

October 2014

**C-144 Permit Package for
Wool Head "20" State No. 1H
Temporary Pit
Section 19 T21S R33E Lea County NM**



**Prepared for
AMTEX Energy, Inc.
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

October 16, 2014

Dr. Tomáš Oberding
NMOCD District
1625 French Drive
Hobbs, NM 88240
Via E-Mail and US Mail

RE: Amtex Energy, Inc. – Wool Head “20” State Well #1H, C-144 Application, Section 19 (P),
T-21-S, R-33-E, Lea County, New Mexico (API: 30-025-42140)

Dear Tomáš:

On behalf of Amtex Energy, Inc., R.T. Hicks Consultants, Ltd. is pleased to submit the C-144 application package for the above-referenced well. Please note the following:

1. Generic Plans included in this submission have all been recently approved by OCD.
2. Plates 1 and 2 are based on a previously approved C-144 application with similar dimensions and volumes.
3. We anticipate “in place” burial of stabilized solids.
4. This letter and application is also addressed to the New Mexico State Land Office, as surface landowner, to notify them of the operator’s intent to use on-site burial.
5. We certify that we performed a visual inspection of the site on September 17, 2014.

The Wool Head “20” State Well #1H is located within the San Simon Swale, approximately 2.0 miles to the north of the Dagger State Unit Well #2H (API: 30-025-41178), which was approved in August 2013. We believe the siting criteria for this well to be very similar. Amtex has begun construction of this pit (as shown in the photographs), as the soil and caliche was needed to construct the pad. The pit will be lined upon your approval; the drilling rig to be used should be available by in mid-November.

If you have any questions or concerns regarding this application, please contact me at the phone number below. As always, we appreciate your work ethic and attention to detail.

Sincerely,
R.T. Hicks Consultants



Dale T. Littlejohn
Geologist
(432) 528-3878

Copy: Amtex Energy, Inc.
New Mexico State Land Office, Terry Warnell



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: Amtex Energy, Inc. OGRID #: 000785
Address: PO Box 3418 Midland, Texas 79702
Facility or well name: Wool Head "20" State Well No. 1H
API Number: 30-025-42140 OCD Permit Number: _____
U/L or Qtr/Qtr P Section 19 Township 21S Range 33E County: Lea
Center of Proposed Design: Latitude 32.4579506° N Longitude -103.6044385° W NAD: 1927 1983
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
 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: 41,766 bbl Dimensions: L 140 x W 285 x D 5.0-9.0 ft (drilling) 12 ft (fluids cell)

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.*

<u>General siting</u>	
Ground water is less than 25 feet below the bottom of a low chloride temporary pit or below-grade tank. - <input type="checkbox"/> NM Office of the State Engineer - iWATERS database search; <input type="checkbox"/> USGS; <input type="checkbox"/> Data obtained from nearby wells	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> 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 Figure 2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> 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	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within a 100-year floodplain. (Does not apply to below grade tanks) See Figure 9 - FEMA map	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<u>Below Grade Tanks</u>	
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	<input type="checkbox"/> Yes <input type="checkbox"/> 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	<input type="checkbox"/> Yes <input type="checkbox"/> No
<u>Temporary Pit using Low Chloride Drilling Fluid</u> (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	<input type="checkbox"/> Yes <input type="checkbox"/> 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	<input type="checkbox"/> Yes <input type="checkbox"/> 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	<input type="checkbox"/> Yes <input type="checkbox"/> No

<p>Within 100 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p><u>Temporary Pit Non-low chloride drilling fluid</u></p>	
<p>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</p>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<p>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</p>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<p>Within 500 horizontal feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 1000 feet of any other fresh water well or spring, in the existence at the time of the initial application; - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site See Figure 1 & 3</p>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<p>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</p>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<p><u>Permanent Pit or Multi-Well Fluid Management Pit</u></p>	
<p>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</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>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</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>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</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site</p>	<input type="checkbox"/> Yes <input type="checkbox"/> 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): William J. Savage Title: President

Signature:  Date: October 16, 2014

e-mail address: bsavage@amtenergy.com Telephone: (432) 770-0913

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

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: _____

Siting Criteria (19.15.17.10 NMAC)
AMTEX Energy, Inc.: Wool Head “20” State Well No. 1H

Geologic Setting of the Regional Fresh-Water Bearing Formations

The proposed temporary pit site is located within the northwest portion of the San Simon Swale, which is on the eastern edge of the Pecos Valley Physiographic Province.

Regionally, the San Simon Swale drains from the northwest to the southeast, toward the San Simon Sink, located approximately fifteen miles to the southeast of the site. The San Simon Swale in this area is approximately six miles wide extending from Grama Ridge on the northeast to Antelope Ridge on the southwest (see adjacent map insert).

Hat Mesa, to the west of the site, forms an extension of Grama Ridge that protrudes into the San Simon Swale, and is similar to Grama Ridge in both surface geology and elevation. Approximately 330 feet of topographic relief is present from the top of Hat Mesa (3,910 feet ASL) to the valley floor (3,580 feet ASL) located three and one-half miles to the south of the site. The elevation of Antelope Ridge is much lower than Hat Mesa, approximately 3750 feet ASL.



Groundwater in the area within and surrounding the San Simon Swale is found only in Mesozoic and Cenozoic Era rocks that were deposited since approximately 235 million years ago. The oldest of these are the Triassic age Dockum Group. 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.



Siting Criteria (19.15.17.10 NMAC)
AMTEX Energy, Inc.: Wool Head “20” State Well No. 1H

Any Jurassic or Cretaceous age rocks that were deposited above the Triassic have subsequently been removed by erosion leaving an irregular surface on the Triassic rocks. Cenozoic Era rocks in the area consist of the Tertiary age Ogallala Formation and Quaternary age eolian and piedmont deposits. The Ogallala Formation consists of terrestrial sediments (sand with some clay, silt and gravel) that were deposited on the Triassic age rocks. Generally, the Ogallala is capped by a caliche layer, observed at Grama Ridge to the north and Hat Mesa to the west, being resistant to the erosion that shaped the San Simon Swale.

The Ogallala and associated alluvium aquifers are the primary groundwater source where they are present at the higher elevations outside of the San Simon Swale. Water wells drilled within the San Simon Swale target only the Triassic age rocks and are designated by the USGS as producing from either Chinle or Santa Rosa aquifers.

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 beneath the temporary pit.

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 as a purple hexagon.
2. Water wells from the USGS database as color-coded triangles that indicated the producing aquifer (see Legend).
3. Water wells from the New Mexico Office of the State Engineer (OSE) database as a small blue triangle inside a colored circle that indicates the well depth (see Legend). Please note, OSE wells are often miss-located in the WATERS database as older wells are plotted in the center of the quarter, quarter, quarter, of the Section Township and Range. Topographic maps and/or aerial photographs verified all of the OSE well locations included on this map.
4. 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.
5. Depth to water and gauging dates from the most recent and reliable measurement for each well is provided adjacent to the well symbol. It should be noted that in most cases the depth to water provided by the OSE database are from drillers log notes estimated at the time of completion, rather than actual field measurements.

Figure 2 is a regional topographic base map (metric contour units) that depicts the potentiometric surface contours of the shallow-most aquifer surrounding the site. The potentiometric contours are labeled in feet above sea level (ASL). The water wells plotted include only the USGS database and published report water wells from Figure 1 for which a reliable depth to water measurement has been recorded. Figure 2 also shows:

1. The location of the temporary pit as a purple hexagon.
2. Groundwater elevations and gauging dates from the most recent available static water level measurement for each well.

Siting Criteria (19.15.17.10 NMAC)

AMTEX Energy, Inc.: Wool Head “20” State Well No. 1H

Site Geology

The proposed temporary pit for the Wool Head “20” State No. 1H well is located on an outcrop of Quaternary Age eolian and piedmont deposits (Qe/Qp on Figure 1). These fine-grained sands and clays, along with the Quaternary piedmont deposits and Quaternary lacustrine/playa deposits (Qp and Qpl on Figure 1), are present as a thin covering of the underlying eroded Tertiary or Triassic age rocks. Based on information from Ground-Water Report 6 (GWR-6) *Geology and Ground-Water Conditions in Southern Lea County, New Mexico* by Alexander Nicholson and Alfred Clebsch (1961) and the survey elevation of the site (3,749 feet ASL), the Triassic age rocks are present approximately 80 feet below the proposed temporary pit location.

The surface drainage is generally to the east, however the area is covered by low stabilized sand dunes and no continuously flowing or any other significant watercourses are present.

Water Table Elevation

Thirteen water wells were identified in the area surrounding the Wool Head “20” State No. 1H site (see Figure 1). A summary of the available water well data, with respect to groundwater elevation, is provided on the table below. In addition to data from the USGS, published, and field verified well information, which is generally considered reliable, the table also includes wells listed on the OSE Waters database. As stated earlier, the groundwater elevations provided for these OSE wells are likely based on driller log notes rather than measurements made under static conditions.

