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 JUN 1 6 2010

RECEIVED

Form C-144 July 21, 2008

NMOCD ARTESIA
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.

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

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.
I.
Operator: Read and Stevens, Inc OGRID #: 18917
Address: PO Box 1518, Roswell, NM 88201
Facility or well name: Full Moon 29#1
API Number: 30-005-64128 OCD Permit Number:
U/L or Qtr/Qtr H Section 29 Township 8S Range 29E County: Eddy
Center of Proposed Design: Latitude 33.59334 Longitude -104.00249 NAD: ☐1927 ☐ 1983
Surface Owner: Federal State Private Tribal Trust or Indian Allotment
2. No. 2. Substitute For Confident For Confident State of State o
∑ Pit: Subsection F or G of 19.15.17.11 NMAC
Temporary: Drilling Workover
Permanent Emergency Cavitation P&A
☐ Unlined Liner type: Thickness <u>20</u> mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other
String-Reinforced
Liner Seams: Welded Factory Other Volume: 1200 bbl Dimensions: L 50 x W 26 x D 8
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: Thicknessmil ☐ 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 HDPF DPVC Other
Liner type: Thicknessmil
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.

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, institution or church)	hospital,				
 ∑ 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)					
intenting inspections (it neutring or screening is not physically reasions)					
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 of					
consideration of approval. Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.					
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 SEE FIGURE	☐ 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 SEE FIGURE	☐ 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 SEE FIGURE	☐ 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 puts)	☐ Yes ☒ No ☐ NA				
- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image SEE FIGURE 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 SEE FIGURE	☐ 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. SEE FIGURE - 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 SEE	☐ Yes 🏻 No				
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division SEE FIGURE	☐ Yes 🖾 No				
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map SEE EXPLANATION & FIGURE	☐ Yes ⊠ No				
Within a 100-year floodplain FEMA map 응용 액딩딩딩	☐ Yes ⊠ No				

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:
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) □ Previously Approved Operating and Maintenance Plan □ API Number: (Applies only to closed-loop system that use
Previously Approved Operating and Maintenance Plan API Number:
13. Downward Dita Downit Application Charleigt. Subsection D of 10.15.17.0 NMAC
<u>Permanent Pits Permit Application Checklist</u> : Subsection B of 19.15.17.9 NMAC Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are
attached. Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.9 NMAC Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC Climatological Factors Assessment
Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19.15.17.11 NMAC Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC
☐ Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC ☐ Quality Control/Quality Assurance Construction and Installation Plan
☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC ☐ Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
 □ Nuisance or Hazardous Odors, including H₂S, Prevention Plan □ Emergency Response Plan
☐ Oil Field Waste Stream Characterization ☐ Monitoring and Inspection Plan
Erosion Control Plan Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
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
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

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: D	isposal Facility Permit Number:					
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						
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 of	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						
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 of	obtained from nearby wells	Yes □ No □ NA				
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other signilake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	ficant watercourse or lakebed, sinkhole, or playa	☐ Yes ☒ No				
Within 300 feet from a permanent residence, school, hospital, institution, or church in Visual inspection (certification) of the proposed site; Aerial photo; Satellite i		☐ 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						
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						
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 a	nd Mineral Division	☐ Yes ☒ No				
 Within an unstable area. Engineering measures incorporated into the design; NM Bureau of Geology of Society; Topographic map 	& Mineral Resources; USGS; NM Geological	☐ Yes ⊠ No				
Within a 100-year floodplain FEMA map		☐ Yes ⊠ No				
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 19.15.17.13 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 I 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						

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, Inc				
Signature: Date: June 11, 2010				
e-mail address:r@rthicksconsult.com Telephone:505-266-5004				
OCD Approval: Permit Application (including closure plan) Closure Plan (only) OCD Conditions (see attachment)				
OCD Representative Signature: Approval Date:				
Title:OCD Permit Number:				
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				
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				
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				
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:				

R. T. HICKS CONSULTANTS, LTD.

901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505,266,5004 ▲ Fax: 505,266-0745

June 14, 2010

Mr. Mike Bratcher NMOCD District 2 1301 West Grande Artesia, New Mexico 88210 Via E-Mail JUN 16 2010
NMOCD ARTESIA

RE:

Full Moon 29 #1, Read and Stevens, Inc.

Dear Mike:

Attached is the C-144 and attendant supporting documents for the above-referenced well. Read and Stevens requests approval for trench burial in full compliance with the mandates of NMOCD Rules and withdraws the request for an exception to NMOCD Rules. In order to assure that this submission represents a complete application, we include:

- 1. A C-144 form for the modification of the existing permit signed by the operator
- 2. Documents required by item 11 of the C-144:
 - a. Hydrogeologic data
 - b. Siting Criteria Compliance Demonstrations
 - c. Design Plan (attached)
 - d. Operating and Maintenance Plan (attached)
 - e. Closure Plan (attached)
- 3. Documents required by item 18 of the C-144
 - a. Siting Criteria Compliance Demonstration
 - b. Proof of Surface Owner Notice (see attached)
 - c. Construction/design Plan of Burial Trench (see attached)
 - d. Protocols and procedures (see attached)
 - e. Confirmation Sampling Plan (see attached)
 - f. Waste Material Sampling Plan (see attached)
 - g. Soil Cover Design (see attached)
 - h. Re-vegetation Plan (see attached)
 - i. Site Reclamation Plan (see attached)

We believe this submission will show that the pit design meets all of the criteria specified in NMOCD Rules. The NMOCD Artesia Office approved a similar design for the Bandit well. If Read and Stevens elects to request an exception to NMOCD Rules in the future for this well, we will submit the request to the Environmental Bureau with a copy to your office.

