District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, 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
July 21, 2008

For temporary pits, closed-loop systems, and below-grade tanks, submit to the appropriate NMOCD District Office.
For permanent pits and exceptions submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

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

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

Instructions: Please submit one application (Form C-144) per individual pit, closed-loop system, 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: Read and Stevens, Inc OGRID #:
Address: PO Box 1518, Roswell, NM 88201
Facility or well name: Full Moon 29#1
API Number: OCD Permit Number:
U/L or Qtr/Qtr Section 29 Township 8S Range 29E County: Eddy
Center of Proposed Design: Latitude 323.59334 Longitude -104.00249 NAD: ☐ 1927 ☒ 1983
Surface Owner: ☐ Federal ☒ State ☐ Private ☐ Tribal Trust or Indian Allotment

2.
☒ **Pit:** Subsection F or G of 19.15.17.11 NMAC
Temporary: ☒ Drilling ☐ Workover
☐ Permanent ☐ Emergency ☐ Cavitation ☐ P&A
☒ Lined ☐ Unlined Liner type: Thickness 20 mil ☒ LLDPE ☐ HDPE ☐ PVC ☐ Other
☒ String-Reinforced
Liner Seams: ☒ Welded ☒ Factory ☐ Other Volume: 1900 bbl Dimensions: L 60 x W 35 x D 9

3.
☐ **Closed-loop System:** Subsection H of 19.15.17.11 NMAC
Type of Operation: ☐ P&A ☐ Drilling a new well ☐ Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent)
☐ Drying Pad ☐ Above Ground Steel Tanks ☐ Haul-off Bins ☐ Other
☐ Lined ☐ Unlined Liner type: Thickness mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other
Liner Seams: ☐ Welded ☐ Factory ☐ Other

4.
☐ **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

5.
☒ **Alternative Method:**
Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

6.

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_____

7.

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

☐ Screen ☐ Netting ☐ Other___Not Applicable_____

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

8.

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 19.15.3.103 NMAC

9.

Administrative Approvals 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:

☒ Administrative approval(s): Requests must be submitted to the appropriate division district or the Santa Fe Environmental Bureau office for consideration of approval.

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

10.

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. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. **Siting criteria does not apply to drying pads or above-grade tanks associated with a closed-loop system.**

Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☒ No
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. *(Applies to temporary, emergency, or cavitation pits and below-grade tanks)* - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☒ No ☐ NA
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. *(Applies to permanent pits)* - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☒ No ☐ NA
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. NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☒ No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☒ No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	☐ Yes ☒ No
Within a 100-year floodplain. - FEMA map	☐ Yes ☒ No

11.
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: _____

12.
Closed-loop Systems 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.

- ☐ Geologic and Hydrogeologic Data (only for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19.15.17.9
- ☐ Siting Criteria Compliance Demonstrations (only for on-site closure) - 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: _____

☐ Previously Approved Operating and Maintenance Plan API Number: _____ *(Applies only to closed-loop system that use above ground steel tanks or haul-off bins and propose to implement waste removal for closure)*

13.
Permanent Pits Permit Application Checklist: Subsection B of 19.15.17.9 NMAC
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

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

14.
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 ☐ Closed-loop System ☐ 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 (Exceptions must be submitted to the Santa Fe Environmental Bureau for consideration)

15.
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 F 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 I of 19.15.17.13 NMAC
- ☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

16.

Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only: (19.15.17.13.D NMAC)

Instructions: Please indentify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings. Use attachment if more than two facilities are required.

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Will any of the proposed closed-loop system operations and associated activities occur on or in areas that *will not* be used for future service and operations?

☐ Yes (If yes, please provide the information below) ☐ No

Required for impacted areas which will not be used for future service and operations:

☐ 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 I of 19.15.17.13 NMAC

☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

17.

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 may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC for guidance.

Ground water is less than 50 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☒ No ☐ NA
Ground water is between 50 and 100 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☒ No ☐ NA
Ground water is more than 100 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☒ Yes ☐ No ☐ NA
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☒ No
Within 500 horizontal feet of a 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. - NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☒ No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☒ No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	☐ Yes ☒ No
Within a 100-year floodplain. - FEMA map	☐ Yes ☒ No

18.

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 F of 19.15.17.13 NMAC

☒ Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements 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 Subsection F of 19.15.17.13 NMAC

☒ Waste Material Sampling Plan - based upon the appropriate requirements of Subsection F 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 I of 19.15.17.13 NMAC

☒ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

19.
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): __Randall T. Hicks_____ Title: _Agent for Read and Stevens _(David Luna)__

Signature:___  _____ Date: _____May 14, 2010_____

e-mail address:_____R@rthicksconsult.com_____ Telephone: ___505-266-5004_____

20.
OCD Approval: ☐ Permit Application (including closure plan) ☐ Closure Plan (only) ☐ OCD Conditions (see attachment)

OCD Representative Signature: _____ **Approval Date:** _____

Title: _____ **OCD Permit Number:**_____

21.
Closure Report (required within 60 days of closure completion): Subsection K of 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:**_____

22.
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.

23.
Closure Report Regarding Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only:

Instructions: Please indentify the facility or facilities for where the liquids, drilling fluids and drill cuttings were disposed. Use attachment if more than two facilities were utilized.

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Were the closed-loop system operations and associated activities performed on or in areas that *will not* be used for future service and operations?

☐ Yes (If yes, please demonstrate compliance to the items below) ☐ No

Required for impacted areas which will not be used for future service and operations:

☐ Site Reclamation (Photo Documentation)
☐ Soil Backfilling and Cover Installation
☐ Re-vegetation Application Rates and Seeding Technique

24.
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)
☐ 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

25.
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

Data sources for Section 10 are listed on the Petroleum Recovery Research Center's (PRRC) Pit Rule Mapping Home Page available at http://pitrule.source3.com. References are included with submission for your convenience. Figures were generated from:

1. PRRC's pit rule mapping portal or
2. Directly from the associated agency
3. Published sources.

The photographs presented in Appendix A, along with signatures on this letter, confirm that a representative has personally visited the site and can confirm the Siting Criteria as listed in Section 10.

- Figure 1 shows surface geology and the depth to water at nearby wells from the Office of the State Engineer and the USGS. Depth to water is more than 100-feet below ground surface at the proposed drilling site as discussed below.
- Figure 2 is a topographic map showing the nearest water courses, Red Lake and an unnamed ephemeral stream, are more than 300-feet from the drilling site.
- Figure 3 shows an aerial photograph indicating no dwellings exist with 300-feet of the proposed drilling site.
- Figures 1 and 2 show that the proposed drilling site is not within 500-feet of a fresh water well.
- Figure 4 is a location map that shows that the proposed drilling site is not within an incorporated municipal boundary
- Figure 1 shows that the site is not within a municipal fresh water well field.
- Figures 2, 3 and 5 show that the proposed drilling site is not within a designated wetland.
- The PRRC map server shows that the proposed drilling site is not within a known karst area nor subsurface mines.
- Figure 6 shows that the proposed drilling site is in FEMA zone "Other Zone X", which FEMA determined to be outside the 500-year floodplain

Hydrogeologic Data

Surface topography at the proposed site gently slopes south, toward Red Lake. The nearest surface water, Red Lake, is approximately 800 feet south of the proposed drilling site (Figure 2).

As shown in Figure 1, the Triassic upper Chinle (T(r)cu) crop out at the proposed drilling site. While the lower Dockum Group consists of the Santa Rosa Sandstone, the upper Dockum is mapped as the upper Chinle and is composed of a thick series of red shales interbedded with thin sandstones (see G.E. Hendrickson and R.T. Jones, Geology and Ground-Water Resources of Eddy County, New Mexico, Ground-Water Report 3, NMBMMR, 1952). In wells where Hicks Consultants has penetrated the upper Chinle (e.g. Loco Hills), the unit is either dry or the thin sandstone units contain water under artesian pressure. At the Full Moon 29 #1 site, evidence from the Office of the State

Engineer (see Figure 1) suggest that ground water in the Chinle/Dockum, if present, is well over 100 feet below grade and probably confined.

While numerous large-scale collapse features are present throughout southeast New Mexico due to salt flow in deep Permian marine sediments (e.g. the Salado Formation) our site inspection and our evaluation of the geology and topographic features confirms that the proposed drilling site is not within an unstable area.

