deg, 43 min, 16.97 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 30 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):



- For each interval plugged, describe within the following columns:**

| MULTIPLY    |   | BY     | AND OBTAIN |
|-------------|---|--------|------------|
| cubic feet  | x | 7 4806 | = gallons  |
| cubic yards | x | 201.97 | = gallons  |

I, Shawn Cain, say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Signature of Well Driller

Date \_\_\_\_\_



# WELL RECORD & LOG

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|  |  |                           |  |   |  |   |   |                                      |                          |
|--|--|---------------------------|--|---|--|---|---|--------------------------------------|--------------------------|
| 1. GENERAL AND WELL LOCATION   | OSE POD NO. (WELL NO.)<br>POD 33   |                           | WELL TAG ID NO.<br>SB-31               |   | OSE FILE NO(S).<br>C-4144  |   |   |                                      |                          |
|  | WELL OWNER NAME(S)<br>EOG Resources  |                           |  |   | PHONE (OPTIONAL)<br>432-848-9146                                       |   |   |                                      |                          |
|  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive   |                           |  |   | CITY<br>Midland  | STATE<br>Texas  | ZIP<br>79706                                    |                                      |                          |
|  | WELL LOCATION (FROM GPS)   | DEGREES<br>LATITUDE<br>32 | MINUTES<br>24                          | SECONDS<br>13.72<br>N   | • ACCURACY REQUIRED: ONE TENTH OF A SECOND<br>• DATUM REQUIRED: WGS 84 |   |   |                                      |                          |
|  |  | LONGITUDE<br>-103         | 43                                     | 15.44<br>W  |  |   |   |                                      |                          |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180 |  |                           |  |   |  |   |   |                                      |                          |
| 2. DRILLING & CASING INFORMATION   | LICENSE NO.<br>1664  |                           | NAME OF LICENSED DRILLER<br>Shawn Cain |   |  | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling       |   |                                      |                          |
|  | DRILLING STARTED<br>8/9/21   |                           | DRILLING ENDED<br>8/9/21               |   | DEPTH OF COMPLETED WELL (FT)<br>NA                                     | BORE HOLE DEPTH (FT)<br>30                              | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA        |                                      |                          |
|  | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)   |                           |  |   |  |   | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA |                                      |                          |
|  | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:   |                           |  |   |  |   |   |                                      |                          |
|  | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Roto Sonic |                           |  |   |  |   |   |                                      |                          |
|  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM.<br>(inches)         | CASING MATERIAL AND/OR<br>GRADE<br>(include each casing string, and<br>note sections of screen) |  | CASING<br>CONNECTION<br>TYPE<br>(add coupling diameter) | CASING<br>INSIDE DIAM.<br>(inches)              | CASING WALL<br>THICKNESS<br>(inches) | SLOT<br>SIZE<br>(inches) |
|  |  |                           |  |   |  |   |   |                                      |                          |
|  |  |                           |  |   |  |   |   |                                      |                          |
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|  |  |                           |  |   |  |   |   |                                      |                          |
|  |  |                           |  |   |  |   |   |                                      |                          |
| 3. ANNULAR MATERIAL  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM. (inches)            | LIST ANNULAR SEAL MATERIAL AND<br>GRAVEL PACK SIZE-RANGE BY INTERVAL                            |  | AMOUNT<br>(cubic feet)                                  | METHOD OF<br>PLACEMENT                          |                                      |                          |
|  | 0 30   |                           | 6                                      | Cement with 5% Bentonite  |  | 6.5   | Tremie Pumped                                   |                                      |                          |
|  |  |                           |  |   |  |   |   |                                      |                          |
|  |  |                           |  |   |  |   |   |                                      |                          |
|  |  |                           |  |   |  |   |   |                                      |                          |
|  |  |                           |  |   |  |   |   |                                      |                          |
|  |  |                           |  |   |  |   |   |                                      |                          |

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 04/30/19)

|          |                 |             |
|----------|-----------------|-------------|
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| LOCATION | WELL TAG ID NO. | PAGE 1 OF 2 |

|                      |         |  |             |
|----------------------|---------|--|-------------|
| FOR USE INTERNAL USE |         | WR-20 WELL RECORD & LOG (Version 04/30/2019) |             |
| FILE NO.             | POD NO. | TRN NO.                                      |             |
| LOCATION             |         | WELL TAG ID NO.                              | PAGE 2 OF 2 |



# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: SB-31

Well owner: EOG Resources

Phone No.: 432-848-9146

Mailing address: 5509 Champions Drive

City: Midland

State: Texas

Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Cliff Hillman
- 4) Date well plugging began: 8/9/2021 Date well plugging concluded: 8/9/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 13.72 sec  
Longitude: -103 deg, 43 min, 15.44 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 30 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

**For each interval plugged, describe within the following columns:**

[illegible]

| MULTIPLY    |   | BY     | AND OBTAIN |         |
|-------------|---|--------|------------|---------|
| cubic feet  | x | 7.4805 | =          | gallons |
| cubic yards | x | 201.97 | =          | gallons |

**III. SIGNATURE:**

I, Shawn Cain, say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Sh C.  
Signature of Well Driller

11/20/21  
Date





# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER


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|  |  |                           |  |   |   |   |                                      |                          |
|--|--|---------------------------|--|---|---|---|--------------------------------------|--------------------------|
| 1. GENERAL AND WELL LOCATION   | OSE POD NO. (WELL NO.)<br>POD 34   |                           | WELL TAG ID NO.<br>SB-32               |   | OSE FILE NO(S).<br>C-4144                               |   |                                      |                          |
|  | WELL OWNER NAME(S)<br>EOG Resources  |                           |  |   | PHONE (OPTIONAL)<br>432-848-9146                        |   |                                      |                          |
|  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive   |                           |  |   | CITY<br>Midland   | STATE<br>Texas                                    |                                      |                          |
|  |  |                           |  |   | ZIP<br>79706  |   |                                      |                          |
|  | WELL LOCATION (FROM GPS)   | DEGREES<br>LATITUDE<br>32 | MINUTES<br>24                          | SECONDS<br>13.86  | N   | * ACCURACY REQUIRED: ONE TENTH OF A SECOND        |                                      |                          |
|  | LONGITUDE<br>-103  | 43                        | 14.75                                  | W   | * DATUM REQUIRED: WGS 84                                |   |                                      |                          |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180 |  |                           |  |   |   |   |                                      |                          |
| 2. DRILLING & CASING INFORMATION   | LICENSE NO.<br>1664  |                           | NAME OF LICENSED DRILLER<br>Shawn Cain |   |   | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling |                                      |                          |
|  | DRILLING STARTED<br>7/27/21  | DRILLING ENDED<br>7/27/21 | DEPTH OF COMPLETED WELL (FT)<br>NA     |   | BORE HOLE DEPTH (FT)<br>20                              | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA          |                                      |                          |
|  | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)   |                           |  |   |   | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA   |                                      |                          |
|  | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:   |                           |  |   |   |   |                                      |                          |
|  | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Roto Sonic |                           |  |   |   |   |                                      |                          |
|  | DEPTH (feet bgl)   |                           | BORE HOLE<br>DIAM.<br>(inches)         | CASING MATERIAL AND/OR<br>GRADE<br>(include each casing string, and<br>note sections of screen) | CASING<br>CONNECTION<br>TYPE<br>(add coupling diameter) | CASING<br>INSIDE DIAM.<br>(inches)                | CASING WALL<br>THICKNESS<br>(inches) | SLOT<br>SIZE<br>(inches) |
|  | FROM   | TO                        |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
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|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
| 3. ANNULAR MATERIAL  | DEPTH (feet bgl)   |                           | BORE HOLE<br>DIAM. (inches)            | LIST ANNULAR SEAL MATERIAL AND<br>GRAVEL PACK SIZE-RANGE BY INTERVAL                            | AMOUNT<br>(cubic feet)                                  | METHOD OF<br>PLACEMENT                            |                                      |                          |
|  | FROM   | TO                        |  |   |   |   |                                      |                          |
|  | 0  | 20                        | 6                                      | Cement with 5% Bentonite  | 4.5   | Tremie Pumped                                     |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
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FOR OSE INTERNAL USE

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|----------|-----------------|-------------|
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| LOCATION | WELL TAG ID NO. | PAGE 1 OF 2 |

| 4. HYDROGEOLOGIC LOG OF WELL  | DEPTH (feet bgl)   |    | THICKNESS<br>(feet) | COLOR AND TYPE OF MATERIAL ENCOUNTERED -<br>INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES<br>(attach supplemental sheets to fully describe all units) | WATER<br>BEARING?<br>(YES / NO)           | ESTIMATED<br>YIELD FOR<br>WATER-<br>BEARING<br>ZONES (gpm) |
|---|--|----|---------------------|--|---|--|
|   | FROM   | TO |                     |  |   |  |
|   | 0  | 15 | 15                  | Fine Silty Sand Brown  | Y <input checked="" type="checkbox"/> N   |  |
|   | 15   | 20 | 5                   | Caliche  | Y <input checked="" type="checkbox"/> N   |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
| METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:  |  |    |                     |  | TOTAL ESTIMATED<br>WELL YIELD (gpm): 0.00 |  |
| <input type="checkbox"/> PUMP <input type="checkbox"/> AIR LIFT <input type="checkbox"/> BAILER <input type="checkbox"/> OTHER - SPECIFY: |  |    |                     |  |   |  |
| 5. TEST; RIG SUPERVISION  | WELL TEST    TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.   |    |                     |  |   |  |
|   | MISCELLANEOUS INFORMATION:   |    |                     |  |   |  |
| PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:<br>Cliff Hillman      |  |    |                     |  |   |  |
| 6. SIGNATURE  | BY SIGNING BELOW, I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED WELL. I ALSO CERTIFY THAT THE WELL TAG, IF REQUIRED, HAS BEEN INSTALLED AND THAT THIS WELL RECORD WILL ALSO BE FILED WITH THE PERMIT HOLDER WITHIN 30 DAYS AFTER THE COMPLETION OF WELL DRILLING. |    |                     |  |   |  |
|   |  Shawn Cain   |    |                     |  | 11/20/21                                  |  |
|   | SIGNATURE OF DRILLER / PRINT SIGNEE NAME   |    |                     |  | DATE                                      |  |

FOR USE INTERNAL USE

WR-20 WELL RECORD &amp; LOG (Version 04/30/2019)

|          |                 |             |
|----------|-----------------|-------------|
| FILE NO. | POD NO.         | TRN NO.     |
| LOCATION | WELL TAG ID NO. | PAGE 2 OF 2 |



# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: SB-32

Well owner: EOG Resources

Phone No.: 432-848-9146

Mailing address: 5509 Champions Drive

City: Midland

State: Texas

Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s):  
Cliff Hillman
- 4) Date well plugging began: 7/27/2021 Date well plugging concluded: 7/27/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 13.86 sec  
Longitude: -103 deg, 43 min, 14.75 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 20 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

- For each interval plugged, describe within the following columns:**

| MULTIPLY    |   | BY     | AND OBTAIN |
|-------------|---|--------|------------|
| cubic feet  | x | 7.4805 | = gallons  |
| cubic yards | x | 201.97 | = gallons  |

I, Shawn Cain, say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

11/20/21

---

Date



# WELL RECORD & LOG

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|  |  |                           |  |   |   |   |                                      |                          |
|--|--|---------------------------|--|---|---|---|--------------------------------------|--------------------------|
| 1. GENERAL AND WELL LOCATION   | OSE POD NO. (WELL NO.)<br>POD 35   |                           | WELL TAG ID NO.<br>SB-33               |   | OSE FILE NO(S).<br>C-4144                               |   |                                      |                          |
|  | WELL OWNER NAME(S)<br>EOG Resources  |                           |  |   | PHONE (OPTIONAL)<br>432-848-9146                        |   |                                      |                          |
|  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive   |                           |  |   | CITY<br>Midland   | STATE<br>Texas                                    | ZIP<br>79706                         |                          |
|  | WELL LOCATION<br>(FROM GPS)  | DEGREES<br>LATITUDE<br>32 | MINUTES<br>24                          | SECONDS<br>11.77 N  | * ACCURACY REQUIRED: ONE TENTH OF A SECOND              |   |                                      |                          |
|  |  | LONGITUDE<br>-103         | 43                                     | 16.05 W   | * DATUM REQUIRED: WGS 84                                |   |                                      |                          |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180 |  |                           |  |   |   |   |                                      |                          |
| 2. DRILLING & CASING INFORMATION   | LICENSE NO.<br>1664  |                           | NAME OF LICENSED DRILLER<br>Shawn Cain |   |   | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling |                                      |                          |
|  | DRILLING STARTED<br>8/8/21   | DRILLING ENDED<br>8/8/21  | DEPTH OF COMPLETED WELL (FT)<br>NA     |   | BORE HOLE DEPTH (FT)<br>65                              | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA          |                                      |                          |
|  | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)   |                           |  |   |   | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA   |                                      |                          |
|  | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:   |                           |  |   |   |   |                                      |                          |
|  | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Roto Sonic |                           |  |   |   |   |                                      |                          |
|  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM.<br>(inches)         | CASING MATERIAL AND/OR<br>GRADE<br>(include each casing string, and<br>note sections of screen) | CASING<br>CONNECTION<br>TYPE<br>(add coupling diameter) | CASING<br>INSIDE DIAM.<br>(inches)                | CASING WALL<br>THICKNESS<br>(inches) | SLOT<br>SIZE<br>(inches) |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
| 3. ANNULAR MATERIAL  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM. (inches)            | LIST ANNULAR SEAL MATERIAL AND<br>GRAVEL PACK SIZE-RANGE BY INTERVAL                            |   | AMOUNT<br>(cubic feet)                            | METHOD OF<br>PLACEMENT               |                          |
|  | 0  | 65                        | 6                                      | Cement with 5% Bentonite  |   | 10  | Tremie Pumped                        |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 04/30/19)

|          |                 |             |
|----------|-----------------|-------------|
| FILE NO. | POD NO.         | TRN NO.     |
| LOCATION | WELL TAG ID NO. | PAGE 1 OF 2 |

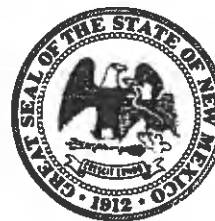


#### 4. HYDROGEOLOGIC LOG OF WELL

|                      |         |  |             |
|----------------------|---------|--|-------------|
| FOR USE INTERNAL USE |         | WR-20 WELL RECORD & LOG (Version 04/30/2019) |             |
| FILE NO.             | POD NO. | TRN NO.                                      |             |
| LOCATION             |         | WELL TAG ID NO.                              | PAGE 2 OF 2 |



# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: SB-33

Well owner: EOG Resources

Phone No.: 432-848-9146

Mailing address: 5509 Champions Drive

City: Midland

State: Texas

Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Cliff Hillman
- 4) Date well plugging began: 8/8/2021 Date well plugging concluded: 8/8/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 11.77 sec  
Longitude: -103 deg, 43 min, 16.05 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 65 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

- For each interval plugged, describe within the following columns:**

| MULTIPLY    |   | BY     | AND OBTAIN |
|-------------|---|--------|------------|
| cubic feet  | x | 7.4805 | = gallons  |
| cubic yards | x | 201.97 | = gallons  |

I, Shawn Cain, say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Date \_\_\_\_\_



# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

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|  |  |                           |  |   |   |   |                                |                    |
|--|--|---------------------------|--|---|---|---|--------------------------------|--------------------|
| 1. GENERAL AND WELL LOCATION   | OSE POD NO. (WELL NO.)<br>POD 36   |                           | WELL TAG ID NO.<br>SB-34               |   | OSE FILE NO(S).<br>C-4144                         |   |                                |                    |
|  | WELL OWNER NAME(S)<br>EOG Resources  |                           |  |   | PHONE (OPTIONAL)<br>432-848-9146                  |   |                                |                    |
|  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive   |                           |  |   | CITY<br>Midland                                   | STATE<br>Texas                                    | ZIP<br>79706                   |                    |
|  | WELL LOCATION (FROM GPS)   | DEGREES<br>LATITUDE<br>32 | MINUTES<br>24                          | SECONDS<br>11.45 N  | * ACCURACY REQUIRED: ONE TENTH OF A SECOND        |   |                                |                    |
|  |  | LONGITUDE<br>-103         | 43                                     | 16.62 W   | * DATUM REQUIRED: WGS 84                          |   |                                |                    |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180 |  |                           |  |   |   |   |                                |                    |
| 2. DRILLING & CASING INFORMATION   | LICENSE NO.<br>1664  |                           | NAME OF LICENSED DRILLER<br>Shawn Cain |   |   | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling |                                |                    |
|  | DRILLING STARTED<br>8/8/21   | DRILLING ENDED<br>8/8/21  | DEPTH OF COMPLETED WELL (FT)<br>NA     |   | BORE HOLE DEPTH (FT)<br>25                        | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA          |                                |                    |
|  | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)   |                           |  |   |   | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA   |                                |                    |
|  | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:   |                           |  |   |   |   |                                |                    |
|  | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Roto Sonic |                           |  |   |   |   |                                |                    |
|  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE DIAM (inches)                | CASING MATERIAL AND/OR GRADE<br>(include each casing string, and note sections of screen) | CASING CONNECTION TYPE<br>(add coupling diameter) | CASING INSIDE DIAM. (inches)                      | CASING WALL THICKNESS (inches) | SLOT SIZE (inches) |
|  |  |                           |  |   |   |   |                                |                    |
|  |  |                           |  |   |   |   |                                |                    |
|  |  |                           |  |   |   |   |                                |                    |
|  |  |                           |  |   |   |   |                                |                    |
|  |  |                           |  |   |   |   |                                |                    |
| 3. ANNULAR MATERIAL  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE DIAM. (inches)               | LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL                         | AMOUNT (cubic feet)                               | METHOD OF PLACEMENT                               |                                |                    |
|  | 0  | 25                        | 6                                      | Cement with 5% Bentonite  | 5.5   | Tremie Pumped                                     |                                |                    |
|  |  |                           |  |   |   |   |                                |                    |
|  |  |                           |  |   |   |   |                                |                    |
|  |  |                           |  |   |   |   |                                |                    |
|  |  |                           |  |   |   |   |                                |                    |

FOR OSE INTERNAL USE

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FOR OSE INTERNAL USE

|          |  |         |                 |
|----------|--|---------|-----------------|
| FILE NO. |  | POD NO. | TRN NO.         |
| LOCATION |  |         | WELL TAG ID NO. |

PAGE 2 OF 2





# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: SB-34

Well owner: EOG Resources

Phone No.: 432-848-9146

Mailing address: 5509 Champions Drive

City: Midland State: Texas Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Cliff Hillman
- 4) Date well plugging began: 8/8/2021 Date well plugging concluded: 8/8/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 11.45 sec  
Longitude: -103 deg, 43 min, 16.62 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 25 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

- For each interval plugged, describe within the following columns:**

### III. SIGNATURE:

11/20/21  
Date



# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER


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|  |  |                           |  |   |   |   |                                      |                          |
|--|--|---------------------------|--|---|---|---|--------------------------------------|--------------------------|
| 1. GENERAL AND WELL LOCATION   | OSE POD NO. (WELL NO.)<br>POD 37   |                           | WELL TAG ID NO.<br>SB-35               |   | OSE FILE NO(S)<br>C-4144                                |   |                                      |                          |
|  | WELL OWNER NAME(S)<br>EOG Resources  |                           |  |   | PHONE (OPTIONAL)<br>432-848-9146                        |   |                                      |                          |
|  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive   |                           |  |   | CITY<br>Midland   | STATE<br>Texas                                    | ZIP<br>79706                         |                          |
|  | WELL LOCATION<br>(FROM GPS)  | DEGREES<br>LATITUDE<br>32 | MINUTES<br>24                          | SECONDS<br>11.77<br>N   | * ACCURACY REQUIRED: ONE TENTH OF A SECOND              |   |                                      |                          |
|  |  | LONGITUDE<br>-103         | 43                                     | 17.71<br>W  | * DATUM REQUIRED: WGS 84                                |   |                                      |                          |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180 |  |                           |  |   |   |   |                                      |                          |
| 2. DRILLING & CASING INFORMATION   | LICENSE NO.<br>1664  |                           | NAME OF LICENSED DRILLER<br>Shawn Cain |   |   | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling |                                      |                          |
|  | DRILLING STARTED<br>8/8/21   | DRILLING ENDED<br>8/18/21 | DEPTH OF COMPLETED WELL (FT)<br>NA     |   | BORE HOLE DEPTH (FT)<br>80                              | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA          |                                      |                          |
|  | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)   |                           |  |   |   | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA   |                                      |                          |
|  | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:   |                           |  |   |   |   |                                      |                          |
|  | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Roto Sonic |                           |  |   |   |   |                                      |                          |
|  | DEPTH (feet bgl)   |                           | BORE HOLE<br>DIAM.<br>(inches)         | CASING MATERIAL AND/OR<br>GRADE<br>(include each casing string, and<br>note sections of screen) | CASING<br>CONNECTION<br>TYPE<br>(add coupling diameter) | CASING<br>INSIDE DIAM.<br>(inches)                | CASING WALL<br>THICKNESS<br>(inches) | SLOT<br>SIZE<br>(inches) |
|  | FROM   | TO                        |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
| 3. ANNULAR MATERIAL  | DEPTH (feet bgl)   |                           | BORE HOLE<br>DIAM. (inches)            | LIST ANNULAR SEAL MATERIAL AND<br>GRAVEL PACK SIZE-RANGE BY INTERVAL                            | AMOUNT<br>(cubic feet)                                  | METHOD OF<br>PLACEMENT                            |                                      |                          |
|  | FROM   | TO                        |  |   |   |   |                                      |                          |
|  | 0  | 80                        | 6                                      | Cement with 5% Bentonite  | 17  | Tremie Pumped                                     |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |

FOR OSE INTERNAL USE

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| FILE NO. | POD NO.         | TRN NO.     |
| LOCATION | WELL TAG ID NO. | PAGE 1 OF 2 |

| 4. HYDROGEOLOGIC LOG OF WELL  | DEPTH (feet bgl)   |   | THICKNESS<br>(feet) | COLOR AND TYPE OF MATERIAL ENCOUNTERED -<br>INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES<br>(attach supplemental sheets to fully describe all units) | WATER<br>BEARING?<br>(YES / NO)           | ESTIMATED<br>YIELD FOR<br>WATER-<br>BEARING<br>ZONES (gpm) |
|---|--|---|---------------------|--|---|--|
|   | FROM   | TO  |                     |  |   |  |
|   | 0  | 6   | 6                   | Fine Silty Sand Brown  | Y ✓ N                                     |  |
|   | 6  | 8   | 2                   | Caliche  | Y ✓ N                                     |  |
|   | 8  | 25  | 17                  | Fine silty sand Brown  | Y ✓ N                                     |  |
|   | 25   | 30  | 5                   | Medium Sandstone   | Y ✓ N                                     |  |
|   | 30   | 35  | 5                   | Fat Clay   | Y ✓ N                                     |  |
|   | 35   | 60  | 25                  | Medium Sandstone   | Y ✓ N                                     |  |
|   | 60   | 70  | 15                  | Fat Clay   | Y ✓ N                                     |  |
|   | 70   | 80  | 10                  | Medium sandstone   | Y ✓ N                                     |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
| METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:  |  |   |                     |  | TOTAL ESTIMATED<br>WELL YIELD (gpm): 0.00 |  |
| <input type="checkbox"/> PUMP <input type="checkbox"/> AIR LIFT <input type="checkbox"/> BAILER <input type="checkbox"/> OTHER - SPECIFY: |  |   |                     |  |   |  |
| 5. TEST; RIG SUPERVISION  | WELL TEST  | TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD. |                     |  |   |  |
|   | MISCELLANEOUS INFORMATION:   |   |                     |  |   |  |
|   | PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:<br>Cliff Hillman   |   |                     |  |   |  |
| 6. SIGNATURE  | BY SIGNING BELOW, I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED WELL. I ALSO CERTIFY THAT THE WELL TAG, IF REQUIRED, HAS BEEN INSTALLED AND THAT THIS WELL RECORD WILL ALSO BE FILED WITH THE PERMIT HOLDER WITHIN 30 DAYS AFTER THE COMPLETION OF WELL DRILLING. |   |                     |  |   |  |
|   | <br>SIGNATURE OF DRILLER / PRINT SIGNEE NAME  |   |                     |  | 11/20/21<br>DATE                          |  |

FOR USE INTERNAL USE

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| LOCATION | WELL TAG ID NO. | PAGE 2 OF 2 |



# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: SB-35

Well owner: EOG Resources

Phone No.: 432-848-9146

Mailing address: 5509 Champions Drive

City: Midland

State: Texas

Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Cliff Hillman
- 4) Date well plugging began: 8/8/2021 Date well plugging concluded: 8/18/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 11.77 sec  
Longitude: -103 deg, 43 min, 17.71 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 80 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):



- For each interval plugged, describe within the following columns:**

| MULTIPLY    |   | BY     | AND OBTAIN |         |
|-------------|---|--------|------------|---------|
| cubic feet  | x | 7.4805 | =          | gallons |
| cubic yards | x | 201.97 | =          | gallons |

I, Shawn Cain, say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

11/20/21  
Date



# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER


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|  |  |                           |  |   |  |   |                                      |
|--|--|---------------------------|--|---|--|---|--------------------------------------|
| 1. GENERAL AND WELL LOCATION   | OSE POD NO. (WELL NO.)<br>POD 38   |                           | WELL TAG ID NO.<br>SB-36               |   | OSE FILE NO(S).<br>C-4144  |   |                                      |
|  | WELL OWNER NAME(S)<br>EOG Resources  |                           |  |   | PHONE (OPTIONAL)<br>432-848-9146                                       |   |                                      |
|  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive   |                           |  |   | CITY<br>Midland  | STATE<br>Texas                                    |                                      |
|  |  |                           |  |   | ZIP<br>79706   |   |                                      |
|  | WELL LOCATION (FROM GPS)   | DEGREES<br>LATITUDE<br>32 | MINUTES<br>24                          | SECONDS<br>11.18<br>N   | * ACCURACY REQUIRED: ONE TENTH OF A SECOND<br>* DATUM REQUIRED: WGS 84 |   |                                      |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180 |  |                           |  |   |  |   |                                      |
| 2. DRILLING & CASING INFORMATION   | LICENSE NO.<br>1664  |                           | NAME OF LICENSED DRILLER<br>Shawn Cain |   |  | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling |                                      |
|  | DRILLING STARTED<br>8/8/21   | DRILLING ENDED<br>8/8/21  | DEPTH OF COMPLETED WELL (FT)<br>NA     |   | BORE HOLE DEPTH (FT)<br>80   | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA          |                                      |
|  | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)   |                           |  |   |  | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA   |                                      |
|  | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:   |                           |  |   |  |   |                                      |
|  | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Roto Sonic |                           |  |   |  |   |                                      |
|  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM.<br>(inches)         | CASING MATERIAL AND/OR<br>GRADE<br>(include each casing string, and<br>note sections of screen) | CASING<br>CONNECTION<br>TYPE<br>(add coupling diameter)                | CASING<br>INSIDE DIAM.<br>(inches)                | CASING WALL<br>THICKNESS<br>(inches) |
|  |  |                           |  |   |  |   |                                      |
|  |  |                           |  |   |  |   |                                      |
|  |  |                           |  |   |  |   |                                      |
|  |  |                           |  |   |  |   |                                      |
| 3. ANNULAR MATERIAL  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM. (inches)            | LIST ANNULAR SEAL MATERIAL AND<br>GRAVEL PACK SIZE-RANGE BY INTERVAL                            | AMOUNT<br>(cubic feet)   | METHOD OF<br>PLACEMENT                            |                                      |
|  | 0 80   |                           | 6                                      | Cement with 5% Bentonite  | 17   | Tremie Pumped                                     |                                      |
|  |  |                           |  |   |  |   |                                      |
|  |  |                           |  |   |  |   |                                      |
|  |  |                           |  |   |  |   |                                      |
|  |  |                           |  |   |  |   |                                      |

FOR OSE INTERNAL USE

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| LOCATION | WELL TAG ID NO. | PAGE 1 OF 2 |

| 4. HYDROGEOLOGIC LOG OF WELL  | DEPTH (feet bgl)   |    | THICKNESS<br>(feet) | COLOR AND TYPE OF MATERIAL ENCOUNTERED -<br>INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES<br>(attach supplemental sheets to fully describe all units) | WATER<br>BEARING?<br>(YES / NO)           | ESTIMATED<br>YIELD FOR<br>WATER-<br>BEARING<br>ZONES (gpm) |
|---|--|----|---------------------|--|---|--|
|   | FROM   | TO |                     |  |   |  |
|   | 0  | 4  | 4                   | Fine Silty Sand Brown  | Y ✓ N                                     |  |
|   | 4  | 8  | 4                   | Caliche  | Y ✓ N                                     |  |
|   | 8  | 25 | 17                  | Fine silty sand Brown  | Y ✓ N                                     |  |
|   | 25   | 30 | 5                   | Medium Sandstone   | Y ✓ N                                     |  |
|   | 30   | 35 | 5                   | Fat Clay   | Y ✓ N                                     |  |
|   | 35   | 50 | 15                  | Medium Sandstone   | Y ✓ N                                     |  |
|   | 50   | 55 | 5                   | Fat Clay   | Y ✓ N                                     |  |
|   | 55   | 60 | 5                   | Medium sandstone   | Y ✓ N                                     |  |
|   | 60   | 70 | 10                  | Fat Clay   | Y ✓ N                                     |  |
|   | 70   | 80 | 10                  | Medium Sandstone   | Y ✓ N                                     |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
|   |  |    |                     |  | Y N                                       |  |
| METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:  |  |    |                     |  | TOTAL ESTIMATED<br>WELL YIELD (gpm): 0.00 |  |
| <input type="checkbox"/> PUMP <input type="checkbox"/> AIR LIFT <input type="checkbox"/> BAILER <input type="checkbox"/> OTHER - SPECIFY: |  |    |                     |  |   |  |
| 5. TEST; RIG SUPERVISION  | WELL TEST    TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.   |    |                     |  |   |  |
|   | MISCELLANEOUS INFORMATION:   |    |                     |  |   |  |
|   | PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:<br>Cliff Hillman   |    |                     |  |   |  |
| 6. SIGNATURE  | BY SIGNING BELOW, I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED WELL. I ALSO CERTIFY THAT THE WELL TAG, IF REQUIRED, HAS BEEN INSTALLED AND THAT THIS WELL RECORD WILL ALSO BE FILED WITH THE PERMIT HOLDER WITHIN 30 DAYS AFTER THE COMPLETION OF WELL DRILLING. |    |                     |  |   |  |
|   | <br>SIGNATURE OF DRILLER / PRINT SIGNEE NAME  |    |                     |  | 11/20/21<br>DATE                          |  |

FOR USE INTERNAL USE

WR-20 WELL RECORD &amp; LOG (Version 04/30/2019)

|          |                 |             |
|----------|-----------------|-------------|
| FILE NO. | POD NO.         | TRN NO.     |
| LOCATION | WELL TAG ID NO. | PAGE 2 OF 2 |



# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: SB-36

Well owner: EOG Resources

Phone No.: 432-848-9146

Mailing address: 5509 Champions Drive

City: Midland

State: Texas

Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s):  
Cliff Hillman
- 4) Date well plugging began: 8/8/2021 Date well plugging concluded: 8/8/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 11.18 sec  
Longitude: -103 deg, 43 min, 17.82 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 80 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

- For each interval plugged, describe within the following columns:**

**III. SIGNATURE:**

Sh C.

11/20/21

Date \_\_\_\_\_





# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER


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|  |  |                           |  |   |   |   |                                      |
|--|--|---------------------------|--|---|---|---|--------------------------------------|
| 1. GENERAL AND WELL LOCATION   | OSE POD NO. (WELL NO.)<br>POD 39   |                           | WELL TAG ID NO.<br>SB-37               |   | OSE FILE NO(S).<br>C-4144                               |   |                                      |
|  | WELL OWNER NAME(S)<br>EOG Resources  |                           |  |   | PHONE (OPTIONAL)<br>432-848-9146                        |   |                                      |
|  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive   |                           |  |   | CITY<br>Midland   | STATE<br>Texas                                    | ZIP<br>79706                         |
|  | WELL LOCATION<br>(FROM GPS)  | DEGREES<br>LATITUDE<br>32 | MINUTES<br>24                          | SECONDS<br>11.17<br>N   | * ACCURACY REQUIRED: ONE TENTH OF A SECOND              |   |                                      |
|  |  | LONGITUDE<br>-103         | 43                                     | 18.73<br>W  | * DATUM REQUIRED: WGS 84                                |   |                                      |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180 |  |                           |  |   |   |   |                                      |
| 2. DRILLING & CASING INFORMATION   | LICENSE NO.<br>1664  |                           | NAME OF LICENSED DRILLER<br>Shawn Cain |   |   | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling |                                      |
|  | DRILLING STARTED<br>8/7/21   | DRILLING ENDED<br>8/7/21  | DEPTH OF COMPLETED WELL (FT)<br>NA     | BORE HOLE DEPTH (FT)<br>65  | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA                |   |                                      |
|  | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)   |                           |  |   | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA         |   |                                      |
|  | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:   |                           |  |   |   |   |                                      |
|  | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Roto Sonic |                           |  |   |   |   |                                      |
|  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM (inches)             | CASING MATERIAL AND/OR<br>GRADE<br>(include each casing string, and<br>note sections of screen) | CASING<br>CONNECTION<br>TYPE<br>(add coupling diameter) | CASING<br>INSIDE DIAM.<br>(inches)                | CASING WALL<br>THICKNESS<br>(inches) |
|  |  |                           |  |   |   |   |                                      |
|  |  |                           |  |   |   |   |                                      |
|  |  |                           |  |   |   |   |                                      |
|  |  |                           |  |   |   |   |                                      |
| 3. ANNULAR MATERIAL  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM. (inches)            | LIST ANNULAR SEAL MATERIAL AND<br>GRAVEL PACK SIZE-RANGE BY INTERVAL                            | AMOUNT<br>(cubic feet)                                  | METHOD OF<br>PLACEMENT                            |                                      |
|  | 0 65   |                           | 6                                      | Cement with 5% Bentonite  | 14  | Tremie Pumped                                     |                                      |
|  |  |                           |  |   |   |   |                                      |
|  |  |                           |  |   |   |   |                                      |
|  |  |                           |  |   |   |   |                                      |
|  |  |                           |  |   |   |   |                                      |
|  |  |                           |  |   |   |   |                                      |

FOR OSE INTERNAL USE

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|          |                 |             |
|----------|-----------------|-------------|
| FILE NO. | POD NO.         | TRN NO.     |
| LOCATION | WELL TAG ID NO. | PAGE 1 OF 2 |

|  |  |           |   |  |                              |                                      |  |      |
|--|--|-----------|---|--|------------------------------|--------------------------------------|--|------|
| 4. HYDROGEOLOGIC LOG OF WELL   | DEPTH (feet bgl)   |           | THICKNESS<br>(feet)   | COLOR AND TYPE OF MATERIAL ENCOUNTERED -<br>INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES<br>(attach supplemental sheets to fully describe all units) | WATER BEARING?<br>(YES / NO) |                                      | ESTIMATED<br>YIELD FOR<br>WATER-<br>BEARING<br>ZONES (gpm) |      |
|  | FROM   | TO        |   |  |                              |                                      |  |      |
|  | 0  | 4         | 4   | Fine Silty Sand Brown  | Y                            | ✓ N                                  |  |      |
|  | 4  | 10        | 6   | Caliche  | Y                            | ✓ N                                  |  |      |
|  | 10   | 30        | 20  | Fine silty sand Brown  | Y                            | ✓ N                                  |  |      |
|  | 30   | 35        | 5   | Fat Clay   | Y                            | ✓ N                                  |  |      |
|  | 35   | 45        | 10  | Medium sandstone   | Y                            | ✓ N                                  |  |      |
|  | 45   | 65        | 20  | Fat Clay   | Y                            | ✓ N                                  |  |      |
|  |  |           |   |  | Y                            | N                                    |  |      |
|  |  |           |   |  | Y                            | N                                    |  |      |
|  |  |           |   |  | Y                            | N                                    |  |      |
|  |  |           |   |  | Y                            | N                                    |  |      |
|  |  |           |   |  | Y                            | N                                    |  |      |
|  |  |           |   |  | Y                            | N                                    |  |      |
|  |  |           |   |  | Y                            | N                                    |  |      |
|  |  |           |   |  | Y                            | N                                    |  |      |
|  |  |           |   |  | Y                            | N                                    |  |      |
|  |  |           |   |  | Y                            | N                                    |  |      |
|  | METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:<br><input type="checkbox"/> PUMP <input type="checkbox"/> AIR LIFT <input type="checkbox"/> BAILER <input type="checkbox"/> OTHER - SPECIFY:  |           |   |  |                              | TOTAL ESTIMATED<br>WELL YIELD (gpm): |  | 0.00 |
|  | 5. TEST; RIG SUPERVISION   | WELL TEST | TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD. |  |                              |                                      |  |      |
| MISCELLANEOUS INFORMATION:   |  |           |   |  |                              |                                      |  |      |
| PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:<br>Cliff Hillman |  |           |   |  |                              |                                      |  |      |
| 6. SIGNATURE   | BY SIGNING BELOW, I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED WELL. I ALSO CERTIFY THAT THE WELL TAG, IF REQUIRED, HAS BEEN INSTALLED AND THAT THIS WELL RECORD WILL ALSO BE FILED WITH THE PERMIT HOLDER WITHIN 30 DAYS AFTER THE COMPLETION OF WELL DRILLING. |           |   |  |                              |                                      |  |      |
|  |   |           |   | Shawn Cain   | 11/20/21                     |                                      |  |      |
|  | SIGNATURE OF DRILLER / PRINT SIGNEE NAME   |           |   |  | DATE                         |                                      |  |      |

|                      |                 |  |  |
|----------------------|-----------------|--|--|
| FOR OSE INTERNAL USE |                 | WR-20 WELL RECORD & LOG (Version 04/30/2019) |  |
| FILE NO.             | POD NO.         | TRN NO.                                      |  |
| LOCATION             | WELL TAG ID NO. | PAGE 2 OF 2                                  |  |



# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: SB-37

Well owner: EOG Resources

Phone No.: 432-848-9146

Mailing address: 5509 Champions Drive

City: Midland

State: Texas

Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s):  
Cliff Hillman
- 4) Date well plugging began: 8/7/2021 Date well plugging concluded: 8/7/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 11.17 sec  
Longitude: -103 deg, 43 min, 18.73 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 65 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

- For each interval plugged, describe within the following columns:**

**III. SIGNATURE:**

SHC

11/20/21

Date \_\_\_\_\_



# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

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|  |  |                           |  |   |   |   |                                      |                          |
|--|--|---------------------------|--|---|---|---|--------------------------------------|--------------------------|
| 1. GENERAL AND WELL LOCATION   | OSE POD NO. (WELL NO.)<br>POD 40   |                           | WELL TAG ID NO.<br>SB-38               |   | OSE FILE NO(S).<br>C-4144                               |   |                                      |                          |
|  | WELL OWNER NAME(S)<br>EOG Resources  |                           |  |   | PHONE (OPTIONAL)<br>432-848-9146                        |   |                                      |                          |
|  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive   |                           |  |   | CITY<br>Midland   | STATE<br>Texas                                    | ZIP<br>79706                         |                          |
|  | WELL LOCATION (FROM GPS)   | DEGREES<br>LATITUDE<br>32 | MINUTES<br>24                          | SECONDS<br>10.67<br>N   | * ACCURACY REQUIRED: ONE TENTH OF A SECOND              |   |                                      |                          |
|  |  | LONGITUDE<br>-103         | 43                                     | 18.71<br>W  | * DATUM REQUIRED: WGS 84                                |   |                                      |                          |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180 |  |                           |  |   |   |   |                                      |                          |
| 2. DRILLING & CASING INFORMATION   | LICENSE NO.<br>1664  |                           | NAME OF LICENSED DRILLER<br>Shawn Cain |   |   | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling |                                      |                          |
|  | DRILLING STARTED<br>8/7/21   | DRILLING ENDED<br>8/7/21  | DEPTH OF COMPLETED WELL (FT)<br>NA     |   | BORE HOLE DEPTH (FT)<br>65                              | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA          |                                      |                          |
|  | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)   |                           |  |   |   | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA   |                                      |                          |
|  | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:   |                           |  |   |   |   |                                      |                          |
|  | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Roto Sonic |                           |  |   |   |   |                                      |                          |
|  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM (inches)             | CASING MATERIAL AND/OR<br>GRADE<br>(include each casing string, and<br>note sections of screen) | CASING<br>CONNECTION<br>TYPE<br>(add coupling diameter) | CASING<br>INSIDE DIAM.<br>(inches)                | CASING WALL<br>THICKNESS<br>(inches) | SLOT<br>SIZE<br>(inches) |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
| 3. ANNULAR MATERIAL  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM (inches)             | LIST ANNULAR SEAL MATERIAL AND<br>GRAVEL PACK SIZE-RANGE BY INTERVAL                            |   | AMOUNT<br>(cubic feet)                            | METHOD OF<br>PLACEMENT               |                          |
|  | 0 65   |                           | 6                                      | Cement with 5% Bentonite  |   | 14  | Tremie Pumped                        |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |

FOR OSE INTERNAL USE

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FOR OSE INTERNAL USE





# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: SB-38

Well owner: EOG Resources

Phone No.: 432-848-9146

Mailing address: 5509 Champions Drive

City: Midland

State: Texas

Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Cliff Hillman
- 4) Date well plugging began: 8/7/2021 Date well plugging concluded: 8/7/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 10.67 sec  
Longitude: -103 deg, 43 min, 18.71 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 65 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

- For each interval plugged, describe within the following columns:**

| MULTIPLY    |   | BY     | AND OBTAIN |         |
|-------------|---|--------|------------|---------|
| cubic feet  | x | 7.4805 | =          | gallons |
| cubic yards | x | 201.97 | =          | gallons |

I, Shawn Cain, say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

11/20/21  
Date



# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

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|  |  |                           |  |   |   |   |                                      |                          |
|--|--|---------------------------|--|---|---|---|--------------------------------------|--------------------------|
| 1. GENERAL AND WELL LOCATION   | OSE POD NO. (WELL NO.)<br>POD 41   |                           | WELL TAG ID NO.<br>SB-39               |   | OSE FILE NO(S)<br>C-4144                                |   |                                      |                          |
|  | WELL OWNER NAME(S)<br>EOG Resources  |                           |  |   | PHONE (OPTIONAL)<br>432-848-9146                        |   |                                      |                          |
|  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive   |                           |  |   | CITY<br>Midland   | STATE<br>Texas                                    | ZIP<br>79706                         |                          |
|  | WELL LOCATION<br>(FROM GPS)  | DEGREES<br>LATITUDE<br>32 | MINUTES<br>24                          | SECONDS<br>10.40<br>N   | * ACCURACY REQUIRED: ONE TENTH OF A SECOND              |   |                                      |                          |
|  |  | LONGITUDE<br>-103         | 43                                     | 19.46<br>W  | * DATUM REQUIRED: WGS 84                                |   |                                      |                          |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180 |  |                           |  |   |   |   |                                      |                          |
| 2. DRILLING & CASING INFORMATION   | LICENSE NO.<br>1664  |                           | NAME OF LICENSED DRILLER<br>Shawn Cain |   |   | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling |                                      |                          |
|  | DRILLING STARTED<br>7/26/21  | DRILLING ENDED<br>7/26/21 | DEPTH OF COMPLETED WELL (FT)<br>NA     |   | BORE HOLE DEPTH (FT)<br>15                              | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA          |                                      |                          |
|  | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)   |                           |  |   |   | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA   |                                      |                          |
|  | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:   |                           |  |   |   |   |                                      |                          |
|  | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Roto Sonic |                           |  |   |   |   |                                      |                          |
|  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM.<br>(inches)         | CASING MATERIAL AND/OR<br>GRADE<br>(include each casing string, and<br>note sections of screen) | CASING<br>CONNECTION<br>TYPE<br>(add coupling diameter) | CASING<br>INSIDE DIAM.<br>(inches)                | CASING WALL<br>THICKNESS<br>(inches) | SLOT<br>SIZE<br>(inches) |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
| 3. ANNULAR MATERIAL  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM. (inches)            | LIST ANNULAR SEAL MATERIAL AND<br>GRAVEL PACK SIZE-RANGE BY INTERVAL                            |   | AMOUNT<br>(cubic feet)                            | METHOD OF<br>PLACEMENT               |                          |
|  | 0 15   |                           | 6                                      | Cement with 5% Bentonite  |   | 3.5   | Tremie Pumped                        |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |

FOR OSE INTERNAL USE

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|----------------------|-----------------|--|-------------|
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| FILE NO.             | POD NO.         | TRN NO.                                      |             |
| LOCATION             | WELL TAG ID NO. |  | PAGE 2 OF 2 |



# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: SB-39

Well owner: EOG Resources

Phone No.: 432-848-9146

Mailing address: 5509 Champions Drive

City: Midland

State: Texas

Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Cliff Hillman
- 4) Date well plugging began: 7/26/2021 Date well plugging concluded: 7/26/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 10.40 sec  
Longitude: -103 deg, 43 min, 19.46 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 15 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

- For each interval plugged, describe within the following columns:**

| MULTIPLY    |   | BY     | AND OBTAIN |         |
|-------------|---|--------|------------|---------|
| cubic feet  | x | 7.4805 | =          | gallons |
| cubic yards | x | 201.97 | =          | gallons |

I, Shawn Cain, say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Signature of Well Driller

Date \_\_\_\_\_





# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

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|  |  |                           |  |   |  |   |                                      |                          |
|--|--|---------------------------|--|---|--|---|--------------------------------------|--------------------------|
| 1. GENERAL AND WELL LOCATION   | OSE POD NO. (WELL NO.)<br>POD 42   |                           | WELL TAG ID NO.<br>SB-40               |   | OSE FILE NO(S).<br>C-4144  |   |                                      |                          |
|  | WELL OWNER NAME(S)<br>EOG Resources  |                           |  |   | PHONE (OPTIONAL)<br>432-848-9146                                       |   |                                      |                          |
|  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive   |                           |  |   | CITY<br>Midland  | STATE<br>Texas                                    | ZIP<br>79706                         |                          |
|  | WELL LOCATION (FROM GPS)   | DEGREES<br>LATITUDE<br>32 | MINUTES<br>24                          | SECONDS<br>12.92<br>N   | * ACCURACY REQUIRED: ONE TENTH OF A SECOND<br>* DATUM REQUIRED: WGS 84 |   |                                      |                          |
|  |  | LONGITUDE<br>-103         | 43                                     | 19.97<br>W  |  |   |                                      |                          |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180 |  |                           |  |   |  |   |                                      |                          |
| 2. DRILLING & CASING INFORMATION   | LICENSE NO.<br>1664  |                           | NAME OF LICENSED DRILLER<br>Shawn Cain |   |  | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling |                                      |                          |
|  | DRILLING STARTED<br>7/26/21  | DRILLING ENDED<br>7/26/21 | DEPTH OF COMPLETED WELL (FT)<br>NA     |   | BORE HOLE DEPTH (FT)<br>20   | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA          |                                      |                          |
|  | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)   |                           |  |   |  | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA   |                                      |                          |
|  | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:   |                           |  |   |  |   |                                      |                          |
|  | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Roto Sonic |                           |  |   |  |   |                                      |                          |
|  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM.<br>(inches)         | CASING MATERIAL AND/OR<br>GRADE<br>(include each casing string, and<br>note sections of screen) | CASING<br>CONNECTION<br>TYPE<br>(add coupling diameter)                | CASING<br>INSIDE DIAM.<br>(inches)                | CASING WALL<br>THICKNESS<br>(inches) | SLOT<br>SIZE<br>(inches) |
|  |  |                           |  |   |  |   |                                      |                          |
|  |  |                           |  |   |  |   |                                      |                          |
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|  |  |                           |  |   |  |   |                                      |                          |
|  |  |                           |  |   |  |   |                                      |                          |
| 3. ANNULAR MATERIAL  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM. (inches)            | LIST ANNULAR SEAL MATERIAL AND<br>GRAVEL PACK SIZE-RANGE BY INTERVAL                            |  | AMOUNT<br>(cubic feet)                            | METHOD OF<br>PLACEMENT               |                          |
|  | 0  | 20                        | 6                                      | Cement with 5% Bentonite  |  | 4.5   | Tremie Pumped                        |                          |
|  |  |                           |  |   |  |   |                                      |                          |
|  |  |                           |  |   |  |   |                                      |                          |
|  |  |                           |  |   |  |   |                                      |                          |
|  |  |                           |  |   |  |   |                                      |                          |

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 04/30/19)

|          |                 |             |
|----------|-----------------|-------------|
| FILE NO. | POD NO.         | TRN NO.     |
| LOCATION | WELL TAG ID NO. | PAGE 1 OF 2 |

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# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: SB-40

Well owner: EOG Resources

Phone No.: 432-848-9146

Mailing address: 5509 Champions Drive

City: Midland

State: Texas


Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s):  
Cliff Hillman
- 4) Date well plugging began: 7/26/2021 Date well plugging concluded: 7/26/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 12.92 sec  
Longitude: -103 deg, 43 min, 19.97 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 20 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

- For each interval plugged, describe within the following columns:**

**III. SIGNATURE:**

  
Signature of Well Driller

Date \_\_\_\_\_



# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

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|  |  |                           |  |   |   |   |                                      |                          |
|--|--|---------------------------|--|---|---|---|--------------------------------------|--------------------------|
| 1. GENERAL AND WELL LOCATION   | OSE POD NO. (WELL NO.)<br>POD 42   |                           | WELL TAG ID NO.<br>SB-40A              |   | OSE FILE NO(S)<br>C-4144                                |   |                                      |                          |
|  | WELL OWNER NAME(S)<br>EOG Resources  |                           |  |   | PHONE (OPTIONAL)<br>432-848-9146                        |   |                                      |                          |
|  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive   |                           |  |   | CITY<br>Midland   | STATE<br>Texas                                    | ZIP<br>79706                         |                          |
|  | WELL LOCATION<br>(FROM GPS)  | DEGREES<br>LATITUDE       | MINUTES<br>32                          | SECONDS<br>24   | 12.58   | * ACCURACY REQUIRED: ONE TENTH OF A SECOND        |                                      |                          |
|  |  | LONGITUDE                 | -103                                   | 43  | 20.02   | * DATUM REQUIRED: WGS 84                          |                                      |                          |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180 |  |                           |  |   |   |   |                                      |                          |
| 2. DRILLING & CASING INFORMATION   | LICENSE NO.<br>1664  |                           | NAME OF LICENSED DRILLER<br>Shawn Cain |   |   | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling |                                      |                          |
|  | DRILLING STARTED<br>8/12/21  | DRILLING ENDED<br>8/12/21 | DEPTH OF COMPLETED WELL (FT)<br>NA     |   | BORE HOLE DEPTH (FT)<br>25                              | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA          |                                      |                          |
|  | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)   |                           |  |   |   | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA   |                                      |                          |
|  | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:   |                           |  |   |   |   |                                      |                          |
|  | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Roto Sonic |                           |  |   |   |   |                                      |                          |
|  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM.<br>(inches)         | CASING MATERIAL AND/OR<br>GRADE<br>(include each casing string, and<br>note sections of screen) | CASING<br>CONNECTION<br>TYPE<br>(add coupling diameter) | CASING<br>INSIDE DIAM.<br>(inches)                | CASING WALL<br>THICKNESS<br>(inches) | SLOT<br>SIZE<br>(inches) |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
| 3. ANNULAR MATERIAL  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM. (inches)            | LIST ANNULAR SEAL MATERIAL AND<br>GRAVEL PACK SIZE-RANGE BY INTERVAL                            |   | AMOUNT<br>(cubic feet)                            | METHOD OF<br>PLACEMENT               |                          |
|  | 0  | 25                        | 6                                      | Cement with 5% Bentonite  |   | 5.5   | Tremie Pumped                        |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
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FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 04/30/19)

|          |                 |             |
|----------|-----------------|-------------|
| FILE NO. | POD NO.         | TRN NO.     |
| LOCATION | WELL TAG ID NO. | PAGE 1 OF 2 |

|                      |                 |  |             |
|----------------------|-----------------|--|-------------|
| FOR USE INTERNAL USE |                 | WR-20 WELL RECORD & LOG (Version 04/30/2019) |             |
| FILE NO.             | POD NO.         | TRN NO.                                      |             |
| LOCATION             | WELL TAG ID NO. |  | PAGE 2 OF 2 |





# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: SB-40A

Well owner: EOG Resources

Phone No.: 432-848-9146

Mailing address: 5509 Champions Drive

City: Midland

State: Texas

Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Cliff Hillman
- 4) Date well plugging began: 8/12/2021 Date well plugging concluded: 8/12/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 12.58 sec  
Longitude: -103 deg, 43 min, 20.02 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 25 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

- For each interval plugged, describe within the following columns:**

| MULTIPLY    |   | BY     | AND OBTAIN |         |
|-------------|---|--------|------------|---------|
| cubic feet  | x | 7.4805 | =          | gallons |
| cubic yards | x | 201.97 | =          | gallons |

I, Shawn Cain, say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Signature of Well Driller

Date \_\_\_\_\_



# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

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|  |  |                          |  |   |   |   |                                      |                          |
|--|--|--------------------------|--|---|---|---|--------------------------------------|--------------------------|
| 1. GENERAL AND WELL LOCATION   | OSE POD NO. (WELL NO.)<br>POD 43   |                          | WELL TAG ID NO.<br>SB-41               |   | OSE FILE NO(S).<br>C-4144                               |   |                                      |                          |
|  | WELL OWNER NAME(S)<br>EOG Resources  |                          |  |   | PHONE (OPTIONAL)<br>432-848-9146                        |   |                                      |                          |
|  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive   |                          |  |   | CITY<br>Midland   | STATE<br>Texas                                    | ZIP<br>79706                         |                          |
|  | WELL LOCATION<br>(FROM GPS)  | DEGREES<br>32            |  | MINUTES<br>24   | SECONDS<br>13.98  | N   |                                      |                          |
|  |  | LONGITUDE<br>-103        |  | 43  | 19.07   | W   |                                      |                          |
| * ACCURACY REQUIRED: ONE TENTH OF A SECOND<br>* DATUM REQUIRED: WGS 84   |  |                          |  |   |   |   |                                      |                          |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180 |  |                          |  |   |   |   |                                      |                          |
| 2. DRILLING & CASING INFORMATION   | LICENSE NO.<br>1664  |                          | NAME OF LICENSED DRILLER<br>Shawn Cain |   |   | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling |                                      |                          |
|  | DRILLING STARTED<br>7/2/21   | DRILLING ENDED<br>7/2/21 | DEPTH OF COMPLETED WELL (FT)<br>NA     |   | BORE HOLE DEPTH (FT)<br>15                              | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA          |                                      |                          |
|  | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)   |                          |  |   |   | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA   |                                      |                          |
|  | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:   |                          |  |   |   |   |                                      |                          |
|  | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Roto Sonic |                          |  |   |   |   |                                      |                          |
|  | DEPTH (feet bgl)   |                          | BORE HOLE<br>DIAM.<br>(inches)         | CASING MATERIAL AND/OR<br>GRADE<br>(include each casing string, and<br>note sections of screen) | CASING<br>CONNECTION<br>TYPE<br>(add coupling diameter) | CASING<br>INSIDE DIAM.<br>(inches)                | CASING WALL<br>THICKNESS<br>(inches) | SLOT<br>SIZE<br>(inches) |
|  | FROM   | TO                       |  |   |   |   |                                      |                          |
|  |  |                          |  |   |   |   |                                      |                          |
|  |  |                          |  |   |   |   |                                      |                          |
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|  |  |                          |  |   |   |   |                                      |                          |
|  |  |                          |  |   |   |   |                                      |                          |
|  |  |                          |  |   |   |   |                                      |                          |
| 3. ANNULAR MATERIAL  | DEPTH (feet bgl)   |                          | BORE HOLE<br>DIAM. (inches)            | LIST ANNULAR SEAL MATERIAL AND<br>GRAVEL PACK SIZE-RANGE BY INTERVAL                            | AMOUNT<br>(cubic feet)                                  | METHOD OF<br>PLACEMENT                            |                                      |                          |
|  | FROM   | TO                       |  |   |   |   |                                      |                          |
|  | 0  | 15                       | 6                                      | Cement with 5% Bentonite  | 3.5   | Tremie Pumped                                     |                                      |                          |
|  |  |                          |  |   |   |   |                                      |                          |
|  |  |                          |  |   |   |   |                                      |                          |
|  |  |                          |  |   |   |   |                                      |                          |

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 04/30/19)

|          |                 |             |
|----------|-----------------|-------------|
| FILE NO. | POD NO.         | TRN NO.     |
| LOCATION | WELL TAG ID NO. | PAGE 1 OF 2 |

|                      |                 |  |             |
|----------------------|-----------------|--|-------------|
| FOR USE INTERNAL USE |                 | WR-20 WELL RECORD & LOG (Version 04/30/2019) |             |
| FILE NO.             | POD NO.         | TRN NO.                                      |             |
| LOCATION             | WELL TAG ID NO. |  | PAGE 2 OF 2 |



# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: SB-41

Well owner: EOG Resources

Phone No.: 432-848-9146

Mailing address: 5509 Champions Drive

City: Midland State: Texas Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s):  
Cliff Hillman
- 4) Date well plugging began: 7/2/2021 Date well plugging concluded: 7/2/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 13.98 sec  
Longitude: -103 deg, 43 min, 19.07 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 15 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

- For each interval plugged, describe within the following columns:**

| MULTIPLY    |   | BY     | AND OBTAIN |
|-------------|---|--------|------------|
| cubic feet  | x | 7.4805 | = gallons  |
| cubic yards | x | 201.97 | = gallons  |

I, Shawn Cain, say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Date \_\_\_\_\_





# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

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|   |   |                      |                                 |                      |   |  |                     |
|---|---|----------------------|---------------------------------|----------------------|---|--|---------------------|
| <b>1. GENERAL AND WELL LOCATION</b>   | OSE POD NO. (WELL NO.)<br><b>POD 44</b>                   |                      | WELL TAG ID NO.<br><b>SB-42</b> |                      | OSE FILE NO(S).<br><b>C-4144</b>        |  |                     |
|   | WELL OWNER NAME(S)<br><b>EOG Resources</b>                |                      |                                 |                      | PHONE (OPTIONAL)<br><b>432-848-9146</b> |  |                     |
|   | WELL OWNER MAILING ADDRESS<br><b>5509 Champions Drive</b> |                      |                                 |                      | CITY<br><b>Midland</b>                  | STATE<br><b>Texas</b>  | ZIP<br><b>79706</b> |
|   | WELL<br>LOCATION<br>(FROM GPS)                            | DEGREES<br><b>32</b> |                                 | MINUTES<br><b>24</b> | SECONDS<br><b>14.79</b>                 | * ACCURACY REQUIRED: ONE TENTH OF A SECOND<br>* DATUM REQUIRED: WGS 84 |                     |
|   |   | LATITUDE             |                                 | N                    | W                                       |  |                     |
| LONGITUDE   |   | <b>-103</b>          |                                 | <b>43</b>            | <b>18.64</b>                            |  |                     |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br><b>Approximately 10.5 south of US Highway 62/180</b> |   |                      |                                 |                      |   |  |                     |

|   |   |                                  |   |   |   |  |                                      |                          |
|---|---|----------------------------------|---|---|---|--|--------------------------------------|--------------------------|
| <b>2. DRILLING &amp; CASING INFORMATION</b> | LICENSE NO.<br><b>1664</b>  |                                  | NAME OF LICENSED DRILLER<br><b>Shawn Cain</b> |   |   | NAME OF WELL DRILLING COMPANY<br><b>Cascade Drilling</b> |                                      |                          |
|   | DRILLING STARTED<br><b>7/27/21</b>  | DRILLING ENDED<br><b>7/27/21</b> | DEPTH OF COMPLETED WELL (FT)<br><b>NA</b>     | BORE HOLE DEPTH (FT)<br><b>15</b>   | DEPTH WATER FIRST ENCOUNTERED (FT)<br><b>NA</b>         |  |                                      |                          |
|   | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)  |                                  |   |   |   | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br><b>NA</b>   |                                      |                          |
|   | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:  |                                  |   |   |   |  |                                      |                          |
|   | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: <b>Roto Sonic</b> |                                  |   |   |   |  |                                      |                          |
|   | DEPTH (feet bgl)  |                                  | BORE HOLE<br>DIAM.<br>(inches)                | CASING MATERIAL AND/OR<br>GRADE<br>(include each casing string, and<br>note sections of screen) | CASING<br>CONNECTION<br>TYPE<br>(add coupling diameter) | CASING<br>INSIDE DIAM.<br>(inches)                       | CASING WALL<br>THICKNESS<br>(inches) | SLOT<br>SIZE<br>(inches) |
|   | FROM  | TO                               |   |   |   |  |                                      |                          |
|   |   |                                  |   |   |   |  |                                      |                          |
|   |   |                                  |   |   |   |  |                                      |                          |
|   |   |                                  |   |   |   |  |                                      |                          |
|   |   |                                  |   |   |   |  |                                      |                          |
|   |   |                                  |   |   |   |  |                                      |                          |
|   |   |                                  |   |   |   |  |                                      |                          |

|                            |                  |    |                             |  |                        |                        |
|----------------------------|------------------|----|-----------------------------|--|------------------------|------------------------|
| <b>3. ANNULAR MATERIAL</b> | DEPTH (feet bgl) |    | BORE HOLE<br>DIAM. (inches) | LIST ANNULAR SEAL MATERIAL AND<br>GRAVEL PACK SIZE-RANGE BY INTERVAL | AMOUNT<br>(cubic feet) | METHOD OF<br>PLACEMENT |
|                            | FROM             | TO |                             |  |                        |                        |
|                            | 0                | 15 | 6                           | Cement with 5% Bentonite   | 3.5                    | Tremie Pumped          |
|                            |                  |    |                             |  |                        |                        |
|                            |                  |    |                             |  |                        |                        |
|                            |                  |    |                             |  |                        |                        |
|                            |                  |    |                             |  |                        |                        |


FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 04/30/19)

|          |                 |             |
|----------|-----------------|-------------|
| FILE NO. | POD NO.         | TRN NO.     |
| LOCATION | WELL TAG ID NO. | PAGE 1 OF 2 |

| 4. HYDROGEOLOGIC LOG OF WELL  | DEPTH (feet bgl) |    | THICKNESS<br>(feet) | COLOR AND TYPE OF MATERIAL ENCOUNTERED -<br>INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES<br>(attach supplemental sheets to fully describe all units) | WATER<br>BEARING?<br>(YES / NO)      | ESTIMATED<br>YIELD FOR<br>WATER-<br>BEARING<br>ZONES (gpm) |
|---|------------------|----|---------------------|--|--------------------------------------|--|
|   | FROM             | TO |                     |  |                                      |  |
|   | 0                | 8  | 8                   | Fine Silty Sand Brown  | Y ✓ N                                |  |
|   | 8                | 10 | 2                   | Caliche  | Y ✓ N                                |  |
|   | 10               | 15 | 5                   | Medium Sandstone Brown   | Y ✓ N                                |  |
|   |                  |    |                     |  | Y N                                  |  |
|   |                  |    |                     |  | Y N                                  |  |
|   |                  |    |                     |  | Y N                                  |  |
|   |                  |    |                     |  | Y N                                  |  |
|   |                  |    |                     |  | Y N                                  |  |
|   |                  |    |                     |  | Y N                                  |  |
|   |                  |    |                     |  | Y N                                  |  |
|   |                  |    |                     |  | Y N                                  |  |
|   |                  |    |                     |  | Y N                                  |  |
|   |                  |    |                     |  | Y N                                  |  |
|   |                  |    |                     |  | Y N                                  |  |
|   |                  |    |                     |  | Y N                                  |  |
|   |                  |    |                     |  | Y N                                  |  |
|   |                  |    |                     |  | Y N                                  |  |
|   |                  |    |                     |  | Y N                                  |  |
|   |                  |    |                     |  | Y N                                  |  |
|   |                  |    |                     |  | Y N                                  |  |
|   |                  |    |                     |  | Y N                                  |  |
|   |                  |    |                     |  | Y N                                  |  |
| METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:  |                  |    |                     |  | TOTAL ESTIMATED<br>WELL YIELD (gpm): |  |
| <input type="checkbox"/> PUMP <input type="checkbox"/> AIR LIFT <input type="checkbox"/> BAILER <input type="checkbox"/> OTHER - SPECIFY: |                  |    |                     |  | 0.00                                 |  |

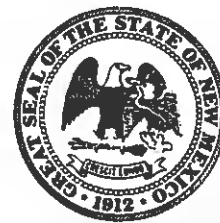
| 5. TEST; RIG SUPERVISION   | WELL TEST                  | TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD. |
|--|----------------------------|---|
|  | MISCELLANEOUS INFORMATION: |   |
| PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:<br>Cliff Hillman |                            |   |

| 6. SIGNATURE | BY SIGNING BELOW, I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED WELL. I ALSO CERTIFY THAT THE WELL TAG, IF REQUIRED, HAS BEEN INSTALLED AND THAT THIS WELL RECORD WILL ALSO BE FILED WITH THE PERMIT HOLDER WITHIN 30 DAYS AFTER THE COMPLETION OF WELL DRILLING.   |  |
|--------------|--|--|
|              | SIGNATURE OF DRILLER / PRINT SIGNEE NAME<br><div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> <br/>             Shawn Cain           </div> <div style="text-align: right;">             11/20/21<br/>             DATE           </div> </div> |  |

|                      |         |  |             |
|----------------------|---------|--|-------------|
| FOR OSE INTERNAL USE |         | WR-20 WELL RECORD & LOG (Version 04/30/2019) |             |
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| LOCATION             |         | WELL TAG ID NO.                              | PAGE 2 OF 2 |



# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: SB-42

Well owner: EOG Resources

Phone No.: 432-848-9146

Mailing address: 5509 Champions Drive

City: Midland

State: Texas

Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Cliff Hillman
- 4) Date well plugging began: 7/27/2021 Date well plugging concluded: 7/27/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 14.79 sec  
Longitude: -103 deg, 43 min, 18.64 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 15 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

- For each interval plugged, describe within the following columns:**

| MULTIPLY    |   | BY     | AND OBTAIN |
|-------------|---|--------|------------|
| cubic feet  | x | 7.4805 | = gallons  |
| cubic yards | x | 201.97 | = gallons  |

I, Shawn Cain , say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Signature of Well Driller

Date \_\_\_\_\_



# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER


[www.ose.state.nm.us](http://www.ose.state.nm.us)

|  |  |                           |  |   |   |   |                                      |                          |
|--|--|---------------------------|--|---|---|---|--------------------------------------|--------------------------|
| 1. GENERAL AND WELL LOCATION   | OSE POD NO. (WELL NO.)<br>POD 45   |                           | WELL TAG ID NO.<br>SB-43               |   | OSE FILE NO(S).<br>C-4144                               |   |                                      |                          |
|  | WELL OWNER NAME(S)<br>EOG Resources  |                           |  |   | PHONE (OPTIONAL)<br>432-848-9146                        |   |                                      |                          |
|  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive   |                           |  |   | CITY<br>Midland   | STATE<br>Texas                                    | ZIP<br>79706                         |                          |
|  | WELL LOCATION (FROM GPS)   | DEGREES<br>LATITUDE<br>32 | MINUTES<br>24                          | SECONDS<br>8.90   | N   | * ACCURACY REQUIRED: ONE TENTH OF A SECOND        |                                      |                          |
|  |  | LONGITUDE<br>-103         | 43                                     | 21.50   | W   | * DATUM REQUIRED: WGS 84                          |                                      |                          |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180 |  |                           |  |   |   |   |                                      |                          |
| 2. DRILLING & CASING INFORMATION   | LICENSE NO.<br>1664  |                           | NAME OF LICENSED DRILLER<br>Shawn Cain |   |   | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling |                                      |                          |
|  | DRILLING STARTED<br>8/6/21   | DRILLING ENDED<br>8/6/21  | DEPTH OF COMPLETED WELL (FT)<br>NA     |   | BORE HOLE DEPTH (FT)<br>55                              | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA          |                                      |                          |
|  | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)   |                           |  |   |   | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA   |                                      |                          |
|  | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:   |                           |  |   |   |   |                                      |                          |
|  | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Roto Sonic |                           |  |   |   |   |                                      |                          |
|  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM.<br>(inches)         | CASING MATERIAL AND/OR<br>GRADE<br>(include each casing string, and<br>note sections of screen) | CASING<br>CONNECTION<br>TYPE<br>(add coupling diameter) | CASING<br>INSIDE DIAM.<br>(inches)                | CASING WALL<br>THICKNESS<br>(inches) | SLOT<br>SIZE<br>(inches) |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
| 3. ANNULAR MATERIAL  | DEPTH (feet bgl)<br>FROM TO  |                           | BORE HOLE<br>DIAM. (inches)            | LIST ANNULAR SEAL MATERIAL AND<br>GRAVEL PACK SIZE-RANGE BY INTERVAL                            | AMOUNT<br>(cubic feet)                                  | METHOD OF<br>PLACEMENT                            |                                      |                          |
|  | 0  | 55                        | 6                                      | Cement with 5% Bentonite  | 12  | Tremie Pumped                                     |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |
|  |  |                           |  |   |   |   |                                      |                          |

FOR OSE INTERNAL USE

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| FILE NO. | POD NO.         | TRN NO.     |
| LOCATION | WELL TAG ID NO. | PAGE 1 OF 2 |

| 4. HYDROGEOLOGIC LOG OF WELL  | DEPTH (feet bgl)   |   | THICKNESS<br>(feet) | COLOR AND TYPE OF MATERIAL ENCOUNTERED -<br>INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES<br>(attach supplemental sheets to fully describe all units) | WATER<br>BEARING?<br>(YES / NO)           | ESTIMATED<br>YIELD FOR<br>WATER-<br>BEARING<br>ZONES (gpm) |
|---|--|---|---------------------|--|---|--|
|   | FROM   | TO  |                     |  |   |  |
|   | 0  | 15  | 15                  | Fine Silty Sand Brown  | Y ✓ N                                     |  |
|   | 15   | 20  | 5                   | Fat Clay   | Y ✓ N                                     |  |
|   | 20   | 25  | 5                   | Fine silty sand Brown  | Y ✓ N                                     |  |
|   | 25   | 35  | 10                  | Medium Sandstone   | Y ✓ N                                     |  |
|   | 35   | 45  | 10                  | Fat Clay   | Y ✓ N                                     |  |
|   | 45   | 55  | 10                  | Clayey sandstone   | Y ✓ N                                     |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
|   |  |   |                     |  | Y N                                       |  |
| METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:  |  |   |                     |  | TOTAL ESTIMATED<br>WELL YIELD (gpm): 0.00 |  |
| <input type="checkbox"/> PUMP <input type="checkbox"/> AIR LIFT <input type="checkbox"/> BAILER <input type="checkbox"/> OTHER - SPECIFY: |  |   |                     |  |   |  |
| 5. TEST; RIG SUPERVISION  | WELL TEST  | TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD. |                     |  |   |  |
|   | MISCELLANEOUS INFORMATION:   |   |                     |  |   |  |
| PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:<br>Cliff Hillman      |  |   |                     |  |   |  |
| 6. SIGNATURE  | BY SIGNING BELOW, I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED WELL. I ALSO CERTIFY THAT THE WELL TAG, IF REQUIRED, HAS BEEN INSTALLED AND THAT THIS WELL RECORD WILL ALSO BE FILED WITH THE PERMIT HOLDER WITHIN 30 DAYS AFTER THE COMPLETION OF WELL DRILLING. |   |                     |  |   |  |
|   | <br>SIGNATURE OF DRILLER / PRINT SIGNEE NAME  |   |                     |  | 11/20/21<br>DATE                          |  |

FOR USE INTERNAL USE

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| LOCATION | WELL TAG ID NO. | PAGE 2 OF 2 |





# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: SB-43

Well owner: EOG Resources

Phone No.: 432-848-9146

Mailing address: 5509 Champions Drive

City: Midland

State: Texas

Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s):  
Cliff Hillman
- 4) Date well plugging began: 8/6/2021 Date well plugging concluded: 8/6/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 8.90 sec  
Longitude: -103 deg, 43 min, 21.50 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 55 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

- For each interval plugged, describe within the following columns:**

| MULTIPLY    |   | BY     | AND OBTAIN |
|-------------|---|--------|------------|
| cubic feet  | x | 7.4805 | = gallons  |
| cubic yards | x | 201.97 | = gallons  |

I, Shawn Cain, say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

11/20/21  
Date



# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

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|  |   |                           |  |   |   |   |                                   |
|--|---|---------------------------|--|---|---|---|-----------------------------------|
| 1. GENERAL AND WELL LOCATION   | OSE POD NO. (WELL NO.)<br>POD 46  |                           | WELL TAG ID NO.<br>SB-44               |   | OSE FILE NO(S).<br>C-4144                         |   |                                   |
|  | WELL OWNER NAME(S)<br>EOG Resources   |                           |  |   | PHONE (OPTIONAL)<br>432-848-9146                  |   |                                   |
|  | WELL OWNER MAILING ADDRESS<br>5509 Champions Drive  |                           |  |   | CITY<br>Midland                                   | STATE<br>Texas                                    |                                   |
|  |   |                           |  |   | ZIP<br>79706                                      |   |                                   |
|  | WELL LOCATION (FROM GPS)  | DEGREES<br>LATITUDE<br>32 | MINUTES<br>24                          | SECONDS<br>7.79   | N   | * ACCURACY REQUIRED: ONE TENTH OF A SECOND        |                                   |
|  | LONGITUDE<br>-103   | 43                        | 21.53                                  | W   | * DATUM REQUIRED: WGS 84                          |   |                                   |
| DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE<br>Approximately 10.5 south of US Highway 62/180 |   |                           |  |   |   |   |                                   |
| 2. DRILLING & CASING INFORMATION   | LICENSE NO.<br>1664   |                           | NAME OF LICENSED DRILLER<br>Shawn Cain |   |   | NAME OF WELL DRILLING COMPANY<br>Cascade Drilling |                                   |
|  | DRILLING STARTED<br>8/6/21  | DRILLING ENDED<br>8/6/21  | DEPTH OF COMPLETED WELL (FT)<br>NA     | BORE HOLE DEPTH (FT)<br>30  | DEPTH WATER FIRST ENCOUNTERED (FT)<br>NA          |   |                                   |
|  | COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)                                      |                           |  |   | STATIC WATER LEVEL IN COMPLETED WELL (FT)<br>NA   |   |                                   |
|  | DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:  |                           |  |   |   |   |                                   |
|  | DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: |                           |  |   | Roto Sonic  |   |                                   |
|  | DEPTH (feet bgl)<br>FROM TO   |                           | BORE HOLE DIAM.<br>(inches)            | CASING MATERIAL AND/OR GRADE<br>(include each casing string, and note sections of screen) | CASING CONNECTION TYPE<br>(add coupling diameter) | CASING INSIDE DIAM.<br>(inches)                   | CASING WALL THICKNESS<br>(inches) |
|  |   |                           |  |   |   |   |                                   |
|  |   |                           |  |   |   |   |                                   |
|  |   |                           |  |   |   |   |                                   |
|  |   |                           |  |   |   |   |                                   |
| 3. ANNULAR MATERIAL  | DEPTH (feet bgl)<br>FROM TO   |                           | BORE HOLE DIAM. (inches)               | LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL                         | AMOUNT (cubic feet)                               | METHOD OF PLACEMENT                               |                                   |
|  | 0 30  |                           | 6                                      | Cement with 5% Bentonite  | 6.5   | Tremie Pumped                                     |                                   |
|  |   |                           |  |   |   |   |                                   |
|  |   |                           |  |   |   |   |                                   |
|  |   |                           |  |   |   |   |                                   |
|  |   |                           |  |   |   |   |                                   |

FOR OSE INTERNAL USE

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|----------------------|-----------------|--|-------------|
| FOR USE INTERNAL USE |                 | WR-20 WELL RECORD & LOG (Version 04/30/2019) |             |
| FILE NO.             | POD NO.         | TRN NO.                                      |             |
| LOCATION             | WELL TAG ID NO. |  | PAGE 2 OF 2 |



# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: SB-44

Well owner: EOG Resources

Phone No.: 432-848-9146

Mailing address: 5509 Champions Drive

City: Midland

State: Texas

Zip code: 79706

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Cascade Drilling
- 2) New Mexico Well Driller License No.: 1664 Expiration Date: 1/31/23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Cliff Hillman
- 4) Date well plugging began: 8/6/2021 Date well plugging concluded: 8/6/2021
- 5) GPS Well Location: Latitude: 32 deg, 24 min, 7.79 sec  
Longitude: -103 deg, 43 min, 21.53 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 30 ft below ground level (bgl),  
by the following manner: tag line
- 7) Static water level measured at initiation of plugging: None ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 3/24/2021
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

- For each interval plugged, describe within the following columns:**

**III. SIGNATURE:**

  
Signature of Well Driller

Date \_\_\_\_\_



# Attachment C

**NMSOE Well Permits and BLM Sundry**



STATE OF NEW MEXICO  
OFFICE OF THE STATE ENGINEER  
District 2 Office, Roswell, NM

John R. D'Antonio Jr., P.E.  
State Engineer

1900 West Second Street  
Roswell, New Mexico 88201  
(575) 622-6521  
FAX: (575) 623-8559

March 24, 2021

EOG Resources  
c/o GHD Services  
5509 Champions Dr  
Albuquerque, NM 79706

RE: *Well Plugging Plan of Operations for C-4144-POD13/POD46*

Greetings:

Enclosed is your copy of Well Plugging Plan of Operations for the above referenced project, which has been approved subject to the attached Specific Conditions of Approval. The following conditions of approval have been developed to ensure compliance with the Rules and Regulations Governing Well Driller Licensing; Construction, Repair and Plugging of Wells 19.27.4 NMAC adopted June 13, 2017, by the State Engineer.

Aggrieval of this permit, or any of the conditions of approval therein, suspends the permit. No plugging operations shall occur while a permit is aggrieved.

Sincerely,

A handwritten signature in blue ink, appearing to read "C. Guillen", written over a horizontal line.

Claudia K. Guillen  
Engineering Tech III  
Water Resources Allocation Program

encl

**Specific Conditions of Approval for C-4144-POD13-POD456**

- 1) If groundwater is not encountered the borehole can be filled with drill cuttings or clean native fill up to 10 feet below ground surface. From 10 feet below ground surface to ground surface the borehole will be filled with bentonite. Bentonite chips shall be hydrated with 5 gallons of water per 50 pound sack.
- 2) The cement-bentonite slurry (bentonite powder) shall be mixed using a maximum of 5.2 gallons water per 94-lb sack Type II portland cement **PLUS** 0.65 gallons per 1% increase in bentonite up to a maximum 6% bentonite by dry weight ratio. Bentonite must be hydrated separately and then mixed.
  - a) Grout shall be tremied from the bottom up.
- 3) A completed Plugging Record form shall be submitted no later than 30 days after completion of the plugging.
- 4) Before any attempts are made to plug this well, the O.S.E. District II Office shall be notified 48 hours in advance of the anticipated schedule for plugging, so that an O.S.E. representative has the opportunity to witness the procedures, if deemed necessary.
- 5) Any deviation from this plan must obtain an approved variance from this office prior to implementation.
- 6) Aggrieval of this permit, or any of the conditions of approval therein, suspends the permit. No plugging operations shall occur while a permit is aggrieved.

Witness my hand and seal this 24th day of March A.D., 2021

*John R. D'Antonio Jr., P.E., State Engineer*

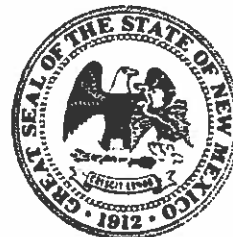
By: \_\_\_\_\_

Claudia K. Guillen  
Engineering Tech III





# WELL PLUGGING PLAN OF OPERATIONS



**NOTE:** A Well Plugging Plan of Operations shall be filed with and accepted by the Office of the State Engineer prior to plugging. This form may be used to plug a single well, or if you are plugging multiple monitoring wells on the same site using the same plugging methodology.

**Alert!** Your well may be eligible to participate in the Aquifer Mapping Program (AMP)-NM Bureau of Geology [geoinfo.nmt.edu/resources/water/cgman/](http://geoinfo.nmt.edu/resources/water/cgman/) if within an area of interest and meets the minimum construction requirements, such as there is still water in your well, and the well construction reflected in a well record and log is not compromised, contact AMP at 575-835-5038 or -6951, or by email [nmbg-waterlevels@nmt.edu](mailto:nmbg-waterlevels@nmt.edu), prior to completing this prior form. Showing proof to the OSE that your well was accepted in this program, may delay the plugging of your well until a later date.

**I. FILING FEE:** There is no filing fee for this form.

**II. GENERAL / WELL OWNERSHIP:** ☒ Check here if proposing one plan for multiple monitoring wells on the same site and attaching WD-08m

Existing Office of the State Engineer POD Number (Well Number) for well to be plugged: SB-12 **C-4144**

Name of well owner: EOG Resources

Mailing address: 5509 Champions Drive County: \_\_\_\_\_

City: Midland State: Texas Zip code: 79706

Phone number: 432-848-9146 E-mail: James\_kennedy@eogresources.com

## III. WELL DRILLER INFORMATION:

Well Driller contracted to provide plugging services: White Drilling Company, Inc.

New Mexico Well Driller License No.: WD-1456 Expiration Date: 09-30-2022

**IV. WELL INFORMATION:** ☒ Check here if this plan describes method for plugging multiple monitoring wells on the same site and attach supplemental form WD-08m and skip to #2 in this section.

Note: A copy of the existing Well Record for the well(s) to be plugged should be attached to this plan.

1) GPS Well Location: Latitude: 32° deg, 24' min, 09.21" sec  
Longitude: -103° deg, 43' min, 21.72" sec, NAD 83

2) Reason(s) for plugging well(s):

These are soil borings are not going to be wells. The plugging plans are for in case we encounter groundwater.

3) Was well used for any type of monitoring program? no If yes, please use section VII of this form to detail what hydrogeologic parameters were monitored. If the well was used to monitor contaminated or poor quality water, authorization from the New Mexico Environment Department may be required prior to plugging.

4) Does the well tap brackish, saline, or otherwise poor quality water? unknown If yes, provide additional detail, including analytical results and/or laboratory report(s): \_\_\_\_\_

5) Static water level: unknown feet below land surface / feet above land surface (circle one)

6) Depth of the well: unknown feet

- 7) Inside diameter of innermost casing: 4-3/8' inches.
- 8) Casing material: n/a
- 9) The well was constructed with:  
☐ an open-hole production interval, state the open interval: \_\_\_\_\_  
☐ a well screen or perforated pipe, state the screened interval(s): \_\_\_\_\_
- 10) What annular interval surrounding the artesian casing of this well is cement-grouted? \_\_\_\_\_
- 11) Was the well built with surface casing? \_\_\_\_\_ If yes, is the annulus surrounding the surface casing grouted or otherwise sealed? \_\_\_\_\_ If yes, please describe:
- 12) Has all pumping equipment and associated piping been removed from the well? \_\_\_\_\_ If not, describe remaining equipment and intentions to remove prior to plugging in Section VII of this form.

**V. DESCRIPTION OF PLANNED WELL PLUGGING:** ☐ If plugging method differs between multiple wells on same site, a separate form must be completed for each method.

Note: If this plan proposes to plug an artesian well in a way other than with cement grout, placed bottom to top with a tremie pipe, a detailed diagram of the well showing proposed final plugged configuration shall be attached, as well as any additional technical information, such as geophysical logs, that are necessary to adequately describe the proposal. Attach a copy of any signed OSE variance to this plugging plan.

Also, if this planned plugging plan requires a variance to 19.27.4 NMAC, attach a detailed variance request signed by the applicant.

- 1) Describe the method by which cement grout shall be placed in the well, or describe requested plugging methodology proposed for the well:  

Tremie grout from bottom up.
- 2) Will well head be cut-off below land surface after plugging? \_\_\_\_\_

**VI. PLUGGING AND SEALING MATERIALS:**

Note: The plugging of a well that taps poor quality water may require the use of a specialty cement or specialty sealant. Attach a copy of the batch mix recipe from the cement company and/or product description for specialty cement mixes or any sealant that deviates from the list of OSE approved sealants.

