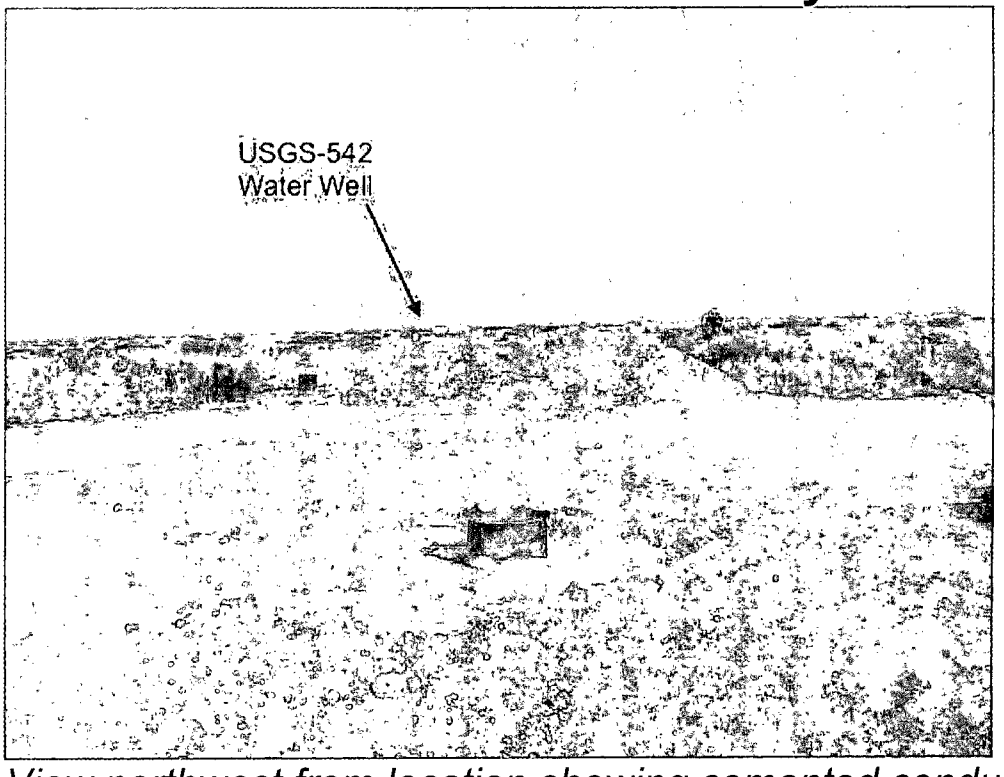
C-144 Permit Package for Warrior "BRW" State COM No. 1H Temporary Pit Section 28 T23S R35E Lea County NM



View northwest from location showing cemented conductor pipe and the closest water well in the distance.

Prepared for
Yates Petroleum Corporation
Artesia, New Mexico

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

August 11, 2014

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

RE: Yates Petroleum, Warrior "BRW" State No. 1H Reserve Pit

Dear Tomas:

On behalf of Yates Petroleum Corporation, R.T. Hicks Consultants, Ltd. is pleased to submit the C-144 application package for the above-referenced wells. Please note the following:

1. The distance between the bottom of the pit and groundwater is more than 200 feet.
2. The Design/Construction, O&M and Closure Plans are verbatim after the recently-approved Convoy 2H application.
3. The Closure Plan is verbatim after the recently approved Trucker pit. The wording allows Yates to implement the closure protocols outlined in our 6/17/14 submission to OCD. Although our proposal is contrary to current OCD Policy, we strongly believe our method:
    a. Is fully consistent with the Pit Rule because
        i. the geomembrane cap covers the stabilized cuttings, not side slopes that did not come into contact with drilling waste
        ii. the geomembrane cap is 20-mil LLDPE liner (reclaimed and new)
        iii. the surface of the geomembrane cap slopes to prevent moisture collection
    b. Provides a better closure system because it reduces the flux of chloride to groundwater relative to the protocols of the OCD Policy.
4. Until OCD completes their review of our 6/17/14 submission (sent to you on 7/8/14), Yates will abide by the OCD Policy and place the geomembrane cap over the footprint of the pit and will use only new liner with welded seams.
5. Plates 1 and 2 are based on a previously-approved C-144 application,
6. We anticipate "in place" burial of stabilized solids.
7. This letter and application is copied to the State Land Office to notify the surface landowner of the operator's intent to use on-site burial.
8. I certify that Hicks Consultants performed a visual inspection of the site.

If you have any questions or concerns regarding this application, please contact Dale Littlejohn or me. Dale is the primary author of this application. As always, we appreciate your work ethic and attention to detail.

Sincerely,
R.T. Hicks Consultants

Randall Hicks
Principal

Copy: Yates Petroleum Corporation
NM State Land Office, Ed Martin

C-144 and
Site Specific Information for
Temporary Pit

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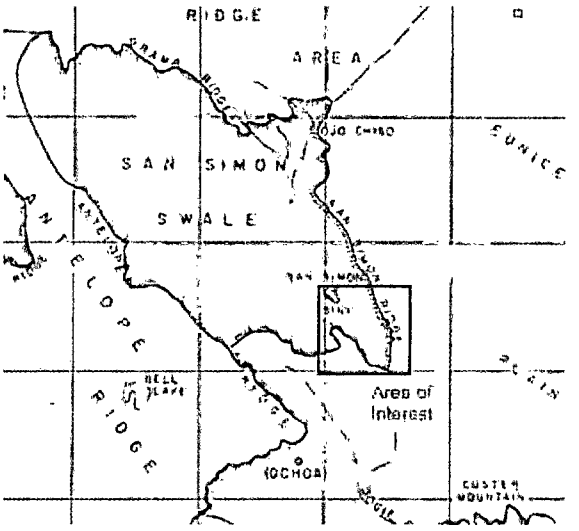
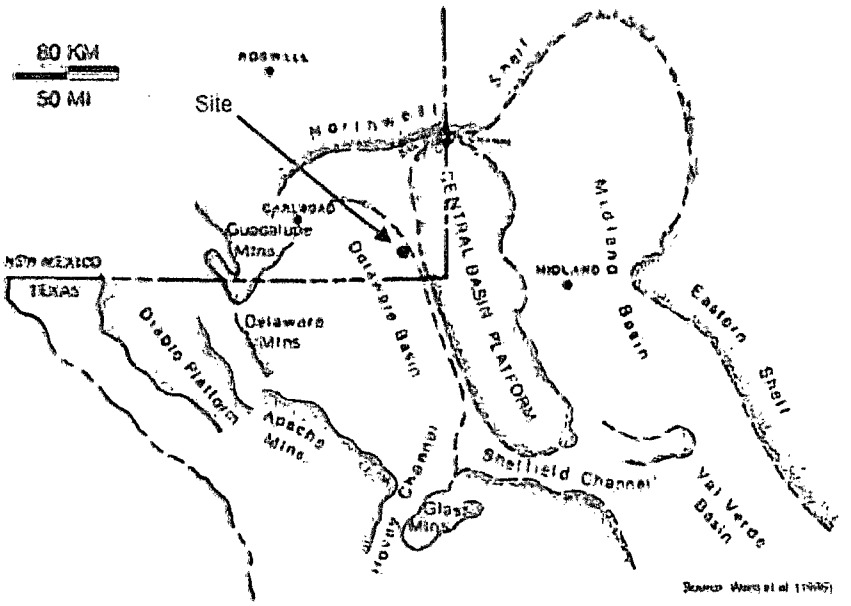
Albuquerque, NM 87104

Geologic Setting of the Regional Fresh-Water Bearing Formations



The proposed temporary pit site is located within the southeast 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 two miles northwest of the site. The San Simon Swale is approximately six miles wide extending from Grama Ridge/San Simon Ridge on the northeast to Antelope Ridge on the southwest (see adjacent map insert). Approximately 240 feet of topographic relief is present from the top of San Simon Ridge (3,520 feet ASL) to the San Simon Sink (3,280 feet ASL). The elevation of Antelope Ridge is lower than the San Simon Ridge, approximately 3,460 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.



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 along Grama Ridge and San Simon Ridge to the northeast, 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 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.

Figure 2 is a regional topographic base map (metric contour units) that depicts the potentiometric surface contours of the Triassic aquifer (solid blue line), which is believed to be the shallow-most aquifer within the San Simon Swale. The potentiometric contours are labeled in feet above sea level (ASL). A yellow dashed line indicates the southwestern limit of the known shallow Ogallala or Alluvium aquifer in the area. 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.

Site Geology

The proposed temporary pit for the Warrior "BRW" State #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 (3,364 feet ASL), the Triassic age rocks are present approximately 150 feet below the proposed temporary pit location. The surface drainage is to the west, however the area is generally flat with no distinct drainage features present.

Water Table Elevation

Nine water wells were identified in the area surrounding the Warrior "BRW" State #1H site (see Figure 1 and 2). A summary of the available water well data, with respect to groundwater elevation, is provided on the table below.

Summary of Groundwater Data

	Well Location						Well Source Information						Groundwater Elevation Data						
Well Numbers (see Map)	Township (south)	Range (east)	Section	Quarter Section OSE protocol (64,	16,	4)	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.)	Gauging Date
Misc-43	23	34	23	1	4	4				✓	✓	✓		3,375		232.9		3,142	10/10/12
Misc-34	23	35	6	3	3	3		✓	✓	✓	✓	✓	3,359	3,360	149	141.4	3,218	3,219	11/18/77
USGS-615	23	35	11	1	4	2	✓	✓		✓	✓	--	3,435	3,432	205	96.9	3,338	3,335	3/7/96
USGS-577	23	35	15	2	3	4	✓	✓		✓	--	--	3,475	3,472	60	42.5	3,433	3,430	3/7/96
Misc-182	23	35	27	3	4	4		✓	✓		✓	--	3,472	3,470		117.1	3,355	3,353	1/13/71
Misc-184	23	35	28	3	2	1		✓			✓	✓	3,385	3,386	795	233.72	3,151	3,152	10/17/67
Misc-183	23	35	28	4	2	1					✓	✓		3,386		>300		<3,086	8/5/14
USGS-542	23	35	29	2	2	2	✓				✓	--	3,370	3,370		234.8	3,135	3,135	3/13/96
Misc-181	23	35	29	3	3	3		✓			✓	--	3,461	3,460	400	326.47	3,135	3,134	12/9/70

✓ 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-615 is identified as producing from the Chinle Formation, but may also be completed in a shallow aquifer (Ogallala or Alluvium) based on the measured groundwater elevation and location.

