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.

24036

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

Type of action: X 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: McElvain Oil & Gas Properties, Inc. OGRID #: 22044
Address: 1050 17th St., Ste. 1800, Denver, CO 80265-1801
Facility or well name: L Miller A No.1E
API Number: 30-039-30594 OCD Permit Number:
U/L or Qtr/Qtr E Section 13 Township 24N Range 7W County: Rio Arriba
Center of Proposed Design: Latitude 36.31486° N Longitude 107.53445° W NAD: ☐1927 X 1983
Surface Owner: X Federal ☐ State ☐ Private ☐ Tribal Trust or Indian Allotment

2.
X **Pit:** Subsection F or G of 19.15.17.11 NMAC
Temporary: X Drilling ☐ Workover
☐ Permanent ☐ Emergency ☐ Cavitation ☐ P&A
X Lined ☐ Unlined Liner type: Thickness 20 mil X LLDPE ☐ HDPE ☐ PVC ☐ Other
X String-Reinforced
Liner Seams: X Welded X Factory ☐ Other Volume: 7570 bbl Dimensions: L 90' x W 75' x D 10'

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

RECEIVED
DEC 2008
OIL CONS. DIV. DIST. 3

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

X Alternate. Please specify Four foot high hogwire

7.

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

☐ Screen ☐ Netting ☐ Other

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

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

X 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 X 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 X 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 X 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 X 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 X 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 X No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes X No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes X No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	☐ Yes X No
Within a 100-year floodplain. - FEMA map	☐ Yes X 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
X Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9 NMAC
X Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
X Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
X Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
X 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: X 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)
X On-site Closure Method (Only for temporary pits and closed-loop systems)
X 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 X 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	X 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 X 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 X 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 X 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 X 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 X No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes X No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes X No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	☐ Yes X No
Within a 100-year floodplain. - FEMA map	☐ Yes X 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.***

X Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC

X 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

X 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

X Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC

X Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC

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

X Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot be achieved)

X Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

X Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC

X 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): Robert E. Fielder Title: Agent

Signature: Robert E. Fielder Date: December 2, 2008

e-mail address: pmci@advantas.net Telephone: 505.320.1435

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

OCD Representative Signature: Brandon Powell **Approval Date:** 12-11-08

Title: Envir Spec. **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:

District I
1625 N. French Dr, Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

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

Form C-102
Revised October 12, 2005
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
	71599	Basin Dakota

4 Property Code	5 Property Name	6 Well Number
6665	L MILLER A	1E

7 OGRID No.	8 Operator Name	9 Elevation
22044	McELVAIN OIL & GAS PROPERTIES, INC.	6679

10 Surface Location

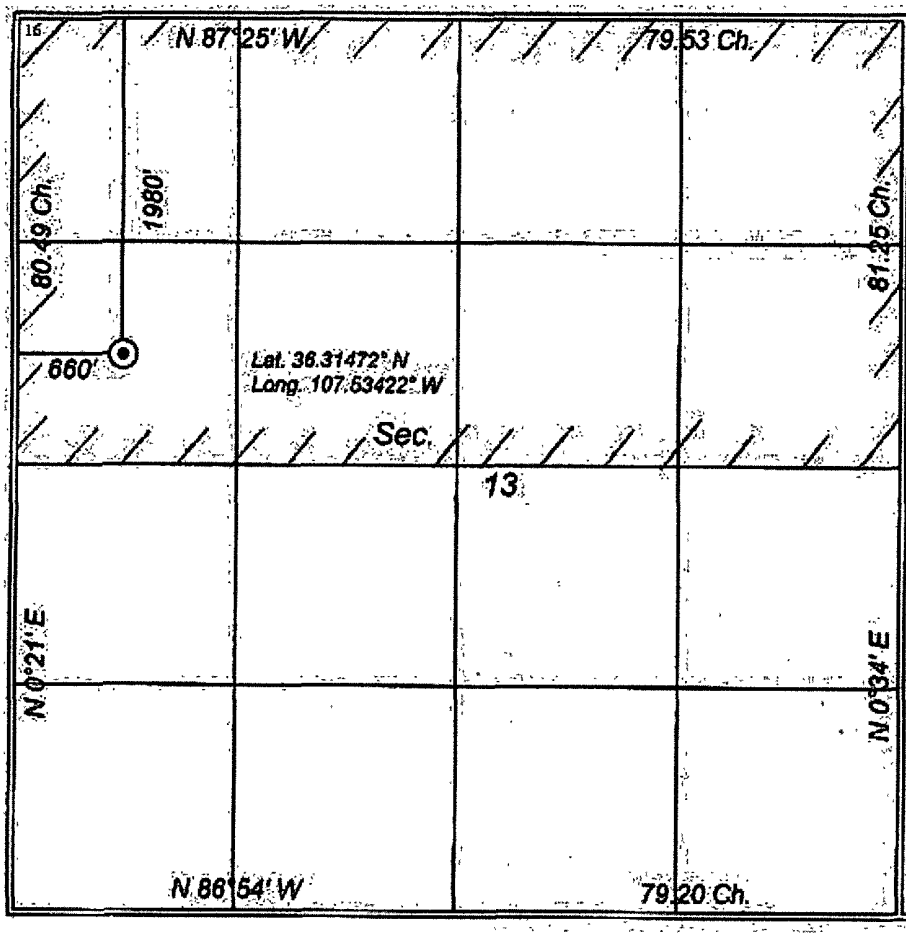
UL or Lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South Line	Feet from the	East/West Line	County
E	13	24 N	7 W		1980	North	660	West	Rio Arriba

11 Bottom Hole Location If Different From Surface

UL or Lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South Line	Feet from the	East/West Line	County

