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By OCD; Dr. Oberding at 1:11 pm, Feb 23, 2015

February 2015

**C-144 Permit Package for
Tele Delux 32 State 4H
Liquids Recovery and Cuttings Disposal Pit
Section 32 T25 R35E, Lea Co, NM**



View of staked location to north

**Prepared for
Endurance Resources
Midland, Texas**

**Prepared by
R.T. Hicks Consultants, Ltd.
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

February 17

Dr. Tomas Oberding
NMOCD District 1
1625 French Drive
Hobbs, NM 88240
Via E-Mail

RE: Endurance Resources LLC – Tele Delux State 32 4H
Fluids Recovery and Solids Disposal Temporary Pit
UL A Section 32 Township 25S Range 35E

Dear Tomas:

On behalf of Endurance Resources LLC, R.T. Hicks Consultants, Ltd. is pleased to submit the C-144 application package for the above-referenced project. Please note the following:

1. The Design/Construction Plan and O&M Plan are modified from previously approved plans as this pit design and operation represent a relatively new concept: a single pit used for numerous nearby wells that employ closed loop systems.
2. The Closure Plan is essentially the same as previously approved plans, as the process is the same.
3. The fluids recovery and solids disposal pit will be placed 300 feet south of the staked location.
4. We ask for District approval of a variance to allow the use of EPA Method 8015 (GRO+DRO+MRO) for the analysis of TPH in lieu of Method 418.1 for the required sampling of drilling solids. We attach the variance for the Murchison Jackson 17H which OCD previously approved.
5. This letter and application is copied to the Bureau of Land Management to notify the surface landowner of the operator's intent to use on-site burial.
6. In addition, the operator has submitted an application to the BLM for a right-of-way to use this pit. This right of way, if approved, will supersede any previously-issued Conditions of Approval that specify "no pits" at this site.
7. I certify that Hicks Consultants performed a visual inspection of the site.

If you have any questions or concerns regarding this application, please contact me as I am the author of the siting criteria demonstration. As always, we appreciate your work ethic and attention to detail.

Sincerely,
R.T. Hicks Consultants



Randall Hicks
Principal

Copy: Endurance Resources LLC
Bureau of Land Management

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 subsections of 19.15.17.13.D:

(5) The operator shall collect, at a minimum, a five point composite of the contents of the temporary pit or drying pad/tank associated with a closed-loop system to demonstrate that, after the waste is solidified or stabilized with soil or other non-waste material at a ratio of no more than 3:1 soil or other non-waste material to waste, the concentration of any contaminant in the stabilized waste is not higher than the parameters listed in Table II of 19.15.17.13 NMAC.

Depth below bottom of pit to groundwater less than 10,000 mg/l TDS	Constituent	Method*	Limit**
25-50 feet	Chloride	EPA Method 300.0	20,000 mg/kg
	TPH	EPA SW-846 Method 418.1	100 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B	10 mg/kg

<http://www.nmcpr.state.nm.us/nmac/parts/title19/19.015.0017.htm>[7/3/2013 10:50:10 AM]

19.15.17 NMAC

51-100 feet	Chloride	or 8015M EPA Method 300.0	40,000 mg/kg
	TPH	EPA SW-846 Method 418.1	2,500 mg/kg
	GRO+DRO	EPA SW-846 Method 8015M	1,000 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8015M	10 mg/kg
> 100 feet	Chloride	EPA Method 300.0	80,000 mg/kg
	TPH	EPA SW-846 Method 418.1	2,500 mg/kg
	GRO+DRO	EPA SW-846 Method 8015M	1,000 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8015M	10 mg/kg

*Or other test methods approved by the division

**Numerical limits or natural background level, whichever is greater
[19.15.17.13 NMAC - Rp. 19.15.17.13 NMAC, 6/28/13]

On October 28, 2014 composite samples were recovered from the Jackson Unit #17H pit, one from the inner and one from the outer cells, as well as a composite sample of available mixing dirt from the berms of the pit below the liner. These three composites were submitted for individual analyses for parameters listed in Table II of 19.15.17.13 NMAC. As approved previously by OCD, an accurate demonstration that “after the waste is solidified or stabilized with soil or other non-waste material at a ratio of no more than 3:1 soil or other non-waste material to waste, the concentration of any contaminant in the stabilized waste is not higher than

the parameters listed in Table II of 19.15.17.13 NMAC” may be derived by mathematically mixing the laboratory results. First, we calculated “pit composite” concentration based on the volume of cuttings of each cell (3.5 parts outer, 1 part inner cell) and the individual laboratory results. Next we mathematically mixed the composite pit concentration with the mixing dirt concentrations at a ratio of 3 parts mixing dirt to 1 part pit contents. When compared to Table II closure criteria, TPH (418.1) target concentrations were not met, as shown in the table below. TPH (418.1) is approximately 17% over the Pit Rule standard while TPH by 8015 (GRO+DRO+MRO) is 29% of the 2,500-mg/kg limit. All other constituents meet the in-place burial limits of the Rule.

Jackson Unit #17H 3:1 STABILIZED CUTTINGS CALCULATIONS		
Constituent	Table II Limit (GW>100')	10/28/2014 Samples*
Chloride	80,000 mg/kg	7302
TPH	2,500 mg/kg	2927
GRO+DRO	1,000 mg/kg	612
BTEX	50 mg/kg	3.15
Benzene	10 mg/kg	0.25
GRO+DRO+MRO		735

*Concentrations of stabilized cuttings determined using component concentrations inserted into the follow formula:

$$3:1 \text{ Stabilized Cuttings} = \frac{\text{inner pit cell} + (3.5 * \text{outer pit cell}) / 4.5 + (\text{mixing dirt} * 3)}{4}$$

EPA Method 418.1 measures carbon-hydrogen bonds (hydrocarbons) and is not specific to petroleum-based material. Several analytical laboratories have informed us that many non-petroleum organic additives used during drilling (e.g. cellulose, pine pulp, vegetable oils, cottonseed hulls, nut shells) will be captured by the 418.1 analytical method. Method 418.1 can also capture other naturally-occurring material in a sample such as dry grass and humic material in topsoil. For example, TPH concentrations of grass (14,000 mg/kg), pine needles (16,000 mg/kg), and oak leaves (18,000 mg/kg) ¹ would not meet the Table II concentration limits and the Commission did not intend that the in-place burial limit for TPH include hydrocarbons associated with leaves or pine pulp.

We conclude that TPH by 418.1 captures a broader spectrum of hydrocarbons than was envisioned by the Commission when evaluating the burial standards for drilling solids. In contrast, TPH by 8015M (GRO+DRO+MRO) appears to better reflect the intent of the Commission as reflected in the Findings of Fact, which state (emphasis added):

P. The Commission finds that constituents reflected in Tables I and II (other than chloride), benzene, and toluene, ethylbenzene and xylene (a compound commonly referred to as BTEX), as well as the *gasoline range organics* (“GRO”) and *diesel range organics* (“DRO”), which are *compounds in the total petroleum hydrocarbons* (“TPH”), are *light aromatics*. While they are soluble and are able to travel to groundwater, they are slower than chlorides in unsaturated flow, which is why chlorides are used as the outer boundary marker for contaminates. Moreover, the light aromatics are volatile, particularly benzene, which is highly volatile. The resident time for light aromatics is very short, and they will evaporate quickly and degrade in the soil. This is

¹ “Frequently Asked Questions About TPH Analytical Methods for Crude Oil” see http://www.api.org/environment-health-and-safety/environmental-performance/~/_/media/cd8032db1be74914a6b3c816bab33786.ashx

particularly true during closure and mixing. The benzene level that is reflected in Tables I and II, is lower than the levels recommended by the American Petroleum Institute, and GRO and DRO, while they could affect the odor and taste of water, are not a matter of concern with respect to toxicity. *The other compounds in TPH, the oil range organics and asphaltenes, are made up of large molecules and are not sufficiently mobile to pose a concern for human health or fresh water.*

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

The modified Method 8015 uses solvent extraction followed by gas chromatography and is more widely used in the regulation of the petroleum industry than the 418.1. The evaluation of TPH using method 8015M (GRO+DRO+MRO) provide a more accurate representation of the *petroleum* hydrocarbons without interference from organic, biodegradable, drilling additives such as vegetable/pine oils, cottonseed hulls, and nuts shells, which we believe are not intended for regulation. Our analyses of drilling pit solids demonstrates how “total” TPH results from 418.1 do not contribute to the protection of fresh water relative to SPLP (synthetic precipitation leaching procedure) TPH analysis by 418.1 with respect to the potential of the hydrocarbon to migrate into the underlying groundwater via leaching or into the root zone via wicking upward.

Reviewing the analyses of seven sample sets from five Murchison pits in 2014, the percentage of TPH by SPLP relative to “total” TPH ranges from 0% to 1.42%. This is likely because nearly all of the TPH in the stabilized cutting samples at this site are from the insoluble (or nearly insoluble) matter. The TPH analysis using the SPLP sample preparation method provides a better understanding of the actual risks to human health and the environment than the “total” TPH analysis, but currently there are no regulatory standard concentrations established for samples prepared by SPLP.

GRO+DRO+MRO analysis by 8015M offers greater characterization of leacheability by reporting actual petroleum hydrocarbon concentrations by their known chromatograph fingerprints. TPH using Method 418.1 is not the best indicator for risk to human health or the environment and we do not believe it was the intent of the Pit Rule to preclude in-place closure of a temporary pit due to non-petroleum organic matter, either naturally-occurring or in drilling additives. We believe that the approval of a variance allowing the use of TPH by method 8015M (GRO+DRO+MRO) in place of TPH by method 418.1 for comparison to the existing TPH standard (2,500 mg/kg) will provide equal or better protection of fresh water, public health, and the environment.

From: [Oberding, Tomas, EMNRD](#)
To: [Kristin Pope](#)
Cc: [ccottrell@jdmii.com](#); [Chace Walls](#); [gboans@jdmii.com](#); [Randy Hicks](#); [Griswold, Jim, EMNRD](#)
Subject: RE: VARIANCE REQUEST: Murchison - Jackson Unit #17H
Date: Thursday, December 18, 2014 8:19:14 AM

Aloha Ms. Pope et al,

Thank you for sending in this variance request.

After discussions, OCD approves the substitution of 8015 B, C, or D for 418.1. Hydrocarbons between C6 and C36 must be included in the results.

As 8015M appears to cover GRO+DRO+MRO- this too is an appropriate alternate methodology.

Thank you for continuing to work with the OCD.

Please let me know if you have any questions.

-Doc

Tomáš 'Doc' Oberding, PhD
Senior Environmental Specialist
New Mexico Oil Conservation Division, District 1
Energy, Minerals and Natural Resources Department
(575) 393-6161 ext 111
E-Mail: tomas.oberding@state.nm.us

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.

From: Kristin Pope [<mailto:kristin@rthicksconsult.com>]
Sent: Tuesday, December 16, 2014 7:51 AM
To: Oberding, Tomas, EMNRD
Cc: [ccottrell@jdmii.com](#); [Chace Walls](#); [gboans@jdmii.com](#); [Randy Hicks](#); [Griswold, Jim, EMNRD](#)
Subject: VARIANCE REQUEST: Murchison - Jackson Unit #17H

Dr. Oberding:

Please find the attached variance request we discussed over the phone last week. During our phone call, I was mistaken on the closure deadline for this site; the closure deadline for this is January 14, 2015. Per our discussion, note that I've copied Jim Griswold on this submission.

Please let me know if we can assist NMOCD's review in any way. Thank you.

Kristin Pope

C-144 and Site Specific Information for Temporary Pit

R.T. Hicks Consultants, Ltd.

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

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 June 6, 2013

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: Endurance Resources LLC OGRID #: 270329
Address: 203 West Wall Street Suite 1000, Midland, Texas 79701
Facility or well name: Tele Delux 32 State 4H will be the first well served by this fluids recovery and solids disposal pit
API Number: 30-025-42362 OCD Permit Number: _____
U/L or Qtr/Qtr A Section 32 Township 25S Range 35E County: Lea
Center of Proposed Design: Latitude 32 05 37.272 Longitude -103 22 59.279 NAD: 1927 1983 Staked Location
Surface Owner: Federal State Private Tribal Trust or Indian Allotment

2.
 Pit: Subsection F, G or J of 19.15.17.11 NMAC
Temporary: Drilling Workover **FLUIDS RECOVERY AND SOLIDS DISPOSAL PIT FOR MULTIPLE WELLS**
 Permanent Emergency Cavitation P&A Multi-Well Fluid Management Low Chloride Drilling Fluid yes no
 Lined Unlined Liner type: Thickness 20 mil LLDPE HDPE PVC Other _____
 String-Reinforced
Liner Seams: Welded Factory Other _____ Volume 69,060 bbls (8.9 ac ft) Dimensions: L 125 x W 325 x D 10-16 ft

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.

Variations 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 Yes No
See Figures 1 & 2

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 H₂S, 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.