Well Numbers (see Map)	Well Location			Well Source Information						Groundwater Elevation Data						Gauging Date				
	Township (south)	Range (east)	Section	Quarter Section OSE protocol (64, 16, 4)	NM-OSE Database	USGS Database	Open File Rpt. 95	GW Report No. 6	USGS Topo Sheet	Aerial Photograph	Field Verification	Surface Elevation (published)	Surface Elevation (Topo Sheet)	Well Total Depth (published)	Depth to Water (published)		Groundwater Elev. (published)	Groundwater Elev. (using topo elev.)		
USGS-906	20	34	34	4	3	4	✓		✓	--	--	3,774	3,774		82.0	3,692	3,692	2/2/96		
USGS-888	21	33	2	1	2	4		✓	✓	--	--	3,768	3,768	102	87.5	3,681	3,681	2/22/96		
USGS-882	21	33	11	1	1	1	✓	✓		✓	--	--	3,820	3,812	195	142.4	3,678	3,670	2/22/96	
CP 0057	21	33	11	4	4	3	✓		✓		✓	--		3,795	165	150		3,645	1/6/79	
Misc- 72	21	33	18	2	1	1		✓	✓		--	--	3,900	3,885		143	3,757	3,742	6/21/54	
Misc- 73	21	33	18	2	1	1		✓	✓		--	--	3,892	3,882	160	148.43	3,744	3,734	11/16/65	
USGS-841	21	33	18	4	1	1	✓	✓		✓	--	--	3,855	3,855	123	115.75	3,739	3,739	2/20/96	
Misc-71	21	33	25	3	2	4		✓	✓		--	--	3,666	3,662		58.95	3,607	3,603	2/4/71	
USGS-798	21	33	28	4	2	1	✓	✓	✓		--	--	3,688	3,688	224	178.85	3,509	3,509	2/21/96	
CP 00873	21	33	33	1	1	2	✓			✓	--	--		3,665	340	180		3,485	1/5/98	
USGS-716	22	32	14	4	2	3	✓	✓		✓	✓	--		3,717	3,718	435	382.65	3,334	3,335	2/20/96
USGS-604	22	33	12	4	3	1		✓			--	--		3,531	400	324.95	3,206		3/13/96	
USGS-719	22	33	13	1	3	2	✓	✓		✓	--	--		3,514	3,515	508	391.13	3,123	3,124	2/20/96

✓ Indicates well was verified, (blank) indicates well not verified, and -- indicates no attempt to verify

Initially, an attempt was made to identify each well using USGS topographic maps. The surface elevation of each well identified on the topographic maps 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 well. The following comments should be noted from Figure 1 and the table:

- Well USGS-604 is properly located on Figure 1 and Figure 2 according to the USGS latitude and longitude. However, the USGS database information indicates that the well is located in T-23-S instead of T-22-S. The USGS topographic map identifies the “Allred Well” at this

Siting Criteria (19.15.17.10 NMAC)
AMTEX Energy, Inc.: Wool Head “20” State Well No. 1H

location. The datum elevation (3,531 feet) is consistent with the maps at both locations, so the well has been included on the table and figures for this evaluation.

- The “Rogers” well is shown on the USGS topographic map as a twin to USGS-719, but no depth to water information is available so it is not included on the table or Figures.

Hydrogeology

GWR-6 indicates that Ogallala groundwater is not present as a regional aquifer in the area surrounding the temporary pit location, but can be found in wells at higher elevations to the north. The nearest water well, designated by the USGS as an Ogallala producer, is USGS-841, located approximately 2.0 miles to the north. The groundwater elevation from this well and other Ogallala/Bolson wells was used to produce Figure 2, however all of the wells within this area of the San Simon Swale (off the cap rock) produce only from Triassic age rocks.

Based on the potentiometric surface contours created using the available measurements from surrounding wells (Figure 2), we conclude that the groundwater elevation at the Wool Head “20” State No. 1H temporary pit site is approximately 3,520 feet ASL. With a surface elevation of 3,749 feet ASL and a maximum depth of the temporary pit of 12 feet, the depth to groundwater below the pit floor should be approximately 217 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 1.8 miles to the northwest and 70 feet upslope from the site, as identified in Figure 3. It has been formed at the margin of Hat Mesa and Grama Ridge, but does not continue into the valley floor.

A watercourse with a defined bed and bank was identified within 300 feet of the site, as shown on the photographs below. The location of the watercourse and photographs are indicated on an expanded portion of the satellite image from Figure 4 (below).

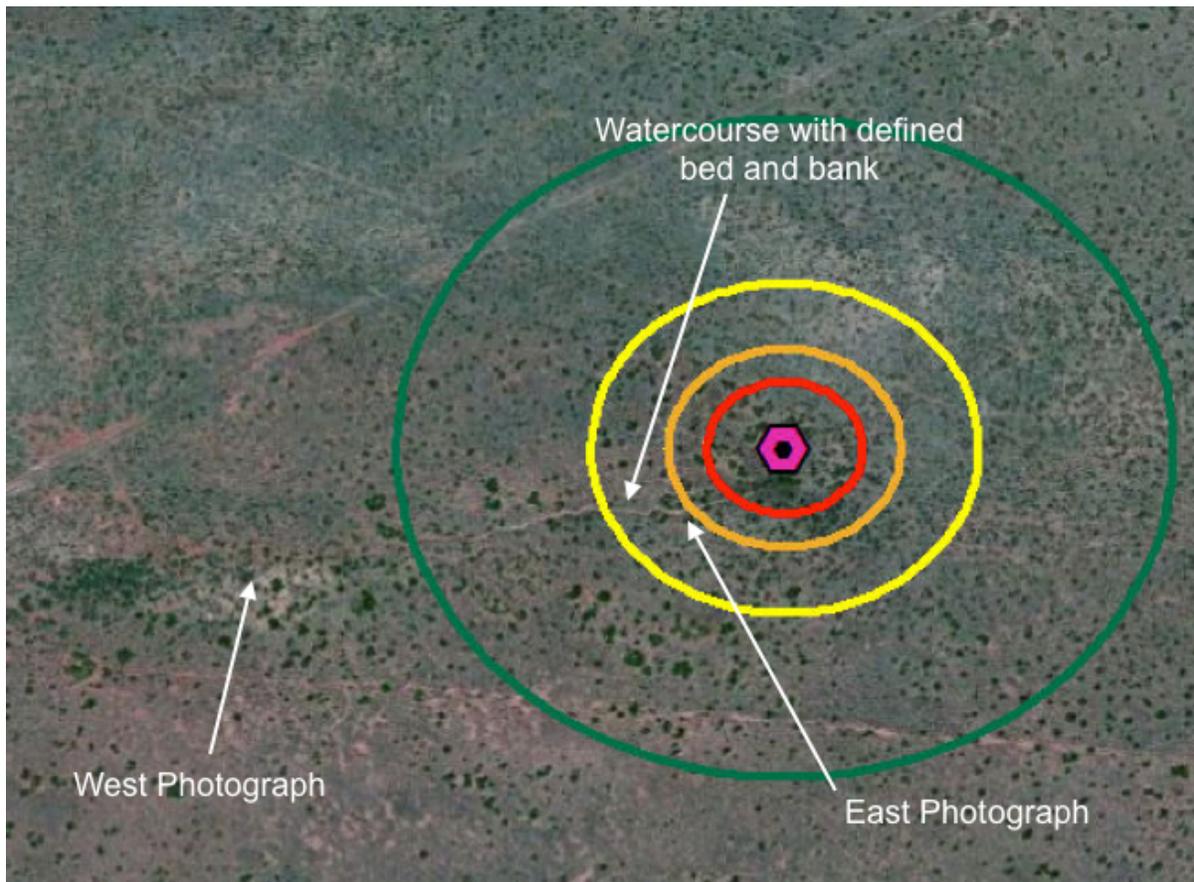


West Photograph



East Photograph

Siting Criteria (19.15.17.10 NMAC)
AMTEX Energy, Inc.: Wool Head “20” State Well No. 1H



The defined bed and bank observed during the site inspection is approximately 1,500 feet long extending through an area of stabilized sand dunes. It could not be identified upstream of the West Photograph or downstream of the partially completed drilling pad. Seepage of storm water into the sand dunes is the most likely explanation for the disappearance of the drainage.

The Pit Rule defines a **Significant Watercourse** as “a watercourse with a defined bed and bank either named or identified by a dashed blue line on a USGS 7.5 minute quadrangle map or the next lower order tributary with a defined bed and bank of such watercourse.”

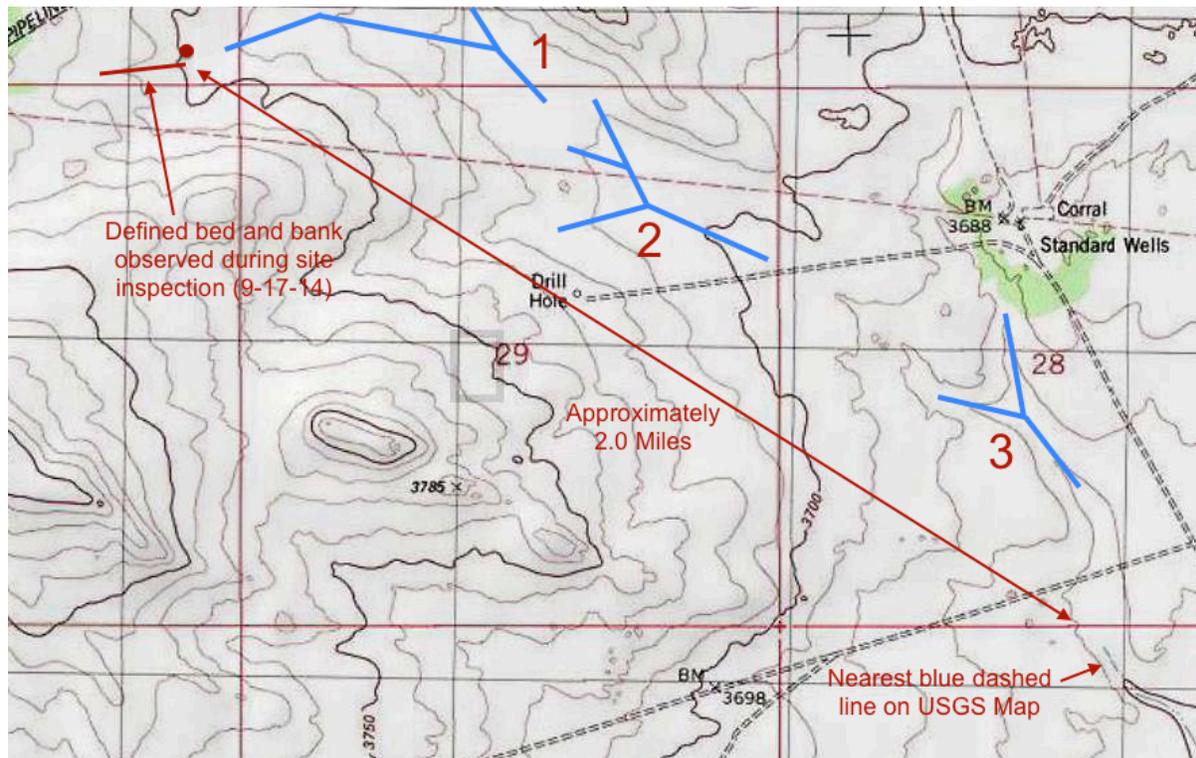
Tributary order is understood as a hierarchy of downstream strength based originally on the 1952 article by Arthur Newell *Hypsometric Analysis of Erosional Topography*, whereas two first order streams join to form a second order stream, two second order streams join to form a third order stream, and so forth.

