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Chevron U.S.A. Inc.
C-147 Registration Application Package
Salado Draw T26S R32E

- Section 23 Recycling Containment
- Section 13 Recycling Facility

APPROVED

December 16, 2016

Contents

I. INTRODUCTION

Chevron U.S.A. Inc. (Chevron) requests registration under 19.15.34 NMAC of the following recycling containment and recycling facility in the Salado Draw development area located in Township 26 South, Range 32 East in southwestern Lea County.

- Section 23 Recycling Containment
- Section 13 Recycling Facility

Appendix 1 contains a survey plat identifying the location of the recycling containment and the recycling facility. Note that the Section 23 recycling containment is identified as "Proposed Frac Pond 2" and the Section 13 recycling facility is identified as "Proposed Recycling Facility", respectively on the plat. The plat also identifies "Proposed Frac Pond 1" located in Sections 13 and 14, which will be subsequently registered at a later date under a separate application.

Compliance with the requirements of 19.15.34.11 through 19.15.34.15 is described in this application. Note that Chevron is requesting a total of three variances from these requirements as noted in Section IV and fully described in Section VIII.

A copy of Form C-147 found in Section II has been submitted to the Bureau of Land Management, which is the surface land owner, as required under 19.15.34.10.A.

II. NMOCD FORM C-147

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 March 31, 2015

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: Chevron U.S.A. Inc. (For multiple operators attach page with information) OGRID #: 4323

Address: 1400 Smith Street, Houston TX 77002

Facility or well name (include API# if associated with a well): Salado Draw T26S R32E Sections 13 and 23 Recycling Facility & Containment

OCD Permit Number: _____ (For new facilities the permit number will be assigned by the district office)

U/L or Qtr/Qtr A Section 23 Township 26 South Range 32 East County: Lea

Surface Owner: ☒ Federal ☐ State ☐ Private ☐ Tribal Trust or Indian Allotment

2.

☒ **Recycling Facility: (Location: U/L M, Section 13, T26S, R32E)**

Location of recycling facility (if applicable): Latitude 32.036234 Longitude -103.636212 NAD: ☐ 1927 ☒ 1983

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: (Location: U/L A, Section 23, T26S, R32E)**

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

Center of Recycling Containment (if applicable): Latitude 32.033156 Longitude -103.639194 NAD: ☐ 1927 ☒ 1983

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

☒ Lined ☒ Liner type: Thickness 60 mil ☐ LLDPE ☒ HDPE ☐ PVC ☐ Other _____

☐ String-Reinforced

Liner Seams: ☒ Welded ☐ Factory ☒ Other Field Volume: 698,060 bbl Dimensions: L 925' x W 700' x D 23'

☐ 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 Eight foot chain link fence with three stands of barbed wire on top .

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): David W. Macurdy Title: HES Support Supervisor

Signature: Date: 12/16/2016

e-mail address: david.macurdy@chevron.com Telephone: 713-372-3259

11.
OCD Representative Signature: **Approval Date:** 12/16/16

Title: Hydrologist **OCD Permit Number:** 1RF-11 1RC-11

☐ OCD Conditions

☐ Additional OCD Conditions on Attachment

III. SITING REQUIREMENTS

A. DISTANCE TO GROUNDWATER

Appendix 2 / Figure 1, Appendix 3, and the discussion below demonstrates that depth to groundwater at the proposed location is greater than 50 feet beneath the bottom of the recycling containment. Appendix 2 / Figure 1 is a geologic map based on a GIS database of geologic units and structural features in the general location.

The Hobbs Sheet of the Geologic Atlas of Texas locates the project site within sand, silt, and clay deposits (Windblown sand, alluvium, playa, and fluviatile terrace deposits, Qcs, Qp,) underlain by Blackwater Draw (Qbd) Formation consisting of caliche. The caliche and windblown deposits consist of sand and silt in sheets and may sometimes be associated with playa deposits that are generally associated with organics. The windblown cover sands are fine to medium grained, silty, calcareous, and include caliche nodules. Generally, these deposits are 20 to 50 feet thick. The caliche is a conglomerate of various materials such as clay, silt, sand, and gravel that included precipitated calcium carbonate. Often, the calcium carbonate cements the soil grains together. The level of cementation can vary and can be highly cemented to weakly cemented. These deposits can often be soft or loose, especially in the presence of groundwater. Our findings of the exploration are consistent with this within the depths explored.

On October 26, 2016, site-specific geotechnical boring was conducted to a depth of 80 feet with no detected or observed groundwater presence and the borehole remained dry for a period of at least 24 hours following drilling. The Test Boring Log may be found in Appendix 3.

B. DISTANCE TO SURFACE WATER

Appendix 2 / Figure 2 illustrates that the recycling containment is not located within 300 feet of a continuously flowing watercourse or 200 feet of any other significant watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).

No continuously flowing watercourses of other significant water features, as defined by NMOCD rules, are located with the prescribed setbacks. Appendix 2 / Figure 2 identifies the nearest watercourses approximately 4,800 feet east and 7,000 feet west of the recycling containment.

C. DISTANCE TO PERMANENT RESIDENCE OR INSTITUTIONS

Appendix 2 / Figure 3 illustrates that the recycling containment is not located within 1,000 feet of a permanent residence, school, hospital, institution, or church in existence at the time of this initial registration. The only development and structures in the prescribed setback area is associated with oil and gas production operations.

D. DISTANCE TO DOMESTIC AND STOCK WATER SUPPLIES

Appendix 2 / Figure 4 illustrates that the recycling containment is not located within 500 feet of a spring or fresh water well used for domestic of stock watering purposes at the time of this initial registration. Appendix 2 / Figure 4 identifies that the nearest water well listed in the NMOSE database is located approximately 13,300 feet west of the recycling containment.

E. DISTANCE TO MUNICIPAL BOUNDARIES AND FRESH WATER FIELDS

Appendix 2 / Figure 5 illustrates that the recycling containment is not within incorporated municipal boundaries or within defined municipal fresh water well fields covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978, as amended.