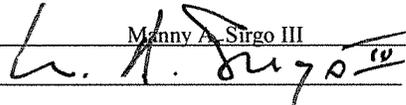
Ground water is less than 25 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
Ground water is between 25-50 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> 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	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> 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	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Written confirmation or verification from the municipality; Written approval obtained from the municipality	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within 300 feet of a wetland. US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within a 100-year floodplain. - FEMA map	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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): Manny A. Sirgo III Title: Engineer
 Signature:  Date: 2-17-2017
 e-mail address: manny@enduranceresourcesllc.com Telephone: 432-242-4680

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

OCD Representative Signature: _____ Approval Date: _____
 Title: _____ OCD Permit Number: _____

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

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: _____

Geologic Setting of the Regional Fresh-Water Bearing Formations

The proposed temporary pit site is located on the border area between the Eunice Plain and what Ground-Water Report 6¹ calls the South Plain (see inset map from Ground-Water Report 6). Ground-Water Report 6 describes the Eunice Plain as a dune covered surface that is underlain by caliche. This description fits the area of the proposed pit (see site inspection photographs). The description of the South Plain is similar to the Eunice Plain. The differentiation between the two areas is generally defined by elevation and drainage. Enlargement of Figure 1 shows the topographic scarp that defines the boundary between these two areas east of the pit location. Here the dune field slopes to the east-southeast into what is named as the Javelina Basin

Groundwater in the area is found mainly in the Triassic Dockum Group: Chinle and Santa Rosa Formation. They consist of conglomerates, cross-bedded sandstones, claystones, and siltstones that were deposited in a continental fluvial environment over the evaporites of the late Permian Ochoan Series, which had filled the Delaware Basin by that time.

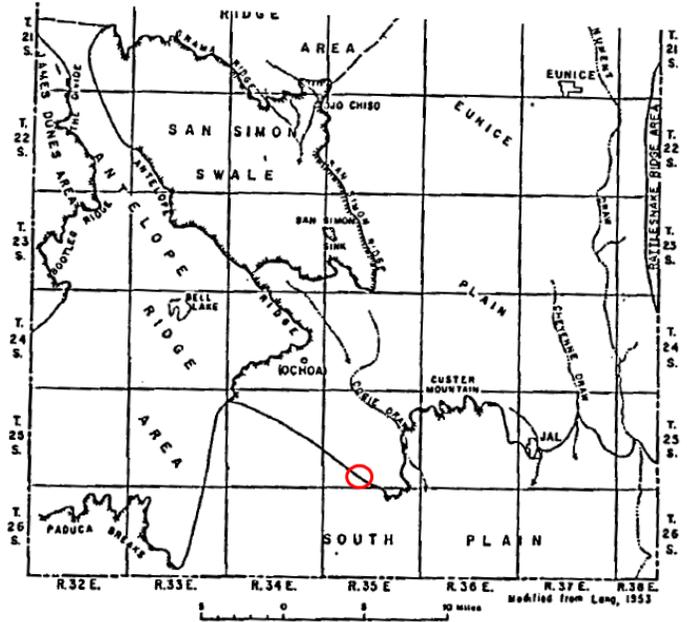
Groundwater also exists in Quaternary Bolson and Alluvial sediments in the area. The USGS suggest that wells north and southeast of the location draw water from this unit (see Figure). The Tertiary age Ogallala Formation is an aquifer that crops out north of the area of the pit. As Figure 1 shows, Triassic Rocks crop out northeast of the pit. This relationship of outcrop strongly suggests that the Ogallala Formation has been removed by erosion in the area of the Southern Plain. Nevertheless, the USGS shows an Ogallala well southeast of the proposed pit location. We believe that differentiation between Bolson deposits and the Ogallala from driller's logs can prove difficult and the USGS classification may be incorrect.

Distance to Groundwater

Figure 1, Figure 2 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 geologic base map that depicts regional topography (metric contour units) and includes the water wells located nearest to the temporary pit site for which information is available, regardless of how comprehensive or useful. It also shows:

1. The location of the temporary pit site as a purple hexagon.



¹ <http://pbadupws.nrc.gov/docs/ML0424/ML042430324.pdf>

Siting Criteria (19.15.17.10 NMAC)
Endurance Resources Tele Delux 32 State 4H

2. Water wells from the USGS database as color-coded triangles that indicate the producing aquifer (see Legend).
3. Water wells, which are not documented in the public databases but were identified by field inspection or other published reports are shown as a dot inside a color-coded (depth) square.
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. No wells registered with the NM Office of the State Engineer are present in the area of Figure 1.

Figure 2 is a regional topographic base map (metric contour units) that depicts the potentiometric surface contours (in feet) of the shallow-most aquifer surrounding the site from Ground-Water Report 6. The water wells plotted include wells from the USGS database that present recent data as wells as significantly older data from Ground-Water Report 6 and Open File Report 92.

Figure 2A also shows:

1. The location of the temporary pit site as a purple hexagon.
2. Groundwater elevations and gauging dates from the most recent available static water level measurement for each well.
3. The more recent data generally agree with the data from the late 1950s that was used to construct the Ground-Water Report #6 map displayed in Figure 2.

Site Geology

The temporary pit is located on an outcrop of Quaternary Age eolian and piedmont deposits (Qe/Qp on Figure 1). These fine-grained sands and clays are present as a thin covering of the underlying rocks. Based on information from GWR-6 and the elevation of the site (3,219 feet ASL), the Triassic age red shale and clays are present approximately 75-100 feet below the temporary pit location.

Water Table Elevation

Ten water wells with depth to water data were identified in the area surrounding the temporary pit site (see Figures 1 and 2). In addition to data from the USGS, published, and field verified well information, which is generally considered reliable. No wells in the area are listed on the OSE Waters database.

Initially, an attempt was made to identify each well using USGS topographic maps. The surface elevation of each well identified on the topographic map was compared to the published surface elevation, if available. Wells that could not be verified using maps were searched for using current and historic satellite photographs in an effort to identify windmills, tanks, or roads associated with the present of former water well. The following comments should be noted from Figures 1 and 2:

- Well USGS-368 is properly located on Figure 1 and Figure 2 according to our field inspection. This well is active and a current water level measurement was not possible.
- The more recent data from the USGS generally agree with the data published in 1960 (Ground-Water Report 6)

Hydrogeology

The nearest water well, assumed to be a Chinle Formation producer, is USGS-368, located approximately 5 miles to the north. Based on the potentiometric surface contours shown in Figure 2, which agree with recent data, we conclude that the groundwater elevation at the temporary pit site is no higher than 3050 feet ASL. With a surface elevation of 3219 feet ASL and a maximum pit depth of 16 feet, the depth to groundwater below the pit floor should be at least $(3219 - 16 - 3055 =)$ 148 feet.

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 significant watercourse, or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). No continuously flowing watercourses exist within 300 feet of the location. The nearest surface drainage feature (un-named intermittent stream identified on the USGS quadrangle map) is located about 1.25 miles south.

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.

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 locations of all area water wells; the nearest fresh water well is the actively pumping USGS-368, which is located about 2 miles to the north-northeast. There are no known domestic water wells located within the mapping area.
- Figure 3 shows that no springs are identified within the mapping area.

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 Jal, NM approximately 10 miles to the east.
- The closest mapped public well field is located approximately 40 miles to the west.

Distance to Wetlands

Figure 6 demonstrates the location is not within 300 feet of wetlands.

- The nearest designated wetlands is a “Freshwater Pond” located about 3 miles to the southwest

Distance to Subsurface Mines

Figure 7 and our general reconnaissance of the area demonstrate that the nearest mines are caliche pits.

- The nearest caliche pits is located approximately 1.5 miles to the north and east.

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

Figure 8 shows the location of the proposed temporary pit with respect to BLM Karst areas using the 2014 map and Figure 1 shows the regional geology.

- The proposed temporary pit is located within a “low” potential karst area.
- The nearest “high” or “critical” potential karst area is located approximately 8 miles west of the site.
- We saw no evidence of solution voids were observed 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

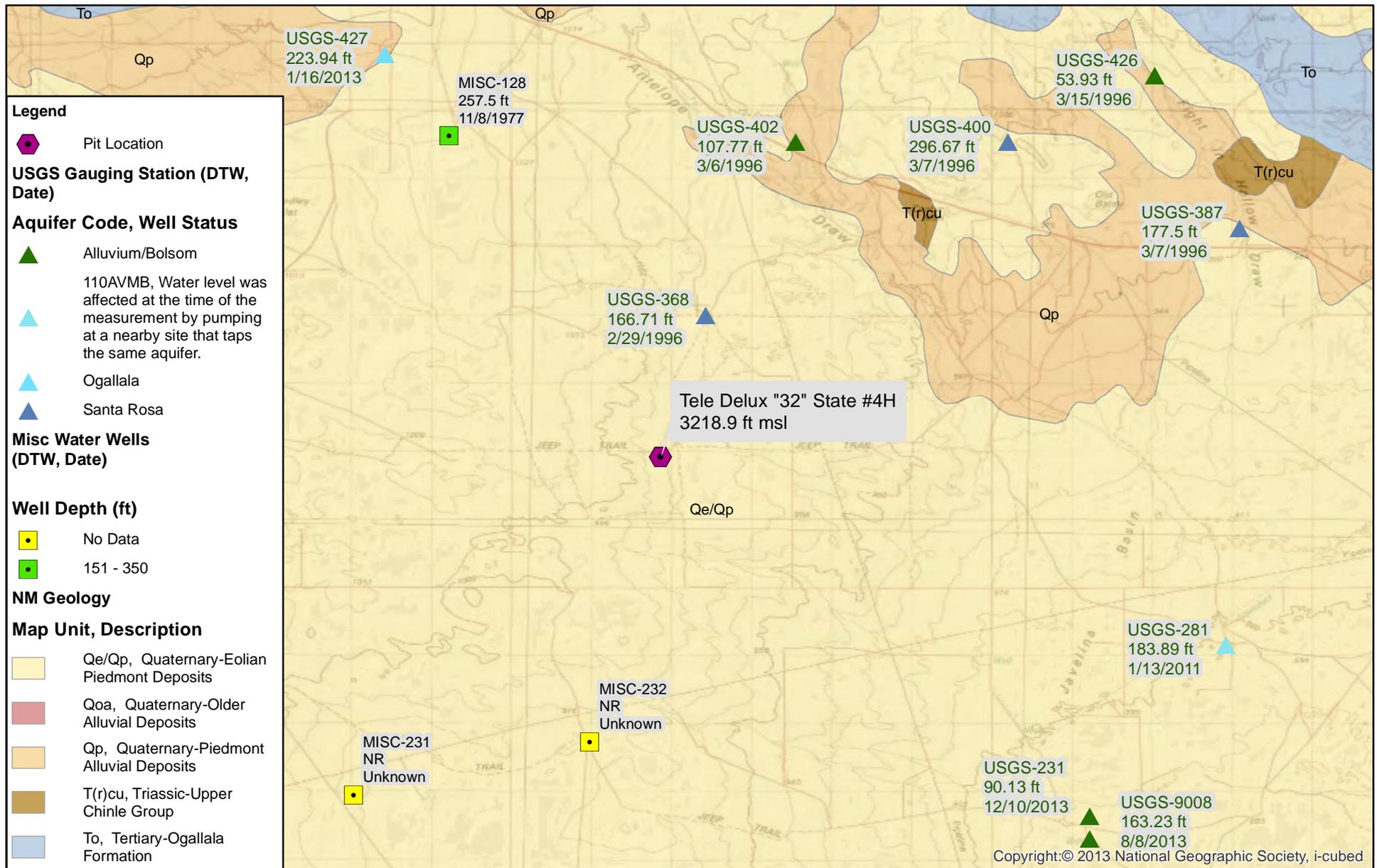
Figure 9 demonstrates that the location is within an area that has not yet been mapped by the Federal Emergency Management Agency with respect to the Flood Insurance Rate 100-Year Floodplain.

- Areas that are not mapped are designated as “Undetermined Flood Hazard” and are generally considered minimal flood risk.
- Our field inspection and examination of the topography permit a conclusion that the location is not within any floodplain.

Site Specific Information Figures

R.T. Hicks Consultants, Ltd.

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Albuquerque, NM 87104



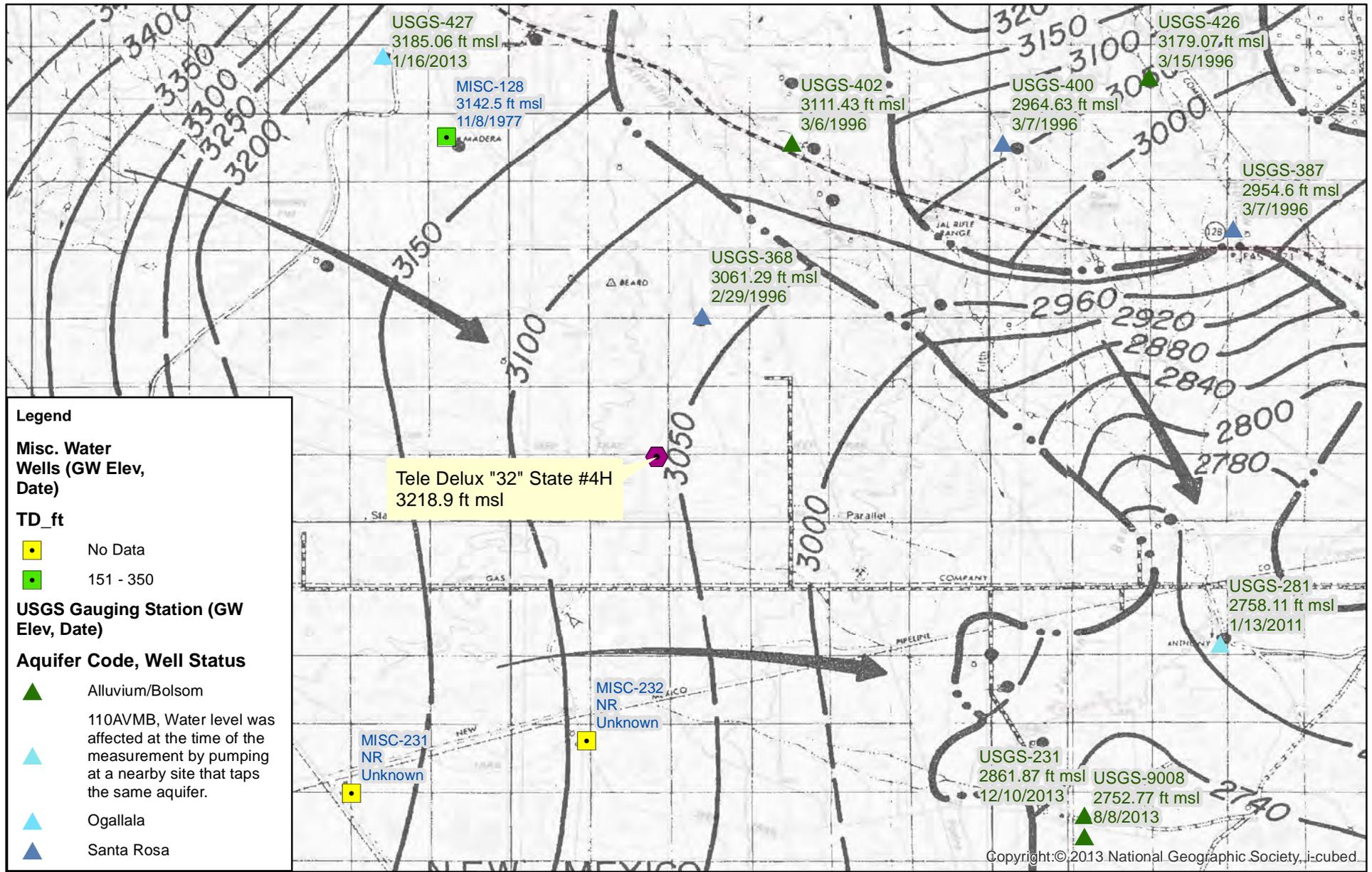
R.T. Hicks Consultants, Ltd
 901 Rio Grande Blvd NW Suite F-142
 Albuquerque, NM 87104
 Ph: 505.266.5004

