Matador Production Company

One Lincoln Centre • 5400 LBJ Freeway • Suite 1500 • Dallas, Texas 75240
Voice 972.371.5288 • Fax 214.866.4888
chumphreys@matadorresources.com

Cliff Humphreys
Vice President of Completions

May 18, 2020

VIA CERTIFIED MAIL/RRR

Susan A. Lucas Kamat
Oil Conservation Division
Energy, Minerals, and Natural Resources Department
5200 Oakland Avenue, Suite 1000
Albuquerque, New Mexico 87113

Re: C-147 for Matador Production Company
Rodney Robinson Recycling Facility and Containment, Section 6, T23S, R33E

Dear Ms. Lucas Kamat

Matador Production Company ("MPC") is pleased to submit a registration package for the proposed Rodney Robinson Recycling Facility and Containment in Lea County, NM. With assistance from Souder, Miller & Associates, MPC has sought to provide the appropriate data verifying that this site passes NMOCD Standards under Rule 34. Please find enclosed:

- Completed C-147 Form and Required Siting Criteria; including a variance request for an Audible Bird Deterrent System.
- Stamped Engineered Design for the Proposed Facility and Containment, developed in accordance with a geotechnical survey of the area.
- Rodney Robinson Recycling Containment Facility Geotechnical Investigation.
- Approved Rodney Robinson State Business Lease from NMSLO.
- Certified Plat.
- Equipment and Liner Material Manufacturer Specifications.

Thank you, and please do not hesitate to contact me if you have any questions or concerns regarding the registration.

Sincerely,

Cliff Humphreys

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

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

Form C-147
Revised April 3, 2017

Recycling Facility and/or Recycling Containment

Type of Facility: ☒ Recycling Facility ☒ Recycling Containment*

Type of action: ☐ Permit ☒ Registration
☐ Modification ☐ Extension
☐ Closure ☐ Other (explain) _____

*** At the time C-147 is submitted to the division for a Recycling Containment, a copy shall be provided to the surface owner.**

Be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.

1.
Operator: Matador Production Company (For multiple operators attach page with information) OGRID #: 228937
Address: One Lincoln Center, 5400 LBJ Freeway, Suite 1500, Dallas, TX, 75240
Facility or well name (include API# if associated with a well): Rodney Robinson Recycling Facility API: Not Applicable
OCD Permit Number: _____ (For new facilities the permit number will be assigned by the district office)
U/L or Qtr/Qtr _____ Section 6 Township 23S Range 33E County: Lea
Surface Owner: ☐ Federal ☒ State ☐ Private ☐ Tribal Trust or Indian Allotment

2.
☒ **Recycling Facility:**
Location of recycling facility (if applicable): Latitude 32.336389 Longitude 103.6175
Proposed Use: ☒ Drilling* ☒ Completion* ☒ Production* ☒ Plugging *
The re-use of produced water may NOT be used until fresh water zones are cased and cemented
☐ Other, ***requires permit for other uses. Describe use, process, testing, volume of produced water and ensure there will be no adverse impact on groundwater or surface water.***
☒ Fluid Storage
☒ Above ground tanks ☒ Recycling containment ☐ Activity permitted under 19.15.17 NMAC explain type _____
☐ Activity permitted under 19.15.36 NMAC explain type: _____ ☐ Other explain _____
☐ For multiple or additional recycling containments, attach design and location information of each containment
☐ **Closure Report (required within 60 days of closure completion):** ☐ Recycling Facility Closure Completion Date: _____

3.
☒ **Recycling Containment: Pit**
☐ Annual Extension after initial 5 years (attach summary of monthly leak detection inspections for previous year)
Center of Recycling Containment (if applicable): Latitude 32.336408 Longitude 103.617561
☐ For multiple or additional recycling containments, attach design and location information of each containment
☒ Lined ☒ Liner type: Thickness 60 mil conductive primary ☐ LLDPE ☒ HDPE ☐ PVC ☐ Other 40 mil HDPE secondary
☐ String-Reinforced
Liner Seams: ☒ Welded ☐ Factory ☐ Other _____ Volume: 484.106 bbl Dimensions: L 690 x W 335 x D 24 (max)
☐ Recycling Containment Closure Completion Date: _____

3.

☒ **Recycling Containment: 40k AST**

☐ Annual Extension after initial 5 years (attach summary of monthly leak detection inspections for previous year)

Center of Recycling Containment (if applicable): Latitude 32.336389 Longitude 103.6175

☐ For multiple or additional recycling containments, attach design and location information of each containment

☒ Lined ☒ Liner type: Thickness two-layers 40 mil ☒ LLDPE ☐ HDPE ☐ PVC ☐ Other _____

☒ String-Reinforced

Liner Seams: ☐ Welded ☒ Factory ☐ Other _____ Volume: 40,000 bbl Dimensions: 153' diameter. 12' tank walls

☐ Recycling Containment Closure Completion Date: _____

4.

Bonding:

☒ Covered under bonding pursuant to 19.15.8 NMAC per 19.15.34.15(A)(2) NMAC **(These containments are limited to only the wells owned or operated by the owners of the containment.)**

☐ Bonding in accordance with 19.15.34.15(A)(1). Amount of bond $_____ **(work on these facilities cannot commence until bonding amounts are approved)**

☐ Attach closure cost estimate and documentation on how the closure cost was calculated.

5.

Fencing:

☐ Four foot height, four strands of barbed wire evenly spaced between one and four feet

☒ Alternate. Please specify 8 foot tall game fence with locked gates

6.

Signs:

☒ 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers

☐ Signed in compliance with 19.15.16.8 NMAC

7.

Variances:

Justifications and/or demonstrations that the proposed variance will afford reasonable protection against contamination of fresh water, human health, and the environment.

Check the below box only if a variance is requested:

☒ Variance(s): Requests must be submitted to the appropriate division district for consideration of approval. If a Variance is requested, include the variance information on a separate page and attach it to the C-147 as part of the application.

If a Variance is requested, it must be approved prior to implementation.

8.

Siting Criteria for Recycling Containment

Instructions: The applicant must provide attachments that demonstrate compliance for each siting criteria below as part of the application. Potential examples of the siting attachment source material are provided below under each criteria.

General siting

Ground water is less than 50 feet below the bottom of the Recycling Containment. NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☒ No ☐ NA
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; written approval obtained from the municipality	☐ Yes ☒ No ☐ NA
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Minerals Division	☐ Yes ☒ No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; topographic map	☐ Yes ☒ No
Within a 100-year floodplain. FEMA map	☐ Yes ☒ No
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; aerial photo; satellite image	☐ Yes ☒ No
Within 500 horizontal feet of a spring or a fresh water well used for domestic or stock watering purposes, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database search; visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; topographic map; visual inspection (certification) of the proposed site	☐ Yes ☒ No

9.
Recycling Facility and/or Containment Checklist:
Instructions: Each of the following items must be attached to the application. Indicate, by a check mark in the box, that the documents are attached.

- ☒ Design Plan - based upon the appropriate requirements.
- ☒ Operating and Maintenance Plan - based upon the appropriate requirements.
- ☒ Closure Plan - based upon the appropriate requirements.
- ☒ Site Specific Groundwater Data -
- ☒ Siting Criteria Compliance Demonstrations –
- ☒ **Certify that notice of the C-147 (only) has been sent to the surface owner(s)**

10.
Operator Application Certification:
I hereby certify that the information and attachments submitted with this application are true, accurate and complete to the best of my knowledge and belief.

Name (Print): Cliff Humphreys Title: VP of Completions

Signature: [signature] Date: 5/18/2020

e-mail address: CHumphreys@matadorresources.com Telephone: 972-371-5288

11.
OCD Representative Signature: _____ **Approval Date:** _____

Title: _____ **OCD Permit Number:** _____

☐ OCD Conditions _____
☐ Additional OCD Conditions on Attachment

Design Plan, Operating and Maintenance Plan, & Closure Plan

Design and Construction Plan:

Project Overview

The following specifications will be met during the construction of the recycling containment:

- The recycling containment will be constructed to ensure the confinement of produced water, to prevent releases and to prevent overtopping due to wave action or rainfall.
- The foundation will be properly constructed and interior slopes will consist of a firm unyielding base that will be smooth and free of rocks, debris or and sharp edges that may penetrate the liner.
- 8 ounce geotextile will be laid on the base of the containment to add another layer of protection for the liner from any sharp edges and to reduce localized stress-strain or protuberances that otherwise may compromise the liner's integrity.
- A levee will be constructed with an inside and outside grade of three horizontal feet to one vertical foot (3H:1V). The top of the levee shall be wide enough to install an anchor trench and provide adequate room for inspection and maintenance. The anchor trench will be at least 18 inches deep.
- The recycling containment will be constructed with a 60 mil HDPE *conductive* primary liner and a 40 mil HDPE secondary liner with a leak detection system appropriate to the site's conditions. Liner compatibility shall meet or exceed the EPA SW-846 method 9090A or subsequent relevant publications.
- The edges of both liners will be anchored with a 24 inch deep (needs to be at least 18 inches deep) compacted earth filled trench.
- Liner seems will be minimized and shall be oriented up and down (not across) the slope of the levee. Factory welded seams will be used anywhere possible and no horizontal seams will be within five feet of the slope's toe.
- All field seams will be tested and logged to ensure the seams are thermally sealed. Prior to field seaming, the operator shall overlap liners four to six inches. The number of field seams and corners and irregularly shaped areas will be minimized. Qualified personnel will conduct field welding and testing.
- The conductive primary liner will be spark tested to ensure no cuts are present.
- The liner will be protected from excessive hydrostatic force or mechanical damage. External discharge or suction lines will not penetrate the liner.