Sincerely,

R.T. Hicks Consultants

. Randall Hicks

Copy: Read and Stevens

LIMITED POWER OF ATTORNEY

State (situs of land): New Mexico

County (situs of land): Chaves, Eddy and Lea Counties

Principal: Read & Stevens, Inc.

Principal's Address: 400 N. Pennsylvania Ave, Suite 1000, Roswell, NM 88201

Agent/Attorney in Fact: Randall Hicks (owner of R T Hicks Consulting)

Agent/Attorney in Fact's Address: 901 Rio Grande NW F-142, Albuquerque, NM 87104

Date Executed: 06/08/2010

Effective Date: 05/08/2010

Principal, identified above, makes, constitutes and appoints Agent, identified above, Principal's true and lawful Agent and Attorney in Fact for Principal and in Principal's name, place and stead, for the sole purposes of transacting any business dealings with the New Mexico Oil Conservation Division (NMOCD) Form C-144 on behalf of Principal.

Principal gives and grants Agent full and complete power and authority to do and perform all acts and things required or necessary to be done in transacting Principal's dealing with the NMOCD, Form C-144, as fully to all intents and purposes as if Principal might or could do if personally present and acting on Principal's own behalf.

Principal ratifies and affirms all that the Agent may lawfully do or cause to be done by virtue of this Limited Power of Attorney.

Principal

CORPORATE ACKNOWLEDGEMENT

STATE OF NEW MEXICO

COUNTY OF

The foregoing instrument was acknowledged before me this the day of xun., 2010 by Navatura, of Real + Stevers Inca a final maying corporation on behalf of said corporation.

My Commission Expires:

Notary Public

Introduction explanation

Read and Stevens, Inc. (R&S) requests administrative approval to construct the temporary drilling pit with 1.5H:1V slopes for certain sides of the drilling pit as shown in the design drawings. R&S will adhere to all other prescriptive mandates of NMOCD Rules. If any statements in this submission inadvertently suggest that R&S will not adhere to all other mandates in NMOCD Rules, R&S will adhere to the Rules, not the text in this submission. If NMOCD finds any such language, please bring it to our attention so we may correct it.

Hydrogeologic Data

The information identified in item 10 "Siting Criteria" of the C-144 is attached. These are:

- 1. Figure 1 –presents data from the Office of the State Engineer (OSE) database and USGS database. This figure shows the location of the nearest registered water supply wells and available depth to ground water data. Depth to water is more than 100-feet below ground surface at the proposed drilling site and the site is not within a municipal fresh water well field, as discussed below.
- 2. Figure 2- USGS topographic map of the area. These maps show locations of any significant watercourse the locations of windmills and other wells that may not be registered with the OSE. Red Lake and an unnamed ephemeral stream are both more than 300-feet from the drilling site.
- 3. Figure 3 recent aerial photograph showing the presence of structures, which in this area are oil wells and tank batteries. No dwellings exist with 300-feet of the proposed drilling site.
- 4. Figure 4 is a street map that also shows the location of the nearest incorporated municipal boundary. The proposed drilling site is not within an incorporated municipal boundary
- 5. Figure 5 shows the US Fish and Wildlife Wetland Mapper for the site and surrounding area. The area directly east of the site is not available online and is shaded with a light green marked "non-digital". The topographic map in Figure 2 presents additional data regarding nearby water bodies. Based on these maps and a visual inspection, we affirm that there are no wetlands within 500 feet of the site.
- 6. 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.
- 7. Figure 7 shows the location of the nearest identified mines, processing plants and prospects. No subsurface mines exist near the proposed well.
- 8. Figure 8 shows the area in relation to identified unstable Karst areas.

Siting Criteria Compliance Demonstration

As designated in the C-144 we believe the data presented in Figures 1-8 demonstrate that:

Ground water is GREATER than 100 feet below the bottom of the temporary pit and proposed burial trench

Figure 1 shows all wells in the OSE database, wells with depth to water data from the USGS database and information on well depths and aquifers from the Petroleum Recovery Research Center (PRRC). The map confirms information typically employed by NMOCD to determine the depth to water.

The map indicates that nearby wells obtain ground water from the Chinle (based upon our evaluation of recorded total depths and the independent evaluation by the PRRC). Ground water in the Chinle is generally under pressure (confined) and therefore cannot be impaired by surface releases. Moreover, wells near the site that draw water from the Chinle show depth to water measurements in excess of 500 feet. Note that some wells in the OSE database do not have data for depth to water or total depth (e.g. TD = 0) and these registered wells might be applications for wells that were not drilled, wells drilled prior to requirements to submit information to the OSE or drilled wells where the applicant did not submit data.

The pit, excavated material and burial trench 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).

Figures 2-3 and our site visit (see Appendix A) confirm this statement. Red Lake is the nearest surface water body and is more than 300 feet from the proposed location.

The pit and burial trench is NOT within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.

Figures 2-3 and Appendix A confirm this statement.

The pit and burial trench is NOT within 500 feet of a private, domestic fresh water well or spring used by less than five households use for domestic or stock watering purposes, it is NOT within 1,000 feet of any other fresh water well or spring, in existence at the time of initial application.

Figures 1-3 and Appendix A support this statement.

The pit and burial trench is NOT 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.

© 2019 R.T. Fliores Consum Miles, Line. 6/11/2010 Figure 4 and Appendix A confirm this statement.

The pit, excavated material and burial trench is NOT within 500 feet of a wetland.