- 1) For plugging intervals that employ cement grout, complete and attach Table A.
- 2) For plugging intervals that will employ approved non-cement based sealant(s), complete and attach Table B.
- 3) Theoretical volume of grout required to plug the well to land surface: 146 Gallons or 19.63 cf
- 4) Type of Cement proposed: Portland Cement w/5% Bentonite Grout - Type II
- 5) Proposed cement grout mix: 6 gallons of water per 94 pound sack of Portland cement.
- 6) Will the grout be: \_\_\_\_\_ batch-mixed and delivered to the site  
X mixed on site

**TABLE A - For plugging intervals that employ cement grout. Start with deepest interval.**

|   | <b>Interval 1 – deepest</b> | <b>Interval 2</b> | <b>Interval 3 – most shallow</b>   |
|---|-----------------------------|-------------------|--|
|   |                             |                   | Note: if the well is non-artesian and breaches only one aquifer, use only this column. |
| Top of proposed interval of grout placement (ft bgl)                          | 0 feet                      |                   |  |
| Bottom of proposed interval of grout placement (ft bgl)                       | 100 feet                    |                   |  |
| Theoretical volume of grout required per interval (gallons)                   | 146 Gallons                 |                   |  |
| Proposed cement grout mix gallons of water per 94-lb. sack of Portland cement | 6 Gallons of Water          |                   |  |
| Mixed on-site or batch-mixed and delivered?                                   | On-Site                     |                   |  |
| Grout additive 1 requested  | 5% Bentonite Grout          |                   |  |
| Additive 1 percent by dry weight relative to cement                           |                             |                   |  |
| Grout additive 2 requested  |                             |                   |  |
| Additive 2 percent by dry weight relative to cement                           |                             |                   |  |



**TABLE B - For plugging intervals that will employ approved non-cement based sealant(s). Start with deepest interval.**

|   | Interval 1 – deepest | Interval 2 | Interval 3 – most shallow  |
|---|----------------------|------------|--|
|   |                      |            | Note: if the well is non-artesian and breaches only one aquifer, use only this column. |
| Top of proposed interval of sealant placement (ft bgl)        |                      |            |  |
| Bottom of proposed sealant of grout placement (ft bgl)        |                      |            |  |
| Theoretical volume of sealant required per interval (gallons) |                      |            |  |
| Proposed abandonment sealant (manufacturer and trade name)    |                      |            |  |



# NEW MEXICO OFFICE OF THE STATE ENGINEER



## ATTACHMENT to WD-08 Plan of Plugging MULTIPLE MONITORING WELL DESCRIPTIONS

This Attachment is to be completed if more than one (1) monitoring well is to be plugged using the same method.

| Location (Required):  |                |  |                         |  |                      |   |                             |               |                          |
|---|----------------|--|-------------------------|--|----------------------|---|-----------------------------|---------------|--------------------------|
| <input checked="" type="checkbox"/> NM State Plane (NAD83)<br>(Feet)<br><input type="checkbox"/> NM West Zone<br><input type="checkbox"/> NM Central Zone<br><input checked="" type="checkbox"/> NM East Zone |                | <input checked="" type="checkbox"/> UTM (NAD83) (Meters)<br><input type="checkbox"/> Zone 13N<br><input type="checkbox"/> Zone 12N |                         | <input checked="" type="checkbox"/> Lat/Long (WGS84)<br>(1/10 <sup>th</sup> of second) |                      | OTHER (allowable only for move-from descriptions - see application form for format)<br><input type="checkbox"/> PLSS (quarters, section, township, range)<br><input type="checkbox"/> Hydrographic Survey, Map & Tract<br><input type="checkbox"/> Lot, Block & Subdivision<br><input type="checkbox"/> Grant |                             |               |                          |
| OSE POD Number:   | Other Well ID: | X or Longitude (ddmmss):   | Y or Latitude (ddmmss): | Other Location Info (PLSS):  | Casing ID- (inches): | Depth to Water- (ft bgs):   | Total well Depth- (ft bgs): | Grout Volume: | Surface Casing (Y or N): |
| C-4144<br>POD 15  | SB-13          | -103°43'20.96"E  | 32°24'09.07"N           |  |                      |   | 105-110ft                   | 146gal.       |                          |
| " 14  | SB-14          | -103°43'21.85"E  | 32°24'08.65"N           |  |                      |   |                             |               |                          |
| " 17  | SB-15          | -103°43'21.79"E  | 32°24'08.09"N           |  |                      |   |                             |               |                          |
| " 18  | SB-16          | -103°43'20.99"E  | 32°24'08.03"N           |  |                      |   |                             |               |                          |
| " 19  | SB-17          | -103°43'20.64"E  | 32°24'08.04"N           |  |                      |   |                             |               |                          |
| " 20  | SB-18          | -103°43'21.20"E  | 32°24'13.89"N           |  |                      |   |                             |               |                          |
| " 21  | SB-19          | -103°43'20.43"E  | 32°24'13.69"N           |  |                      |   |                             |               |                          |
| " 22  | SB-20          | -103°43'21.14"E  | 32°24'13.25"N           |  |                      |   |                             |               |                          |
| " 23  | SB-21          | -103°43'20.80"E  | 32°24'13.25"N           |  |                      |   |                             |               |                          |
| " 24  | SB-22          | -103°43'19.89"E  | 32°24'13.57"N           |  |                      |   |                             |               |                          |
| " 25  | SB-23          | -103°43'18.14"E  | 32°24'15.26"N           |  |                      |   |                             |               |                          |
| " 26  | SB-24          | -103°43'18.21"E  | 32°24'14.62"N           |  |                      |   |                             |               |                          |

FOR OSE INTERNAL USE

Multiple Monitoring POD Descriptions, Form wr-08m (Rev 7/31/19)

|  |                    |
|--|--------------------|
| File Number: C-4144                    | Trn Number: 690620 |
| Trans Description (optional): Plg Plan |                    |



# NEW MEXICO OFFICE OF THE STATE ENGINEER



## ATTACHMENT to WD-08 Plan of Plugging MULTIPLE MONITORING WELL DESCRIPTIONS

This Attachment is to be completed if more than one (1) monitoring well is to be plugged using the same method.

| Location (Required):  |                |  |                         |  |                      |   |                             |               |                          |
|---|----------------|--|-------------------------|--|----------------------|---|-----------------------------|---------------|--------------------------|
| <input checked="" type="checkbox"/> NM State Plane (NAD83)<br>(Feet)<br><input type="checkbox"/> NM West Zone<br><input type="checkbox"/> NM Central Zone<br><input checked="" type="checkbox"/> NM East Zone |                | <input checked="" type="checkbox"/> UTM (NAD83) (Meters)<br><input type="checkbox"/> Zone 13N<br><input type="checkbox"/> Zone 12N |                         | <input checked="" type="checkbox"/> Lat/Long (WGS84)<br>(1/10 <sup>th</sup> of second) |                      | OTHER (allowable only for move-from descriptions - see application form for format)<br><input type="checkbox"/> PLSS (quarters, section, township, range)<br><input type="checkbox"/> Hydrographic Survey, Map & Tract<br><input type="checkbox"/> Lot, Block & Subdivision<br><input type="checkbox"/> Grant |                             |               |                          |
| OSE POD Number:   | Other Well ID: | X or Longitude (ddmmss):   | Y or Latitude (ddmmss): | Other Location Info (PLSS):  | Casing ID- (inches): | Depth to Water- (ft bgs):   | Total well Depth- (ft bgs): | Grout Volume: | Surface Casing (Y or N): |
| C-4144  |                |  |                         |  |                      |   |                             |               |                          |
| POD 27  | SB-25          | -103°43'18.40"E  | 32°24'14.17"N           |  |                      |   | 105-110ft                   | 144 gal       |                          |
| " 28  | SB-26          | -103°43'18.62"E  | 32°24'13.51"N           |  |                      |   |                             |               |                          |
| " 29  | SB-27          | -103°43'18.85"E  | 32°24'12.90"N           |  |                      |   |                             |               |                          |
| " 30  | SB-28          | -103°43'18.11"E  | 32°24'13.22"N           |  |                      |   |                             |               |                          |
| " 31  | SB-29          | -103°43'17.42"E  | 32°24'14.55"N           |  |                      |   |                             |               |                          |
| " 32  | SB-30          | -103°43'16.97"E  | 32°24'12.85"N           |  |                      |   |                             |               |                          |
| " 33  | SB-31          | -103°43'15.44"E  | 32°24'13.72"N           |  |                      |   |                             |               |                          |
| " 34  | SB-32          | -103°43'14.75"E  | 32°24'13.86"N           |  |                      |   |                             |               |                          |
| " 35  | SB-33          | -103°43'16.05"E  | 32°24'11.77"N           |  |                      |   |                             |               |                          |
| " 36  | SB-34          | -103°43'16.62"E  | 32°24'11.45"N           |  |                      |   |                             |               |                          |
| " 37  | SB-35          | -103°43'17.73"E  | 32°24'11.83"N           |  |                      |   |                             |               |                          |
| " 38  | SB-36          | -103°43'17.82"E  | 32°24'11.18"N           |  |                      |   |                             |               |                          |

FOR OSE INTERNAL USE Multiple Monitoring POD Descriptions, Form wr-08m (Rev 7/31/19)

|  |                    |
|--|--------------------|
| File Number: C-4144                    | Trn Number: 690620 |
| Trans Description (optional): Plg Plan |                    |



# NEW MEXICO OFFICE OF THE STATE ENGINEER



## ATTACHMENT to WD-08 Plan of Plugging MULTIPLE MONITORING WELL DESCRIPTIONS

This Attachment is to be completed if more than one (1) monitoring well is to be plugged using the same method.

| Location (Required):  |                |  |                         |  |                      |   |                             |               |                         |
|---|----------------|--|-------------------------|--|----------------------|---|-----------------------------|---------------|-------------------------|
| <input checked="" type="checkbox"/> NM State Plane (NAD83)<br>(Feet)<br><input type="checkbox"/> NM West Zone<br><input type="checkbox"/> NM Central Zone<br><input checked="" type="checkbox"/> NM East Zone |                | <input checked="" type="checkbox"/> UTM (NAD83) (Meters)<br><input type="checkbox"/> Zone 13N<br><input type="checkbox"/> Zone 12N |                         | <input checked="" type="checkbox"/> Lat/Long (WGS84)<br>(1/10 <sup>th</sup> of second) |                      | OTHER (allowable only for move-from descriptions - see application form for format)<br><input type="checkbox"/> PLSS (quarters, section, township, range)<br><input type="checkbox"/> Hydrographic Survey, Map & Tract<br><input type="checkbox"/> Lot, Block & Subdivision<br><input type="checkbox"/> Grant |                             |               |                         |
| OSE POD Number:   | Other Well ID: | X or Longitude (ddmmss):   | Y or Latitude (ddmmss): | Other Location Info (PLSS):  | Casing ID- (inches): | Depth to Water- (ft bgs):   | Total well Depth- (ft bgs): | Grout Volume: | Surface Casing (Y or N) |
| POD 39  | SB-37          | -103°43'18.73"E  | 32°24'11.17"N           |  |                      |   | 105-110ft                   | 14 legal      |                         |
| " 40  | SB-38          | -103°43'18.71"E  | 32°24'10.67"N           |  |                      |   |                             |               |                         |
| " 41  | SB-39          | -103°43'19.46"E  | 32°24'10.40"N           |  |                      |   |                             |               |                         |
| " 42  | SB-40          | -103°43'17.69"E  | 32°24'11.09"N           |  |                      |   |                             |               |                         |
| " 43  | SB-41          | -103°43'19.07"E  | 32°24'13.98"N           |  |                      |   |                             |               |                         |
| " 44  | SB-42          | -103°43'18.64"E  | 32°24'14.79"N           |  |                      |   |                             |               |                         |
| " 45  | SB-43          | -103°43'21.50"E  | 32°24'08.90"N           |  |                      |   |                             |               |                         |
| " 46  | SB-44          | -103°43'21.53"E  | 32°24'07.79"N           |  |                      |   |                             |               |                         |
| POD 13  | PMW-10         | -103°43'10.85" E   | 32°24'15.43"            |  |                      |   |                             |               |                         |
| POD 14  | PMW-11         | -103°43'23.28" E   | 32°24'08.82" N          |  |                      |   |                             |               |                         |
|   |                |  |                         |  |                      |   |                             |               |                         |
|   |                |  |                         |  |                      |   |                             |               |                         |

FOR OSE INTERNAL USE Multiple Monitoring POD Descriptions, Form wr-08m (Rev 7/31/19)

|  |                    |
|--|--------------------|
| File Number: C-4144                    | Trn Number: 690620 |
| Trans Description (optional): PLg Plan |                    |

File No. C-4144



## NEW MEXICO OFFICE OF THE STATE ENGINEER

## WR-07 APPLICATION FOR PERMIT TO DRILL

## A WELL WITH NO WATER RIGHT

(check applicable box):

For fees, see State Engineer website: <http://www.ose.state.nm.us/>

|   |  |  |
|---|--|--|
| Purpose:  | <input type="checkbox"/> Pollution Control And/Or Recovery         | <input type="checkbox"/> Ground Source Heat Pump |
| <input type="checkbox"/> Exploratory Well (Pump test) | <input type="checkbox"/> Construction Site/Public Works Dewatering | <input type="checkbox"/> Other(Describe):        |
| <input checked="" type="checkbox"/> Monitoring Well   | <input type="checkbox"/> Mine Dewatering                           |  |

A separate permit will be required to apply water to beneficial use regardless if use is consumptive or nonconsumptive.

|  |                         |
|--|-------------------------|
| <input checked="" type="checkbox"/> Temporary Request - Requested Start Date: 2/9/21 | Requested End Date: TBD |
|--|-------------------------|

Plugging Plan of Operations Submitted? ☒ Yes ☐ No

## 1. APPLICANT(S)

|  |   |
|--|---|
| Name:<br>EOG Resources   | Name:<br>GHD Services   |
| Contact or Agent: <input type="checkbox"/> check here if Agent<br>James Kennedy            | Contact or Agent: <input checked="" type="checkbox"/> check here if Agent<br>Charles Neligh |
| Mailing Address:<br>5509 Champions Drive   | Mailing Address:<br>6121 Indian School Rd NE #200   |
| City:<br>Midland   | City:<br>Albuquerque  |
| State:<br>Texas  | State:<br>New Mexico  |
| Zip Code:<br>79706   | Zip Code:<br>87110  |
| Phone: 432-848-9146 <input type="checkbox"/> Home <input checked="" type="checkbox"/> Cell | Phone: 716-818-0224 <input type="checkbox"/> Home <input checked="" type="checkbox"/> Cell  |
| Phone (Work):  | Phone (Work):   |
| E-mail (optional):<br>James_kennedy@eogresources.com                                       | E-mail (optional):<br>Charles.Neligh@ghd.com  |

FOR OSE INTERNAL USE

Application for Permit, Form WR-07, Rev 11/17/16

|                                   |                             |                      |
|-----------------------------------|-----------------------------|----------------------|
| File No. C-4144                   | Trn. No.: 690620            | Receipt No.: 2-43110 |
| Trans Description (optional): MON |                             |                      |
| Sub-Basin: CUB                    | PCW/LOG Due Date: 3/25/2022 |                      |

Page 1 of 3



## 2. WELL(S) Describe the well(s) applicable to this application.

**Location Required:** Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84).

District II (Roswell) and District VII (Cimarron) customers, provide a PLSS location in addition to above.

☒ NM State Plane (NAD83) (Feet)

☐ NM West Zone

☒ NM East Zone

☐ NM Central Zone

☒ UTM (NAD83) (Meters)

☐ Zone 12N

☒ Zone 13N

☒ Lat/Long (WGS84) (to the nearest 1/10<sup>th</sup> of second)

| Well Number (if known): | X or Easting or Longitude: | Y or Northing or Latitude: | Provide if known:<br>-Public Land Survey System (PLSS)<br>(Quarters or Halves, Section, Township, Range) OR<br>- Hydrographic Survey Map & Tract; OR<br>- Lot, Block & Subdivision; OR<br>- Land Grant Name |
|-------------------------|----------------------------|----------------------------|---|
| C-4144 POD12<br>PMW-10  | -103°43'10.85" E           | 32°24'15.43"               | T22s, R32E, Q7  |
| C-4144 POD13<br>PMW-11  | -103°43'23.28" E           | 32°24'08.82" N             | T22S, R31E, Q12   |
| C-4144 POD14<br>SB-12   | -103°43'21.72" E           | 32°24'09.21" N             | T22s, R32E, Q7  |
| C-4144 POD15<br>SB-13   | -103°43'20.96"E            | 32°24'09.07"N              | T22s, R32E, Q7  |
| C-4144 POD16<br>SB-14   | -103°43'21.85"E            | 32°24'08.65"N              | T22s, R32E, Q7  |

NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)

Additional well descriptions are attached: ☒ Yes ☐ No If yes, how many 30

Other description relating well to common landmarks, streets, or other:  
Approx 10.5 miles south of us hwy 62/180

Well is on land owned by: BLM - Sundry included

Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. Attached? ☒ Yes ☐ No  
If yes, how many 5

|   |  |
|---|--|
| Approximate depth of well (feet): 105-110'BGS | Outside diameter of well casing (inches): 2" |
| Driller Name: White Drilling Co.              | Driller License Number: WD-1456              |

## 3. ADDITIONAL STATEMENTS OR EXPLANATIONS

Well construction will be a 2-in dia. PVC casing with a 15-20 ft. 0.010-in slotted screen. Grade 10/20 silica sand pack will be placed in the annulus to 2 ft. above the screen. A 2ft. thick hydrated bentonite plug will be placed on top of the sand pack followed by cement/bentonite grout to the surface.

The soil borings will be advanced in order to help delineated the extent of the impact. If groundwater is encountered a monitoring well may be constructed.

the duration of planned monitoring will continue until NMOCD grants remedial Site closure.

FOR USE INTERNAL USE

Application for Permit, Form WR-07

File No.: C-4144

Trn No.: 690620

Page 2 of 3



**SPECIFIC REQUIREMENTS:** The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

|   |  |  |   |
|---|--|--|---|
| <b>Exploratory:</b><br><input type="checkbox"/> Include a description of any proposed pump test, if applicable.   | <b>Pollution Control and/or Recovery:</b><br><input type="checkbox"/> Include a plan for pollution control/recovery, that includes the following:<br><input type="checkbox"/> A description of the need for the pollution control or recovery operation.<br><input type="checkbox"/> The estimated maximum period of time for completion of the operation.<br><input type="checkbox"/> The annual diversion amount.<br><input type="checkbox"/> The annual consumptive use amount.<br><input type="checkbox"/> The maximum amount of water to be diverted and injected for the duration of the operation.<br><input type="checkbox"/> The method and place of discharge.<br><input type="checkbox"/> The method of measurement of water produced and discharged.<br><input type="checkbox"/> The source of water to be injected.<br><input type="checkbox"/> The method of measurement of water injected.<br><input type="checkbox"/> The characteristics of the aquifer.<br><input type="checkbox"/> The method of determining the resulting annual consumptive use of water and depletion from any related stream system.<br><input type="checkbox"/> Proof of any permit required from the New Mexico Environment Department.<br><input type="checkbox"/> An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located. | <b>Construction De-Watering:</b><br><input type="checkbox"/> Include a description of the proposed dewatering operation.<br><input type="checkbox"/> The estimated duration of the operation.<br><input type="checkbox"/> The maximum amount of water to be diverted.<br><input type="checkbox"/> A description of the need for the dewatering operation, and,<br><input type="checkbox"/> A description of how the diverted water will be disposed of.  | <b>Mine De-Watering:</b><br><input type="checkbox"/> Include a plan for pollution control/recovery, that includes the following:<br><input type="checkbox"/> A description of the need for mine dewatering.<br><input type="checkbox"/> The estimated maximum period of time for completion of the operation.<br><input type="checkbox"/> The source(s) of the water to be diverted.<br><input type="checkbox"/> The geohydrologic characteristics of the aquifer(s).<br><input type="checkbox"/> The maximum amount of water to be diverted per annum.<br><input type="checkbox"/> The maximum amount of water to be diverted for the duration of the operation.<br><input type="checkbox"/> The quality of the water.<br><input type="checkbox"/> The method of measurement of water diverted.<br><input type="checkbox"/> The recharge of water to the aquifer.<br><input type="checkbox"/> Description of the estimated area of hydrologic effect of the project.<br><input type="checkbox"/> The method and place of discharge.<br><input type="checkbox"/> An estimation of the effects on surface water rights and underground water rights from the mine dewatering project.<br><input type="checkbox"/> A description of the methods employed to estimate effects on surface water rights and underground water rights.<br><input type="checkbox"/> Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect. |
| <b>Monitoring:</b><br><input checked="" type="checkbox"/> Include the reason for the monitoring well, and,<br><input checked="" type="checkbox"/> The duration of the planned monitoring. |  | <b>Ground Source Heat Pump:</b><br><input type="checkbox"/> Include a description of the geothermal heat exchange project.<br><input type="checkbox"/> The number of boreholes for the completed project and required depths.<br><input type="checkbox"/> The time frame for constructing the geothermal heat exchange project, and,<br><input type="checkbox"/> The duration of the project.<br><input type="checkbox"/> Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request. |   |

**ACKNOWLEDGEMENT**

I, We (name of applicant(s)), Charles Neligh of GHD on behalf of EOG Resources  
Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief

Charles Neligh  
Digitally signed by Charles Neligh  
Date: 2021.02.11 14:45:32 -07'00'  
Applicant Signature

[Signature]  
Applicant Signature



**ACTION OF THE STATE ENGINEER**

This application is:

☒ approved ☐ partially approved ☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this 25 day of March 20 21 for the State Engineer.

John R. D'Antonio Jr., P.E., State Engineer

By: [Signature]  
Signature

Juan Hernandez  
Print

Title: Water Resources Manager I  
Print

FOR OSE INTERNAL USE

Application for Permit, Form WR-07

File No.: C-4144

Trn No: 690620



# NEW MEXICO OFFICE OF THE STATE ENGINEER



## ATTACHMENT 1 POINT OF DIVERSION DESCRIPTIONS

This Attachment is to be completed if more than one (1) point of diversion is described on an Application or Declaration.

|  |   |  |   |
|--|---|--|---|
| <b>a. Is this a:</b><br><input type="checkbox"/> Move-From Point of Diversion(s)<br><input type="checkbox"/> Move-To Point of Diversion(s)                     |   | <b>b. Information on Attachment(s):</b><br>Number of points of diversion involved in the application: <u>35</u><br>Total number of pages attached to the application: <u>5</u> |   |
| <input type="checkbox"/> Surface Point of Diversion      OR <input checked="" type="checkbox"/> Well   |   |  |   |
| Name of ditch, acequia, or spring:   |   |  |   |
| Stream or water course:  |   |  |   |
| Tributary of:  |   |  |   |
| <b>c. Location (Required):</b><br>Required: Move to POD location coordinate must be either New Mexico State Plane (NAD 83), UTM (NAD 83), or Lat/Long (WGS84)  |   |  |   |
| NM State Plane (NAD83)<br>(feet)<br>NM West Zone <input type="checkbox"/><br>NM Central Zone <input type="checkbox"/><br>NM East Zone <input type="checkbox"/> | UTM (NAD83)<br>(meters)<br>Zone 13N <input type="checkbox"/><br>Zone 12N <input type="checkbox"/> | <input checked="" type="checkbox"/> Lat/Long--<br>(WGS84)<br>1/10 <sup>th</sup> of second  | OTHER (allowable only for move-from<br>descriptions - see application form for format)<br><input checked="" type="checkbox"/> PLSS (quarters, section, township, range)<br><input type="checkbox"/> Hydrographic Survey, Map & Tract<br><input type="checkbox"/> Lot, Block & Subdivision<br><input type="checkbox"/> Grant |
| POD Number: <u>C-4144</u><br><u>POD 17</u><br>SB-15  | X or Longitude<br>-103°43'21.79"E   | Y or Latitude<br>32°24'08.09"N   | Other Location Description:<br>T22s, R32E, Q7   |
| POD Number: <u>C-4144</u><br><u>POD 18</u><br>SB-16  | X or Longitude<br>-103°43'20.99"E   | Y or Latitude<br>32°24'08.03"N   | Other Location Description:<br>T22s, R32E, Q7   |
| POD Number: <u>C-4144</u> <u>POD 19</u><br>SB-17   | X or Longitude<br>-103°43'20.64"E   | Y or Latitude<br>32°24'08.04"N   | Other Location Description:<br>T22s, R32E, Q7   |
| POD Number: <u>C-4144</u> <u>POD 20</u><br>SB-18   | X or Longitude<br>-103°43'21.20"E   | Y or Latitude<br>32°24'13.89"N   | Other Location Description:<br>T22s, R32E, Q7   |
| POD Number: <u>C-4144</u> <u>POD 21</u><br>SB-19   | X or Longitude<br>-103°43'20.43"E   | Y or Latitude<br>32°24'13.69"N   | Other Location Description:<br>T22s, R32E, Q7   |
| POD Number: <u>C-4144</u> <u>POD 22</u><br>SB-20   | X or Longitude<br>-103°43'21.14"E   | Y or Latitude<br>32°24'13.25"N   | Other Location Description:<br>T22s, R32E, Q7   |
| POD Number: <u>C-4144</u> <u>POD 23</u><br>SB-21   | X or Longitude<br>-103°43'20.80"E   | Y or Latitude<br>32°24'13.25"N   | Other Location Description:<br>T22s, R32E, Q7   |
| POD Number: <u>C-4144</u> <u>POD 24</u><br>SB-22   | X or Longitude<br>-103°43'19.89"E   | Y or Latitude<br>32°24'13.57"N   | Other Location Description:<br>T22s, R32E, Q7   |
| POD Number: <u>C-4144</u> <u>POD 25</u><br>SB-23   | X or Longitude<br>-103°43'18.14"E   | Y or Latitude<br>32°24'15.26"N   | Other Location Description:<br>T22s, R32E, Q7   |

FOR OSE INTERNAL USE

Form wr-08

POD DESCRIPTIONS - ATTACHMENT 1

File Number: C-4144Trn Number: 690620Trans Description (optional): MON



# NEW MEXICO OFFICE OF THE STATE ENGINEER



## ATTACHMENT 1 POINT OF DIVERSION DESCRIPTIONS

This Attachment is to be completed if more than one (1) point of diversion is described on an Application or Declaration.

|  |   |  |   |
|--|---|--|---|
| <b>a. Is this a:</b><br><input type="checkbox"/> Move-From Point of Diversion(s)<br><input type="checkbox"/> Move-To Point of Diversion(s)                     |   | <b>b. Information on Attachment(s):</b><br>Number of points of diversion involved in the application: <u>35</u><br>Total number of pages attached to the application: <u>5</u> |   |
| <input type="checkbox"/> <b>Surface Point of Diversion</b> OR <input checked="" type="checkbox"/> <b>Well</b>  |   |  |   |
| Name of ditch, acequia, or spring:   |   |  |   |
| Stream or water course:  |   |  |   |
| Tributary of:  |   |  |   |
| <b>c. Location (Required):</b><br>Required: Move to POD location coordinate must be either New Mexico State Plane (NAD 83), UTM (NAD 83), or Lat/Long (WGS84)  |   |  |   |
| NM State Plane (NAD83)<br>(feet)<br>NM West Zone <input type="checkbox"/><br>NM Central Zone <input type="checkbox"/><br>NM East Zone <input type="checkbox"/> | UTM (NAD83)<br>(meters)<br>Zone 13N <input type="checkbox"/><br>Zone 12N <input type="checkbox"/> | <input checked="" type="checkbox"/> Lat/Long--<br>(WGS84)<br>1/10 <sup>th</sup> of second  | OTHER (allowable only for move-from<br>descriptions - see application form for format)<br><input checked="" type="checkbox"/> PLSS (quarters, section, township, range)<br><input type="checkbox"/> Hydrographic Survey, Map & Tract<br><input type="checkbox"/> Lot, Block & Subdivision<br><input type="checkbox"/> Grant |
| POD Number: <u>C-4144</u><br><u>SB-24</u> <u>POD 26</u>  | X or Longitude<br>-103°43'18.21"E   | Y or Latitude<br>32°24'14.62"N   | Other Location Description:<br>T22s, R32E, Q7   |
| POD Number: <u>C-4144</u><br><u>SB-25</u> <u>POD 27</u>  | X or Longitude<br>-103°43'18.40"E   | Y or Latitude<br>32°24'14.17"N   | Other Location Description:<br>T22s, R32E, Q7   |
| POD Number: <u>C-4144</u><br><u>SB-26</u> <u>POD 28</u>  | X or Longitude<br>-103°43'18.62"E   | Y or Latitude<br>32°24'13.51"N   | Other Location Description:<br>T22s, R32E, Q7   |
| POD Number: <u>C-4144</u><br><u>SB-27</u> <u>POD 29</u>  | X or Longitude<br>-103°43'18.85"E   | Y or Latitude<br>32°24'12.90"N   | Other Location Description:<br>T22s, R32E, Q7   |
| POD Number: <u>C-4144</u><br><u>SB-28</u> <u>POD 30</u>  | X or Longitude<br>-103°43'18.11"E   | Y or Latitude<br>32°24'13.22"N   | Other Location Description:<br>T22s, R32E, Q7   |
| POD Number: <u>C-4144</u><br><u>SB-29</u> <u>POD 31</u>  | X or Longitude<br>-103°43'17.42"E   | Y or Latitude<br>32°24'14.55"N   | Other Location Description:<br>T22s, R32E, Q7   |
| POD Number: <u>C-4144</u><br><u>SB-30</u> <u>POD 32</u>  | X or Longitude<br>-103°43'16.97"E   | Y or Latitude<br>32°24'12.85"N   | Other Location Description:<br>T22s, R32E, Q7   |
| POD Number: <u>C-4144</u><br><u>SB-31</u> <u>POD 33</u>  | X or Longitude<br>-103°43'15.44"E   | Y or Latitude<br>32°24'13.72"N   | Other Location Description:<br>T22s, R32E, Q7   |
| POD Number: <u>C-4144</u><br><u>SB-32</u> <u>POD 34</u>  | X or Longitude<br>-103°43'14.75"E   | Y or Latitude<br>32°24'13.86"N   | Other Location Description:<br>T22s, R32E, Q7   |

FOR USE INTERNAL USE

Form wr-08

POD DESCRIPTIONS - ATTACHMENT 1

|  |                           |
|--|---------------------------|
| File Number: <u>C-4144</u>               | Trn Number: <u>690620</u> |
| Trans Description (optional): <u>MON</u> |                           |



# NEW MEXICO OFFICE OF THE STATE ENGINEER



## ATTACHMENT 1 POINT OF DIVERSION DESCRIPTIONS

This Attachment is to be completed if more than one (1) point of diversion is described on an Application or Declaration.

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| <b>a. Is this a:</b><br><input type="checkbox"/> Move-From Point of Diversion(s)<br><input type="checkbox"/> Move-To Point of Diversion(s)                     |   | <b>b. Information on Attachment(s):</b><br>Number of points of diversion involved in the application: <u>35</u><br>Total number of pages attached to the application: <u>5</u> |   |
| <input type="checkbox"/> <b>Surface Point of Diversion</b> <b>OR</b> <input checked="" type="checkbox"/> <b>Well</b>   |   |  |   |
| Name of ditch, acequia, or spring:   |   |  |   |
| Stream or water course:  |   |  |   |
| Tributary of:  |   |  |   |
| <b>c. Location (Required):</b><br>Required: Move to POD location coordinate must be either New Mexico State Plane (NAD 83), UTM (NAD 83), or Lat/Long (WGS84)  |   |  |   |
| NM State Plane (NAD83)<br>(feet)<br>NM West Zone <input type="checkbox"/><br>NM Central Zone <input type="checkbox"/><br>NM East Zone <input type="checkbox"/> | UTM (NAD83)<br>(meters)<br>Zone 13N <input type="checkbox"/><br>Zone 12N <input type="checkbox"/> | <input checked="" type="checkbox"/> Lat/Long—<br>(WGS84)<br>1/10 <sup>th</sup> of second   | OTHER (allowable only for move-from<br>descriptions - see application form for format)<br><input checked="" type="checkbox"/> PLSS (quarters, section, township, range)<br><input type="checkbox"/> Hydrographic Survey, Map & Tract<br><input type="checkbox"/> Lot, Block & Subdivision<br><input type="checkbox"/> Grant |
| POD Number: <u>C-4144</u><br>SB-33 <u>POD 35</u>   | X or Longitude<br>-103°43'16.05"E   | Y or Latitude<br>32°24'11.77"N   | Other Location Description:<br>T22s, R32E, Q7   |
| POD Number: <u>C-4144</u><br>SB-34 <u>POD 36</u>   | X or Longitude<br>-103°43'16.62"E   | Y or Latitude<br>32°24'11.45"N   | Other Location Description:<br>T22s, R32E, Q7   |
| POD Number: <u>C-4144</u><br>SB-35 <u>POD 37</u>   | X or Longitude<br>-103°43'17.73"E   | Y or Latitude<br>32°24'11.83"N   | Other Location Description:<br>T22s, R32E, Q7   |
| POD Number: <u>C-4144</u><br>SB-36 <u>POD 38</u>   | X or Longitude<br>-103°43'17.82"E   | Y or Latitude<br>32°24'11.18"N   | Other Location Description:<br>T22s, R32E, Q7   |
| POD Number: <u>C-4144</u><br>SB-37 <u>POD 39</u>   | X or Longitude<br>-103°43'18.73"E   | Y or Latitude<br>32°24'11.17"N   | Other Location Description:<br>T22s, R32E, Q7   |
| POD Number: <u>C-4144</u><br>SB-38 <u>POD 40</u>   | X or Longitude<br>-103°43'18.71"E   | Y or Latitude<br>32°24'10.67"N   | Other Location Description:<br>T22s, R32E, Q7   |
| POD Number: <u>C-4144</u><br>SB-39 <u>POD 41</u>   | X or Longitude<br>-103°43'19.46"E   | Y or Latitude<br>32°24'10.40"N   | Other Location Description:<br>T22s, R32E, Q7   |
| POD Number: <u>C-4144</u><br>SB-40 <u>POD 42</u>   | X or Longitude<br>-103°43'17.69"E   | Y or Latitude<br>32°24'11.09"N   | Other Location Description:<br>T22s, R32E, Q7   |
| POD Number: <u>C-4144</u><br>SB-41 <u>POD 43</u>   | X or Longitude<br>-103°43'19.07"E   | Y or Latitude<br>32°24'13.98"N   | Other Location Description:<br>T22s, R32E, Q7   |

FOR OSE INTERNAL USE

Form wr-08

POD DESCRIPTIONS - ATTACHMENT 1

|  |                           |
|--|---------------------------|
| File Number: <u>C-4144</u>               | Trn Number: <u>690620</u> |
| Trans Description (optional): <u>MON</u> |                           |





# NEW MEXICO OFFICE OF THE STATE ENGINEER



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| <b>a. Is this a:</b><br><input type="checkbox"/> Move-From Point of Diversion(s)<br><input type="checkbox"/> Move-To Point of Diversion(s)                                |  | <b>b. Information on Attachment(s):</b><br>Number of points of diversion involved in the application: <u>35</u><br>Total number of pages attached to the application: <u>5</u> |   |
| <input type="checkbox"/> <b>Surface Point of Diversion</b> OR <input checked="" type="checkbox"/> <b>Well</b>   |  |  |   |
| Name of ditch, acequia, or spring:  |  |  |   |
| Stream or water course:   |  |  |   |
| Tributary of:   |  |  |   |
| <b>c. Location (Required):</b><br>Required: Move to POD location coordinate must be either New Mexico State Plane (NAD 83), UTM (NAD 83), or Lat/Long (WGS84)             |  |  |   |
| NM State Plane (NAD83)<br>(feet)<br>NM West Zone <input type="checkbox"/><br>NM Central Zone <input type="checkbox"/><br>NM East Zone <input checked="" type="checkbox"/> | UTM (NAD83)<br>(meters)<br>Zone 13N <input checked="" type="checkbox"/><br>Zone 12N <input type="checkbox"/> | <input checked="" type="checkbox"/> Lat/Long-<br>(WGS84)<br>1/10 <sup>th</sup> of second   | OTHER (allowable only for move-from<br>descriptions - see application form for format)<br><input checked="" type="checkbox"/> PLSS (quarters, section, township, range)<br><input type="checkbox"/> Hydrographic Survey, Map & Tract<br><input type="checkbox"/> Lot, Block & Subdivision<br><input type="checkbox"/> Grant |
| POD Number: <u>C-4144</u><br>SB-42 <u>POD 44</u>  | X or Longitude<br>-103°43'18.64"E  | Y or Latitude<br>32°24'14.79"N   | Other Location Description:<br>T22s, R32E, Q7   |
| POD Number: <u>C-4144</u><br>SB-43 <u>POD 45</u>  | X or Longitude<br>-103°43'21.50"E  | Y or Latitude<br>32°24'08.90"N   | Other Location Description:<br>T22s, R32E, Q7   |
| POD Number: <u>C-4144</u><br>SB-44 <u>POD 46</u>  | X or Longitude<br>-103°43'21.53"E  | Y or Latitude<br>32°24'07.79"N   | Other Location Description:<br>T22s, R32E, Q7   |
| POD Number:   | X or Longitude   | Y or Latitude  | Other Location Description:   |
| POD Number:   | X or Longitude   | Y or Latitude  | Other Location Description:   |
| POD Number:   | X or Longitude   | Y or Latitude  | Other Location Description:   |
| POD Number:   | X or Longitude   | Y or Latitude  | Other Location Description:   |
| POD Number:   | X or Longitude   | Y or Latitude  | Other Location Description:   |
| POD Number:   | X or Longitude   | Y or Latitude  | Other Location Description:   |

FOR OSE INTERNAL USE

Form wr-08

POD DESCRIPTIONS - ATTACHMENT 1

|  |                           |
|--|---------------------------|
| File Number: <u>C-4144</u>               | Trn Number: <u>690420</u> |
| Trans Description (optional): <u>MON</u> |                           |

**NEW MEXICO STATE ENGINEER OFFICE  
PERMIT TO EXPLORE**

**SPECIFIC CONDITIONS OF APPROVAL**

- 17-1A Depth of the well shall not exceed the thickness of the valley fill.
- 17-4 No water shall be appropriated and beneficially used under this permit.
- 17-6 The well authorized by this permit shall be plugged completely using the following method per Rules and Regulations Governing Well Driller Licensing, Construction, Repair and Plugging of Wells; Subsection C of 19.27.4.30 NMAC unless an alternative plugging method is proposed by the well owner and approved by the State Engineer upon completion of the permitted use. All pumping appurtenance shall be removed from the well prior to plugging. To plug a well, the entire well shall be filled from the bottom upwards to ground surface using a tremie pipe. The bottom of the tremie shall remain submerged in the sealant throughout the entire sealing process; other placement methods may be acceptable and approved by the state engineer. The well shall be plugged with an office of the state engineer approved sealant for use in the plugging of non-artesian wells. The well driller shall cut the casing off at least four (4) feet below ground surface and fill the open hole with at least two vertical feet of approved sealant. The driller must fill or cover any open annulus with sealant. Once the sealant has cured, the well driller or well owner may cover the seal with soil. A Plugging Report for said well shall be filed with the Office of the State Engineer in a District Office within 30 days of completion of the plugging.
- 17-7 The Permittee shall utilize the highest and best technology available to ensure conservation of water to the maximum extent practical.

Trn Desc: C 04144 POD12-46

File Number: C 04144

Trn Number: 690620



NEW MEXICO STATE ENGINEER OFFICE  
PERMIT TO EXPLORE

SPECIFIC CONDITIONS OF APPROVAL (Continued)

- 17-B The well shall be drilled by a driller licensed in the State of New Mexico in accordance with 72-12-12 NMSA 1978. A licensed driller shall not be required for the construction of a well driven without the use of a drill rig, provided that the casing shall not exceed two and three-eighths (2 3/8) inches outside diameter.
- 17-C The well driller must file the well record with the State Engineer and the applicant within 30 days after the well is drilled or driven. It is the well owner's responsibility to ensure that the well driller files the well record.  
The well driller may obtain the well record form from any District Office or the Office of the State Engineer website.
- 17-P The well shall be constructed, maintained, and operated to prevent inter-aquifer exchange of water and to prevent loss of hydraulic head between hydrogeologic zones.
- 17-Q The State Engineer retains jurisdiction over this permit.
- 17-R Pursuant to section 72-8-1 NMSA 1978, the permittee shall allow the State Engineer and OSE representatives entry upon private property for the performance of their respective duties, including access to the ditch or acequia to measure flow and also to the well for meter reading and water level measurement.
- LOG The Point of Diversion C 04144 POC28 must be completed and the Well Log filed on or before 03/25/2022.
- LOG The Point of Diversion C 04144 POD12 must be completed and the Well Log filed on or before 03/25/2022.

Trn Desc: C 04144 POD12-46

File Number: C 04144

Trn Number: 690620

**NEW MEXICO STATE ENGINEER OFFICE  
PERMIT TO EXPLORE**

**SPECIFIC CONDITIONS OF APPROVAL (Continued)**

LOG      The Point of Diversion C 04144 POD13 must be completed and the Well Log filed on or before 03/25/2022.

LOG      The Point of Diversion C 04144 POD14 must be completed and the Well Log filed on or before 03/25/2022.

LOG      The Point of Diversion C 04144 POD15 must be completed and the Well Log filed on or before 03/25/2022.

LOG      The Point of Diversion C 04144 POD16 must be completed and the Well Log filed on or before 03/25/2022.

LOG      The Point of Diversion C 04144 POD17 must be completed and the Well Log filed on or before 03/25/2022.

LOG      The Point of Diversion C 04144 POD18 must be completed and the Well Log filed on or before 03/25/2022.

LOG      The Point of Diversion C 04144 POD19 must be completed and the Well Log filed on or before 03/25/2022.

LOG      The Point of Diversion C 04144 POD20 must be completed and the Well Log filed on or before 03/25/2022.

LOG      The Point of Diversion C 04144 POD21 must be completed and the Well Log filed on or before 03/25/2022.

LOG      The Point of Diversion C 04144 POD22 must be completed and the Well Log filed on or before 03/25/2022.

Trn Desc: C 04144 POD12-46

File Number: C 04144

Trn Number: 690620

**NEW MEXICO STATE ENGINEER OFFICE  
PERMIT TO EXPLORE**

**SPECIFIC CONDITIONS OF APPROVAL (Continued)**

LOG      The Point of Diversion C 04144 POD23 must be completed and the Well Log filed on or before 03/25/2022.

LOG      The Point of Diversion C 04144 POD24 must be completed and the Well Log filed on or before 03/25/2022.

LOG      The Point of Diversion C 04144 POD25 must be completed and the Well Log filed on or before 03/25/2022.

LOG      The Point of Diversion C 04144 POD26 must be completed and the Well Log filed on or before 03/25/2022.

LOG      The Point of Diversion C 04144 POD27 must be completed and the Well Log filed on or before 03/25/2022.

LOG      The Point of Diversion C 04144 POD29 must be completed and the Well Log filed on or before 03/25/2022.

LOG      The Point of Diversion C 04144 POD30 must be completed and the Well Log filed on or before 03/25/2022.

LOG      The Point of Diversion C 04144 POD31 must be completed and the Well Log filed on or before 03/25/2022.

LOG      The Point of Diversion C 04144 POD32 must be completed and the Well Log filed on or before 03/25/2022.

LOG      The Point of Diversion C 04144 POD33 must be completed and the Well Log filed on or before 03/25/2022.

Trn Desc: C 04144 POD12-46

File Number: C 04144

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NEW MEXICO STATE ENGINEER OFFICE  
PERMIT TO EXPLORE

SPECIFIC CONDITIONS OF APPROVAL (Continued)

LOG The Point of Diversion C 04144 POD34 must be completed and the Well Log filed on or before 03/25/2022.

LOG The Point of Diversion C 04144 POD35 must be completed and the Well Log filed on or before 03/25/2022.

LOG The Point of Diversion C 04144 POD36 must be completed and the Well Log filed on or before 03/25/2022.

LOG The Point of Diversion C 04144 POD37 must be completed and the Well Log filed on or before 03/25/2022.

LOG The Point of Diversion C 04144 POD38 must be completed and the Well Log filed on or before 03/25/2022.

LOG The Point of Diversion C 04144 POD39 must be completed and the Well Log filed on or before 03/25/2022.

LOG The Point of Diversion C 04144 POD40 must be completed and the Well Log filed on or before 03/25/2022.

LOG The Point of Diversion C 04144 POD41 must be completed and the Well Log filed on or before 03/25/2022.

LOG The Point of Diversion C 04144 POD42 must be completed and the Well Log filed on or before 03/25/2022.

LOG The Point of Diversion C 04144 POD43 must be completed and the Well Log filed on or before 03/25/2022.

Trn Desc: C 04144 POD12-46

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**NEW MEXICO STATE ENGINEER OFFICE  
PERMIT TO EXPLORE**

**SPECIFIC CONDITIONS OF APPROVAL (Continued)**

- LOG      The Point of Diversion C 04144 POD44 must be completed and the Well Log filed on or before 03/25/2022.
- LOG      The Point of Diversion C 04144 POD45 must be completed and the Well Log filed on or before 03/25/2022.
- LOG      The Point of Diversion C 04144 POD46 must be completed and the Well Log filed on or before 03/25/2022.

IT IS THE PERMITTEES RESPONSIBILITY TO OBTAIN ALL AUTHORIZATIONS AND PERMISSIONS TO DRILL ON PROPERTY OF OTHER OWNERSHIP BEFORE COMMENCING ACTIVITIES UNDER THIS PERMIT.

**ACTION OF STATE ENGINEER**

|                                     |                          |
|-------------------------------------|--------------------------|
| Notice of Intention Rcvd:           | Date Rcvd. Corrected:    |
| Formal Application Rcvd: 03/10/2021 | Pub. of Notice Ordered:  |
| Date Returned - Correction:         | Affidavit of Pub. Filed: |

This application is approved provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare of the state; and further subject to the specific conditions listed previously.

Witness my hand and seal this 25 day of Mar A.D., 2021

John R. D Antonio, Jr., P.E., State Engineer

By: \_\_\_\_\_

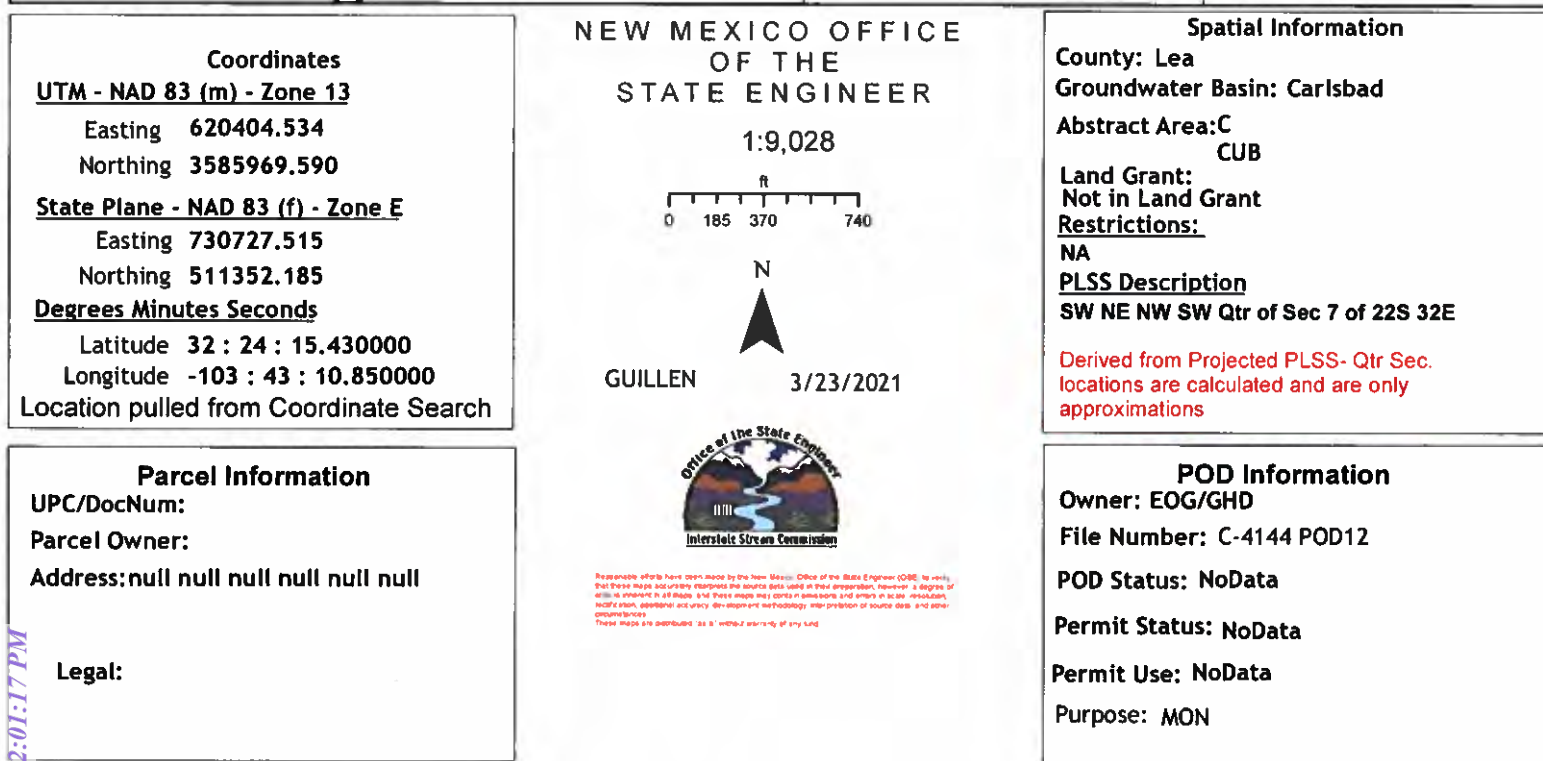
JUAN HERNADEZ



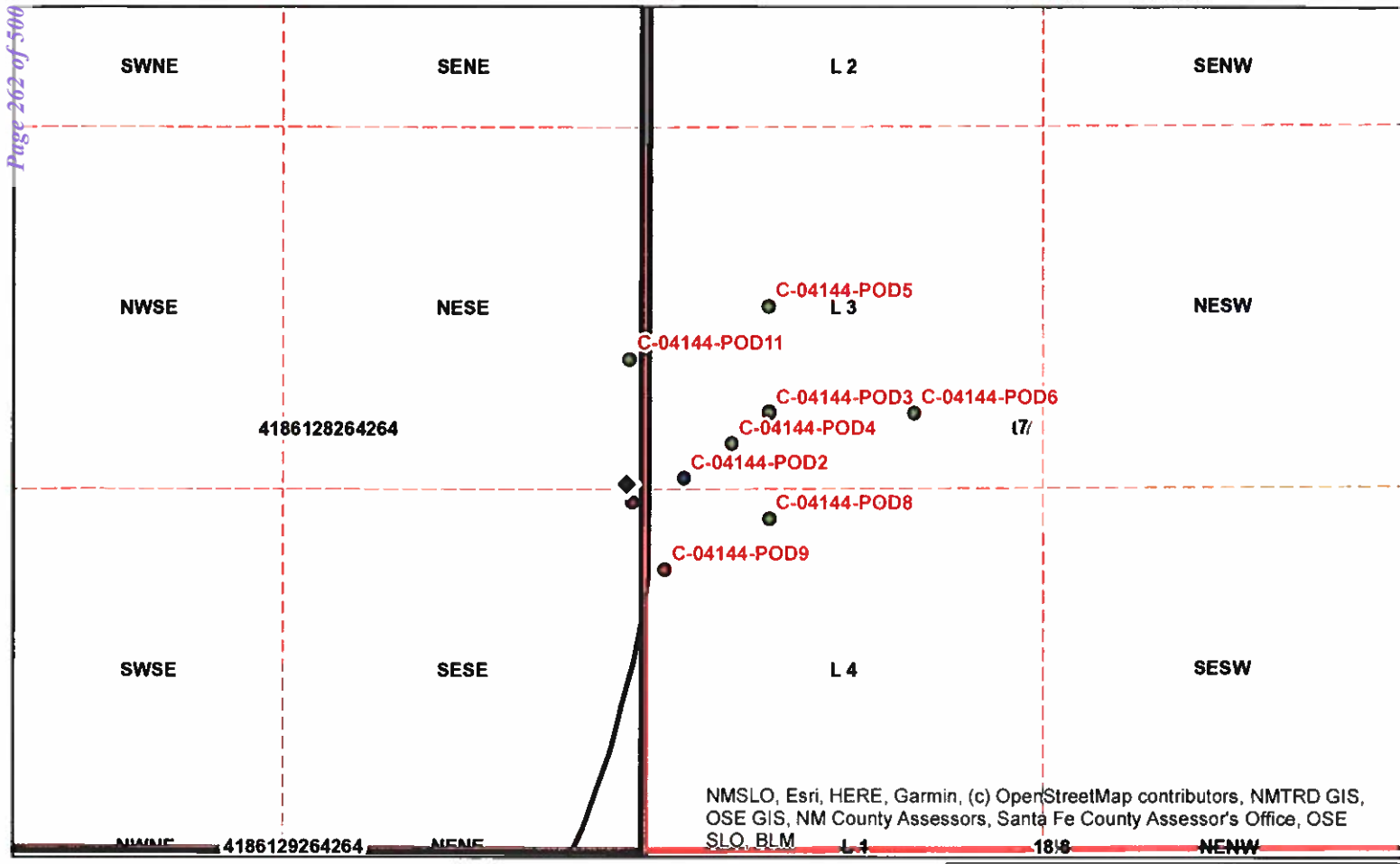
Trn Desc: C 04144 POD12-46

File Number: C 04144

Trn Number: 690620



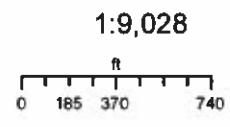




**Coordinates**  
**UTM - NAD 83 (m) - Zone 13**  
Easting 620082.236  
Northing 3585762.152  
**State Plane - NAD 83 (f) - Zone E**  
Easting 729665.704  
Northing 510678.108  
**Degrees Minutes Seconds**  
Latitude 32 : 24 : 8.820000  
Longitude -103 : 43 : 23.280000  
Location pulled from Coordinate Search

**Parcel Information**  
UPC/DocNum: 4186128264264  
Parcel Owner: BUREAU OF LAND  
Address:null null null  
  
**Legal:** Quarter: NE S: 12 T: 22S R: 31E Quarter: NW S: 12 T: 22S R: 31E Quarter: SW S: 12 T: 22S R: 31E Quarter: SE S: 12 T: 22S R: 31E ALL MAP# 280-12 LOC CARLSBAD EXEMPT

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**Spatial Information**  
County: Eddy  
Groundwater Basin: Carlsbad  
Abstract Area: CUB  
Land Grant: Not in Land Grant  
Restrictions: NA  
**PLSS Description**  
SESENESE Qtr of Sec 12 of 022S 031E  
  
Derived from CADNSDI- Qtr Sec. locations are calculated and are only approximations

**POD Information**  
Owner: EOG/GHD  
File Number: C-4144 POD13  
POD Status: NoData  
Permit Status: NoData  
Permit Use: NoData  
Purpose: MON

◆ Coord Search Location

● Active

● Pending

● Plugged

**GIS WATERS**

**ODs**

**New Mexico State Trust Lands**

Subsurface Estate

Surface Estate

Both Estates

□ Chaves County Parcels 2020

□ Eddy County Parcels 2020

□ Sections

□ BLM Land Grant

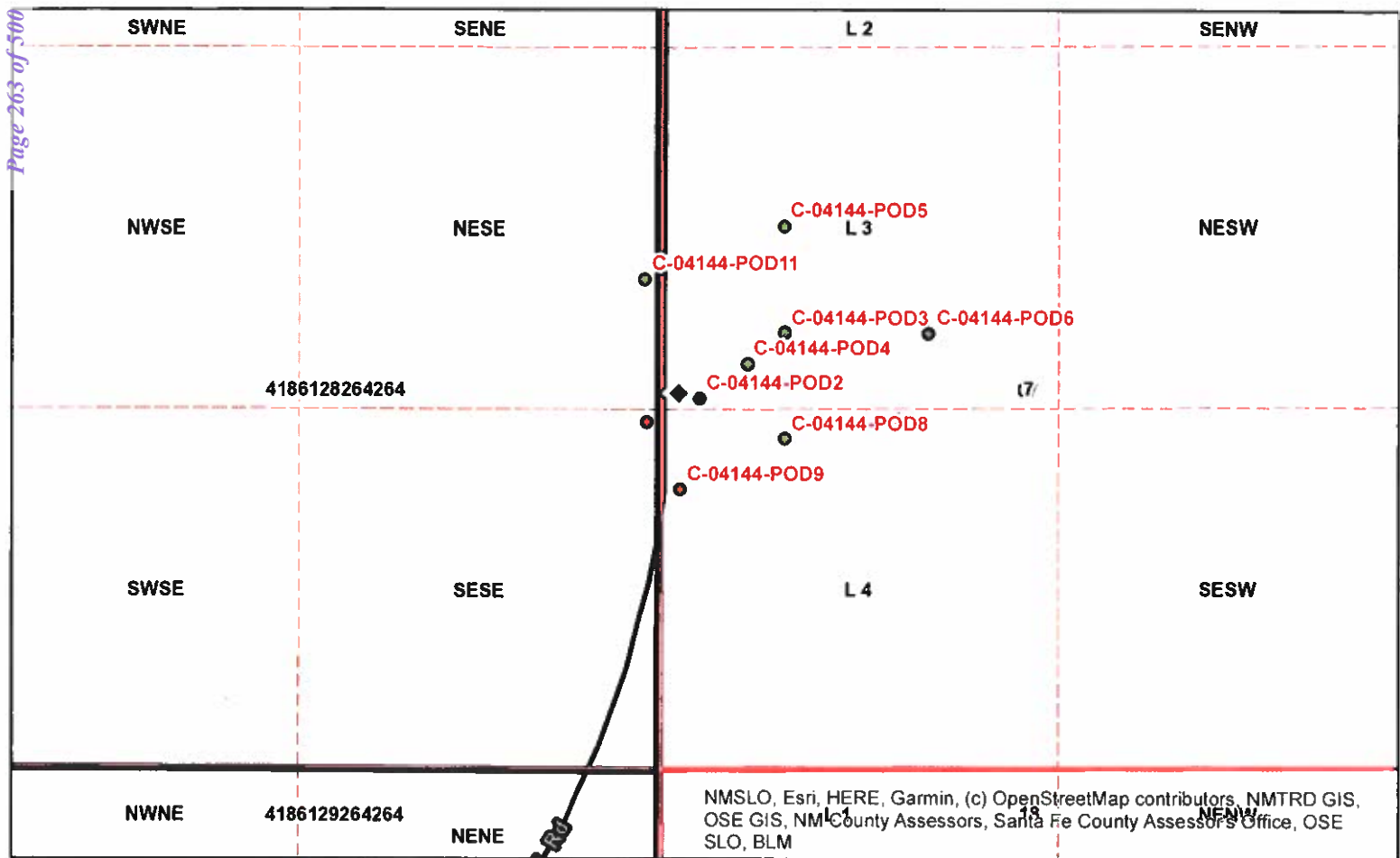
□ PLSSTownship

□ PLSSFirstDiv...

□ PLSSSecond...

Received by OGD: 3/22/2022 2:01:17 PM

Released to Imaging: 5/2/2022 3:36:34 PM



**Coordinates**  
**UTM - NAD 83 (m) - Zone 13**  
Easting 620122.848  
Northing 3585774.649  
**State Plane - NAD 83 (f) - Zone E**  
Easting 729799.221  
Northing 510718.284  
**Degrees Minutes Seconds**  
Latitude 32 : 24 : 9.210000  
Longitude -103 : 43 : 21.720000  
Location pulled from Coordinate Search

**NEW MEXICO OFFICE OF THE STATE ENGINEER**  
1:9,028  
0 185 370 740  
N  
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**Spatial Information**  
County: Lea  
Groundwater Basin: Carlsbad  
Abstract Area: C  
CUB  
Land Grant:  
Not in Land Grant  
Restrictions:  
NA  
**PLSS Description**  
SW SW NW SW Qtr of Sec 7 of 22S 32E  
Derived from Projected PLSS- Qtr Sec.  
locations are calculated and are only  
approximations

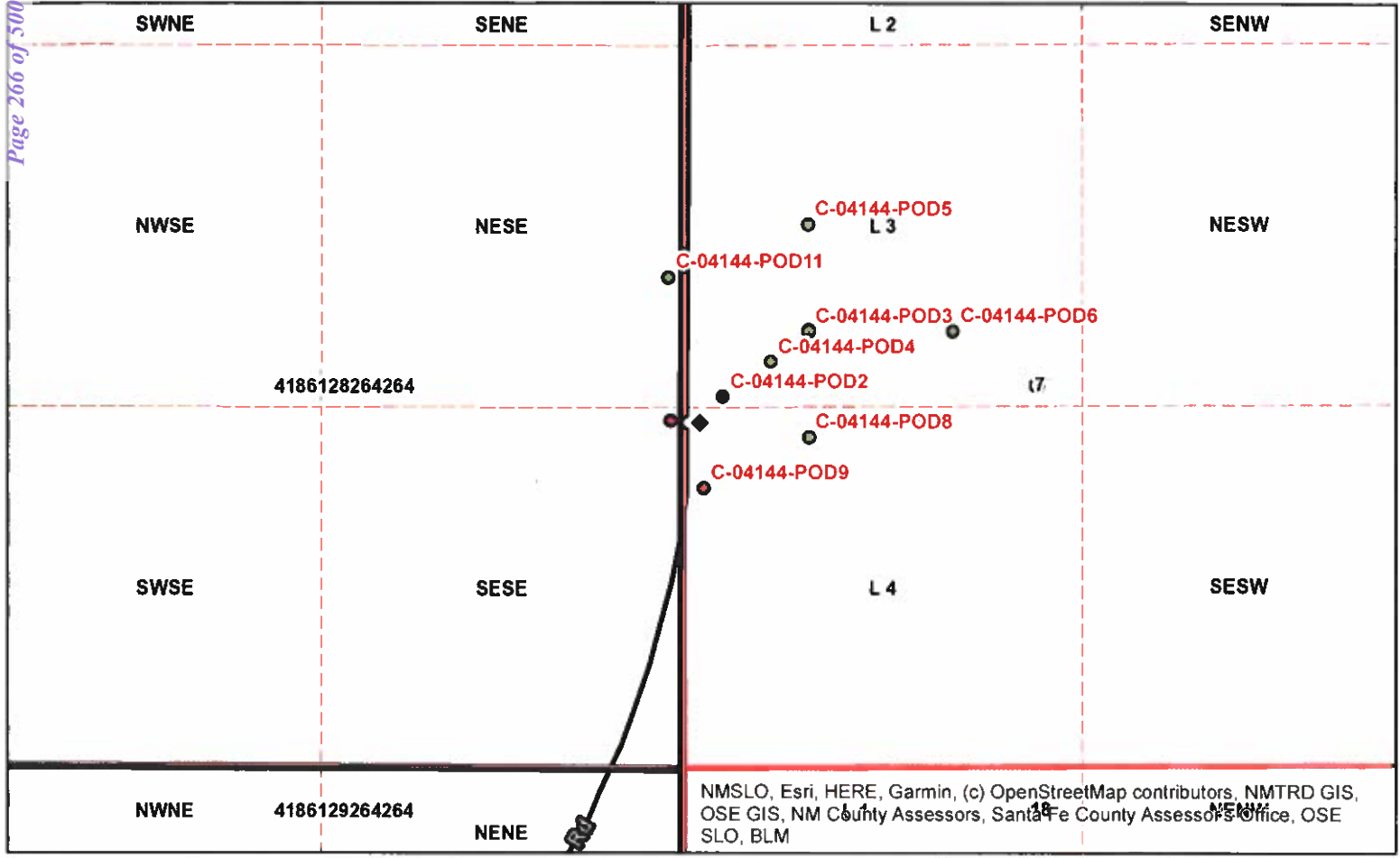
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UPC/DocNum:  
Parcel Owner:  
Address: null null null null null null  
Legal:

**POD Information**  
Owner: EOG/GHD  
File Number: C-4144 POD14  
POD Status: NoData  
Permit Status: NoData  
Permit Use: NoData  
Purpose: MON

|                         |                                     |                              |                   |
|-------------------------|-------------------------------------|------------------------------|-------------------|
| ◆ Coord Search Location | <b>New Mexico State Trust Lands</b> | □ Chaves County Parcels 2020 | □ PLSSTownship    |
| <b>GIS WATERS</b>       | Subsurface Estate                   | □ Eddy County Parcels 2020   | □ PLSSFirstDiv... |
| <b>PODs</b>             | Surface Estate                      | □ Sections                   | □ PLSSSecond...   |
| ● Active                | Both Estates                        | □ BLM Land Grant             |                   |
| ● Pending               |                                     |                              |                   |
| ● Plugged               |                                     |                              |                   |







**Coordinates**  
**UTM - NAD 83 (m) - Zone 13**  
Easting 620121.431  
Northing 3585740.137  
**State Plane - NAD 83 (f) - Zone E**  
Easting 729793.866  
Northing 510605.067  
**Degrees Minutes Seconds**  
Latitude 32 : 24 : 8.090000  
Longitude -103 : 43 : 21.790000  
Location pulled from Coordinate Search

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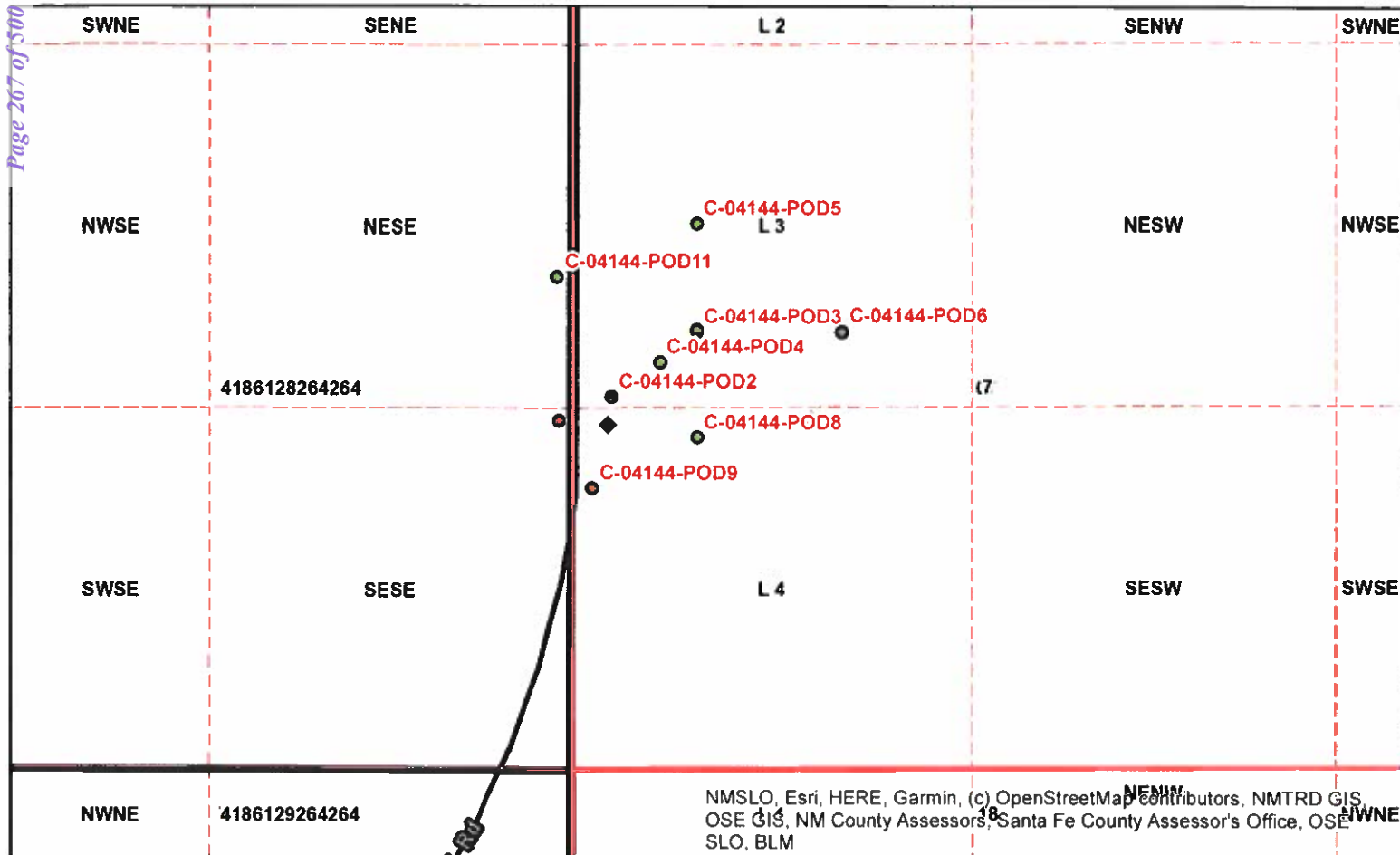
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**Spatial Information**  
County: Lea  
Groundwater Basin: Carlsbad  
Abstract Area: C  
CUB  
Land Grant:  
Not in Land Grant  
Restrictions:  
NA  
PLSS Description  
NW NW SW SW Qtr of Sec 7 of 22S 32E  
Derived from Projected PLSS- Qtr Sec.  
locations are calculated and are only  
approximations

**Parcel Information**  
UPC/DocNum:  
Parcel Owner:  
Address: null null null null null null  
Legal:

**POD Information**  
Owner: EOG/GHD  
File Number: C-4144 POD17  
POD Status: NoData  
Permit Status: NoData  
Permit Use: NoData  
Purpose: MON

|                         |                                     |                              |                   |
|-------------------------|-------------------------------------|------------------------------|-------------------|
| ◆ Coord Search Location | <b>New Mexico State Trust Lands</b> | □ Chaves County Parcels 2020 | □ PLSSTownship    |
| <b>IS WATERS</b>        | Subsurface Estate                   | □ Eddy County Parcels 2020   | □ PLSSFirstDiv... |
| <b>PODs</b>             | Surface Estate                      | □ Sections                   | □ PLSSSecond...   |
| ● Active                | Both Estates                        | □ BLM Land Grant             |                   |
| ● Pending               |                                     |                              |                   |
| ● Plugged               |                                     |                              |                   |



### Coordinates

UTM - NAD 83 (m) - Zone 13

Easting 620142.354

Northing 3585738.539

State Plane - NAD 83 (f) - Zone E

Easting 729862.486

Northing 510599.395

Degrees Minutes Seconds

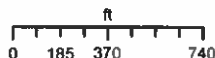
Latitude 32 : 24 : 8.030000

Longitude -103 : 43 : 20.990000

Location pulled from Coordinate Search

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### Spatial Information

County: Lea

Groundwater Basin: Carlsbad

Abstract Area: C

CUB

Land Grant:

Not in Land Grant

Restrictions:

NA

PLSS Description

NW NW SW SW Qtr of Sec 7 of 22S 32E

Derived from Projected PLSS- Qtr Sec locations are calculated and are only approximations

### Parcel Information

UPC/DocNum:

Parcel Owner:

Address: null null null null null

Legal:

### POD Information

Owner: EOG/GHD

File Number: C-4144 POD18

POD Status: NoData

Permit Status: NoData

Permit Use: NoData

Purpose: MON

Coord Search Location

New Mexico State Trust Lands

Chaves County Parcels 2020

PLSS Township

Eddy County Parcels 2020

PLSS First Div...

Sections

PLSS Second...

BLM Land Grant

Subsurface Estate

Surface Estate

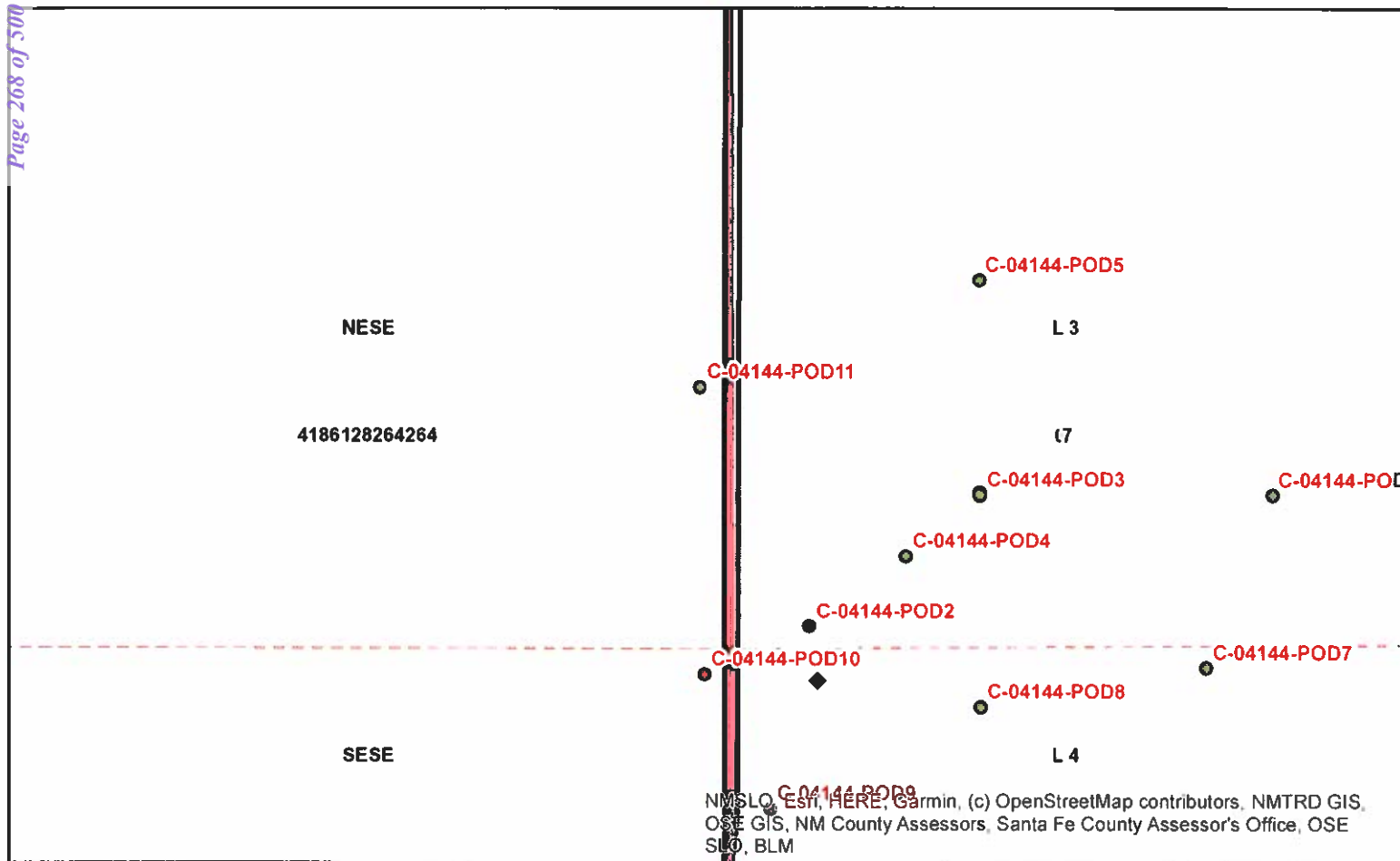
Both Estates

GIS WATERS

PODs

- Active
- Pending
- Plugged

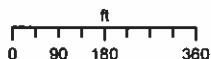




**Coordinates**  
UTM - NAD 83 (m) - Zone 13  
 Easting 620151.494  
 Northing 3585738.957  
State Plane - NAD 83 (f) - Zone E  
 Easting 729892.486  
 Northing 510600.577  
Degrees Minutes Seconds  
 Latitude 32 : 24 : 8.040000  
 Longitude -103 : 43 : 20.640000  
 Location pulled from Coordinate Search

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**Spatial Information**

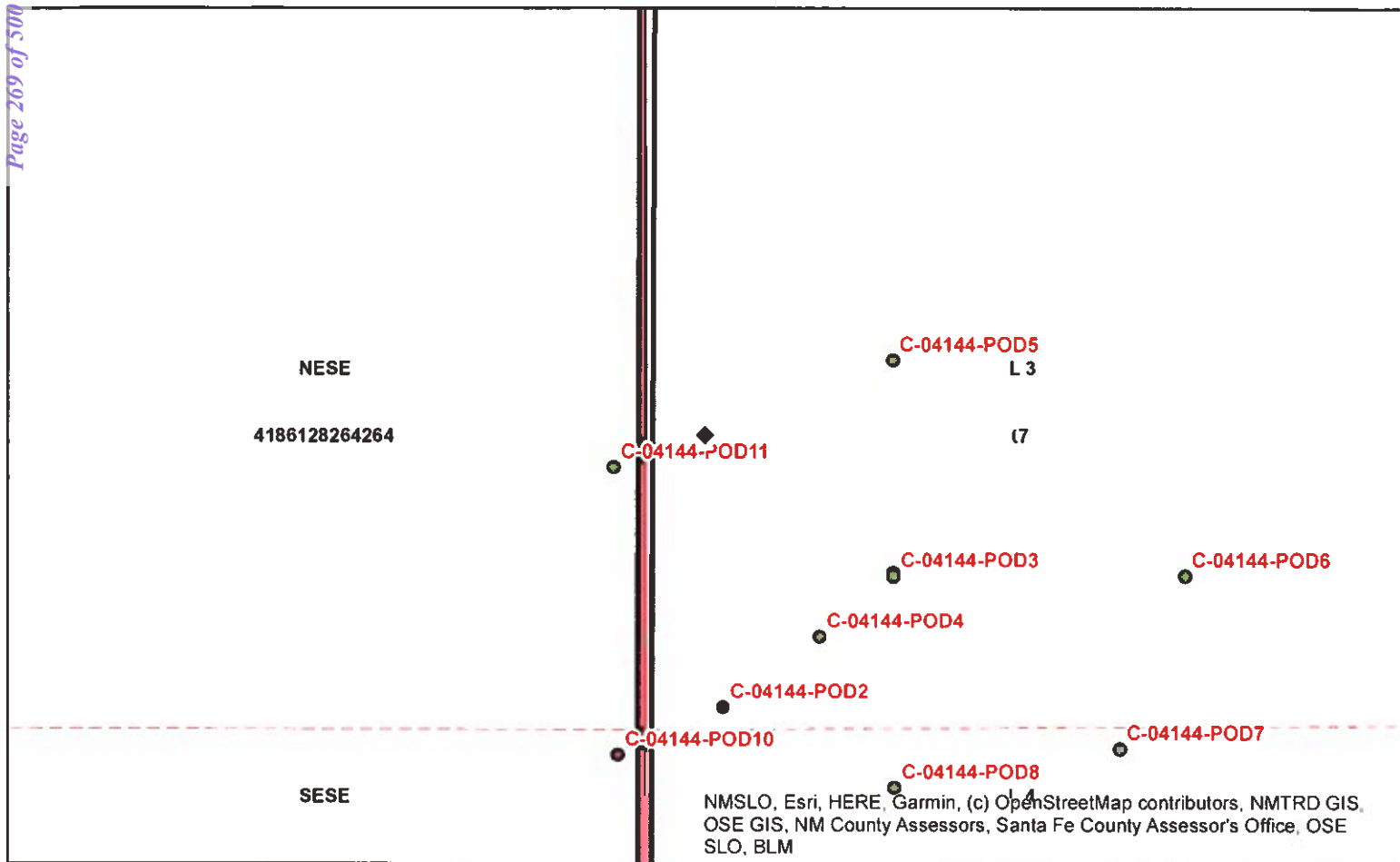
County: Lea  
 Groundwater Basin: Carlsbad  
 Abstract Area: C  
 CUB  
 Land Grant:  
 Not in Land Grant  
Restrictions:  
 NA  
PLSS Description  
 NW NW SW SW Qtr of Sec 7 of 22S 32E  
 Derived from Projected PLSS- Qtr Sec.  
 locations are calculated and are only  
 approximations

**Parcel Information**  
 UPC/DocNum:  
 Parcel Owner:  
 Address: null null null null null null  
 Legal:

**POD Information**

Owner: EOG/GHD  
 File Number: C-4144 POD19  
 POD Status: NoData  
 Permit Status: NoData  
 Permit Use: NoData  
 Purpose: MON

- |                         |                                     |                              |                   |
|-------------------------|-------------------------------------|------------------------------|-------------------|
| ◆ Coord Search Location | <b>New Mexico State Trust Lands</b> | □ Chaves County Parcels 2020 | □ PLSSTownship    |
| <b>IS WATERS</b>        | Subsurface Estate                   | □ Eddy County Parcels 2020   | □ PLSSFirstDiv... |
| ODs                     | Surface Estate                      | □ Sections                   | □ PLSSSecond...   |
| ● Active                | Both Estates                        | □ BLM Land Grant             |                   |
| ● Pending               |                                     |                              |                   |
| ● Plugged               |                                     |                              |                   |



**Coordinates**  
**UTM - NAD 83 (m) - Zone 13**  
 Easting 620134.711  
 Northing 3585918.931  
**State Plane - NAD 83 (f) - Zone E**  
 Easting 729841.099  
 Northing 511191.478  
**Degrees Minutes Seconds**  
 Latitude 32 : 24 : 13.890000  
 Longitude -103 : 43 : 21.200000  
 Location pulled from Coordinate Search

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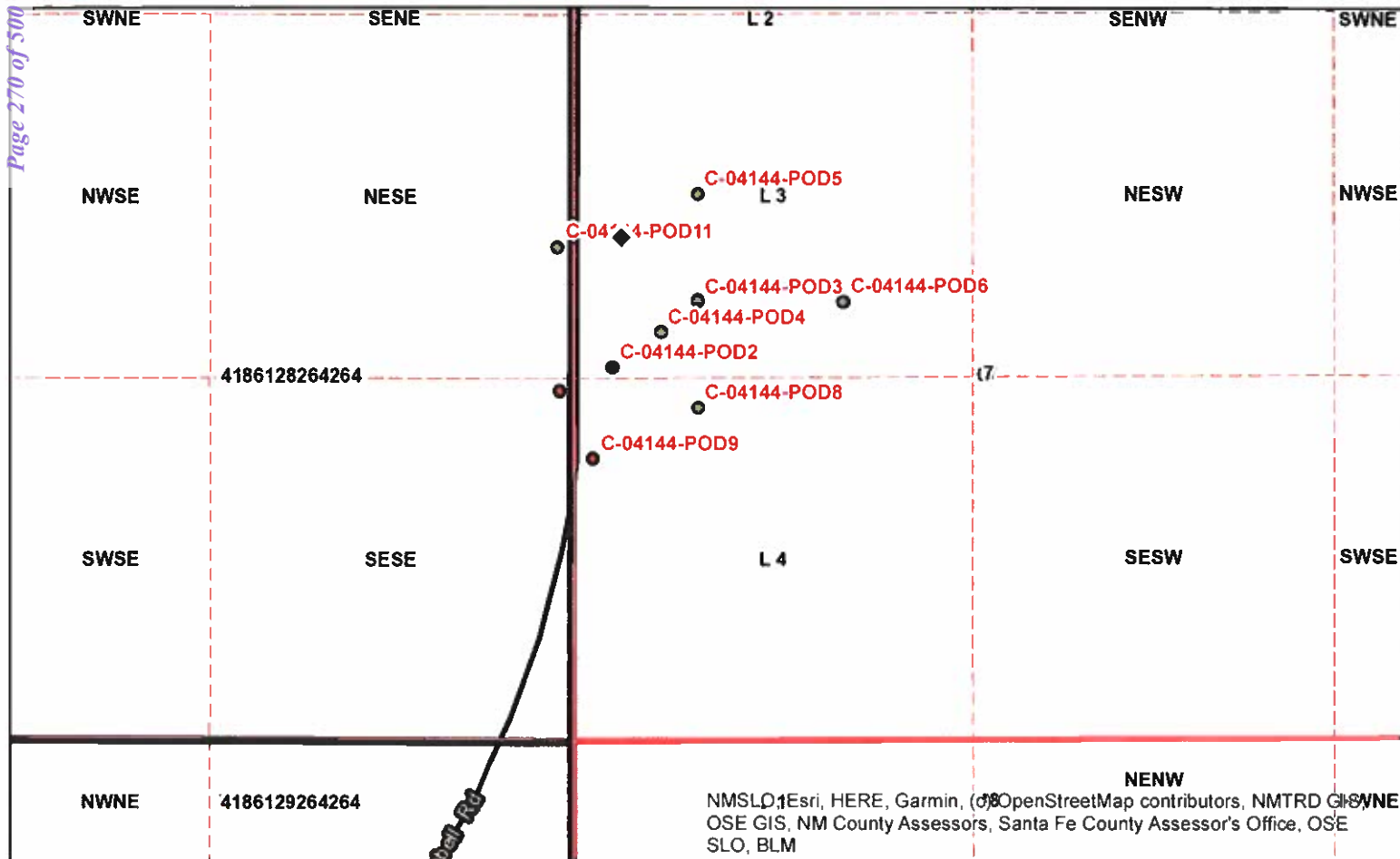
**Spatial Information**  
 County: Lea  
 Groundwater Basin: Carlsbad  
 Abstract Area: C  
 CUB  
 Land Grant:  
 Not in Land Grant  
 Restrictions:  
 NA  
**PLSS Description**  
 NW SW NW SW Qtr of Sec 7 of 22S 32E  
 Derived from Projected PLSS- Qtr Sec.  
 locations are calculated and are only  
 approximations

**Parcel Information**  
 UPC/DocNum:  
 Parcel Owner:  
 Address: null null null null null null  
 Legal:



**POD Information**  
 Owner: EOG/GHD  
 File Number: C-4144 POD20  
 POD Status: NoData  
 Permit Status: NoData  
 Permit Use: NoData  
 Purpose: MON

- ◆ Coord Search Location
- IS WATERS
- ODs
- Active
- Pending
- Plugged
- New Mexico State Trust Lands
- Subsurface Estate
- Surface Estate
- Both Estates
- Chaves County Parcels 2020
- Eddy County Parcels 2020
- Sections
- BLM Land Grant
- PLSSTownship
- PLSSFirstDiv...
- PLSSSecond...



### Coordinates

UTM - NAD 83 (m) - Zone 13

Easting 620154.901

Northing 3585913.013

State Plane - NAD 83 (f) - Zone E

Easting 729907.227

Northing 511171.644

Degrees Minutes Seconds

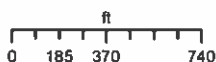
Latitude 32 : 24 : 13.690000

Longitude -103 : 43 : 20.430000

Location pulled from Coordinate Search

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### Spatial Information

County: Lea

Groundwater Basin: Carlsbad

Abstract Area: C

CUB

Land Grant:

Not in Land Grant

Restrictions:

NA

PLSS Description

NW SW NW SW Qtr of Sec 7 of 22S 32E

Derived from Projected PLSS- Qtr Sec. locations are calculated and are only approximations

### Parcel Information

UPC/DocNum:

Parcel Owner:

Address: null null null null null null

Legal:

### POD Information

Owner: EOG/GHD

File Number: C-4144 POD21

POD Status: NoData

Permit Status: NoData

Permit Use: NoData

Purpose: MON

Coord Search Location

New Mexico State Trust Lands

Chaves County Parcels 2020

PLSSTownship

GIS WATERS

Subsurface Estate

Eddy County Parcels 2020

PLSSFirstDiv...

PODs

Surface Estate

Sections

PLSSSecond...

Active



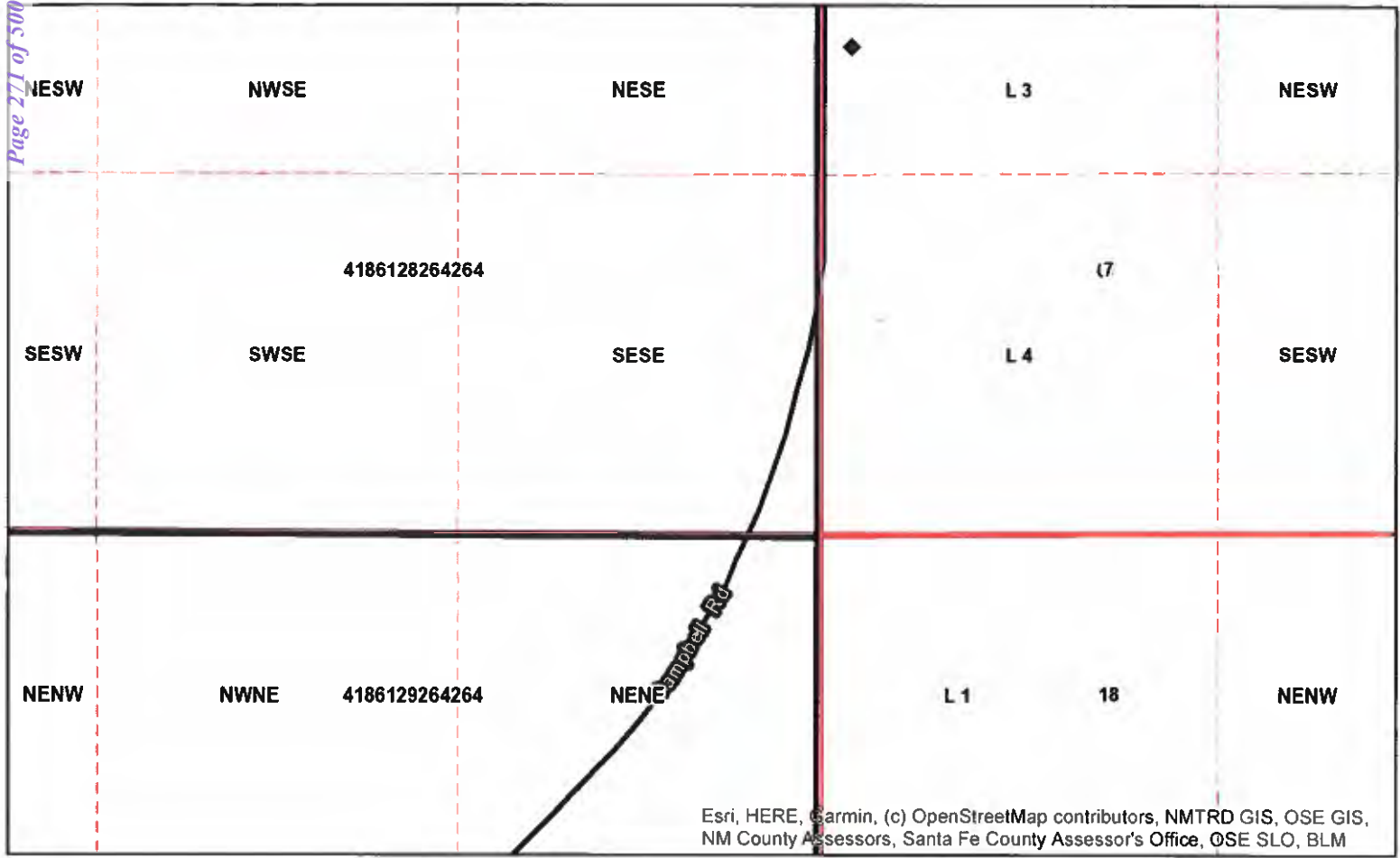
Both Estates

BLM Land Grant

Pending



Plugged



**Coordinates**  
UTM - NAD 83 (m) - Zone 13  
Easting 620136.514  
Northing 3585899.241  
State Plane - NAD 83 (f) - Zone E  
Easting 729846.612  
Northing 511126.832  
Degrees Minutes Seconds  
Latitude 32 : 24 : 13.250000  
Longitude -103 : 43 : 21.140000  
Location pulled from Coordinate Search

**Parcel Information**  
UPC/DocNum:  
Parcel Owner:  
Address:null null null null null null  
  
Legal:


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0 185 370 740

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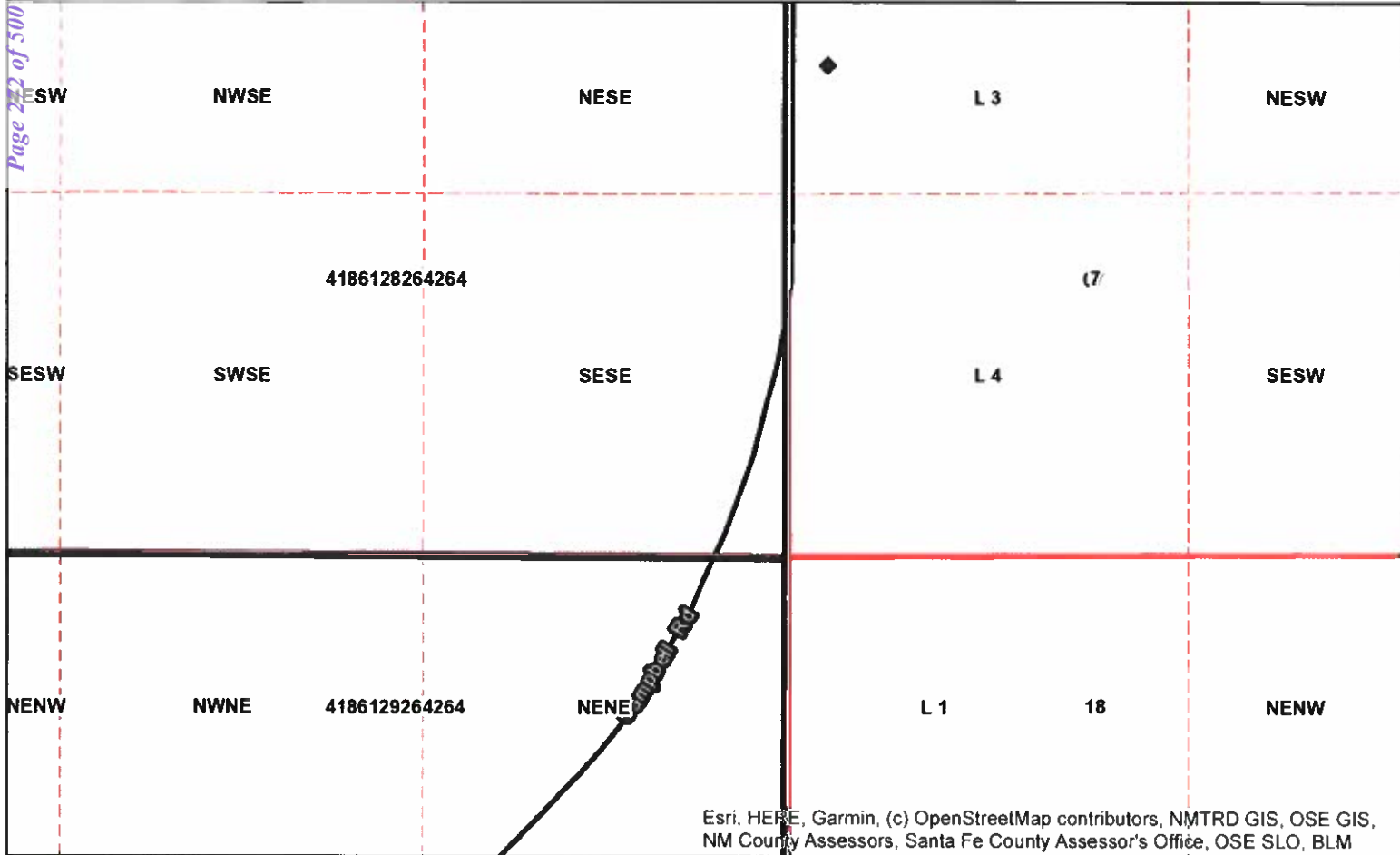


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**Spatial Information**  
County: Lea  
Groundwater Basin: Carlsbad  
Abstract Area:C  
CUB  
Land Grant:  
Not in Land Grant  
Restrictions:  
NA  
PLSS Description  
NW SW NW SW Qtr of Sec 7 of 22S 32E  
  
Derived from Projected PLSS Qtr Sec  
locations are calculated and are only  
approximations

**POD Information**  
Owner: EOG/GHD  
File Number: C-4144 POD22  
POD Status: NoData  
Permit Status: NoData  
Permit Use: NoData  
Purpose: MON

- ◆ Coord Search Location
- Eddy County Parcels 2020
- Sections
- BLM Land Grant
- PLSSTownship
- PLSSFirstDiv...
- PLSSSecond...