Depth To Water and Geology

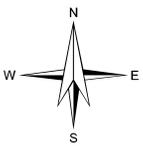
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Figure 1

February 2015



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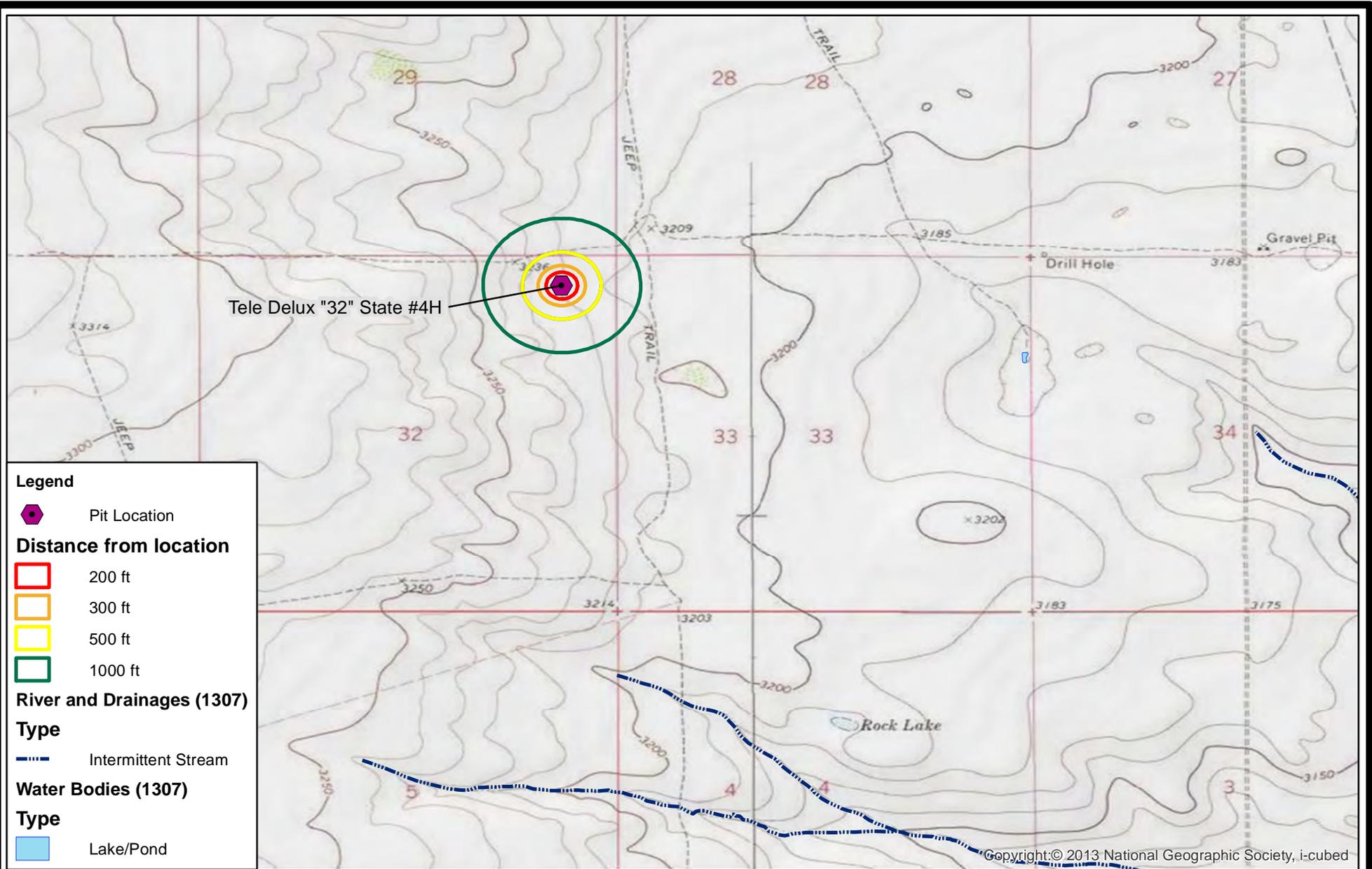
Basemap Source: OFR-95



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Potentiometric Surface and Groundwater Elevation
 at Nearby Water Wells
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Figure 2
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Surface Water and Topography

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Figure 3

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Legend

 Pit Location

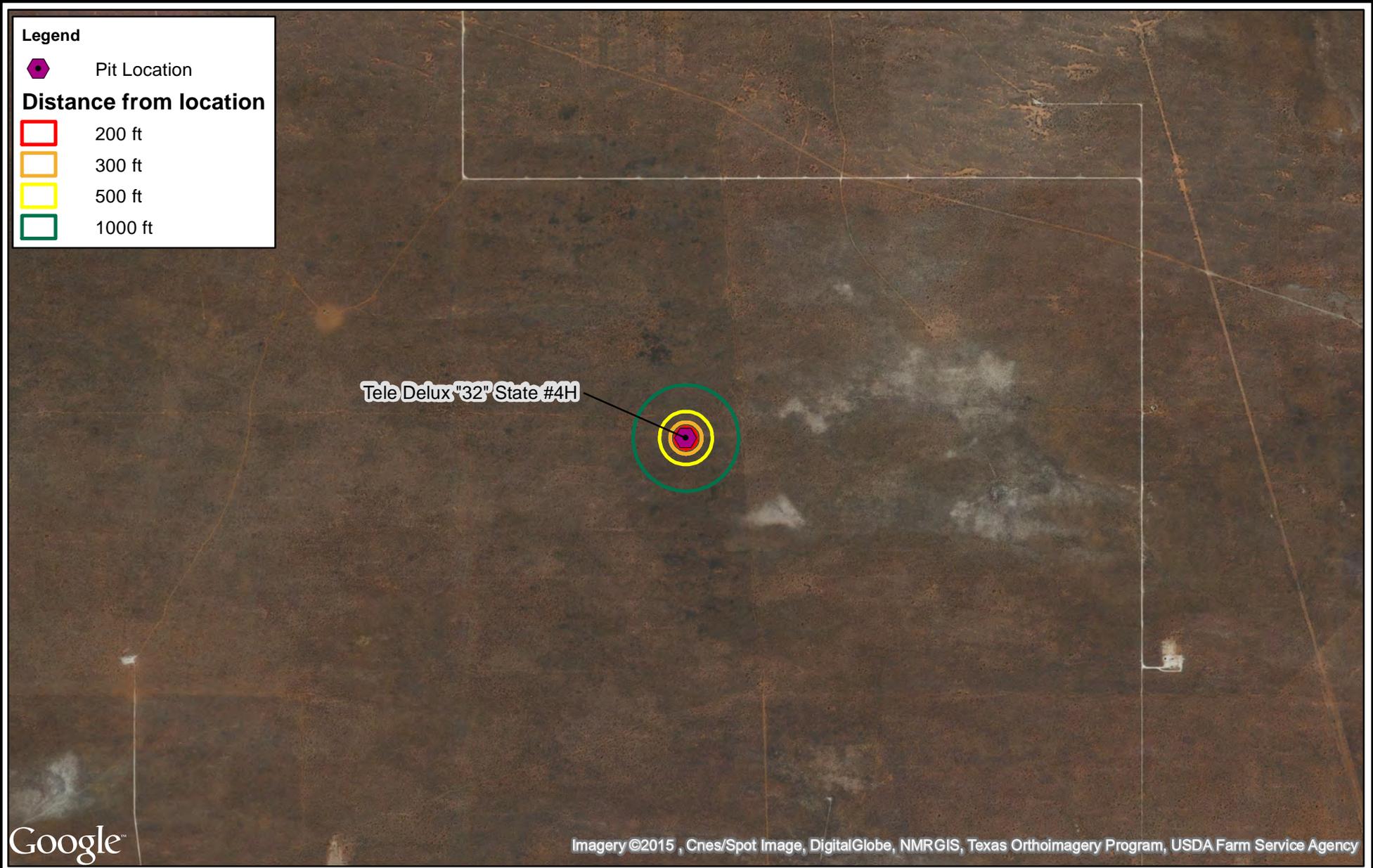
Distance from location

 200 ft

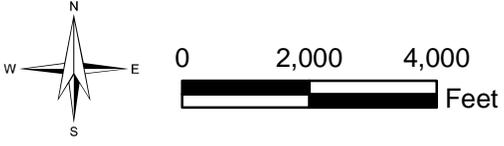
 300 ft

 500 ft

 1000 ft



Basemap: Google, Inc.



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Nearby Structures

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Figure 4

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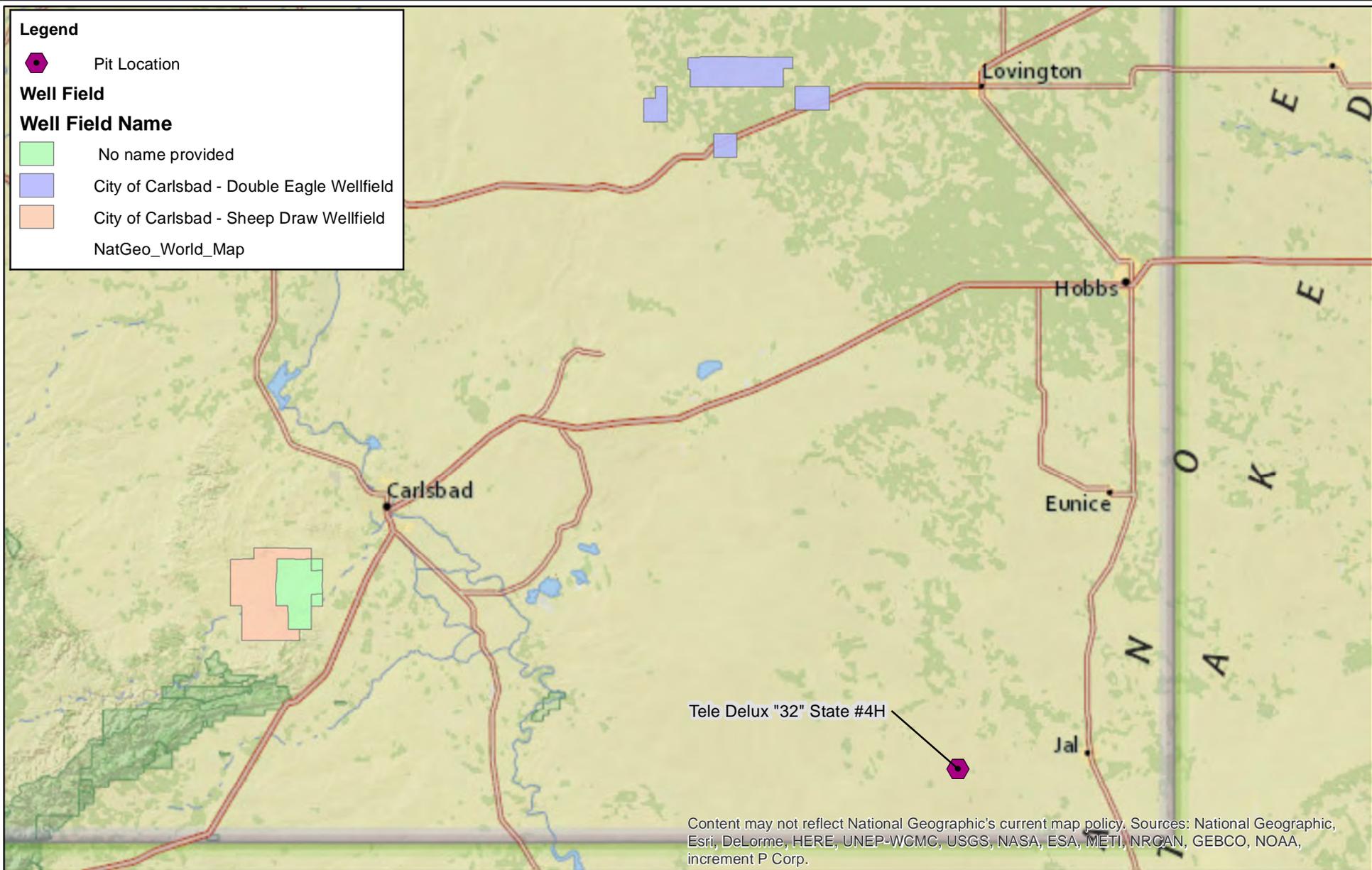
Legend

 Pit Location

Well Field

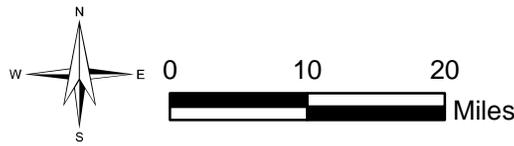
Well Field Name

-  No name provided
 -  City of Carlsbad - Double Eagle Wellfield
 -  City of Carlsbad - Sheep Draw Wellfield
- NatGeo_World_Map



Tele Delux "32" State #4H

Content may not reflect National Geographic's current map policy. Sources: National Geographic, Esri, DeLorme, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.