Figures 2, 3 and 5 confirm this statement.

The pit and burial trench is NOT within the area overlying a subsurface mine.

Figure 7 confirm this statement. While not shown in the Figure, the closest underground mine is south of Artesia in the Potash Area.

The pit and burial trench is NOT within an unstable area.

Figure 8 shows that the area is not within any karst area, which is a strong indicator of unstable areas. Our site visit and our examination of the geology of the area (see Figure 1) allow us to provide a professional opinion that the site is not in an unstable area.

The pit, excavated material and burial trench is NOT within a 100-year floodplain.

Figure 2, Figure 6 and our site visit confirm this statement. The location of the pit is not in or near an active watercourse.

Design Plan

Figures 9 and 10 present the design plan for the proposed drilling pit. The plan consists of the following protocols, which are derived from NMOCD Rules. The purpose of the pit is to contain liquids and solids and prevent contamination of fresh water and protect public health and the environment. The design proposes appropriate engineering principles and practices and will follow applicable liner manufacturers' requirements. R&S will:

- I. Prior to constructing the pit the operator will strip and stockpile the topsoil for use as the final cover or fill at the time of closure.
- II. The operator will post an upright sign not less than 12 inches by 24 inches with lettering not less than two inches in height in a conspicuous place on the fence surrounding the pit, unless the pit is located on a site where there is an existing well signed in compliance with 19.15.16.8 NMAC, that is operated by the same operator. The operator will post the sign in a manner and location such that a person can easily read the legend. The sign will provide the following information: the operator's name; the location of the site by quarter-quarter or unit letter, section, township and range; and emergency telephone numbers.
- III. The operator will fence or enclose the pit in a manner that prevents unauthorized access and will maintain the fences in good repair.
- IV. The operator will fence the pit to exclude livestock with a four foot fence that has at least four strands of barbed wire evenly spaced in the interval between one foot and four feet above ground level.

With respect to the design and construction of the temporary pit:

- **A.** The operator will design and construct a temporary pit to ensure the confinement of liquids to prevent unauthorized releases.
- **B.** The temporary pit will have a properly constructed foundation and interior slopes consisting of a firm, unyielding base, smooth and free of rocks, debris, sharp edges or irregularities to prevent the liner's rupture or tear.
- C. The operator will construct a temporary pit so that the end slopes are no steeper than two horizontal feet to one vertical foot (2H:1V) as shown in Figure 9. This application requests that the division district office approve an alternative to the slope requirement. The side slopes of the pit and any interior pit divider will be 1.5H:1V. NMOCD's approval of similar requests provides the demonstration that the operator can construct and operate the temporary pit in a safe manner to prevent contamination of fresh water and protect public health and the environment.
- D. The temporary pit uses a geomembrane liner consisting of 20-mil string reinforced LLDPE that the division district office has approved in the past. The geomembrane liner is composed of an impervious, synthetic material that is resistant to petroleum hydrocarbons, salts and acidic and alkaline solutions. The liner material is resistant to ultraviolet light. Liner compatibility complies with EPA SW-846 method 9090A.
- **E.** The operator will minimize liner seams and orient them up and down, not across a slope. The operator will use factory welded seams where possible. Prior to field seaming, the operator will 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 will minimize the number of field seams in corners and irregularly shaped areas.
- **F.** Qualified personnel will perform field seaming. The operator will weld field liner seams.
- **G.** Construction will avoid excessive stress-strain on the liner.
- **H.** Geotextile will be placed under the liner where needed to reduce localized stress-strain or protuberances that may otherwise compromise the liner's integrity.
- I. The operator will anchor the edges of all liners in the bottom of a compacted earth-filled trench. The anchor trench will be at least 18 inches deep.
- J. The operator will 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 through the placement of a layer of protective felt over the liner and the placement of pipes at these locations as shown in the design drawings.

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- **K.** The operator will design and construct a temporary pit to prevent run-on of surface water. A berm, ditch, proper sloping or other diversion will surround a temporary pit to prevent run-on of surface water as shown on the design drawings.
- **L.** The volume of a temporary pit does not exceed 10 acre-feet, including freeboard.

Additionally:

- If practical, the contractor will separate coarser material from finergrained material excavated from the pit for use in constructing the soil cover over the buried waste when operations of the drilling pit cease.
- Below the liner, the contractor will install the leak detection system described in the design drawings.
- 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.

Operations Plan

As stated earlier, the operator will operate and maintain the temporary pit to contain liquids and solids and maintain the integrity of the liner, liner system or secondary containment system, prevent contamination of fresh water and protect public health and the environment. Specifically:

- 1. The operator will dispose of all drilling fluids in a manner, approved by division rules, that prevents the contamination of fresh water and protects public health and the environment.
- 2. The operator will not discharge into or store any hazardous waste in the temporary pit.
- 3. If the pit liner's integrity is compromised, or if any penetration of the liner occurs above the liquid's surface, then the operator will notify the division district office within 48 hours of the discovery and repair the damage or replace the liner.
- 4. 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, notify the division district office within 48 hours of the discovery and repair the damage or replace the pit liner.
- 5. The injection or withdrawal of liquids from the pit will be accomplished through 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.
- 6. The operator will operate and install the pit to prevent the collection of surface water run-on.
- 7. The operator will install, or maintain on site, an oil absorbent boom or other device to contain and remove oil from the pit's surface.

The operator will maintain and operate a temporary pit in accordance with the following additional protocols.