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#### Coordinates

##### UTM - NAD 83 (m) - Zone 13

Easting 620145.396

Northing 3585899.348

##### State Plane - NAD 83 (ft) - Zone E

Easting 729875.761

Northing 511126.999

##### Degrees Minutes Seconds

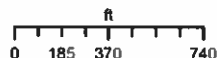
Latitude 32 : 24 : 13.250000

Longitude -103 : 43 : 20.800000

Location pulled from Coordinate Search

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#### Spatial Information

County: Lea

Groundwater Basin: Carlsbad

Abstract Area: C

CUB

Land Grant:

Not in Land Grant

Restrictions:

NA

PLSS Description

NW SW NW SW Qtr of Sec 7 of 22S 32E

Derived from Projected PLSS- Qtr Sec.  
locations are calculated and are only  
approximations

#### Parcel Information

UPC/DocNum:

Parcel Owner:

Address: null null null null null

Legal:

#### POD Information

Owner: EOG/GHD

File Number: C-4144 POD23

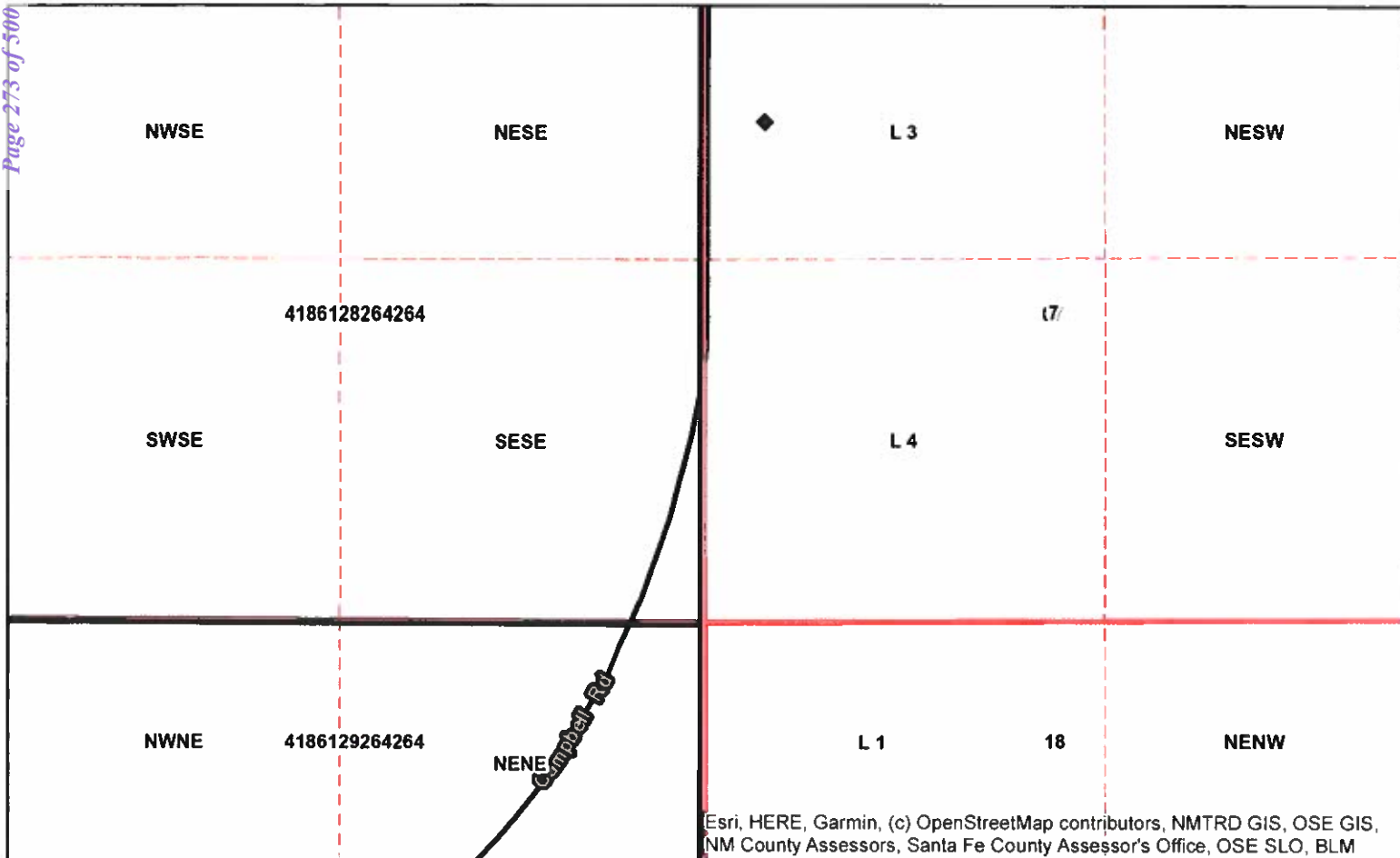
POD Status: NoData

Permit Status: NoData

Permit Use: NoData

Purpose: MON

- ◆ Coord Search Location
- Eddy County Parcels 2020
- Sections
- BLM Land Grant
- PLSS Township
- PLSS First Div...
- PLSS Second...



#### Coordinates

**UTM - NAD 83 (m) - Zone 13**

Easting 620169.052  
Northing 3585909.486

#### State Plane - NAD 83 (f) - Zone E

Easting 729953.591  
Northing 511159.782

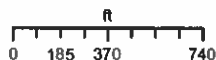
#### Degrees Minutes Seconds

Latitude 32 : 24 : 13.570000  
Longitude -103 : 43 : 19.890000

Location pulled from Coordinate Search

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#### Spatial Information

County: Lea

Groundwater Basin: Carlsbad

Abstract Area: C

CUB

Land Grant:  
Not in Land Grant

Restrictions:

NA

#### PLSS Description

NW SW NW SW Qtr of Sec 7 of 22S 32E

Derived from Projected PLSS- Qtr Sec.  
locations are calculated and are only  
approximations

#### Parcel Information

UPC/DocNum:

Parcel Owner:

Address: null null null null null

Legal:

#### POD Information

Owner: EOG/GHD

File Number: C-4144 POD 24

POD Status: NoData

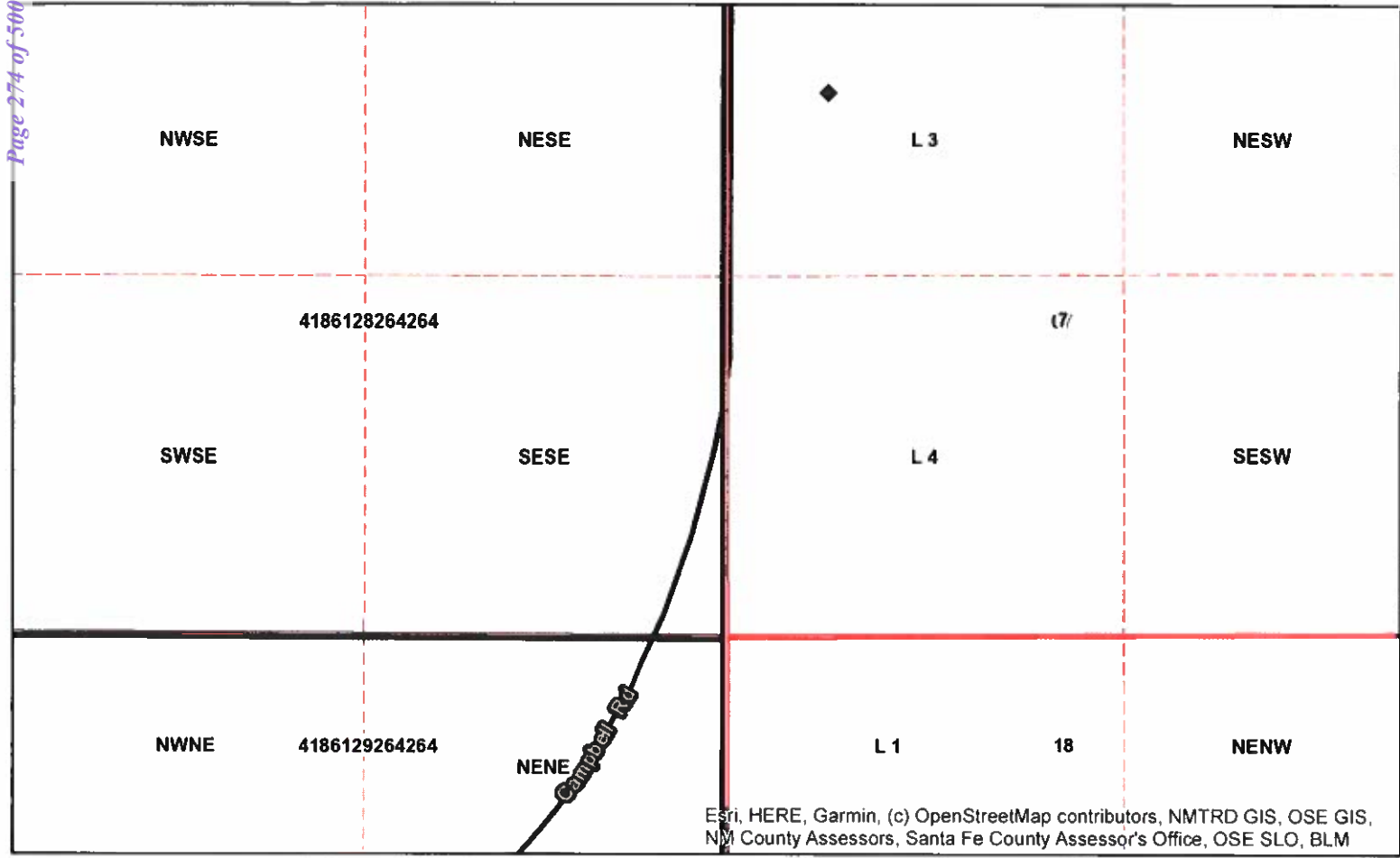
Permit Status: NoData

Permit Use: NoData

Purpose: MON

- ◆ Coord Search Location
- Eddy County Parcels 2020
- Sections
- BLM Land Grant
- PLSSTownship
- PLSSFirstDiv...
- PLSSSecond...



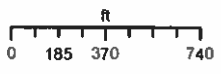


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**Coordinates**  
**UTM - NAD 83 (m) - Zone 13**  
Easting 620214.148  
Northing 3585962.076  
**State Plane - NAD 83 (f) - Zone E**  
Easting 730102.642  
Northing 511331.424  
**Degrees Minutes Seconds**  
Latitude 32 : 24 : 15.260000  
Longitude -103 : 43 : 18.140000  
Location pulled from Coordinate Search

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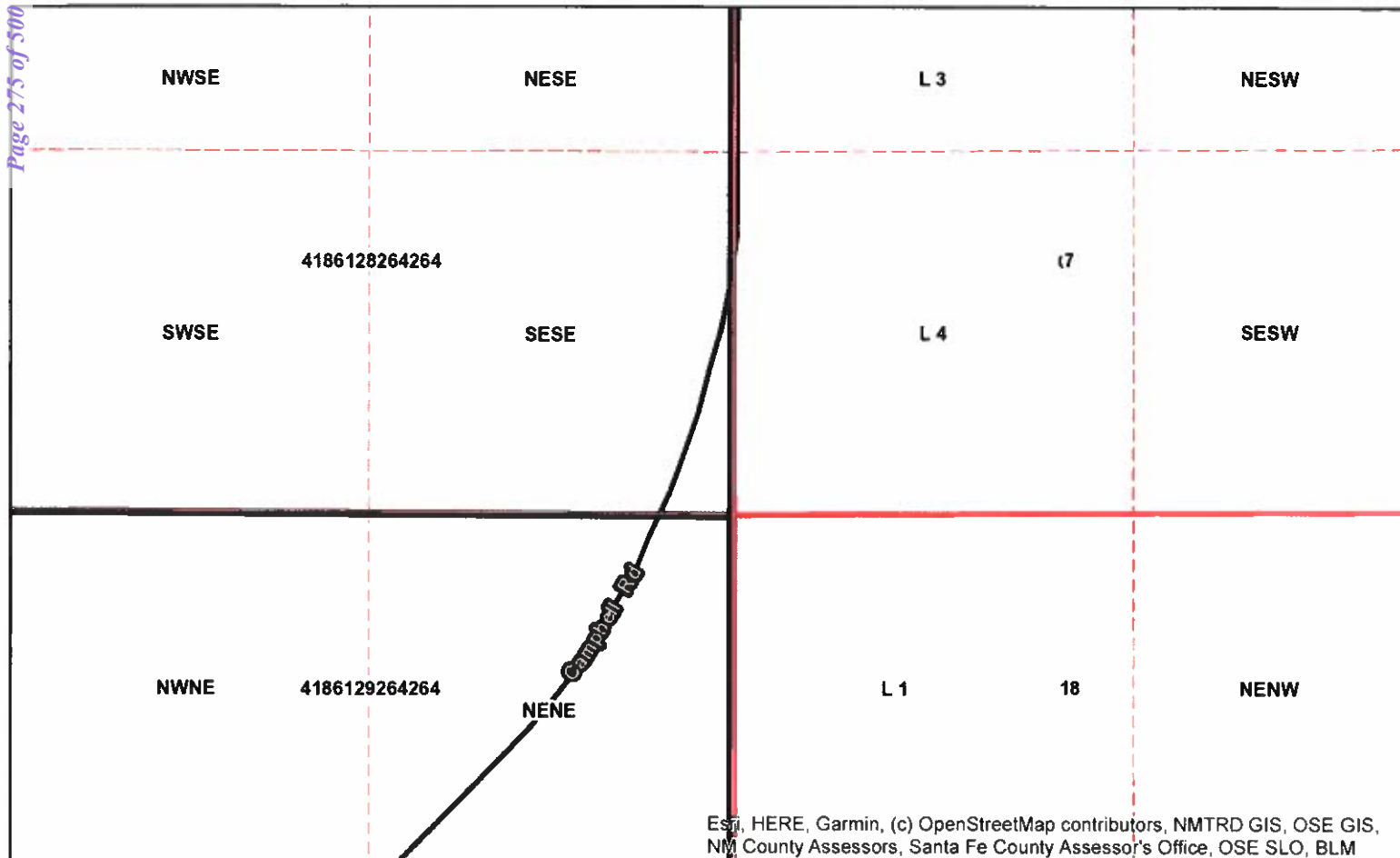
**Spatial Information**  
County: Lea  
Groundwater Basin: Carlsbad  
Abstract Area: C  
CUB  
Land Grant:  
Not in Land Grant  
**Restrictions:**  
NA  
**PLSS Description**  
SE NW NW SW Qtr of Sec 7 of 22S 32E  
  
Derived from Projected PLSS- Qtr Sec  
locations are calculated and are only  
approximations

**Parcel Information**  
UPC/DocNum:  
Parcel Owner:  
Address: null null null null null null

Legal:

**POD Information**  
Owner: EOG/GHD  
File Number: C-4122 POD25  
POD Status: NoData  
Permit Status: NoData  
Permit Use: NoData  
Purpose: MON

- ◆ Coord Search Location
- Eddy County Parcels 2020
- Sections
- BLM Land Grant
- PLSS Township
- PLSS First Div...
- PLSS Second...



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#### Coordinates

##### UTM - NAD 83 (m) - Zone 13

Easting 620212.555

Northing 3585942.345

##### State Plane - NAD 83 (f) - Zone E

Easting 730097.011

Northing 511266.714

##### Degrees Minutes Seconds

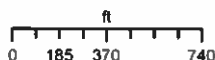
Latitude 32 : 24 : 14.620000

Longitude -103 : 43 : 18.210000

Location pulled from Coordinate Search

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#### Spatial Information

County: Lea

Groundwater Basin: Carlsbad

Abstract Area: C

CUB

Land Grant:

Not in Land Grant

Restrictions:

NA

PLSS Description

NE SW NW SW Qtr of Sec 7 of 22S 32E

Derived from Projected PLSS- Qtr Sec  
locations are calculated and are only  
approximations

#### Parcel Information

UPC/DocNum:

Parcel Owner:

Address: null null null null null null

Legal:

#### POD Information

Owner: EOG/GHD

File Number: C-4144 POD26

POD Status: NoData

Permit Status: NoData

Permit Use: NoData

Purpose: MON



Eddy County  
Parcels 2020



PLSSSecond...



Sections



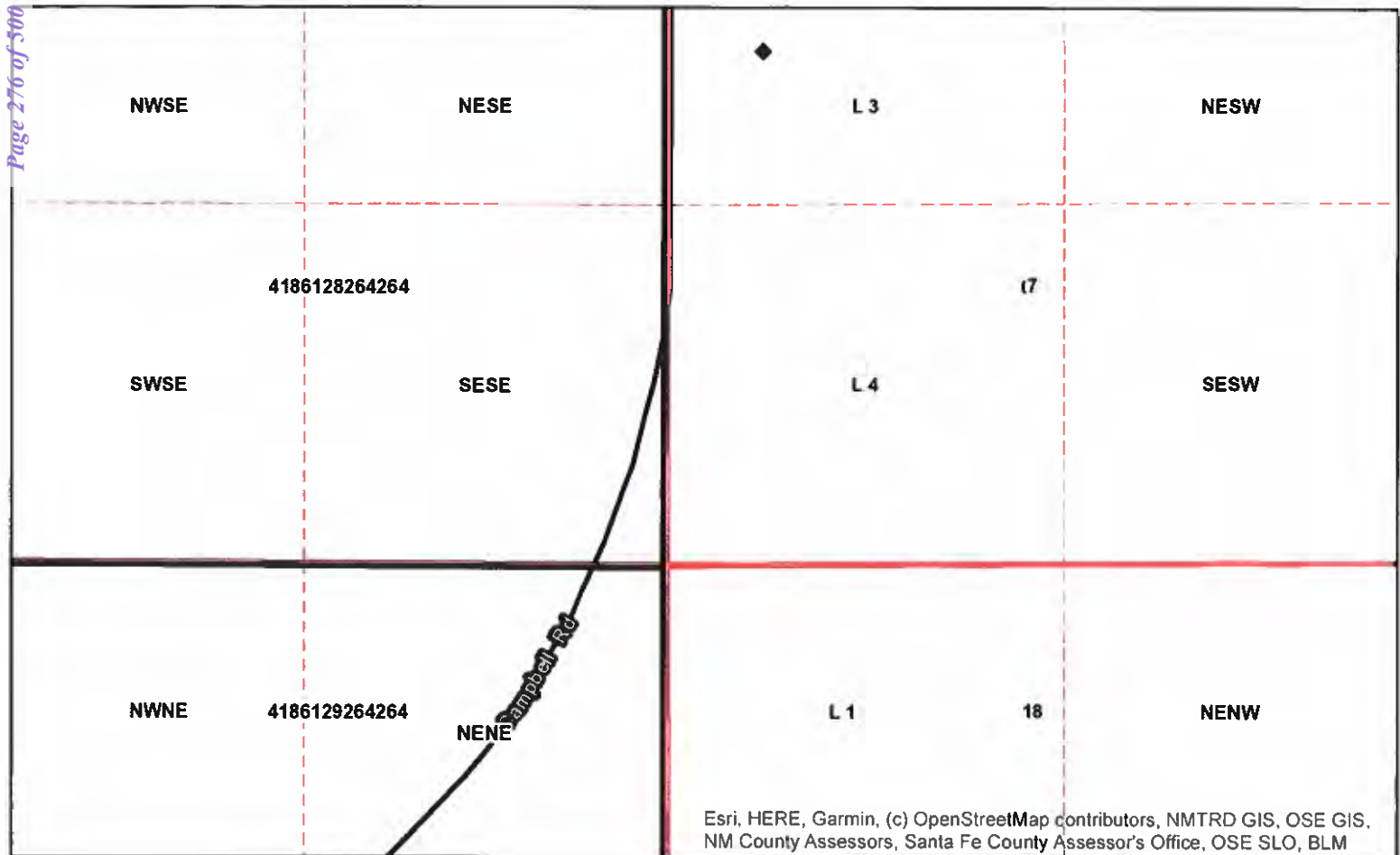
BLM Land  
Grant



PLSSTownship



PLSSFirstDiv...

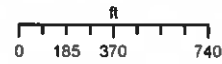


Esri, HERE, Garmin, (c) OpenStreetMap contributors, NMTRD GIS, OSE GIS, NM County Assessors, Santa Fe County Assessor's Office, OSE SLO, BLM

**Coordinates**  
**UTM - NAD 83 (m) - Zone 13**  
Easting 620207.757  
Northing 3585928.428  
**State Plane - NAD 83 (f) - Zone E**  
Easting 730080.982  
Northing 511221.146  
**Degrees Minutes Seconds**  
Latitude 32 : 24 : 14.170000  
Longitude -103 : 43 : 18.400000  
Location pulled from Coordinate Search

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1:9,028



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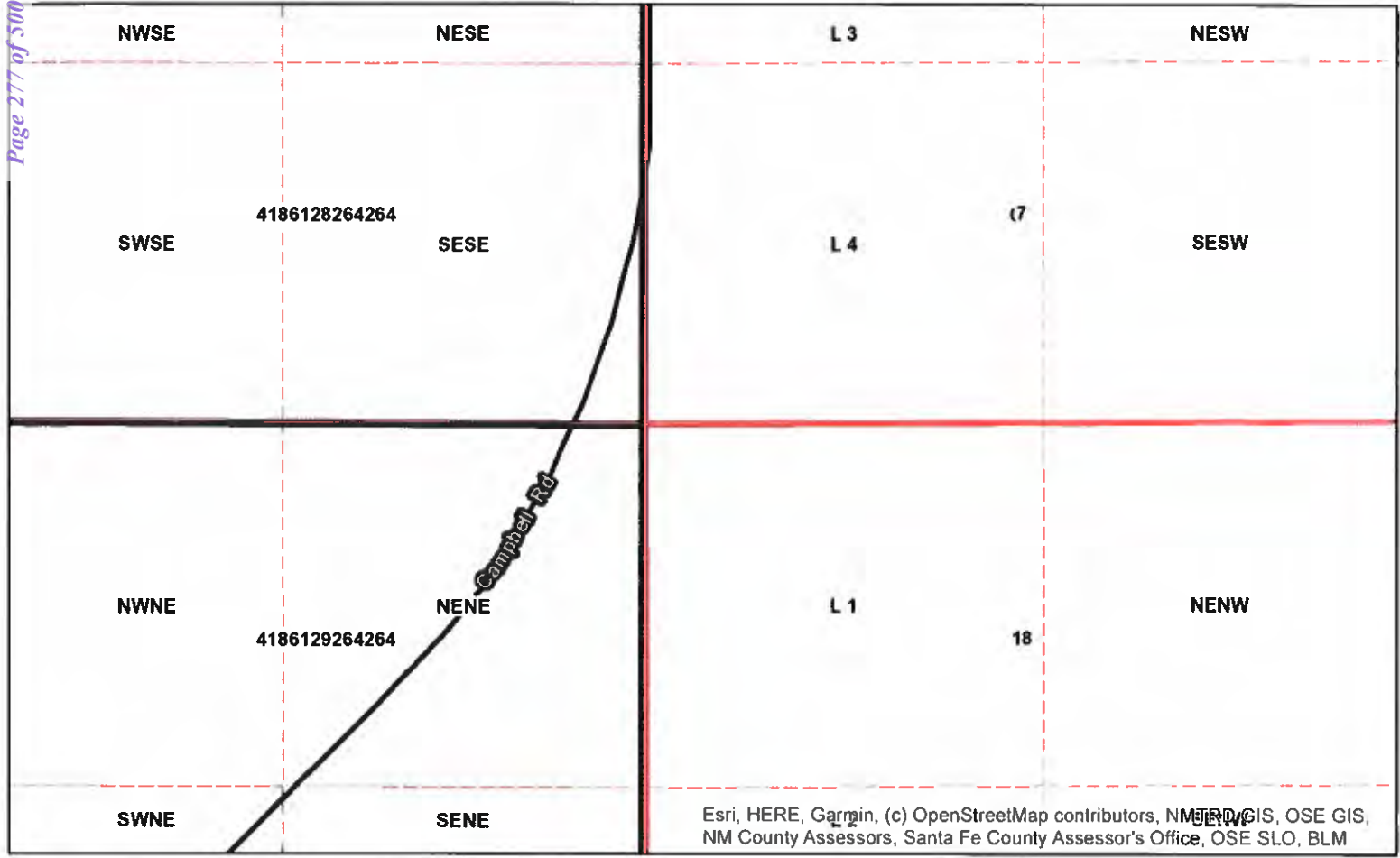
Reasonable efforts have been made by the New Mexico Office of the State Engineer (OSE) to verify that these maps accurately represent the source data used in their preparation, however, a degree of error is involved in all maps, and these maps may contain omissions and errors of omission, commission, positional accuracy, data acquisition methodology, interpretation of source data, and other imperfections. These maps are distributed "as is" without warranty of any kind.

**Spatial Information**  
**County:** Lea  
**Groundwater Basin:** Carlsbad  
**Abstract Area:** C  
CUB  
**Land Grant:**  
Not in Land Grant  
**Restrictions:**  
NA  
**PLSS Description**  
NE SW NW SW Qtr of Sec 7 of 22S 32E  
  
Derived from Projected PLSS- Qtr Sec  
locations are calculated and are only  
approximations

**Parcel Information**  
**UPC/DocNum:**  
**Parcel Owner:**  
**Address:** null null null null null null  
  
**Legal:**

**POD Information**  
**Owner:** EOG/GHD  
**File Number:** C-4144 POD27  
**POD Status:** NoData  
**Permit Status:** NoData  
**Permit Use:** NoData  
**Purpose:** MON

Page 277 of 500  
Received by OCD: 2/22/2022 2:01:17 PM  
Released to Imaging: 5/2/2022 3:36:34 PM



**Coordinates**  
UTM - NAD 83 (m) - Zone 13  
Easting 620202.253  
Northing 3585908.035  
State Plane - NAD 83 (f) - Zone E  
Easting 730062.503  
Northing 511154.341  
Degrees Minutes Seconds  
Latitude 32 : 24 : 13.510000  
Longitude -103 : 43 : 18.620000  
Location pulled from Coordinate Search

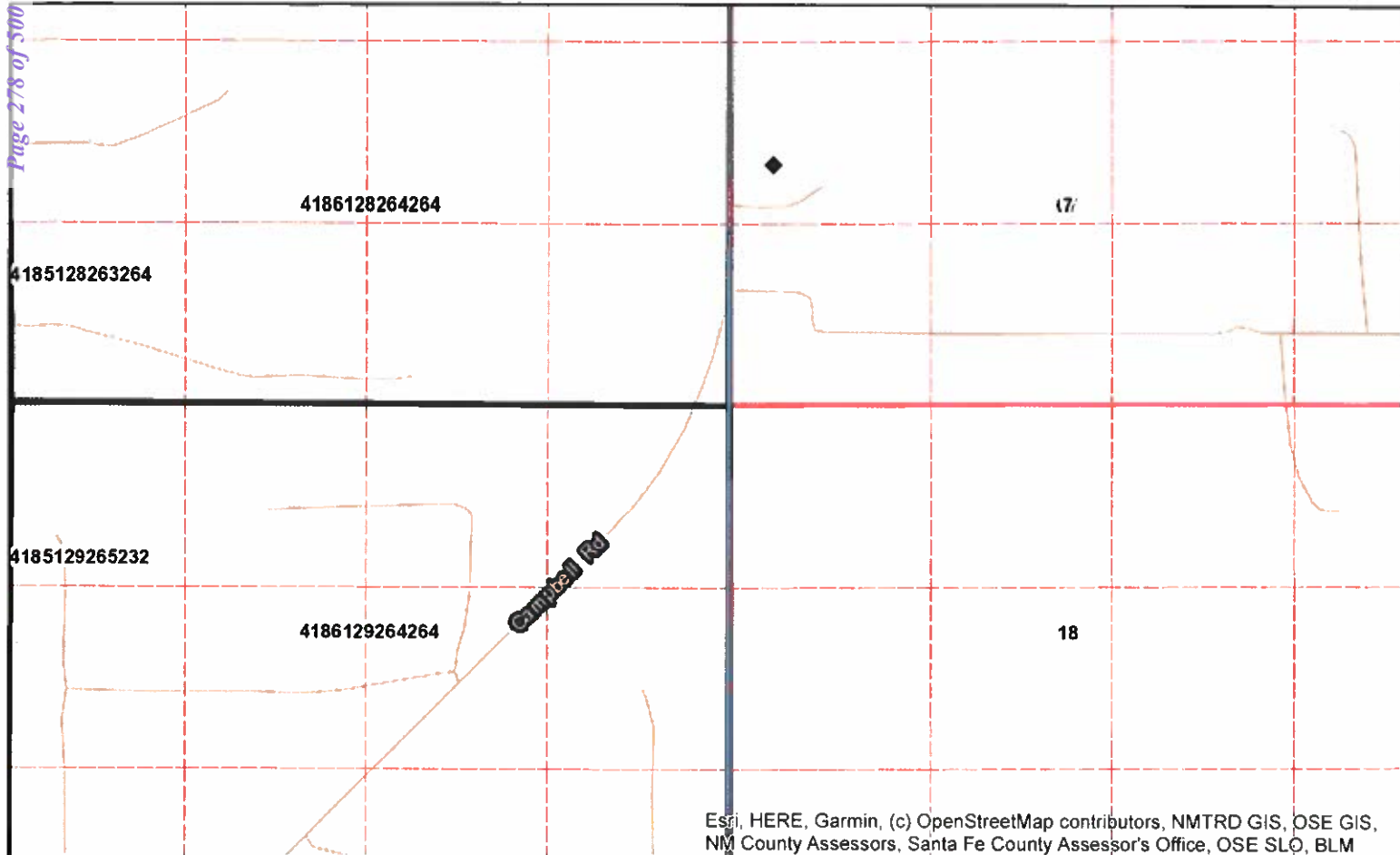
NEW MEXICO OFFICE  
OF THE  
STATE ENGINEER  
1:9,028  
0 185 370 740  
N  
GUILLEN 3/24/2021

**Spatial Information**  
County: Lea  
Groundwater Basin: Carlsbad  
Abstract Area: C  
CUB  
Land Grant:  
Not in Land Grant  
Restrictions:  
NA  
PLSS Description  
NW SW NW SW Qtr of Sec 7 of 22S 32E  
Derived from Projected PLSS- Qtr Sec  
locations are calculated and are only  
approximations

**Parcel Information**  
UPC/DocNum:  
Parcel Owner:  
Address: null null null null null null  
  
Legal:

**POD Information**  
Owner: EOG/GHD  
File Number: C-4144 POD28  
POD Status: NoData  
Permit Status: NoData  
Permit Use: NoData  
Purpose: MON

- ☐ Eddy County Parcels 2020
- ☐ Lea County Parcels 2020
- ☐ Sections
- ☐ BLM Land Grant
- ☐ PLSS Township
- ☐ PLSS First Div...
- ☐ PLSS Second...

**Coordinates****UTM - NAD 83 (m) - Zone 13**

Easting 620196.468

Northing 3585889.178

**State Plane - NAD 83 (f) - Zone E**

Easting 730043.138

Northing 511092.585

**Degrees Minutes Seconds**

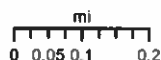
Latitude 32 : 24 : 12.900000

Longitude -103 : 43 : 18.850000

Location pulled from Coordinate Search

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**Spatial Information**

County: Lea

Groundwater Basin: Carlsbad

Abstract Area: C

CUB

Land Grant:

Not in Land Grant

Restrictions:

NA

**PLSS Description**

NW SW NW SW Qtr of Sec 7 of 22S 32E

Derived from Projected PLSS- Qtr Sec  
locations are calculated and are only  
approximations

**Parcel Information**

UPC/DocNum:

Parcel Owner:

Address: null null null null null null

Legal:

**POD Information**

Owner: EOG/GHD

File Number: C-4144 POD29

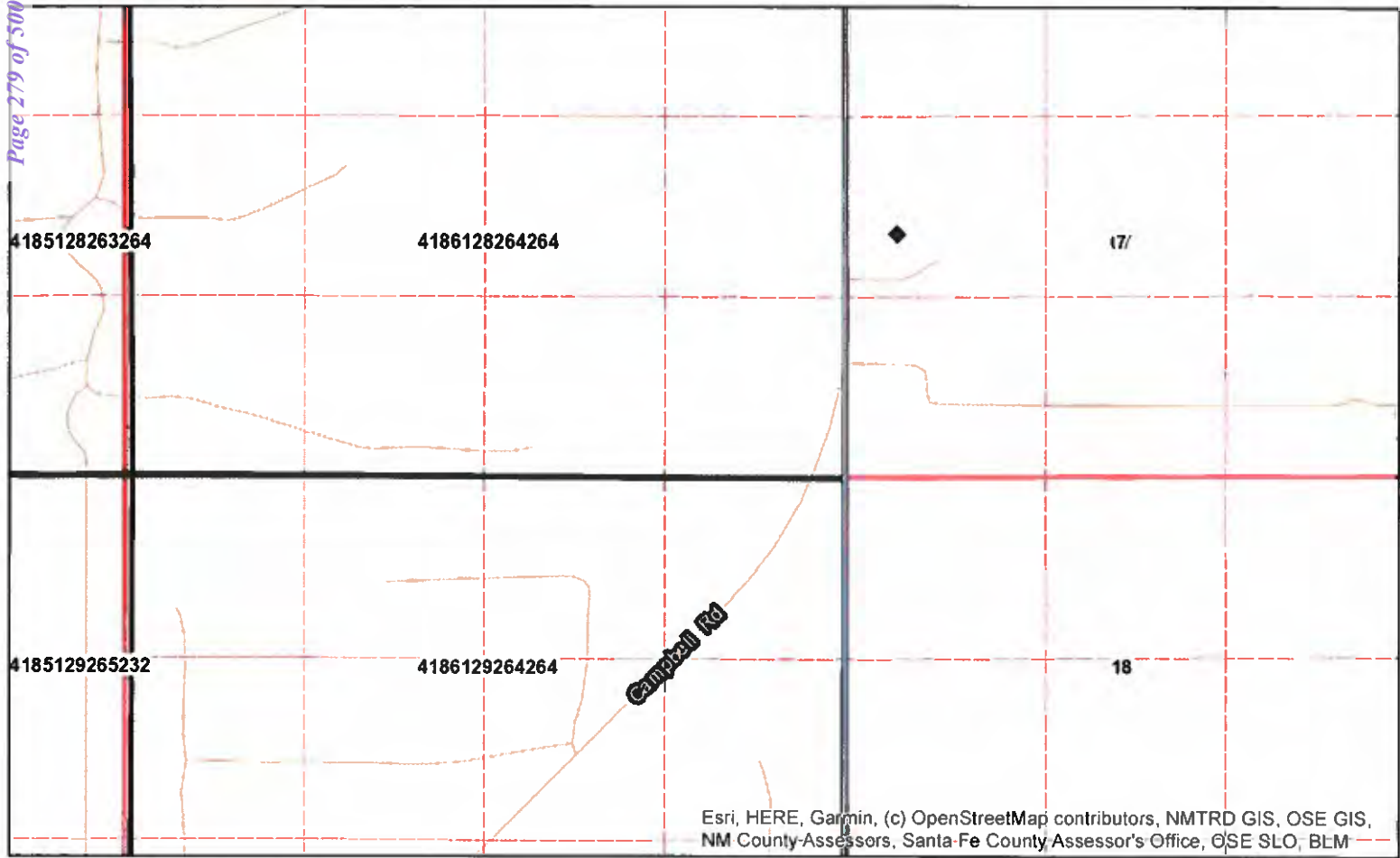
POD Status: NoData

Permit Status: NoData

Permit Use: NoData

Purpose: MON

- ◆ Coord Search Location
- Eddy County Parcels 2020
- Lea County Parcels 2020
- Sections
- BLM Land Grant
- PLSS Township
- PLSS First Div...
- PLSS Second...

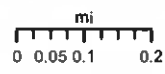


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**Coordinates**  
**UTM - NAD 83 (m) - Zone 13**  
Easting 620215.683  
Northing 3585899.264  
**State Plane - NAD 83 (f) - Zone E**  
Easting 730106.393  
Northing 511125.285  
**Degrees Minutes Seconds**  
Latitude 32 : 24 : 13.220000  
Longitude -103 : 43 : 18.110000  
Location pulled from Coordinate Search

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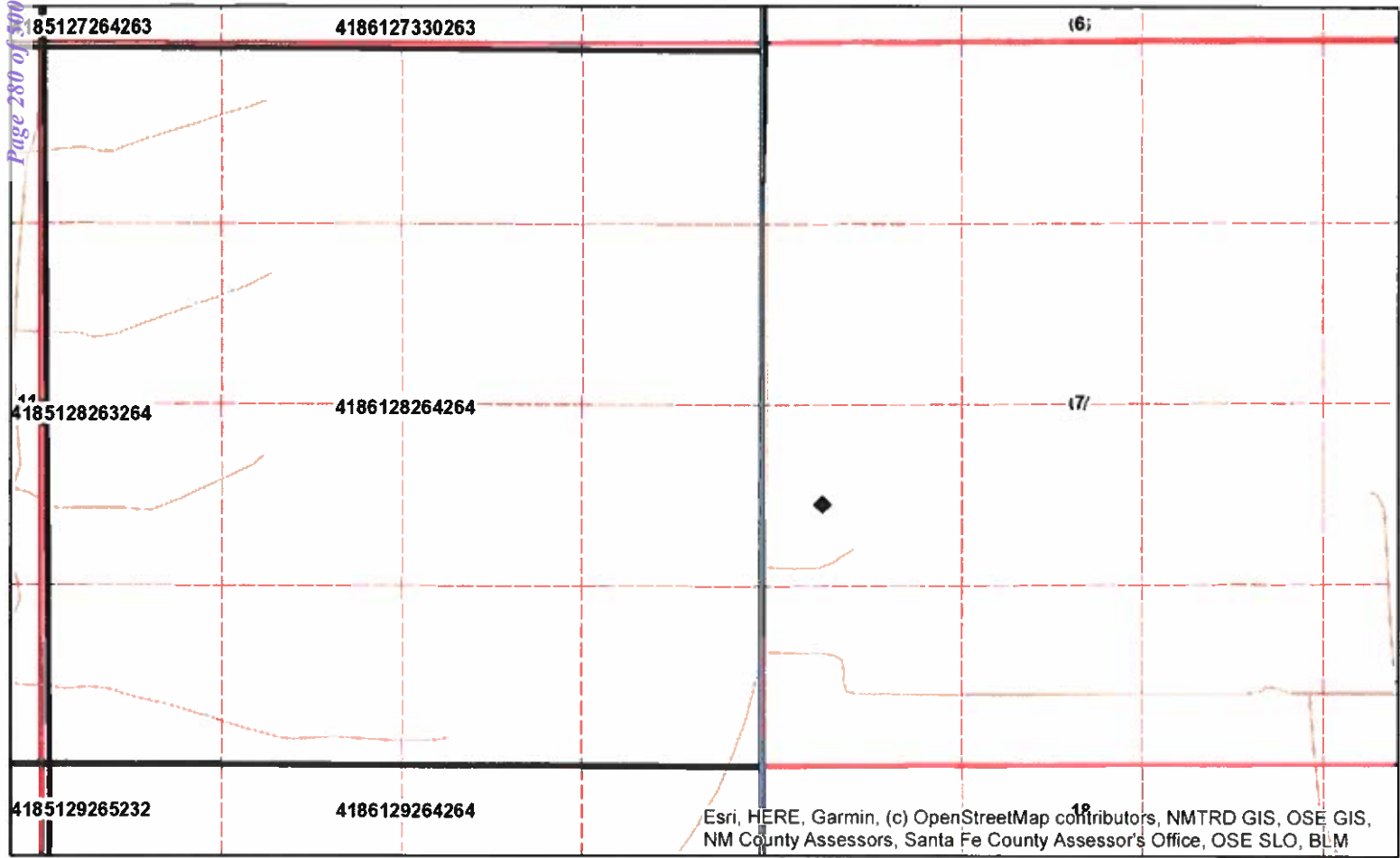
**Spatial Information**  
**County:** Lea  
**Groundwater Basin:** Carlsbad  
**Abstract Area:** C  
**CUB**  
**Land Grant:** Not in Land Grant  
**Restrictions:** NA  
**PLSS Description**  
NE SW NW SW Qtr of Sec 7 of 22S 32E  
  
Derived from Projected PLSS- Qtr Sec locations are calculated and are only approximations

**Parcel Information**  
**UPC/DocNum:**  
**Parcel Owner:**  
**Address:** null null null null null null  
  
**Legal:**

**POD Information**  
**Owner:** EOG/GHD  
**File Number:** C-4144 POD30  
**POD Status:** NoData  
**Permit Status:** NoData  
**Permit Use:** NoData  
**Purpose:** MON

- ◆ Coord Search Location
- Eddy County Parcels 2020
- Lea County Parcels 2020
- Sections
- BLM Land Grant
- PLSSTownship
- PLSSFirstDiv...
- PLSSSecond...





**Coordinates**  
**UTM - NAD 83 (m) - Zone 13**  
Easting 620233.219  
Northing 3585940.436  
**State Plane - NAD 83 (f) - Zone E**  
Easting 730164.778  
Northing 511260.028  
**Degrees Minutes Seconds**  
Latitude 32 : 24 : 14.550000  
Longitude -103 : 43 : 17.420000  
Location pulled from Coordinate Search

**Parcel Information**  
UPC/DocNum:  
Parcel Owner:  
Address:null null null null null null  
  
Legal:

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STATE ENGINEER

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mi  
0 0.05 0.1 0.2

N

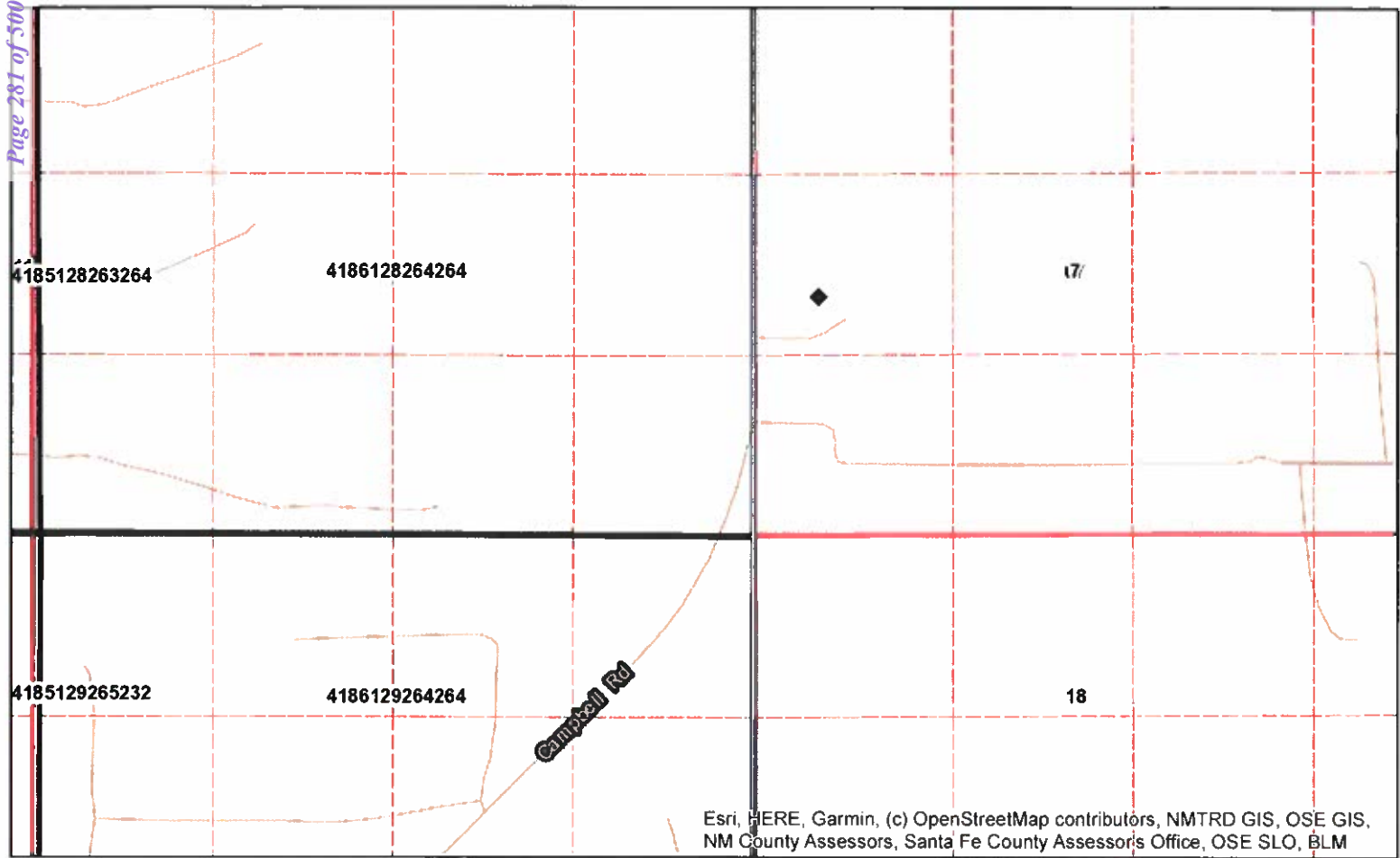
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**Spatial Information**  
County: Lea  
Groundwater Basin: Carlsbad  
Abstract Area:C  
CUB  
Land Grant:  
Not in Land Grant  
**Restrictions:**  
NA  
**PLSS Description**  
NE SW NW SW Qtr of Sec 7 of 22S 32E  
  
Derived from Projected PLSS- Qtr Sec.  
locations are calculated and are only  
approximations

**POD Information**  
Owner: EOG/GHD  
File Number: C-4144 POD31  
POD Status: NoData  
Permit Status: NoData  
Permit Use: NoData  
Purpose: MON

- ◆ Coord Search Location
- Eddy County Parcels 2020
- Lea County Parcels 2020
- Sections
- BLM Land Grant
- PLSSTownship
- PLSSFirstDiv...
- PLSSSecond...

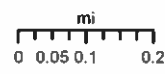


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**Coordinates**  
**UTM - NAD 83 (m) - Zone 13**  
Easting 620245.602  
Northing 3585888.226  
**State Plane - NAD 83 (f) - Zone E**  
Easting 730204.340  
Northing 511088.454  
**Degrees Minutes Seconds**  
Latitude 32 : 24 : 12.850000  
Longitude -103 : 43 : 16.970000  
Location pulled from Coordinate Search

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**Spatial Information**

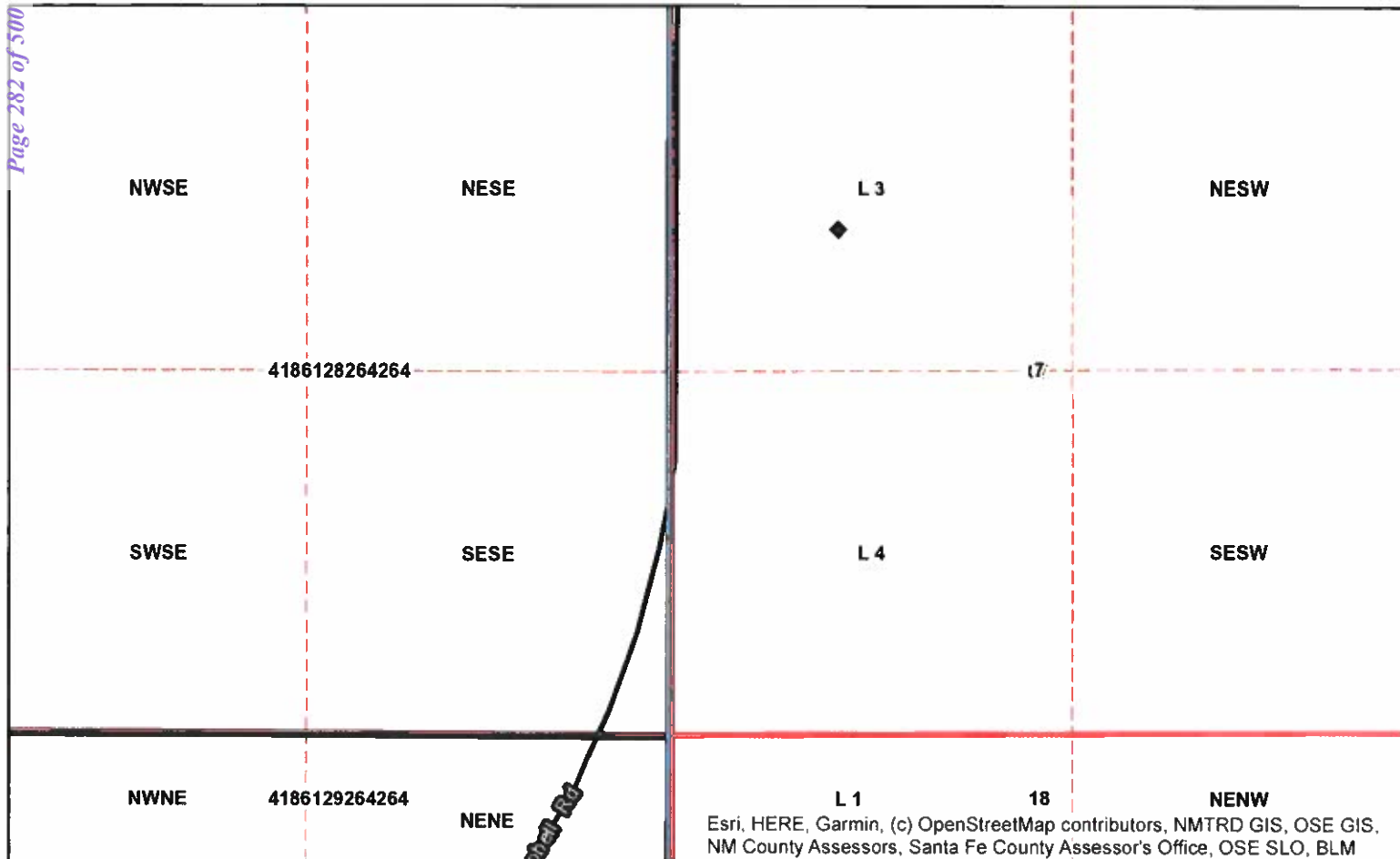
**County:** Lea  
**Groundwater Basin:** Carlsbad  
**Abstract Area:** C  
CUB  
**Land Grant:**  
Not in Land Grant  
**Restrictions:**  
NA  
**PLSS Description**  
NE SW NW SW Qtr of Sec 7 of 22S 32E  
  
Derived from Projected PLSS- Qtr Sec.  
locations are calculated and are only  
approximations

**Parcel Information**  
**UPC/DocNum:**  
**Parcel Owner:**  
**Address:** null null null null null null  
  
**Legal:**

**POD Information**

**Owner:** EOG/GIS  
**File Number:** C-4144 POD32  
**POD Status:** NoData  
**Permit Status:** NoData  
**Permit Use:** NoData  
**Purpose:** MON

- ◆ Coord Search Location
- Eddy County Parcels 2020
- Lea County Parcels 2020
- Sections
- BLM Land Grant
- PLSSTownship
- PLSSFirstDiv...
- PLSSSecond...

**Coordinates****UTM - NAD 83 (m) - Zone 13**

Easting 620285.252

Northing 3585915.496

**State Plane - NAD 83 (f) - Zone E**

Easting 730335.004

Northing 511177.124

**Degrees Minutes Seconds**

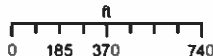
Latitude 32 : 24 : 13.720000

Longitude -103 : 43 : 15.440000

Location pulled from Coordinate Search

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**Spatial Information**

County: Lea

Groundwater Basin: Carlsbad

Abstract Area: C

CUB

Land Grant:

Not in Land Grant

Restrictions:

NA

**PLSS Description**

NE SW NW SW Qtr of Sec 7 of 22S 32E

Derived from Projected PLSS- Qtr Sec.  
locations are calculated and are only  
approximations

**Parcel Information**

UPC/DocNum:

Parcel Owner:

Address: null null null null null

Legal:

**POD Information**

Owner: EOG/GIS

File Number: C-4144 POD33

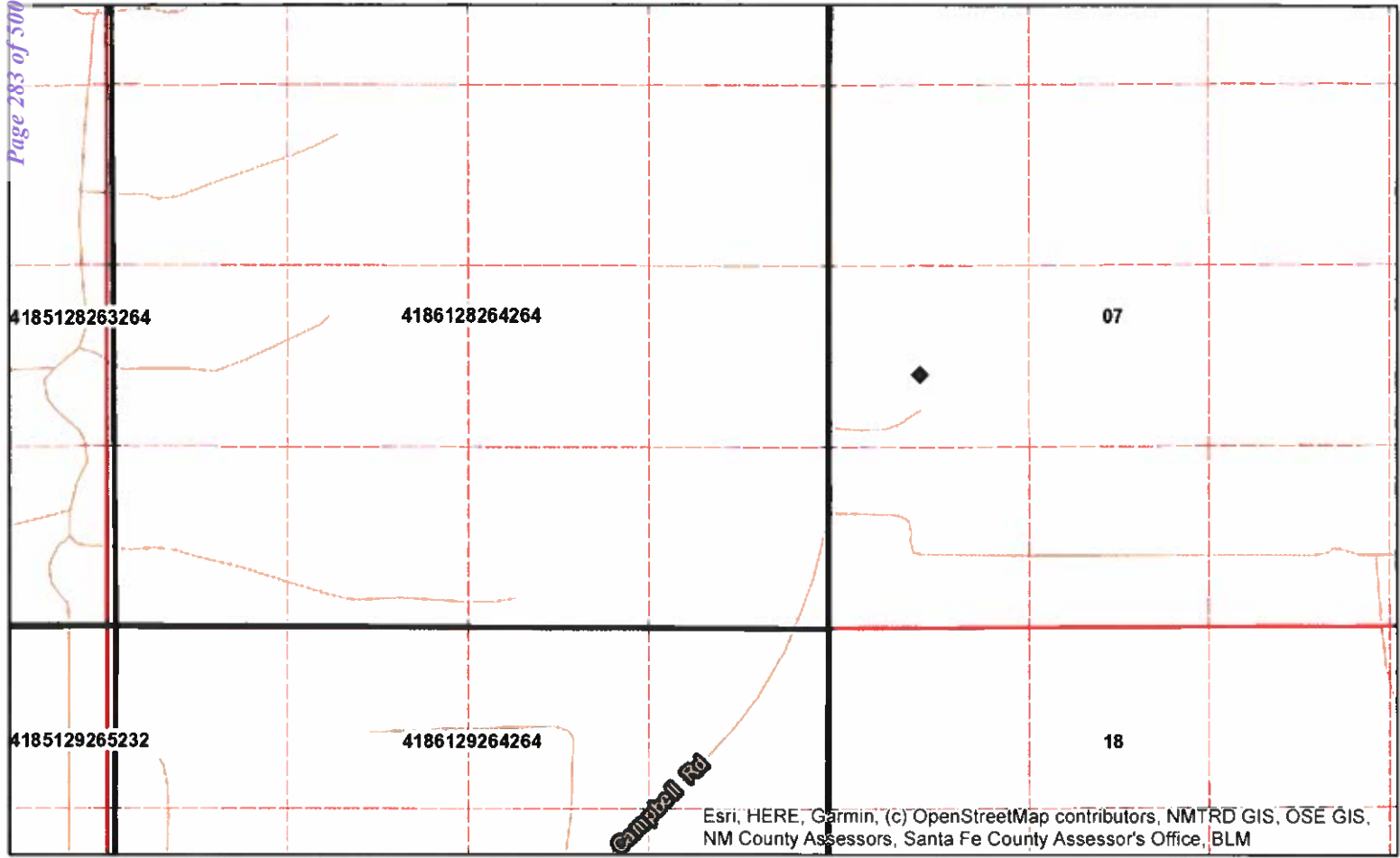
POD Status: NoData

Permit Status: NoData

Permit Use: NoData

Purpose: MON

- ◆ Coord Search Location
- Eddy County Parcels 2020
- Lea County Parcels 2020
- Sections
- BLM Land Grant
- PLSSTownship
- PLSSFirstDiv...
- PLSSSecond...



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**Coordinates**  
**UTM - NAD 83 (m) - Zone 13**  
Easting 620303.226  
Northing 3585920.023  
**State Plane - NAD 83 (f) - Zone E**  
Easting 730394.077  
Northing 511191.610  
**Degrees Minutes Seconds**  
Latitude 32 : 24 : 13.860000  
Longitude -103 : 43 : 14.750000  
Location pulled from Coordinate Search

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1:18,056

mi  
0 0.05 0.1 0.2

N

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**Spatial Information**  
County: Lea  
Groundwater Basin: Carlsbad  
Abstract Area: C  
CUB  
Land Grant:  
Not in Land Grant  
**Restrictions:**  
NA  
**PLSS Description**  
NE SW NW SW Qtr of Sec 7 of 22S 32E  
  
Derived from Projected PLSS- Qtr Sec.  
locations are calculated and are only  
approximations

**Parcel Information**  
UPC/DocNum:  
Parcel Owner:  
Address: null null null null null null  
  
Legal:

**POD Information**  
Owner: EOG/GHD  
File Number: C-4144 POD34  
POD Status: NoData  
Permit Status: NoData  
Permit Use: NoData  
Purpose: MON

- ◆ Coord Search Location
- Eddy County Parcels 2020
- Lea County Parcels 2020
- BLM Land Grant
- PLSSTownship
- PLSSFirstDiv...
- PLSSSecond...

NESE

L 3

NESW

4186128264264

07

SESE

L 4

SESW

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NM County Assessors, Santa Fe County Assessor's Office, BLM

**Coordinates****UTM - NAD 83 (m) - Zone 13**

Easting 620270.034

Northing 3585855.255

**State Plane - NAD 83 (f) - Zone E**

Easting 730283.837

Northing 510979.766

**Degrees Minutes Seconds**

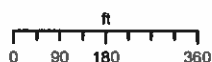
Latitude 32 : 24 : 11.770000

Longitude -103 : 43 : 16.050000

Location pulled from Coordinate Search

NEW MEXICO OFFICE  
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1:4,514



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**Spatial Information**

County: Lea

Groundwater Basin: Carlsbad

Abstract Area: C

CUB

Land Grant:

Not in Land Grant

Restrictions:

NA

PLSS Description

SE SW NW SW Qtr of Sec 7 of 22S 32E

Derived from Projected PLSS- Qtr Sec.  
locations are calculated and are only  
approximations

**Parcel Information**

UPC/DocNum:

Parcel Owner:

Address: null null null null null null

Legal:

**POD Information**

Owner: EOG/GHD

File Number: C-4144 POD35

POD Status: NoData

Permit Status: NoData

Permit Use: NoData

Purpose: MON



Coord Search  
Location



PLSSTownship



Eddy County  
Parcels 2020



PLSSFirstDiv...



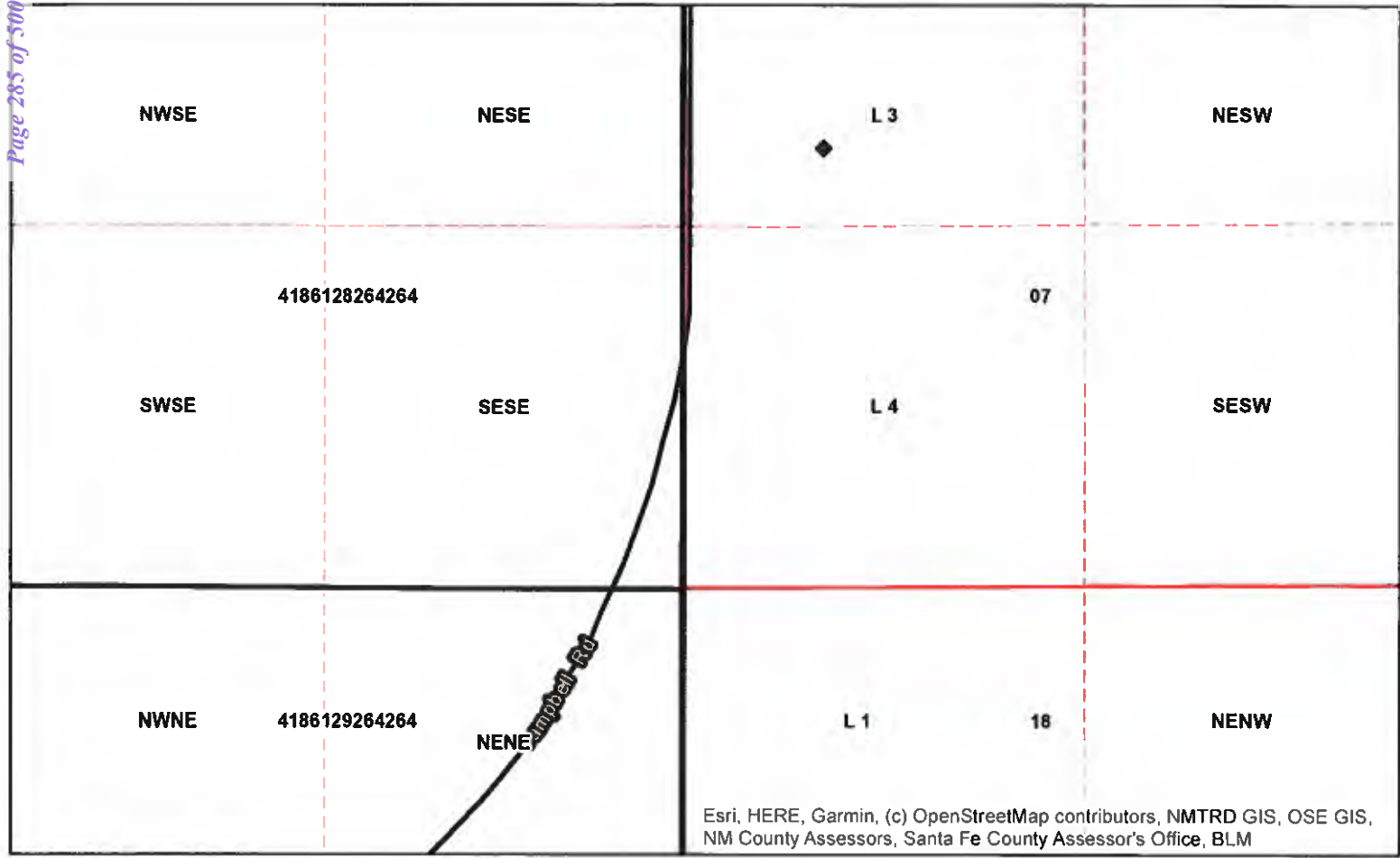
Lea County  
Parcels 2020



PLSSSecond...



BLM Land  
Grant

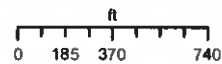


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**Coordinates**  
**UTM - NAD 83 (m) - Zone 13**  
Easting 620255.261  
Northing 3585845.223  
**State Plane - NAD 83 (f) - Zone E**  
Easting 730235.156  
Northing 510947.148  
**Degrees Minutes Seconds**  
Latitude 32 : 24 : 11.450000  
Longitude -103 : 43 : 16.620000  
Location pulled from Coordinate Search

NEW MEXICO OFFICE  
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STATE ENGINEER

1:9,028



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3/25/2021



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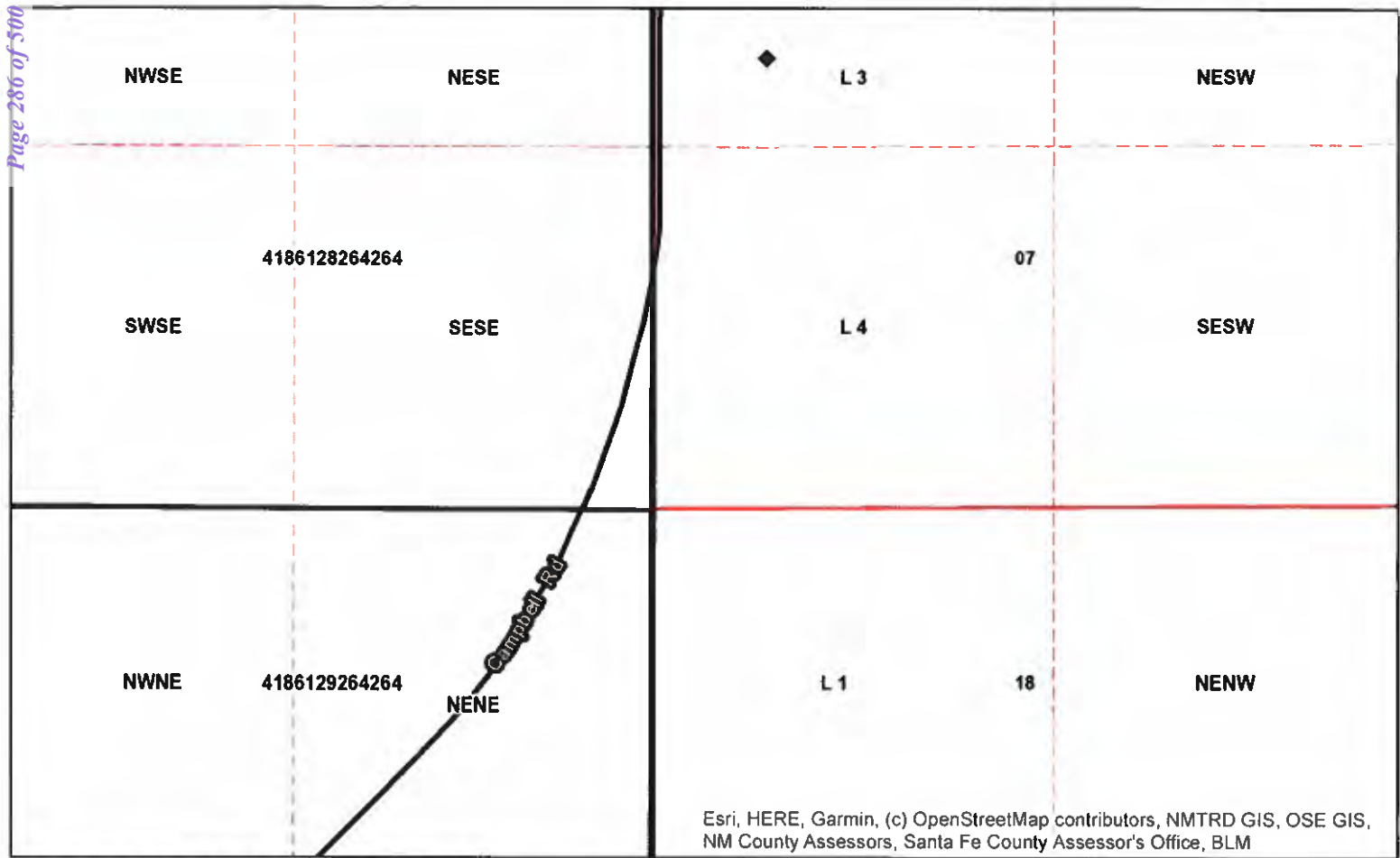
**Spatial Information**  
County: Lea  
Groundwater Basin: Carlsbad  
Abstract Area: C  
CUB  
Land Grant:  
Not in Land Grant  
**Restrictions:**  
NA  
**PLSS Description**  
SE SW NW SW Qtr of Sec 7 of 22S 32E  
  
Derived from Projected PLSS- Qtr Sec  
locations are calculated and are only  
approximations

**Parcel Information**  
UPC/DocNum:  
Parcel Owner:  
Address: null null null null null null  
  
Legal:

**POD Information**  
Owner: OSE/GHD  
File Number: C-4144 POD36  
POD Status: NoData  
Permit Status: NoData  
Permit Use: NoData  
Purpose: MON

- ◆ Coord Search Location
- Eddy County Parcels 2020
- Lea County Parcels 2020
- BLM Land Grant
- PLSSTownship
- PLSSFirstDiv...
- PLSSSecond...



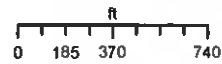


**Coordinates**  
**UTM - NAD 83 (m) - Zone 13**  
Easting 620226.122  
Northing 3585856.578  
**State Plane - NAD 83 (f) - Zone E**  
Easting 730139.774  
Northing 510985.005  
**Degrees Minutes Seconds**  
Latitude 32 : 24 : 11.830000  
Longitude -103 : 43 : 17.730000  
Location pulled from Coordinate Search

**Parcel Information**  
UPC/DocNum:  
Parcel Owner:  
Address:null null null null null null  
  
Legal:

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1:9,028



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3/25/2021



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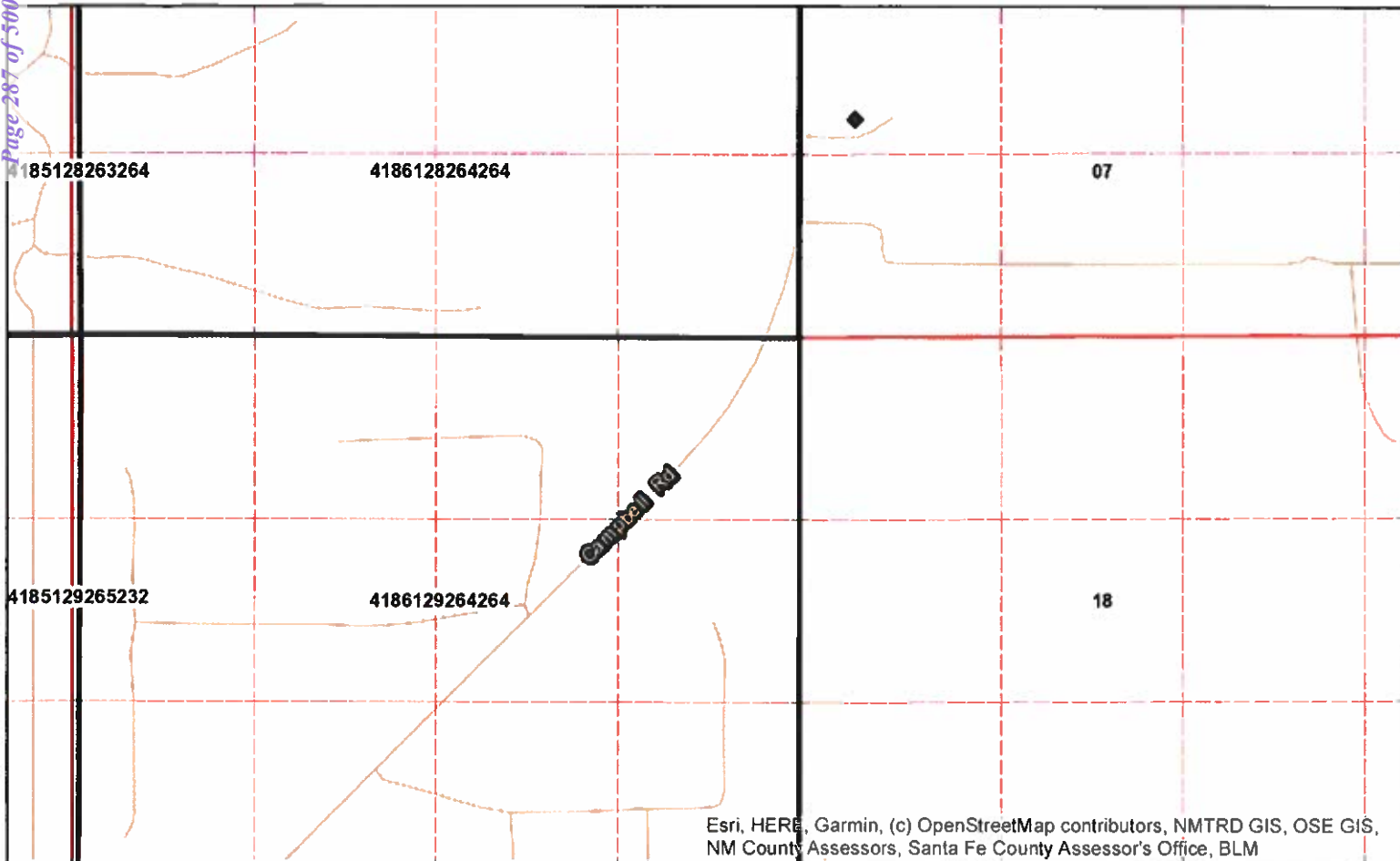
**Spatial Information**

County: Lea  
Groundwater Basin: Carlsbad  
Abstract Area:C  
CUB  
Land Grant:  
Not in Land Grant  
**Restrictions:**  
NA  
**PLSS Description**  
SE SW NW SW Qtr of Sec 7 of 22S 32E  
  
Derived from Projected PLSS- Qtr Sec  
locations are calculated and are only  
approximations

**POD Information**

Owner: EOG/GHD  
File Number: C-4144 POD37  
POD Status: NoData  
Permit Status: NoData  
Permit Use: NoData  
Purpose: MON

- ◆ Coord Search Location
- Eddy County Parcels 2020
- Lea County Parcels 2020
- BLM Land Grant
- PLSSTownship
- PLSSFirstDiv...
- PLSSSecond...



### Coordinates

**UTM - NAD 83 (m) - Zone 13**

Easting 620224.010

Northing 3585836.533

**State Plane - NAD 83 (f) - Zone E**

Easting 730132.435

**Northing 510919.274**

### Degrees Minutes Seconds

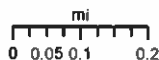
**Latitude 32 : 24 : 11.180000**

Longitude -103 : 43 : 17.820000

Location pulled from Coordinate Search

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1:18.056



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### Spatial Information

County: Lea

**Groundwater Basin: Carlsbad**

**Abstract Area:C**

**CUB**

**Land Grant:**

**Not in Land Grant**

**Restrictions:**

NA

### PLSS Description

SE SW NW SW Qtr of Sec 7 of 22S 32E

Derived from Projected PLSS- Qtr Sec  
locations are calculated and are only  
approximations

### Parcel Information

UPC/DocNum:

**Parcel Owner:**

Address:null null null null null null

**Legal:**

### POD Information

Owner: EOG/GHD








**File Number: C-4144 POD38**

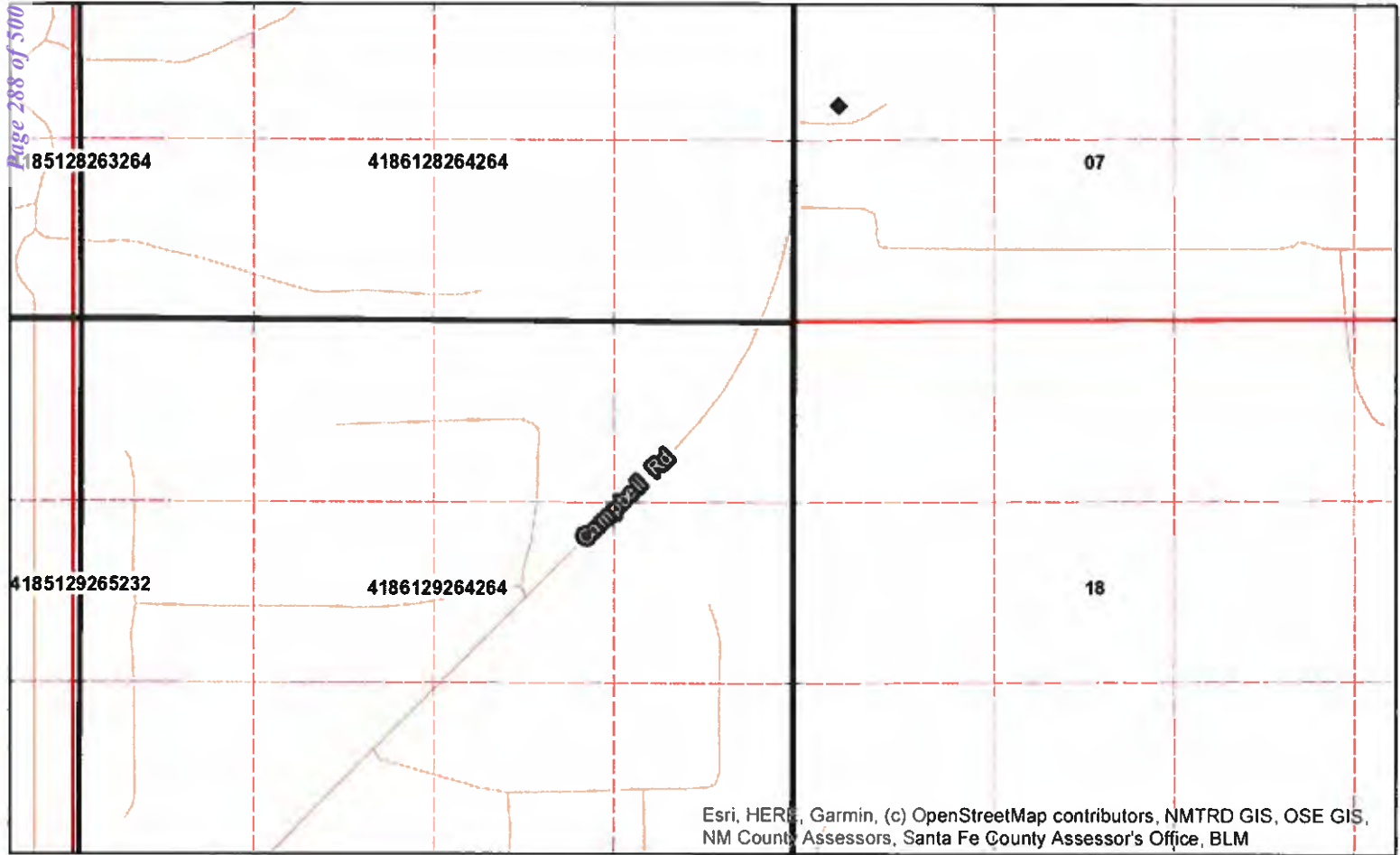
POD Status: NoData

Permit Status: NoData

Permit Use: NoData

Purpose: MON

-  Coord Search  
 Location
-  Eddy County  
 Parcels 2020
-  Lea County  
 Parcels 2020
-  BLM Land  
 Grant
-  PLSSTownship
-  PLSSFirstDiv...
-  PLSSSecond...



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**Coordinates**

**UTM - NAD 83 (m) - Zone 13**

Easting 620200.240

Northing 3585835.941

**State Plane - NAD 83 (f) - Zone E**

Easting 730054.425

Northing 510917.817

**Degrees Minutes Seconds**

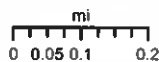
Latitude 32 : 24 : 11.170000

Longitude -103 : 43 : 18.730000

Location pulled from Coordinate Search

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**Spatial Information**

County: Lea

Groundwater Basin: Carlsbad

Abstract Area: C

CUB

Land Grant:

Not in Land Grant

Restrictions:

NA

**PLSS Description**

SW SW NW SW Qtr of Sec 7 of 22S 32E

Derived from Projected PLSS- Qtr Sec locations are calculated and are only approximations

**Parcel Information**

UPC/DocNum:

Parcel Owner:

Address: null null null null null null

Legal:

**POD Information**

Owner: EOG/GHD

File Number: C-4144 POD39

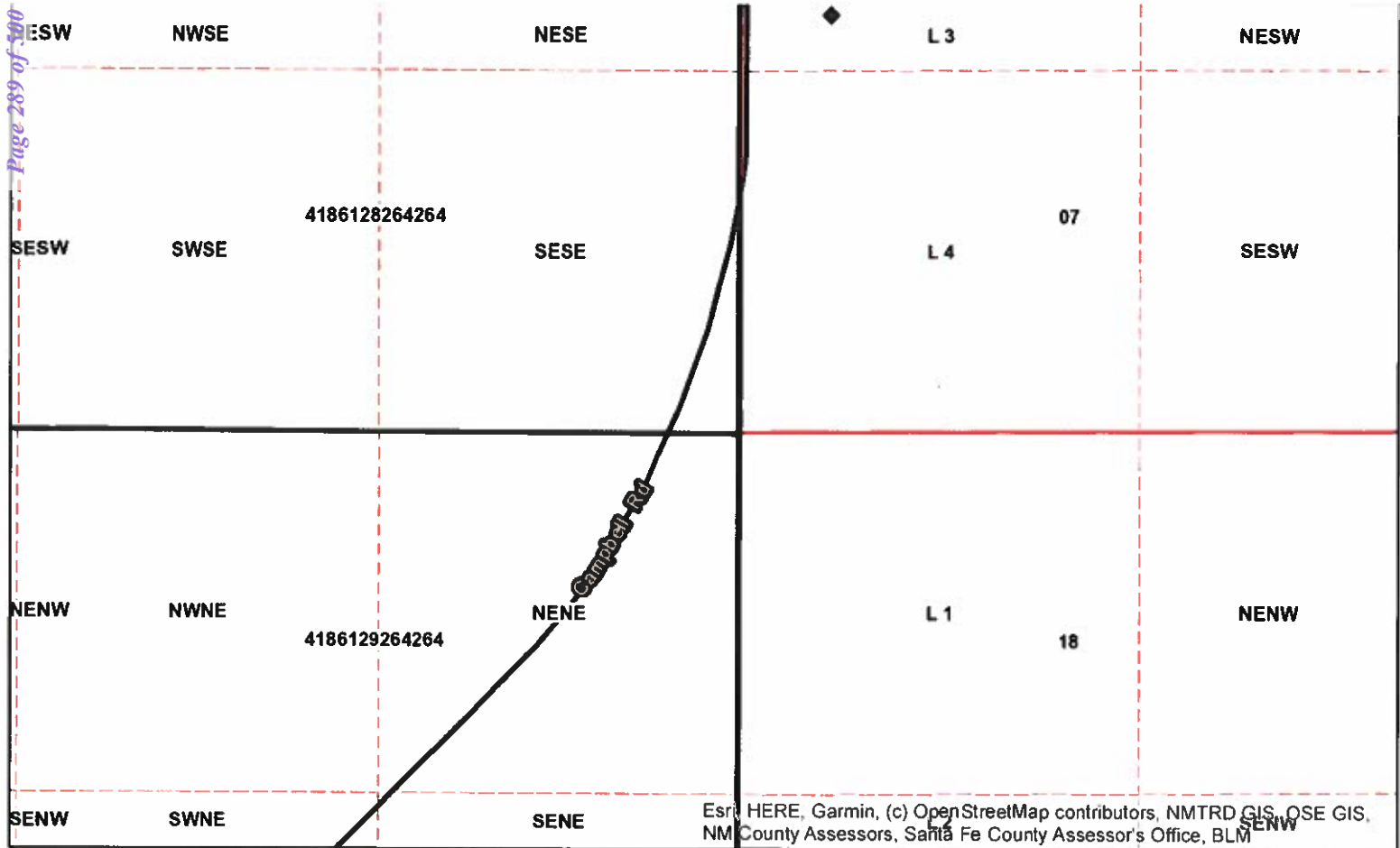
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Permit Status: NoData

Permit Use: NoData

Purpose: MON

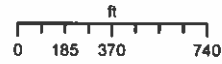
- ◆ Coord Search Location
- Eddy County Parcels 2020
- Lea County Parcels 2020
- BLM Land Grant
- PLSSTownship
- PLSSFirstDiv...
- PLSSSecond...



**Coordinates**  
UTM - NAD 83 (m) - Zone 13  
Easting 620200.947  
Northing 3585820.550  
State Plane - NAD 83 (f) - Zone E  
Easting 730056.429  
Northing 510867.299  
Degrees Minutes Seconds  
Latitude 32 : 24 : 10.670000  
Longitude -103 : 43 : 18.710000  
Location pulled from Coordinate Search

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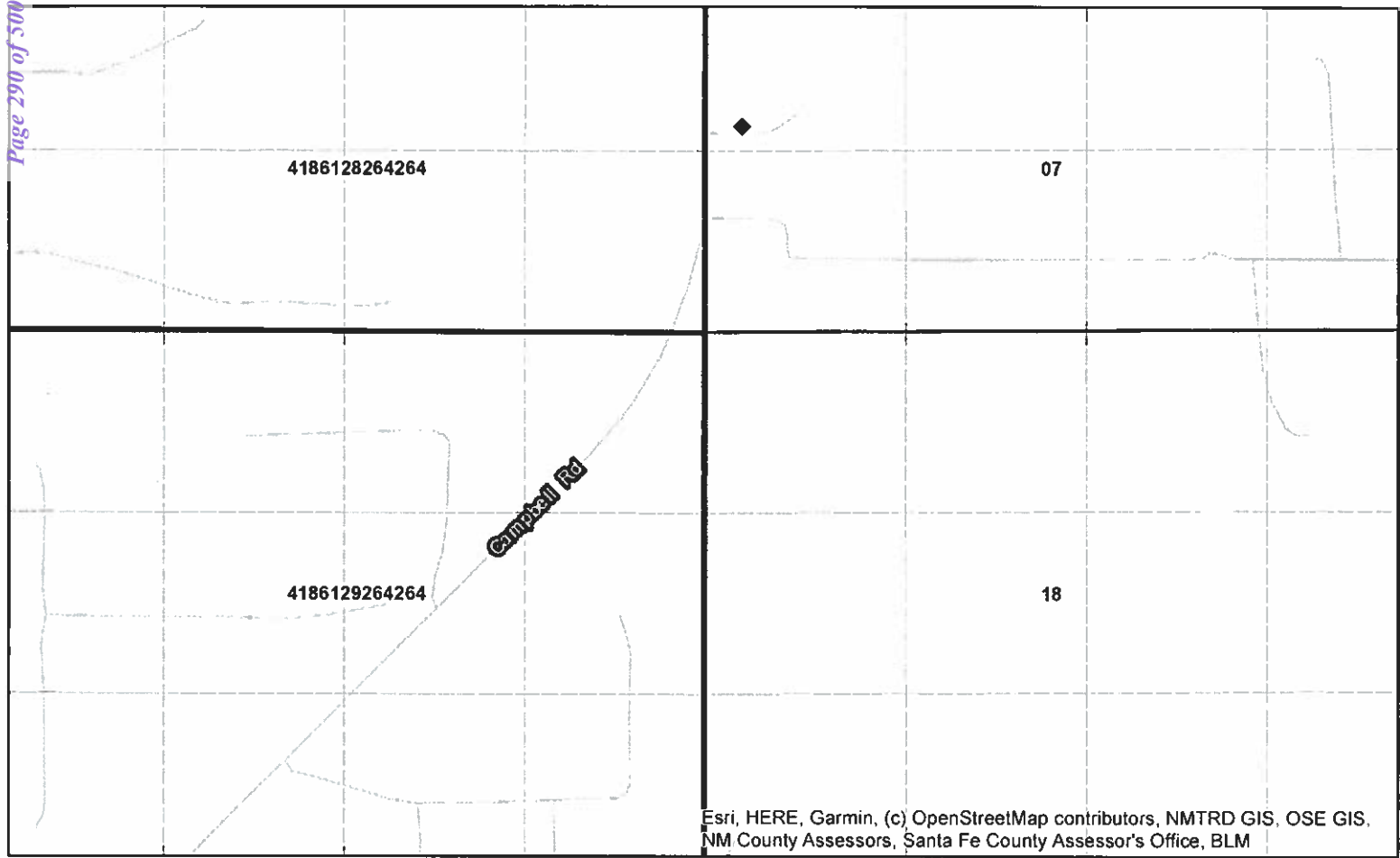
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**Spatial Information**  
County: Lea  
Groundwater Basin: Carlsbad  
Abstract Area: C  
CUB  
Land Grant:  
Not in Land Grant  
Restrictions:  
NA  
PLSS Description  
SW SW NW SW Qtr of Sec 7 of 22S 32E  
  
Derived from Projected PLSS- Qtr Sec.  
locations are calculated and are only  
approximations

**Parcel Information**  
UPC/DocNum:  
Parcel Owner:  
Address: null null null null null null  
  
Legal:

**POD Information**  
Owner: EOG/GHD  
File Number: C-4144 POD40  
POD Status: NoData  
Permit Status: NoData  
Permit Use: NoData  
Purpose: MON

- ◆ Coord Search Location
- Eddy County Parcels 2020
- Lea County Parcels 2020
- BLM Land Grant
- PLSS Township
- PLSS First Div...
- PLSS Second...

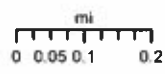


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**Coordinates**  
UTM - NAD 83 (m) - Zone 13  
Easting 620181.453  
Northing 3585812.001  
State Plane - NAD 83 (f) - Zone E  
Easting 729992.286  
Northing 510839.647  
Degrees Minutes Seconds  
Latitude 32 : 24 : 10.400000  
Longitude -103 : 43 : 19.460000  
Location pulled from Coordinate Search

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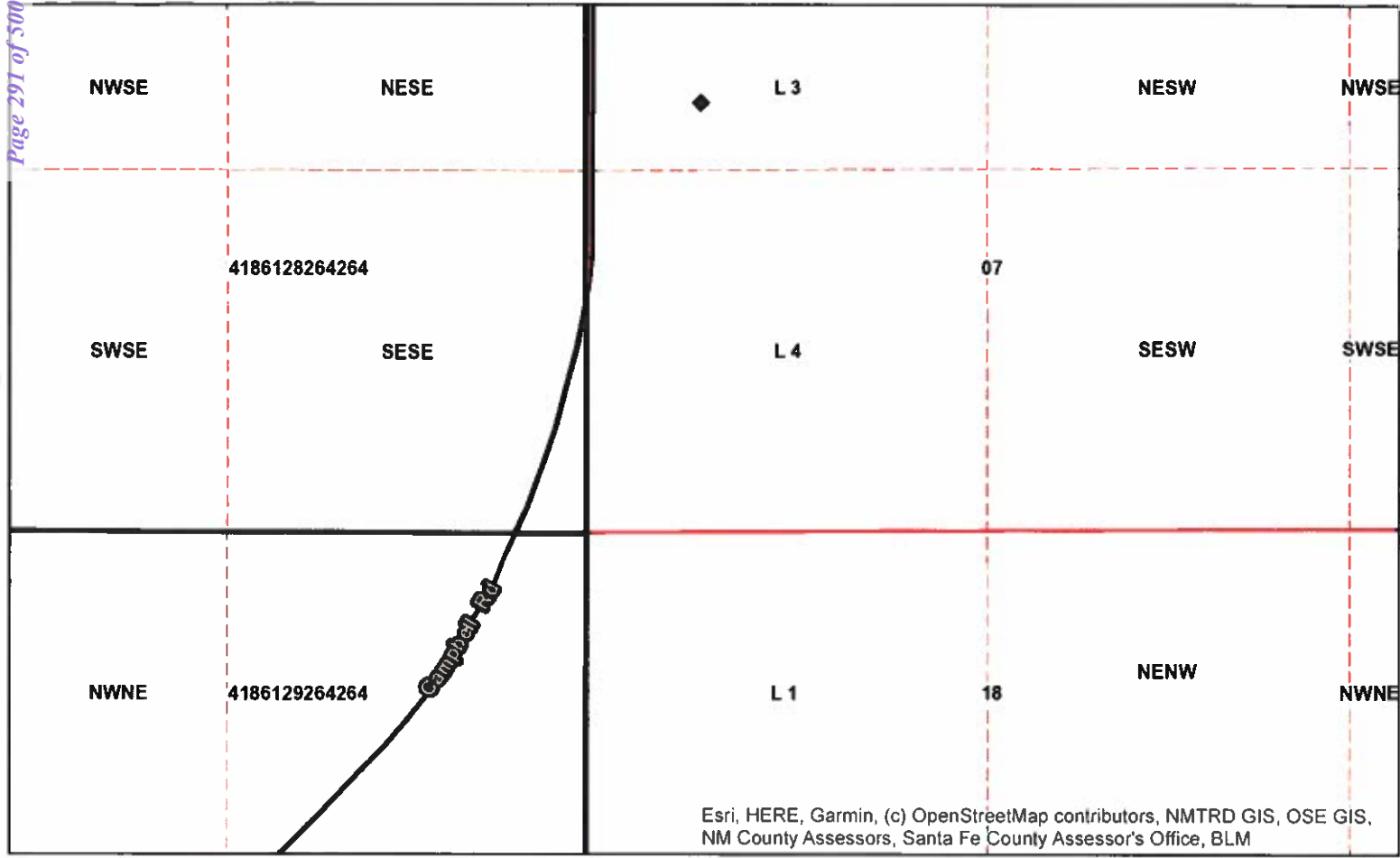
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**Spatial Information**  
County: Lea  
Groundwater Basin: Carlsbad  
Abstract Area: C  
CUB  
Land Grant:  
Not in Land Grant  
Restrictions:  
NA  
PLSS Description  
SW SW NW SW Qtr of Sec 7 of 22S 32E  
  
Derived from Projected PLSS- Qtr Sec  
locations are calculated and are only  
approximations

**Parcel Information**  
UPC/DocNum:  
Parcel Owner:  
Address: null null null null null null  
  
Legal:

**POD Information**  
Owner: EOG/GHD  
File Number: C-4144 POD41  
POD Status: NoData  
Permit Status: NoData  
Permit Use: NoData  
Purpose: MON

- ◆ Coord Search Location
- Eddy County Parcels 2020
- Lea County Parcels 2020
- BLM Land Grant
- PLSSTownship
- PLSSFirstDiv...
- PLSSSecond...