The nearest municipal community to the recycling containment is the City of Jal, which is incorporated, located approximately 26 miles east and operates the Jal Well Field located southwest of the city and approximately 19 miles east of the recycling containment; and

It is noted that the City of Midland, Texas operates the T-Bar Ranch Well Field located in Loving and Winkler Counties just south of the New Mexico-Texas line and approximately 18 miles east of the recycling containment.

F. DISTANCE TO WETLANDS

Appendix 2 / Figure 3 illustrates that the recycling containment is not located within 500 feet of any identified wetland. The nearest identified wetland is approximately 4,900 feet east of the recycling containment.

G. DISTANCE TO SUBSURFACE MINES

General knowledge based on interaction with the Bureau of Land Management (BLM) Carlsbad Field Office (CFO) staff and a search of the NM EMNRD Mining and Minerals Division database confirms that there are no subsurface mines in proximity of the recycling containment. The only identified facilities in the general vicinity are surface caliche and aggregate pits.

H. DISTANCE TO CAVE / KARST FEATURES

The recycling containment is located within a BLM-identified low potential karst zone. Appendix 2 / Figure 6, BLM inventory data of existing cave/karst features, and results of site-specific geotechnical studies as detailed in Appendix 6 verify that the recycling containment is not located within an unstable area.

I. DISTANCE TO 100-YEAR FLOODPLAINS

Available information from the Federal Emergency Management Agency indicates that recycling containment location is within the FEMA-identified Zone D, which is an area with possible but undetermined flood hazards where flood hazard analysis has not been conducted and mapped and generally considered to be of minimal flood risk. Field inspection and evaluation of topography in the

general vicinity leads to a determination that the recycling containment is not within any floodplain and has minimal risk for flooding.

IV. DESIGN AND CONSTRUCTION PLAN

Appendix 4 contains the design drawings and details for the recycling containment, which were developed and stamped by a Professional Engineer licensed in the state of New Mexico. Appendix 5 contains the construction specifications to accompany the design drawings and details. These design and construction specifications meet or exceed NMOCD requirements for recycling containments. Appendix 6 contains the Geotechnical Engineering Study Report for the recycling containment site.

A. GENERAL SPECIFICATIONS

The following general specifications have been incorporated into the design and will be met during construction.

- The recycling containment is designed and will be constructed to ensure confinement of produced water, to prevent releases, and to prevent overtopping due to wave action or rainfall.
- The recycling containment, as designed, will be constructed with a proper foundation and interior slopes consisting of a firm, unyielding base, which is smooth and free of rocks, debris, sharp objects, and irregularities. In addition, 8 ounce non-woven geotextile will be installed under the secondary liner to provide additional protection from any protuberances in the foundation and reduction of localized stress-strain.
- The recycling containment will be constructed in a levee with inside and outside grades of three horizontal feet to one vertical foot (3H:1V), which is shallower and provides greater stability than the NMOCD 2H:1V specification for the inside grade.
- The recycling containment will be constructed with a 60 mil HDPE primary and secondary liner and an interstitial leak detection system. Note that the 60 mil HDPE secondary liner exhibits a hydraulic conductivity of less than 1 x 10^{-12} cm/sec. **Note that this is a variance** from the specified 30 mil LLDPE string reinforced liner or equivalent with a hydraulic conductivity of 1 x 10^{-9} cm/sec and provides greater protection of fresh water, public health, and the environment. Please refer to Section VIII.A that provides a full description and basis for this variance request.
- The exterior edges of both liners will be anchored in the bottom of a 24-inch deep compacted earth-filled trench, which exceeds the NMOCD 18 inch specification.
- Liner seams will be minimized and oriented vertically rather than across all levee slopes. Factory welded seams will be utilized to the maximum extent possible. Sloped liner panels will extend a minimum of five feet beyond the point of grade change to prevent seams from resting on the grade break.

- All field seams and welds will be subjected to non-destructive field testing by qualified personnel per the appropriate testing standard to ensure proper thermal sealing. Details on liner testing procedures may be found in Section 33 47 13 / Subpart 3.04 of the construction specification (Appendix 5). Field seams will be overlapped a minimum of six inches.
- The primary liner will be protected from excessive hydraulic force or mechanical damage from discharge or suction within the recycling containment. No discharge or suction lines penetrate the liners.
- The recycling containment will be constructed with a leak detection system between the primary and secondary liners comprised of a 200-mil geonet. The system is properly designed to facilitate effective drainage, collection, and removal of liquid above the secondary liner and leakage detection at the earliest possible time.
- The recycling containment is designed to prevent run-on of surface water. The minimal distance from the existing surface elevation to the top of the containment berm will be approximately four feet.

B. STOCKPILING OF TOPSOIL

Where topsoil is present, prior to constructing the recycling containment, it will be stripped and stockpiled on site for use as final cover or fill at time of closure.

C. SIGNS

An upright sign no less than 12 inches by 24 inches with lettering no less than two inches in height will be installed in a conspicuous place on the fence surrounding the containment. The sign will be installed in such a manner and location that a person can easily read the legend. The sign will include the following information:

- The operator's name;
- The location of the site by quarter-quarter or unit letter, section, township, and range;
- Emergency telephone number.

D. FENCING

The recycling containment will be constructed with an eight foot tall chain link fence equipped with three strands of barbed wire on top to deter unauthorized wildlife and human access. **Note that this is a variance** from the minimum required four foot fence with at least four stands of barbed wire evenly spaced in the intervals between one foot and four feet above ground level and provides equivalent or greater wildlife and human deterrence. Please refer to Section VIII.B that provides a full description and basis for this variance request.

The fence will be gated to provide access to Operations personnel and will be closed and locked when access is not required

E. NETTING AND WILDLIFE PROTECTION

The game fence, as described above, surrounding the recycling containment will be effective is excluding terrestrial wildlife. Due to infeasibility of installing netting on a recycling containment system of this size (700 feet by 925 feet), an audible avian deterrence system has been designed and will be installed as an alternative. This type of system has been utilized by other recycling containment operators in southeast New Mexico and has been demonstrated as providing effective protection for avian species, including migratory birds. **Note that this is a variance** from the specified screening or netting and will provide equal protection of avian species. Please refer to Section VIII.C that provides a full description and basis for this variance request.