- a. Only fluids used or generated during the drilling process will be discharged into a temporary pit.
- b. The operator will maintain the temporary pit free of miscellaneous solid waste or debris.
- c. The operator will use a tank made of steel, or other material, which the division district office approves, to contain hydrocarbon-based drilling fluids. The operator does not plan on using hydrocarbon-based drilling fluids.
- d. Immediately after cessation of a drilling operation, the operator will remove any visible or measurable layer of oil from the surface of the drilling pit.
- e. The operator will maintain at least two feet of freeboard for a temporary pit.
- f. The operator will inspect a temporary pit containing drilling fluids at least daily while the drilling rig is on-site.
- g. Thereafter, the operator will inspect the temporary pit weekly so long as liquids remain in the temporary pit.
- h. The operator will maintain a log of such inspections and make the log available for the division district office's review upon request. The operator will file a copy of the log with the division district office when the operator closes the temporary pit.
- i. The operator will remove all free liquids from a temporary pit within 30 days from the date that the operator releases the drilling rig. The operator will note the date of the drilling or workover rig's release on form C-105 or C-103 upon well completion.

In addition to the specifications outlined above, R&S will:

- Use steel pit and lined outer horse shoe reserve pit to circulate mud and drill surface casing with fresh water.
- Discharge the fresh water cuttings and residual drilling fluids to the drilling pit.
- Use steel pit and lined inner horse shoe reserve pit to circulate mud and drill intermediate casing with saturated brine.
- Transfer sufficient brine fluid from inner pit to outer horse shoe pit to create appropriate salinity/weight of drilling fluid for drilling to total depth.
- Use steel pit and lined outer horse shoe reserve pit to circulate mud and drill to total depth with cut brine.
- When possible, add fresh water to inner pit to create brine/cut brine and transfer fluid to outer pit as necessary to accommodate for fluid loss during drilling.
- During drilling the liner leak detection system is checked routinely and weekly during drying and closure.

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•	After 10-40 days of drainage pumping and solids drying, the solids will be
	sampled as described below.

Closure Plan

Siting Criteria Compliance Demonstration

As described above, the site meets all of the siting criteria for on-site trench burial.

Proof of Surface Owner Notification

Appendix B is a letter from Read and Stevens to the surface owner confirming the intention to bury drilling waste on the location.

Construction/Design of Burial Trench

R&S proposes to close the pit using an on-site trench adjacent to the temporary pit. The operator will design and construct an on-site trench for closure as specified in Paragraph (2) of Subsection B of 19.15.17.13 NMAC. Specifically:

- 1. The operator will 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. The on-site trench will 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. Geotextile will be placed under the liner where needed to reduce localized stress-strain or protuberances that may otherwise compromise the liner's integrity.
- 4. The on-site trench will be constructed with a geomembrane liner that consists of a 20-mil string reinforced LLDPE liner.
- 5. The geomembrane liner will be composed of an impervious, synthetic material that is resistant to petroleum hydrocarbons, salts and acidic and alkaline solutions. The liner material will be resistant to ultraviolet light. Liner compatibility will comply with EPA SW-846 method 9090A.
- 6. The operator will minimize liner seams and orient them up and down, not across a slope and the operator will use factory welded seams where possible. Prior to field seaming, the operator will 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 will minimize the number of field seams in corners and irregularly shaped areas.
- 7. Qualified personnel will perform field seaming. The operator will weld field liner seams.
- 8. The operator will install sufficient liner material to reduce stress-strain on the liner.

- 9. The operator will ensure that the outer edges of all liners are secured for the placement of the excavated waste material into the trench.
- 10. The operator will fold the outer edges of the trench liner to overlap the waste material in the trench prior to the installation of the geomembrane cover.
- 11. The operator will install a geomembrane cover over the waste material in the lined trench. The operator will install the geomembrane cover in a manner that prevents the collection of infiltration water in the lined trench and on the geomembrane cover after the soil cover is in place.
- 12. The geomembrane cover will consist of a 20-mil string reinforced LLDPE liner. The geomembrane cover will be composed of an impervious, synthetic material that is resistant to petroleum hydrocarbons, salts and acidic and alkaline solutions. Cover compatibility will comply with EPA SW-846 method 9090A.

Protocols and Procedures

The operator will remove all liquids from the temporary pit prior to closure and dispose of the liquids in a division-approved facility or recycle, reuse or reclaim the liquids in a manner that the division district office approves.

Prior to placing the contents from the temporary pit into the trench, the operator will stabilize or solidify the contents to a bearing capacity sufficient to support the final cover of the trench burial. The operator will not mix the contents with soil or other material at a mixing ratio of greater than 3:1, soil or other material to contents.

The operator will place a steel marker at the center of an on-site burial. The steel marker will be not less than four inches in diameter and will be cemented in a three-foot deep hole at a minimum. The steel marker will extend at least four feet above mean ground level and at least three feet below ground level. The operator name, lease name and well number and location, including unit letter, section, township and range, and that the marker designates an on-site burial location will be welded, stamped or otherwise permanently engraved into the metal of the steel marker.

The operator will report the exact location of the on-site burial on form C-105 filed with the division.

The operator will file a notice with the BLM identifying the exact location of the on-site burial as there is no deed associated with this location

Confirmation Sampling Plan

Because ground water is more than 100 feet below the bottom of the temporary pit, the operator will collect, at a minimum, a five point, composite sample; collect individual grab samples from any area that is wet, discolored or showing

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other evidence of a release; and analyze for benzene, total BTEX, TPH, the GRO and DRO combined fraction and chlorides to demonstrate that benzene, as determined by EPA SW-846 method 8021B or 8260B or other EPA method that the division approves, does not exceed 0.2 mg/kg; total BTEX, as determined by EPA SW-846 method 8021B or 8260B or other method that the division approves, does not exceed 50 mg/kg; the GRO and DRO combined fraction, as determined by EPA SW-846 method 8015M, does not exceed 500 mg/kg; the TPH, as determined by EPA method 418.1 or other EPA method that the division approves, does not exceed 2500 mg/kg; and chlorides, as determined by EPA method 300.1, do not exceed 1000 mg/kg or the background concentration, whichever is greater. The operator will notify the division of its results on form C-141.