- The recycling containment will be constructed with a leak detection system between the primary and secondary liner. The leak detection system will consist of 200-mil geonet and will be sloped to facilitate the earliest possible leak detection.
- The containment will be designed to prevent run-on of surface water. Diversion ditches will be used where necessary.
- Above-ground storage tank will be double-lined using (2) 40-mil LLDPE string reinforced liners. This tank will be installed according to notes in the engineering drawing and according to manufacturer specifications.
- Above-ground storage tank will be placed on 200-geonet, 8 oz. geotextile and will exist within a secondary containment

Stockpiling of Topsoil

Topsoil will be stockpiled beside the recycling containment and will be used as final layer at the time of the enclosure of the containment.

Signs

Matador Resources Company will provide easily read sign(s) no less than 12 inch by 24 inch with lettering not less than two inches in height in a conspicuous place around the perimeter of the fence that will include:

- The operator's name
- The location of the site by quarter-quarter, section, township and range
- Emergency telephone numbers

Fencing

An 8-foot tall game fence will be provided around the perimeter of the containment to deter an unauthorized human or wildlife access. Gates will be used for authorized personnel only and will be kept locked at all times. The operator maintains that this will provide equal or better protection to wildlife than the minimum four-foot, four stranded barbed wire fence required by NMOCD.

Netting and Wildlife Plan

The fence indicated above will be effective in excluding any terrestrial wildlife. In lieu of a physical net over the recycling containment and over tanks at the recycling facility, the operator proposes instead utilizing a previously approved audible avian deterrent system. This system has proved effective in deterring migratory birds on other recycling facilities operated by Matador in both New Mexico and Texas. The audible system is manufactured by **Bird-X**. Manufacturer's specifications are attached to the registration.

Operating and Maintenance Plan:

The recycling facility and containment will be operated as such to protect public health and the environment and maintained in a manner that prevents contamination of fresh water. The recycling facility and lined containment will be used to facilitate recycling and reclamation of produced water from surrounding oil and gas wells for the purpose of reuse in drilling, completion, producing or plugging operations in oil and gas wells. This facility or containment will not be used for the purpose of disposal of produced water or oilfield waste of any kind. The operation plan consists of the following:

- Weekly inspections of the recycling facility and recycling containment including leak detection testing while the containment is holding fluid. A log of these inspections will be filed and held by the operator for review by the division upon request.
- Produced water from nearby producing oil and gas wells will enter the facility to be treated via gathering lines or trucks. Produced water will be treated for removal of hydrocarbons at the facility before entering the recycling containment.
- The operator shall remove any visible layer of oil from the surface of the recycling containment should such appear.
- The operator will maintain a minimum of three feet of freeboard in the recycling containment.
- Records will be kept by the operator and delivered on a monthly basis to the state in the form of a C-148 notification documenting the total volume of produced water received for recycling, and the total volume of water leaving the facility for use in oil and gas operations.
- In the case of discovery that the containment's primary liner has been compromised above the fluid's surface, the operator shall repair the damage within 48 hours of discovery or else seek an extension of time from the division district office.
- In the case of discovery that the containment's primary liner has been compromised below the fluid's surface, the operator shall remove all fluid above the damage or leak within 48 hours of discovery, notify the division district office, and repair the damage to the liner.
- Above ground storage tank will be inspected weekly along with the recycling containment, including leak detection testing within the secondary containment. If a leak is discovered in the above-ground storage tank, operator will follow the same protocol as if a leak was discovered in the recycling containments liner.
- The containment berm shall be operated and regularly inspected to prevent the collection of surface water run-on.
- The recycling containment will be deemed to have ceased operations if less than 20% of the total fluid capacity is used every six months following the first withdrawal of produced water for use. The operator will either report cessation of operations to the appropriate division district office or request an extension for cessation of operations.

Closure Plan

- Once operator has declared cessation of operations, all fluid shall be removed from the site within 60 days. The containment will be closed within six months from the date of cessation.
- All fluids, contents and synthetic liners will be transferred to a division approved facility.
- The soil under the containment will be tested for contamination with a five-point composite sample, including any and all stained or wet soils. The sample will be analyzed for constituents in accordance with Table 1 of NMOCD 19.15.34.14.
- The operator will submit a closure report on form C-147, including required attachments to document all closure activities.
- After closure, the operator will reclaim the containment's location to a safe and stable condition that blends with the surrounding undisturbed area.
- Surface reclamation obligations imposed by the BLM or NM State Trust Land on lands managed by those agencies will supersede these requirements, provided that these other requirements provide equal or greater protection of fresh water, human health, and the environment.

Financial Assurance Requirements

The operator has an existing financial assurance in place with NMOCD as required by 19.15.8 NMAC. Use of recycling facility and containment will be used solely for wells owned or operated by Matador Production Company.

Variance Request

- Bird Deterrents- In lieu of a physical net over the recycling containment and over tanks at the recycling facility, the operator proposes instead utilizing a previously approved audible avian deterrent system. This system has proved effective in deterring migratory birds on other recycling facilities operated by Matador in both New Mexico and Texas. The audible system is manufactured by **Bird-X**. Manufacturers specifications are attached to the registration.

Variances-Section 7

Variance Request for Audible Bird Deterrent

Re: Rodney Robinson Water Recycling Facility and Containment Pit

Matador Production Company would like to request the OCD's approval for a variance regarding bird deterrents at the location described above. Matador proposes to utilize the Bird-X Mega Blaster Pro, creating intermittent distress calls to create a "danger zone" that frightens native and or migrating birds and wildlife from the water recycling facility and containment pit area. Two units would be installed, each containing 2 built-in high output amplifiers and houses 20 speakers, capable of producing up to 125 decibels and a frequency range from 2,000 – 10,000Hz. Please note that EOG Resources, Inc. is currently utilizing this same bird deterrent, which was approved by the OCD on several current permits.

Bird X Specs

- Coverage: Up to 30 acres from single unit
- Box dimensions: Box 1: 23" x 18" x 16" (23 lbs., unit & speaker), Box 2: 32" x 24" x 5" (17 lbs., solar panel)
- Power Input: 12vDC (3 amps) via solar panel and battery
- Sound Pressure: up to 125 decibels
- Frequency: 2,000–10,000 Hz
- Library of predator calls

Siting Criteria-Section 8

Souder, Miller & Associates ♦ 201 S. Halagueno Street ♦ Carlsbad, NM 88220
(575) 689-8801

May 18, 2020 #5E28219.T2

Mr. Garrett Hunt
Matador Production Company
One Lincoln Centre
5400 LBJ Freeway, Suite 1500
Dallas, Texas 75240
(972) 587-4639
(210) 269-8490 (mobile)
ghunt@matadorresources.com

RE: C-147 Recycling Containment Permit Siting Criteria Attachment, Proposed, Rodney Robinson Recycling Facility, Lea County, New Mexico

Dear Mr. Hunt:

Souder, Miller & Associates (SMA) is pleased to submit the enclosed C-147 Siting Criteria Explanation and supporting documentation for the proposed Rodney Robinson Recycling Containment Pond to be constructed in southwestern Lea County, New Mexico. The proposed recycling containment will be composed of a lined pond with an approximate capacity of 20.3 million gallons, and located in Township 23S, Range 33E, NW/4 of Section 6, located north of U.S. Highway 128, west of County Road 21, and east of County Road 1 (Orla Road).

Below are details on the siting criteria in Section 8 of the C-147 permit. Supporting documentation is included in the Appendices indicated in each siting criteria explanation. Information obtained from the supporting documentation was confirmed during a site visit by Ms. Melodie Sanjari with SMA on September 30, 2019. A summary of findings is included in the following excerpt from the C-147 permit General Siting conditions:

General siting

Ground water is less than 50 feet below the bottom of the Recycling Containment. NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ■ No ☐ NA
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; written approval obtained from the municipality	☐ Yes ■ No ☐ NA
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Minerals Division	☐ Yes ■ No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; topographic map	☐ Yes ■ No
Within a 100-year floodplain. FEMA map	☐ Yes ■ No
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; visual inspection (certification) of the proposed site	☐ Yes ■ No
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; aerial photo; satellite image	☐ Yes ■ No
Within 500 horizontal feet of a spring or a fresh water well used for domestic or stock watering purposes, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database search; visual inspection (certification) of the proposed site	☐ Yes ■ No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; topographic map; visual inspection (certification) of the proposed site	☐ Yes ■ No

8.1 Groundwater Depth at Proposed Facility

The proposed facility is located near the western boundary of a large geologic feature named the San Simon Swale, a structure formed by infilling of collapse structures that has resulted in a thick package of alluvial sediments overlying Triassic-aged redbed units, including the Chinle Formation and the Santa Rosa Sandstone (Nicholson & Clebsch, 1961). Near the proposed facility, the alluvium is estimated to be approximately 150-200 feet thick, however, further west, the alluvial thickness increases to nearly 300 feet. Groundwater flow in the area is thought to be to the east into the San Simon Swale (Nicholson & Clebsch, 1961) and, based on data collected in 1953 and 1954, was estimated to lie at approximately 3,200 feet above mean sea level (illustrated in Plate 2 in Appendix A).