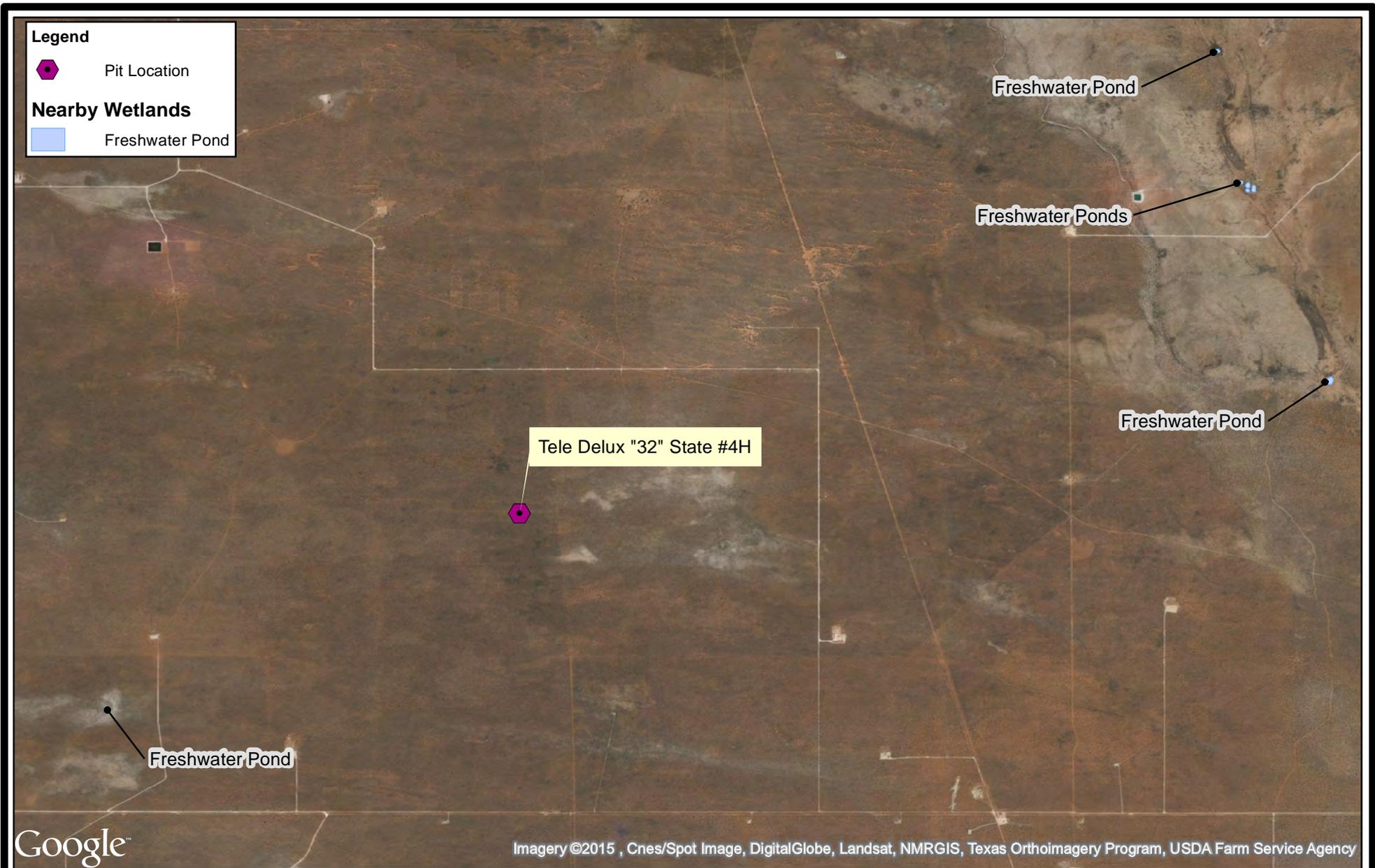
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 Albuquerque, NM 87104
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Nearby Municipalities and Well Fields

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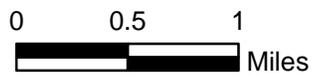
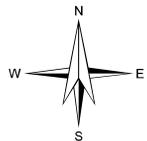
Figure 5

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Google™

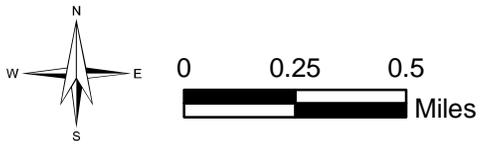
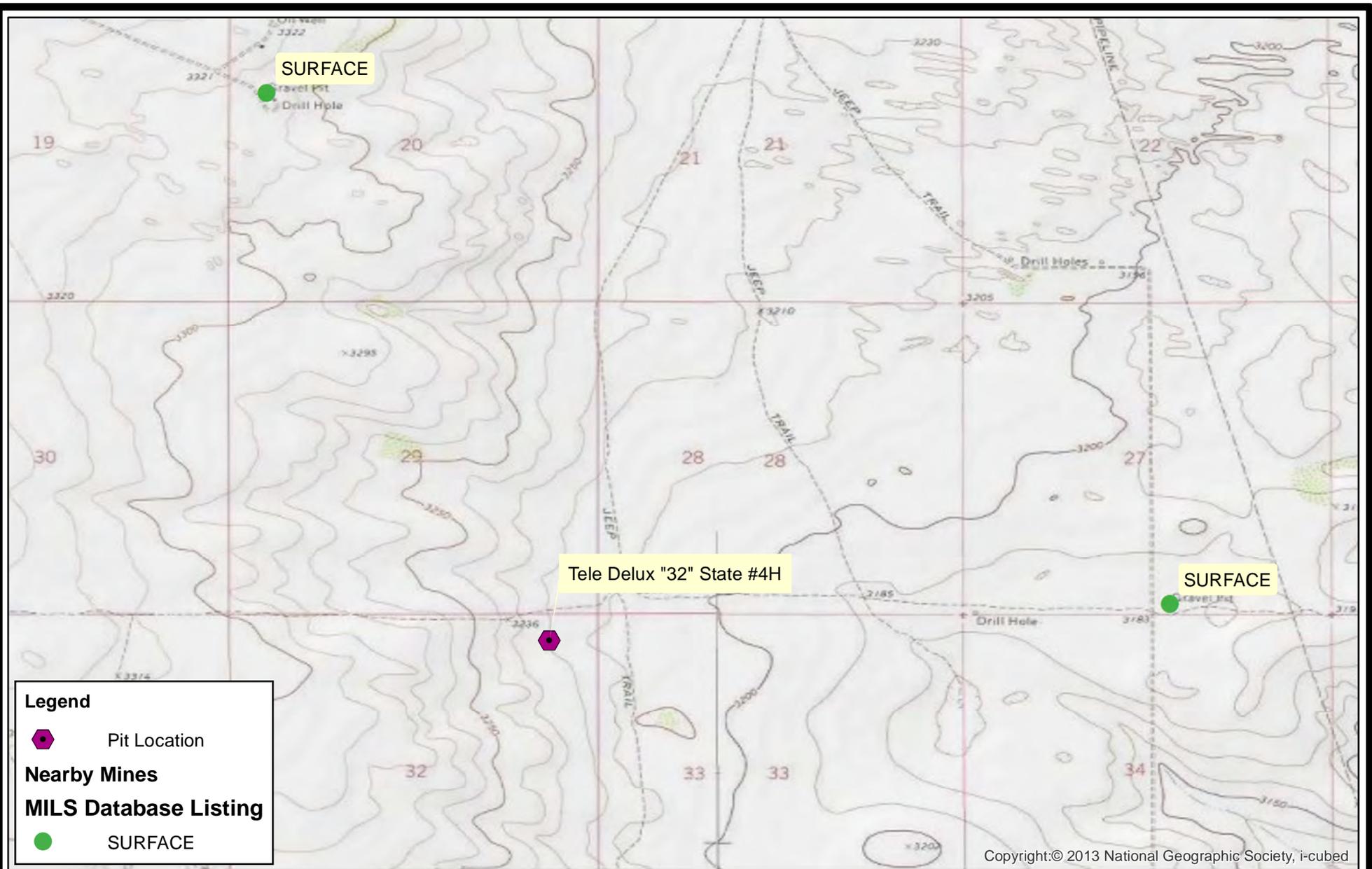
Imagery ©2015, Cnes/Spot Image, DigitalGlobe, Landsat, NMRGIS, Texas Orthoimagery Program, USDA Farm Service Agency



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Nearby Wetlands
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Figure 6
 February 2015



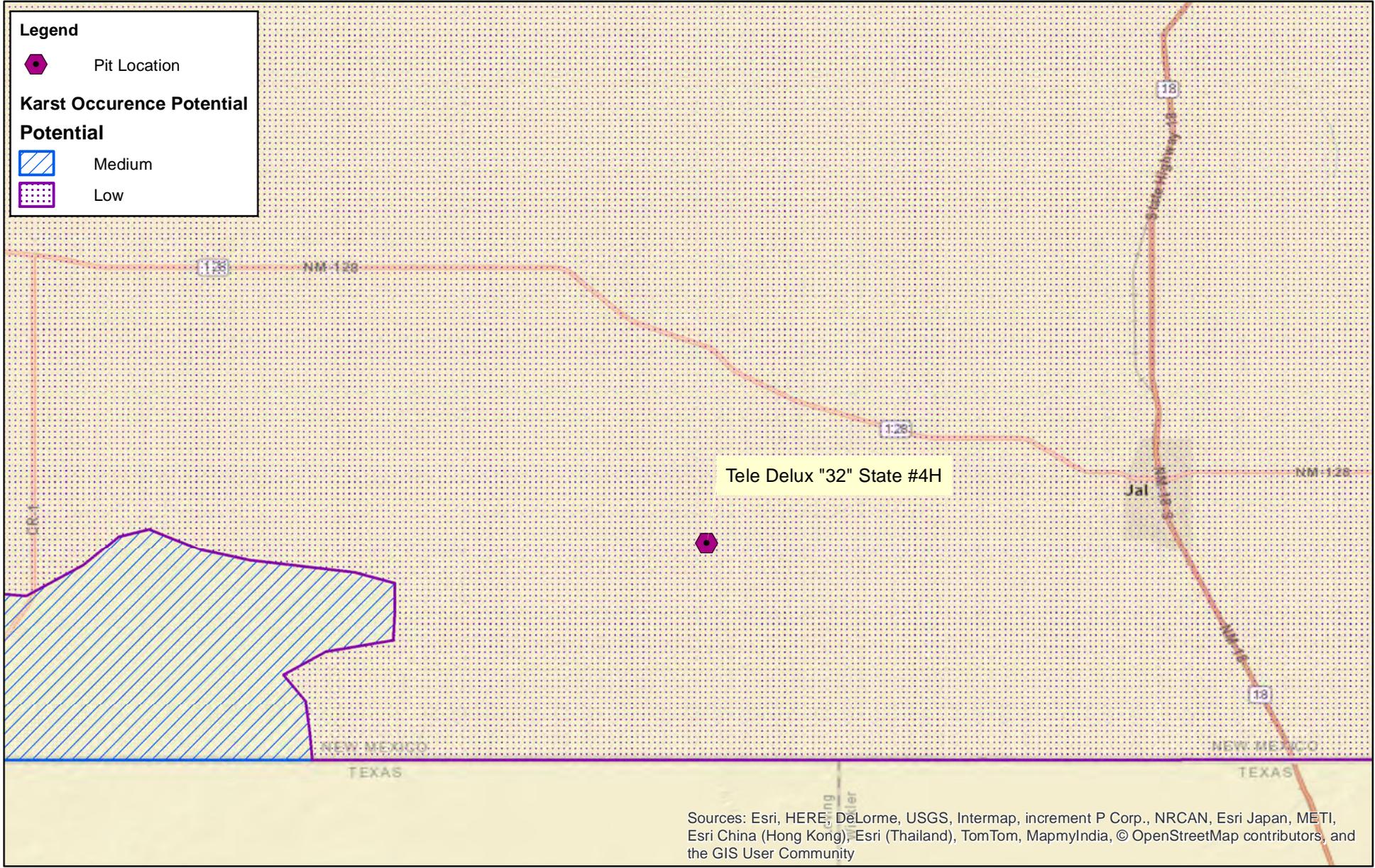
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Nearby Mines and Minerals
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Figure 7
 February 2015