If the operator or the division determines that a release has occurred, then the operator will comply with 19.15.29 NMAC and 19.15.30 NMAC, as appropriate.

If the sampling program demonstrates that a release has not occurred or that any release does not exceed the concentrations specified in Subparagraph (c) of Paragraph (3) of Subsection F of 19.15.17.13 NMAC, as the operator has certified to the division that it has given written notice to the surface owner that it intends to do so (see Appendix B). The operator will use a separate on-site trench for closure of the temporary pit. The operator will backfill the temporary pit excavation with compacted, non-waste containing, earthen material; construct a division-prescribed soil cover; recontour and re-vegetate the site. The division-prescribed soil cover, recontouring and re-vegetation requirements will comply with Subsections G, H and I of 19.15.17.13 NMAC.

Waste Material Sampling Plan

The operator will collect at a minimum, a five point, composite sample of the contents of the temporary pit to demonstrate that the TPH concentration, as determined by EPA method 418.1 or other EPA method that the division approves, does not exceed 2500 mg/kg. Using EPA SW-846 method 1312 or other EPA leaching procedure that the division approves, the operator will demonstrate that (i) the chloride concentration, as determined by EPA method 300.1 or other EPA method that the division approves, does not exceed 3000 mg/l or the background concentration, whichever is greater, (ii) the concentrations of the inorganic water contaminants specified in Subsection A of 20.6.2.3103 NMAC as determined by appropriate EPA methods do not exceed the standards specified in Subsection A of 20.6.2.3103 NMAC or the background concentration, whichever is greater, and (iii) the concentrations of the organic water contaminants specified in Subsection A of 20.6.2.3103 NMAC as determined by appropriate EPA methods do not exceed the standards specified in Subsection A of 20.6.2.3103 NMAC, unless otherwise specified above. The operator may collect the composite sample prior to treatment or stabilization to demonstrate that the contents do not exceed these concentrations. However, if the

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contents collected prior to treatment or stabilization exceed the specified concentrations the operator will collect a second five point, composite sample of the contents after treatment or stabilization to demonstrate that the contents do not exceed these concentrations.

Soil Cover Design

After the operator has removed the pit contents to the burial trench, the soil cover will consist of the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater.

The soil cover for trench burial will consist of a minimum of four feet of compacted, non-waste containing, earthen material. The soil cover will include either the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater.

The operator will construct the soil cover to the site's existing grade and prevent ponding of water and erosion of the cover material.

Re-vegetation Plan

The first growing season after the operator closes the pit and trench, the operator will seed or plant the disturbed areas.

The operator will accomplish seeding by a division-approved method. The operator will notify the NMOCD District Office of the proposed protocol at least 30-days prior to implementing the re-vegetation plan.

The operator will obtain vegetative cover that equals 70% of the native perennial vegetative cover (un-impacted by overgrazing, fire or other intrusion damaging to native vegetation) consisting of at least three native plant species, including at least one grass, but not including noxious weeds, and maintain that cover through two successive growing seasons.

During the two growing seasons that prove viability, there will be no artificial irrigation of the vegetation.

The operator will repeat seeding or planting until it successfully achieves the required vegetative cover.

When conditions are not favorable for the establishment of vegetation, such as periods of drought, the operator may request to delay seeding or planting until soil moisture conditions become favorable or may require the operator to use additional techniques such as mulching, fertilizing, irrigating, fencing or other practices.

The operator will notify the division when it has seeded or planted and when it successfully achieves re-vegetation.

Site Reclamation Plan

After closure of the pit and trench, the operator will reclaim the pit location and trench location and all areas associated with the pit and trench including associated access roads to a safe and stable condition that blends with the surrounding undisturbed area. The operator will substantially restore the impacted surface area to the condition that existed prior to oil and gas operations by placement of the soil cover as provided in Subsection H of 19.15.17.13 NMAC (described in this submittal), recontour the location and associated areas to a contour that approximates the original contour and blends with the surrounding topography and re-vegetate according to Subsection I of 19.15.17.13 NMAC (as described herein).

Alternative Closure Plan

In the event that the proposed closure method does not satisfy the on-site closure standards specified in Subsection F of 19.15.17.13 NMAC or, if applicable, other on-site closure standards that the environmental bureau in the division's Santa Fe office approves, Read and Stevens will close the temporary pit by excavating all contents and, if applicable, synthetic pit liners and transferring those materials to a division-approved facility.

<u>Disposal Facility Names and Permit Numbers</u> Lea Land, LLC NM-01-0035 Controlled Recovery, Inc. NM-01-0006

Closure Notice and Reporting to NMOCD

Read and Stevens will notify the division district office verbally or by other means at least 72 hours, but not more than one week, prior to any closure operation. The notice will include the operator's name and the location to be closed by unit letter, section, township and range, well name, number and API number.

Within 60 days of closure completion, Read and Stevens will submit a closure report on form C-144, with necessary attachments to document all closure activities including sampling results; information required by 19.15.17 NMAC; a plot plan; and details on back-filling, capping and covering, where applicable.