The observations and data are clear: this drainage feature is not a “significant watercourse” because it is neither:

1. A named or identified by a dashed blue line on the USGS 7.5 minute quadrangle map
2. A next lower order tributary to a named or identified drainage

Siting Criteria (19.15.17.10 NMAC)
AMTEX Energy, Inc.: Wool Head “20” State Well No. 1H

The nearest downstream dashed blue line on a USGS 7.5 minute quadrangle map is located approximately 2.0 miles to the southeast. As shown below, two orders of tributaries exist between the watercourse observed near the site and the “significant watercourse” that meets the definition in the Pit Rule.



Based on this information and the field inspection, there are no significant watercourses located within 300 feet, or lakebeds, sinkholes, or playa lakes located within 200 feet of the site.

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 USGS-798, which is located 1.8 miles to the east. 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 Eunice, NM approximately 30 miles to the east.
- The closest public well field is located approximately 27 miles to the north.

Distance to Wetlands

Figure 6 demonstrates the location is not within 500 feet of wetlands.

- The nearest designated wetlands is a “Freshwater Pond” located 2.6 miles to the northwest.

Distance to Subsurface Mines

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

- The nearest caliche pit is located approximately 1.8 miles to the west-southwest.

Distance to High or Critical Karst Areas

Figure 8 shows the location of the temporary pit with respect to BLM Karst areas

- The proposed temporary pit is located within a “low” potential karst area.
- The nearest “high” or “critical” potential karst area is located approximately 12 miles west of the site.
- We saw no evidence of unstable ground near the proposed pit location during the site inspection.

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.

Temporary Pit Design

Please refer to Plates 1 and 2 for the design of the temporary pit and the Design and Construction Plan at the end of this application. Note that the outline of the bottom of the pit is not to scale and the Flow-Back Cell is optional.



Site Specific Information Figures

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Legend

 Pit Location

USGS Gauging Station (DTW, Date)

Aquifer Code, Well Status

 Alluvium/Bolsom

Alluvium/Bolsom, Water level was affected recently by pumping at a nearby site that taps the same aquifer.

 Chirle

 Santa Rosa

Misc Water Wells (DTW, Date)

Well Depth (ft)

 No Data

 151 - 350

OSE Water Wells

Well Depth (ft)

 151 - 350

NM Geology

Map Unit, Description

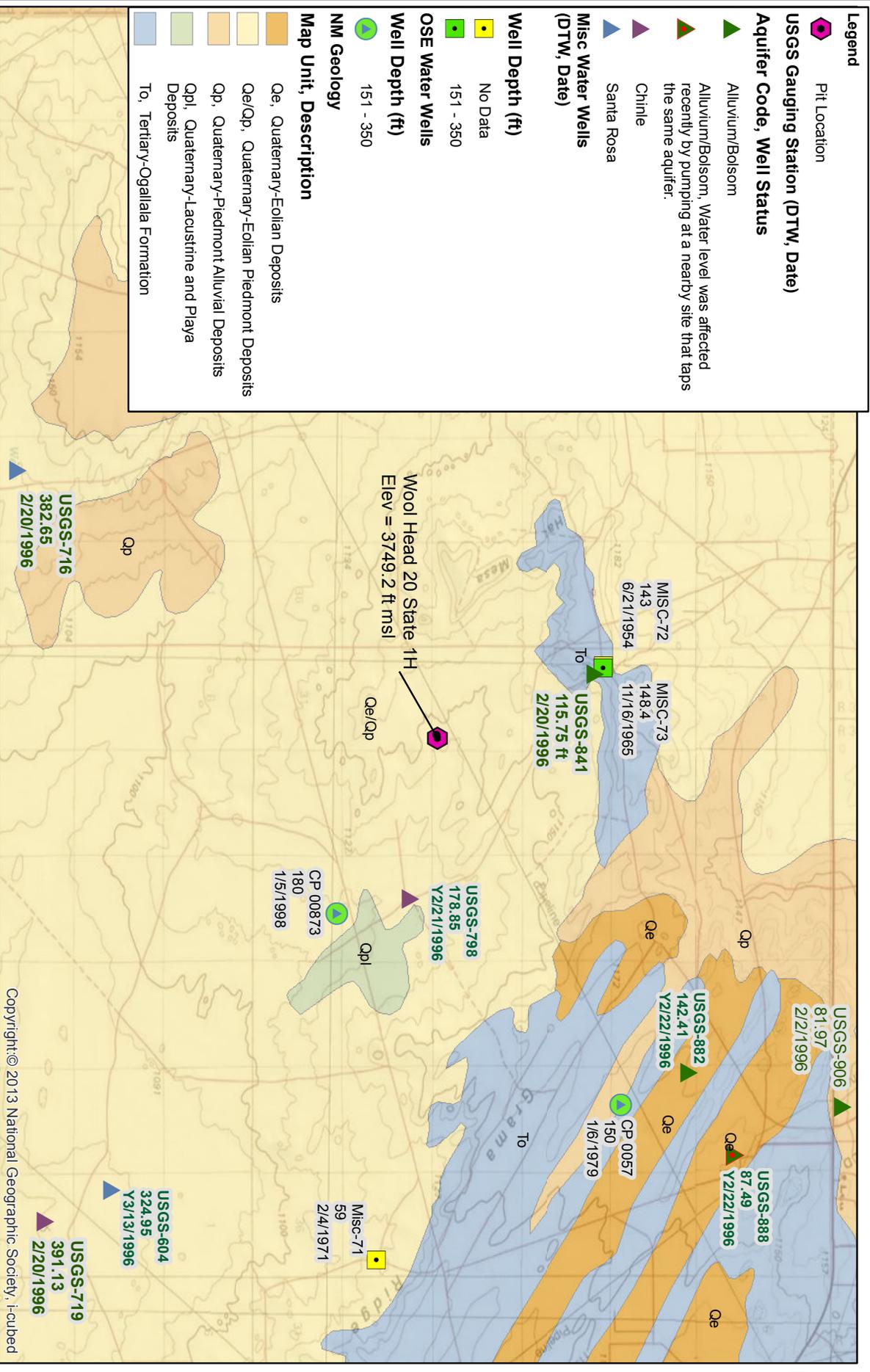
 Qe, Quaternary-Eolian Deposits

 Qe/Qp, Quaternary-Eolian Piedmont Deposits

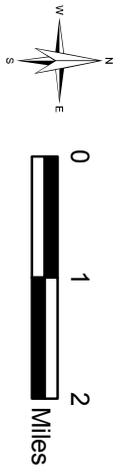
 Qp, Quaternary-Piedmont Alluvial Deposits

 Qpl, Quaternary-Lacustrine and Playa Deposits

 To, Tertiary-Ogallala Formation



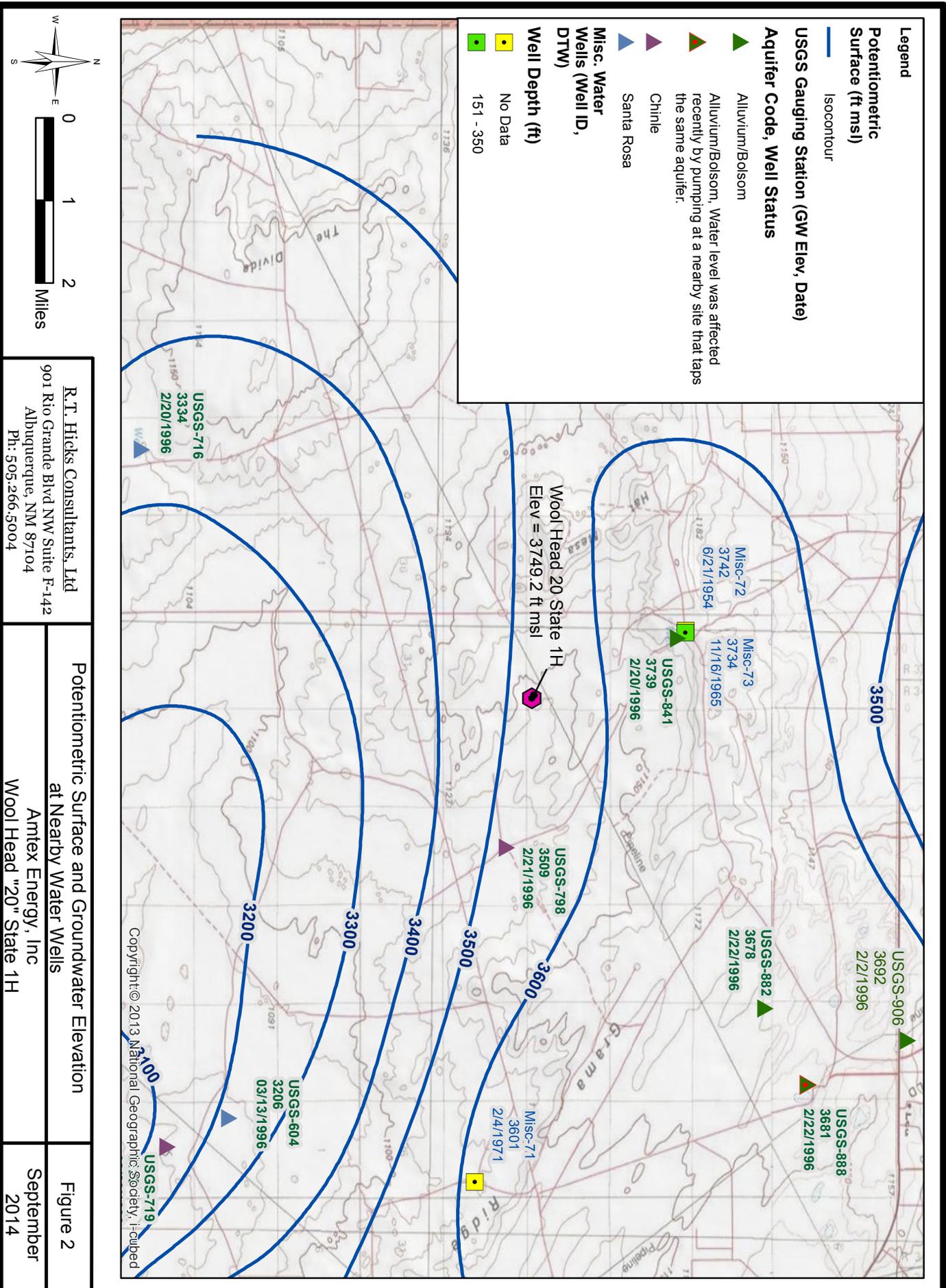
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Depth To Water and Geology
 Amtex Energy, Inc
 Wool Head "20" State 1H