Containment inspections will be conducted at least once per week to include visual determination of any wildlife impacts. If any dead migratory birds or other wildlife is detected, notification to the New Mexico Department of Game and Fish and NMOCD District Office will provided as soon as practicable but no later than 30 days from the date of discovery.

V. OPERATING AND MAINTENANCE PLAN

The recycling containment will be operated in such a manner to contain liquids and solids and the integrity of the liner and leak detection system will be monitored in such a manner to prevent contamination of fresh water and protect public health and the environment as described below. The purpose of the recycling containment is to facilitate recycling of treated produced water from nearby oil and gas wells for new well completions. When treated produced water is not needed for well completion activity, produced water will be properly injected at one of Chevron's or third party's authorized SWDs. The recycling containment will not be used for disposal of produced water or other oilfield wastes.

The recycling containment and associated leak detection system will be inspected at least weekly while it contains any fluid and results of the inspection will be documented on an inspection checklist. These inspections will be performed by a third party contractor, which has been selected by Chevron to operate the recycling facilities and monitor the associated recycling containments. The contractor will continuously staff these facilities while in operation. The completed checklists will be retained and made available for review upon request.

These inspections will address, at a minimum, the following:

- Removal of any visible layer of oil from the liquid surface;
- Verification that a minimum of three foot freeboard is maintained;
- If a liner breach is identified above the liquid surface, the liner will be repaired or liner replacement will be initiated within 48 hours of detection. Alternatively, the NMOCD district office will be contacted within 48 hours to seek and extension for liner repair / replacement.

- If a liner breach is identified below the liquid surface, all liquid above the identified breach will be removed, the NMOCD district office will be notified, and liner repair / replacement shall be initiated within 48 hours of discovery.
- Visual inspection of berm integrity and condition to ensure the prevention of surface water run-on.
- Determination that an oil absorbent boom is present and in proper condition to contain an unanticipated release.

The recycling containment will be equipped with continuous liquid level monitoring and interstitial leak detection systems utilizing pressure transducers connected through a SCADA system to provide immediate notification to Chevron field personnel.

Treated produced water deposits into and withdrawals from the recycling containment will be measured and documented to determine when the system has ceased operations (less than 20% of the total fluid capacity is used during each rolling six month period following the initial withdrawal of produced water). The third party contactor will keep accurate records of total volumes of water received and treated through the recycling facility. Chevron will submit Form C-148 monthly to NMOCD within 30 days of the end of the calendar month listing: volumes of produced water received; volumes of fresh or brackish water received; and total volume of water leaving the recycling facility.

Upon cessation of operation, the NMOCD district office will be notified. Chevron will submit to NMOCD a completed Form C-148 within 30 days following the end of each calendar month. Each submittal will certify that the recycling containment has not ceased operation based on the 20% threshold described above.

VI. CLOSURE PLAN

After operations cease (less than 20% of the total fluid capacity is used every six months following the initial withdrawal of produced water), all fluids will be removed within 60 days and the recycling containment closed within six months.

All removed liquids, solids, and liner materials will be removed and transferred to an NMOCD-approved disposal facility within the six month period.

A five-point composite sample will be collected from beneath the containment and tested for contamination. The composite sample will include stained or wet soil areas, if any, and analyzed for constituents listed in Table I of 19.15.34.14 NMAC.

- If any contaminant concentration exceeds the values listed in Table I (based on depth from bottom of containment to groundwater), the NMOCD district office will be contacted requesting approval before proceeding with closure activity.

- If all contaminant concentrations are less than or equal to the values listed in Table I, closure will proceed by backfilling with non-waste containing, uncontaminated, earthen material.

Within 60 days of completing closure, a Closure Report on NMOCD Form C-147, including required attachments, will be submitted to document all closure activities including sampling results and details of any backfilling, capping, or covering, were applicable. The Closure Report will certify that all information in the report and attachments is correct and that all applicable closure requirements and conditions specified in NMOCD rules and directives have been met.

The recycling containment's locations will be reclaimed to a safe and stable condition that blends with the surrounding undisturbed areas. Topsoils and subsoils will be replaced to their original relative positions and contoured to achieve erosion control, long-term stability, and preservation of surface water flow patterns.

The location will be reseeded in the first favorable growing season following closure with the goal of substantially restoring the impact surface location to the existing condition prior to construction of the recycling containment. Surface reclamation will be deemed complete when: all ground surface disturbing activities have been completed; a uniform vegetative cover with a life-form ratio of plus or minus 50% of pre-disturbance levels has been established; and a total percent plant over of at least 70%, excluding noxious weeds, has been established.

Surface reclamation obligations imposed by the Bureau of Land Management or New Mexico 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.

NMOCD will be notified when reclamation and re-vegetation are complete.

VII. FINANCIAL ASSURANCE REQUIREMENTS

Chevron U.S.A. Inc. (OGRID 4323) has existing financial assurance in place with NMOCD as required by 19.15.8 NMAC and use of the recycling containment will be limited to support completion of only wells owned and operated by Chevron U.S.A. Inc. Therefore, no additional financial assurance associated with the recycling containment is required.

VIII. VARIANCE REQUESTS

This registration includes requests for three variances from the requirements for each recycling containment as described below.

A. SECONDARY LINER SPECIFICATION

The recycling containment has been designed and will be constructed with a 60 mil HDPE secondary liner rather than the prescribed 30 mil LLDPE secondary liner. Chevron has selected the 60 mil HPDE material for the following reasons:

- The 60 mil HDPE exhibits a maximum hydraulic conductivity of 1×10^{-12} cm/sec, which exceeds the specified performance of 1×10^{-9} cm/sec.
- The US Environmental Protection Agency identifies 60 mil as the recommended minimum thickness for HDPE as detailed in the EPA's Guide for Industrial Waste Management, Part IV, Chapter 7, Section B, page 7B-24 addressing protection of groundwater through proper design and installation of double liner systems.
- HDPE was selected as the preferred secondary liner material based upon weathering/aging characteristics, mechanical properties, and chemical resistance.
- HDPE liner life is expected to exceed twenty years, which is substantially longer than the anticipated age of the recycling containment to support well completion activities in the development area.
- The 60 mil HDPE liner is compliant with internal Chevron Global engineering design and environmental performance standards.

