

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  
June 24, 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.

3927

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

Type of action: ☒ Permit of a pit, closed-loop system, below-grade tank, or proposed alternative method  
☐ Closure of a pit, closed-loop system, below-grade tank, or proposed alternative method

**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.

Operator: High Plains Operating Company, LLC OGRID #: 246238  
Address: 32700 Aspen Drive, Buena Vista Colorado 81211  
Facility or well name: Ojo Encino 21 Federal #1H  
API Number: 30-031-21107 OCD Permit Number: \_\_\_\_\_  
U/L or Qtr/Qtr K (NE/SW) Section 21 Township 20N Range 5W County: Sandoval  
Center of Proposed Design: Latitude 35.94915 deg N Longitude 107.37139 deg W NAD: ☐ 1927 ☒ 1983  
Surface Owner: ☒ Federal ☐ State ☐ Private ☐ Tribal Trust or Indian Allotment

☒ **Pit:** Subsection F or G of 19.15.17.11 NMAC

Temporary: ☒ Drilling ☐ Workover  
☐ Permanent ☐ Emergency ☐ Cavitation ☐ Steel Pit  
☒ Lined ☐ Unlined  
Liner type: Thickness 20 mil ☒ LLDPE ☐ HDPE ☐ PVC  
☐ Other \_\_\_\_\_ ☒ String-Reinforced  
Seams: ☒ Welded ☒ Factory ☐ Other \_\_\_\_\_  
Volume: 9,260 bbl Dimensions: L 130' x W 40' x D 10'

☒ **Closed-loop System:** Subsection H of 19.15.17.11 NMAC

☐ Drying Pad ☒ Tanks ☐ Haul-off Bins ☐ Other \_\_\_\_\_  
☐ Lined ☐ Unlined  
Liner type: Thickness \_\_\_\_\_ mil ☐ LLDPE ☐ HDPE ☐ PVC  
☐ Other \_\_\_\_\_  
Seams: ☐ Welded ☐ Factory ☐ Other \_\_\_\_\_  
Volume: 527 bbl 110 yd<sup>3</sup>  
Dimensions: Length 74 ft x Width 8 ft x Height 5 ft

☐ **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 \_\_\_\_\_

**Fencing:** Subsection D of 19.15.17.11 NMAC

☐ Chain link, six feet in height, two strands of barbed wire at top  
☒ Four foot height, four strands of barbed wire evenly spaced between one and four feet

**Netting:** Subsection E of 19.15.17.11 NMAC

☐ Screen ☐ Netting ☐ Other \_\_\_\_\_  
☐ Monthly inspections

**Signs:** Subsection C of 19.15.17.11 NMAC

☐ 12'x24', 2' lettering, providing Operator's name, site location, and emergency telephone numbers  
☒ Signed in compliance with 19.15.3.103 NMAC



☐ **Alternative Method:**

Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

**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.

**Siting Criteria (regarding permitting):** 19.15.17.10 NMAC

**Instructions:** The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or above-grade tanks associated with a closed-loop system.

Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank.

- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells

☐ Yes ☒ No

Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).

- Topographic map; Visual inspection (certification) of the proposed site

☐ Yes ☒ No

Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.

(Applies to temporary, emergency, or cavitation pits and below-grade tanks)

- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image

☐ Yes ☒ No  
☐ NA

Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.

(Applies to permanent pits)

- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image

☐ Yes ☐ No  
☒ NA

Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application.

- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site

☐ Yes ☒ No

Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended.

- Written confirmation or verification from the municipality; Written approval obtained from the municipality

☐ Yes ☒ No

Within 500 feet of a wetland.

- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site

☐ Yes ☒ No

Within the area overlying a subsurface mine.

- Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division

☐ Yes ☒ No

Within an unstable area.

- Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map

☐ Yes ☒ No

Within a 100-year floodplain.

- FEMA map

☐ Yes ☒ No

**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 - 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 (required for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19.15.17.9
- ☐ Siting Criteria Compliance Demonstrations (required 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 - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

NMAC

☐ Previously Approved Design (attach copy of design) API Number: \_\_\_\_\_

**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<sub>2</sub>S, 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

**Proposed Closure:** 19.15.17.13 NMAC

Type: ☒ Drilling ☐ Workover ☐ Emergency ☐ Cavitation ☐ Permanent Pit ☐ Below-grade Tank ☒ Closed-loop System ☐ Alternative

Proposed Closure Method: ☐ Waste Excavation and Removal  
☒ Waste Removal (Closed-loop systems only)  
☒ On-site Closure Method (Only for temporary pits and closed-loop systems)  
☒ In-place Burial ☐ On-site Trench Burial  
☐ Alternative Closure Method (Exceptions must be submitted to the Santa Fe Environmental Bureau for consideration)

**Siting Criteria (regarding on-site closure methods only):** 19.15.17.10 NMAC

**Instructions:** Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC for guidance.

Ground water is less than 50 feet below the bottom of the buried waste.

- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells

☐ Yes ☒ No  
☐ NA

Ground water is between 50 and 100 feet below the bottom of the buried waste

- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells

☐ Yes ☒ No  
☐ NA

Ground water is more than 100 feet below the bottom of the buried waste.

- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells

☒ Yes ☐ No  
☐ NA

Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).

- Topographic map; Visual inspection (certification) of the proposed site

☐ Yes ☒ No

Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.

- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image

☐ Yes ☒ No

Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application.

- NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site

☐ Yes ☒ No

Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended.

- Written confirmation or verification from the municipality; Written approval obtained from the municipality

☐ Yes ☒ No

Within 500 feet of a wetland.

- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site

☐ Yes ☒ No

Within the area overlying a subsurface mine.

- Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division

☐ Yes ☒ No

Within an unstable area.

- Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map

☐ Yes ☒ No

Within a 100-year floodplain.

- FEMA map

☐ Yes ☒ No

**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 Haul-off Bins Only:** (19.15.17.13.D NMAC) **Instructions:** Please identify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings.

Disposal Facility Name: \_\_\_\_\_ Disposal Facility Permit Number: \_\_\_\_\_

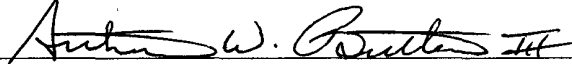
**On-Site Closure Plan Checklist:** (19.15.17.13 NMAC) **Instructions:** Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.

- ☒ 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 and Design of Burial Trench (if applicable) based upon the appropriate requirements of 19.15.17.11 NMAC
- ☒ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
- ☒ Waste Material Sampling Plan - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
- ☒ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot be achieved)
- ☒ Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☒ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC
- ☒ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

**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): Arthur W. Butler III Title: Manager

Signature:  Date: August 3, 2009

e-mail address: bbutler@highplainsop.com Telephone: 719-395-8059 (Office); 719-207-0164 (Cell)

**OCD Approval:** ☒ Permit Application (including closure plan) ☐ Closure Plan (only)

OCD Representative Signature:  Approval Date: 9-10-09

Title: Enviro Spec OCD Permit Number: \_\_\_\_\_

**Closure Report (required within 60 days of closure completion):** Subsection K of 19.15.17.13 NMAC

☐ Closure Completion Date: \_\_\_\_\_

**Closure Method:**

- ☐ Waste Excavation and Removal ☐ On-Site Closure Method ☐ Alternative Closure Method  
☐ If different from approved plan, please explain.

**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  
☐ Proof of Deed Notice (if applicable)  
☐ Plot Plan  
☐ Confirmation Sampling Analytical Results  
☐ Waste Material Sampling Analytical Results  
☐ 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

**Operator Closure Certification:**

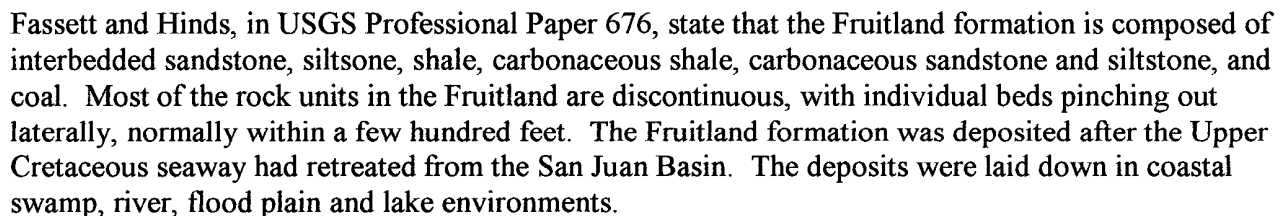
I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.

Name (Print): \_\_\_\_\_ Title: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

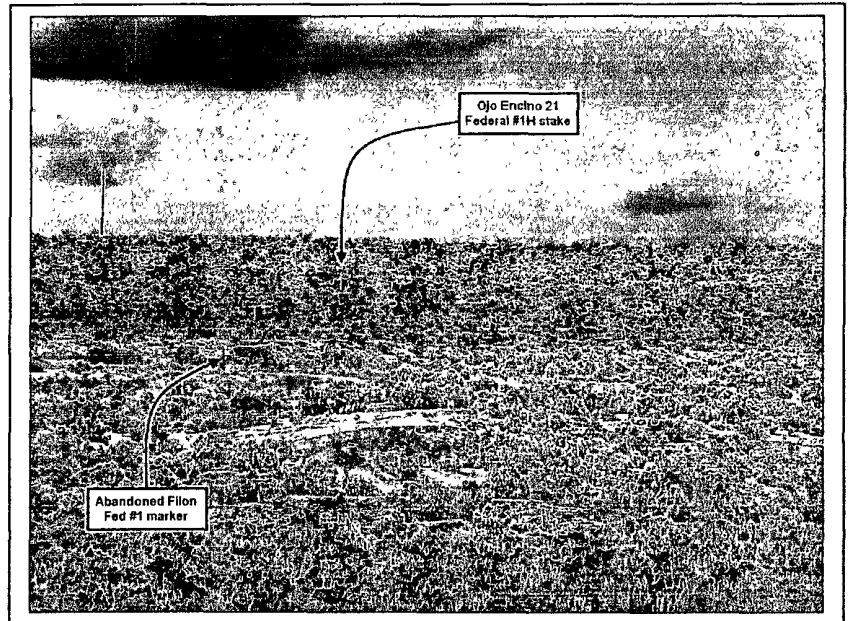
e-mail address: \_\_\_\_\_ Telephone: \_\_\_\_\_