Legend

-  Pit Location
- Karst Occurrence Potential**
-  Medium
-  Low



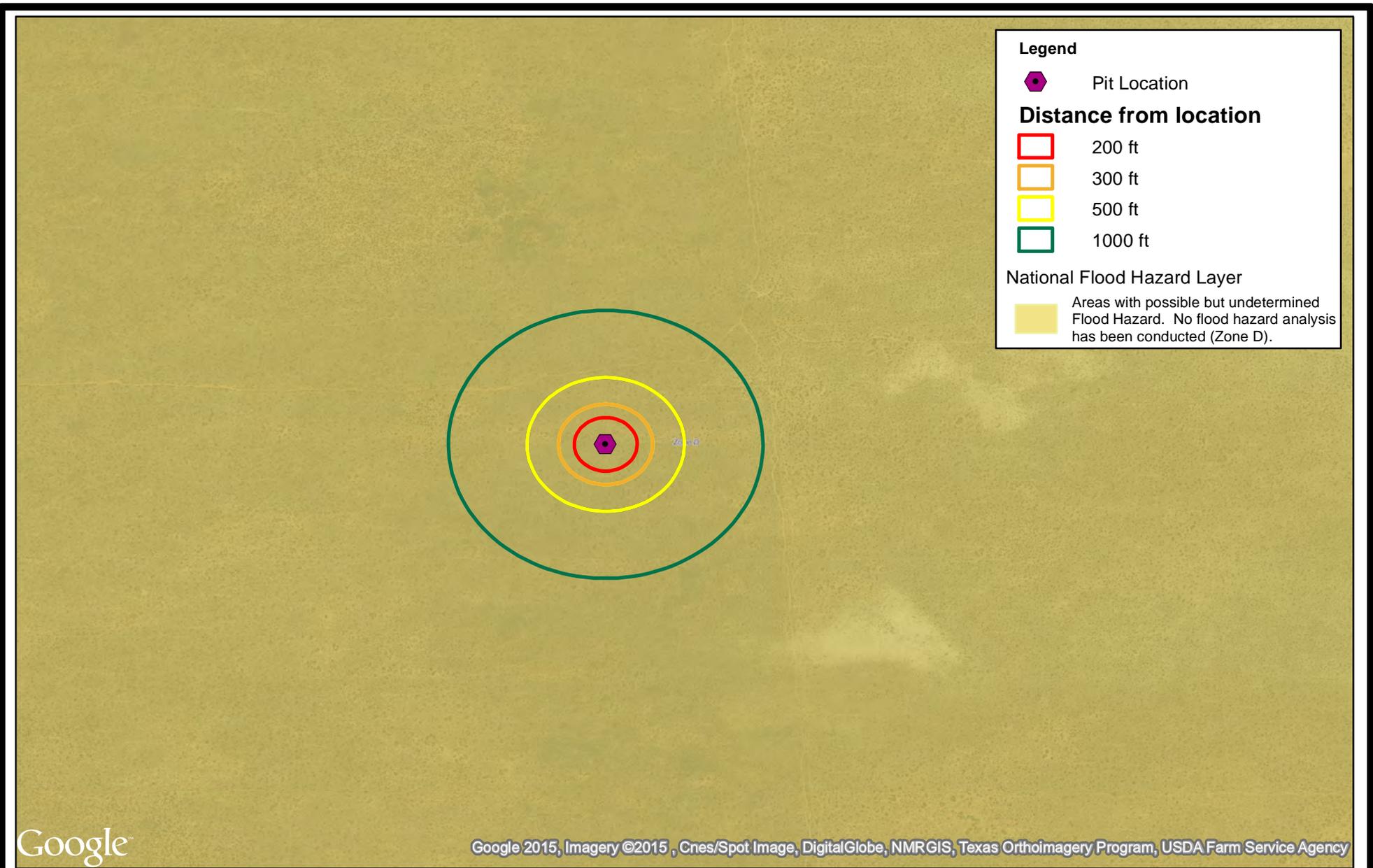
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Karst Potential

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Figure 8

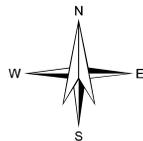
February 2015



Google

Google 2015, Imagery ©2015, Cnes/Spot Image, DigitalGlobe, NMRGIS, Texas Orthoimagery Program, USDA Farm Service Agency

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



0 500 1,000
 Feet

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 Albuquerque, NM 87104
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FEMA Flood Map

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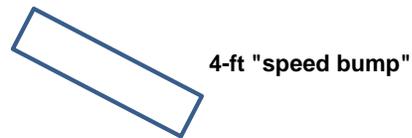
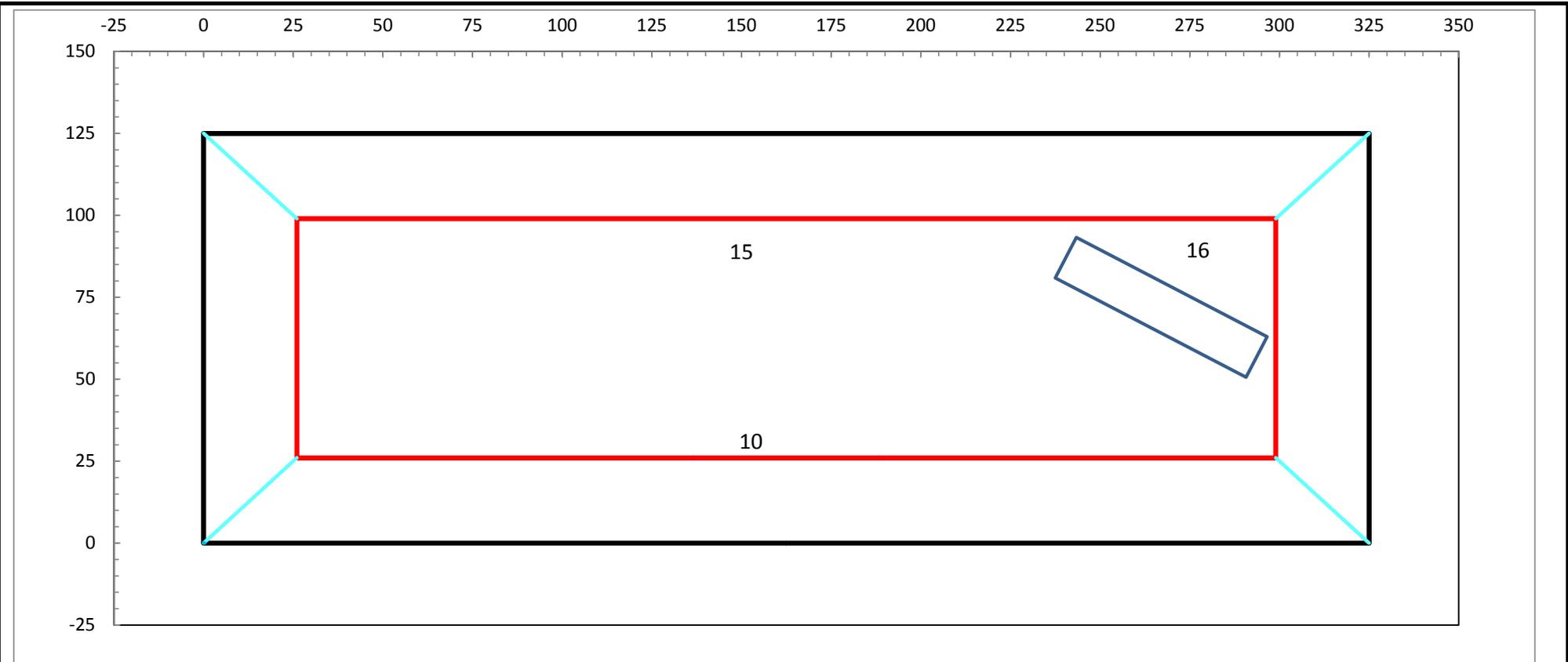
Figure 9

February 2015

Site Specific Information Plates

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Slopes of Pit	Horizontal Distance	2.00	Feet
Slopes of Pit	Vertical Distance	1.00	

Total Capacity 69060 bbl Acre Feet 8.9

Estimated Stabilized Solid Storage Plus 4-Foot Soil Cover 4.00 Wells

Fluid Recovery/Solids Disposal Pit

Total Width (left right)	325.0	FT.
Total Length (up down)	125.0	FT.
Depth Far Side	16.0	FT.
Depth Near Side	10	FT.
Bottom of Pit Width Far Side	261	FT.
Bottom of Pit Width Near Side	305	FT.

R.T. Hicks Consultants 901 Rio Grande Blvd. NW Suite F-142 Albuquerque, N. M. 87104	Fluid Recovery and Solids Disposal	Plate 1
	Endurance Resources Tele Delux 32 4H	Feb 2015

Appendix A

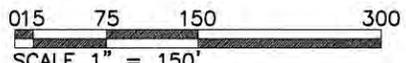
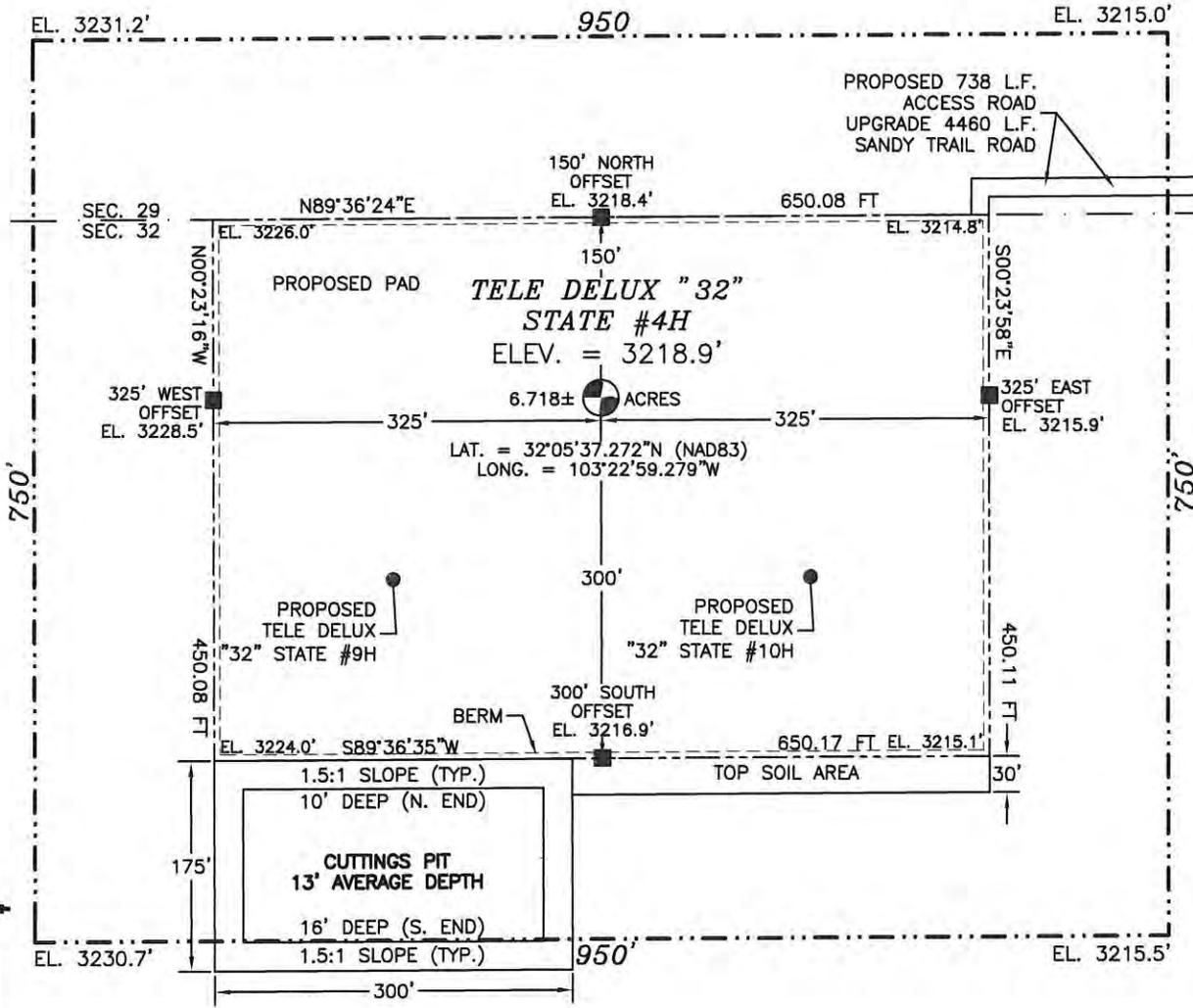
Site Inspection Photographs & Survey Information

R.T. Hicks Consultants, Ltd.

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Albuquerque, NM 87104

**SECTION 32, TOWNSHIP 25 SOUTH, RANGE 35 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
SITE MAP**

NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1983 (NAD83) IN DEGREES, MINUTES AND DECIMAL SECONDS FORMAT. BASIS OF BEARING IS NEW MEXICO STATE PLANE EAST (NAD83) COORDINATES MODIFIED TO SURFACE.