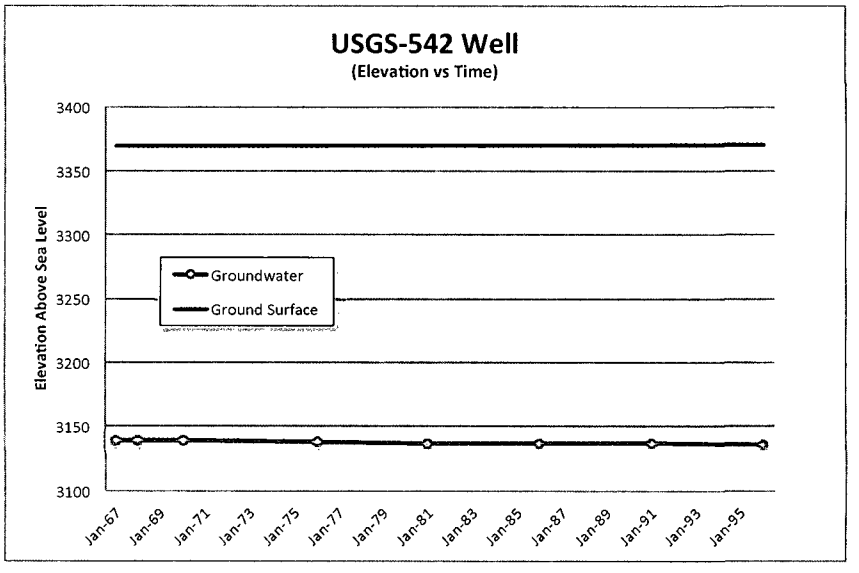
- Well Misc-183 is a large diameter steel casing, open at the surface but protected by a metal building labeled as property of the US Department of the Interior. Access to the casing is provided by and small door at the back of the building. An attempt was made to gauge the water level on August 5, 2014, however the depth to water exceeded the 300-foot probe cable length.

- Both wells USGS-542 and Misc-184 were operational on the day of inspection, with submersible pumps powered by a generator located at the USGS-542 well site.

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 east, south, and west. The nearest water well, designated by the USGS as an Ogallala or Alluvium producer, is USGS-577, located approximately 3.3 miles to the northeast.

The two nearest water wells to the Warrior "BRW" State #1H temporary pit site are Misc-184 (1,070 feet to the east-southeast) and USGS-542 (660 feet to the west-northwest). Both wells have similar groundwater elevations, however a history of consistent gauging data is available for the USGS-542 well as shown below:



Based on the potentiometric surface contours created using the available measurements from surrounding wells (Figure 2) and the information from the two nearest water wells, it has been determined that the groundwater elevation at the Warrior "BRW" State #1H temporary pit site is approximately 3,140 feet ASL. With a surface elevation of 3,364 feet ASL and a maximum depth of the temporary pit of 10 feet, the depth to groundwater below the pit floor should be approximately 214 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 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).

- The nearest surface drainage feature (Lake/Pond) is located 2,000 feet to the south-southeast; it did not contain water on the day of inspection.
- No other watercourses, as defined by NMOCD Rules, or water bodies exist within 300 feet of the location, based upon our site visit and examination of the surrounding area.

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 demonstrates that the location is not within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 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-542, which is located 660 feet to the west-northwest of the oil well location. While the water well is not used for domestic purposes, it may likely be used for stock in the future, therefore the proposed pit will be placed on the east side of the location to ensure a distance of greater than 500 feet from the water well. There are no "other" (non-private) or domestic water wells located within the mapping area.
- No springs were 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 19 miles to the northeast.
- The closest public well field is located approximately 45 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 north-northwest, it is associated with the San Simon Sink area.

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 3.6 miles to the south.

Distance to High or Critical Karst Areas

Figure 8 shows the location of the temporary pits with respect 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 30 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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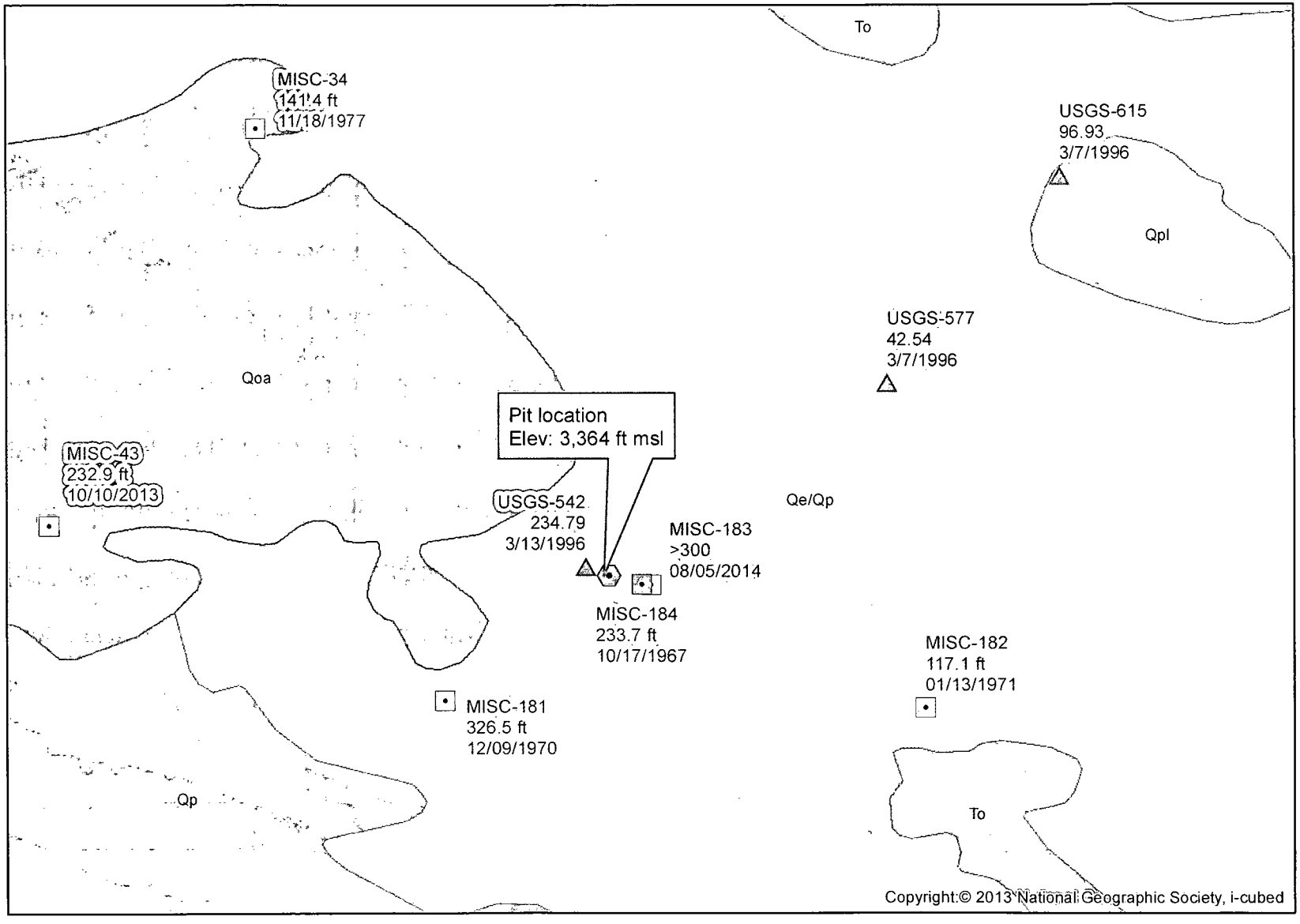
Albuquerque, NM 87104



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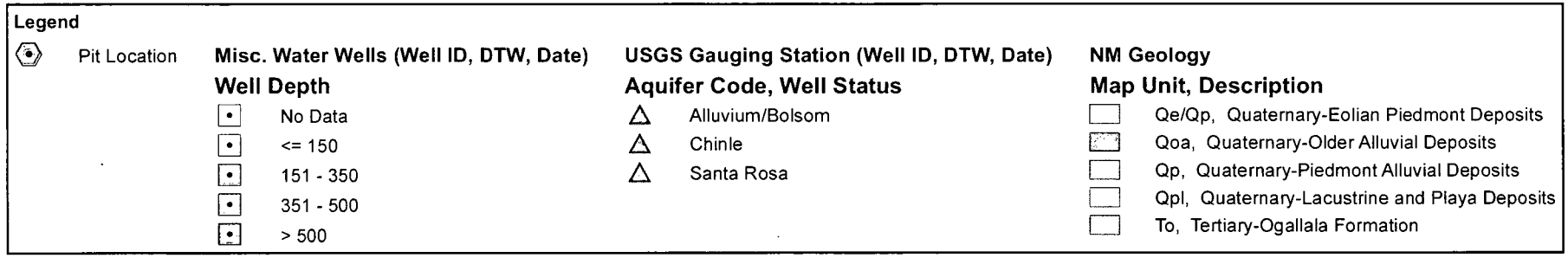
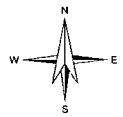
Depth To Water and Geology