Chevron believes that this variance from the NMOCD prescribed liner specification is warranted and provides greater protection of groundwater resources. Liner hydraulic conductivity and performance specifications are found in Appendix 7.

B. FENCING

The recycling containment has been designed and will be equipped with an eight foot tall chain link fence equipped with three strands of barbed wire on top. This fence will not be installed with the specified four stands of barbed wire but offers equivalent entry deterrence to wildlife and unauthorized human without introducing the risk of injury resulting from unintended or incidental contact with the barbed wire.

C. NETTING

The recycling containment has been designed and will be equipped with an audible avian species protection system, which effectively deters birds from approaching the area. Due to the size of the proposed recycling containment structure (700 feet by 925 feet), design, construction, and maintenance of netting is not practicable. Chevron has evaluated multiple alternatives, determined that an audible system is the most effective and viable option, and selected the Bird-X Mega Blaster PRO for use. This particular product has been used by other operators with registered recycling containments in southeast New Mexico and proven effective.

IX. APPENDICES

Appendix 1 – Survey Plat

R 32 E

T 26 S

Sec. 13
Bureau of Land Management

700'

225'

700'

Proposed
Frac Pond 1

PROPOSED
EXTENSION

Sec. 14
Bureau of Land Management

Existing Nuevo Pipeline ROW

PROPOSED 8" DR9 LINE-
RECYCLING FACILITY TO POND 1

Existing
Salado Draw SWD 13
No. 1 Drillsite

PROPOSED
RECYCLING
FACILITY

Existing
SD WE 14&23 Fed P7
Nos. 3H & 4H Drillsite

PROPOSED
UTILITY LINE

PROPOSED 12" DR9 LINE-
POND TO POND

Existing 43' Pipeline ROW
(containing SWD line/gas lift lines)

Proposed Utility ROW

Existing Utility ROW

Existing
Lease Road

PROPOSED 8" DR9 LINE-
RECYCLING FACILITY TO POND 2

700'

Proposed 60'
Pipeline ROW
(To contain SWD
lines/gas lift
lines/flowlines)

Existing
P&A'd Well

Proposed
Frac Pond 2

700'

Proposed 43' Pipeline ROW
(containing SWD line/gas lift lines)

PROPOSED
EXTENSION

225'

Sec. 24
Bureau of Land Management

NAD 27 NEW MEXICO EAST ZONE

Sec. 23
Bureau of Land Management

CHEVRON U.S.A. INC.

SALADO DRAW
RECYCLING FACILITY WORK AREA
SECTIONS 13, 14, 23 & 24, T26S-R32E
LEA COUNTY, NEW MEXICO

FENSTERMAKER
C. H. Fenstermaker & Associates, L.L.C.
135 Regency Sq. Lafayette, LA 70508
Ph. 337-237-2200 Fax. 337-232-3299
www.fenstermaker.com

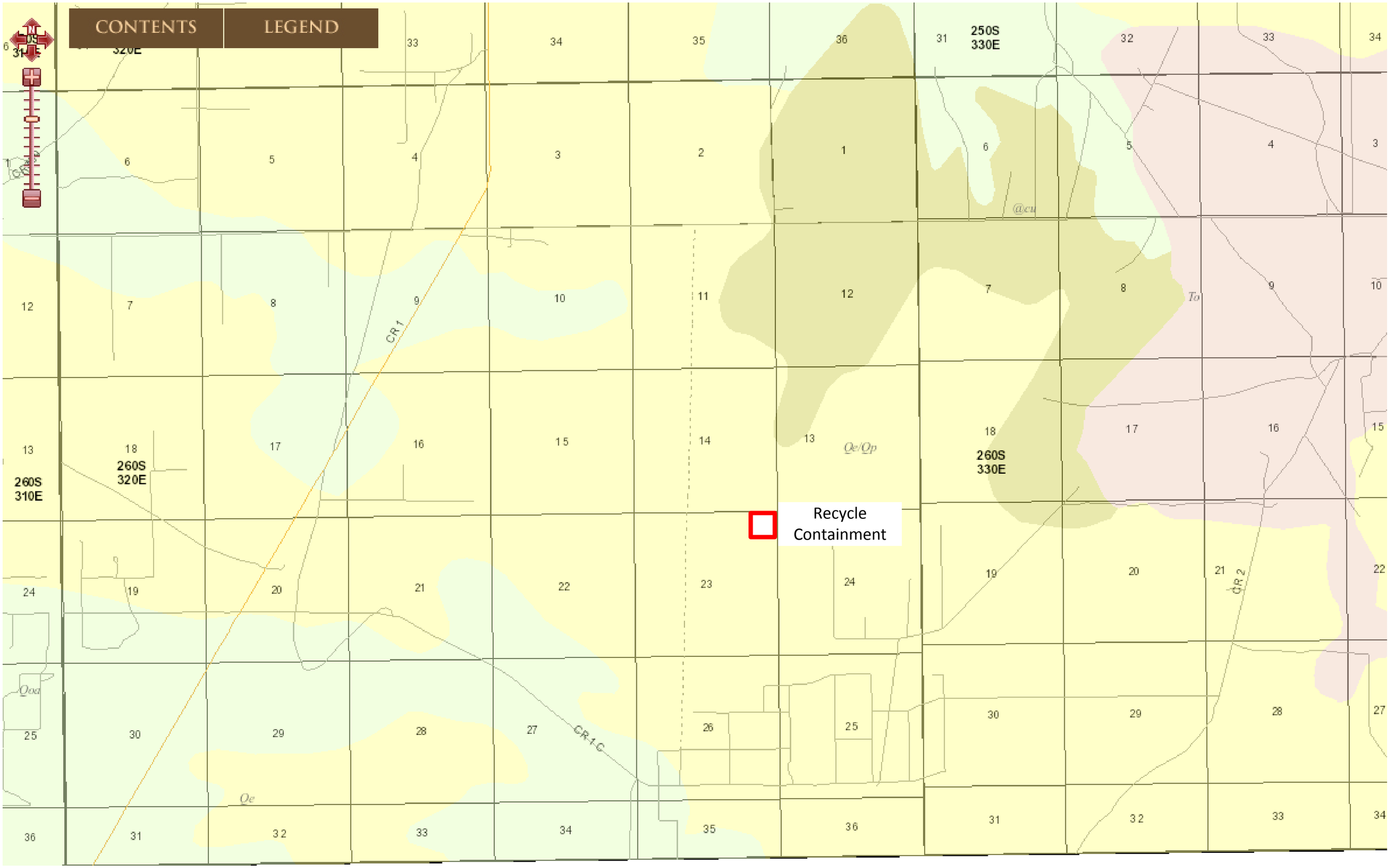
Scale: 1" = 200'
200' 0 100' 200'

