Received 7/13/2015
NMOCD Artesia

Form C-144
Revised June 6, 2013

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

For temporary pits, below-grade tanks, and multi-well fluid management pits, submit to the appropriate NMOCD District Office.
For permanent pits submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

Pit, Below-Grade Tank, or Proposed Alternative Method Permit or Closure Plan Application

Type of action:
- ☐ Below grade tank registration
- ☒ Permit of a pit or proposed alternative method
- ☐ Closure of a pit, below-grade tank, or proposed alternative method
- ☐ Modification to an existing permit/or registration
- ☐ Closure plan only submitted for an existing permitted or non-permitted pit, below-grade tank, or proposed alternative method

Instructions: Please submit one application (Form C-144) per individual pit, below-grade tank or alternative request

Please 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: OXY USA, Inc OGRID #: 160696
Address: PO B o x 50250 Midland, TX 79710,
Facility or well name: Cypress 34 Federal 10H
API Number: 30-015-43076 OCD Permit Number:
U/L or Qtr/Qtr Section 34 Township 23S Range 29E County: Eddy
Center of Proposed Design: Latitude 32.2678920 Longitude -103.9796248 NAD: ☒1927 ☐ 1983
Surface Owner: ☒ Federal ☐ State ☐ Private ☐ Tribal Trust or Indian Allotment

2.
☒ **Pit- Trench:** Subsection K and/or F, G or J of 19.15.17.11 NMAC
Temporary: ☐ Drilling ☐ Workover **XX Trench**
☐ Permanent ☐ Emergency ☐ Cavitation ☐ P&A ☐ Multi-Well Fluid Management Low Chloride Drilling Fluid ☐ yes ☒ no
☒ Lined ☐ Unlined Liner type: Thickness 30 mil ☒ LLDPE ☐ HDPE ☐ PVC ☐ Other
☒ String-Reinforced
Liner Seams: ☒ Welded ☐ Factory ☐ Other Volume 6990 barrels Dimensions: L 150 x 45 x D 10 feet

3.
☐ **Below-grade tank:** Subsection I of 19.15.17.11 NMAC
Volume: bbl Type of fluid:
Tank Construction material:
☐ Secondary containment with leak detection ☐ Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off
☐ Visible sidewalls and liner ☐ Visible sidewalls only ☐ Other
Liner type: Thickness mil ☐ HDPE ☐ PVC ☐ Other

4.
☐ **Alternative Method:**
Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

5.
Fencing: Subsection D of 19.15.17.11 NMAC *(Applies to permanent pits, temporary pits, and below-grade tanks)*
☐ Chain link, six feet in height, two strands of barbed wire at top *(Required if located within 1000 feet of a permanent residence, school, hospital, institution or church)*
☒ Four foot height, four strands of barbed wire evenly spaced between one and four feet
☐ Alternate. Please specify

6.

Netting: Subsection E of 19.15.17.11 NMAC *(Applies to permanent pits and permanent open top tanks)*

☐ Screen ☐ Netting ☐ Other_____

☐ Monthly inspections (If netting or screening is not physically feasible)

7.

Signs: Subsection C of 19.15.17.11 NMAC

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

☒ Signed in compliance with 19.15.16.8 NMAC

8.

Variances and Exceptions:

Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance.

Please check a box if one or more of the following is requested, if not leave blank:

☒ Variance(s): Requests must be submitted to the appropriate division district for consideration of approval.

☐ Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

9.

Siting Criteria (regarding permitting): 19.15.17.10 NMAC

Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of acceptable source material are provided below. **Siting criteria does not apply to drying pads or above-grade tanks.**

General siting	
Ground water is less than 25 feet below the bottom of a low chloride temporary pit or below-grade tank. - ☐ NM Office of the State Engineer - iWATERS database search; ☐ USGS; ☐ Data obtained from nearby wells	☐ Yes ☐ No ☒ NA
Ground water is less than 50 feet below the bottom of a Temporary pit, permanent pit, or Multi-Well Fluid Management pit . NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells **See Figures 1 & 2**	☐ 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. **(Does not apply to below grade tanks) See Figure 5** - Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☒ No
Within the area overlying a subsurface mine. **(Does not apply to below grade tanks) See Figure 7** - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☒ No
Within an unstable area. **(Does not apply to below grade tanks) See Figure 8** - 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. **(Does not apply to below grade tanks) See Figure 9** - FEMA map	☐ Yes ☒ No
Below Grade Tanks	
Within 100 feet of a continuously flowing watercourse, significant watercourse, lake bed, sinkhole, wetland or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 200 horizontal feet of a spring or a fresh water well used for public or livestock consumption;. - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Temporary Pit using Low Chloride Drilling Fluid (maximum chloride content 15,000 mg/liter)	
Within 100 feet of a continuously flowing watercourse, or any other significant watercourse or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). (Applies to low chloride temporary pits.) - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 300 feet from a occupied 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 200 horizontal feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 300feet of any other fresh water well or spring, in existence at the time of the initial application. NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes ☐ No

Within 100 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Temporary Pit Non-low chloride drilling fluid	
Within 300 feet of a continuously flowing watercourse, or any other significant watercourse, or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). **See Figure 3** - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within 300 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. **See Figure 4**	☐ Yes ☒ No
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, or 1000 feet of any other fresh water well or spring, in the existence at the time of the initial application; - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site **See Figures 1 & 2**	☐ Yes ☒ No
Within 300 feet of a wetland. **See Figure 6** - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Permanent Pit or Multi-Well Fluid Management Pit	
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

10.

Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC

Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

☐ Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
☒ Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9 NMAC
☒ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
☒ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
☒ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
☒ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

☐ Previously Approved Design (attach copy of design) API Number: _____ or Permit Number: _____

11.

Multi-Well Fluid Management Pit Checklist: Subsection B of 19.15.17.9 NMAC

Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

☐ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
☐ A List of wells with approved application for permit to drill associated with the pit.
☐ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
☐ Hydrogeologic Data - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC

☐ Previously Approved Design (attach copy of design) API Number: _____ or Permit Number: _____

12.

Permanent Pits Permit Application Checklist: Subsection B of 19.15.17.9 NMAC

Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.9 NMAC
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Climatological Factors Assessment
- ☐ Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Quality Control/Quality Assurance Construction and Installation Plan
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Nuisance or Hazardous Odors, including H_2S, Prevention Plan
- ☐ Emergency Response Plan
- ☐ Oil Field Waste Stream Characterization
- ☐ Monitoring and Inspection Plan
- ☐ Erosion Control Plan
- ☐ Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

13.

Proposed Closure: 19.15.17.13 NMAC

Instructions: Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan.

Type: ☒ Drilling ☐ Workover ☐ Emergency ☐ Cavitation ☐ P&A ☐ Permanent Pit ☐ Below-grade Tank ☐ Multi-well Fluid Management Pit ☐ Alternative

Proposed Closure Method: ☐ Waste Excavation and Removal
☐ Waste Removal (Closed-loop systems only)
☒ On-site Closure Method (Only for temporary pits and closed-loop systems)
☐ In-place Burial ☒ On-site Trench Burial
☐ Alternative Closure Method

14.

Waste Excavation and Removal Closure Plan Checklist: (19.15.17.13 NMAC) ***Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.***

- ☐ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.13 NMAC
- ☐ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)
- ☐ Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

15.

Siting Criteria (regarding on-site closure methods only): 19.15.17.10 NMAC

Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria require justifications and/or demonstrations of equivalency. Please refer to 19.15.17.10 NMAC for guidance.

Ground water is less than 25 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☒ No ☐ NA
Ground water is between 25-50 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☒ No ☐ NA
Ground water is more than 100 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☒ Yes ☐ No ☐ NA
Within 100 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). - Topographic map; Visual inspection (certification) of the proposed	☐ Yes ☒ No
Within 300 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 300 horizontal feet of a private, domestic fresh water well or spring used for domestic or stock watering purposes, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within 300 feet of a wetland. US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
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

Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral 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
	☐ Yes ☒ No

16.
On-Site Closure Plan Checklist: (19.15.17.13 NMAC) ***Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.***

- ☒ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☒ Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection E of 19.15.17.13 NMAC
- ☒ Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of Subsection K of 19.15.17.11 NMAC
- ☒ Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☒ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☒ Waste Material Sampling Plan - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☐ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot be achieved)
- ☒ Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☒ Re-vegetation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☒ Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

17.
Operator Application Certification:

I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.

Name (Print): Linsay Earle Title: Drilling Engineer

Signature: Linsay Earle Date: July 13, 2015

e-mail address: linsay_earle@oxy.com Telephone: 713-350-4921

18.
OCD Approval: ☒ Permit Application (including closure plan) ☐ Closure Plan (only) ☒ OCD Conditions (see attachment)

OCD Representative Signature: _____ **Approval Date:** 7/17/2015

Title: Environmental Specialist **OCD Permit Number:** 2-13-0028

19.
Closure Report (required within 60 days of closure completion): 19.15.17.13 NMAC

Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed.

☐ **Closure Completion Date:** _____

20.
Closure Method:

☐ Waste Excavation and Removal ☐ On-Site Closure Method ☐ Alternative Closure Method ☐ Waste Removal (Closed-loop systems only)

☐ If different from approved plan, please explain.

21.
Closure Report Attachment Checklist: ***Instructions: Each of the following items must be attached to the closure report. Please indicate, by a check mark in the box, that the documents are attached.***

- ☐ Proof of Closure Notice (surface owner and division)
- ☐ Proof of Deed Notice (required for on-site closure for private land only)
- ☐ Plot Plan (for on-site closures and temporary pits)
- ☐ Confirmation Sampling Analytical Results (if applicable)
- ☐ Waste Material Sampling Analytical Results (required for on-site closure)
- ☐ Disposal Facility Name and Permit Number
- ☐ Soil Backfilling and Cover Installation
- ☐ Re-vegetation Application Rates and Seeding Technique
- ☐ Site Reclamation (Photo Documentation)

On-site Closure Location: Latitude _____ Longitude _____ NAD: ☐ 1927 ☐ 1983

22.

Operator Closure Certification:

I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.

Name (Print): _____ Title: _____

Signature: _____ Date: _____

e-mail address: _____ Telephone: _____

From: Patterson, Heather, EMNRD
To: "Randall Hicks"; Linsay_Earle@oxy.com; Calvin_Weaver@oxy.com
Cc: Bratcher, Mike, EMNRD; clayton@blm.gov; Billings, Bradford, EMNRD; Griswold, Jim, EMNRD
Subject: RE: Oxy - Cypress 34 Federal 10H - BURIAL TRENCH C-144
Date: Friday, July 17, 2015 2:12:00 PM

RE: Oxy USA * Cypress 34 Federal 10H Solids Burial Trench * 30-015-43076

Gentlemen,

Your application for a burial trench at the Cypress 34 Federal 10H is approved. This approval is subject to the operator's adherence to all provisions of 19.15.17 [NMAC]. Request for variance to introduce fluids into the burial trench is denied. As per 19.15.17.13 D. (4) NMAC all contents must be dried, stabilized, and pass the paint filter liquids test before being transferred into the burial trench.

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

If you have any questions or concerns, and for notification, please contact me.

Heather Patterson
Environmental Specialist
NMOCD District II
Office (575)748-1283 ext.101
Cell (575)703-0228

From: Randall Hicks [mailto:r@rthicksconsult.com]
Sent: Tuesday, July 14, 2015 9:42 AM
To: Bratcher, Mike, EMNRD; Patterson, Heather, EMNRD; clayton@blm.gov
Subject: Oxy - Cyprress 34 Federal 10H - BURIAL TRENCH C-144

Mike, Heather and Cody

In order to maintain the drilling schedule, Oxy needs to begin construction of the burial trench next week.

Due to the presence of nearby erosion features that might be considered to be "significant watercourses", we request that OCD and BLM withdraw the previously-submitted C-144 for a pit in exchange for this application to use a burial trench. This trench meets the setback requirements from these "watercourses" whereas a pit does not.

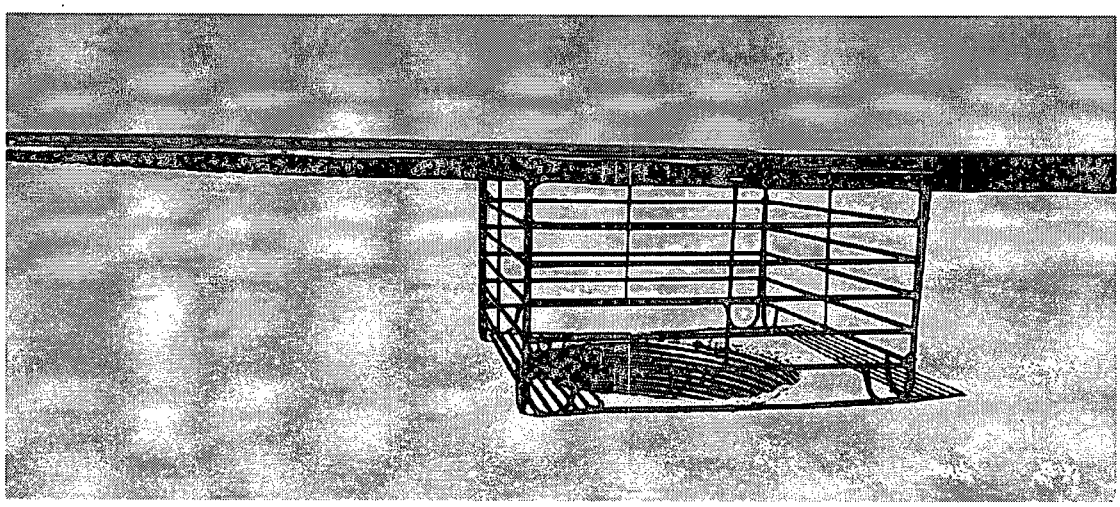
I will be hand delivering the paper copy of the permit to OCD Artesia tomorrow between noon and 3 pm.

Thanks for your attention to this short fuse.

Randall Hicks
R.T. Hicks Consultants
Cell: 505-238-9515
Office: 505-266-5004

July 2015

C-144 Permit Package for Cypress 34 Federal 10H Solids Burial Trench Sec 34 T23S R29E, Eddy Co.



View north toward potash tailings pond/playa lake. The solids disposal pit will lie north of the cellar shown in this image.

Prepared for:
Oxy USA
Houston, Texas

Prepared by:

R.T. Hicks Consultants, Ltd.
901 Rio Grande NW
F-142
Albuquerque, New Mexico

R. T. HICKS CONSULTANTS, LTD.

901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266-0745
Artesia ▲ Carlsbad ▲ Durango ▲ Midland

July 14, 2015

Ms. Heather Patterson
Mr. Mike Bratcher
NMOCD District 2
811 S. First Street
Artesia, New Mexico 88210
Via E-mail and US Mail

RE: C-144 for Oxy USA Cypress 34 Federal 10H Burial Trench
SHL Sec 34 T23S R29E,

Dear Ms. Patterson and Mr. Bratcher:

On behalf of Oxy USA, Inc., R.T. Hicks Consultants, Ltd. is pleased to submit the attached permit for a burial trench. Please note the following in the C-144 Package

1. The hydrogeologic data are quite good for the area; the location meets the setback distance to groundwater. Evidence shows that the shallow groundwater unit has a TDS concentration in excess of 10,000 mg/L.
2. My personal site inspection showed no signs of unstable ground within this medium cave/karst potential area.
3. With respect to nearby watercourses, the trench meets the setback criteria.
4. The burial trench generic plans are *almost* verbatim from previously-approved C-144 drilling pit permits. Note that
    a. the design construction plan is very similar to a pit plan because we propose essentially the same protocols as we employ for temporary pits.
    b. The Rule does not provide for an O&M Plan for a burial trench. We have provided an O&M plan in the event that OCD approves the variance request for limited discharge of fluids into the trench.
    c. The closure plan meets the mandates of the Rule for a burial trench
5. This letter and application are copied to the surface owner (BLM) as notification of the intent to bury drilling solids on-site.
6. In order to maintain the drilling schedule, Oxy would like to begin construction of the trench next week or earlier.

Not described in the attached O&M plan are these protocols which may occur:

1. Solids from the shaker and centrifuge will fall into a 3-sided steel bin – as will excess grout/cement from circulation to surface during casing.
2. A backhoe, forklift or other equipment will remove and transport the solids to the trench. The backhoe will shift the solids discharge to avoid mounding of solids.
3. The trench will be lined with 30-mil LLDPE rather than the minimum 20-mil LLDPE required by the Rule in order to provide additional protection.

The purpose of the attached variance request is to address possible mounding of solids beneath the areas where the backhoe places solids. We propose to introduce water into the trench to cause distribution of solids and flow toward the low end of the trench. Introduction of fluid would mainly occur when the steel mud pits are emptied to change

out drilling mud (e.g. from fresh water to brine). As outlined in the variance request and O&M plan, standing water will not remain in the trench for more than 72 hours.

Appendix B is an example set of Conditions of Approval recently provided to an operator by BLM as well as the Sundry Notice to BLM regarding the use of a pit at this well.

Please let me know if you have any questions or concerns.

Sincerely,
R.T. Hicks Consultants

Randall Hicks

Copy: Oxy USA
BLM Carlsbad (surface owner)

Statement Explaining Why the Applicant Seeks a Variance

The prescriptive mandates of the Rule that are the subject of this variance request are the following:

> (4) When closing a temporary pit the operator shall stabilize or solidify the remaining temporary pit contents to a capacity sufficient to support the final cover of the temporary pit. When transferring the waste contents from a drying pad and tank associated with a closed-loop system into a temporary pit or burial trench, the operator shall stabilize or solidify the waste contents to a capacity sufficient to support the final cover of the temporary pit or burial trench. The operator shall not mix the contents with soil or other material at a mixing ratio of greater than 3:1, soil or other material to contents. The waste mixture must pass the paint filter liquids test (EPA SW-846, Method 9095 or other test methods approved by the division).