Figure 1

Yates Petroleum Corporation
Warrior "BRW" State Com 1H

August 2014





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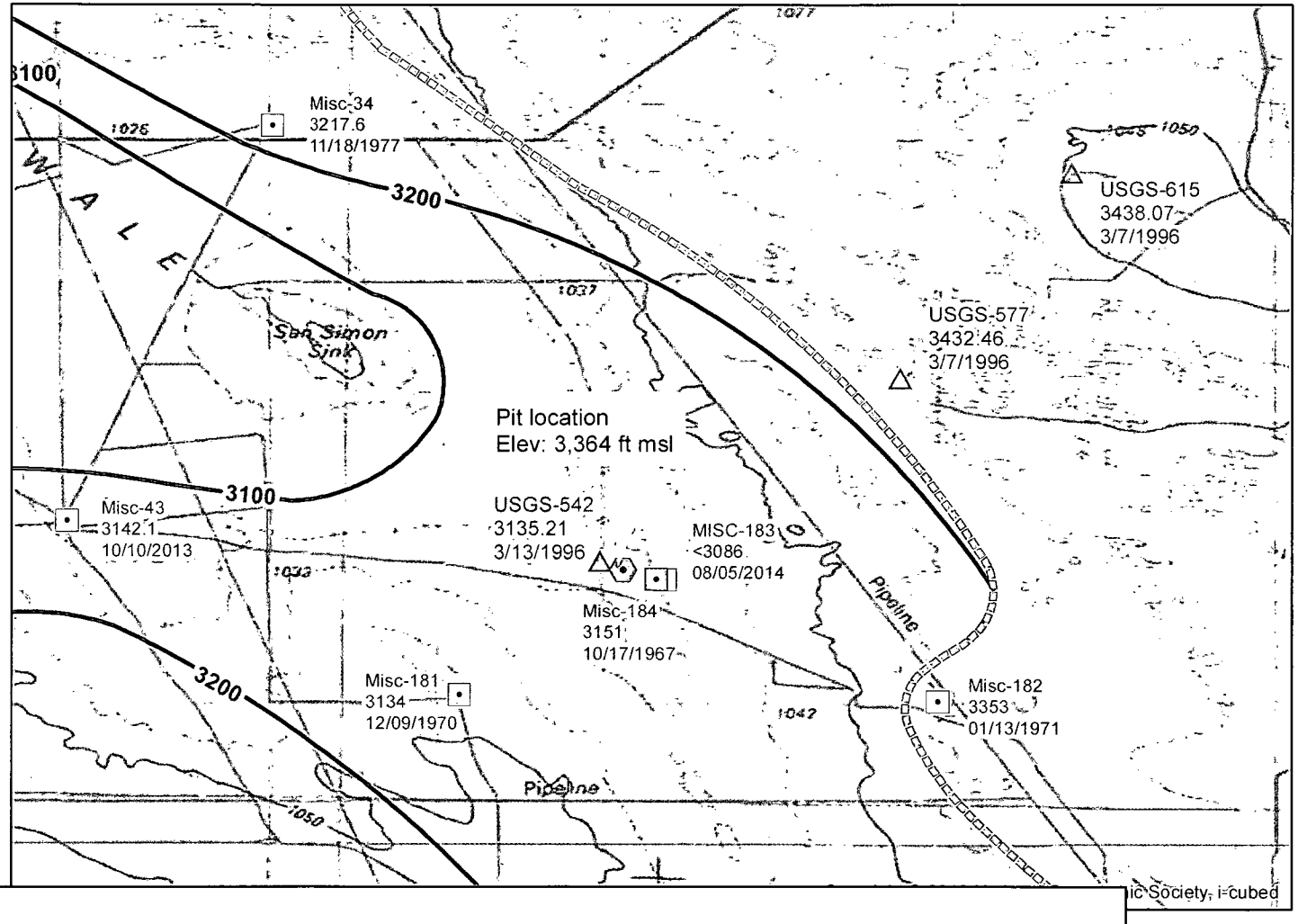
LEGEND - Depth To Water and Geology

Yates Petroleum Corporation
Warrior "BRW" State Com 1H

Figure 1
Legend

August 2014



Legend

Potentiometric Surface (ft msl)

- Isocontour
- Limit of Ogalla/Alluvium Water Production

USGS Gauging Station (Well ID, GW Elev, Date)

Aquifer Code, Well Status

- Alluvium/Bolsom
- Chinle
- Santa Rosa

Misc. Water Wells (Well ID, GW Elev, Date)

Total Depth (ft)

- No Data
- 351 - 500
- > 500

N W E S

0 0.5 1 Miles

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Potentiometric Surface

Figure 2

Yates Petroleum Corporation
Warrior "BRW" State Com 1H

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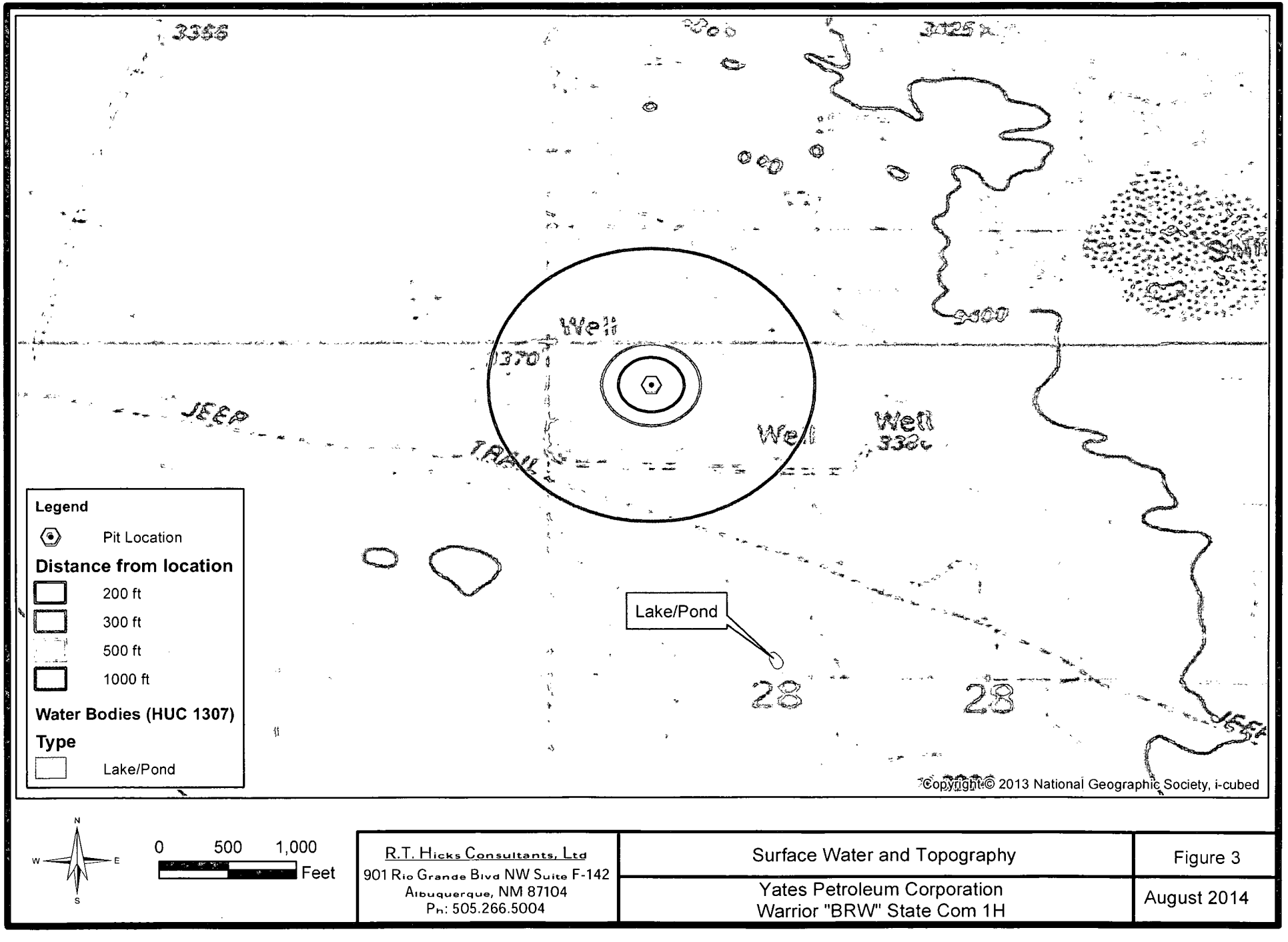
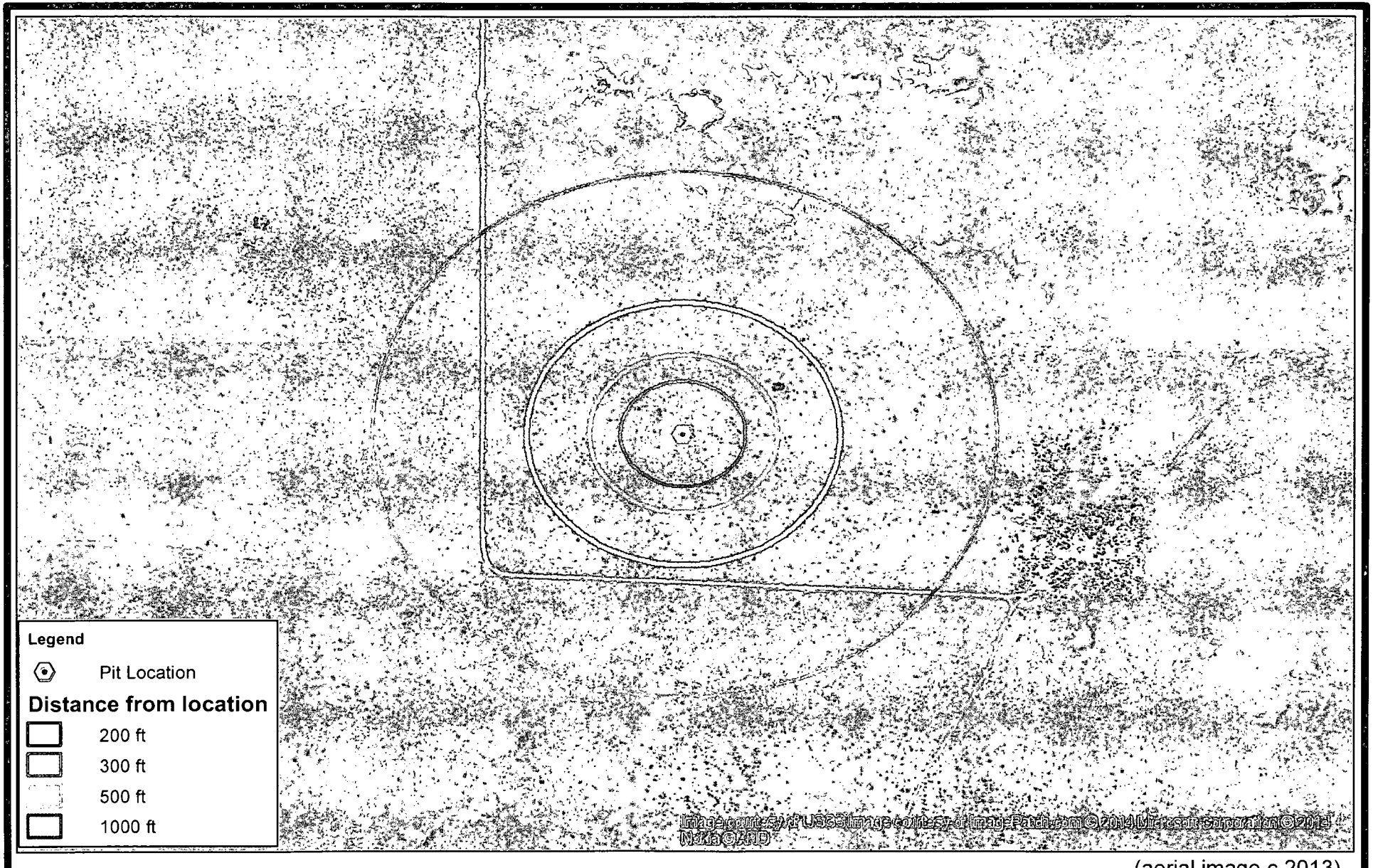