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
(N/2) 320	Y		

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature Date

Printed Name

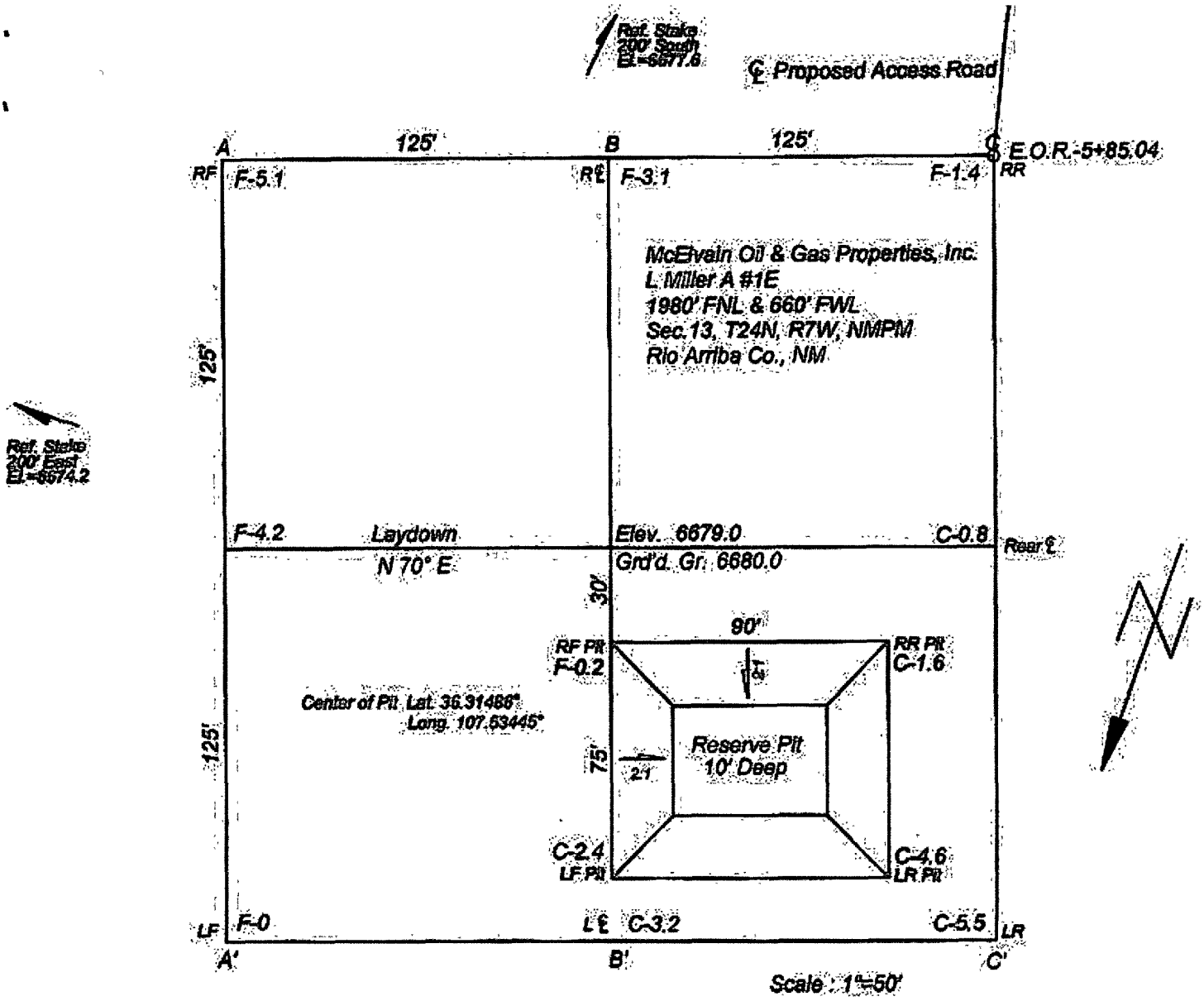
18 SURVEYOR CERTIFICATION

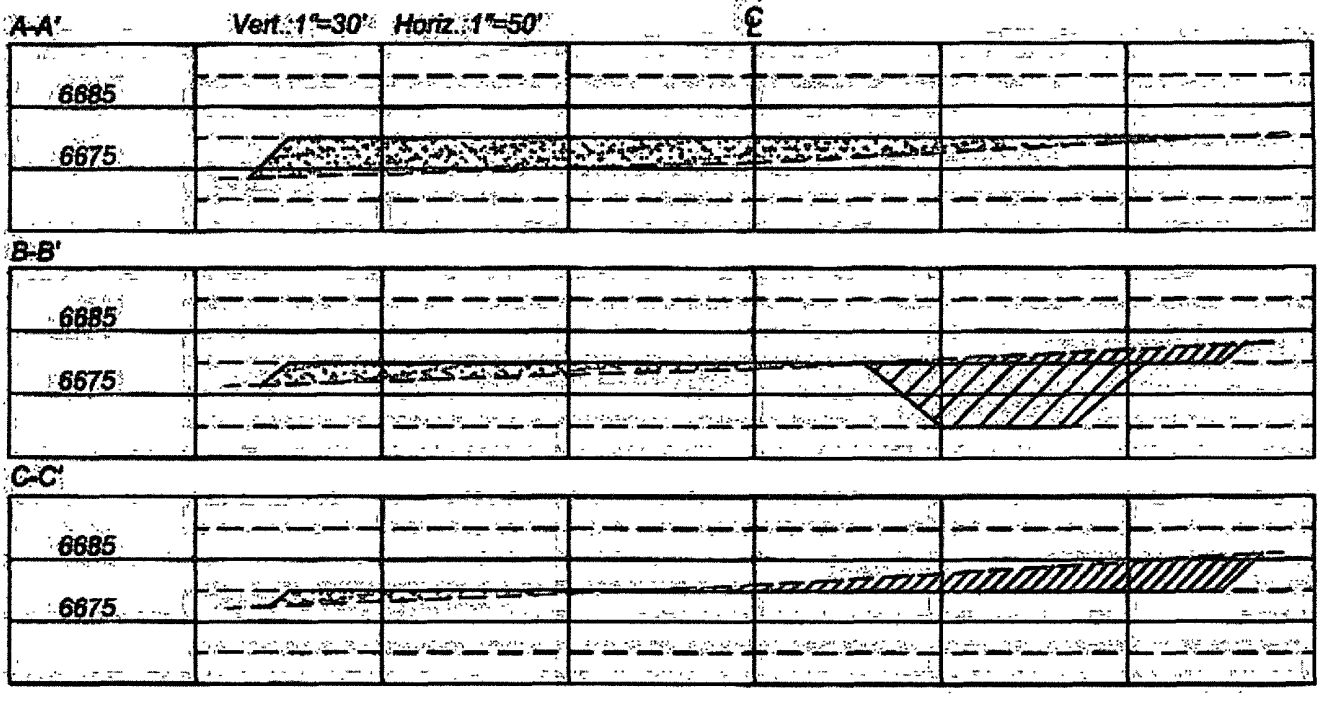
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

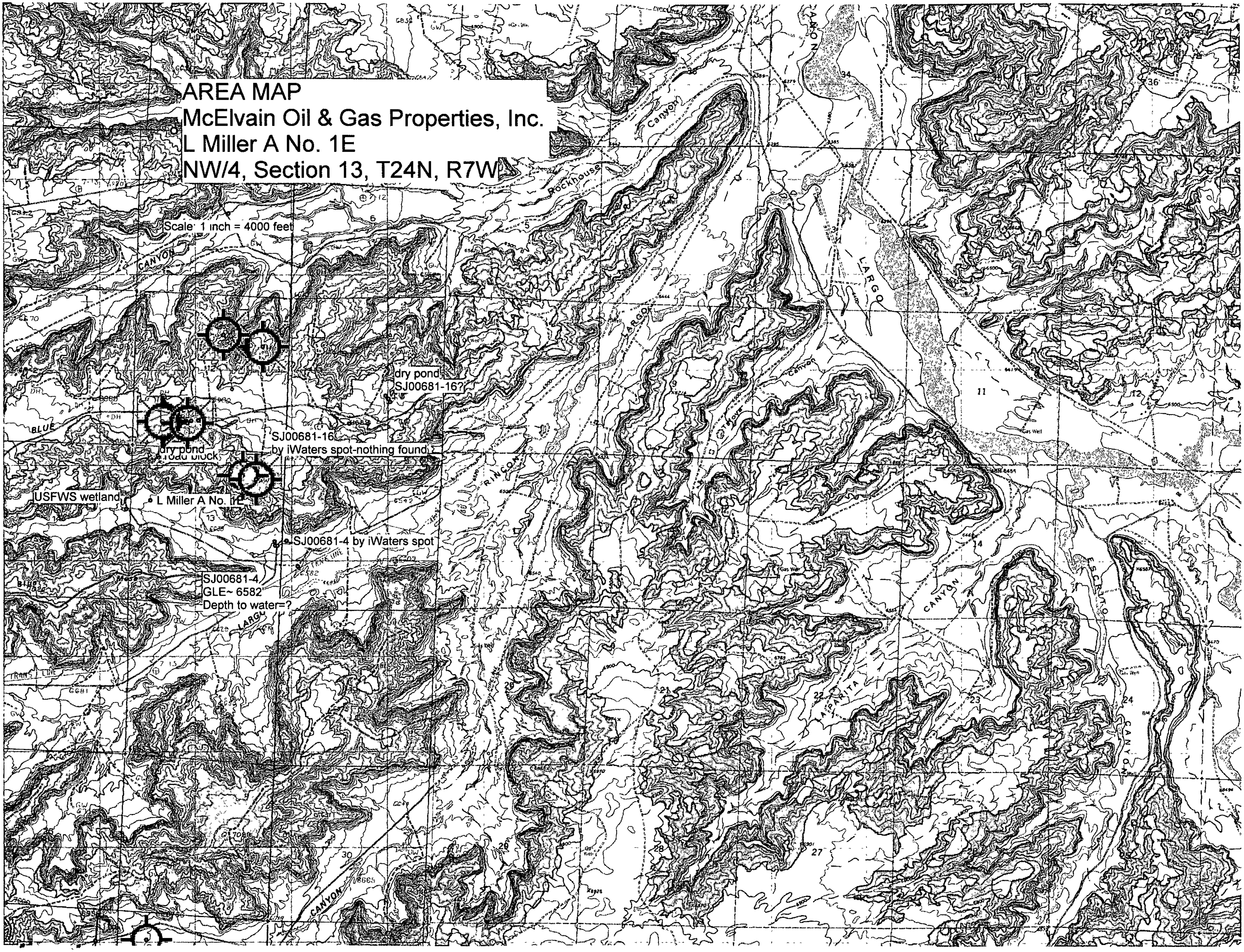
Date of Survey: 24 Sep 2008

Signature and Seal of Professional Surveyor: William E. Mahnke II

Certificate Number 8466


Ref. Stake
200' South
El.=6677.6
℄ Proposed Access Road
A
125'
B
125'
℄ E.O.R.-5+85.04
RF
F-5.1
R℄
F-3.1
F-1.4
RR
McElvain Oil & Gas Properties, Inc.
L Miller A #1E
1980' FNL & 660' FWL
Sec.13, T24N, R7W, NMPM
Rio Arriba Co., NM
125'
Ref. Stake
200' East
El.=6674.2
F-4.2
Laydown
N 70° E
Elev. 6679.0
Grd'd. Gr. 6680.0
C-0.8
Rear ℄
30'
90'
RF Pit
F-0.2
RR Pit
C-1.6
Center of Pit Lat. 36.31486°
Long. 107.63445°
125'
75'
2:1
Reserve Pit
10' Deep
C-2.4
LF Pit
C-4.6
LR Pit
LF
F-0
L℄
C-3.2
C-5.5
LR
A'
B'
C'
Scale : 1"=50'