In the closure report, Read and Stevens will certify that all information in the report and attachments is correct and that the operator has complied with all applicable closure requirements and conditions specified in the approved closure plan. If the operator used a temporary pit, the operator shall provide a plat of the pit location on form C-105 within 60 days of closing the temporary pit.

Appendix A Photo Documentation

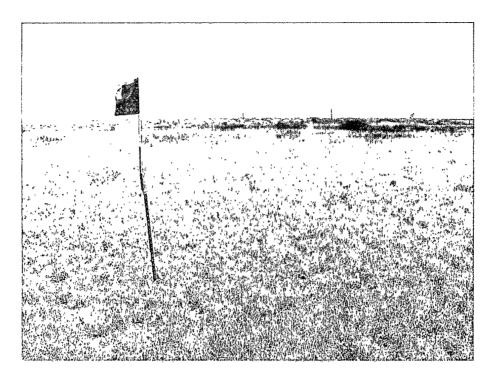


Figure A1: Photo of proposed drilling site viewing east.

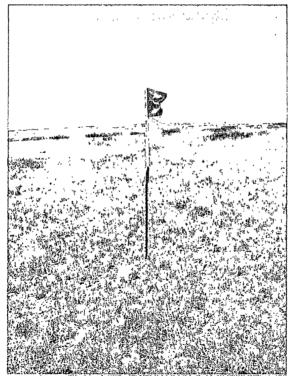


Figure A2: View to south – toward Red Lake

Appendix B Letter to Landowner

READ & STEVENS, INC.

OIL PRODUCERS

Mailing address P. O. Bex 1518 Reswell, New Mexico 88202 400 Penn Plaza, Suite 1000 Roswell, New Mexico 88201 Phone: 575/622-3770 Fax: 575/622-8643

April 26, 2010

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, Engineer

David Suna by Kb)

Read & Stevens, Inc.

DL/kb

Xc: Bob Watson

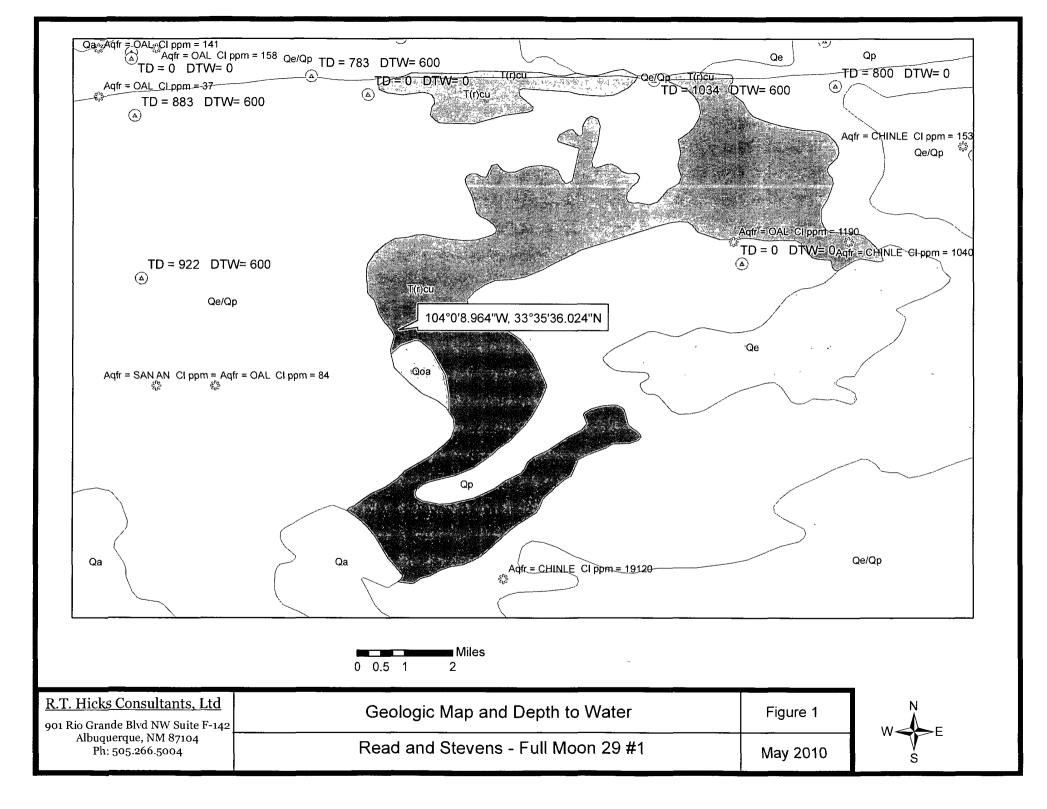
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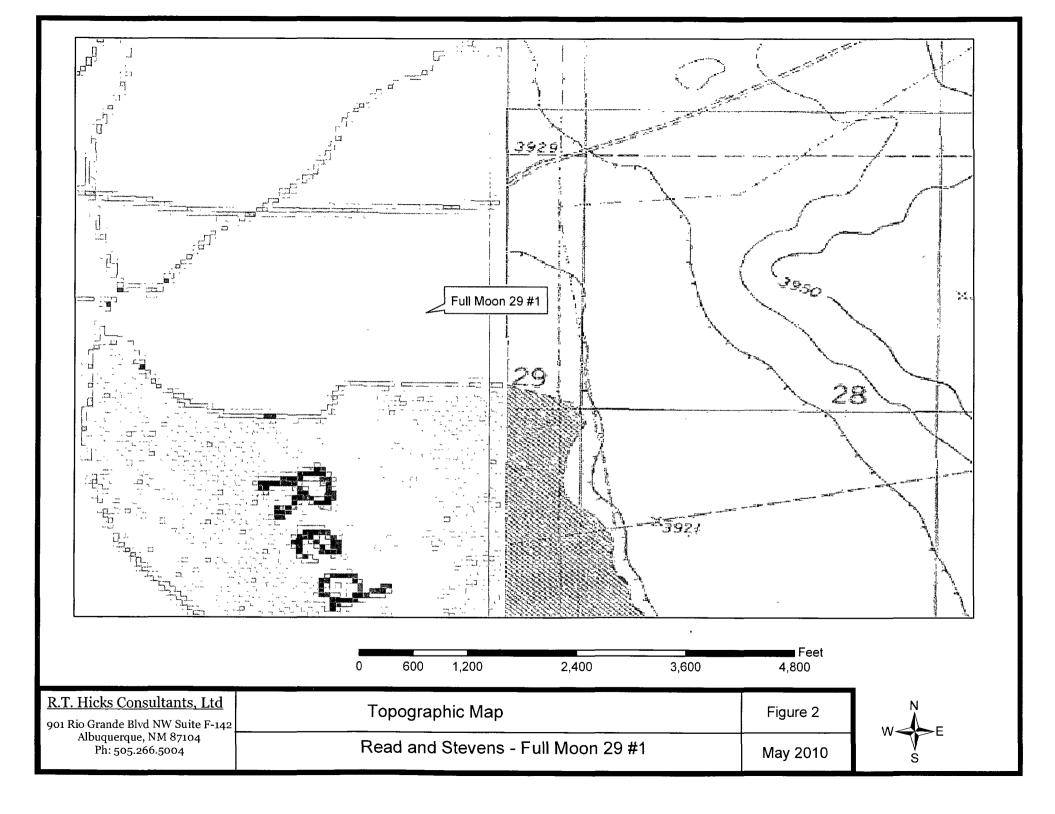
Canada Inc. - Kent Gabel