R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Surface Water and Topography	Figure 3
	Yates Petroleum Corporation Warrior "BRW" State Com 1H	August 2014



(aerial image c.2013)

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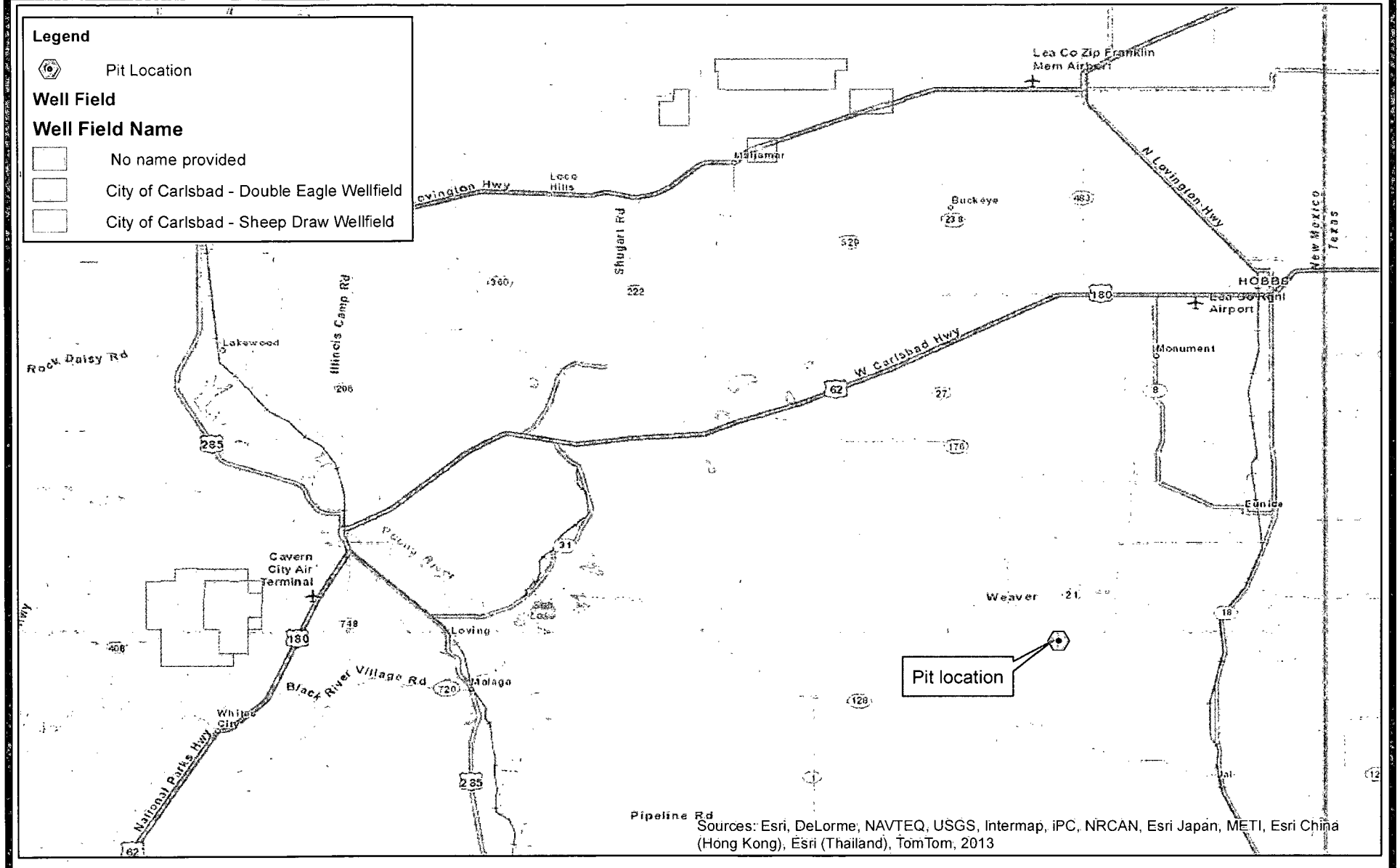
Nearby Structures	Figure 4
Yates Petroleum Corporation Warrior "BRW" State Com 1H	August 2014



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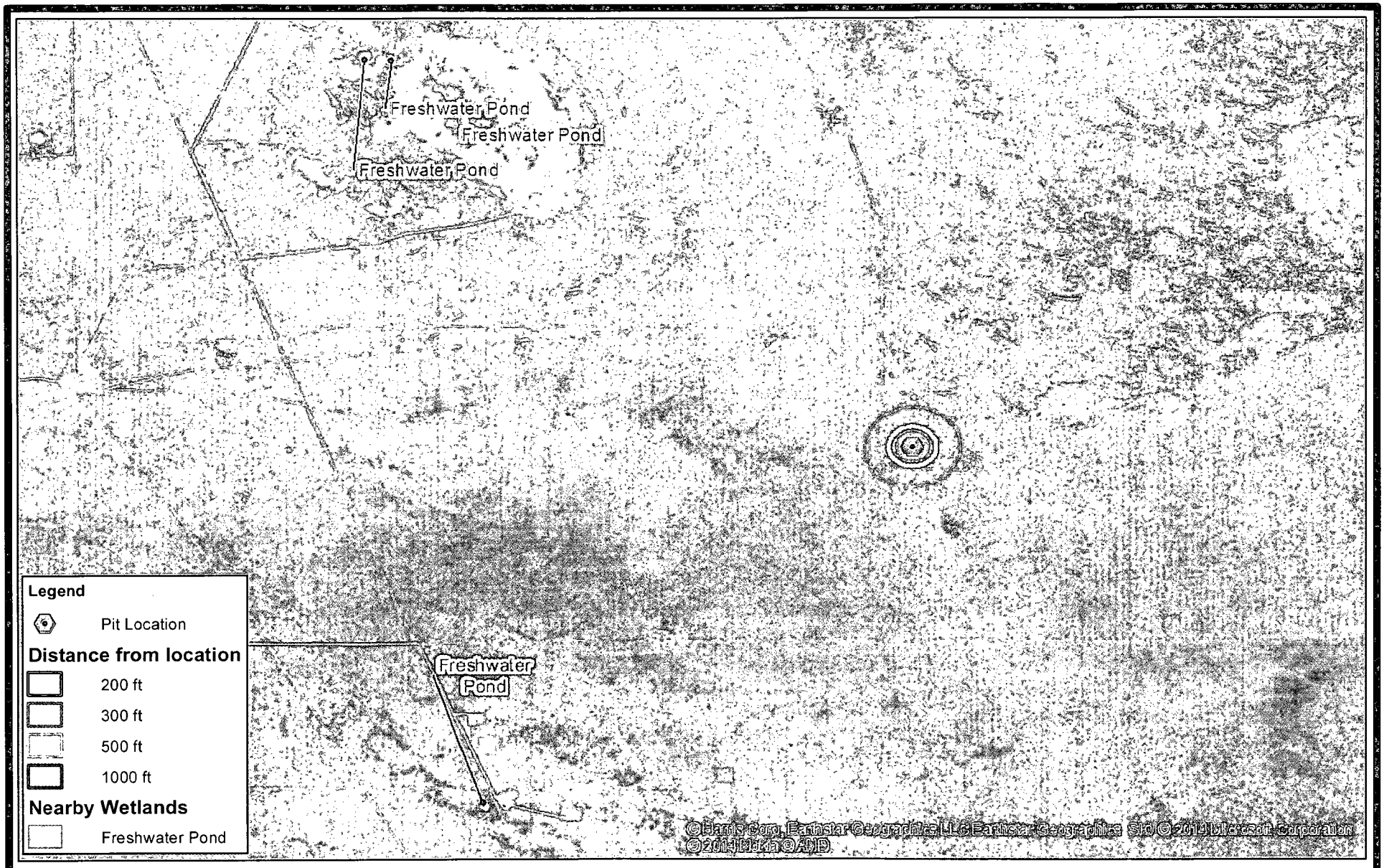
Nearby Municipalities and Well Fields

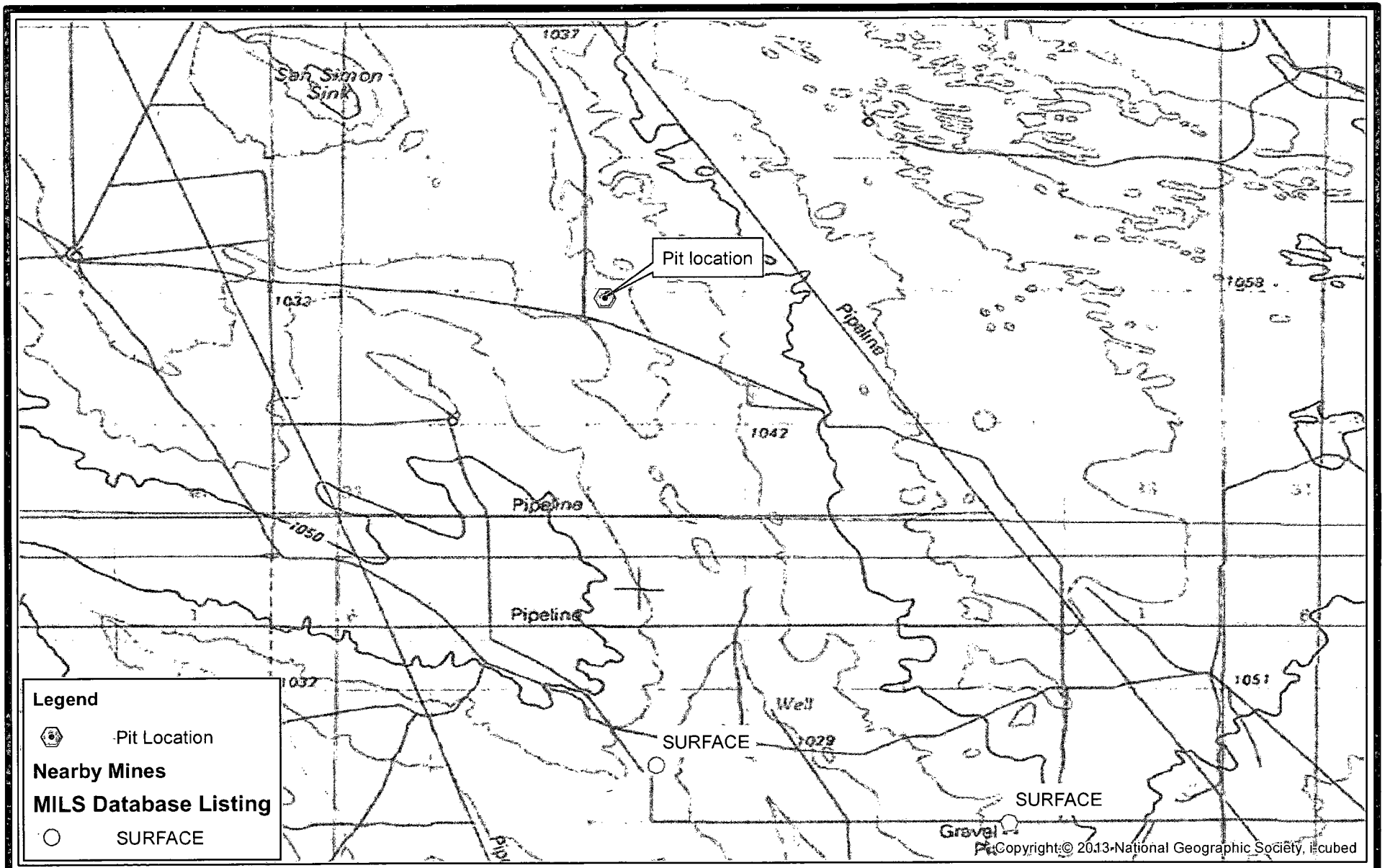
Figure 5

Yates Petroleum Corporation
Warrior "BRW" State Com 1H

August 2014



R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Nearby Wetlands	Figure 6
	Yates Petroleum Corporation Warrior "BRW" State Com 1H	August 2014