Design Plan

Figures 7 and 8 present the design plan for the proposed drilling pit and leak detection system. In addition to the specifications outlined in 19.15.17.11 NMAC, the construction contractors will follow the steps outlined below:

I. Topsoil from the pit, drying pad and location site are segregated for restoration of the pit and site after operations cease.
II. If practical, the contractor will separate coarser material from finer-grained material excavated from the pit for use in constructing the infiltration barrier over the buried waste when operations of the drilling pit cease.
III. The proposed depth of the pit is sufficient to cause cuttings and residual drilling fluid solids to be at least 4-feet below the final ground surface after drilling ceases and free liquid has been removed from the pit.
IV. Below the liner, the contractor will install the leak detection system described in the Confirmation Sampling Plan.
V. Above the liner, a drain system composed of perforated pipe will allow removal of brine and associated constituents of concern from the residual solid materials.
VI. One-foot tall berms surround the pit providing ample freeboard.
VII. The side slopes proposed for the pit are about 1.5H:1V and the end slopes of the pit are 2H:1V.
VIII. The factory welded liner will be installed in conformance with manufacturer's specification and consistent with NMOCD Rules.
IX. The unlined drying pad for the cuttings/mud derived from drilling the surface casing with fresh water will be constructed in an area to be determined after construction of the drilling pad.

We request administrative approval from the District Office for the proposed 1.5H:1V side slopes for the pit.

Because drilling the surface casing with fresh water is equivalent to drilling a fresh water well, we do not believe that discharge of cuttings and mud to a lined drying pad is required to provide a high degree of environmental stewardship. This letter formally requests an exception to NMOCD Rules unless NMOCD can administratively approve discharge of fresh water cuttings and mud from drilling the surface casing into an unlined drying pad. Please consider this request after reading the proposed sampling plan for the fresh water mud/cuttings drying pad as described below.

The fresh water drilling waste drying pad will be:

- 4-feet deep
- 24-feet wide
- 35-feet long
- 1H:1V slopes on all sides

Operations and Maintenance Plan

In addition to the specifications outlined in 19.15.17.12 NMAC, Read & Stevens shall:

1. Use steel pits to drill with fresh water mud and at TD of surface casing, discharge mud and cuttings to an unlined fresh water drying pad.
2. Use the lined pit to drill with brine/cut brine (brine pit) to total depth.
3. The brine/cut brine pit contains horizontal perforated pipe(s) and a standpipe laid over the primary liner to recover brine/cut brine from the cuttings and residual drilling mud as described below.
4. During drilling the leak detection system (see Confirmation Sampling Plan) of the brine/cut brine pit is checked daily.
5. After drilling is complete, brine is pumped from the cut brine/brine pit via the standpipes (at 1-4 gpm) to a surface storage tank. Recovered cut brine might be re-used as make up water for the next well (some salt addition may be required) or sent to deep well disposal.
6. After brine removal is nearly complete, any residual fresh water in the fresh water mud/cuttings drying pad is transferred to the brine/cut brine pit and thence removed via pumping to storage.
7. The leak detection system (described below) will be monitored at least weekly during drilling, dewatering and closure.

Solids Sampling Plan

The contents of the brine/cut brine pit will be sampled prior to any necessary stabilization according to the protocol outlined in NMOCD Rules for trench burial. We will obtain a five-point composite sample of the residual solids for laboratory analysis of:

- GRO and DRO using EPA Method 8015B rather than TPH concentration, as determined by EPA method 418.1
- Chloride, using EPA SW-846 method 1312 (SPLP) and determined by EPA method 300.1
- The concentrations of the inorganic water contaminants specified in Subsection A of 20.6.2.3103 NMAC EPA SW-846 method 1312 (SPLP) as determined by appropriate EPA methods, and
- The concentrations of the organic water contaminants specified in Subsection A of 20.6.2.3103 NMAC EPA SW-846 method 1312 (SPLP) as determined by appropriate EPA methods.

The NMOCD Rule 13.F.3.c specifies concentration limits for the residual mud and cuttings for trench burial. However, the Rule states that residual mud and cuttings may be mixed with three parts clean earth prior to sampling. As NMOCD understands, adding clean soil to the cuttings and mud provide no environmental benefit for trench burial of waste. For in-place burial, however, concentration limits are critical to the protection of

the root zone. For trench burial, the Laws of Fluid Mechanics demonstrate that it is not the concentration that creates any threat to ground water or the root zone – it is the mass of the buried constituent (and to a lesser extent moisture content, grain size, and other factors). This letter formally requests an exception to NMOCD Rules unless NMOCD can administratively approve "mathematically mixing" the laboratory results from the waste sampling protocol rather than wasting clean earth material that can be used for construction of the infiltration barrier. The example below illustrates our proposed arithmetic.

When we physically mix 3 parts earth with a chloride concentration of 10 mg/L (SPLP preparation method) with drilling solids that contain 11,000 mg/L (SPLP preparation method) the resultant concentration is:

$$\text{Cl ppm in mixture} = \frac{(\text{Cl ppm in solids} * 1 \text{ part}) + (\text{Cl ppm in earth} * 3 \text{ parts})}{4 \text{ parts}}$$

Or for this example:

$$\text{Cl ppm in mixture} = \frac{11{,}000 + 30}{4} = 2{,}757 \text{ mg/L}$$

Upon receipt of the results from the proposed sampling, we will provide NMOCD with the calculation showing that the mass of constituents of concern that will be trench buried at the site meets the criteria established by NMOCD Rules.

We conclude that this protocol provides equal or better protection of the environment than following the specific text of NMOCD Rules. This protocol is mathematically equal to compliance with the Rule and allows waste minimization.

We also ask for administrative approval to evaluate GRO and DRO rather than TPH as described above.

For the fresh water cuttings and residual drilling mud discharged to the unlined drying pad, we propose to follow the specific mandates of NMOCD Rules for in-place burial.

Confirmation Sampling Plan

NMOCD Rules state "The operator shall test the soils beneath the temporary pit to determine whether a release has occurred." The Rule then provides a protocol for this sampling. This letter formally requests an exception to NMOCD Rules unless NMOCD can administratively approve employing the leak detection system described below in lieu of soil sampling beneath the primary liner as a demonstration that the pit has or has not leaked. In addition to monitoring liner integrity using the leak detection system, as, we will inspect the earth below the primary liner that is not fully monitored by the leak detection system for moisture and discoloration.

The proposed leak detection system is essentially the same system approved by the New Mexico Environment Department for a brackish water pit in Sandoval County. For the

Full Moon 29 #1 Pit, Figure 8 shows the proposed layout. A total of 4 detection grids are proposed. Each leak detection grid consists of:

- One gypsum block moisture sensor (Soil Moisture Corporation Model 5201F, www.soilmoisture.com/prod_details.asp?prod_id=1087&cat_id=20) installed in accordance with manufacturer's specifications in
- A 6-inch layer of permeable earth (e.g. sand or loam), which overlies
- A sheet of 20-mil string reinforced liner with dimensions as shown on Figure 8

Because the State of New Mexico has approved this system for the Sandoval County temporary pit, we hope that NMOCD will administratively approve this method "to determine if a release has occurred". We conclude that this method of leak detection provides better protection of the environment than following the specific mandates of NMOCD. This method calls for monitoring the integrity of the pit during and after operation of the pit. Real-time leak detection will allow the operator to take action to mitigate impact to the environment whereas inspection during closure does not.

Because we anticipate that sampling of the residual mud and cuttings discharged to the fresh water drying pad will meet the criteria of NMOCD Rules for in-place burial, we do not propose confirmation sampling.

Closure Plan

The design of the brine/cut brine drilling pit is consistent with the design of a trench for burial (see Appendix B). Provided leak detection monitoring demonstrates that the drilling pit liner has maintained integrity and other design features are implemented during closure of the pit, we conclude that burial of waste in a drilling pit is equivalent to burial of waste in a separate trench. However, Section 19.15.17.F.3 of the Rule states: "The operator shall use a separate on-site trench for closure of each drying pad associated with a closed-loop system or each temporary pit." This letter formally requests an exception to NMOCD Rules unless NMOCD can administratively approve using the existing pit in lieu of constructing a separate trench. We conclude that using a drilling pit with documented liner integrity provides equal or better protection of the environment than following the specific text of NMOCD Rules as required for an exception. Avoiding construction of a separate trench minimizes the environmental footprint of the drilling activity and thus minimizes waste.

The protocol for using the existing pit as a burial trench is:

A. After drilling is complete, brine is pumped from the cut brine/brine pit via the standpipes (at 1-4 gpm) to a surface storage tank. Recovered cut brine might be re-used as make up water for the next well (some salt addition may be required) or sent to deep well disposal. A vacuum truck may be used to remove standing water from the pit.