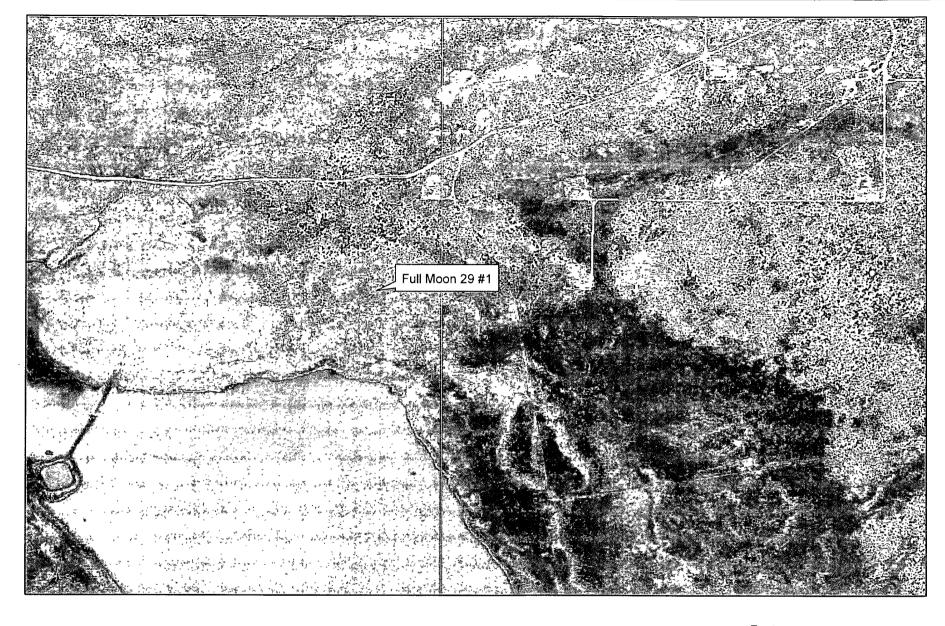
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R&S