A-A'
Vert. 1"=30'
Horiz. 1"=50'
℄
6685
6675
B-B'
6685
6675
C-C'
6685
6675


AREA MAP
McElvain Oil & Gas Properties, Inc.
L Miller A No. 1E
NW/4, Section 13, T24N, R7W
Scale 1 inch = 4000 feet
dry pond
SJ00681-16?
SJ00681-16
by iWaters spot-nothing found
dry pond
road block
USFWS wetland
L Miller A No. 1E
SJ00681-4 by iWaters spot
SJ00681-4
GLE~ 6582
Depth to water=?

Temporary Pit

Operating and Maintenance Procedures

McElvain Oil & Gas Properties, Inc. (MOG)

L Miller A No. 1E

I. Design and Construction Specifications

a. Prior to construction of the pit, zero to six inches of topsoil will be stripped from the north half of the location area and stockpiled as a berm in the construction buffer above the cut slope along the north and northwest sides for future reclamation of the cut slopes and pit area during interim reclamation. Zero to six inches the topsoil from the south side of the location will be stockpiled along the toe of the fill slope with the brush and vegetation removed for future reclamation of the fill slopes during interim reclamation.

b. In lieu of a pit sign, MOG will install and maintain a sign on the wellsite in accordance with the provisions of Rule 103.

c. Upon completion of construction and liner installation, three sides of the pit will be fenced with a four foot hogwire fence installed on steel tee posts since this location is over 1000 feet from the nearest residential building. The fourth side (rig side) will be fenced upon completion of the drilling operation and removal of the drilling equipment. This fence will be maintained to insure no access by livestock or wildlife as long as there is fluid in the pit.

d. The temporary pit will be constructed to the size shown on the attached Wellsite layout(s). Approximate volume is 0.98 ac-ft. It is anticipated the top three feet will be a sandy loam alluvial material associated with this Pinavetes-Florita soil complex. The bottom seven feet is unknown but is likely also similar alluvium. The soil removed for pit excavation will be stockpiled in the northeast corner of the pad. The pit walls will be constructed on 2:1 slopes. Any benches of rock encountered will be scraped to a depth to allow cover by soil material if possible. The side slopes will be walked down by the tractor to insure a smooth bottom and side walls for liner installation. No run on preventative measures will be installed around the pit since they will be installed on the location perimeter.

e. The temporary pit will be lined with one section of 20 mil string reinforced LLDPE liner material with factory welded seams if necessary. If a seamed liner is used the factory welded seams will be aligned running from the rig side to the outside wall. One end will be anchored in the anchor trench and then the liner will be pulled into the pit. In the event a smooth bottom or wall slope cannot be attained on construction this liner will be underlain with a geotextile liner. The edges of the liner on the level part of the pad will be anchored in a ditch around the perimeter at least eighteen inches deep and filled with dirt. A 30' W X 90' L section of the same liner material will be installed on the rig side of the pit by anchoring the pit side in the anchor trench with the pit liner and the

balance will be anchored by piling fill dirt on the edges. This apron will be used solely for spill containment of surface equipment and will be separate from the liner.

II. Operational Plan

a. MOG will operate and maintain the pit to contain the liquids and solids associated with the drilling phase of this operation, prevent contamination of the fresh water supply and protect the public health and the environment.
b. MOG will not dispose of or store any hazardous material in this pit. All workover and completion fluids associated with flow back or circulation during these operations will be stored in a flow back tank on location.
c. MOG will monitor the condition of the installed liner from the date it is installed until the pit is closed and will take the appropriate measures to repair and report any breach of the liner integrity in accordance with applicable regulations and procedures. The inspection will be daily during the drilling phase and the results will be recorded in the daily drillers log. The inspection will be weekly after the drilling rig is removed until the pit is closed. The results of these inspections will be kept in a log book in MOG's Farmington office.
d. Two feet of freeboard will be maintained in the pit at all times until closure.
e. MOG will remove all free liquid from the pit and haul it to the TNT Environmental facility, permit # NM-01-0008 within 30 days of cessation of the drilling operation. All fluids associated with drilling or workover operations that are accumulated and stored in the flow back tank will be removed within 30 days of cessation of these operations and hauled to the TNT Environmental facility.
f. The pit will be maintained free of any solid refuse. This will be stored in a trash basket on the location.
g. A header system or hoses without ends or unions will be used for loading liquid into the pit or removing liquid from the pit.
h. The pit will be maintained free of any oil accumulation. MOG keeps an oil absorbent boom at their Farmington warehouse that can be dispatched to any site within two hours.

III. Closure Plan

a. MOG will close this pit within six months of the completion date of the well.
b. MOG has notified the landowner (BLM) by e- mail of its plan to proceed with in place burial if possible. A copy is attached. MOG will send a similar notice to the BLM and the OCD District office prior to initiating in place burial.
c. MOG will initiate sampling and testing of the residue left in the pit after the completion of the liquid hauling operation in accordance with the applicable sampling and testing requirements outlined for in place burial.
    i. If the testing of the residue meets the quality standards below, MOG will proceed with in place burial as outlined in d. below.

Components	Tests Method	Limit (mg/Kg)
Benzene	EPA SW-846 8021B or 8260B	0.2
BTEX	EPA SW-846 8021B or 8260B	50
TPH	EPA SW-846 418.1	2500
GRO/DRO	EPA SW-846 8015M	500
Chlorides	EPA 300.1	1000/[redacted]

ii. If test results of the residue do not meet the quality standards for on site burial, MOG will dispatch a vacuum truck as soon as practical in the contractors schedule. They will remove the residue and haul it to the TNT Environmental facility, permit # NM-01-0008. After the residue is removed the pit liner will be removed and hauled to an approved waste facility in Rio Arriba County. MOG will then initiate testing and sampling of the pit area as outlined in the Waste Evacuation and Haul section of the regulations. Results of these tests will be reported to the Aztec district office and the applicable closure method initiated.

d. MOG will mix stockpiled pit dirt with residue at a 3:1 ratio to stabilize the residue.
e. MOG will remove the pit apron and cut and remove that section of the pit liner above the stabilized residue line. These will be disposed of in an approved solid waste facility in Rio Arriba or San Juan County.
f. MOG will use the remaining pit dirt stockpile to provide a compacted fill over the stabilized residue to a depth within two feet of the graded location level. The remaining pit dirt will be spread over the pit side area, outside of the anchor pattern, to re-contour the pit area. Topsoil stockpiled in the buffer outside the pit slopes will then be pushed over the re-contoured pit area and seeded with a seed mix specified by the BLM in the next applicable seeding season.
g. MOG will file the applicable closure report with attachments within 60 days of completion of closure.
h. MOG will install a 4" X 4' steel marker at the center of the buried pit during interim reclamation.