B. After brine removal is nearly complete, any residual fresh water in the fresh water drying pad is transferred to the brine/cut brine pit and thence removed via pumping to storage.

C. Continue drainage pumping of fluid from the brine/cut brine pit and transfer the fluid to storage for re-use or disposal.
D. After 10 days of pumping and evaporation of fluids, the residual solids should have a bearing capacity to support the final cover. The addition of some dry soil may be warranted.
E. Fold the pit liner over the waste as prescribed in NMOCD Rules. Sew or otherwise amend new liner to the residual pit liner as required to meet the requirement of the Rule.
F. Place a second liner over the folded liner as prescribed in NMOCD rules.
G. Place the coarser-grained excavated material (if available) over the liner, then the finer-grained material such that at least 4-feet separates the top of the encapsulated waste from the final ground surface after restoration.

If the leak detection system identifies a release, we will address the release under Part 29 of the Rules.

If analysis of the fresh water drying pad shows residual material exceeds the criteria of NMOCD Rules for in-place burial after stabilization with three parts native material, we will notify NMOCD and proceed with trench burial of the mud/cuttings and any material beneath the drying pad that does not meet the criteria for in-place closure.

Soil Cover, Re-vegetation, Site Reclamation

We will follow the protocols outlined in NMOCD Rules for placement of the soil cover, for re-vegetation and for site reclamation.

Landowner Notification

Granda, Inc., the surface landowner, has approved this document with the provision for on-site burial of cuttings.

Permanent Marker

Read and Stevens will install a permanent marker per NMOCD Rules to identify the location of the buried cuttings and mud.

Rationale for Administrative Approval or Approval of Exceptions for Identified Protocols

1. We believe the information presented herein demonstrates that the proposed alternative methods provide equal or better protection of fresh water, public health and the environment than following the prescriptive language of NMOCD Rules.
2. The protocols require removal of liquids prior to implementing the closure method and re-use or disposal of the liquids in a division-approved facility. Because water is very scarce in this area, we will recycle or reuse the liquids for drilling future wells as much as possible.
3. The proposed protocols outlined herein implement one or more of the following practices:
    a. Waste minimization – the protocols do not call for mixing clean earth with waste

b. Treatment of waste - occurs as fresh water derived from the fresh water mud/cuttings drying pad rinses brine and entrained constituents of concern from the solids in the brine pit.
c. Reclamation – using the existing drilling pit for the burial trench reduces the size of disturbance of habitat
d. Reuse; recycling – the protocols call for re-using the pit and pit liners for the burial trench as well as re-using water as much as possible;
e. Reduction in available contaminant concentration – removal of cut brine and entrained constituents of concern from the residual solids via drainage system pumping will reduce the mass/concentration in the buried waste.

Notification of Surface Owner

The attached letter to the surface owner provides notification to the surface owner of the intent to employ an on-site burial of cuttings and residual drilling mud and confirms that Granada, Inc. approves of the proposed practice.

Deed Notice

Read and Stevens will file a deed notice identifying the exact location of the on-site burial with the county clerk in the county where the on-site burial occurs.

Signatures

Site visit and photographs conducted by Randall Hicks of R.T. Hicks Consultants.

Finally, this submission is intended to begin a dialogue about how waste and environmental impact may be minimized through the process of an exception in this specific location. We believe the physical attributes of this site lend it to the modifications we have proposed here without undue threat to fresh water, human health and the environment. We look forward to NMOCD input and will be pleased to consider alternatives that are cost-effective and provide a higher degree of environmental protection. We also stand ready to provide answers to any questions of NMOCD and responses to any comments.

Randall Hicks
R.T. Hicks Consultants

New Mexico Energy, Minerals and Natural Resources Department

Bill Richardson
Governor

Jon Goldstein
Cabinet Secretary

Jim Noel
Deputy Cabinet Secretary

Mark Fesmire
Division Director
Oil Conservation Division

May 27, 2010

David Luna
Read & Stevens, Inc.
400 Penn Plaza, Suite 1000
Roswell, New Mexico 88201

RE: Exception and Administrative Approval Request Regarding Full Moon 29 State #1
API Number: Not Assigned
Location: Section 29, Township 8 South, Range 29 East, NMPM
Eddy County, New Mexico

Dear Mr. Luna:

The Oil Conservation Division (OCD) has received and reviewed R. T. Hicks Consultants, Inc's (Hicks) request, submitted on the behalf of Read & Stevens, Inc. and dated May 18, 2010, for exceptions and administrative approvals to provisions of 19.15.17 NMAC regarding proposed drilling activities at the Full Moon 29 State #1 located within Section 29, Township 8 South, Range 29 East NMPM, Eddy County, New Mexico. The exception and administrative approval permit application request was not complete nor was it submitted in a format in which it could be accepted or considered for review by the OCD.

The permit application packet, form C-144, was signed by Mr. Randall T. Hicks (the consultant) rather than a representative of Read & Stevens (operator). The OCD will accept the signature of an agent for the operator if a notarized Power of Attorney (POA) form is submitted with each form C-144. The POA form must be signed by a person authorized to issue a POA. A copy of the POA form is acceptable if it is current. Read & Stevens did not provide the required POA with its form C-144; therefore, the OCD cannot accept the submittal. Please see page 3, dated October 31, 2008, of the "*19.15.17 NMAC (PITS, CLOSED-LOOP SYSTEMS, BELOW-GRADE TANKS AND SUMPS) FREQUENTLY ASKED QUESTIONS*" document provided on the OCD website and the following hyperlink:

http://www.emnrd.state.nm.us/ocd/documents/PitRuleBaseFAQ20081031.pdf

In an exception and administrative approval request it is important that the applicant submit a complete application in order to clearly indentify which provisions it will comply with and which provisions it is requesting an exception or administrative approval. The exception and

administrative approval request did not demonstrate that Read & Stevens would comply with specific provisions of 19.15.17 NMAC nor did it properly identify which exceptions and administrative approvals to specific provisions of 19.15.17 NMAC were being requested. A complete design and construction plan, operation and maintenance plan, and closure plan were not submitted in the application packet as indicated in Box 11 of the form C-144. If submitted in this format, such issues as contradictory statements and proposals would not be submitted. One such example is proposing an alternative soil cover design while making the statement that the provisions of the Pit Rule regarding the soil cover will be followed. The submittal of a complete permit application is especially important when requesting an exception.

Pursuant the Paragraph (1) of Subsection A of 19.15.17.15 NMAC, "The environmental bureau in the division's Santa Fe office may grant an exception from a requirement or provision of 19.15.17 NMAC, if the operator demonstrates to the satisfaction of the environmental bureau in the division's Santa Fe office that the granting of the exception provides equivalent or better protection of fresh water, public health and the environment." This task was not completed for each provision in which an exception is requested. Read & Stevens must demonstrate equivalency and better protection based upon sound science and engineering practices. If Read & Stevens wishes to pursue an exception request, then it must provide appropriate demonstrations of equivalency and better protection.

Please address the issues identified above regarding the May 18, 2010 request for exceptions and administrative approvals to provisions of 19.15.17 NMAC prior to resubmitting. If there are any questions regarding this matter, please do not hesitate to contact Mr. Brad Jones at (505) 476-3487 or brad.a.jones@state.nm.us.

Sincerely,

Glenn von Gonten
Acting Environmental Bureau Chief

GvG/baj

cc: OCD District II Office, Artesia

COPY

R. T. HICKS CONSULTANTS, LTD.
901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266-0745

May 18, 2010

Mr. Mike Bratcher
NMOCD District 2
1301 West Grande
Artesia, New Mexico 88210
Via E-mail

Mr. Glenn Von Gonten
NMOCD Environmental Bureau
1220 St. Francis Drive
Santa Fe, New Mexico
Via E-Mail

RE: Full Moon 29 State #1
Read and Stevens

Dear Mike and Glenn:

Attached is the C-144 for the above-referenced well. On behalf of Read and Stevens, inc., we are requesting four exceptions to NMOCD Rules, unless NMOCD can administratively approve the proposed protocols. This letter confirms our intention to comply with all other prescriptive language in the Rule.

Proposed Alternative Confirmation Sampling Protocol

As discussed in the attachment we request NMOCD review monitoring gypsum block moisture sensor leak detection system in lieu of soil sampling beneath the primary liner as a demonstration that the pit has or has not leaked. For reasons stated in the attachments, we believe this protocol provides better protection of fresh water, public health and the environment than compliance with the prescriptive language of NMOCD Rules. However, as described, we will inspect the earth below the primary liner that is not fully monitored by the leak detection system for moisture and discoloration. We will collect samples of any wet or discolored earth that is not mixed with the drilling waste for burial in the trench.