The Ojo Encino property lies on the gently dipping South Chaco Slope of the San Juan Basin. Cretaceous (Campanian) aged sediments of the Kirtland and Fruitland Formations outcrop at the surface, where exposed. See the yellow band in the geologic map below.



The overall thickness of the Fruitland and Kirtland shale formation ranges from about 190 feet to 290 in the area of the Eagle Springs property. The Cretaceous Pictured Cliffs Sandstone underlies the Fruitland formation.

The area of the Ojo Encino 21 Federal #1H location lies on the south flank of a broad, gentle topographic high. A photo of the well stake with a view to the north is at right. There are no formation outcrops, no fresh water wells and no live streams in the immediate project vicinity. There is an intermittent wash and old tank about 1,000' south of the location. See the NM Office of the State Engineer's POD reports and aerial and topo maps in the next section of this report for further details. Due to this paucity of information concerning fresh water resources, it is difficult to determine solid, hydrogeologic data regarding water resources for this location.



#### **References:**

Fassett, J.E., and Hinds, J.S., 1971, Geology and Fuel Resources of the Fruitland Formation and Kirtland Shale of the San Juan Basin, New Mexico and Colorado: Geological Survey Professional Paper 676, 76 pgs and 3 plates

## **Temporary Pit Siting Criteria Compliance Demonstrations for Ojo Encino 21 Federal #1H**

An exhaustive search of the water records on the New Mexico Office of the State Engineer's Web site using multiple criteria indicates no fresh water wells or "Points of Diversion" in the project area. See search results on this and following pages. All searches were conducted on August 3, 2009.



### **New Mexico Office of the State Engineer Point of Diversion by Location (with Drilling Information)**

No PODs found

UTMNA83 Radius Search (in meters):

**Easting (X):** 286128

**Northing (Y):** 3980928

**Radius:** 2000

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability or suitability for any particular purpose of the data.

8/3/09 2:13 PM

Page 1 of 1

POINT OF DIVERSION BY LOCATION





## *New Mexico Office of the State Engineer* **Water Column/Average Depth to Water**

No records found.

**Basin/County Search:**

**Basin:** San Juan

**County:** McKinley

**UTMNAD83 Radius Search (in meters):**

**Easting (X):** 286128

**Northing (Y):** 3980928

**Radius:** 2000



## *New Mexico Office of the State Engineer* **Water Column/Average Depth to Water**

No records found.

**Basin/County Search:**

**Basin:** San Juan

**County:** McKinley

**PLSS Search:**

**Section(s):** 15-17

**Township:** 20N

**Range:** 05W



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## New Mexico Office of the State Engineer Water Column/Average Depth to Water

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No records found.

**Basin/County Search:**

**Basin:** San Juan

**County:** McKinley

**PLSS Search:**

**Section(s):** 20-22

**Township:** 20N

**Range:** 05W



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## New Mexico Office of the State Engineer Water Column/Average Depth to Water

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No records found.

**Basin/County Search:**

**Basin:** San Juan

**County:** McKinley

**PLSS Search:**

**Section(s):** 27-29

**Township:** 20N

**Range:** 05W



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## New Mexico Office of the State Engineer Wells with Well Log Information

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No wells found

Basin/County Search:

**Basin:** San Juan

**County:** McKinley

UTMAD83 Radius Search (in meters):

**Easting (X):** 286128

**Northing (Y):** 3980928

**Radius:** 2000



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## New Mexico Office of the State Engineer Point of Diversion with Meter Attached

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No PODs found.

Basin/County Search:

**Basin:** San Juan

**County:** McKinley

UTMAD83 Radius Search (in meters):

**Easting (X):** 286128

**Northing (Y):** 3980928

**Radius:** 2000



# *New Mexico Office of the State Engineer* **Wells Without Well Log Information**

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No wells found.