Although the text can be read in a number of ways, we believe the intent of the Rule was to preclude storage of fluids in burial trenches. Oxy requests very limited introduction of fluids into the trench for the following reasons:

1. Periodic discharge of fluids into the trench will distribute the solids toward the deepest end of the trench. The distribution of solids using a liquid medium places less stress on the liner than moving the solids with a backhoe or other mechanical (steel) device.
2. Discharge of drilling mud from the steel pits into the trench promotes recycling of fluid. By allowing discharged fluids to settle for 24-48 hours, the clarified drilling muds can be more effectively recycled.
3. There is insufficient room on the existing location to construct a drying pad. Thus it is possible that the solids will not pass the paint filter test when initially placed in the trench.

Demonstration That the Variance Will Provide Equal or Better Protection of Fresh Water, Public Health and the Environment

The alternatives to granting this variance are:

- Haul-off of the solids and liquids from the closed loop system to R360 or
- Extraordinary care in handling and drying the solids before transfer to the trench

There are two principal reasons that the Rule precludes discharge into a burial trench of solids that do not meet the paint filter test or fluids. The first reason is the setback to fresh groundwater is 25 feet. Thus, with only 25 feet between the bottom of a burial trench and fresh groundwater the restriction of placing fluids in a burial trench are justified. At this location, the depth to fresh water (if any exists) is at least 120 feet. OCD does allow storage of high chloride fluids in pits if the distance to groundwater is greater than 50 feet. Thus, from a groundwater protection standpoint, allowing introduction of fluids into the burial trench provides equal protection.

The second reason for the restriction on fluids in a burial pit is the setback distance to a significant watercourse is 200 feet for in-place closure or trench closure rather than a setback distance of 300 feet, as is the case for a drilling pit that holds high chloride fluid with a 2-foot freeboard. As described in the O&M plan for the burial trench:

1. **The trench will not store liquids for more than 72 hours.** Liquids may be discharged into the trench from the above-ground steel pits from time to time. This discharge can occur when the mud system changes from fresh water to brine and from brine to the mud system(s) proposed for below the salt.
2. During this 72 hour period. **fluid level in the pit will be 4 feet below the top of the liner** (3 feet below the elevation of the location).
3. Much of the material removed during excavation of the pit will be used to **build a 1-2 foot high berm around the north and east edges of the location**. The purpose of this berm is to direct surface runoff from the location to the southeast portion of the location and away from the nearest drainages/gullies north of the pit.

We believe these measures in addition to any recycling of fluids provide better protection of the environment as compared to hauling the waste solids and liquids to R360.

C-144 and Site Specific Information for Temporary Pit

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Distance to Groundwater

Figure 1, Figure 2, and the discussion below demonstrates that groundwater (fresh water as defined by NMOCD Rules) at the location is greater than 100 feet beneath the temporary pit/burial trench that will contain fluids that cannot be classified as "low-chloride." Groundwater will be more than 100 feet below the bottom of the buried waste, meeting criteria for in-place closure.

Figure 1 is a geologic/ topographic map that shows:

1. The location of staked well locations as hexagons.
2. Water wells from the OSE database are plotted as a blue triangle inside colored circles that indicate well depth, if such wells exist within the area of the map. OSE wells are often miss-located in the WATERS database as older wells are plotted in the center of the quarter, quarter, quarter, of the Section Township and Range.
3. Water wells from the USGS database as large green triangles, if such wells existed.
4. Water wells, which are not documented in the public databases but were identified by field inspection or other published reports as colored squares.
5. The depth-to-water from the most recent available measurement for each well is provided adjacent to the well symbol.

Our examination of the geology of the area near the proposed temporary pit/burial trench cause us to conclude that the uppermost water-bearing zone lay in Quaternary Alluvium, where present, and the underlying Rustler Formation, which is probably hydraulically connected to the Alluvium in this area. As discussed below, seepage from the potash mines tailings pond, formerly a playa lake, has caused significant salinity in the uppermost groundwater zone beneath the proposed pit/burial trench.

Figure 2 is an area topographic map that shows:

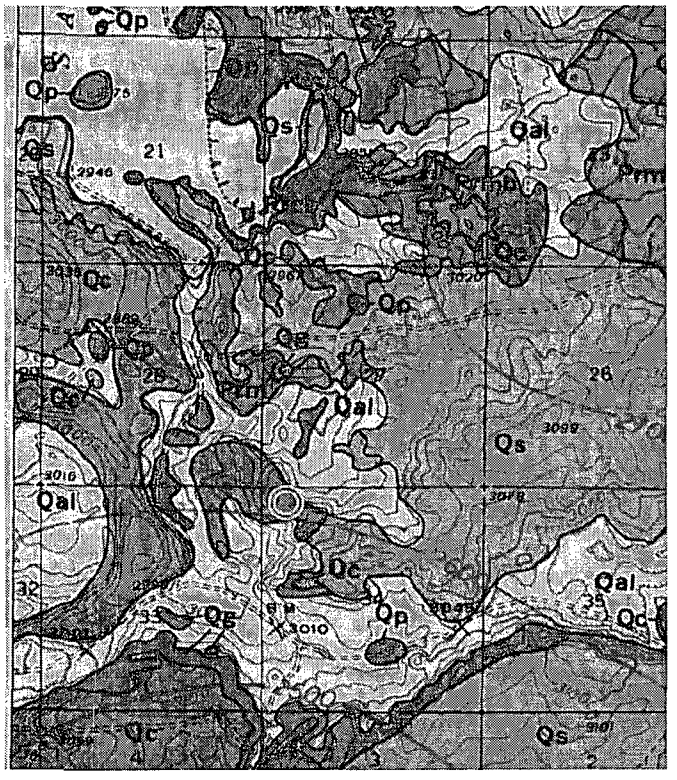
1. The location of the staked locations as hexagons.
2. Water wells measured by the USGS or other parties, the total depth of the well and the calculated elevation of the groundwater surface.

The Rustler Formation contains groundwater for beneficial use east of the area of the proposed pit/burial trench. On the eastern border of Figures 1 and 2, wells Misc-7, Misc-10 and Misc-165 are fresh water wells. Fresh water also exists in the Alluvium on the west side of the Pecos River (e.g. C-2182) about 1.5 miles west of the locations. Adjacent to and down-gradient from the former playa lake (tailings pond for potash mines), brine has seeped into the permeable units of the Alluvium and Rustler. We sampled well Misc-312, about 1-mile north of the proposed pit/burial trenchs and the laboratory result showed 174,000 mg/L chloride. Misc-189 and Misc-190, which lie about two miles southwest of the Cypress locations, are background monitoring wells associated with the Malaga Salt facility. These wells exhibit TDS concentrations slightly above or slightly below 30,000 mg/ and chloride concentrations in excess of 10,000 mg/L. Finally, near Malaga Bend (in the area of wells Misc 204 and Misc. 188), the USGS and others[1]

[1] See http://pecosbasin.tamu.edu/media/453325/malaga-bend-ppt_prc-meeting_april-2014.pdf and https://repository.tamu.edu/bitstream/handle/1969.1/86109/TR-315%20-Hydrology%2c%20Salinity%2c%20and%20Salinity%20Control.pdf?sequence=1&isAllowed=y

have documented a pressurized brine zone leaking into the alluvium (and Pecos River) that caused widespread salinization of groundwater in the alluvium and bedrock units.

As shown in the graphic below extracted from http://pubs.usgs.gov/bul/1141b/plate-1.pdf, the location of the pit/burial trench (green circle) is about 1 mile south of the 1939 playa lake shoreline. The location lies on a caliche unit (Qc) which in turn overlies Quaternary Alluvium (Qal). The bedrock beneath the alluvium is the Magenta Dolomite of the Rustler Formation (Prm due north and northeast of the location) or possibly the Quaternary Gautuna Formation (Qg) which crops out south of the location.



Based upon the outcrop pattern and topography, the Gautuna Formation probably lies above the water table in the area. The Magenta Dolomite may also lie above the water table, which would leave the underlying Culebra Dolomite (Prcb – the "b" signifies brecciation of the Culebra) as the uppermost permeable zone that contains groundwater. The Culebra is porous and would readily transmit water (brine) from the potash tailings pond down dip (south) toward the location.

The map also shows that the top of the salt in the Salado Formation is at an elevation of 2600 feet asl, or about 450 feet beneath the pit/burial trench. The top of the Salado dips south in this area.

For Figure 2 we did not use any data from the OSE database as this data relies upon observed water levels by drillers during the completion of the water well. The OSE dataset provides some useful data in certain areas – but due to the intrusion of brine from the tailings pond into permeable zones, it is not surprising that water supply wells do not exist in this area. Therefore, we relied upon the best and nearest data available: Misc-312 (aka C-2702 north of the locaton), Misc 189 and 190 (southwest of the location) and the data from the publications referenced in the footnote.

From these data, we conclude::

- Beneath the proposed pit/burial trench, the elevation of the uppermost water bearing zone (Alluvium?) is less than 2940 (Misc-312) and higher than 2919 (Misc-290) – probably about 2935 feet asl

- Given the surface elevation of the location (3049) and a 10-foot deep temporary pit/burial trench, the distance between the bottom of the pit/burial trench and the groundwater surface is about 104 feet (3049-10-2935)
- However, the groundwater in this area is not fresh.

On July 2, Hicks Consultants logged the rathole for the conductor pipe and found no evidence of groundwater to a depth of 120 feet below land surface. The findings of this event are presented at the end of this section of the application.

Distance to Surface Water

Figure 3 and the site visit demonstrates that the location is not within 200 feet of a continuously flowing watercourse or any other significant watercourse or 200 feet from lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). This temporary pit/burial trench will also qualify for in-place closure as the location is not within 100 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).

- No continuously flowing watercourses, significant watercourses, sinkhole or other water bodies, as defined by NMOCD Rules, exist within the prescribed setback criteria for the siting, trench burial, or in-place closure of a temporary pit/burial trench at this location.
- The area surrounding the proposed pit/burial trench location is a caliche topped hill with radial drainage in the form of small erosional gullies with no defined bank or bed that transmitting stormwater to mapped watercourses thence to nearby closed depressions
- The ephemeral watercourses are mapped about 500 feet west, south and east of the location (see also Figure 4, figure 4a and the discussion at the end of this section of the application)

Distance to Permanent Residence or Structures

Figure 4 and the site visit demonstrates that the location is not within 300 feet from an occupied permanent residence, school, hospital, institution, church, or other structure in existence at the time of initial application. This also qualifies the location for in-place closure.

- The nearest structures are oil and gas wells and tank batteries.
- Also plotted on Figure 4 are the mapped watercourses shown in Figure 3.

Distance to Non-Public Water Supply

Figures 1 and Figure 2 demonstrates that the location is not within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1,000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application. Additionally, this location is also not within 300 feet of a spring or private, domestic fresh water well used for domestic or stock watering purposes, thus qualifying for in-place closure.

- Figure 1 shows the locations of all area water wells, active or plugged.

- The nearest active water well on the east side of the Pecos River is approximately 3 miles east (Misc-7).
- There are no known domestic wells within 1,000 feet of this location.
- No springs were identified within the mapping area (see Figure 3).

Distance to Municipal Boundaries and Fresh Water Fields

Figure 5 demonstrates that the location is not within incorporated municipal boundaries or within defined municipal fresh water well fields covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. This also qualifies the location for in-place closure.

- The closest municipality is Loving, NM approximately 8 miles due west.
- The closest public well field is located approximately 24 miles to the west.

Distance to Wetlands

Figure 6 demonstrates the location is not within 300 feet of wetlands. This also qualifies the location for in-place closure.

- The nearest designated wetlands are "freshwater pond" located approximately 2000 feet west of the location

Distance to Subsurface Mines

Figure 7 and our general reconnaissance of the area demonstrate that the nearest mines are caliche pits and underground potash mines. This location is not within an area overlying a subsurface mine.

- The nearest mapped caliche pit is located approximately 3.5 miles north
- The pit/burial trench lies within the potash main district, but active subsurface mining is more than 3 miles northeast.

Distance to High or Critical Karst Areas

Figure 8 shows the location of the temporary pit/burial trenchs with respect to current BLM Karst areas.

- The proposed temporary pit/burial trench is mapped as a "moderate" potential karst area.
- No evidence of solution voids were observed near the site during the field inspection.
- No evidence of unstable ground was observed
- The nearest high karst potential area lies about 2 miles east

Distance to 100-Year Floodplain

Figure 9 demonstrates that the location is within Zone X as designated by the Federal Emergency Management Agency with respect to the Flood Insurance Rate 100-Year Floodplain.

- Zone X for this map is described as areas with minimal flood hazards. However, no flood hazard analysis has been conducted.
- Our field inspection and examination of the topography permits a conclusion that the location is not within any floodplain and has low risk for flooding.

Temporary Pit/burial trench Design

Please refer to Plates 1 and 2 for the design of the temporary pit/burial trench and the Design and Construction Plan at the end of this application.

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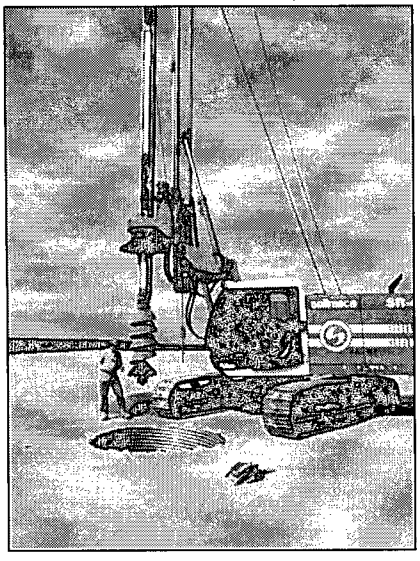
Memorandum

From: Kristin Pope

Date: July 6, 2015

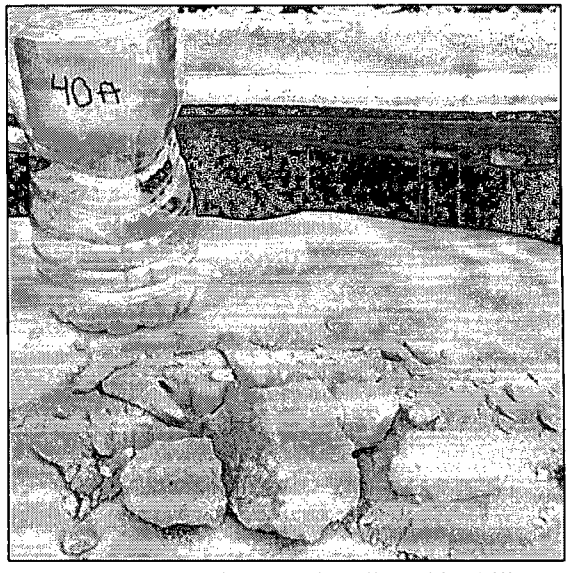
RE: Oxy USA, Cypress 34 Fed #10H Conductor Hole Evaluation



The Cypress 34 Federal #10H well site has a surface elevation of 3,049 feet and is located about 1 mile south of the potash tailings pond. The uppermost water-bearing zone was expected at 2,940-2935 feet above sea level, or 109-114 feet below the location surface, in Quaternary Alluvium. Groundwater, if present, was not expected to be fresh due to brine seepage from the former playa (potash tailings pond).

On July 2, 2015 I witnessed the drilling of the conductor hole at the site, located in south-central Eddy County. Butch's Rat Hole & Anchor Service, Inc. of Levelland, Texas performed the work using a track-mounted Soilmec SR-45 continuous-flight auger hydraulic drilling rig as shown in the adjacent photograph.

I arrived on site at 9:00 am and the depth of the hole was reported to be at 50 feet below surface. Several Oxy personnel were already on site to discuss the location of the proposed pit and left the location when the placement was resolved, at approximately 9:45 am. Prior to my arrival and beginning at 8:00 am, the drilling crew collected samples from upper strata beginning at 40 feet. Inspection of these samples revealed dry, fine, tan sand with soft pink sandstone to 52 feet. Continuous lithological inspection of returned samples occurred with each trip out of the hole.



40-ft sample collected by drillers

Over the next 4.5 hours the boring was advanced to a total depth of 120 feet. In addition to lithology, I inspected the cuttings from each trip for moisture to indicate a groundwater formation, but all samples were dry. If any appreciable moisture would have been indicated,

the operation would have been suspended to allow the water to accumulate and then measured and tested for salinity. At 1:30 pm, the hole was completed at 120 feet below surface. No water or drilling fluids were used to drill any portion of this conductor hole.