Proposed Alternative Waste Sampling Protocol

In order to comply with NMOCD Rules that establish concentration limits for trench burial, we propose a protocol that uses "mathematically mixing" the laboratory results rather than physically mixing clean material with drilling waste. For reasons stated in the attachments, we believe this protocol provides better protection of the fresh water, public health and the environment than compliance with the prescriptive language of NMOCD Rules.

Proposed Use of the Drilling Pit as a Burial Trench

If the drilling pit maintains integrity as expected, the pit closure method will meet the criteria (Part 11.J 1-8) for trench burial. However, the Rule states: "The operator shall use a separate on-site trench for closure of each drying pad associated with a closed-loop system or each temporary pit." We request that NMOCD review the proposal to use a drilling pit with demonstrated integrity in lieu of constructing a separate trench. For reasons stated in the attachments, we believe this protocol provides better protection of

fresh water, public health and the environment than compliance with the prescriptive language of NMOCD Rules.

Proposed Alternative Drying Bed for Surface Casing Drilling Waste

As stated in the attached draft Public Notice, drilling and installing surface casing is no different that drilling and completing a water supply well. We propose to discharge the residual drilling mud and cuttings generated by drilling the surface casing to an unlined drying pad. If, as expected, this drilling waste meets the concentration criteria for in-place burial, we will use the dried mud/cuttings in the construction of the soil cover for the burial trench.

We attach a draft Public Notice that contains a provision for a public meeting immediately after the end of the public notice period. If the Director determines that sufficient interest exists to hold a public hearing, this meeting will allow stakeholders to informally address questions and concerns and perhaps avoid the need for a formal hearing. In working with NMED and DairiConcepts in Portales, we have found that these meetings can be less expensive, save time, are very productive and can resolve issues in lieu of a formal hearing. Please take a look at the proposed public notice and tell us what you think.

Finally, if this well is successful, Read and Stevens may drill two offset wells, both of which would be located within the dry bed of Red Lake. These wells would employ closed loop drilling with exportation of drilling waste. If these well are drilled, we will submit a request for an exception to NMOCD Rules to allow trench burial of the waste from these two wells at the Full Moon 29 State #1 site.

We look forward to working with you on this project. We stand ready to discuss this application in Santa Fe with you and/or the Task Force.

Sincerely,
R.T. Hicks Consultants

Randall Hicks

Copy: Read and Stevens

DRAFT NOTICE OF PUBLICATION

State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division

Notice is hereby given that pursuant to Oil Conservation Division Regulations, the following Proposed Exceptions to NMOCD Rules have been submitted to the Director of the Oil Conservation Division, 1220 S. St. Francis Dr., Santa Fe, New Mexico 87505, Telephone (505) 476-3440:

John Maxey, President of Read and Stevens., Inc., which is a New Mexico corporation, Telephone (575) 622-3770, 400 North Pennsylvania, Suite 1000, Roswell, New Mexico 88202, has submitted an application for exceptions to NMOCD Rules for the Full Moon 29 #1 Drilling Pit site, located in Section 29, Township 8 South, Range 29 East, Chavez County, New Mexico, approximately 20 miles northeast of the Roswell, New Mexico. Read and Stevens, Inc. is the operator of an oil and gas well at the site.

With the exception of the proposals described below, the operator will all other mandates of NMOCD Rules. Proposal #1: In lieu of collecting soil samples beneath the liner to determine if a release occurred, the operator proposes to monitor a leak detection system. Proposal #2: In lieu of physically mixing one part drilling waste with three parts "clean soil", the operator proposes to obtain a sample of the stabilized waste and "mathematically mix" the sample results to demonstrate that the mass of constituents of concern in the waste meets the criteria of NMOCD Rules. Proposal #3: Because the drilling pit meets the construction specifications for a burial trench, the operator proposes to use the drilling pit as a burial trench. Proposal #4: Because drilling surface casing with fresh water is no different than drilling a water supply well, the operator proposes to use an unlined drying pad to stabilize the drilling waste from this portion of the wellbore.

The division has determined that the application satisfies the requirements of OCD Rules and is therefore, administratively complete. The division will accept written comments on the proposed exceptions if the director receives them within 30 days after the date of publication of the public notice. Persons who are interested in obtaining further information, submitting comments, or wish to be placed on a facility-specific mailing list for future notices may contact the Environmental Bureau Chief of the Oil Conservation Division at the address given above. The application and administrative completeness determination may be viewed at the above address between 8:00 a.m. and 4:00 p.m., Monday through Friday, or may also be viewed at the OCD web site (http://www.emnrd.state.nm.us/ocd). Persons who are interested in obtaining a copy of the application and administrative completeness determination may contact XXXXX at the address given above, or by telephone at 505-476-3484, or by email at XXXXXX..

The Director shall allow a period of at least thirty (30) days after the date of publication of this notice, during which interested persons may submit comments or request that NMOCD hold a

public hearing. Requests for a public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines that there is significant public interest.

If the Director determines that a hearing is required, the operator has agreed to hold a public meeting at 6 pm on June (this date will be after the public notice period) at the Company Headquarters in Roswell, New Mexico to address questions or concerns.

READ & STEVENS, INC.
OIL PRODUCERS

Mailing address
P. O. Box 1518
Roswell, New Mexico 88202

400 Penn Plaza, Suite 1000
Roswell, New Mexico 88201

Phone: 575/622-3770
Fax: 575/622-8643

April 26, 2010 mailed 5/11/10

Ganada Inc.
Attn: Kent Gabel
P. O. Box 9
Sudan, TX 79371

RE: Full Moon #1 Location

Dear Mr. Gabel,

This letter is concerning the conversation we had on Friday April 23rd. Attached is a $500 check that covers the burial of drill cuttings on the Full Moon #1 location.

This agreement also covers additional wells to the south and west of this location (in the playa). Their drill cuttings would also be buried on the Full Moon #1 location. An additional $500 (per well) will be sent as these wells are drilled.

Please sign and mail back one copy in the enclosed self addressed/stamped envelope. Your signature acknowledges your agreement to the above. Look forward to working with you.

Sincerely,

David Luna by kb

David Luna, Engineer
Read & Stevens, Inc.