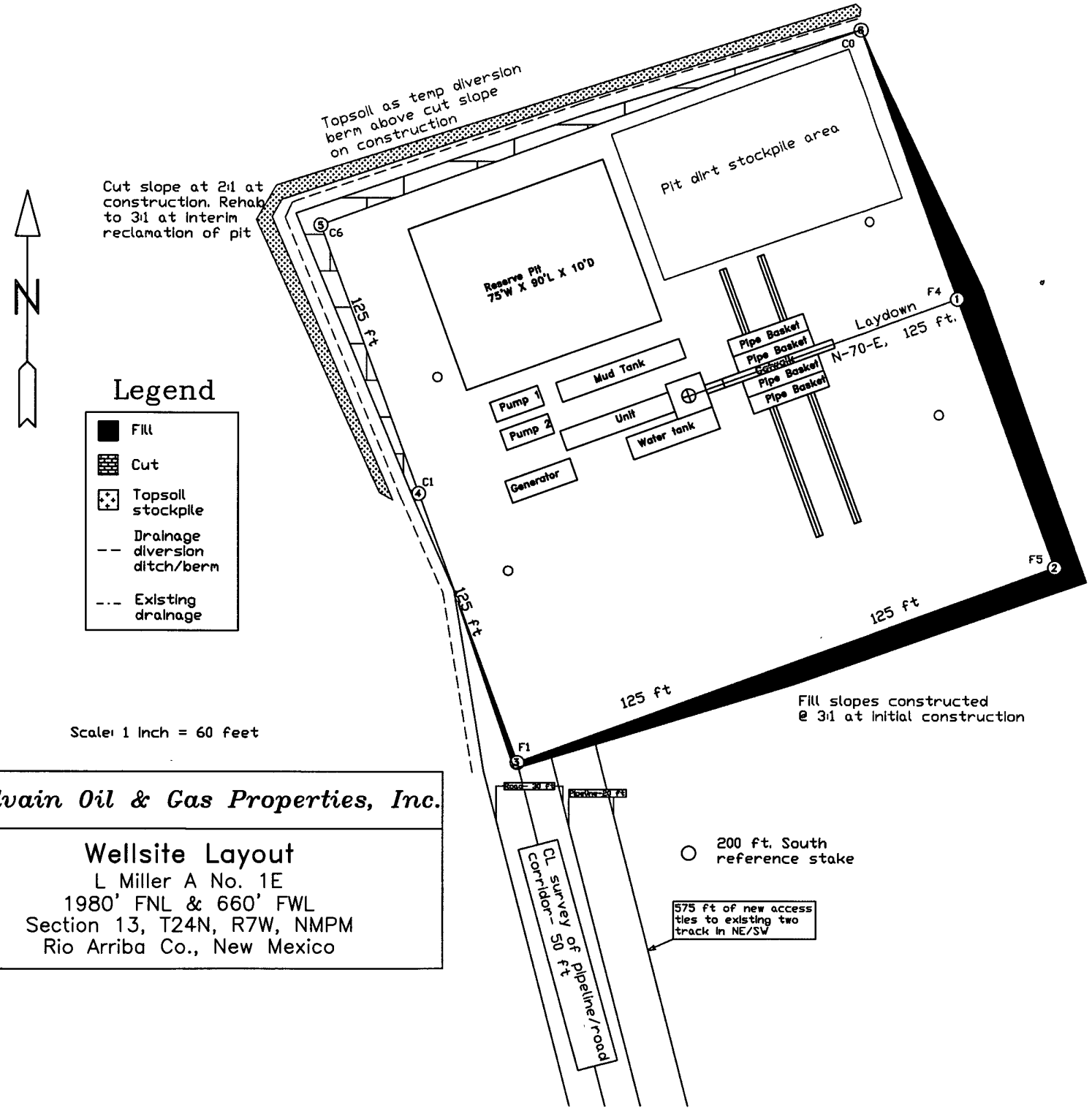
IV. Siting Requirements substantiation and hydrogeologic data

a. Hydrogeologic data –
   i. Surface formation – San Jose Formation
   ii. Geographic setting – Located in the bottom of a tributary of Rincon Largo canyon adjacent to the north canyon wall.
   iii. Soils – Pinavetes-Florita complex- a nonsaline loamy sand to sandy loam formed by the erosion of the sands and shales of the San Jose formation deposited as a fan alluvium over the subject area. Typical distribution is 0 – 60 inches: loamy sand if the Pinavetes predominates; 0 – 6 inches: sandy loam; 6-24 inches: coarse sandy loam; 24-60 inches: sandy loam if Florita dominates. Laid down on 0-3% slopes across location area.
   iv. Drainage – Generally to the southeast. There are no identified drainages in the area of the subject location shown on the attached wellsite diagram. The

location area is basically a sheet wash area for run off from the bluffs to the north. There will be no impact to the drainage due to this location construction. The runoff will be diverted around the pad by construction of ditches and berms along the north and west side of the pad above the cut slope.

b. Siting requirements substantiation
    i. A search of the iWaters database was conducted covering all the sections surrounding the proposed drillsite. There was one well identified on the iWaters data base, SJ00681-4. Ownership is probably Navajo tribe. The iWaters review did not reveal any depth to ground water information. The well is identified in Report # 6 of the New Mexico Bureau of Mines and Mineral Resources but this report did not yield any depth to ground water information. This well was part of the Berry Ranch permit and experience with this permit on past occasions show no well data was supplied when this permit was issued. This well is shown on USGS topo maps and scales to 5650 feet east/southeast of the proposed location. During the visual inspection, the canyon rims to the north and south were reviewed for signs of springs. No signs of springs were evident from this visual review. The decision was made to drill test holes at this site and also in Johnson Canyon, however BLM permission could not be obtained to drill the test hole in the time frame for submitting this application. The test hole in Johnson Canyon was drilled adjacent to the MOG Lybrook 4 proposed location (SE/4-36-24-7). The 85 foot depth indicates the water source is likely Tsj. Recharge to this aquifer is from infiltration of precipitation and stream flow on outcrops, and from vertical upward leakage of water from underlying strata (Levings et al., 1990). Rates of such leakage, however, are very low except in areas of intense fracturing (Stone et al., 1983). With no surface indications of fracturing – i.e. – no springs – the primary source of groundwater is assumed to be infiltration of precipitation or stream flow. A review of the soil data for the area encompassing Johnson Canyon, Rincon Largo and this tributary indicates the soils are identical. With the geographic setting similarities, the similar soil components and assuming the Tsj in the subsurface dips to Largo at the same rate as the Rincon Largo you could conclude that the depth to water would be the same 85 feet . It is apparent that there is some down dip influence because taking the calculated subsea elevation of the water sand in the test hole and applying this to this location would yield a depth to water of 12 feet, which means it would be at the surface in the wash by SJ00681-4. If the recharge were from stream flow the closest data point on the Largo is the Canyon Largo waterhole at an elevation of 6400 feet. This would put depth to ground water at 225 feet, assuming same dip gradient as Rincon Largo, to 280 feet assuming no dip. We conclude that the depth to water at this location is at least 85 feet which is 73 feet below the bottom of the pit based on a mathematical estimate of ground level elevation of pit center on this location of 6681 feet.

ii. There are no flowing watercourses within 300 feet of the proposed pit. The wash at the bottom of this tributary has no defined banks but was considered as significant for the purposes of this evaluation. The scaled distance from the topo map is 400 feet. The distance based on road survey measurements is 405 feet.
iii. There are no residences or buildings within 1000 feet of this location.
iv. The closest water well is 5650 feet east/southeast and the closest spring is three miles southwest.
v. This is a rural area location.
vi. A review of the USFWS wetland map revealed one site, 950 feet west. Visual inspection revealed a pond and dam that is currently dry and is obviously a runoff collection facility.
vii. This was not identified as part of the FEMA 100 year flood plain as illustrated on the attached FIRM.
viii. There were no unstable areas noted during the field inspection nor evidence of underground mining activity. There are no identified mining or quarry operations identified on the Bureau of Mines website.



McElvain Oil & Gas Properties, Inc.