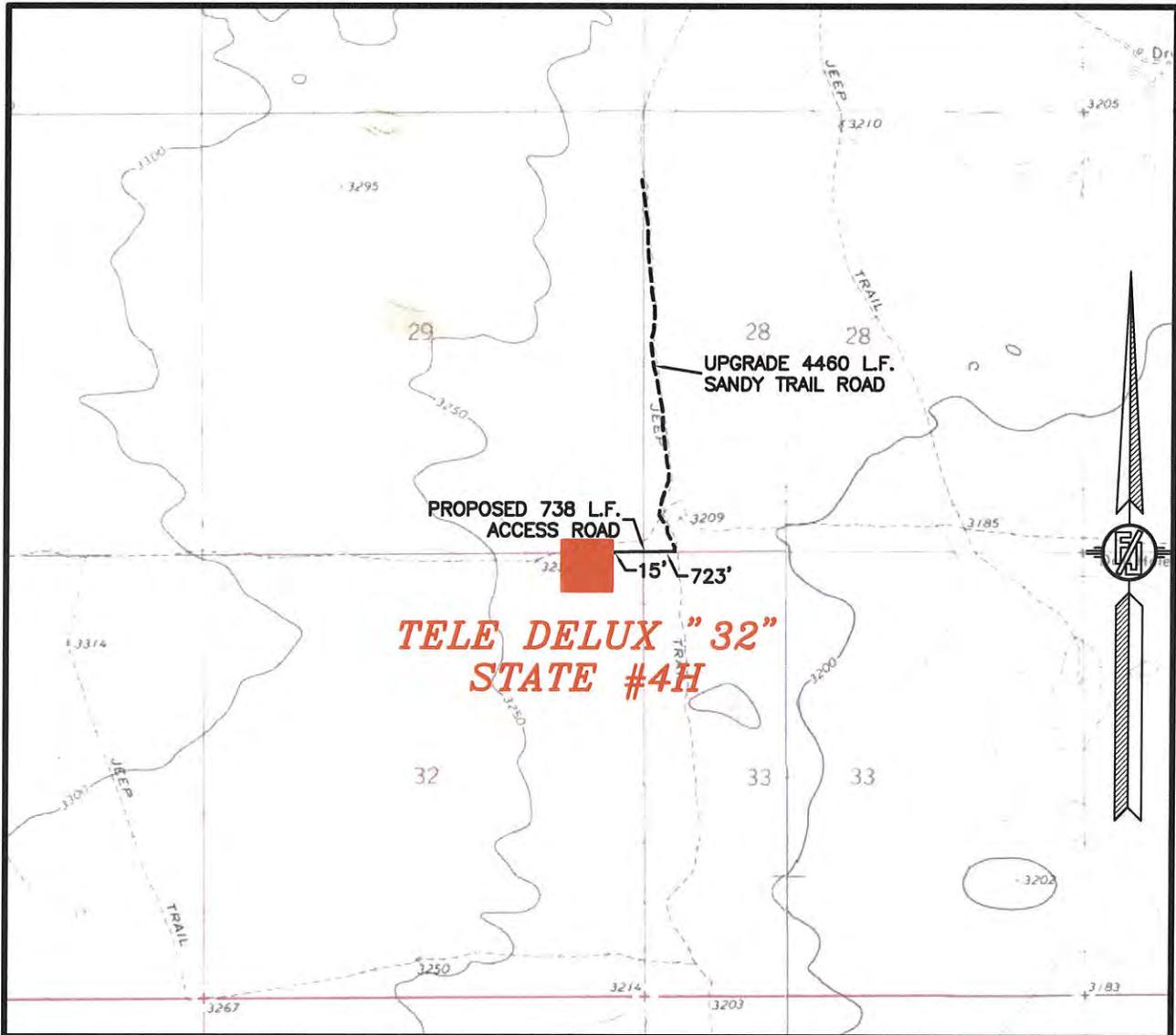


DIRECTIONS TO LOCATION
FROM STATE HWY. 128 AND CR. #2 BATTLE AXE, GO EAST ON HWY. 128 0.2 MILES, TURN RIGHT ON CALICHE ROAD AND GO SOUTH 4.2 MILES, TURN LEFT AND GO SOUTHEAST 1.2 MILES, BEND RIGHT AND GO SOUTH 0.7 MILES, TURN LEFT AND GO EAST 0.9 MILES, TURN RIGHT ON SANDY TRAIL ROAD AND GO SOUTH 0.9 MILES TO A PROPOSED ROAD SURVEY AND FOLLOW FLAGS WEST 723', THEN SOUTH 15' TO THE PROPOSED NORTHEAST PAD CORNER FOR THIS LOCATION.

**ENDURANCE RESOURCES, LLC
TELE DELUX "32" STATE #4H
LOCATED 150 FT. FROM THE NORTH LINE
AND 660 FT. FROM THE EAST LINE OF
SECTION 32, TOWNSHIP 25 SOUTH,
RANGE 35 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO**

FEBRUARY 11, 2015
SURVEY NO. 3278A

SECTION 32, TOWNSHIP 25 SOUTH, RANGE 35 EAST, N.M.P.M.
 LEA COUNTY, STATE OF NEW MEXICO
 LOCATION VERIFICATION MAP



USGS QUAD MAP:
 ANDREWS PLACE

NOT TO SCALE

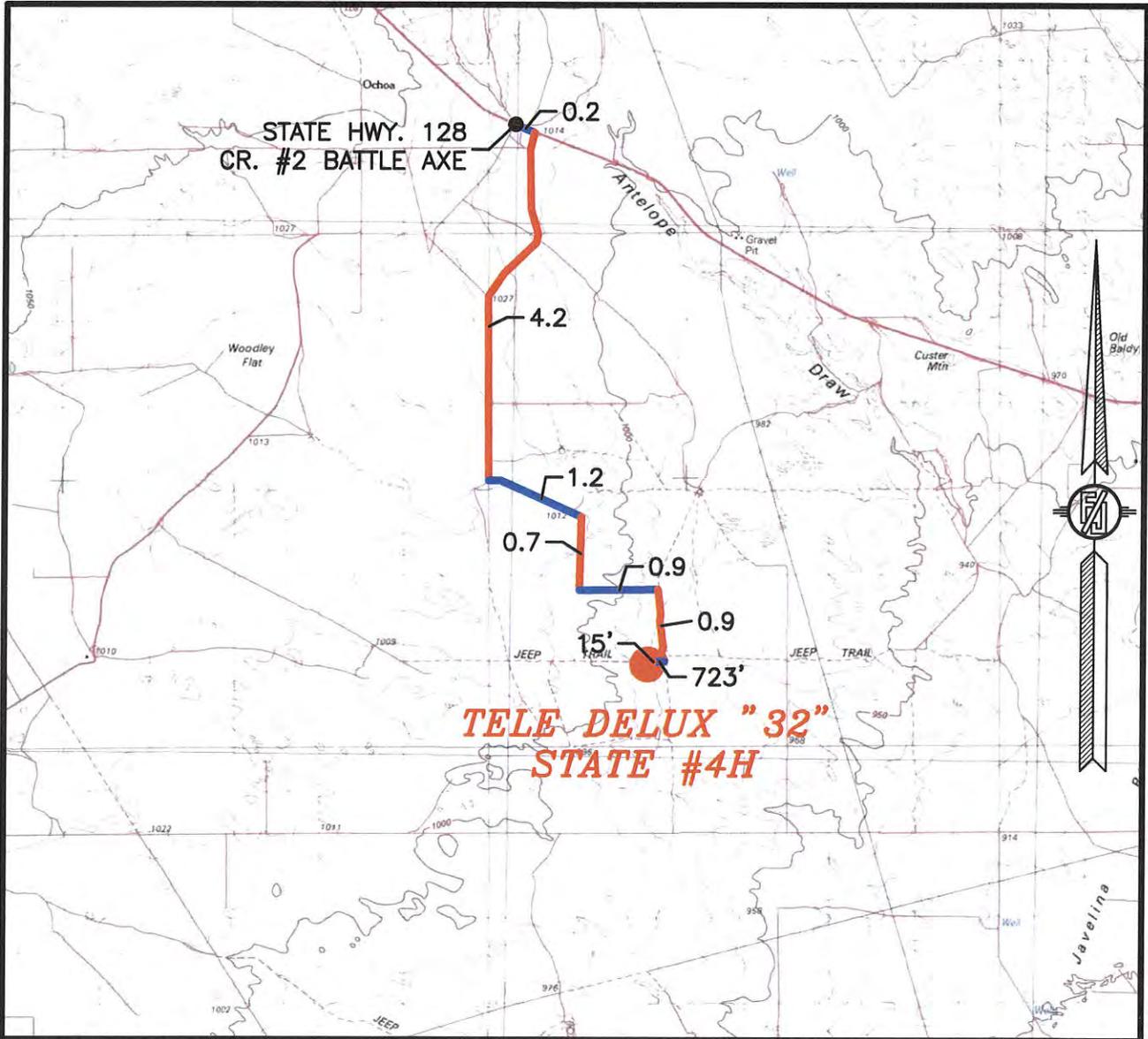
ENDURANCE RESOURCES, LLC
 TELE DELUX "32" STATE #4H
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 AND 660 FT. FROM THE EAST LINE OF
 SECTION 32, TOWNSHIP 25 SOUTH,
 RANGE 35 EAST, N.M.P.M.
 LEA COUNTY, STATE OF NEW MEXICO

FEBRUARY 11, 2015

SURVEY NO. 3278A

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO
 (575) 234-3341

SECTION 32, TOWNSHIP 25 SOUTH, RANGE 35 EAST, N.M.P.M.
 LEA COUNTY, STATE OF NEW MEXICO
 VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE

DIRECTIONS TO LOCATION

FROM STATE HWY. 128 AND CR. #2 BATTLE AXE, GO EAST ON HWY. 128 0.2 MILES, TURN RIGHT ON CALICHE ROAD AND GO SOUTH 4.2 MILES, TURN LEFT AND GO SOUTHEAST 1.2 MILES, BEND RIGHT AND GO SOUTH 0.7 MILES, TURN LEFT AND GO EAST 0.9 MILES, TURN RIGHT ON SANDY TRAIL ROAD AND GO SOUTH 0.9 MILES TO A PROPOSED ROAD SURVEY AND FOLLOW FLAGS WEST 723', THEN SOUTH 15' TO THE PROPOSED NORTHEAST PAD CORNER FOR THIS LOCATION.

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 SECTION 32, TOWNSHIP 25 SOUTH,
 RANGE 35 EAST, N.M.P.M.
 LEA COUNTY, STATE OF NEW MEXICO

FEBRUARY 11, 2015

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341

SURVEY NO. 3278A
 CARLSBAD, NEW MEXICO

SECTION 32, TOWNSHIP 25 SOUTH, RANGE 35 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
AERIAL PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
APR. 2013

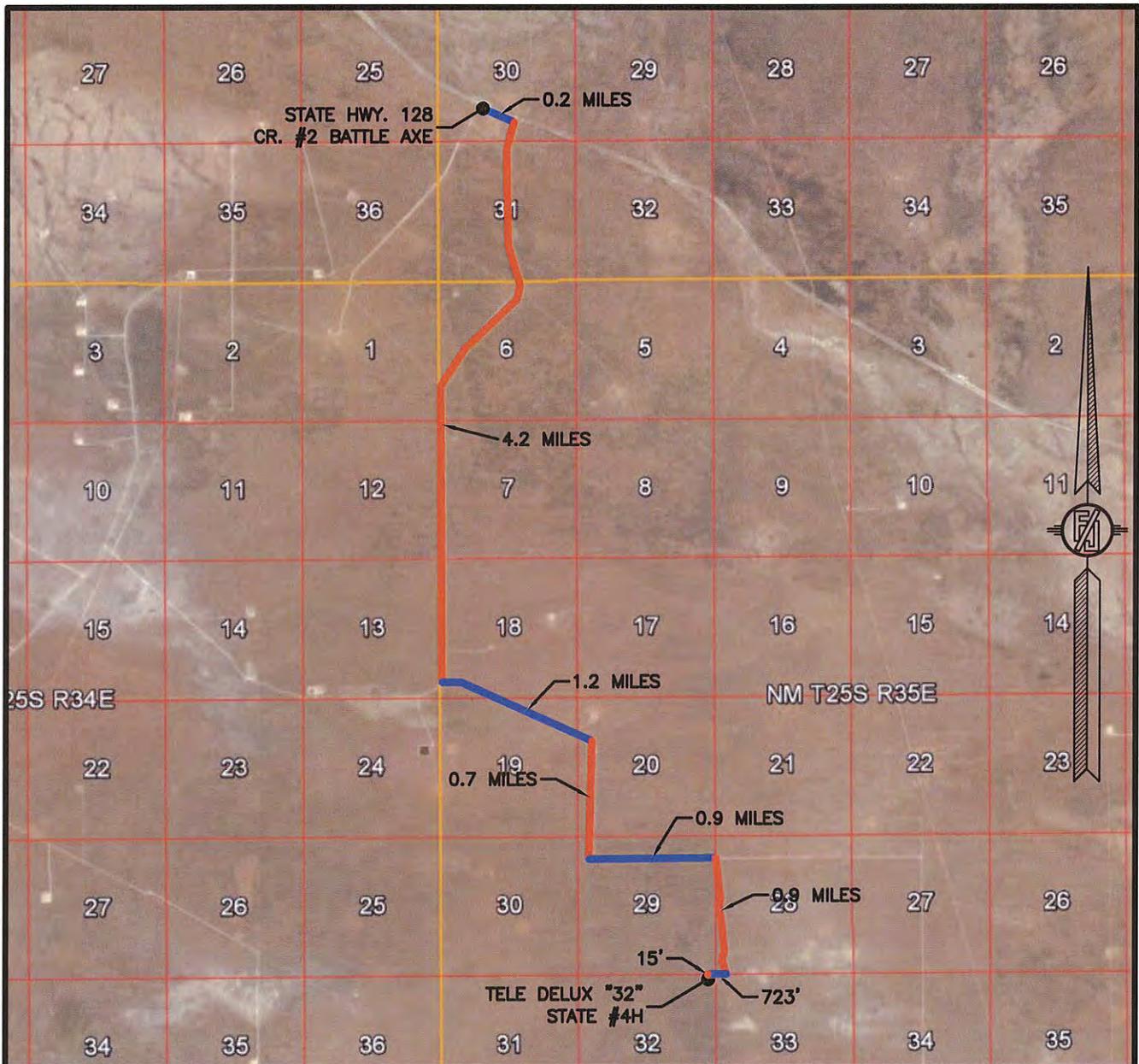
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LEA COUNTY, STATE OF NEW MEXICO