DRAWN BY: VHV	REVISIONS		
PROJ. MGR.: VHV	No.	DATE:	REVISED BY:
DATE: SEPT 07, 2016	No.	DATE:	REVISED BY:
FILENAME: T:\2014\2146735\DWG\Salado Draw Recycling Facility Work Area_Detail.dwg			

Appendix 2 – Recycling Containment Figures

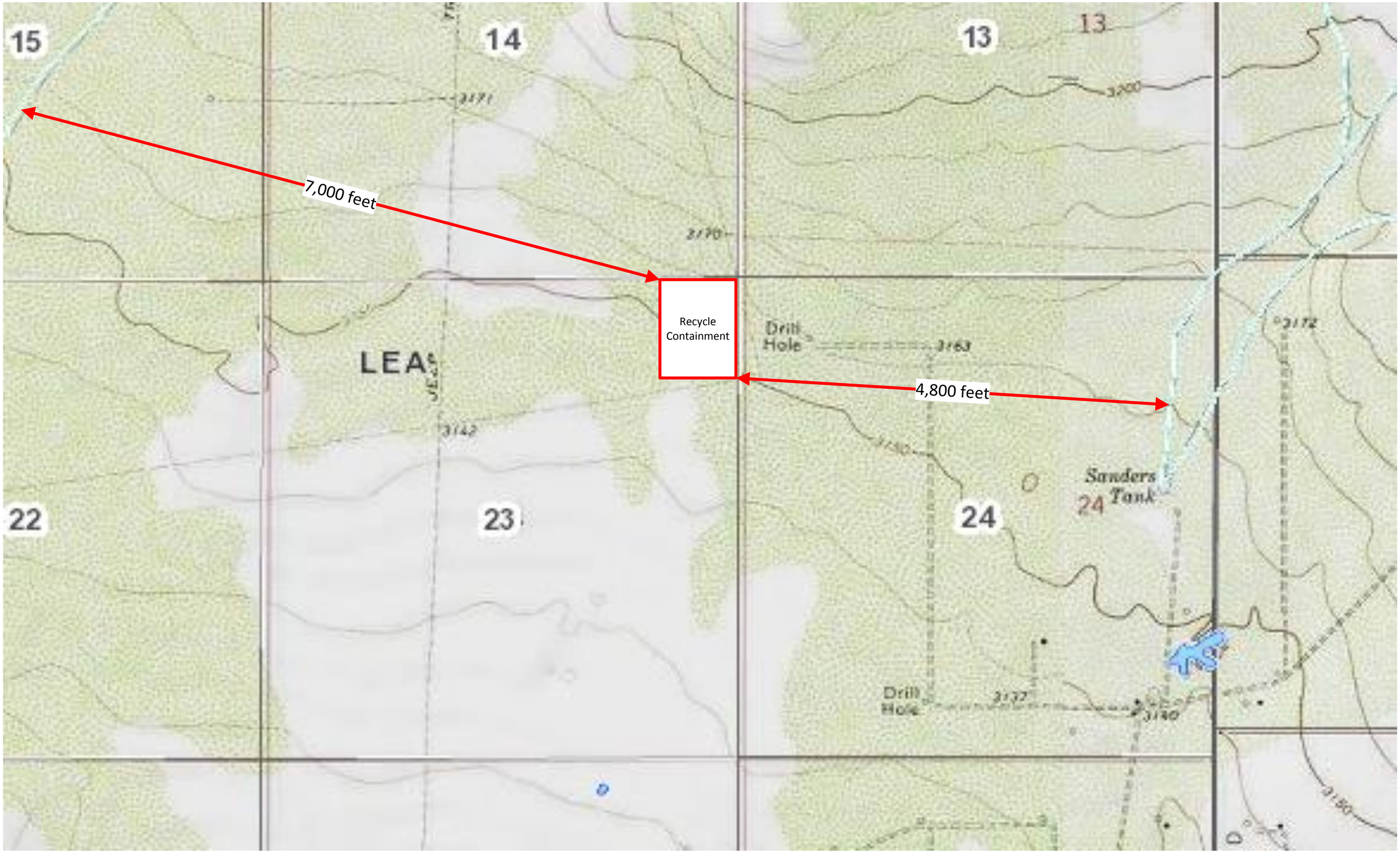
Chevron U.S.A. Inc. Salado Draw T26S R32E Section 23 Recycling Containment