Wellsite Layout

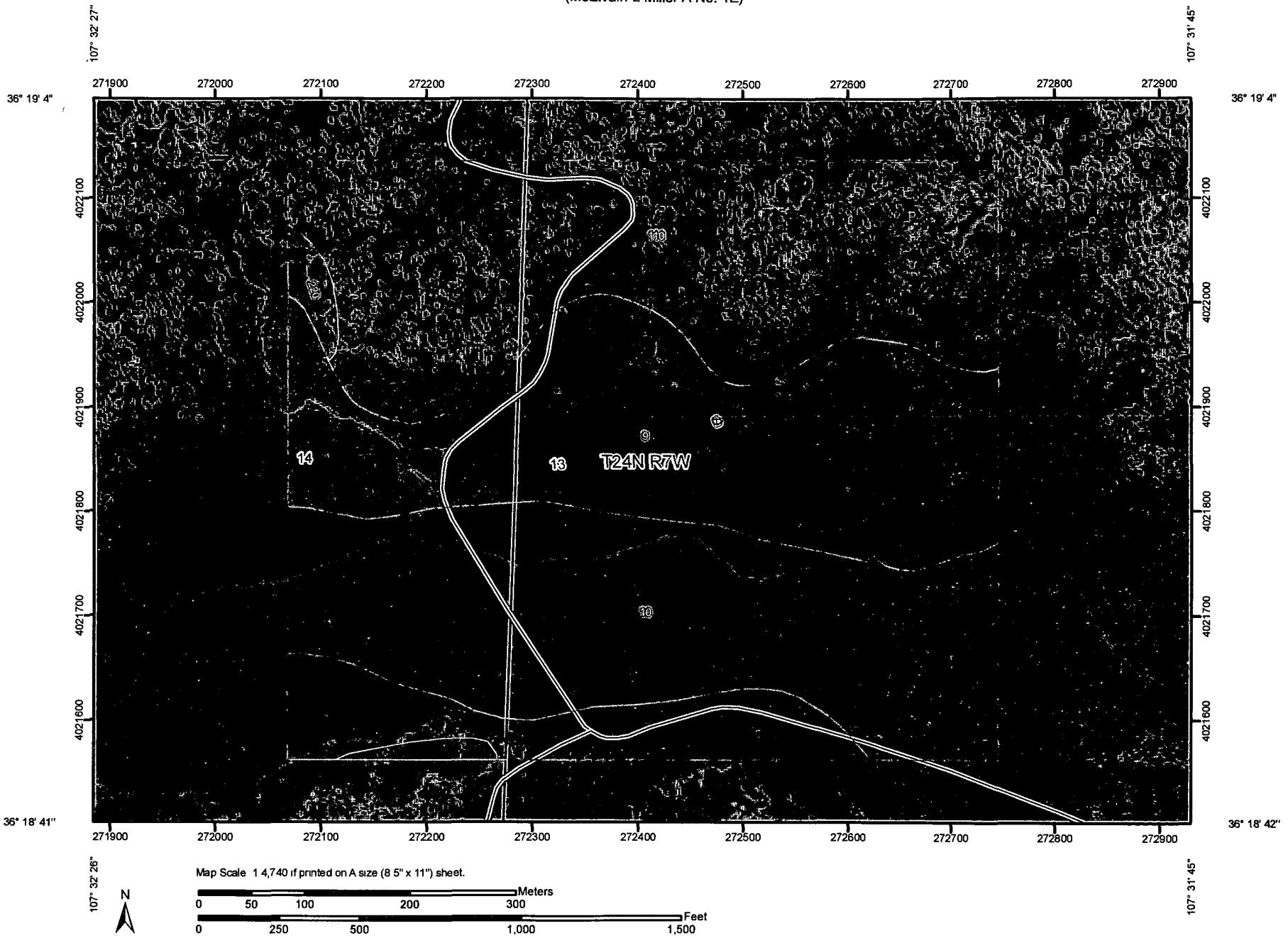
L Miller A No. 1E
1980' FNL & 660' FWL
Section 13, T24N, R7W, NMPM
Rio Arriba Co., New Mexico

Bob Fielder

From: Bob Fielder [pmci@advantas.net]
Sent: Friday, December 05, 2008 7:31 AM
To: Mark Kelly (mark_kelly@nm.blm.gov)
Subject: Onsite closure notification - L Miller A No. 1E

Mark:
McElvain Oil & Gas Properties, Inc. is proposing to close this lined reserve pit by the in place burial method prescribed in NMOCD's new pit rule. You will receive additional notification when we get ready to commence closure.

Soil Map—Rio Arriba Area, New Mexico, Parts of Rio Arriba and Sandoval Counties
(McElvain-L Miller A No. 1E)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features
- Gully
- Short Steep Slope
- Other

Political Features
- Cities
- PLSS Township and Range
- PLSS Section

Water Features
- Oceans
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:4,740 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 13N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Rio Arriba Area, New Mexico, Parts of Rio Arriba and Sandoval Counties
Survey Area Data: Version 8, Nov 12, 2008

Date(s) aerial images were photographed: 10/13/1997

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Rio Arriba Area, New Mexico, Parts of Rio Arriba and Sandoval Counties (NM650)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
9	Pinavetes-Florita complex, 2 to 10 percent slopes	34.8	36.3%
10	Sparank-San Mateo silt loams, saline, sodic, 0 to 3 percent slopes	28.9	30.2%
110	Vessilla-Menefee-Orlie complex, 1 to 30 percent slopes	30.7	32.0%
220	Rock outcrop-Vessilla-Menefee complex, 15 to 45 percent slopes	1.4	1.5%
Totals for Area of Interest		**95.9**	**100.0%**

Component Legend

This report presents general information about the map units and map unit components in the selected area. It shows map unit symbols and names and the components in each map unit. It also shows the percent of the components in the map units, the kind of component, and the slope range of each component.

Report—Component Legend

Component Legend– Rio Arriba Area, New Mexico, Parts of Rio Arriba and Sandoval Counties						
Map unit symbol and name	Pct. of map unit	Component name	Component kind	Pct. slope		
				Low	RV	High
9—Pinavetes-Florita complex, 2 to 10 percent slopes						
	50	Pinavetes	Series	2	6	10
	40	Florita	Series	2	4	6
10—Sparank-San Mateo silt loams, saline, sodic, 0 to 3 percent slopes						
	55	Sparank	Series	0	2	3
	30	San mateo	Series	0	2	3
110—Vessilla-Menefee-Orlie complex, 1 to 30 percent slopes						
	45	Vessilla	Series	1	16	30
	25	Menefee	Series	2	16	30
	20	Orlie	Series	1	5	8
220—Rock outcrop-Vessilla-Menefee complex, 15 to 45 percent slopes						
	40	Rock outcrop	Miscellaneous area			
	30	Vessilla	Series	15	30	45
	20	Menefee	Series	15	30	45

Data Source Information

Soil Survey Area: Rio Arriba Area, New Mexico, Parts of Rio Arriba and Sandoval Counties
Survey Area Data: Version 8, Nov 12, 2008

Map Unit Description

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. All the soils of a series have major horizons that are similar in composition, thickness, and arrangement. Soils of a given series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Additional information about the map units described in this report is available in other soil reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the soil reports define some of the properties included in the map unit descriptions.

Report—Map Unit Description

Rio Arriba Area, New Mexico, Parts of Rio Arriba and Sandoval Counties

9—Pinavetes-Florita complex, 2 to 10 percent slopes

Map Unit Setting

Elevation: 6,000 to 6,900 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 48 to 50 degrees F
Frost-free period: 120 to 140 days

Map Unit Composition

Pinavetes and similar soils: 50 percent

Florita and similar soils: 40 percent

Description of Pinavetes

Setting

Landform: Dunes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Eolian deposits derived from sandstone

Properties and qualities

Slope: 2 to 10 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water capacity: Low (about 3.6 inches)

Interpretive groups

Land capability (nonirrigated): 6e
Ecological site: Sandy (R036XB011NM)

Typical profile

0 to 3 inches: Loamy sand
3 to 60 inches: Loamy sand

Description of Florita

Setting

Landform: Hills
Landform position (two-dimensional): Toeslope, backslope, footslope, shoulder
Landform position (three-dimensional): Nose slope, side slope, head slope, crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Eolian deposits over slope alluvium derived from sandstone

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 12.0
Available water capacity: Moderate (about 7.0 inches)

Interpretive groups

Land capability (nonirrigated): 6c
Ecological site: Gravelly Loamy (R036XB006NM)