DL/kb

Xc: Bob Watson
File

Ganada Inc. – Kent Gabel

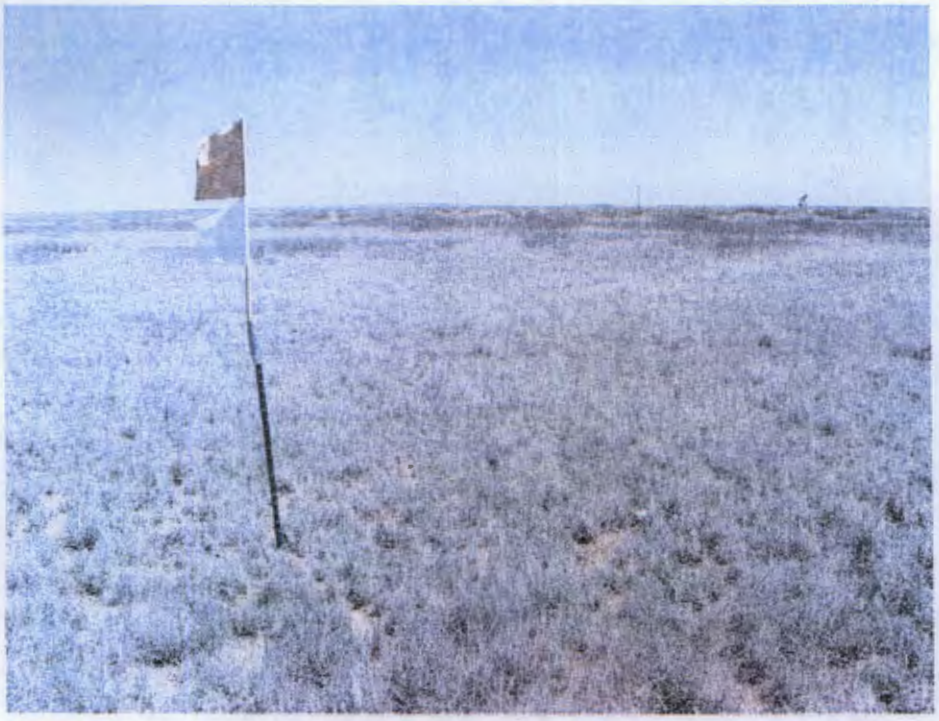
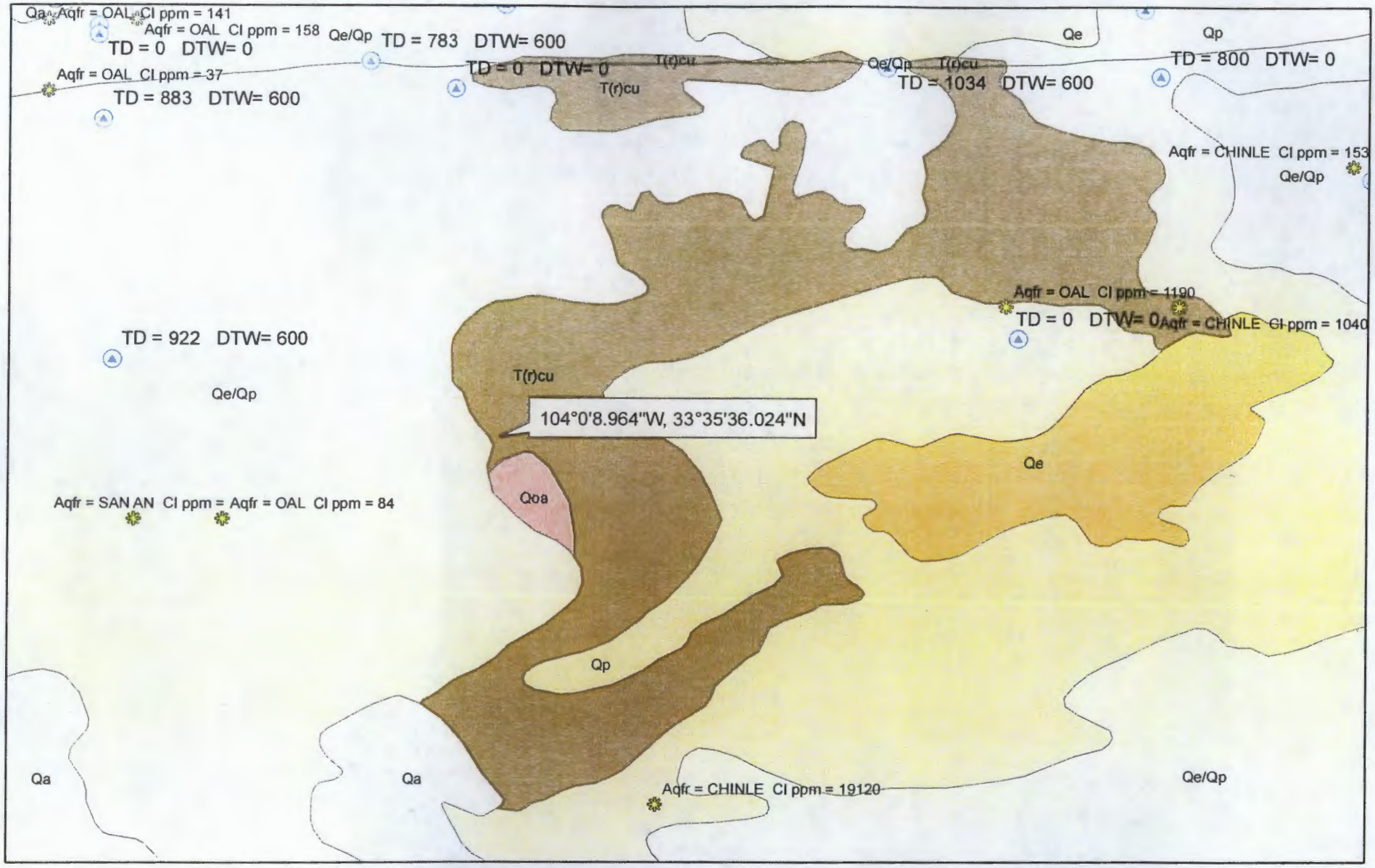


Figure A1: Photo of proposed drilling site viewing east.

Figure A2: View to south – toward Red Lake

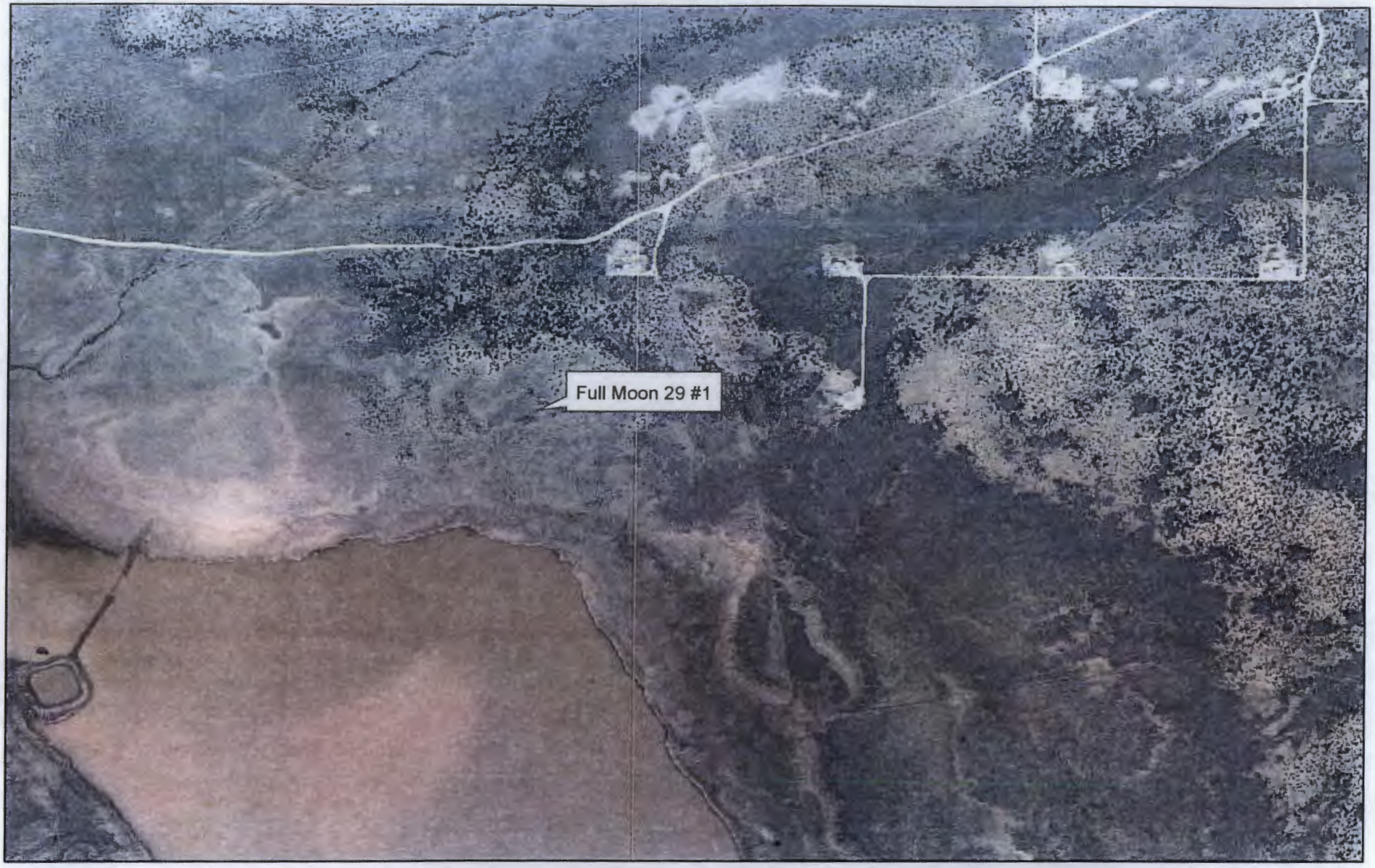
Appendix B –Design and Specifications of Drilling Pit v. Burial Trench