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Nearby Mines and Minerals

Figure 7

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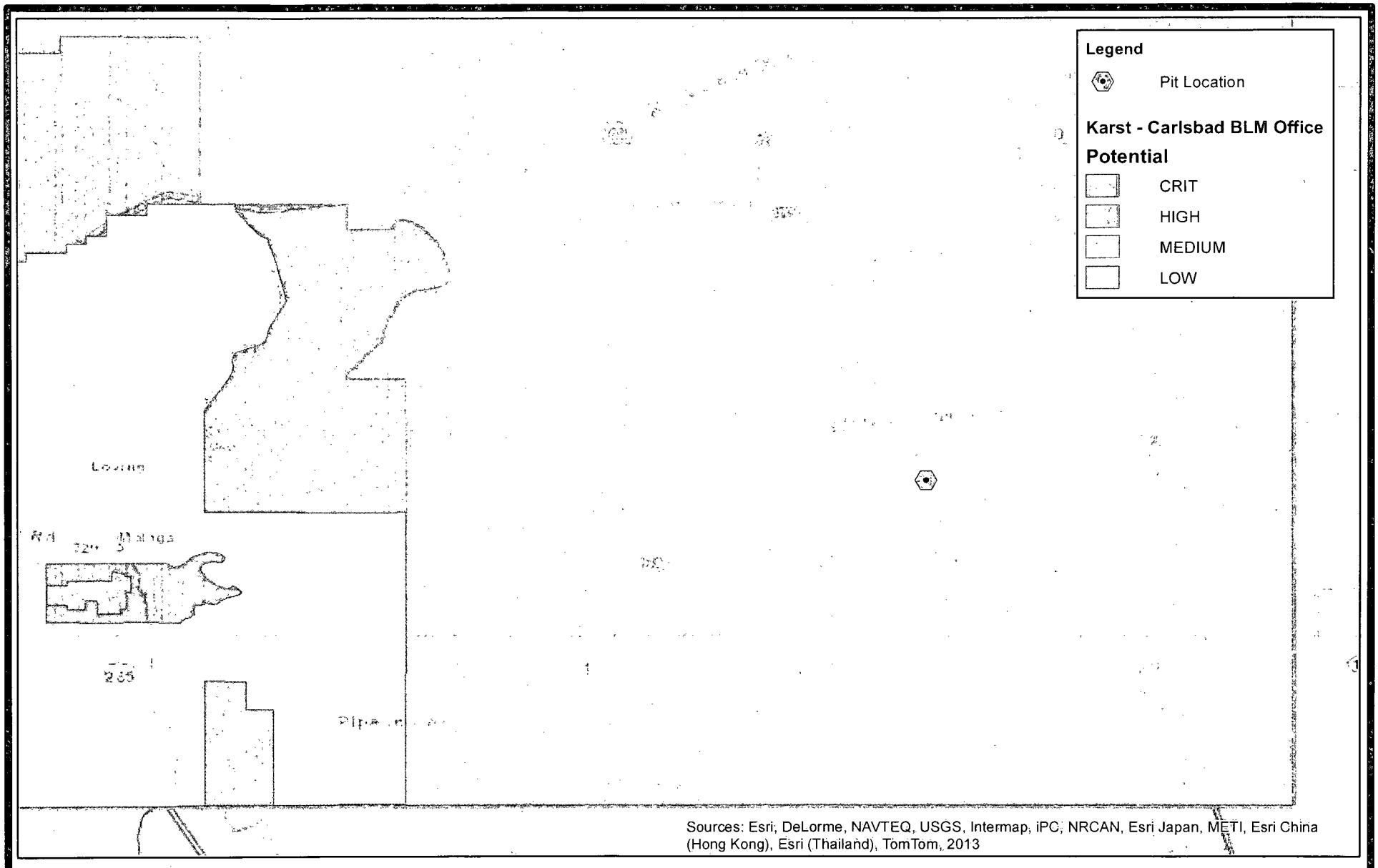
Warrior "BRW" State Com 1H

August 2014



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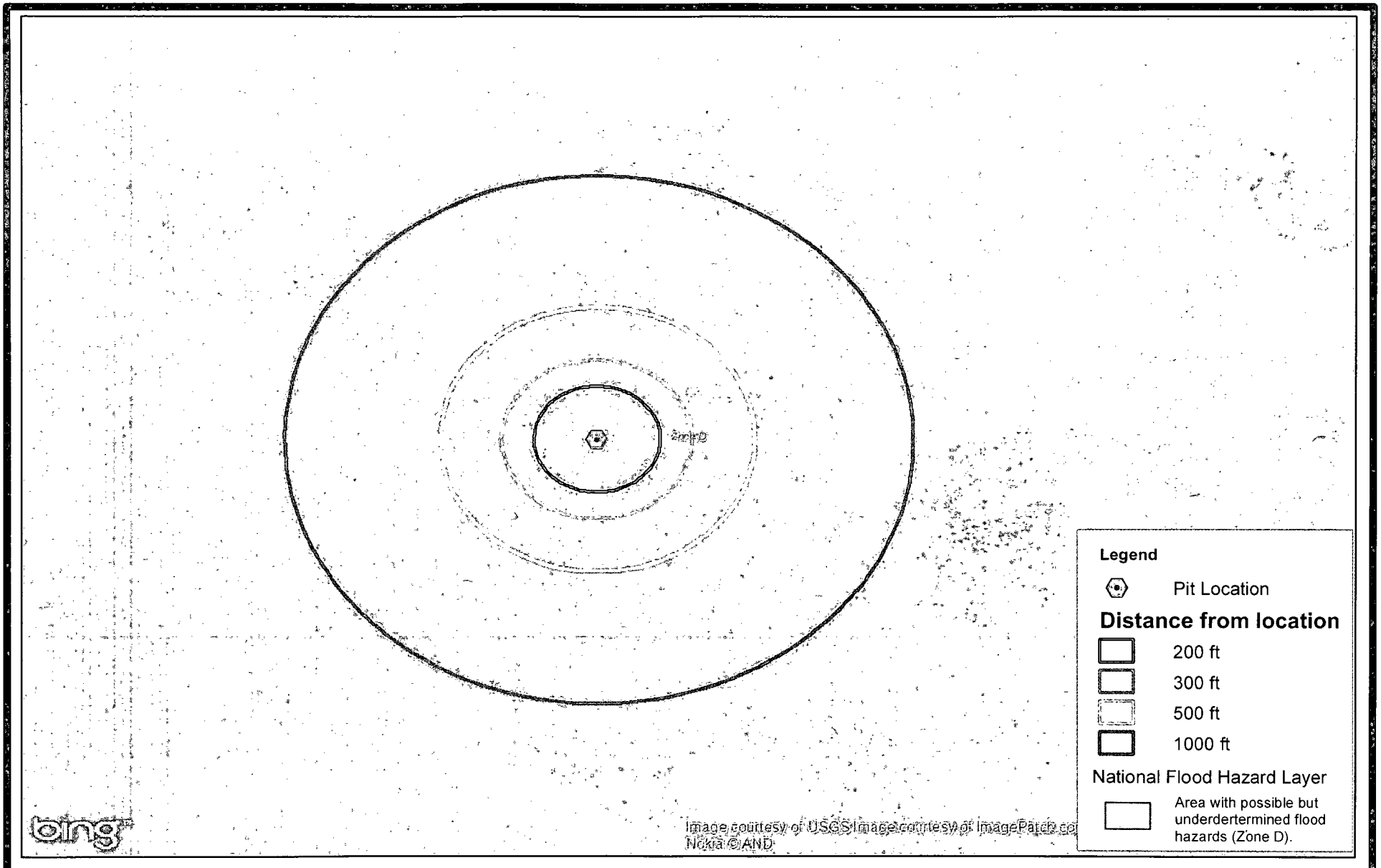
Karst Potential

Figure 8

Yates Petroleum Corporation
Warrior "BRW" State Com 1H

August 2014



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

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0 300 600 Feet

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FEMA Flood Map	Figure 9
Yates Petroleum Corporation Warrior "BRW" State Com 1H	August 2014