Typical profile

0 to 2 inches: Sandy loam
2 to 6 inches: Sandy loam
6 to 24 inches: Coarse sandy loam
24 to 60 inches: Sandy loam

10—Sparank-San Mateo silt loams, saline, sodic, 0 to 3 percent slopes

Map Unit Setting

Elevation: 6,000 to 6,900 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 48 to 50 degrees F
Frost-free period: 120 to 140 days

Map Unit Composition

Sparank and similar soils: 55 percent
San mateo and similar soils: 30 percent

Description of Sparank

Setting

Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Stream alluvium derived from sandstone and shale

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Very slightly saline to slightly saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 30.0
Available water capacity: Moderate (about 6.6 inches)

Interpretive groups

Land capability (nonirrigated): 7s
Ecological site: Salty Bottomland (R036XB010NM)

Typical profile

0 to 2 inches: Silt loam
2 to 60 inches: Clay

Description of San Mateo

Setting

Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Stream alluvium derived from sandstone and shale

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Very slightly saline to slightly saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 30.0
Available water capacity: High (about 9.1 inches)

Interpretive groups

Land capability (nonirrigated): 6e
Ecological site: Salty Bottomland (R036XB010NM)

Typical profile

0 to 2 inches: Silt loam
2 to 60 inches: Stratified sandy loam to clay loam

110—Vessilla-Menefee-Orlie complex, 1 to 30 percent slopes

Map Unit Setting

Elevation: 6,100 to 7,200 feet
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 100 to 130 days

Map Unit Composition

Vessilla and similar soils: 45 percent
Menefee and similar soils: 25 percent
Orlie and similar soils: 20 percent

Description of Vessilla

Setting

Landform: Breaks
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Nose slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Slope alluvium over residuum weathered from sandstone

Properties and qualities

Slope: 1 to 30 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 5.0
Available water capacity: Very low (about 2.1 inches)

Interpretive groups

Land capability (nonirrigated): 7s
Ecological site: Pinus edulis-Juniperus monosperma/Quercus gambelii/Bouteloua gracilis (F035XG134NM)

Typical profile

0 to 1 inches: Sandy loam
1 to 15 inches: Sandy loam
15 to 60 inches: Bedrock

Description of Menefee

Setting

Landform: Breaks
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Colluvium over residuum weathered from shale

Properties and qualities

Slope: 2 to 30 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water capacity: Very low (about 2.0 inches)

Interpretive groups

Land capability (nonirrigated): 7e
Ecological site: Pinus edulis-Juniperus monosperma/Quercus gambelii/Bouteloua gracilis (F035XG134NM)

Typical profile

0 to 3 inches: Clay loam
3 to 10 inches: Clay loam
10 to 60 inches: Bedrock

Description of Orlie

Setting

Landform: Mesas
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Slope alluvium derived from sandstone and shale

Properties and qualities

Slope: 1 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)
Available water capacity: High (about 11.1 inches)

Interpretive groups

Land capability (nonirrigated): 6c
Ecological site: Gravelly Loamy (R036XB006NM)

Typical profile

0 to 4 inches: Silt loam
4 to 14 inches: Clay loam
14 to 60 inches: Clay loam

220—Rock outcrop-Vessilla-Menefee complex, 15 to 45 percent slopes

Map Unit Setting

Elevation: 6,100 to 7,200 feet
Mean annual precipitation: 13 to 16 inches

Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 100 to 130 days

Map Unit Composition
Rock outcrop: 40 percent
Vessilla and similar soils: 30 percent
Menefee and similar soils: 20 percent

Description of Rock Outcrop

Properties and qualities
Depth to restrictive feature: 0 inches to lithic bedrock
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)

Typical profile
0 to 60 inches: Bedrock

Description of Vessilla

Setting
Landform: Breaks
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium over residuum weathered from sandstone

Properties and qualities
Slope: 15 to 45 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water capacity: Very low (about 1.3 inches)

Interpretive groups
Land capability (nonirrigated): 7e
Ecological site: Pinus edulis-Juniperus monosperma/Quercus gambelii/Bouteloua gracilis (F035XG134NM)

Typical profile
0 to 2 inches: Sandy loam
2 to 10 inches: Sandy loam
10 to 60 inches: Bedrock

Description of Menefee

Setting

Landform: Breaks
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium over residuum weathered from shale

Properties and qualities

Slope: 15 to 45 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 5.0
Available water capacity: Very low (about 2.0 inches)

Interpretive groups

Land capability (nonirrigated): 7e
Ecological site: Pinus edulis-Juniperus monosperma/Quercus gambelii/Bouteloua gracilis (F035XG134NM)

Typical profile

0 to 1 inches: Clay loam
1 to 10 inches: Clay loam
10 to 60 inches: Bedrock

Data Source Information

Soil Survey Area: Rio Arriba Area, New Mexico, Parts of Rio Arriba and Sandoval Counties
Survey Area Data: Version 8, Nov 12, 2008

New Mexico Office of the State Engineer
POD Reports and Downloads

Township: 24N Range: 06W Sections: 7

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) Non-Domestic Domestic All

POD/Surface Data Report | Avg Depth to Water Report | Water Column Report

Clear Form | iWATERS Menu | Help

AVERAGE DEPTH OF WATER REPORT 09/19/2008

Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	(Depth Water in Feet) Min	Max	Avg

No Records found, try again

New Mexico Office of the State Engineer
POD Reports and Downloads

Township: 24N Range: 06W Sections: 7

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) Non-Domestic Domestic All

POD / Surface Data Report | Avg Depth to Water Report | Water Column Report

Clear Form | iWATERS Menu | Help

POD / SURFACE DATA REPORT 09/19/2008

DB File Nbr	Use	(acre ft per annum) Diversion	Owner	POD Number	(qua (qua
SJ 00681 16	STK	24.195	HOMER C. BERRY	SJ 00681 16	

Record Count: 1

New Mexico Office of the State Engineer
Point of Diversion Summary

Back

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are biggest to smallest)

POD Number	Tws	Rng	Sec	q	q	q	Zone	UTM X	Y
SJ 00681 16	24N	06W	07	3	4	4	13	274606	4022441

Driller Licence:
Driller Name:
Drill Start Date:
Log File Date:
Pump Type:
Casing Size:
Depth Well:
Source:
Drill Finish Date:
PCW Received Date:
Pipe Discharge Size:
Estimated Yield:
Depth Water:

New Mexico Office of the State Engineer
POD Reports and Downloads

Township: 24N Range: 06W Sections: 18

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) Non-Domestic Domestic All

POD / Surface Data Report | Avg Depth to Water Report | Water Column Report

Clear Form | iWATERS Menu | Help

AVERAGE DEPTH OF WATER REPORT 09/19/2008

Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	(Depth Water in Feet) Min	Max	Avg

No Records found, try again

New Mexico Office of the State Engineer
POD Reports and Downloads

Township: 24N Range: 06W Sections: 18

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) Non-Domestic Domestic All

POD / Surface Data Report | Avg Depth to Water Report | Water Column Report

Clear Form | iWATERS Menu | Help

POD / SURFACE DATA REPORT 09/19/2008

DB File Nbr	Use	(acre ft per annum) Diversion	Owner	POD Number	(qua (qua
SJ 00681 4	STK	9.678	HOMER C. BERRY	SJ 00681 4	

Record Count: 1

New Mexico Office of the State Engineer
Point of Diversion Summary

Back

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are biggest to smallest)

POD Number	Tws	Rng	Sec	q	q	q	Zone	UTM X E	UTM X N
SJ 00681 4	24N	06W	18	3	1	3	13	273955	4021213

Driller Licence:
Driller Name:
Drill Start Date:
Log File Date:
Pump Type:
Casing Size:
Depth Well:

Source:
Drill Finish Date:
PCW Received Date:
Pipe Discharge Size:
Estimated Yield: 6gpm
Depth Water:

stock water

New Mexico Office of the State Engineer
POD Reports and Downloads

Township: 24N Range: 06W Sections: 19

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) Non-Domestic Domestic All

POD / Surface Data Report | Avg Depth to Water Report | Water Column Report

Clear Form | iWATERS Menu | Help

AVERAGE DEPTH OF WATER REPORT 09/19/2008

Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	(Depth Water in Feet) Min	Max	Avg