**Coordinates**  
**UTM - NAD 83 (m) - Zone 13**  
Easting 620227.440  
Northing 3585833.802  
**State Plane - NAD 83 (f) - Zone E**  
Easting 730143.632  
Northing 510910.243  
**Degrees Minutes Seconds**  
Latitude 32 : 24 : 11.090000  
Longitude -103 : 43 : 17.690000  
Location pulled from Coordinate Search

**Parcel Information**  
UPC/DocNum:  
Parcel Owner:  
Address:null null null null null null  
  
Legal:

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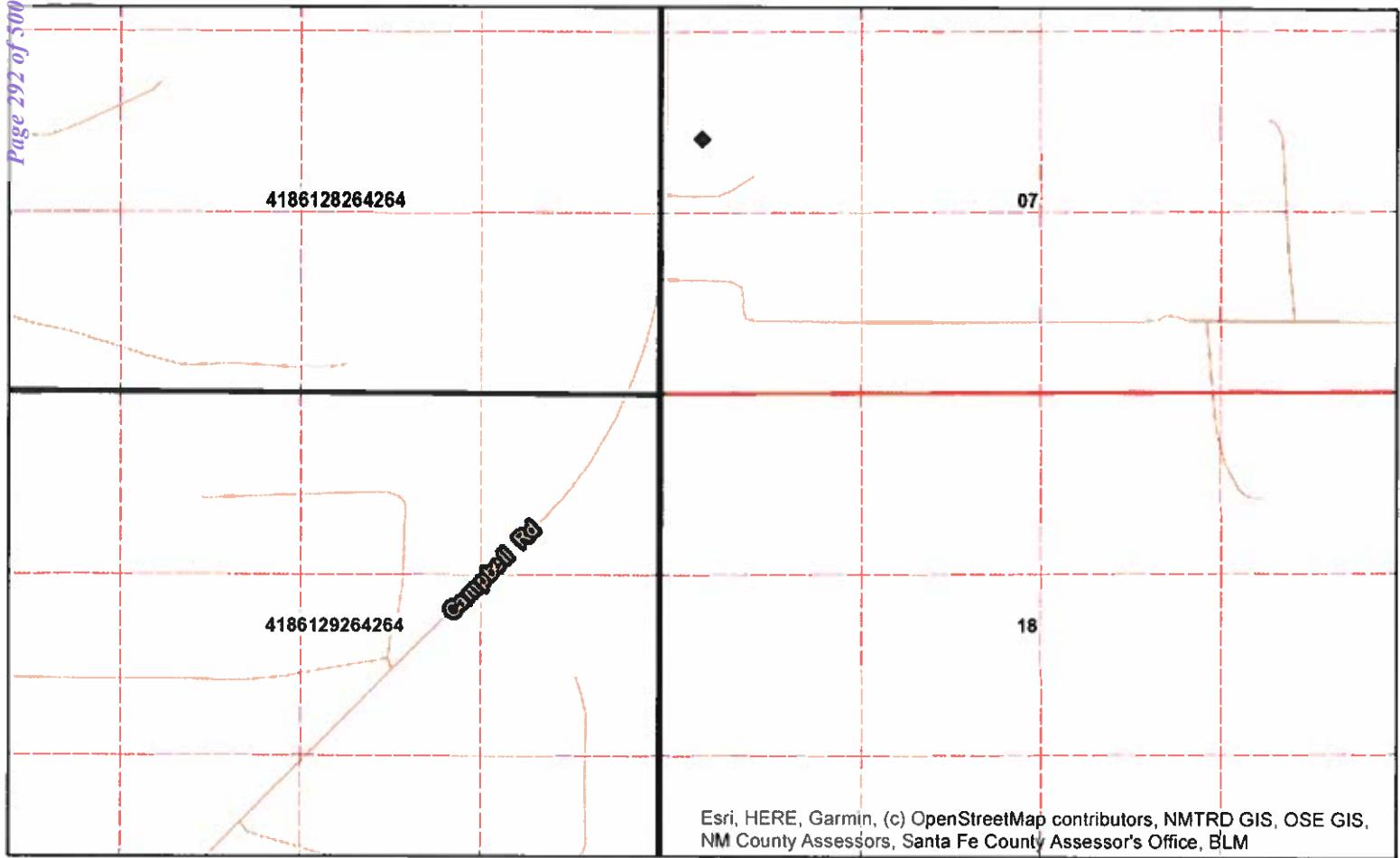
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**Spatial Information**  
County: Lea  
Groundwater Basin: Carlsbad  
Abstract Area:C  
CUB  
Land Grant:  
Not in Land Grant  
**Restrictions:**  
NA  
**PLSS Description**  
SE SW NW SW Qtr of Sec 7 of 22S 32E  
  
Derived from Projected PLSS- Qtr Sec.  
locations are calculated and are only  
approximations

**POD Information**  
Owner: EOG/GHD  
File Number: C-4144 POD42  
POD Status: NoData  
Permit Status: NoData  
Permit Use: NoData  
Purpose: MON

- ◆ Coord Search Location
- Eddy County Parcels 2020
- Lea County Parcels 2020
- BLM Land Grant
- PLSSTownship
- PLSSFirstDiv...
- PLSSSecond...





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**Coordinates**  
**UTM - NAD 83 (m) - Zone 13**  
Easting 620190.323  
Northing 3585922.368  
**State Plane - NAD 83 (f) - Zone E**  
Easting 730023.653  
Northing 511201.617  
**Degrees Minutes Seconds**  
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Longitude -103 : 43 : 19.070000  
Location pulled from Coordinate Search

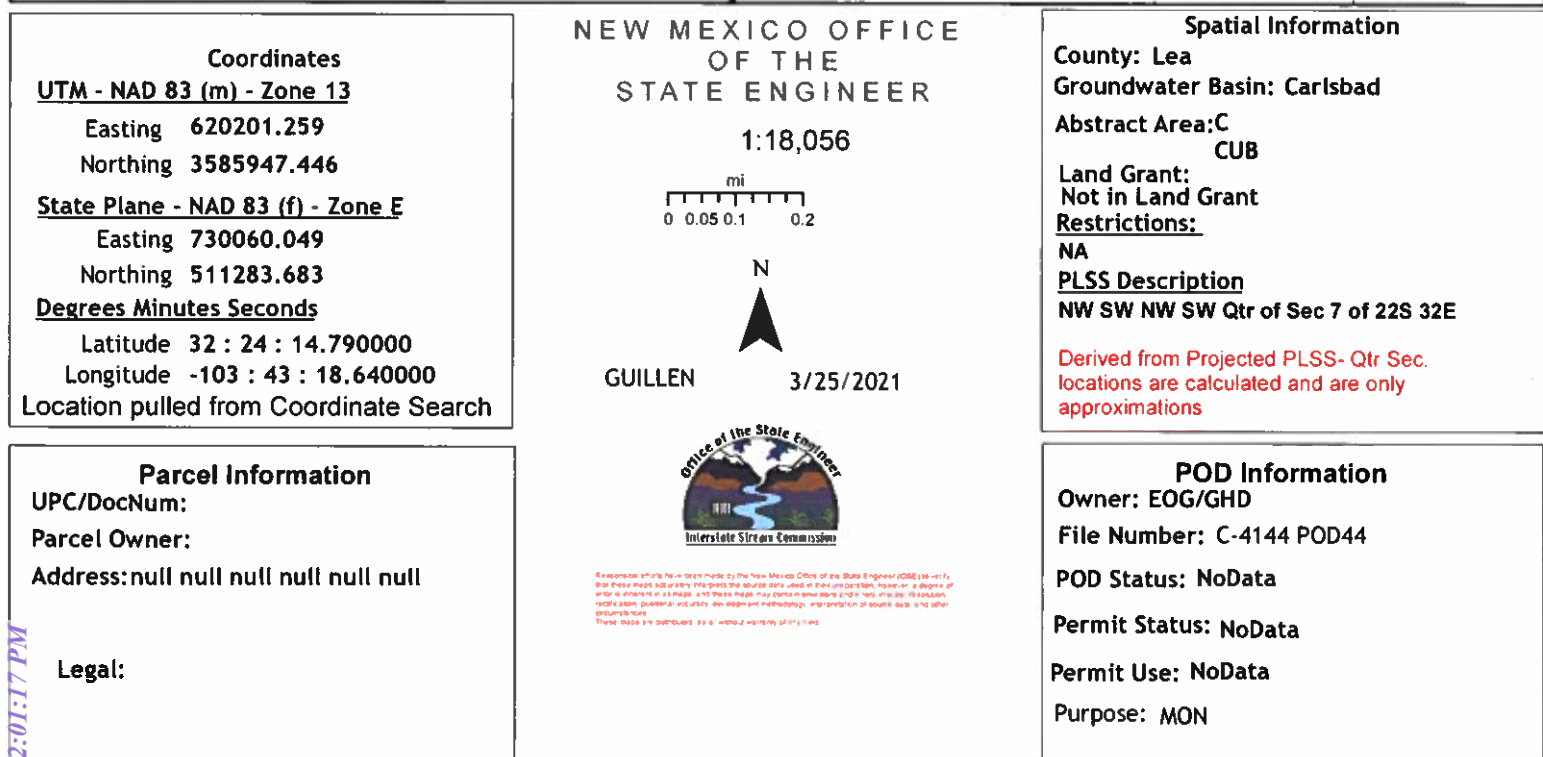
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OF THE  
STATE ENGINEER  
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0 0.05 0.1 0.2  
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**Spatial Information**  
County: Lea  
Groundwater Basin: Carlsbad  
Abstract Area: C  
CUB  
Land Grant:  
Not in Land Grant  
**Restrictions:**  
NA  
**PLSS Description**  
NW SW NW SW Qtr of Sec 7 of 22S 32E  
Derived from Projected PLSS- Qtr Sec.  
locations are calculated and are only  
approximations

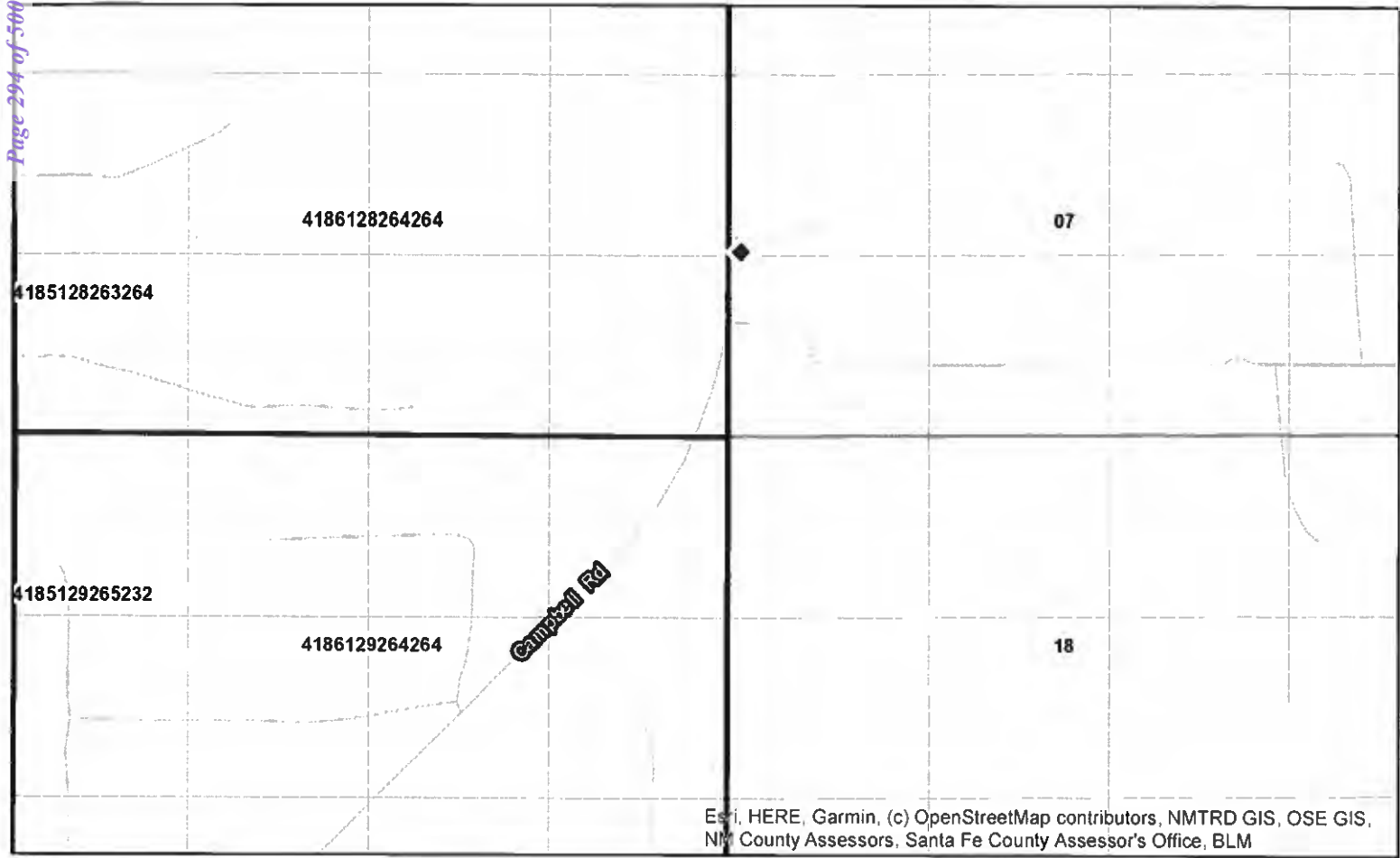
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Parcel Owner:  
Address:null null null null null null  
**Legal:**

**POD Information**  
Owner: EOG/GHD  
File Number: C-4144 POD43  
POD Status: NoData  
Permit Status: NoData  
Permit Use: NoData  
Purpose: MON

- ◆ Coord Search Location
- Eddy County Parcels 2020
- Lea County Parcels 2020
- BLM Land Grant
- PLSSTownship
- PLSSFirstDiv...
- PLSSSecond...



-  Coord Search Location  
 Eddy County Parcels 2020  
 Lea County Parcels 2020  
 BLM Land Grant
-  PLSSTownship  
 PLSSFirstDiv...  
 PLSSSecond...



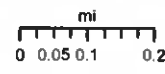
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**Coordinates**  
UTM - NAD 83 (m) - Zone 13  
Easting 620128.710  
Northing 3585765.172  
State Plane - NAD 83 (f) - Zone E  
Easting 729818.260  
Northing 510687.064  
Degrees Minutes Seconds  
Latitude 32 : 24 : 8.900000  
Longitude -103 : 43 : 21.500000  
Location pulled from Coordinate Search

**Parcel Information**  
UPC/DocNum:  
Parcel Owner:  
Address:null null null null null null  
  
Legal:

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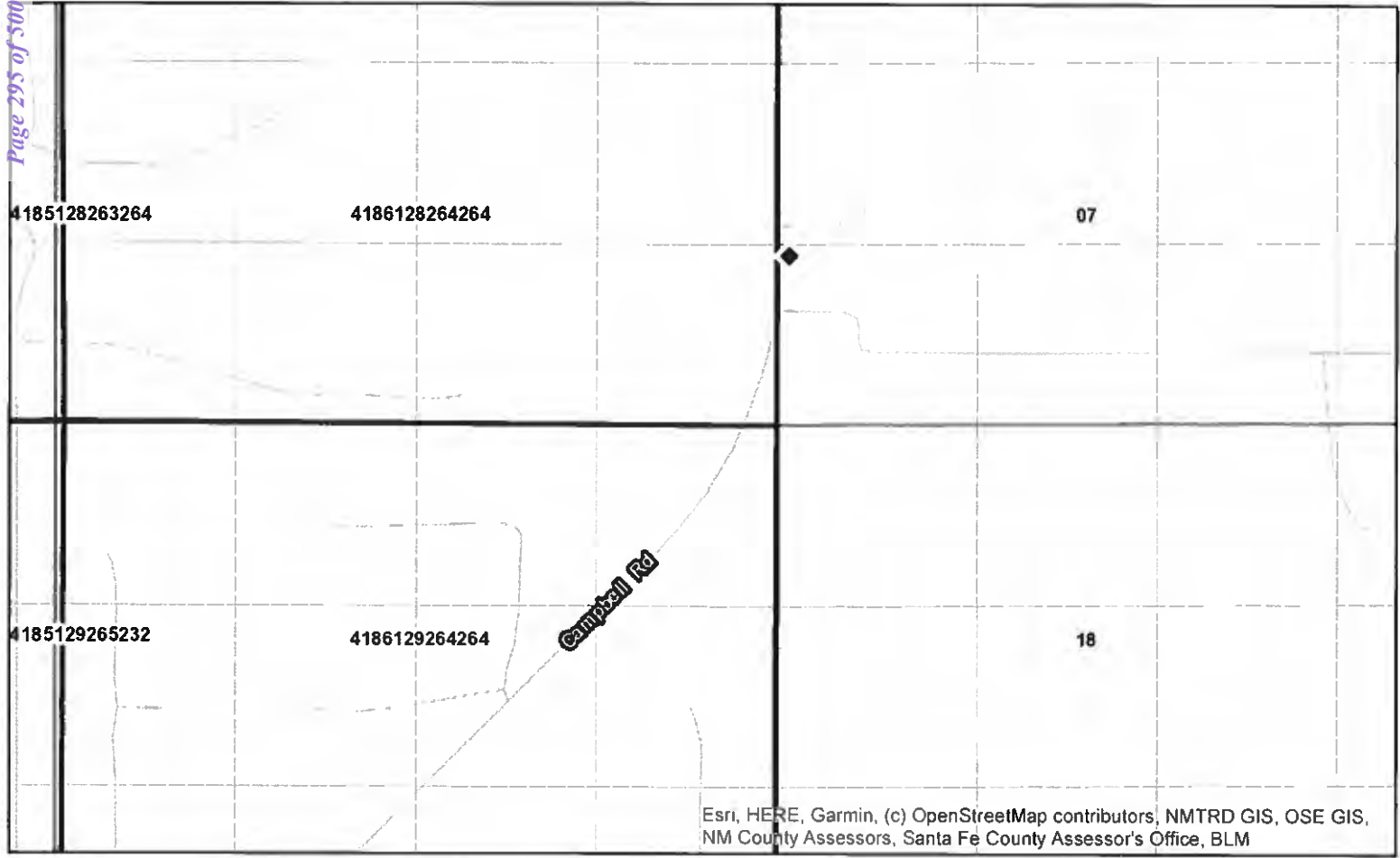


Office of the State Engineer  
Interstate Stream Commission  
1000 E. University Avenue, Suite 200  
Albuquerque, NM 87106  
505.243.2200  
www.nmstateengineer.com

**Spatial Information**  
County: Lea  
Groundwater Basin: Carlsbad  
Abstract Area:C  
CUB  
Land Grant:  
Not in Land Grant  
Restrictions:  
NA  
PLSS Description  
SW SW NW SW Qtr of Sec 7 of 22S 32E  
  
Derived from Projected PLSS- Qtr Sec  
locations are calculated and are only  
approximations

**POD Information**  
Owner: EOG/GHD  
File Number: C-4144 POD45  
POD Status: NoData  
Permit Status: NoData  
Permit Use: NoData  
Purpose: MON

- ☒ Coord Search Location
- ☐ Eddy County Parcels 2020
- ☐ Lea County Parcels 2020
- ☐ BLM Land Grant
- ☐ PLSSTownship
- ☐ PLSSFirstDiv...
- ☐ PLSSSecond...

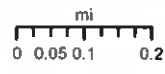


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**Coordinates**  
UTM - NAD 83 (m) - Zone 13  
Easting 620128.334  
Northing 3585730.980  
State Plane - NAD 83 (f) - Zone E  
Easting 729816.329  
Northing 510574.878  
Degrees Minutes Seconds  
Latitude 32 : 24 : 7.790000  
Longitude -103 : 43 : 21.530000  
Location pulled from Coordinate Search

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**Spatial Information**  
County: Lea  
Groundwater Basin: Carlsbad  
Abstract Area: C  
CUB  
Land Grant:  
Not in Land Grant  
Restrictions:  
NA  
PLSS Description  
NW NW SW SW Qtr of Sec 7 of 22S 32E  
Derived from Projected PLSS- Qtr Sec  
locations are calculated and are only  
approximations

**Parcel Information**  
UPC/DocNum:  
Parcel Owner:  
Address: null null null null null null  
  
Legal:

**POD Information**  
Owner: EOG/GHD  
File Number: C-4144 POD46  
POD Status: NoData  
Permit Status: NoData  
Permit Use: NoData  
Purpose: MON

- ◆ Coord Search Location
- Eddy County Parcels 2020
- Lea County Parcels 2020
- BLM Land Grant
- PLSSTownship
- PLSSFirstDiv...
- PLSSSecond...

John R. D Antonio, Jr., P.E.  
State Engineer



Roswell Office  
1900 WEST SECOND STREET  
ROSWELL, NM 88201

**STATE OF NEW MEXICO  
OFFICE OF THE STATE ENGINEER**

Trn Nbr: 690620  
File Nbr: C 04144

Mar. 25, 2021

ALAN BRANDON  
GHD SERVICES INC.  
6121 INDIAN SCHOOL RD NE  
ALBUQUERQUE, NM 87110

Greetings:

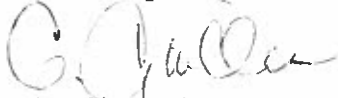
Your approved copy of the above numbered permit to drill a well for non-consumptive purposes is enclosed. You must obtain an additional permit if you intend to use the water. It is your responsibility to provide the contracted well driller with a copy of the permit that must be made available during well drilling activities.

Carefully review the attached conditions of approval for all specific permit requirements.

- \* If use of this well is temporary in nature and the well will be plugged at the end of the well usage, the OSE must initially approve of the plugging. If plugging approval is not conditioned in this permit, the applicant must submit a Plugging Plan of Operations for approval prior to the well being plugged. The Plugging Record must be properly completed and submitted to the OSE within 30 days of the well plugging.
- \* If the final intended purpose and condition requires a well ID tag and meter installation, the applicant must immediately send a completed meter report form to this office.
- \* The well record and log must be submitted within 30 days of the completion of the well or if the attempt was a dry hole.
- \* This permit expires and will be cancelled if no well is drilled and/or a well log is not received by the date set forth in the conditions of approval.

Appropriate forms can be downloaded from the OSE website [www.ose.state.nm.us](http://www.ose.state.nm.us).

Sincerely,

  
Claudia Guillen  
(575) 622-6521

Enclosure

explore

# Attachment D

## Laboratory Reports and Chain-of-Custody Documentation





## Environment Testing America

### ANALYTICAL REPORT

Eurofins Xenco, Carlsbad  
1089 N Canal St.  
Carlsbad, NM 88220  
Tel: (575)988-3199

Laboratory Job ID: 890-492-1

Laboratory Sample Delivery Group: 11220747/02

Client Project/Site: Flamenco Federal #1

For:

GHD Services Inc.  
2135 South Loop 250 West  
Midland, Texas 79703

Attn: Becky Haskell

A handwritten signature in black ink, appearing to read "Debbie Simmons".

Authorized for release by:  
4/27/2021 10:26:20 AM

Debbie Simmons, Project Manager  
(281)240-4200  
[debbie.simmons@eurofinset.com](mailto:debbie.simmons@eurofinset.com)

#### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

Client: GHD Services Inc.  
Project/Site: Flamenco Federal #1

Laboratory Job ID: 890-492-1  
SDG: 11220747/02

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## Definitions/Glossary

Client: GHD Services Inc.  
Project/Site: Flamenco Federal #1

Job ID: 890-492-1  
SDG: 11220747/02

## Qualifiers

## GC VOA

| Qualifier | Qualifier Description  |
|-----------|--|
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |
| U         | Indicates the analyte was analyzed for but not detected.   |

## HPLC/IC

| Qualifier | Qualifier Description                                    |
|-----------|--|
| U         | Indicates the analyte was analyzed for but not detected. |

## General Chemistry

| Qualifier | Qualifier Description                                    |
|-----------|--|
| U         | Indicates the analyte was analyzed for but not detected. |

## Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

## Case Narrative

Client: GHD Services Inc.  
Project/Site: Flamenco Federal #1

Job ID: 890-492-1  
SDG: 11220747/02

---

### Job ID: 890-492-1

---

Laboratory: Eurofins Xenco, Carlsbad

---

#### Narrative

#### Job Narrative 890-492-1

##### Receipt

The samples were received on 4/6/2021 3:25 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 19.2°C

##### Receipt Exceptions

Insufficient sample volume was provided for the following sample for the <FRACTION\_METHOD> analysis: MW-9 (890-492-5). One liter container not full for sample MW-9 for TDS

##### GC VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

##### HPLC/IC

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

##### General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

## Client Sample Results

Client: GHD Services Inc.  
Project/Site: Flamenco Federal #1

Job ID: 890-492-1  
SDG: 11220747/02

Client Sample ID: MW-1

Lab Sample ID: 890-492-1

Date Collected: 04/06/21 11:50

Matrix: Water

Date Received: 04/06/21 15:25

## Method: 8021B - Volatile Organic Compounds (GC)

| Analyte             | Result          | Qualifier | RL      | MDL      | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------|-----------------|-----------|---------|----------|------|---|----------|----------------|---------|
| Benzene             | <0.00200        | U         | 0.00200 | 0.000408 | mg/L |   |          | 04/08/21 17:33 | 1       |
| <b>Toluene</b>      | <b>0.000594</b> | <b>J</b>  | 0.00200 | 0.000367 | mg/L |   |          | 04/08/21 17:33 | 1       |
| Ethylbenzene        | <0.00200        | U         | 0.00200 | 0.000657 | mg/L |   |          | 04/08/21 17:33 | 1       |
| m-Xylene & p-Xylene | <0.00400        | U         | 0.00400 | 0.000629 | mg/L |   |          | 04/08/21 17:33 | 1       |
| o-Xylene            | <0.00200        | U         | 0.00200 | 0.000642 | mg/L |   |          | 04/08/21 17:33 | 1       |
| Xylenes, Total      | <0.00400        | U         | 0.00400 | 0.00100  | mg/L |   |          | 04/08/21 17:33 | 1       |
| Total BTEX          | <0.00200        | U         | 0.00200 | 0.00100  | mg/L |   |          | 04/08/21 17:33 | 1       |

| Surrogate                   | %Recovery | Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|-----------------------------|-----------|-----------|----------|----------|----------------|---------|
| 4-Bromofluorobenzene (Surr) | 111       |           | 70 - 130 |          | 04/08/21 17:33 | 1       |
| 1,4-Difluorobenzene (Surr)  | 101       |           | 70 - 130 |          | 04/08/21 17:33 | 1       |

## Method: 300.0 - Anions, Ion Chromatography

| Analyte         | Result       | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|-----------------|--------------|-----------|-----|------|------|---|----------|----------------|---------|
| <b>Chloride</b> | <b>37000</b> |           | 250 | 10.5 | mg/L |   |          | 04/18/21 19:51 | 500     |

## General Chemistry

| Analyte                       | Result       | Qualifier | RL   | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------------------------|--------------|-----------|------|------|------|---|----------|----------------|---------|
| <b>Total Dissolved Solids</b> | <b>61600</b> |           | 5000 | 5000 | mg/L |   |          | 04/10/21 15:16 | 1       |

Client Sample ID: MW-2

Lab Sample ID: 890-492-2

Date Collected: 04/06/21 12:40

Matrix: Water

Date Received: 04/06/21 15:25

## Method: 8021B - Volatile Organic Compounds (GC)

| Analyte             | Result   | Qualifier | RL      | MDL      | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------|----------|-----------|---------|----------|------|---|----------|----------------|---------|
| Benzene             | <0.00200 | U         | 0.00200 | 0.000408 | mg/L |   |          | 04/08/21 22:06 | 1       |
| Toluene             | <0.00200 | U         | 0.00200 | 0.000367 | mg/L |   |          | 04/08/21 22:06 | 1       |
| Ethylbenzene        | <0.00200 | U         | 0.00200 | 0.000657 | mg/L |   |          | 04/08/21 22:06 | 1       |
| m-Xylene & p-Xylene | <0.00400 | U         | 0.00400 | 0.000629 | mg/L |   |          | 04/08/21 22:06 | 1       |
| o-Xylene            | <0.00200 | U         | 0.00200 | 0.000642 | mg/L |   |          | 04/08/21 22:06 | 1       |
| Xylenes, Total      | <0.00400 | U         | 0.00400 | 0.00100  | mg/L |   |          | 04/08/21 22:06 | 1       |
| Total BTEX          | <0.00200 | U         | 0.00200 | 0.00100  | mg/L |   |          | 04/08/21 22:06 | 1       |

| Surrogate                   | %Recovery | Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|-----------------------------|-----------|-----------|----------|----------|----------------|---------|
| 4-Bromofluorobenzene (Surr) | 117       |           | 70 - 130 |          | 04/08/21 22:06 | 1       |
| 1,4-Difluorobenzene (Surr)  | 102       |           | 70 - 130 |          | 04/08/21 22:06 | 1       |

## Method: 300.0 - Anions, Ion Chromatography

| Analyte         | Result      | Qualifier | RL   | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|-----------------|-------------|-----------|------|------|------|---|----------|----------------|---------|
| <b>Chloride</b> | <b>8940</b> |           | 50.0 | 2.10 | mg/L |   |          | 04/18/21 19:56 | 100     |

## General Chemistry

| Analyte                       | Result       | Qualifier | RL  | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------------------------|--------------|-----------|-----|-----|------|---|----------|----------------|---------|
| <b>Total Dissolved Solids</b> | <b>15300</b> |           | 500 | 500 | mg/L |   |          | 04/10/21 15:16 | 1       |

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## Client Sample Results

Client: GHD Services Inc.  
Project/Site: Flamenco Federal #1

Job ID: 890-492-1  
SDG: 11220747/02

Client Sample ID: MW-3

Lab Sample ID: 890-492-3

Date Collected: 04/06/21 13:20

Matrix: Water

Date Received: 04/06/21 15:25

## Method: 8021B - Volatile Organic Compounds (GC)

| Analyte             | Result   | Qualifier | RL      | MDL      | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------|----------|-----------|---------|----------|------|---|----------|----------------|---------|
| Benzene             | <0.00200 | U         | 0.00200 | 0.000408 | mg/L |   |          | 04/08/21 22:27 | 1       |
| Toluene             | <0.00200 | U         | 0.00200 | 0.000367 | mg/L |   |          | 04/08/21 22:27 | 1       |
| Ethylbenzene        | <0.00200 | U         | 0.00200 | 0.000657 | mg/L |   |          | 04/08/21 22:27 | 1       |
| m-Xylene & p-Xylene | <0.00400 | U         | 0.00400 | 0.000629 | mg/L |   |          | 04/08/21 22:27 | 1       |
| o-Xylene            | <0.00200 | U         | 0.00200 | 0.000642 | mg/L |   |          | 04/08/21 22:27 | 1       |
| Xylenes, Total      | <0.00400 | U         | 0.00400 | 0.00100  | mg/L |   |          | 04/08/21 22:27 | 1       |
| Total BTEX          | <0.00200 | U         | 0.00200 | 0.00100  | mg/L |   |          | 04/08/21 22:27 | 1       |

| Surrogate                   | %Recovery | Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|-----------------------------|-----------|-----------|----------|----------|----------------|---------|
| 4-Bromofluorobenzene (Surr) | 111       |           | 70 - 130 |          | 04/08/21 22:27 | 1       |
| 1,4-Difluorobenzene (Surr)  | 99        |           | 70 - 130 |          | 04/08/21 22:27 | 1       |

## Method: 300.0 - Anions, Ion Chromatography

| Analyte  | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| Chloride | 39400  |           | 250 | 10.5 | mg/L |   |          | 04/18/21 20:01 | 500     |

## General Chemistry

| Analyte                | Result | Qualifier | RL   | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|------------------------|--------|-----------|------|------|------|---|----------|----------------|---------|
| Total Dissolved Solids | 72500  |           | 5000 | 5000 | mg/L |   |          | 04/10/21 15:16 | 1       |

Client Sample ID: MW-8

Lab Sample ID: 890-492-4

Date Collected: 04/06/21 14:20

Matrix: Water

Date Received: 04/06/21 15:25

## Method: 8021B - Volatile Organic Compounds (GC)

| Analyte             | Result   | Qualifier | RL      | MDL      | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------|----------|-----------|---------|----------|------|---|----------|----------------|---------|
| Benzene             | <0.00200 | U         | 0.00200 | 0.000408 | mg/L |   |          | 04/08/21 22:47 | 1       |
| Toluene             | <0.00200 | U         | 0.00200 | 0.000367 | mg/L |   |          | 04/08/21 22:47 | 1       |
| Ethylbenzene        | <0.00200 | U         | 0.00200 | 0.000657 | mg/L |   |          | 04/08/21 22:47 | 1       |
| m-Xylene & p-Xylene | <0.00400 | U         | 0.00400 | 0.000629 | mg/L |   |          | 04/08/21 22:47 | 1       |
| o-Xylene            | <0.00200 | U         | 0.00200 | 0.000642 | mg/L |   |          | 04/08/21 22:47 | 1       |
| Xylenes, Total      | <0.00400 | U         | 0.00400 | 0.00100  | mg/L |   |          | 04/08/21 22:47 | 1       |
| Total BTEX          | <0.00200 | U         | 0.00200 | 0.00100  | mg/L |   |          | 04/08/21 22:47 | 1       |

| Surrogate                   | %Recovery | Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|-----------------------------|-----------|-----------|----------|----------|----------------|---------|
| 4-Bromofluorobenzene (Surr) | 114       |           | 70 - 130 |          | 04/08/21 22:47 | 1       |
| 1,4-Difluorobenzene (Surr)  | 102       |           | 70 - 130 |          | 04/08/21 22:47 | 1       |

## Method: 300.0 - Anions, Ion Chromatography

| Analyte  | Result | Qualifier | RL   | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|--------|-----------|------|------|------|---|----------|----------------|---------|
| Chloride | 765    |           | 25.0 | 1.05 | mg/L |   |          | 04/18/21 20:06 | 50      |

## General Chemistry

| Analyte                | Result | Qualifier | RL  | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|------------------------|--------|-----------|-----|-----|------|---|----------|----------------|---------|
| Total Dissolved Solids | 2630   |           | 200 | 200 | mg/L |   |          | 04/10/21 15:16 | 1       |

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## Client Sample Results

Client: GHD Services Inc.  
Project/Site: Flamenco Federal #1

Job ID: 890-492-1  
SDG: 11220747/02

Client Sample ID: MW-9

Lab Sample ID: 890-492-5

Date Collected: 04/06/21 14:00

Matrix: Water

Date Received: 04/06/21 15:25

## Method: 8021B - Volatile Organic Compounds (GC)

| Analyte             | Result   | Qualifier | RL      | MDL      | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------|----------|-----------|---------|----------|------|---|----------|----------------|---------|
| Benzene             | <0.00200 | U         | 0.00200 | 0.000408 | mg/L |   |          | 04/08/21 23:08 | 1       |
| Toluene             | <0.00200 | U         | 0.00200 | 0.000367 | mg/L |   |          | 04/08/21 23:08 | 1       |
| Ethylbenzene        | <0.00200 | U         | 0.00200 | 0.000657 | mg/L |   |          | 04/08/21 23:08 | 1       |
| m-Xylene & p-Xylene | <0.00400 | U         | 0.00400 | 0.000629 | mg/L |   |          | 04/08/21 23:08 | 1       |
| o-Xylene            | <0.00200 | U         | 0.00200 | 0.000642 | mg/L |   |          | 04/08/21 23:08 | 1       |
| Xylenes, Total      | <0.00400 | U         | 0.00400 | 0.00100  | mg/L |   |          | 04/08/21 23:08 | 1       |
| Total BTEX          | <0.00200 | U         | 0.00200 | 0.00100  | mg/L |   |          | 04/08/21 23:08 | 1       |

| Surrogate                   | %Recovery | Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|-----------------------------|-----------|-----------|----------|----------|----------------|---------|
| 4-Bromofluorobenzene (Surr) | 118       |           | 70 - 130 |          | 04/08/21 23:08 | 1       |
| 1,4-Difluorobenzene (Surr)  | 103       |           | 70 - 130 |          | 04/08/21 23:08 | 1       |

## Method: 300.0 - Anions, Ion Chromatography

| Analyte  | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| Chloride | 21800  |           | 100 | 4.21 | mg/L |   |          | 04/18/21 20:11 | 200     |

## General Chemistry

| Analyte                | Result | Qualifier | RL   | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|------------------------|--------|-----------|------|------|------|---|----------|----------------|---------|
| Total Dissolved Solids | 33400  |           | 1000 | 1000 | mg/L |   |          | 04/10/21 15:16 | 1       |

Client Sample ID: Dup-1

Lab Sample ID: 890-492-6

Date Collected: 04/06/21 00:00

Matrix: Water

Date Received: 04/06/21 15:25

## Method: 8021B - Volatile Organic Compounds (GC)

| Analyte             | Result   | Qualifier | RL      | MDL      | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------|----------|-----------|---------|----------|------|---|----------|----------------|---------|
| Benzene             | <0.00200 | U         | 0.00200 | 0.000408 | mg/L |   |          | 04/08/21 23:28 | 1       |
| Toluene             | <0.00200 | U         | 0.00200 | 0.000367 | mg/L |   |          | 04/08/21 23:28 | 1       |
| Ethylbenzene        | <0.00200 | U         | 0.00200 | 0.000657 | mg/L |   |          | 04/08/21 23:28 | 1       |
| m-Xylene & p-Xylene | <0.00400 | U         | 0.00400 | 0.000629 | mg/L |   |          | 04/08/21 23:28 | 1       |
| o-Xylene            | <0.00200 | U         | 0.00200 | 0.000642 | mg/L |   |          | 04/08/21 23:28 | 1       |
| Xylenes, Total      | <0.00400 | U         | 0.00400 | 0.00100  | mg/L |   |          | 04/08/21 23:28 | 1       |
| Total BTEX          | <0.00200 | U         | 0.00200 | 0.00100  | mg/L |   |          | 04/08/21 23:28 | 1       |

| Surrogate                   | %Recovery | Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|-----------------------------|-----------|-----------|----------|----------|----------------|---------|
| 4-Bromofluorobenzene (Surr) | 115       |           | 70 - 130 |          | 04/08/21 23:28 | 1       |
| 1,4-Difluorobenzene (Surr)  | 101       |           | 70 - 130 |          | 04/08/21 23:28 | 1       |

## Method: 300.0 - Anions, Ion Chromatography

| Analyte  | Result | Qualifier | RL   | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|--------|-----------|------|------|------|---|----------|----------------|---------|
| Chloride | 788    |           | 25.0 | 1.05 | mg/L |   |          | 04/18/21 20:16 | 50      |

## General Chemistry

| Analyte                | Result | Qualifier | RL  | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|------------------------|--------|-----------|-----|-----|------|---|----------|----------------|---------|
| Total Dissolved Solids | 2820   |           | 200 | 200 | mg/L |   |          | 04/10/21 15:16 | 1       |

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## Surrogate Summary

Client: GHD Services Inc.  
Project/Site: Flamenco Federal #1

Job ID: 890-492-1  
SDG: 11220747/02

## Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Water

Prep Type: Total/NA

## Percent Surrogate Recovery (Acceptance Limits)

| Lab Sample ID   | Client Sample ID       | BFB1     | DFBZ1    |
|-----------------|------------------------|----------|----------|
|                 |                        | (70-130) | (70-130) |
| 890-492-1       | MW-1                   | 111      | 101      |
| 890-492-2       | MW-2                   | 117      | 102      |
| 890-492-3       | MW-3                   | 111      | 99       |
| 890-492-4       | MW-8                   | 114      | 102      |
| 890-492-5       | MW-9                   | 118      | 103      |
| 890-492-6       | Dup-1                  | 115      | 101      |
| LCS 880-1527/3  | Lab Control Sample     | 103      | 94       |
| LCSD 880-1527/4 | Lab Control Sample Dup | 103      | 98       |
| MB 880-1527/8   | Method Blank           | 105      | 96       |

## Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

## QC Sample Results

Client: GHD Services Inc.  
Project/Site: Flamenco Federal #1

Job ID: 890-492-1  
SDG: 11220747/02

## Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-1527/8

Matrix: Water

Analysis Batch: 1527

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte             | MB Result | MB Qualifier | RL      | MDL      | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------|-----------|--------------|---------|----------|------|---|----------|----------------|---------|
| Benzene             | <0.00200  | U            | 0.00200 | 0.000408 | mg/L |   |          | 04/08/21 16:03 | 1       |
| Toluene             | <0.00200  | U            | 0.00200 | 0.000367 | mg/L |   |          | 04/08/21 16:03 | 1       |
| Ethylbenzene        | <0.00200  | U            | 0.00200 | 0.000657 | mg/L |   |          | 04/08/21 16:03 | 1       |
| m-Xylene & p-Xylene | <0.00400  | U            | 0.00400 | 0.000629 | mg/L |   |          | 04/08/21 16:03 | 1       |
| o-Xylene            | <0.00200  | U            | 0.00200 | 0.000642 | mg/L |   |          | 04/08/21 16:03 | 1       |
| Xylenes, Total      | <0.00400  | U            | 0.00400 | 0.00100  | mg/L |   |          | 04/08/21 16:03 | 1       |
| Total BTEX          | <0.00200  | U            | 0.00200 | 0.00100  | mg/L |   |          | 04/08/21 16:03 | 1       |

| Surrogate                   | MB %Recovery | MB Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|-----------------------------|--------------|--------------|----------|----------|----------------|---------|
| 4-Bromofluorobenzene (Surr) | 105          |              | 70 - 130 |          | 04/08/21 16:03 | 1       |
| 1,4-Difluorobenzene (Surr)  | 96           |              | 70 - 130 |          | 04/08/21 16:03 | 1       |

Lab Sample ID: LCS 880-1527/3

Matrix: Water

Analysis Batch: 1527

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte             | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------------------|-------------|------------|---------------|------|---|------|--------------|
| Benzene             | 0.100       | 0.1034     |               | mg/L |   | 103  | 70 - 130     |
| Toluene             | 0.100       | 0.1155     |               | mg/L |   | 116  | 70 - 130     |
| Ethylbenzene        | 0.100       | 0.1192     |               | mg/L |   | 119  | 70 - 130     |
| m-Xylene & p-Xylene | 0.200       | 0.2423     |               | mg/L |   | 121  | 70 - 130     |
| o-Xylene            | 0.100       | 0.1170     |               | mg/L |   | 117  | 70 - 130     |

| Surrogate                   | LCS %Recovery | LCS Qualifier | Limits   |
|-----------------------------|---------------|---------------|----------|
| 4-Bromofluorobenzene (Surr) | 103           |               | 70 - 130 |
| 1,4-Difluorobenzene (Surr)  | 94            |               | 70 - 130 |

Lab Sample ID: LCSD 880-1527/4

Matrix: Water

Analysis Batch: 1527

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

| Analyte             | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---------------------|-------------|-------------|----------------|------|---|------|--------------|-----|-----------|
| Benzene             | 0.100       | 0.1132      |                | mg/L |   | 113  | 70 - 130     | 9   | 20        |
| Toluene             | 0.100       | 0.1194      |                | mg/L |   | 119  | 70 - 130     | 3   | 20        |
| Ethylbenzene        | 0.100       | 0.1203      |                | mg/L |   | 120  | 70 - 130     | 1   | 20        |
| m-Xylene & p-Xylene | 0.200       | 0.2468      |                | mg/L |   | 123  | 70 - 130     | 2   | 20        |
| o-Xylene            | 0.100       | 0.1207      |                | mg/L |   | 121  | 70 - 130     | 3   | 20        |

| Surrogate                   | LCSD %Recovery | LCSD Qualifier | Limits   |
|-----------------------------|----------------|----------------|----------|
| 4-Bromofluorobenzene (Surr) | 103            |                | 70 - 130 |
| 1,4-Difluorobenzene (Surr)  | 98             |                | 70 - 130 |

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## QC Sample Results

Client: GHD Services Inc.  
Project/Site: Flamenco Federal #1

Job ID: 890-492-1  
SDG: 11220747/02

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-1981/38

Matrix: Water

Analysis Batch: 1981

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte  | MB<br>Result | MB<br>Qualifier | RL    | MDL    | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|--------------|-----------------|-------|--------|------|---|----------|----------------|---------|
| Chloride | <0.500       | U               | 0.500 | 0.0210 | mg/L |   |          | 04/18/21 17:44 | 1       |

Lab Sample ID: LCS 880-1981/39

Matrix: Water

Analysis Batch: 1981

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte  | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|----------|----------------|---------------|------------------|------|---|------|-----------------|
| Chloride | 25.0           | 25.71         |                  | mg/L |   | 103  | 90 - 110        |

Lab Sample ID: LCSD 880-1981/40

Matrix: Water

Analysis Batch: 1981

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

| Analyte  | Spike<br>Added | LCSD<br>Result | LCSD<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits | RPD | RPD<br>Limit |
|----------|----------------|----------------|-------------------|------|---|------|-----------------|-----|--------------|
| Chloride | 25.0           | 25.75          |                   | mg/L |   | 103  | 90 - 110        | 0   | 20           |

## Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 880-1676/1

Matrix: Water

Analysis Batch: 1676

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte                | MB<br>Result | MB<br>Qualifier | RL   | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|------------------------|--------------|-----------------|------|------|------|---|----------|----------------|---------|
| Total Dissolved Solids | <25.0        | U               | 25.0 | 25.0 | mg/L |   |          | 04/10/21 15:16 | 1       |

Lab Sample ID: LCS 880-1676/2

Matrix: Water

Analysis Batch: 1676

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte                | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|------------------------|----------------|---------------|------------------|------|---|------|-----------------|
| Total Dissolved Solids | 1000           | 1044          |                  | mg/L |   | 104  | 80 - 120        |

Lab Sample ID: LCSD 880-1676/3

Matrix: Water

Analysis Batch: 1676

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

| Analyte                | Spike<br>Added | LCSD<br>Result | LCSD<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits | RPD | RPD<br>Limit |
|------------------------|----------------|----------------|-------------------|------|---|------|-----------------|-----|--------------|
| Total Dissolved Solids | 1000           | 989.0          |                   | mg/L |   | 99   | 80 - 120        | NaN | 10           |

Lab Sample ID: 890-492-1 DU

Matrix: Water

Analysis Batch: 1676

Client Sample ID: MW-1

Prep Type: Total/NA

| Analyte                | Sample<br>Result | Sample<br>Qualifier | DU<br>Result | DU<br>Qualifier | Unit | D | RPD | RPD<br>Limit |
|------------------------|------------------|---------------------|--------------|-----------------|------|---|-----|--------------|
| Total Dissolved Solids | 61600            |                     | 61500        |                 | mg/L |   | 0.2 | 10           |

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## QC Association Summary

Client: GHD Services Inc.  
Project/Site: Flamenco Federal #1

Job ID: 890-492-1  
SDG: 11220747/02

## GC VOA

## Analysis Batch: 1527

| Lab Sample ID   | Client Sample ID       | Prep Type | Matrix | Method | Prep Batch |
|-----------------|------------------------|-----------|--------|--------|------------|
| 890-492-1       | MW-1                   | Total/NA  | Water  | 8021B  |            |
| 890-492-2       | MW-2                   | Total/NA  | Water  | 8021B  |            |
| 890-492-3       | MW-3                   | Total/NA  | Water  | 8021B  |            |
| 890-492-4       | MW-8                   | Total/NA  | Water  | 8021B  |            |
| 890-492-5       | MW-9                   | Total/NA  | Water  | 8021B  |            |
| 890-492-6       | Dup-1                  | Total/NA  | Water  | 8021B  |            |
| MB 880-1527/8   | Method Blank           | Total/NA  | Water  | 8021B  |            |
| LCS 880-1527/3  | Lab Control Sample     | Total/NA  | Water  | 8021B  |            |
| LCSD 880-1527/4 | Lab Control Sample Dup | Total/NA  | Water  | 8021B  |            |

## HPLC/IC

## Analysis Batch: 1981

| Lab Sample ID    | Client Sample ID       | Prep Type | Matrix | Method | Prep Batch |
|------------------|------------------------|-----------|--------|--------|------------|
| 890-492-1        | MW-1                   | Total/NA  | Water  | 300.0  |            |
| 890-492-2        | MW-2                   | Total/NA  | Water  | 300.0  |            |
| 890-492-3        | MW-3                   | Total/NA  | Water  | 300.0  |            |
| 890-492-4        | MW-8                   | Total/NA  | Water  | 300.0  |            |
| 890-492-5        | MW-9                   | Total/NA  | Water  | 300.0  |            |
| 890-492-6        | Dup-1                  | Total/NA  | Water  | 300.0  |            |
| MB 880-1981/38   | Method Blank           | Total/NA  | Water  | 300.0  |            |
| LCS 880-1981/39  | Lab Control Sample     | Total/NA  | Water  | 300.0  |            |
| LCSD 880-1981/40 | Lab Control Sample Dup | Total/NA  | Water  | 300.0  |            |

## General Chemistry

## Analysis Batch: 1676

| Lab Sample ID   | Client Sample ID       | Prep Type | Matrix | Method   | Prep Batch |
|-----------------|------------------------|-----------|--------|----------|------------|
| 890-492-1       | MW-1                   | Total/NA  | Water  | SM 2540C |            |
| 890-492-2       | MW-2                   | Total/NA  | Water  | SM 2540C |            |
| 890-492-3       | MW-3                   | Total/NA  | Water  | SM 2540C |            |
| 890-492-4       | MW-8                   | Total/NA  | Water  | SM 2540C |            |
| 890-492-5       | MW-9                   | Total/NA  | Water  | SM 2540C |            |
| 890-492-6       | Dup-1                  | Total/NA  | Water  | SM 2540C |            |
| MB 880-1676/1   | Method Blank           | Total/NA  | Water  | SM 2540C |            |
| LCS 880-1676/2  | Lab Control Sample     | Total/NA  | Water  | SM 2540C |            |
| LCSD 880-1676/3 | Lab Control Sample Dup | Total/NA  | Water  | SM 2540C |            |
| 890-492-1 DU    | MW-1                   | Total/NA  | Water  | SM 2540C |            |

Eurofins Xenco, Carlsbad

## Lab Chronicle

Client: GHD Services Inc.  
Project/Site: Flamenco Federal #1

Job ID: 890-492-1  
SDG: 11220747/02

## Client Sample ID: MW-1

Date Collected: 04/06/21 11:50

Date Received: 04/06/21 15:25

## Lab Sample ID: 890-492-1

Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|-----|
| Total/NA  | Analysis   | 8021B        |     | 1               | 1527         | 04/08/21 17:33       | AJ      | XM  |
| Total/NA  | Analysis   | 300.0        |     | 500             | 1981         | 04/18/21 19:51       | CH      | XM  |
| Total/NA  | Analysis   | SM 2540C     |     | 1               | 1676         | 04/10/21 15:16       | SC      | XM  |

## Client Sample ID: MW-2

Date Collected: 04/06/21 12:40

Date Received: 04/06/21 15:25

## Lab Sample ID: 890-492-2

Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|-----|
| Total/NA  | Analysis   | 8021B        |     | 1               | 1527         | 04/08/21 22:06       | AJ      | XM  |
| Total/NA  | Analysis   | 300.0        |     | 100             | 1981         | 04/18/21 19:56       | CH      | XM  |
| Total/NA  | Analysis   | SM 2540C     |     | 1               | 1676         | 04/10/21 15:16       | SC      | XM  |

## Client Sample ID: MW-3

Date Collected: 04/06/21 13:20

Date Received: 04/06/21 15:25

## Lab Sample ID: 890-492-3

Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|-----|
| Total/NA  | Analysis   | 8021B        |     | 1               | 1527         | 04/08/21 22:27       | AJ      | XM  |
| Total/NA  | Analysis   | 300.0        |     | 500             | 1981         | 04/18/21 20:01       | CH      | XM  |
| Total/NA  | Analysis   | SM 2540C     |     | 1               | 1676         | 04/10/21 15:16       | SC      | XM  |

## Client Sample ID: MW-8

Date Collected: 04/06/21 14:20

Date Received: 04/06/21 15:25

## Lab Sample ID: 890-492-4

Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|-----|
| Total/NA  | Analysis   | 8021B        |     | 1               | 1527         | 04/08/21 22:47       | AJ      | XM  |
| Total/NA  | Analysis   | 300.0        |     | 50              | 1981         | 04/18/21 20:06       | CH      | XM  |
| Total/NA  | Analysis   | SM 2540C     |     | 1               | 1676         | 04/10/21 15:16       | SC      | XM  |

## Client Sample ID: MW-9

Date Collected: 04/06/21 14:00

Date Received: 04/06/21 15:25

## Lab Sample ID: 890-492-5

Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|-----|
| Total/NA  | Analysis   | 8021B        |     | 1               | 1527         | 04/08/21 23:08       | AJ      | XM  |
| Total/NA  | Analysis   | 300.0        |     | 200             | 1981         | 04/18/21 20:11       | CH      | XM  |
| Total/NA  | Analysis   | SM 2540C     |     | 1               | 1676         | 04/10/21 15:16       | SC      | XM  |

Eurofins Xenco, Carlsbad



Lab Chronicle

Client: GHD Services Inc.  
Project/Site: Flamenco Federal #1

Job ID: 890-492-1  
SDG: 11220747/02

Client Sample ID: Dup-1  
Date Collected: 04/06/21 00:00  
Date Received: 04/06/21 15:25

Lab Sample ID: 890-492-6  
Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|-----|
| Total/NA  | Analysis   | 8021B        |     | 1               | 1527         | 04/08/21 23:28       | AJ      | XM  |
| Total/NA  | Analysis   | 300.0        |     | 50              | 1981         | 04/18/21 20:16       | CH      | XM  |
| Total/NA  | Analysis   | SM 2540C     |     | 1               | 1676         | 04/10/21 15:16       | SC      | XM  |

Laboratory References:  
XM = Eurofins Xenco, Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

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- 14

**Accreditation/Certification Summary**

Client: GHD Services Inc.  
Project/Site: Flamenco Federal #1

Job ID: 890-492-1  
SDG: 11220747/02

**Laboratory: Eurofins Xenco, Midland**

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|-----------|---------|-----------------------|-----------------|
| Texas     | NELAP   | T104704400-20-21      | 06-30-21        |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte                |
|-----------------|-------------|--------|------------------------|
| 300.0           |             | Water  | Chloride               |
| 8021B           |             | Water  | Total BTEX             |
| SM 2540C        |             | Water  | Total Dissolved Solids |

Eurofins Xenco, Carlsbad

## Method Summary

Client: GHD Services Inc.  
Project/Site: Flamenco Federal #1

Job ID: 890-492-1  
SDG: 11220747/02

| Method   | Method Description              | Protocol | Laboratory |
|----------|---------------------------------|----------|------------|
| 8021B    | Volatile Organic Compounds (GC) | SW846    | XM         |
| 300.0    | Anions, Ion Chromatography      | MCAWW    | XM         |
| SM 2540C | Solids, Total Dissolved (TDS)   | SM       | XM         |
| 5030B    | Purge and Trap                  | SW846    | XM         |

**Protocol References:**

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

XM = Eurofins Xenco, Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Eurofins Xenco, Carlsbad

## Sample Summary

Client: GHD Services Inc.  
Project/Site: Flamenco Federal #1

Job ID: 890-492-1  
SDG: 11220747/02

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       | Asset ID |
|---------------|------------------|--------|----------------|----------------|----------|
| 890-492-1     | MW-1             | Water  | 04/06/21 11:50 | 04/06/21 15:25 |          |
| 890-492-2     | MW-2             | Water  | 04/06/21 12:40 | 04/06/21 15:25 |          |
| 890-492-3     | MW-3             | Water  | 04/06/21 13:20 | 04/06/21 15:25 |          |
| 890-492-4     | MW-8             | Water  | 04/06/21 14:20 | 04/06/21 15:25 |          |
| 890-492-5     | MW-9             | Water  | 04/06/21 14:00 | 04/06/21 15:25 |          |
| 890-492-6     | Dup-1            | Water  | 04/06/21 00:00 | 04/06/21 15:25 |          |

Eurofins Xenco, Carlsbad



## Chain of Custody

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334  
 Midland, TX (432-704-5440) EL Paso, TX (915)585-3443 Lubbock, TX (806)794-1296  
 Hobbs, NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

Work Order No: \_\_\_\_\_

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Page \_\_\_\_\_ of \_\_\_\_\_

|                  |                     |                         |  |
|------------------|---------------------|-------------------------|--|
| Project Manager: | Becky Haskell       | Bill to: (if different) | James Kennedy                                      |
| Company Name:    | GHD                 | Company Name:           | EOG Resources                                      |
| Address:         | 2135 S. Loop 250 W. | Address:                | 5509 Champions Drive                               |
| City, State ZIP: | Midland, TX, 79703  | City, State ZIP:        | Midland TX   |
| Phone:           | 432-203-8471        | Email:                  | becky.haskell@ghd.com & Christopher.Knight@ghd.com |

|   |  |
|---|--|
| Work Order Comments   |  |
| Program: <input type="checkbox"/> PST <input type="checkbox"/> PRP <input type="checkbox"/> Brownfields <input type="checkbox"/> RRC <input type="checkbox"/> Superfund |  |
| State of Project:   |  |
| Reporting: Level II <input type="checkbox"/> Level III <input type="checkbox"/> PST/UST <input type="checkbox"/> TRRP Level IV <input type="checkbox"/>                 |  |
| Deliverables: EDD <input type="checkbox"/> ADaPT <input type="checkbox"/> Other:  |  |

| ANALYSIS REQUEST   |                     |              |              |       |                      |          |   |         |   | Work Order Notes             |  |            |  |     |  |    |  |         |  |     |  |    |  |                   |  |      |  |  |  |  |  |  |  |  |  |  |  |                  |  |     |  |    |  |          |  |  |  |  |  |  |  |                       |  |     |  |    |  |     |  |  |  |  |  |  |  |                       |  |     |  |    |  |     |  |  |  |  |  |  |  |                       |        |              |              |       |                      |  |  |  |  |  |  |  |  |      |    |        |      |     |   |   |   |   |   |               |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |       |    |   |   |     |   |   |   |   |   |  |  |  |  |  |  |
|--|---------------------|--------------|--------------|-------|----------------------|----------|---|---------|---|------------------------------|--|------------|--|-----|--|----|--|---------|--|-----|--|----|--|-------------------|--|------|--|--|--|--|--|--|--|--|--|--|--|------------------|--|-----|--|----|--|----------|--|--|--|--|--|--|--|-----------------------|--|-----|--|----|--|-----|--|--|--|--|--|--|--|-----------------------|--|-----|--|----|--|-----|--|--|--|--|--|--|--|-----------------------|--------|--------------|--------------|-------|----------------------|--|--|--|--|--|--|--|--|------|----|--------|------|-----|---|---|---|---|---|---------------|--|--|--|--|------|--|--|------|--|---|---|---|---|---|--|--|--|--|--|------|--|--|------|--|---|---|---|---|---|--|--|--|--|--|------|--|--|------|--|---|---|---|---|---|--|--|--|--|--|------|--|--|------|--|---|---|---|---|---|--|--|--|--|--|-------|----|---|---|-----|---|---|---|---|---|--|--|--|--|--|--|
| Project Name:  | Flamenco Federal #1 |              |              |       |                      |          |   |         |   | <br>890-492 Chain of Custody |  |            |  |     |  |    |  |         |  |     |  |    |  |                   |  |      |  |  |  |  |  |  |  |  |  |  |  |                  |  |     |  |    |  |          |  |  |  |  |  |  |  |                       |  |     |  |    |  |     |  |  |  |  |  |  |  |                       |  |     |  |    |  |     |  |  |  |  |  |  |  |                       |        |              |              |       |                      |  |  |  |  |  |  |  |  |      |    |        |      |     |   |   |   |   |   |               |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |       |    |   |   |     |   |   |   |   |   |  |  |  |  |  |  |
| Project Number:  | 11220747/02         |              |              |       |                      |          |   |         |   |                              |  |            |  |     |  |    |  |         |  |     |  |    |  |                   |  |      |  |  |  |  |  |  |  |  |  |  |  |                  |  |     |  |    |  |          |  |  |  |  |  |  |  |                       |  |     |  |    |  |     |  |  |  |  |  |  |  |                       |  |     |  |    |  |     |  |  |  |  |  |  |  |                       |        |              |              |       |                      |  |  |  |  |  |  |  |  |      |    |        |      |     |   |   |   |   |   |               |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |       |    |   |   |     |   |   |   |   |   |  |  |  |  |  |  |
| P.O. Number:   |                     |              |              |       |                      |          |   |         |   |                              |  |            |  |     |  |    |  |         |  |     |  |    |  |                   |  |      |  |  |  |  |  |  |  |  |  |  |  |                  |  |     |  |    |  |          |  |  |  |  |  |  |  |                       |  |     |  |    |  |     |  |  |  |  |  |  |  |                       |  |     |  |    |  |     |  |  |  |  |  |  |  |                       |        |              |              |       |                      |  |  |  |  |  |  |  |  |      |    |        |      |     |   |   |   |   |   |               |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |       |    |   |   |     |   |   |   |   |   |  |  |  |  |  |  |
| Sampler's Name:  |                     |              |              |       |                      |          |   |         |   |                              |  |            |  |     |  |    |  |         |  |     |  |    |  |                   |  |      |  |  |  |  |  |  |  |  |  |  |  |                  |  |     |  |    |  |          |  |  |  |  |  |  |  |                       |  |     |  |    |  |     |  |  |  |  |  |  |  |                       |  |     |  |    |  |     |  |  |  |  |  |  |  |                       |        |              |              |       |                      |  |  |  |  |  |  |  |  |      |    |        |      |     |   |   |   |   |   |               |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |       |    |   |   |     |   |   |   |   |   |  |  |  |  |  |  |
| <table border="1"> <thead> <tr> <th colspan="2">SAMPLE RECEIPT</th> <th colspan="2">Temp Blank</th> <th colspan="2">Yes</th> <th colspan="2">No</th> <th colspan="2">Wet Ice</th> <th colspan="2">Yes</th> <th colspan="2">No</th> </tr> <tr> <td colspan="2">Temperature (°C):</td> <td colspan="2">19.4</td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> </tr> <tr> <td colspan="2">Received Intact:</td> <td colspan="2">Yes</td> <td colspan="2">No</td> <td colspan="2">T-NM-007</td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> </tr> <tr> <td colspan="2">Cooler Custody Seals:</td> <td colspan="2">Yes</td> <td colspan="2">No</td> <td colspan="2">N/A</td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> </tr> <tr> <td colspan="2">Sample Custody Seals:</td> <td colspan="2">Yes</td> <td colspan="2">No</td> <td colspan="2">N/A</td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> </tr> </thead> <tbody> <tr> <th>Sample Identification</th> <th>Matrix</th> <th>Date Sampled</th> <th>Time Sampled</th> <th>Depth</th> <th colspan="9">Number of Containers</th> </tr> <tr> <td>MW-1</td> <td>GW</td> <td>4/6/21</td> <td>1130</td> <td>DTW</td> <td>4</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td colspan="5">BTX 8021/8260</td> </tr> <tr> <td>MW-2</td> <td></td> <td></td> <td>1240</td> <td></td> <td>4</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td colspan="5"></td> </tr> <tr> <td>MW-3</td> <td></td> <td></td> <td>1320</td> <td></td> <td>4</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td colspan="5"></td> </tr> <tr> <td>MW-8</td> <td></td> <td></td> <td>1400</td> <td></td> <td>4</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td colspan="5"></td> </tr> <tr> <td>MW-9</td> <td></td> <td></td> <td>1400</td> <td></td> <td>4</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td colspan="5"></td> </tr> <tr> <td>Dup-1</td> <td>GW</td> <td>-</td> <td>-</td> <td>DTW</td> <td>4</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td colspan="5"></td> </tr> </tbody> </table> |                     |              |              |       |                      |          |   |         |   | SAMPLE RECEIPT               |  | Temp Blank |  | Yes |  | No |  | Wet Ice |  | Yes |  | No |  | Temperature (°C): |  | 19.4 |  |  |  |  |  |  |  |  |  |  |  | Received Intact: |  | Yes |  | No |  | T-NM-007 |  |  |  |  |  |  |  | Cooler Custody Seals: |  | Yes |  | No |  | N/A |  |  |  |  |  |  |  | Sample Custody Seals: |  | Yes |  | No |  | N/A |  |  |  |  |  |  |  | Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers |  |  |  |  |  |  |  |  | MW-1 | GW | 4/6/21 | 1130 | DTW | 4 | X | X | X | X | BTX 8021/8260 |  |  |  |  | MW-2 |  |  | 1240 |  | 4 | X | X | X | X |  |  |  |  |  | MW-3 |  |  | 1320 |  | 4 | X | X | X | X |  |  |  |  |  | MW-8 |  |  | 1400 |  | 4 | X | X | X | X |  |  |  |  |  | MW-9 |  |  | 1400 |  | 4 | X | X | X | X |  |  |  |  |  | Dup-1 | GW | - | - | DTW | 4 | X | X | X | X |  |  |  |  |  | TAT starts the day received by the lab, if received by 4:30pm<br>Sample Comments<br>Sampled @ 1420<br>MW-9 (2)<br>not full container |
| SAMPLE RECEIPT   |                     | Temp Blank   |              | Yes   |                      | No       |   | Wet Ice |   | Yes                          |  | No         |  |     |  |    |  |         |  |     |  |    |  |                   |  |      |  |  |  |  |  |  |  |  |  |  |  |                  |  |     |  |    |  |          |  |  |  |  |  |  |  |                       |  |     |  |    |  |     |  |  |  |  |  |  |  |                       |  |     |  |    |  |     |  |  |  |  |  |  |  |                       |        |              |              |       |                      |  |  |  |  |  |  |  |  |      |    |        |      |     |   |   |   |   |   |               |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |       |    |   |   |     |   |   |   |   |   |  |  |  |  |  |  |
| Temperature (°C):  |                     | 19.4         |              |       |                      |          |   |         |   |                              |  |            |  |     |  |    |  |         |  |     |  |    |  |                   |  |      |  |  |  |  |  |  |  |  |  |  |  |                  |  |     |  |    |  |          |  |  |  |  |  |  |  |                       |  |     |  |    |  |     |  |  |  |  |  |  |  |                       |  |     |  |    |  |     |  |  |  |  |  |  |  |                       |        |              |              |       |                      |  |  |  |  |  |  |  |  |      |    |        |      |     |   |   |   |   |   |               |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |       |    |   |   |     |   |   |   |   |   |  |  |  |  |  |  |
| Received Intact:   |                     | Yes          |              | No    |                      | T-NM-007 |   |         |   |                              |  |            |  |     |  |    |  |         |  |     |  |    |  |                   |  |      |  |  |  |  |  |  |  |  |  |  |  |                  |  |     |  |    |  |          |  |  |  |  |  |  |  |                       |  |     |  |    |  |     |  |  |  |  |  |  |  |                       |  |     |  |    |  |     |  |  |  |  |  |  |  |                       |        |              |              |       |                      |  |  |  |  |  |  |  |  |      |    |        |      |     |   |   |   |   |   |               |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |       |    |   |   |     |   |   |   |   |   |  |  |  |  |  |  |
| Cooler Custody Seals:  |                     | Yes          |              | No    |                      | N/A      |   |         |   |                              |  |            |  |     |  |    |  |         |  |     |  |    |  |                   |  |      |  |  |  |  |  |  |  |  |  |  |  |                  |  |     |  |    |  |          |  |  |  |  |  |  |  |                       |  |     |  |    |  |     |  |  |  |  |  |  |  |                       |  |     |  |    |  |     |  |  |  |  |  |  |  |                       |        |              |              |       |                      |  |  |  |  |  |  |  |  |      |    |        |      |     |   |   |   |   |   |               |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |       |    |   |   |     |   |   |   |   |   |  |  |  |  |  |  |
| Sample Custody Seals:  |                     | Yes          |              | No    |                      | N/A      |   |         |   |                              |  |            |  |     |  |    |  |         |  |     |  |    |  |                   |  |      |  |  |  |  |  |  |  |  |  |  |  |                  |  |     |  |    |  |          |  |  |  |  |  |  |  |                       |  |     |  |    |  |     |  |  |  |  |  |  |  |                       |  |     |  |    |  |     |  |  |  |  |  |  |  |                       |        |              |              |       |                      |  |  |  |  |  |  |  |  |      |    |        |      |     |   |   |   |   |   |               |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |       |    |   |   |     |   |   |   |   |   |  |  |  |  |  |  |
| Sample Identification  | Matrix              | Date Sampled | Time Sampled | Depth | Number of Containers |          |   |         |   |                              |  |            |  |     |  |    |  |         |  |     |  |    |  |                   |  |      |  |  |  |  |  |  |  |  |  |  |  |                  |  |     |  |    |  |          |  |  |  |  |  |  |  |                       |  |     |  |    |  |     |  |  |  |  |  |  |  |                       |  |     |  |    |  |     |  |  |  |  |  |  |  |                       |        |              |              |       |                      |  |  |  |  |  |  |  |  |      |    |        |      |     |   |   |   |   |   |               |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |       |    |   |   |     |   |   |   |   |   |  |  |  |  |  |  |
| MW-1   | GW                  | 4/6/21       | 1130         | DTW   | 4                    | X        | X | X       | X | BTX 8021/8260                |  |            |  |     |  |    |  |         |  |     |  |    |  |                   |  |      |  |  |  |  |  |  |  |  |  |  |  |                  |  |     |  |    |  |          |  |  |  |  |  |  |  |                       |  |     |  |    |  |     |  |  |  |  |  |  |  |                       |  |     |  |    |  |     |  |  |  |  |  |  |  |                       |        |              |              |       |                      |  |  |  |  |  |  |  |  |      |    |        |      |     |   |   |   |   |   |               |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |       |    |   |   |     |   |   |   |   |   |  |  |  |  |  |  |
| MW-2   |                     |              | 1240         |       | 4                    | X        | X | X       | X |                              |  |            |  |     |  |    |  |         |  |     |  |    |  |                   |  |      |  |  |  |  |  |  |  |  |  |  |  |                  |  |     |  |    |  |          |  |  |  |  |  |  |  |                       |  |     |  |    |  |     |  |  |  |  |  |  |  |                       |  |     |  |    |  |     |  |  |  |  |  |  |  |                       |        |              |              |       |                      |  |  |  |  |  |  |  |  |      |    |        |      |     |   |   |   |   |   |               |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |       |    |   |   |     |   |   |   |   |   |  |  |  |  |  |  |
| MW-3   |                     |              | 1320         |       | 4                    | X        | X | X       | X |                              |  |            |  |     |  |    |  |         |  |     |  |    |  |                   |  |      |  |  |  |  |  |  |  |  |  |  |  |                  |  |     |  |    |  |          |  |  |  |  |  |  |  |                       |  |     |  |    |  |     |  |  |  |  |  |  |  |                       |  |     |  |    |  |     |  |  |  |  |  |  |  |                       |        |              |              |       |                      |  |  |  |  |  |  |  |  |      |    |        |      |     |   |   |   |   |   |               |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |       |    |   |   |     |   |   |   |   |   |  |  |  |  |  |  |
| MW-8   |                     |              | 1400         |       | 4                    | X        | X | X       | X |                              |  |            |  |     |  |    |  |         |  |     |  |    |  |                   |  |      |  |  |  |  |  |  |  |  |  |  |  |                  |  |     |  |    |  |          |  |  |  |  |  |  |  |                       |  |     |  |    |  |     |  |  |  |  |  |  |  |                       |  |     |  |    |  |     |  |  |  |  |  |  |  |                       |        |              |              |       |                      |  |  |  |  |  |  |  |  |      |    |        |      |     |   |   |   |   |   |               |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |       |    |   |   |     |   |   |   |   |   |  |  |  |  |  |  |
| MW-9   |                     |              | 1400         |       | 4                    | X        | X | X       | X |                              |  |            |  |     |  |    |  |         |  |     |  |    |  |                   |  |      |  |  |  |  |  |  |  |  |  |  |  |                  |  |     |  |    |  |          |  |  |  |  |  |  |  |                       |  |     |  |    |  |     |  |  |  |  |  |  |  |                       |  |     |  |    |  |     |  |  |  |  |  |  |  |                       |        |              |              |       |                      |  |  |  |  |  |  |  |  |      |    |        |      |     |   |   |   |   |   |               |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |       |    |   |   |     |   |   |   |   |   |  |  |  |  |  |  |
| Dup-1  | GW                  | -            | -            | DTW   | 4                    | X        | X | X       | X |                              |  |            |  |     |  |    |  |         |  |     |  |    |  |                   |  |      |  |  |  |  |  |  |  |  |  |  |  |                  |  |     |  |    |  |          |  |  |  |  |  |  |  |                       |  |     |  |    |  |     |  |  |  |  |  |  |  |                       |  |     |  |    |  |     |  |  |  |  |  |  |  |                       |        |              |              |       |                      |  |  |  |  |  |  |  |  |      |    |        |      |     |   |   |   |   |   |               |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |      |  |  |      |  |   |   |   |   |   |  |  |  |  |  |       |    |   |   |     |   |   |   |   |   |  |  |  |  |  |  |

|  |              |               |                      |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |   |    |    |      |    |    |    |    |   |   |    |
|--|--------------|---------------|----------------------|----|----|----|----|----|---|----|----|----|----|----|----|----|----|----|----|---|----|----|------|----|----|----|----|---|---|----|
| Total  | 200.7 / 6010 | 200.8 / 6020: | 8RCRA 13PPM Texas 11 | Al | Sb | As | Ba | Be | B | Cd | Ca | Co | Cu | Fe | Pb | Mg | Mn | Mo | Ni | K | Se | Ag | SiO2 | Na | Sr | Ti | Sn | U | V | Zn |
| Circle Method(s) and Metal(s) to be analyzed   |              |               |                      |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |   |    |    |      |    |    |    |    |   |   |    |
| TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 1631 / 245.1 / 7470 / 7471 : Hg |              |               |                      |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |   |    |    |      |    |    |    |    |   |   |    |

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| Relinquished by: (Signature) | Received by: (Signature) | Date/Time     | Relinquished by: (Signature) | Received by: (Signature) | Date/Time    |
|------------------------------|--------------------------|---------------|------------------------------|--------------------------|--------------|
| 1                            | 2                        | 4/6/21 @ 1300 | 3                            | 4                        | 4/6/21 15:25 |
| 5                            |                          |               |                              |                          |              |

Revised Date 05/14/18 Rev 2018.1



## Chain of Custody

Work Order No: \_\_\_\_\_

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334  
 Midland, TX (432-704-5440) El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296  
 Hobbs, NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

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|                  |                     |                         |  |
|------------------|---------------------|-------------------------|--|
| Project Manager: | Becky Haskell       | Bill to: (if different) | James Kennedy                                      |
| Company Name:    | GHD                 | Company Name:           | EOG Resources                                      |
| Address:         | 2135 S. Loop 250 W. | Address:                | 5509 Champions Drive                               |
| City, State ZIP: | Midland, TX 79703   | City, State ZIP:        | Midland TX   |
| Phone:           | 432-203-8471        | Email:                  | becky.haskell@ghd.com & Christopher.Knight@ghd.com |

|   |                                   |
|---|-----------------------------------|
| Work Order Comments   |                                   |
| Program: <input type="checkbox"/> PST <input type="checkbox"/> PRP <input type="checkbox"/> Brownfields <input type="checkbox"/> RRC <input type="checkbox"/> Superfund |                                   |
| State of Project:   |                                   |
| Reporting: Level II <input type="checkbox"/> Level III <input type="checkbox"/> PST/UST <input type="checkbox"/> TRRP   | Level IV <input type="checkbox"/> |
| Deliverables: EDD <input type="checkbox"/> ADaPT <input type="checkbox"/> Other:  |                                   |

|                 |                     |   |
|-----------------|---------------------|---|
| Project Name:   | Flamenco Federal #1 | Turn Around                                 |
| Project Number: | 1122074702          | Routine <input checked="" type="checkbox"/> |
| P.O. Number:    |                     | Rush:                                       |
| Sampler's Name: |                     | Due Date:                                   |

|                       |              |                    |     |      |         |     |    |
|-----------------------|--------------|--------------------|-----|------|---------|-----|----|
| SAMPLE RECEIPT        |              | Temp Blank         | Yes | No   | Wet Ice | Yes | No |
| Temperature (°C):     | 19.4         |                    |     |      |         |     |    |
| Received Intact:      | (Yes) No     | Thermometer ID     |     |      |         |     |    |
| Cooler Custody Seals: | Yes (No) N/A | Correction Factor: |     | 19.2 |         |     |    |
| Sample Custody Seals: | Yes (No) N/A | Total Containers:  |     |      |         |     |    |

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | BTEX 8021/8260 | Chloride | TDS |
|-----------------------|--------|--------------|--------------|-------|----------------------|----------------|----------|-----|
| MW-1                  | GW     | 4/6/21       | 1130         | DTW   | 4                    | X              | X        | X   |
| MW-2                  |        |              | 1240         |       | 4                    | X              | X        | X   |
| MW-3                  |        |              | 1320         |       | 4                    | X              | X        | X   |
| MW-8                  |        |              | 1400         |       | 4                    | X              | X        | X   |
| MW-9                  |        |              | 1400         |       | 4                    | X              | X        | X   |
| Dup-1                 | GW     | -            | -            | DTW   | 4                    | X              | X        | X   |

|   |  |                  |
|---|--|------------------|
| ANALYSIS REQUEST  |  | Work Order Notes |
| Barcode: 890-492 Chain of Custody                             |  |                  |
| TAT starts the day received by the lab, if received by 4:30pm |  |                  |
| Sample Comments   |  |                  |
| Sampled @ 1420  |  |                  |
| MW-9 (circled) not full container                             |  |                  |

|   |               |  |
|---|---------------|--|
| Total 200.7 / 6010  | 200.8 / 6020: | 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn |
| Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 1631 / 245.1 / 7470 / 7471 : Hg |               |  |

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| Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time    |
|------------------------------|--------------------------|-----------|------------------------------|--------------------------|--------------|
| 1 [Signature]                |                          |           | 2 [Signature]                |                          | 4/6/21 15:25 |
| 3                            |                          |           | 4                            |                          |              |
| 5                            |                          |           | 6                            |                          |              |

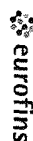
Revised Date 051418 Rev. 2018.1



Eurofins Xenco, Carlsbad

1089 N Canal St.  
Carlsbad, NM 88220  
Phone. 575-988-3199 Fax: 575-988-3199

## Chain of Custody Record



## Environment Testing America

[illegible]

## Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 890-492-1

SDG Number: 11220747/02

**Login Number: 492****List Number: 1****Creator: Clifton, Cloe****List Source: Eurofins Carlsbad**

| Question   | Answer | Comment |
|--|--------|---------|
| The cooler's custody seal, if present, is intact.                                | True   |         |
| Sample custody seals, if present, are intact.                                    | True   |         |
| The cooler or samples do not appear to have been compromised or tampered with.   | True   |         |
| Samples were received on ice.  | True   |         |
| Cooler Temperature is acceptable.  | True   |         |
| Cooler Temperature is recorded.  | True   |         |
| COC is present.  | True   |         |
| COC is filled out in ink and legible.  | True   |         |
| COC is filled out with all pertinent information.                                | True   |         |
| Is the Field Sampler's name present on COC?                                      | True   |         |
| There are no discrepancies between the containers received and the COC.          | True   |         |
| Samples are received within Holding Time (excluding tests with immediate HTs)    | True   |         |
| Sample containers have legible labels.   | True   |         |
| Containers are not broken or leaking.  | True   |         |
| Sample collection date/times are provided.                                       | True   |         |
| Appropriate sample containers are used.  | True   |         |
| Sample bottles are completely filled.  | True   |         |
| Sample Preservation Verified.  | N/A    |         |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True   |         |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").  | N/A    |         |

## Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 890-492-1

SDG Number: 11220747/02

**Login Number: 492****List Number: 2****Creator: Mireles, David****List Source: Eurofins Midland****List Creation: 04/07/21 03:23 PM**

| Question   | Answer | Comment |
|--|--------|---------|
| The cooler's custody seal, if present, is intact.                                | True   |         |
| Sample custody seals, if present, are intact.                                    | True   |         |
| The cooler or samples do not appear to have been compromised or tampered with.   | True   |         |
| Samples were received on ice.  | True   |         |
| Cooler Temperature is acceptable.  | True   |         |
| Cooler Temperature is recorded.  | True   |         |
| COC is present.  | True   |         |
| COC is filled out in ink and legible.  | True   |         |
| COC is filled out with all pertinent information.                                | True   |         |
| Is the Field Sampler's name present on COC?                                      | True   |         |
| There are no discrepancies between the containers received and the COC.          | True   |         |
| Samples are received within Holding Time (excluding tests with immediate HTs)    | True   |         |
| Sample containers have legible labels.   | True   |         |
| Containers are not broken or leaking.  | True   |         |
| Sample collection date/times are provided.                                       | True   |         |
| Appropriate sample containers are used.  | True   |         |
| Sample bottles are completely filled.  | True   |         |
| Sample Preservation Verified.  | True   |         |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True   |         |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").  | True   |         |

# Attachment E

## 2018 Annual Groundwater Monitoring Report



# 2018 Annual Groundwater Monitoring Report

Flamenco Fed #1  
Lea, New Mexico

EOG Resources Inc.





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|            |  |
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| Appendix A | Soil Analytical Laboratory Results           |
| Appendix B | Soil Boring Logs and Monitoring Well Details |
| Appendix C | NMSOE Well Permits and BLM Sundry            |
| Appendix D | Monitoring Well Surveys                      |
| Appendix E | Groundwater Analytical Laboratory Results    |



## 1. Introduction

GHD Services Inc. (GHD) is pleased to present the results of groundwater monitoring well installation and quarterly groundwater monitoring conducted in 2018 and January 2019 at the Flamenco Fed #1 (Site). The Site is located within Unit L, Section 7, Township 22 South, Range 32 East, in Lea County, New Mexico (Figure 1). EOG Resources, Inc. (EOG) is the current Site producer. Surface ownership is that of the U.S. Bureau of Land Management (BLM).

## 2. Background Information

### 2.1 Tin Horn Area

The Site is an active well site located approximately 30 miles east of Carlsbad, New Mexico. According to EOG supplied data, a release of approximately 275 barrels (bbls) of produced water occurred when a water line connection in a tin horn failed. Approximately 260 bbls of produced water was recovered utilizing a vacuum truck. The release was discovered on October 21, 2011. A C-141 Form was submitted to the New Mexico Oil Conservation Division (NMOCD) on November 2, 2011 and remediation permit number 1RP-2790 was assigned. GHD was unable to determine if the final C-141 was approved.

A second release occurred on June 12, 2013 that consisted of 200 bbls of produced water. None of the produced water was recovered. A third release occurred on August 4, 2013 that consisted of 600 bbls of produced water, none of which was recovered. Both of these releases were also the result of a water line failure at a tin horn and occurred at the same location as the first release. Yates Petroleum Corporation (Yates), former Site producer, submitted a C-141 Form to the NMOCD and BLM on August 5, 2013 regarding the third release. A final C-141, dated January 31, 2014 was prepared, but was not approved by NMOCD. However, GHD was unable to determine if a remediation permit number was assigned to these releases. However, the releases were assigned 1RPs-4800 and 4801 by NMOCD on September 6, 2017.

Initial delineation samples were collected for the first release on November 30, 2011 by Yates. One composite soil sample, consisting of soil from three areas, was collected from depths of 1, 2, and 3 feet below ground surface (ft bgs). The samples were submitted to Xenco Laboratories (Xenco) in Odessa, Texas for analyses of chloride by EPA Method 300, benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8021B, and gasoline and diesel range total petroleum hydrocarbons (TPH) by EPA Method 8015. None of the samples contained BTEX or TPH constituents above the laboratory reporting limit (LRL). Chloride concentrations ranged from 4,210 to 8,260 milligrams per kilogram (mg/kg).

Initial delineation samples were collected for the second and third releases on August 21, 2013 by Yates. One composite soil sample, consisting of soil from three areas, was collected from depths of 1, 2, and 3 ft bgs. The samples were submitted to Cardinal Laboratories in Hobbs, New Mexico for analysis of chloride by method SM4500CL-B, BTEX by EPA Method 8021B, and TPH by EPA Method 8015. None of the samples contained BTEX or TPH constituents above the LRL. Chloride concentrations ranged from 7,730 to 11,400 mg/kg. Additional samples were collected and analyzed



between September 24, 2013 and January 24, 2014. Chloride concentrations exceeding the Recommended Remediation Action Limits (RRALs) were encountered to a depth of 8 ft bgs. Two samples collected at 8 ft bgs at two locations contained chloride concentrations of 2,460 and 4,200 mg/kg.

## 2.2 Battery Area

According to EOG-obtained information, a release of approximately 100 bbl of oil and 600 bbls of produced water occurred when lightning struck a 750 bbl fiberglass gun tank causing a fire that destroyed four other tanks. None of the oil and produced water was recovered. The release was discovered on August 11, 2009. A C-141 Form was submitted to the NMOCD and the BLM on August 20, 2009 and 1RP-2281 was assigned. A final C-141 was submitted to the NMOCD on April 13, 2010; however, there was no indication that it was approved.

Initial delineation samples were collected for the release on August 27, 2009 by Yates. One composite soil sample from three areas was collected from depths of 3, 4, 5, and 6 ft bgs. The samples were submitted to Xenco analysis of chloride by EPA Method 300.0, BTEX by EPA Method 8021B, and TPH by EPA Method 8015. Total BTEX concentrations ranged from below the LRLs to 1.922 mg/kg and total TPH constituents ranged from below the LRLs to 2,800 mg/kg. Chloride concentrations ranged from 1,210 to 8,310 mg/kg.

Soil contaminated with TPH constituents above the applicable NMOCD Site-specific RRALs extended to a depth of 2 ft bgs and chloride contaminated soil exceeding the RRAL extended to a depth of 6 ft bgs.

Yates excavated the soil to a depth of 1 to 2 ft bgs and disposed of it at an NMOCD-approved facility. Yates proposed to remove 2 feet of soil from the pad and blend it with soils in the pasture to a depth of 3 ft bgs and reseed the area. The work was reportedly completed by Yates.

Yates collected three additional composite samples from three areas at depths of 3, 4, and 5 ft bgs on March 30, 2010. The samples were submitted to Xenco for chloride analysis by EPA Method 300.0. Chloride concentrations ranged from 824 to 8,310 mg/kg with the highest concentration from the sample collected at 5 ft bgs.

## 3. GHD Assessment Summary

Based on the above assumed Site history, GHD performed additional assessments to assess the horizontal and vertical extent of chlorides in the subsurface. A summary of GHD's assessment activities is presented below.

### 3.1 Tin Horn Area Releases (1RP-2790, 1RP-4800, and 1RP-4801)

- GHD performed assessment activities that included test pits, excavation oversight, and soil sampling (see attached Figure 2).
- Approximately 600 cubic yards of soil were excavated and stockpiled on-site (for possible future reuse).



- The horizontal extent of impacted soil was assessed to the north, east, and south. Chloride-impacted soil with concentrations above the RRALs remain to the west due to the fence line and close proximity to Campbell Road.
- GHD advanced two soil borings (SB-2 and SB-3) to depths of 50 and 30 ft bgs, respectively.
- Groundwater was encountered at approximately 50 ft in SB-2 and the soil boring was terminated. Installation of a well was attempted, however, the boring collapsed.
- Laboratory soil chloride concentrations ranged from below the LRL to 9,000 mg/kg with the highest concentration found in TP-11 at a depth of 10 ft bgs during the above activities. The sample collected from 50 ft bgs in SB-2 contained a chloride concentration of 650 mg/kg.

### 3.2 Battery Area Release (1RP-2281)

- GHD performed assessment activities that included test pits, soil borings, and soil sampling (Figure 3).
- Analytical soil chloride concentrations ranged from below the LRL to 13,000 milligrams per kilogram (mg/kg) during the above activities.
- The horizontal extent of chloride-impacted soils was assessed to the east, south, and west. Chloride-impacted soil has not been assessed to the northwest.
- Soil chloride concentrations of 780 and 1,200 mg/kg were encountered at a depth of 45 ft bgs.

## 4. Soil Borings and Monitoring Well Installation

### 4.1 Soil Borings and Monitor Well Installation Activities

Ten soil borings were completed at the Site during 2018 in order to assess the vertical and horizontal extent of the chloride contaminated soil (locations are shown on Figure 4). Depths of the soil borings ranged from 25 to 65 ft bgs. A hard caliche layer was encountered in soil boring MW-5 at 25 ft bgs and it was terminated. Soil borings that did not encounter water were grouted. In five soil borings where groundwater was encountered, a monitoring well was installed. Soil samples were collected from the soil borings utilizing a split spoon sampler and select samples were submitted to Hall Environmental Analysis Laboratory (HEAL) of Albuquerque, New Mexico. The samples were analyzed for chloride by EPA Method 300. Chloride concentrations ranged from below the LRL to 2,200 mg/kg with the highest concentrations found in the soil from the MW-1 soil boring at a depth of 40 ft bgs.