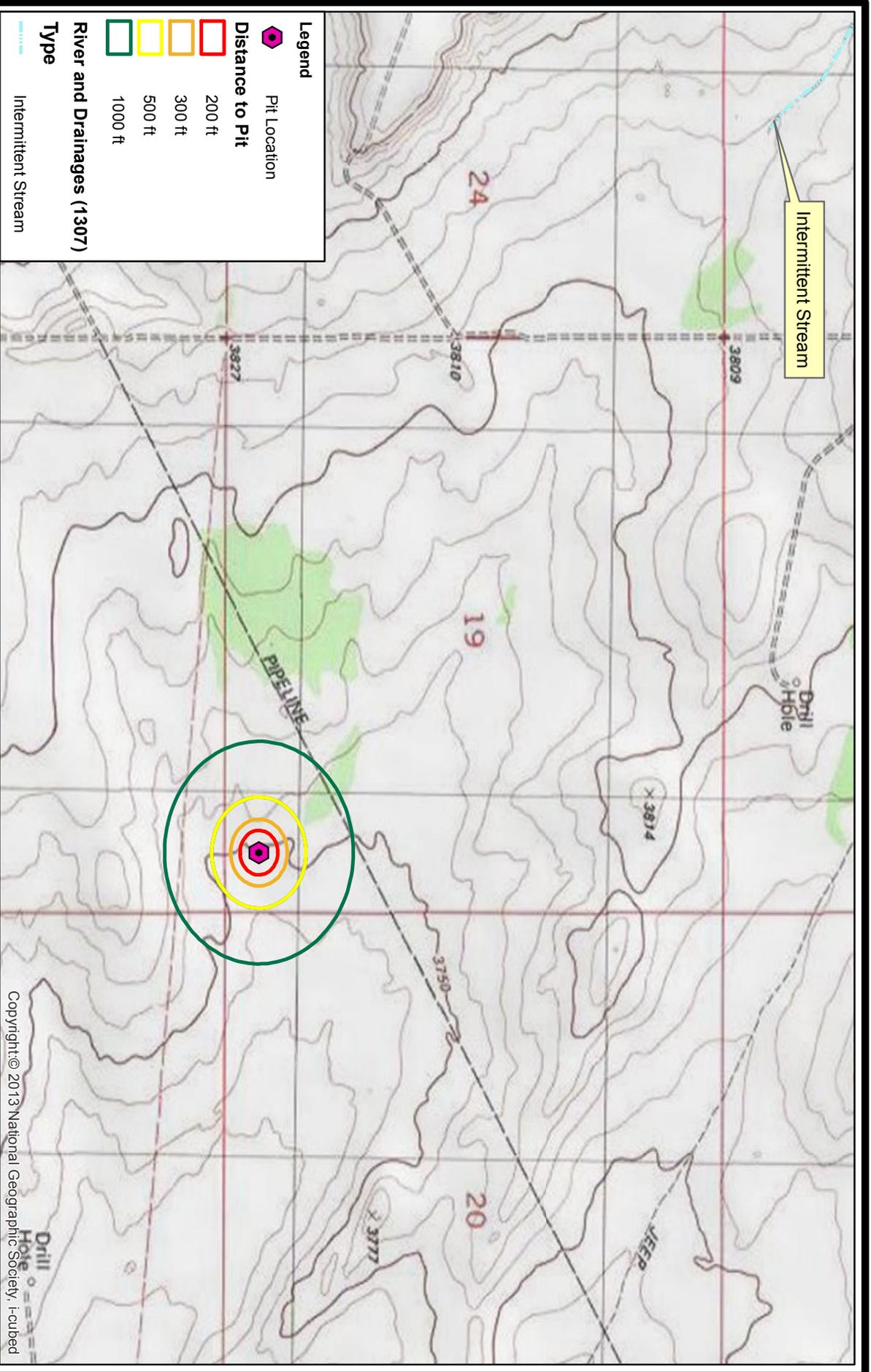
Figure 1
 September
 2014



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Potentiometric Surface and Groundwater Elevation
 at Nearby Water Wells
 Amtex Energy, Inc
 Wool Head "20" State 1H

Figure 2
 September
 2014



Legend

-  Pit Location
- Distance to Pit**
-  200 ft
-  300 ft
-  500 ft
-  1000 ft
- River and Drainages (1307)**
-  Intermittent Stream

North Arrow

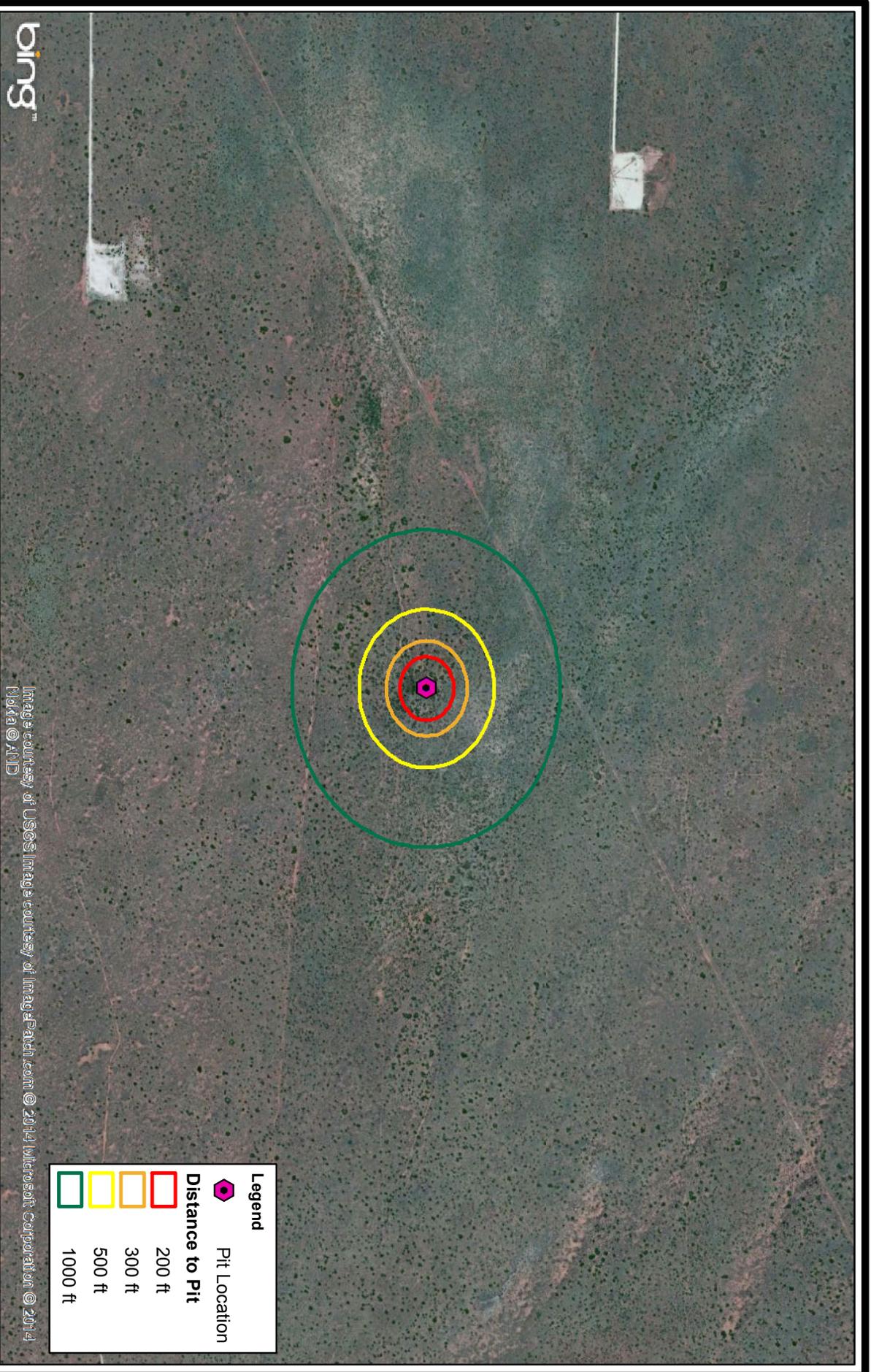
Scale: 0, 1,000, 2,000 Feet

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Surface Water and Topography
 Amtex Energy, Inc
 Wool Head "20" State 1H

Figure 3
 September
 2014

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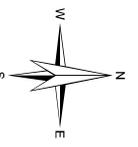


bing™

Image courtesy of USGS; Image courtesy of ImagEarth.com @ 2014; Microsoft Corporation @ 2014; Madia@AMD