No Records found, try again

New Mexico Office of the State Engineer
POD Reports and Downloads

Township: 24N Range: 07W Sections: 11

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) Non-Domestic Domestic All

POD/Surface Data Report | Avg Depth to Water Report | Water Column Report

Clear Form | iWATERS Menu | Help

AVERAGE DEPTH OF WATER REPORT 09/19/2008

Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	(Depth Water in Feet) Min	Max	Avg

No Records found, try again

New Mexico Office of the State Engineer
POD Reports and Downloads

Township: 24N Range: 07W Sections: 12

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) Non-Domestic Domestic All

POD / Surface Data Report | Avg Depth to Water Report | Water Column Report

Clear Form | iWATERS Menu | Help

AVERAGE DEPTH OF WATER REPORT 09/19/2008

Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	(Depth Water in Feet) Min	Max	Avg

No Records found, try again

New Mexico Office of the State Engineer
POD Reports and Downloads

Township: 24N Range: 07W Sections: 13

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) Non-Domestic Domestic All

POD / Surface Data Report | Avg Depth to Water Report | Water Column Report

Clear Form | iWATERS Menu | Help

AVERAGE DEPTH OF WATER REPORT 09/19/2008

Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	(Depth Water in Feet) Min	Max	Avg

No Records found, try again

New Mexico Office of the State Engineer
POD Reports and Downloads

Township: 24N Range: 07W Sections: 14

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) Non-Domestic Domestic All

POD / Surface Data Report | Avg Depth to Water Report | Water Column Report

Clear Form | iWATERS Menu | Help

AVERAGE DEPTH OF WATER REPORT 09/19/2008

Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	(Depth Water in Feet) Min	Max	Avg

No Records found, try again

New Mexico Office of the State Engineer
POD Reports and Downloads

Township: 24N Range: 07W Sections: 23

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) Non-Domestic Domestic All

POD / Surface Data Report | Avg Depth to Water Report | Water Column Report

Clear Form | iWATERS Menu | Help

AVERAGE DEPTH OF WATER REPORT 09/19/2008

Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	(Depth Water in Feet) Min	Max	Avg

No Records found, try again

New Mexico Office of the State Engineer
POD Reports and Downloads

Township: 24N Range: 07W Sections: 24

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) Non-Domestic Domestic All

POD / Surface Data Report | Avg Depth to Water Report | Water Column Report

Clear Form | iWATERS Menu | Help

AVERAGE DEPTH OF WATER REPORT 09/19/2008

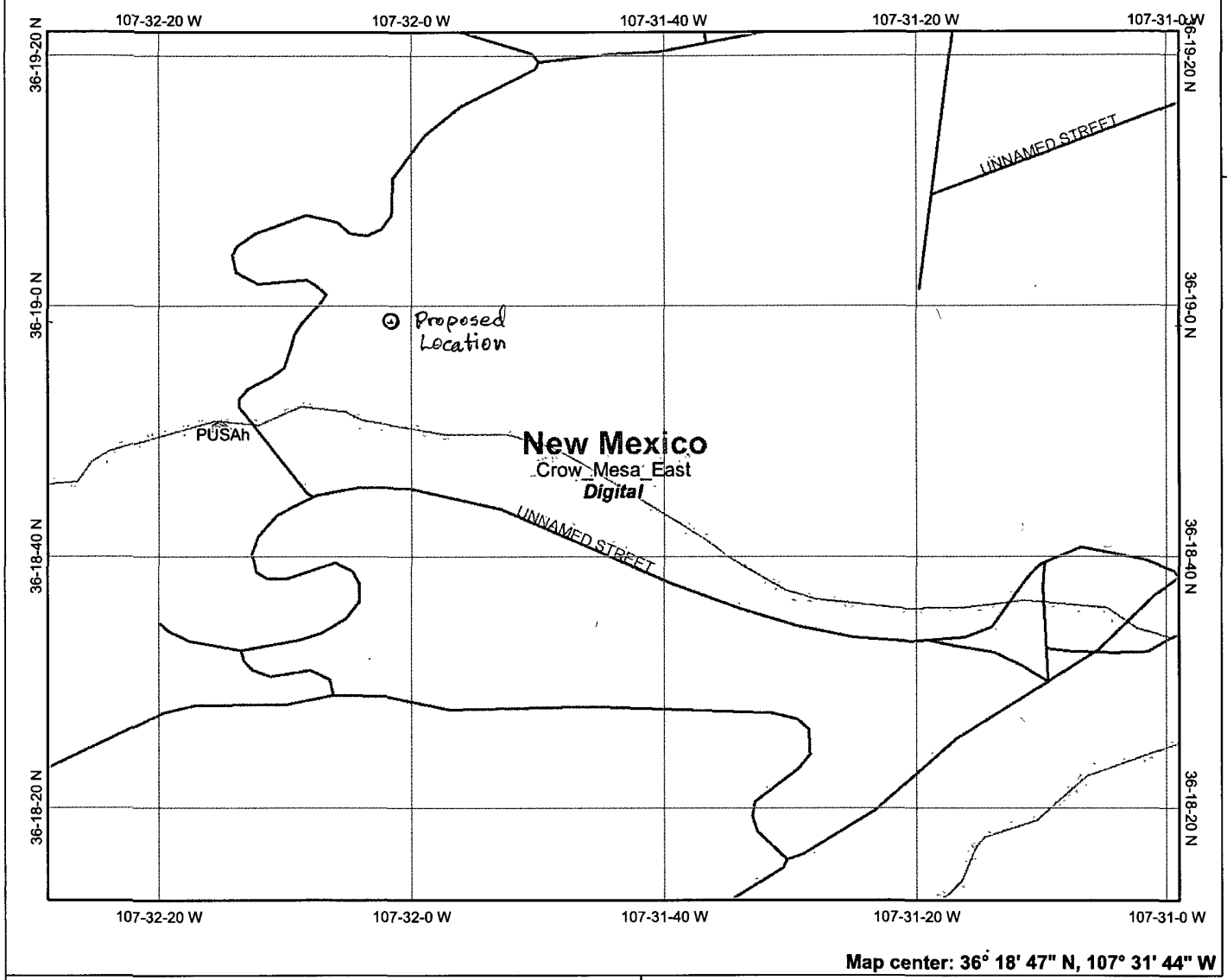
Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	(Depth Water in Feet) Min	Max	Avg

No Records found, try again

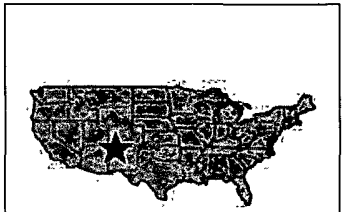
Location	Latitude-Longitude	Number or name	Depth (feet)	Altitude (feet)	Depth to Water (feet)	Date	Producing interval (feet)	Principal water-bearing unit(s)	Specific conductance (umhos at 25 C)
..05.32.1241	361625 1072305	-	-	6,550	-	-	-	Tsj(?)	1,550
.05.36.3422	361549 1071848	-	-	6,720	-	-	-	Qal(?)	1,100
.05.36.43	361838 1071543	Lincoln Velarde #1	198	6,720	-	-	-	Tsj	1,780 *
.06.04.3213	362040 1072813	H. C. Berry Spring	-	6,500	-	-	-	Tsj	353 *
.06.18.3312	361831 1073056	-	-	6,572	-	-	-	-	4,500
.06.25.1222	361728 1072509	-	-	6,520	-	-	-	Qal(?)	1,500
.07.27.112	361731 1073359	-	-	6,800	-	-	-	-	10,500
.07.36.2414	361622 1073116	-	-	6,691	-	-	-	-	7,800
.08.15.1122	361917 1074024	Crow Lake Windmill	-	6,900	73	05-05-75	-	Qal	940
.09.01.3	-	Magnolia	6,512	6,700	-	-	6,467-6,512	Kd	-
.09.01.3314	362016 1074450	19T-349, Magnolia	435	6,700	240	12- -64	300-320 360-410	Tn	1,300
.09.08.4134	361931 1074836	-	210M	6,691	-	-	-	Tn	2,310
.09.19	-	Otis T.P.	327	-	-	-	-	Tn	-
.09.19.3142	361751 1075003	Blancet	380ME	6,920	354.0 297.7	05-12-75 09-05-68	-	Tn	1,230
.09.27.124	361703 1074613	19R-296 Largo #1	527	6,835	494.6	09-04-68	498-518	TKoa	950
.10.09.3144	361928 1075416	BIA	500	6,930	450	-	-	TKoa	-
.10.12	-	B of C Mission	162	6,900E	45	04-28-51	-	Tn	-