The results are summarized on Table 1 and the analytical reports are included in Appendix A. Soil boring Logs with Well Completion Diagrams are included as Appendix B.

Monitoring wells MW-1, MW-2 and MW-3 were installed in January 2018 by White Drilling Company, Inc. of Clyde, Texas and wells MW-8 and MW-9 were installed in August 2018 by Authentic Drilling, Inc. of Castle Rock, Colorado. All borings were advanced utilizing an air rotary drill rig.



Prior to well installation, the appropriate permits were obtained from the New Mexico Office of the State Engineer and from the BLM. Copies are included in Appendix C. The soil boring locations were cleared via New Mexico One Call prior to mobilization.

Wells were constructed of 2-inch diameter flush-threaded schedule 40 polyvinyl chloride (PVC) casing and 0.020-inch slot PVC screen. Wells were completed to a depth of approximately 65-70 ft bgs with 20 ft of screen.

The annulus of each constructed monitoring well was backfilled with a 10/20 silica sand filter pack to approximately 2 ft above the top of the screen interval. An approximate 2 to 5-foot thick 3/8-inch bentonite chip seal was placed on top of the sand and hydrated. The remainder of each well annulus was grouted to the ground surface with a 95% Portland cement/ 5% bentonite powder grout. Each monitor well was constructed with a stick-up well completion in a concrete pad rising 2 to 3 ft above ground surface.

The well locations and tops of casing were surveyed by a New Mexico licensed surveyor from High Mesa Consulting Group of Albuquerque, New Mexico. A copies of the surveys are included in Appendix D.

## 5. Groundwater Monitoring

Monitor wells MW-1, MW-2 and MW-3 were gauged and sampled in 2018 during February, June and October. Monitor wells MW-8 and MW-9 were installed in August 2018 but were not sampled at installation or during the October 2018 and January 2019 sampling events due to insufficient water volume.

### 5.1 Groundwater Monitoring Methodology

Prior to collection of groundwater samples, the depth to groundwater in each well was measured using an oil/water interface probe. Fluid levels and groundwater elevations are detailed in Table 2.

A groundwater potentiometric surface map was created using gauging data from the June 2018, October 2018, and January 2019 quarterly monitoring events and are presented as Figures 5 through 8.

Site wells containing a sufficient quantity of water were purged of at least three casing volumes of groundwater using a 1.5-inch diameter, polyethylene bailer prior to sampling. Groundwater quality parameters including pH, temperature, conductivity, dissolved oxygen, and oxidation reduction potential were collected using a multi parameter groundwater quality sonde and are summarized on Table 3. Following collection, groundwater samples were labeled, placed on ice, and submitted to HEAL for analyses of chlorides and Total Dissolved Solids (TDS) by EPA Method 300.0. Field parameter data is included in Table 3.

### 5.2 Groundwater Monitoring Analytical Results

The following New Mexico Water Quality Control Commission (NMWQCC) groundwater standard exceedances are reported:



#### **2018: February, June, and October**

- Chloride concentrations exceeded the NMWQCC groundwater standard of 250 mg/L in all Site wells for all sampling events. Chloride concentrations ranged from 6,900 mg/L to 49,000 mg/L.
- TDS concentrations exceeded the NMWQCC groundwater standard of 1,000 mg/L in all Site wells for all sampling events. TDS concentrations ranged from 15,300 mg/L to 97,600 mg/L.

#### **2019: January**

- Chloride concentrations exceeded the NMWQCC groundwater standard of 250 mg/L in all Site wells. Chloride concentrations ranged from 8,000 mg/L to 47,000 mg/L.
- TDS concentrations exceeded the NMWQCC groundwater standard of 1,000 mg/L in all Site wells. TDS concentrations ranged from 18,400 mg/L to 100,000 mg/L.

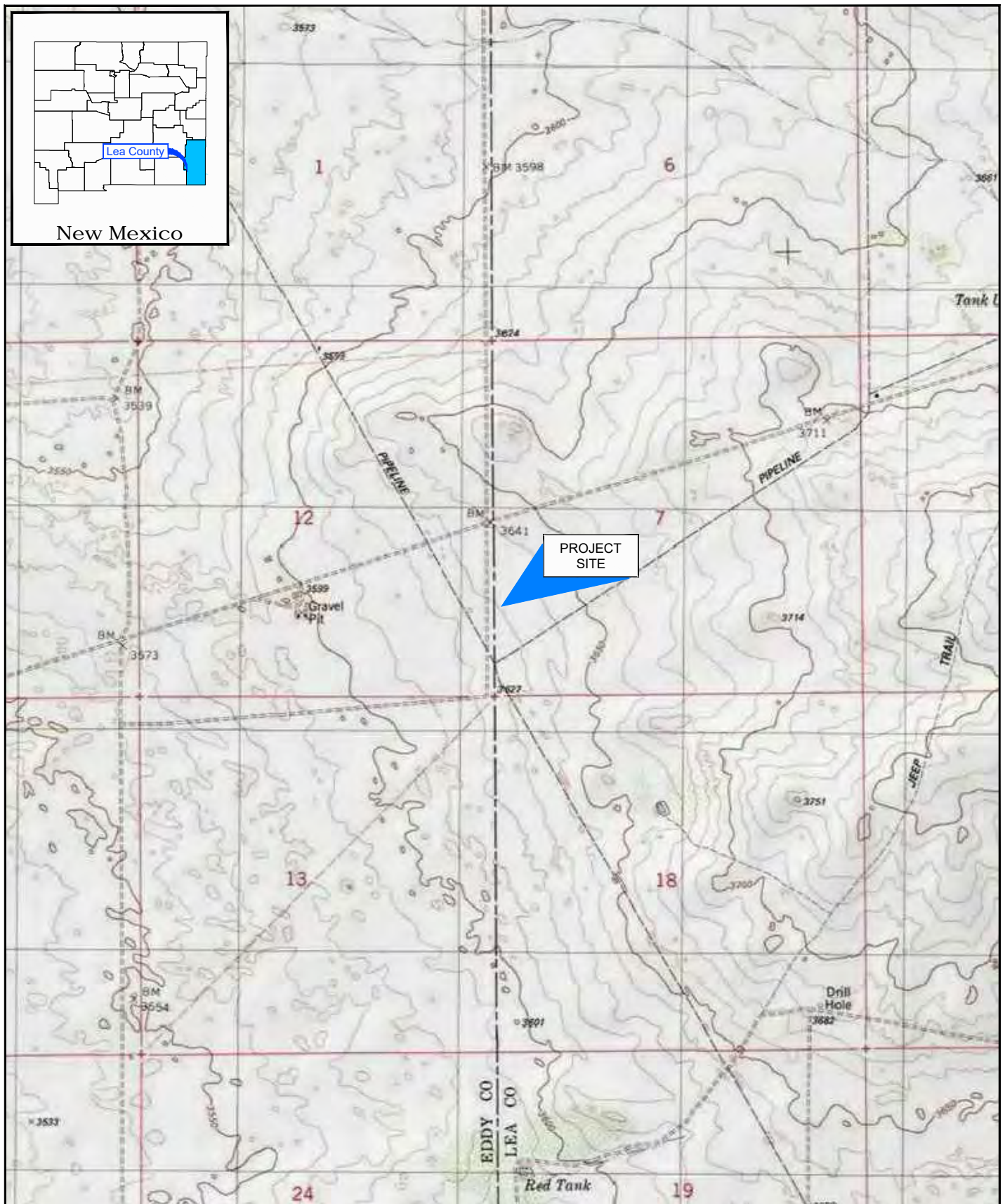
A summary of laboratory results is shown on Figure 3 and included on Table 4. Copies of Laboratory Analytical Reports for the 2018 and 2019 groundwater sampling events are included in Appendix E.

## **6. Conclusion and Recommendations**

Based on the analytical data collected from Site groundwater monitoring wells, chloride and TDS concentrations exceeded the NMWQCC standards in all wells sampled for all sampling periods. GHD recommends the installation of a groundwater monitoring well in the hydraulically up-gradient direction to ascertain background groundwater quality, specifically, TDS concentration. If the groundwater concentration of TDS is established above 10,000 mg/kg in the background well, then in accordance with 20 NMAC 20.6.2.3103, the aquifer beneath the Site is not protected and Site closure will be requested.



## Figures



Source: USGS 7.5 Minute Quad "The Divide and Livingston Ridge, New Mexico"

Lat/Long: 32.402374° North, 103.722648° West

0 1000 2000ft

Coordinate System:  
NAD 1983 (2011) StatePlane-  
New Mexico East (US Feet)



EOG RESOURCES  
LEA COUNTY, NEW MEXICO  
FLAMENCO FEDERAL No.1

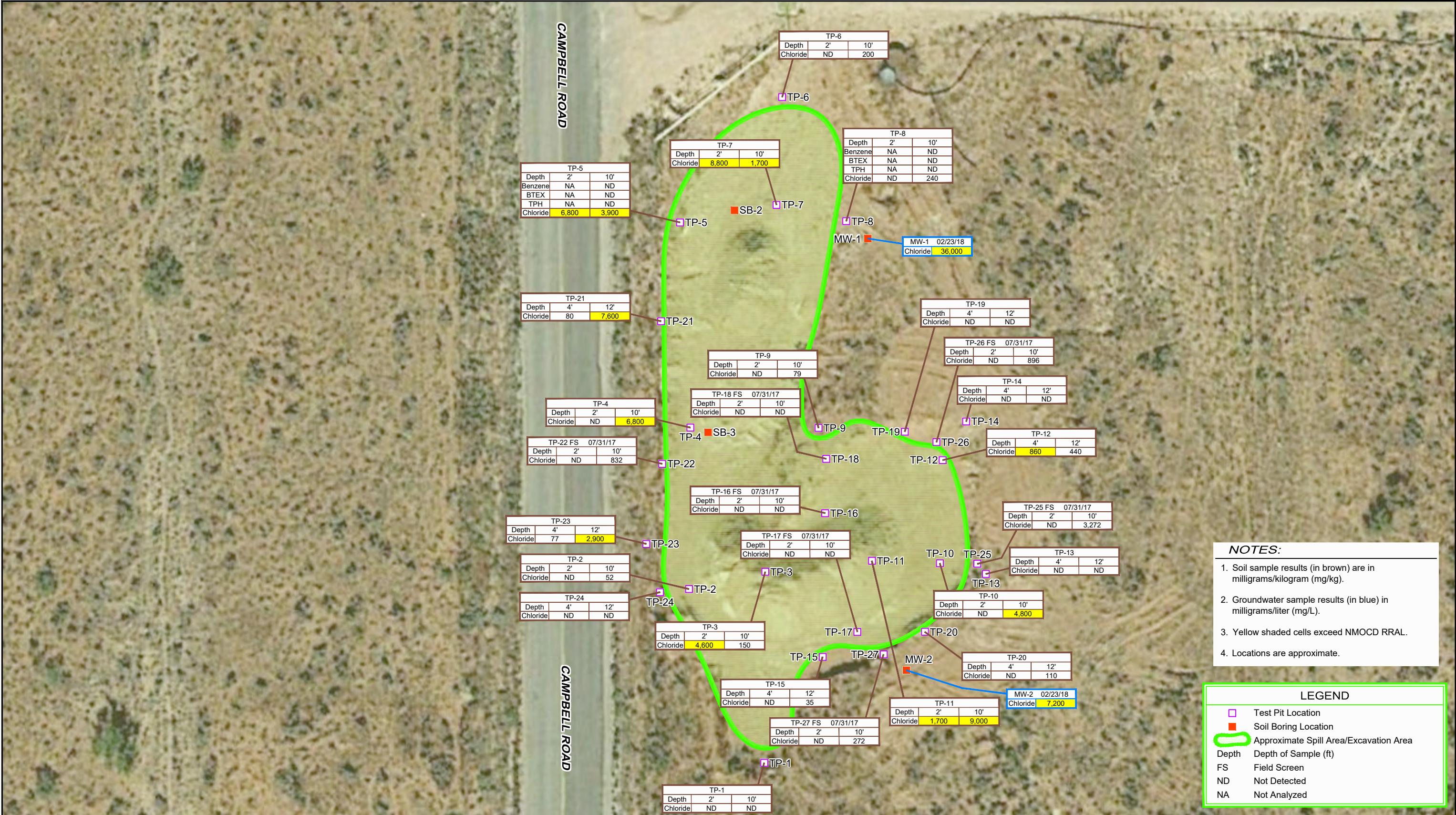
SITE LOCATION MAP

088210-34

Jun 21, 2017

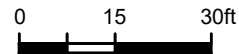
FIGURE 1





Source: Image © 2016 Google - Imagery Date: February 1, 2017

Lat/Long: 32.402374° North, 103.722648° West



Coordinate System:  
NAD 1983 (2011) StatePlane-  
New Mexico East (US Feet)



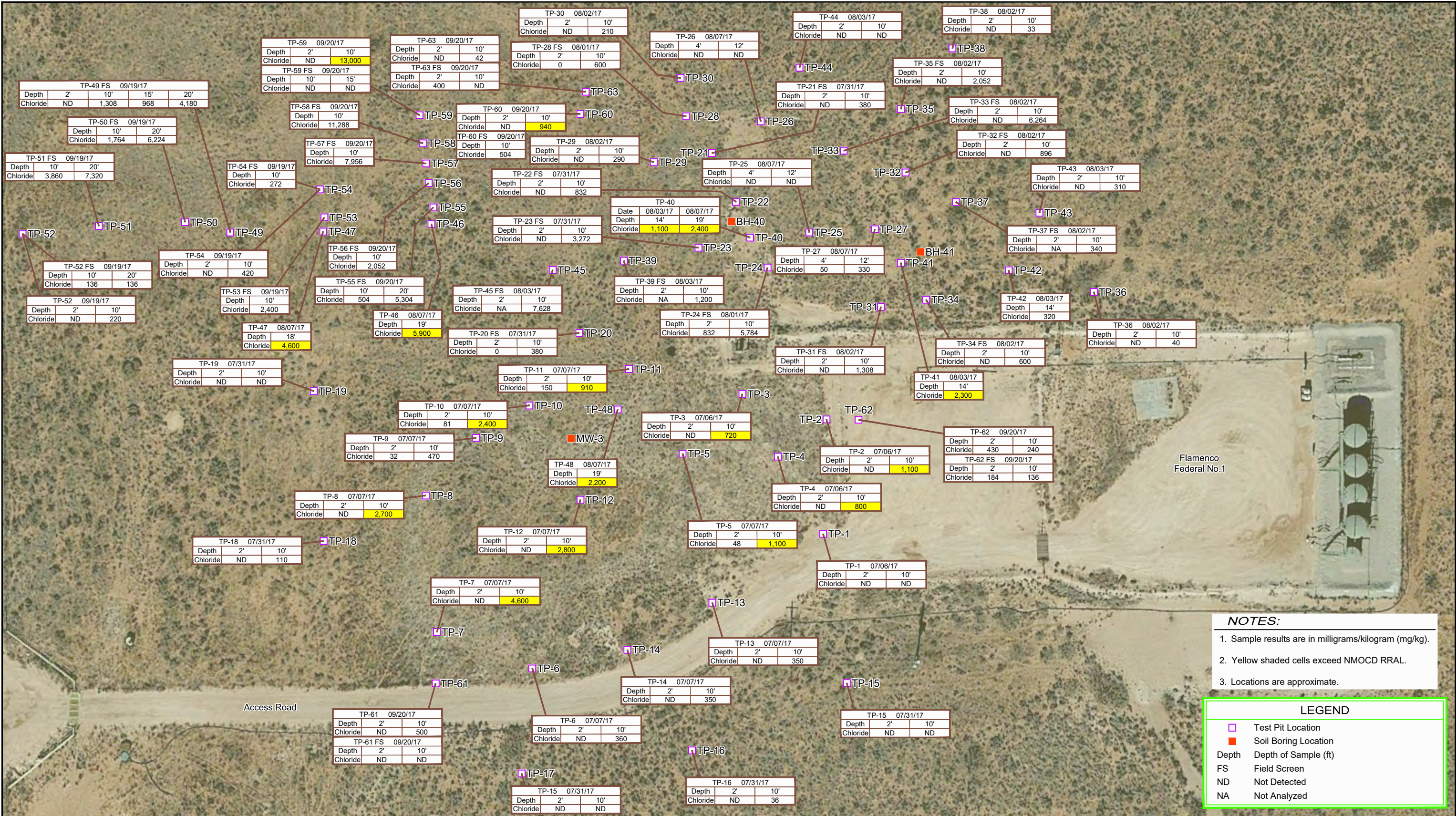
EOG RESOURCES  
LEA COUNTY, NEW MEXICO  
FLAMENCO FEDERAL No.1  
TIN HORN ASSESSMENT  
SAMPLE LOCATION MAP

088210-34

Feb 18, 2019

FIGURE 2





0 20 60ft

Coordinate System:  
NAD 1983 (2011) StatePlane-  
New Mexico East (US Feet)

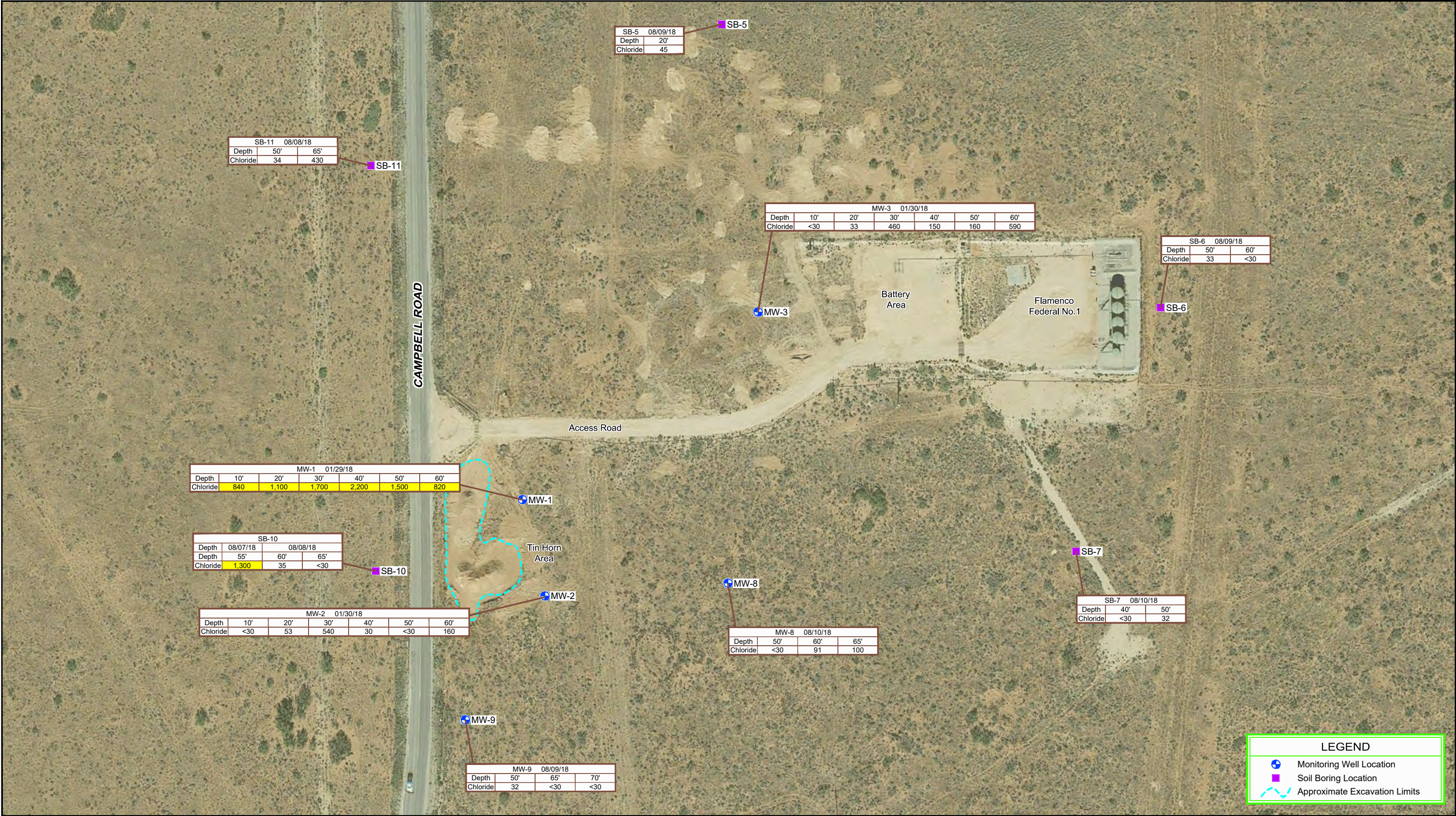


EOG RESOURCES  
LEA COUNTY, NEW MEXICO  
FLAMENCO FEDERAL No.1 - BATTERY AREA  
BATTERY AREA ASSESSMENT  
SAMPLE LOCATION MAP

088210-34  
Jun 18, 2018

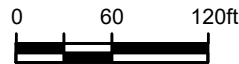
FIGURE 3





Source: Image © 2017 Google - Imagery Date: November 2, 2017

Lat/Long: 32.402374° North, 103.722648° West



Coordinate System:  
NAD 1983 (2011) StatePlane-  
New Mexico East (US Feet)



NOTES:

- Chloride groundwater sample results in milligrams/kilogram (mg/kg).
- Yellow shaded cells exceed NMOCd RRAL.
- Locations are approximate.

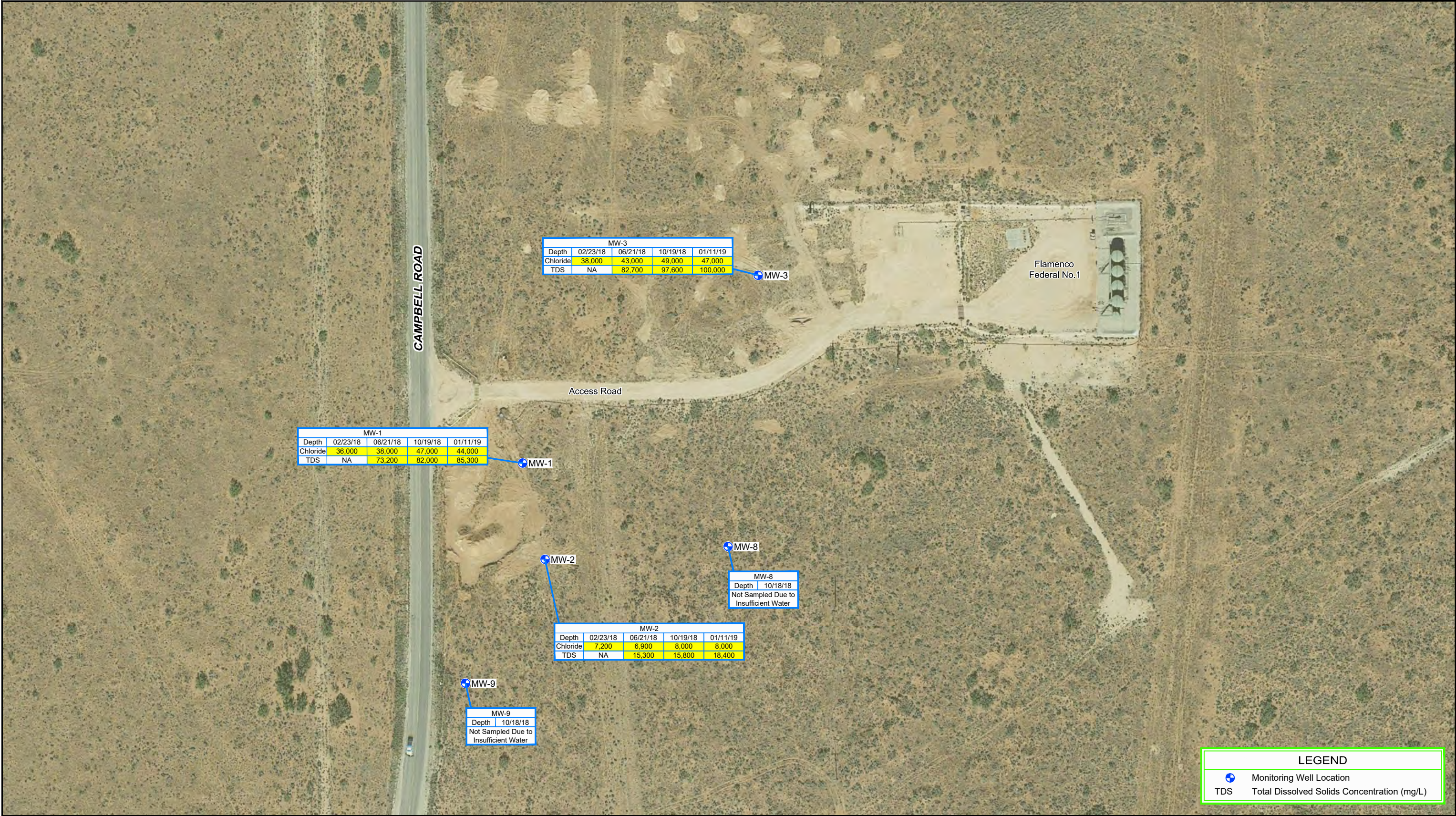


EOG RESOURCES  
LEA COUNTY, NEW MEXICO  
FLAMENCO FEDERAL No.1  
SITE DETAILS AND 2018  
SOIL BORING SAMPLE CONCENTRATIONS MAP

088210-34  
Feb 18, 2019

FIGURE 4





Source: Image © 2017 Google - Imagery Date: November 2, 2017

Lat/Long: 32.402374° North, 103.722648° West

060120ft

Coordinate System:  
NAD 1983 (2011) StatePlane-  
New Mexico East (US Feet)

**NOTES:**

- Chloride groundwater sample results in milligrams/liter (mg/L).
- TDS groundwater sample results in milligrams/liter (mg/L).
- Yellow shaded cells exceed NMOCD RRAL.
- Locations are approximate.

EOG RESOURCES  
LEA COUNTY, NEW MEXICO  
FLAMENCO FEDERAL No.1

2018/2019 GROUNDWATER CONCENTRATIONS MAP

088210-34  
Feb 18, 2019

**FIGURE 5**

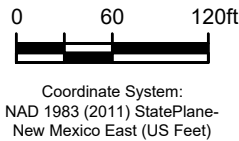
Released to Imaging: 5/2/2022 3:36:34 PM

CAD File: I:\CAD\Files\08-1088-1088210-EOG Madera Ridge 25-11088210-34(000)GN-DL003.dwg





Source: Image © 2017 Google - Imagery Date: November 2, 2017 Lat/Long: 32.402374° North, 103.722648° West



**NOTES:**

1. Groundwater elevations indicated are from measurements obtained on June 21, 2018.
2. The apparent groundwater gradient and direction of flow were determined to be approximately 0.024 ft/ft to the southwest.



EOG RESOURCES  
LEA COUNTY, NEW MEXICO  
FLAMENCO FEDERAL No.1

088210-34  
Feb 18, 2019

GROUNDWATER GRADIENT MAP - JUNE 2018

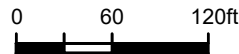
FIGURE 6





Source: Image © 2017 Google - Imagery Date: November 2, 2017

Lat/Long: 32.402374° North, 103.722648° West



Coordinate System:  
NAD 1983 (2011) StatePlane-  
New Mexico East (US Feet)



**NOTES:**

1. Groundwater elevations indicated are from measurements obtained on October 19, 2018.
2. The apparent groundwater gradient and direction of flow were determined to be approximately 0.045 ft/ft to the southwest.



EOG RESOURCES  
LEA COUNTY, NEW MEXICO  
FLAMENCO FEDERAL No.1

088210-34

Feb 18, 2019

GROUNDWATER GRADIENT MAP - OCTOBER 2018

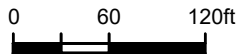
FIGURE 7





Source: Image © 2017 Google - Imagery Date: November 2, 2017

Lat/Long: 32.402374° North, 103.722648° West



Coordinate System:  
NAD 1983 (2011) StatePlane-  
New Mexico East (US Feet)



**NOTES:**

1. Groundwater elevations indicated are from measurements obtained on January 11, 2019.
2. The apparent groundwater gradient and direction of flow were determined to be approximately 0.025 ft/ft to the southwest.



EOG RESOURCES  
LEA COUNTY, NEW MEXICO  
FLAMENCO FEDERAL No.1

088210-34

Feb 18, 2019

GROUNDWATER GRADIENT MAP - JANUARY 2019

FIGURE 8



## Tables

**Table 1**  
**Summary of Soil Analytical Data - 2018**  
**EOG Resources Inc.**  
**Flamenco Fed #1**  
**Lea County, New Mexico**

Page 1 of 1

| Sample ID                                    | Monitoring Well ID | Depth (feet) | Date      | Chloride   |
|--|--------------------|--------------|-----------|------------|
| 088210-34-012918-MG-MW-5-10'                 | MW-1               | 10           | 1/29/2018 | 840        |
| 088210-34-012918-MG-MW-5-20'                 | MW-1               | 20           | 1/29/2018 | 1,100      |
| 088210-34-012918-MG-MW-5-30'                 | MW-1               | 30           | 1/29/2018 | 1,700      |
| 088210-34-012918-MG-MW-5-40'                 | MW-1               | 40           | 1/29/2018 | 2,200      |
| 088210-34-012918-MG-MW-5-50'                 | MW-1               | 50           | 1/29/2018 | 1,500      |
| 088210-34-012918-MG-MW-5-60'                 | MW-1               | 60           | 1/29/2018 | 820        |
| 088210-34-013018-MG-MW-6-10'                 | MW-2               | 10           | 1/30/2018 | <30        |
| 088210-34-013018-MG-MW-6-20'                 | MW-2               | 20           | 1/30/2018 | 53         |
| 088210-34-013018-MG-MW-6-30'                 | MW-2               | 30           | 1/30/2018 | 540        |
| 088210-34-013018-MG-MW-6-40'                 | MW-2               | 40           | 1/30/2018 | 30         |
| 088210-34-013018-MG-MW-6-50'                 | MW-2               | 50           | 1/30/2018 | <30        |
| 088210-34-013018-MG-MW-6-60'                 | MW-2               | 60           | 1/30/2018 | 160        |
| 088210-34-013018-MG-MW-7-10'                 | MW-3               | 10           | 1/30/2018 | <30        |
| 088210-34-013018-MG-MW-7-20'                 | MW-3               | 20           | 1/30/2018 | 33         |
| 088210-34-013018-MG-MW-7-30'                 | MW-3               | 30           | 1/30/2018 | 460        |
| 088210-34-013018-MG-MW-7-40'                 | MW-3               | 40           | 1/30/2018 | 150        |
| 088210-34-013018-MG-MW-7-50'                 | MW-3               | 50           | 1/30/2018 | 160        |
| 088210-34-013018-MG-MW-7-60'                 | MW-3               | 60           | 1/30/2018 | 590        |
| 088210-34-080918-JP-SB-5-20                  | --                 | 20           | 8/9/2018  | 45         |
| 088210-34-080918-JP-SB-6-50                  | --                 | 50           | 8/9/2018  | 33         |
| 088210-34-080918-JP-SB-6-60                  | --                 | 60           | 8/9/2018  | <30        |
| 088210-34-081018-JP-SB-7-40                  | --                 | 40           | 8/10/2018 | <30        |
| 088210-34-081018-JP-SB-7-50                  | --                 | 50           | 8/10/2018 | 32         |
| 088210-34-081018-JP-SB-8-50                  | MW-8               | 50           | 8/10/2018 | <30        |
| 088210-34-081018-JP-SB-8-60                  | MW-8               | 60           | 8/10/2018 | 91         |
| 088210-34-081018-JP-SB-8-65                  | MW-8               | 65           | 8/10/2018 | 100        |
| 088210-34-080918-JP-SB-9-50                  | MW-9               | 50           | 8/9/2018  | 32         |
| 088210-34-080918-JP-SB-9-65                  | MW-9               | 65           | 8/9/2018  | <30        |
| 088210-34-080918-JP-SB-9-70                  | MW-9               | 70           | 8/9/2018  | <30        |
| 088210-34-080718-JP-SB-10-55                 | --                 | 55           | 8/7/2018  | 1,300      |
| 088210-34-080818-JP-SB-10-60                 | --                 | 60           | 8/8/2018  | 35         |
| 088210-34-080818-JP-SB-10-65                 | --                 | 65           | 8/8/2018  | <30        |
| 088210-34-080818-JP-SB-11-50                 | --                 | 50           | 8/8/2018  | 34         |
| 088210-34-080818-JP-SB-11-65                 | --                 | 65           | 8/8/2018  | 430        |
| <b>NMOCD RRALs (Total Ranking Score =20)</b> |                    |              |           | <b>600</b> |

**Notes:**

All sample results are in milligrams per kilogram

NA = Not Analyzed

NMOCD = New Mexico Oil Conservation Division

RRALs = Recommended Remediation Action Limits

Highlighted = Exceeds NMOCD RRAL

**Table 2**  
**Fluid Levels and Groundwater Elevations**  
**EOG Resources Inc.**  
**Flamenco Fed #1**  
**Lea County, New Mexico**

| Well | TOC Elevation (ft) | Date       | Depth to Water (ft) | GW Elevation (ft) |
|------|--------------------|------------|---------------------|-------------------|
| MW-1 | 3636.22            | 2/23/2018  | 54.42               | 3,581.80          |
|      |                    | 6/21/2018  | 55.19               | 3,581.03          |
|      |                    | 10/19/2018 | 55.63               | 3,580.59          |
|      |                    | 1/11/2019  | 55.17               | 3,581.05          |
| MW-2 | 3636.08            | 2/23/2018  | 47.38               | 3,588.70          |
|      |                    | 6/21/2018  | 57.36               | 3,578.72          |
|      |                    | 10/19/2018 | 57.54               | 3,578.54          |
|      |                    | 1/11/2019  | 57.21               | 3,578.87          |
| MW-3 | 3642.27            | 2/23/2018  | 51.83               | 3,590.44          |
|      |                    | 6/21/2018  | 52.22               | 3,590.05          |
|      |                    | 10/19/2018 | 52.57               | 3,589.70          |
|      |                    | 1/11/2019  | 52.44               | 3,589.83          |
| MW-8 | 3634.889           | 10/19/2018 | 65.04               | 3,569.85          |
|      |                    | 1/11/2019  | Dry                 |                   |
| MW-9 | 3641.131           | 10/19/2018 | 66.87               | 3,574.26          |
|      |                    | 1/11/2019  | Dry                 |                   |



**Table 3**  
**Field Parameters Summary**  
**EOG Resources Inc.**  
**Flamenco Fed #1**  
**Lea County, New Mexico**

| Well ID | Sample Date | Temperature (°C) | pH   | TDS (g/L) | Conductivity (µS/cm) | DO (mg/L) | ORP (mV) | Volume (gallons) |
|---------|-------------|------------------|------|-----------|----------------------|-----------|----------|------------------|
| MW-1    | 2/23/2018   | 18.58            | NA   | 51.14     | 78,692               | 10.92     | 315      | --               |
|         | 6/21/2018   | 21.48            | 6.07 | 0.754     | 1,142                | 25.67     | --       | 4.05             |
|         | 10/19/2018  | 18.1             | 6.38 | 63.61     | 97,859               | 9.22      | 213      | 4.5              |
|         | 1/11/2019   | 16.76            | 6.15 | 69.44     | 90,094               | 4.52      | 146.4    | 3.5              |
| MW-2    | 2/23/2018   | 18.07            | NA   | 12.55     | 19,260               | 13.38     | 294.3    | --               |
|         | 6/21/2018   | 20.15            | 6.73 | 7.418     | 11,406               | 19.39     | --       | 3                |
|         | 10/19/2018  | 18.37            | 6.82 | 13.98     | 21,524               | 12.96     | -21.9    | 3                |
|         | 1/11/2019   | 17.27            | 6.60 | 15.09     | 19,849               | 6.80      | 30.2     | 2.5              |
| MW-3    | 2/23/2018   | 18.35            | NA   | 55.3      | 85,075               | 6.79      | 330.5    | --               |
|         | 6/21/2018   | 19.21            | 6.21 | 69.75     | 107,268              | 6.6       | --       | 4.5              |
|         | 10/19/2018  | 17.83            | 6.26 | 68.62     | 105,520              | 4.4       | 7.4      | 4.5              |
|         | 1/11/2019   | 17.20            | 5.83 | 77.89     | 101,192              | 2.83      | 3.3      | 3.5              |

--= not measured

**Table 4**  
**Groundwater Analytical Results Summary**  
**EOG Resources Inc.**  
**Flamenco Fed #1**  
**Lea County, New Mexico**

Page 1 of 1

| Well ID                | Sample ID                   | Date       | Chloride<br>(mg/L) | TDS (mg/L)     |
|------------------------|-----------------------------|------------|--------------------|----------------|
| <b>NMWQCC Standard</b> |                             |            | <b>250</b>         | <b>1,000</b>   |
| MW-1                   | W-088210-34-022318-JP-MW-1  | 2/23/2018  | <b>36,000</b>      | --             |
|                        | W-088210-34-062118-PL-MW-1  | 6/21/2018  | <b>38,000</b>      | <b>73,200</b>  |
|                        | GW-088210-34-101918-PL-MW-1 | 10/19/2018 | <b>47,000</b>      | <b>82,000</b>  |
|                        | GW-088210-34-011119-MM-MW-1 | 1/11/2019  | <b>44,000</b>      | <b>85,300</b>  |
| MW-2                   | W-088210-34-022318-JP-MW-2  | 2/23/2018  | <b>7,200</b>       | --             |
|                        | W-088210-34-062118-PL-MW-2  | 6/21/2018  | <b>6,900</b>       | <b>15,300</b>  |
|                        | GW-088210-34-101918-PL-MW-2 | 10/19/2018 | <b>8,000</b>       | <b>15,800</b>  |
|                        | GW-088210-34-011119-MM-MW-2 | 1/11/2019  | <b>8,000</b>       | <b>18,400</b>  |
| MW-3                   | W-088210-34-022318-JP-MW-3  | 2/23/2018  | <b>38,000</b>      | --             |
|                        | W-088210-34-062118-PL-MW-3  | 6/21/2018  | <b>43,000</b>      | <b>82,700</b>  |
|                        | GW-088210-34-101918-PL-MW-3 | 10/19/2018 | <b>49,000</b>      | <b>97,600</b>  |
|                        | GW-088210-34-011119-MM-MW-3 | 1/11/2019  | <b>47,000</b>      | <b>100,000</b> |

-- = not measured

## Appendices

## Appendix A

# Soil Analytical Laboratory Results



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

February 20, 2018

Bernie Bockisch

GHD

6121 Indian School Road, NE #200

Albuquerque, NM 87110

TEL: (505) 884-0672

FAX

RE: Flamenco

OrderNo.: 1802125

Dear Bernie Bockisch:

Hall Environmental Analysis Laboratory received 18 sample(s) on 2/2/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](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 #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109



## Analytical Report

Lab Order: 1802125

Date Reported: 2/20/2018

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD  
**Project:** Flamenco

**Lab Order:** 1802125

**Lab ID:** 1802125-001 **Collection Date:** 1/29/2018 12:30:00 PM  
**Client Sample ID:** S-088210-34-012918-MG-MW-5-10' **Matrix:** SOIL

| Analyses                                     | Result | PQL | Qual | Units | DF | Date Analyzed        | Batch ID |
|--|--------|-----|------|-------|----|----------------------|----------|
| <b>EPA METHOD 300.0: ANIONS</b> Analyst: MRA |        |     |      |       |    |                      |          |
| Chloride                                     | 840    | 30  |      | mg/Kg | 20 | 2/13/2018 1:11:56 PM | 36495    |

**Lab ID:** 1802125-002 **Collection Date:** 1/29/2018 12:40:00 PM  
**Client Sample ID:** S-088210-34-012918-MG-MW-5-20' **Matrix:** SOIL

| Analyses                                     | Result | PQL | Qual | Units | DF | Date Analyzed        | Batch ID |
|--|--------|-----|------|-------|----|----------------------|----------|
| <b>EPA METHOD 300.0: ANIONS</b> Analyst: MRA |        |     |      |       |    |                      |          |
| Chloride                                     | 1100   | 30  |      | mg/Kg | 20 | 2/13/2018 1:49:10 PM | 36495    |

**Lab ID:** 1802125-003 **Collection Date:** 1/29/2018 12:45:00 PM  
**Client Sample ID:** S-088210-34-012918-MG-MW-5-30' **Matrix:** SOIL

| Analyses                                     | Result | PQL | Qual | Units | DF | Date Analyzed        | Batch ID |
|--|--------|-----|------|-------|----|----------------------|----------|
| <b>EPA METHOD 300.0: ANIONS</b> Analyst: CJS |        |     |      |       |    |                      |          |
| Chloride                                     | 1700   | 75  |      | mg/Kg | 50 | 2/16/2018 5:40:11 PM | 36495    |

**Lab ID:** 1802125-004 **Collection Date:** 1/29/2018 12:55:00 PM  
**Client Sample ID:** S-088210-34-012918-MG-MW-5-40' **Matrix:** SOIL

| Analyses                                     | Result | PQL | Qual | Units | DF | Date Analyzed        | Batch ID |
|--|--------|-----|------|-------|----|----------------------|----------|
| <b>EPA METHOD 300.0: ANIONS</b> Analyst: CJS |        |     |      |       |    |                      |          |
| Chloride                                     | 2200   | 75  |      | mg/Kg | 50 | 2/16/2018 5:52:36 PM | 36495    |

**Lab ID:** 1802125-005 **Collection Date:** 1/29/2018 1:00:00 PM  
**Client Sample ID:** S-088210-34-012918-MG-MW-5-50' **Matrix:** SOIL

| Analyses                                     | Result | PQL | Qual | Units | DF | Date Analyzed        | Batch ID |
|--|--------|-----|------|-------|----|----------------------|----------|
| <b>EPA METHOD 300.0: ANIONS</b> Analyst: CJS |        |     |      |       |    |                      |          |
| Chloride                                     | 1500   | 75  |      | mg/Kg | 50 | 2/16/2018 6:05:01 PM | 36495    |

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                | Page 1 of 5 |
|                    | ND  | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |             |
|                    | PQL | Practical Quantitative Limit                          | RL | Reporting Detection Limit                                 |             |
|                    | S   | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |             |

## Analytical Report

Lab Order: 1802125

Date Reported: 2/20/2018

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD  
**Project:** Flamenco

**Lab Order:** 1802125**Lab ID:** 1802125-006**Collection Date:** 1/29/2018 1:15:00 PM**Client Sample ID:** S-088210-34-012918-MG-MW-5-60'**Matrix:** SOIL

| Analyses                        | Result | PQL | Qual | Units | DF | Date Analyzed        | Batch ID |
|---------------------------------|--------|-----|------|-------|----|----------------------|----------|
| <b>EPA METHOD 300.0: ANIONS</b> |        |     |      |       |    |                      |          |
| Chloride                        | 820    | 30  |      | mg/Kg | 20 | 2/13/2018 2:38:47 PM | 36495    |

Analyst: MRA

**Lab ID:** 1802125-007**Collection Date:** 1/30/2018 9:45:00 AM**Client Sample ID:** S-088210-34-013018-MG-MW-6-10'**Matrix:** SOIL

| Analyses                        | Result | PQL | Qual | Units | DF | Date Analyzed        | Batch ID |
|---------------------------------|--------|-----|------|-------|----|----------------------|----------|
| <b>EPA METHOD 300.0: ANIONS</b> |        |     |      |       |    |                      |          |
| Chloride                        | ND     | 30  |      | mg/Kg | 20 | 2/13/2018 3:16:01 PM | 36495    |

Analyst: MRA

**Lab ID:** 1802125-008**Collection Date:** 1/30/2018 9:50:00 AM**Client Sample ID:** S-088210-34-013018-MG-MW-6-20'**Matrix:** SOIL

| Analyses                        | Result | PQL | Qual | Units | DF | Date Analyzed        | Batch ID |
|---------------------------------|--------|-----|------|-------|----|----------------------|----------|
| <b>EPA METHOD 300.0: ANIONS</b> |        |     |      |       |    |                      |          |
| Chloride                        | 53     | 30  |      | mg/Kg | 20 | 2/13/2018 3:28:26 PM | 36495    |

Analyst: MRA

**Lab ID:** 1802125-009**Collection Date:** 1/30/2018 9:55:00 AM**Client Sample ID:** S-088210-34-013018-MG-MW-6-30'**Matrix:** SOIL

| Analyses                        | Result | PQL | Qual | Units | DF | Date Analyzed        | Batch ID |
|---------------------------------|--------|-----|------|-------|----|----------------------|----------|
| <b>EPA METHOD 300.0: ANIONS</b> |        |     |      |       |    |                      |          |
| Chloride                        | 540    | 30  |      | mg/Kg | 20 | 2/13/2018 3:40:51 PM | 36495    |

Analyst: MRA

**Lab ID:** 1802125-010**Collection Date:** 1/30/2018 10:00:00 AM**Client Sample ID:** S-088210-34-013018-MG-MW-6-40'**Matrix:** SOIL

| Analyses                        | Result | PQL | Qual | Units | DF | Date Analyzed        | Batch ID |
|---------------------------------|--------|-----|------|-------|----|----------------------|----------|
| <b>EPA METHOD 300.0: ANIONS</b> |        |     |      |       |    |                      |          |
| Chloride                        | 30     | 30  |      | mg/Kg | 20 | 2/13/2018 3:53:15 PM | 36495    |

Analyst: MRA

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                | Page 2 of 5 |
|                    | ND  | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |             |
|                    | PQL | Practical Quantitative Limit                          | RL | Reporting Detection Limit                                 |             |
|                    | S   | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |             |

## Analytical Report

Lab Order: 1802125

Date Reported: 2/20/2018

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD  
**Project:** Flamenco

**Lab Order:** 1802125

**Lab ID:** 1802125-011 **Collection Date:** 1/30/2018 10:05:00 AM  
**Client Sample ID:** S-088210-34-013018-MG-MW-6-50' **Matrix:** SOIL

| Analyses                                     | Result | PQL | Qual | Units | DF | Date Analyzed        | Batch ID |
|--|--------|-----|------|-------|----|----------------------|----------|
| <b>EPA METHOD 300.0: ANIONS</b> Analyst: MRA |        |     |      |       |    |                      |          |
| Chloride                                     | ND     | 30  |      | mg/Kg | 20 | 2/13/2018 4:05:39 PM | 36495    |

**Lab ID:** 1802125-012 **Collection Date:** 1/30/2018 10:10:00 AM  
**Client Sample ID:** S-088210-34-013018-MG-MW-6-60' **Matrix:** SOIL

| Analyses                                     | Result | PQL | Qual | Units | DF | Date Analyzed        | Batch ID |
|--|--------|-----|------|-------|----|----------------------|----------|
| <b>EPA METHOD 300.0: ANIONS</b> Analyst: MRA |        |     |      |       |    |                      |          |
| Chloride                                     | 160    | 30  |      | mg/Kg | 20 | 2/13/2018 4:18:03 PM | 36495    |

**Lab ID:** 1802125-013 **Collection Date:** 1/30/2018 11:00:00 AM  
**Client Sample ID:** S-088210-34-013018-MG-MW-7-10' **Matrix:** SOIL

| Analyses                                     | Result | PQL | Qual | Units | DF | Date Analyzed         | Batch ID |
|--|--------|-----|------|-------|----|-----------------------|----------|
| <b>EPA METHOD 300.0: ANIONS</b> Analyst: CJS |        |     |      |       |    |                       |          |
| Chloride                                     | ND     | 30  |      | mg/Kg | 20 | 2/14/2018 11:16:25 AM | 36522    |

**Lab ID:** 1802125-014 **Collection Date:** 1/30/2018 11:05:00 AM  
**Client Sample ID:** S-088210-34-013018-MG-MW-7-20' **Matrix:** SOIL

| Analyses                                     | Result | PQL | Qual | Units | DF | Date Analyzed         | Batch ID |
|--|--------|-----|------|-------|----|-----------------------|----------|
| <b>EPA METHOD 300.0: ANIONS</b> Analyst: CJS |        |     |      |       |    |                       |          |
| Chloride                                     | 33     | 30  |      | mg/Kg | 20 | 2/14/2018 11:28:50 AM | 36522    |

**Lab ID:** 1802125-015 **Collection Date:** 1/30/2018 11:10:00 AM  
**Client Sample ID:** S-088210-34-013018-MG-MW-7-30' **Matrix:** SOIL

| Analyses                                     | Result | PQL | Qual | Units | DF | Date Analyzed         | Batch ID |
|--|--------|-----|------|-------|----|-----------------------|----------|
| <b>EPA METHOD 300.0: ANIONS</b> Analyst: CJS |        |     |      |       |    |                       |          |
| Chloride                                     | 460    | 30  |      | mg/Kg | 20 | 2/14/2018 11:41:15 AM | 36522    |

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                | Page 3 of 5 |
|                    | ND  | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |             |
|                    | PQL | Practical Quantitative Limit                          | RL | Reporting Detection Limit                                 |             |
|                    | S   | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |             |

## Analytical Report

Lab Order: 1802125

Date Reported: 2/20/2018

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD  
**Project:** Flamenco

**Lab Order:** 1802125

**Lab ID:** 1802125-016 **Collection Date:** 1/30/2018 11:15:00 AM  
**Client Sample ID:** S-088210-34-013018-MG-MW-7-40' **Matrix:** SOIL

| Analyses  | Result | PQL | Qual | Units | DF | Date Analyzed         | Batch ID |
|---|--------|-----|------|-------|----|-----------------------|----------|
| <b>EPA METHOD 300.0: ANIONS</b> Analyst: <b>CJS</b> |        |     |      |       |    |                       |          |
| Chloride  | 150    | 30  |      | mg/Kg | 20 | 2/14/2018 11:53:39 AM | 36522    |

**Lab ID:** 1802125-017 **Collection Date:** 1/30/2018 11:20:00 AM  
**Client Sample ID:** S-088210-34-013018-MG-MW-7-50' **Matrix:** SOIL

| Analyses  | Result | PQL | Qual | Units | DF | Date Analyzed         | Batch ID |
|---|--------|-----|------|-------|----|-----------------------|----------|
| <b>EPA METHOD 300.0: ANIONS</b> Analyst: <b>CJS</b> |        |     |      |       |    |                       |          |
| Chloride  | 160    | 30  |      | mg/Kg | 20 | 2/14/2018 12:06:04 PM | 36522    |

**Lab ID:** 1802125-018 **Collection Date:** 1/30/2018 11:23:00 AM  
**Client Sample ID:** S-088210-34-013018-MG-MW-7-60' **Matrix:** SOIL

| Analyses  | Result | PQL | Qual | Units | DF | Date Analyzed        | Batch ID |
|---|--------|-----|------|-------|----|----------------------|----------|
| <b>EPA METHOD 300.0: ANIONS</b> Analyst: <b>CJS</b> |        |     |      |       |    |                      |          |
| Chloride  | 590    | 30  |      | mg/Kg | 20 | 2/14/2018 1:08:06 PM | 36522    |

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

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

Page 4 of 5

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 1802125

20-Feb-18

**Client:** GHD  
**Project:** Flamenco

|            |           |     |                          |             |                                    |          |              |      |          |      |
|------------|-----------|-----|--------------------------|-------------|------------------------------------|----------|--------------|------|----------|------|
| Sample ID  | MB-36495  |     | SampType: mblk           |             | TestCode: EPA Method 300.0: Anions |          |              |      |          |      |
| Client ID: | PBS       |     | Batch ID: 36495          |             | RunNo: 49085                       |          |              |      |          |      |
| Prep Date: | 2/13/2018 |     | Analysis Date: 2/13/2018 |             | SeqNo: 1583564                     |          | Units: mg/Kg |      |          |      |
| Analyte    | Result    | PQL | SPK value                | SPK Ref Val | %REC                               | LowLimit | HighLimit    | %RPD | RPDLimit | Qual |
| Chloride   | ND        | 1.5 |                          |             |                                    |          |              |      |          |      |

|            |           |     |                          |             |                                    |          |              |      |          |      |
|------------|-----------|-----|--------------------------|-------------|------------------------------------|----------|--------------|------|----------|------|
| Sample ID  | LCS-36495 |     | SampType: Ics            |             | TestCode: EPA Method 300.0: Anions |          |              |      |          |      |
| Client ID: | LCSS      |     | Batch ID: 36495          |             | RunNo: 49085                       |          |              |      |          |      |
| Prep Date: | 2/13/2018 |     | Analysis Date: 2/13/2018 |             | SeqNo: 1583565                     |          | Units: mg/Kg |      |          |      |
| Analyte    | Result    | PQL | SPK value                | SPK Ref Val | %REC                               | LowLimit | HighLimit    | %RPD | RPDLimit | Qual |
| Chloride   | 14        | 1.5 | 15.00                    | 0           | 92.3                               | 90       | 110          |      |          |      |

|            |           |     |                |             |      |           |                          |      |          |       |  |
|------------|-----------|-----|----------------|-------------|------|-----------|--------------------------|------|----------|-------|--|
| Sample ID  | MB-36522  |     | SampType:      | mblk        |      | TestCode: | EPA Method 300.0: Anions |      |          |       |  |
| Client ID: | PBS       |     | Batch ID:      | 36522       |      | RunNo:    | 49121                    |      |          |       |  |
| Prep Date: | 2/14/2018 |     | Analysis Date: | 2/14/2018   |      | SeqNo:    | 1584649                  |      | Units:   | mg/Kg |  |
| Analyte    | Result    | PQL | SPK value      | SPK Ref Val | %REC | LowLimit  | HighLimit                | %RPD | RPDLimit | Qual  |  |
| Chloride   | ND        | 1.5 |                |             |      |           |                          |      |          |       |  |

|            |           |     |                          |             |                                    |          |              |      |          |      |
|------------|-----------|-----|--------------------------|-------------|------------------------------------|----------|--------------|------|----------|------|
| Sample ID  | LCS-36522 |     | SampType: lcs            |             | TestCode: EPA Method 300.0: Anions |          |              |      |          |      |
| Client ID: | LCSS      |     | Batch ID: 36522          |             | RunNo: 49121                       |          |              |      |          |      |
| Prep Date: | 2/14/2018 |     | Analysis Date: 2/14/2018 |             | SeqNo: 1584650                     |          | Units: mg/Kg |      |          |      |
| Analyte    | Result    | PQL | SPK value                | SPK Ref Val | %REC                               | LowLimit | HighLimit    | %RPD | RPDLimit | Qual |
| Chloride   | 14        | 1.5 | 15.00                    | 0           | 93.9                               | 90       | 110          |      |          |      |

**Qualifiers:**

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





Hall Environmental Analysis Laboratory  
4901 Hawkes NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-1107  
Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: GHD

Work Order Number: 1802125

Rep No: 1

Received By: Erin Melendrez 2/2/2018 10:35:00 AM

Completed By: Erin Melendrez 2/2/2018 1:19:49 PM

Reviewed By: *AS 02/02/18*

Labeled By DDS

### 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  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐  
5. Sample(s) in proper container(s)? Yes ☒ No ☐  
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐  
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐  
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐  
9. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒  
10. Were any sample containers received broken? Yes ☐ No ☒  
11. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐  
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐  
13. Is it clear what analyses were requested? Yes ☒ No ☐  
14. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐  
# of preserved bottles checked for pH: \_\_\_\_\_  
( $<2$  or  $>12$  unless noted)  
Adjusted? \_\_\_\_\_  
Checked by: \_\_\_\_\_

### 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         | 0.4     | Good      | Yes         |         |           |           |

## Chain-of-Custody Record

Client: EHD Services

Turn-Around Time:

☐ Standard ☐ RushMailing Address: 6121 Indian School Rd

Project Name:

FlamencoNE Albuquerque, NM 87110 Ste 200

Project #:

088210.34Phone #: 505 844 0672email or Fax#: Bernard.Bockisch@ehd.com

Project Manager:

Bernard Bockisch

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other☐ EDD (Type)Sampler: Michael GantOn Ice: ☒ Yes ☐ NoSample Temperature: 1.4 - 1.0 (C) = 0.4HALL ENVIRONMENTAL  
ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

## Analysis Request

| BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / DRO / MRO) | TPH (Method 418.1) | EDB (Method 504.1) | PAH's (8310 or 8270 SIMS) | RCRA 8 Metals | Anions (F, Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> ) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) | 8270 (Semi-VOA) | Chloride ENH* | Air Bubbles (Y or N) |
|----------------------------|------------------------------|-----------------------------|--------------------|--------------------|---------------------------|---------------|--|------------------------------|-------------|-----------------|---------------|----------------------|
|                            |                              |                             |                    |                    |                           |               |  |                              |             |                 | 8/12/18       |                      |
|                            |                              |                             |                    |                    |                           |               |  |                              |             |                 | X             |                      |
|                            |                              |                             |                    |                    |                           |               |  |                              |             |                 | X             |                      |
|                            |                              |                             |                    |                    |                           |               |  |                              |             |                 | X             |                      |
|                            |                              |                             |                    |                    |                           |               |  |                              |             |                 | X             |                      |
|                            |                              |                             |                    |                    |                           |               |  |                              |             |                 | X             |                      |
|                            |                              |                             |                    |                    |                           |               |  |                              |             |                 | X             |                      |
|                            |                              |                             |                    |                    |                           |               |  |                              |             |                 | X             |                      |
|                            |                              |                             |                    |                    |                           |               |  |                              |             |                 | X             |                      |
|                            |                              |                             |                    |                    |                           |               |  |                              |             |                 | X             |                      |
|                            |                              |                             |                    |                    |                           |               |  |                              |             |                 | X             |                      |
|                            |                              |                             |                    |                    |                           |               |  |                              |             |                 | X             |                      |
|                            |                              |                             |                    |                    |                           |               |  |                              |             |                 | X             |                      |
|                            |                              |                             |                    |                    |                           |               |  |                              |             |                 | X             |                      |
|                            |                              |                             |                    |                    |                           |               |  |                              |             |                 | X             |                      |

| Date    | Time | Matrix | Sample Request ID          | Container Type and # | Preservative Type | HEAL No. |
|---------|------|--------|----------------------------|----------------------|-------------------|----------|
|         |      |        |                            |                      |                   | 1802125  |
| 1/29/18 | 1230 | S      | S-088210-34-012918-MW-S-16 | 4oz Soil/Ser         | ICE               | -001     |
|         | 1240 |        | S-088210-34-012918-MW-S-20 |                      |                   | -002     |
|         | 1245 |        | S-088210-34-012918-MW-S-26 |                      |                   | -003     |
|         | 1255 |        | S-088210-34-012918-MW-S-40 |                      |                   | -004     |
|         | 1300 |        | S-088210-34-012918-MW-S-50 |                      |                   | -005     |
|         | 1315 |        | S-088210-34-012918-MW-S-48 |                      |                   | -006     |
| 1/30/18 | 0945 |        | S-088210-34-013018-MW-S-10 |                      |                   | -007     |
|         | 0950 |        | S-088210-34-013018-MW-S-20 |                      |                   | -008     |
|         | 0955 |        | S-088210-34-013018-MW-S-28 |                      |                   | -009     |
|         | 1000 |        | S-088210-34-013018-MW-S-40 |                      |                   | -010     |
|         | 1005 |        | S-088210-34-013018-MW-S-50 |                      |                   | -011     |
|         | 1010 |        | S-088210-34-013018-MW-S-60 |                      |                   | -012     |

Date: 2/1/18 Time: 850 Relinquished by: AKReceived by: SptDate: 2/1/18 Time: 0850Remarks: \*Per SKIPDate: 2/1/18 Time: 1900 Relinquished by: SptReceived by: LiADate: 2/2/18 Time: 1035

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



**HALL ENVIRONMENTAL  
ANALYSIS LABORATORY**

[www.hallenvironmental.com](http://www.hallenvironmental.com)





4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

### Analysis Request

| Chain-of-Custody Record  |   | Turn-Around Time: |
|--|---|-------------------|
| Client: <u>GHD Services</u>  | <input type="checkbox"/> Standard <input type="checkbox"/> Rush             |                   |
| Mailing Address: <u>6121 Indian School Rd</u>  | Project Name: <u>Flamence</u>   |                   |
| <u>NE Albuquerque, NM 87110 Ste 200</u>  | Project #: <u>088210-34</u>   |                   |
| Phone #: <u>505 334 6672</u>   | Project Manager: <u>Bernard Backisch</u>                                    |                   |
| email or Fax#: <u>Bernard.Backisch@ghd.com</u>                                       |   |                   |
| QA/QC Package:   |   |                   |
| <input type="checkbox"/> Standard <input type="checkbox"/> Level 4 (Full Validation) |   |                   |
| Accreditation  | Sampler: <u>Michael Gant</u>  |                   |
| <input type="checkbox"/> NELAP <input type="checkbox"/> Other _____                  | On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |                   |
| <input type="checkbox"/> EDD (Type) _____  | Sample Temperature: <u>14-1.0/CA=0.4</u>                                    |                   |

[illegible]

|                 |               |   |   |                 |               |                       |
|-----------------|---------------|---|---|-----------------|---------------|-----------------------|
| Date:<br>2/1/18 | Time:<br>0850 | Relinquished by:<br> | Received by:<br> | Date:<br>2/1/18 | Time:<br>0850 | Remarks:<br>*Per SKIP |
| Date:<br>2/1/18 | Time:<br>1900 | Relinquished by:<br> | Received by:<br> | Date:<br>2/1/18 | Time:<br>1035 |                       |

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



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

August 21, 2018

Alan Brandon

GHD

6121 Indian School Road, NE #200

Albuquerque, NM 87110

TEL: (505) 884-0672

FAX

RE: Flamenco

OrderNo.: 1808832

Dear Alan Brandon:

Hall Environmental Analysis Laboratory received 15 sample(s) on 8/14/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](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 horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order: 1808832

Date Reported: 8/21/2018

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD  
**Project:** Flamenco

**Lab Order:** 1808832**Lab ID:** 1808832-001 **Collection Date:** 8/8/2018 1:30:00 PM**Client Sample ID:** S-088210-34-080818-JP-SB-10-60 **Matrix:** SOIL

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch ID |
|----------|--------|-----|------|-------|----|---------------|----------|
|----------|--------|-----|------|-------|----|---------------|----------|

**EPA METHOD 300.0: ANIONS**

Analyst: MRA

|          |    |    |  |       |    |                       |       |
|----------|----|----|--|-------|----|-----------------------|-------|
| Chloride | 35 | 30 |  | mg/Kg | 20 | 8/20/2018 12:35:08 PM | 39874 |
|----------|----|----|--|-------|----|-----------------------|-------|

**Lab ID:** 1808832-002 **Collection Date:** 8/8/2018 1:35:00 PM**Client Sample ID:** S-088210-34-080818-JP-SB-10-65 **Matrix:** SOIL

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch ID |
|----------|--------|-----|------|-------|----|---------------|----------|
|----------|--------|-----|------|-------|----|---------------|----------|

**EPA METHOD 300.0: ANIONS**

Analyst: MRA

|          |    |    |  |       |    |                      |       |
|----------|----|----|--|-------|----|----------------------|-------|
| Chloride | ND | 30 |  | mg/Kg | 20 | 8/20/2018 1:12:22 PM | 39874 |
|----------|----|----|--|-------|----|----------------------|-------|

**Lab ID:** 1808832-003 **Collection Date:** 8/8/2018 4:38:00 PM**Client Sample ID:** S-088210-34-080818-JP-SB-11-50 **Matrix:** SOIL

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch ID |
|----------|--------|-----|------|-------|----|---------------|----------|
|----------|--------|-----|------|-------|----|---------------|----------|

**EPA METHOD 300.0: ANIONS**

Analyst: MRA

|          |    |    |  |       |    |                      |       |
|----------|----|----|--|-------|----|----------------------|-------|
| Chloride | 34 | 30 |  | mg/Kg | 20 | 8/20/2018 1:24:46 PM | 39874 |
|----------|----|----|--|-------|----|----------------------|-------|

**Lab ID:** 1808832-004 **Collection Date:** 8/8/2018 5:00:00 PM**Client Sample ID:** S-088210-34-080818-JP-SB-11-65 **Matrix:** SOIL

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch ID |
|----------|--------|-----|------|-------|----|---------------|----------|
|----------|--------|-----|------|-------|----|---------------|----------|

**EPA METHOD 300.0: ANIONS**

Analyst: MRA

|          |     |    |  |       |    |                      |       |
|----------|-----|----|--|-------|----|----------------------|-------|
| Chloride | 430 | 30 |  | mg/Kg | 20 | 8/20/2018 1:37:10 PM | 39874 |
|----------|-----|----|--|-------|----|----------------------|-------|

**Lab ID:** 1808832-005 **Collection Date:** 8/9/2018 9:50:00 AM**Client Sample ID:** S-088210-34-080918-JP-SB-6-50 **Matrix:** SOIL

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch ID |
|----------|--------|-----|------|-------|----|---------------|----------|
|----------|--------|-----|------|-------|----|---------------|----------|

**EPA METHOD 300.0: ANIONS**

Analyst: MRA

|          |    |    |  |       |    |                      |       |
|----------|----|----|--|-------|----|----------------------|-------|
| Chloride | 33 | 30 |  | mg/Kg | 20 | 8/20/2018 1:49:35 PM | 39874 |
|----------|----|----|--|-------|----|----------------------|-------|

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

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

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## Analytical Report

Lab Order: 1808832

Date Reported: 8/21/2018

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD  
**Project:** Flamenco

**Lab Order:** 1808832**Lab ID:** 1808832-006 **Collection Date:** 8/9/2018 10:20:00 AM**Client Sample ID:** S-088210-34-080918-JP-SB-6-60 **Matrix:** SOIL

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch ID |
|----------|--------|-----|------|-------|----|---------------|----------|
|----------|--------|-----|------|-------|----|---------------|----------|

**EPA METHOD 300.0: ANIONS**

Analyst: MRA

|          |    |    |  |       |    |                      |       |
|----------|----|----|--|-------|----|----------------------|-------|
| Chloride | ND | 30 |  | mg/Kg | 20 | 8/20/2018 2:02:00 PM | 39874 |
|----------|----|----|--|-------|----|----------------------|-------|

**Lab ID:** 1808832-007 **Collection Date:** 8/9/2018 12:05:00 PM**Client Sample ID:** S-088210-34-080918-JP-SB-5-20 **Matrix:** SOIL

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch ID |
|----------|--------|-----|------|-------|----|---------------|----------|
|----------|--------|-----|------|-------|----|---------------|----------|

**EPA METHOD 300.0: ANIONS**

Analyst: MRA

|          |    |    |  |       |    |                      |       |
|----------|----|----|--|-------|----|----------------------|-------|
| Chloride | 45 | 30 |  | mg/Kg | 20 | 8/20/2018 2:14:24 PM | 39874 |
|----------|----|----|--|-------|----|----------------------|-------|

**Lab ID:** 1808832-008 **Collection Date:** 8/9/2018 4:00:00 PM**Client Sample ID:** S-088210-34-080918-JP-SB-9-60 **Matrix:** SOIL

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch ID |
|----------|--------|-----|------|-------|----|---------------|----------|
|----------|--------|-----|------|-------|----|---------------|----------|

**EPA METHOD 300.0: ANIONS**

Analyst: MRA

|          |    |    |  |       |    |                      |       |
|----------|----|----|--|-------|----|----------------------|-------|
| Chloride | ND | 30 |  | mg/Kg | 20 | 8/20/2018 2:26:49 PM | 39874 |
|----------|----|----|--|-------|----|----------------------|-------|

**Lab ID:** 1808832-009 **Collection Date:** 8/9/2018 4:40:00 PM**Client Sample ID:** S-088210-34-080918-JP-SB-9-70 **Matrix:** SOIL

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch ID |
|----------|--------|-----|------|-------|----|---------------|----------|
|----------|--------|-----|------|-------|----|---------------|----------|

**EPA METHOD 300.0: ANIONS**

Analyst: MRA

|          |    |    |  |       |    |                      |       |
|----------|----|----|--|-------|----|----------------------|-------|
| Chloride | ND | 30 |  | mg/Kg | 20 | 8/20/2018 3:04:02 PM | 39874 |
|----------|----|----|--|-------|----|----------------------|-------|

**Lab ID:** 1808832-010 **Collection Date:** 8/10/2018 9:47:00 AM**Client Sample ID:** S-088210-34-081018-JP-SB-8-65 **Matrix:** SOIL

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch ID |
|----------|--------|-----|------|-------|----|---------------|----------|
|----------|--------|-----|------|-------|----|---------------|----------|

**EPA METHOD 300.0: ANIONS**

Analyst: MRA

|          |     |    |  |       |    |                      |       |
|----------|-----|----|--|-------|----|----------------------|-------|
| Chloride | 100 | 30 |  | mg/Kg | 20 | 8/20/2018 3:16:27 PM | 39874 |
|----------|-----|----|--|-------|----|----------------------|-------|

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

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

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## Analytical Report

Lab Order: 1808832

Date Reported: 8/21/2018

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD  
**Project:** Flamenco

**Lab Order:** 1808832**Lab ID:** 1808832-011 **Collection Date:** 8/10/2018 9:30:00 AM**Client Sample ID:** S-088210-34-081018-JP-SB-8-60 **Matrix:** SOIL

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch ID |
|----------|--------|-----|------|-------|----|---------------|----------|
|----------|--------|-----|------|-------|----|---------------|----------|

**EPA METHOD 300.0: ANIONS**

Analyst: MRA

|          |    |    |  |       |    |                      |       |
|----------|----|----|--|-------|----|----------------------|-------|
| Chloride | 91 | 30 |  | mg/Kg | 20 | 8/20/2018 3:28:52 PM | 39874 |
|----------|----|----|--|-------|----|----------------------|-------|

**Lab ID:** 1808832-012 **Collection Date:** 8/10/2018 12:00:00 PM**Client Sample ID:** S-088210-34-081018-JP-SB-7-50 **Matrix:** SOIL

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch ID |
|----------|--------|-----|------|-------|----|---------------|----------|
|----------|--------|-----|------|-------|----|---------------|----------|

**EPA METHOD 300.0: ANIONS**

Analyst: MRA

|          |    |    |  |       |    |                      |       |
|----------|----|----|--|-------|----|----------------------|-------|
| Chloride | 32 | 30 |  | mg/Kg | 20 | 8/20/2018 3:41:17 PM | 39874 |
|----------|----|----|--|-------|----|----------------------|-------|

**Lab ID:** 1808832-013 **Collection Date:** 8/10/2018 12:45:00 PM**Client Sample ID:** S-088210-34-081018-JP-SB-7-40 **Matrix:** SOIL

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch ID |
|----------|--------|-----|------|-------|----|---------------|----------|
|----------|--------|-----|------|-------|----|---------------|----------|

**EPA METHOD 300.0: ANIONS**

Analyst: MRA

|          |    |    |  |       |    |                      |       |
|----------|----|----|--|-------|----|----------------------|-------|
| Chloride | ND | 30 |  | mg/Kg | 20 | 8/20/2018 3:53:42 PM | 39874 |
|----------|----|----|--|-------|----|----------------------|-------|

**Lab ID:** 1808832-015 **Collection Date:** 8/10/2018 9:15:00 AM**Client Sample ID:** S-088210-34-081018-JP-SB-8-50 **Matrix:** SOIL

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch ID |
|----------|--------|-----|------|-------|----|---------------|----------|
|----------|--------|-----|------|-------|----|---------------|----------|

**EPA METHOD 300.0: ANIONS**

Analyst: MRA

|          |    |    |  |       |    |                      |       |
|----------|----|----|--|-------|----|----------------------|-------|
| Chloride | ND | 30 |  | mg/Kg | 20 | 8/20/2018 4:06:06 PM | 39874 |
|----------|----|----|--|-------|----|----------------------|-------|

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

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

Page 3 of 4

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 1808832

21-Aug-18

**Client:** GHD  
**Project:** Flamenco

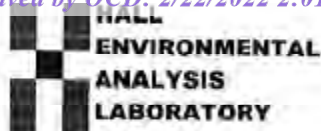
|            |                  |                |                  |             |                                 |          |              |      |          |      |
|------------|------------------|----------------|------------------|-------------|---------------------------------|----------|--------------|------|----------|------|
| Sample ID  | <b>LCS-39874</b> | SampType:      | <b>lcs</b>       | TestCode:   | <b>EPA Method 300.0: Anions</b> |          |              |      |          |      |
| Client ID: | <b>LCSS</b>      | Batch ID:      | <b>39874</b>     | RunNo:      | <b>53555</b>                    |          |              |      |          |      |
| Prep Date: | <b>8/20/2018</b> | Analysis Date: | <b>8/20/2018</b> | SeqNo:      | <b>1766307</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           | 92.7                            | 90       | 110          |      |          |      |

|            |                  |                |                  |             |                                 |          |              |      |          |      |
|------------|------------------|----------------|------------------|-------------|---------------------------------|----------|--------------|------|----------|------|
| Sample ID  | <b>MB-39874</b>  | SampType:      | <b>mbk</b>       | TestCode:   | <b>EPA Method 300.0: Anions</b> |          |              |      |          |      |
| Client ID: | <b>PBS</b>       | Batch ID:      | <b>39874</b>     | RunNo:      | <b>53555</b>                    |          |              |      |          |      |
| Prep Date: | <b>8/20/2018</b> | Analysis Date: | <b>8/20/2018</b> | SeqNo:      | <b>1766308</b>                  | Units:   | <b>mg/Kg</b> |      |          |      |
| Analyte    | Result           | PQL            | SPK value        | SPK Ref Val | %REC                            | LowLimit | HighLimit    | %RPD | RPDLimit | Qual |
| Chloride   | ND               | 1.5            |                  |             |                                 |          |              |      |          |      |

**Qualifiers:**

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

Page 4 of 4



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

## Sample Log-In Check List

Client Name: GHD

Work Order Number: 1808832

RcptNo: 1

Received By: Isaiah Ortiz

8/14/2018 11:30:00 AM

Completed By: Ashley Gallegos

8/14/2018 2:28:30 PM

Reviewed By:

Labeled by:

JAB 08/14/18

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
9. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐
- # of preserved bottles checked /or pH: (2 or >2 unless noted)  
Adjusted? JAB 08/14/18  
Checked by:

Special Handling (if applicable)

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

Person Notified:

Date

By Whom:

Via

☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

Sample SB-8-65 not received.

17 Cooler Information

| Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|---------|-----------|-------------|---------|-----------|-----------|
| 1         | 2.3     | Good      | Yes         |         |           |           |



Released to Imaging: 5/2/2022 3:36:34 PM

Turn-Around Time: 5 DAY TURN

[www.hallenvironmental.com](http://www.hallenvironmental.com)

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

### Analysis Request

Project Name:

Flamenco

NE Suite 200 Albuquerque NM 87110

Project #:

088210-34

Phone #: 505 884 0672

Project Manager:

email or Fax#: Alan.Brandon@ghd.com

Alan Brandon

QA/QC Package:

Sampler: Joshua Pigg / Mike

☐ Standard


On Ice: ☒ Yes ☐ No

## Accreditation

Sample Temperature: 33-10 (CF) 2.3

☐ NELAP      ☐ Other☐ EDD (Type)[illegible]

|         |       |                    |
|---------|-------|--------------------|
| Date:   | Time: | Relinquished by:   |
| 8/13/18 | 1000  | <i>[Signature]</i> |

Received by:  Date: 8/13/18 Time: 1000

Remarks:

|               |            |                     |
|---------------|------------|---------------------|
| Date: 8/13/18 | Time: 1:10 | Relinquished by: JH |
|---------------|------------|---------------------|

Received by: ICA courier Date 8/14/18 Time 1130



Released to Imaging: 5/2/2022 3:36:34 PM

Turn-Around Time: 5 DAY Turn

☒ Standard ☐ Rush

Project Name: Flamenco

|            |           |
|------------|-----------|
| Project #: | 088210-34 |
|------------|-----------|

Project Manager:  
Alex Brandon

Sampler: Joshua Pigg  
On Ice: ☒ Yes ☐ No

|                                   |              |
|-----------------------------------|--------------|
| Sample Temperature: 33-10 (°F) 23 |              |
| Container                         | Preservative |

|                         |                      |                     |
|-------------------------|----------------------|---------------------|
| Container<br>Type and # | Preservative<br>Type | HEAL No.<br>180883a |
|-------------------------|----------------------|---------------------|

|               |      |      |
|---------------|------|------|
| 402 glass jar | IC F | -013 |
| 402 glass jar | IC E | -014 |

|               |     |      |
|---------------|-----|------|
| 4-2 gl-ss Jar | ICE | -015 |
|               |     |      |
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| Received by: | Date | Time |
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Ab 1/8 8/10/18/1000

Received by: 8/5/18 Date 1000 Time

1. 1.1

|          |
|----------|
| Remarks: |
|----------|

Sample SB-8-65 not reviewed 8/15

1.  $\frac{1}{2}$  of the population is 100,000. The population is 200,000.

\_\_\_\_\_



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

August 27, 2018

Alan Brandon

GHD

6121 Indian School Road, NE #200

Albuquerque, NM 87110

TEL: (505) 884-0672

FAX

RE: Flamenco

OrderNo.: 1808911

Dear Alan Brandon:

Hall Environmental Analysis Laboratory received 2 sample(s) on 8/15/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](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: 1808911

Date Reported: 8/27/2018

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD  
**Project:** Flamenco

**Lab Order:** 1808911**Lab ID:** 1808911-001**Collection Date:** 8/7/2018 1:20:00 PM**Client Sample ID:** S-088210-34-080718-JP-SB-10-55**Matrix:** SOIL

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch ID |
|----------|--------|-----|------|-------|----|---------------|----------|
|----------|--------|-----|------|-------|----|---------------|----------|

**EPA METHOD 300.0: ANIONS**

Analyst: MRA

|          |      |    |  |       |    |                      |       |
|----------|------|----|--|-------|----|----------------------|-------|
| Chloride | 1300 | 75 |  | mg/Kg | 50 | 8/24/2018 5:11:57 PM | 39891 |
|----------|------|----|--|-------|----|----------------------|-------|

**Lab ID:** 1808911-002**Collection Date:** 8/9/2018 3:32:00 PM**Client Sample ID:** S-088210-34-080718-JP-SB-9-50**Matrix:** SOIL

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch ID |
|----------|--------|-----|------|-------|----|---------------|----------|
|----------|--------|-----|------|-------|----|---------------|----------|

**EPA METHOD 300.0: ANIONS**

Analyst: MRA

|          |    |    |  |       |    |                      |       |
|----------|----|----|--|-------|----|----------------------|-------|
| Chloride | 32 | 30 |  | mg/Kg | 20 | 8/20/2018 6:10:13 PM | 39891 |
|----------|----|----|--|-------|----|----------------------|-------|

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

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

Page 1 of 2

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1808911

27-Aug-18

Client: GHD  
Project: Flamenco

|            |           |                |           |             |                          |          |           |      |          |      |
|------------|-----------|----------------|-----------|-------------|--------------------------|----------|-----------|------|----------|------|
| Sample ID  | MB-39891  | SampType:      | mblk      | TestCode:   | EPA Method 300.0: Anions |          |           |      |          |      |
| Client ID: | PBS       | Batch ID:      | 39891     | RunNo:      | 53555                    |          |           |      |          |      |
| Prep Date: | 8/20/2018 | Analysis Date: | 8/20/2018 | SeqNo:      | 1766339                  | Units:   | mg/Kg     |      |          |      |
| Analyte    | Result    | PQL            | SPK value | SPK Ref Val | %REC                     | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Chloride   | ND        | 1.5            |           |             |                          |          |           |      |          |      |

|            |           |                |           |             |                          |          |           |      |          |      |
|------------|-----------|----------------|-----------|-------------|--------------------------|----------|-----------|------|----------|------|
| Sample ID  | LCS-39891 | SampType:      | lcs       | TestCode:   | EPA Method 300.0: Anions |          |           |      |          |      |
| Client ID: | LCSS      | Batch ID:      | 39891     | RunNo:      | 53555                    |          |           |      |          |      |
| Prep Date: | 8/20/2018 | Analysis Date: | 8/20/2018 | SeqNo:      | 1766340                  | Units:   | mg/Kg     |      |          |      |
| Analyte    | Result    | PQL            | SPK value | SPK Ref Val | %REC                     | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Chloride   | 14        | 1.5            | 15.00     | 0           | 91.8                     | 90       | 110       |      |          |      |

|   |   |             |
|---|---|-------------|
| Qualifiers:   |   |             |
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |             |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |             |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                | Page 2 of 2 |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |             |
| PQL Practical Quantitative Limit                        | RL Reporting Detection Limit                                |             |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |             |



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

## Sample Log-In Check List

Client Name: GHD

Work Order Number: 1808911

RcptNo: 1

Received By: Ashley Gallegos

8/15/2018 8:40:00 AM

Completed By: Ashley Gallegos

8/15/2018 9:47:30 AM

Reviewed By: ID

8/15/18

labeled by: ENM 8/15/18

Chain of Custody1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐

2. How was the sample delivered? Courier

Log In3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐5. Sample(s) in proper container(s)? Yes ☒ No ☐6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐9. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒10. Were any sample containers received broken? Yes ☐ No ☒11. Does paperwork match bottle labels? Yes ☒ No ☐

(Note discrepancies on chain of custody)

12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐13. Is it clear what analyses were requested? Yes ☒ No ☐14. Were all holding times able to be met? Yes ☒ No ☐

(If no, notify customer for authorization.)