The following lithological descriptions were observed:

40-52 feet Sand, light brown, fine-grained, well-sorted with soft, pink sandstone; dry

52-67 feet Sand, light brown, extra fine-grained with hard, gray-brown dolomite; dry

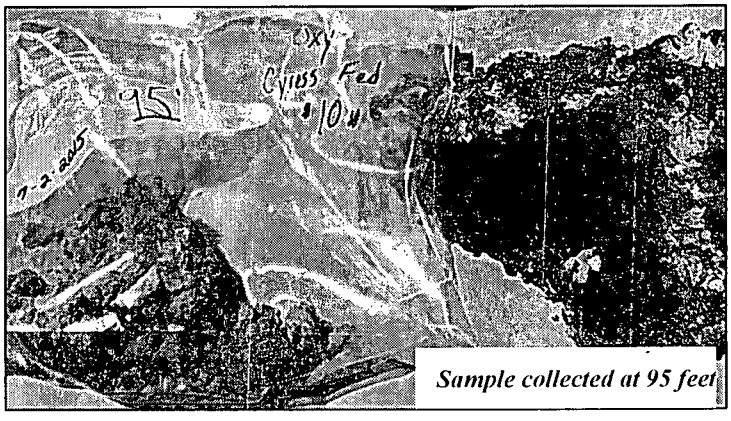
67-80 feet Silt, light brown to light gray, medium-grained with soft, light brown siltstone and hard, gray-brown dolomite (0.5-1.0 inch diameter); dry

80-83 feet Silt, light gray, loose, medium-grained with hard, gray-brown dolomite (0.5-1.0 inch diameter); dry

83-88 feet Silt, light gray, loose, medium-grained with friable, pink siltstone; dry

88-96 feet Clay, red, massive, soft, platy, with 10-15% light gray silt; very slight moisture

96-110 feet Gypsum, white and pink, loose, very fine silt, with hard, gray dolomite pieces (0.5 inch diameter) and light gray gypsum pieces (1-2 inch diameter), dry



Sample collected at 95 feet


Final trip out of hole at 1:30 pm; dry at 120 feet

110-115 feet Clay (90%), red, massive, platy, soft, with gypsum and dolomite inclusions (0.5-3 inches diameter); dry

115-119 feet Sand, brown, loose, medium-grained, with 10% white gypsum (less than 1 inch diameter)

119-120 feet Sand, brown, loose, medium-grained, with 5% gypsum and dolomite (less than 1 inch diameter)

Based on my evaluation of the cuttings, I conclude that no groundwater is present below this site to at least 120 feet below ground surface (2,929 feet below sea level).

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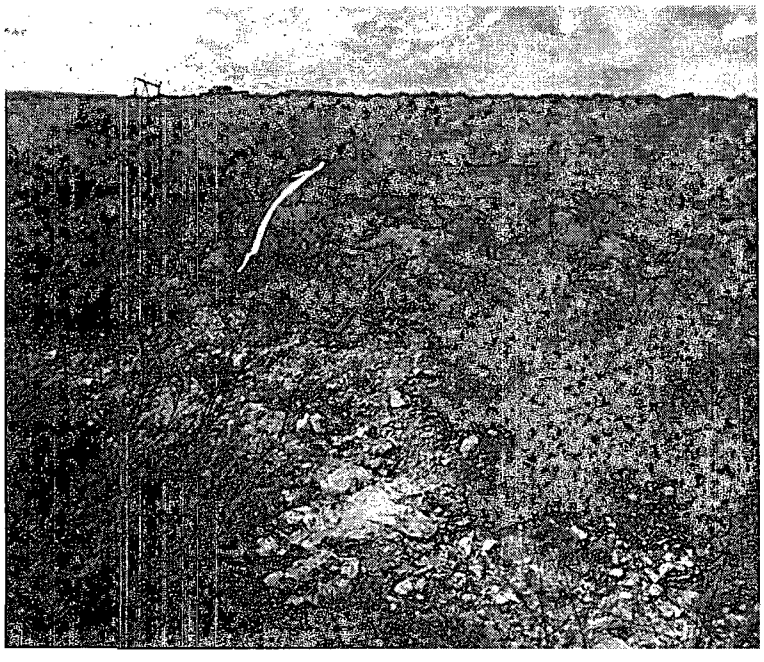
Artesia ▲ Carlsbad ▲ Durango ▲ Midland

Oxy USA, Cypress 34 Fed #10H, Watercourse Inspection

Kristin Pope arrived at the Cypress 34 Federal #10H well site at 9:00 am on July 2, 2015 and drilling of the conductor pipe hole was in progress. Travis Johnson, completions superintendent, as well as other Oxy personnel met me to discuss the location of the planned burial pit/trench. Oxy representatives decided that locating the pit/trench 65 feet due north and 10-15 feet west of the wellhead was the best scenario and this new location is presented in the Plates of the proposed minor modification to the C-144 application. Oxy representatives left the location at approximately 9:45 am. Randall Hicks performed an additional investigation on July 8 and with OCD representatives on July 9, 2015.

The well survey provided the latitude and longitude in NAD 27 coordinates and the Figures in the application show locations based upon NAD 83 datum. Thus, the location on the maps in the application is not exact. The foot survey described below with measured distances is exact.

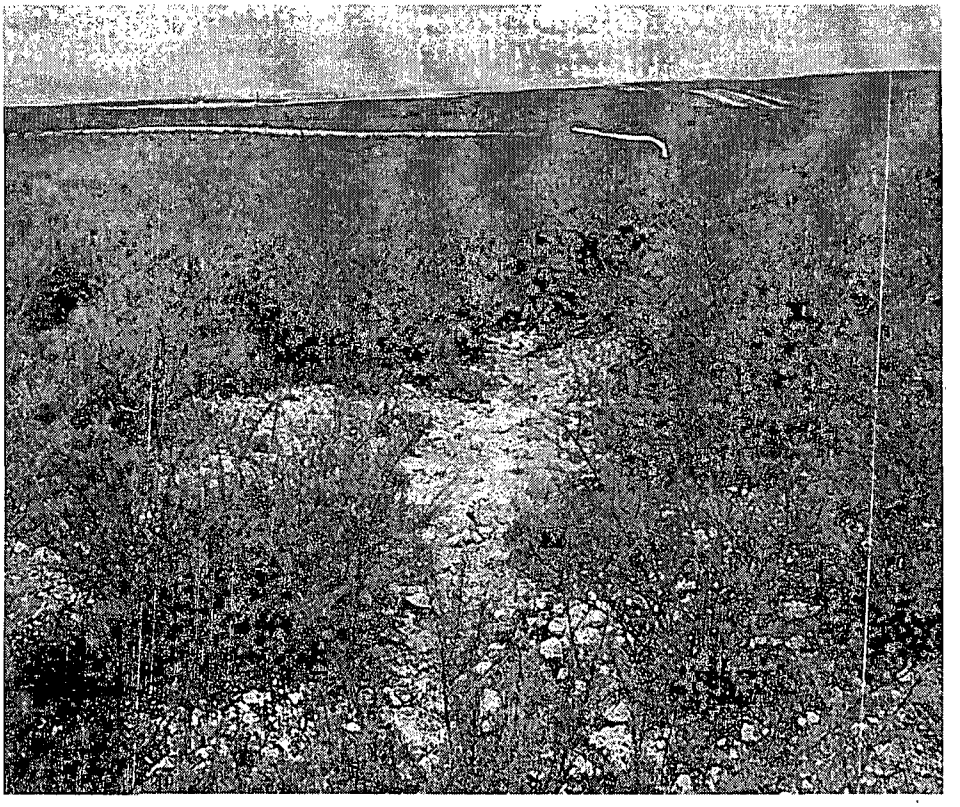
Erosional features mapped by the USGS as an "intermittent stream" northwest of the location are shown on figure 4 of the C-144 application (attached). Figure 4a shows this same representation in greater detail. Uphill from the "blue-line arroyo: an erosional feature drains to the west and joins the drainage that is mapped by the USGS. In theory, the channel upstream from the mapped arroyo could be a significant watercourse as it is the next-order tributary to this blue-line arroyo[1]. The image below shows this erosional feature at the closest point to the proposed solids burial pit/trench where two smaller gullies join to form a slightly larger channel. Does this feature exhibit a bed and a bank? Is it a watercourse?



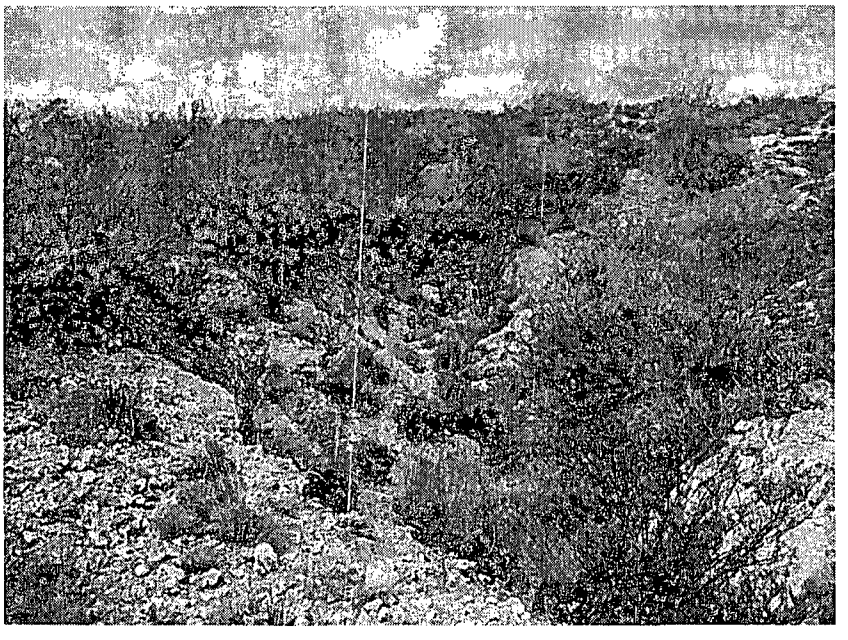
Some experts may say yes; Hicks Consultants believes the area in the photograph is not a true "next lower order tributary" of a blue-line arroyo. The location of the image above is 32 16 8.499, -103 58 50.62 and the measured ground distance from the northwest corner of the pit/trench footprint is 234 feet.

Below is a view west (down grade) showing the same erosional feature uphill from the junction of the two channels. From this perspective, we believe most professionals would not identify this feature as a "significant watercourse".

[1] "Significant watercourse" means a watercourse with a defined bed and bank either named or identified by a dashed blue line on a USGS 7.5 minute quadrangle map or the next lower order tributary with a defined bed and bank of such watercourse.



Northeast of the northeast corner of the proposed solids burial pit/trench is a more pronounced erosional feature that is located at 32 16 7.089, -103 58 46.140 (GPS coordinates from site visit). In the center of this photograph is a measuring wheel at the junction of two channels that theoretically would form the next lower order tributary of a north-draining, mapped blue-line arroyo on a USGS map that lies west of the 10H location. Figure 4a shows this gully north- northwest of the plotted well and the blue line. The purple circle shows the area of the map that mistakenly connects two different arroyos[2].



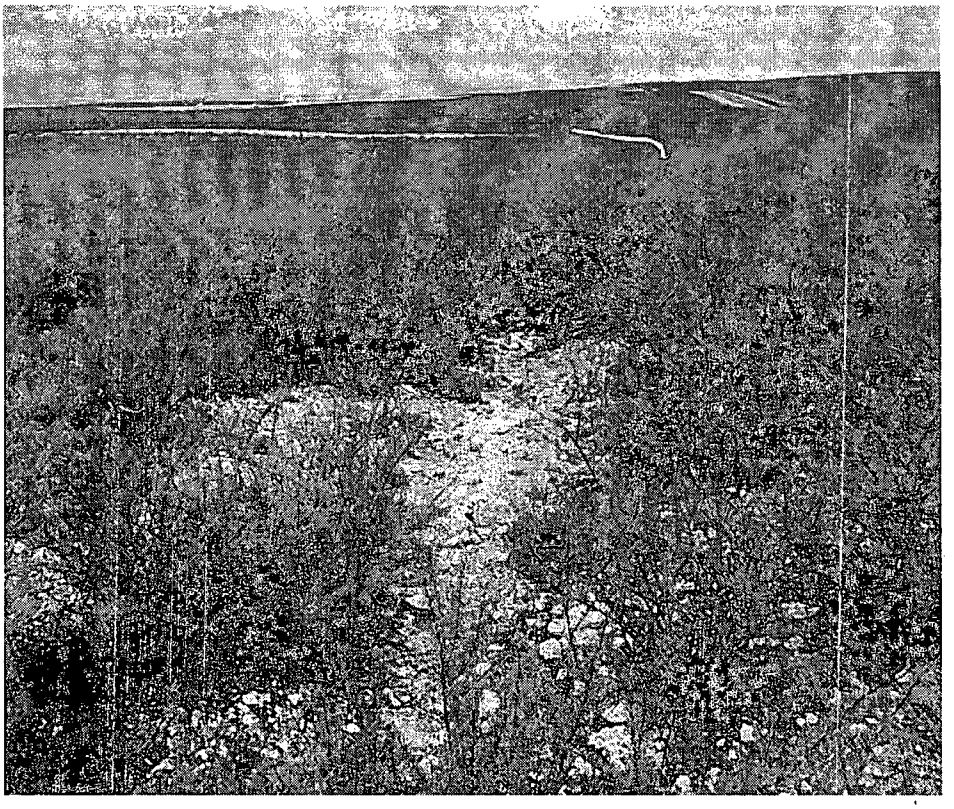
The Google Earth image below shows the location of the 10H well per the NAD 27 survey as converted to NAD 83. Also plotted on this image is the GPS location of the well (based upon a photograph of the cellar from 20 feet west). The

[2] The most recent USGS topographic map of the area of interest is in black and white. Therefore, we employ an overlay of watercourses from a US Hydrographic Survey to show the "blue line" watercourses. At this site, the data used in the Figures is not consistent with the black and white USGS map and connects two separate drainages.

Google Earth image shows the location of the measuring wheel in the photograph above. Also shown in this image is the channel of the blue-line arroyo to the west of the 10H location (blue dashed line just east of channel). Note that the trace of the arroyo in the Google Earth image (and the location on the ground) does not exactly agree with the alignment mapped by the USGS.

Regardless of the location of various features on different images, the following on-the-ground facts are clear with respect to this closest channel:

1. A junction of two channels that may or may not be a significant watercourse exists 205-210 feet from the proposed solids burial pit/trench
2. Northeast and downhill from the photograph, the channel effectively ends in a maze of brush where the topographic gradient lessens.
3. Significant watercourse or not, the channel observed in the photograph and plotted in the Google Earth image could convey any fluids released from the proposed pit/trench more quickly than a flat area with no such channels.
4. The distance from the proposed pit/trench to this channel that lies northeast of the well is more than 200 feet.
5. The distance from the pit/trench to the channel northwest of the well is about 230 feet.



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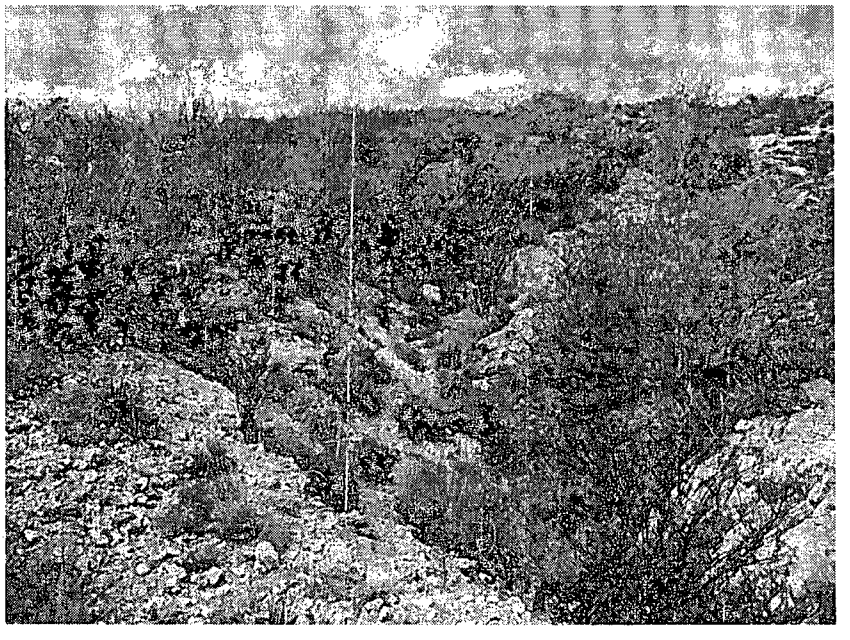