Groundwater, as indicated by lithology logs from recent geotechnical drilling activities within the facility site (location indicated on Figure 1), was not encountered at depths above 60 feet below ground surface (bgs), suggesting the maximum groundwater elevation in the area is 3,665 feet above mean sea level amsl. The proposed facility is located at an elevation of approximately 3,730 feet amsl, and the base of the containment pond will be installed to a maximum depth of 24 feet below the proposed facility, or an elevation of approximately 3,706 ft amsl. Geotechnical drilling bores only went 60’ below ground surface (3,665 feet amsl) due to the initial containment designs having the base at 3,715 feet amsl (50’ difference). After finalizing the pit design, the new base of the containment pond is at 3,706 feet amsl, or only 41 feet above the geotechnical bore depths. However, we have provided the following citations and supporting documents that provide us with a high level of confidence that ground water is at the very minimum 50’ below the planned base of the containment pond:

Additional field drilling information obtained by Matador Production Company from Redi Drill suggests that, during the completion of six oil wells within approximately 0.5 mile of the proposed facility, groundwater was not encountered to a depth of 120 feet bgs. (See Appendix A).

Data obtained from the iWATERS database maintained by the New Mexico Office of the State Engineer (NMOSE) does not identify any groundwater wells within Section 6 or any adjacent Section. Further, the two closest well permit applications (illustrated in the figure entitled “Site Map – OSE Wells Map” in Appendix A) lack specificity on groundwater depth and in fact only one includes a final well depth. Well permit C-02349, located approximately 3 miles west of the subject property, indicates a total depth of 525 feet bgs and an estimated yield of 5 gpm, suggesting a depth to water in excess of 200 feet bgs. (See Appendix A).

Supporting information from recent lithology logs are provided as *Supplemental Document: Rodney Robinson Recycling Containment Facility Geotechnical Investigation*. The exact borehole coordinates from the recent drilling activities are: LAT N32.3364943, LONG W-103.6175544.

8.2 Facility Location Relative to Municipal Boundary or Defined Fresh Water Well Field

The facility is located approximately 29.2 miles from the nearest municipality (City of Jal) in an area consisting predominantly of oil and gas development. The proposed facility is not within any defined freshwater field as no municipal water wells are present near the facility location and exploitation of existing groundwater resources is extremely limited. A vicinity map of the proposed facility on a USGS topographic map is included as Figure 1. A map indicating the location of wells registered with the NMOSE is included in the figure entitled “Site Map – OSE Wells Map” in Appendix A.

8.3 Facility Location Relative to Subsurface Mines

Information from the USGS Topographic map covering the location of the facility, as well as, a map from the New Mexico Energy, Minerals, and Natural Resources Department (EMNRD) indicates that no subsurface mines or quarries are present within the facility boundaries. There are no quarries or subsurface mines within a one (1) mile radius of the facility boundaries. A vicinity map of the facility on a USGS topographic map is included as Figure 1. A map indicating the location of active mines from the EMNRD website is included as Appendix B.

8.4 Facility Location Relative to Areas of Geologic Instability

The facility is generally flat, with a slightly sloping topography and no nearby mapped faults. The USGS Seismic hazard map places the region as a low-risk area for potential earthquakes or other seismic hazards. As such, SMA believes the facility is not located in an unstable area. A vicinity map of the facility on a USGS topographic map is included as Figure 1, and a geologic map of the area with known faults is included as Figure 3. A seismic hazards map is included as Appendix C.

8.5 Facility Location Relative to 100-Year Floodplain

The facility is located within FEMA Zone D in an area that is not covered by printed flood maps. Information from the FEMA Floodplain online database indicates that no known 100-year floodplains are present within 10 miles of the facility. A screenshot of the proposed facility area from the online FEMA Floodplain database is included as Appendix D.

8.6 Facility Location Relative to Continuously Flowing Watercourse or Other Significant Watercourse, Lakebed, Sinkhole or Playa Lake

The nearest continually flowing watercourse, as indicated on the USGS topographic map, is over 15 miles from the proposed facility boundary; the nearest ephemeral water course is located approximately 4.0 miles to the northeast of the proposed facility. No Lakebeds and/or sinkholes are located within 3 miles of the facility. A vicinity map of the facility on a USGS topographic map is included as Figure 1, and an aerial photo of the project area is included as Figure 2. The absence of watercourses, lakebeds, sinkholes and playa lakes in the near vicinity of the proposed facility was confirmed by a site visit conducted by Ms. Melodie Sanjari with SMA on September 30, 2019.

8.7 Facility Location Relative to an Existing Residence, School, Hospital, Institution or Church

The facility is located over 10 miles from the nearest private residence. The closest facilities to the proposed facility are existing oil field tank batteries and well pads surrounding the facility. A vicinity map of the facility on a USGS topographic map is included as Figure 1, and an aerial photo of the project area is included as Figure 2. The absence of residences, schools, hospitals, churches or institutions in the vicinity of the proposed facility was confirmed by a site visit conducted by Ms. Melodie Sanjari with SMA on September 30, 2019.

8.8 Facility Location Relative to Spring or Fresh Water Well

The nearest freshwater well registered with the NMOSE or USGS is located approximately 2.6 miles to the north of the proposed facility, although even this well appears to not have been completed. No springs are indicated on USGS topographic maps within 1.0 mile of the proposed facility. A vicinity map of the facility on a USGS topographic map is included as Figure 1, and an aerial photo of the project area indicating the location of registered wells is included as Figure 2. Supporting information from nearby NMOSE wells and the USGS monitoring wells is included as Appendix A. The absence of springs or drinking water wells in the vicinity of the proposed facility was confirmed by a site visit conducted by Ms. Melodie Sanjari with SMA on September 30, 2019.

8.9 Facility Location Relative to Identified Wetlands

The nearest wetland as mapped by the United States Fish and Wildlife Service (USFWS) is over 5 miles from the proposed facility. A map prepared by the USFWS online wetland database is included as Appendix E. The absence of potential wetlands in the vicinity of the proposed facility was confirmed by a site visit conducted by Ms. Melodie Sanjari with SMA on September 30, 2019.

If you have any questions regarding the information within or attached to this letter, please do not hesitate to contact me by phone at (575) 647-0799 or by email.

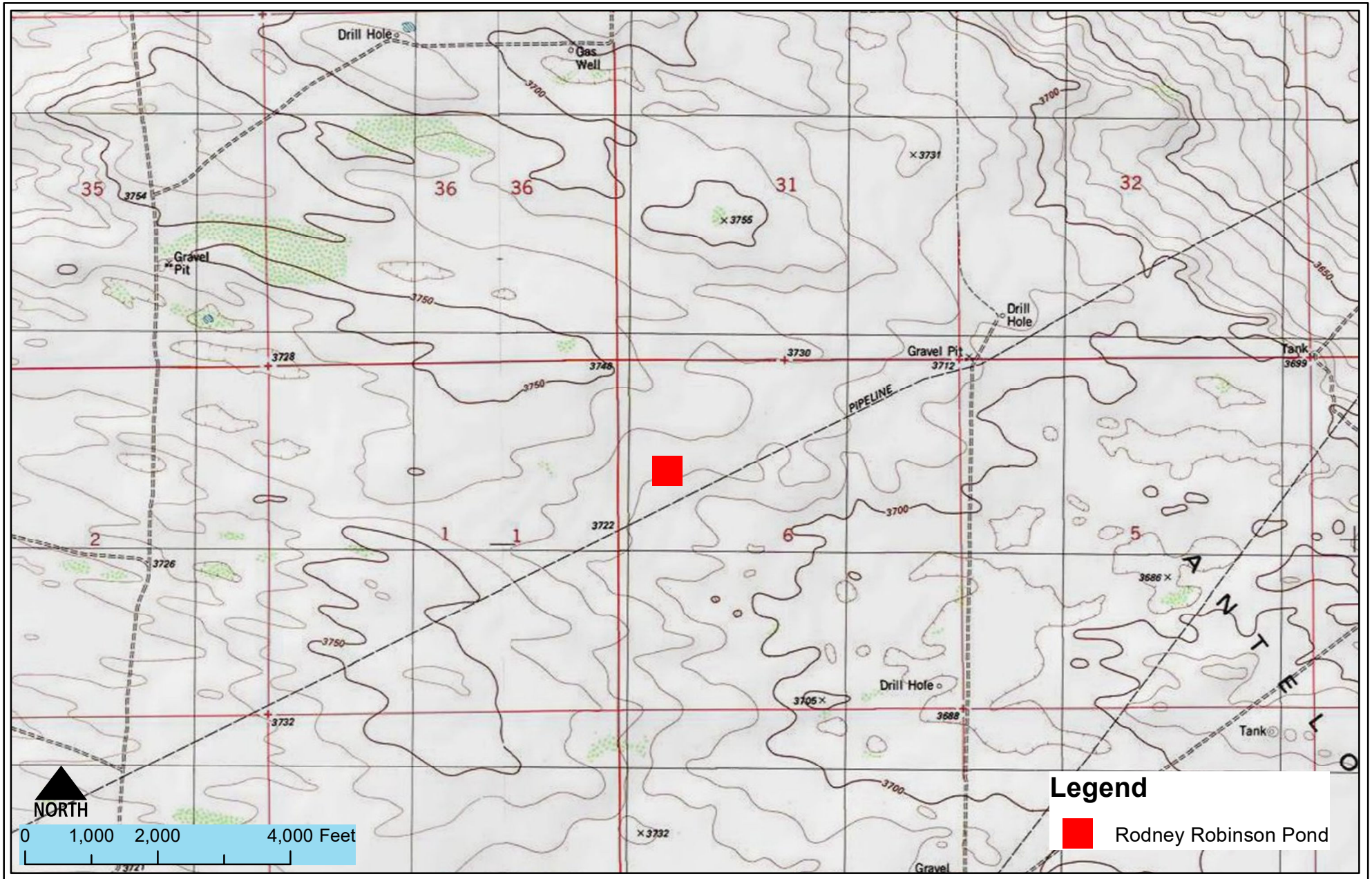
Sincerely,

MILLER ENGINEERS, INC. D/B/A
SOUDER, MILLER & ASSOCIATES

Karl E. Tonander, P.G., P.E.
Principal Geoscientist/Engineer
karl.tonander@soudermiller.com

Enc: *Figure 1: Vicinity Map on USGS Topographic Quad*
Figure 2: Site Aerial Photo
Figure 3: Geologic Map of Proposed Facility Area
Appendix A: Groundwater & Well Information (NMOSE, NMBMMR & USGS, RediDrill)
Appendix B: Active Mine/Quarry Map (EMNRD)
Appendix C: USGS Seismic Hazard Map
Appendix D: FEMA Floodplain Information
Appendix E: Wetlands & Critical Habitat Map (USFWS)

Figures



SITE MAP - TOPOGRAPHIC MAP
MATADOR RODNEY ROBINSON RECYCLYING CONTAINMENT
SEC. 6, TN. 23S, RG. 33E, EDDY COUNTY, NM.