# of preserved  
bottles checked  
for pH:

02 or &gt;12 unless noted)

Adjusted? \_\_\_\_\_

Checked by: \_\_\_\_\_

Special Handling (if applicable)15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

|                      |  |
|----------------------|--|
| Person Notified:     | Date:  |
| By Whom:             | Via: <input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person |
| Regarding:           |  |
| Client Instructions: |  |

16. Additional remarks:

17. Cooler Information

| Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|---------|-----------|-------------|---------|-----------|-----------|
| 1         | 3.3     | Good      | Yes         |         |           |           |



Released to Imaging: 5/2/2022 3:36:34 PM

[illegible]

|         |       |                  |
|---------|-------|------------------|
| Date:   | Time: | Relinquished by: |
| 8/14/81 | 9:40  | [Signature]      |

If necessary, sample submitted to Hall Environ

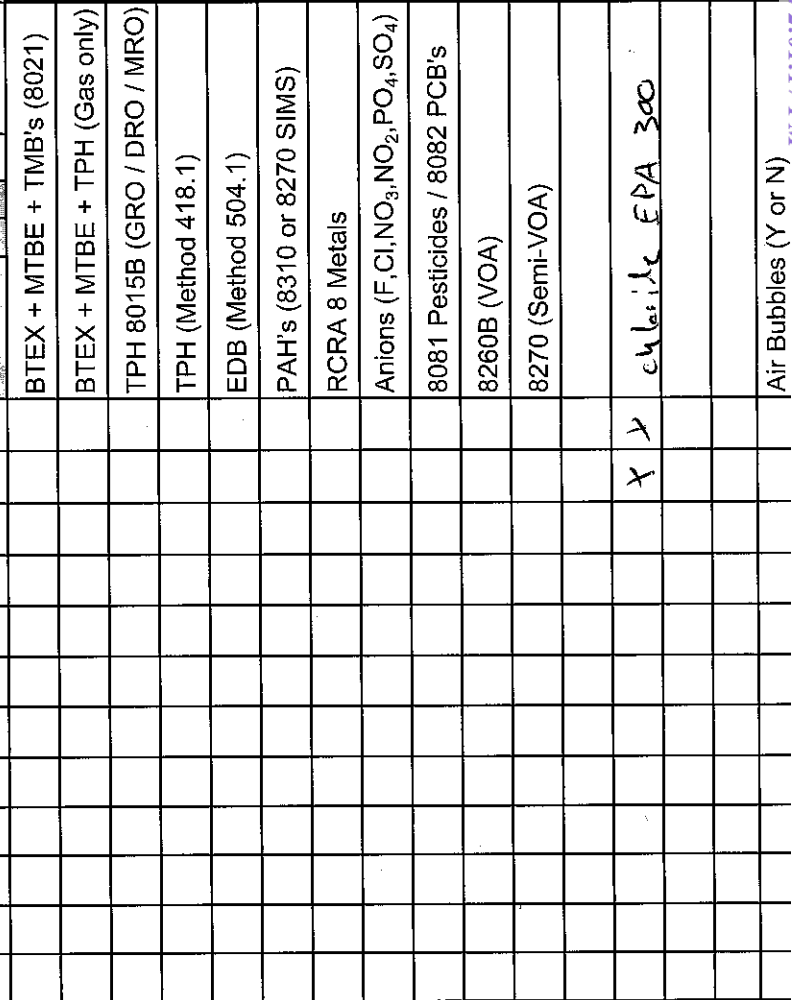
Sample Temperature: 3.3

|                         |                      |                     |
|-------------------------|----------------------|---------------------|
| Container<br>Type and # | Preservative<br>Type | HEAL No.<br>1808911 |
|-------------------------|----------------------|---------------------|

|               |     |
|---------------|-----|
| 402 glass Tar | LCF |
|---------------|-----|

|               |     |
|---------------|-----|
| 402 glass Jar | ICE |
|---------------|-----|

Received by: [Signature] Date: 08/15/18 Time: 0840



|          |
|----------|
| Remarks: |
|----------|

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

## Appendix B

# Soil Boring Logs and Monitoring Well Details



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: FLAMENCO FED NO. 1

HOLE DESIGNATION: MW-5/SB-5

PROJECT NUMBER: 088210-34

DATE COMPLETED: 9 August 2018

CLIENT: EOG RESOURCES

DRILLING METHOD: AIR ROTARY

LOCATION: LEA COUNTY, NEW MEXICO

FIELD PERSONNEL: M. GANT

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS  | DEPTH<br>ft | BOREHOLE | SAMPLE  |          |         |           |                  |
|-----------------|--|-------------|----------|---------|----------|---------|-----------|------------------|
|                 |  |             |          | NUMBER  | INTERVAL | REC (%) | 'N' VALUE | Chloride (mg/kg) |
| 2               | SM-SILTY SAND, few gravel, very fine grained, poorly graded, whitish pink, dry |             |          |         |          |         |           |                  |
| 4               |  |             |          |         |          |         |           |                  |
| 6               |  |             |          |         |          |         |           |                  |
| 8               |  |             |          |         |          |         |           |                  |
| 10              |  |             |          |         |          |         |           |                  |
| 12              |  |             |          |         |          |         |           |                  |
| 14              |  |             |          |         |          |         |           |                  |
| 16              |  |             |          |         |          |         |           |                  |
| 18              |  |             |          |         |          |         |           |                  |
| 20              | - very hard at 20.0ft BGS  |             |          | SB-5-20 |          |         |           | <1.0             |
| 22              |  |             |          |         |          |         |           |                  |
| 24              |  |             |          |         |          |         |           |                  |
| 25              | - REFUSAL at 25.0ft BGS  | 25.00       |          |         |          |         |           |                  |
| 26              | END OF BOREHOLE @ 25.0ft BGS   |             |          |         |          |         |           |                  |
| 28              |  |             |          |         |          |         |           |                  |
| 30              |  |             |          |         |          |         |           |                  |
| 32              |  |             |          |         |          |         |           |                  |
| 34              |  |             |          |         |          |         |           |                  |

BACKFILLED  
WITH  
BENTONITE  
CHIPS AND  
SOIL  
CUTTINGS

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 088210-34-WI.GPJ GHD\_Corp 4/9/18



## STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 2

PROJECT NAME: FLAMENCO FED NO. 1

HOLE DESIGNATION: MW-7

PROJECT NUMBER: 088210-34



DATE COMPLETED: 10 August 2018

CLIENT: EOG RESOURCES

DRILLING METHOD: AIR ROTARY

LOCATION: LEA COUNTY, NEW MEXICO

FIELD PERSONNEL: J. PIGG

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS  | DEPTH<br>ft  | BOREHOLE   | SAMPLE |          |         |          |                     |   |       |  |         |  |  |  |    |
|-----------------|--|--|--|--------|----------|---------|----------|---------------------|---|-------|--|---------|--|--|--|----|
|                 |  |  |  | NUMBER | INTERVAL | REC (%) | N' VALUE | Chloride<br>(mg/kg) |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
| 2               | SP-SAND, with fines, fine to medium grained, cohesive, low plasticity, yellow/reddish brown, dry |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
| 4               |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
| 6               |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
| 8               |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
| 10              |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
| 12              |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
| 14              |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
| 16              |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
| 18              |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
| 20              |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
| 22              |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
| 24              |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
| 26              |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
| 28              |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
| 30              |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
| 32              |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
| 34              |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     | SM-SILTY SAND, fine to very fine grained, low plasticity, well sorted, reddish brown, dry | 20.00 |  | MW-7-20 |  |  |  | <1 |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
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|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |
|                 |  |  |  |        |          |         |          |                     |   |       |  |         |  |  |  |    |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 2 of 2

PROJECT NAME: FLAMENCO FED NO. 1

HOLE DESIGNATION: MW-7

PROJECT NUMBER: 088210-34

DATE COMPLETED: 10 August 2018

CLIENT: EOG RESOURCES

DRILLING METHOD: AIR ROTARY

LOCATION: LEA COUNTY, NEW MEXICO

FIELD PERSONNEL: J. PIGG

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS                                  | DEPTH<br>ft | BOREHOLE | SAMPLE  |          |         |           |                     |
|-----------------|--|-------------|----------|---------|----------|---------|-----------|---------------------|
|                 |  |             |          | NUMBER  | INTERVAL | REC (%) | 'N' VALUE | Chloride<br>(mg/kg) |
| 36              | - very fine grained, medium plasticity, reddish yellow at 40.0ft BGS |             |          | MW-7-40 |          |         |           | <1                  |
| 38              |  |             |          |         |          |         |           |                     |
| 40              |  |             |          |         |          |         |           |                     |
| 42              |  |             |          |         |          |         |           |                     |
| 44              |  |             |          |         |          |         |           |                     |
| 46              |  |             |          |         |          |         |           |                     |
| 48              |  |             |          |         |          |         |           |                     |
| 50              |  |             |          |         |          |         |           |                     |
| 52              |  |             |          |         |          |         |           |                     |
| 54              |  |             |          |         |          |         |           |                     |
| 50              | END OF BOREHOLE @ 50.0ft BGS   | 50.00       |          | MW-7-50 |          |         |           | <1                  |
| 56              |  |             |          |         |          |         |           |                     |
| 58              |  |             |          |         |          |         |           |                     |
| 60              |  |             |          |         |          |         |           |                     |
| 62              |  |             |          |         |          |         |           |                     |
| 64              |  |             |          |         |          |         |           |                     |
| 66              |  |             |          |         |          |         |           |                     |
| 68              |  |             |          |         |          |         |           |                     |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 088210-34-WI.GPJ GHD\_Corp 4/9/18





# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 2

PROJECT NAME: FLAMENCO FED NO. 1

HOLE DESIGNATION: MW-8

PROJECT NUMBER: 088210-34

DATE COMPLETED: 10 August 2018

CLIENT: EOG RESOURCES

DRILLING METHOD: AIR ROTARY

LOCATION: LEA COUNTY, NEW MEXICO

FIELD PERSONNEL: J. PIGG

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS  | DEPTH<br>ft | BOREHOLE | SAMPLE  |          |         |           |                     |
|-----------------|--|-------------|----------|---------|----------|---------|-----------|---------------------|
|                 |  |             |          | NUMBER  | INTERVAL | REC (%) | 'N' VALUE | Chloride<br>(mg/kg) |
| 2               | SP-SAND, with gravel and fines, fine to medium grained, low plasticity, reddish brown, dry |             |          |         |          |         |           |                     |
| 4               |  |             |          |         |          |         |           |                     |
| 6               |  |             |          |         |          |         |           |                     |
| 8               |  |             |          |         |          |         |           |                     |
| 10              |  |             |          |         |          |         |           |                     |
| 12              |  |             |          |         |          |         |           |                     |
| 14              |  |             |          |         |          |         |           |                     |
| 16              |  |             |          |         |          |         |           |                     |
| 18              |  |             |          |         |          |         |           |                     |
| 20              |  |             |          |         |          |         |           |                     |
| 22              |  |             |          |         |          |         |           |                     |
| 24              |  |             |          |         |          |         |           |                     |
| 26              |  |             |          |         |          |         |           |                     |
| 28              |  |             |          |         |          |         |           |                     |
| 30              |  |             |          |         |          |         |           |                     |
| 32              |  |             |          |         |          |         |           |                     |
| 34              |  |             |          |         |          |         |           |                     |
|                 | SP/GP-SAND/GRAVEL, trace fines, medium to coarse grained, poor plasticity, light gray, dry | 30.00       |          | MW-8-20 |          |         |           | <1                  |
|                 |  |             |          | MW-8-30 |          |         |           | <1                  |

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NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 088210-34-WI.GPJ GHD\_Corp 4/9/18



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 2 of 2

PROJECT NAME: FLAMENCO FED NO. 1

HOLE DESIGNATION: MW-8

PROJECT NUMBER: 088210-34

DATE COMPLETED: 10 August 2018

CLIENT: EOG RESOURCES

DRILLING METHOD: AIR ROTARY

LOCATION: LEA COUNTY, NEW MEXICO

FIELD PERSONNEL: J. PIGG

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS  | DEPTH<br>ft | BOREHOLE | SAMPLE  |          |         |           |                     |
|-----------------|--|-------------|----------|---------|----------|---------|-----------|---------------------|
|                 |  |             |          | NUMBER  | INTERVAL | REC (%) | 'N' VALUE | Chloride<br>(mg/kg) |
| 36              |  |             | CUTTINGS |         |          |         |           |                     |
| 38              |  |             |          |         |          |         |           |                     |
| 40              | CL-SILTY CLAY, some sand, very fine grained, moderate plasticity, well graded, dark reddish brown, dry | 40.00       |          | MW-8-40 |          |         |           | <1                  |
| 42              |  |             |          |         |          |         |           |                     |
| 44              |  |             |          |         |          |         |           |                     |
| 46              |  |             |          |         |          |         |           |                     |
| 48              |  |             |          |         |          |         |           |                     |
| 50              | - reddish brown at 50.0ft BGS  |             |          | MW-8-50 |          |         |           | <1                  |
| 52              |  |             |          |         |          |         |           |                     |
| 54              |  |             |          |         |          |         |           |                     |
| 56              |  |             |          |         |          |         |           |                     |
| 58              |  |             |          |         |          |         |           |                     |
| 60              | ML-SANDY SILT, some 3mm gravel, very fine grained, moderate to low plasticity, reddish gray/brown, dry | 60.00       |          | MW-8-60 |          |         |           | <1                  |
| 62              |  |             |          |         |          |         |           |                     |
| 64              |  |             |          |         |          |         |           |                     |
| 66              | END OF BOREHOLE @ 65.0ft BGS   | 65.00       |          | MW-8-65 |          |         |           | 124                 |
| 68              |  |             |          |         |          |         |           |                     |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 088210-34-WI.GPJ GHD\_Corp 4/9/18



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 2

PROJECT NAME: FLAMENCO FED NO. 1

HOLE DESIGNATION: SB-10

PROJECT NUMBER: 088210-34

DATE COMPLETED: 8 August 2018

CLIENT: EOG RESOURCES

DRILLING METHOD: AI ROTARY

LOCATION: LEA COUNTY, NEW MEXICO

FIELD PERSONNEL: M. GANT

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS  | DEPTH<br>ft | BOREHOLE | SAMPLE   |          |         |           |                  |
|-----------------|--|-------------|----------|----------|----------|---------|-----------|------------------|
|                 |  |             |          | NUMBER   | INTERVAL | REC (%) | 'N' VALUE | Chloride (mg/kg) |
| 2               | SM-SILTY SAND, with gravel, very fine grained, poorly graded, reddish yellow, dry      |             |          |          |          |         |           |                  |
| 4               |  |             |          |          |          |         |           |                  |
| 6               |  |             |          |          |          |         |           |                  |
| 8               |  |             |          |          |          |         |           |                  |
| 10              |  |             |          |          |          |         |           |                  |
| 12              |  |             |          |          |          |         |           |                  |
| 14              |  |             |          |          |          |         |           |                  |
| 16              |  |             |          |          |          |         |           |                  |
| 18              |  |             |          |          |          |         |           |                  |
| 20              |  |             |          | SB-10-20 |          |         |           | <1               |
| 22              |  |             |          |          |          |         |           |                  |
| 24              |  |             |          |          |          |         |           |                  |
| 26              |  |             |          | SB-10-25 |          |         |           | <1               |
| 28              |  |             |          |          |          |         |           |                  |
| 30              |  | 30.00       |          | SB-10-30 |          |         |           | <1               |
| 32              | SP/CL-SAND/CLAY, very fine cemented sand, lean clay, poorly graded, reddish brown, dry |             |          |          |          |         |           |                  |
| 34              |  |             |          |          |          |         |           |                  |

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NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 088210-34-WI.GPJ GHD\_Corp 4/9/18



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 2 of 2

PROJECT NAME: FLAMENCO FED NO. 1  
PROJECT NUMBER: 088210-34  
CLIENT: EOG RESOURCES  
LOCATION: LEA COUNTY, NEW MEXICO

HOLE DESIGNATION: SB-10  
DATE COMPLETED: 8 August 2018  
DRILLING METHOD: AI ROTARY  
FIELD PERSONNEL: M. GANT

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS  | DEPTH<br>ft | BOREHOLE | SAMPLE   |          |         |           |                     |
|-----------------|--|-------------|----------|----------|----------|---------|-----------|---------------------|
|                 |  |             |          | NUMBER   | INTERVAL | REC (%) | 'N' VALUE | Chloride<br>(mg/kg) |
| 36              | SP-SAND, fine to medium grained, cemented,<br>poorly graded, gray/brown, dry | 35.00       | CUTTINGS | SB-10-35 |          |         |           | <1                  |
| 38              |  |             |          |          |          |         |           |                     |
| 40              |  |             |          | SB-10-40 |          |         |           | <1                  |
| 42              |  |             |          |          |          |         |           |                     |
| 44              | SM-SILTY SAND, very fine grained, well graded,<br>reddish brown, dry         | 45.00       |          | SB-10-45 |          |         |           | <1                  |
| 46              |  |             |          |          |          |         |           |                     |
| 48              |  |             |          |          |          |         |           |                     |
| 50              |  |             |          | SB-10-50 |          |         |           | <1                  |
| 52              | CL-SILTY CLAY, very fine grained, well graded,<br>brown                      | 55.00       |          | SB-10-55 |          |         |           | 892                 |
| 54              |  |             |          |          |          |         |           |                     |
| 56              |  |             |          |          |          |         |           |                     |
| 58              |  |             |          |          |          |         |           |                     |
| 60              | - light brown at 60.0ft BGS  |             |          | SB-10-60 |          |         |           | <1                  |
| 62              |  |             |          |          |          |         |           |                     |
| 64              |  |             |          |          |          |         |           |                     |
| 66              | END OF BOREHOLE @ 65.0ft BGS   | 65.00       |          | SB-10-65 |          |         |           | <1                  |
| 68              |  |             |          |          |          |         |           |                     |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 088210-34-WI.GPJ GHD\_Corp 4/9/18



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 2

PROJECT NAME: FLAMENCO FED NO. 1

HOLE DESIGNATION: SB-11

PROJECT NUMBER: 088210-34

DATE COMPLETED: 8 August 2018

CLIENT: EOG RESOURCES

DRILLING METHOD: AIR ROTARY

LOCATION: LEA COUNTY, NEW MEXICO

FIELD PERSONNEL: M. GANT

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS  | DEPTH<br>ft | BOREHOLE | SAMPLE   |          |         |           |                     |
|-----------------|--|-------------|----------|----------|----------|---------|-----------|---------------------|
|                 |  |             |          | NUMBER   | INTERVAL | REC (%) | 'N' VALUE | Chloride<br>(mg/kg) |
| 2               | SM-SILTY SAND, trace 1-3mm pebbles), very fine grained, reddish brown, dry             |             |          |          |          |         |           |                     |
| 4               |  |             |          |          |          |         |           |                     |
| 6               |  |             |          |          |          |         |           |                     |
| 8               |  |             |          |          |          |         |           |                     |
| 10              |  |             |          |          |          |         |           |                     |
| 12              |  |             |          |          |          |         |           |                     |
| 14              |  |             |          |          |          |         |           |                     |
| 16              |  |             |          |          |          |         |           |                     |
| 18              |  |             |          |          |          |         |           |                     |
| 20              | - 1-5mm pebbles, reddish yellow/brown at 20.0ft BGS                                    |             |          | SB-11-20 |          |         |           | <1                  |
| 22              |  |             |          |          |          |         |           |                     |
| 24              |  |             |          |          |          |         |           |                     |
| 26              |  |             |          |          |          |         |           |                     |
| 28              |  |             |          |          |          |         |           |                     |
| 30              | ML-CLAYEY SILT, with sand, trace pebbles, very fine grained, dark brown, with red, dry | 30.00       |          | SB-11-30 |          |         |           | <1                  |
| 32              |  |             |          |          |          |         |           |                     |
| 34              |  |             |          |          |          |         |           |                     |

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NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 088210-34-WI.GPJ GHD\_Corp 4/9/18





# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 2 of 2

PROJECT NAME: FLAMENCO FED NO. 1

HOLE DESIGNATION: SB-11

PROJECT NUMBER: 088210-34

DATE COMPLETED: 8 August 2018

CLIENT: EOG RESOURCES

DRILLING METHOD: AIR ROTARY

LOCATION: LEA COUNTY, NEW MEXICO

FIELD PERSONNEL: M. GANT

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS  | DEPTH<br>ft | BOREHOLE | SAMPLE   |          |         |           |                     |
|-----------------|--|-------------|----------|----------|----------|---------|-----------|---------------------|
|                 |  |             |          | NUMBER   | INTERVAL | REC (%) | 'N' VALUE | Chloride<br>(mg/kg) |
| 36              |  |             | CUTTINGS |          |          |         |           |                     |
| 38              |  |             |          |          |          |         |           |                     |
| 40              | SM-SILTY SAND, with clay, some 1-4mm pebbles, very fine grained, light reddish brown, dry        | 40.00       |          | SB-11-40 |          |         |           | <1                  |
| 42              |  |             |          |          |          |         |           |                     |
| 44              |  |             |          |          |          |         |           |                     |
| 46              |  |             |          |          |          |         |           |                     |
| 48              |  |             |          |          |          |         |           |                     |
| 50              | CL-SILTY CLAY, with fine sand, very fine grained, light brown, with reddish tint, slightly moist | 50.00       |          | SB-11-50 |          |         |           | <1                  |
| 52              |  |             |          |          |          |         |           |                     |
| 54              |  |             |          |          |          |         |           |                     |
| 56              |  |             |          |          |          |         |           |                     |
| 58              |  |             |          |          |          |         |           |                     |
| 60              | - trace fine sand and cohesive clay, fine grained, reddish brown at 60.0ft BGS                   |             |          | SB-11-60 |          |         |           | <1                  |
| 62              |  |             |          |          |          |         |           |                     |
| 64              |  |             |          |          |          |         |           |                     |
| 66              | END OF BOREHOLE @ 65.0ft BGS   | 65.00       |          | SB-11-65 |          |         |           | <6                  |
| 68              |  |             |          |          |          |         |           |                     |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 088210-34-WI.GPJ GHD\_Corp 4/9/18



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 2

PROJECT NAME: FLAMENCO FED NO. 1

HOLE DESIGNATION: SB-6

PROJECT NUMBER: 088210-34

DATE COMPLETED: 9 August 2018

CLIENT: EOG RESOURCES

DRILLING METHOD: AIR ROTARY

LOCATION: LEA COUNTY, NEW MEXICO

FIELD PERSONNEL: M. GANT

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS  | DEPTH<br>ft | BOREHOLE  | SAMPLE  |          |         |           |                  |
|-----------------|--|-------------|---|---------|----------|---------|-----------|------------------|
|                 |  |             |   | NUMBER  | INTERVAL | REC (%) | 'N' VALUE | Chloride (mg/kg) |
| 2               | SM-SILTY SAND, with silt, trace gravel, loose, very fine grained, plastic, well graded, reddish yellow, dry                |             |   |         |          |         |           |                  |
| 4               |  |             |   |         |          |         |           |                  |
| 6               |  |             |   |         |          |         |           |                  |
| 8               |  |             |   |         |          |         |           |                  |
| 10              |  |             |   |         |          |         |           |                  |
| 12              |  |             |   |         |          |         |           |                  |
| 14              |  |             |   |         |          |         |           |                  |
| 16              |  |             |   |         |          |         |           |                  |
| 18              |  |             |   |         |          |         |           |                  |
| 20              | - poorly graded, increase in yellow at 20.0ft BGS  |             |   | SB-6-20 |          |         |           | <1               |
| 22              |  |             |   |         |          |         |           |                  |
| 24              |  |             |   |         |          |         |           |                  |
| 26              |  |             |   |         |          |         |           |                  |
| 28              |  |             |   |         |          |         |           |                  |
| 30              | CL/ML-CLAYEY SILT, with 2-14mm gravel, with sand, very fine grained, medium plasticity, poorly graded, tannish yellow, dry | 30.00       | BACKFILLED WITH BENTONITE CHIPS AND SOIL CUTTINGS | SB-6-30 |          |         |           | <1               |
| 32              |  |             |   |         |          |         |           |                  |
| 34              |  |             |   |         |          |         |           |                  |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 088210-34-WI.GPJ GHD\_Corp 4/9/18



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 2 of 2

PROJECT NAME: FLAMENCO FED NO. 1

HOLE DESIGNATION: SB-6

PROJECT NUMBER: 088210-34

DATE COMPLETED: 9 August 2018

CLIENT: EOG RESOURCES

DRILLING METHOD: AIR ROTARY

LOCATION: LEA COUNTY, NEW MEXICO

FIELD PERSONNEL: M. GANT

| DEPTH<br>ft BGS | STRATIGRAPHIC DESCRIPTION & REMARKS   | DEPTH<br>ft | BOREHOLE | SAMPLE  |          |         |           |                     |
|-----------------|---|-------------|----------|---------|----------|---------|-----------|---------------------|
|                 |   |             |          | NUMBER  | INTERVAL | REC (%) | 'N' VALUE | Chloride<br>(mg/kg) |
| 36              |   |             |          |         |          |         |           |                     |
| 38              |   |             |          |         |          |         |           |                     |
| 40              | - increase in sand and gravel content at 40.0ft BGS   |             |          | SB-6-40 |          |         |           | <1                  |
| 42              |   |             |          |         |          |         |           |                     |
| 44              |   |             |          |         |          |         |           |                     |
| 46              |   |             |          |         |          |         |           |                     |
| 48              |   |             |          |         |          |         |           |                     |
| 50              | ML-SANDY SILT, with 1-4mm gravel, very fine grained, medium to low plasticity, well graded, reddish yellow/brown, dry | 50.00       |          | SB-6-50 |          |         |           | <1                  |
| 52              |   |             |          |         |          |         |           |                     |
| 54              |   |             |          |         |          |         |           |                     |
| 56              |   |             |          |         |          |         |           |                     |
| 58              |   |             |          |         |          |         |           |                     |
| 60              | END OF BOREHOLE @ 60.0ft BGS  | 60.00       |          | SB-6-60 |          |         |           | <1                  |
| 62              |   |             |          |         |          |         |           |                     |
| 64              |   |             |          |         |          |         |           |                     |
| 66              |   |             |          |         |          |         |           |                     |
| 68              |   |             |          |         |          |         |           |                     |

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 088210-34-WI.GPJ GHD\_Corp 4/9/18

## Appendix C

### NMSOE Well Permits and BLM Sundry



**STATE OF NEW MEXICO**  
**OFFICE OF THE STATE ENGINEER**  
District 2 Office, Roswell, NM

**Tom Blaine, P.E.**  
State Engineer

**DISTRICT II**  
1900 West Second St.  
Roswell, New Mexico 88201  
Phone: (575) 622-6521  
Fax: (575) 623-8559

Trn Nbr : 612679  
File Nbr: C-4144

August 28, 2017

Christine Mathews  
GHD Services Inc.  
6121 Indian School RD NE  
Albuquerque NM 87110

Zane Kurts  
EOG Resources  
5509 Champion Drive  
Midland TX 79706

**GREETINGS:**

Enclosed is your copy of the above numbered permit that has been approved subject to the conditions set forth on the approval page. In accordance with the conditions of approval, the well can only be tested for 10 cumulative days, and the well is to be plugged on or before 08/28/2018, unless a permit to use the water is acquired from this office.

A well Record & Log (OSE Form wr-20) shall be filed in this office within thirty (30) days after completion of drilling, but no later than 08/28/2018.

Appropriate forms can be downloaded from the OSE website [www.ose.state.nm.us](http://www.ose.state.nm.us) or will be mailed upon request.

Sincerely,

A handwritten signature in black ink, appearing to read "Alvaro Alvarado".

Alvaro Alvarado  
Water Resources Professional

ENCLOSURE  
cc Santa Fe



File No.

## NEW MEXICO OFFICE OF THE STATE ENGINEER



## WR-07 APPLICATION FOR PERMIT TO DRILL

## A WELL WITH NO WATER RIGHT

(check applicable box):

For fees, see State Engineer website: <http://www.ose.state.nm.us/>

|   |  |  |
|---|--|--|
| Purpose:  | <input type="checkbox"/> Pollution Control And/Or Recovery         | <input type="checkbox"/> Ground Source Heat Pump |
| <input type="checkbox"/> Exploratory Well (Pump test) | <input type="checkbox"/> Construction Site/Public Works Dewatering | <input type="checkbox"/> Other(Describe):        |
| <input checked="" type="checkbox"/> Monitoring Well   | <input type="checkbox"/> Mine Dewatering                           |  |

A separate permit will be required to apply water to beneficial use regardless if use is consumptive or nonconsumptive.

|  |                         |
|--|-------------------------|
| <input checked="" type="checkbox"/> Temporary Request - Requested Start Date: 8/28/2017                    | Requested End Date: TBD |
| Plugging Plan of Operations Submitted? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                         |

## 1. APPLICANT(S)

|  |   |
|--|---|
| Name:<br>GHD Services Inc. on behalf of <b>EOG Resources</b>                                   | Name:<br>EOG Resources  |
| Contact or Agent: <input checked="" type="checkbox"/> check here if Agent<br>Christine Mathews | Contact or Agent: <input type="checkbox"/> check here if Agent<br>Zane Kurtz                            |
| Mailing Address:<br>6121 Indian School Rd NE   | Mailing Address:<br>5509 Champion Drive   |
| City:<br>Albuquerque   | City:<br>Midland  |
| State:<br>New Mexico   | State:<br>Texas   |
| Zip Code:<br>87110   | Zip Code:<br>79706  |
| Phone: 505-269-0088 <input type="checkbox"/> Home <input checked="" type="checkbox"/> Cell     | Phone: (432) 425-2023 <input checked="" type="checkbox"/> Home <input checked="" type="checkbox"/> Cell |
| Phone (Work):  | Phone (Work):   |
| E-mail (optional):<br>chrstine.mathews@ghd.com   | E-mail (optional):<br>Zane_Kurtz@eogresources.com   |

FOR OSE INTERNAL USE

Application for Permit, Form WR-07, Rev 11/17/16

|   |                                    |                             |
|---|------------------------------------|-----------------------------|
| File No.: <b>C-4144</b>   | Trn. No.: <b>612677</b>            | Receipt No.: <b>2-38532</b> |
| Trans Description (optional): <b>C-4144-Pool thru C-4144-Pool</b> |                                    |                             |
| Sub-Basin: <b>C</b>   | PCW/LOG Due Date: <b>8-28-2018</b> |                             |

Page 1 of 3

## 2. WELL(S) Describe the well(s) applicable to this application.

**Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84).**  
**District II (Roswell) and District VII (Cimarron) customers, provide a PLSS location in addition to above.**

☐ NM State Plane (NAD83) (Feet)
 ☐ UTM (NAD83) (Meters)
 ☒ Lat/Long (WGS84) (to the nearest 1/10<sup>th</sup> of second)

☐ NM West Zone
 ☐ Zone 12N

☐ NM East Zone
 ☐ Zone 13N

| Well Number (if known): | X or Easting or Longitude: | Y or Northing or Latitude: | Provide if known:<br>-Public Land Survey System (PLSS) (Quarters or Halves, Section, Township, Range) OR<br>- Hydrographic Survey Map & Tract; OR<br>- Lot, Block & Subdivision; OR<br>- Land Grant Name |
|-------------------------|----------------------------|----------------------------|--|
| MW-1                    | -103 43' 21.51"W           | 32 24' 09.12"N             |  |
| MW-2                    | -103 43' 21.21"            | 32 24' 07.85"              |  |
| MW-3                    | -103 43' 17.16"            | 32 24' 11.34"              |  |
| MW-4                    | -103 43' 18.74"            | 32 24' 10.25"              |  |
|                         |                            |                            |  |

**NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)**  
 Additional well descriptions are attached: ☐ Yes ☒ No If yes, how many \_\_\_\_\_

Other description relating well to common landmarks, streets, or other:  
 Just east of Campbell Rd. General site coordinates are 32.402374, -103.722648

Well is on land owned by: Bureau of Land Management - *Sundry included*

**Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. Attached?** ☐ Yes ☒ No  
 If yes, how many \_\_\_\_\_

|                                      |   |
|--------------------------------------|---|
| Approximate depth of well (feet): 35 | Outside diameter of well casing (inches): 2 |
| Driller Name: EnviroDrill Inc        | Driller License Number: WD 1186             |

## 3. ADDITIONAL STATEMENTS OR EXPLANATIONS

Well construction is 2-in. dia. PVC casing with 15-20 ft. length 0.010-in. slotted screen. A 10/20 grade silica sand pack will be placed in annulus around screen to 2 ft. above top of screen. A 2 ft. thick hydrated bentonite plug will be placed on top of the sand pack, and followed by cement/bentonite grout to surface.

Monitoring wells are being installed at the request of NMOCD to assess groundwater quality.

The duration of planned monitoring will continue until NMOCD grants remedial Site closure.

FOR OSE INTERNAL USE

Application for Permit, Form WR-07

File No.: C-4144

Trn No.: 612679

Page 2 of 3



**4. SPECIFIC REQUIREMENTS:** The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

|   |  |  |   |
|---|--|--|---|
| <b>Exploratory:</b><br><input type="checkbox"/> Include a description of any proposed pump test, if applicable.   | <b>Pollution Control and/or Recovery:</b><br><input type="checkbox"/> Include a plan for pollution control/recovery, that includes the following:<br><input type="checkbox"/> A description of the need for the pollution control or recovery operation.<br><input type="checkbox"/> The estimated maximum period of time for completion of the operation.<br><input type="checkbox"/> The annual diversion amount.<br><input type="checkbox"/> The annual consumptive use amount.<br><input type="checkbox"/> The maximum amount of water to be diverted and injected for the duration of the operation.<br><input type="checkbox"/> The method and place of discharge.<br><input type="checkbox"/> The method of measurement of water produced and discharged.<br><input type="checkbox"/> The source of water to be injected.<br><input type="checkbox"/> The method of measurement of water injected.<br><input type="checkbox"/> The characteristics of the aquifer.<br><input type="checkbox"/> The method of determining the resulting annual consumptive use of water and depletion from any related stream system.<br><input type="checkbox"/> Proof of any permit required from the New Mexico Environment Department.<br><input type="checkbox"/> An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located. | <b>Construction De-Watering:</b><br><input type="checkbox"/> Include a description of the proposed dewatering operation,<br><input type="checkbox"/> The estimated duration of the operation,<br><input type="checkbox"/> The maximum amount of water to be diverted,<br><input type="checkbox"/> A description of the need for the dewatering operation, and,<br><input type="checkbox"/> A description of how the diverted water will be disposed of.  | <b>Mine De-Watering:</b><br><input type="checkbox"/> Include a plan for pollution control/recovery, that includes the following:<br><input type="checkbox"/> A description of the need for mine dewatering.<br><input type="checkbox"/> The estimated maximum period of time for completion of the operation.<br><input type="checkbox"/> The source(s) of the water to be diverted.<br><input type="checkbox"/> The geohydrologic characteristics of the aquifer(s).<br><input type="checkbox"/> The maximum amount of water to be diverted per annum.<br><input type="checkbox"/> The maximum amount of water to be diverted for the duration of the operation.<br><input type="checkbox"/> The quality of the water.<br><input type="checkbox"/> The method of measurement of water diverted.<br><input type="checkbox"/> The recharge of water to the aquifer.<br><input type="checkbox"/> Description of the estimated area of hydrologic effect of the project.<br><input type="checkbox"/> The method and place of discharge.<br><input type="checkbox"/> An estimation of the effects on surface water rights and underground water rights from the mine dewatering project.<br><input type="checkbox"/> A description of the methods employed to estimate effects on surface water rights and underground water rights.<br><input type="checkbox"/> Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect. |
| <b>Monitoring:</b><br><input checked="" type="checkbox"/> Include the reason for the monitoring well, and,<br><input checked="" type="checkbox"/> The duration of the planned monitoring. |  | <b>Ground Source Heat Pump:</b><br><input type="checkbox"/> Include a description of the geothermal heat exchange project,<br><input type="checkbox"/> The number of boreholes for the completed project and required depths.<br><input type="checkbox"/> The time frame for constructing the geothermal heat exchange project, and,<br><input type="checkbox"/> The duration of the project.<br><input type="checkbox"/> Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request. |   |

#### ACKNOWLEDGEMENT

I, We (name of applicant(s)), Christine Mathews of GHD Services, Inc. on behalf of EOG Resources

Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Applicant Signature

Applicant Signature

#### ACTION OF THE STATE ENGINEER

This application is:

☒ approved

☐ partially approved

☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this 28 day of August 20 17, for the State Engineer,

Tom Blane, P.E.

State Engineer

By: DR. OHL  
Signature

Print

Title: Water Resources Professional  
Print



FOR OSE INTERNAL USE

Application for Permit, Form WR-07

File No.: C-4144

Trn No.: 612679

Page 3 of 3

NEW MEXICO STATE ENGINEER OFFICE  
PERMIT TO EXPLORE

SPECIFIC CONDITIONS OF APPROVAL

- 17-1A Depth of the well shall not exceed the thickness of the valley fill.
- 17-4 No water shall be appropriated and beneficially used under this permit.
- 17-7 The Permittee shall utilize the highest and best technology available to ensure conservation of water to the maximum extent practical.
- 17-B The well shall be drilled by a driller licensed in the State of New Mexico in accordance with 72-12-12 NMSA 1978. A licensed driller shall not be required for the construction of a well driven without the use of a drill rig, provided that the casing shall not exceed two and three-eighths (2 3/8) inches outside diameter.
- 17-C The well driller must file the well record with the State Engineer and the applicant within 30 days after the well is drilled or driven. It is the well owner's responsibility to ensure that the well driller files the well record.  
The well driller may obtain the well record form from any District Office or the Office of the State Engineer website.
- 17-C2 No water shall be diverted from this well except for testing purposes which shall not exceed ten (10) cumulative days, and well shall be plugged or capped on or before , unless a permit to use water from this well is acquired from the Office of the State Engineer.



NEW MEXICO STATE ENGINEER OFFICE  
PERMIT TO EXPLORE

SPECIFIC CONDITIONS OF APPROVAL (Continued)

- 17-P The well shall be constructed, maintained, and operated to prevent inter-aquifer exchange of water and to prevent loss of hydraulic head between hydrogeologic zones.
- 17-Q The State Engineer retains jurisdiction over this permit.
- LOG The Point of Diversion C 04144 POD1 must be completed and the Well Log filed on or before 08/28/2018.
- LOG The Point of Diversion C 04144 POD2 must be completed and the Well Log filed on or before 08/28/2018.
- LOG The Point of Diversion C 04144 POD3 must be completed and the Well Log filed on or before 08/28/2018.
- LOG The Point of Diversion C 04144 POD4 must be completed and the Well Log filed on or before 08/28/2018.

ACTION OF STATE ENGINEER

|                                     |                          |
|-------------------------------------|--------------------------|
| Notice of Intention Rcvd:           | Date Rcvd. Corrected:    |
| Formal Application Rcvd: 08/18/2017 | Pub. of Notice Ordered:  |
| Date Returned - Correction:         | Affidavit of Pub. Filed: |

This application is approved provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare of the state; and further subject to the specific conditions listed previously.

Witness my hand and seal this 28 day of Aug A.D., 2017

Tom Blaine, P.E., State Engineer

By:   
Alvaro Alvarado

Trn Desc: C 04144-POD1 THRU POD4

File Number: C 04144

Trn Number: 612679



**OFFICE OF THE STATE ENGINEER/INTERSTATE STREAM COMMISSION – ROSWELL OFFICE**

OFFICIAL RECEIPT NUMBER: 2 - 38532 DATE: 8-18-17 FILE NO.: \_\_\_\_\_  
 TOTAL: \$20.00 RECEIVED: Twenty \$00 DOLLARS CHECK NO.: 1131 CASH: \_\_\_\_\_  
 PAYOR: CHRISTINE MATTHEWS ADDRESS: 3810 Cottonwood Rd NE CITY: Albq STATE: NM  
 ZIP: 87111 RECEIVED BY: DD

INSTRUCTIONS: Indicate the number of actions to the left of the appropriate type of filing. Complete the receipt information. **Original** to payor; **pink** copy to Program Support/ASD; and **yellow** copy for Water Rights. If a mistake is made, void the original and all copies and submit to Program Support/ASD as part of your daily deposit.

**A. Ground Water Filing Fees**

- |                  |   |           |
|------------------|---|-----------|
| ___ 1.           | Change of Ownership of Water Right  | \$ 2.00   |
| ___ 2.           | Application to Appropriate or Supplement Domestic 72-12-1 Well  | \$ 125.00 |
| ___ 3.           | Application to Repair or Deepen 72-12-1 Well  | \$ 75.00  |
| ___ 4.           | Application for Replacement 72-12-1 Well  | \$ 75.00  |
| ___ 5.           | Application to Change Purpose of Use 72-12-1 Well   | \$ 75.00  |
| ___ 6.           | Application for Stock Well/Temp. Use  | \$ 5.00   |
| <hr/>            |   |           |
| ___ 7.           | Application to Appropriate Irrigation, Municipal, or Commercial Use   | \$ 25.00  |
| ___ 8.           | Declaration of Water Right  | \$ 1.00   |
| ___ 9.           | Application for Supplemental Non 72-12-1 Well   | \$ 25.00  |
| ___ 10.          | Application to Change Place or Purpose of Use Non 72-12-1 Well  | \$ 25.00  |
| ___ 11.          | Application to Change Point of Diversion and Place and/or Purpose of Use from Surface Water to Ground Water | \$ 50.00  |
| ___ 12.          | Application to Change Point of Diversion and Place and/or Purpose of Use from Ground Water to Ground Water  | \$ 50.00  |
| ___ 13.          | Application to Change Point of Diversion of Non 72-12-1 Well  | \$ 25.00  |
| ___ 14.          | Application to Repair or Deepen Non 72-12-1 Well  | \$ 5.00   |
| <hr/>            |   |           |
| <u>4</u> ___ 15. | Application for Test, Expl. Observ. Well  | \$ 5.00   |
| ___ 16.          | Application for Extension of Time   | \$ 25.00  |
| ___ 17.          | Proof of Application to Beneficial Use  | \$ 25.00  |
| ___ 18.          | Notice of Intent to Appropriate   | \$ 25.00  |

**B. Surface Water Filing Fees**

- |         |  |           |
|---------|--|-----------|
| ___ 1.  | Change of Ownership of a Water Right   | \$ 5.00   |
| ___ 2.  | Declaration of Water Right   | \$ 10.00  |
| ___ 3.  | Amended Declaration  | \$ 25.00  |
| ___ 4.  | Application to Change Point of Diversion and Place and/or Purpose of Use from Surface Water to Surface Water | \$ 200.00 |
| ___ 5.  | Application to Change Point of Diversion and Place and/or Purpose of Use from Ground Water to Surface Water  | \$ 200.00 |
| ___ 6.  | Application to Change Point of Diversion   | \$ 100.00 |
| ___ 7.  | Application to Change Place and/or Purpose of Use  | \$ 100.00 |
| ___ 8.  | Application to Appropriate   | \$ 25.00  |
| ___ 9.  | Notice of Intent to Appropriate  | \$ 25.00  |
| ___ 10. | Application for Extension of Time  | \$ 50.00  |
| ___ 11. | Supplemental Well to a Surface Right   | \$ 100.00 |
| ___ 12. | Return Flow Credit   | \$ 100.00 |
| ___ 13. | Proof of Completion of Works   | \$ 25.00  |
| ___ 14. | Proof of Application of Water to Beneficial Use  | \$ 25.00  |
| ___ 15. | Water Development Plan   | \$ 100.00 |
| ___ 16. | Declaration of Livestock Water Impoundment   | \$ 10.00  |
| ___ 17. | Application for Livestock Water Impoundment  | \$ 10.00  |

**C. Well Driller Fees**

- |        |   |          |
|--------|---|----------|
| ___ 1. | Application for Well Driller's License            | \$ 50.00 |
| ___ 2. | Application for Renewal of Well Driller's License | \$ 50.00 |
| ___ 3. | Application to Amend Well Driller's License       | \$ 50.00 |

**D. Reproduction of Documents**

- |             |          |
|-------------|----------|
| ___ @ 0.25¢ | \$ _____ |
| ___ Map(s)  | \$ _____ |

**E. Certification****F. Other****G. Comments:**

Fed-ex  
Re: GHD / EDG Resources

**All fees are non-refundable.**



**STATE OF NEW MEXICO**  
**OFFICE OF THE STATE ENGINEER**  
District 2 Office, Roswell, NM

**Tom Blaine, P.E.**  
State Engineer

**DISTRICT II**  
1900 West Second St.  
Roswell, New Mexico 88201  
Phone: (575) 622-6521  
Fax: (575) 623-8559

Trn Nbr : 612679  
File Nbr: C-4144

August 28, 2017

Christine Mathews  
GHD Services Inc.  
6121 Indian School RD NE  
Albuquerque NM 87110

Zane Kurts  
EOG Resources  
5509 Champion Drive  
Midland TX 79706

**GREETINGS:**

Enclosed is your copy of the above numbered permit that has been approved subject to the conditions set forth on the approval page. In accordance with the conditions of approval, the well can only be tested for 10 cumulative days, and the well is to be plugged on or before 08/28/2018, unless a permit to use the water is acquired from this office.

A well Record & Log (OSE Form wr-20) shall be filed in this office within thirty (30) days after completion of drilling, but no later than 08/28/2018.

Appropriate forms can be downloaded from the OSE website [www.ose.state.nm.us](http://www.ose.state.nm.us) or will be mailed upon request.

Sincerely,

A handwritten signature in black ink, appearing to read "Alvaro Alvarado".

Alvaro Alvarado  
Water Resources Professional

ENCLOSURE  
cc Santa Fe



File No.

## NEW MEXICO OFFICE OF THE STATE ENGINEER



## WR-07 APPLICATION FOR PERMIT TO DRILL

## A WELL WITH NO WATER RIGHT

(check applicable box):

For fees, see State Engineer website: <http://www.ose.state.nm.us/>

|   |  |  |
|---|--|--|
| Purpose:  | <input type="checkbox"/> Pollution Control And/Or Recovery         | <input type="checkbox"/> Ground Source Heat Pump |
| <input type="checkbox"/> Exploratory Well (Pump test) | <input type="checkbox"/> Construction Site/Public Works Dewatering | <input type="checkbox"/> Other(Describe):        |
| <input checked="" type="checkbox"/> Monitoring Well   | <input type="checkbox"/> Mine Dewatering                           |  |

A separate permit will be required to apply water to beneficial use regardless if use is consumptive or nonconsumptive.

|  |                         |
|--|-------------------------|
| <input checked="" type="checkbox"/> Temporary Request - Requested Start Date: 8/28/2017                    | Requested End Date: TBD |
| Plugging Plan of Operations Submitted? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                         |

2017 AUG 16 PM 1:03

STATE OF NEW MEXICO  
OFFICE OF THE STATE ENGINEER  
ROSEN, J. MEXICO

## 1. APPLICANT(S)

|   |   |
|---|---|
| Name:<br>GHD Services Inc. on behalf of <u>EOG Resources</u>  | Name:<br>EOG Resources  |
| Contact or Agent: <u>Christine Mathews</u><br>check here if Agent <input checked="" type="checkbox"/> | Contact or Agent: <u>Zane Kurtz</u><br>check here if Agent <input type="checkbox"/> |
| Mailing Address:<br>6121 Indian School Rd NE  | Mailing Address:<br>5509 Champion Drive   |
| City:<br>Albuquerque  | City:<br>Midland  |
| State:<br>New Mexico  | State:<br>Texas   |
| Zip Code:<br>87110  | Zip Code:<br>79706  |
| Phone: 505-269-0088<br>Phone (Work):  | Phone: (432) 425-2023<br>Phone (Work):  |
| <input type="checkbox"/> Home <input checked="" type="checkbox"/> Cell                                | <input checked="" type="checkbox"/> Home <input checked="" type="checkbox"/> Cell   |
| E-mail (optional):<br>chrstine.mathews@ghd.com  | E-mail (optional):<br>Zane_Kurtz@eogresources.com                                   |

FOR OSE INTERNAL USE

Application for Permit, Form WR-07, Rev 11/17/16

|   |                                    |                             |
|---|------------------------------------|-----------------------------|
| File No.: <u>C-4144</u>   | Trn. No.: <u>612677</u>            | Receipt No.: <u>2-38532</u> |
| Trans Description (optional): <u>C-4144-Pool thru C-4144-Pool</u> |                                    |                             |
| Sub-Basin: <u>C</u>   | PCW/LOG Due Date: <u>8-28-2018</u> |                             |

Page 1 of 3

## 2. WELL(S) Describe the well(s) applicable to this application.

**Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84).**  
**District II (Roswell) and District VII (Cimarron) customers, provide a PLSS location in addition to above.**

☐ NM State Plane (NAD83) (Feet)
 ☐ UTM (NAD83) (Meters)
 ☒ Lat/Long (WGS84) (to the nearest 1/10<sup>th</sup> of second)

☐ NM West Zone
 ☐ Zone 12N

☐ NM East Zone
 ☐ Zone 13N

| Well Number (if known): | X or Easting or Longitude: | Y or Northing or Latitude: | Provide if known:<br>-Public Land Survey System (PLSS)<br>(Quarters or Halves, Section, Township, Range) OR<br>- Hydrographic Survey Map & Tract; OR<br>- Lot, Block & Subdivision; OR<br>- Land Grant Name |
|-------------------------|----------------------------|----------------------------|---|
| MW-1                    | -103 43' 21.51"W           | 32 24' 09.12"N             |   |
| MW-2                    | -103 43' 21.21"            | 32 24' 07.85"              |   |
| MW-3                    | -103 43' 17.16"            | 32 24' 11.34"              |   |
| MW-4                    | -103 43' 18.74"            | 32 24' 10.25"              |   |
|                         |                            |                            |   |

**NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)**  
 Additional well descriptions are attached: ☐ Yes ☒ No If yes, how many \_\_\_\_\_

Other description relating well to common landmarks, streets, or other:  
 Just east of Campbell Rd. General site coordinates are 32.402374, -103.722648

Well is on land owned by: Bureau of Land Management - *Sundry included*

**Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. Attached?** ☐ Yes ☒ No  
 If yes, how many \_\_\_\_\_

|                                      |   |
|--------------------------------------|---|
| Approximate depth of well (feet): 35 | Outside diameter of well casing (inches): 2 |
| Driller Name: EnviroDrill Inc        | Driller License Number: WD 1186             |

## 3. ADDITIONAL STATEMENTS OR EXPLANATIONS

Well construction is 2-in. dia. PVC casing with 15-20 ft. length 0.010-in. slotted screen. A 10/20 grade silica sand pack will be placed in annulus around screen to 2 ft. above top of screen. A 2 ft. thick hydrated bentonite plug will be placed on top of the sand pack, and followed by cement/bentonite grout to surface.

Monitoring wells are being installed at the request of NMOCD to assess groundwater quality.

The duration of planned monitoring will continue until NMOCD grants remedial Site closure.

FOR OSE INTERNAL USE

Application for Permit, Form WR-07

File No.: C-4144

Trn No.: 612679

Page 2 of 3



**4. SPECIFIC REQUIREMENTS:** The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

|   |  |  |   |
|---|--|--|---|
| <b>Exploratory:</b><br><input type="checkbox"/> Include a description of any proposed pump test, if applicable.   | <b>Pollution Control and/or Recovery:</b><br><input type="checkbox"/> Include a plan for pollution control/recovery, that includes the following:<br><input type="checkbox"/> A description of the need for the pollution control or recovery operation.<br><input type="checkbox"/> The estimated maximum period of time for completion of the operation.<br><input type="checkbox"/> The annual diversion amount.<br><input type="checkbox"/> The annual consumptive use amount.<br><input type="checkbox"/> The maximum amount of water to be diverted and injected for the duration of the operation.<br><input type="checkbox"/> The method and place of discharge.<br><input type="checkbox"/> The method of measurement of water produced and discharged.<br><input type="checkbox"/> The source of water to be injected.<br><input type="checkbox"/> The method of measurement of water injected.<br><input type="checkbox"/> The characteristics of the aquifer.<br><input type="checkbox"/> The method of determining the resulting annual consumptive use of water and depletion from any related stream system.<br><input type="checkbox"/> Proof of any permit required from the New Mexico Environment Department.<br><input type="checkbox"/> An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located. | <b>Construction De-Watering:</b><br><input type="checkbox"/> Include a description of the proposed dewatering operation,<br><input type="checkbox"/> The estimated duration of the operation,<br><input type="checkbox"/> The maximum amount of water to be diverted,<br><input type="checkbox"/> A description of the need for the dewatering operation, and,<br><input type="checkbox"/> A description of how the diverted water will be disposed of.  | <b>Mine De-Watering:</b><br><input type="checkbox"/> Include a plan for pollution control/recovery, that includes the following:<br><input type="checkbox"/> A description of the need for mine dewatering.<br><input type="checkbox"/> The estimated maximum period of time for completion of the operation.<br><input type="checkbox"/> The source(s) of the water to be diverted.<br><input type="checkbox"/> The geohydrologic characteristics of the aquifer(s).<br><input type="checkbox"/> The maximum amount of water to be diverted per annum.<br><input type="checkbox"/> The maximum amount of water to be diverted for the duration of the operation.<br><input type="checkbox"/> The quality of the water.<br><input type="checkbox"/> The method of measurement of water diverted.<br><input type="checkbox"/> The recharge of water to the aquifer.<br><input type="checkbox"/> Description of the estimated area of hydrologic effect of the project.<br><input type="checkbox"/> The method and place of discharge.<br><input type="checkbox"/> An estimation of the effects on surface water rights and underground water rights from the mine dewatering project.<br><input type="checkbox"/> A description of the methods employed to estimate effects on surface water rights and underground water rights.<br><input type="checkbox"/> Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect. |
| <b>Monitoring:</b><br><input checked="" type="checkbox"/> Include the reason for the monitoring well, and,<br><input checked="" type="checkbox"/> The duration of the planned monitoring. |  | <b>Ground Source Heat Pump:</b><br><input type="checkbox"/> Include a description of the geothermal heat exchange project,<br><input type="checkbox"/> The number of boreholes for the completed project and required depths.<br><input type="checkbox"/> The time frame for constructing the geothermal heat exchange project, and,<br><input type="checkbox"/> The duration of the project.<br><input type="checkbox"/> Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request. |   |

#### ACKNOWLEDGEMENT

I, We (name of applicant(s)), Christine Mathews of GHD Services, Inc. on behalf of EOG Resources

Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Applicant Signature

Applicant Signature

#### ACTION OF THE STATE ENGINEER

This application is:

☒ approved

☐ partially approved

☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this 28 day of August 20 17, for the State Engineer,

Tom Blane, P.E.

State Engineer

By: DR. OHL  
Signature

ALVARO ACUARO  
Print

Title: WATER RESOURCES PROFESSIONAL  
Print



FOR OSE INTERNAL USE

File No.:

C-4144

Application for Permit, Form WR-07

Trn No.:

612679

Page 3 of 3



**NEW MEXICO STATE ENGINEER OFFICE  
PERMIT TO EXPLORE**

**SPECIFIC CONDITIONS OF APPROVAL**

- 17-1A Depth of the well shall not exceed the thickness of the valley fill.
- 17-4 No water shall be appropriated and beneficially used under this permit.
- 17-7 The Permittee shall utilize the highest and best technology available to ensure conservation of water to the maximum extent practical.
- 17-B The well shall be drilled by a driller licensed in the State of New Mexico in accordance with 72-12-12 NMSA 1978. A licensed driller shall not be required for the construction of a well driven without the use of a drill rig, provided that the casing shall not exceed two and three-eighths (2 3/8) inches outside diameter.
- 17-C The well driller must file the well record with the State Engineer and the applicant within 30 days after the well is drilled or driven. It is the well owner's responsibility to ensure that the well driller files the well record.  
The well driller may obtain the well record form from any District Office or the Office of the State Engineer website.
- 17-C2 No water shall be diverted from this well except for testing purposes which shall not exceed ten (10) cumulative days, and well shall be plugged or capped on or before , unless a permit to use water from this well is acquired from the Office of the State Engineer.

NEW MEXICO STATE ENGINEER OFFICE  
PERMIT TO EXPLORE

SPECIFIC CONDITIONS OF APPROVAL (Continued)

- 17-P The well shall be constructed, maintained, and operated to prevent inter-aquifer exchange of water and to prevent loss of hydraulic head between hydrogeologic zones.
- 17-Q The State Engineer retains jurisdiction over this permit.
- LOG The Point of Diversion C 04144 POD1 must be completed and the Well Log filed on or before 08/28/2018.
- LOG The Point of Diversion C 04144 POD2 must be completed and the Well Log filed on or before 08/28/2018.
- LOG The Point of Diversion C 04144 POD3 must be completed and the Well Log filed on or before 08/28/2018.
- LOG The Point of Diversion C 04144 POD4 must be completed and the Well Log filed on or before 08/28/2018.

ACTION OF STATE ENGINEER

|                                     |                          |
|-------------------------------------|--------------------------|
| Notice of Intention Rcvd:           | Date Rcvd. Corrected:    |
| Formal Application Rcvd: 08/18/2017 | Pub. of Notice Ordered:  |
| Date Returned - Correction:         | Affidavit of Pub. Filed: |

This application is approved provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare of the state; and further subject to the specific conditions listed previously.

Witness my hand and seal this 28 day of Aug A.D., 2017

Tom Blaine, P.E., State Engineer

By:   
Alvaro Alvarado

Trn Desc: C 04144-POD1 THRU POD4

File Number: C 04144

Trn Number: 612679



**OFFICE OF THE STATE ENGINEER/INTERSTATE STREAM COMMISSION – ROSWELL OFFICE**

OFFICIAL RECEIPT NUMBER: 2 - 38532 DATE: 8-18-17 FILE NO.: \_\_\_\_\_  
 TOTAL: \$20.00 RECEIVED: Twenty \$00 DOLLARS CHECK NO.: 1131 CASH: \_\_\_\_\_  
 PAYOR: CHRISTINE MATTHEWS ADDRESS: 3810 Cottonwood Rd NE CITY: Albq STATE: NM  
 ZIP: 87111 RECEIVED BY: DD

INSTRUCTIONS: Indicate the number of actions to the left of the appropriate type of filing. Complete the receipt information. **Original** to payor; **pink** copy to Program Support/ASD; and **yellow** copy for Water Rights. If a mistake is made, void the original and all copies and submit to Program Support/ASD as part of your daily deposit.

**A. Ground Water Filing Fees**

- |                  |   |           |
|------------------|---|-----------|
| ___ 1.           | Change of Ownership of Water Right  | \$ 2.00   |
| ___ 2.           | Application to Appropriate or Supplement Domestic 72-12-1 Well  | \$ 125.00 |
| ___ 3.           | Application to Repair or Deepen 72-12-1 Well  | \$ 75.00  |
| ___ 4.           | Application for Replacement 72-12-1 Well  | \$ 75.00  |
| ___ 5.           | Application to Change Purpose of Use 72-12-1 Well   | \$ 75.00  |
| ___ 6.           | Application for Stock Well/Temp. Use  | \$ 5.00   |
| <hr/>            |   |           |
| ___ 7.           | Application to Appropriate Irrigation, Municipal, or Commercial Use   | \$ 25.00  |
| ___ 8.           | Declaration of Water Right  | \$ 1.00   |
| ___ 9.           | Application for Supplemental Non 72-12-1 Well   | \$ 25.00  |
| ___ 10.          | Application to Change Place or Purpose of Use Non 72-12-1 Well  | \$ 25.00  |
| ___ 11.          | Application to Change Point of Diversion and Place and/or Purpose of Use from Surface Water to Ground Water | \$ 50.00  |
| ___ 12.          | Application to Change Point of Diversion and Place and/or Purpose of Use from Ground Water to Ground Water  | \$ 50.00  |
| ___ 13.          | Application to Change Point of Diversion of Non 72-12-1 Well  | \$ 25.00  |
| ___ 14.          | Application to Repair or Deepen Non 72-12-1 Well  | \$ 5.00   |
| <hr/>            |   |           |
| <u>4</u> ___ 15. | Application for Test, Expl. Observ. Well  | \$ 5.00   |
| ___ 16.          | Application for Extension of Time   | \$ 25.00  |
| ___ 17.          | Proof of Application to Beneficial Use  | \$ 25.00  |
| ___ 18.          | Notice of Intent to Appropriate   | \$ 25.00  |

**B. Surface Water Filing Fees**

- |         |  |           |
|---------|--|-----------|
| ___ 1.  | Change of Ownership of a Water Right   | \$ 5.00   |
| ___ 2.  | Declaration of Water Right   | \$ 10.00  |
| ___ 3.  | Amended Declaration  | \$ 25.00  |
| ___ 4.  | Application to Change Point of Diversion and Place and/or Purpose of Use from Surface Water to Surface Water | \$ 200.00 |
| ___ 5.  | Application to Change Point of Diversion and Place and/or Purpose of Use from Ground Water to Surface Water  | \$ 200.00 |
| ___ 6.  | Application to Change Point of Diversion   | \$ 100.00 |
| ___ 7.  | Application to Change Place and/or Purpose of Use  | \$ 100.00 |
| ___ 8.  | Application to Appropriate   | \$ 25.00  |
| ___ 9.  | Notice of Intent to Appropriate  | \$ 25.00  |
| ___ 10. | Application for Extension of Time  | \$ 50.00  |
| ___ 11. | Supplemental Well to a Surface Right   | \$ 100.00 |
| ___ 12. | Return Flow Credit   | \$ 100.00 |
| ___ 13. | Proof of Completion of Works   | \$ 25.00  |
| ___ 14. | Proof of Application of Water to Beneficial Use  | \$ 25.00  |
| ___ 15. | Water Development Plan   | \$ 100.00 |
| ___ 16. | Declaration of Livestock Water Impoundment   | \$ 10.00  |
| ___ 17. | Application for Livestock Water Impoundment  | \$ 10.00  |

**C. Well Driller Fees**

- |        |   |          |
|--------|---|----------|
| ___ 1. | Application for Well Driller's License            | \$ 50.00 |
| ___ 2. | Application for Renewal of Well Driller's License | \$ 50.00 |
| ___ 3. | Application to Amend Well Driller's License       | \$ 50.00 |

**D. Reproduction of Documents**

- |             |          |
|-------------|----------|
| ___ @ 0.25¢ | \$ _____ |
| ___ Map(s)  | \$ _____ |

**E. Certification****F. Other****G. Comments:**

Fed-ex  
Re: GHD / EDG Resources

**All fees are non-refundable.**

Tom Blaine, P.E.  
State Engineer



Roswell Office  
1900 WEST SECOND STREET  
ROSWELL, NM 88201

## STATE OF NEW MEXICO

Trn Nbr: 629437  
File Nbr: C 04144 POD5-11

**OFFICE OF THE STATE ENGINEER**

Jul. 30, 2018

CHRISTINE MATHEWS  
GHD SERVICES INC.  
6121 INDIAN SCHOOL RD NE  
ALBUQUERQUE, NM 87110

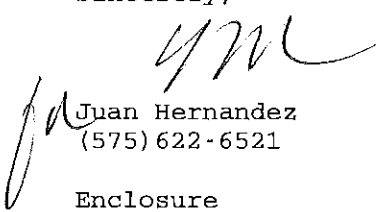
Greetings:

Enclosed is your copy of the above numbered permit that has been approved subject to the conditions set forth on the approval page. In accordance with the conditions of approval, the well can only be tested for 10 cumulative days, and the well is to be plugged on or before 07/31/2019, unless a permit to use the water is acquired from this office.

A Well Record & Log (OSE Form wr-20) shall be filed in this office within twenty (20) days after completion of drilling, but no later than 07/31/2019.

Appropriate forms can be downloaded from the OSE website [www.ose.state.nm.us](http://www.ose.state.nm.us) or will be mailed upon request.

Sincerely,

  
Juan Hernandez  
(575) 622-6521

Enclosure

explore

File No. C-4144



## NEW MEXICO OFFICE OF THE STATE ENGINEER

### WR-07 APPLICATION FOR PERMIT TO DRILL

#### A WELL WITH NO WATER RIGHT

(check applicable box):



For fees, see State Engineer website: <http://www.ose.state.nm.us/>

|   |  |  |
|---|--|--|
| Purpose:  | <input type="checkbox"/> Pollution Control And/Or Recovery         | <input type="checkbox"/> Ground Source Heat Pump |
| <input type="checkbox"/> Exploratory Well (Pump test)   | <input type="checkbox"/> Construction Site/Public Works Dewatering | <input type="checkbox"/> Other(Describe):        |
| <input checked="" type="checkbox"/> Monitoring Well   | <input type="checkbox"/> Mine Dewatering                           |  |
| A separate permit will be required to apply water to beneficial use regardless if use is consumptive or nonconsumptive. |  |  |
| <input checked="" type="checkbox"/> Temporary Request - Requested Start Date: 08/06/2018                                |  | Requested End Date: TBD                          |
| Plugging Plan of Operations Submitted? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No              |  |  |

#### 1. APPLICANT(S)

|   |   |
|---|---|
| Name:<br>GHD Services, Inc. on behalf of EOG Resources  | Name:<br>EOG Resources  |
| Contact or Agent: <input checked="" type="checkbox"/> check here if Agent<br>Alan Brandon                   | Contact or Agent: <input type="checkbox"/> check here if Agent<br>James Kennedy                             |
| Mailing Address:<br>6121 Indian School Road, NE   | Mailing Address:<br>5509 Champion Drive   |
| City:<br>Albuquerque  | City:<br>Midland  |
| State: NM Zip Code: 87110   | State: TX Zip Code: 79706   |
| Phone: 505-697-2025 <input type="checkbox"/> Home <input checked="" type="checkbox"/> Cell<br>Phone (Work): | Phone: 432-258-4346 <input type="checkbox"/> Home <input checked="" type="checkbox"/> Cell<br>Phone (Work): |
| E-mail (optional):<br>alan.brandon@ghd.com  | E-mail (optional):<br>james_kennedy@eogresources.com  |

FOR OSE INTERNAL USE

Application for Permit, Form WR-07, Rev 11/17/16

|   |                                  |                             |
|---|----------------------------------|-----------------------------|
| File No.: <u>C-4144</u>                           | Trn. No.: <u>629437</u>          | Receipt No.: <u>2-39719</u> |
| Trans Description (optional): <u>PODS - PODII</u> |                                  |                             |
| Sub-Basin: <u>CVB</u>                             | PCW/LOG Due Date: <u>7-31-19</u> |                             |

Page 1 of 3



## 2. WELL(S) Describe the well(s) applicable to this application.

**Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84). District II (Roswell) and District VII (Cimarron) customers, provide a PLSS location in addition to above.**

☐ NM State Plane (NAD83) (Feet)
 ☐ UTM (NAD83) (Meters)
 ☒ Lat/Long (WGS84) (to the nearest 1/10<sup>th</sup> of second)

☐ NM West Zone
 ☐ Zone 12N

☐ NM East Zone
 ☐ Zone 13N

☐ NM Central Zone

| Well Number (if known): | X or Easting or Longitude: | Y or Northing or Latitude: | Provide if known:<br>-Public Land Survey System (PLSS)<br>(Quarters or Halves, Section, Township, Range) OR<br>- Hydrographic Survey Map & Tract; OR<br>- Lot, Block & Subdivision; OR<br>- Land Grant Name |
|-------------------------|----------------------------|----------------------------|---|
| C-4144 POD 5<br>MW-4    | -103 43' 17.18"W           | 32 24' 15.21"N             |   |
| MW-5 POD 6              | -103 43' 10.96"W           | 32 24' 11.35"N             |   |
| MW-6 POD 7              | -103 43' 12.34"W           | 32 24' 08.25"N             |   |
| MW-7 POD 8              | -103 43' 17.14"W           | 32 24' 07.55"N             |   |
| MW-8 POD 9              | -103 43' 21.60"W           | 32 24' 05.71"N             |   |

**NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)**

Additional well descriptions are attached: ☒ Yes ☐ No If yes, how many 2

Other description relating well to common landmarks, streets, or other:  
Just east of Campbell Road. General site coordinates are 32.402374, -103.722648

Well is on land owned by: Bureau of Land Management - Sundry enclosed

**Well Information: NOTE: If more than one (1) well needs to be described, provide attachment.** Attached? ☐ Yes ☒ No  
If yes, how many \_\_\_\_\_

Approximate depth of well (feet): 60 Outside diameter of well casing (inches): 2

Driller Name: Authentic Drilling, Inc. Driller License Number: WD 1767

## 3. ADDITIONAL STATEMENTS OR EXPLANATIONS

Well construction is 2-inch diameter PVC casing with 15-20 feet length 0.010 inch slotted screen. A 10/20 grade silica sand pack will be placed in the annulus around the screen to 2 feet above the screen. A 2 foot hydrated bentonite plug will be placed on top of the sand pack and followed by a cement/bentonite grout to surface.

Monitoring wells are being installed at the request of NMOCD to assess groundwater quality.

The duration of planned monitoring will continue until NMOCD grants remedial site closure.

FOR OSE INTERNAL USE

Application for Permit, Form WR-07

|                  |                 |
|------------------|-----------------|
| File No.: C-4144 | Trn No.: 629437 |
|------------------|-----------------|

Page 2 of 3



# NEW MEXICO OFFICE OF THE STATE ENGINEER



## ATTACHMENT 1 POINT OF DIVERSION DESCRIPTIONS

This Attachment is to be completed if more than one (1) point of diversion is described on an Application or Declaration.

|  |   |   |  |
|--|---|---|--|
| <b>a. Is this a:</b><br><input type="checkbox"/> Move-From Point of Diversion(s)<br><input checked="" type="checkbox"/> Move-To Point of Diversion(s)          |   | <b>b. Information on Attachment(s):</b><br>Number of points of diversion involved in the application: <u>7</u><br>Total number of pages attached to the application: <u>1</u> |  |
| <input type="checkbox"/> Surface Point of Diversion      OR <input checked="" type="checkbox"/> Well   |   |   |  |
| Name of ditch, acequia, or spring:   |   |   |  |
| Stream or water course:  |   |   |  |
| Tributary of:  |   |   |  |
| <b>c. Location (Required):</b><br>Required: Move to POD location coordinate must be either New Mexico State Plane (NAD 83), UTM (NAD 83), or Lat/Long (WGS84)  |   |   |  |
| NM State Plane (NAD83)<br>(feet)<br>NM West Zone <input type="checkbox"/><br>NM Central Zone <input type="checkbox"/><br>NM East Zone <input type="checkbox"/> | UTM (NAD83)<br>(meters)<br>Zone 13N <input type="checkbox"/><br>Zone 12N <input type="checkbox"/> | <input checked="" type="checkbox"/> Lat/Long-<br>(WGS84)<br>1/10 <sup>th</sup> of second  | OTHER (allowable only for move-from<br>descriptions - see application form for format)<br><input type="checkbox"/> PLSS (quarters, section, township, range)<br><input type="checkbox"/> Hydrographic Survey, Map & Tract<br><input type="checkbox"/> Lot, Block & Subdivision<br><input type="checkbox"/> Grant |
| POD Number: <u>10</u><br><u>C-4144</u> MW-9  | X or Longitude<br>-103.43° 23.01"W  | Y or Latitude<br>32 24' 08.13"N   | Other Location Description:  |
| POD Number: <u>11</u><br><u>C-4144</u> MW-10   | X or Longitude<br>-103 43' 23.11"W  | Y or Latitude<br>32 24' 13.29"N   | Other Location Description:  |
| POD Number:  | X or Longitude  | Y or Latitude   | Other Location Description:  |
| POD Number:  | X or Longitude  | Y or Latitude   | Other Location Description:  |
| POD Number:  | X or Longitude  | Y or Latitude   | Other Location Description:  |
| POD Number:  | X or Longitude  | Y or Latitude   | Other Location Description:  |
| POD Number:  | X or Longitude  | Y or Latitude   | Other Location Description:  |
| POD Number:  | X or Longitude  | Y or Latitude   | Other Location Description:  |
| POD Number:  | X or Longitude  | Y or Latitude   | Other Location Description:  |

FOR OSE INTERNAL USE

Form wr-08

POD DESCRIPTIONS - ATTACHMENT 1

File Number: C-4144Trn Number: 429437

Trans Description (optional):

PODS-11



**4. SPECIFIC REQUIREMENTS:** The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

|   |  |  |  |
|---|--|--|--|
| <b>Exploratory:</b><br><input type="checkbox"/> Include a description of any proposed pump test, if applicable.   | <b>Pollution Control and/or Recovery:</b><br><input type="checkbox"/> Include a plan for pollution control/recovery, that includes the following:<br><input type="checkbox"/> A description of the need for the pollution control or recovery operation.<br><input type="checkbox"/> The estimated maximum period of time for completion of the operation.<br><input type="checkbox"/> The annual diversion amount.<br><input type="checkbox"/> The annual consumptive use amount.<br><input type="checkbox"/> The maximum amount of water to be diverted and injected for the duration of the operation.<br><input type="checkbox"/> The method and place of discharge.   | <b>Construction De-Watering:</b><br><input type="checkbox"/> Include a description of the proposed dewatering operation,<br><input type="checkbox"/> The estimated duration of the operation,<br><input type="checkbox"/> The maximum amount of water to be diverted,<br><input type="checkbox"/> A description of the need for the dewatering operation, and,<br><input type="checkbox"/> A description of how the diverted water will be disposed of.  | <b>Mine De-Watering:</b><br><input type="checkbox"/> Include a plan for pollution control/recovery, that includes the following:<br><input type="checkbox"/> A description of the need for mine dewatering.<br><input type="checkbox"/> The estimated maximum period of time for completion of the operation,<br><input type="checkbox"/> The source(s) of the water to be diverted.<br><input type="checkbox"/> The geohydrologic characteristics of the aquifer(s).<br><input type="checkbox"/> The maximum amount of water to be diverted per annum.<br><input type="checkbox"/> The maximum amount of water to be diverted for the duration of the operation.<br><input type="checkbox"/> The quality of the water.              |
| <b>Monitoring:</b><br><input checked="" type="checkbox"/> Include the reason for the monitoring well, and,<br><input checked="" type="checkbox"/> The duration of the planned monitoring. | <input type="checkbox"/> The method of measurement of water produced and discharged.<br><input type="checkbox"/> The source of water to be injected.<br><input type="checkbox"/> The method of measurement of water injected.<br><input type="checkbox"/> The characteristics of the aquifer.<br><input type="checkbox"/> The method of determining the resulting annual consumptive use of water and depletion from any related stream system.<br><input type="checkbox"/> Proof of any permit required from the New Mexico Environment Department.<br><input type="checkbox"/> An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located. | <b>Ground Source Heat Pump:</b><br><input type="checkbox"/> Include a description of the geothermal heat exchange project,<br><input type="checkbox"/> The number of boreholes for the completed project and required depths,<br><input type="checkbox"/> The time frame for constructing the geothermal heat exchange project, and,<br><input type="checkbox"/> The duration of the project.<br><input type="checkbox"/> Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request. | <input type="checkbox"/> The method of measurement of water diverted.<br><input type="checkbox"/> The recharge of water to the aquifer.<br><input type="checkbox"/> Description of the estimated area of hydrologic effect of the project.<br><input type="checkbox"/> The method and place of discharge.<br><input type="checkbox"/> An estimation of the effects on surface water rights and underground water rights from the mine dewatering project.<br><input type="checkbox"/> A description of the methods employed to estimate effects on surface water rights and underground water rights.<br><input type="checkbox"/> Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect. |

#### ACKNOWLEDGEMENT

I, We (name of applicant(s)), Alan Brandon of GHD Services, Inc. on behalf of EOG Resources

Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Alan Brandon  
Applicant Signature

Applicant Signature

#### ACTION OF THE STATE ENGINEER

This application is:

☒ approved

☐ partially approved

☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this 30<sup>th</sup> day of July 20 18, for the State Engineer,

Tom Blaine, P.E., State Engineer

By:  
Signature

Print

Title:  
Print

Juan Hernandez, Water Resources Manager 1

FOR OSE INTERNAL USE

Application for Permit, Form WR-07

File No.:

C-4144

Trn No.:

629437

Page 3 of 3

NEW MEXICO STATE ENGINEER OFFICE  
PERMIT TO EXPLORE

SPECIFIC CONDITIONS OF APPROVAL

- 17-1A Depth of the well shall not exceed the thickness of the valley fill.
- 17-4 No water shall be appropriated and beneficially used under this permit.
- 17-6 The well authorized by this permit shall be plugged completely using the following method per Rules and Regulations Governing Well Driller Licensing, Construction, Repair and Plugging of Wells; Subsection C of 19.27.4.30 NMAC unless an alternative plugging method is proposed by the well owner and approved by the State Engineer upon completion of the permitted use. All pumping appurtenance shall be removed from the well prior to plugging. To plug a well, the entire well shall be filled from the bottom upwards to ground surface using a tremie pipe. The bottom of the tremie shall remain submerged in the sealant throughout the entire sealing process; other placement methods may be acceptable and approved by the state engineer. The well shall be plugged with an office of the state engineer approved sealant for use in the plugging of non-artesian wells. The well driller shall cut the casing off at least four (4) feet below ground surface and fill the open hole with at least two vertical feet of approved sealant. The driller must fill or cover any open annulus with sealant. Once the sealant has cured, the well driller or well owner may cover the seal with soil. A Plugging Report for said well shall be filed with the Office of the State Engineer in a District Office within 30 days of completion of the plugging.
- 17-7 The Permittee shall utilize the highest and best technology available to ensure conservation of water to the maximum extent practical.

Trn Desc: C 04144 POD5-11

File Number: C 04144  
Trn Number: 629437

**NEW MEXICO STATE ENGINEER OFFICE  
PERMIT TO EXPLORE**

**SPECIFIC CONDITIONS OF APPROVAL (Continued)**

LOG      The Point of Diversion C 04144 POD5 must be completed and the Well Log filed on or before 07/31/2019.

LOG      The Point of Diversion C 04144 POD6 must be completed and the Well Log filed on or before 07/31/2019.

LOG      The Point of Diversion C 04144 POD7 must be completed and the Well Log filed on or before 07/31/2019.

LOG      The Point of Diversion C 04144 POD8 must be completed and the Well Log filed on or before 07/31/2019.

LOG      The Point of Diversion C 04144 POD9 must be completed and the Well Log filed on or before 07/31/2019.

IT IS THE PERMITTEES RESPONSIBILITY TO OBTAIN ALL AUTHORIZATIONS AND PERMISSIONS TO DRILL ON PROPERTY OF OTHER OWNERSHIP BEFORE COMMENCING ACTIVITIES UNDER THIS PERMIT.

SHOULD THE PERMITTEE CHANGE THE PURPOSE OF USE TO OTHER THAN MONITORING PURPOSES, AN APPLICATION SHALL BE ACQUIRED FROM THE OFFICE OF THE STATE ENGINEER.

**ACTION OF STATE ENGINEER**

|                                     |                          |
|-------------------------------------|--------------------------|
| Notice of Intention Rcvd:           | Date Rcvd. Corrected:    |
| Formal Application Rcvd: 07/18/2018 | Pub. of Notice Ordered:  |
| Date Returned - Correction:         | Affidavit of Pub. Filed: |

This application is approved provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare of the state; and further subject to the specific conditions listed previously.

Witness my hand and seal this 30<sup>th</sup> day of Jul A.D., 2018

Tom Blaine, P.E., State Engineer

By: Juan Hernandez

Trn Desc: C 04144 POD5-11

File Number: C 04144

Trn Number: 629437



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
OMB No. 1004-0137  
Expires: January 31, 2018

**SUNDRY NOTICES AND REPORTS ON WELLS**  
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.*

**SUBMIT IN TRIPLICATE - Other Instructions on page 2**

|  |   |  |
|--|---|--|
| 1. Type of Well<br><input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other |   | 5. Lease Serial No. NM-84890                   |
| 2. Name of Operator EOG Services, Inc.   |   | 6. If Indian, Allottee or Tribe Name           |
| 3a. Address 6509 Champions Drive   | 3b. Phone No. (include area code)<br>(432) 686-3667 | 7. If Unit of CA/Agreement, Name and/or No.    |
| 4. Location of Well (Footage, Sec., T., R., M., or Survey Description)<br>32.402502N, -103.722655                                |   | 8. Well Name and No. Flamenco Federal #1       |
|  |   | 9. API Well No. 30-025-31076                   |
|  |   | 10. Field and Pool or Exploratory Area         |
|  |   | 11. Country or Parish, State<br>Lea County, NM |

**12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA**

| TYPE OF SUBMISSION                                   | TYPE OF ACTION                                |  |  |   |
|--|---|--|--|---|
| <input checked="" type="checkbox"/> Notice of Intent | <input type="checkbox"/> Acidize              | <input type="checkbox"/> Deepen                      | <input type="checkbox"/> Production (Start/Resume) | <input type="checkbox"/> Water Shut-Off |
| <input type="checkbox"/> Subsequent Report           | <input type="checkbox"/> Alter Casing         | <input type="checkbox"/> Hydraulic Fracturing        | <input type="checkbox"/> Reclamation               | <input type="checkbox"/> Well Integrity |
| <input type="checkbox"/> Final Abandonment Notice    | <input type="checkbox"/> Casing Repair        | <input checked="" type="checkbox"/> New Construction | <input type="checkbox"/> Recomplete                | <input type="checkbox"/> Other          |
|  | <input type="checkbox"/> Change Plans         | <input type="checkbox"/> Plug and Abandon            | <input type="checkbox"/> Temporarily Abandon       |   |
|  | <input type="checkbox"/> Convert to Injection | <input type="checkbox"/> Plug Back                   | <input type="checkbox"/> Water Disposal            |   |

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleting horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

Proposing to install 7 additional groundwater monitoring wells for the collection and analysis of water samples to assess the horizontal extent of chloride impacted groundwater due to a release. The wells are anticipated to be installed to a depth of approximately 50 feet below ground surface. Anticipated start date is August 6, 2018 and the end date is August 10, 2018.

|   |  |                         |  |
|---|--|-------------------------|--|
| 14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)<br>Jamon Hohensee |  | Title Environmental Rep |  |
| Signature   |  | Date 6-19-18            |  |





































**THE SPACE FOR FEDERAL OR STATE OFFICE USE**

|   |  |                                  |                |
|---|--|----------------------------------|----------------|
| Approved by   |  | Title E.P.S.                     | Date 7/12/2018 |
| Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon. |  | Office Carlsbad Field Office, NM |                |

Title 18 U.S.C Section 1001 and Title 43 U.S.C Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)



































- |  |                                     |  |                                  |  |                                |  |                              |  |                                |  |                              |
|--|-------------------------------------|--|----------------------------------|--|--------------------------------|--|------------------------------|--|--------------------------------|--|------------------------------|
|  | Calaveras County Parcel Points 2018 |  | Quincy County Parcel Points 2018 |  | Curry County Parcels 2018      |  | Hidalgo County Parcels 2017  |  | Otero County Parcels 2018      |  | Sandoval County Parcels 2018 |
|  | Cord Search Location                |  | Union County Parcel Points 2017  |  | Doña Ana County Parcels 2018   |  | Lea County Parcels 2018      |  | Roosevelt County Parcels 2018  |  | Santa Fe County Parcels 2018 |
|  | Federal Lands                       |  | Bernalillo County Parcels 2018   |  | De Baca County Parcels 2017    |  | Lincoln County Parcels 2018  |  | Rio Arriba County Parcels 2018 |  | Sierra County Parcels 2017   |
|  | Catron County Parcel Points 2017    |  | Eddy County Parcels 2018         |  | Los Alamos County Parcels 2017 |  | Luna County Parcels 2017     |  | San Juan County Parcels 2018   |  | Socorro County Parcels 2017  |
|  | Guadalupe County Parcel Points 2016 |  | Grant County Parcels 2017        |  | Cibola County Parcels 2018     |  | McKinley County Parcels 2017 |  | San Miguel County Parcels 2017 |  | Taos County Parcels 2018     |
|  | Mora County Parcel Points 2014      |  | Harding County Parcels 2017      |  | Golfax County Parcels 2018     |  |                              |  |                                |  | Torrance County Parcels 2018 |







| GIS WATERS PODs  |                                  | Santa Fe County Parcels 2018   |                                     | Hidalgo County Parcels 2017  |                              | Otero County Parcels 2018  |                                | Santa Fe County Parcels 2018   |                                |
|--|----------------------------------|--|-------------------------------------|--|------------------------------|--|--------------------------------|--|--------------------------------|
|  | Calculated PLSS                  |  | Guadalupe County Parcel Points 2016 |  | Gibola County Parcels 2018   |  | Harding County Parcels 2017    |  | Otero County Parcels 2018      |
|  | Coord Search Location            |  | Mora County Parcel Points 2014      |  | Coffax County Parcels 2018   |  | Hidalgo County Parcels 2017    |  | Roosevelt County Parcels 2018  |
|  | ACT                              |  | Osby County Parcel Points 2018      |  | Curry County Parcels 2018    |  | Lea County Parcels 2018        |  | Rio Arriba County Parcels 2018 |
|  | PEN                              |  | Union County Parcel Points 2017     |  | Doña Ana County Parcels 2018 |  | Lincoln County Parcels 2018    |  | San Juan County Parcels 2018   |
|  | OSE District Boundary            |  | Bernalillo County Parcels 2018      |  | De Baca County Parcels 2017  |  | Los Alamos County Parcels 2017 |  | San Miguel County Parcels 2017 |
|  | Federal Lands                    |  | Chaves County Parcels 2018          |  | Eddy County Parcels 2018     |  | Luna County Parcels 2017       |  | Valencia County Parcels 2018   |
|  | Catron County Parcel Points 2017 |  | Grant County Parcels 2017           |  | McKinley County Parcels 2017 |  | Sandoval County Parcels 2018   |  | BLM Land Grant                 |



**Coordinates**  
**UTM - NAD 83 (m) - Zone 13**

Easting 620243.112  
 Northing 3585724.960

**State Plane - NAD 83 (f) - Zone E**

Easting 730192.831  
 Northing 510552.776

**Degrees Minutes Seconds**

Latitude 32 : 24 : 7.550000  
 Longitude -103 : 43 : 17.140000

Location pulled from Coordinate Search

NEW MEXICO OFFICE  
 OF THE  
 STATE ENGINEER  
 1:4,514

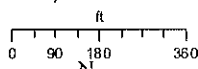


Image Info  
 Source: DigitalGlobe  
 Date: 5/4/2016  
 Resolution (m): 0.5  
 Accuracy (m): 10.2

**Spatial Information**

County: Lea  
 Groundwater Basin: Carlsbad  
 Sub-Basin: Upper Pecos-Black  
 Land Grant: Not in Land Grant  
 Restrictions:  
 NA

**PLSS Description**

NE NW SW SW Qtr of Sec 7 of 22S 32E

Derived from Projected PLSS- Qtr Sec.  
 locations are calculated and are only  
 approximations

**POD Information**

Owner: BLM/GHD SERV/EOG  
 File Number: C-4144POD8  
 POD Status: NoData  
 Permit Status: NoData  
 Permit Use: NoData  
 Purpose: MONITOR

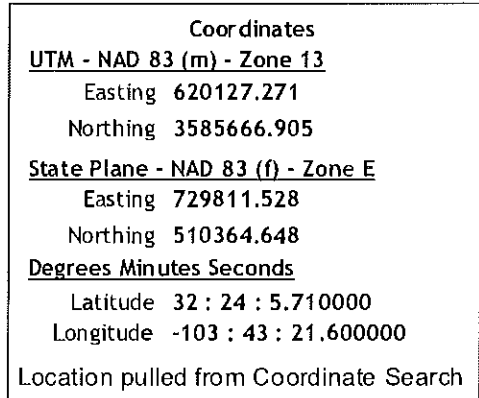
YMENDIOLA






































Reproduction of this map is prohibited without the written consent of the State Engineer. The State Engineer is not responsible for any errors or omissions in this map. The State Engineer is not responsible for any damages or losses resulting from the use of this map. The State Engineer is not responsible for any claims or liabilities resulting from the use of this map. The State Engineer is not responsible for any claims or liabilities resulting from the use of this map.



- |  |  |   |  |  |   |
|--|--|---|--|--|---|
| <ul style="list-style-type: none"> <li>Calculated PLSS</li> <li>Coord Search Location</li> <li>GIS WATERS</li> <li>PODs</li> <li>ACT</li> <li>PEN</li> <li>OSE District Boundary</li> <li>Federal Lands</li> <li>Carson County Parcel Points 2017</li> </ul> | <ul style="list-style-type: none"> <li>Guadalupe County Parcel Points 2016</li> <li>Mora County Parcel Points 2014</li> <li>Quay County Parcel Points 2018</li> <li>Union County Parcel Points 2017</li> <li>Bernalillo County Parcel Points 2018</li> <li>Chaves County Parcel Points 2018</li> </ul> | <ul style="list-style-type: none"> <li>Qibola County Parcels 2018</li> <li>Gallup County Parcels 2018</li> <li>Curry County Parcels 2018</li> <li>Dona Ana County Parcels 2018</li> <li>De Baca County Parcels 2017</li> <li>Eddy County Parcels 2018</li> <li>Grant County Parcels 2017</li> </ul> | <ul style="list-style-type: none"> <li>Harding County Parcels 2017</li> <li>Hidalgo County Parcels 2017</li> <li>Lea County Parcels 2018</li> <li>Lincoln County Parcels 2018</li> <li>Los Alamos County Parcels 2017</li> <li>Luna County Parcels 2017</li> <li>McKinley County Parcels 2017</li> </ul> | <ul style="list-style-type: none"> <li>Otero County Parcels 2018</li> <li>Roosevelt County Parcels 2018</li> <li>Rio Arriba County Parcels 2018</li> <li>San Juan County Parcels 2018</li> <li>San Miguel County Parcels 2017</li> <li>Sandoval County Parcels 2018</li> </ul> | <ul style="list-style-type: none"> <li>Santa Fe County Parcels 2018</li> <li>Sierra County Parcels 2017</li> <li>Socorro County Parcels 2017</li> <li>Taos County Parcels 2018</li> <li>Torrance County Parcels 2018</li> <li>Valencia County Parcels 2018</li> <li>BLM Land Grant</li> </ul> |
|--|--|---|--|--|---|





| Legend  |                       | County Parcels  |                                   |   |                               |   |                              |   |                                |   |                              |
|---|-----------------------|---|-----------------------------------|---|-------------------------------|---|------------------------------|---|--------------------------------|---|------------------------------|
|  | Calculated PLSS       |  | Guthrie County Parcel Points 2016 |  | Ogble County Parcels 2018     |  | Harding County Parcels 2017  |  | Olan County Parcels 2018       |  | Santa Fe County Parcels 2018 |
|  | Coord Search Location |  | Mora County Parcel Points 2014    |  | Colla County Parcels 2018     |  | Hidalgo County Parcels 2017  |  | Roosevelt County Parcels 2018  |  | Sierra County Parcels 2017   |
| <b>GIS WATERS PDDs</b>  |                       |  | Quay County Parcel Points 2018    |  | Curry County Parcels 2018     |  | Lea County Parcels 2018      |  | Rowan County Parcels 2018      |  | Socorro County Parcels 2017  |
|  | ACT                   |  | Union County Parcel Points 2017   |  | Dofia Ana County Parcels 2018 |  | Lincoln County Parcels 2018  |  | San Juan County Parcels 2018   |  | Taos County Parcels 2018     |
|  | PEN                   |  | De Baca County Parcels 2017       |  | Eddy County Parcels 2018      |  | Luna County Parcels 2017     |  | San Miguel County Parcels 2017 |  | Valencia County Parcels 2018 |
|  | OSE District Boundary |  | Bernalillo County Parcels 2018    |  | Grant County Parcels 2017     |  | McKinley County Parcels 2017 |  | Sandoval County Parcels 2018   |  | BLM Land Grants              |
|  | Federal Lands         |  | Chaves County Parcels 2018        |   |                               |   |                              |   |                                |   |                              |

[illegible]



### Coordinates

**UTM - NAD 83 (m) - Zone 13**  
 Easting 620089.544  
 Northing 3585740.988

### State Plane - NAD 83 (f) - Zone E

Eastings 729689.250  
 Northing 510608.512

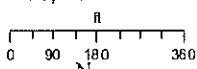
### Degrees Minutes Seconds

Latitude 32 : 24 : 8.130000  
 Longitude -103 : 43 : 23.010000

Location pulled from Coordinate Search

### NEW MEXICO OFFICE OF THE STATE ENGINEER

1:4,514



### Image Info

Source: DigitalGlobe  
 Date: 5/4/2016  
 Resolution (m): 0.5  
 Accuracy (m): 10.2

### Spatial Information

County: Eddy  
 Groundwater Basin: Carlsbad  
 Sub-Basin: Upper Pecos-Black  
 Land Grant: Not in Land Grant  
 Restrictions:  
 NA

### PLSS Description

NEENESE Qtr of Sec 12 of 022S 031E

Derived from CADNDSI- Qtr Sec. locations are calculated and are only approximations

### POD Information

Owner: BLM/GHD SERV/EOG  
 File Number: C-4144POD10  
 POD Status: NoData  
 Permit Status: NoData  
 Permit Use: NoData  
 Purpose: MONITOR

### YMENDIOLA

BLM Land Grant  
 Office of the State Engineer  
 Interstate Stream Commission

|                            |   |                                |   |                              |   |                                |   |                                |   |                              |
|----------------------------|---|--------------------------------|---|------------------------------|---|--------------------------------|---|--------------------------------|---|------------------------------|
| Calculated PLSS            | ★ | Guadalupe County Parcels 2016  | □ | Cibola County Parcels 2018   | □ | Harding County Parcels 2017    | □ | Otero County Parcels 2018      | □ | Santa Fe County Parcels 2018 |
| Coord Search Location      | ★ | Mora County Parcels 2016       | □ | Colfax County Parcels 2018   | □ | Hidalgo County Parcels 2017    | □ | Roosevelt County Parcels 2018  | □ | Sierra County Parcels 2017   |
| GIS WATERS PODs            | ★ | Quay County Parcels 2014       | □ | Curry County Parcels 2018    | □ | Lea County Parcels 2018        | □ | Rio Arriba County Parcels 2018 | □ | Socorro County Parcels 2017  |
| ACT                        | ★ | Union County Parcels 2018      | □ | Doña Ana County Parcels 2018 | □ | Lincoln County Parcels 2018    | □ | San Juan County Parcels 2018   | □ | Taos County Parcels 2018     |
| PEN                        | ★ | Union County Parcels 2017      | □ | De Baca County Parcels 2017  | □ | Los Alamos County Parcels 2017 | □ | San Miguel County Parcels 2018 | □ | Torrance County Parcels 2018 |
| OSE District Boundary      | ★ | Bernalillo County Parcels 2018 | □ | Eddy County Parcels 2018     | □ | Luna County Parcels 2017       | □ | San Miguel County Parcels 2017 | □ | Valencia County Parcels 2018 |
| Federal Lands              | ★ | Chaves County Parcels 2018     | □ | Grant County Parcels 2017    | □ | McKinley County Parcels 2017   | □ | Sandoval County Parcels 2018   | □ |                              |
| Catron County Parcels 2017 | ★ |                                |   |                              |   |                                |   |                                |   |                              |



**Coordinates**  
**UTM - NAD 83 (m) - Zone 13**

Easting 620085.033

Northing 3585899.858

**State Plane - NAD 83 (f) - Zone E**

Easting 729677.700

Northing 511129.910

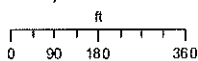
**Degrees Minutes Seconds**

Latitude 32 : 24 : 13.290000

Longitude -103 : 43 : 23.110000

Location pulled from Coordinate Search

**NEW MEXICO OFFICE  
 OF THE  
 STATE ENGINEER**  
 1:4,514



**Image Info**  
 Source: DigitalGlobe  
 Date: 5/4/2016  
 Resolution (m): 0.5  
 Accuracy (m): 10.2

**Spatial Information**

County: Eddy

Groundwater Basin: Carlsbad

Sub-Basin: Upper Pecos-Black

Land Grant: Not in Land Grant  
 Restrictions:

NA

**PLSS Description**

NESENESE Qtr of Sec 12 of 022S 031E

Derived from CADNDSI- Qtr Sec. locations are  
 calculated and are only approximations

**POD Information**

Owner: BLM/GHD SERV/EOG

File Number: C-4144POD11

POD Status: NoData

Permit Status: NoData

Permit Use: NoData

Purpose: MONITOR

YMENDIOLA

BLM Land Grant



|  |   |   |   |                                    |   |                                      |   |                                      |   |                                    |
|--|---|---|---|------------------------------------|---|--------------------------------------|---|--------------------------------------|---|------------------------------------|
| Calculated<br>PLSS                     | ★ | Guadalupe<br>County Parcel<br>Points 2016 | □ | Gibbs County<br>Parcels 2018       | □ | Harding County<br>Parcels 2017       | □ | Otero County<br>Parcels 2018         | □ | Santa Fe<br>County Parcels<br>2018 |
| Coord Search<br>Location               | ★ | Mora County<br>Parcel Points<br>2014      | □ | Colfax County<br>Parcels 2018      | □ | Hidalgo County<br>Parcels 2017       | □ | Roosevelt<br>County Parcels<br>2018  | □ | Sierra County<br>Parcels 2017      |
| <b>GIS WATERS</b>                      | ★ | Quay County<br>Parcel Points<br>2018      | □ | Curry County<br>Parcels 2018       | □ | Lea County<br>Parcels 2018           | □ | Rio Arriba<br>County Parcels<br>2018 | □ | Socorro County<br>Parcels 2017     |
| <b>PDDs</b>                            | ★ | Union County<br>Parcel Points<br>2017     | □ | Dona Ana<br>County Parcels<br>2018 | □ | Lincoln County<br>Parcels 2018       | □ | San Juan<br>County Parcels<br>2018   | □ | Taos County<br>Parcels 2018        |
| ACT                                    | ★ | Bernalillo<br>County Parcels<br>2018      | □ | Doña Ana<br>County Parcels<br>2017 | □ | Los Alamos<br>County Parcels<br>2017 | □ | San Miguel<br>County Parcels<br>2017 | □ | Torrance County<br>Parcels 2018    |
| PEN                                    | ★ | Chaves County<br>Parcels 2018             | □ | Eddy County<br>Parcels 2018        | □ | Luna County<br>Parcels 2017          | □ | Sandoval<br>County Parcels<br>2018   | □ | Valencia County<br>Parcels 2018    |
| OSE District<br>Boundary               | ★ | Grant County<br>Parcels 2017              | □ | McKinley<br>County Parcels<br>2017 | □ |                                      |   |                                      |   |                                    |
| Federal Lands                          | ★ |   |   |                                    |   |                                      |   |                                      |   |                                    |
| Catron County<br>Parcel Points<br>2017 | ★ |   |   |                                    |   |                                      |   |                                      |   |                                    |



# OFFICE OF THE STATE ENGINEER/INTERSTATE STREAM COMMISSION – ROSWELL OFFICE

OFFICIAL RECEIPT NUMBER: 2 - 39719 DATE: 7-18-18 FILE NO.: \_\_\_\_\_  
 TOTAL: \$35.00 RECEIVED: thirty five DOLLARS CHECK NO.: 4215 CASH: \_\_\_\_\_  
 PAYOR: Alan Brandon ADDRESS: 4801 Overland NE CITY: Albq STATE: NM  
 ZIP: 87109 RECEIVED BY: DJ

INSTRUCTIONS: Indicate the number of actions to the left of the appropriate type of filing. Complete the receipt information. **Original** to payor; **pink** copy to Program Support/ASD; and **yellow** copy for Water Rights. If a mistake is made, void the original and all copies and submit to Program Support/ASD as part of your daily deposit.