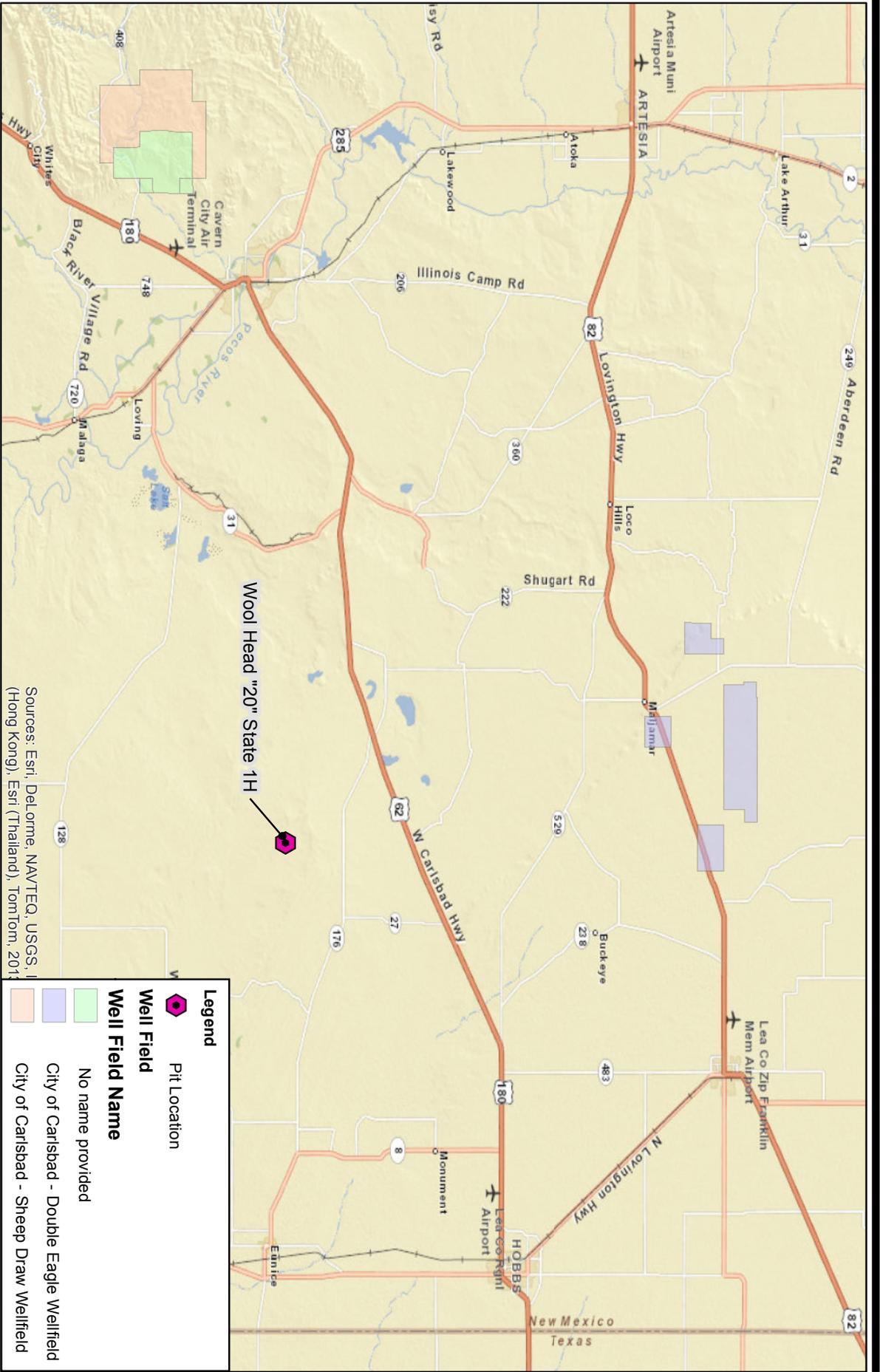
	Pit Location
	Distance to Pit
	200 ft
	300 ft
	500 ft
	1000 ft

(aerial image c:2014)



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Nearby Structures	Figure 4
Amtex Energy, Inc Wool Head "20" State 1H	September 2014



Sources: Esri, DeLorme, NAVTEQ, USGS, I
(Hong Kong), Esri (Thailand), TomTom, 2014

Wool Head "20" State 1H

Legend

-  Pit Location
-  Well Field

Well Field Name

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

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Nearby Municipalities and Well Fields

Amtext Energy, Inc
Wool Head "20" State 1H

Figure 5

September
2014

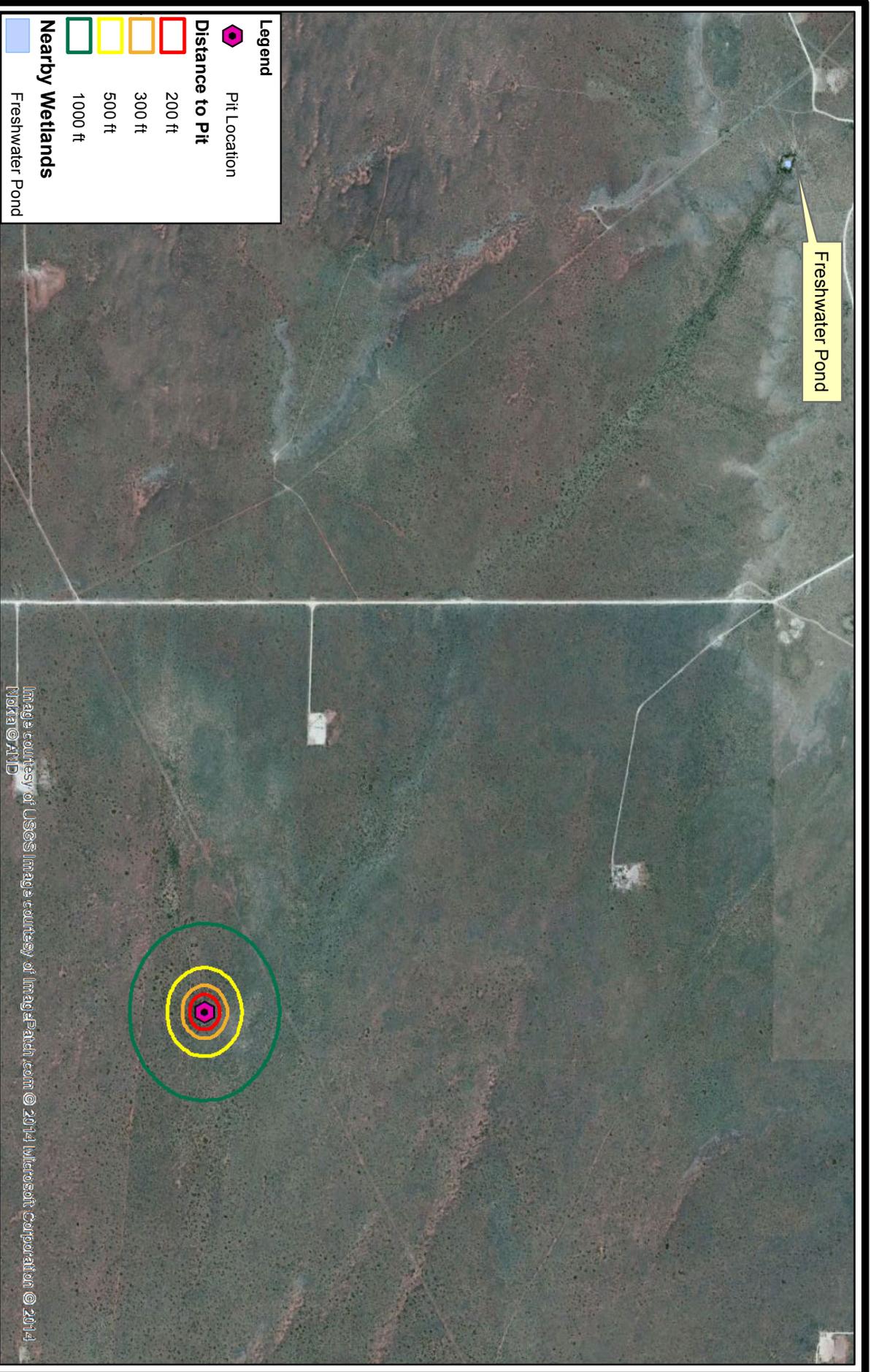
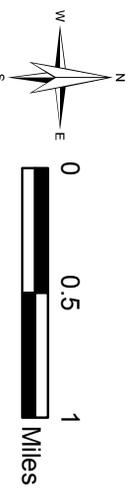
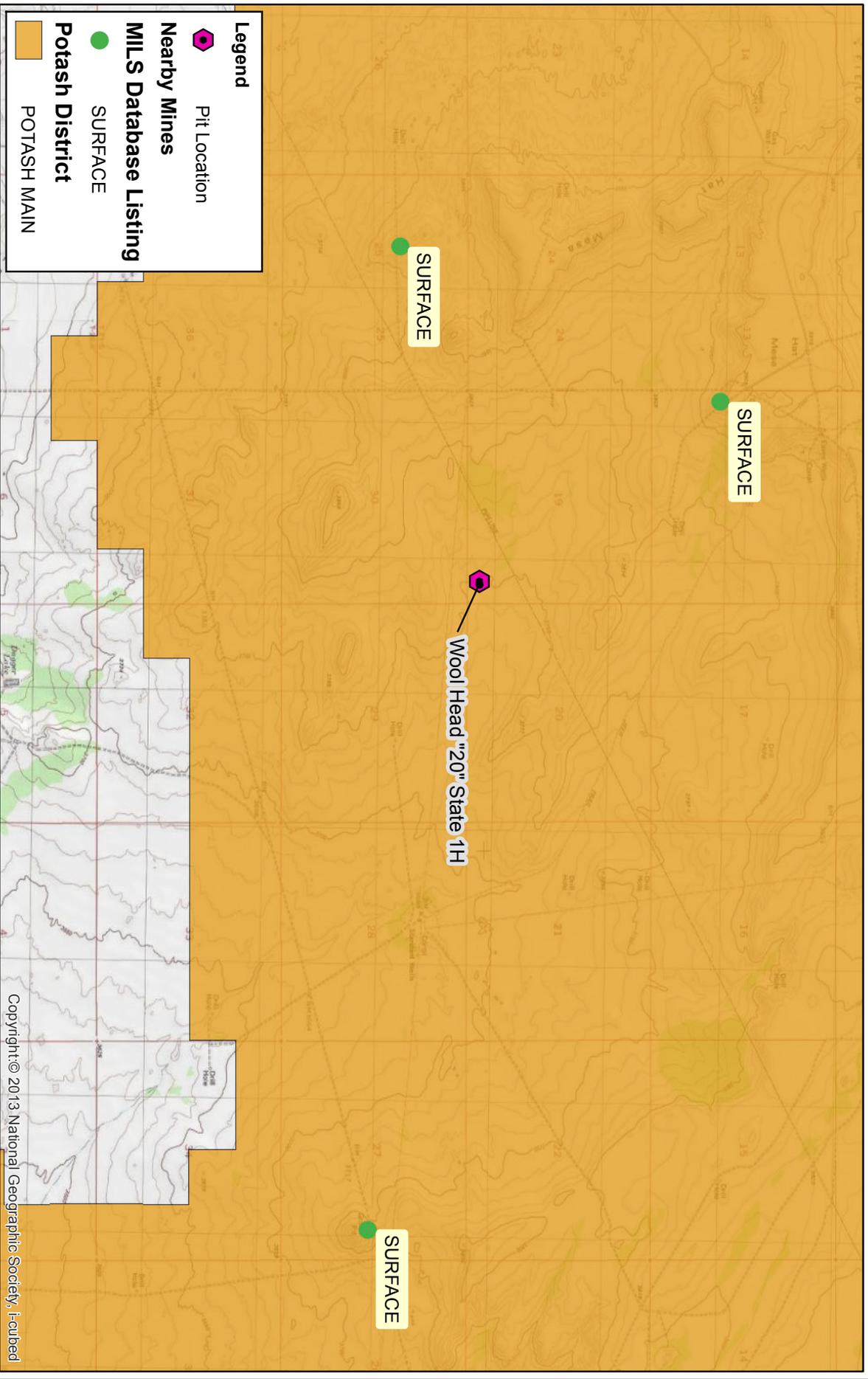