F. Temporary pits. The operator shall design and construct a temporary pit in accordance with the following requirements.	**J.** On-site trenches for closure. The operator shall design and construct an on-site trench for closure, specified in Paragraph (2) of Subsection B of 19.15.17.13 NMAC or Paragraph (2) of Subsection D of 19.15.17.13 NMAC, in accordance with the following requirements.
(1) The operator shall design and construct a temporary pit to ensure the confinement of liquids to prevent unauthorized releases.	**(1)** The operator shall locate the trench to satisfy the siting criteria specified in Subsection C of 19.15.17.10 NMAC and Subparagraph (d) of Paragraph (3) of Subsection F of 19.15.17.13 NMAC and excavate to an appropriate depth that allows for the installation of the geomembrane bottom liner, geomembrane liner cover and the division-prescribed soil cover required pursuant to Subsection H of 19.15.17.13 NMAC.
(2) A temporary pit shall 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 operator shall construct a temporary pit so that the slopes are no steeper than two horizontal feet to one vertical foot (2H:1V). The appropriate division district office may approve an alternative to the slope requirement if the operator demonstrates that it can construct and operate the temporary pit in a safe manner to prevent contamination of fresh water and protect public health and the environment.	**(2)** An on-site trench shall have a properly constructed foundation and side walls consisting of a firm, unyielding base, smooth and free of rocks, debris, sharp edges or irregularities to prevent the liner's rupture or tear.
(3) The operator shall design and construct a temporary pit with a geomembrane liner. The geomembrane liner shall consist of 20-mil string reinforced LLDPE or equivalent liner material that the appropriate division district office approves. The geomembrane liner shall be composed of an impervious, synthetic material that is resistant to petroleum hydrocarbons, salts and acidic and alkaline solutions. The liner material shall be resistant to ultraviolet light. Liner compatibility shall comply with EPA SW-846 method 9090A .	*(3) See below in italics*
(4) The operator shall minimize liner seams and orient them up and down, not across a slope. The operator shall use factory welded seams where possible. Prior to field seaming, the operator shall overlap liners four to six inches and orient seams parallel to the line of maximum slope, *i.e.*, oriented along, not across, the slope. The operator shall minimize the number of field seams in corners and irregularly shaped areas. Qualified personnel shall perform field seaming. The operator shall weld field liner seams.	(4) An on-site trench shall be constructed with a geomembrane liner. The geomembrane shall consist of a 20-mil string reinforced LLDPE liner or equivalent liner that the appropriate division district office approves. The geomembrane liner shall be composed of an impervious, synthetic material that is resistant to petroleum hydrocarbons, salts and acidic and alkaline solutions. The liner material shall be resistant to ultraviolet light. Liner compatibility shall comply with EPA SW-846 method 9090A.
(5) Construction shall avoid excessive stress-strain on the liner.	**(5)** The operator shall minimize liner seams and orient them up and down, not across a slope. The operator shall use factory welded seams where possible. Prior to field seaming, the operator shall overlap liners four to six inches and orient liner seams parallel to the line of maximum slope, *i.e.*, oriented along, not across, the slope. The operator shall minimize the number of field seams in corners and irregularly shaped areas. Qualified personnel shall perform field seaming. The operator shall weld field liner seams.
(6) Geotextile is required under the liner where needed to reduce localized stress-strain or protuberances that may otherwise compromise the liner's integrity.	**(6)** The operator shall install sufficient liner material to reduce stress-strain on the liner.
	(3) Geotextile is required under the liner where needed to reduce localized stress-strain or protuberances that may otherwise compromise the liner's integrity.
(7) The operator shall anchor the edges of all liners in the bottom of a compacted earth-filled trench. The anchor trench shall be at least 18 inches deep.	**(7)** The operator shall ensure that the outer edges of all liners are secured for the placement of the excavated waste material into the trench.



R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Geologic Map and Depth to Water	Figure 1
	Read and Stevens - Full Moon 29 #1	May 2010

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Topographic Map	Figure 2
	Read and Stevens - Full Moon 29 #1	May 2010



0 600 1,200 2,400 3,600 4,800 Feet

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Recent Air Photo	Figure 3
	Read and Stevens - Full Moon 29 #1	May 2010

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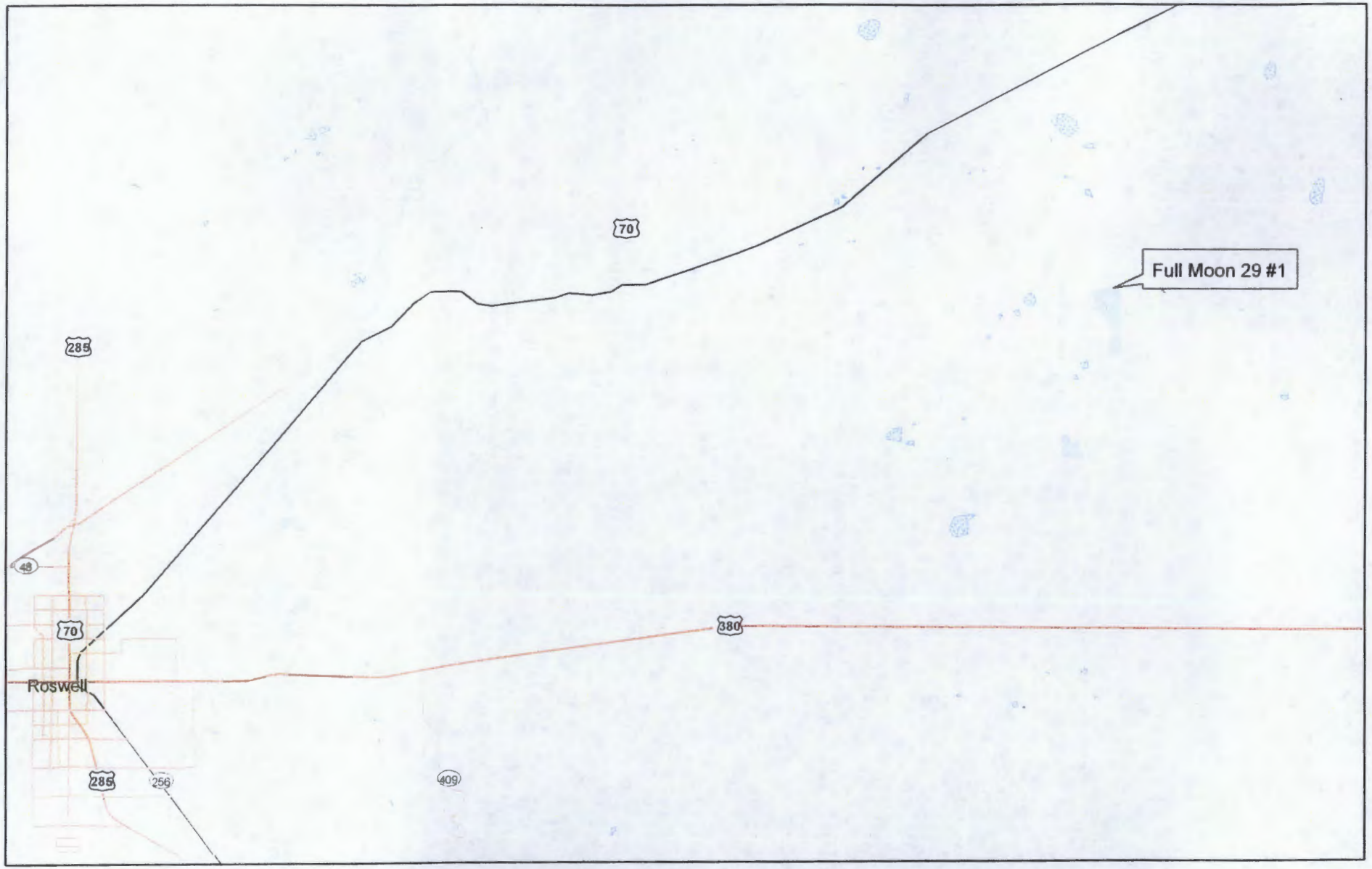

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Location Map	Figure 4
	Read and Stevens - Full Moon 29 #1	May 2010