## A. Ground Water Filing Fees

- |              |   |           |
|--------------|---|-----------|
| ___ 1.       | Change of Ownership of Water Right  | \$ 2.00   |
| ___ 2.       | Application to Appropriate or Supplement Domestic 72-12-1 Well  | \$ 125.00 |
| ___ 3.       | Application to Repair or Deepen 72-12-1 Well  | \$ 75.00  |
| ___ 4.       | Application for Replacement 72-12-1 Well  | \$ 75.00  |
| ___ 5.       | Application to Change Purpose of Use 72-12-1 Well   | \$ 75.00  |
| ___ 6.       | Application for Stock Well/Temp. Use  | \$ 5.00   |
| <hr/>        |   |           |
| ___ 7.       | Application to Appropriate Irrigation, Municipal, or Commercial Use   | \$ 25.00  |
| ___ 8.       | Declaration of Water Right  | \$ 1.00   |
| ___ 9.       | Application for Supplemental Non 72-12-1 Well   | \$ 25.00  |
| ___ 10.      | Application to Change Place or Purpose of Use Non 72-12-1 Well  | \$ 25.00  |
| ___ 11.      | Application to Change Point of Diversion and Place and/or Purpose of Use from Surface Water to Ground Water | \$ 50.00  |
| ___ 12.      | Application to Change Point of Diversion and Place and/or Purpose of Use from Ground Water to Ground Water  | \$ 50.00  |
| ___ 13.      | Application to Change Point of Diversion of Non 72-12-1 Well  | \$ 25.00  |
| ___ 14.      | Application to Repair or Deepen Non 72-12-1 Well  | \$ 5.00   |
| <hr/>        |   |           |
| <u>1</u> 15. | Application for Test, Expl. Observ. Well  | \$ 5.00   |
| ___ 16.      | Application for Extension of Time   | \$ 25.00  |
| ___ 17.      | Proof of Application to Beneficial Use  | \$ 25.00  |
| ___ 18.      | Notice of Intent to Appropriate   | \$ 25.00  |

## B. Surface Water Filing Fees

- |         |  |           |
|---------|--|-----------|
| ___ 1.  | Change of Ownership of a Water Right   | \$ 5.00   |
| ___ 2.  | Declaration of Water Right   | \$ 10.00  |
| ___ 3.  | Amended Declaration  | \$ 25.00  |
| ___ 4.  | Application to Change Point of Diversion and Place and/or Purpose of Use from Surface Water to Surface Water | \$ 200.00 |
| ___ 5.  | Application to Change Point of Diversion and Place and/or Purpose of Use from Ground Water to Surface Water  | \$ 200.00 |
| ___ 6.  | Application to Change Point of Diversion   | \$ 100.00 |
| ___ 7.  | Application to Change Place and/or Purpose of Use  | \$ 100.00 |
| ___ 8.  | Application to Appropriate   | \$ 25.00  |
| ___ 9.  | Notice of Intent to Appropriate  | \$ 25.00  |
| ___ 10. | Application for Extension of Time  | \$ 50.00  |
| ___ 11. | Supplemental Well to a Surface Right   | \$ 100.00 |
| ___ 12. | Return Flow Credit   | \$ 100.00 |
| ___ 13. | Proof of Completion of Works   | \$ 25.00  |
| ___ 14. | Proof of Application of Water to Beneficial Use  | \$ 25.00  |
| ___ 15. | Water Development Plan   | \$ 100.00 |
| ___ 16. | Declaration of Livestock Water Impoundment   | \$ 10.00  |
| ___ 17. | Application for Livestock Water Impoundment  | \$ 10.00  |

## C. Well Driller Fees

- |        |   |          |
|--------|---|----------|
| ___ 1. | Application for Well Driller's License            | \$ 50.00 |
| ___ 2. | Application for Renewal of Well Driller's License | \$ 50.00 |
| ___ 3. | Application to Amend Well Driller's License       | \$ 50.00 |

## D. Reproduction of Documents

- |             |          |
|-------------|----------|
| ___ @ 0.25¢ | \$ _____ |
| ___ Map(s)  | \$ _____ |

## E. Certification

\$ \_\_\_\_\_

## F. Other

\$ \_\_\_\_\_

## G. Comments:

mail

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**All fees are non-refundable.**



Form 3160-5  
(June 2015)UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENTFORM APPROVED  
OMB No. 1004-0137  
Expires: January 31, 2018**SUNDRY NOTICES AND REPORTS ON WELLS**  
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.*

5. Lease Serial No. NM-84890

6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other Instructions on page 2

7. If Unit of CA/Agreement, Name and/or No.

1. Type of Well

☐ Oil Well ☐ Gas Well ☒ Other

8. Well Name and No. Flamerico Federal #1

2. Name of Operator EOG Services, Inc.

9. API Well No. 30-025-31076

3a. Address 5509 Champions Drive

3b. Phone No. (include area code)  
(432) 686-3667

10. Field and Pool or Exploratory Area

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)  
32.402502N, -103.72265511. Country or Parish, State  
Lea County, NM

## 12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

| TYPE OF SUBMISSION                                   | TYPE OF ACTION                                |  |  |   |
|--|---|--|--|---|
| <input checked="" type="checkbox"/> Notice of Intent | <input type="checkbox"/> Acidize              | <input type="checkbox"/> Deepen                      | <input type="checkbox"/> Production (Start/Resume) | <input type="checkbox"/> Water Shut-Off |
| <input type="checkbox"/> Subsequent Report           | <input type="checkbox"/> Alter Casing         | <input type="checkbox"/> Hydraulic Fracturing        | <input type="checkbox"/> Reclamation               | <input type="checkbox"/> Well Integrity |
| <input type="checkbox"/> Final Abandonment Notice    | <input type="checkbox"/> Casing Repair        | <input checked="" type="checkbox"/> New Construction | <input type="checkbox"/> Recomplete                | <input type="checkbox"/> Other          |
|  | <input type="checkbox"/> Change Plans         | <input type="checkbox"/> Plug and Abandon            | <input type="checkbox"/> Temporarily Abandon       |   |
|  | <input type="checkbox"/> Convert to Injection | <input type="checkbox"/> Plug Back                   | <input type="checkbox"/> Water Disposal            |   |

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

Proposing to install four groundwater monitoring wells for the collection and analysis of water samples to assess the potential for contamination due to a release. Anticipated depths of the wells will be approximately 50 feet below ground surface. Anticipated start date is August 7, 2017 and the end date is August 11, 2017.

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)

Zane Kurtz

Title EOG Rep

Signature

[Signature]

Date 8-2-2017

## THE SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Title EPS

Date

Office

Carlsbad PD

Title 18 U.S.C Section 1001 and Title 43 U.S.C Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

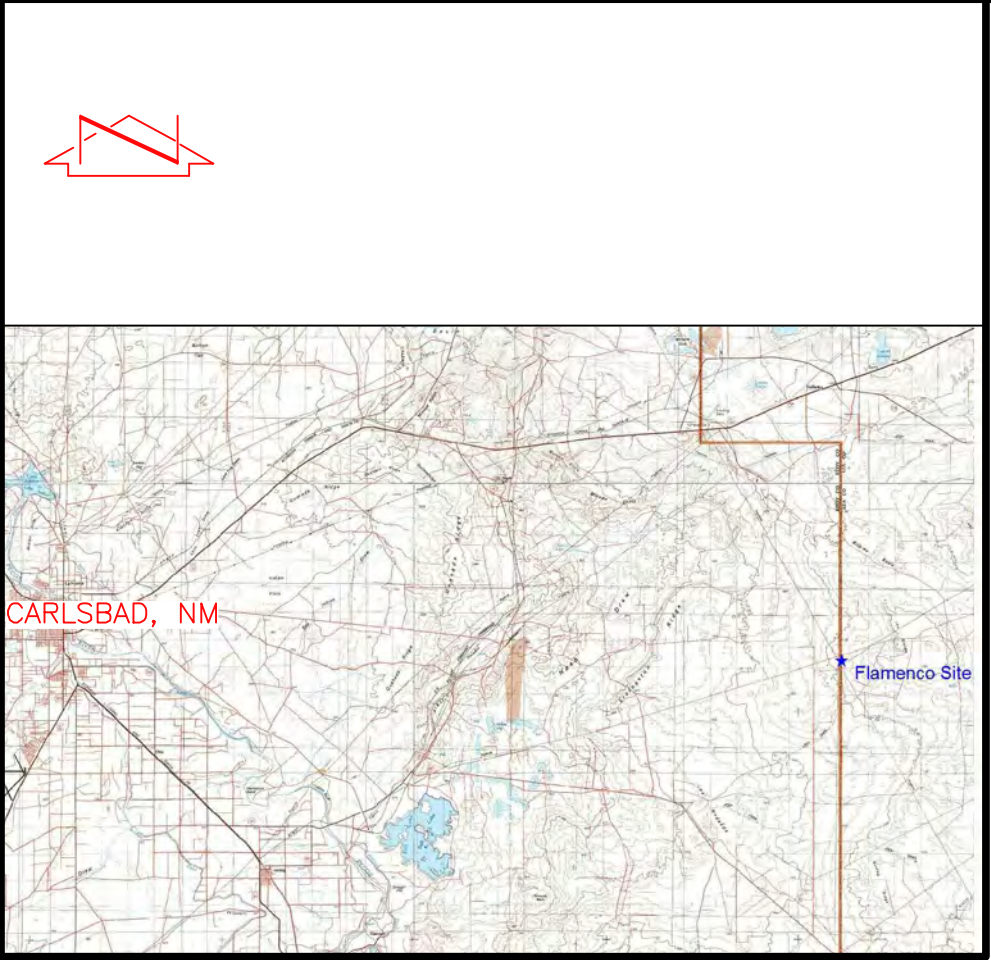
(Instructions on page 2)



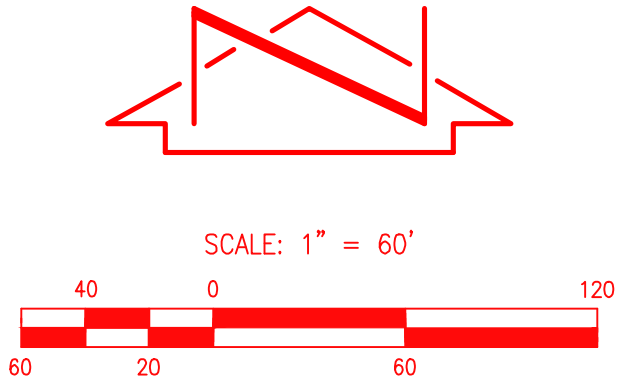
## Appendix D

# Monitoring Well Surveys





VICINITY MAP  
NOT TO SCALE



CONTROL COORDINATE TABLE

| POINT NO. | NORTHING—GRID | EASTING—GRID | ELEVATION | DESCRIPTION         | LATITUDE—NORTH  | LONGITUDE—WEST   |
|-----------|---------------|--------------|-----------|---------------------|-----------------|------------------|
| FLM—201   | 510846.624    | 730302.040   | 3641.96   | PBM (OBSERVED—OPUS) | 32°24'10.43219" | 103°43'15.81355" |
| FLM—202   | 510802.663    | 729827.534   | 3634.13   | TBM #1 (HMCg)       | 32°24'10.02404" | 103°43'21.35111" |

WELLS COORDINATE TABLE

| POINT NO. | NORTHING—GRID | EASTING—GRID | ELEVATION | DESCRIPTION        | LATITUDE—NORTH  | LONGITUDE—WEST   |
|-----------|---------------|--------------|-----------|--------------------|-----------------|------------------|
| 1008      | 510695.323    | 729881.015   | 3633.500  | FLM—MW1 (Ground)   | 32°24'08.95887" | 103°43'20.73447" |
| 1007      | 510693.364    | 729881.126   | 3633.809  | FLM—MW1 (Concrete) | 32°24'08.93947" | 103°43'20.73329" |
| 1006      | 510693.264    | 729881.168   | 3636.306  | FLM—MW1 (Lid)      | 32°24'08.93848" | 103°43'20.73281" |
| 1005      | 510693.344    | 729881.224   | 3636.223  | FLM—MW1 (Casing)   | 32°24'08.93927" | 103°43'20.73216" |
| 1009      | 510569.224    | 729910.691   | 3633.215  | FLM—MW2 (Ground)   | 32°24'07.70941" | 103°43'20.39673" |
| 1010      | 510567.338    | 729910.661   | 3633.647  | FLM—MW2 (Concrete) | 32°24'07.69075" | 103°43'20.39720" |
| 1011      | 510567.307    | 729910.559   | 3636.167  | FLM—MW2 (Lid)      | 32°24'07.69045" | 103°43'20.39839" |
| 1012      | 510567.247    | 729910.563   | 3636.078  | FLM—MW2 (Casing)   | 32°24'07.68986" | 103°43'20.39835" |
| 1001      | 510940.945    | 730190.465   | 3639.206  | FLM—MW3 (Ground)   | 32°24'11.37184" | 103°43'17.10866" |
| 1002      | 510939.540    | 730189.952   | 3639.744  | FLM—MW3 (Concrete) | 32°24'11.35797" | 103°43'17.11475" |
| 1003      | 510939.478    | 730189.936   | 3642.312  | FLM—MW3 (Lid)      | 32°24'11.35736" | 103°43'17.11493" |
| 1004      | 510939.453    | 730189.904   | 3642.270  | FLM—MW3 (Casing)   | 32°24'11.35710" | 103°43'17.11531" |



GENERAL NOTES

1. AN UNCLASSIFIED SURVEY FOR WELL LOCATIONS WAS PERFORMED ON MARCH 22, 2018. THIS IS NOT A BOUNDARY SURVEY.
2. WELL LOCATIONS ARE NAD 83 GRID COORDINATES (NEW MEXICO EASTERN ZONE 3001). ELEVATIONS ARE NAVD 88 VERTICAL DATUM.
3. SITE LOCATED WITHIN SECTION 7, TOWNSHIP 22 SOUTH, RANGE 32 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO.
4. THE PHOTOBASED IMAGE, DEPICTED ON THIS SURVEY, WAS IMPORTED FROM THE GOOGLE EARTH WEB SITE. THIS PHOTOBASE IMAGE IS SHOWN TO PROVIDE A GENERAL SITE ORIENTATION AND MAY NOT REFLECT THE CURRENT SITE CONDITIONS.
5. THE PURPOSE OF THIS SURVEY IS TO ESTABLISH NEW MEXICO STATE PLANE GRID COORDINATES AND ELEVATIONS FOR THE LOCATIONS OF THE NEWLY INSTALLED AND EXISTING EOG MONITORING WELLS.

CONTROL SURVEY NOTE

A CONTROL SURVEY WAS CONDUCTED AT THE SITE ON MARCH 22, 2018 AND QUALITY CONTROLLED. BEARINGS ARE STATE PLANE GRID (NM EASTERN ZONE). CONTROL WAS PROJECTED ONTO THE SUBJECT SITE UTILIZING STATIC GPS COMBINED WITH RTK OBSERVATIONS TO ESTABLISH HORIZONTAL AND VERTICAL POSITIONS BASED UPON NAD 83/NAVD 88. THE STATIC OBSERVATIONS WERE PROCESSED USING NGS/NOAA ONLINE POSITIONING USER SERVICE COMBINED WITH GEOID12B, TO OBTAIN COORDINATES FOR THE PROJECT BENCHMARK.

A PERMANENT BENCHMARK WAS OCCUPIED ON SITE AS SHOWN ON THE DRAWING AND IS DESCRIBED AS FOLLOWS: PROJECT BM: A #5 REBAR W/CAP STAMPED "HMCg CONTROL NMPS 15075", LOCATED NEAR A FENCE POST AT THE MAIN ENTRANCE TO THE FACILITY, AS SHOWN ON THIS SHEET. ELEVATION = 3641.96 FEET (NAVD 88)

PROJECT BENCHMARK (P.B.M.)

A #5 REBAR W/CAP STAMPED "HMCg CONTROL NMPS 15075" IN DIRT, NEAR A FENCE POST AT THE MAIN ENTRANCE TO THE FACILITY, AS SHOWN ON THIS SHEET. ELEVATION = 3641.96 FEET (NAVD 1988)

TEMPORARY BENCHMARK #1 (T.B.M. #1)

A #5 REBAR W/CAP STAMPED "HMCg CONTROL NMPS 15075" IN DIRT, NEAR A FENCE POST BY THE CATTLE GUARD AT THE ENTRANCE FROM CAMPBELL ROAD, AS SHOWN ON THIS SHEET. ELEVATION = 3634.13 FEET (NAVD 1988)

SURVEYORS CERTIFICATION

I, JOSEPH M. SOLOMON, JR., NEW MEXICO PROFESSIONAL SURVEYOR NO. 15075, DO HEREBY CERTIFY; THAT THIS PARTIAL TOPOGRAPHIC SURVEY AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO, AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

JOSEPH M. SOLOMON, JR., NMPS 15075



April 23, 2018  
DATE

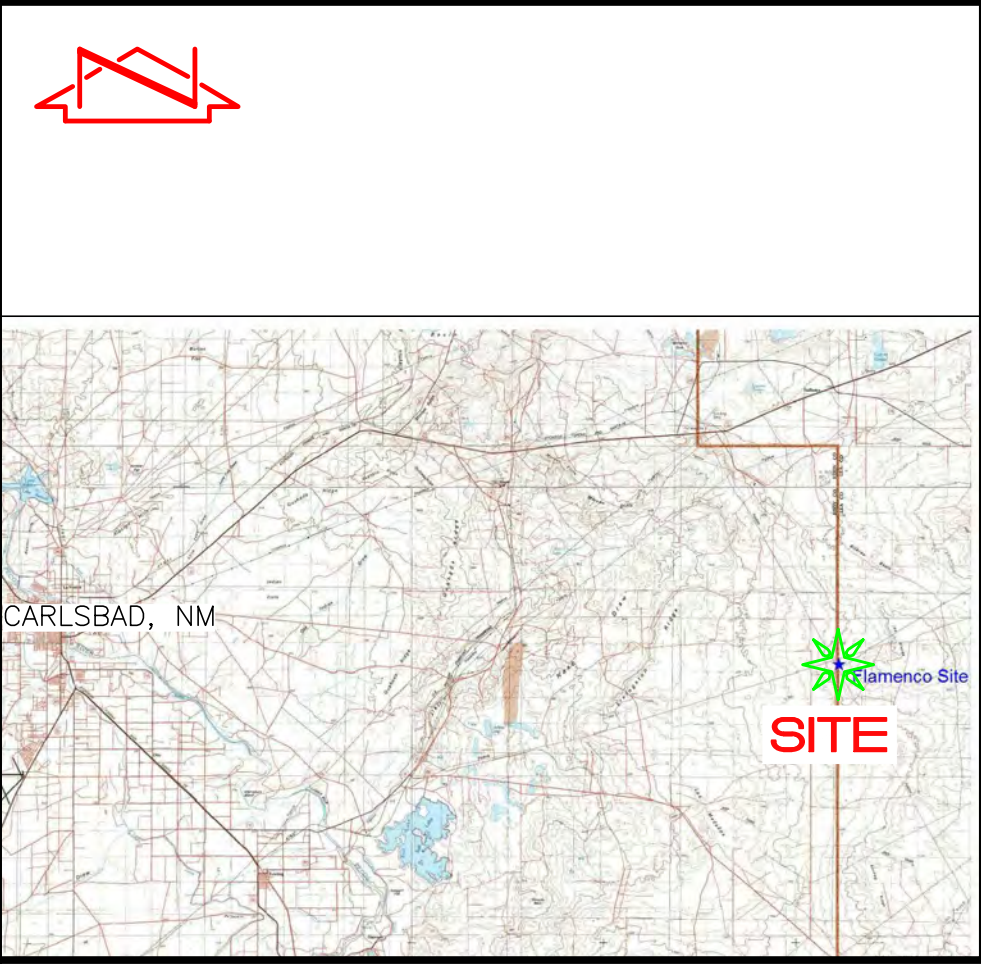


6010-B Midway Park Blvd. NE • Albuquerque, New Mexico 87109  
Phone: 505.345.4250 • Fax: 505.345.4254 • www.highmesacg.com

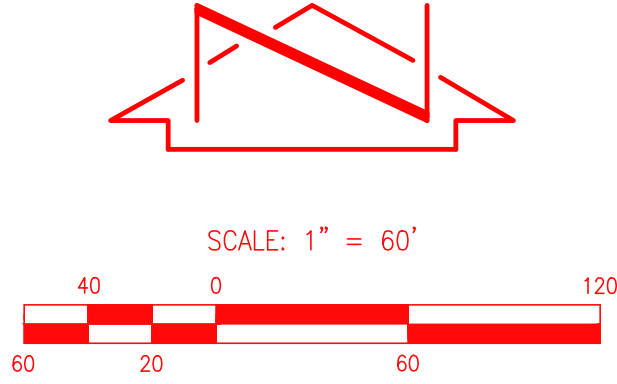
UNCLASSIFIED SURVEY - GROUNDWATER MONITOR WELLS  
EOG RESOURCES FLAMENCO FEDERAL No. 1 WELL - LEA COUNTY, NM

| SURVEYED BY | J.M.S. | NO. | DATE | BY | REVISIONS | JOB NO.    | DATE    | SHEET | OF |
|-------------|--------|-----|------|----|-----------|------------|---------|-------|----|
|             |        |     |      |    |           |            |         |       |    |
| DRAWN BY    | T.N.T. |     |      |    |           | 2018.013.1 | 04-2018 | 1     | 1  |
| APPROVED BY | J.M.S. |     |      |    |           |            |         |       |    |





VICINITY MAP  
NOT TO SCALE



CONTROL COORDINATE TABLE

| POINT NO. | NORTHING—GRID | EASTING—GRID | ELEVATION | DESCRIPTION         | LATITUDE—NORTH  | LONGITUDE—WEST   |
|-----------|---------------|--------------|-----------|---------------------|-----------------|------------------|
| FLM—201   | 510846.624    | 730302.040   | 3641.96   | PBM (OBSERVED—OPUS) | 32°24'10.43219" | 103°43'15.81355" |
| FLM—202   | 510802.663    | 729827.534   | 3634.13   | TBM #1 (HMCg)       | 32°24'10.02404" | 103°43'21.35111" |

WELLS COORDINATE TABLE

| POINT NO. | NORTHING—GRID | EASTING—GRID | ELEVATION | DESCRIPTION        | LATITUDE—NORTH  | LONGITUDE—WEST   |
|-----------|---------------|--------------|-----------|--------------------|-----------------|------------------|
| 1006      | 510693.364    | 729881.126   | 3633.809  | FLM—MW1 (Ground)   | 32°24'08.93947" | 103°43'20.73329" |
| 1007      | 510693.364    | 729881.126   | 3633.809  | FLM—MW1 (Concrete) | 32°24'08.93947" | 103°43'20.73329" |
| 1006      | 510693.264    | 729881.168   | 3636.306  | FLM—MW1 (Lid)      | 32°24'08.93848" | 103°43'20.73281" |
| 1005      | 510693.344    | 729881.224   | 3636.223  | FLM—MW1 (Casing)   | 32°24'08.93927" | 103°43'20.73218" |
| 1009      | 510569.224    | 729910.691   | 3633.215  | FLM—MW2 (Ground)   | 32°24'07.70941" | 103°43'20.39673" |
| 1010      | 510567.338    | 729910.661   | 3633.647  | FLM—MW2 (Concrete) | 32°24'07.69075" | 103°43'20.39720" |
| 1011      | 510567.307    | 729910.559   | 3636.167  | FLM—MW2 (Lid)      | 32°24'07.69045" | 103°43'20.39839" |
| 1012      | 510567.247    | 729910.563   | 3636.078  | FLM—MW2 (Casing)   | 32°24'07.68966" | 103°43'20.39835" |
| 1001      | 510940.945    | 730190.465   | 3639.206  | FLM—MW3 (Ground)   | 32°24'11.37184" | 103°43'17.10866" |
| 1002      | 510939.540    | 730189.852   | 3639.744  | FLM—MW3 (Concrete) | 32°24'11.35797" | 103°43'17.11475" |
| 1003      | 510939.478    | 730189.936   | 3642.512  | FLM—MW3 (Lid)      | 32°24'11.35736" | 103°43'17.11493" |
| 1004      | 510939.453    | 730189.904   | 3642.270  | FLM—MW3 (Casing)   | 32°24'11.35710" | 103°43'17.11531" |
| 1014      | 510407.592    | 729807.205   | 3631.985  | FLM—MW8 (Ground)   | 32°24'06.11588" | 103°43'21.61454" |
| 1015      | 510405.139    | 729806.482   | 3631.747  | FLM—MW8 (Concrete) | 32°24'06.09164" | 103°43'21.62314" |
| 1016      | 510404.937    | 729806.414   | 3634.908  | FLM—MW8 (Lid)      | 32°24'06.08965" | 103°43'21.62395" |
| 1017      | 510404.789    | 729806.418   | 3634.889  | FLM—MW8 (Casing)   | 32°24'06.08818" | 103°43'21.62392" |
| 1018      | 510585.972    | 730150.327   | 3637.999  | FLM—MW9 (Ground)   | 32°24'07.86157" | 103°43'17.60053" |
| 1019      | 510584.350    | 730150.427   | 3638.048  | FLM—MW9 (Concrete) | 32°24'07.84552" | 103°43'17.59946" |
| 1020      | 510584.129    | 730150.440   | 3641.099  | FLM—MW9 (Lid)      | 32°24'07.84333" | 103°43'17.59933" |
| 1021      | 510583.957    | 730150.496   | 3641.131  | FLM—MW9 (Casing)   | 32°24'07.84163" | 103°43'17.59869" |



GENERAL NOTES

1. AN UNCLASSIFIED SURVEY FOR WELL LOCATIONS WAS PERFORMED ON MARCH 22, 2018 AND UPDATED ON AUGUST 22, 2018. THIS IS NOT A BOUNDARY SURVEY.
2. WELL LOCATIONS ARE NAD 83 GRID COORDINATES (NEW MEXICO EASTERN ZONE 3001). ELEVATIONS ARE NAVD 88 VERTICAL DATUM.
3. SITE LOCATED WITHIN SECTION 7, TOWNSHIP 22 SOUTH, RANGE 32 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO.
4. THE PHOTOBASED IMAGE, DEPICTED ON THIS SURVEY, WAS IMPORTED FROM THE GOOGLE EARTH WEB SITE. THIS PHOTOBASE IMAGE IS SHOWN TO PROVIDE A GENERAL SITE ORIENTATION AND MAY NOT REFLECT THE CURRENT SITE CONDITIONS.
5. THE PURPOSE OF THIS SURVEY IS TO ESTABLISH NEW MEXICO STATE PLANE GRID COORDINATES AND ELEVATIONS FOR THE LOCATIONS OF THE NEWLY INSTALLED AND EXISTING EOG MONITORING WELLS.
6. SCREENED WELL INFORMATION IS BASED UPON THE UNCLASSIFIED SURVEY OF FLAMENCO FEDERAL WELL NO. 1 PREPARED BY THIS FIRM DATED APRIL 23, 2018.

CONTROL SURVEY NOTE

A CONTROL SURVEY WAS CONDUCTED AT THE SITE ON MARCH 22, 2018 AND VERIFIED ON AUGUST 22, 2018. BEARINGS ARE STATE PLANE GRID (NM EASTERN ZONE). CONTROL WAS PROJECTED ONTO THE SUBJECT SITE UTILIZING STATIC GPS COMBINED WITH RTK OBSERVATIONS TO ESTABLISH HORIZONTAL AND VERTICAL POSITIONS BASED UPON NAD 83/NAVD 88. THE STATIC OBSERVATIONS WERE PROCESSED USING NGS/NOAA ONLINE POSITIONING USER SERVICE COMBINED WITH GEOID12B, TO OBTAIN COORDINATES FOR THE PROJECT BENCHMARK.

A PERMANENT BENCHMARK WAS OCCUPIED ON SITE AS SHOWN ON THE DRAWING AND IS DESCRIBED AS FOLLOWS: PROJECT BM: A #5 REBAR W/CAP STAMPED "HMCg CONTROL NMPS 15075", LOCATED NEAR A FENCE POST AT THE MAIN ENTRANCE TO THE FACILITY, AS SHOWN ON THIS SHEET. ELEVATION = 3641.96 FEET (NAVD 88)

PROJECT BENCHMARK (P.B.M.)

A #5 REBAR W/CAP STAMPED "HMCg CONTROL NMPS 15075" IN DIRT, NEAR A FENCE POST AT THE MAIN ENTRANCE TO THE FACILITY, AS SHOWN ON THIS SHEET. ELEVATION = 3641.96 FEET (NAVD 1988)

TEMPORARY BENCHMARK #1 (T.B.M. #1)

A #5 REBAR W/CAP STAMPED "HMCg CONTROL NMPS 15075" IN DIRT, NEAR A FENCE POST BY THE CATTLE GUARD AT THE ENTRANCE FROM CAMPBELL ROAD, AS SHOWN ON THIS SHEET. ELEVATION = 3634.13 FEET (NAVD 1988)

SURVEYORS CERTIFICATION

I, JOSEPH M. SOLOMON, JR., NEW MEXICO PROFESSIONAL SURVEYOR NO. 15075, DO HEREBY CERTIFY; THAT THIS UNCLASSIFIED SURVEY AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO, AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

JOSEPH M. SOLOMON, JR., NMPS 15075



September 11, 2018  
DATE



6010-B Midway Park Blvd. NE • Albuquerque, New Mexico 87109  
Phone: 505.345.4250 • Fax: 505.345.4254 • www.highmesacg.com

UNCLASSIFIED SURVEY - GROUNDWATER MONITOR WELLS  
EOG RESOURCES FLAMENCO FEDERAL No. 1 WELL - LEA COUNTY, NM

| SURVEYED BY | M.V.Z. | NO. | DATE | BY | REVISIONS | JOB NO.      |
|-------------|--------|-----|------|----|-----------|--------------|
|             |        |     |      |    |           |              |
| DRAWN BY    | E.J.S. |     |      |    |           | 2018.050.1   |
|             |        |     |      |    |           | 09-2018      |
| APPROVED BY | J.M.S. |     |      |    |           | SHEET 1 OF 1 |
|             |        |     |      |    |           |              |



## Appendix E

# Groundwater Analytical Laboratory Results



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

March 07, 2018

Bernie Bockisch

GHD

6121 Indian School Road, NE #200

Albuquerque, NM 87110

TEL: (505) 884-0672

FAX

RE: Flamenco Fed 1

OrderNo.: 1802D75

Dear Bernie Bockisch:

Hall Environmental Analysis Laboratory received 4 sample(s) on 2/27/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](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 #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109



## Analytical Report

Lab Order: 1802D75

Date Reported: 3/7/2018

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD  
**Project:** Flamenco Fed 1

**Lab Order:** 1802D75

**Lab ID:** 1802D75-001 **Collection Date:** 2/23/2018 1:40:00 PM

**Client Sample ID:** W-088210-34-022318-JP-MW-1 **Matrix:** AQUEOUS

| Analyses                                     | Result | PQL  | Qual | Units | DF | Date Analyzed       | Batch ID |
|--|--------|------|------|-------|----|---------------------|----------|
| <b>EPA METHOD 300.0: ANIONS</b> Analyst: MRA |        |      |      |       |    |                     |          |
| Chloride                                     | 36000  | 2500 | *    | mg/L  | 5E | 3/5/2018 6:37:33 PM | R49564   |

**Lab ID:** 1802D75-002 **Collection Date:** 2/23/2018 2:00:00 PM

**Client Sample ID:** W-088210-34-022318-JP-MW-2 **Matrix:** AQUEOUS

| Analyses                                     | Result | PQL | Qual | Units | DF  | Date Analyzed       | Batch ID |
|--|--------|-----|------|-------|-----|---------------------|----------|
| <b>EPA METHOD 300.0: ANIONS</b> Analyst: MRA |        |     |      |       |     |                     |          |
| Chloride                                     | 7200   | 250 | *    | mg/L  | 500 | 3/5/2018 6:49:58 PM | R49564   |

**Lab ID:** 1802D75-003 **Collection Date:** 2/23/2018 2:15:00 AM

**Client Sample ID:** W-088210-34-022318-JP-MW-3 **Matrix:** AQUEOUS

| Analyses                                     | Result | PQL  | Qual | Units | DF | Date Analyzed       | Batch ID |
|--|--------|------|------|-------|----|---------------------|----------|
| <b>EPA METHOD 300.0: ANIONS</b> Analyst: MRA |        |      |      |       |    |                     |          |
| Chloride                                     | 38000  | 2500 | *    | mg/L  | 5E | 3/5/2018 7:02:22 PM | R49564   |

**Lab ID:** 1802D75-004 **Collection Date:** 2/23/2018

**Client Sample ID:** W-088210-34-022318-JP-MW-Dup **Matrix:** AQUEOUS

| Analyses                                     | Result | PQL | Qual | Units | DF  | Date Analyzed       | Batch ID |
|--|--------|-----|------|-------|-----|---------------------|----------|
| <b>EPA METHOD 300.0: ANIONS</b> Analyst: MRA |        |     |      |       |     |                     |          |
| Chloride                                     | 7300   | 250 | *    | mg/L  | 500 | 3/5/2018 7:14:47 PM | R49564   |

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           | Page 1 of 2 |
|                    | D   | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |             |
|                    | H   | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |             |
|                    | ND  | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |             |
|                    | PQL | Practical Quantitative Limit                          | RL | Reporting Detection Limit                                 |             |
|                    | S   | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |             |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1802D75  
07-Mar-18

Client: GHD  
Project: Flamenco Fed 1

|            |        |                |           |             |                          |          |           |      |          |      |
|------------|--------|----------------|-----------|-------------|--------------------------|----------|-----------|------|----------|------|
| Sample ID  | MB     | SampType:      | mblk      | TestCode:   | EPA Method 300.0: Anions |          |           |      |          |      |
| Client ID: | PBW    | Batch ID:      | R49564    | RunNo:      | 49564                    |          |           |      |          |      |
| Prep Date: |        | Analysis Date: | 3/5/2018  | SeqNo:      | 1602334                  | Units:   | mg/L      |      |          |      |
| Analyte    | Result | PQL            | SPK value | SPK Ref Val | %REC                     | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Chloride   | ND     | 0.50           |           |             |                          |          |           |      |          |      |

|            |        |                |           |             |                          |          |           |      |          |      |
|------------|--------|----------------|-----------|-------------|--------------------------|----------|-----------|------|----------|------|
| Sample ID  | LCS    | SampType:      | lcs       | TestCode:   | EPA Method 300.0: Anions |          |           |      |          |      |
| Client ID: | LCSW   | Batch ID:      | R49564    | RunNo:      | 49564                    |          |           |      |          |      |
| Prep Date: |        | Analysis Date: | 3/5/2018  | SeqNo:      | 1602335                  | Units:   | mg/L      |      |          |      |
| Analyte    | Result | PQL            | SPK value | SPK Ref Val | %REC                     | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Chloride   | 4.7    | 0.50           | 5.000     | 0           | 94.0                     | 90       | 110       |      |          |      |

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Page 2 of 2



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

## Sample Log-In Check List

Client Name: GHD

Work Order Number: 1802D75

RcptNo: 1

Received By: Dennis Suazo

2/27/2018 9:15:00 AM

*Dennis Suazo*

Completed By: Isaiah Ortiz

2/27/2018 9:22:39 AM

*Isaiah Ortiz*

Reviewed By: PDS

2/27/18

LB: MW 2/27/18

### Chain of Custody

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

### Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
9. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐ # of preserved bottles checked for pH: \_\_\_\_\_  
( $<2$  or  $>12$  unless noted)
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐ Adjusted? \_\_\_\_\_
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐ Checked by: \_\_\_\_\_

### Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

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

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

### 17. Cooler Information

| Cooler No | Temp $^{\circ}\text{C}$ | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|-------------------------|-----------|-------------|---------|-----------|-----------|
| 1         | 3.6                     | Good      | Yes         |         |           |           |





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

July 11, 2018

Alan Brandon

GHD

6121 Indian School Road, NE #200

Albuquerque, NM 87110

TEL: (505) 884-0672

FAX

RE: Flamenco Fed 1

OrderNo.: 1806E54

Dear Alan Brandon:

Hall Environmental Analysis Laboratory received 8 sample(s) on 6/23/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](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: 1806E54

Date Reported: 7/11/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD

Lab Order: 1806E54

Project: Flamenco Fed 1

Lab ID: 1806E54-001

Collection Date: 6/21/2018 1:47:00 PM

Client Sample ID: GW-088210-34-062118-PL-MW-1-A

Matrix: GROUNDWATER

| Analyses                            | Result | PQL  | Qual | Units | DF | Date Analyzed         | Batch ID     |
|-------------------------------------|--------|------|------|-------|----|-----------------------|--------------|
| EPA METHOD 300.0: ANIONS            |        |      |      |       |    |                       | Analyst: MRA |
| Chloride                            | 38000  | 2500 | *    | mg/L  | 5E | 7/10/2018 12:40:46 AM | R52563       |
| SM2540C MOD: TOTAL DISSOLVED SOLIDS |        |      |      |       |    |                       | Analyst: KS  |
| Total Dissolved Solids              | 73200  | 200  | *D   | mg/L  | 1  | 6/29/2018 6:37:00 PM  | 38956        |

Lab ID: 1806E54-002

Collection Date: 6/21/2018 1:47:00 PM

Client Sample ID: GW-088210-34-062118-PL-MW-1-B

Matrix: GROUNDWATER

| Analyses                            | Result | PQL  | Qual | Units | DF | Date Analyzed        | Batch ID     |
|-------------------------------------|--------|------|------|-------|----|----------------------|--------------|
| EPA METHOD 300.0: ANIONS            |        |      |      |       |    |                      | Analyst: MRA |
| Chloride                            | 38000  | 2500 | *    | mg/L  | 5E | 7/10/2018 1:18:00 AM | R52563       |
| SM2540C MOD: TOTAL DISSOLVED SOLIDS |        |      |      |       |    |                      | Analyst: KS  |
| Total Dissolved Solids              | 67400  | 200  | *D   | mg/L  | 1  | 6/29/2018 6:37:00 PM | 38956        |

Lab ID: 1806E54-003

Collection Date: 6/21/2018 3:29:00 PM

Client Sample ID: GW-088210-34-062118-PL-MW-2-A

Matrix: GROUNDWATER

| Analyses                            | Result | PQL | Qual | Units | DF | Date Analyzed        | Batch ID     |
|-------------------------------------|--------|-----|------|-------|----|----------------------|--------------|
| EPA METHOD 300.0: ANIONS            |        |     |      |       |    |                      | Analyst: MRA |
| Chloride                            | 6900   | 500 | *    | mg/L  | 1E | 7/10/2018 1:30:24 AM | R52563       |
| SM2540C MOD: TOTAL DISSOLVED SOLIDS |        |     |      |       |    |                      | Analyst: KS  |
| Total Dissolved Solids              | 15300  | 100 | *D   | mg/L  | 1  | 6/29/2018 6:37:00 PM | 38956        |

Lab ID: 1806E54-004

Collection Date: 6/21/2018 3:29:00 PM

Client Sample ID: GW-088210-34-062118-PL-MW-2-B

Matrix: GROUNDWATER

| Analyses                            | Result | PQL | Qual | Units | DF | Date Analyzed        | Batch ID     |
|-------------------------------------|--------|-----|------|-------|----|----------------------|--------------|
| EPA METHOD 300.0: ANIONS            |        |     |      |       |    |                      | Analyst: MRA |
| Chloride                            | 6100   | 500 | *    | mg/L  | 1E | 7/10/2018 1:42:49 AM | R52563       |
| SM2540C MOD: TOTAL DISSOLVED SOLIDS |        |     |      |       |    |                      | Analyst: KS  |
| Total Dissolved Solids              | 12800  | 100 | *D   | mg/L  | 1  | 6/29/2018 6:37:00 PM | 38956        |

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

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

## Analytical Report

Lab Order: 1806E54

Date Reported: 7/11/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD

Lab Order: 1806E54

Project: Flamenco Fed 1

Lab ID: 1806E54-005

Collection Date: 6/21/2018 4:38:00 PM

Client Sample ID: GW-088210-34-062118-PL-MW-3-A

Matrix: GROUNDWATER

| Analyses                            | Result | PQL  | Qual | Units | DF | Date Analyzed        | Batch ID     |
|-------------------------------------|--------|------|------|-------|----|----------------------|--------------|
| EPA METHOD 300.0: ANIONS            |        |      |      |       |    |                      | Analyst: MRA |
| Chloride                            | 43000  | 2500 | *    | mg/L  | 5E | 7/10/2018 1:55:13 AM | R52563       |
| SM2540C MOD: TOTAL DISSOLVED SOLIDS |        |      |      |       |    |                      | Analyst: KS  |
| Total Dissolved Solids              | 82700  | 200  | *D   | mg/L  | 1  | 6/29/2018 6:37:00 PM | 38956        |

Lab ID: 1806E54-006

Collection Date: 6/21/2018 4:38:00 PM

Client Sample ID: GW-088210-34-062118-PL-MW-3-B

Matrix: GROUNDWATER

| Analyses                            | Result | PQL  | Qual | Units | DF | Date Analyzed        | Batch ID     |
|-------------------------------------|--------|------|------|-------|----|----------------------|--------------|
| EPA METHOD 300.0: ANIONS            |        |      |      |       |    |                      | Analyst: MRA |
| Chloride                            | 44000  | 2500 | *    | mg/L  | 5E | 7/10/2018 2:07:37 AM | R52563       |
| SM2540C MOD: TOTAL DISSOLVED SOLIDS |        |      |      |       |    |                      | Analyst: KS  |
| Total Dissolved Solids              | 80000  | 200  | *D   | mg/L  | 1  | 6/29/2018 6:37:00 PM | 38956        |

Lab ID: 1806E54-007

Collection Date: 6/21/2018

Client Sample ID: GW-088210-34-062118-PL-DUP-A

Matrix: GROUNDWATER

| Analyses                            | Result | PQL | Qual | Units | DF | Date Analyzed        | Batch ID     |
|-------------------------------------|--------|-----|------|-------|----|----------------------|--------------|
| EPA METHOD 300.0: ANIONS            |        |     |      |       |    |                      | Analyst: MRA |
| Chloride                            | 6100   | 500 | *    | mg/L  | 1E | 7/10/2018 2:20:01 AM | R52563       |
| SM2540C MOD: TOTAL DISSOLVED SOLIDS |        |     |      |       |    |                      | Analyst: KS  |
| Total Dissolved Solids              | 13700  | 100 | *D   | mg/L  | 1  | 6/29/2018 6:37:00 PM | 38956        |

Lab ID: 1806E54-008

Collection Date: 6/21/2018

Client Sample ID: GW-088210-34-062118-PL-DUP-B

Matrix: GROUNDWATER

| Analyses                            | Result | PQL | Qual | Units | DF | Date Analyzed        | Batch ID     |
|-------------------------------------|--------|-----|------|-------|----|----------------------|--------------|
| EPA METHOD 300.0: ANIONS            |        |     |      |       |    |                      | Analyst: MRA |
| Chloride                            | 6100   | 500 | *    | mg/L  | 1E | 7/10/2018 2:32:26 AM | R52563       |
| SM2540C MOD: TOTAL DISSOLVED SOLIDS |        |     |      |       |    |                      | Analyst: KS  |
| Total Dissolved Solids              | 13400  | 100 | *D   | mg/L  | 1  | 6/29/2018 6:37:00 PM | 38956        |

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

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

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**WO#: **1806E54****11-Jul-18****Client:** GHD**Project:** Flamenco Fed 1

| Sample ID <b>MB</b>   | SampType: <b>mblk</b>           |      | TestCode: <b>EPA Method 300.0: Anions</b> |             |                    |          |           |      |          |      |
|-----------------------|---------------------------------|------|---|-------------|--------------------|----------|-----------|------|----------|------|
| Client ID: <b>PBW</b> | Batch ID: <b>R52563</b>         |      | RunNo: <b>52563</b>                       |             |                    |          |           |      |          |      |
| Prep Date:            | Analysis Date: <b>7/10/2018</b> |      | SeqNo: <b>1724282</b>                     |             | Units: <b>mg/L</b> |          |           |      |          |      |
| Analyte               | Result                          | PQL  | SPK value                                 | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Chloride              | ND                              | 0.50 |   |             |                    |          |           |      |          |      |

| Sample ID <b>LCS</b>   | SampType: <b>lcs</b>            |      | TestCode: <b>EPA Method 300.0: Anions</b> |             |                    |          |           |      |          |      |
|------------------------|---------------------------------|------|---|-------------|--------------------|----------|-----------|------|----------|------|
| Client ID: <b>LCSW</b> | Batch ID: <b>R52563</b>         |      | RunNo: <b>52563</b>                       |             |                    |          |           |      |          |      |
| Prep Date:             | Analysis Date: <b>7/10/2018</b> |      | SeqNo: <b>1724283</b>                     |             | Units: <b>mg/L</b> |          |           |      |          |      |
| Analyte                | Result                          | PQL  | SPK value                                 | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Chloride               | 4.8                             | 0.50 | 5.000                                     | 0           | 95.5               | 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

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**WO#: **1806E54****11-Jul-18**

**Client:** GHD  
**Project:** Flamenco Fed 1

|                        |                  |                |                  |             |  |          |             |      |          |      |
|------------------------|------------------|----------------|------------------|-------------|--|----------|-------------|------|----------|------|
| Sample ID              | <b>MB-38956</b>  | SampType:      | <b>MBLK</b>      | TestCode:   | <b>SM2540C MOD: Total Dissolved Solids</b> |          |             |      |          |      |
| Client ID:             | <b>PBW</b>       | Batch ID:      | <b>38956</b>     | RunNo:      | <b>52384</b>                               |          |             |      |          |      |
| Prep Date:             | <b>6/28/2018</b> | Analysis Date: | <b>6/29/2018</b> | SeqNo:      | <b>1716593</b>                             | Units:   | <b>mg/L</b> |      |          |      |
| Analyte                | Result           | PQL            | SPK value        | SPK Ref Val | %REC                                       | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Total Dissolved Solids | ND               | 20.0           |                  |             |  |          |             |      |          |      |

|                        |                  |                |                  |             |  |          |             |      |          |      |
|------------------------|------------------|----------------|------------------|-------------|--|----------|-------------|------|----------|------|
| Sample ID              | <b>LCS-38956</b> | SampType:      | <b>LCS</b>       | TestCode:   | <b>SM2540C MOD: Total Dissolved Solids</b> |          |             |      |          |      |
| Client ID:             | <b>LCSW</b>      | Batch ID:      | <b>38956</b>     | RunNo:      | <b>52384</b>                               |          |             |      |          |      |
| Prep Date:             | <b>6/28/2018</b> | Analysis Date: | <b>6/29/2018</b> | SeqNo:      | <b>1716594</b>                             | Units:   | <b>mg/L</b> |      |          |      |
| Analyte                | Result           | PQL            | SPK value        | SPK Ref Val | %REC                                       | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Total Dissolved Solids | 1060             | 20.0           | 1000             | 0           | 106  | 80       | 120         |      |          |      |

|                        |                          |                |                  |             |  |          |             |      |          |      |
|------------------------|--------------------------|----------------|------------------|-------------|--|----------|-------------|------|----------|------|
| Sample ID              | <b>1806E54-003AMS</b>    | SampType:      | <b>MS</b>        | TestCode:   | <b>SM2540C MOD: Total Dissolved Solids</b> |          |             |      |          |      |
| Client ID:             | <b>GW-088210-34-0621</b> | Batch ID:      | <b>38956</b>     | RunNo:      | <b>52384</b>                               |          |             |      |          |      |
| Prep Date:             | <b>6/28/2018</b>         | Analysis Date: | <b>6/29/2018</b> | SeqNo:      | <b>1716598</b>                             | Units:   | <b>mg/L</b> |      |          |      |
| Analyte                | Result                   | PQL            | SPK value        | SPK Ref Val | %REC                                       | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Total Dissolved Solids | 19800                    | 100            | 5000             | 15320       | 88.8                                       | 80       | 120         |      |          | D    |

|                        |                          |                |                  |             |  |          |             |      |          |      |
|------------------------|--------------------------|----------------|------------------|-------------|--|----------|-------------|------|----------|------|
| Sample ID              | <b>1806E54-003AMSD</b>   | SampType:      | <b>MSD</b>       | TestCode:   | <b>SM2540C MOD: Total Dissolved Solids</b> |          |             |      |          |      |
| Client ID:             | <b>GW-088210-34-0621</b> | Batch ID:      | <b>38956</b>     | RunNo:      | <b>52384</b>                               |          |             |      |          |      |
| Prep Date:             | <b>6/28/2018</b>         | Analysis Date: | <b>6/29/2018</b> | SeqNo:      | <b>1716599</b>                             | Units:   | <b>mg/L</b> |      |          |      |
| Analyte                | Result                   | PQL            | SPK value        | SPK Ref Val | %REC                                       | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Total Dissolved Solids | 20100                    | 100            | 5000             | 15320       | 95.4                                       | 80       | 120         | 1.66 | 5        | D    |

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified



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

## Sample Log-In Check List

Client Name: GHD

Work Order Number: 1806E54

RcptNo: 1

Received By: Andy Freeman

6/23/2018 10:40:00 AM

*Andy Freeman*

Completed By: Anne Thorne

6/25/2018 9:55:28 AM

*Anne Thorne*

Reviewed By: ENM

6/25/18

6/25/18 mmw

### Chain of Custody

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

### Log In

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

# of preserved  
bottles checked  
for pH:

(&lt;2 or &gt;12 unless noted)

Adjusted?

Checked by: *mmw 6/25/18*

### Special Handling (if applicable)

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

Person Notified:

Date:

By Whom:

Via:

☐ eMail☐ Phone☐ Fax☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

17. Cooler Information

| Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|---------|-----------|-------------|---------|-----------|-----------|
| 1         | 4.2     | Good      | Yes         |         |           |           |



Released to Imaging: 5/2/2022 3:36:34 PM

☐ EDD (Type)

Sample Temperature: 4.2°C

Tel. 505-345-3975 Fax 505-345-4107

[illegible][illegible]

|                            |                              |                          |                             |
|----------------------------|------------------------------|--------------------------|-----------------------------|
| Date: 22-18<br>Time: 09:57 | Relinquished by: [Signature] | Received by: [Signature] | Date: 6/23/18<br>Time: 1000 |
| Date: 22/8<br>Time: 1900   | Relinquished by: [Signature] | Received by: [Signature] | Date: 6/23/18<br>Time: 1040 |

|          |  |
|----------|--|
| Remarks: |  |
|----------|--|

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



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

November 02, 2018

Alan Brandon

GHD

6121 Indian School Road, NE #200

Albuquerque, NM 87110

TEL: (505) 884-0672

FAX

RE: Flamenco Fed 1

OrderNo.: 1810B73

Dear Alan Brandon:

Hall Environmental Analysis Laboratory received 3 sample(s) on 10/23/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](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 horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order: 1810B73

Date Reported: 11/2/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD

Lab Order: 1810B73

Project: Flamenco Fed 1

Lab ID: 1810B73-001

Collection Date: 10/19/2018 2:38:00 PM

Client Sample ID: GW-088210-34-101918-PL-MW-1

Matrix: AQUEOUS

| Analyses                            | Result | PQL  | Qual | Units | DF | Date Analyzed         | Batch ID     |
|-------------------------------------|--------|------|------|-------|----|-----------------------|--------------|
| EPA METHOD 300.0: ANIONS            |        |      |      |       |    |                       | Analyst: MRA |
| Chloride                            | 47000  | 2500 | *    | mg/L  | 5E | 10/26/2018 5:33:56 PM | R55207       |
| SM2540C MOD: TOTAL DISSOLVED SOLIDS |        |      |      |       |    |                       | Analyst: KS  |
| Total Dissolved Solids              | 82000  | 2000 | *D   | mg/L  | 1  | 10/28/2018 4:55:00 PM | 41224        |

Lab ID: 1810B73-002

Collection Date: 10/19/2018 1:20:00 PM

Client Sample ID: GW-088210-34-101918-PL-MW-2

Matrix: AQUEOUS

| Analyses                            | Result | PQL | Qual | Units | DF | Date Analyzed         | Batch ID     |
|-------------------------------------|--------|-----|------|-------|----|-----------------------|--------------|
| EPA METHOD 300.0: ANIONS            |        |     |      |       |    |                       | Analyst: MRA |
| Chloride                            | 8000   | 500 | *    | mg/L  | 1E | 10/26/2018 5:46:47 PM | R55207       |
| SM2540C MOD: TOTAL DISSOLVED SOLIDS |        |     |      |       |    |                       | Analyst: KS  |
| Total Dissolved Solids              | 15800  | 100 | *D   | mg/L  | 1  | 10/26/2018 5:10:00 PM | 41193        |

Lab ID: 1810B73-003

Collection Date: 10/19/2018 3:26:00 PM

Client Sample ID: GW-088210-34-101918-PL-MW-3

Matrix: AQUEOUS

| Analyses                            | Result | PQL  | Qual | Units | DF | Date Analyzed         | Batch ID     |
|-------------------------------------|--------|------|------|-------|----|-----------------------|--------------|
| EPA METHOD 300.0: ANIONS            |        |      |      |       |    |                       | Analyst: MRA |
| Chloride                            | 49000  | 2500 | *    | mg/L  | 5E | 10/26/2018 5:59:39 PM | R55207       |
| SM2540C MOD: TOTAL DISSOLVED SOLIDS |        |      |      |       |    |                       | Analyst: KS  |
| Total Dissolved Solids              | 97600  | 2000 | *D   | mg/L  | 1  | 10/28/2018 4:55:00 PM | 41224        |

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

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

Page 1 of 3

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**WO#: **1810B73**

02-Nov-18

**Client:** GHD**Project:** Flamenco Fed 1

| Sample ID <b>MB</b>   | SampType: <b>mblk</b>            |      |           | TestCode: <b>EPA Method 300.0: Anions</b> |      |                    |           |      |          |      |
|-----------------------|----------------------------------|------|-----------|---|------|--------------------|-----------|------|----------|------|
| Client ID: <b>PBW</b> | Batch ID: <b>R55207</b>          |      |           | RunNo: <b>55207</b>                       |      |                    |           |      |          |      |
| Prep Date:            | Analysis Date: <b>10/26/2018</b> |      |           | SeqNo: <b>1835753</b>                     |      | Units: <b>mg/L</b> |           |      |          |      |
| Analyte               | Result                           | PQL  | SPK value | SPK Ref Val                               | %REC | LowLimit           | HighLimit | %RPD | RPDLimit | Qual |
| Chloride              | ND                               | 0.50 |           |   |      |                    |           |      |          |      |

| Sample ID <b>LCS</b>   | SampType: <b>lcs</b>             |      |           | TestCode: <b>EPA Method 300.0: Anions</b> |      |                    |           |      |          |      |
|------------------------|----------------------------------|------|-----------|---|------|--------------------|-----------|------|----------|------|
| Client ID: <b>LCSW</b> | Batch ID: <b>R55207</b>          |      |           | RunNo: <b>55207</b>                       |      |                    |           |      |          |      |
| Prep Date:             | Analysis Date: <b>10/26/2018</b> |      |           | SeqNo: <b>1835754</b>                     |      | Units: <b>mg/L</b> |           |      |          |      |
| Analyte                | Result                           | PQL  | SPK value | SPK Ref Val                               | %REC | LowLimit           | HighLimit | %RPD | RPDLimit | Qual |
| Chloride               | 4.7                              | 0.50 | 5.000     | 0   | 93.5 | 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

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

Page 2 of 3



**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**WO#: **1810B73**

02-Nov-18

**Client:** GHD  
**Project:** Flamenco Fed 1

| Sample ID <b>MB-41193</b>    | SampType: <b>MBLK</b>            |      | TestCode: <b>SM2540C MOD: Total Dissolved Solids</b> |             |                    |          |           |      |          |      |
|------------------------------|----------------------------------|------|--|-------------|--------------------|----------|-----------|------|----------|------|
| Client ID: <b>PBW</b>        | Batch ID: <b>41193</b>           |      | RunNo: <b>55204</b>                                  |             |                    |          |           |      |          |      |
| Prep Date: <b>10/25/2018</b> | Analysis Date: <b>10/26/2018</b> |      | SeqNo: <b>1835649</b>                                |             | Units: <b>mg/L</b> |          |           |      |          |      |
| Analyte                      | Result                           | PQL  | SPK value  | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Total Dissolved Solids       | ND                               | 20.0 |  |             |                    |          |           |      |          |      |

| Sample ID <b>LCS-41193</b>   | SampType: <b>LCS</b>             |      | TestCode: <b>SM2540C MOD: Total Dissolved Solids</b> |             |                    |          |           |      |          |      |
|------------------------------|----------------------------------|------|--|-------------|--------------------|----------|-----------|------|----------|------|
| Client ID: <b>LCSW</b>       | Batch ID: <b>41193</b>           |      | RunNo: <b>55204</b>                                  |             |                    |          |           |      |          |      |
| Prep Date: <b>10/25/2018</b> | Analysis Date: <b>10/26/2018</b> |      | SeqNo: <b>1835650</b>                                |             | Units: <b>mg/L</b> |          |           |      |          |      |
| Analyte                      | Result                           | PQL  | SPK value  | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Total Dissolved Solids       | 1020                             | 20.0 | 1000   | 0           | 102                | 80       | 120       |      |          |      |

| Sample ID <b>MB-41224</b>    | SampType: <b>MBLK</b>            |      | TestCode: <b>SM2540C MOD: Total Dissolved Solids</b> |             |                    |          |           |      |          |      |
|------------------------------|----------------------------------|------|--|-------------|--------------------|----------|-----------|------|----------|------|
| Client ID: <b>PBW</b>        | Batch ID: <b>41224</b>           |      | RunNo: <b>55214</b>                                  |             |                    |          |           |      |          |      |
| Prep Date: <b>10/26/2018</b> | Analysis Date: <b>10/28/2018</b> |      | SeqNo: <b>1835995</b>                                |             | Units: <b>mg/L</b> |          |           |      |          |      |
| Analyte                      | Result                           | PQL  | SPK value  | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Total Dissolved Solids       | ND                               | 20.0 |  |             |                    |          |           |      |          |      |

| Sample ID <b>LCS-41224</b>   | SampType: <b>LCS</b>             |      | TestCode: <b>SM2540C MOD: Total Dissolved Solids</b> |             |                    |          |           |      |          |      |
|------------------------------|----------------------------------|------|--|-------------|--------------------|----------|-----------|------|----------|------|
| Client ID: <b>LCSW</b>       | Batch ID: <b>41224</b>           |      | RunNo: <b>55214</b>                                  |             |                    |          |           |      |          |      |
| Prep Date: <b>10/26/2018</b> | Analysis Date: <b>10/28/2018</b> |      | SeqNo: <b>1835996</b>                                |             | Units: <b>mg/L</b> |          |           |      |          |      |
| Analyte                      | Result                           | PQL  | SPK value  | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Total Dissolved Solids       | 1020                             | 20.0 | 1000   | 0           | 102                | 80       | 120       |      |          |      |

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87105  
TEL: 505-343-3975 FAX: 505-343-4107  
Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: GHD

Work Order Number: 1810B73

RcptNo: 1

Received By: Erin Melendrez 10/23/2018 9:10:00 AM

Completed By: Ashley Gallegos 10/23/2018 9:43:28 AM

Reviewed By: *[Signature]* 10/23/18

Labeled by: DAD 10/23/18

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
9. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐
- # of preserved bottles checked for pH: ( $<2$  or  $>12$  unless noted)
- Adjusted? Checked by: DAD 10/23/18

Special Handling (if applicable)

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

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

16. Additional remarks:

17. Cooler Information

| Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|---------|-----------|-------------|---------|-----------|-----------|
| 1         | 2.5     | Good      | Yes         |         |           |           |





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

January 25, 2019

Alan Brandon

GHD

6121 Indian School Road, NE #200

Albuquerque, NM 87110

TEL: (505) 884-0672

FAX

RE: Flamenco Federal #1

OrderNo.: 1901556

Dear Alan Brandon:

Hall Environmental Analysis Laboratory received 3 sample(s) on 1/15/2019 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](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 horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109



## Analytical Report

Lab Order: 1901556

Date Reported: 1/25/2019

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD

Lab Order: 1901556

Project: Flamenco Federal #1

Lab ID: 1901556-001

Collection Date: 1/11/2019 1:45:00 PM

Client Sample ID: GW-088210-34-011119-MM-MW-1

Matrix: AQUEOUS

| Analyses                                   | Result | PQL  | Qual | Units | DF | Date Analyzed        | Batch ID            |
|--|--------|------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 300.0: ANIONS</b>            |        |      |      |       |    |                      | Analyst: <b>smb</b> |
| Chloride                                   | 44000  | 2500 | *    | mg/L  | 5E | 1/21/2019 2:17:48 PM | R57164              |
| <b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b> |        |      |      |       |    |                      | Analyst: <b>KS</b>  |
| Total Dissolved Solids                     | 85300  | 200  | *D   | mg/L  | 1  | 1/16/2019 5:43:00 PM | 42623               |

Lab ID: 1901556-002

Collection Date: 1/11/2019 2:24:00 PM

Client Sample ID: GW-088210-34-011119-MM-MW-2

Matrix: AQUEOUS

| Analyses                                   | Result | PQL | Qual | Units | DF | Date Analyzed        | Batch ID            |
|--|--------|-----|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 300.0: ANIONS</b>            |        |     |      |       |    |                      | Analyst: <b>smb</b> |
| Chloride                                   | 8000   | 500 | *    | mg/L  | 1E | 1/21/2019 2:30:39 PM | R57164              |
| <b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b> |        |     |      |       |    |                      | Analyst: <b>KS</b>  |
| Total Dissolved Solids                     | 18400  | 200 | *D   | mg/L  | 1  | 1/16/2019 5:43:00 PM | 42623               |

Lab ID: 1901556-003

Collection Date: 1/11/2019 12:33:00 PM

Client Sample ID: GW-088210-34-011119-MM-MW-3

Matrix: AQUEOUS

| Analyses                                   | Result | PQL  | Qual | Units | DF | Date Analyzed        | Batch ID            |
|--|--------|------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 300.0: ANIONS</b>            |        |      |      |       |    |                      | Analyst: <b>smb</b> |
| Chloride                                   | 47000  | 2500 | *    | mg/L  | 5E | 1/21/2019 2:43:31 PM | R57164              |
| <b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b> |        |      |      |       |    |                      | Analyst: <b>KS</b>  |
| Total Dissolved Solids                     | 100000 | 2000 | *D   | mg/L  | 1  | 1/16/2019 5:43:00 PM | 42623               |

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

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

Page 1 of 3

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 1901556

25-Jan-19

**Client:** GHD  
**Project:** Flamenco Federal #1

| Sample ID <b>MB</b>   | SampType: <b>MBLK</b>           |      | TestCode: <b>EPA Method 300.0: Anions</b> |             |                    |          |           |      |          |      |
|-----------------------|---------------------------------|------|---|-------------|--------------------|----------|-----------|------|----------|------|
| Client ID: <b>PBW</b> | Batch ID: <b>R57164</b>         |      | RunNo: <b>57164</b>                       |             |                    |          |           |      |          |      |
| Prep Date:            | Analysis Date: <b>1/21/2019</b> |      | SeqNo: <b>1912082</b>                     |             | Units: <b>mg/L</b> |          |           |      |          |      |
| Analyte               | Result                          | PQL  | SPK value                                 | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Chloride              | ND                              | 0.50 |   |             |                    |          |           |      |          |      |

| Sample ID <b>LCS</b>   | SampType: <b>LCS</b>            |      | TestCode: <b>EPA Method 300.0: Anions</b> |             |                    |          |           |      |          |      |
|------------------------|---------------------------------|------|---|-------------|--------------------|----------|-----------|------|----------|------|
| Client ID: <b>LCSW</b> | Batch ID: <b>R57164</b>         |      | RunNo: <b>57164</b>                       |             |                    |          |           |      |          |      |
| Prep Date:             | Analysis Date: <b>1/21/2019</b> |      | SeqNo: <b>1912083</b>                     |             | Units: <b>mg/L</b> |          |           |      |          |      |
| Analyte                | Result                          | PQL  | SPK value                                 | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Chloride               | 4.8                             | 0.50 | 5.000                                     | 0           | 95.2               | 90       | 110       |      |          |      |

**Qualifiers:**

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

Page 2 of 3

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1901556  
25-Jan-19

Client: GHD  
Project: Flamenco Federal #1

|                        |           |                |           |             |                                     |          |           |      |          |      |
|------------------------|-----------|----------------|-----------|-------------|-------------------------------------|----------|-----------|------|----------|------|
| Sample ID              | MB-42623  | SampType:      | MBLK      | TestCode:   | SM2540C MOD: Total Dissolved Solids |          |           |      |          |      |
| Client ID:             | PBW       | Batch ID:      | 42623     | RunNo:      | 57045                               |          |           |      |          |      |
| Prep Date:             | 1/15/2019 | Analysis Date: | 1/16/2019 | SeqNo:      | 1908245                             | Units:   | mg/L      |      |          |      |
| Analyte                | Result    | PQL            | SPK value | SPK Ref Val | %REC                                | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Total Dissolved Solids | ND        | 20.0           |           |             |                                     |          |           |      |          |      |

|                        |           |                |           |             |                                     |          |           |      |          |      |
|------------------------|-----------|----------------|-----------|-------------|-------------------------------------|----------|-----------|------|----------|------|
| Sample ID              | LCS-42623 | SampType:      | LCS       | TestCode:   | SM2540C MOD: Total Dissolved Solids |          |           |      |          |      |
| Client ID:             | LCSW      | Batch ID:      | 42623     | RunNo:      | 57045                               |          |           |      |          |      |
| Prep Date:             | 1/15/2019 | Analysis Date: | 1/16/2019 | SeqNo:      | 1908246                             | Units:   | mg/L      |      |          |      |
| Analyte                | Result    | PQL            | SPK value | SPK Ref Val | %REC                                | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Total Dissolved Solids | 1020      | 20.0           | 1000      | 0           | 102                                 | 80       | 120       |      |          |      |

Qualifiers:

|   |   |             |
|---|---|-------------|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           | Page 3 of 3 |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |             |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |             |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |             |
| PQL Practical Quantitative Limit                        | RL Reporting Detection Limit                                |             |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |             |



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

## Sample Log-In Check List

Client Name: **GHD**

Work Order Number: **1901556**

RcptNo: 1

Received By: **Erin Melendrez**

1/15/2019 8:55:00 AM

Completed By: **Victoria Zellar**

1/15/2019 9:24:17 AM

Reviewed By: **vz 1/15/19**

*Victoria Zellar*

*labeled by*

*ENM 1/15/19*

### Chain of Custody

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

### Log In

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

# of preserved bottles checked for pH: ENM 1/15/19  
( $< 8$  or  $> 12$  unless noted)  
Adjusted? \_\_\_\_\_  
Checked by: \_\_\_\_\_

### Special Handling (if applicable)

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

|                      |                      |       |   |
|----------------------|----------------------|-------|---|
| Person Notified:     | <input type="text"/> | Date: | <input type="text"/>  |
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| Client Instructions: | <input type="text"/> |       |   |

16. Additional remarks:

### 17. Cooler Information

| Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|---------|-----------|-------------|---------|-----------|-----------|
| 1         | 2.1     | Good      | Yes         |         |           |           |



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# Attachment F

## Excerpts from Referenced WIPP Hydrogeological Studies

Page 440 of 500

GEOLOGICAL CHARACTERIZATION REPORT  
WASTE ISOLATION PILOT PLANT (WIPP) SITE,  
SOUTHEASTERN NEW MEXICO

SAND78-1596

VOLUME I

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## PREFACE

The Geological Characterization Report (GCR) for the WIPP site presents, in one document, a compilation of geologic information available to August, 1978, which is judged to be relevant to studies for the WIPP. As such, commonly available documents are summarized as appropriate while other documents may be presented more fully. In some instances, the information presented may be preliminary or may reflect continuing studies not yet complete. The Geological Characterization Report certainly should not be construed as the final word on the WIPP geology. Furthermore, specific judgements of how the geologic information affects the WIPP are restricted since the document is intended as a source of information. However, recommendations may be made on the basis of the document. The Geological Characterization Report for the WIPP site is neither a Preliminary Safety Analysis Report nor an Environmental Impact Statement; these documents, when prepared, should be consulted for appropriate discussion of safety analysis and environmental impact. The Geological Characterization Report of the WIPP site is a unique document and at this time is not required by regulatory process.

The Geological Characterization Report (GCR) for the WIPP has been created through the efforts of many individuals who are to be acknowledged for their contributions; little of the material presented, however, is original material created solely for the Geological Characterization Report. At Sandia Laboratories, principal contributors to the writing of the GCR are, in alphabetical order: G.E. Barr, B.M. Butcher, R.G. Dosch, L.R. Hill, S.J. Lambert, D.W. Powers, S.E. Shaffer, W. Wawersik, and W.D. Weart. Bechtel Corporation provided basic summaries for many chapters; the principal participants were: D. Dale, C. Farrell, V. Howes, J. Litehiser, D. Roberts, R. Sayer. In particular, J. Litehiser provided the analysis of seismic risk in Chapter 5. G.B. Griswold of Tecolote Corporation summarized resources in Chapter 8. F.H. Dove of NUS summarized hydrology in Chapter 6.

Editorial and review comments were solicited on a working copy and received from independent agencies with personnel familiar with the geology of southeastern New Mexico, particularly the New Mexico Bureau of Mines and Mineral Resources. An internal review at Sandia Laboratories of a working copy of the entire document also resulted in detailed comments. Those review comments were incorporated as appropriate into this draft copy. As usual, some of the suggestions were not followed for various reasons. The draft copy received review and comment by the WIPP Panel (Committee on Radioactive Waste Management, National Research Council) of the National Academy of Science, the Office of Nuclear Waste Isolation (ONWI) and various subcontractors, and by Westinghouse as a contractor to DOE. Major parts of the draft were reviewed by members of the Special Projects Branch, USGS. These comments have resulted in some revision of the final copy, as seemed appropriate. The editors assume responsibility for the contents of this report.

The editors and writers acknowledge the enormous volume of accumulated data and interpretations which provide the background for the Geological Characterization Report; referencing of authors is intended to reflect this background and to properly attribute material.

The Report is primarily intended for use by those with a technical background in earth sciences. However, the text should also be generally readable without all of this background by referral to the American Geological Institute Glossary of Geology (1974).



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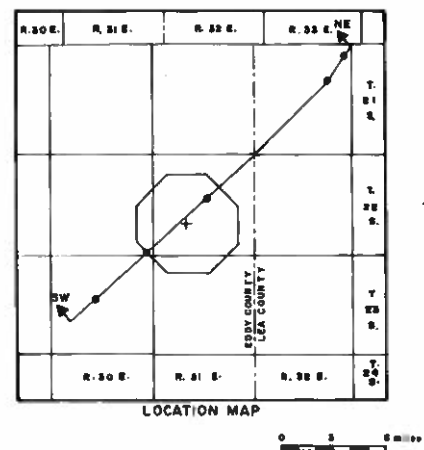
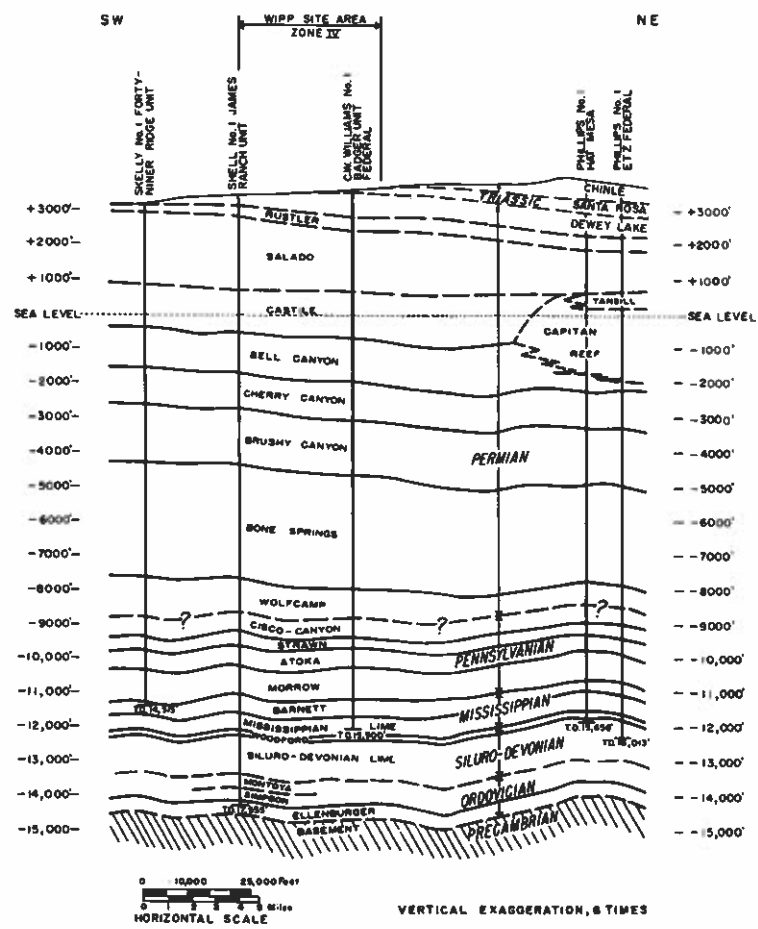
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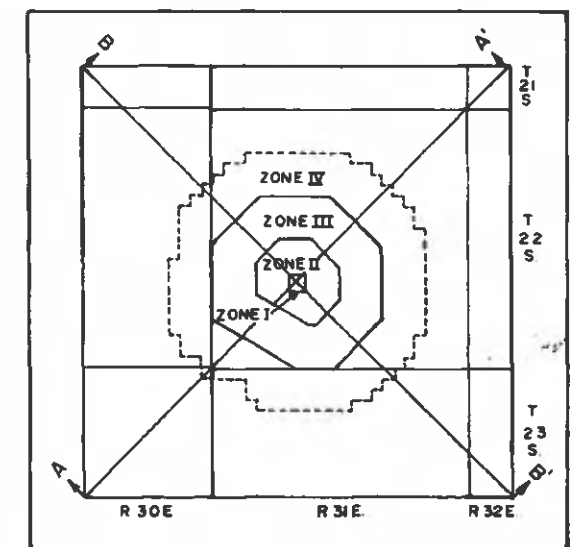
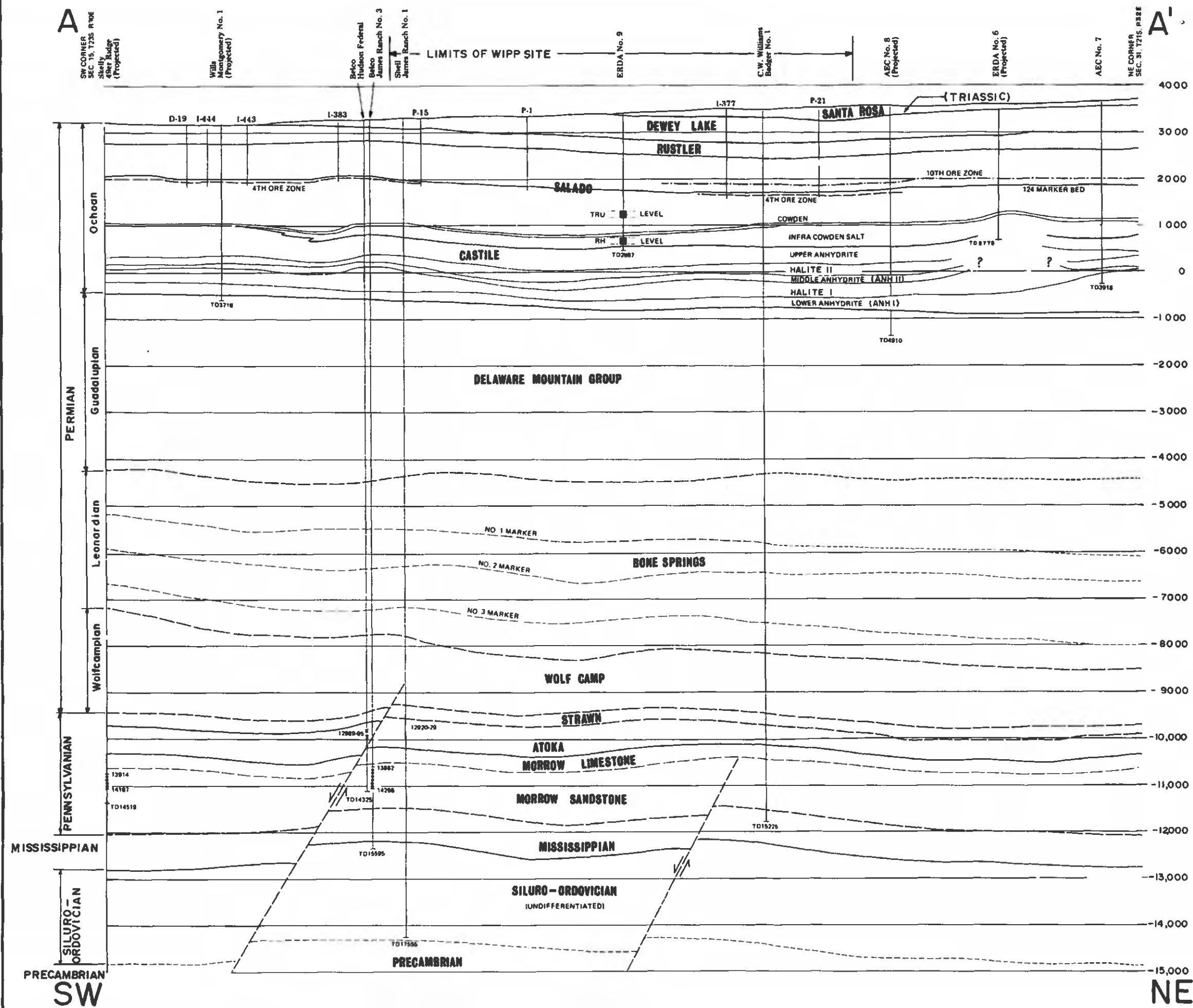




REFERENCE:  
Netherland, Sewell & Associates, 1974, Exbt G-18

GENERALIZED SITE STRATIGRAPHIC SECTION

FIGURE 4.3-1



**REFERENCE**

Griswold, 1977, figure 6

0 1 2 3  
HORIZONTAL SCALE IN MILES  
VERTICAL EXAGGERATION, APPROX. 3 1/2 TIMES  
DATUM IS MEAN SEA LEVEL

**SITE GEOLOGIC SECTION A-A'**

**FIGURE 4.4-4**

**GEOHYDROLOGY OF THE PROPOSED WASTE ISOLATION  
PILOT PLANT SITE, LOS MEDAÑOS AREA,  
SOUTHEASTERN NEW MEXICO**

By Jerry W. Mercer

---

U.S. GEOLOGICAL SURVEY

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CONVERSION FACTORS

In this report figures for measurements are given in inch-pound units only. The following table contains factors for converting to International System (S.I.) units.

| <u>Multiply inch-pound units</u> | <u>By</u> | <u>To obtain S.I.units</u>     |
|----------------------------------|-----------|--------------------------------|
| foot                             | 0.3048    | meter                          |
| foot per mile                    | 0.1894    | meter per kilometer            |
| foot per day                     | 0.3048    | meter per day                  |
| foot squared per day             | 0.0929    | meter squared per day          |
| gallon per minute                | 0.06309   | liter per second               |
| ton (short)                      | 0.9072    | megagram                       |
| pound per square inch            | 0.07031   | kilogram per square centimeter |
| mile                             | 1.609     | kilometer                      |
| square mile                      | 2.590     | square kilometer               |
| inch                             | 25.40     | millimeter                     |

Chemical concentrations are given only in metric units--milligrams per liter, micrograms per liter, picocuries per liter, or milliequivalents per liter. Liquid densities are given only in metric units--grams per cubic centimeter.

National Geodetic Vertical Datum of 1929 (NGVD of 1929): A geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called "Mean Sea Level." NGVD of 1929 is referred to as sea level in this report.

**GEOHYDROLOGY OF THE PROPOSED WASTE  
ISOLATION PILOT PLANT SITE, LOS MEDAÑOS  
AREA, SOUTHEASTERN NEW MEXICO**

by Jerry W. Mercer

**ABSTRACT**

Geohydrologic data have been collected in the Los Medaños area at the U.S. Department of Energy's proposed Waste Isolation Pilot Plant (WIPP) site in southeastern New Mexico since 1975 as part of a study evaluating the feasibility of storing defense-associated nuclear wastes within the bedded salt of the Salado Formation of Permian age. Drilling and hydrologic testing have identified three principal water-bearing zones above the Salado Formation and one below that could potentially transport wastes to the biosphere if the proposed facility were breached. The zones above the Salado are the contact between the Rustler and Salado Formations and the Culebra and Magenta Dolomite Members of the Rustler Formation of Permian age. The zone below the Salado Formation consists of channel sandstones in the Bell Canyon Formation of the Permian Delaware Mountain Group.

Determinations of hydraulic gradients, directions of flow, and hydraulic properties were hindered because of the negligible permeability of the water-bearing zones. Special techniques in drilling, well completion, and hydraulic testing have been developed to determine the hydrologic characteristics of these water-bearing zones.

The Rustler Formation contains the principal water-bearing zones identified at the WIPP site, and thus was the most extensively studied. Calculations from pumping, slug, and pressure-pulse tests indicate that the transmissivities of the units vary laterally within, as well as between, the individual beds. The Culebra Dolomite Member is the most persistent and productive hydrologic unit in the WIPP site area and also has the greatest variability of hydraulic properties. This variability results from the size and number of fractures, which in turn are related to the degree of evaporite dissolution within the Rustler Formation. Transmissivities calculated for the Culebra in Nash Draw immediately west of the WIPP site range from 18 to 1,250 feet squared per day, whereas they range from  $1 \times 10^{-3}$  to 140 feet squared per day at the WIPP site. Potentiometric-surface maps (as equivalent



freshwater heads) indicate flow in the Culebra Dolomite Member of the Rustler Formation at the WIPP site to be southerly, eventually flowing southwestward to Nash Draw. Determination of flow directions, however, may be significantly affected by directional differences in permeability along fractures. The dominant dissolved ions are sodium and chloride, with calcium, magnesium, potassium, and sulfate being other major ions present. Hydrochemistry studies indicate an increase of mineralization of water from west to east along with a decrease in circulation of the flow system. The dissolved-solids concentrations across the WIPP site range from 3,200 to 420,000 milligrams per liter.

The Magenta Dolomite Member is the uppermost hydrologic unit. Water in this unit occurs either in thin silt beds and silty dolomite or in fractures where extensive evaporite dissolution has occurred in the Rustler Formation. Transmissivities calculated for the Magenta in Nash Draw range from 53 to 375 feet squared per day, whereas they range from  $4 \times 10^{-3}$  to  $1 \times 10^{-1}$  foot squared per day at the WIPP site. Potentiometric-surface maps (as equivalent freshwater heads) indicate flow in the Magenta to be westward toward Nash Draw where the flow direction is then controlled by the evaporite dissolution in the Rustler. The water is brackish to briny. The dominant dissolved ions are sodium and chloride with calcium, magnesium, potassium, and sulfate being other major ions. Dissolved-solids concentrations across the WIPP site range from 5,460 to 270,000 milligrams per liter.

The least productive water-producing zone is at the contact between the Rustler and Salado Formations where brine occurs either in an evaporite residuum or in clays along bedding planes. The residuum is concentrated along Nash Draw and is most extensive between Malaga Bend on the Pecos River, 10 miles southwest of the proposed WIPP site, and Laguna Grande de la Sal, where transmissivities are as large as 8,000 feet squared per day. North of Laguna Grande de la Sal in Nash Draw, the transmissivities range from  $2 \times 10^{-4}$  to 8 feet squared per day; transmissivities at the WIPP site range from  $3 \times 10^{-5}$  to  $5 \times 10^{-2}$  foot squared per day. Potentiometric surface maps (as equivalent freshwater heads) indicate flow in the contact zone to the southwest across the WIPP site toward Nash Draw. The dissolved solids in the brines at the Rustler-Salado contact are predominantly sodium chloride with dissolved-solids concentrations ranging from 79,800 to 480,000 milligrams per liter. Large potassium and magnesium ion concentrations in the eastern part of the site may indicate restricted circulation of the brines.

The relative static heads or formation pressures of the hydrologic units in the Rustler decrease with depth; that is, static heads are the highest in the Magenta and the lowest at the contact zone between the Rustler and Salado. In the WIPP site area, the presence of relatively impermeable interbeds of halite and anhydrite probably restricts vertical movement between units. The Rustler Formation probably is recharged in Bear Grass Draw about 20 miles northwest of the WIPP site and in Clayton Basin, which is about 12 miles northwest of the WIPP site. The major discharge occurs at Malaga Bend on the Pecos River.



Data collected from drill-stem tests in test wells penetrating the Bell Canyon Formation indicate that the brines associated with the unit usually occur in relatively isolated channel sandstones that are permeable (hydraulic conductivities ranging from  $7 \times 10^{-3}$  to  $5 \times 10^{-2}$  foot per day) but grade vertically and laterally into siltstones and shales with little permeability. Potentiometric-surface maps (as equivalent freshwater heads) show flow in the Bell Canyon Formation to be laterally across the basin to the northeast, but the movement probably is extremely slow. The dissolved ions in the brines of the Bell Canyon are predominantly sodium and chloride with dissolved-solids concentrations ranging from 180,000 to 270,000 milligrams per liter.

## INTRODUCTION

### Purpose and Scope

The U.S. Geological Survey, at the request of the U.S. Department of Energy, is investigating the geohydrology of the proposed Waste Isolation Pilot Plant (WIPP) site in an area known as Los Medanos, 30 miles east of Carlsbad, New Mexico (fig. 1). Geohydrologic data have been collected from this area by the U.S. Geological Survey intermittently since 1972 and on a continuous basis since 1975.

The WIPP is a project of the Department of Energy and is proposed as a radioactive-waste storage facility to be placed at a depth of approximately 2,150 feet in the bedded salts of the Permian Salado Formation. The WIPP is planned to demonstrate disposal technology for transuranic wastes. After a period of "pilot" operation in a waste-retrievable mode, it is expected WIPP will be converted into a facility for permanent storage of transuranic wastes (Powers, 1981, p. 119).

The characteristics of the regional geohydrologic systems associated with the WIPP site need to be defined because of the potential for transport of radionuclides to the biosphere by ground water in the event the storage facility is breached. Another equally important aspect of the WIPP study is the determination of the geologic stability of the formation in which the wastes will be placed. Because the formation of concern is easily dissolved halite, the inherent stability of the formation is directly related to the hydrologic regime within and around the formation and needs to be studied in detail.

At the WIPP site, water-bearing zones above and below the salt section could affect stability as well as potentially transport radionuclides. Because some of these water-bearing zones are more likely to be involved than others, the degree of certainty required in the definition of flow paths, velocity of ground water, quality of water, and other characteristics is different for some zones than others.

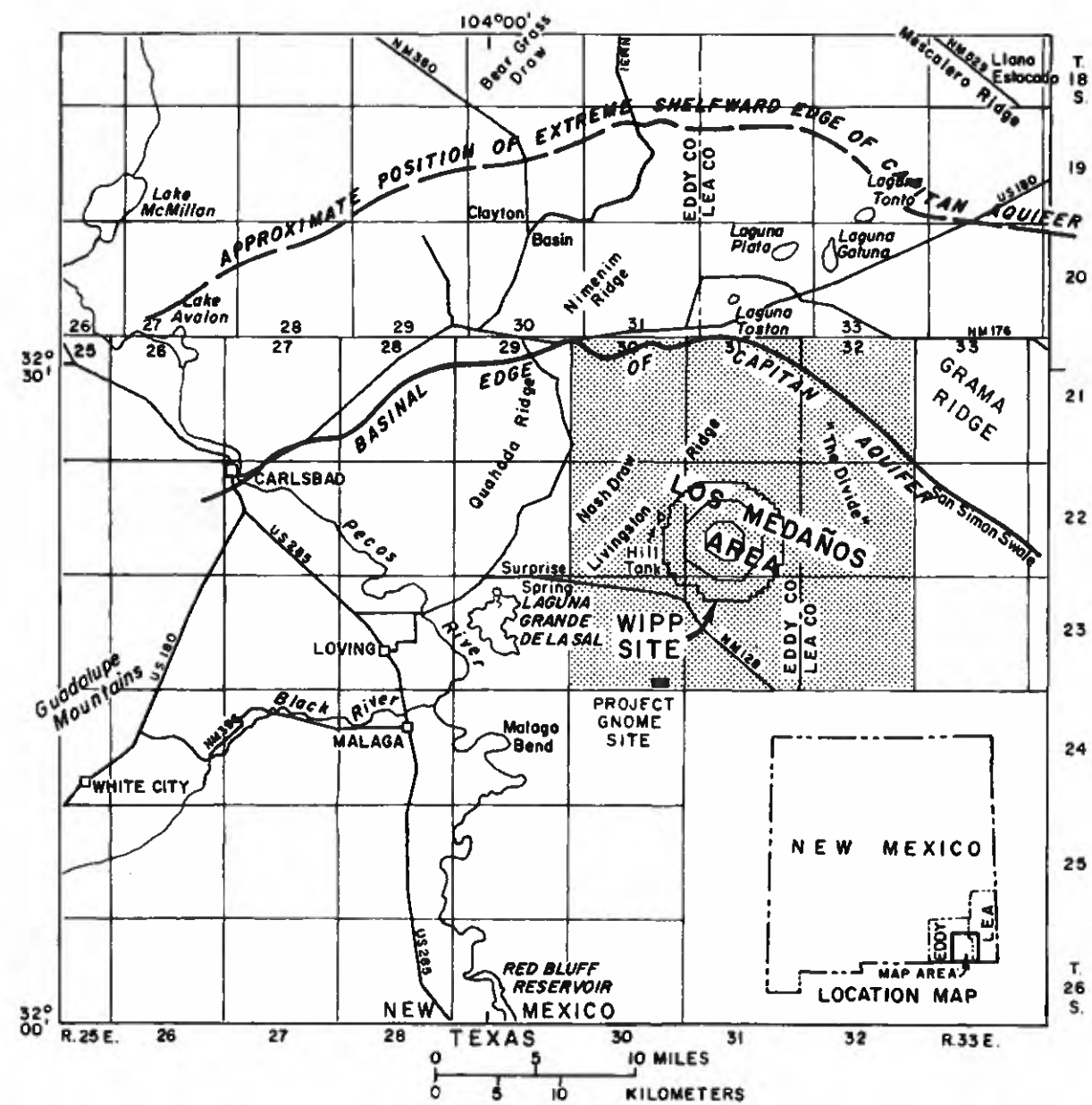


Figure 1.--Location of Los Medaños area and the proposed Waste Isolation Pilot Plant (WIPP) site

This report discusses the ground-water systems and the interpretation of test results in the water-bearing zones above and below the proposed facility. Hydrologic data used in these analyses were collected during 7 years beginning in 1975 and were from 39 test holes drilled for, or converted to, hydrologic test holes. The study included: the determination of potential ground-water flow boundaries; potentiometric heads; ground-water chemistry; and hydraulic properties obtained through pumping, slug, pressure-pulse, and tracer tests.