Image courtesy of USGS Image courtesy of ImagEarth.com © 2014 Microsoft Corporation © 2014 Nadara@A11D

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Nearby Wetlands
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 Wool Head "20" State 1H

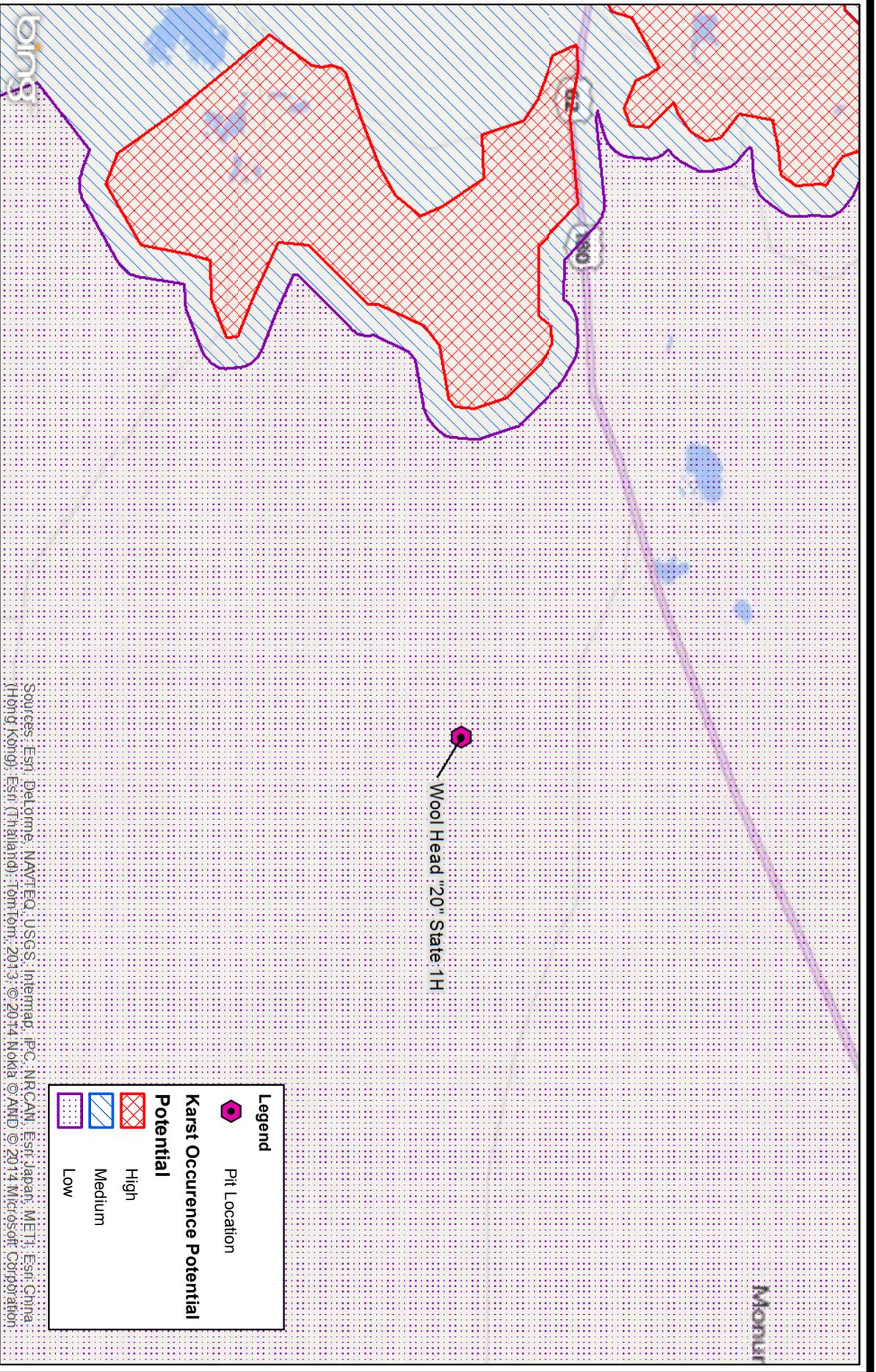
Figure 6
 September
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Nearby Mines and Minerals
 Amtex Energy, Inc
 Wool Head "20" State 1H

Figure 7
 September
 2014



Wool Head "20" State 1H

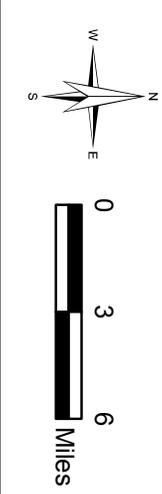
Legend

-  Pit Location

Karst Occurrence Potential

-  High
-  Medium
-  Low

Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri, Japan, METI, Esri, China (Hong Kong), Esri, Thailand, TomTom, 2013, © 2014 Nokia, © AND, © 2014 Microsoft Corporation



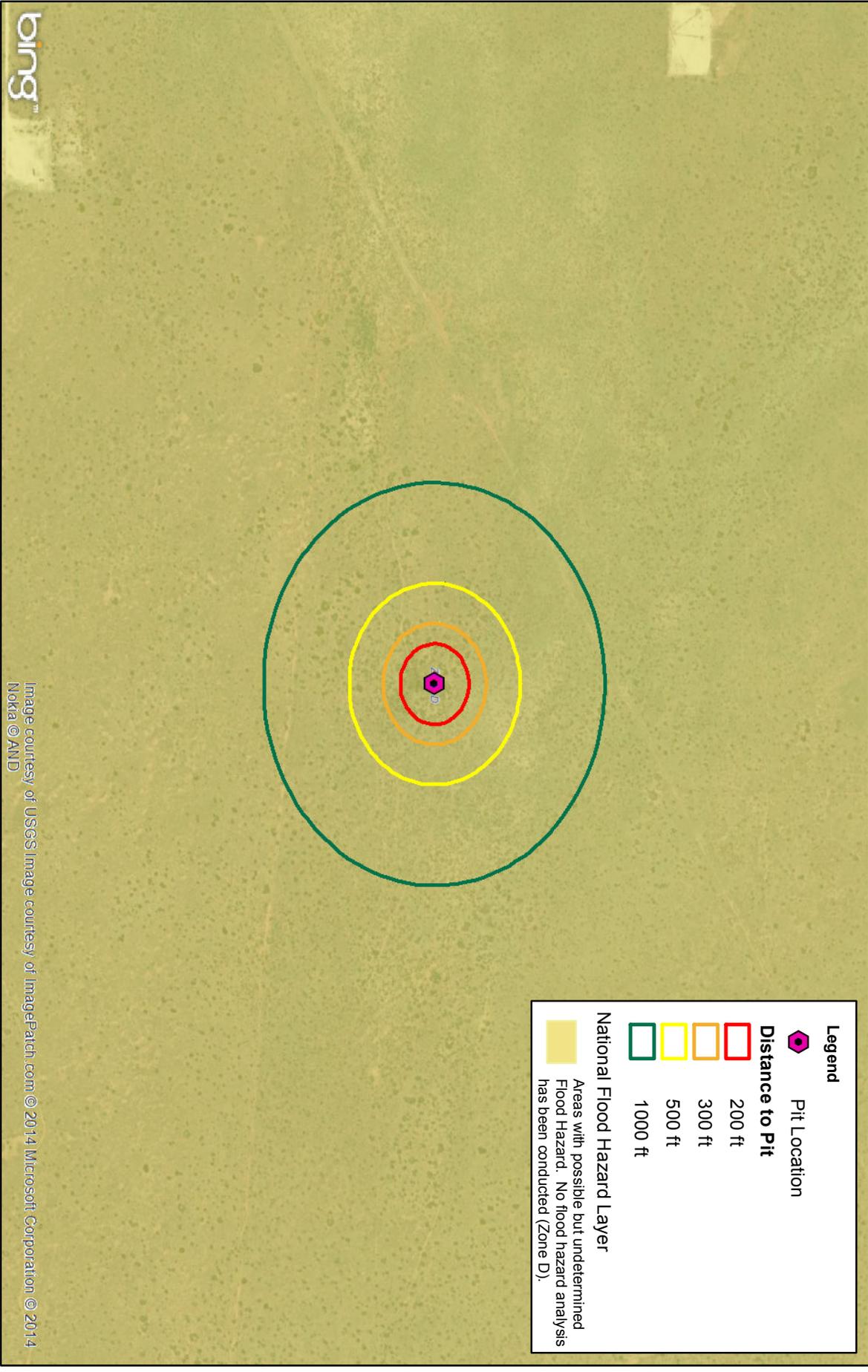
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Karst Potential

Amtex Energy, Inc
 Wool Head "20" State 1H

Figure 8

September
 2014



Legend

-  Pit Location
- Distance to Pit**
-  200 ft
-  300 ft
-  500 ft
-  1000 ft
-  National Flood Hazard Layer

Areas with possible but undetermined Flood Hazard. No flood hazard analysis has been conducted (Zone D).