Figure 1

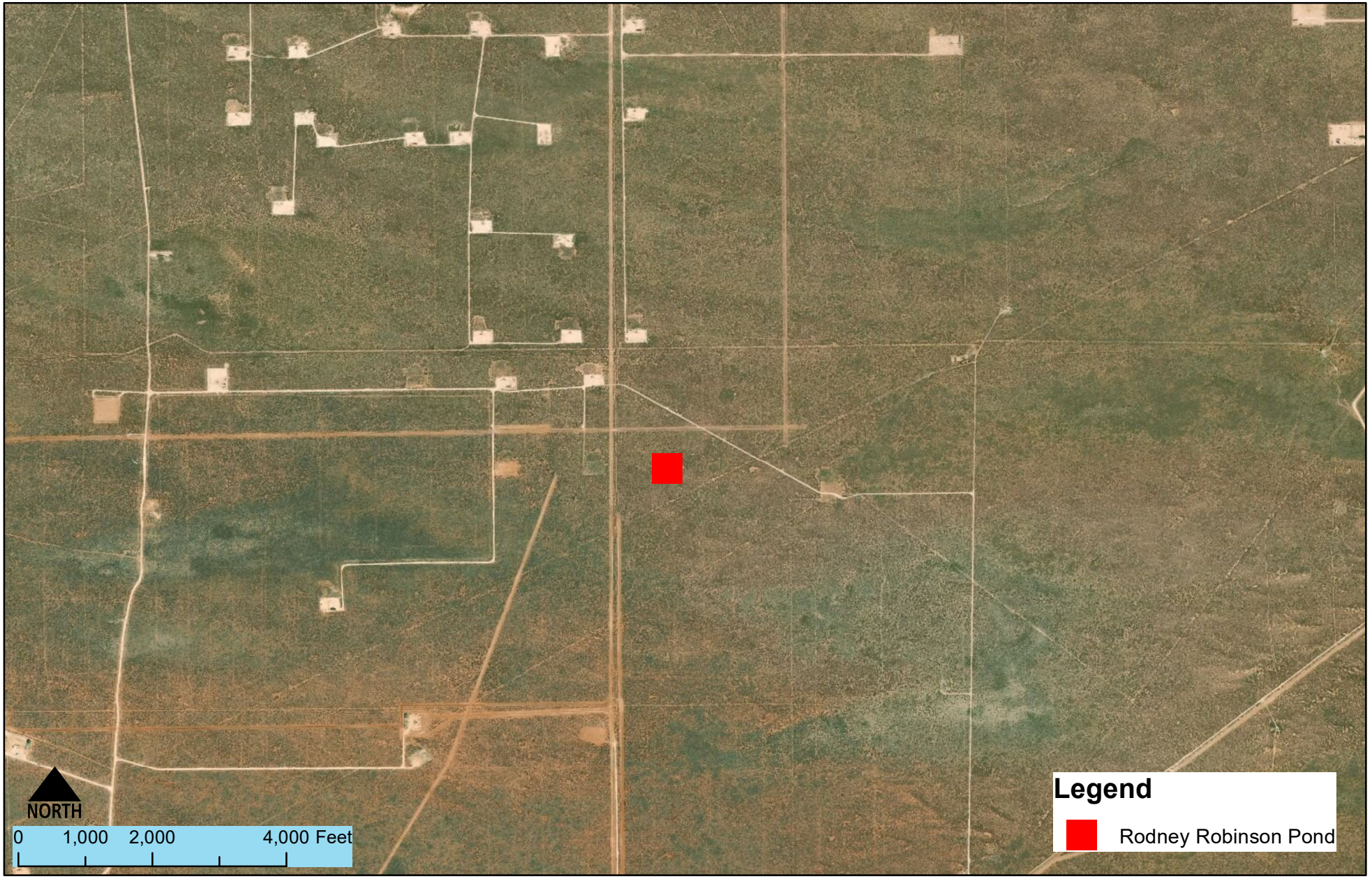
Revisions
By: Date: Descr:
By: Date: Descr:

Date Saved: 9/12/2019

Drawn Curtis Pattillo
Checked
Approved

SMA
201 South Halaguena Street
Carlsbad, New Mexico 88221
(575) 689.7040
www.soudermiller.com
Serving the Southwest & Rocky Mountains

Document: C:\Users\cmp\Desktop\SMA_MAR_2014\Matador Pits\Figures 1&2.mxd



SITE MAP - *AERIAL MAP*
MATADOR RODNEY ROBINSON RECYCLYING CONTAINMENT
SEC. 6, TN. 23S, RG. 33E, EDDY COUNTY, NM.

Figure 2

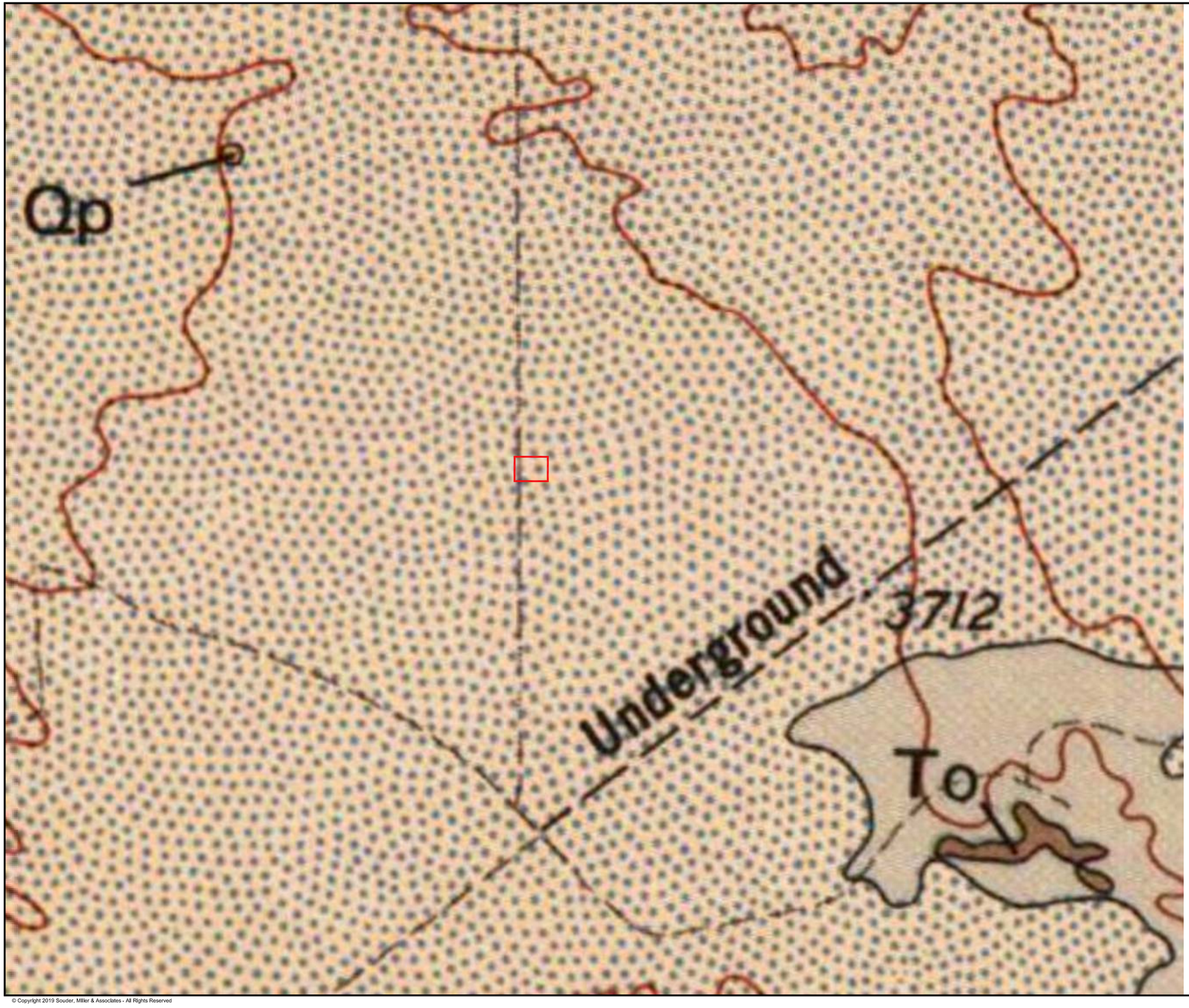
Revisions
By: Date: Descr:
By: Date: Descr:

Date Saved: 9/12/2019

Drawn Curtis Pattillo
Checked
Approved

SMA
201 South Halaguena Street
Carlsbad, New Mexico 88221
(575) 689.7040
www.soudermiller.com
Serving the Southwest & Rocky Mountains