The hydrologic investigation is part of a comprehensive study related to site characterization and validation conducted on behalf of the U.S. Department of Energy by Sandia National Laboratories. The hydrologic studies were conducted by the U.S. Geological Survey and were designed to supplement the technical site-characterization program performed by Sandia.

## Location and Areal Extent

The study area of approximately 800 square miles is located within the northern part of the Delaware Basin in eastern Eddy and western Lea Counties, New Mexico and includes all or part of Tps. 21-23 S., Rs. 30-32 E. (fig. 1). The WIPP site is approximately in the center of the study area and covers about 54 square miles, encompassing almost all of T. 22 S., R. 31 E. (fig. 1). It is outlined in figure 1 by a proposed exclusion boundary, or buffer zone, surrounding the area of the proposed facility.

The WIPP site is in an area referred to as Los Medaños. Los Medaños is part of a gently sloping terrain that rises eastward from the Pecos River to the "caprock" of the Llano Estacado. The topographic relief generally is less than 50 feet; the surface area is covered with sand dunes. Vegetation consists of mesquite, scrub oak, and other plants typical of the northern Chihuahuan desert. The average annual precipitation is 11 to 13 inches, while evaporation from surface water exceeds 98 inches per year. The primary land use is cattle grazing. Potash is being mined in the area to the north and west; petroleum exploration and development recently has become quite intensive.

The major topographic features in the area include two depressions called Nash Draw and Clayton Basin. Nash Draw is the larger, being 4 to 6 miles wide and 15 to 18 miles long, extending southward through the western part of the area (fig. 1). These features are believed to have been formed by solution-subsidence and collapse and then extensively modified by erosion. Neither Nash Draw nor Clayton Basin has external surface drainage.



Los Medaños area is drained by the Pecos River, the only perennial stream in the region. The Pecos drainage system trends southeastward through the western margin of the study area and is at its closest point 10 miles from the WIPP site.

Laguna Grande de la Sal (Great Salt Lake), a large salt lake in the southern end of Nash Draw, contains water most of the time. Numerous small lakes and playas contain water only after intense rains, whereas small permanent tailings ponds, resulting from potash mining, occupy several of the smaller closed depressions.

## Previous Investigations

The Delaware Basin geology in southeastern New Mexico has been studied extensively during the past 40 years, especially since the increase in oil and gas exploration. Prior to the establishment of the WIPP project, however, relatively little study was devoted to the Permian formations (above the Bell Canyon Formation), which include the evaporites of concern. Lang (1937) was one of the first to discuss these rock units and topographic features in the area; however, the most intensive geologic work prior to the WIPP project was done by C. L. Jones and others in connection with the U.S. Geological Survey's study of the potash deposits of the Carlsbad area. Reports were prepared by Jones (1954, 1959, 1972), Jones and Madsen (1959), and Jones, Bowles, and Bell (1960). The other significant geologic studies concentrating on this sequence of rocks were related to the Gnome experiment (an underground nuclear test) and include work by Vine (1963), Cooper (1960, 1961, 1962a, and 1962b), and Gard (1968). Numerous recent geologic papers concerned with the WIPP site investigations have been published and are included as references in this report and in a report published by Sandia National Laboratories (Powers and others, 1978).

The first detailed hydrologic work in the area was conducted by Robinson and Lang (1938) during studies of the occurrence of brine springs in the Malaga area during 1937-38. Additional work was performed in the Malaga Bend area from 1938 to 1941; the results of this work, particularly that of Theis and Sayre (1942), was published in "Reports of the participating agencies, the Pecos River Joint Investigation." Further detail on the Malaga Bend salinity problem was added by Hale (1945a, 1945b, 1961), Hale and Clebsch (1958), Hale, Hughes, and Cox (1954), Cox and Kunkler (1962), Cox and Havens (1965), and more recently, Havens and Wilkins (1980) and Kunkler (1980). The regional occurrence of ground water in the area was discussed by Hendrickson and Jones (1952) and Nicholson and Clebsch (1961). Hiss (1976) made an extensive contribution to the hydrology of the Capitan Reef in a dissertation prepared while working with the U.S. Geological Survey. Others that made contributions to an understanding of the Capitan Reef include Bjorklund and Motts (1959), Halpenny and Greene (1966), and Motts (1968). Associated with



the Project Gnome investigations, contributions by Cooper (1961, 1962a, 1962b), Cooper and others (1962), and Cooper and Glanzman (1971) have greatly added to an understanding of the geohydrology of the Rustler Formation.

Recent investigations related to hydrologic characteristics of the WIPP site began with a review of the geology and hydrology of the Carlsbad potash area (Brokaw, Jones, Cooley, and Hays, 1972) and a review of the Los Medanos area (Jones, Cooley, and Bachman, 1973). A review of the regional hydrology of the WIPP site area was presented by Mercer and Orr (1977), while detailed hydrologic studies are included in an interim data report by Mercer and Orr (1979) and in a paper by Mercer and Gonzalez (1981).

The dissolution in the WIPP area is complex and has been considered in studies of the Cenozoic history of the area by Bachman (1973, 1974, 1976, 1980, and 1981). These studies added greatly to an understanding of the hydrologic systems in the area. Additional interpretations of dissolution have been prepared by Lambert (1982) and Anderson (1978, 1981).

## Methods of Investigation

The objective of the hydrologic program was to define the hydrologic characteristics of the flow path of the ground-water system that could potentially transport wastes to the biosphere. Hydrologic information required to define the flow-path characteristics included static heads or reservoir pressures, the magnitude and direction of ground-water flow, and the chemical characteristics of the water that may have an effect on dissolution or on chemical interactions with rocks along the flow path.

The lack of very permeable rocks and the consequent lack of existing wells within the WIPP study area necessitated the development of a comprehensive drilling and testing program. This program included test holes for both site-specific geohydrologic studies and regional studies. Seventy-one test holes were drilled during WIPP studies; of these, 26 were specifically for hydrologic testing (H series) and 13 of the 45 geologic test holes were later used or converted for hydrologic testing (table 1, fig. 1a). These holes range in depth from 154 to 4,910 feet. Because the water-producing zones had little permeability and consequently would require months of recovery time and testing, special techniques in drilling, well completion, and hydraulic testing were developed to determine the hydrologic characteristics of the water-producing zones (Basler, 1983).

The air-rotary method was used to drill two types of holes specifically designed for hydrologic testing: (1) Holes were drilled, cased, cemented, and then perforated at the selected test zone; and (2) three closely spaced holes were drilled in a complex, each cased down to a specific test interval.

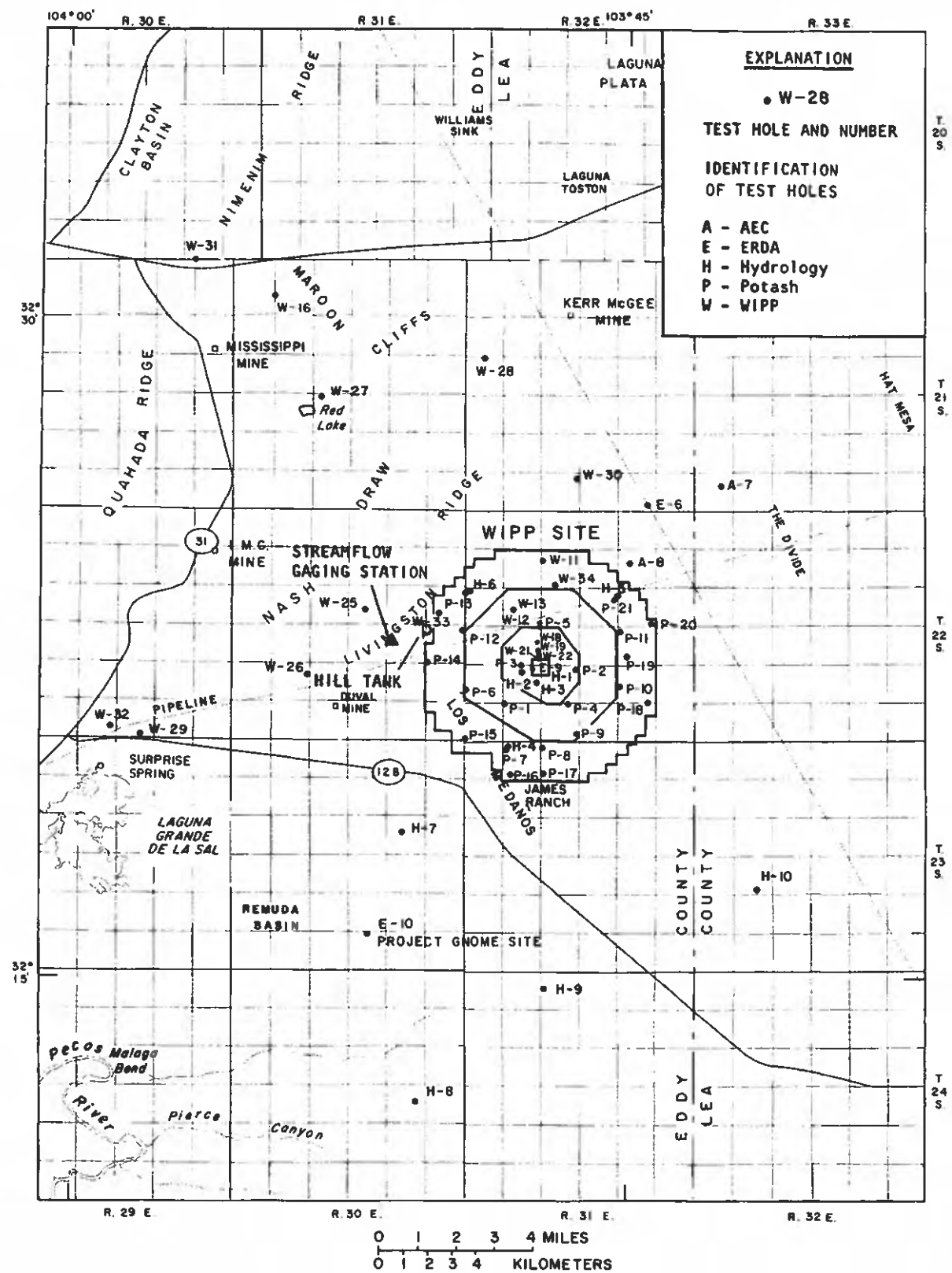


Figure 1a.--Location of test holes at and near the proposed Waste Isolation Pilot Plant (WIPP) site



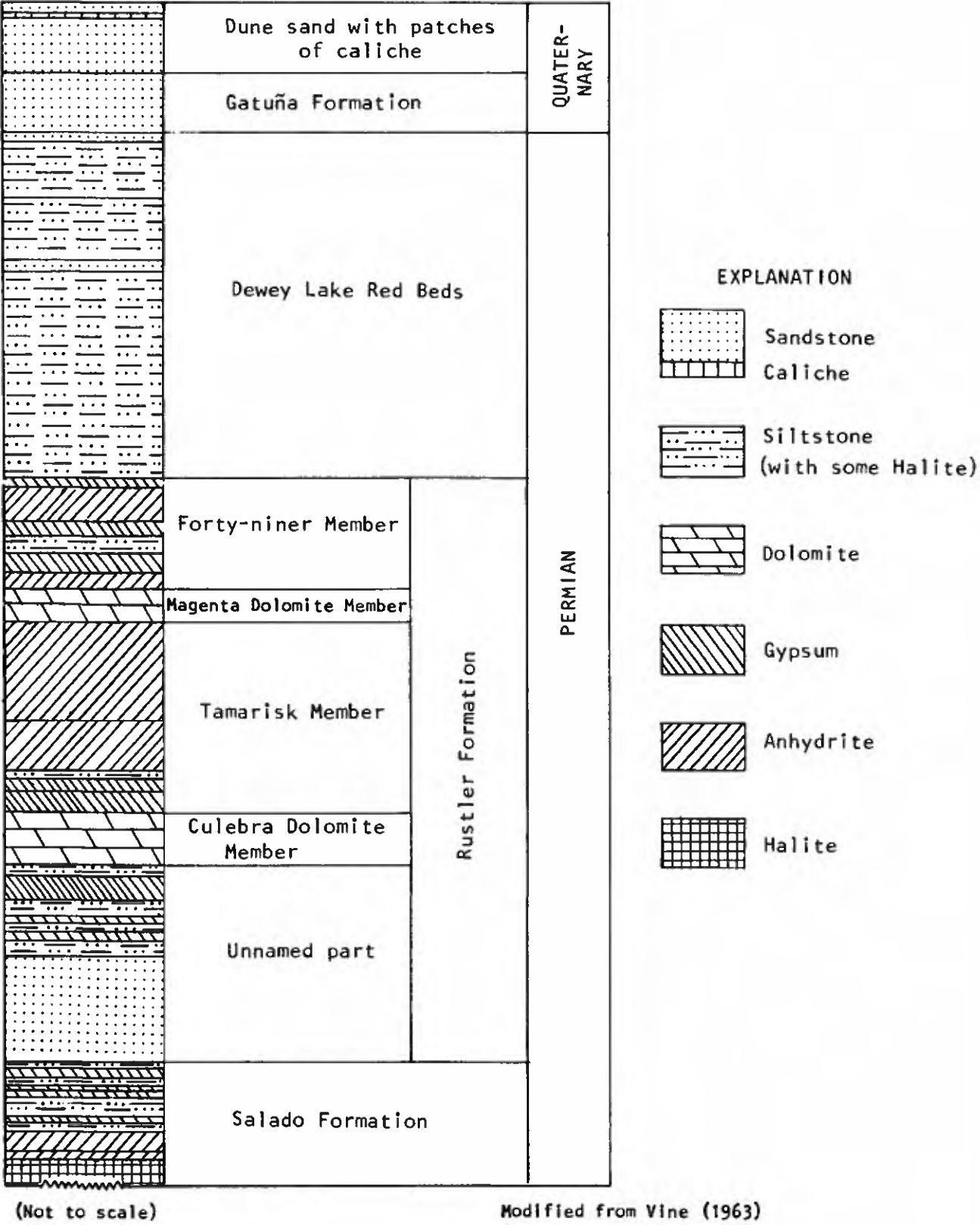


Figure 4.--The five subdivisions of the Rustler Formation in Nash Draw,  
Eddy County, New Mexico

18

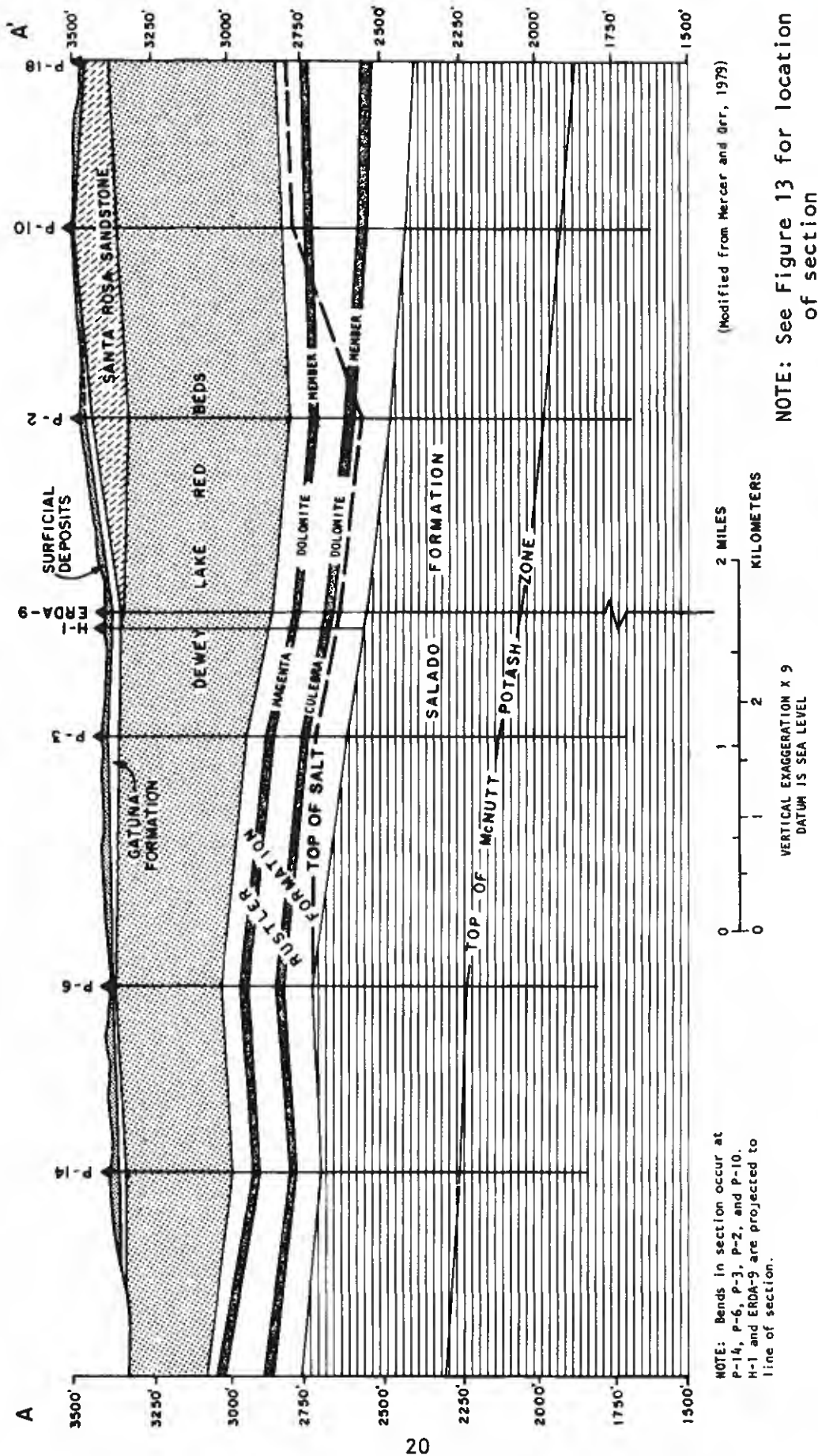


Figure 5.--Geologic section across the proposed Waste Isolation Pilot Plant (WIPP) site.



Table 1. Geologic and hydrologic data from test holes drilled at and near the proposed Waste Isolation Pilot Plant site

[FNL, from north line; FEL, from east line, FSL, from south line; FWL, from west line; Sec., Section; T, Township; R. Range; units, in feet below land surface R; Rustler Formation; S, Salado Formation]

| Test hole | Altitude, in feet above sea level | Location   |                                       | Depth of rock      |                        |                       |                     |
|-----------|-----------------------------------|------------|---------------------------------------|--------------------|------------------------|-----------------------|---------------------|
|           |                                   | Sec. T. R. | Distance, in feet, from section lines | Surficial deposits | Gatuna Formation       | Santa Rosa Formation  | Dewey Lake Red Beds |
| H-1       | 3397.71                           | 29 22S 31E | 623.31FNL 1082.75FEL                  | 0-15               | 15-35                  | M.P., (Not Present)   | 35-502              |
| H-2A      | 3377.85                           | 29 22S 31E | 726.17FNL 1698.43FWL                  | 0-14               | 14-38                  | N.P.                  | 38-457              |
| H-2B      | 3377.68                           | do         | 695.57FNL 1660.57FWL                  | do                 | do                     | N.P.                  | do                  |
| H-2C      | 3377.75                           | do         | 637.15FNL 1708.62FWL                  | do                 | do                     | N.P.                  | do                  |
| H-3       | 3389.48                           | 29 22S 31E | 2085.30FSL 138.1FEL                   | 0-4                | 4-22                   | N.P.                  | 22-502              |
| H-4A      | 3332.91                           | 5 23S 31E  | 545.89FNL 720.00FWL                   | 0-13               | 13-29                  | N.P.                  | 29-315              |
| H-4B      | 3332.76                           | do         | 498.47FWL 632.54FWL                   | do                 | do                     | N.P.                  | do                  |
| H-4C      | 3333.54                           | do         | 446.36FNL 717.89FWL                   | do                 | do                     | N.P.                  | do                  |
| H-5A      | 3506.15                           | 15 22S 31E | 1093.12FNL 184.33FEL                  | 0-8                | N.P. (Not Present)     | 8-225                 | 225-732             |
| H-5B      | 3505.97                           | do         | 1006.80FNL 234.21FEL                  | do                 | N.P.                   | do                    | do                  |
| H-5C      | 3506.37                           | do         | 1006.47FNL 134.20FEL                  | do                 | N.P.                   | do                    | do                  |
| H-6A      | 3347.26                           | 18 22S 31E | 283.80FNL 274.93FWL                   | 0-12               | 12-38                  | N.P.                  | 38-427              |
| H-6B      | 3347.57                           | do         | 195.61FNL 322.15FWL                   | do                 | do                     | N.P.                  | do                  |
| H-6C      | 3347.93                           | do         | 280.61FNL 374.81FWL                   | do                 | do                     | N.P.                  | do                  |
| H-7A      | 3163.55                           | 14 23S 30E | 2495.04FNL 2492.35FWL                 | 0-5                |                        | N.P.                  | 57-87               |
| H-7B      | 3163.63                           | do         | 2565.8FNL 2563.45FWL                  | do                 | do                     | N.P.                  | do                  |
| H-7C      | 3163.48                           | do         | 2591.93FNL 2467.51FWL                 | do                 | do                     |                       | do                  |
| H-8A      | 3433.0                            | 23 24S 30E | 1962.61FNL 1486.59FEL                 | 0-4                | 4-10 Mescalero Caliche | N.P.                  | 153-399             |
| H-8B      | 3433.8                            | do         | 1994.76FNL 1405.39FEL                 | do                 | do                     | N.P.                  | do                  |
| H-8C      | 3433.0                            | do         | 2059.39FNL 1470.14FEL                 | do                 | do                     | N.P.                  | do                  |
| H-9A      | 3405.4                            | 4 24S 31E  | 2392.14FNL 138.92FWL                  | 0-5                | 5-25                   | N.P.                  | 24-455              |
| H-9B      | 3405.6                            | do         | 2391.04FNL 283.63FWL                  | do                 | do                     | N.P.                  | do                  |
| H-9C      | 3405.9                            | do         | 2479.06FNL 188.02FWL                  | do                 | do                     | N.P.                  | do                  |
| H-10A     | 3686.52                           | 20 23S 32E | 433.04FSL 2068.91FEL                  | 0-9                | 9-90                   | 90-482 Chinle 482-658 | 658-1204            |
| H-10B     | 3687.01                           | do         | 484.54FSL 1984.84FEL                  | do                 | do                     | do                    | do                  |
| H-10C     | 3686.88                           | do         | 384.54FSL 1981.84FEL                  | do                 | do                     | do                    | do                  |

| Rustler Formation | Magenta Dolomite Member of Rustler Formation |  | Culebra Dolomite Member of Rustler Formation |  | Top of Salado Formation | Top of salt in Salado Formation | Top of McNitt potash zone | Top of Castle Formation | Test hole depth in feet |
|-------------------|--|--|--|--|-------------------------|---------------------------------|---------------------------|-------------------------|-------------------------|
|                   |  |  |  |  |                         |                                 |                           |                         |                         |
| 502-824           | 563-589                                      |  | 676-699                                      |  | 824                     | 731(R)                          |                           |                         | 856                     |
| 457-              | 515-543                                      |  |  |  |                         |                                 |                           |                         | 563                     |
| 457               | 515-543                                      |  | 623-645                                      |  | N.P.                    |                                 |                           |                         | 661                     |
| 457-764           | 515-543                                      |  | 623-645                                      |  | 764                     | 676(R)                          |                           |                         | 795                     |
| 502-821           | 559-584                                      |  | 672-694                                      |  | 821                     | 823(S)                          |                           |                         | 894                     |
| 315-              | 375-400                                      |  |  |  |                         |                                 |                           |                         | 415                     |
| 315-              | 377-402                                      |  | 498-522                                      |  |                         |                                 |                           |                         | 529                     |
| 315-626           | 377-403                                      |  | 490-516                                      |  | 626                     | 7                               |                           |                         | 661                     |
| 732-              | 783-810                                      |  | 897-920                                      |  |                         |                                 |                           |                         | 824                     |
| 732-              | 785-805                                      |  | 897-920                                      |  |                         |                                 |                           |                         | 925                     |
| 732-1041          | 788-812                                      |  | 899-924                                      |  | 1041                    |                                 |                           |                         | 1076                    |
| 427-              | 492-511                                      |  |  |  |                         |                                 |                           |                         | 525                     |
| 427-              | 492-511                                      |  | 604-627                                      |  |                         |                                 |                           |                         | 640                     |
| 427-721           | 490-514                                      |  | 604-627                                      |  | 721                     | 723.4(S)                        |                           |                         | 741                     |
| 87-283            | 117-140                                      |  |  |  |                         |                                 |                           |                         | 154                     |
| 87-283            | 117-140                                      |  | 237-283                                      |  |                         |                                 |                           |                         | 286                     |
| 87-283            | 117-140                                      |  | 237-273.5                                    |  | 283                     | 405(S)                          |                           |                         | 420                     |
| 399-              | 466-488                                      |  |  |  |                         |                                 |                           |                         | 505                     |
| 399-              | 466-488                                      |  | 588-614                                      |  |                         |                                 |                           |                         | 624                     |
| 399-733           | 466-488                                      |  | 588-614                                      |  | 733                     | 798(S)                          |                           |                         | 808                     |
| 455-              | 523-554                                      |  |  |  |                         |                                 |                           |                         | 559                     |
| 455-              | 523-554                                      |  | 647-677                                      |  |                         |                                 |                           |                         | 708                     |
| 455-791           | 523-554                                      |  | 647-677                                      |  | 791                     | 791(S)                          |                           |                         | 816                     |
| 1204-             | 1256-1280                                    |  |  |  |                         |                                 |                           |                         | 1318                    |
| 1204-             | 1256-1280                                    |  | 1360-1391                                    |  |                         |                                 |                           |                         | 1398                    |
| 1204-1501         | 1256-1280                                    |  | 1360-1391                                    |  | 1501                    | 1501(S)                         |                           |                         | 1536                    |

Table 1. Geologic and hydrologic data from test holes drilled at and near the proposed Waste Isolation Pilot Plant site - Continued

| Test hole | Altitude, in feet above sea level | Location   |                                       | Depth of rock      |                  |                      |                     |
|-----------|-----------------------------------|------------|---------------------------------------|--------------------|------------------|----------------------|---------------------|
|           |                                   | Sec. T. R. | Distance, in feet, from section lines | Surficial deposits | Gatuna Formation | Santa Rosa Formation | Dewey Lake Red Beds |
| P-1       | 3345.1                            | 29 22S 31E | 328FSL 552FWL                         | 0-10               | 10-40            | N.P.                 | 40-358              |
| P-2       | 3479.4                            | 28 22S 31E | 121FNL 171FEL                         | 0-18               | 18-38            | 38-164               | 164-690             |
| P-3       | 3382.7                            | 20 22S 31E | 104FSL 2154FWL                        | 0-10               | 10-41            | N.P.                 | 41-468              |
| P-4       | 3443.8                            | 28 22S 31E | 149FSL 1485FEL                        | 0-8                | N.P.             | 8-99                 | 99-609              |
| P-5       | 3470.9                            | 17 22S 31E | 186FSL 160FEL                         | 0-13               | N.P.             | 13-146               | 146-623             |
| P-6       | 3354.1                            | 30 22S 31E | 2509FNL 195FWL                        | 0-8                | 8-18             | N.P.                 | 18-357              |
| P-7       | 3332.0                            | 5 23S 31E  | 514FNL 393FWL                         | 0-11               | 11-45            | N.P.                 | 45-312              |
| P-8       | 3338.6                            | 4 23S 31E  | 640FNL 92FWL                          | 0-11               | 9-39             | N.P.                 | 39-391              |
| P-9       | 3411.5                            | 33 22S 31E | 1493FSL 126FEL                        | 0-11               | N.P.             | 11-66                | 66-562              |
| P-10      | 3509.3                            | 26 22S 31E | 2341FNL 323FWL                        | 0-8                | N.P.             | 8-151                | 151-686             |
| P-11      | 3503.9                            | 23 22S 31E | 156FNL 183FWL                         | 0-9                | N.P.             | 9-224                | 224-745             |
| P-12      | 3373.6                            | 24 22S 30E | 165FNL 198FEL                         | 0-8                | N.P.             | N.P.                 | 8-461               |
| P-13      | 3345.2                            | 18 22S 31E | 110FNL 147FWL                         | 0-12               | 12-38            | N.P.                 | 38-427              |
| P-14      | 3359.6                            | 24 22S 30E | 309FSL 613FWL                         | 0-10               | 10-42            | N.P.                 | 42-387              |
| P-15      | 3309.5                            | 31-22S 31E | 411FSL 190FWL                         | 0-11               | 11-32            | N.P.                 | 32-231              |
| P-16      | 3317.9                            | 5 23S 31E  | 939FSL 1647FWL                        | 0-14               | 14-32            | N.P.                 | 32-316              |
| P-17      | 3335.9                            | 4 23S 31E  | 1356FSL 398FWL                        | 0-14               | 14-46            | N.P.                 | 46-382              |
| P-18      | 3477.2                            | 26 22S 31E | 139FSL 733FEL                         | 0-9                | N.P.             | 9-87                 | 87-628              |
| P-19      | 3545.1                            | 23 22S 31E | 1652FSL 2335FWL                       | 0-8                | N.P.             | 8-232                | 232-758             |
| P-20      | 3552.7                            | 14 22S 31E | 801FSL 79FEL                          | 0-6                | N.P.             | 6-261                | 261-780             |
| P-21      | 3509                              | 15 22S 31E | 859FNL 130FEL                         | 0-8                | N.P.             | 8-225                | 225-734             |
| ERDA-6    | 3540.2                            | 35 21S 31E | 2152FSL 910FEL                        | 0-17               | 17-42            | 42-71                | 71-536              |
| ERDA-9    | 3418.86                           | 20 22S 31E | 267.23FSL 176.74FEL                   | 0-15               | 15-42            | 42-51                | 51-538              |
| ERDA-10   | 3371.2                            | 34 23S 30E | 200FNL 2327FEL                        | 0-5                | 5-151            | N.P.                 | 151-366             |
| AEC-7     | 3654.00                           | 31 21S 32E | 2040FNL 2040FEL                       | 0-12               | N.P.             | 12-112               | 112-662             |
| AEC-8     | 3531.5                            | 11 22S 31E | 935FNL 1979FWL                        |                    | ?                | 31-165               | 165-660             |

| Rustler<br>Formation | Magenta<br>Dolomite<br>Member of<br>Rustler<br>Formation | Culebra<br>Dolomite<br>Member of<br>Rustler<br>Formation | Top of<br>Salado<br>Formation | Top of<br>salt in<br>Salado<br>Formation | Top of<br>McNutt<br>potash<br>zone | Top of<br>Castile<br>Formation | Test<br>hole<br>depth<br>in feet |
|----------------------|--|--|-------------------------------|--|------------------------------------|--------------------------------|----------------------------------|
| 358-677              | 423-448  | 538-565  | 677                           | 597 (R)                                  | 1191-1583                          |                                | 1591.0                           |
| 690-1008             | 748-773  | 857-883  | 1008                          | 906 (R)                                  | 1506-1883                          |                                | 1895.0                           |
| 468-786              | 529-553  | 642-665  | 786                           | 688 (R)                                  | 1287-1668                          |                                | 1676.0                           |
| 609-930              | 662-686  | 775-802  | 930                           | 826 (R)                                  | 1446-1853                          |                                | 1857.0                           |
| 623-947              | 686-711  | 804-827  | 947                           | 350 (R)                                  | 1428-1785                          |                                | 1830.6                           |
| 357-659              | 417-443  | 537-560  | 659                           | 661 (S)                                  | 1162-1560                          |                                | 1573.0                           |
| 312-630              | 373-398  | 496-522  | 630                           | 562 (R)                                  | 1155-1566                          |                                | 1575.0                           |
| 391-715              | 450-474  | 563-588  | 715                           | 606 (R)                                  | 1237-1652                          |                                | 1660.0                           |
| 562-881              | 617-644  | 734-757  | 881                           | 778 (R)                                  | 1401-1796                          |                                | 1796.0                           |
| 686-1086             | 757-781  | 931-957  | 1086                          | 712 (R)                                  | 1594-1983                          |                                | 2010.8                           |
| 745-1058             | 798-823  | 912-938  | 1058                          | 958 (R)                                  | 1550-1917                          |                                | 1943.1                           |
| 461-749              | 519-543  | 633-656  | 749                           | 752 (S)                                  | 1226-1597                          |                                | 1598.4                           |
| 427-721              | 490-514  | 604-627  | 721                           | 725 (S)                                  | 1201-1547                          |                                | 1577.3                           |
| 387-687              | 453-477  | 573-595  | 687                           | 695 (S)                                  | 1158-1510                          |                                | 1545.0                           |
| 231-542              | 294-321  | 413-435  | 542                           | 460 (R)                                  | 1057-1453                          |                                | 1465.0                           |
| 316-646              | 376-401  | 500-523  | 646                           | 552 (R)                                  | 1174-1585                          |                                | 1585.0                           |
| 382-715              | 438-463  | 558-583  | 715                           | 602 (R)                                  | 1234-1648                          |                                | 1660.7                           |
| 628-1088             | 704-730  | 909-938  | 1088                          | 654 (R)                                  | 1604-2087                          |                                | 2000.5                           |
| 758-1117             | 814-839  | 967-997  | 1117                          | 890 (R)                                  | 1621-2011<br>projected             |                                | 2000.0                           |
| 780-1103             | 839-866  | 953-979  | 1103                          | 1002 (R)                                 | 1604-1977                          |                                | 1994.5                           |
| 734-1043             | 788-812  | 893-924  | 1043                          | 944 (R)                                  | 1526-1887                          |                                | 1916.5                           |
| 536-815              | 595-621  | 710-735  | 815                           | 815 (S)                                  |                                    | 2401                           | 2775                             |
| 538-848              | 596-620  | 704-727  | 848                           | 750 (S)                                  | 1350-1730                          | 2824                           | 2876.6                           |
| 366-628              | 366-385  | 476-504  | 628                           | 678 (S)                                  |                                    | 2337<br>3829 (D)               | 4418                             |
| 662-991              | 733-759  | 870-896  | 991                           | 930 (R)<br>1000 (S)                      |                                    | 3004<br>4522 (D)               | 4721                             |
| 660-985              | 715-738  | 833-859  | 985                           | 985 (S)                                  |                                    | 2966<br>4343 (D)               | 4910                             |



Table 1. Geologic and hydrologic data from test holes drilled at and near the proposed Waste Isolation Pilot Plant site - Concluded

| Test hole | Altitude, in feet above sea level | Location   |   | Depth of rock                      |                  |                      |                     |
|-----------|-----------------------------------|------------|---|------------------------------------|------------------|----------------------|---------------------|
|           |                                   | Sec. T. R. | Distance, in feet, from section lines           | Surficial deposits                 | Gatuna Formation | Santa Rosa Formation | Dewey Lake Red Beds |
| WIPP-11   | 3426.07                           | 9 22S 31E  | 711.70FNL 394.08FWL                             | 0-13                               | 13-29            | 29-161               | 161-663             |
| WIPP-12   | 3471.53                           | 17 22S 31E | 147.9FSL 83.91FEL                               | 0-9                                | N.P.             | 9-155                | 155-628             |
| WIPP-13   | 3405.43                           | 17 22S 31E | 2565.68FSL 1730.59FWL                           | 0-13                               | N.P.             | 13-66                | 66-517              |
| WIPP-15   | 3269.34                           | 18 23S 35E | 2426FNL 1793FWL                                 |                                    |                  | 543-2726 (Chinle)    |                     |
| WIPP-16   | 3383                              | 5 21S 30E  | 2355FSL 140FWL                                  | (0-1148)Rubble?                    |                  |                      |                     |
| WIPP-18   | 3456.47                           | 20 22S 31E | 983.58FNL 11.45FEL                              | 0-9                                | N.P.             | 9-138                | 138-613             |
| WIPP-19   | 3433.13                           | 20 22S 31E | 2987.34FSL 12.68FEL                             | 0-14                               | N.P.             | 14-96                | 96-589              |
| WIPP-21   | 3417.00                           | 20 22S 31E | 1551.08FSL 11.74FEL                             | 0-12                               | 12-39            | 39-73                | 73-560              |
| WIPP-22   | 3425.83                           | 20 22S 31E | 2544.45FSL 11.94FEL                             | 0-20                               | 20-25            | 25-80                | 80-573              |
| WIPP-25   | 3212.51                           | 15 22S 30E | 1852.72FSL 2838.1FEL                            | 0-10                               | N.P.             | N.P.                 | 10-232              |
| WIPP-26   | 3151.91                           | 29 22S 30E | 2232.27FNL 12.2FEL                              | 0-10                               | N.P.             | N.P.                 | N.P.                |
| WIPP-27   | 3177.17                           | 21 21S 30E | 89.79FNL 1485.03FWL                             | 0-79                               |                  | N.P.                 | 79-153              |
| WIPP-28   | 3346.76                           | 18 21S 31E | 98.72FNL 2400.99FEL                             | 0-12                               | N.P.             | N.P.                 | 12-215              |
| WIPP-29   | 2976.99                           | 34 22S 29E | 406.62FSL 1827.54FEL                            | 0-12                               | N.P.             | N.P.                 | N.P.                |
| WIPP-30   | 3427.54                           | 33 21S 31E | 667.5FNL 177.41FWL                              |                                    | N.P.             | N.P.                 | 0-449               |
| WIPP-31   | 3401.43                           | 35 20S 30E | 422.54FSL 1762.24FWL                            |                                    | N.P.             | 0(Breccia)           | 38(Breccia)         |
| WIPP-32   | 3023.00                           | 33 22S 29E | 1673FSL 29FEL                                   |                                    |                  |                      |                     |
| WIPP-33   | 3323.00                           | 13 22S 30E | 1762FSL 2427FWL                                 | 0-40                               |                  |                      | 40-398              |
| WIPP-34   | 3433.00                           | 9 22S 31E  | 202FSL 2000FWL                                  | 0-11                               |                  | 11-154               | 154-657             |
| B-25      | 3408.74                           | 20 22S 31E | N 9414.91 E 6693.11*<br>*N.M. State Coordinates | 0-10<br>10-14<br>Mescalero Caliche | 14-34.7          | 34.7-44.8            | 44.8-533            |

| Rustler<br>Formation | Magenta<br>Dolomite<br>Member of<br>Rustler<br>Formation | Culebra<br>Dolomite<br>Member of<br>Rustler<br>Formation | Top of<br>Salado<br>Formation | Top of<br>salt in<br>Salado<br>Formation | Top of<br>McNutt<br>potash<br>zone | Top of<br>Castile<br>Formation | Test<br>hole<br>depth<br>in feet |
|----------------------|--|--|-------------------------------|--|------------------------------------|--------------------------------|----------------------------------|
| 663-951              | 727-750  | 844-867  | 951                           | 951(S)                                   |                                    | 2330                           | 3580.6                           |
| 628-955              | 690-715  | 810-835  | 955                           | 857(R)<br>955(S)                         |                                    | 2727                           | 2777.8                           |
| 517-844              | 564-583  | 701-724  | 844                           | 774(R)<br>918(S)                         |                                    |                                | 1025                             |
|                      |  |  |                               |  |                                    |                                | 810.5                            |
| 1148-1300+           | 1189-1199  | 1153-1176  |                               |  |                                    |                                | 1300                             |
| 613-928              | 672-696  | 786-808  | 928                           | 829(R)<br>928(S)                         |                                    |                                | 1060                             |
| 589-894              | 647-672  | 756-777  | 894                           | 894(S)                                   |                                    |                                | 1038                             |
| 560-868              | 618-641  | 729-753  | 868                           | 770(R)<br>868(S)                         |                                    |                                | 1045                             |
| 573-883              | 630-654  | 742-764  | 883                           | 785(R)<br>884(S)                         |                                    |                                | 1450                             |
| 232-565              | 302-328  | 447-472  | 565                           | 600(S)                                   |                                    |                                | 655                              |
| 10-309               | 70-99  | 186-209  | 309                           | 320(S)                                   |                                    |                                | 503                              |
| 153-416              | 176-194  | 292-318  | 416                           | 508(S)                                   |                                    |                                | 592                              |
| 215-531.0            | 285-310  | 420-446  | 531                           | 589 (S)                                  |                                    |                                | 801                              |
| N.P.                 | N.P.   | 12-42  | 143                           | 251(S)                                   |                                    |                                | 376                              |
| 449-749              | 513-537  | 631-654  | 749                           | 749(S)                                   |                                    |                                | 913                              |
| 750(Breccia)         | 1981(Breccia)  |  | N.P.                          |  |                                    |                                | 1981                             |
| 0-166                | 19-36  | 61-90  | 166-390                       |  |                                    |                                | 390                              |
| 398-675              | 449-468  | 550-578  | 657-840                       |  |                                    |                                | 840                              |
| 657-973              | 718-741  | 834-860  | 973-1820+                     |  |                                    |                                | 1820                             |
| 533-842.9            | 592.7-617  | 704.1-728  | 842.9                         |  |                                    |                                | 901                              |

Table 2.--Selected chemical and radiochemical analyses of water from test holes at and near the proposed Waste Isolation Pilot Plant site

[GEOLOGIC UNIT: 231SNRS, Santa Rosa Sandstone; 313BLCN, Bell Canyon Formation; 312RSLRL, Rustler-Salado residuum; 312CLBR, Culebra Dolomite Member; 310MGNT, Magenta Dolomite Member. GM/ML AT 20 C: Grams per milliliter at 20 degrees Celsius; MG/L: milligrams per liter; UG/L: micrograms per liter; PCI/L: picocuries per liter.]

| WELL    | DATE OF SAMPLE | GEO-LOGIC UNIT | DENSITY (GM/ML AT 20 C) | PH (UNITS) | ALKA-LIMITY           |                       | BICARBONATE            |                      | NITRO-GEN                      |                           | HARD-NESS            |                      |
|---------|----------------|----------------|-------------------------|------------|-----------------------|-----------------------|------------------------|----------------------|--------------------------------|---------------------------|----------------------|----------------------|
|         |                |                |                         |            | FIELD (MG/L AS CAC03) | FIELD (MG/L AS CAC03) | FET-FLD (MG/L AS HC03) | BONATE (MG/L AS C03) | NO2+NO3 DIS-SOLVED (MG/L AS N) | SULFIDE TOTAL (MG/L AS S) | MESS (MG/L AS CAC03) | MESS (MG/L AS CAC03) |
| H-5C    | 78-05-24       | 231SNRS        | --                      | --         | 200                   | 240                   | --                     | --                   | .36                            | --                        | --                   | 150                  |
| AEC-7   | 79-04-28       | 313BLCN        | 1.130                   | --         | 43                    | --                    | --                     | --                   | --                             | --                        | --                   | 35000                |
| AEC-8   | 77-09-27       | 313BLCN        | 1.060                   | 6.3        | --                    | --                    | --                     | --                   | --                             | --                        | --                   | --                   |
| ERDA-10 | 77-09-29       | 313BLCN        | 1.165                   | 7.7        | 90                    | 110                   | 0                      | 3.1                  | --                             | --                        | --                   | 19000                |

| WELL    | HARD-NESS (MG/L AS CAC03) | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM DIS-SOLVED (MG/L AS MG) | SODIUM DIS-SOLVED (MG/L AS NA) | POTAS-SIUM DIS-SOLVED (MG/L AS K) | CHLO-RIDE DIS-SOLVED (MG/L AS CL) | SULFATE DIS-SOLVED (MG/L AS SO4) | FLUO-RIDE DIS-SOLVED (MG/L AS F) | SILICA DIS-SOLVED (MG/L AS SiO2) | BORON DIS-SOLVED (UG/L AS B) | SOLIDS, RESIDUE AT 105 DEG. C, DIS-SOLVED (MG/L) |
|---------|---------------------------|---------------------------------|------------------------------------|--------------------------------|-----------------------------------|-----------------------------------|----------------------------------|----------------------------------|----------------------------------|------------------------------|--|
|         |                           |                                 |                                    |                                |                                   |                                   |                                  |                                  |                                  |                              |  |
| H-5C    | 150                       | 56                              | 51                                 | 280                            | 25                                | 120                               | 530                              | 1.2                              | 11.0                             | 890                          | 1200   |
| AEC-7   | 35000                     | 9700                            | 2600                               | 55000                          | 970                               | 110000                            | 1800                             | 1.4                              | 14.0                             | 76000                        | 180000   |
| AEC-8   | --                        | --                              | --                                 | --                             | --                                | --                                | --                               | --                               | --                               | --                           | 230000   |
| ERDA-10 | 19000                     | 5300                            | 1300                               | 89000                          | 720                               | 150000                            | 2400                             | 0.3                              | 3.4                              | 20000                        | 270000   |

Table 2.—Selected chemical and radiochemical analyses of water from test holes at and near the proposed Waste Isolation Pilot Plant site - Continued

| WELL    | DATE OF SAMPLE | GEO-LOGIC UNIT | DENSITY (GM/ML AT 20 C) | PH (UNITS) | ALKALINITY FIELD |           | BICARBONATE |           | CARBONATE |           | NITROGEN, NO2+NO3 |             | SULFIDE TOTAL |           | HARDNESS  |           |
|---------|----------------|----------------|-------------------------|------------|------------------|-----------|-------------|-----------|-----------|-----------|-------------------|-------------|---------------|-----------|-----------|-----------|
|         |                |                |                         |            | (MG/L AS CAC03)  | (MG/L AS) | (MG/L AS)   | (MG/L AS) | (MG/L AS) | (MG/L AS) | (MG/L AS N)       | (MG/L AS N) | (MG/L AS S)   | (MG/L AS) | (MG/L AS) | (MG/L AS) |
| H-1     | 77-02-23       | 312RSRL        | --                      | 7.9        | 554              | 675       | 0           | 0         | 0         | 0         | .29               | --          | --            | --        | 140000    | 140000    |
| H-2C    | 77-02-23       | 312RSRL        | --                      | 5.9        | 163              | 199       | 0           | 0         | 0         | 0         | 1.1               | --          | --            | --        | 130000    | 130000    |
| H-3     | 77-02-23       | 312RSRL        | --                      | 7.6        | 383              | 467       | 0           | 0         | 0         | 0         | .77               | --          | --            | --        | 150000    | 150000    |
| H-4C    | 79-03-16       | 312RSRL        | --                      | --         | 1                | 1         | 0           | 0         | 0         | 0         | .27               | --          | --            | --        | 130000    | 130000    |
| H-5C    | 79-05-16       | 312RSRL        | --                      | --         | 180              | 300       | --          | --        | --        | --        | --                | --          | --            | --        | 340000    | 340000    |
| H-6C    | 79-04-09       | 312RSRL        | --                      | --         | 1                | --        | --          | --        | --        | --        | --                | --          | --            | --        | 97000     | 97000     |
| H-7C    | 80-03-20       | 312RSRL        | 1.048                   | 6.8        | 35               | --        | --          | --        | --        | --        | .03               | --          | --            | --        | 10000     | 10000     |
| H-8C    | 80-09-06       | 312RSRL        | --                      | 7.6        | 21               | --        | --          | --        | --        | --        | .00               | --          | --            | --        | 4800      | 4800      |
| H-9C    | 80-05-20       | 312RSRL        | 1.202                   | 7.0        | 24               | --        | --          | --        | --        | --        | 1.1               | --          | --            | --        | 6800      | 6800      |
| H-10C   | 80-05-19       | 312RSRL        | 1.198                   | 6.3        | 53               | --        | --          | --        | --        | --        | .84               | --          | --            | --        | 49000     | 49000     |
| P-14    | 77-02-24       | 312RSRL        | --                      | 7.2        | 182              | 222       | 0           | 0         | 0         | 0         | .34               | --          | --            | --        | 6400      | 6400      |
| P-15    | 79-04-03       | 312RSRL        | --                      | --         | 45               | --        | --          | --        | --        | --        | --                | --          | --            | --        | 3400      | 3400      |
| P-17    | 79-05-11       | 312RSRL        | --                      | --         | 650              | --        | --          | --        | --        | --        | .04               | --          | --            | --        | 200000    | 200000    |
| P-18    | 79-05-11       | 312RSRL        | 1.266                   | 5.35       | 400              | --        | --          | --        | --        | --        | .06               | --          | --            | --        | --        | --        |
| WIPP-25 | 80-03-19       | 312RSRL        | 1.173                   | 7.2        | 80               | --        | --          | --        | --        | --        | .04               | --          | --            | --        | 15000     | 15000     |
| WIPP-26 | 80-03-18       | 312RSRL        | 1.078                   | 8.5        | 160              | --        | --          | --        | --        | --        | .05               | --          | --            | --        | 12000     | 12000     |
| WIPP-27 | 80-05-21       | 312RSRL        | 1.205                   | 7.8        | --               | --        | --          | --        | --        | --        | --                | --          | --            | --        | --        | --        |
| WIPP-28 | 80-03-20       | 312RSRL        | 1.140                   | 7.0        | --               | --        | --          | --        | --        | --        | --                | --          | --            | --        | --        | --        |
| WIPP-29 | 80-03-18       | 312RSRL        | 1.068                   | 7.3        | 130              | --        | --          | --        | --        | --        | .23               | --          | --            | --        | 10000     | 10000     |
| WIPP-30 | 80-03-19       | 312RSRL        | 1.201                   | 7.0        | 320              | --        | --          | --        | --        | --        | .04               | --          | --            | --        | 12000     | 12000     |

| WELL    | HARDNESS, NONCARBONATE (MG/L CAC03) | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNESIUM DIS-SOLVED (MG/L AS MG) | SODIUM DIS-SOLVED (MG/L AS NA) | POTASSIUM DIS-SOLVED (MG/L AS K) | CHLORIDE DIS-SOLVED (MG/L AS CL) | SULFATE DIS-SOLVED (MG/L AS SO4) | FLUORIDE DIS-SOLVED (MG/L AS F) | SILICA DIS-SOLVED (MG/L AS SI02) | BORON, DIS-SOLVED (UG/L AS B) | SOLIDS, RESIDUE AT 105 DEG. C, DIS-SOLVED (MG/L) |
|---------|-------------------------------------|---------------------------------|-----------------------------------|--------------------------------|----------------------------------|----------------------------------|----------------------------------|---------------------------------|----------------------------------|-------------------------------|--|
|         |                                     |                                 |                                   |                                |                                  |                                  |                                  |                                 |                                  |                               |  |
| H-1     | 160000                              | 13000                           | 30000                             | 56000                          | 17000                            | 210000                           | 520                              | --                              | <.1                              | 110000                        | 480000   |
| H-2C    | 130000                              | 9200                            | 25000                             | 66000                          | 9100                             | 200000                           | 1300                             | --                              | 2.0                              | 150000                        | 450000   |
| H-3     | 150000                              | 18000                           | 25000                             | 59000                          | 14000                            | 210000                           | 370                              | --                              | 1.0                              | 1900                          | 327000   |
| H-4C    | 130000                              | 8300                            | 27000                             | 66000                          | 8600                             | 210000                           | 1400                             | 1.7                             | 1.3                              | 360000                        | 322000   |
| H-5C    | 340000                              | 2100                            | 82000                             | 14000                          | 21000                            | 290000                           | 2000                             | <.1                             | 1.6                              | 67000                         | 412000   |
| H-6C    | 97000                               | 4200                            | 21000                             | 80000                          | 8000                             | 200000                           | 2000                             | 1.0                             | 1.4                              | 200000                        | 316000   |
| H-7C    | 10000                               | 2600                            | 910                               | 22000                          | 210                              | 41000                            | 2900                             | .8                              | 7.2                              | 3100                          | 79800  |
| H-8C    | 4700                                | 1200                            | 430                               | 46000                          | 660                              | 70000                            | 5300                             | .4                              | .8                               | 1300                          | 130000   |
| H-9C    | 6800                                | 1300                            | 870                               | 130000                         | 1200                             | 190000                           | 2600                             | .1                              | 3.8                              | 19000                         | 326000   |
| H-10C   | 49000                               | 1500                            | 11000                             | 100000                         | 4000                             | 190000                           | 3300                             | .7                              | 3.2                              | 120000                        | 323000   |
| P-14    | 6200                                | 570                             | 1200                              | 120000                         | 1300                             | 180000                           | 10000                            | --                              | 2.0                              | 1700                          | 350000   |
| P-15    | 3300                                | 770                             | 350                               | 24000                          | 1400                             | 38000                            | 2800                             | 1.3                             | 1.3                              | 3700                          | --   |
| P-17    | 200000                              | 15000                           | 40000                             | 23000                          | 8800                             | 180000                           | 1200                             | 3.8                             | 15                               | 880                           | --   |
| P-18    | --                                  | 10000                           | 37000                             | 48000                          | 12000                            | 220000                           | 480                              | 2.3                             | .4                               | 160000                        | --   |
| WIPP-25 | 15000                               | 650                             | 3200                              | 90000                          | 2400                             | 130000                           | 12000                            | .0                              | 2.6                              | 35000                         | 252000   |
| WIPP-26 | 12000                               | 2700                            | 1300                              | 52000                          | 1000                             | 88000                            | 7600                             | .0                              | 2.5                              | 30000                         | 153000   |
| WIPP-27 | 4700                                | 1160                            | 1040                              | 102000                         | 2570                             | 154000                           | 5190                             | .2                              | .1                               | 1300                          | 363000   |
| WIPP-28 | 13000                               | 615                             | 2070                              | 65000                          | 2070                             | 102000                           | 11000                            | .2                              | 6.0                              | 54000                         | --   |
| WIPP-29 | 10000                               | 850                             | 2000                              | 32000                          | 1000                             | 49000                            | 12000                            | .9                              | 3.5                              | 21000                         | 129000   |
| WIPP-30 | 11000                               | 850                             | 2300                              | 120000                         | 1500                             | 170000                           | 7000                             | .0                              | 3.5                              | 77000                         | 302000   |



Table 2.—Selected chemical and radiochemical analyses of water from test holes at and near the proposed Waste Isolation Pilot Plant site - Continued

| WELL    | DATE OF SAMPLE | SEO-LOGIC UNIT | SELEMIUM, TOTAL (UG/L AS SE) | GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT) | GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT) | GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) | GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) | RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L) | URANIUM DIS-SOLVED, EXTRAC-TION (UG/L U-NAT) | GROSS ALPHA, DIS-SOLVED (UG/L U-NAT) |
|---------|----------------|----------------|------------------------------|--|---|--|---|--|--|--------------------------------------|
| H-1     | 77-02-23       | 312RSLRL       | <1                           | --                                       | --  | 16000                                    | 160                                       | 44   | .02  | <6300                                |
| H-2C    | 77-02-23       | 312RSLRL       | <1                           | --                                       | --  | 8400                                     | 91  | 4.8  | 2.4  | <5000                                |
| H-3     | 77-02-23       | 312RSLRL       | 1                            | --                                       | --  | 12000                                    | 26  | 51   | .06  | <6000                                |
| H-4C    | 79-03-16       | 312RSLRL       | <1                           | <7500                                    | 3.3                                       | 8900                                     | <.4                                       | 340  | 1.2  | <11000                               |
| H-5C    | 79-03-16       | 312RSLRL       | 1                            | <13000                                   | .7  | 15000                                    | .6  | 310  | <.04   | <19000                               |
| H-6C    | 79-04-09       | 312RSLRL       | 1                            | <7500                                    | .9  | 4800                                     | <.7                                       | 280  | <.04   | <11000                               |
| H-7C    | 80-03-20       | 312RSLRL       | --                           | <950                                     | --  | <580                                     | --  | 45   | 1.9  | <1400                                |
| H-8C    | 80-09-06       | 312RSLRL       | --                           | <1800                                    | --  | <1100                                    | --  | 18   | .04  | <2400                                |
| H-9C    | 80-05-20       | 312RSLRL       | --                           | <5400                                    | --  | 7600                                     | --  | .31  | .45  | <8000                                |
| H-10C   | 80-05-19       | 312RSLRL       | --                           | <5600                                    | --  | 7200                                     | --  | 10   | .37  | <8200                                |
| P-14    | 77-02-24       | 312RSLRL       | 1                            | --                                       | --  | <2000                                    | 2.3                                       | 15   | 1.3  | <3700                                |
| P-15    | 79-04-03       | 312RSLRL       | <1                           | <1000                                    | <.3                                       | 1300                                     | <.4                                       | .59  | .08  | <1500                                |
| P-17    | 79-05-11       | 312RSLRL       | <1                           | <7500                                    | 4.8                                       | 13000                                    | 2.8                                       | 340  | <.05   | <11000                               |
| WIPP-25 | 80-03-19       | 312RSLRL       | --                           | <5200                                    | --  | <3600                                    | --  | 11   | .29  | <7700                                |
| WIPP-26 | 80-03-18       | 312RSLRL       | --                           | <3200                                    | --  | <1700                                    | --  | 12   | 5.2  | <4700                                |
| WIPP-27 | 80-05-21       | 312RSLRL       | --                           | <1200                                    | --  | <7100                                    | --  | 2.4  | .07  | <1800                                |
| WIPP-28 | 80-03-20       | 312RSLRL       | --                           | <4100                                    | --  | <2700                                    | --  | 3.6  | 2.7  | <6000                                |
| WIPP-29 | 80-03-18       | 312RSLRL       | --                           | <1100                                    | --  | 740                                      | --  | 1.2  | 2.0  | <1400                                |
| WIPP-30 | 80-03-19       | 312RSLRL       | --                           | <7500                                    | --  | <4500                                    | --  | 98   | <.01   | <11000                               |

| WELL    | GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) | GROSS BETA, DIS-SOLVED (PCI/L AS SR/ YT-90) | GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90) |
|---------|--|---|--|
| H-1     | 290                                      | 12000                                       | 120  |
| H-2C    | 190                                      | 6700  | 76   |
| H-3     | 68                                       | 9400  | 21   |
| H-4C    | 4.9                                      | 8100  | <.4  |
| H-5C    | 1.1                                      | 14000                                       | .6   |
| H-6C    | 1.3                                      | 6200  | <.7  |
| H-7C    | --                                       | <590  | --   |
| H-8C    | --                                       | <1100                                       | --   |
| H-9C    | --                                       | <7200                                       | --   |
| H-10C   | --                                       | <6900                                       | --   |
| P-14    | 6.3                                      | <1600                                       | 1.9  |
| P-15    | <.4                                      | 1200  | <.4  |
| P-17    | 10                                       | 12000                                       | 2.5  |
| P-18    | <.4                                      | 8800  | <.4  |
| WIPP-25 | --                                       | <3800                                       | --   |
| WIPP-26 | --                                       | <1800                                       | --   |
| WIPP-27 | --                                       | <15000                                      | --   |
| WIPP-28 | --                                       | <2800                                       | --   |
| WIPP-29 | --                                       | 730   | --   |
| WIPP-30 | --                                       | <4500                                       | --   |

Table 2.--Selected chemical and radiochemical analyses of water from test holes at and near the proposed Waste Isolation Pilot Plant site - Continued

| WELL    | DATE OF SAMPLE | GEO-LOGIC UNIT | DENSITY (GM/ML AT 20 C) | PH  | ALKA-LINITY     |           | BICARBONATE     |           | CARBONATE       |           | NITROGEN    |             | SULFIDE     |             | HARDNESS  |                 |
|---------|----------------|----------------|-------------------------|-----|-----------------|-----------|-----------------|-----------|-----------------|-----------|-------------|-------------|-------------|-------------|-----------|-----------------|
|         |                |                |                         |     | (MG/L AS CAC03) | (MG/L AS) | (MG/L AS CAC03) | (MG/L AS) | (MG/L AS CAC03) | (MG/L AS) | (MG/L AS N) | (MG/L AS N) | (MG/L AS S) | (MG/L AS S) | (MG/L AS) | (MG/L AS CAC03) |
| H-1     | 76-06-02       | 312CLBR        | --                      | 7.6 | 86              | 105       | 0               | 0         | 0               | 0         | --          | --          | .0          | .0          | 3100      | 3100            |
| H-28    | 77-02-22       | 312CLBR        | --                      | 8.4 | 57              | 59        | 5               | 5         | 5               | 5         | .01         | .01         | --          | --          | 2400      | 2400            |
| H-3     | 77-03-17       | 312CLBR        | --                      | 7.4 | 94              | 115       | 0               | 0         | 0               | 0         | .07         | .07         | --          | --          | 4500      | 4500            |
| H-48    | 78-12-14       | 312CLBR        | --                      | 7.6 | 48              | 59        | --              | --        | --              | --        | .02         | .02         | --          | --          | 2200      | 2200            |
| H-58    | 78-12-19       | 312CLBR        | --                      | 6.8 | 34              | 41        | --              | --        | --              | --        | .01         | .01         | --          | --          | 8700      | 8700            |
| H-68    | 78-12-20       | 312CLBR        | --                      | 7.3 | 85              | --        | --              | --        | --              | --        | .02         | .02         | --          | --          | 7000      | 7000            |
| H-78    | 80-03-20       | 312CLBR        | 1.001                   | 7.0 | 100             | --        | --              | --        | --              | --        | .40         | .40         | --          | --          | 2000      | 2000            |
| H-88    | 80-02-11       | 312CLBR        | 1.000                   | 7.3 | 61              | --        | --              | --        | --              | --        | .95         | .95         | --          | --          | 2100      | 2100            |
| H-98    | 80-02-05       | 312CLBR        | --                      | 7.3 | 90              | --        | --              | --        | --              | --        | .13         | .13         | --          | --          | 2100      | 2100            |
| H-108   | 80-03-21       | 312CLBR        | 1.045                   | 8.3 | 37              | --        | --              | --        | --              | --        | .01         | .01         | --          | --          | 8100      | 8100            |
| P-14    | 77-03-14       | 312CLBR        | --                      | 6.0 | 290             | 357       | 0               | 0         | 0               | 0         | .01         | .01         | --          | --          | 11000     | 11000           |
| P-15    | 77-05-10       | 312CLBR        | --                      | --  | 92              | 63        | 24              | 24        | 24              | 24        | .04         | .04         | --          | --          | 2200      | 2200            |
| P-17    | 77-05-10       | 312CLBR        | --                      | 7.4 | 63              | 77        | 0               | 0         | 0               | 0         | .06         | .06         | --          | --          | 11000     | 11000           |
| P-18    | 77-05-10       | 312CLBR        | --                      | 7.2 | 254             | 310       | 0               | 0         | 0               | 0         | .81         | .81         | --          | --          | 80000     | 80000           |
| WIPP-25 | 80-08-14       | 312CLBR        | 1.014                   | 7.3 | 370             | --        | --              | --        | --              | --        | .67         | .67         | --          | --          | 3300      | 3300            |
| WIPP-26 | 80-08-18       | 312CLBR        | 1.013                   | 6.9 | 130             | --        | --              | --        | --              | --        | 3.5         | 3.5         | --          | --          | .0        | 4400            |
| WIPP-27 | 80-08-22       | 312CLBR        | 1.094                   | 6.4 | 150             | --        | --              | --        | --              | --        | 4.0         | 4.0         | --          | --          | .0        | 14000           |
| WIPP-28 | 80-08-21       | 312CLBR        | 1.044                   | 6.4 | 670             | --        | --              | --        | --              | --        | .09         | .09         | --          | --          | 10        | 4900            |
| WIPP-29 | 80-08-20       | 312CLBR        | 1.178                   | 6.1 | 210             | --        | --              | --        | --              | --        | .02         | .02         | --          | --          | .0        | 24000           |
| WIPP-30 | 80-08-13       | 312CLBR        | 1.072                   | 6.8 | 74              | --        | --              | --        | --              | --        | 1.2         | 1.2         | --          | --          | .0        | 6300            |

| WELL    | HARDNESS, NONCARBONATE (MG/L CAC03) | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNESIUM DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | POTASSIUM, DIS-SOLVED (MG/L AS K) | CHLORIDE     |              | SULFATE       |               | FLUORIDE    |             | SILICA         |                | BORON       |             | SOLIDS, RESIDUE AT 105 DEG. C, DIS-SOLVED (MG/L) |
|---------|-------------------------------------|---------------------------------|-----------------------------------|---------------------------------|-----------------------------------|--------------|--------------|---------------|---------------|-------------|-------------|----------------|----------------|-------------|-------------|--|
|         |                                     |                                 |                                   |                                 |                                   | (MG/L AS CL) | (MG/L AS CL) | (MG/L AS SO4) | (MG/L AS SO4) | (MG/L AS F) | (MG/L AS F) | (MG/L AS SI02) | (MG/L AS SI02) | (MG/L AS B) | (MG/L AS B) | (MG/L)   |
| H-1     | 3000                                | 780                             | 280                               | 9400                            | 190                               | 12000        | 12000        | 7400          | 7400          | 5.1         | 5.1         | 2.7            | 2.7            | 2400        | 2400        | 30100  |
| H-28    | 2300                                | 690                             | 160                               | 2100                            | 91                                | 2800         | 2800         | 3000          | 3000          | 2.0         | 2.0         | 1.7            | 1.7            | 9500        | 9500        | 9700   |
| H-3     | 6400                                | 1500                            | 670                               | 19000                           | 630                               | 29600        | 29600        | 5700          | 5700          | .5          | .5          | 1.2            | 1.2            | 20000       | 20000       | 62000  |
| H-48    | 2200                                | 180                             | 430                               | 5800                            | 180                               | 7500         | 7500         | 4000          | 4000          | 1.9         | 1.9         | 5.2            | 5.2            | 19000       | 19000       | 18100  |
| H-58    | 8700                                | 340                             | 1900                              | 53000                           | 1400                              | 84000        | 84000        | 810           | 810           | 1.4         | 1.4         | 2.1            | 2.1            | 36000       | 36000       | 144000   |
| H-68    | 6900                                | 1200                            | 970                               | 18000                           | 500                               | 28000        | 28000        | 3800          | 3800          | 1.5         | 1.5         | 8.5            | 8.5            | 9500        | 9500        | 52800  |
| H-78    | 1900                                | 590                             | 130                               | 210                             | 1.4                               | 350          | 350          | 1900          | 1900          | 1.4         | 1.4         | 39             | 39             | 780         | 780         | 3610   |
| H-88    | 2100                                | 570                             | 170                               | 82                              | 4.7                               | 57           | 57           | 2000          | 2000          | 2.4         | 2.4         | 19             | 19             | 580         | 580         | 3200   |
| H-98    | 2000                                | 580                             | 150                               | 210                             | 1400                              | 320          | 320          | 2000          | 2000          | 3.0         | 3.0         | 26             | 26             | 780         | 780         | 3590   |
| H-108   | 8100                                | 1600                            | 1000                              | 21000                           | 520                               | 36000        | 36000        | 5600          | 5600          | 1.3         | 1.3         | 1.5            | 1.5            | 13000       | 13000       | 69200  |
| P-14    | 11000                               | 3100                            | 740                               | 7600                            | 600                               | 20000        | 20000        | 1400          | 1400          | .9          | .9          | 33             | 33             | 700         | 700         | 38000  |
| P-15    | 2100                                | 770                             | 63                                | 6900                            | 1700                              | 11000        | 11000        | 3200          | 3200          | 1.2         | 1.2         | 1.6            | 1.6            | 4700        | 4700        | 24000  |
| P-17    | 11000                               | 1700                            | 1600                              | 30000                           | 120                               | 54000        | 54000        | 5000          | 5000          | 1.5         | 1.5         | 1.0            | 1.0            | 100000      | 100000      | 420000   |
| P-18    | 80000                               | 5600                            | 16000                             | 9200                            | 6200                              | 80000        | 80000        | 980           | 980           | 1.2         | 1.2         | 1.4            | 1.4            | 1900        | 1900        | 22100  |
| WIPP-25 | 3000                                | 920                             | 250                               | 5100                            | .9                                | 8300         | 8300         | 2400          | 2400          | 1.5         | 1.5         | 20             | 20             | 1800        | 1800        | 23800  |
| WIPP-26 | 4300                                | 1200                            | 340                               | 3400                            | 2.0                               | 8200         | 8200         | 2300          | 2300          | 1.5         | 1.5         | 13             | 13             | 1900        | 1900        | 186000   |
| WIPP-27 | 16000                               | 3100                            | 2000                              | 39000                           | 714                               | 77000        | 77000        | 3900          | 3900          | .5          | .5          | 28             | 28             | 5400        | 5400        | 74000  |
| WIPP-28 | 4300                                | 1200                            | 470                               | 21000                           | 4.0                               | 30000        | 30000        | 3200          | 3200          | 1.1         | 1.1         | 11             | 11             | 45000       | 45000       | 239000   |
| WIPP-29 | 25000                               | 810                             | 5700                              | 79000                           | 150                               | 140000       | 140000       | 13000         | 13000         | .7          | .7          | 2.9            | 2.9            | 64000       | 64000       | 110000   |
| WIPP-30 | 6300                                | 1100                            | 870                               | 37000                           | 888                               | 64000        | 64000        | 5050          | 5050          | .5          | .5          |                |                |             |             |  |

Table 2.--Selected chemical and radiochemical analyses of water from test holes at and near the proposed Waste Isolation Pilot Plant site - Continued

| WELL    | DATE OF SAMPLE | GEO-LOGIC UNIT | SELENIUM, TOTAL (UG/L AS SE) | GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT) |     | GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) |     | GROSS RADIUM 226, DIS-SOLVED, RADON, METHOD (PCI/L) |     | GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) |       |
|---------|----------------|----------------|------------------------------|--|-----|--|-----|---|-----|---|-------|
|         |                |                |                              | U-NAT                                    | AS  | U-NAT                                    | AS  | PCI/L   | AS  | U-NAT                                   | AS    |
| H-1     | 79-03-13       | 312CLBR        | <1                           | <200                                     | <.3 | <.4                                      | 410 | 1.7   | <.4 | <290                                    | <290  |
| H-28    | 77-02-22       | 312CLBR        | 2                            | --                                       | --  | 120                                      | 110 | 4.6   | --  | 330                                     | 330   |
| H-3     | 77-03-17       | 312CLBR        | 2                            | --                                       | --  | 850                                      | --  | 57  | <.4 | <880                                    | <880  |
| H-48    | 78-12-14       | 312CLBR        | <1                           | --                                       | --  | 310                                      | --  | 67  | --  | 720                                     | 720   |
| H-5A    | 78-12-19       | 312CLBR        | <1                           | 2700                                     | --  | 1100                                     | --  | 290   | --  | 4000                                    | 4000  |
| H-68    | 78-12-20       | 312CLBR        | 5                            | --                                       | --  | <420                                     | --  | 6.6   | --  | <1200                                   | <1200 |
| H-78    | 80-03-20       | 312CLBR        | --                           | <38                                      | --  | 19                                       | --  | .98   | --  | <56                                     | <56   |
| H-88    | 80-02-11       | 312CLBR        | --                           | 62                                       | <.3 | <19                                      | --  | 3.4   | --  | 9.7                                     | 9.7   |
| H-98    | 80-02-05       | 312CLBR        | --                           | --                                       | --  | <25                                      | --  | 7.3   | --  | 7.4                                     | 7.4   |
| H-108   | 80-03-21       | 312CLBR        | --                           | <1100                                    | --  | <590                                     | --  | 29  | --  | 34                                      | 34    |
| P-14    | 77-03-14       | 312CLBR        | 1                            | --                                       | --  | 790                                      | --  | 68  | --  | .08                                     | .08   |
| P-15    | 79-04-11       | 312CLBR        | 4                            | <1300                                    | <.3 | 4700                                     | <.4 | 11  | <.4 | <.01                                    | <.01  |
| P-17    | 77-05-10       | 312CLBR        | 1                            | --                                       | --  | 1300                                     | <.4 | 84  | <.4 | 2.2                                     | 2.2   |
| WIPP-25 | 80-08-14       | 312CLBR        | --                           | <200                                     | --  | <170                                     | .5  | 190   | .5  | .10                                     | .10   |
| WIPP-26 | 80-08-18       | 312CLBR        | --                           | <260                                     | --  | <220                                     | --  | 17  | --  | .33                                     | .33   |
| WIPP-27 | 80-08-22       | 312CLBR        | --                           | <1800                                    | --  | 6300                                     | --  | 18  | --  | 6.1                                     | 6.1   |
| WIPP-28 | 80-08-21       | 312CLBR        | --                           | <1100                                    | --  | <1100                                    | --  | 79  | --  | 12                                      | 12    |
| WIPP-29 | 80-08-20       | 312CLBR        | --                           | <7500                                    | --  | 18000                                    | --  | 40  | --  | 4.9                                     | 4.9   |
| WIPP-30 | 80-08-13       | 312CLBR        | --                           | <880                                     | --  | <660                                     | --  | 17  | --  | 1.3                                     | 1.3   |
|         |                |                |                              |  |     |  |     | 64  | --  | 18                                      | 18    |
|         |                |                |                              |  |     |  |     |   |     | .29                                     | .29   |
|         |                |                |                              |  |     |  |     |   |     | <1300                                   | <1300 |

| WELL    | GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) |       | GROSS BETA, DIS-SOLVED (PCI/L AS SR/ YI-90) |      | GROSS BETA, DIS-SOLVED TOTAL (PCI/L AS SR/ YI-90) |      |
|---------|--|-------|---|------|---|------|
|         | U-NAT                                    | AS    | U-NAT                                       | AS   | U-NAT   | AS   |
| H-1     | <.4                                      | 390   | <.4   | 97   | <.4   | 88   |
| H-28    | 380                                      | --    | 710   | --   | <.4   | --   |
| H-3     | <.4                                      | 290   | --  | --   | --  | --   |
| H-48    | --                                       | 1000  | --  | --   | --  | --   |
| H-58    | --                                       | <390  | --  | --   | --  | --   |
| H-68    | --                                       | 19    | --  | --   | --  | --   |
| H-78    | <.4                                      | <18   | <.4   | --   | <.4   | --   |
| H-88    | --                                       | <23   | --  | --   | --  | --   |
| H-98    | --                                       | <610  | <.4   | --   | <.4   | --   |
| P-14    | <.4                                      | 620   | <.4   | 4300 | <.4   | 4300 |
| P-15    | <.4                                      | 1000  | <.4   | 6100 | <.4   | 6100 |
| P-17    | <.4                                      | <160  | --  | --   | --  | --   |
| P-18    | --                                       | <210  | --  | --   | --  | --   |
| WIPP-25 | --                                       | 6100  | --  | --   | --  | --   |
| WIPP-26 | --                                       | <1000 | --  | --   | --  | --   |
| WIPP-27 | --                                       | 17000 | --  | --   | --  | --   |
| WIPP-28 | --                                       | <600  | --  | --   | --  | --   |
| WIPP-29 | --                                       | --    | --  | --   | --  | --   |
| WIPP-30 | --                                       | --    | --  | --   | --  | --   |

Table 2.--Selected chemical and radiochemical analyses of water from test holes at and near the proposed Waste Isolation Pilot Plant site - Continued

| WELL    | DATE OF SAMPLE | GEO-LOGIC UNIT | DENSITY (GR/ML AT 20 C) | PH (UNITS) | ALKALI-LINITY FIELD (MG/L AS CAC03) |       | BICARBONATE FET-FLD (MG/L AS C03) |      | NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N) |      | SULFIDE TOTAL (MG/L AS S) | HARDNESS (MG/L AS CAC03) |
|---------|----------------|----------------|-------------------------|------------|-------------------------------------|-------|-----------------------------------|------|--|------|---------------------------|--------------------------|
|         |                |                |                         |            | AS                                  | CAC03 | AS                                | HC03 | AS N                                     | AS S |                           |                          |
| H-1     | 76-06-04       | 310MGNT        | --                      | 7.4        | 75                                  | 92    | 0                                 | 0    | --                                       | --   | .0                        | 3300                     |
| H-2A    | 77-02-22       | 310MGNT        | --                      | 8.6        | 61                                  | 74    | 0                                 | 0    | .04                                      | --   | --                        | 2700                     |
| H-3     | 77-05-10       | 310MGNT        | --                      | 8.0        | 42                                  | 51    | 0                                 | 0    | .08                                      | --   | --                        | 5000                     |
| H-4A    | 78-12-14       | 310MGNT        | --                      | 8.0        | 52                                  | 63    | --                                | --   | .01                                      | --   | --                        | 2200                     |
| H-5A    | 78-12-14       | 310MGNT        | --                      | 7.8        | 41                                  | 50    | --                                | --   | .01                                      | --   | --                        | 1300                     |
| H-6A    | 78-12-20       | 310MGNT        | --                      | 7.3        | 42                                  | 51    | --                                | --   | .03                                      | --   | --                        | 2000                     |
| H-8A    | 80-02-12       | 310MGNT        | 1.006                   | 9.3        | 26                                  | --    | --                                | --   | .06                                      | --   | --                        | 2200                     |
| H-9A    | 80-02-05       | 310MGNT        | 1.003                   | 8.5        | 35                                  | --    | --                                | --   | .02                                      | --   | --                        | 2100                     |
| H-10A   | 80-03-21       | 310MGNT        | 1.175                   | 7.1        | 0                                   | --    | --                                | --   | .03                                      | --   | --                        | 17000                    |
| WIPP-25 | 80-09-04       | 310MGNT        | 1.010                   | 7.5        | 150                                 | --    | --                                | --   | .64                                      | 1.2  | --                        | 3300                     |
| WIPP-27 | 80-07-24       | 310MGNT        | 1.080                   | 6.8        | 57                                  | --    | --                                | --   | .32                                      | --   | --                        | 11000                    |
| WIPP-30 | 80-09-20       | 310MGNT        | --                      | 6.5        | 180                                 | --    | --                                | --   | .40                                      | 1.8  | --                        | 17000                    |
|         | 80-09-24       | 310MGNT        | --                      | 8.8        | 62                                  | --    | --                                | --   | .00                                      | .0   | --                        | 2400                     |

| WELL    | HARDNESS, NONCARBONATE (MG/L AS CAC03) | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNESIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | POTASSIUM, DIS-SOLVED (MG/L AS K) | CHLORIDE, DIS-SOLVED (MG/L AS CL) |       | SULFATE, DIS-SOLVED (MG/L AS S04) |        | FLUORIDE, DIS-SOLVED (MG/L AS F) |       | SILICA, DIS-SOLVED (MG/L AS SI02) |         | BORON, DIS-SOLVED (UG/L AS B) | SOLIDS, RESIDUE AT 105 DEG. C, DIS-SOLVED (MG/L) |
|---------|--|---------------------------------|------------------------------------|---------------------------------|-----------------------------------|-----------------------------------|-------|-----------------------------------|--------|----------------------------------|-------|-----------------------------------|---------|-------------------------------|--|
|         |  |                                 |                                    |                                 |                                   | RIDE, DIS-SOLVED (MG/L AS CL)     | AS CL | DIS-SOLVED (MG/L AS S04)          | AS S04 | RIDE, DIS-SOLVED (MG/L AS F)     | AS F  | DIS-SOLVED (MG/L AS SI02)         | AS SI02 |                               |  |
| H-1     | 3300                                   | 890                             | 270                                | 5700                            | 70                                | 8000                              | 3900  | 2400                              | 2.8    | 1.3                              | 2200  | 1.3                               | 2200    | 18900                         |  |
| H-2A    | 2700                                   | 820                             | 170                                | 2700                            | 81                                | 4100                              | 2400  | 3400                              | --     | 6.0                              | 220   | 6.0                               | 220     | 12000                         |  |
| H-3     | 4900                                   | 1200                            | 480                                | 9300                            | 250                               | 15000                             | 3400  | 7000                              | 1.8    | 1.8                              | 13000 | 6.4                               | 13000   | 32000                         |  |
| H-4A    | 2100                                   | 210                             | 410                                | 7000                            | 130                               | 7500                              | 3200  | 2700                              | 2.5    | 2.5                              | 11000 | 6.4                               | 11000   | 22300                         |  |
| H-5A    | 1300                                   | 240                             | 170                                | 1500                            | 53                                | 880                               | 2700  | 2100                              | 2.8    | 2.8                              | 2500  | 9.0                               | 2500    | --                            |  |
| H-6A    | 2000                                   | 520                             | 160                                | 1100                            | 46                                | 1200                              | 2700  | 2100                              | 1.4    | 1.4                              | 3100  | 7.7                               | 3100    | --                            |  |
| H-8A    | 2200                                   | 870                             | 17                                 | 2400                            | 84                                | 3500                              | 2100  | 2100                              | .7     | .7                               | 2600  | .9                                | 2600    | 9410                          |  |
| H-9A    | 2000                                   | 550                             | 170                                | 800                             | 28                                | 750                               | 2700  | 2700                              | 1.8    | 1.8                              | 3900  | 3.3                               | 3900    | 5460                          |  |
| H-10A   | 17000                                  | 2500                            | 2600                               | 93000                           | 510                               | 160000                            | 2700  | 1900                              | 1.3    | 1.3                              | 2600  | 1.9                               | 2600    | 270000                        |  |
| WIPP-25 | 3100                                   | 910                             | 240                                | 3100                            | .8                                | 5600                              | 9400  | 2900                              | 1.5    | .0                               | 1900  | 25                                | 1900    | 18700                         |  |
| WIPP-27 | 11000                                  | 1100                            | 1900                               | 34000                           | 1800                              | 61000                             | 9400  | 2900                              | .0     | .0                               | 13    | 1.7                               | 13      | 106000                        |  |
| WIPP-30 | 17000                                  | 3600                            | 2000                               | 43000                           | 10000                             | 85000                             | 2900  | 3200                              | .4     | .4                               | 2300  | 13                                | 2300    | 173000                        |  |
|         | 2400                                   | 690                             | 170                                | 5500                            | 190                               | 8700                              | 3200  | 3200                              | 1.9    | 1.9                              | 12000 | .7                                | 12000   | 19000                         |  |



Table 2.--Selected chemical and radiochemical analyses of water from test holes at and near the proposed Waste Isolation Pilot Plant site - Concluded

| WELL    | DATE OF SAMPLE | GEO-LOGIC UNIT | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | GROSS<br>ALPHA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS<br>U-NAT) | GROSS<br>ALPHA,<br>SUSP.<br>TOTAL<br>(PCI/L<br>AS<br>U-NAT) | GROSS<br>BETA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS<br>CS-137) | GROSS<br>BETA,<br>SUSP.<br>TOTAL<br>(PCI/L<br>AS<br>CS-137) | RADIUM<br>226,<br>DIS-<br>SOLVED,<br>RADON<br>METHOD<br>(PCI/L) | URANIUM<br>DIS-<br>SOLVED,<br>EXTRAC-<br>TION<br>(UG/L) | GROSS<br>ALPHA,<br>DIS-<br>SOLVED<br>(UG/L<br>U-NAT) |
|---------|----------------|----------------|--|---|---|---|---|---|---|--|
| H-1     | 77-05-10       | 310MGNT        | 1  | --  | --  | 940   | <.4   | 170   | .60   | <400   |
| H-2A    | 77-02-22       | 310MGNT        | 1  | --  | --  | 69  | 2.6   | 6.1   | .80   | <160   |
| H-3     | 77-05-10       | 310MGNT        | 7  | --  | --  | 330   | <.4   | 44  | --  | 550  |
|         | 79-05-10       | 310MGNT        | 1  | <420  | .3  | 1300  | .4  | 10  | .24   | <420   |
| H-4A    | 78-12-14       | 310MGNT        | <1   | --  | --  | <100  | --  | 9.3   | .08   | <420   |
| H-5A    | 78-12-14       | 310MGNT        | <1   | --  | --  | 53  | --  | 17  | 1.0   | 160  |
| H-6A    | 78-12-20       | 310MGNT        | 1  | --  | --  | 43  | --  | 11  | 6.7   | 110  |
| H-8A    | 80-02-12       | 310MGNT        | --   | <140  | <.3   | 130   | <.4   | 1.9   | .08   | <200   |
| H-9A    | 80-02-05       | 310MGNT        | --   | --  | --  | <38   | --  | 9.4   | .15   | <150   |
| H-10A   | 80-03-21       | 310MGNT        | --   | <5300   | --  | <3500   | --  | 480   | <.10  | <7800  |
| WIPP-25 | 80-09-04       | 310MGNT        | --   | <160  | --  | <140  | --  | 12  | 8.4   | <230   |
| WIPP-27 | 80-07-24       | 310MGNT        | --   | --  | --  | 1900  | --  | 12  | --  | --   |
|         | 80-09-20       | 310MGNT        | --   | <2000   | --  | 6000  | --  | 24  | 5.8   | <2900  |
| WIPP-30 | 80-09-24       | 310MGNT        | --   | <300  | --  | <200  | --  | 26  | .02   | <440   |

| WELL    | GROSS<br>ALPHA,<br>SUSP.<br>TOTAL<br>(UG/L<br>AS<br>U-NAT) | GROSS<br>BETA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS<br>YT-90) | GROSS<br>BETA,<br>SUSP.<br>TOTAL<br>(PCI/L<br>AS<br>YT-90) |
|---------|--|--|--|
| H-1     | <.4  | 790  | <.4  |
| H-2A    | 12   | 55   | 2.0  |
| H-3     | <.4  | 260  | <.4  |
|         | .4   | 1200   | .4   |
| H-4A    | --   | <92  | --   |
| H-5A    | --   | 48   | --   |
| H-6A    | --   | 39   | --   |
| H-8A    | <.4  | 130  | <.4  |
| H-9A    | --   | <35  | --   |
| H-10A   | --   | <3600  | --   |
| WIPP-25 | --   | <130   | --   |
| WIPP-27 | --   | 1800   | --   |
|         | --   | 5800   | --   |
| WIPP-30 | --   | <190   | --   |

Table 3.--Stratigraphic summary of rock units of Permian (Guadalupean and Ochoan) and younger age underlying the proposed Waste Isolation Pilot Plant site and adjacent areas

| Age         | Rock unit               | Thickness (feet)        | Description  |
|-------------|-------------------------|-------------------------|--|
| Quaternary  | Alluvium and sand       | 0-19                    | Dune sand, uniformly fine grained, light-brown to reddish-brown  |
|             | Mescalero caliche       | 0-5                     | Limestone, chalky, includes fragments of underlying rock   |
|             | Catuna Formation        | 0-32                    | Sandstone and siltstone, poorly indurated, dominantly reddish-orange, contains some conglomerate   |
| Triassic    | Late Triassic           |                         | UNCONFORMITY   |
|             |                         | 0-800                   | Mudstone, shaly with lenses of sandstone and conglomerate  |
| Permian     | Ochoan                  |                         | UNCONFORMITY   |
|             |                         | 0-255                   | Sandstone, medium- to coarse-grained, commonly cross-stratified, gray and yellowish-brown; contains conglomerate and reddish brown mudstone and siltstone  |
|             | Dewey Lake Red Beds     | 250-541                 | Siltstone, shale and sandstone, very fine to fine-grained, reddish-orange to reddish-brown, contains interbedded reddish brown claystone; small-scale lamination and cross-stratification common |
|             |                         |                         | UNCONFORMITY   |
|             | Rustler Formation       | 298-462                 | Anhydrite and halite with subordinate dolomite, sandstone, siltstone, claystone, and polyhalite; includes Magenta Dolomite and Culebra Dolomite Members  |
| Guadalupean | Salado Formation        | 2,000+                  | Halite with subordinate anhydrite, polyhalite, potash ores, sandstone, and magnesite   |
|             | Castile Formation       | 1,300+                  | Anhydrite and halite with subordinate limestone  |
|             | Delaware Mountain Group |                         |  |
|             |                         | Bell Canyon Formation   | Sandstone, brown and gray, with minor limestone and shale  |
|             |                         | Cherry Canyon Formation | Sandstone, gray and brown, with limestone and minor shale  |
|             |                         | Brushy Canyon Formation | Sandstone, gray, with brown and black shale and brown limestone  |

Modified from Bachman, 1980



New Mexico Office of the State Engineer  
Point of Diversion Summary

Well Tag    POD Number    (quarters are 1=NW 2=NE 3=SW 4=SE)  
C 02821    Q64Q16Q4 Sec Tws Rng    (quarters are smallest to largest)    (NAD83 UTM in meters)  
2    2    3    14    22S    32E    627303    3584563\*    X    Y

Driller License: 1348    Driller Company: TAYLOR WATER WELL SERVICE  
Driller Name:

Drill Start Date: 06/12/2001    Drill Finish Date: 06/23/2001    Plug Date:  
Log File Date: 10/04/2001    PCW Rcv Date:    Source: Shallow  
Pump Type:    Pipe Discharge Size:    Estimated Yield: 2 GPM  
Casing Size: 5.00    Depth Well: 540 feet    Depth Water: 340 feet

| Water Bearing Stratifications: |     |     | Top              | Bottom       | Description |
|--------------------------------|-----|-----|------------------|--------------|-------------|
|                                | 410 | 540 | Sandstone/Gravel | Conglomerate |             |

| Casing Perforations: |     |     | Top | Bottom |
|----------------------|-----|-----|-----|--------|
|                      | 410 | 430 |     |        |
|                      | 440 | 540 |     |        |

\*UTM location was derived from PLSS - see Help

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POINT OF DIVERSION SUMMARY



*Kenneth J. Lickliter*

## Summary Evaluation of the Waste Isolation Pilot Plant (WIPP) Site Suitability

Wendell D. Weart

Prepared by  
Sandia National Laboratories  
Albuquerque, New Mexico 87185 and Livermore, California 94550  
for the United States Department of Energy  
under Contract DE-AC04-76DP00789



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# Summary Evaluation of the Waste Isolation Pilot Plant (WIPP) Site Suitability

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## Abstract

Geotechnical studies oriented toward selecting a radioactive waste disposal site began in southeast New Mexico in 1972. These geological studies have focused on the present WIPP site since November 1975 and have been accompanied by investigations of the ecologic and socioeconomic environment. Surface-based geotechnical investigations have relied heavily on geologic mapping, on geophysical exploration techniques, and on drillholes for confirmation of interpretation, core examination, and acquisition of hydrologic parameters. These studies have now been supplemented by direct examination and measurement of the subsurface geology in two shafts and in several thousand feet of mined drift at the depth selected for the WIPP. Additional studies are not likely to change significantly the level of confidence that now exists with regard to the suitability of the WIPP site. Consequently, Sandia has now evaluated the information available on the WIPP site and, in this report, summarizes the information and judgments reached for each of the 21 site qualification criteria. The site satisfies the intent of all the site criteria. Sandia recommends, without reservation, the use of the Los Medanos site for the WIPP.

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**Santa Fe, NM 87505**

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Action 83322

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|  | Action Number:<br>83322                                   |
|  | Action Type:<br>[C-141] Release Corrective Action (C-141) |

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| Created By | Condition   | Condition Date |
|------------|---|----------------|
| jnobui     | Groundwater Closure Report Approved. Remediation Plan Approved. Incident # nOY1724941773 will be closed when Closure Report has been received and Approved. | 5/2/2022       |