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N
W E
S

0 500
Feet

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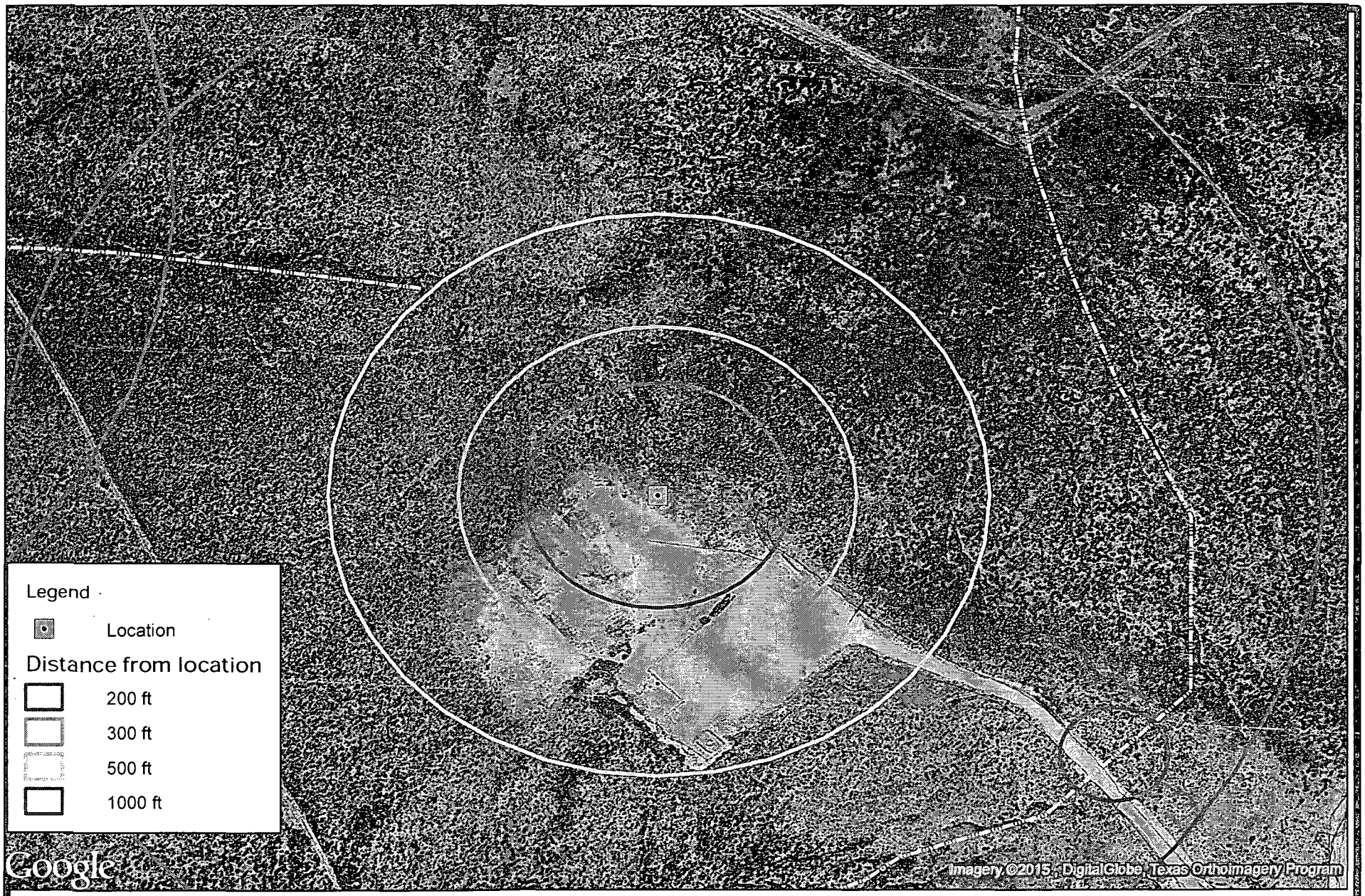
Nearby Structures and Surface Water	Figure 4
Oxy USA - Cypress Federal Wells	June 2015



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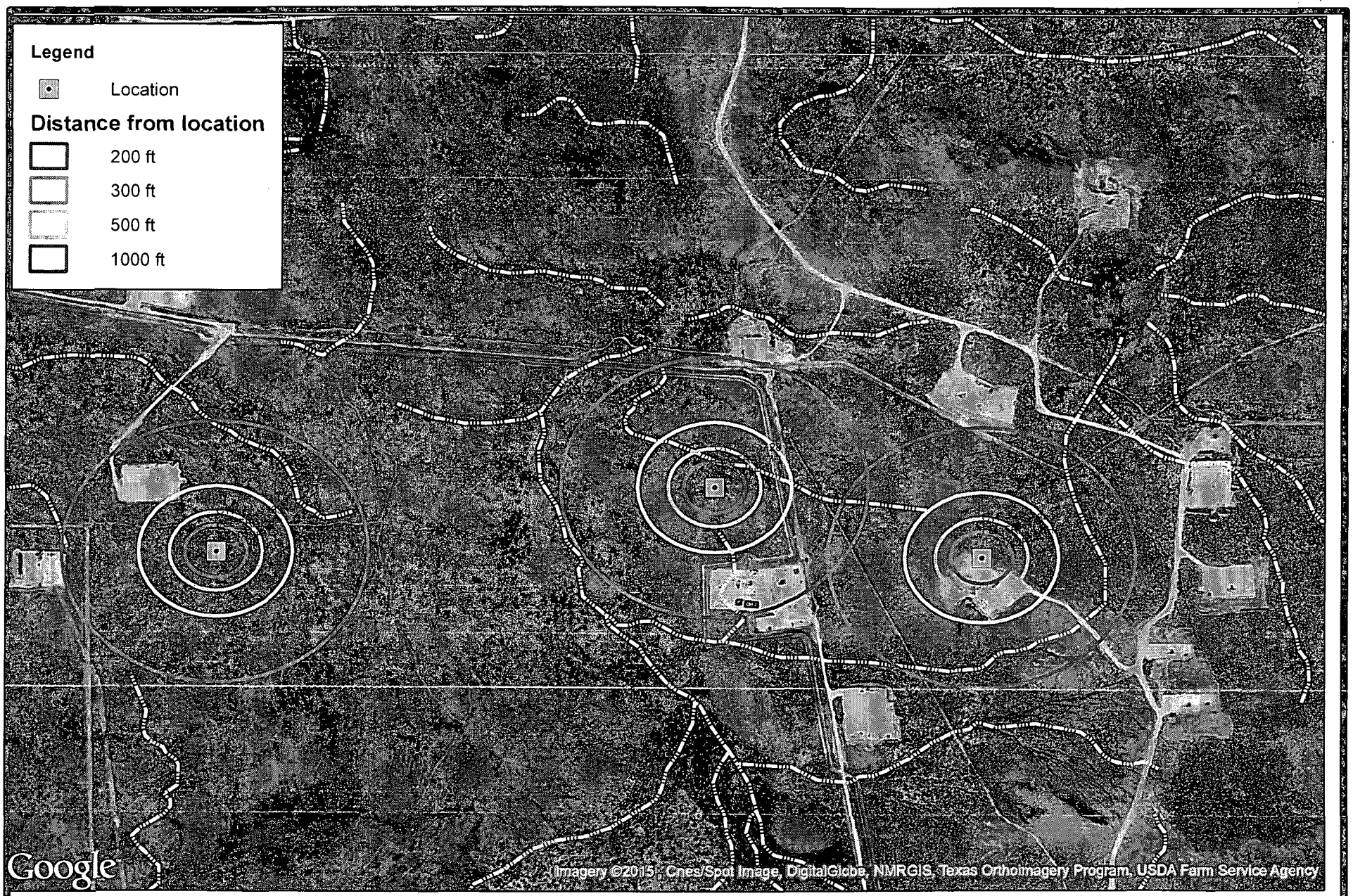
0 300 Feet

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Nearby Structures and Surface Water	Figure 4a
	Oxy USA - Cypress Federal Wells	June 2015



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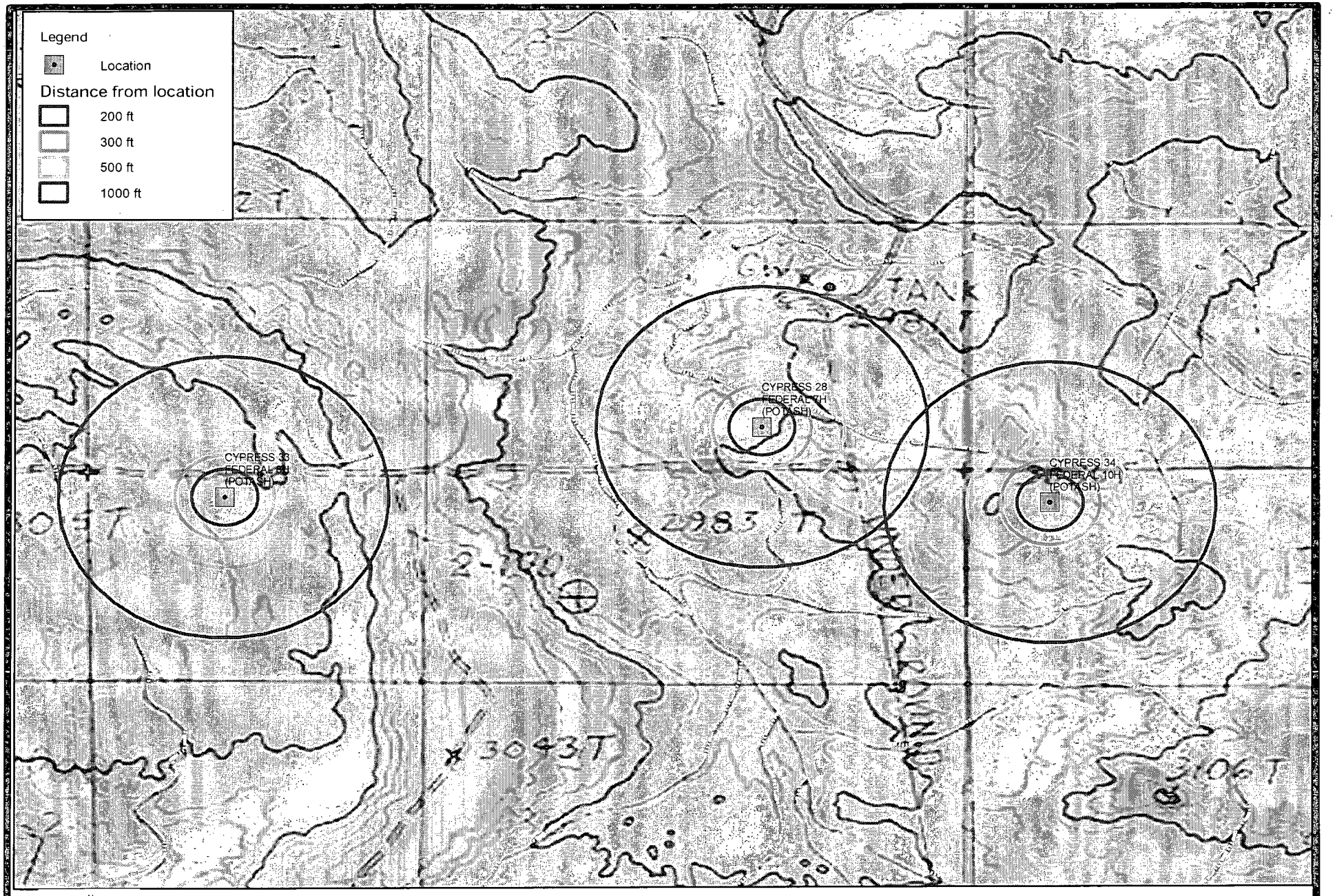
R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Nearby Structures and Surface Water	Figure 4
	Oxy USA - Cypress Federal Wells	June 2015



R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Surface Water and Topography	Figure 3
	Oxy USA - Cypress Federal Wells	June 2015

Site Specific Information Figures

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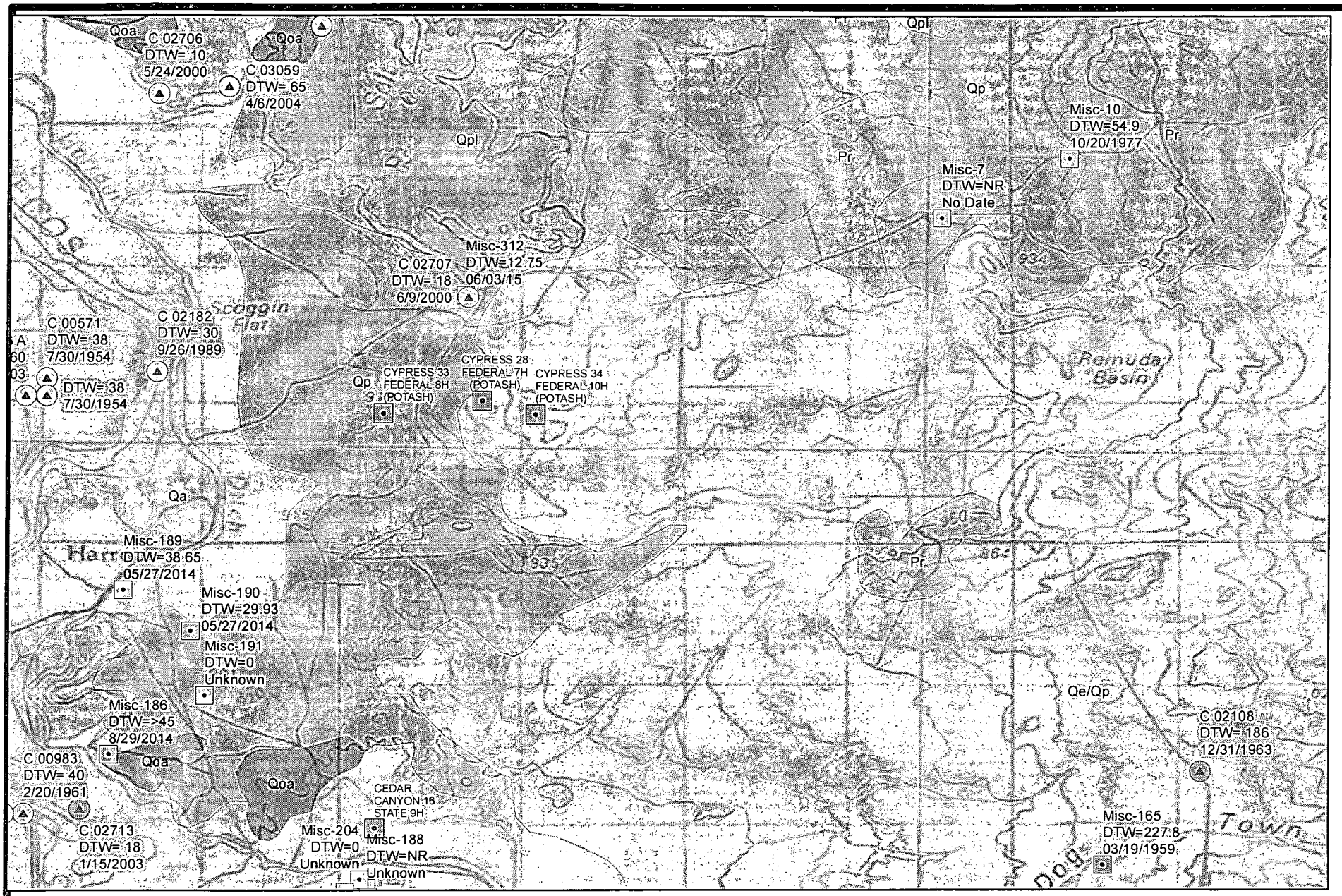

N
W E
S

0 1 Miles

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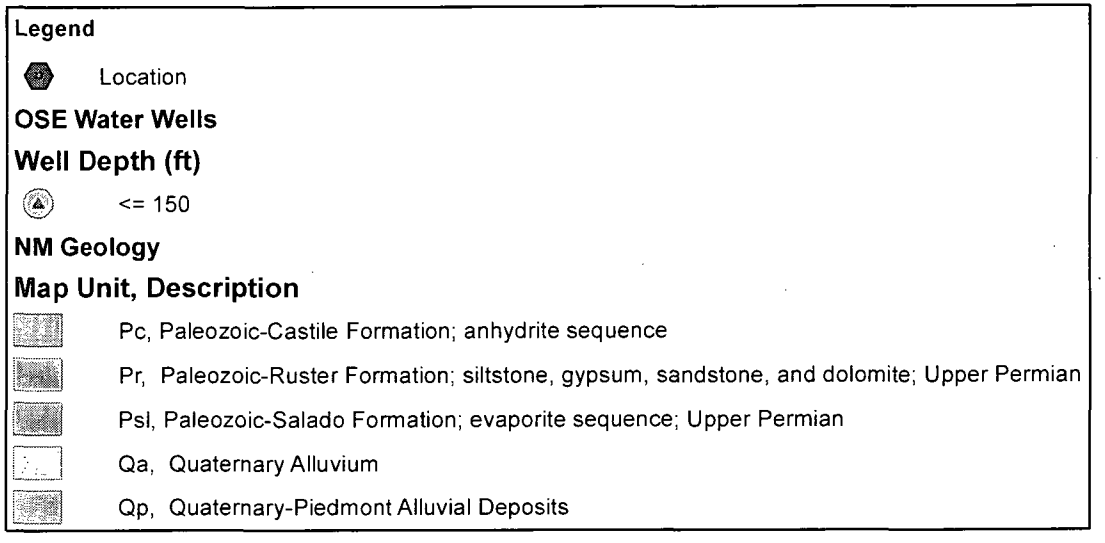
Depth to Groundwater and Geology

Figure 1

Oxy USA - Cypress Federal Wells

June 2015



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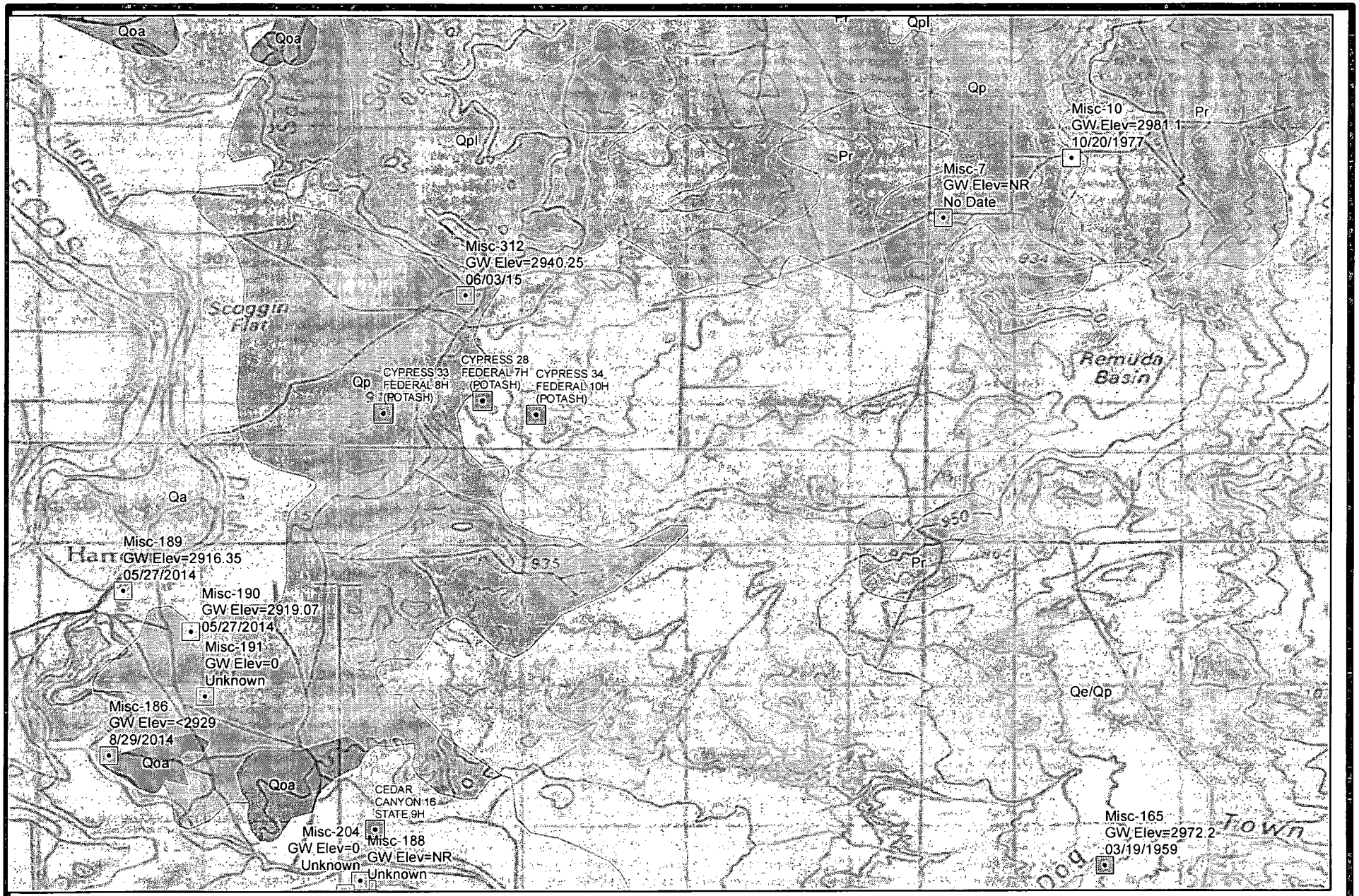
Legend
Depth To Water and Geology

Figure 1
Legend



N
W E
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Groundwater Elevations	Figure 2
Oxy USA - Cypress Federal Wells	June 2015

Legend

Location

Potentiometric Surface (ft msl)

Isocontour

USGS Gauging Station (GW Elev, Date)

Aquifer Code, Well Status

Alluvium/Bolsom

Castile Formation, Water level was affected recently by pumping at a nearby site that taps the same aquifer.

Rustler

Misc. Water Wells (GW Elev, Date)

Well Depth

No Data

151 - 350

OSE Water Wells (GW Elev, Date)

Well Depth (ft)

<= 150

151 - 350

NM Geology

Map Unit, Description

Pc, Paleozoic-Castile Formation; anhydrite sequence

Pr, Paleozoic-Ruster Formation; siltstone, gypsum, sandstone, and dolomite; Upper Permian

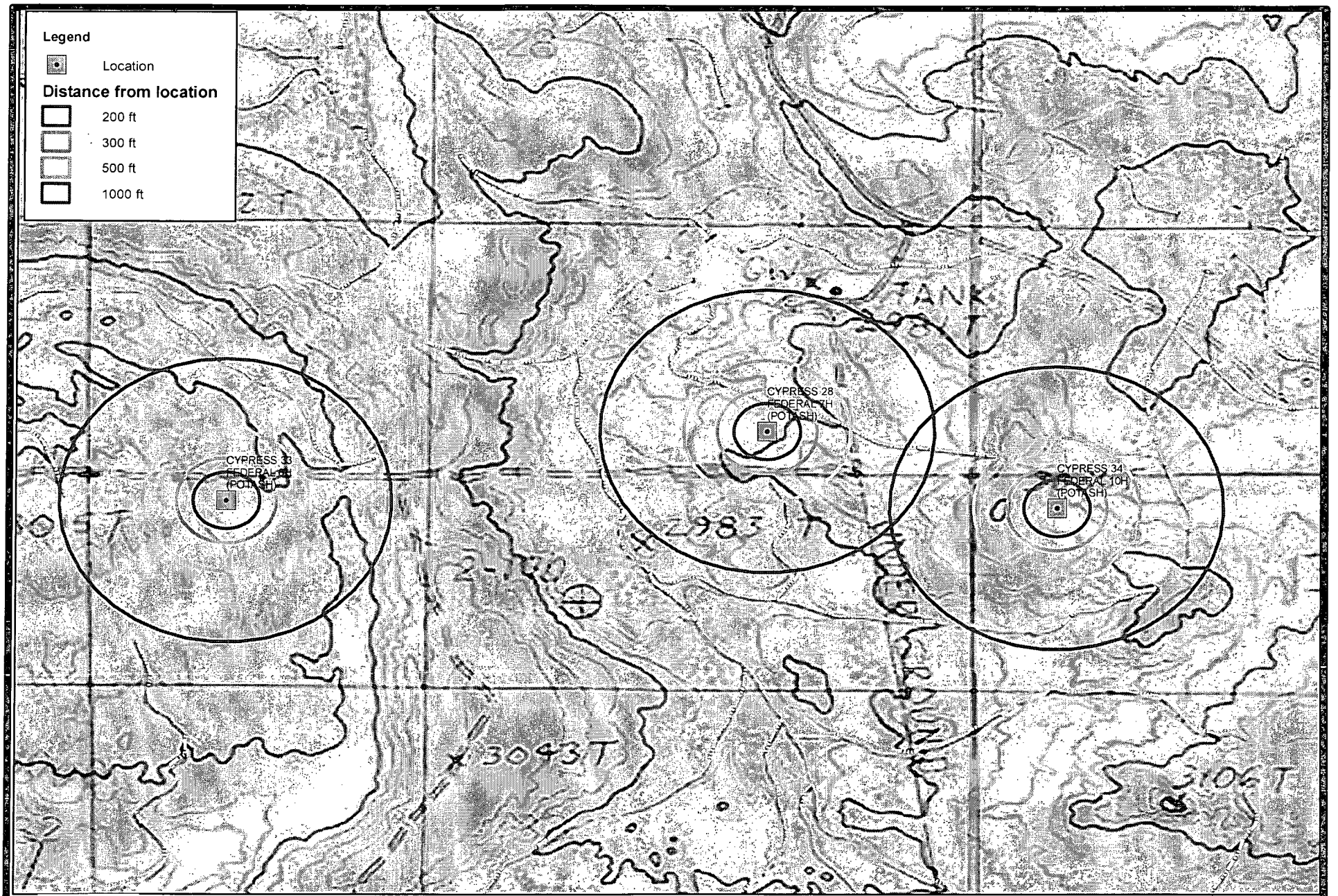
Psl, Paleozoic-Salado Formation; evaporite sequence; Upper Permian

Qa, Quaternary Alluvium

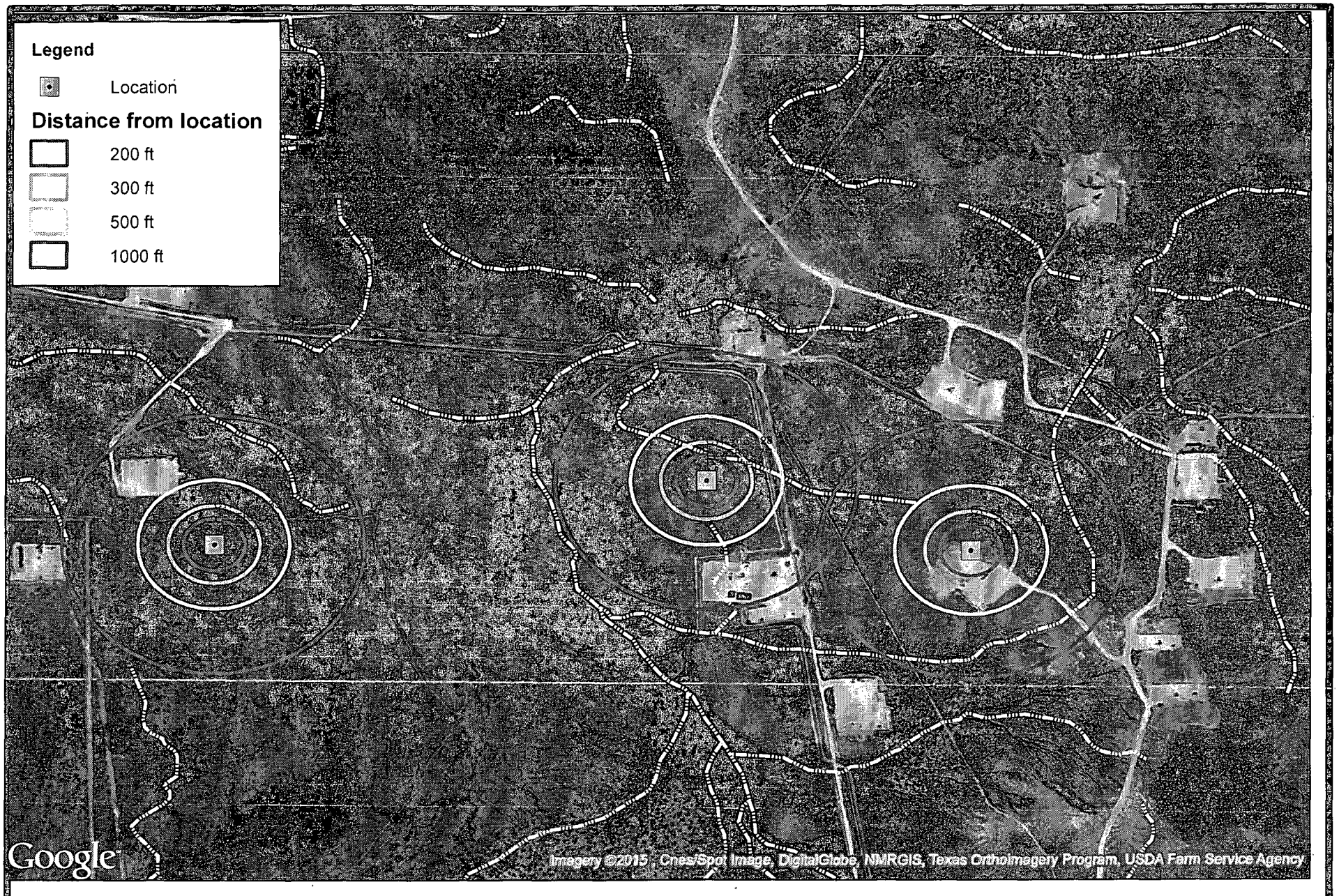
Qoa, Quaternary-Older Alluvial

Qp, Quaternary-Piedmont Alluvial

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104	Potentiometric Surface and Groundwater Elevation at Nearby Water Wells	Figure 2 Legend



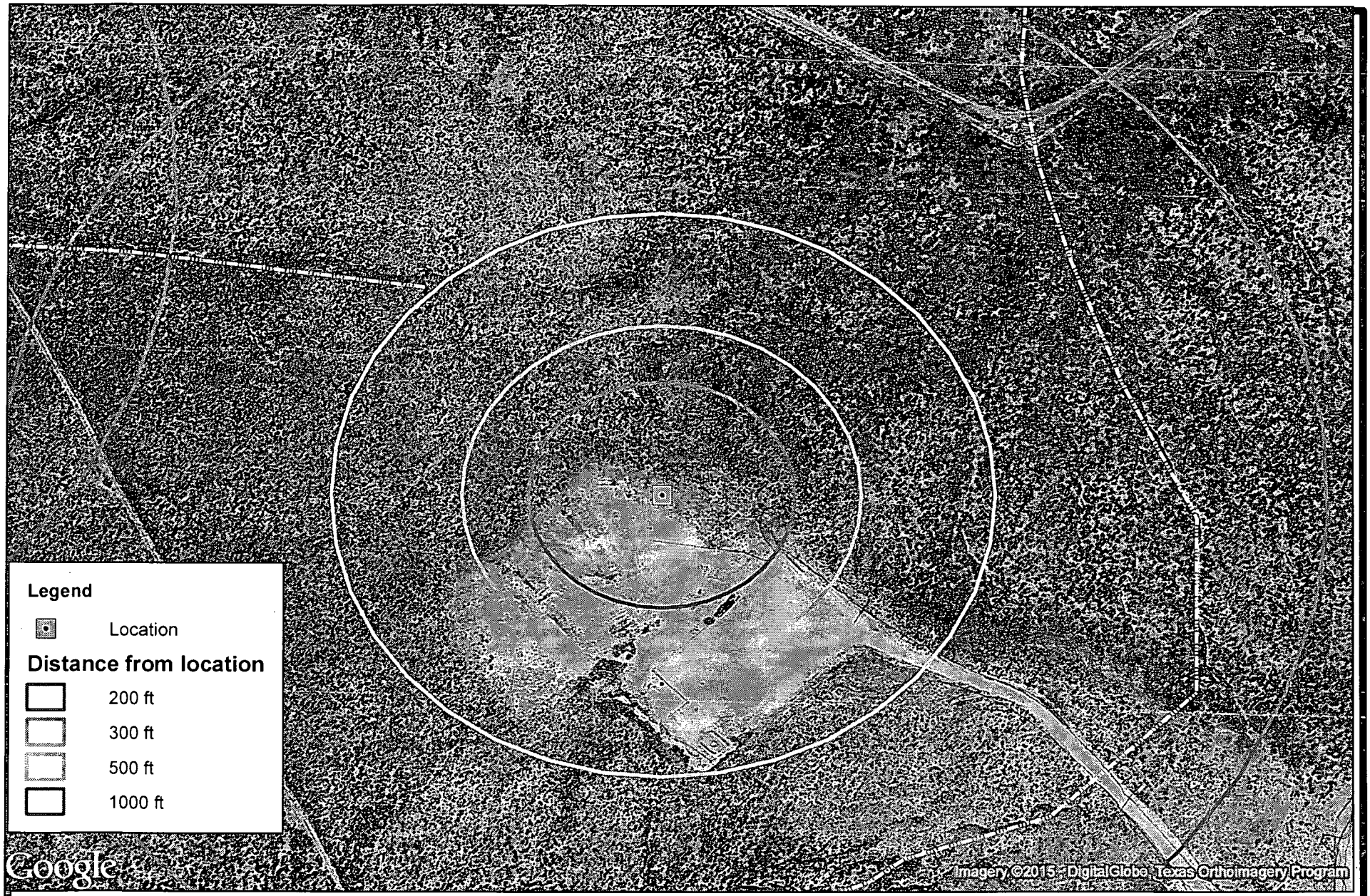
R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Surface Water and Topography	Figure 3
	Oxy USA - Cypress Federal Wells	June 2015



N
W E
S

0 500
Feet

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Nearby Structures and Surface Water	Figure 4
	Oxy USA - Cypress Federal Wells	June 2015



N
W E
S

0 300
Feet

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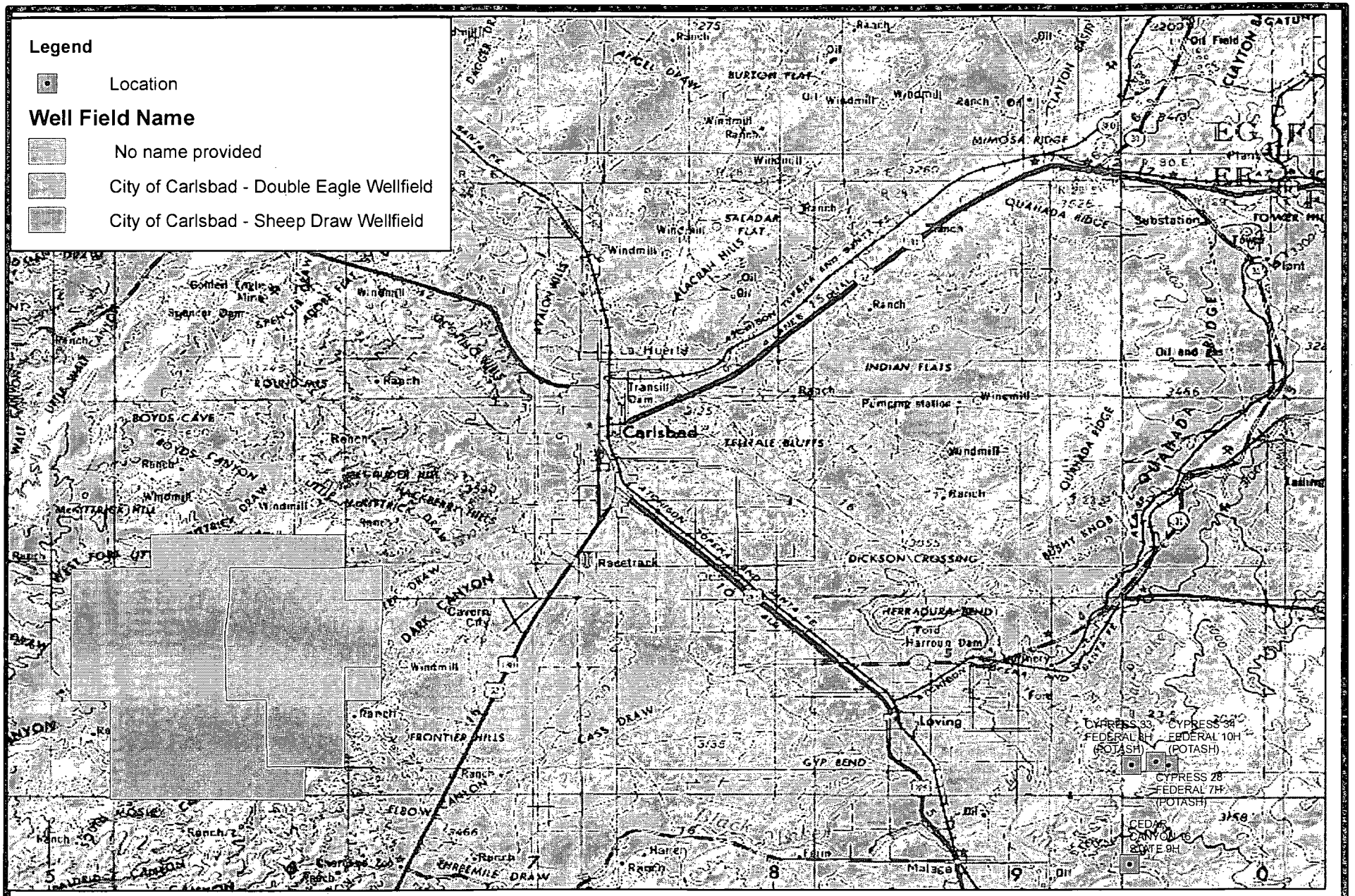
Albuquerque, NM 87104
Ph: 505.266.5004

Nearby Structures and Surface Water

Figure 4a

Oxy USA - Cypress Federal Wells

June 2015



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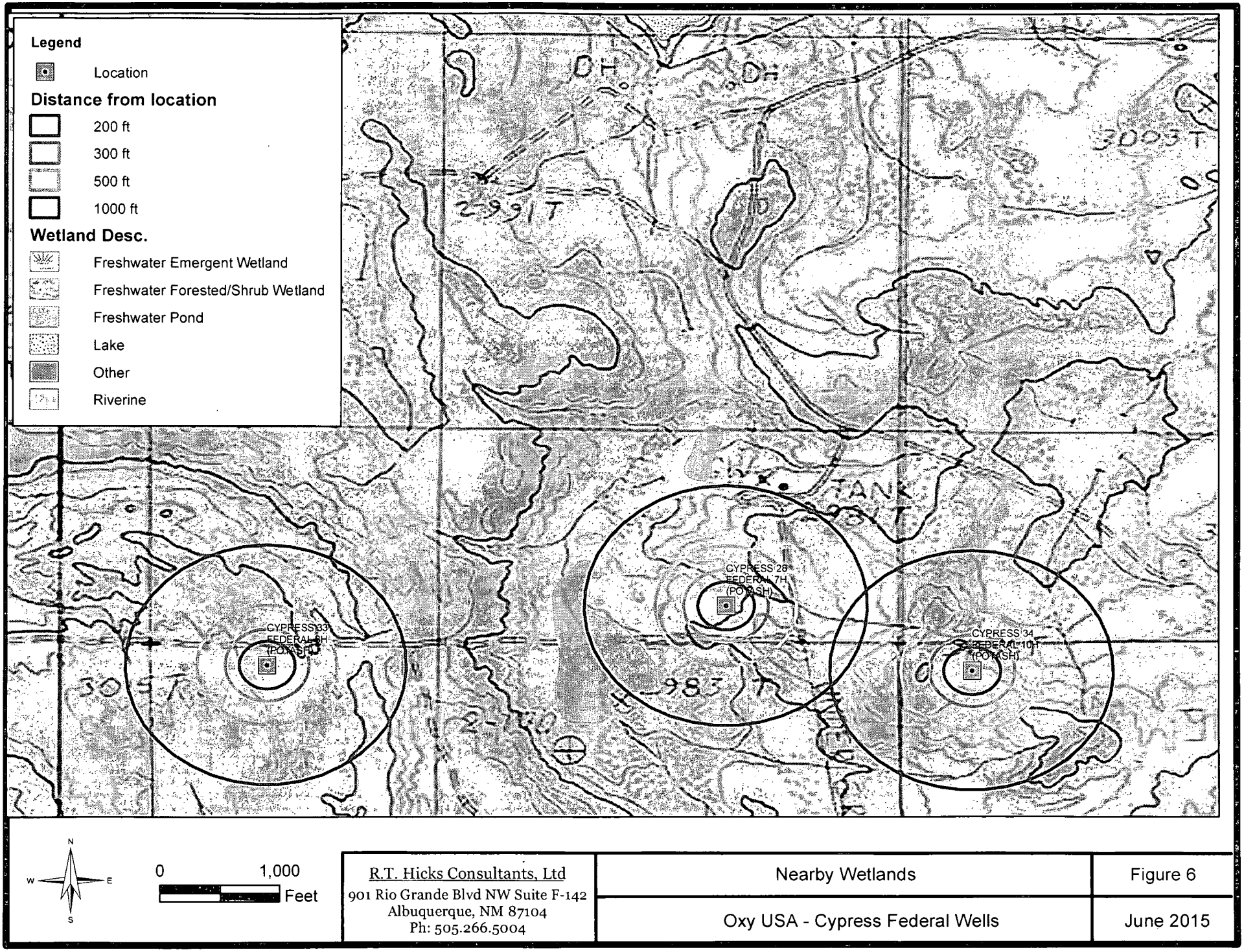
Albuquerque, NM 87104
Ph: 505.266.5004

Nearby Municipalities and Well Fields

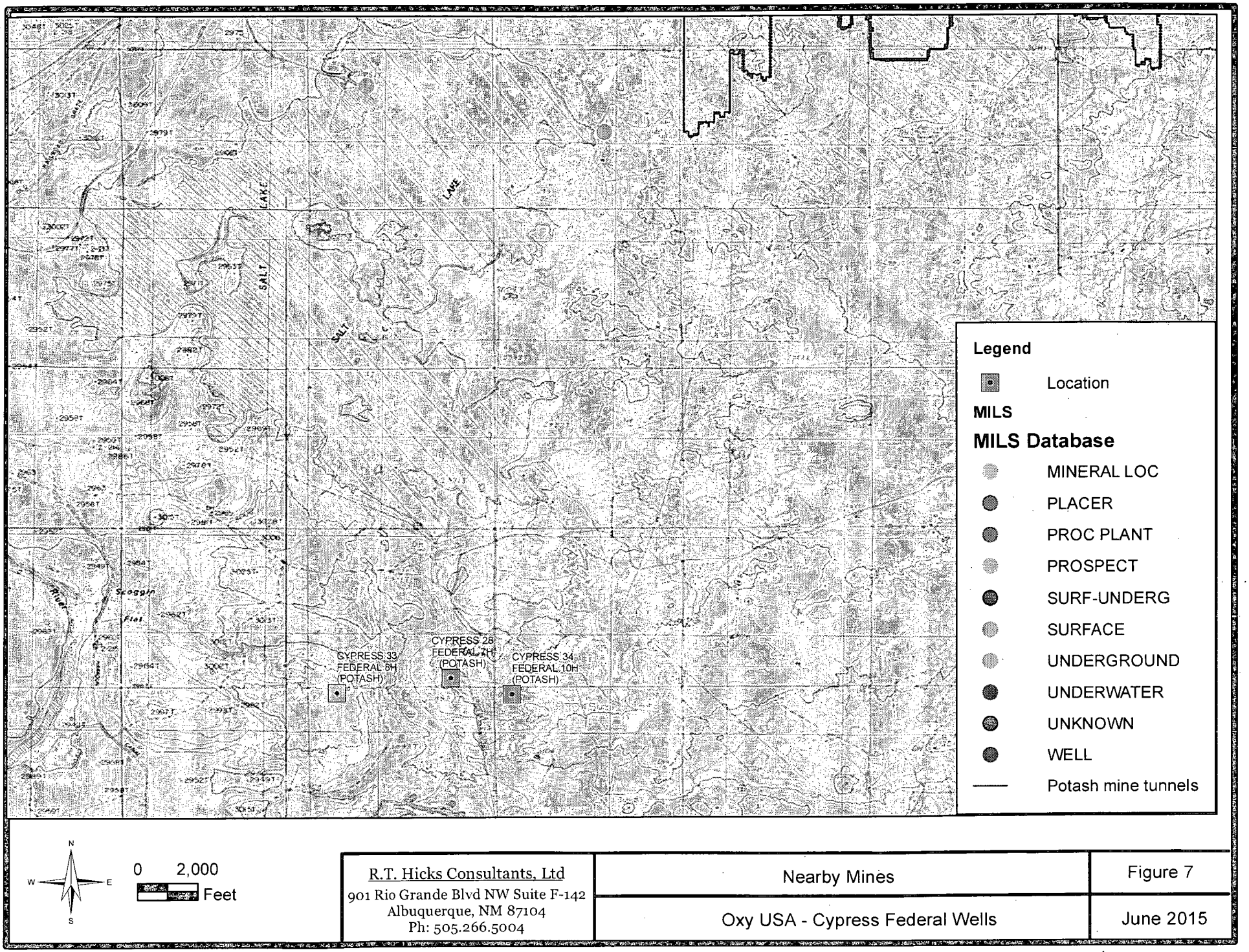
Figure 5

Oxy USA - Cypress Federal Wells

June 2015



R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Nearby Wetlands	Figure 6
	Oxy USA - Cypress Federal Wells	June 2015



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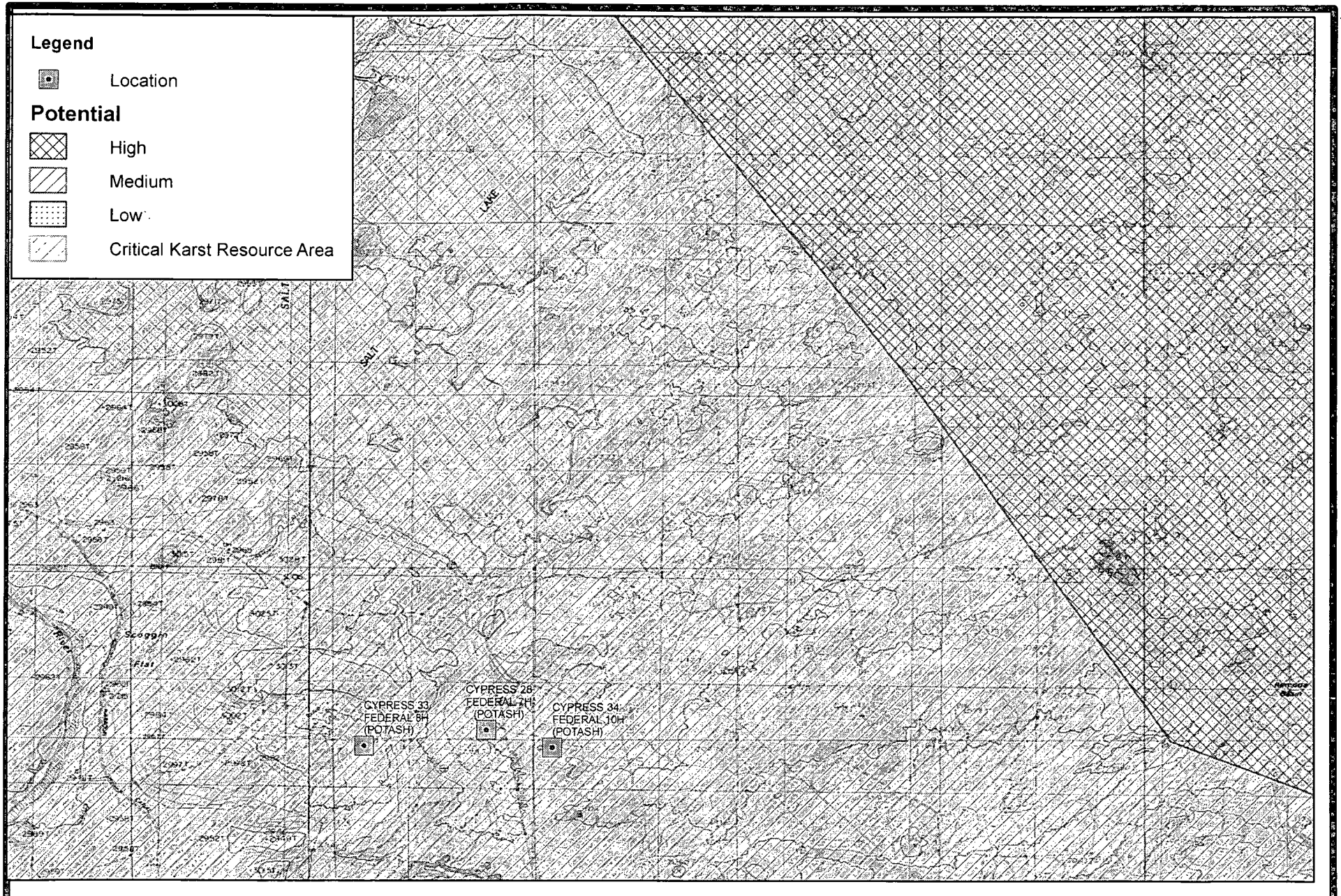
Ph: 505.266.5004

Nearby Mines

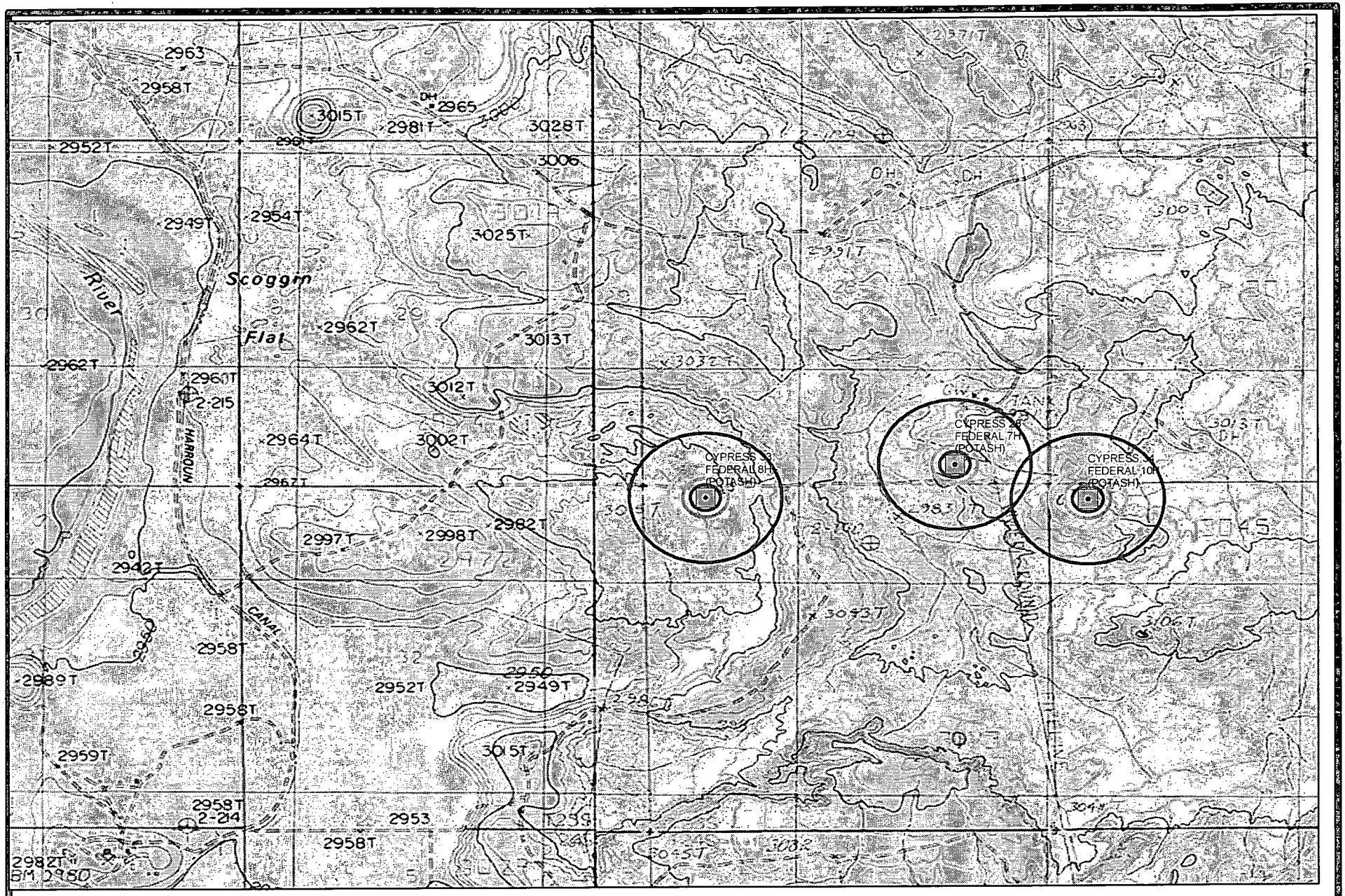
Figure 7

Oxy USA - Cypress Federal Wells

June 2015



R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Karst Potential	Figure 8
	Oxy USA - Cypress Federal Wells	June 2015



R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	FEMA Flood Map	Figure 9
	Oxy USA - Cypress Federal Wells	June 2015

Site Specific Information Plates

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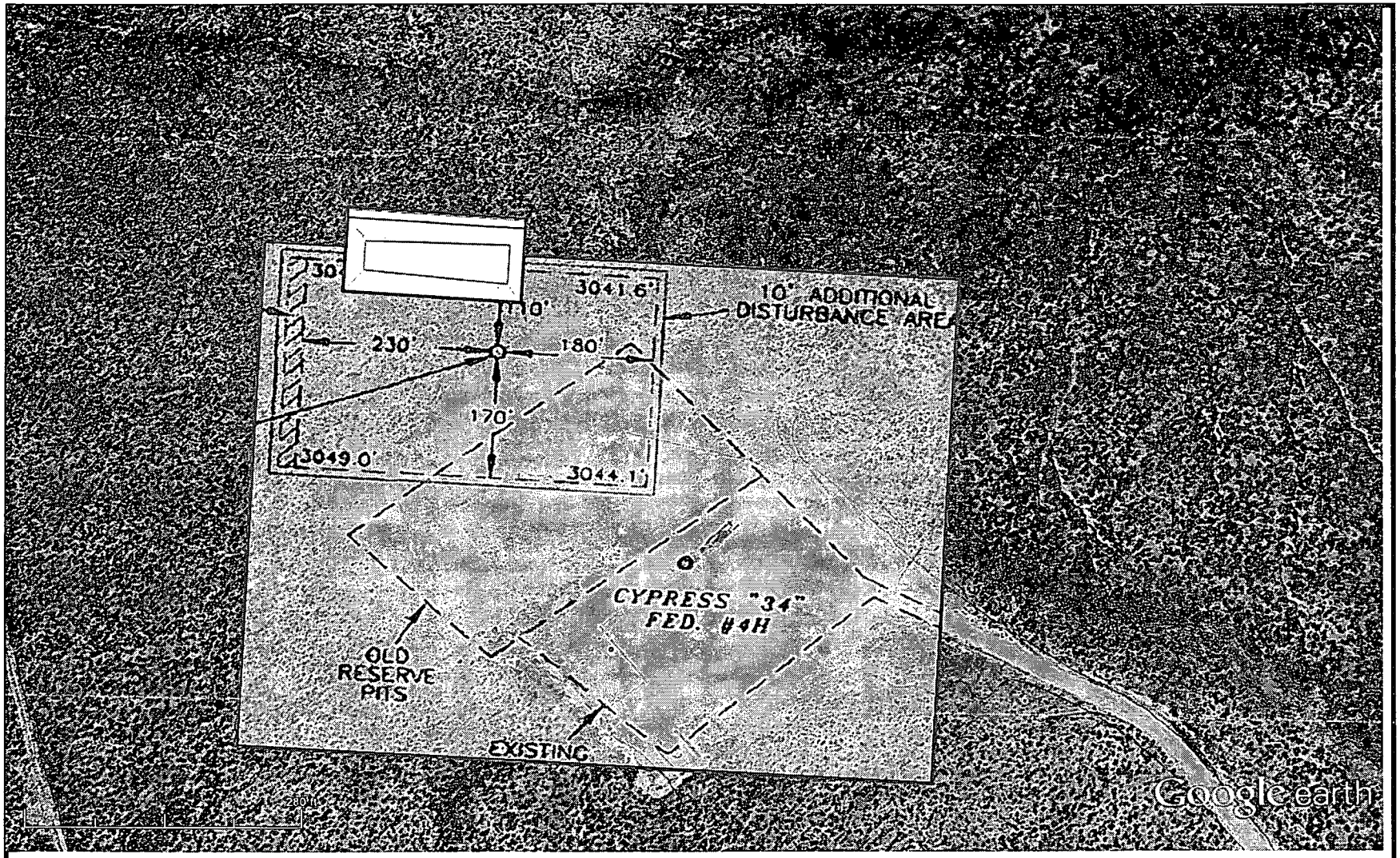
901 Rio Grande Blvd. NW, Suite F-142
Albuquerque, NM 87104



R.T. Hicks Consultants 901 Rio Grande Blvd. NW Suite F-142 Albuquerque, N. M. 87104	**Drawing of Burial Trenh** **(overlay of pad locations approximate)**	**Plate 2**
	Oxy - Cypress 34 Fed 10H	**July 2015**

Generic Plans for Temporary Pits/Burial Trenches

R.T. Hicks Consultants, Ltd.
901 Rio Grande Blvd. NW, Suite F-142
Albuquerque, NM 87104

Burial Trench Design/Construction Plan

Plates 1 and 2 show the design of the temporary pit/burial trench proposed for this project. Field conditions and the drilling rig layout will determine the final configuration of the pit/burial trench, which will consist of single cell for the burial of drilling solids derived from a closed-loop system.

The operator may install a system that can drain water entrained in the drilling waste of the drilling pit/burial trench. The drainage system may be installed in the entire cell. As described in the closure plan, this system of fabric-wrapped perforated pipe and drainage mats lie on the bottom of the pit/burial trench over the liner. The system will drain to the lowest corner of pit/burial trench where a standpipe rises from the depression to the top of the berm. The drainage system can remove water to an above-ground tank or directly to a truck for re-use or disposal.

The temporary storage of fluids, fluid reuse or fluid disposal will be conducted in a manner approved by division rules that prevents the contamination of fresh water and protects public health and the environment.

Although unlikely, for any temporary storage of fluids derived from the drilling pit/burial trench and placed in an above-ground tank, the following will apply:

1. Construction, operation and maintenance of the temporary storage tank(s) will adhere to all applicable NMOCD Rules including but not limited to:
    a. Safety stipulations
    b. Protection from hydrogen sulfide mandates
    c. Signage and identification requirements
    d. Secondary containment requirements for temporary tanks
    e. Applicable netting requirements
2. Any cleaning of the temporary tank(s) will adhere to NMOCD Rules relating to tank cleaning.
3. Transportation of water or drilling fluids derived from the drilling pit/burial trench will adhere to all applicable NMOCD Rules relating to transportation.
4. Storage of water or drilling fluids in temporary above-ground tanks will also adhere to all applicable Federal mandates.

During final closure of the pit/burial trench, the tanks and any secondary containment system will be removed from the location and the area beneath the tank inspected for any leakage. If any leakage is suspected, the operator will sample the soil beneath the tanks and report any release pursuant to NMOCD Rules.

Construction/Design Plan of Temporary Pit/burial trench

Stockpile Topsoil

Prior to constructing the pit/burial trench the qualified contractor will strip and stockpile any topsoil for use as the final cover or fill at the time of closure.

Signage

The operator will post an upright sign in a conspicuous place in compliance with 19.15.16.8

The operator will direct the liner installation contractor to:

1. minimize liner seams and orient them up and down, not across a slope
2. use factory welded seams where possible
3. overlap liners four to six inches and orient seams parallel to the line of maximum slope, i.e., oriented along, not across, the slope, prior to any field seaming
4. minimize the number of welded field seams in comers and irregularly shaped areas
5. utilize only qualified personnel to weld field seams
6. avoid excessive stress-strain on the liner
7. place geotextile under the liner where needed to reduce localized stress-strain or protuberances that may otherwise compromise the liner's integrity
8. anchor the edges of all liners in the bottom of a compacted earth-filled trench that is at least 18 inches deep
9. place additional material (liner, felt, etc.) to ensure that the liner is protected from any fluid force or mechanical damage at any point of discharge into or suction from the lined temporary pit/burial trench.

A berm or ditch will surround the temporary pit/burial trench to prevent run-on of surface water. During drilling operations, the operator may elect to remove run-on protection on the pit/burial trench edge adjacent to the drilling or workover rig provided that the pit/burial trench is being used to collect liquids escaping from the drilling or workover rig and this additional fluid will not cause a breach of the temporary pit/burial trench.

The temporary pit/burial trench will not be used to vent or flare gas and the volume of the temporary drilling pit/burial trench, including freeboard, will not exceed 10 acre-feet.

Temporary Pit/Burial Trench O&M Plan

The Pit Rule does not require an O&M plan for a burial trench. The plan described below relates to OCD's approval of a variance that would allow some fluids to be temporarily placed in the trench. Specifically

1. **The trench will not store liquids for more than 72 hours.** Liquids may be discharged into the pit from the above-ground steel pits from time to time. This discharge can occur when the mud system changes from fresh water to brine and from brine to the mud system(s) proposed for below the salt.
2. During this 72 hour period. **fluid level in the trench will be 4 feet below the top of the liner** (3 feet below the elevation of the location).
3. Much of the material removed during excavation of the trench will be used to **build a 1-2 foot high berm around the north and east edges of the location**. The purpose of this berm is to direct surface runoff from the location to the southeast portion of the location and away from the nearest drainages/gullies north of the pit.

The operator will maintain and operate the pit/burial trench in accordance with the following plan to contain liquids and solids and maintain the integrity of the liner to prevent contamination of fresh water and protect public health and the environment.

If feasible, the operator will recycle, reuse or reclaim all drilling fluids in the temporary pit/burial trench in a manner approved by division rules that prevents the contamination of fresh water and protects public health and the environment. Re-use of drilling fluids and workover fluids (stimulation flow-back) for drilling and stimulation of subsequent wells is anticipated. If re-use is not possible, fluids will be sent to disposal at a division-approved facility.

The operator will not discharge into or store any hazardous waste in the pit/burial trench.

If the pit/burial trench develops a leak or if any penetration of the pit/burial trench liner occurs above the liquid's surface, then the operator will repair the damage or initiate replacement of the liner within 48 hours of discovery or will seek a variance from the division district office within this time period.

If the pit/burial trench develops a leak or if any penetration of the pit/burial trench liner occurs below the liquid's surface, then the operator will remove all liquid above the damage or leak line within 48 hours of discovery. The operator will also notify the district division office (19.15.29 NMAC) within this same 48 hours of the discovery and repair the damage or replace the pit/burial trench liner.

The operator will ensure that the drilling contractor installs and uses a header, diverter or other hardware that prevents damage to the liner by erosion, fluid jets or impact from installation and removal of hoses or pipes during injection or withdrawal of liquids.

During construction, the operator or qualified contractor will install diversion ditches and berms around the pit/burial trench as necessary to prevent the collection of surface water run-on. As

outlined in the Construction and Design Plan, during drilling operations, the edge of the temporary pit/burial trench adjacent to the drilling or workover rig may not have run-on protection if the operator is using the temporary pit/burial trench to collect liquids escaping from the drilling or workover rig and run-on will not result in a breach of the temporary pit/burial trench.

The operator will maintain on site an oil absorbent boom to contain and remove oil from the pit/burial trench's surface.

The operator will only discharge fluids or mineral solids (including cement) generated or used during the drilling, completion, or workover processes into the pit/burial trench.

The operator will maintain the temporary pit/burial trench free of miscellaneous solid waste or debris. Immediately after cessation of drilling or a workover operation, the operator will remove any visible or measurable layer of oil from the surface of the pit/burial trench.

The operator will maintain at least two feet of freeboard for the temporary pit/burial trench, except under extenuating circumstances, which will be noted on the pit/burial trench inspection log as described below.

The operator will inspect the temporary pit/burial trench containing drilling fluids daily while the drilling rig or workover rig is on site. After the rigs have left the site, the operator will inspect the pit/burial trench weekly as long as liquids are present in the pit/burial trench. The operator will maintain a log of the inspections. The operator will make the log available to the division district office upon request.

The operator will note the date of this release upon Form C-105 or C-103 upon well or workover completion. The operator may request an extension up to two months from the division district office as long as this additional time does not exceed the temporary pit/burial trench life span (Subsection R of 19.15.17.7 NMAC).

The operator will direct the liner installation contractor to:

1. minimize liner seams and orient them up and down, not across a slope
2. use factory welded seams where possible
3. overlap liners four to six inches and orient seams parallel to the line of maximum slope, i.e., oriented along, not across, the slope, prior to any field seaming
4. minimize the number of welded field seams in comers and irregularly shaped areas
5. utilize only qualified personnel to weld field seams
6. avoid excessive stress-strain on the liner
7. place geotextile under the liner where needed to reduce localized stress-strain or protuberances that may otherwise compromise the liner's integrity
8. anchor the edges of all liners in the bottom of a compacted earth-filled trench that is at least 18 inches deep
9. place additional material (liner, felt, etc.) to ensure that the liner is protected from any fluid force or mechanical damage at any point of discharge into or suction from the lined temporary pit/burial trench.

A berm or ditch will surround the temporary pit/burial trench to prevent run-on of surface water. During drilling operations, the operator may elect to remove run-on protection on the pit/burial trench edge adjacent to the drilling or workover rig provided that the pit/burial trench is being used to collect liquids escaping from the drilling or workover rig and this additional fluid will not cause a breach of the temporary pit/burial trench.

The temporary pit/burial trench will not be used to vent or flare gas and the volume of the temporary drilling pit/burial trench, including freeboard, will not exceed 10 acre-feet.

Burial Trench Closure Plan

The wastes in the burial trench are destined for burial at the location proposed, which is in the same unit where the drilling wastes are generated.

The operator will not begin closure operations without approval of the closure plan submitted with the permit application.

Siting Criteria Compliance Demonstration
Compliance with siting criteria is described in the site-specific information appended to the C-144.

Proof of Surface Owner Notice
The application package was transmitted to the surface landowner via email, which serves as notification that the operator intends on-site burial of solids.

Construction/Design Plan of Burial Trench
The design and construction protocols for the burial trench are provided in the design and construction plan and in Plate 1.

General Protocols and Procedures

- All free liquids from the burial trench will be recycled or disposed in a manner consistent with OCD Rules.
- No free fluids (e.g. precipitation or minimal drilling fluids) will remain in the burial trench for more than 72 hours.
- The residual drilling mud and cuttings will be stabilized to a capacity sufficient to support the 4-foot thick soil cover prior to placement into the trench. This will be accomplished by drying via evaporation or will adding dry material to the top of the solids to facilitate stabilization.
- The solids will not be mixed at a ratio greater than 1 part burial trench solids to 3 parts dry earth material to achieve stabilization.
- If precipitation creates wet solids in the trench, the burial trench will not be closed until the stabilized solids can support the soil cover.
- The soil cover will be placed such that there exists at least 4-feet of cover between the liner cap and natural grade (not the surface of the drilling or production pad).

Waste Material Sampling Plan
Prior to closure, a five-point (minimum) composite sample of the solids derived from each well will be tested in a laboratory to demonstrate that the stabilized material will not exceed the contaminant concentrations listed in Table II of 19.15.17.13 NMAC after being mixed in a ratio of 3:1 with the earth material to be used for stabilization of the residual cuttings and mud. The composite samples of solids will be obtained from the drying pad prior to any mixing with dry earth material. A sample of clean earth material that may be mixed with the drilling solids will be obtained for laboratory testing. When the trench will no longer accept solids (due to the time limits in the Rule or because the trench is at capacity, the laboratory results will be mathematically mixed (3 parts clean mixing dirt to the average concentration of the drilling waste samples) to determine compliance with the standards of Table II.

outlined in the Construction and Design Plan, during drilling operations, the edge of the temporary pit/burial trench adjacent to the drilling or workover rig may not have run-on protection if the operator is using the temporary pit/burial trench to collect liquids escaping from the drilling or workover rig and run-on will not result in a breach of the temporary pit/burial trench.

The operator will maintain on site an oil absorbent boom to contain and remove oil from the pit/burial trench's surface.

The operator will only discharge fluids or mineral solids (including cement) generated or used during the drilling, completion, or workover processes into the pit/burial trench.

The operator will maintain the temporary pit/burial trench free of miscellaneous solid waste or debris. Immediately after cessation of drilling or a workover operation, the operator will remove any visible or measurable layer of oil from the surface of the pit/burial trench.

The operator will maintain at least two feet of freeboard for the temporary pit/burial trench, except under extenuating circumstances, which will be noted on the pit/burial trench inspection log as described below.

The operator will inspect the temporary pit/burial trench containing drilling fluids daily while the drilling rig or workover rig is on site. After the rigs have left the site, the operator will inspect the pit/burial trench weekly as long as liquids are present in the pit/burial trench. The operator will maintain a log of the inspections. The operator will make the log available to the division district office upon request.

The operator will note the date of this release upon Form C-105 or C-103 upon well or workover completion. The operator may request an extension up to two months from the division district office as long as this additional time does not exceed the temporary pit/burial trench life span (Subsection R of 19.15.17.7 NMAC).

If a concentration of a constituent within the material mixed at a ratio not exceeding 3:1 is higher than the concentration given in Table II, closure will proceed in accordance with Subsection C of 19.15.17.13 NMAC. If the concentration of a constituent in the drilling solids prior to mixing with earth material is less than the concentrations given in Table I of the Pit Rule, the operator may submit a variance request to allow closure pursuant to an alternative method.

In the event that on-site closure standards cannot be achieved, the operator will remove the solid burial trench contents and transfer to the following division-approved facility:

Disposal Facility Name: R360 Permit Number: NM 01-0006

Protocols and Procedures for Earthwork

Stabilization of the residual cuttings and mud is accomplished by allowing the solids to dry in the pit/trench and, if necessary, placing dry earth material over the solids. After stabilization the operator or qualified contractor will:

1. Fold the outer edges of the trench liner over the solids
2. Place a geomembrane cover over the sloping surface of the stabilized waste material. It will be placed in a manner so as to prevent infiltration of water and so that infiltrated water does not collect on the geomembrane cover after the upper soil cover has been placed.
3. Use a geomembrane cover made of 20-mil string reinforced LLDPE liner
4. Over the sloping, stabilized material and liner, place the **Soil Cover** of
    a. at least 3-feet of compacted, uncontaminated, non-waste containing earthen fill with chloride concentrations less than 600 mg/kg as analyzed by EPA Method 300.0.
    b. either the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater, over the 3-foot earth material.
    c. The stabilized material must lie 4-feet below natural grade (not 4-feet below the production/drilling pad surface)
5. Contour the cover to
    a. blend with the surrounding topography
    b. prevent erosion of the cover
    and
    c. prevent ponding over the cover.