Document: C:\Users\cmp\Desktop\SMA_MAR_2014\Matador Pits\Figures 1&2.mxd



EXPLANATION

- Mine Waste (Mw)
- Alluvium (Qal)
- Eolian deposits (Qed)
- Windblown sand (Qed, Qeu, Qs)
- Playa deposits (Qp)
- Caliche (Qcc)
- Alluvium and other Quaternary deposits (Qeu)
- Colluvial deposits (Qcge)
- Fluviatile terrace deposits (Qs)
- Pond deposits (Qsn)
- Pleistocene surficial deposits undivided (Qs)
- Other Quaternary deposits (Qso)
- Gatuña Formation (Qg)
- Tahoka Formation (Qts)
- Windblown cover sand (Qcs)
- Ogallala Formation (Tr)
- Fort Terrett Formation and Fredericksburg Group (Kft, Kfr)
- Antlers Sand (Ka)
- Santa Rosa Sandstone, Chinle Formation, and Dockum Group undivided (Tsr, Trd, Tr)
- Dewey Lake Redbeds and Rustler Formation (Pdl, Pru)
- Diapirs and collapse structures

Recent (Holocene); Recent (Holocene) and Pleistocene; Pleistocene; Pliocene; Lower Cretaceous; Ochoa; QUATERNARY; TERTIARY; CRETACEOUS; TRIASSIC; PERMIAN

Approximate Facility Outline

N

0 1500 3000 6000

SCALE: 1" = 3000'

Rev #	Date	Description

SOUDER, MILLER & ASSOCIATES
401 West Broadway Avenue
Farmington, NM 87401
Phone (505) 325-7535 Toll-Free (800) 519-0098 Fax (505) 326-0045
Serving the Southwest & Rocky Mountains
www.soudermiller.com
SMA Engineering Environmental Surveying

GEOLOGIC MAP OF PROPOSED FACILITY AREA MATADOR ROBINSON FRAC POND LEA, COUNTY, NEW MEXICO

Designed	Drawn	Checked
CP	DJB	RSA

Date: September 2019

Scale: Horiz: 1" = 3000'
Vert: N/A

Project No: 5E28189

FIGURE 3

W:\5-Matador Robinson Frac Pond (5E28189)\CAD\5E28189 Exhibit.dwg, DJB, 9/13/2019 2:28 PM

Appendix A
Groundwater & Well Information (NMOSE & USGS)

EXPLANATION

Pleistocene and Recent — QUATERNARY

Qal — Alluvium

Sand and gravel along dry washes; silt and sand in lake beds; includes some wind-deposited sand around depressions

Pliocene — TERTIARY

To — Ogallala formation

Chiefly sand, poorly to well-cemented with calcium carbonate; contains some clay, silt, and gravel; capped in most places by caliche

Upper Triassic — TRIASSIC

Rc – *Chinle formation, red and green claystone, minor siltstone, and fine-grained sandstone;* **Rs** – *Santa Rosa sandstone, red to white poorly sorted, coarse-grained, crossbedded sandstone;* **Rd** – *rocks of the Dockum group, undifferentiated*

Rc, Rs, Rd — Dockum group

CRETACEOUS

Ku — Cretaceous rocks, undifferentiated

Slumped blocks of buff, tan, or white fossiliferous limestone

3500 — Contours on the red-bed surface

Dashed where approximate or inferred. Contour interval 50 feet. Datum mean sea level

Base adapted from New Mexico State Highway Department, general highway map, 1941.

Geology by Alexander Nicholson, Jr., 1953–4. Contours on buried red-bed surface compiled by Alexander Nicholson, Jr., Alfred Clebsch, Jr., and S. R. Ash from shothole logs, 1960.

PLATE 1. GEOLOGIC MAP OF SOUTHERN LEA COUNTY, NEW MEXICO

EXPLANATION

150/252° — Water well

Upper figure is depth to water; lower figure is depth of well. Open circles are wells finished in Tertiary or Quaternary rocks; solid circles are wells finished in Triassic rocks

F = Flowing
R = Reported
P = Water level measured while pumping
D = Dry
? = Uncertainty as to aquifer
> = More than
< = Less than

(See tables 6 and 7 for detailed well data.)

3925 — Water-table contour in Tertiary or Quaternary rocks

Dashed where inferred or uncertain. Contour interval 25 feet. Datum mean sea level

3500 — Water-table or piezometric contour on water body in Triassic aquifers

Dashed where inferred or uncertain. Contour interval 100 feet. Datum mean sea level

Approximate position of boundary between Triassic rocks and saturated Tertiary and Quaternary rocks

Base adapted from New Mexico State Highway Department, general highway map, 1941.

Compiled by Alfred Clebsch, Jr., 1960, using data collected mainly by Alexander Nicholson, Jr., in 1953 and 1954.

PLATE 2. GROUND-WATER MAP OF SOUTHERN LEA COUNTY, NEW MEXICO

JE

Thu 2/20/2020 9:36 AM

Jordan Edwards <jordan@readydrill.com>

Rodney Robinson conductor drill report

To Garrett Hunt

Cc chad sayre; Randy Harris

Follow up. Start by Thursday, February 20, 2020. Due by Thursday, February 20, 2020.

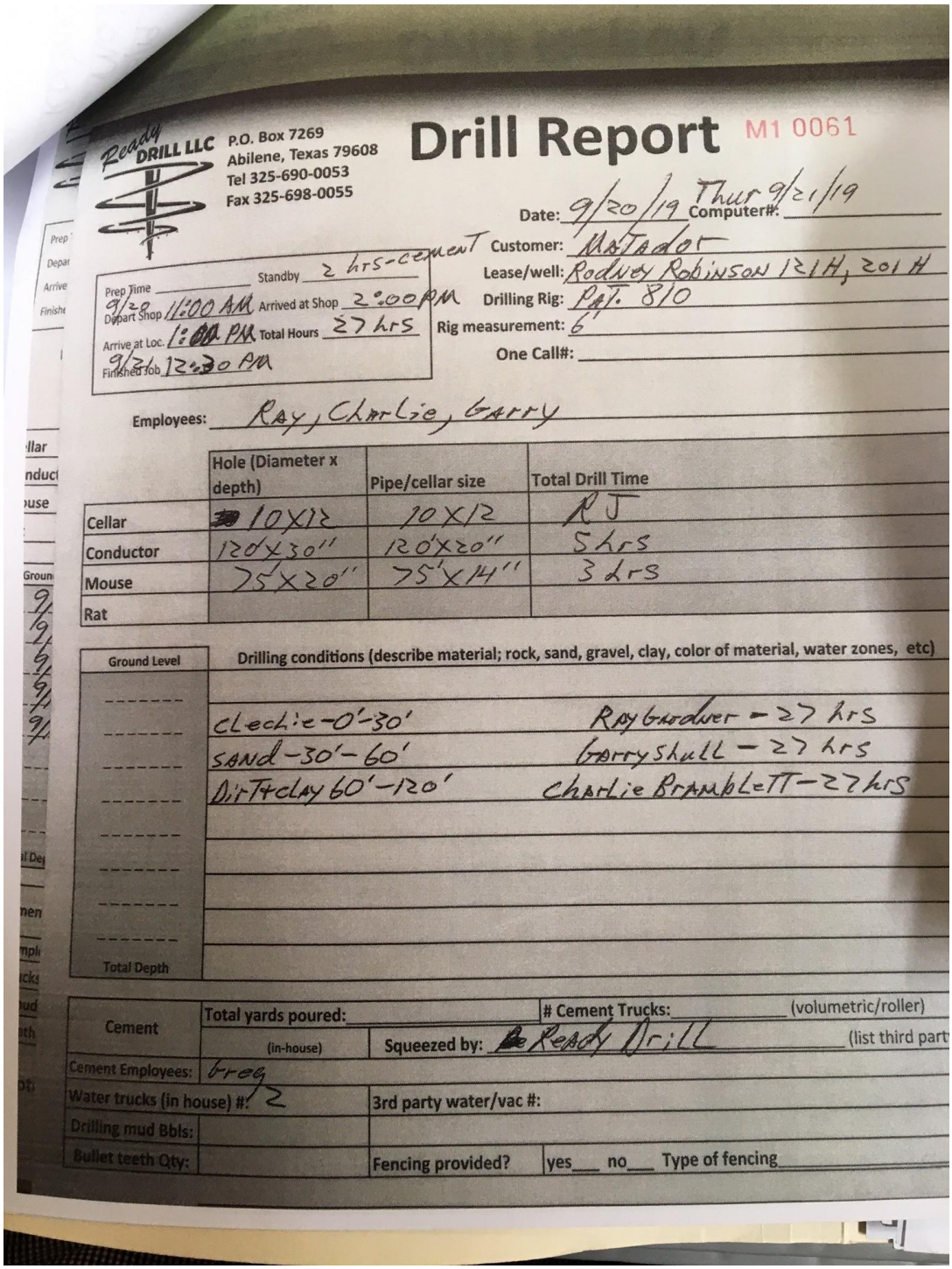
EXTERNAL EMAIL

Hello sir,

Please see the attached drill reports from conductors on the Rodney Robinson 121, 201, and 101h.

I discussed with operators and no water was encountered to 120' depth. We used freshwater mud to get through sugar sand in the 20-60' range. Please let me know if any questions. Sorry for the delay in sending.