Site Specific Information Plates

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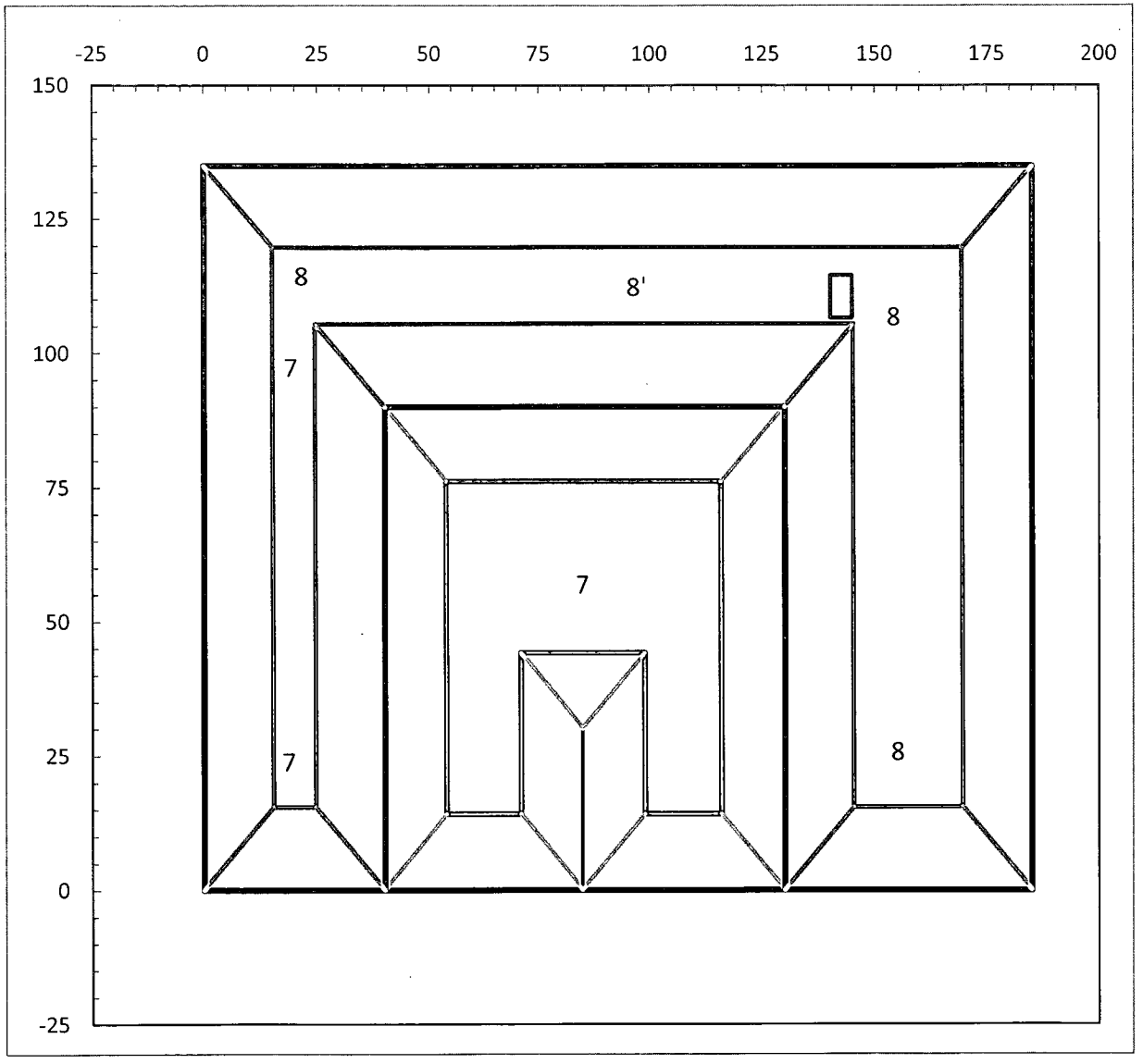


Drilling Cell Dimensions	
Drilling Cell Total Width	185.0
Drilling Cell Total Length	135.0

Slopes of Pit Horizontal Distance	2.00
Slopes of Pit 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	7.0
Length of Divider	30.0
Divider Width	0.0
Width of discharge floor	17.0
Width of suction floor	17.0

Outer Horseshoe Dimensions	
Width Discharge Side	55.0
Width Suction Side	40.0
Length Far Side (up down)	45.0
Width of discharge Floor	23.0
Width of Suction Floor	12.0
Width of Far Side Floor (right-left dimension)	103.0
Length of far side floor (Up-down dimension)	13.0
Depth of Discharge Side	8.0
Depth of Far Side	8.0
Depth of Suction Side	7.0

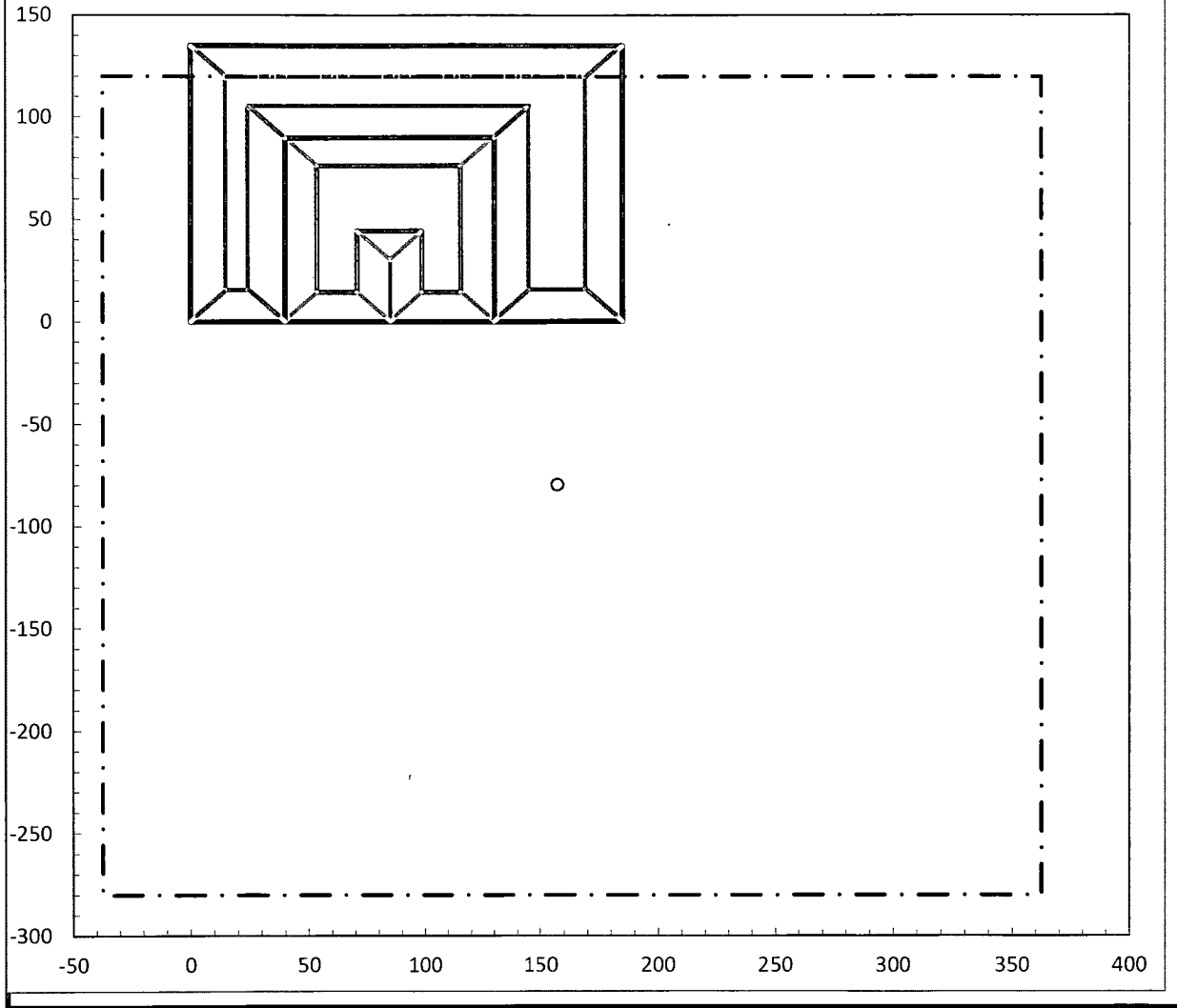
2-foot speed bump

Inner Horseshoe Capacity 6759 bbl
Outer Horseshoe Capacity 15314 bbl

Total Capacity 22073 bbl

North ←

R.T. Hicks Consultants 901 Rio Grande Blvd. NW Suite F-142 Albuquerque, N. M. 87104	**Drawing of Drilling Cell** Bottom of Cell Not to Scale	**Plate 1**
	YPD - Warrior BRW State Com 1H	**August 2014**



Well to in suction/out suction 117.50
Well to in discharge/out discharge 27.50

North

R.T. Hicks Consultants 901 Rio Grande Blvd. NW Suite F-142 Albuquerque, N. M. 87104	**Drawing of Temporary Pit and Well in Relation to Pad Boundary**	**Plate 2**
	YPD - Warrior BRW State Com 1H	**August 2014**