Image courtesy of USGS Image courtesy of ImagePatch.com © 2014 Microsoft Corporation © 2014 Nokia © AND

FEMA Source: <https://hazards.fema.gov/gis/mh/services/public/NFHLWMS/MapServer/WMS/Server>

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FEMA Flood Map
 Amtex Energy, Inc
 Wool Head "20" State 1H

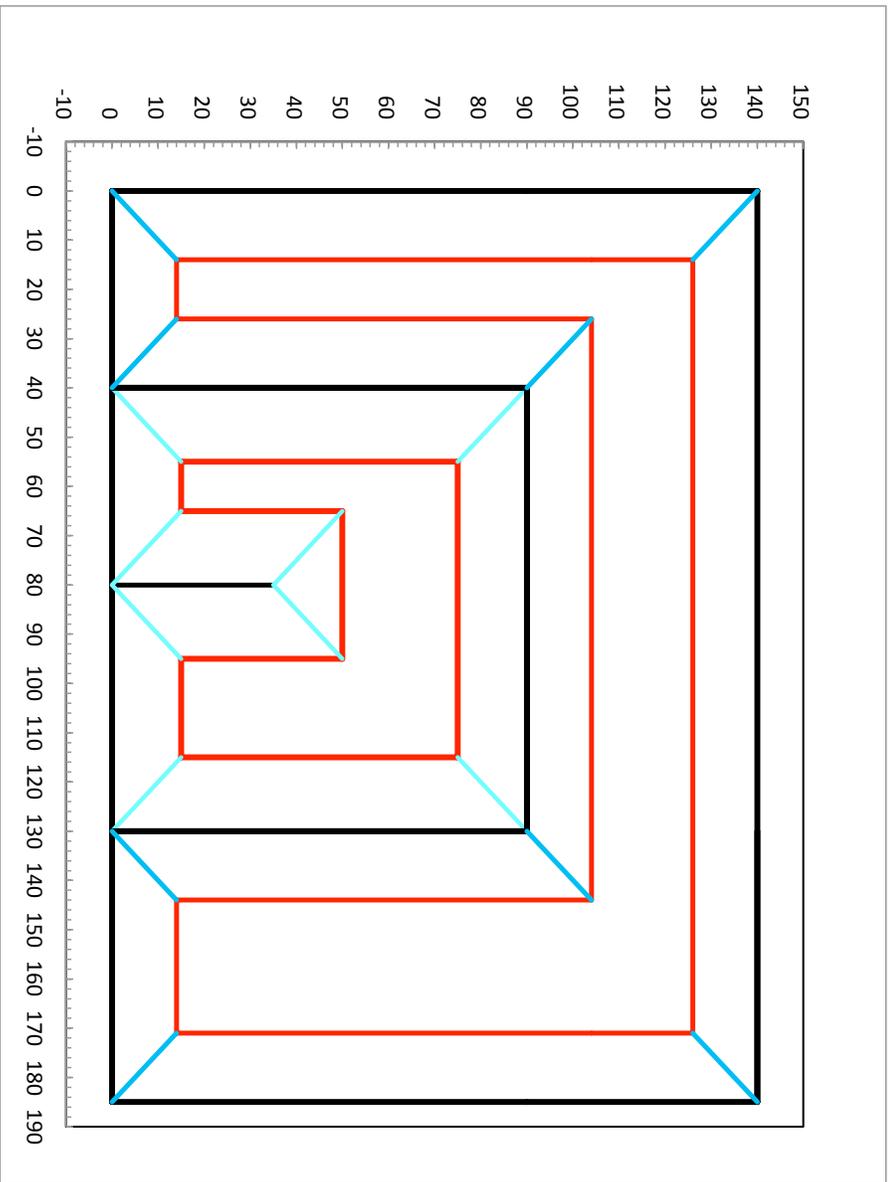
Figure 9
 September
 2014



Site Specific Information Plates

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Albuquerque, NM 87104



Drilling Cell Dimensions

Drilling Cell Total Width	185.0
Drilling Cell Total Length	140.0

Slopes of Pit

Horizontal Distance	2.00
Vertical Distance	1.00
Horseshoe divider width at surface	0.0

Inner Horseshoe Dimensions

Total Width (left right)	90.0
Total Length (up down)	90.0
Depth	7.5
Length of Divider	35.0
Divider Width	0.0
Width of discharge floor	20.0
Width of suction floor	10.0

Outer Horseshoe Dimensions

Width Discharge Side	55.0
Width Suction Side	40.0
Length Far Side (up down)	50.0
Width of discharge Floor	27.0
Width of Suction Floor	12.0
Width of Far Side Floor (right-left dimension)	120.0
Length of far side floor (Up-down dimension)	22.0
Depth of Discharge Side	5.0
Depth of Far Side	7.0
Depth of Suction Side	9.0

Fluids Cell Dimensions

Width (left-right)	100.0
Length (up-down)	140.0
Depth	12.0

Inner Horseshoe Capacity 6913 bbl
 Outer Horseshoe Capacity 15600 bbl

Fluids Cell Capacity 19253 bbl
 Total Capacity 41766 bbl

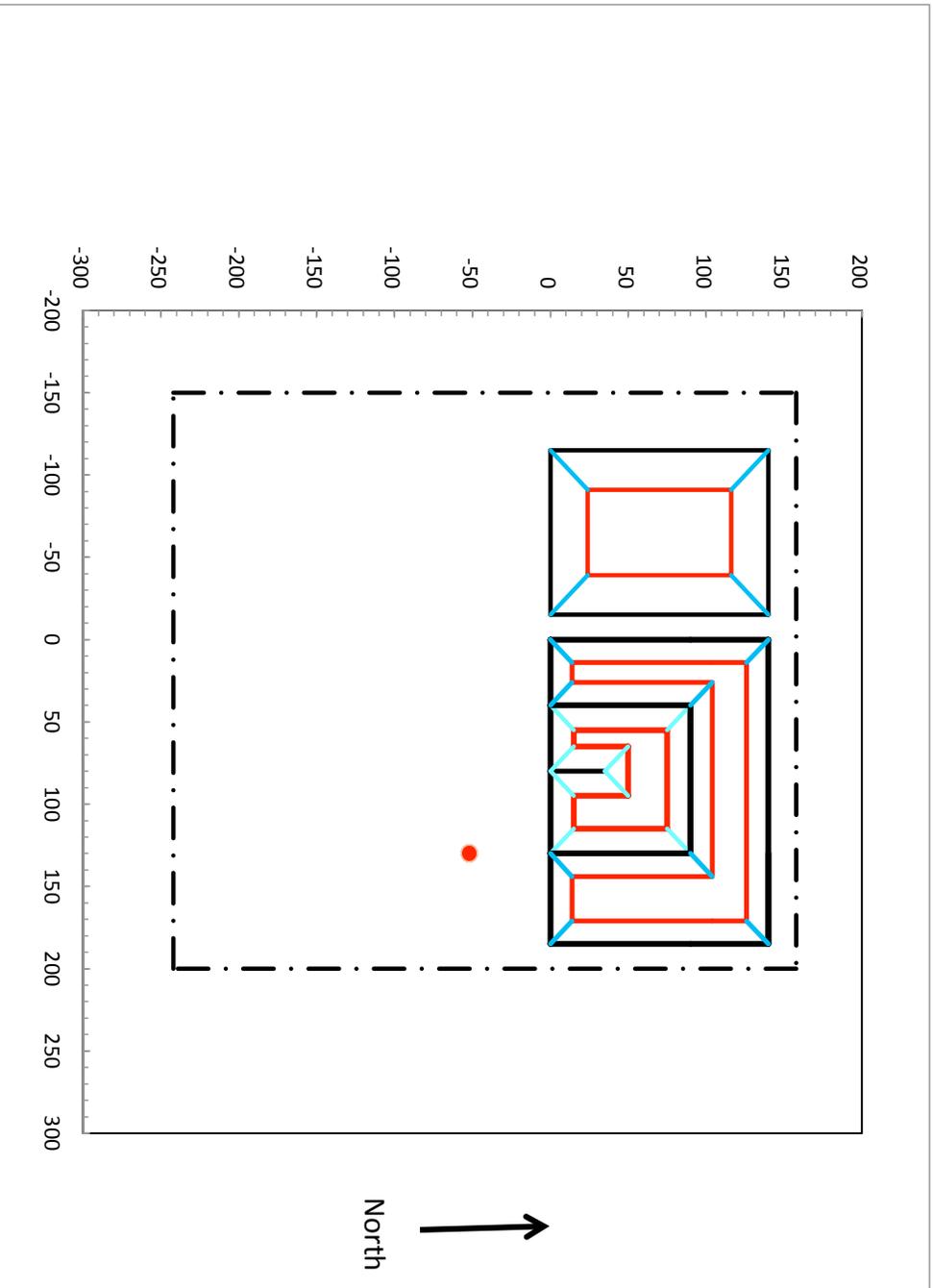
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Drawing of Drilling Cell

Amtex - Wool Head "20" State 1H

Plate 1

September 2014



- Black Lines are on the ground surface.
- Red Lines are on the Pit Floors.
- The Blue Contour Lines are at a depth of 4 feet in both pits.
- The origin (0,0) is at the southwest corner of the Outer Horseshoe Pit.