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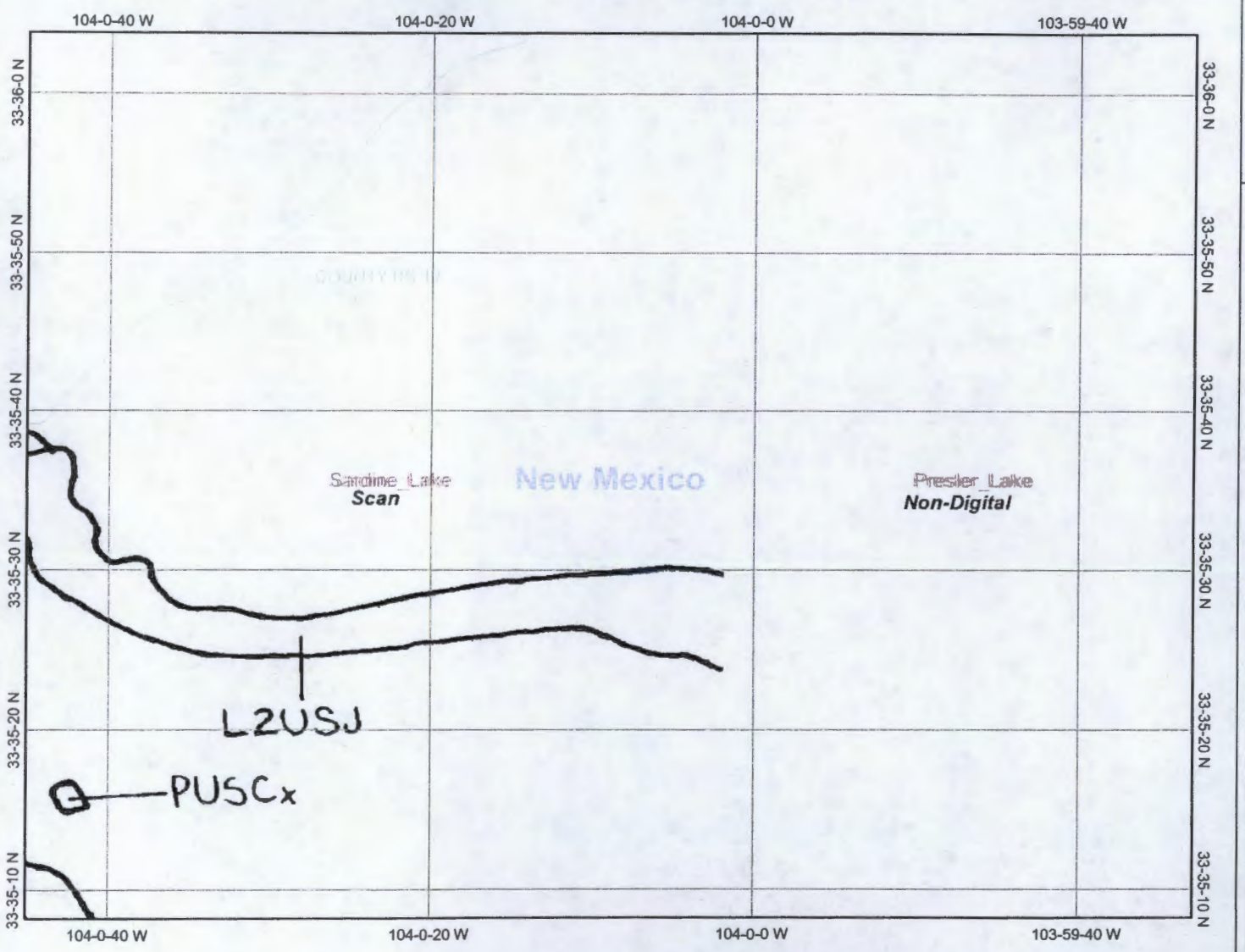
Figure 5 - Wetlands Full Moon 29 #1 Area



Legend

Ohio_wet_scan
- 0
- 1
- Out of range

Interstate

Major Roads

Other Road
- Interstate
- State highway
- US highway

Roads

Cities

USGS Quad Index 24K

Lower 48 Wetland Polygons
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

Lower 48 Available Wetland Data
- Non-Digital
- Digital
- No Data
- Scan

NHD Streams

Counties 100K

States 100K

South America

North America

Scale: 1:12,000

Map center: 33° 35' 36" N, 104° 0' 9" W

This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

Notes: L2USJ – Lacustrine, littoral,
PUSC - Palustrine Unconsolidated
Shore with seasonally flooded water regiem