**Basin/County Search:**

**Basin:** San Juan

**County:** McKinley

**UTMNAD83 Radius Search (in meters):**

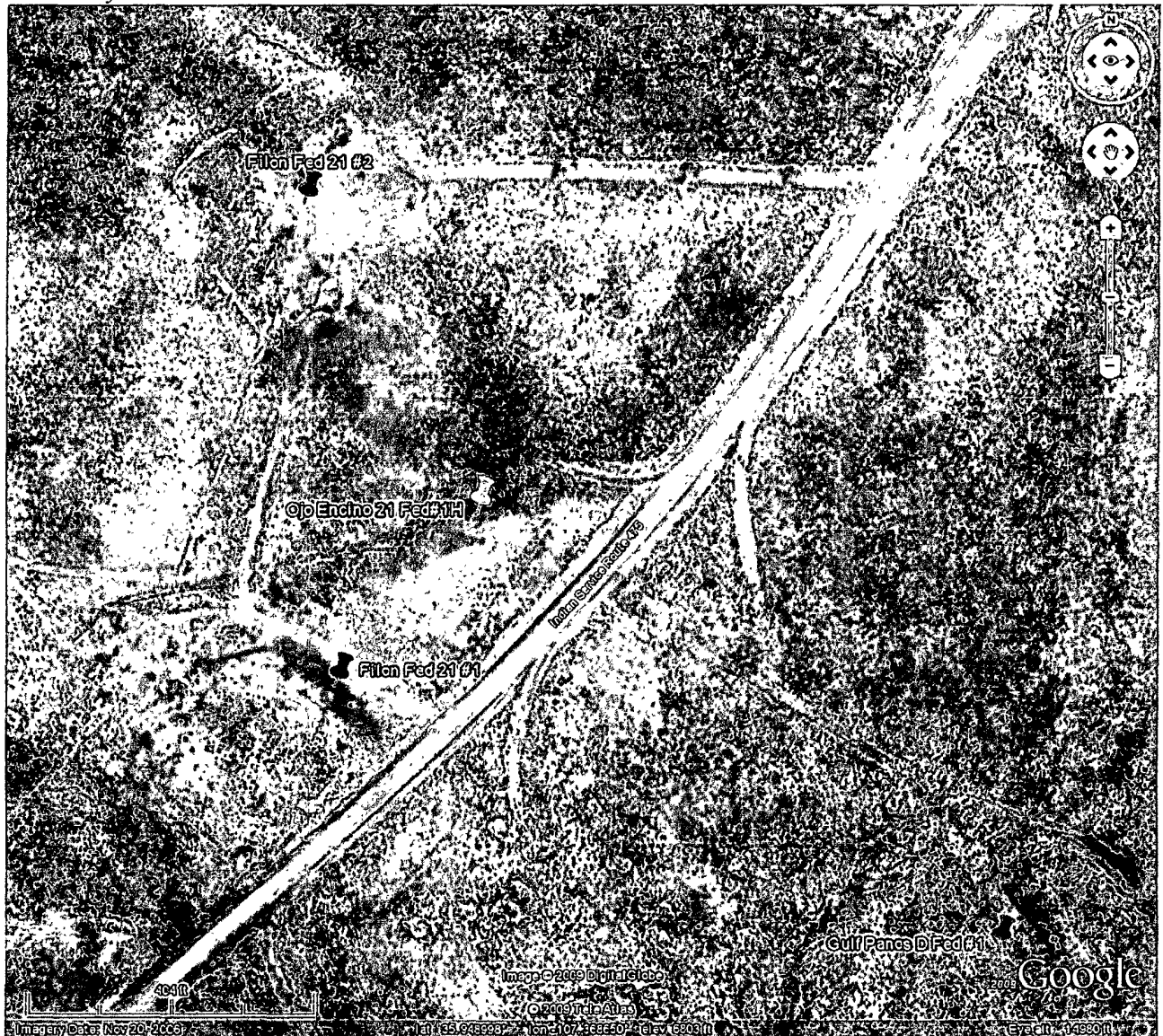
**Easting (X):** 286128

**Northing (Y):** 3980928

**Radius:** 2000

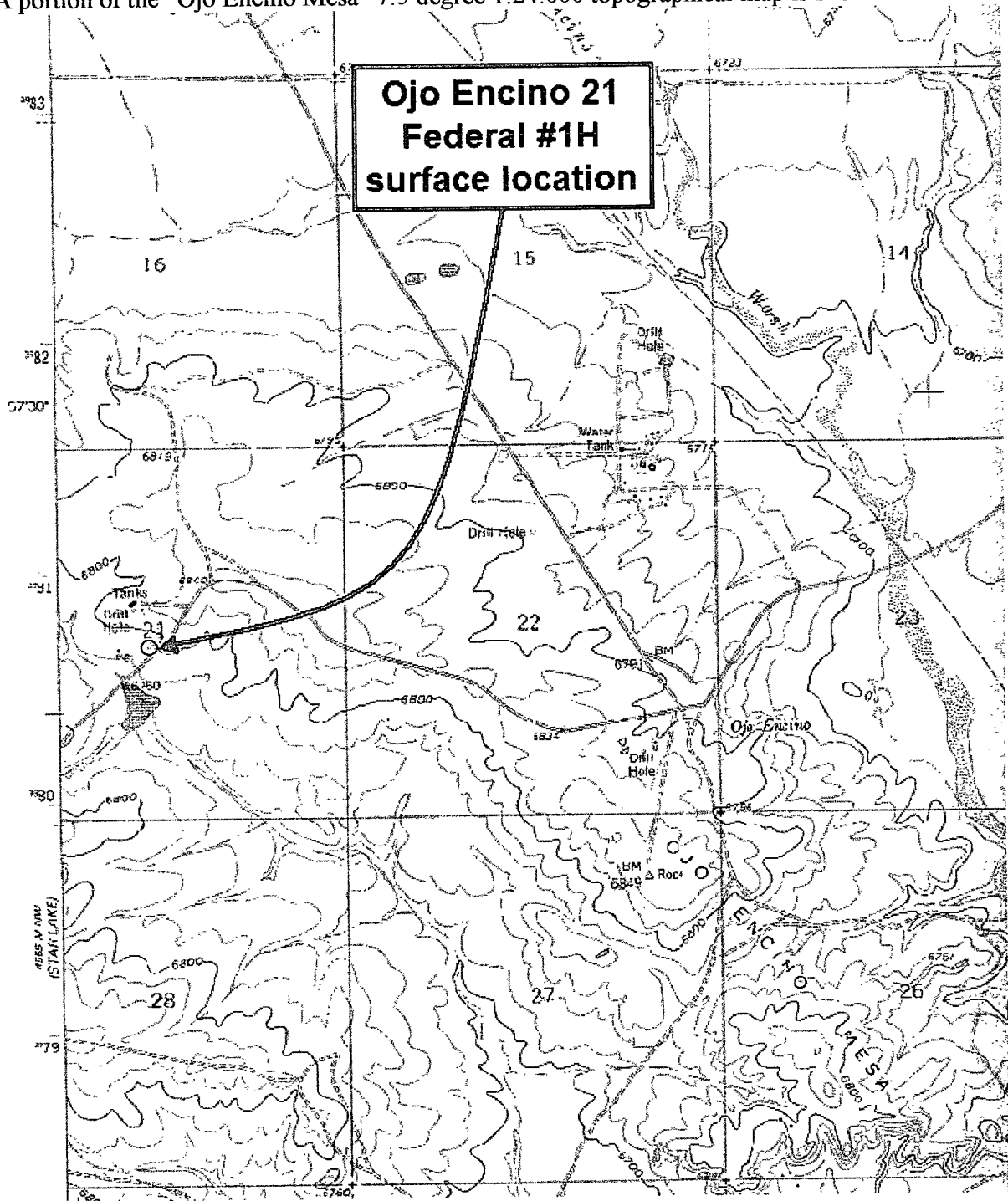
## Aerial Photo

This project is a directionally drilled redevelopment of the now abandoned Ojo Encino Entrada Field. The aerial photo below shows the HPOC Ojo Encino 21 Federal #1H surface location in yellow. The locations of the two Filon wells that produced in the field are shown in purple, as well as the Gulf Panos dry hole to the southeast.