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Drawing of Drilling Pit and Well in Relation to Pad

Amtex - Wool Head "20" State 1H

Plate 2

September 2014



Appendix A

Inspection Photographs & Survey Information

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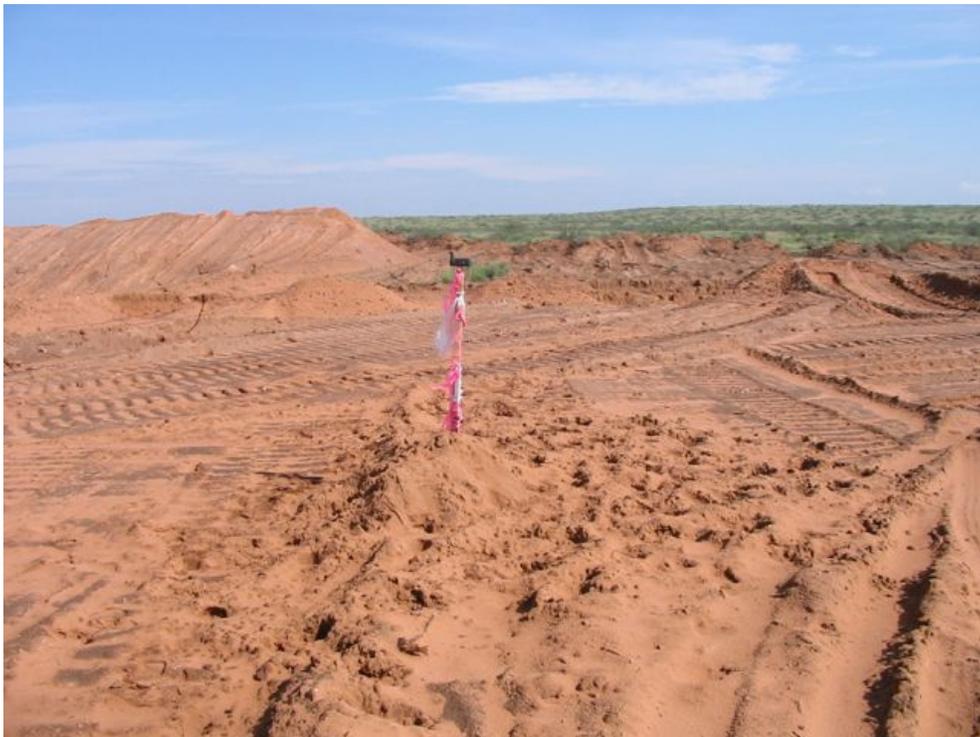
View to the southwest of partially completed pad



Typical soil and vegetation surrounding the proposed temporary pit site



Hard clay bottom of partially completed temporary pit



View to the north from partially completed pad

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

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

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

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
Property Code	Property Name WOOL HEAD "20" STATE	Well Number 1H
OGRID No.	Operator Name AMTEX ENERGY, INC.	Elevation 3749.2'

Surface Location

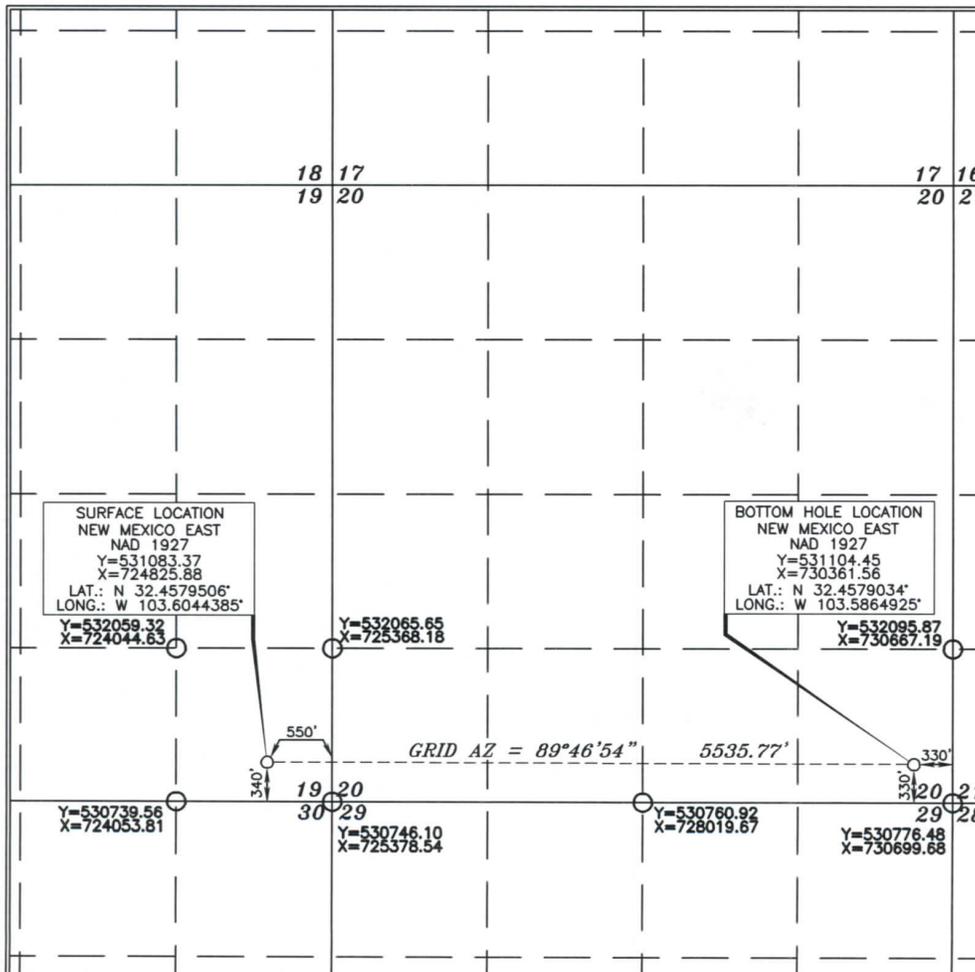
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	19	21 SOUTH	33 EAST, N.M.P.M.		340'	SOUTH	550'	EAST	LEA

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
P	20	21 SOUTH	33 EAST, N.M.P.M.		330'	SOUTH	330'	EAST	LEA

Dedicated Acres	Joint or Infill	Consolidation Code	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.



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 _____

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from full 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.

15079

DATE OF SURVEY
AUGUST 20, 2014

Signature and Seal of Professional Surveyor
Timothy J. Asch

Certificate Number 15079



Generic Plans for Temporary Pits

R.T. Hicks Consultants, Ltd.

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Albuquerque, NM 87104

Temporary Pit Design/Construction Plan

Plates 1 and 2 show the design of the temporary pit proposed for this project. Field conditions and the drilling rig layout will determine the final configuration of the pit cells, which will consist of outer and inner drilling cells and an optional fluids cell as described below:

1. Drilling cells (reserve pit) consist of:
 - a. An inner horseshoe for brine, cut-brine fluid, and cuttings
 - b. An outer horseshoe for freshwater and cuttings
2. An optional cell for the storage of fresh water used in drilling or stimulation, fresh stimulation flow-back water (prior to re-use or disposal), or as an approved disposal site for drilling solids derived from a nearby well on the same lease. Prior to such disposal the operator will provide notice to the NMOCD that:
 - a. Identifies the well(s) to be served by the fluids cell of the temporary pit
 - b. Provides the date that the drilling rig moved from the first well using the pit
 - c. Affirms that the fluids pit will be closed in conformance with the mandates of the Rule

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 or rinse the solids to remove salt and/or petroleum hydrocarbons. The drainage system may be installed in the entire drilling cell or only in one horseshoe (e.g. the inner horseshoe). As described in the closure plan, this system of fabric-wrapped perforated pipe and drainage mats lie on the bottom of the drilling cell of the pit. The system will drain to the lowest corner of the horseshoe where a standpipe rises from the depression to the top of the berm. The drainage system can remove water to an above-ground tank, the fluids cell of the pit, or directly to a truck for re-use or disposal. The drainage system may also be used to introduce fresher water below the residual cuttings/mud, causing the introduced fluid to move upwards through the cuttings/mud and enhance the solids rinsing process. After any rinsing process, the water can be removed from the pit for re-use via a vacuum truck or recovered from the drainage system at the bottom.

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. This drainage and rinsing system allows the operator to:

- Recover clear water for possible re-use
- Reduce the concentration of constituents of concern in the drilling waste by removing some water entrained in the drilling waste.

Precipitation and the possible addition of relatively fresh water (see closure plan) will rinse the solid drilling waste, causing additional reduction in the constituents of concern as the water is recovered for re-use or disposal.

For any temporary storage of fluids derived from the drilling pit and placed in an above-ground tank, the following will apply:

1. Construction, operation and maintenance of the temporary storage tank(s) will adhere to all applicable NMOCD Rules including but not limited to:

C-144 Supplemental Documentation for Temporary Pit

- a. Safety stipulations
 - b. Protection from hydrogen sulfide mandates
 - c. Signage and identification requirements
 - d. Secondary containment requirements for temporary tanks
 - e. Applicable netting requirements
2. Any cleaning of the temporary tank(s) will adhere to NMOCD Rules relating to tank cleaning.
 3. Transportation of water or drilling fluids derived from the drilling pit will adhere to all applicable NMOCD Rules relating to transportation.
 4. Storage of water or drilling fluids in temporary above-ground tanks will also adhere to all applicable Federal mandates.

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

Finally, we intend to place any temporary tank used in conjunction with the pit drainage system on a 20-mil LLDPE string-reinforced liner (that meets the requirements of the NMOCD Rules for temporary pits) with a berm around it that would allow any inadvertently released fluids to drain or be pumped back into the pit.

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.

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Fencing:

During drilling or workover operations, the operator will not fence the edge of the pit adjacent to the drilling or workover rig.

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, 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 and meets all requirements of NMOCD 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

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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.

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 provided that the pit is being used to collect liquids escaping from the drilling or workover rig and this additional fluid will not cause a breach of the temporary pit.

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

During construction, the operator or qualified contractor will install diversion ditches and berms around the pit as necessary to prevent the collection of surface water run-on. As outlined in the Construction and Design Plan, during drilling operations, the edge of the temporary pit adjacent to the drilling or workover rig may not have run-on protection if the operator is using the temporary pit to collect liquids escaping from the drilling or workover rig and run-on will not result in a breach of the temporary pit.

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.

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The operator will inspect the temporary pit containing drilling fluids daily while the drilling rig or workover rig is on site. After the rigs have left the site, the operator will inspect the pit weekly 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 the NMOCD that drilling waste from a nearby site on the same lease may be placed in the temporary pit (e.g. placed in the frilling 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, and 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 Plates 1-2. The optional drainage system described in the design and construction plan is not shown on the Plates but can be an 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 NMOCD 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 a fluids cell of the temporary pit; thereby further rinsing the residual solids in the pit.
- 20-60 days after placement of fresh 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.

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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 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 cell 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.

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**:
 - 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.

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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. 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
- iv. if burial includes solids derived from a nearby well on the same lease, the report will list the name, API number, 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 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.

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 the NMOCD proposes an alternative to the re-vegetation or re-contouring 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,

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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 NMOCD.

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.