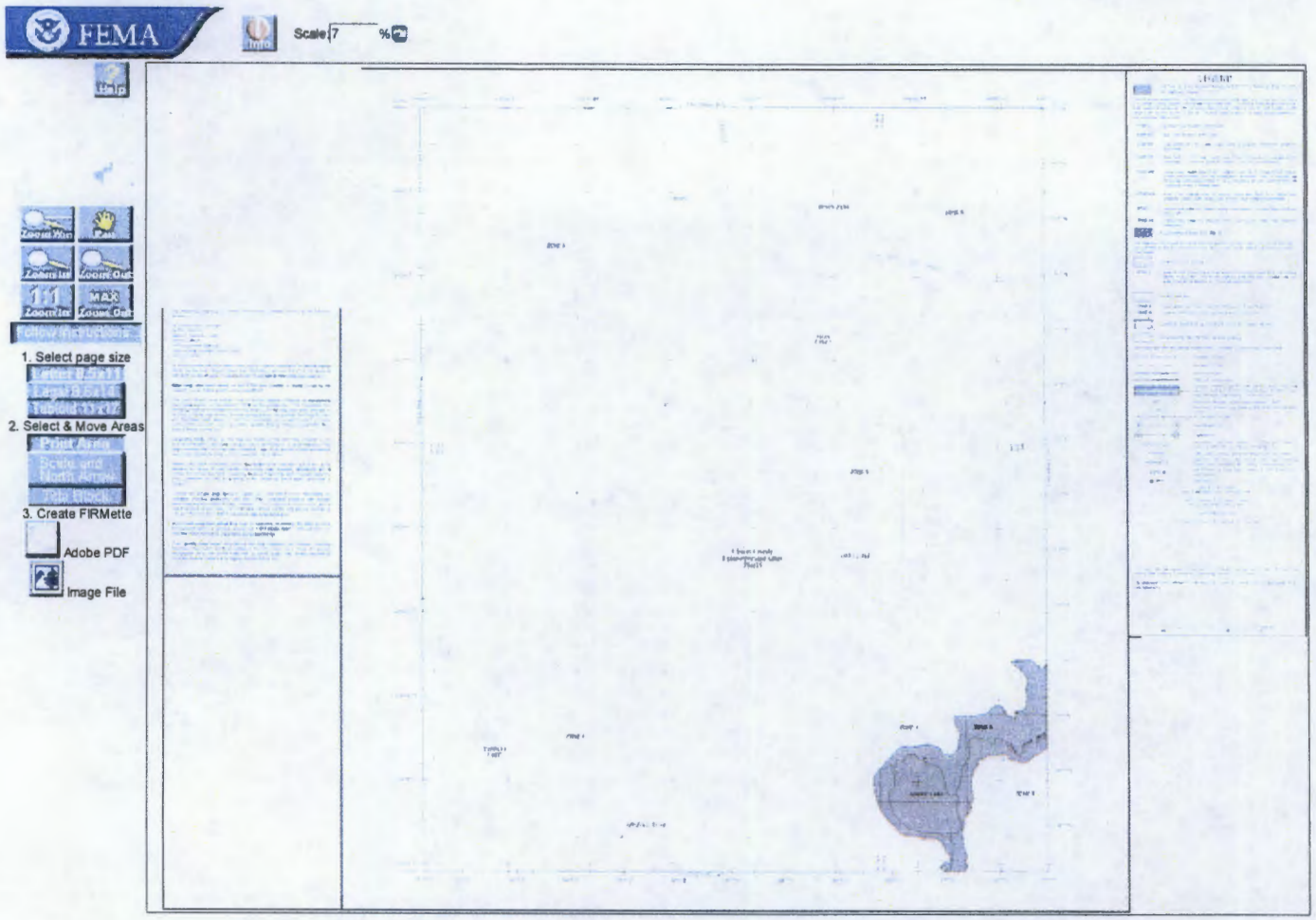
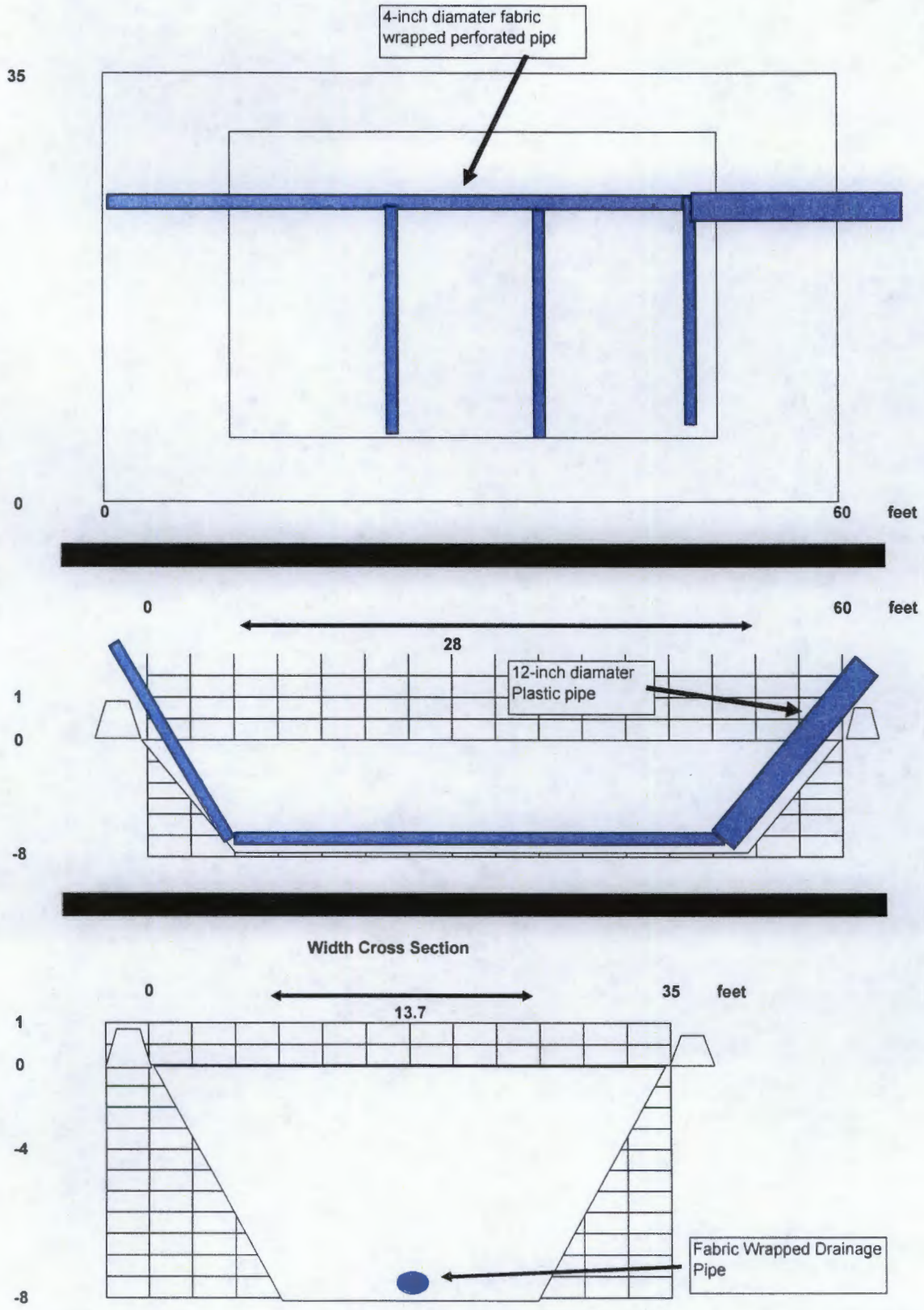
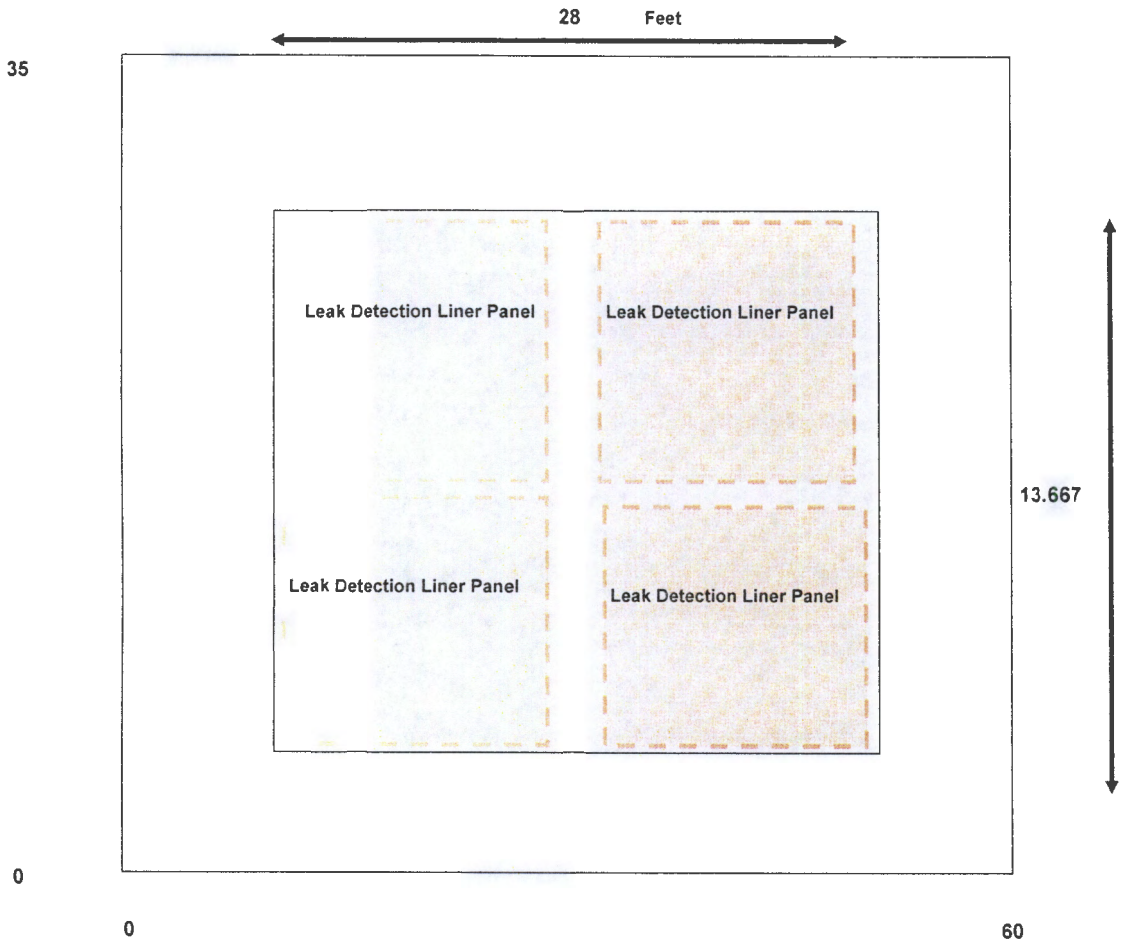
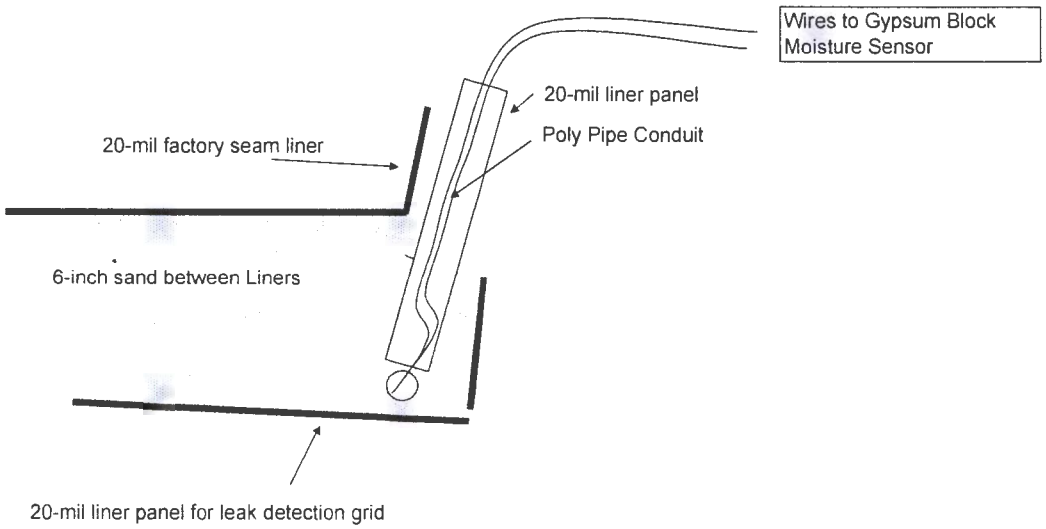


Figure 6 - FEMA Flood Map



R.T. Hicks Consultants, Ltd. Albuquerque, NM patent pending	Pit Grading and Dewatering	Figure 7
	Read and Stevents - Full Moon 29 #1	May-10





R.T. Hicks Consultants Albuquerque, NM	Leak Detection System	Figure 8
patent pending	Read and Stevens - Full Moon 23 #1	May-10