Thanks,
Jordan Edwards
Ready Drill LLC
325-267-5344



Ready DRILL LLC
P.O. Box 7269
Abilene, Texas 79608
Tel 325-690-0053
Fax 325-698-0055

Drill Report M1 0061

Date: 9/20/19 Thur 9/21/19 Computer#:

Customer: MATador

Lease/well: Rodney Robinson 121H, 201H

Drilling Rig: Pat. 810

Rig measurement: 6'

One Call#:

Prep Time Standby 2 hrs-cement
Depart Shop 9/28 11:00 AM Arrived at Shop 2:00 PM
Arrive at Loc. 1:00 PM Total Hours 27 hrs
Finished Job 9/30 12:30 PM

Employees: Ray, Charlie, Garry

	Hole (Diameter x depth)	Pipe/cellar size	Total Drill Time
Cellar	10X12	10X12	RJ
Conductor	120'X30"	120'X20"	5 hrs
Mouse	75'X20"	75'X14"	3 hrs
Rat			

Ground Level	Drilling conditions (describe material; rock, sand, gravel, clay, color of material, water zones, etc)	
	Clechie-0'-30'	Ray Gardner - 27 hrs
	Sand-30'-60'	Garry Shull - 27 hrs
	Dirt+clay 60'-120'	Charlie Bramblett - 27 hrs
Total Depth		

Cement	Total yards poured:	# Cement Trucks:	(volumetric/roller)
	(in-house)	Squeezed by: Be Ready Drill	(list third part
Cement Employees:	Greg		
Water trucks (in house) #:	2	3rd party water/vac #:	
Drilling mud Bbls:			
Bullet teeth Qty:		Fencing provided? yes___ no___	Type of fencing

BASIN SERVICES

1 29368

DRILLING REPORT

BILL TO _____

Drill Rig Patterson 810
Company Matador
Lease Name Rodney Robinson 101H
City Jal
County _____
State NM

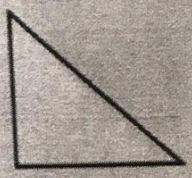
Rig # _____
Computer # _____

CEMENT

Yards: _____ Type: Squeeze Furnished by: Ready Drill

Pumped:	(Yes) No	Furnished by: Ready Drill	# trucks	1
Mud Truck:	(Yes) No	Furnished by: "	# trucks	1
Water Truck:	(Yes) No	Furnished by: "	# trucks	1
VacTruck:	(Yes) No	Furnished by: "	# trucks	1

	Depth	X	Diameter
Conductor			
Hole	30	x	20
Pipe	120	x	120
Rat			
Hole		x	
Casing		x	
Mouse			
Hole		x	
Casing		x	
Cellar			
Tin Horn	10	x	12



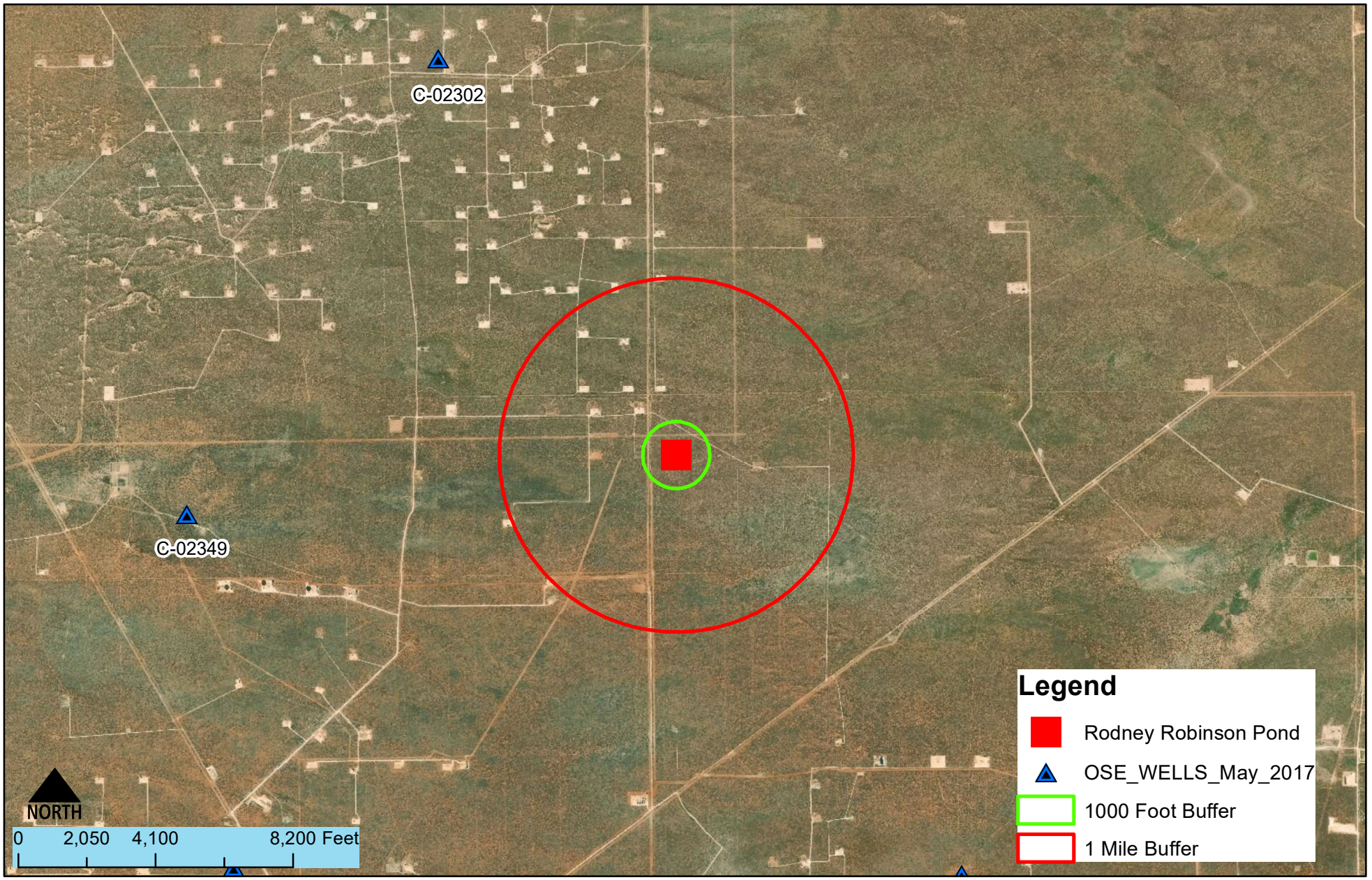
Drilling Conditions:
0ft - 20ft Caliche
20ft - 60ft Sand (Mud)
60ft - 120ft Clay

Driller: RJ Coffman
Pusher: _____
Helper: Sebastian Youngblood
Helper: Danny White, Michael Traylor

ITEM	DATE	TIME
DEPART SHOP	8/5/19	5:00 AM
ARRIVED AT RIG		
STARTED JOB		8:00 AM
FINISHED JOB		11:59 PM
DEPARTED RIG		
ARRIVED AT SHOP		
TOTAL HOURS		
		19 HRS

Directions _____

HOLE COVERS: Main # _____ M/R# _____ ☐ OLD ☐ NEW ☐ NONE



SITE MAP - OSE WELLS MAP
MATADOR RODNEY ROBINSON RECYCLYING CONTAINMENT
SEC. 6, TN. 23S, RG. 33E, EDDY COUNTY, NM.

Appendix A

Revisions
By: Date: Descr:
By: Date: Descr:

Drawn Curtis Pattillo
Checked
Approved

201 South Halaguena Street
Carlsbad, New Mexico 88221
(575) 689.7040
www.soudermiller.com
Serving the Southwest & Rocky Mountains

Date Saved: 9/12/2019

Document: C:\Users\cmp\Desktop\SMA_MAR_2014\Matador Pits\OSE Wells.mxd

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

No records found.

PLSS Search:

Section(s): 35-36 **Township:** 22S **Range:** 32E

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

No records found.

PLSS Search:

Section(s): 31-32 **Township:** 22S **Range:** 33E

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

No records found.

PLSS Search:

Section(s): 1-2, 12 **Township:** 23S **Range:** 32E

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

No records found.

PLSS Search:

Section(s): 5-8 **Township:** 23S **Range:** 33E

New Mexico Office of the State Engineer
Transaction Summary

72121 All Applications Under Statute 72-12-1

Transaction Number: 465390 **Transaction Desc:** C 02302 **File Date:** 03/15/1993

Primary Status: PMT Permit
Secondary Status: APR Approved
Person Assigned: *******
Applicant: POGO PRODUCING COMPANY

Events

	Date	Type	Description	Comment	Processed By
get images	03/15/1993	APP	Application Received	*	*******
	03/16/1993	FIN	Final Action on application		*******
	03/16/1993	WAP	General Approval Letter		*******
	05/23/2011	ARV	Rec & Arch - file location	C 02302 Box: 1872	*******

Change To:

WR File Nbr	Acres	Diversion	Consumptive	Purpose of Use
C 02302		3		

****Point of Diversion**

C 02302		627938	3582161*

***An (*) after northing value indicates UTM location was derived from PLSS - see Help**

Remarks

APPLICATION IS ALSO BEING MADE TO DRILL AND TEST THIS WELL UNDER AN EXPLORATORY WELL PERMIT, RESULTING IN REQUEST FOR 8" CASING. APPLICATION IS AN OIL DEVELOPMENT AND PRODUCTION COMPANY.

Conditions

3 Appropriation and use of water under this permit shall not exceed a period of one year from the date of approval.

5A A totalizing meter shall be installed before the first branch of the discharge line from the well and the installation shall be acceptable to the State Engineer; the Engineer shall be advised of the make, model, serial number, date of installation, and initial reading of the meter prior to appropriation of water; pumping records shall be submitted to the District Supervisor for each calendar month on or before the 10th day of the following month.

Action of the State Engineer

5D. UPON COMPLETION OF PROJECT IF LESS THAN 30 DAYS.