Appendix 2 / Figure 1: Geologic Map



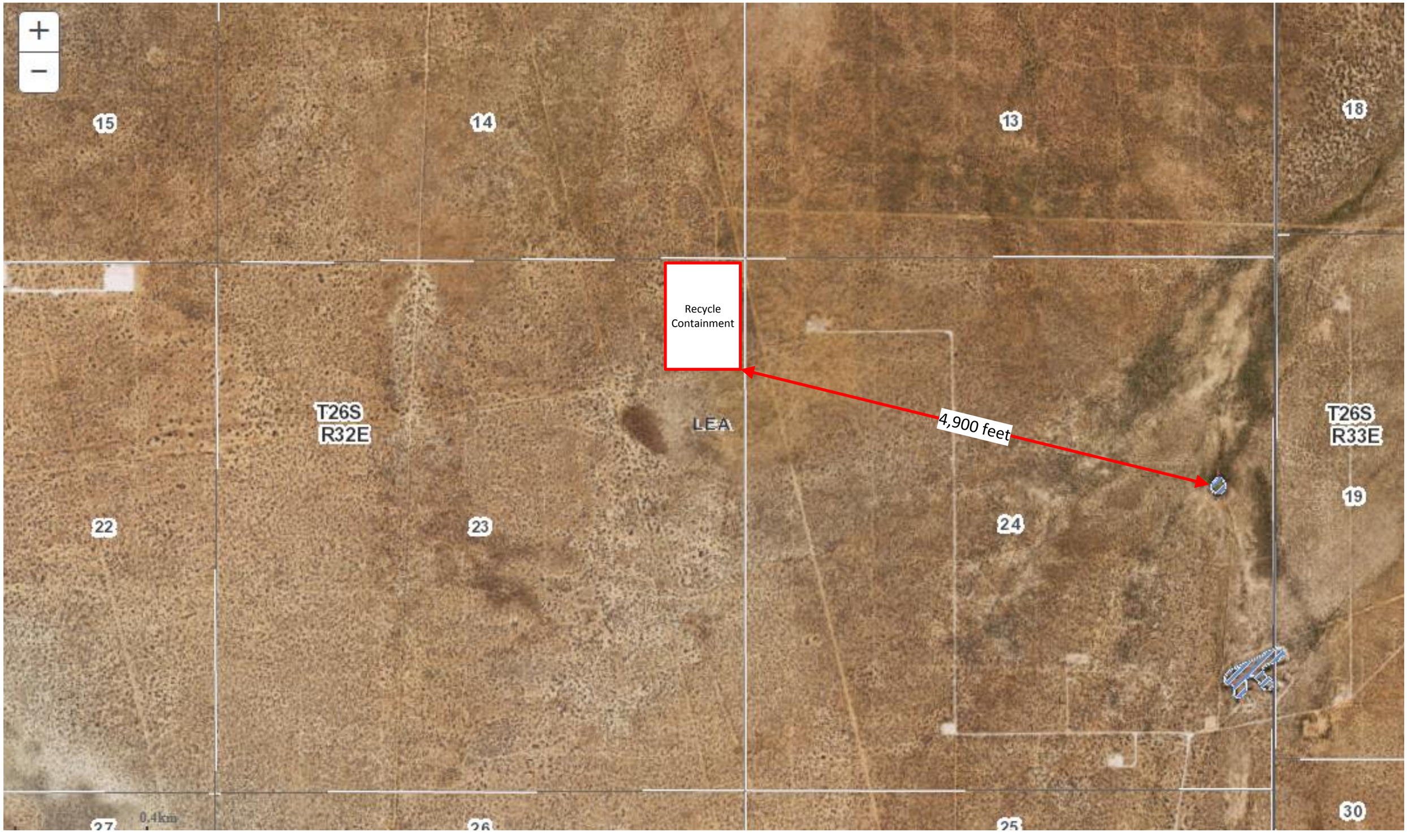
Chevron U.S.A. Inc. Salado Draw T26S R32E Section 23 Recycling Containment

Appendix 2 / Figure 2: Surface Water Features and Watercourses



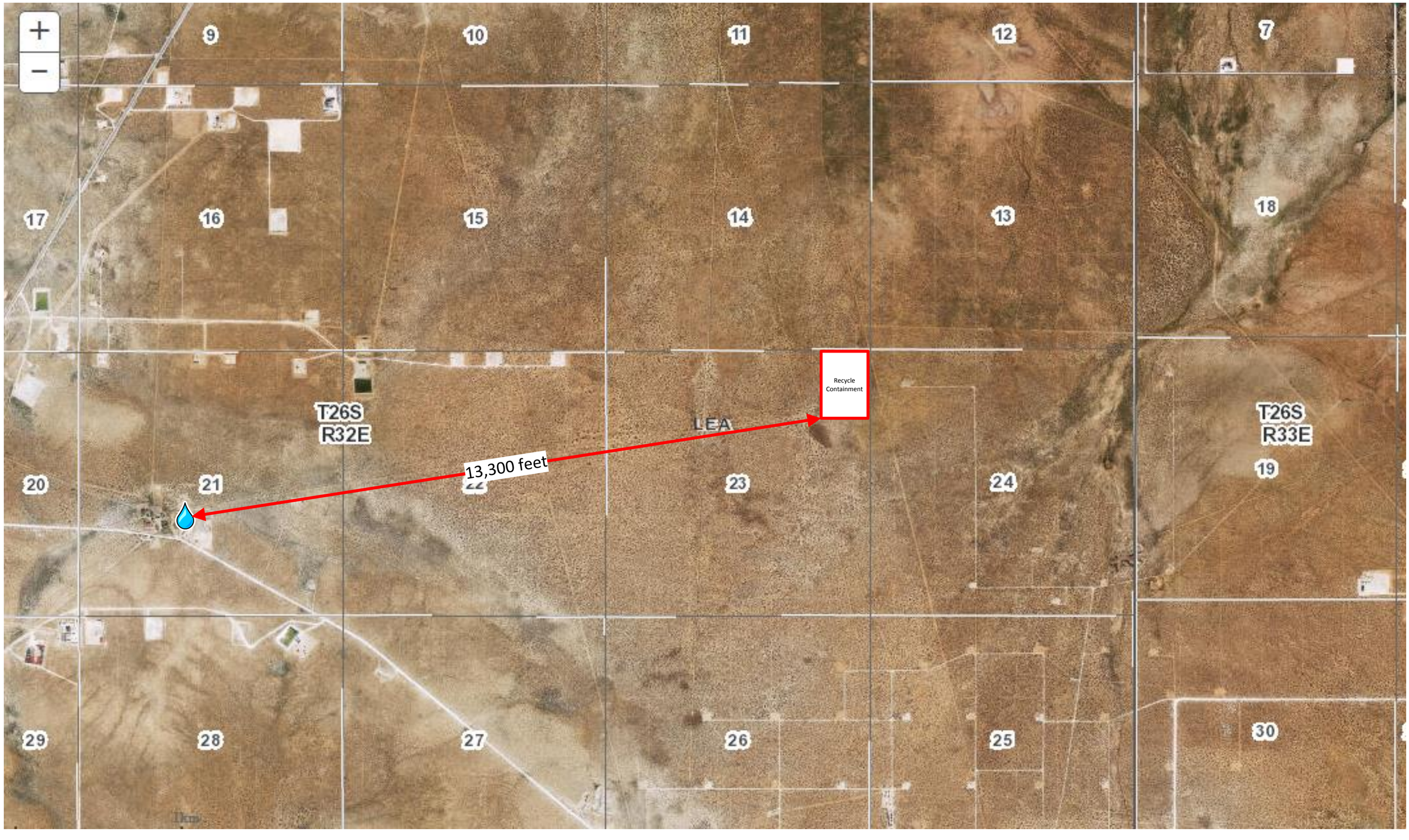
Chevron U.S.A. Inc. Salado Draw T26S R32E Sections 23 Recycling Containment