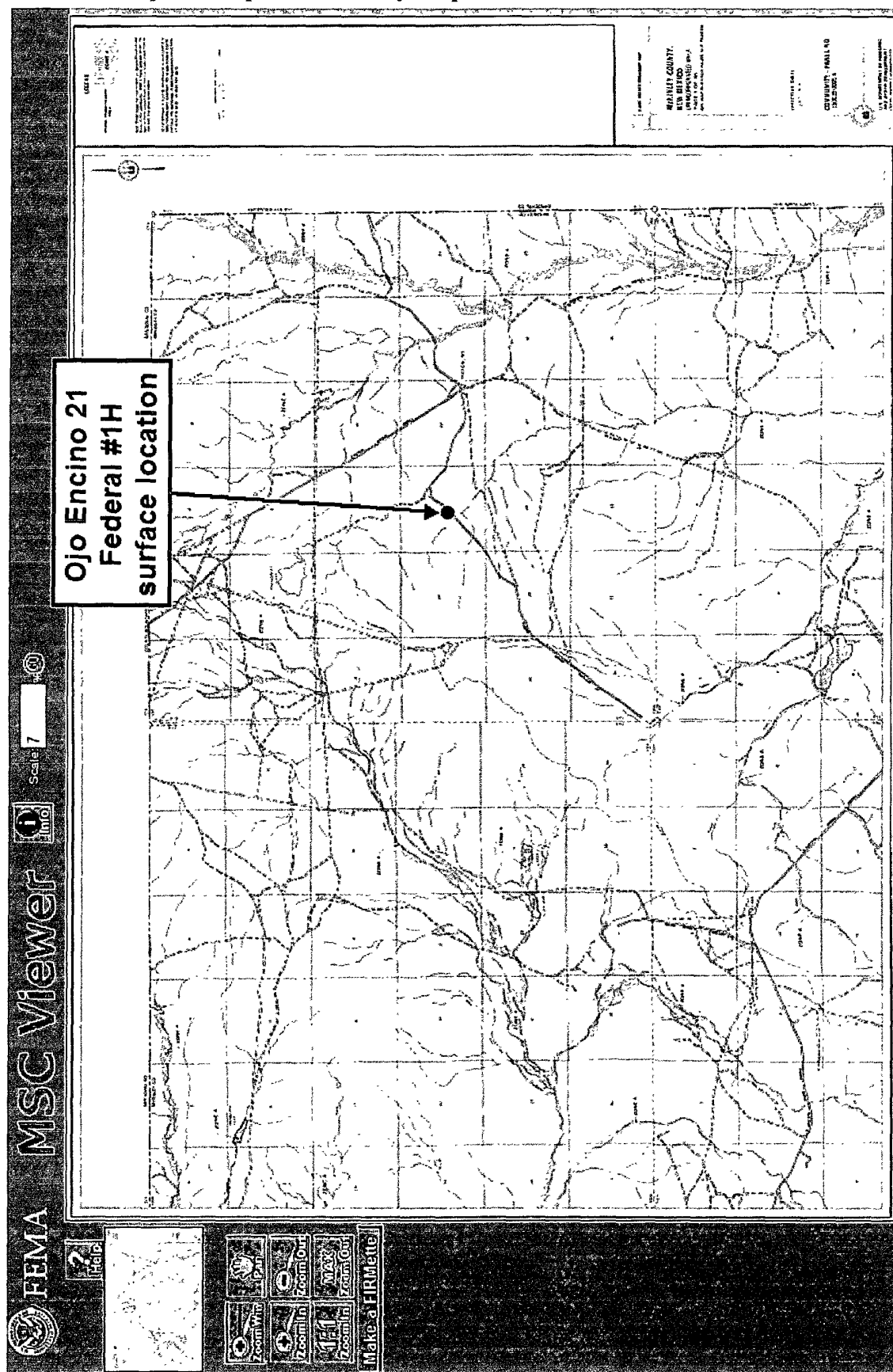


## Topo Map

A portion of the "Ojo Encino Mesa" 7.5 degree 1:24,000 topographical map is shown below.