**** See Image For Any Additional Conditions of Approval ****

Approval Code: A - Approved
Action Date: 03/16/1993
Log Due Date: 03/15/1994
State Engineer:

New Mexico Office of the State Engineer
Point of Diversion Summary

Well Tag	POD Number	Q64	Q16	Q4	Sec	Twn	Rng	X	Y
	C 02349		2	3	03	23S	32E	625678	3578004*

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest)
(NAD83 UTM in meters)

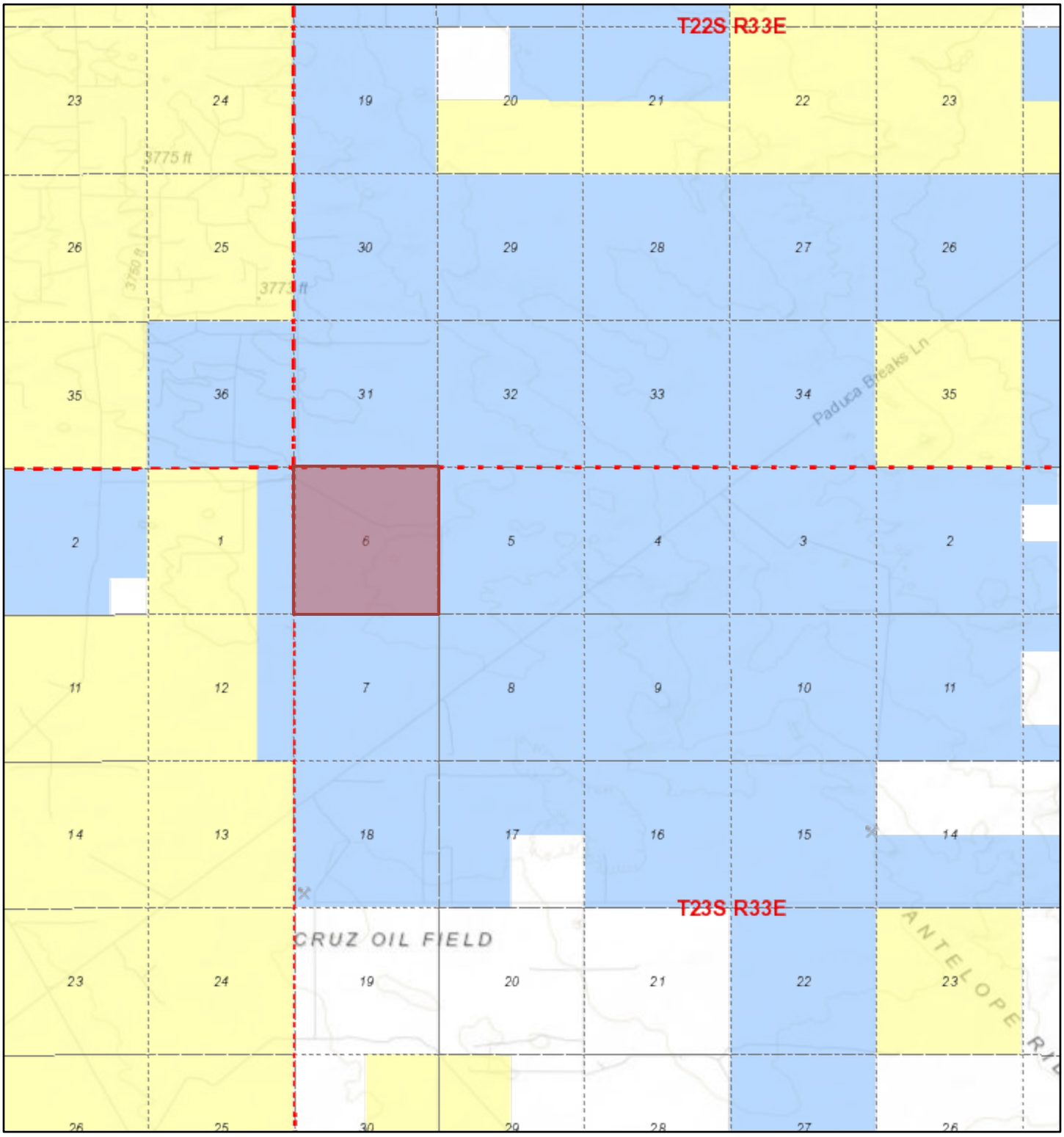
Driller License:
Driller Company:
Driller Name:

Drill Start Date:	04/14/1930	**Drill Finish Date:**	04/14/1930	**Plug Date:**	
Log File Date:		**PCW Rcv Date:**		**Source:**	
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	5 GPM
Casing Size:	8.00	**Depth Well:**	525 feet	**Depth Water:**	

***UTM location was derived from PLSS - see Help**

Appendix B
Active Mine/Quarry Map (NM EMNRD)

Active Mines in New Mexico



9/17/2019, 11:01:05 AM

1:72,224

0 0.5 1 2 mi

0 0.75 1.5 3 km

Registered Mines

- Aggregate, Stone etc.

U.S. Bureau of Land Management - New Mexico State Office, Bureau of Land Management, Texas Parks & Wildlife, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, NGA, EPA, USDA

EMNRD MMD GIS Coordinator

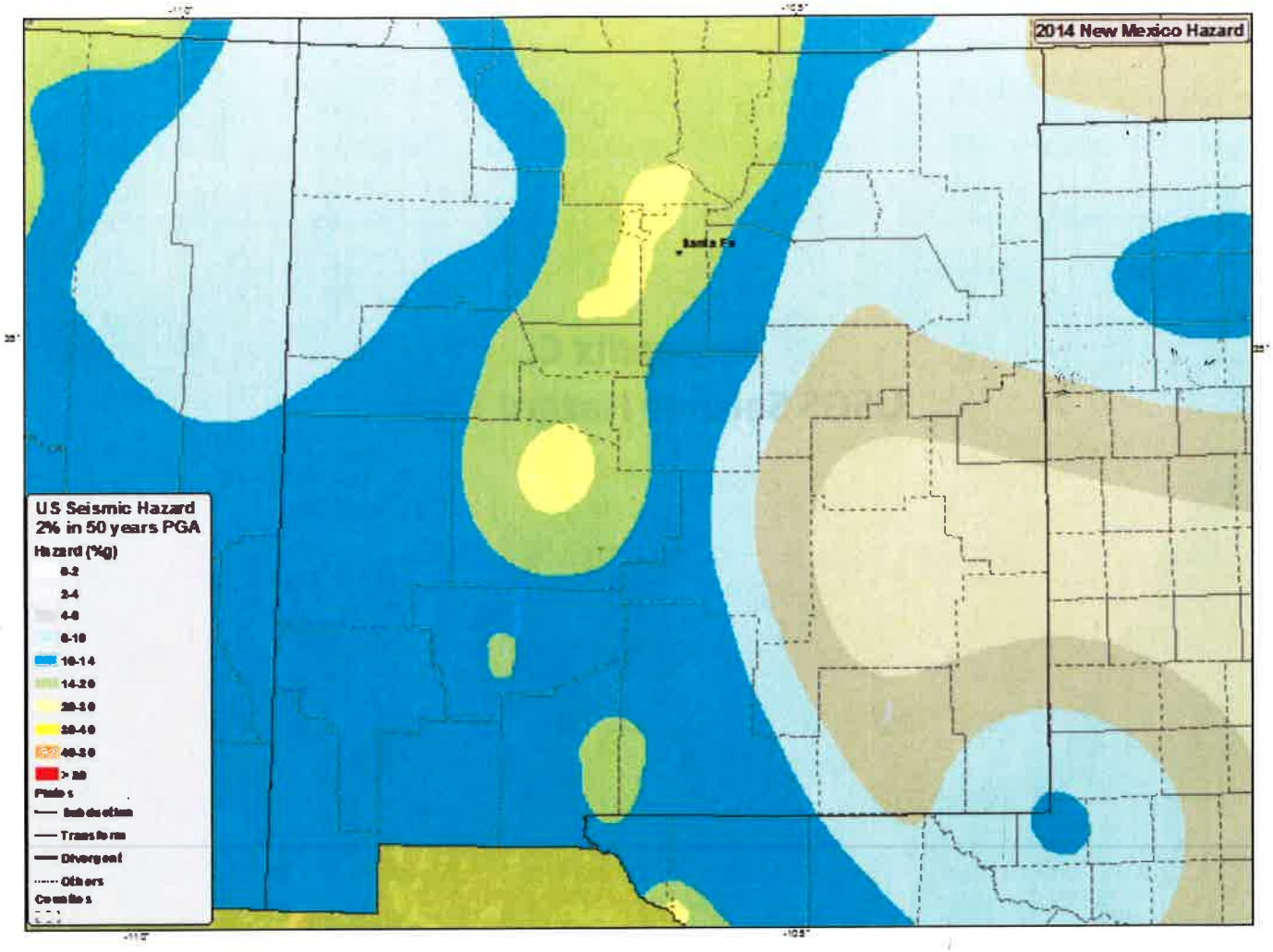
NM Energy, Minerals and Natural Resources Department (http://nm-emnrd.maps.arcgis.com/apps/webappviewer/index.html?id=1b5e577974664d689b47790897ca2795)