Appendix A

Site Inspection Photographs & Survey Information

R.T. Hicks Consultants, Ltd.
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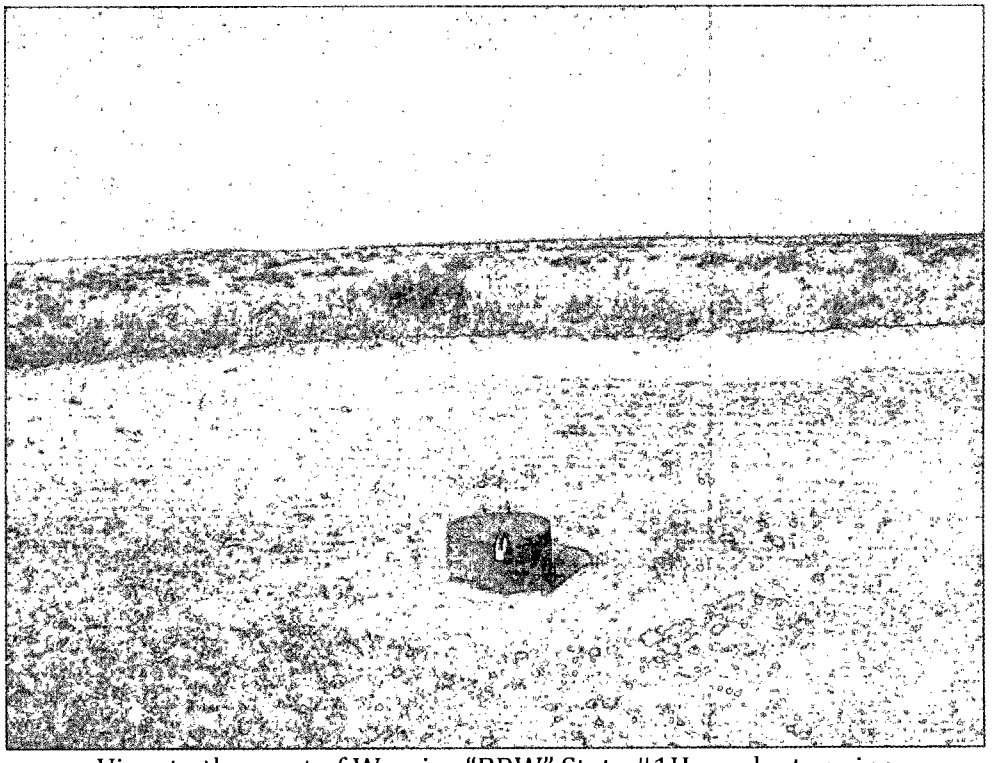
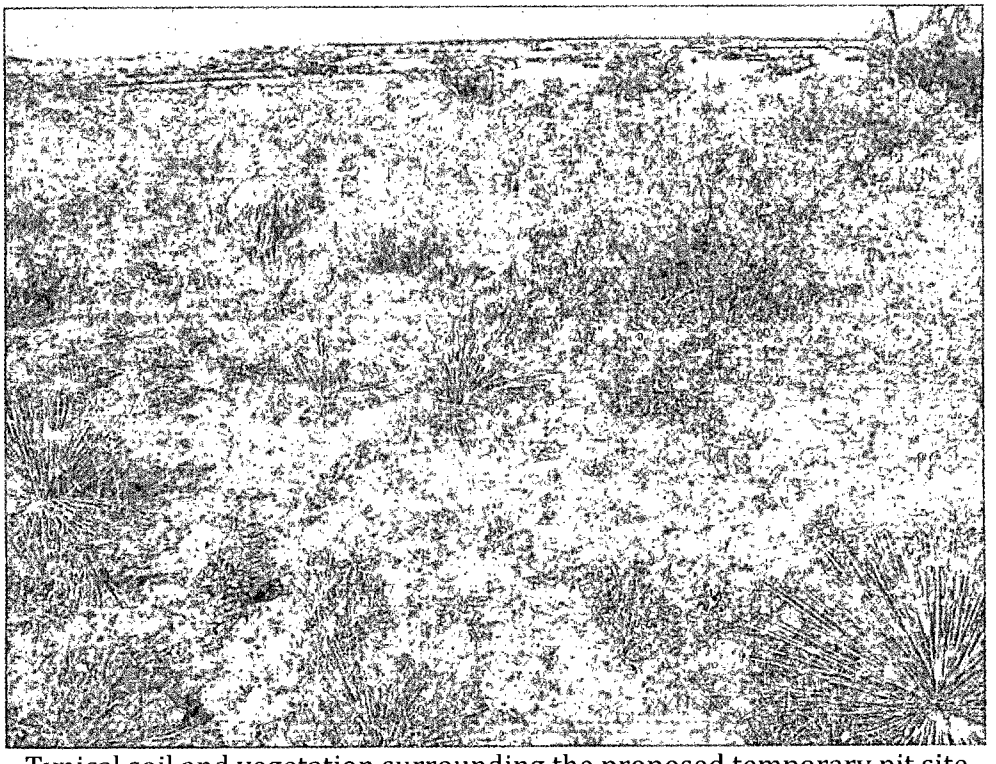
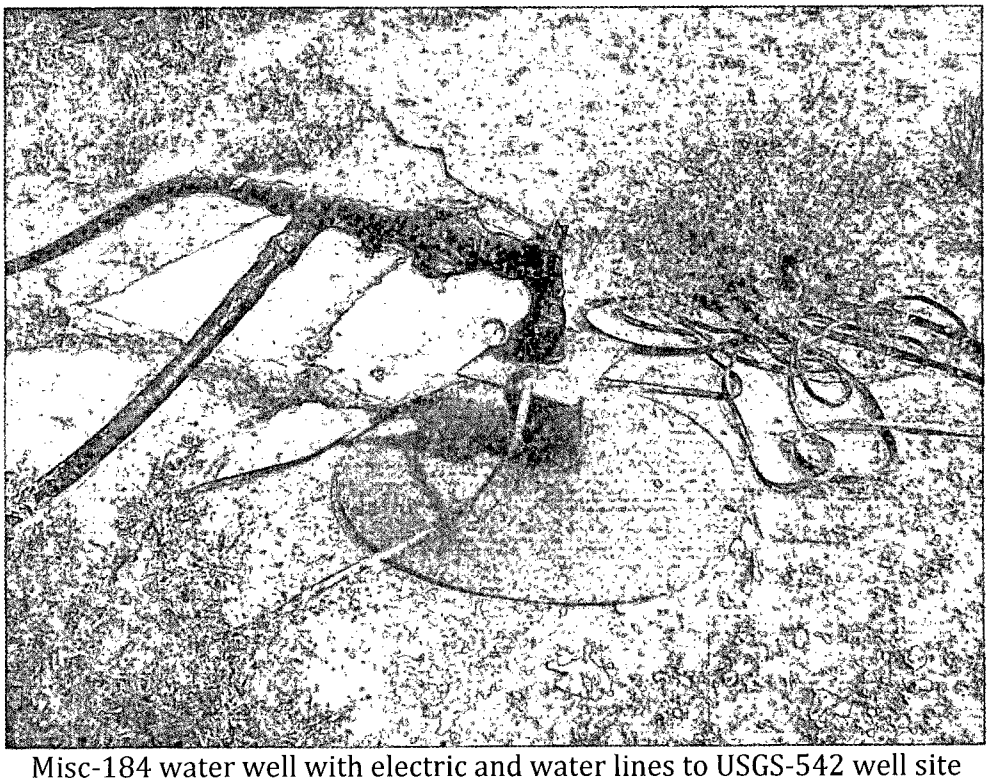


View to the west of Warrior "BRW" State #1H conductor pipe
Devon "Red Bull" Frac Pond in background

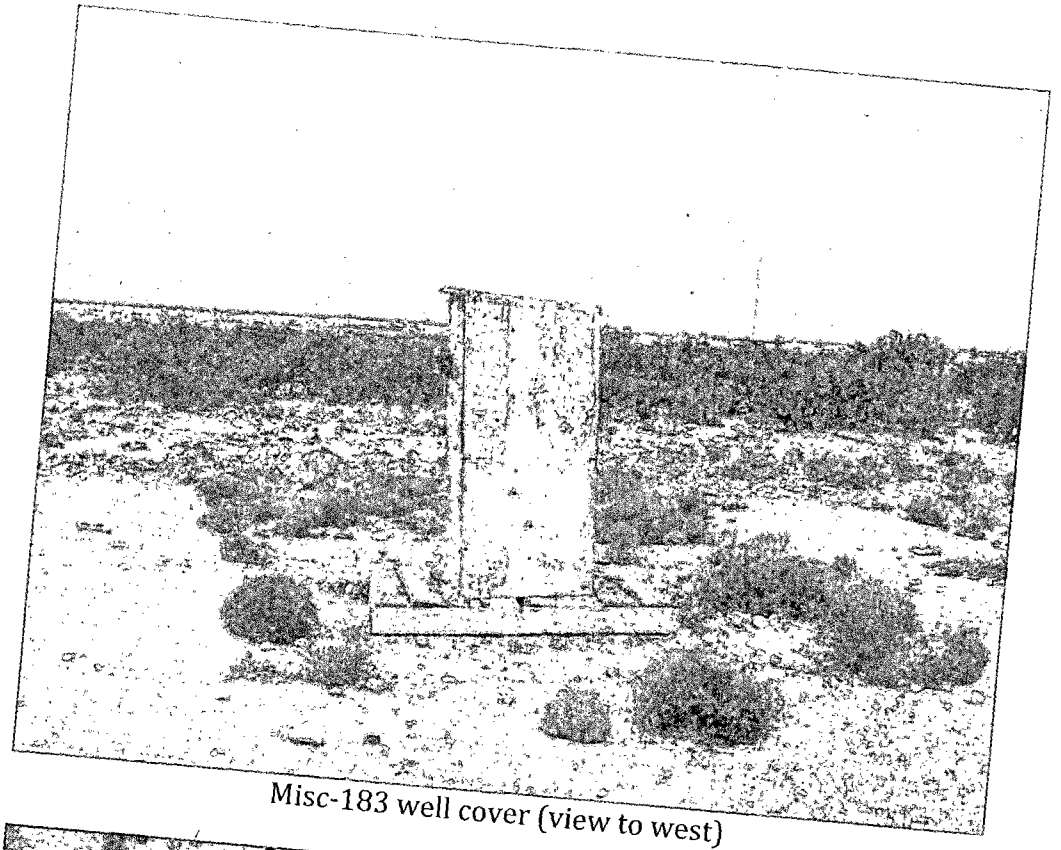


Typical soil and vegetation surrounding the proposed temporary pit site

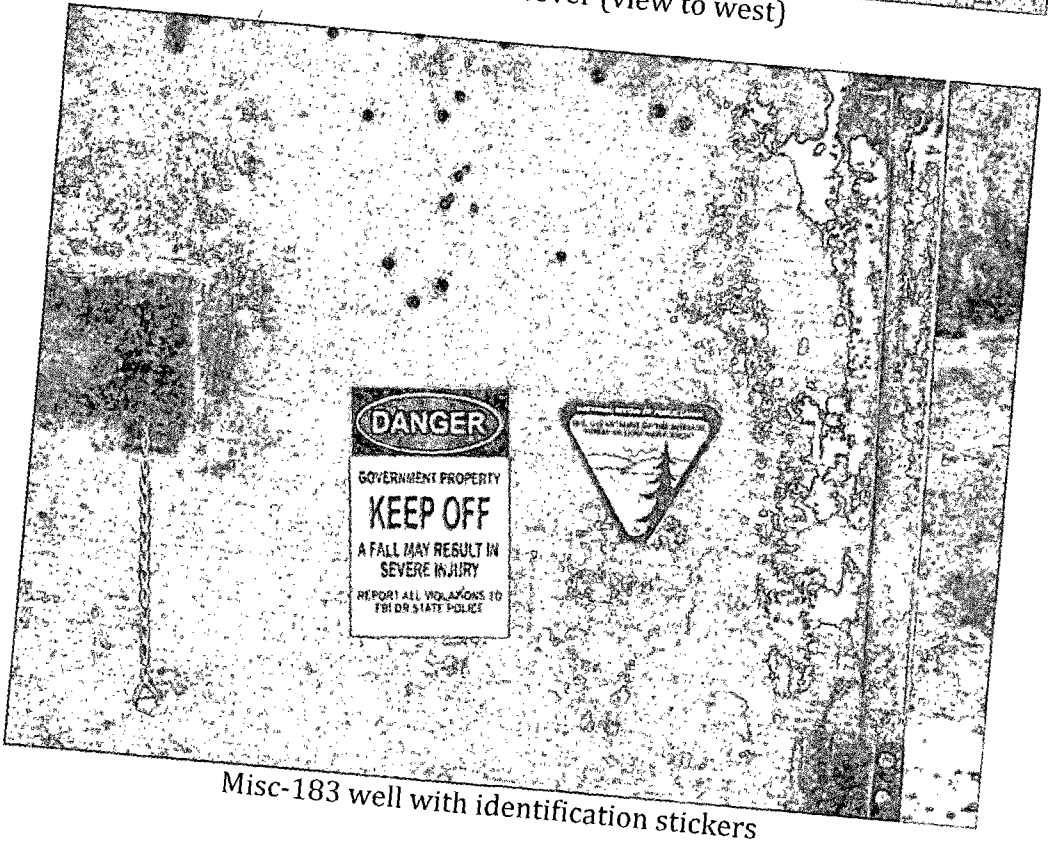
USGS-542 water well with fuel tank and generator