Appendix 2 / Figure 3: Permanent Residences and Institutions, Wetlands



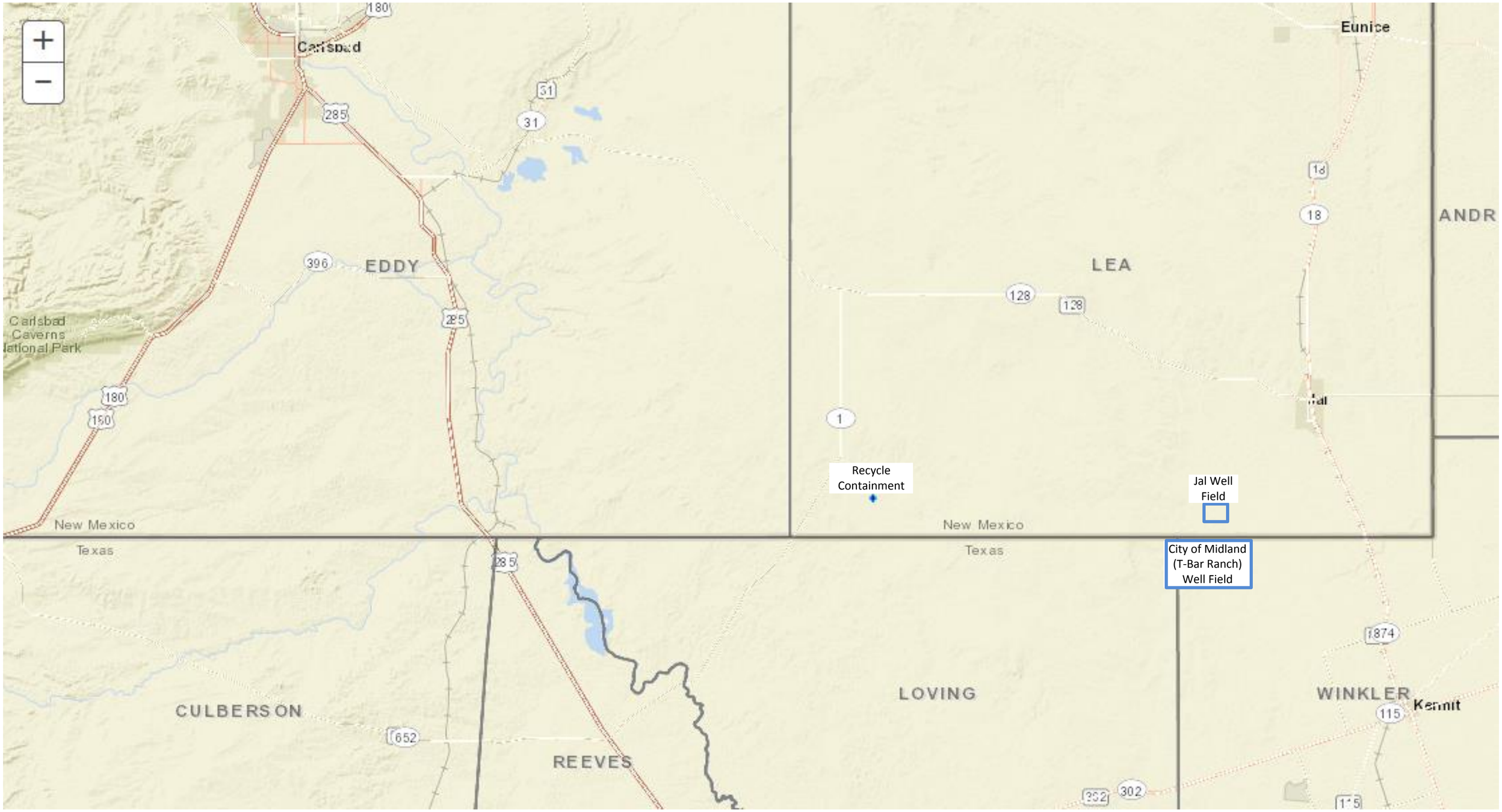
Chevron U.S.A. Inc. Salado Draw T26S R32E Section 23 Recycling Containment