Principal water-bearing unit(s)	Specific conductance (umhos at 25 C)	Date	Logs available	Reference	Drawdown (feet)	Discharge (gal/min)	Duration (hours)	Remarks
Tsj(?)	1,550	06-19-78	-	-	-	-	-	Sample from water in tank; source unknown.
Qal(?)	1,100	06-20-78	-	-	-	-	-	-
Tsj	1,780 **	02-02-76	-	-	-	-	-	2,500 gal capacity in 24 hours.
Tsj	353 *	05-11-77	-	-	-	-	-	Partial analysis.
-	4,500	07-17-78	-	-	-	-	-	-
Qal(?)	1,500	06-19-78	-	-	-	-	-	-
-	10,500	07-17-78	-	-	-	-	-	-
-	7,800	07-17-78	-	-	-	-	-	-
Qal	940	05-05-75	-	-	-	-	-	-
Kd	-	-	-	-	-	-	-	-
Tn	1,300	09-04-68	-	-	-	-	-	-
Tn	2,310	-	-	-	-	-	-	-
Tn	-	-	-	-	-	5	-	-
Tn	1,230	05-12-75	-	-	-	-	-	Windmill.
TKoa	950	09-04-68	-	-	-	12	1	-
TKoa	-	-	-	-	-	-	-	-

L Miller A No. 1E Wetlands



Map center: 36° 18' 47" N, 107° 31' 44" W



Legend

Ohio_wet_scan
- 0
- 1
- Out of range

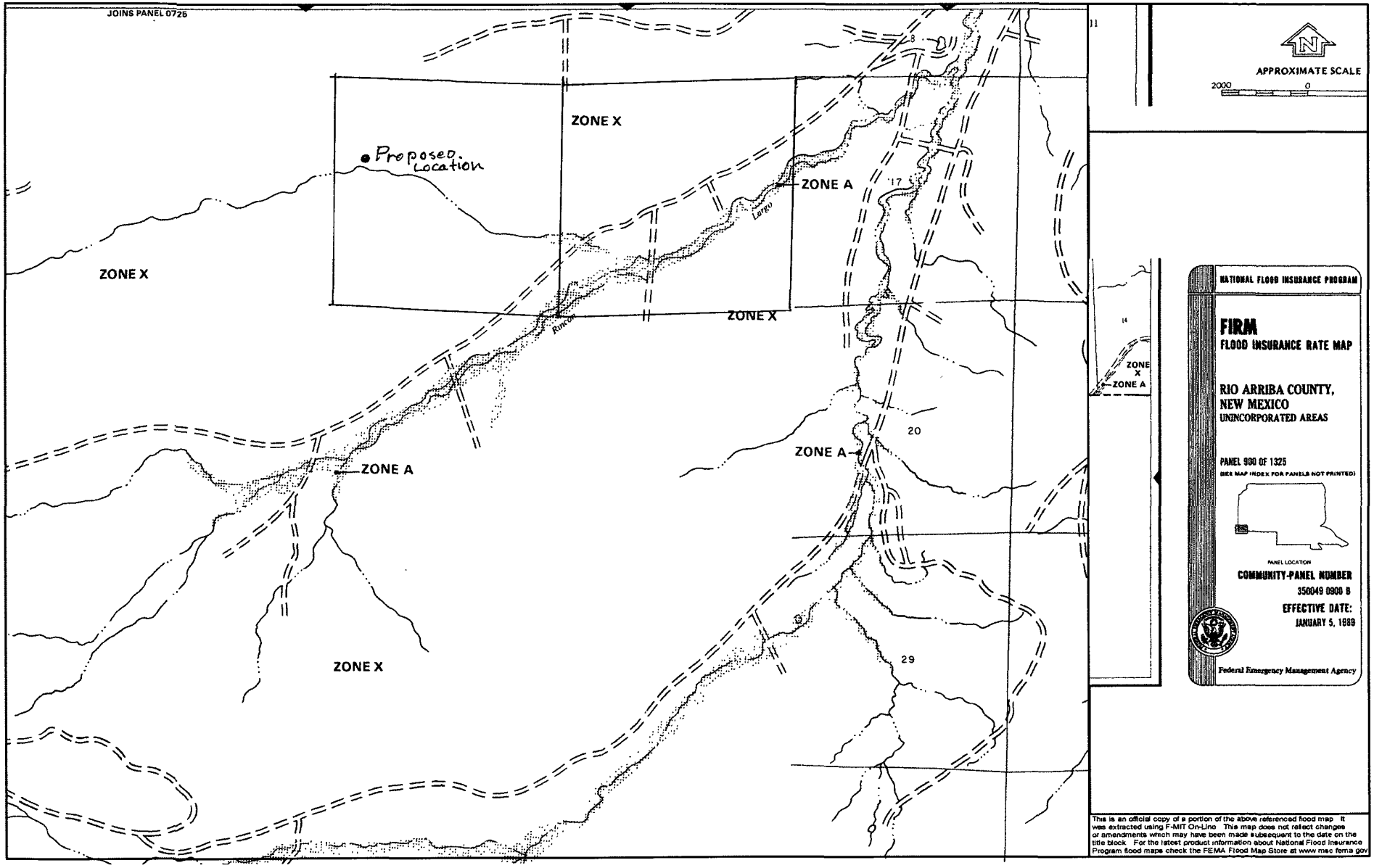
Interstate
Major Roads
- Other Road
- Interstate
- State highway
- US highway

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

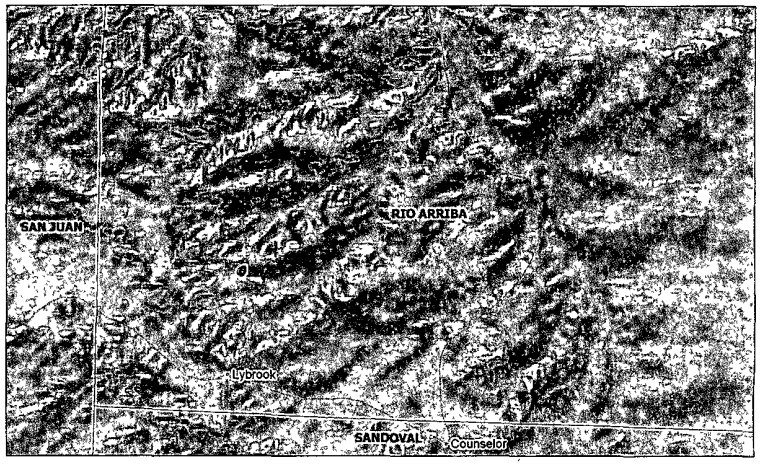
Scale: 1:14,989


JOINS PANEL 0725
ZONE X
Proposed Location
ZONE A
ZONE X
ZONE X
Rincon
Largo
ZONE A
ZONE A
ZONE X
17
20
29
11
14
ZONE X
ZONE A
APPROXIMATE SCALE
2000
0
NATIONAL FLOOD INSURANCE PROGRAM
FIRM
FLOOD INSURANCE RATE MAP
RIO ARRIBA COUNTY, NEW MEXICO
UNINCORPORATED AREAS
PANEL 980 OF 1325
(SEE MAP INDEX FOR PANELS NOT PRINTED)
PANEL LOCATION
COMMUNITY-PANEL NUMBER
350049 0908 B
EFFECTIVE DATE:
JANUARY 5, 1989
Federal Emergency Management Agency
This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

MMQonline Public Version

Mines, Mills & Quarries Commodity Groups

- **Aggregate & Stone Mines**
- **Coal Mines**
- **Industrial Minerals Mines**
- **Industrial Minerals Mills**
- **Metal Mines and Mill Concentrate**
- **Potash Mines & Refineries**
- **Smelters & Refinery Ops.**
- **Uranium Mines**



SCALE 1 : 311,878

5 0 5 10 15

MILES

N