Misc-184 water well with electric and water lines to USGS-542 well site



Misc-183 well cover (view to west)



Misc-183 well with identification stickers

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
DISTRICT II
1301 W. Grand Avenue, Artesia, NM 88210
DISTRICT III
1000 Rio Brazos Rd., 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, New Mexico 87505

HOBBS OCD
OCT 21 2011
RECEIVED

Form C-102
Revised July 16, 2010
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-025-40220		Wildcat; Bone Spring

Property Code	Property Name	Well Number
	WARRIOR "BRW" STATE COM	1H

OGRID No.	Operator Name	Elevation
025575	YATES PETROLEUM CORP.	3364'

Surface Location

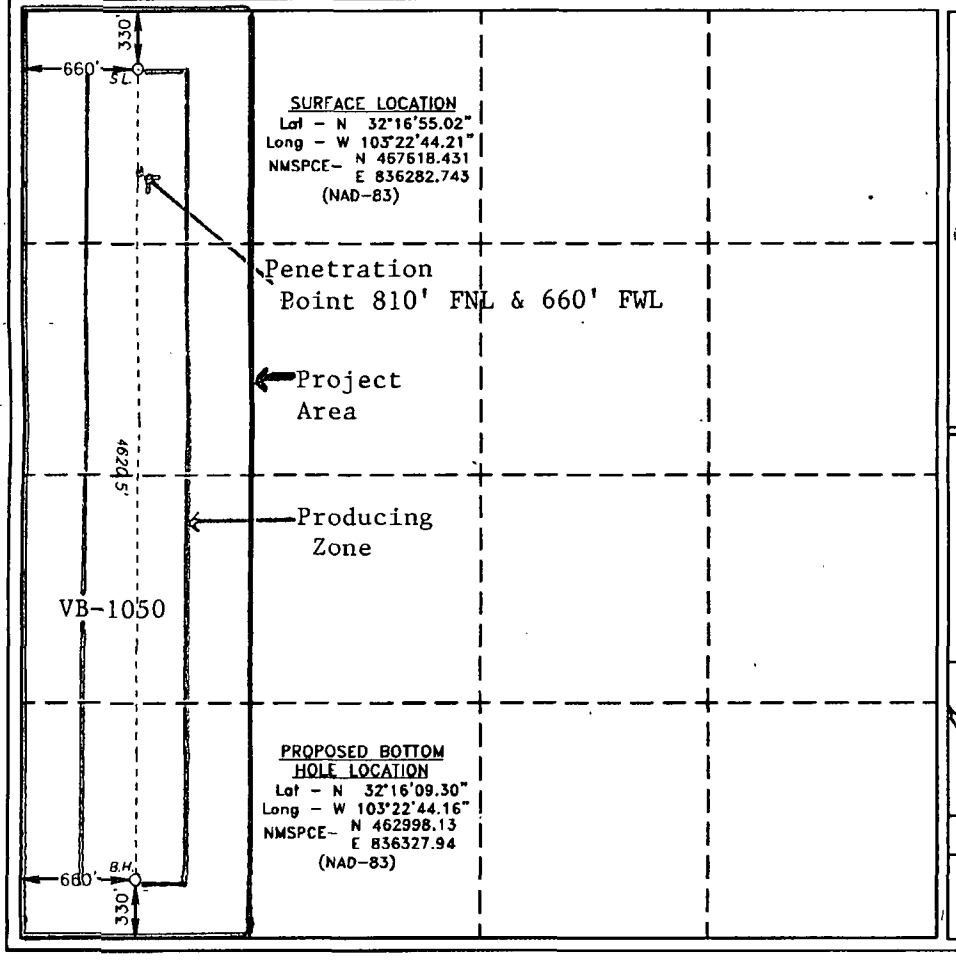
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	28	23 S	35 E		330	NORTH	660	WEST	LEA

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
M	28	23 S	35 E		330	SOUTH	660	WEST	LEA

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160			

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: 10/20/11

Monti Sanders
Printed Name

montis@yatespetroleum.com
Email Address

SURVEYOR CERTIFICATION

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

Date Surveyed: MARCH 11, 2011

Signature & Seal of Professional Surveyor

GARY L. JONES — NEW MEXICO — REGISTERED PROFESSIONAL LAND SURVEYOR

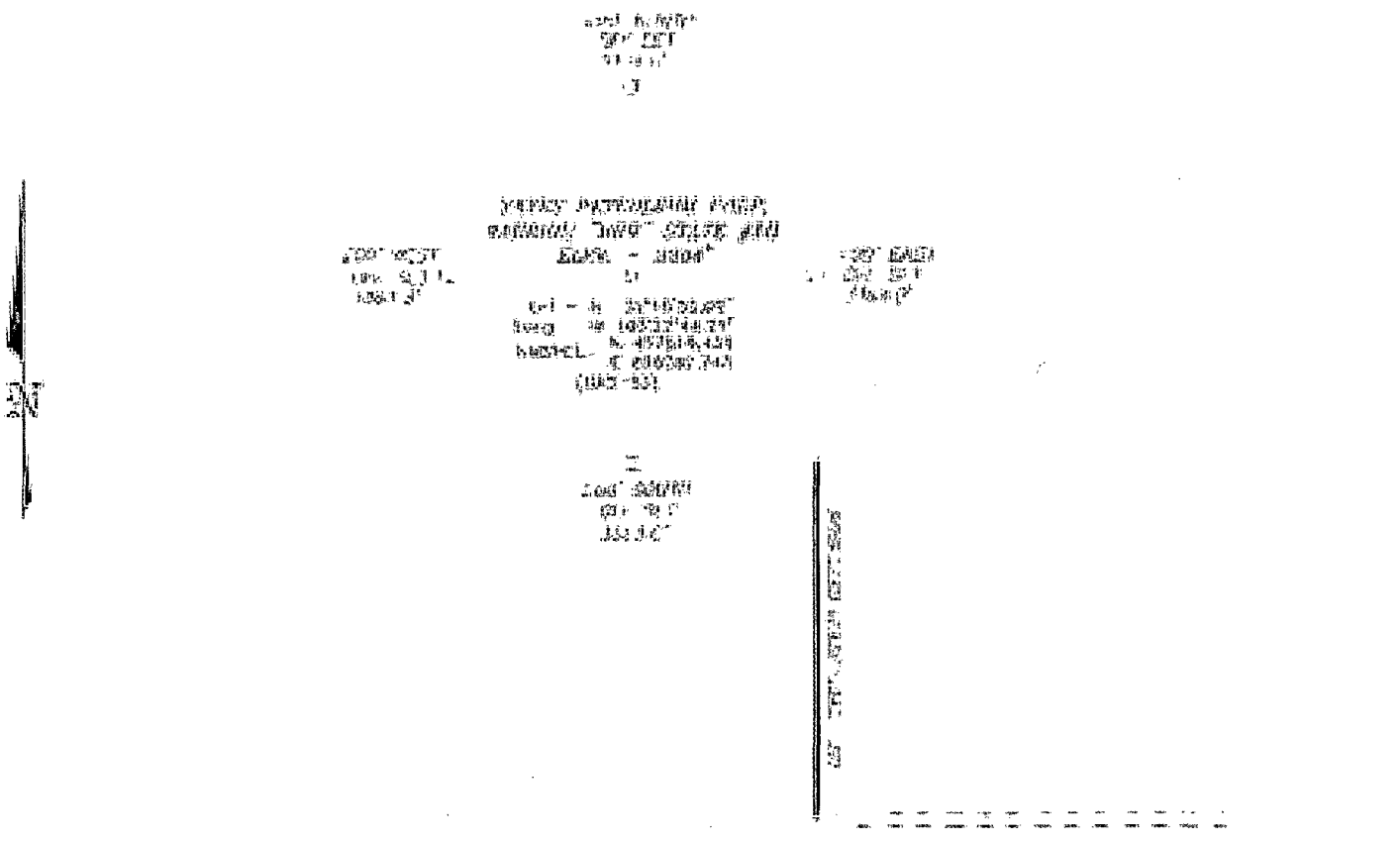
W.O. No. 24574

Certificate No. Gary L. Jones 7977

BASIN SURVEYS 24574

OCT 24 2011

SECTION 28, TOWNSHIP 23 SOUTH, RANGE 35 EAST, N.M.P.M.,
LEA COUNTY, NEW MEXICO.



200 0 200 400 FEET
SCALE: 1" = 200'

YATES PETROLEUM CORP.

Lease: WARRIOR "28" STATE Well / Well No. #1H

THE WARRIOR "28" STATE #1H LOCATED 330'
FROM THE NORTH LINE AND 460' FROM THE WEST LINE OF
SECTION 28, TOWNSHIP 23 SOUTH, RANGE 35 EAST,
N.M.P.M., LEA COUNTY, NEW MEXICO

BASIN SURVEYS P.O. Box 1786 Hobbs, NM 88240

W.O. Number: 28073	Drawn By: J. SMALL		
Date: Dec-28-2011	Disk: JMS 28073	Survey Date: 05/23/2011	Sheet 1 of 1 Sheets

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

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 consists of outer and inner drilling cells and an optional fluids cell as described below:

1. Drilling cells (reserve pit) consist of:
    a. An outer horseshoe for
        i. fresh water and cut-brine fluid and cuttings or
        ii. brine and cut-brine fluid and cuttings
    b. An inner horseshoe for
        i. brine and fluid and cuttings or
        ii. fresh water fluid and cuttings
2. The optional fluids cell may be used
    a. For storage of fresh water used in drilling or stimulation
    b. For storage of stimulation flow-back (fresh) water prior to re-use or disposal
    c. 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 OCD that
        i. Identifies the well(s) to be served by the fluids cell of the temporary pit
        ii. Provides the date that the drilling rig moved from the first well using the pit
        iii. 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 cells of the pit. The system will drain to the lowest corner of 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:
    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 any secondary containment system will be removed from the location and the area beneath the tank inspected for any leakage. If any leakage is suspected, the operator will sample the soil beneath the tanks and report any release pursuant to NMOCD Rules.

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 OCD 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.

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 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 and meets all requirements of 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.

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.

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 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 Plates 1-2. 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 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.

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.

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-l05
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 drilling 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

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.