FEMA Floodplain Map—Community Map # 350039 0005A



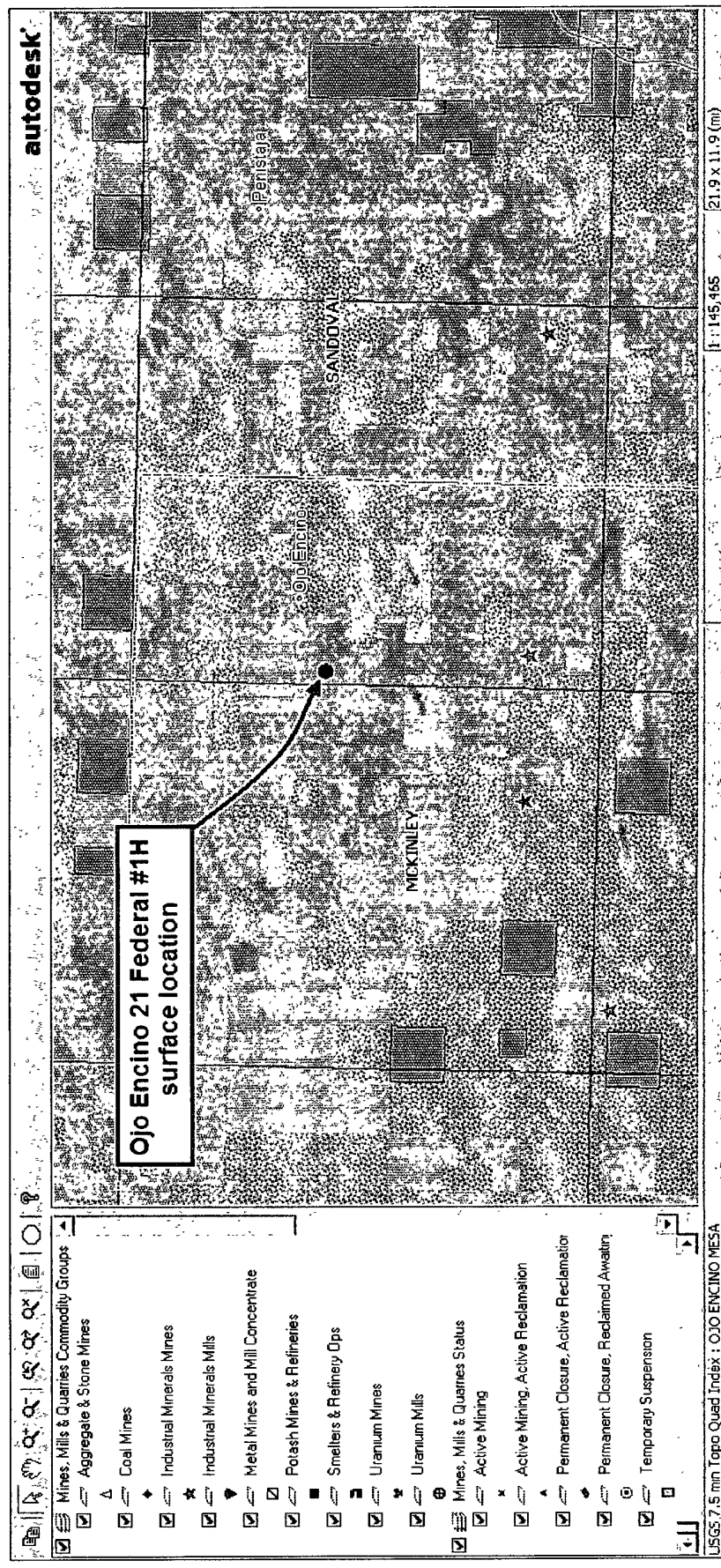




## Mines, Mills and Quarries Map

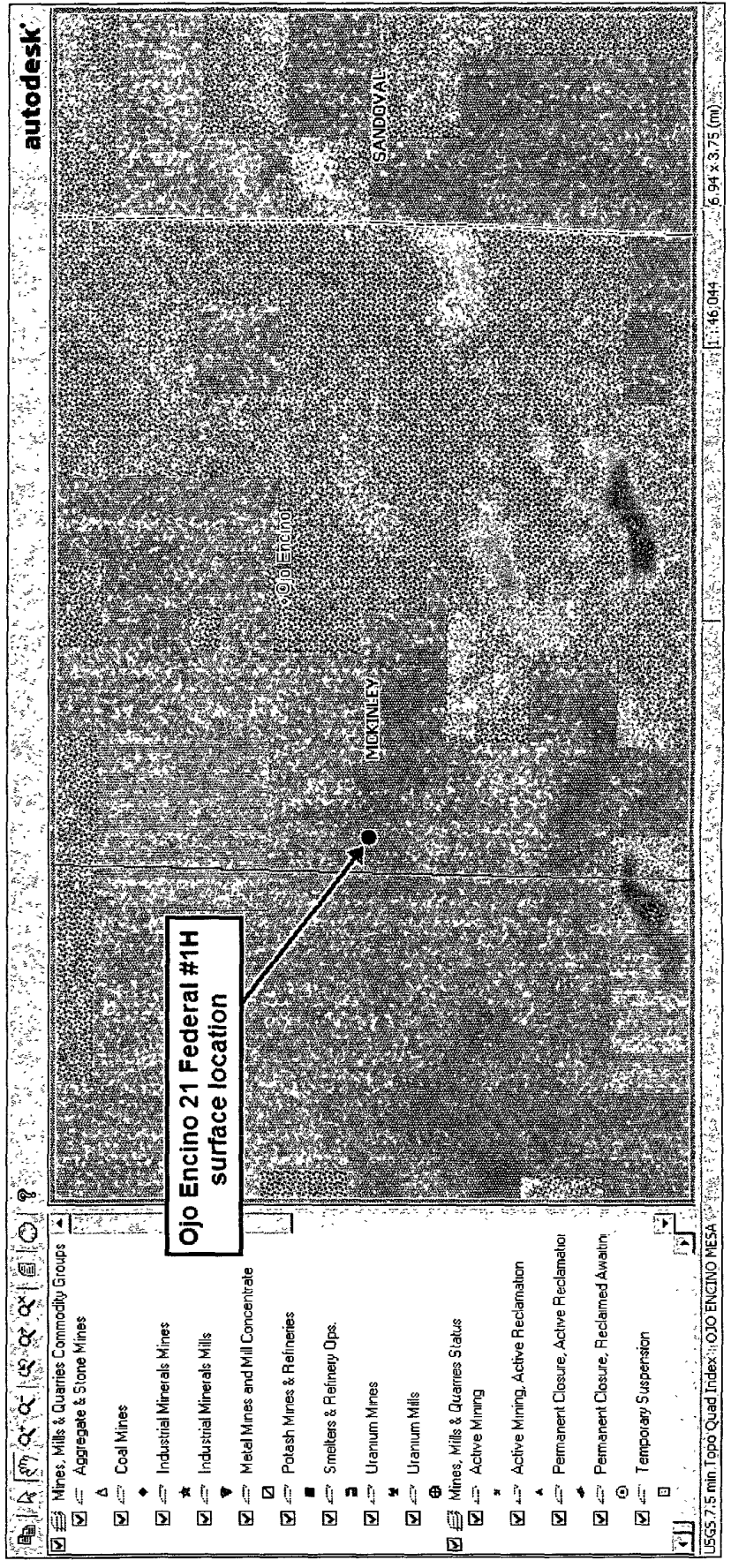
The Morningstar Humate mine approximately 4 miles south of the proposed well is closed. See Mines, Mills & Quarries report that follows.