FEBRUARY 11, 2015

SURVEY NO. 3278A

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SECTION 32, TOWNSHIP 25 SOUTH, RANGE 35 EAST, N.M.P.M.
 LEA COUNTY, STATE OF NEW MEXICO
 AERIAL ACCESS ROUTE MAP



NOT TO SCALE
 AERIAL PHOTO:
 GOOGLE EARTH
 APR. 2013

ENDURANCE RESOURCES, LLC
 TELE DELUX "32" STATE #4H
 LOCATED 150 FT. FROM THE NORTH LINE
 AND 660 FT. FROM THE EAST LINE OF
 SECTION 32, TOWNSHIP 25 SOUTH,
 RANGE 35 EAST, N.M.P.M.
 LEA COUNTY, STATE OF NEW MEXICO

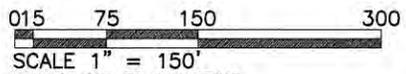
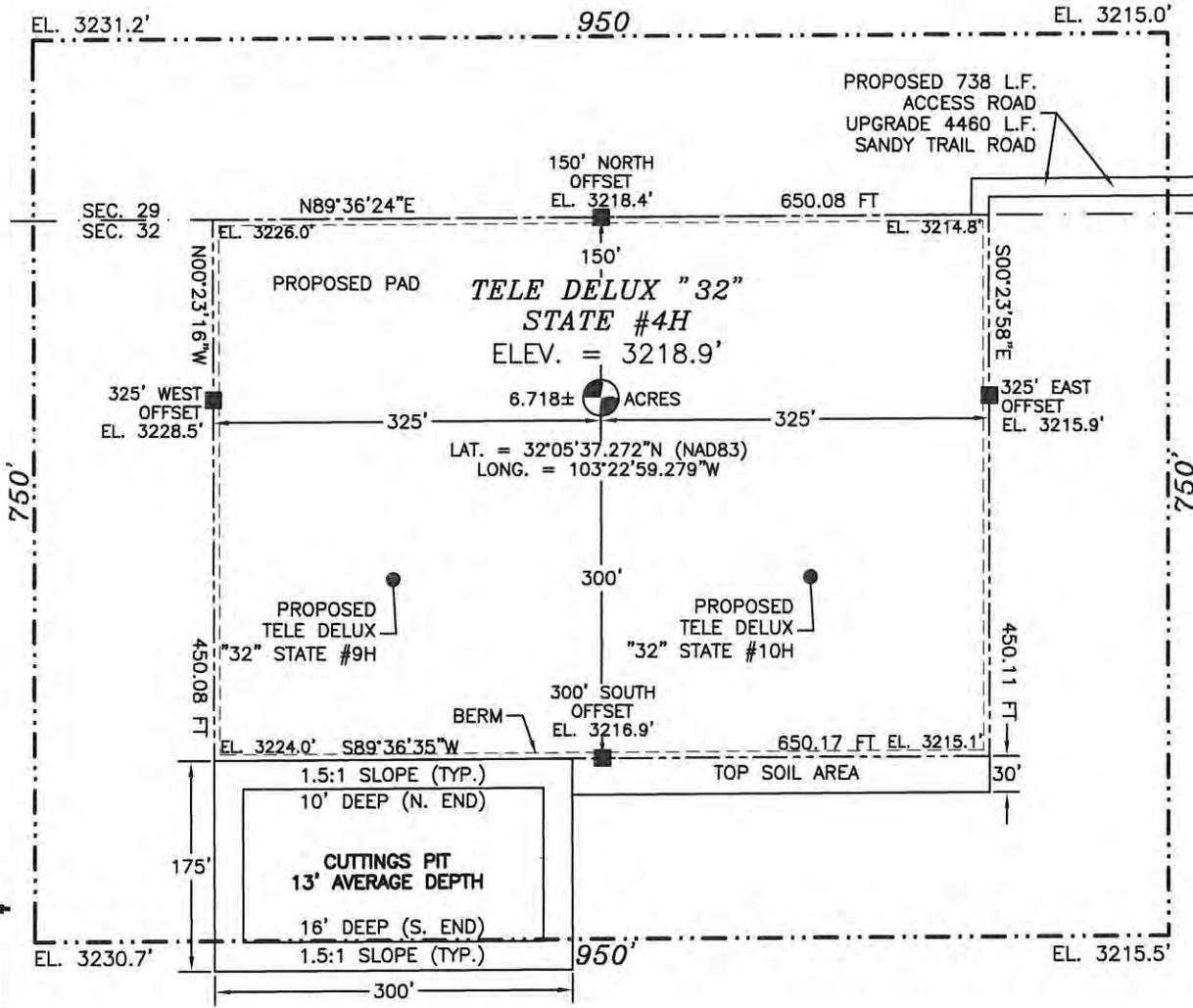
FEBRUARY 11, 2015

SURVEY NO. 3278A

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO
 (575) 234-3341

**SECTION 32, TOWNSHIP 25 SOUTH, RANGE 35 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
SITE MAP**

NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1983 (NAD83) IN DEGREES, MINUTES AND DECIMAL SECONDS FORMAT. BASIS OF BEARING IS NEW MEXICO STATE PLANE EAST (NAD83) COORDINATES MODIFIED TO SURFACE.

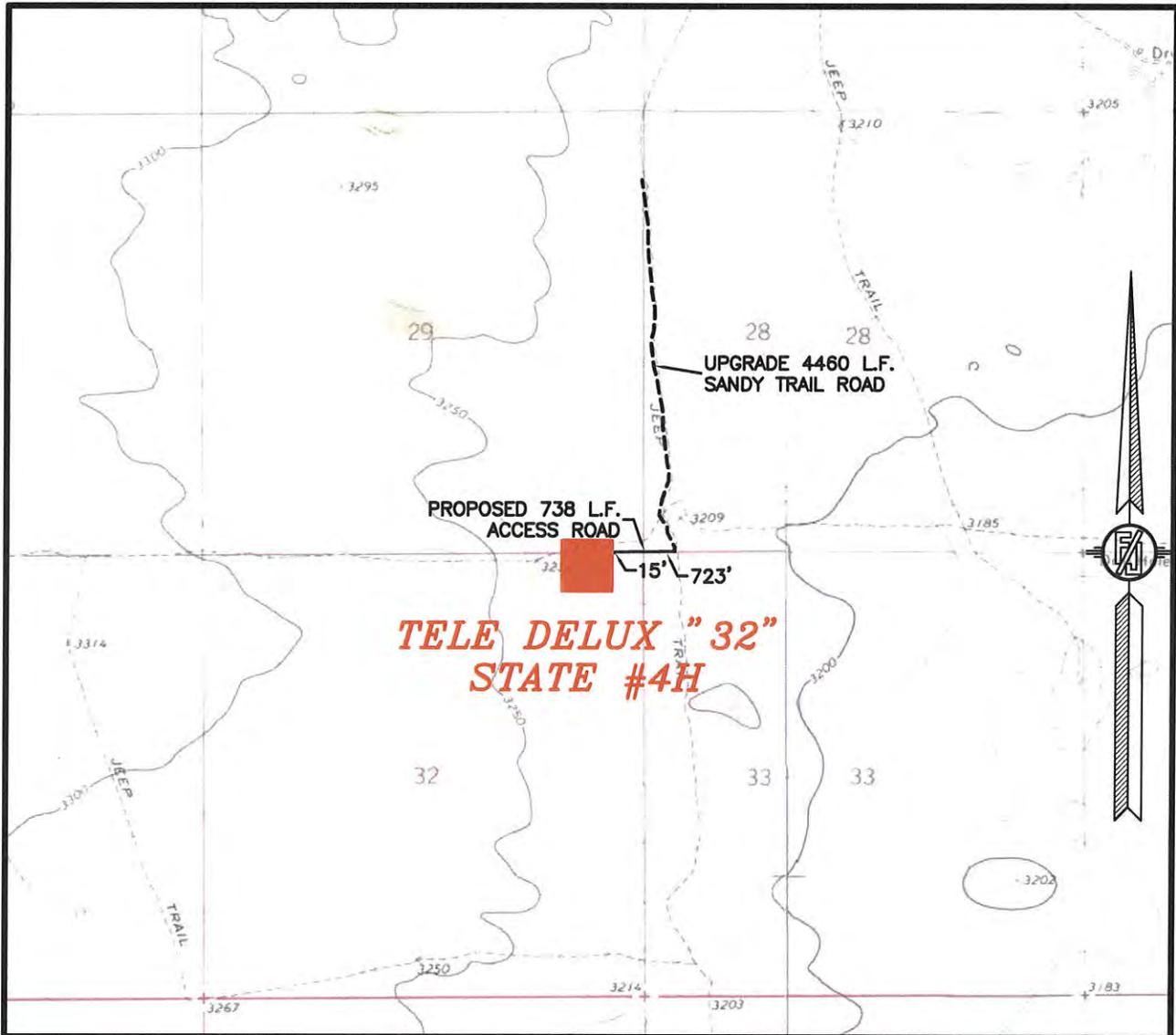


DIRECTIONS TO LOCATION
FROM STATE HWY. 128 AND CR. #2 BATTLE AXE, GO EAST ON HWY. 128 0.2 MILES, TURN RIGHT ON CALICHE ROAD AND GO SOUTH 4.2 MILES, TURN LEFT AND GO SOUTHEAST 1.2 MILES, BEND RIGHT AND GO SOUTH 0.7 MILES, TURN LEFT AND GO EAST 0.9 MILES, TURN RIGHT ON SANDY TRAIL ROAD AND GO SOUTH 0.9 MILES TO A PROPOSED ROAD SURVEY AND FOLLOW FLAGS WEST 723', THEN SOUTH 15' TO THE PROPOSED NORTHEAST PAD CORNER FOR THIS LOCATION.

**ENDURANCE RESOURCES, LLC
TELE DELUX "32" STATE #4H
LOCATED 150 FT. FROM THE NORTH LINE
AND 660 FT. FROM THE EAST LINE OF
SECTION 32, TOWNSHIP 25 SOUTH,
RANGE 35 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO**

FEBRUARY 11, 2015
SURVEY NO. 3278A

SECTION 32, TOWNSHIP 25 SOUTH, RANGE 35 EAST, N.M.P.M.
 LEA COUNTY, STATE OF NEW MEXICO
 LOCATION VERIFICATION MAP



USGS QUAD MAP:
 ANDREWS PLACE

NOT TO SCALE

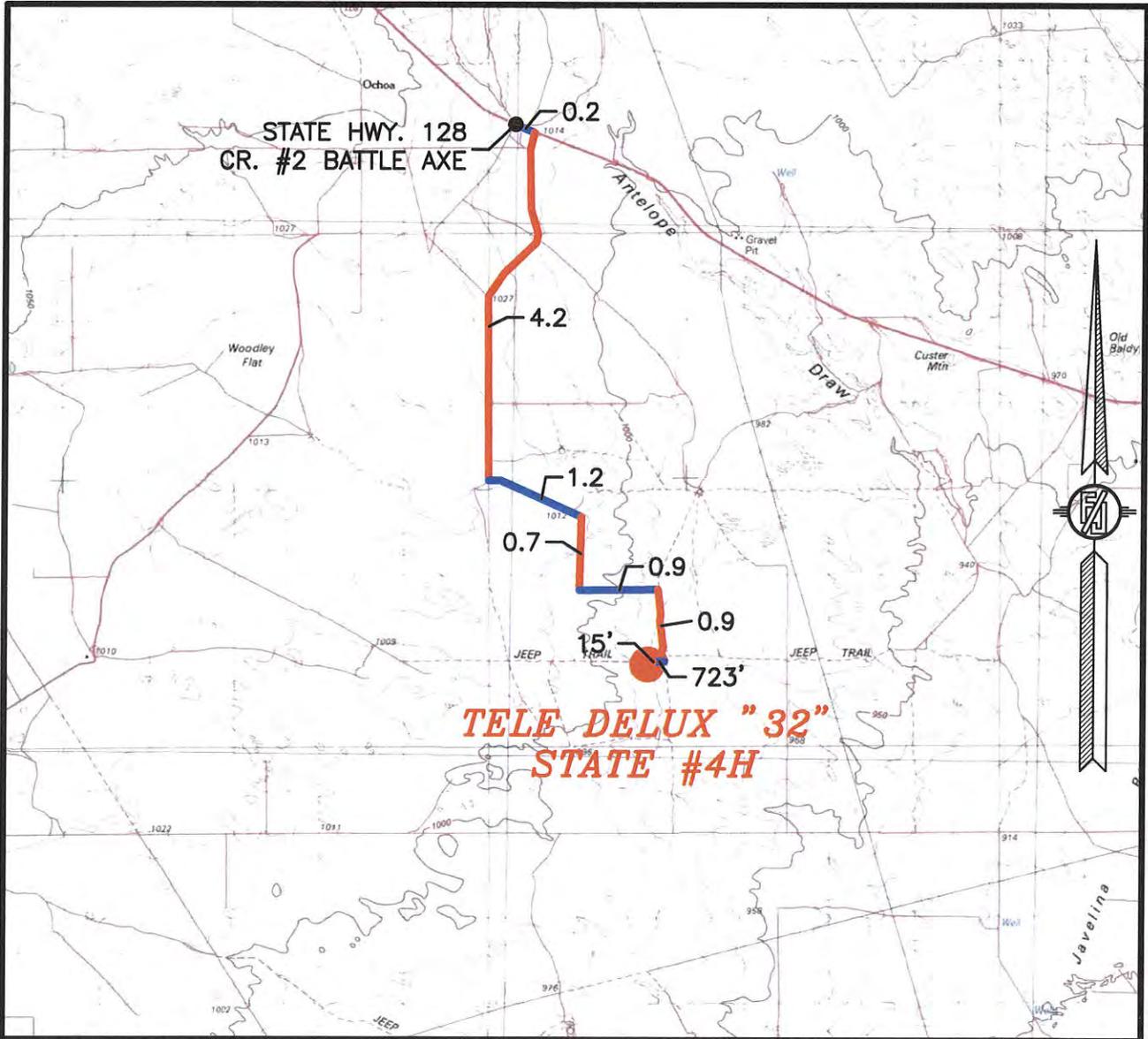
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 (575) 234-3341

SECTION 32, TOWNSHIP 25 SOUTH, RANGE 35 EAST, N.M.P.M.
 LEA COUNTY, STATE OF NEW MEXICO
 VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE

DIRECTIONS TO LOCATION

FROM STATE HWY. 128 AND CR. #2 BATTLE AXE, GO EAST ON HWY. 128 0.2 MILES, TURN RIGHT ON CALICHE ROAD AND GO SOUTH 4.2 MILES, TURN LEFT AND GO SOUTHEAST 1.2 MILES, BEND RIGHT AND GO SOUTH 0.7 MILES, TURN LEFT AND GO EAST 0.9 MILES, TURN RIGHT ON SANDY TRAIL ROAD AND GO SOUTH 0.9 MILES TO A PROPOSED ROAD SURVEY AND FOLLOW FLAGS WEST 723', THEN SOUTH 15' TO THE PROPOSED NORTHEAST PAD CORNER FOR THIS LOCATION.