Appendix 2 / Figure 4: Domestic and Stock Water Supplies



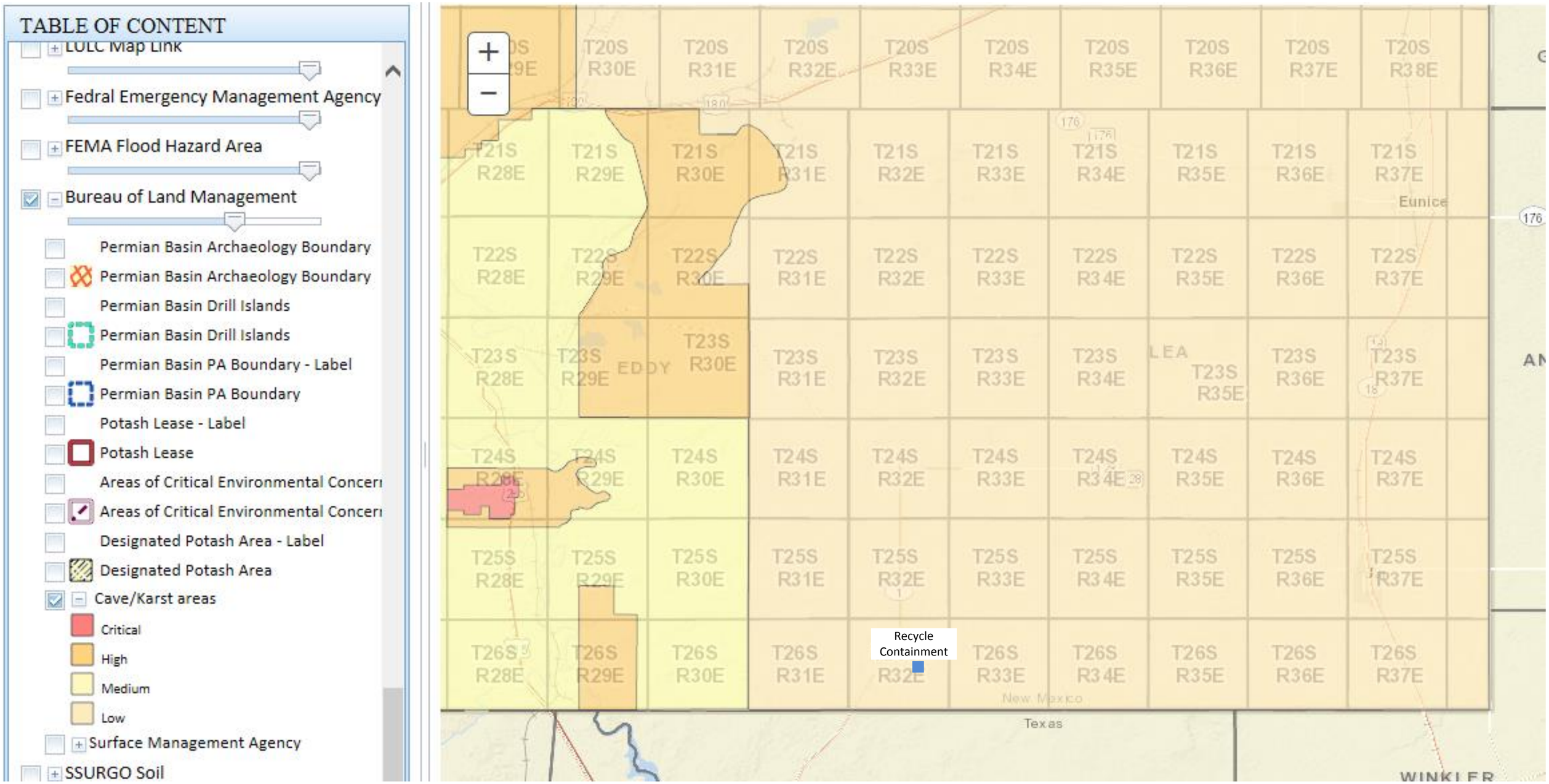
Chevron U.S.A. Inc. Salado Draw T26S R32E Section 23 Recycling Containment

Appendix 2 / Figure 5: Municipal Boundaries and Fresh Water Fields



Chevron U.S.A. Inc. Salado Draw T26S R32E Section 23 Recycling Containment

Appendix 2 / Figure 6: Cave/Karst Features



Appendix 3 – Recycling Containment Groundwater Boring Log

Tetra Tech Inc.
4000 N. Big Spring, Suite 401
Midland, TX, 79705
Telephone: 432-682-4559
Fax: 432-682-3946

BOREHOLE ID: B-1

CLIENT Chevron **PROJECT NAME** Salado Draw Section 23 Frac Pond

PROJECT NUMBER 212C-MD-00649 **PROJECT LOCATION** Lea County, New Mexico

DATE(S) OF EXCAVATION: 10/26/2016 **GROUND ELEVATION: N/** **METHOD: HSA/Air Rotary**

CONSULTANT: Tetra Tech, Inc. **A LATITUDE: 32.033156N** **LOGGED BY: James Kennedy**

DRILLING CONTRACTOR: Yellow Jacket **LONGITUDE: 103.639194W** **DRILLED BY: Jason**

Notes: No groundwater encountered

DEPTH (ft)	SAMPLE TYPE	N Value	GRAPHIC LOG	MATERIAL DESCRIPTION
0				
	SS	1		Very Loose, Brown, Fine to Medium Grained **SAND** with Silt, Dry, with some roots
	SS	8		
				3.5
5	SS	41		Dense to Very Dense, Reddish Brown to Pink, Silty Fine to Medium Grained **SAND**, Calcareous, with Limestone Fragments, Dry
	SS	50/5"		
10	SS	50/1"		
15	SS	50/2"		
20	SS	50/2"		
25	SS	50/2"		
30	SS	50/3"		
35	SS	50/1"		
40	SS	50/1"		

BOREHOLE/TP/WELL - VECTOR SALADO - FRAC POND.GPJ LAB SUMMARY.GDT 11/28/16

(Continued Next Page)

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BOREHOLE ID: B-1

CLIENT Chevron **PROJECT NAME** Salado Draw Section 23 Frac Pond

PROJECT NUMBER 212C-MD-00649 **PROJECT LOCATION** Lea County, New Mexico

DEPTH (ft)	SAMPLE TYPE	N Value	GRAPHIC LOG	MATERIAL DESCRIPTION
40				Dense to Very Dense, Reddish Brown to Pink, Silty Fine to Medium Grained **SAND**, Calcareous, with Limestone Fragments, Dry *(continued)*
45				
50	SS	*50/0"*		
55				
60				
65				
70				
75				
80				80.0 Borehole terminated at 80.0 feet.