Appendix C
USGS Seismic Hazard Map

U.S. Geological Survey - Earthquake Hazards Program

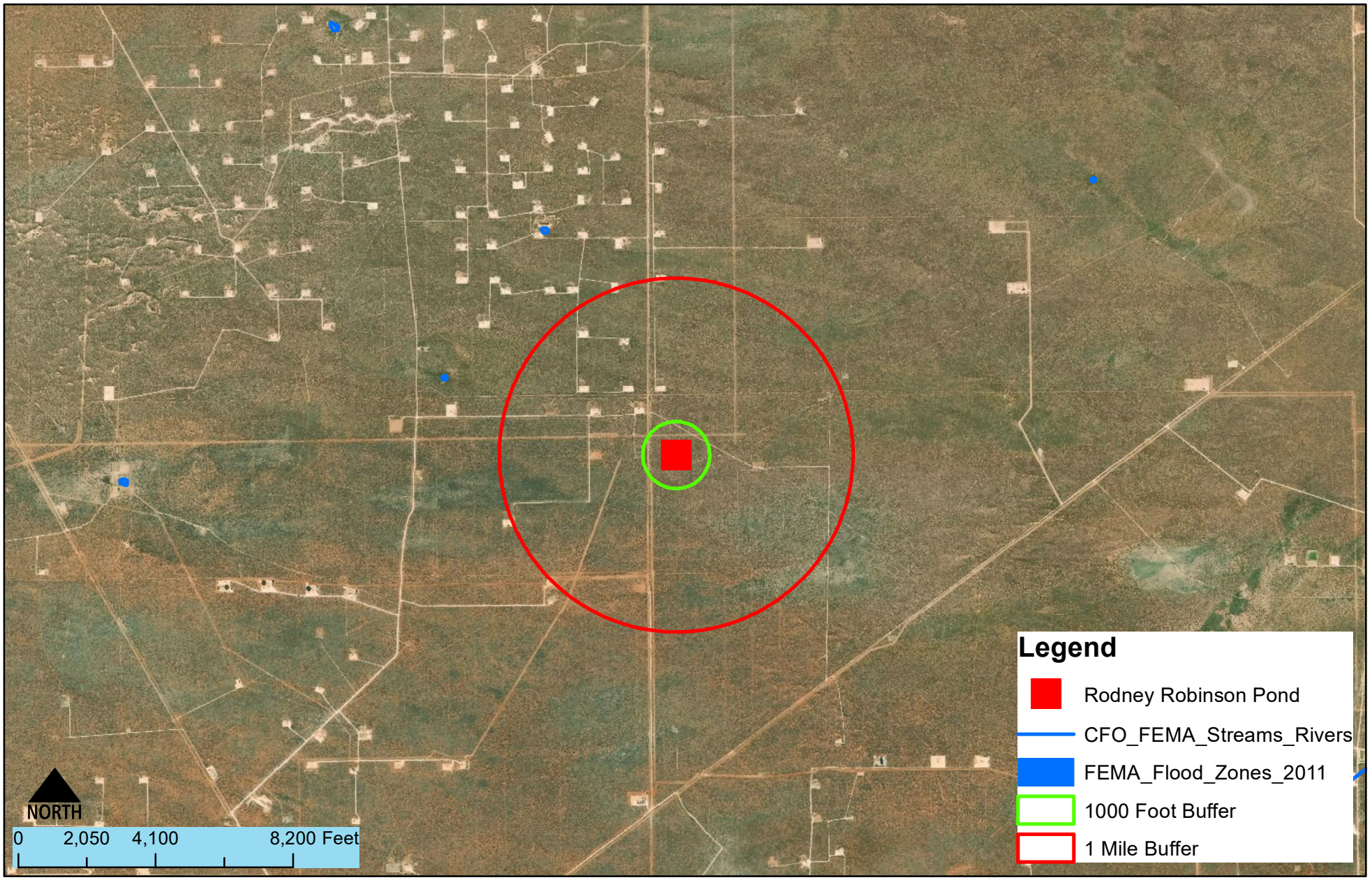
Information by Region - New Mexico

2014 Seismic Hazard Map



USGS National Seismic Hazard Maps

Appendix D
FEMA Floodplain Information



SITE MAP - FEMA Floodplains, Streams and Rivers
MATADOR RODNEY ROBINSON RECYCLYING CONTAINMENT
SEC. 6, TN. 23S, RG. 33E, EDDY COUNTY, NM.

Appendix D

Revisions
By: Date: Descr:
By: Date: Descr:

Drawn Curtis Pattillo
Checked
Approved

201 South Halaguena Street
Carlsbad, New Mexico 88221
(575) 689.7040
www.soudermiller.com
Serving the Southwest & Rocky Mountains

Date Saved: 9/12/2019

Document: C:\Users\cmp\Desktop\SMA_MAR_2014\Matador Pits\OSE Wells.mxd

National Flood Hazard Layer FIRMette

FEMA

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- **SPECIAL FLOOD HAZARD AREAS**
  - Without Base Flood Elevation (BFE) *Zone A, V, A99*
  - With BFE or Depth *Zone AE, AO, AH, VE, AR*
  - Regulatory Floodway
- **OTHER AREAS OF FLOOD HAZARD**
  - 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
  - Future Conditions 1% Annual Chance Flood Hazard *Zone X*
  - Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
  - Area with Flood Risk due to Levee *Zone D*
- **OTHER AREAS**
  - NO SCREEN — Area of Minimal Flood Hazard *Zone X*
  - Effective LOMRs
  - Area of Undetermined Flood Hazard *Zone D*
- **GENERAL STRUCTURES**
  - Channel, Culvert, or Storm Sewer
  - Levee, Dike, or Floodwall
- **OTHER FEATURES**
  - 20.2 / 17.5 — Cross Sections with 1% Annual Chance / Water Surface Elevation
  - Coastal Transect
  - 513 — Base Flood Elevation Line (BFE)
  - Limit of Study
  - Jurisdiction Boundary
  - Coastal Transect Baseline
  - Profile Baseline
  - Hydrographic Feature
- **MAP PANELS**
  - Digital Data Available
  - No Digital Data Available
  - Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

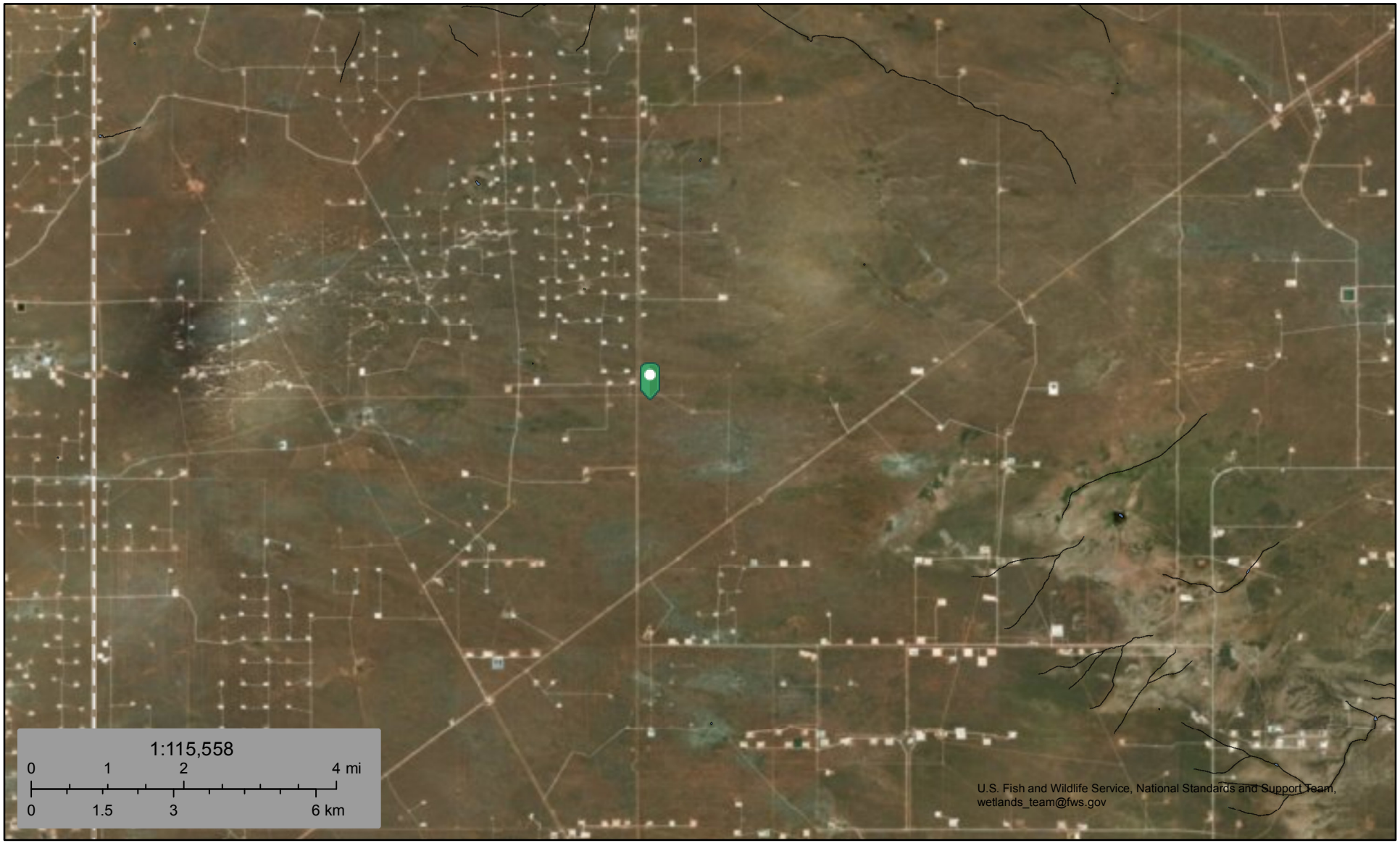
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 9/18/2019 at 12:46:13 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Appendix E
Wetlands & Critical Habitat Map (US FWS)

U.S. Fish and Wildlife Service
National Wetlands Inventory

Rodney Robinson Recycling Containment



September 18, 2019

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine