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-144
Revised April 3, 2017

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.

C-144P
16192

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

pCS1912236653

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: __LOGOS Operating, LLC_____ OGRID #:____289408_____
Address: __2010 Afton Place Farmington, NM 87401_____
Facility or well name: _Section 25 Drying Pad/Burial Trench #2_____
API Number: __30-039-31383; 30-039-31384_____ OCD Permit Number: _____
U/L or Qtr/Qtr _____ Section ___25_____ Township ____T31N_____ Range __R6W____ County: __Rio Arriba_____
Center of Proposed Design: Latitude _36.874969_____ Longitude _-107.419773_____ NAD83
Surface Owner: ☒ Federal ☐ State ☐ Private ☐ Tribal Trust or Indian Allotment

NMOCD
MAY 02 2019
DISTRICT III

2.
☐ **Pit:** Subsection F, G or J of 19.15.17.11 NMAC ☒ **Burial Trench/Drying Pad**
Temporary: ☐ Drilling ☐ Workover
☐ 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: 17,786_____bbl Dimensions: L_100_____ x W_125_____ x D__17____

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_____

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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	☐ 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)** - 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)** - 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)** - 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)** - 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). - 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	☐ 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	☐ 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
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 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	☐ 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
Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ 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

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): Larissa Farrell Title: Environmental/Regulatory Technician

Signature: Larissa Farrell Date: 5/1/19

e-mail address: lfarrell@logosresourcesllc.com Telephone: (505) 787-2027

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

OCD Representative Signature: [signature] **Approval Date:** 5/6/19

Title: Environmental Spec **OCD Permit Number:** C-144P 16192

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: _____

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C-144 Permit Package for Section 25 Quarry Burial Trench #1 Section 25, T31N, R6W, Rio Arriba County

View north of proposed site. To the left, out of the photograph, is a restored and vegetated portion of the former rock quarry site. Placing drill cuttings in the former quarry will help restore original topography.

Prepared for:
WPX Energy
Aztec, New Mexico

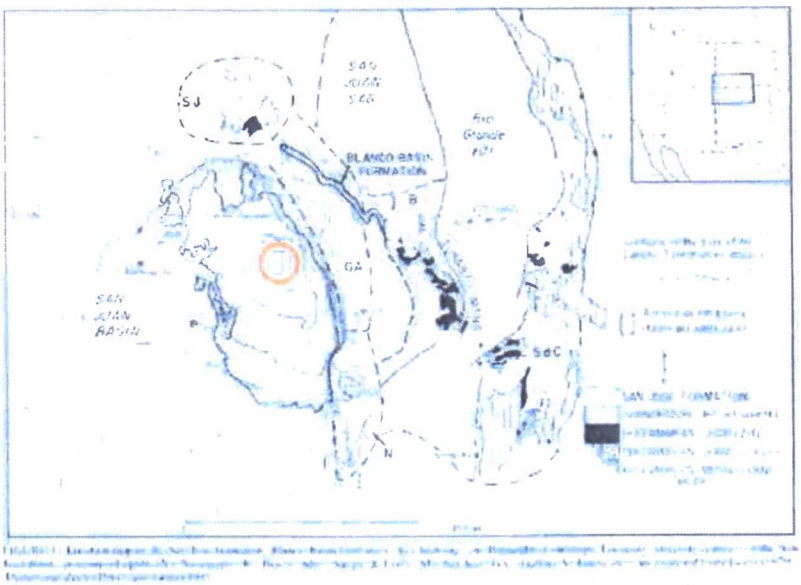
Prepared by:

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

Geologic Setting of the Regional Fresh-Water Bearing Formations

The proposed trench/drying pad site is located in the southeast portion of the Colorado Plateau. on the northern San Juan Basin. The area of the project is characterized by high mesas cut by numerous arroyos and canyons. North of the project area is Navajo Lake, a reservoir that flooded a deep canyon of the San Juan River. The project area lies within the Laguna Seca drainage, a northwest- to west-flowing dry arroyo and canyon system about 6 miles in length. Laguna Seca Mesa, the highest mesa within the drainage basin, is 6779 feet (SE ¼ Section 20 T31N R5W) and the water level elevation of the Navajo Lake ranges between 6030-6050 feet above sea level (asl) throughout the year. Thus the total relief within the Laguna Seca drainage is about 750 feet.

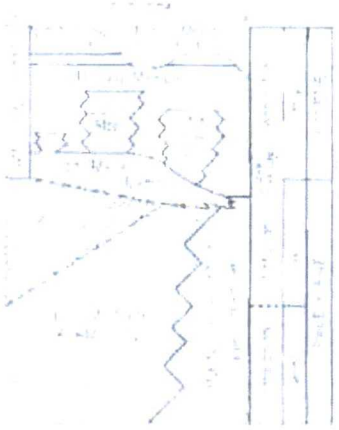
The trench location lies on an outcrop of the Eocene (Tertiary) San Jose Formation, a fluvial unit composed of more than 2000 feet of sandstone and conglomerate interbedded with mudstone. The San Jose formation overlies the Nacimiento Formation to the south and west and the Animas Formation to the northeast. The Llaves (predominantly sandstone) and/or Tapicitos (predominantly mudstone) Members of the San Jose crop out in the general area of the trench, as they do around Navajo Lake[1] . Many authors report inter-bedding of sandstone and mudstone units complicate mapping efforts.



The inset figure above from Smith (1992)[2] shows the general location of the project area (red circle) in relation to the surface exposure of the San Jose Formation. This publication describes the Llaves Member consisting of a lower sequence of sheet standstones that intertongue with the Regina Member of the San Jose Formation. A laterally-persistent sheet sandstone characterizes

[1] http://geoinfo.nmt.edu/tour/state/navaho_lake/home.html
[2] https://nmgs.nmt.edu/publications/guidebooks/downloads/43/43_p0297_p0309.pdf

the upper portion of the Llaves Member and we believe the exposed sandstone of the former rock quarry into which the trench/drying pad will be constructed is this same unit. The Tapicitos Member is composed of red mudrock and pink sandstone and overlies the Llaves and/or Regina Members as shown in the schematic cross-section from this same publication. Thus, in the area of the trench, the Tapicitos Member has been removed by erosion, as suggested in the NW side of schematic cross section.



Distance to Groundwater

Figure 1, Figure 2, Figure 4 and the discussion presented below demonstrates that groundwater (fresh water as defined by NMOCD Rules) at the location is greater than 100 feet

Figure 1 is an area topographic base map that depicts regional topography and includes the water wells located nearest to the trench site for which information is available, regardless of how comprehensive or useful. It also shows:

1. The location of the Section 25 trench site.
2. That water wells from the USGS database are not present in the project region.
3. Water wells, which are documented in WPX files and were identified by field inspection or other data are shown as a dot inside a color-coded (depth) square. These are cathodic protection wells related to individual oil and gas wells.
4. Depth to water and gauging dates from the most recent and reliable measurement for each well is provided adjacent to the well symbol.
5. One well on the NM Office of the State Engineer (OSE) database is present in the area of Figure 1.

Figure 2 is a Google Earth image showing:

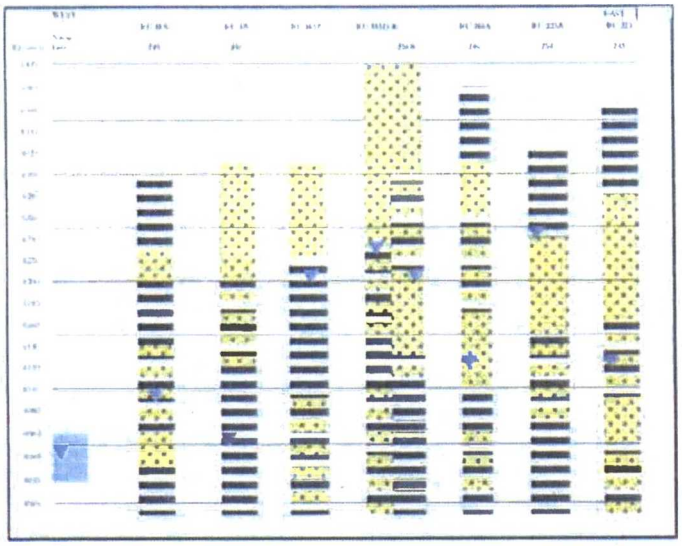
A. The location of the trench.
B. Groundwater elevations and gauging dates from the most recent available static water level measurement for each well within the shallow most water-bearing unit beneath the trench.
C. All of the groundwater elevation data was obtained from logging and observation of cathodic protection wells.

Figure 4 presents data from the cathodic protection wells nearest to the proposed pad/trench

Site Geology

The trench is located on an outcrop the Eocene San Jose Formation, specifically the "persistent sheet sandstone" of the Llaves Member that characterizes the adjacent tree-covered hills of the general area. Beneath the site location are interbedded sandstone and mudrock units as described in the previous section of this application. The schematic cross-section below presents the driller's logs from five cathodic protection wells located on the southern border of Figure 2. This cross-section clearly shows the discontinuous nature of the fluvial sandstones that compose the Regina and Llaves Members of the San Jose Formation. The cross-section also shows that groundwater elevation decreases, in general, from east to west; from the higher mesas toward Navajo Lake. Note that the elevation of the former rock quarry into which the trench and drying

pad will be constructed lies at an elevation of about 6380, thus the sheet sandstone penetrated by the cathodic protection wells is not present in the cross section.



Explanation of Figure

The Rosa Unit well names and the corresponding Miscellaneous well names on Figure 1 are presented at the top of the figure.

Shale units are characterized by stripes.

Sandstone units are yellow stippled areas.

The elevation at which the driller encountered water is shown as a blue triangle.

The water elevation of Navajo Lake varies between 6030 and 6060

Water Table Elevation

The closest cathodic protection wells to the proposed trench/drying pad location are:

- Misc-246 – groundwater encountered at an elevation of 6110
- Misc-244 – groundwater encountered at an elevation of 6044
- Misc-251 – groundwater encountered at an elevation of 6049
- Rosa 165D – groundwater encountered at an elevation of 6233
- Rosa 256A - groundwater encountered at an elevation of 6204
- Rosa 165B - groundwater encountered at an elevation of 6211

Miscellaneous wells 246 and 251 and the three closest wells to the proposed trench are depicted on the cross section above. Perched groundwater zones within the general area exist and one such unit is probably present near the proposed trench at a depth of about 100-140 feet below the base of the rock quarry. As shown in the table below, the first groundwater is encountered more than 100 feet below land surface in 16 of 21 cathodic protection wells.

The preponderance of data allow a conclusion that the distance between the uppermost groundwater zone and the bottom of the proposed drying pad/ trench will be greater than 100 feet.

Misc #	Gas Well Name	Date Measured	Location	Flow Rate	Surface Elevation	Depth to First Water	Total Depth	Groundwater Elevation
251	Rosa Unit 005B	[illegible]	26,T31N R06W		6309	260	300	6049
244	Rosa Unit 005A	[illegible]/1994	26,T31N R06W		6274	200	300	6074
248	Rosa Unit 014A	4/17/2000	25,T31N R06W		6273	260	300	6013
252	Rosa Unit 014B	9/5/2005	25,T31N R06W		6285	160	300	6125
259	Rosa Unit 014C	10/6/2007	25,T31N R06W		6273	140	300	6133
243	Rosa Unit 015A	7/9/1994	22,T31N R06W		6303	220	300	6083
242	Rosa Unit 019A	3/24/[illegible]	24, T31N R06W		6304	200	450	6104
250	Rosa Unit 019B	10/28/2001	24,T31N R06W		6320	200	300	6120
260	Rosa Unit 019D	8/25/2009	24 T31N R06W		6311	180	300	6131
253	Rosa Unit 021C	6/13/2005	23,T31N R06W	1 GPM	6216	140	300	6076
247	Rosa Unit 159A	5/10/2000	19,T31N R05W		6307	180	300	6127
249	Rosa Unit 163A	5/10/2000	24,T31N R06W		6064	280	300	5784
258	Rosa Unit 163C	3/9/2007	24,T31N R06W		6302	160	300	6142
246	Rosa Unit 165A	7/24/1999	25, T31N R06W		6370	260	300	6110
257	Rosa Unit 206A	6/8/2005	24,T31N,R06W	1 GPM	6302	100	300	6202
256	Rosa Unit 209A	6/25/2004	23,T31N R06W		6312	80	480	6232
255	Rosa Unit 213A	6/3/2004	23,T31N,R05W		6247	60	440	6187
245	Rosa Unit 225	9/15/1999	30, T31N,R05W		6361	240	300	6121
254	Rosa Unit 223A	3/27/2004	30,T31N,R05W		6322	80	490	6242
Figure 4	Rosa Unit 256A	4/28/2005	30,T31N,R05W	Wet Sand	6404	200	300	6204
Figure 4	Rosa Unit 165D	3/19/2010	30,T31N,R06W		6403	170	300	6233
Figure 4	Rosa Unit 165B	7/9/2002	30,T31N,R06W		6311	100	300	6211

Distance to Surface Water

Figure 3 and the site visit demonstrates that the location is not within 300 feet of a continuously flowing watercourse, or any other active significant watercourse. Neither the drying pad, trench or material excavated from the trench is within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). Finally, as shown in Plate 2, the material excavated from the containment is not within 100 feet of a watercourse.

The nearest mapped watercourse lies about 500 feet west of the former rock quarry, the site of the proposed drying pad/trench

Distance to Permanent Residence or Structures

Figure 4 and the site visit demonstrates that the location is not within 300 feet from a permanent residence, school, hospital, institution, church, or other structure in existence at the time of initial application.

Our site visit confirms the data in the Figure.

Distance to Non-Public Water Supply

Figures 1 and 3 demonstrate 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 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application.

- Figure 1 shows the location of the only fresh water well in the area, which is located about 2.5 miles to the southeast.
- Figure 3 shows that no springs are identified within the mapping area.
- Our site visits confirms the data presented in the figures.

Distance to Municipal Boundaries and Fresh Water Fields

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

- The closest municipality is Bloomfield, NM approximately 30 miles to the southwest.
- The trench is not located within a municipal fresh water well field.

Distance to Wetlands

Figure 6 demonstrates the location is not within 300 feet of wetlands and the material excavated from the trench/pad does not lie within 100 feet of a wetland.

The nearest designated wetlands are two "Freshwater Ponds" located about 3200 feet northwest and northeast of the former quarry.

Distance to Subsurface Mines

Figure 7 and our general reconnaissance of the area demonstrate that the nearest mines are rock quarries.

The nearest rock quarry is the site of the trench.

Stability of Trench Area and Distance to High or Critical Karst Areas

Figure 8 shows the location of the proposed trench/drying pad with respect to regional karst as mapped by the USGS.

- The proposed trench is not located within a karst area as defined by the USGS.
- The nearest karst area is located approximately 40 miles northwest and southeast of the proposed trench.
- We saw no evidence of solution voids near the site during the field inspection.
- No evidence of unstable ground near the site was observed during the site inspection.

A professional geologist (Randall Hicks) conducted the field survey and concluded that the ground is stable.

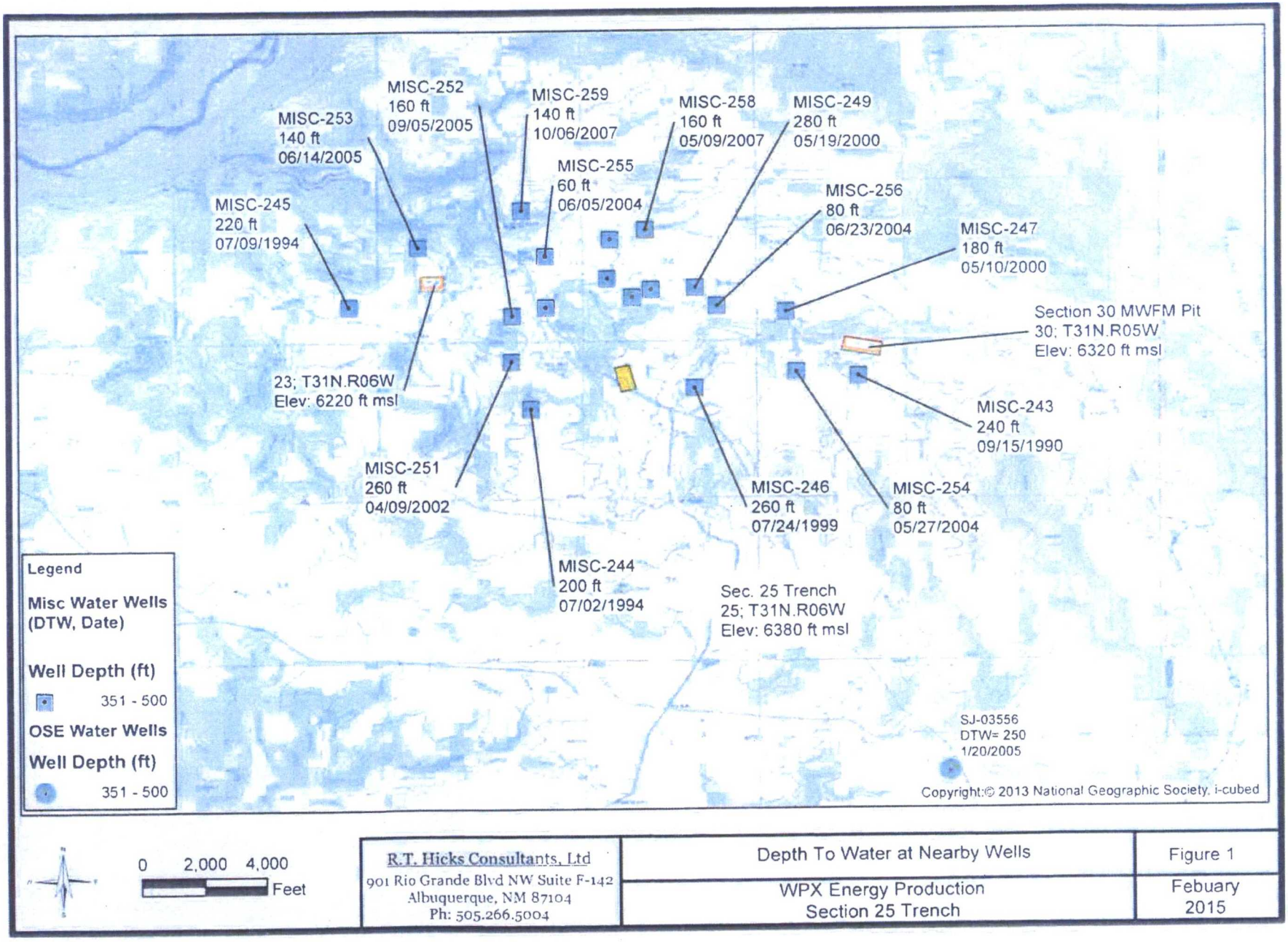
Distance to 100-Year Floodplain

Figure 9 demonstrates that the drying pad/ Trench and the material excavated from the trench is not located within an area that has a 1% annual chance of flood (Zone A) as mapped by the Federal Emergency Management Agency with respect to the Flood Insurance Rate 100-Year Floodplain.

- Areas that are outside of Zone A are mapped as Minimal Flood Risk (Zone X)
- Our field inspection and evaluation permit a conclusion that flooding of the site is highly unlikely

Site Specific Information
Figures

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



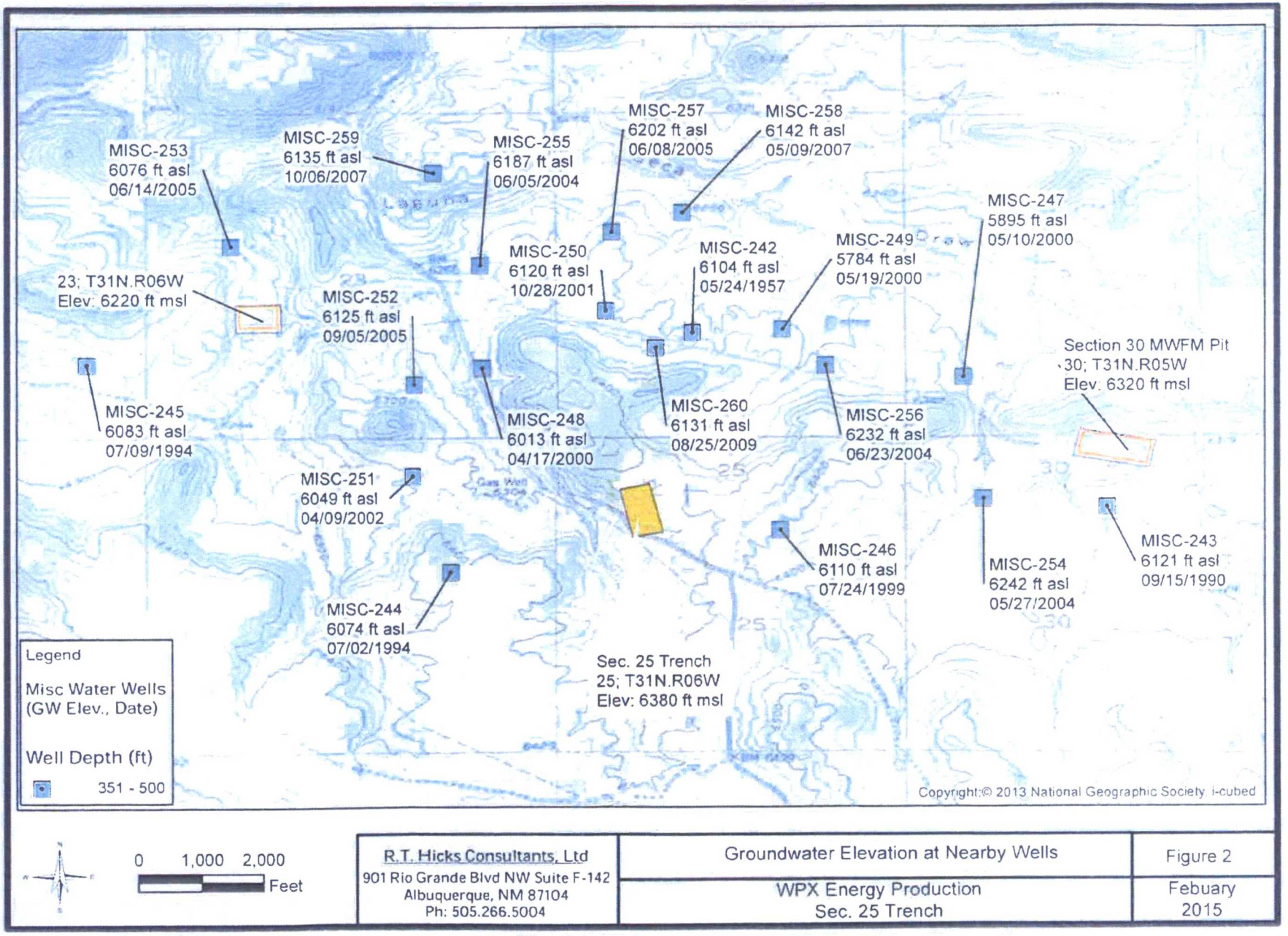
R.T. Hicks Consultants, Ltd
901 Rio Grande Blvd NW Suite F-142
Albuquerque, NM 87104
Ph: 505.266.5004

Depth To Water at Nearby Wells

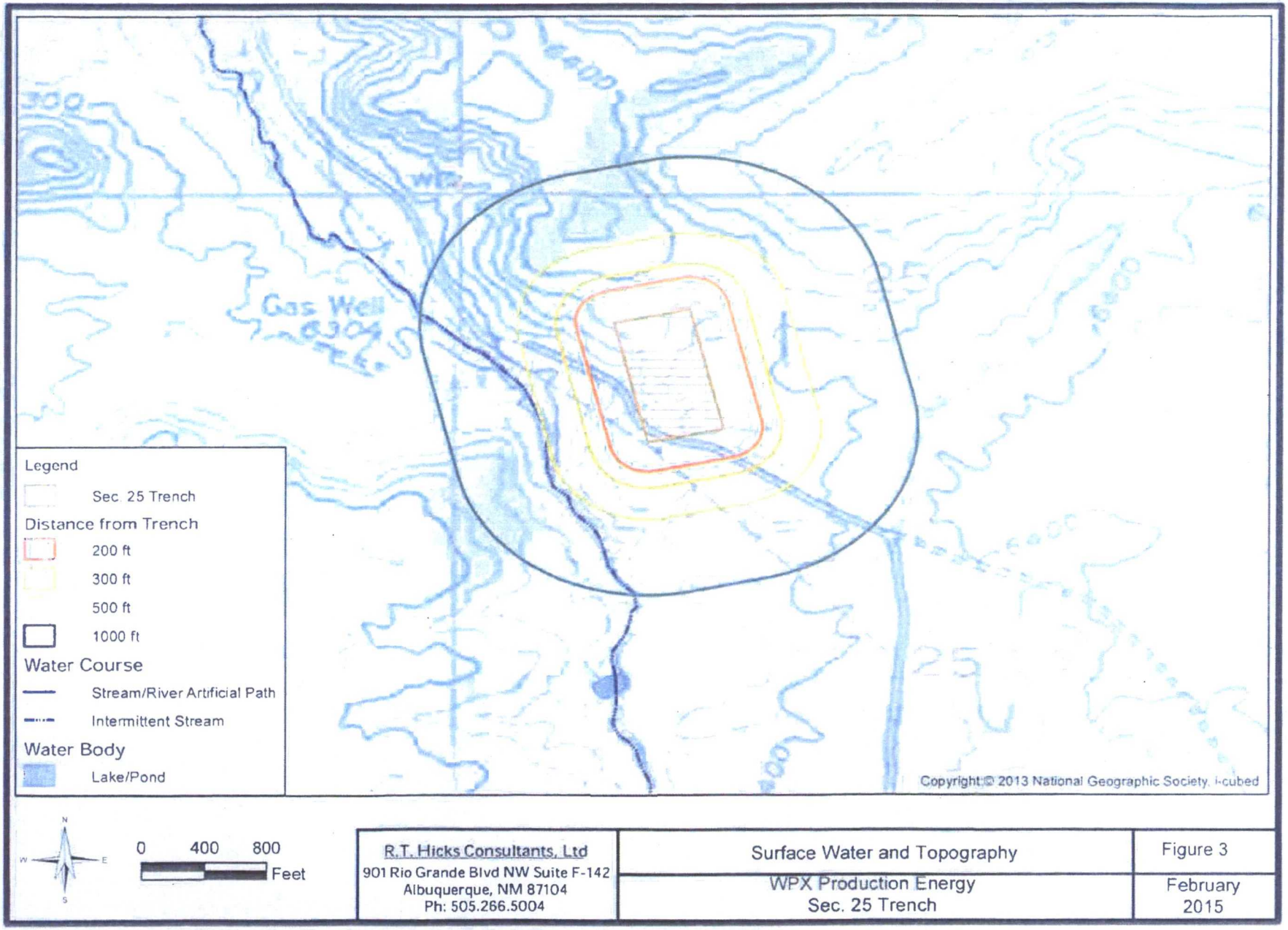
WPX Energy Production
Section 25 Trench

Figure 1

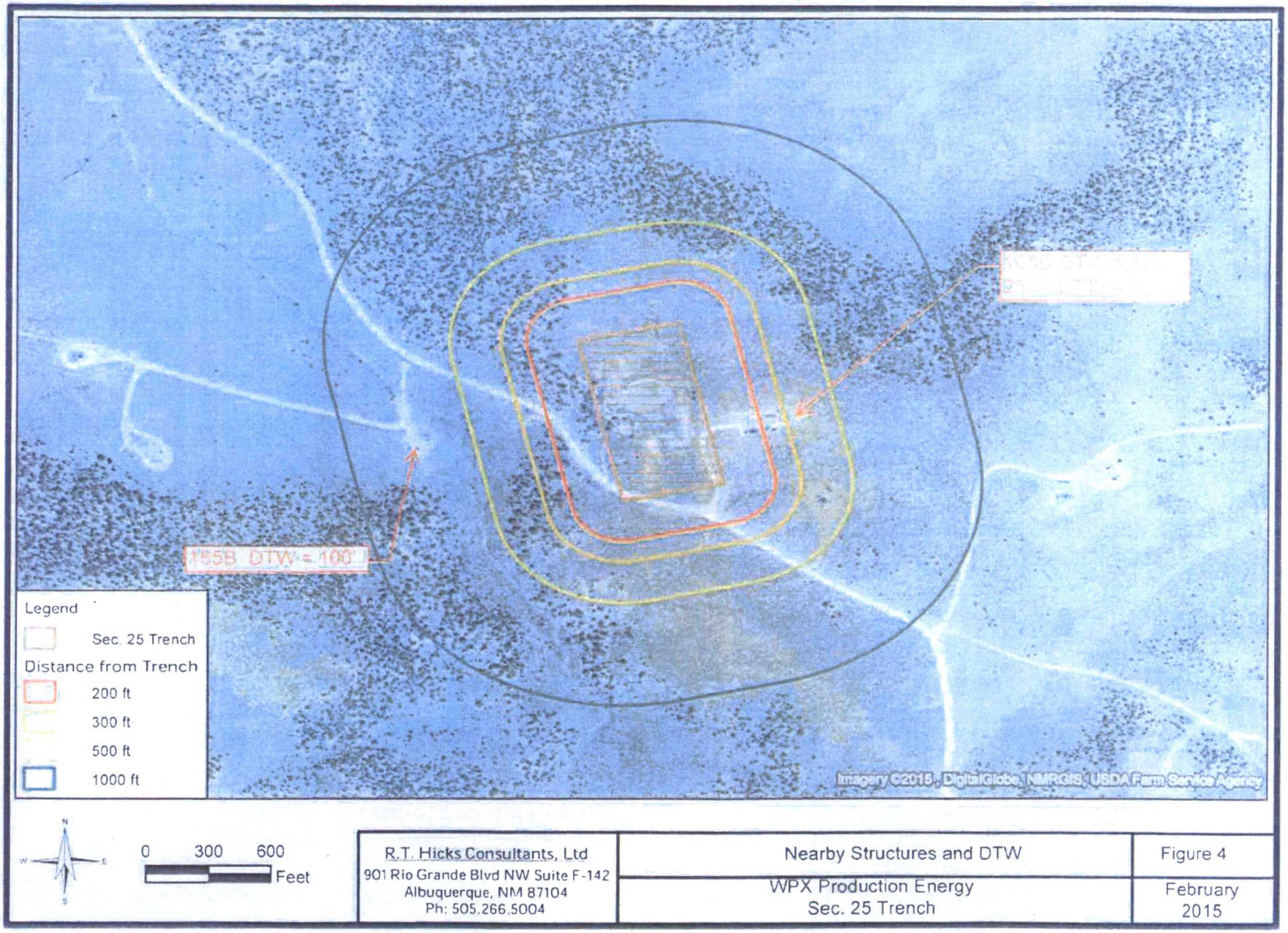
Febuary
2015



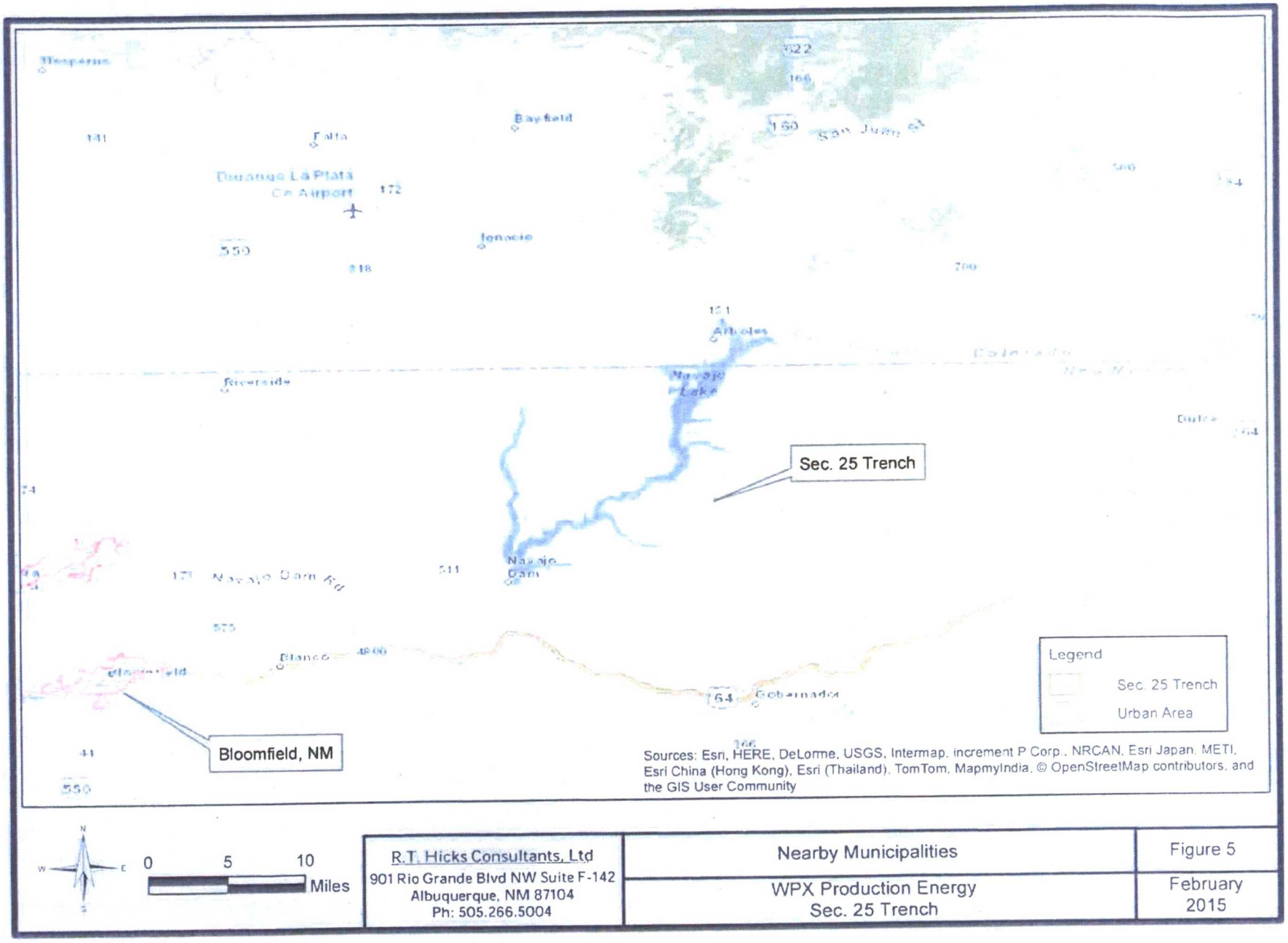
R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Groundwater Elevation at Nearby Wells WPX Energy Production Sec. 25 Trench	Figure 2 Febuary 2015



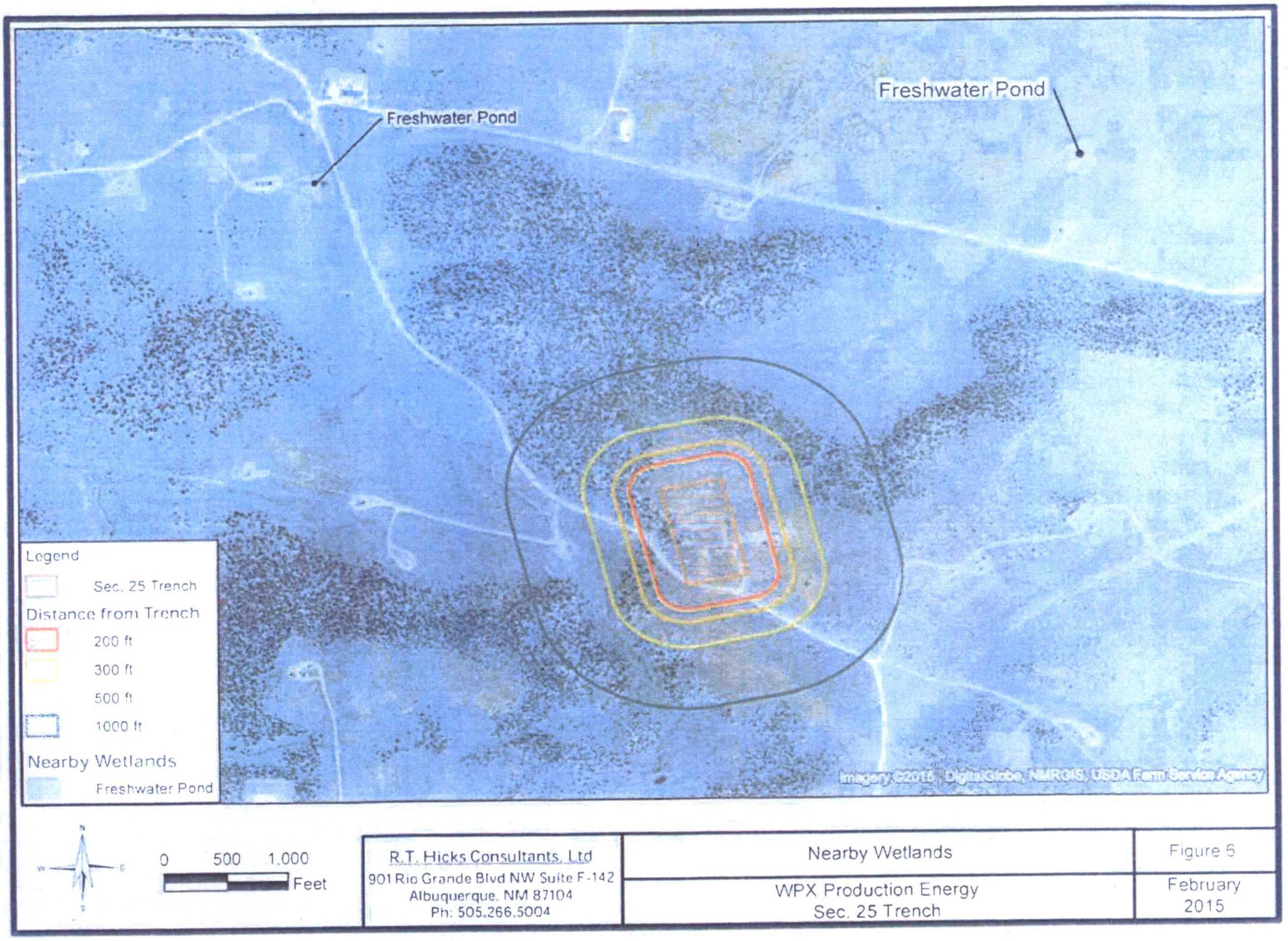
R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Surface Water and Topography WPX Production Energy Sec. 25 Trench	Figure 3 February 2015



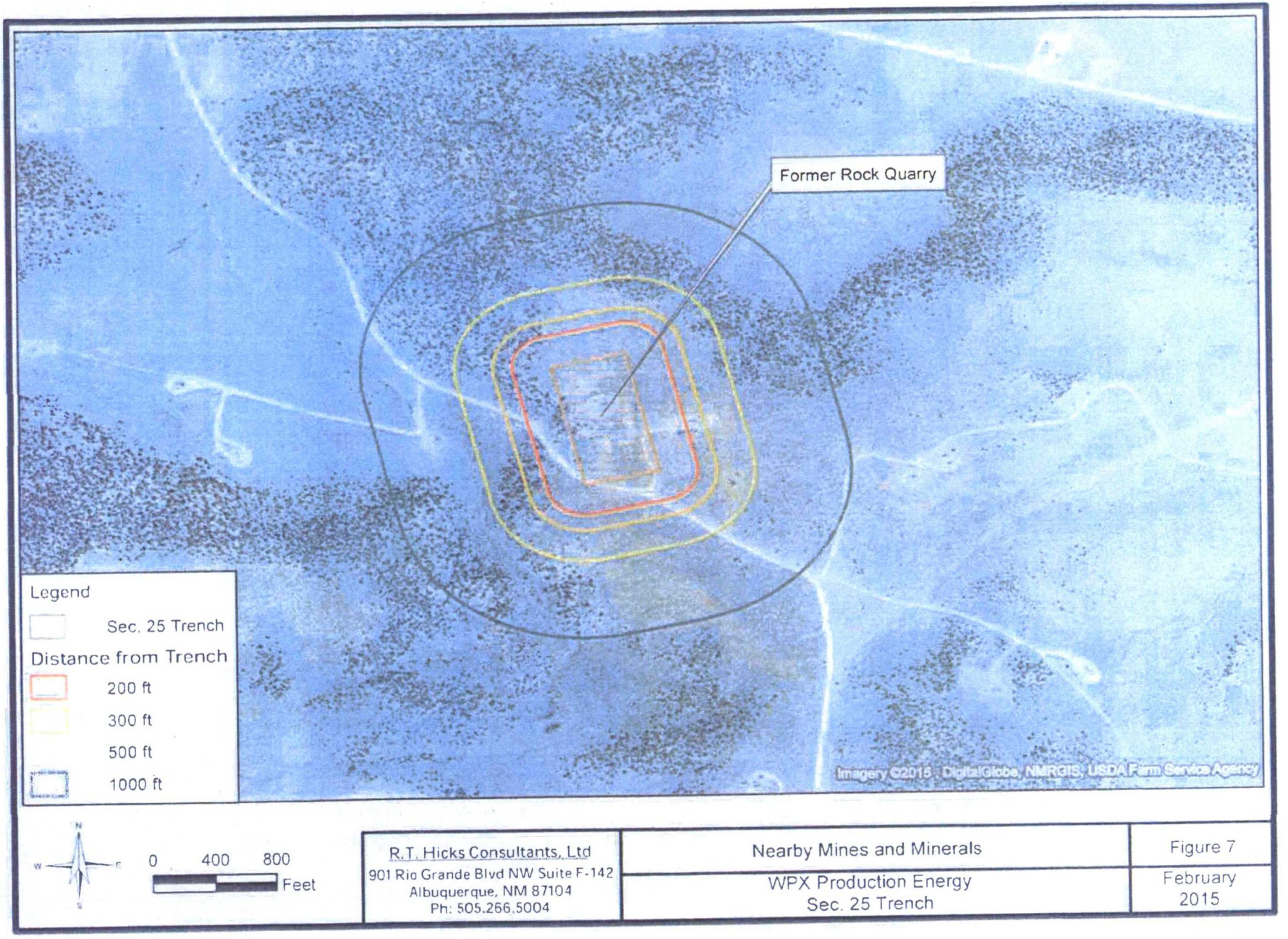
R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Nearby Structures and DTW WPX Production Energy Sec. 25 Trench	Figure 4 February 2015



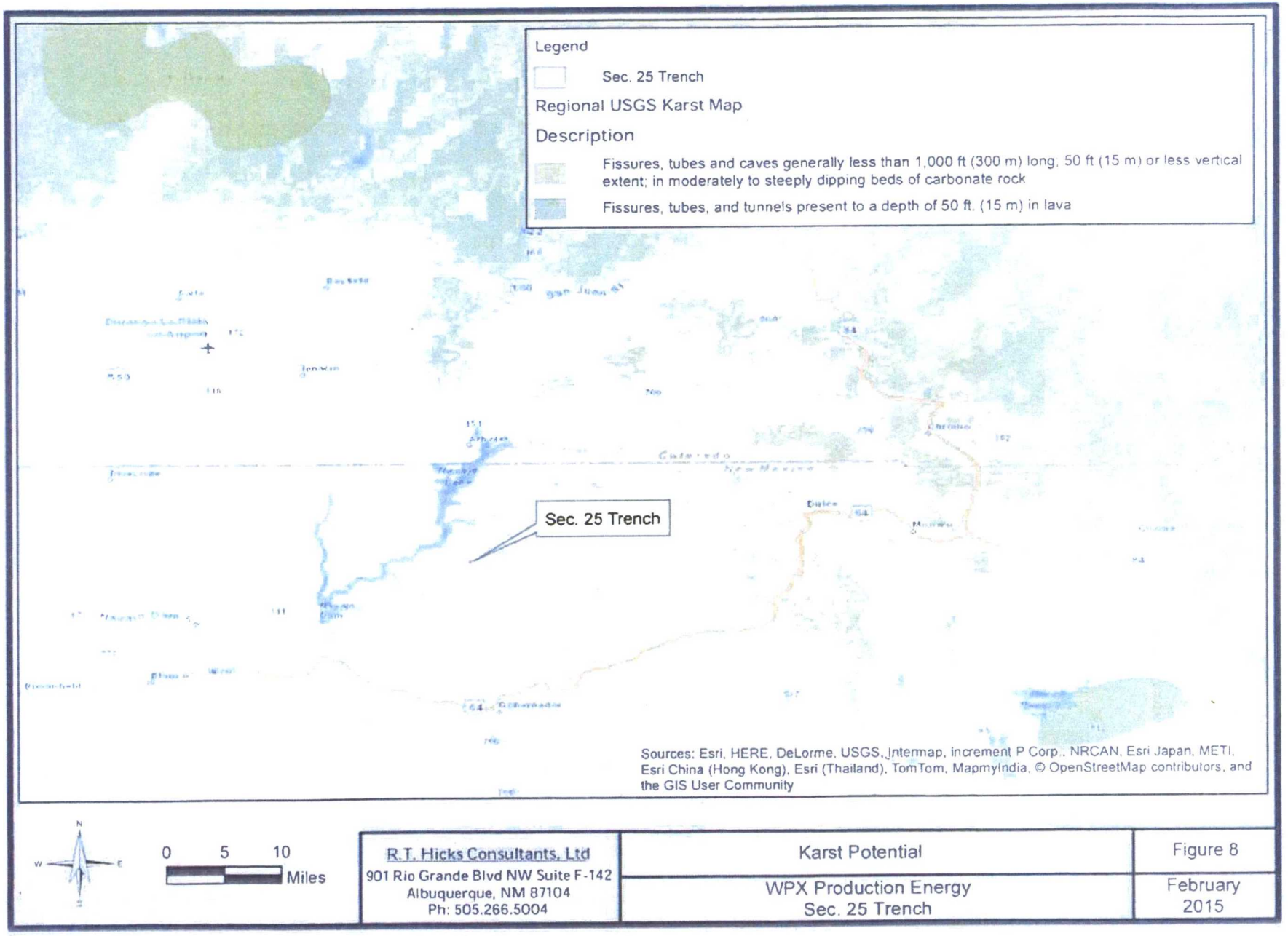
R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Nearby Municipalities	Figure 5
	WPX Production Energy Sec. 25 Trench	February 2015



R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Nearby Wetlands	Figure 5
	WPX Production Energy Sec. 25 Trench	February 2015



R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Nearby Mines and Minerals WPX Production Energy Sec. 25 Trench	Figure 7 February 2015



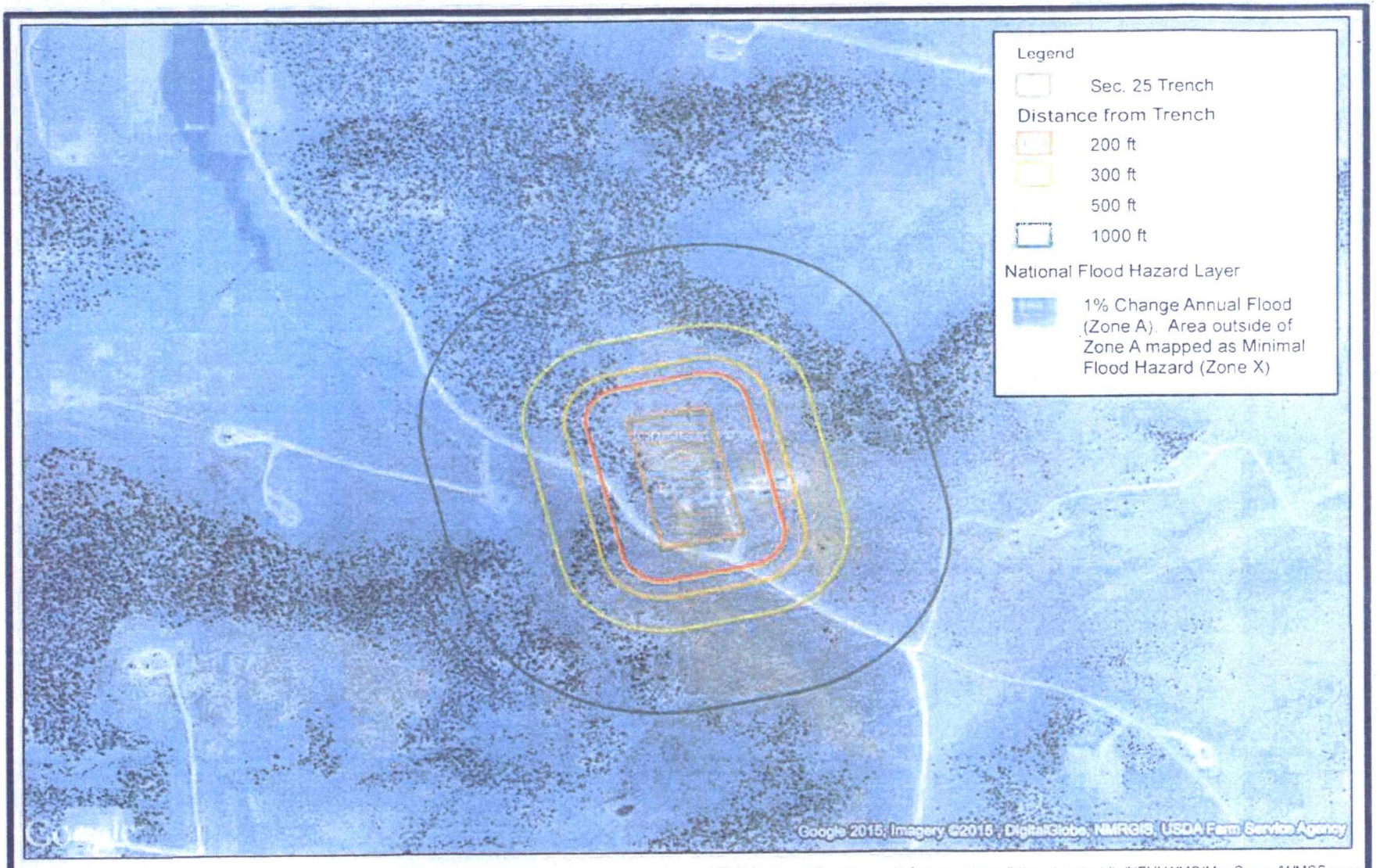
R.T. Hicks Consultants, Ltd
901 Rio Grande Blvd NW Suite F-142
Albuquerque, NM 87104
Ph: 505.266.5004

Karst Potential

WPX Production Energy
Sec. 25 Trench

Figure 8

February 2015

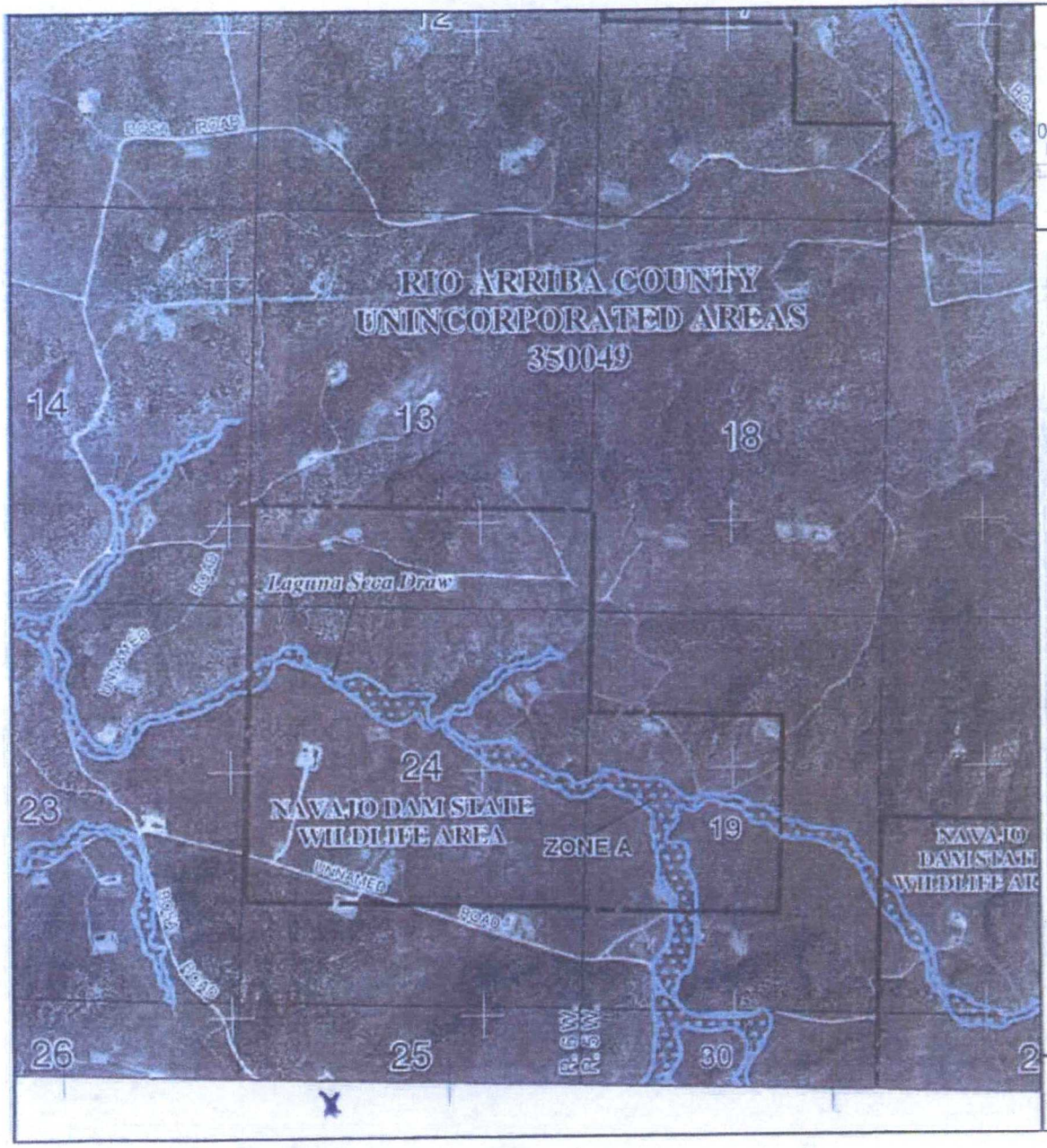


FEMA Source: https://hazards.fema.gov/gis/nfhl/services/public/NFHLWMS/MapServer/WMSServer

0 500 1,000 Feet

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
WPX Production Energy Sec. 25 Trench	February 2015



MAP SCALE 1" = 2000'

000 0 2000 4000 FEET

METE

NFIP PANEL 0175D

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

RIO ARRIBA COUNTY, NEW MEXICO AND INCORPORATED AREAS

PANEL 175 OF 3175

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
RIO ARRIBA COUNTY	[illegible]	[illegible]	[illegible]

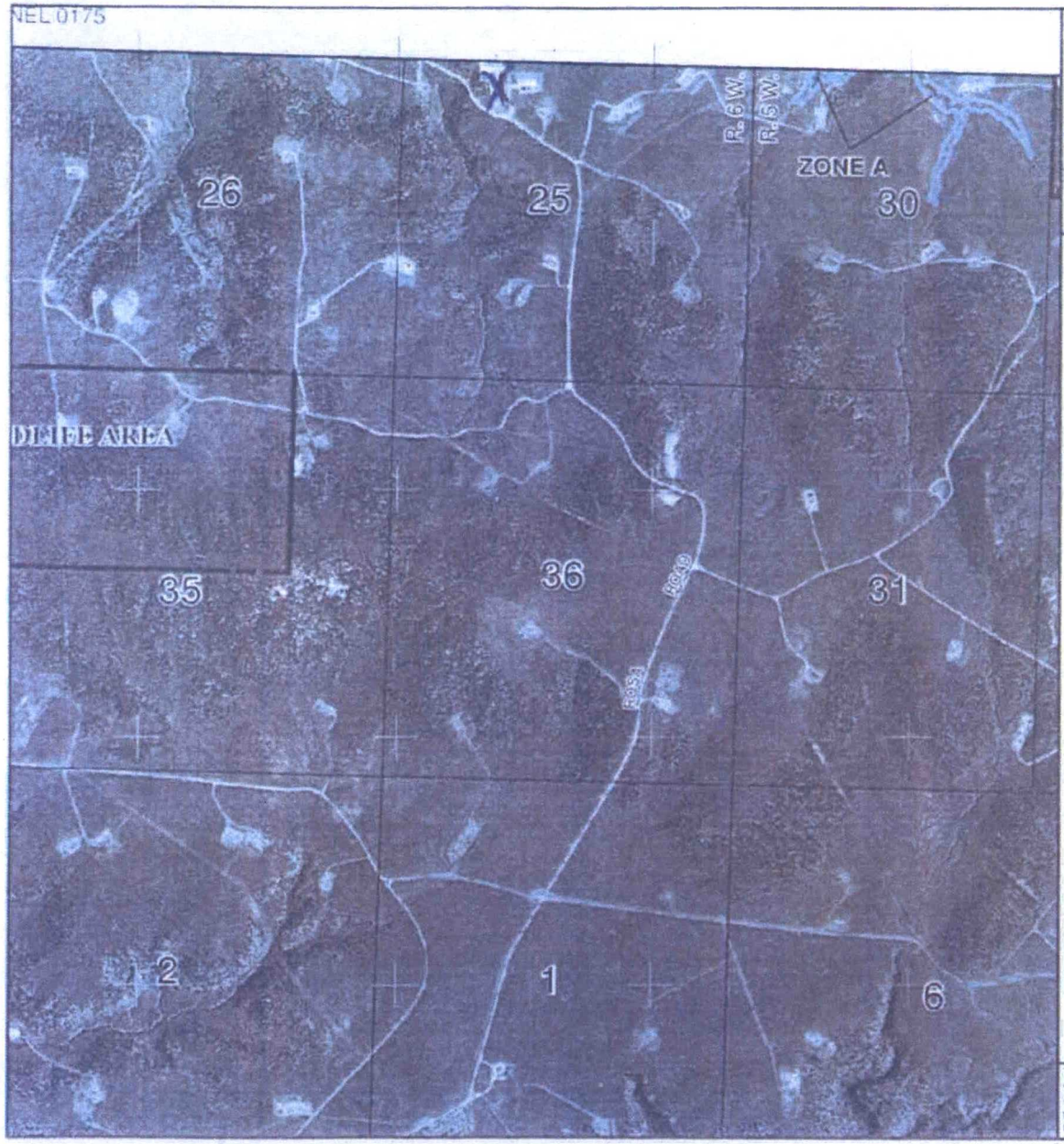
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
35039C0175D

EFFECTIVE DATE
MARCH 15, 2012

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using FEMA On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



MAP SCALE 1" = 2000'

000 0 2000 4000 FEET METE

NFIP PANEL 0525D

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

RIO ARRIBA COUNTY, NEW MEXICO AND INCORPORATED AREAS

PANEL 525 OF 3175

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
RIO ARRIBA COUNTY	[illegible]	[illegible]	D

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
35039C0525D

EFFECTIVE DATE
MARCH 15, 2012

Federal Emergency Management Agency

Ground Bed Drilling Log

Company: **Williams Production Co.** Well: **Rosa Unit 256A** Date: 4/28/05

Location: Sec. 25 T31N R6W Duel Well: State: NM

Ground Bed Depth: 500' Diameter: 6 3/4"

Indicate Water Zone Depth: 200' Wet Sand

Isolation Plugs Set: NO If So Where:

Coke: Type: Loresco SWS Total Weight: 2200 lbs.

Anodes: Type: Silicon Iron Type D Weight: 45 lbs.

Power Source: Battery Volts: 13.9 Amps: 15.3 Resistance: .909

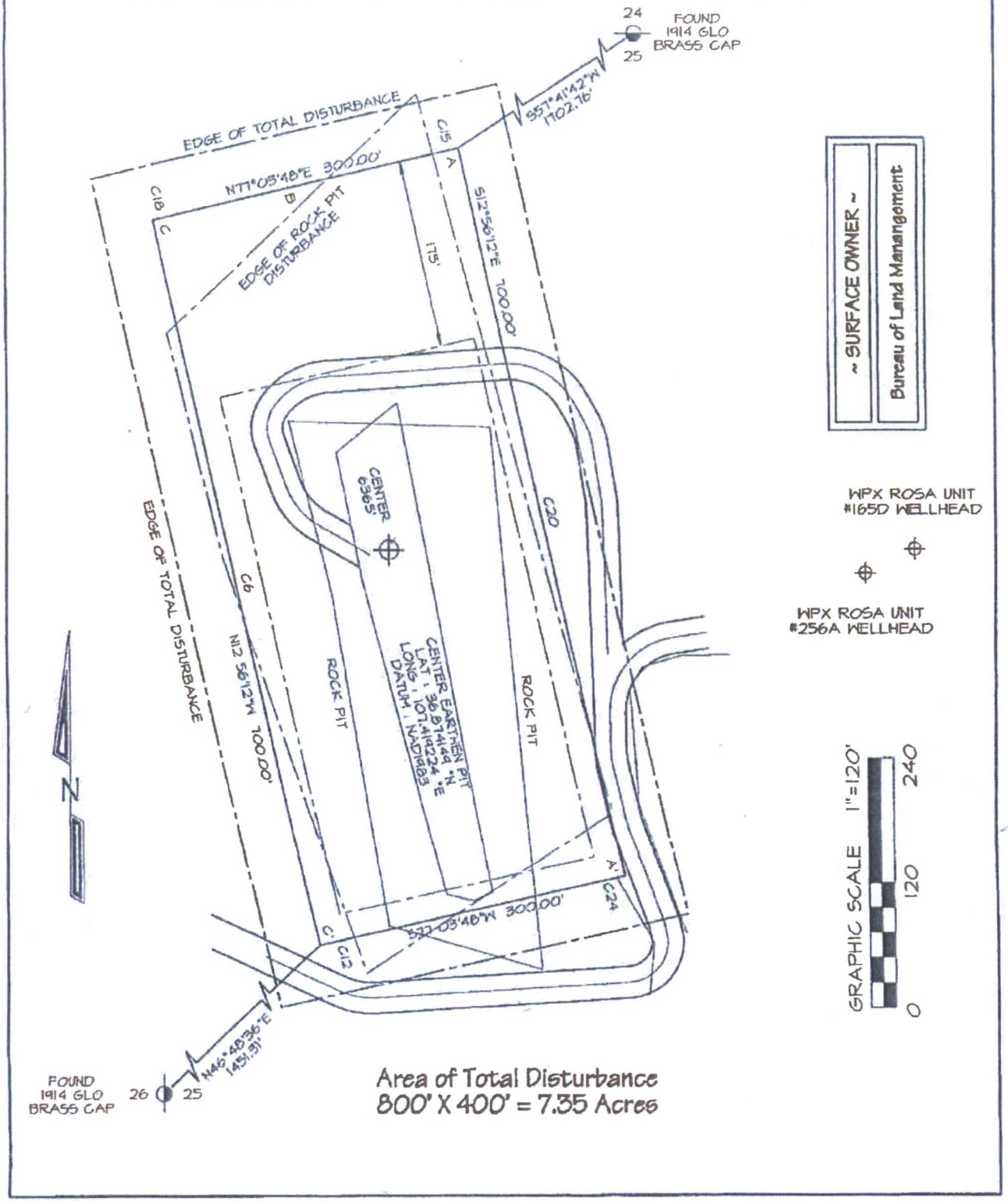
Depth Ft	Drilling Log	Anodes Log Logged	Coked	Depth	Remarks
0'-20'	Casing				8" PVC SCH 40
20' - 100'	Sand Stone				
100' – 200'	Sandy Shale				
200' – 260'	Sand Stone				
260' – 300'	Sandy Shale				
300' - 380'	Shale				
380'	"	2.2	4.5	370'	#12
390'	"	1.8	3.6	380'	#11
400'	"	1.6	3.3	390'	#10
410'	"	2.2	4.5	400'	#9
420'	"	2.3	4.6	410'	#8
430'	"	2.0	4.1	420'	#7
440'	"	1.7	3.3	430'	#6
450'	"	1.6	3.3	440'	#5
460'	"	1.6	3.3	450'	#4
470'	"	1.7	3.4	460'	#3
480'	"	1.9	3.9	470'	#2
490'	"	2.3	4.1	480'	#1
500'	"	2.0			

Site Specific Information
Plates

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

WPX ENERGY PRODUCTION, LLC

LOCATED IN NW/4 NW/4 OF SECTION 25, T31N, R6W
RIO ARRIBA COUNTY, NEW MEXICO ELEVATION: 6365'
LAT: 36.874350°N LONG: 107.419280°W DATUM: NAD1983



Area of Total Disturbance
800' X 400' = 7.35 Acres

District I
1E25 N. French Drive, Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

District II
811 S. First Street, 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 Drive, 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 Drive
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

1 API Number	2 Pool Code	3 Pool Name

4 Property Code	5 Property Name	6 Well Number
	SECTION 25 DRYING PAD / BURIAL TRENCH #2	
7 OGRID No.	8 Operator Name	9 Elevation
289408	LOGOS OPERATING, LLC	6379'

10 Surface Location

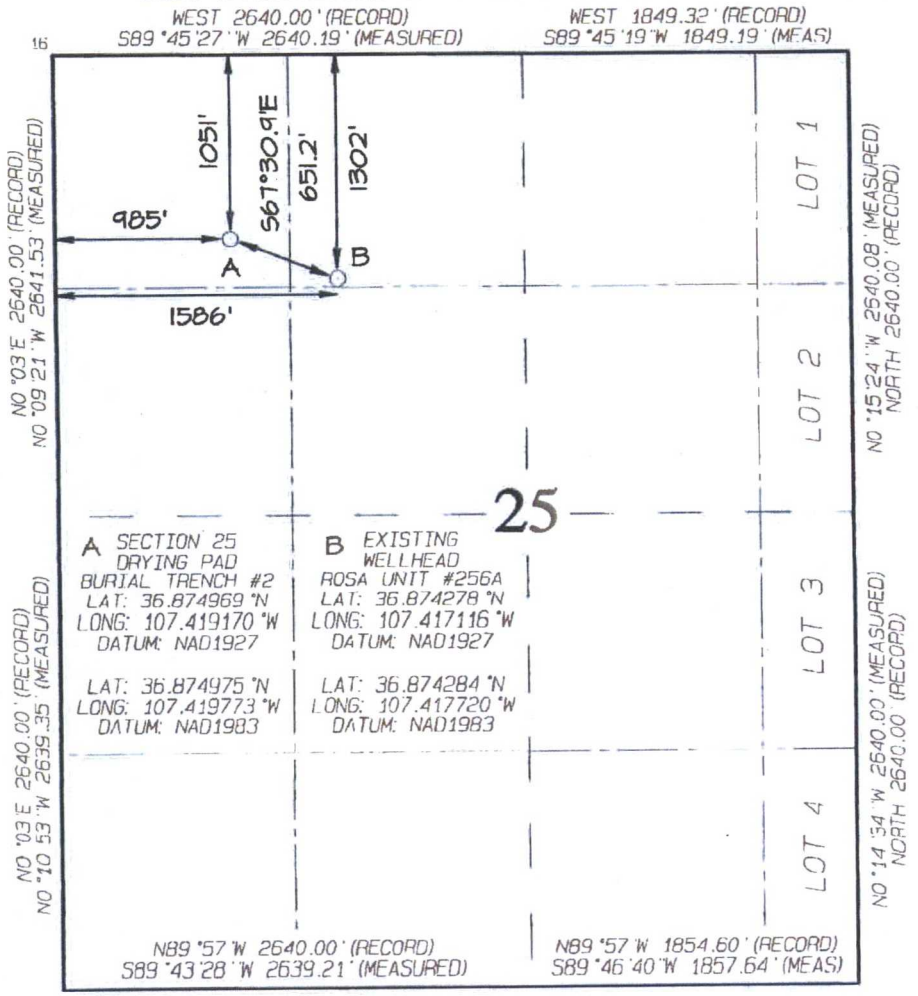
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	25	31N	6W		1051	NORTH	985	WEST	RIO ARRIBA

11 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

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.

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



17 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

Printed Name

E-mail Address

18 SURVEYOR CERTIFICATION

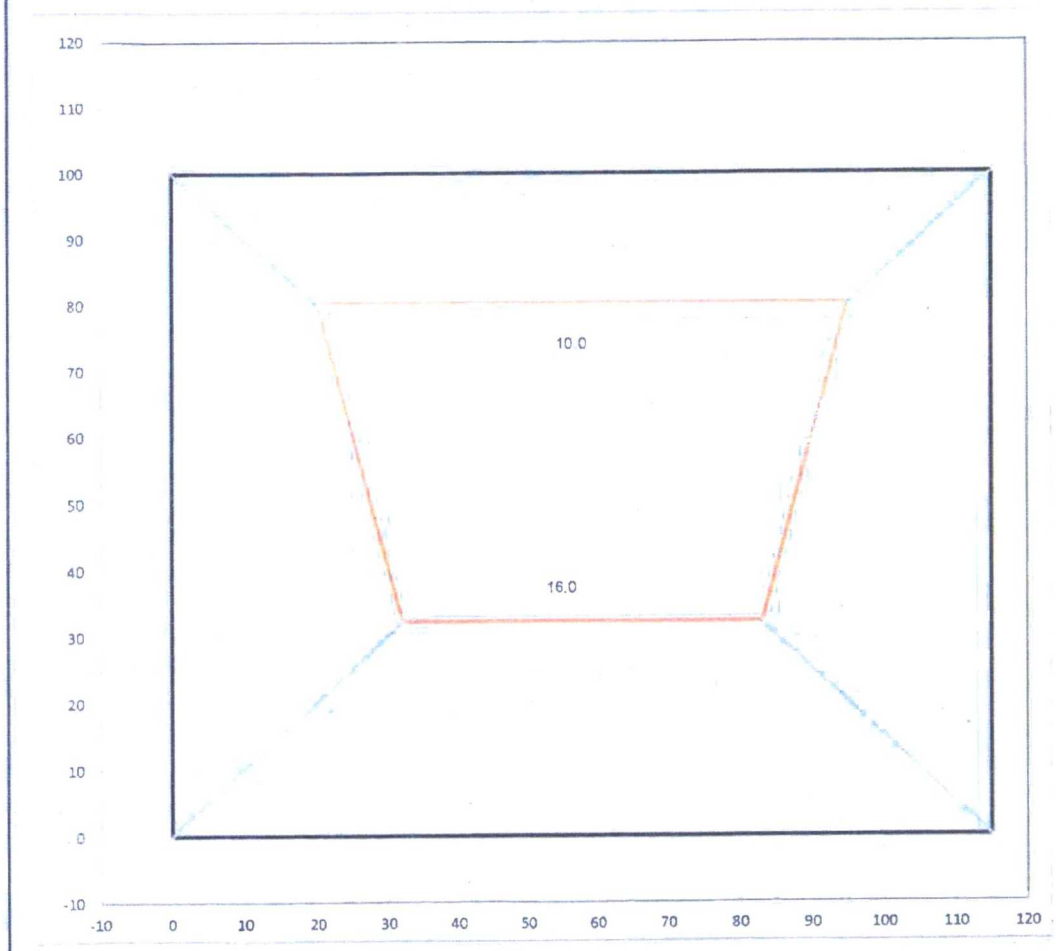
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date Revised: MAY 1, 2019
Date of Survey: JUNE 22, 2015

Signature and Seal of Professional Surveyor

JASON C. EDWARDS
NEW MEXICO
15269
REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS
Certificate Number 15269



Solids Burial Pit

Total Width (E-W)	115.0	Ft	
Total Length (N-S)	100.0	Ft	
Slope Dimensions			
Pit Slopes (Rise to Run)	1.00	to	2.00

	Depth below drying pad	Approximate depth below natural grade
Depth Southeast side	16.0	26.0
Depth Adjacent to Drying Pad West	10.0	16.0
Depth Adjacent to Drying Pad East	10.0	20.0
Depth Southwest Side	16.0	22.0

E-W Botton Dimension South	51.0	Ft
E-W Bottom Dimension North	75.0	Ft
N-S Bottom Dimension	48.00	Ft

Total Capacity	15,770.91	bbls
	88,553	cu ft
	2.03	ac ft
Number of wells	7	
Estimated Solids	78,160	cu ft

North

RT Hicks Consultants 901 Rio Grande Blvd. NW Albuquerque, N M. 87104	**Solids Burial Pit**	**Plate 1**
	WPX - Section 25 Trench	**June 2015**

Legend

- Permitted Edge of Disturbance
- Section 25 Cuttings Disposal Boundary
- Cuttings/Drying Pad #2

LOGOS Operating, LLC Section 25 Drying Pad and Burial Trench
Aerial Map
Section 25, Township 31 North, Range 6 West
Rio Arriba County, New Mexico

LOGOS RESOURCES II, LLC

Appendix A

Site Inspection Photographs & Survey Information

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

View north of former rock quarry shows lease road in foreground. The drying pad will lie between the road (foreground) and the quarry.

View south from north edge of former quarry. Line of boulders in quarry bottom mark the boundary from restored area (behind boulders) from unrestored quarry. The restored area is the location of the first of several burial trenches.

View north showing area to be mined to exhaust the resource.

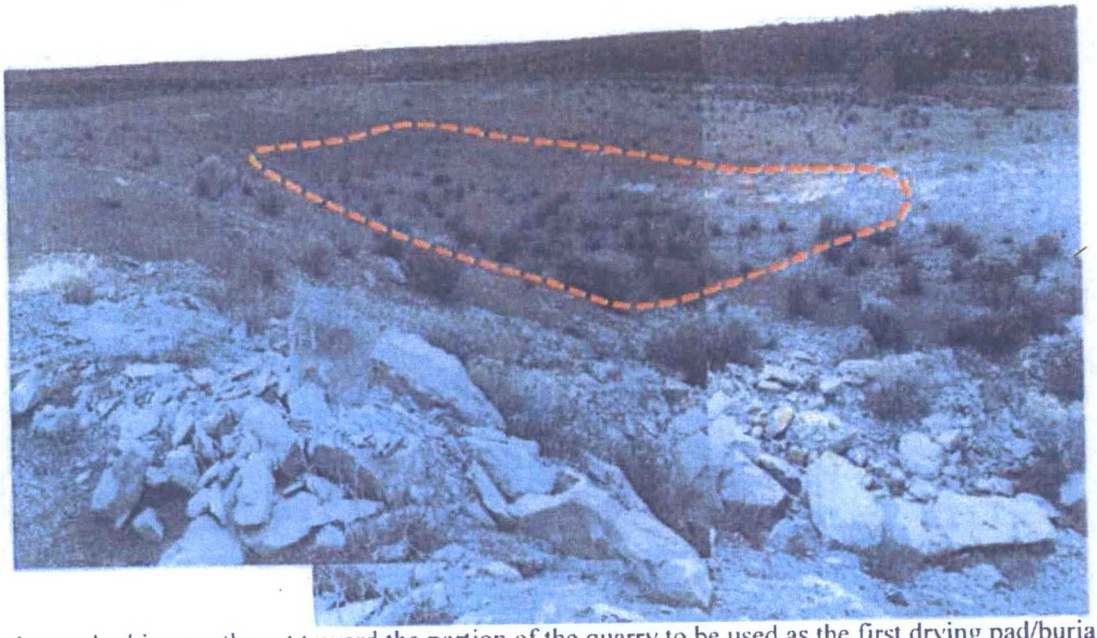


Image looking southwest toward the portion of the quarry to be used as the first drying pad/burial trench (red dashed line).

LOGOS RESOURCES II, LLC

2010 Afton Place
Farmington, NM 87401
Phone: (505) 324-4145
Fax: (505) 326-6112

Design/Construction Plan

The Drying Pad and Burial Trench #2 will be located on the north side of the rock quarry. Plates 1 and 2 describe the design of the drying pad and burial trenches proposed for this project. LOGOS Operating, LLC will provide 72-hour notification prior to lining to allow staff the opportunity to inspect the liner foundation.

Currently, the design consists of a single drying pad located to the east of the burial trench. The burial trench will contain the discharges of closed-loop system drilling solids from Rosa Drill Program. The discharges of closed-loop system drilling solids will be on drying pad until all discharges are collected and pass a paint filter test. Once the material is ready to be buried, the burial trench will be dug and lined as per NMAC 19.15.17.11.K. LOGOS Operating, LLC will provide 72-hour notification prior to lining to allow staff the opportunity to inspect the liner foundation. Composite sampling will be collected before discharge into the burial trench.

Construction/Design Plan of Drying Pad and Burial Trenches

Stockpile Topsoil
The topsoil that is stockpiled to the north of the proposed drying and burial trenches will be utilized for final cover when reclamation commences.

Signage
The operator will post an upright sign not less than 12 inches by 24 inches with lettering not less than two inches in height in a conspicuous place on the fence surrounding the pad/trench. The operator will post the sign in a manner and location such that a person can easily read the legend. The sign shall provide the following information.

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

Fencing
The operator plans to install an adequate surrounding perimeter fence that prevents unauthorized access to the site, including the drying pad/burial trenches. As the drying pad/burial trench is not located within 1000 feet of a permanent residence, school, hospital, institution or church, the operator will fence the drying pad/burial trench to exclude livestock and game. Because fluids are not stored in the pad/trench, the operator will place a four foot fence that has at least four strands of barbed wire evenly spaced in the interval between one foot and four feet above ground level.

LOGOS RESOURCES II, LLC

2010 Afton Place
Farmington, NM 87401
Phone: (505) 324-4145
Fax: (505) 326-6112

Earthwork

The drying pad/burial trenches will adhere to appropriate prescriptive mandates. The pad and trenches will have a properly constructed foundation and slopes consisting of a firm unyielding base that is smooth and free of rocks, debris, sharp edges or irregularities to prevent the liner's rupture or tear. This will require grading the quarry walls as necessary to form the rough slopes of the trench and grading the area adjacent to the proposed trench to proposed trench to form the drying pad. In areas where the trench is mainly rock, smooth foundations for the liners may require importing material that is relatively free of rocks from a suitable location to form the liner foundations and/or geotextile material between the earthen foundation and the liner.

The drying pad to the east of the burial trench is approximately 40-feet wide by 100-feet long and will slope slightly north to south. The foundation of the drying pad will lie 0.5-3.0 feet below the top of the liner in the burial trench. Thus, any fluids drained from solids placed on the drying pad will not flow into the trench. These fluids will be allowed to evaporate or removed for re-use or disposal.

A berm or ditch will surround the drying pad to prevent run-on of surface water.

Liner Installation

For the burial trench, the geomembrane liner will consist of 30-mil string reinforced LLDPE which exceeds the specification of OCD rules. At least 48 hours prior to liner installation, the operator will notify the District Office of this construction event.

For the drying pad, the liner will be at least 30-mil LLDPE and could be as robust as 60-mil HDPE. We plan on placing 1-3 feet of earth material over the drying pad liner.

Solids from the closed loop system will be unloaded from north to south on the drying pad. This area will be graded relatively flat but sloping slightly toward the south. The earth will be smooth and free from rocks to form a good foundation on which to lay the proposed liner. The length of area will be equal to or longer than the length of the burial trench area. The width of the drying pad area will be 40 feet to allow unloading of solids from trucks and transfer of solids into the trench with a loader or other heavy equipment.

For the burial trench area, 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
4. slope, i.e., oriented along, not across, the slope, prior to any field seaming
5. minimize the number of welded field seams in comers and irregularly shaped areas
6. utilize only qualified personnel to weld field seams
7. avoid excessive stress-strain on the liner

LOGOS RESOURCES II, LLC

2010 Afton Place
Farmington, NM 87401
Phone: (505) 324-4145
Fax: (505) 326-6112

8. place geotextile under the liner where needed to reduce localized stress-strain or protuberances that may otherwise compromise the liner's integrity
9. anchor the edges of all liners in the bottom of a compacted earth-filled trench that is at least 18 inches deep
10. place additional material (liner, felt, etc.) to ensure that the liner is protected from any mechanical damage at any point of discharge of solids into the lined drying pad/burial trench.

The contractor will follow the same protocols for the drying pad except there is no anchor trench adjacent to the burial trench. Instead, the liner will extend for 10-20 feet over the 30-mil LLDPE liner that forms the east-facing wall of the burial trench. Over the liner, the contractor may lay 0-3 feet of earth (see O&M Plan).

The drying pad/burial trench will not be used to vent or flare gas and the volume does not exceed 10 acre-feet.

LOGOS RESOURCES II, LLC

2010 Afton Place
Farmington, NM 87401
Phone: (505) 324-4145
Fax: (505) 326-6112

Operating and Maintenance Plan

The operator will maintain and operate the drying pad and adjacent 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.

The operator will recycle, reuse or reclaim all fluids in the drying pad and burial trench in a manner approved by division rules that prevents the contamination of fresh water and protects public health and the environment. If re-use is not possible, fluids will be sent to a division approved facility. Fluids in the trench will be precipitation or minor drainage of fluid from solids. Fluids captured in the drying pad should be minimal.

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

If rainfall or other fluid is found in the pit and the liner develops any penetration 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.

If the trench or drying pad liner's integrity is compromised above the liquid's surface then the operator will repair the damage or initiate replacement of the liner within 48 hours of discovery or seek a variance from the appropriate division district office.

The operator will ensure that the discharge of solids into the pad and trench does not damage the liner by erosion or impact. On the upper portion of the discharge slope of the trench the operator will install a layer of the drying pad liner (as described in the design plan) to minimize the potential of liner damage by unloading solids.

The operator or qualified contractor will install diversion ditches and berms around the drying pad as necessary to prevent the collection of surface water run-on.

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

The operator will maintain the drying pad/burial trench free of miscellaneous solid waste or debris. The operator will remove any visible or measurable layer of oil from the surface of the drying pad although the presence of oil is highly unlikely.

The operator will inspect the drying pad weekly from the start of discharge to the pad until closure and burial of solids. 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 does not anticipate any drilling fluids in the trench as the solids placed in the trench will pass the paint filter test prior to unloading onto trench. As suggested above, the protocol for unloading solids to the drying pad and transfer to the burial trench are:

1. Trucks off load the solids from the closed loop system onto 1 -3 feet of dry earth material that overlays the liner of the drying pad area.

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2. These solids remain on the dry earth until the material passes the paint filter test
3. Using a loader or other appropriate equipment, the closed loop solids will be transferred into the burial trench as will moist earth from beneath the footprint of the solids pile.
4. Dry earth will be replaced on the drying pad area as required after the transfer to the burial trench

Any fluids will be removed from the surface of the burial trench within 60 days from the date that the last drilling or workover rig associated with the drying pad/burial trench permit is released. The operator will note the date of this release upon Form C-105 or C-103 upon well or workover completion.

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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

- No liquids except minimal drainage from the drilling solids should exist in the trench.
- 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. If additional stabilization is necessary, the operator will allow drying by evaporation or will add 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 can support the soil cover.

Waste Material Sampling Plan
Prior to closure, an eight-point composite sample of the solids derived from all wells will be collected from the burial trench and 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.

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.

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: Envirotech Permit Number: NMO1-0011

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Protocols and Procedures for Earthwork

Stabilization of the residual cuttings and mud is accomplished by allowing the solids to dry in the pad/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.
5. Contour the cover to
    a. blend with the surrounding topography OIL CONS. DIV DIST. 3
    b. prevent erosion of the cover .
    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-105 if
iv. the report will list the name, API # and location of the well(s) from which the solids originated

Burial Trench Closure Plan

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

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- 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, 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.

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Drying Pad Closure Plan

The operator will close the drying pad by first removing any remaining dry/stabilized drilling waste and transferring those materials to the burial trench associated with the drying pad. The drying pad constructed for Trench #2 may also be used as a drying pad for Trench #3. Drying pad liners will be sent to an approved disposal facility.

The operator shall test the soils beneath drying pad as follows.

1. A five point composite sample to include any obvious stained or wet soils, or other evidence of contamination will be taken under the liner (after removal) and that sample shall be analyzed for the constituents listed in Table I of 19.15.17.13 NMAC.
2. If any contaminant concentration is higher than the parameters listed in Table I of 19.15.17.13 NMAC, the operator will excavate the soil as necessary and re-test the new bottom as described above. Excavated material will be placed in the burial trench provided that the material meets the standards of Table II.
3. When all contaminant concentrations are less than or equal to the parameters listed in Table I of 19.15.17.13 NMAC, then the operator will proceed to backfill the pit, pad, or excavation with non-waste containing, uncontaminated, earthen material.