Closure Notice

The operator will notify the surface owner by certified mail, return receipt requested, that the operator plans closure operations at least 72 hours, but not more than one week, prior to any closure operation. The notice will include the well names, API numbers, and location of the burial trench.

After approval for on-site burial, the operator shall notify the district office verbally and in writing at least 72 hours but not more than one week before any closure operation. Notice will include the operator's name and the location of the burial trench. The location will include unit letter, section number, township and range. If the location is associated with a well, then the well's name, number and API number will be included.

Should onsite burial be on private land, the operator will file a deed notice including exact location of the burial with the county clerk of the county where the onsite burial is located.

Closure Report

Within 60 days of closure completion, the operator will submit a

i. closure report on form C-144, with necessary attachments
ii. certification that all information in the report and attachments is correct, that the operator has complied with all applicable closure requirements and conditions specified in the approved closure plan
iii. a plat of the burial trench location on form C-l05 if
iv. the report will list the name, API # and location of the well(s) from which the solids originated

Unless the permit transmittal letter requests an alternative marker to comply with surface landowner specifications, the operator will place at the center of an onsite burial a steel marker that

- is not less than four inches in diameter
- is placed at the bottom of a three-foot deep hole (minimum) that is filled with cement to secure the marker
- is at least four feet above mean ground level
- permanently displays the operator name, lease name, well number, unit letter, section, township and range in welded or stamped legible letters/numbers

Timing of Closure

The operator will close the burial trench within 6 months from the date the first drilling rig was released from the first well using the burial trench. This date will be noted on form C-105 or C-103 filed with the division upon the well's completion (or re-completion in the case of a workover).

Reclamation and Re-vegetation Plan

In addition to the area of the on-site burial, the operator will reclaim the surface impacted by the burial trench, including access roads associated with the burial trench, to a safe and stable condition that blends with the surrounding undisturbed area including:

- Areas not reclaimed as described herein due to their use in production or drilling operations will be stabilized and maintained to minimize dust and erosion. This includes the area of the burial trench if a transmittal letter to OCD proposes an alternative to the re-vegetation or recontouring requirement with
    - a demonstration that the proposed alternative provides equal or better prevention of erosion, and protection of fresh water, public health and the environment
    - written documentation that the alternative is agreed upon by the surface owner.

As stated above, the soil cover for burial on-site

A. consists of a minimum of three feet of non-waste containing,

Appendix A

Site Inspection Photographs & Survey Information

R.T. Hicks Consultants, Ltd.
901 Rio Grande Blvd. NW, Suite F-142
Albuquerque, NM 87104

uncontaminated, earthen material with chloride concentrations less than 600 mg/kg (or background concentration) as analyzed by EPA Method 300.0 placed over the liner and stabilized solids

B. is capped by the background thickness of topsoil or 1-foot of suitable material to establish vegetation, whichever is greater
C. blends into surrounding topography
D. is graded to prevent ponding and to minimize erosion

For all areas disturbed by the closure process that will not be used for production operations or future drilling, the operator will:

I. Replace topsoils and subsoils to their original relative positions
II. Grade so as to achieve erosion control, long-term stability and preservation of surface water flow patterns
III. Reseed in the first favorable growing season following closure

Re-vegetation and reclamation plans imposed by the surface owner will be outlined in communications with the OCD.

The operator will notify the division when the surface grading work element of reclamation is complete.

The operator will notify the division when the site meets the surface owner's requirements or exhibits a uniform vegetative cover that reflects a life-form ratio of plus or minus fifty percent (50%) of pre-disturbance levels and a total percent plant cover of at least seventy percent (70%) of pre-disturbance levels, excluding noxious weeds.

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015- 43076	11520	Cedar Canyon Bone Spring

Property Code	Property Name	Well Number
304798	CYPRESS "34" FEDERAL	10H

OGRID No.	Operator Name	Elevation
16696	OXY USA INC.	3049.8'

Surface Location

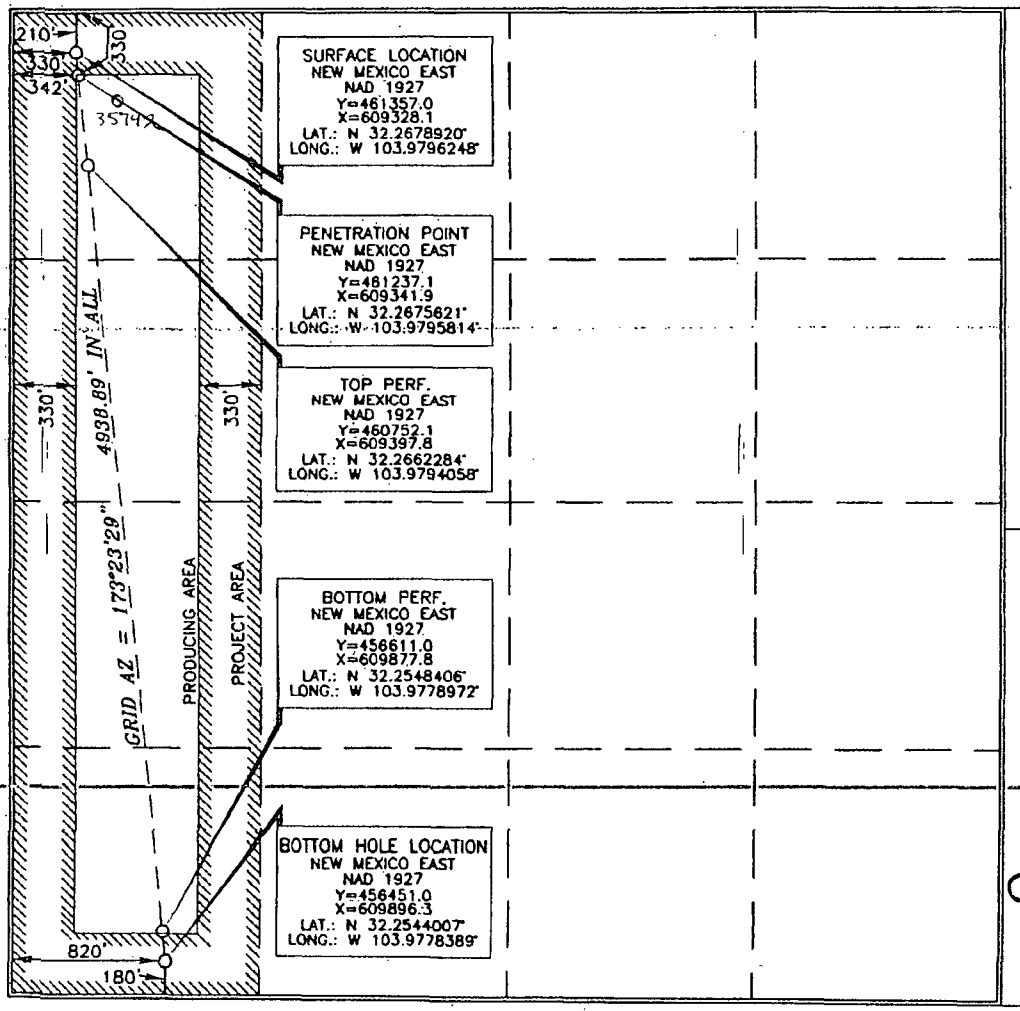
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	34	23 SOUTH	29 EAST, N.M.P.M.		210'	NORTH	330'	WEST	EDDY

Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	34	23 SOUTH	29 EAST, N.M.P.M.		180'	SOUTH	820'	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160	N		

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature — Date: 7/18/14

David Stewart - Sr. Reg Adv.
Printed Name

david_stewart@oxy.com
E-mail Address

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

NOVEMBER 15, 2013
Date of Survey

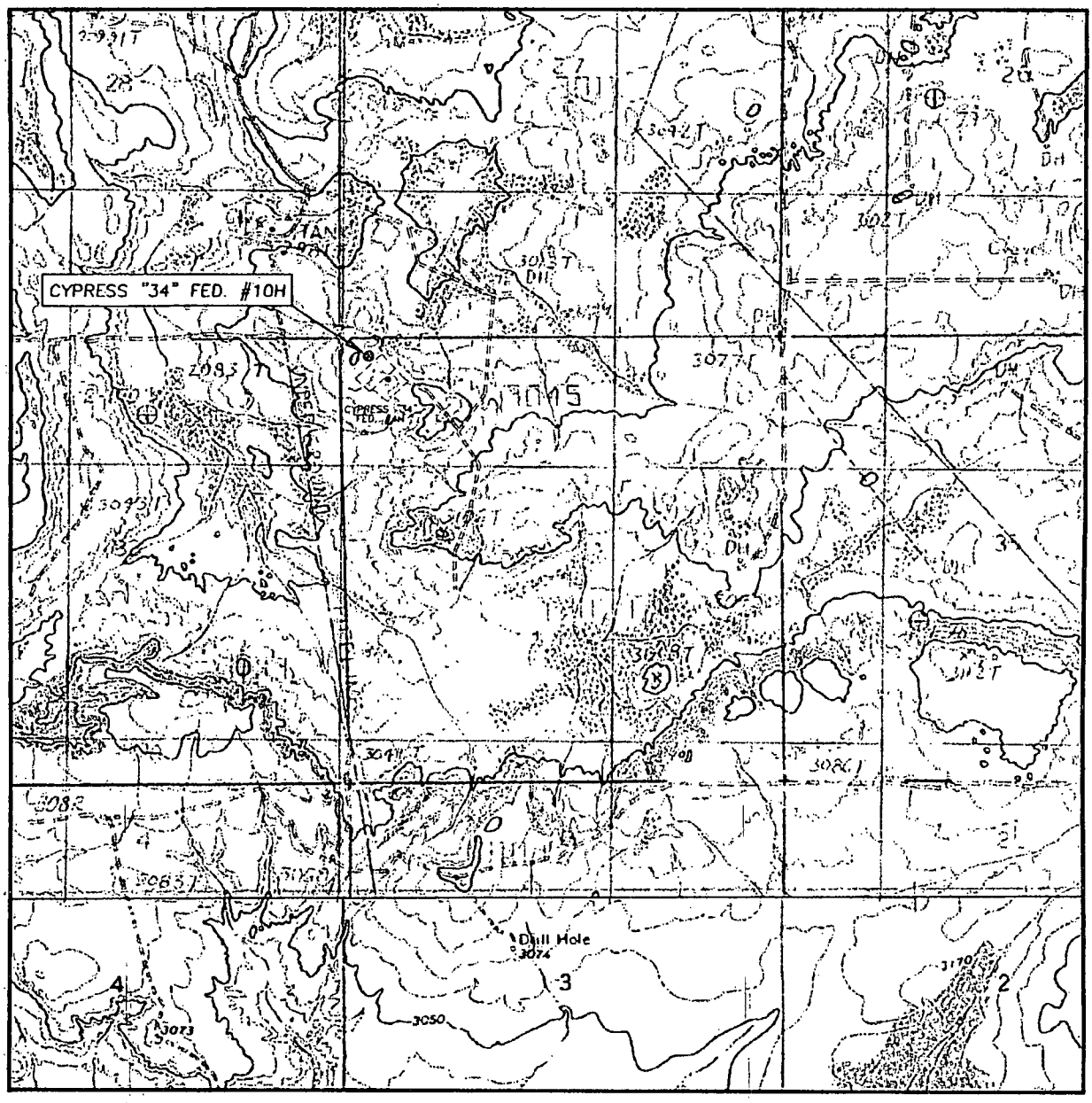
Signature and Seal of Professional Surveyor: TERRY J. ASEL, NEW MEXICO, 15079, PROFESSIONAL LAND SURVEYOR

Certificate Number 15079 — 3/4/2014

WO# 131115WL-c (Rev. C) (KA)

LUM

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL: 10'

SEC. 34 TWP. 23-S RGE. 29-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 210' FNL & 330' FWL

ELEVATION 3049.8'

OPERATOR OXY USA INC.

LEASE CYPRESS "34" FED. #10H

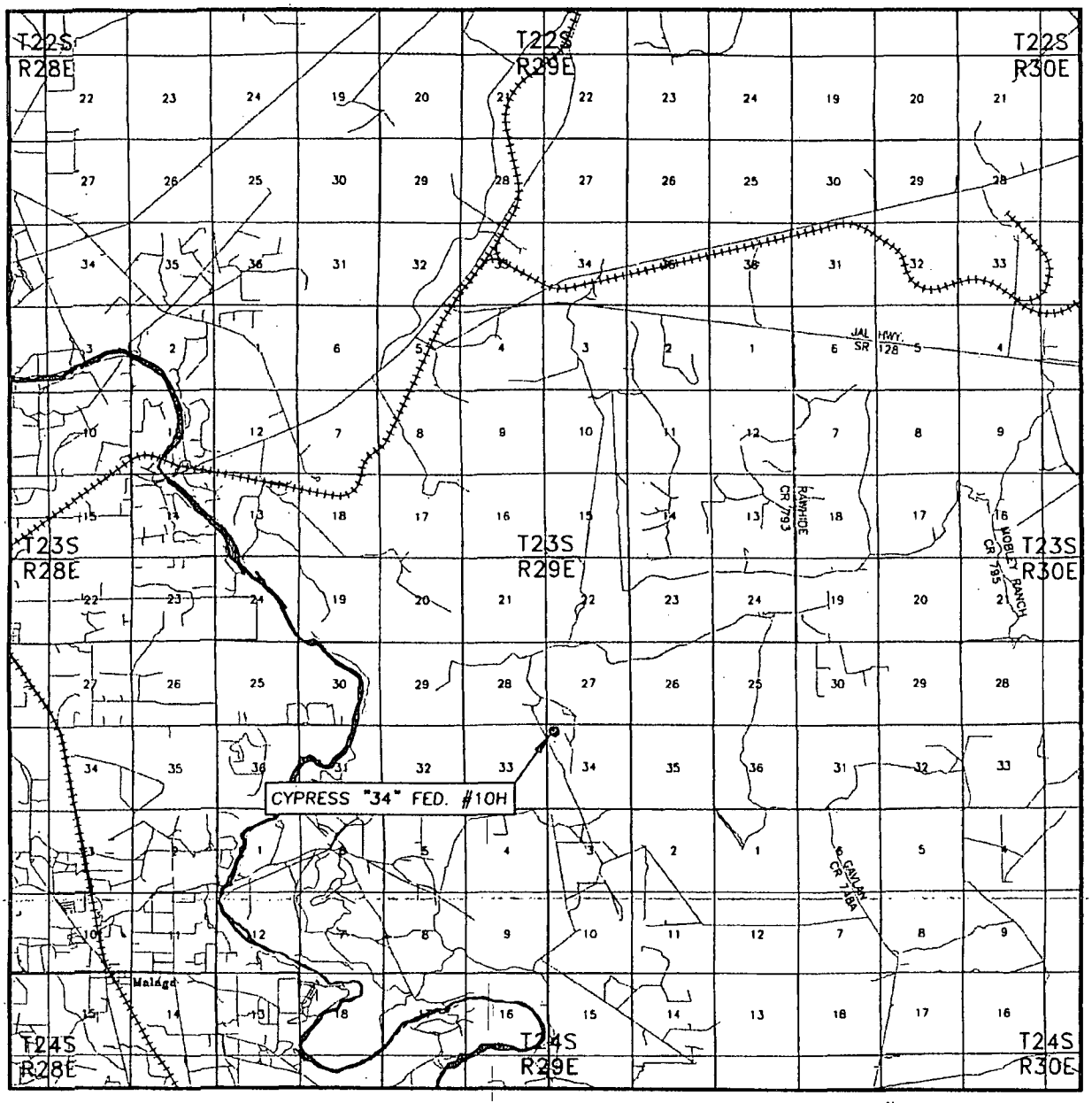
U.S.G.S. TOPOGRAPHIC MAP
REMUDA BASIN, N.M.

Asel Surveying

P.O. BOX 393 - 310 W. TAYLOR
HOBBS, NEW MEXICO - 575-393-9146

VM - Directions

VICINITY MAP



SEC. 34 TWP. 23-S RGE. 29-E
SURVEY N.M.P.M.
COUNTY EDDY
DESCRIPTION 210' FNL & 330' FWL
ELEVATION 3049.8'
OPERATOR OXY USA INC.
LEASE CYPRESS "34" FED. #10H

SCALE: 1" = 2 MILES

Asel Surveying
P.O. BOX 393 - 310 W. TAYLOR
HOBBS, NEW MEXICO - 575-393-9146

DIRECTIONS BEGINNING AT THE INTERSECTION OF HWY. #128 AND HWY. #31, GO EAST ON HWY. #128 FOR 4.5 MILES, TURN SOUTH ON EDDY CO. ROAD #793 (RAWHIDE ROAD) FOR 4.1 MILES, TURN WEST ON LEASE ROAD FOR 3.5 MILES, TURN SOUTH FOR 1.4 MILES, TURN RIGHT AND GO NORTHWEST FOR 0.2 MILES TO LOCATION.

Appendix B

Sundry Notice

BLM Approved Conditions and

Sundry Modification of COAs

R.T. Hicks Consultants, Ltd.
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Albuquerque, NM 87104