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FEBRUARY 11, 2015

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341

SURVEY NO. 3278A
 CARLSBAD, NEW MEXICO

SECTION 32, TOWNSHIP 25 SOUTH, RANGE 35 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
AERIAL PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
APR. 2013

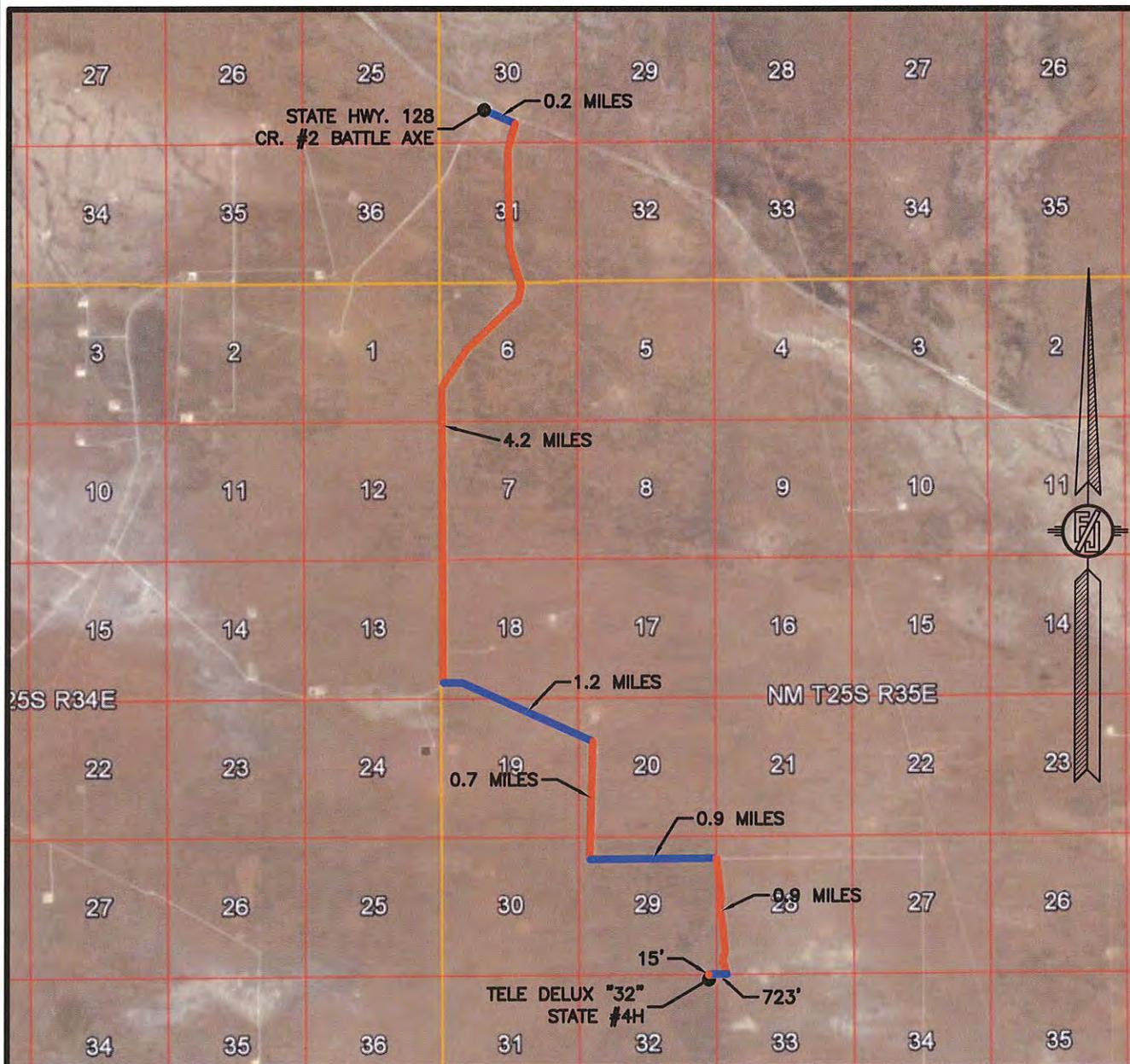
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SURVEY NO. 3278A

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SECTION 32, TOWNSHIP 25 SOUTH, RANGE 35 EAST, N.M.P.M.
 LEA COUNTY, STATE OF NEW MEXICO
 AERIAL ACCESS ROUTE MAP



NOT TO SCALE
 AERIAL PHOTO:
 GOOGLE EARTH
 APR. 2013

ENDURANCE RESOURCES, LLC
 TELE DELUX "32" STATE #4H
 LOCATED 150 FT. FROM THE NORTH LINE
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 SECTION 32, TOWNSHIP 25 SOUTH,
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View south from staked location.



View south from staked location of Tele Delux 10H show location of proposed pit about 150 feet in distance.



Nature of area north of Tele Delux 32 State 4H taken from staked location of Duo Sonic 29 Federal 4H.



View west toward location from staked access road.

Generic Plans for Temporary Pits

R.T. Hicks Consultants, Ltd.

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

Temporary Pit Design/Construction Plan

Plate 1 shows the design of the temporary pit proposed for this project. Field conditions will determine the final configuration of the pit, which will consist of a single cell to contain discharges of drilling solids and spent drilling fluids from closed loop systems at several drilling sites. The first well to discharge solids and fluids to the pit is the subject of this C-144 application.

In addition to the commitments listed below, the operator may install a system that can drain water entrained in the drilling waste of the drilling pit. As described in the closure plan, this system of fabric-wrapped perforated pipe and drainage mats lie on the bottom of the pit. The system will drain to a standpipe that rises from a small depression in the lowest corner of the pit to the top of the berm. The drainage system can remove water to an above-ground tank, a truck for re-use or directly to 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.

Construction/Design Plan of Temporary Pit

Stockpile Topsoil

Prior to constructing the pit the qualified contractor will strip and stockpile the 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 NMAC as the pit and the well are operated by the same operator. Section 19.15.16.8 states in part:

19.15.16.8 SIGN ON WELLS:

B. For drilling wells, the operator shall post the sign on the derrick or not more than 20 feet from the well.

C. The sign shall be of durable construction and the lettering shall be legible and large enough to be read under normal conditions at a distance of 50 feet.

F. Each sign shall show the:

- (1) well number;
- (2) property name;
- (3) operator's name;
- (4) location by footage, quarter-quarter section, township and range (or unit letter can be substituted for the quarter-quarter section) and
- (5) API number.

The sign will also provide emergency telephone numbers.

Fencing:

During drilling operations at the location, the operator will not fence the edge of the pit adjacent to the location. When 24/7 activity on the location ceases, the entire pit will be fenced with easy access (e.g. several gates) as trucks will be constantly discharging solids or fluids into the pit from nearby wells.

C-144 Supplemental Documentation for Temporary Pit Fluids Recovery and Solids Disposal

As the pit is not located within 1000 feet of a permanent residence, school, hospital, institution or church, the operator will fence the pit to exclude livestock with four-wire strands evenly spaced in the interval between one foot and four feet above ground level.

Earthwork

The temporary pit will have a properly constructed foundation and interior 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.

The slopes of the pit will be no steeper than two horizontal feet to one vertical foot (2H:1V) unless in the transmittal letter the operator requested an alternative to the slope requirement with a demonstration that the pit can be operated in a safe manner to prevent contamination of fresh water and protect public health and the environment.

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

If the transmittal letter identifies concerns relating to the presence of karst and associated instability, during construction of the pit the contractor will compact the earth material that forms the foundation for the pit liner. An expected proctor density of greater than 90% will be achieved by

1. adding water to the earth material as appropriate,
2. compacting the earth by walking a crawler-type tractor down the sides and bottom of the pit
3. repeating this process with a second 6-inch lift of earth material if necessary

Liner Installation

The geomembrane liner will consist of 20-mil string reinforced LLDPE as specified by OCD Rules.

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.

**C-144 Supplemental Documentation for Temporary Pit
Fluids Recovery and Solids Disposal**

A berm or ditch will surround the temporary pit to prevent run-on of surface water. During drilling operations, the operator may elect to remove run-on protection on the pit edge adjacent to the drilling or workover rig (if the rig is discharging directly into the pit). This will allow the pit to directly collect liquids escaping from the drilling or workover rig and this additional fluid will not cause a breach of the temporary pit.

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

Temporary Pit Operating and Maintenance Plan

The operator will maintain and operate the pit 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 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.

If the pit develops a leak or if any penetration of the pit 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 develops a leak or if any penetration of the pit 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 liner.

The operator will ensure that the operator 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 as necessary to prevent the collection of surface water run-on.

The operator will maintain on site an oil absorbent boom to contain and remove oil from the pit'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.

The operator will maintain the temporary pit 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.

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

The operator will inspect the temporary pit containing drilling fluids daily while the drilling rig or workover rig is on site. After the rig have left the site, the operator will inspect the pit weekly

**C-144 Supplemental Documentation for Temporary Pit
Fluids Recovery and Solids Disposal**

as long as liquids are present in the pit. 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 remove all free drilling fluids from the surface of the temporary pit within 60 days from the date that the last drilling or workover rig associated with the pit permit is released. 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 life span (Subsection R of 19.15.17.7 NMAC).

Temporary Pit In-Place Closure Plan

The wastes in the temporary pit are destined for in place burial at the drilling location. However, a transmittal letter may notify OCD that drilling waste from a nearby site on the same lease may be placed in the temporary pit (e.g. placed in the drilling or fluids cells of the temporary pit). A notice will include the name of the nearby well, the date that the drilling or workover rig moved from the temporary pit, an affirmation that the temporary pit will be closed in conformance with the mandates of the Rule, including the mandated lifetime of the pit.

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 Temporary Pit

The design and construction protocols for the temporary pit are provided in the design and construction plan and in Plate 1. The optional drainage system described in the design and construction plan is not shown on the Plates but can be important element of the closure plan.

General Protocols and Procedures

- All free liquids from the pit will be recycled or disposed in a manner consistent with OCD Rules.
- Residual drilling fluids will be removed from the pit within 60 days of release of the last drilling or workover rig associated with the relevant pit permit.
- Water derived from the well stimulation program (flow-back or unused fresh water) that is significantly higher quality than the residual drilling fluids *may* discharge into the pit. The fresher water *may* discharge into the drainage system to flow through the solids or onto the solids in the pit.
- A low-flow pump *may* remove water from the drainage system to a tank or the fluids cell of the temporary pit; thereby further rinsing the residual solids in the pit.
- 20-60 days after placement of fresh or flow-back water into the drilling cell, any water in the pit will be removed for re-use or disposal.
- The residual drilling mud and cuttings will be stabilized to a capacity sufficient to support the 4-foot thick soil cover.
- The residual pit solids will not be mixed at a ratio greater than 1 part pit solids to 3 parts dry earth material (e.g. subsoil).
- The pit will not be closed until the stabilized pit contents pass the paint filter liquids test.

Waste Material Sampling Plan

Prior to closure, an eight-point composite sample of the residual solids in the drilling cell of the temporary pit and a five-point composite sample of any solids in the fluids cell of the temporary pit will be tested in a laboratory to demonstrate that the stabilized material will not exceed the

C-144 Supplemental Documentation for Temporary Pit

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. A volumetric average of the laboratory result from the drilling cell solids and any fluid cells solids will be used to determine compliance with the standards of Table II.

In-place burial is the selected on-site disposal alternative.

If a concentration of a contaminant 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 pit 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 mixing dry earth material within the temporary pit footprint. After stabilization the operator or qualified contractor will:

1. 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.
2. Use a geomembrane cover made of 20-mil string reinforced LLDPE liner
3. 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.
4. 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 name, API number, and location.

After approval for in-place 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 temporary pit. 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.

C-144 Supplemental Documentation for Temporary Pit

Closure Report

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

- i. closure report on form C-144, with necessary attachments
- ii. a 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 pit location on form C-105
if burial includes solids derived from a nearby well on the same lease, 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 temporary pit within 6 months from the date the first drilling or workover rig was released from the first well using the pit. 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 in-place burial, the operator will reclaim the surface impacted by the temporary pit, including access roads associated with the pit, 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 temporary pit 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 in-place

- 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:

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C-144 Supplemental Documentation for Temporary Pit

- 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.