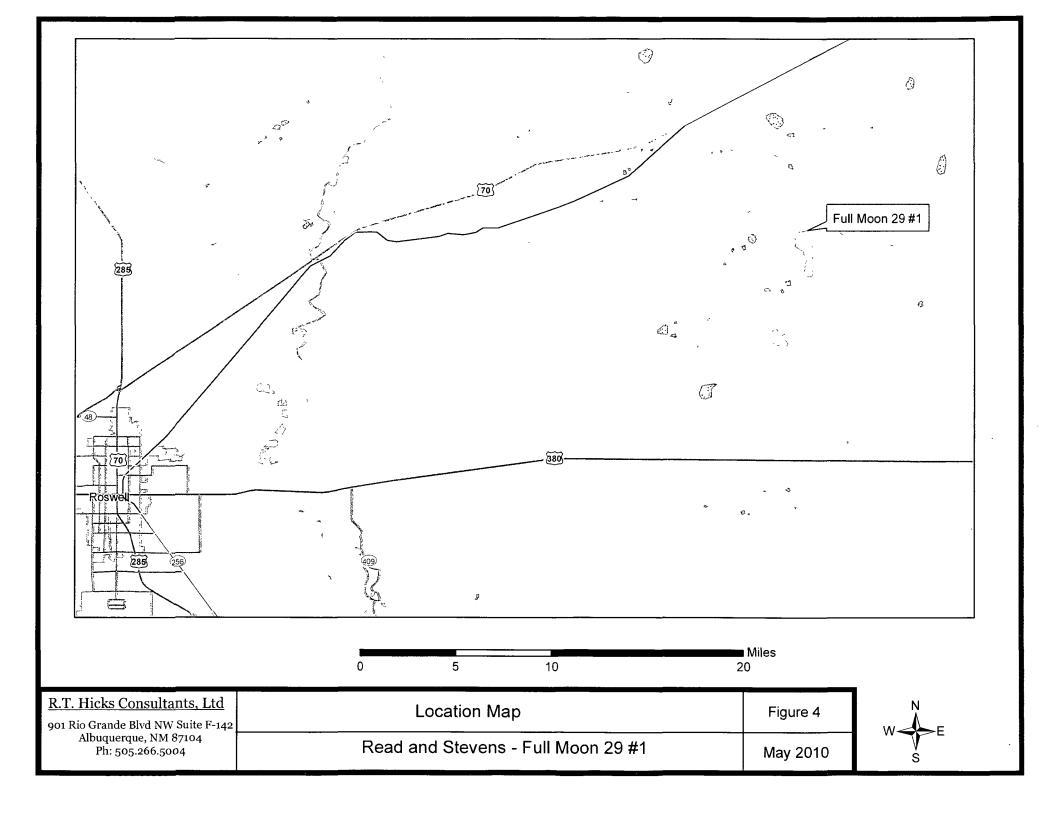
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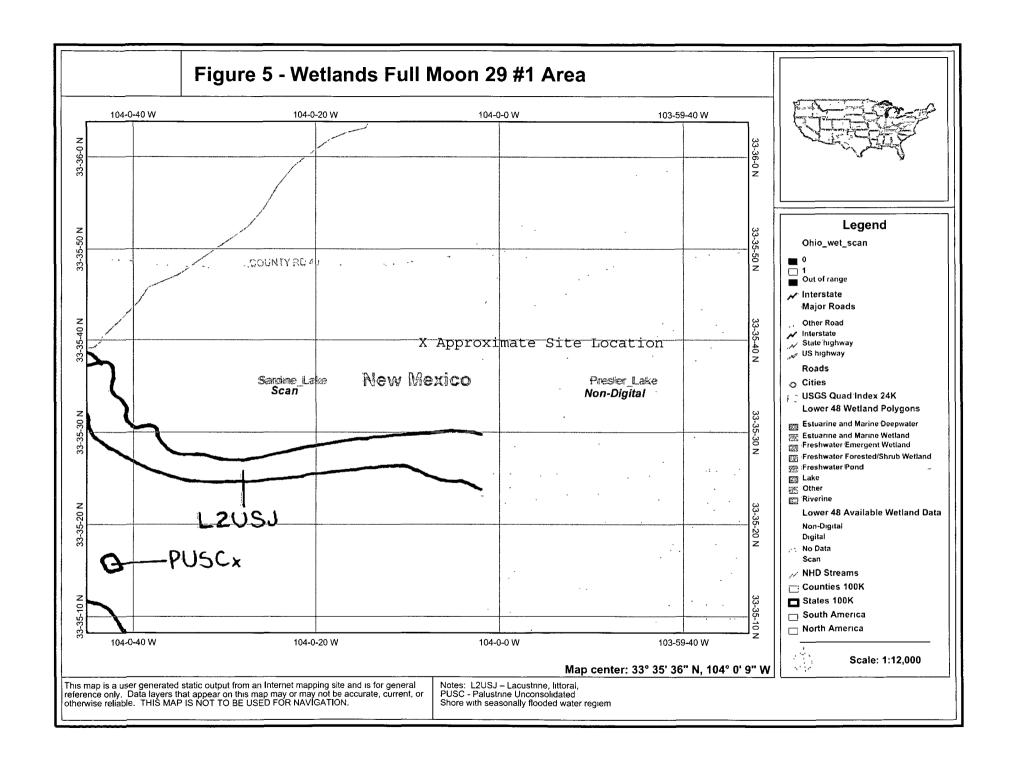
R.T. Hicks Consultants, Ltd
901 Rio Grande Blvd NW Suite F-142
Albuquerque, NM 87104
Ph: 505.266.5004

Read and Stevens - Full Moon 29 #1

May 2010







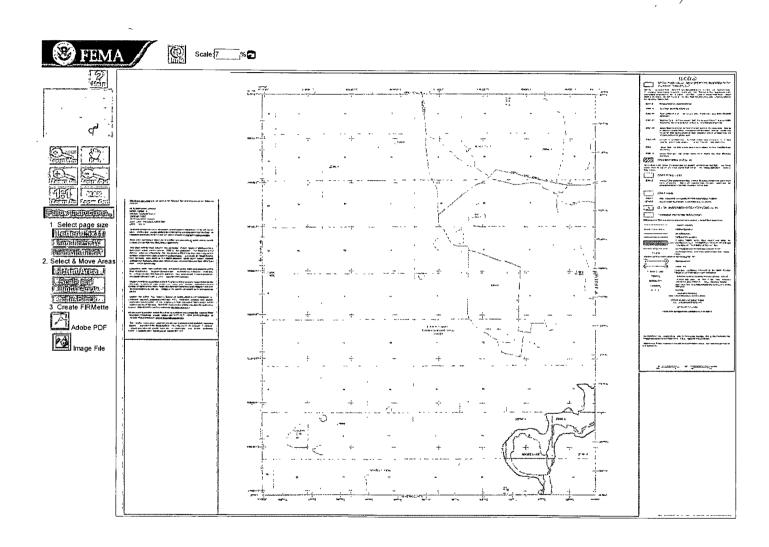


Figure 6 - FEMA Flood Map