### Mines, Mills and Quarries Web Map



# Mines, Mills and Quarries Map Zoom

## Mines, Mills and Quarries Web Map



## Mines, Mills and Quarries report



NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
MINING AND MINERALS DIVISION

Mines, Mills and Quarries Report

Mining and Minerals Division  
1200 South St. Francis Drive  
Santa Fe, NM 87503  
P: (505) 476-3400  
F: (505) 476-3402

### General Information

The following table provides general information for the selected mine:

Mine Name:	Morningstar Mine
County	McKinley
Status	Permanent Closure, Active Reclamation
Commodity Types	Humate
Site Types	Surface - Open Pit
MSHA Numbers	
Land Ownership	Federal
Mineral Ownership	Federal

### Current Operators

This contains the current operators for this mine:

Operator Name:	Address:	Phone:
Morningstar Corporation	22 CR3957 Farmington NM 87499 USA	(505) 325-2401

## On-Site Closure Plan—Proof of Surface Owner Notice

E-mail sent August 4, 2009.

To: jimi\_lovato@blm.gov  
Subject: HPOC Ojo Encino 21 Federal #1H Temporary Pit Closure  
Notification  
Cc: brandon.powell@state.nm.us

Dear Jim: High Plains Operating Company, LLC (HPOC) is submitting an APD for the subject well to your office that will be out in the mail in the next few days. This APD includes the State "Pit Permit" form C-144. As the temporary reserve pit to be utilized during the fresh-water gel-chem mud drilling portion of our operations will be closed on-site, HPOC is required to notify the surface owner of this closure.

Please consider this e-mail notification of on-site closure of this temporary reserve pit. Details will be included in the submitted APD and C-144. Contact me if you have any questions.

Best Regards,

++++++  
Butch Butler -- Manager  
HPOC (High Plains Operating Company, LLC)  
32700 Aspen Drive  
Buena Vista, CO 81211-9620  
Ph: 719-395-8059  
Fax: 719-395-8093  
Cell: 719-207-0164  
E-mail: bbutler@highplainsop.com  
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## **Temporary Pit Design Plan for Ojo Encino 21 Federal #1H**

HPOC's temporary pit for the Ojo Encino 21 Federal #1H will be designed and constructed following all rules in NMAC 19.15 Part 17, "PITS, CLOSED-LOOP SYSTEMS, BELOW-GRADE TANKS AND SUMPS," #11, "DESIGN AND CONSTRUCTION SPECIFICATIONS."

The top 6" of topsoil will be stripped and rolled up on the uphill side of the location to divert runoff and prevent erosion of the location per instructions from Craig Willems during the BLM onsite inspection. HPOC will post a sign not less than 12" X 24" prior to pit construction listing the operator, location of the well by unit letter, section, township and range with emergency telephone numbers. The temporary pit will be fenced with 48" field fence (hogwire) with a single strand of barbed wire above. During drilling or workover operations, HPOC will temporarily remove the side of the fence along the edge of the pit adjacent to the drilling or workover rig.

### **NMAC 19.15.17.11; Subsection F Requirements**

1. HPOC will design and construct the temporary pit to ensure the confinement of liquids to prevent unauthorized releases.
2. HPOC's 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. HPOC has requested a waiver from the BLM under the MOU between the BLM and NM OCD from the two horizontal feet to one vertical foot (2H:1V) pit slope wall requirement.
3. HPOC's temporary pit will be constructed with a geomembrane liner consisting of 20-mil string reinforced LLDPE or equivalent liner material that the Aztec division district office approves. The geomembrane liner shall be composed of an impervious, synthetic material that is resistant to petroleum hydrocarbons, salts and acidic and alkaline solutions. The liner material shall be resistant to ultraviolet light. Liner compatibility shall comply with EPA SW-846 method 9090A.
4. HPOC will minimize liner seams and orient them up and down, not across a slope. HPOC will use factory-welded seams where possible. Prior to field seaming, HPOC 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. HPOC will minimize the number of field seams in corners and irregularly shaped areas. Qualified personnel shall perform field seaming. HPOC will weld any field liner seams necessary.
5. Construction will avoid excessive stress-strain on the liner.
6. HPOC will utilize geotextile under the liner where needed to reduce localized stress-strain or protuberances that may otherwise compromise the liner's integrity.
7. HPOC will anchor the edges of all liners in the bottom of a compacted earth-filled trench. The anchor trench shall be at least 18 inches deep.
8. HPOC 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.
9. HPOC will design and construct the temporary pit to prevent run-on of surface water. A berm, ditch, proper sloping or other diversion shall surround the temporary pit to prevent run-on of surface water. During drilling operations, the edge of the temporary pit adjacent to the drilling or workover rig is not required to have run-on protection if HPOC is using the temporary pit to collect liquids escaping from the drilling or workover rig and run-on will not result in a breach of the temporary pit.

## **Temporary Pit Operating and Maintenance Plan for Ojo Encino 21 Federal #1H**

HPOC's temporary pit for the Ojo Encino 21 Federal #1H will be operated and maintained following all rules in NMAC 19.15 Part 17, "PITS, CLOSED-LOOP SYSTEMS, BELOW-GRADE TANKS AND SUMPS," #12, "OPERATIONAL REQUIREMENTS."

1. HPOC will operate and maintain the pit to contain liquids and solids and maintain the integrity of the liner, prevent contamination of fresh water and protect public health and the environment.
2. HPOC will recycle, reuse or reclaim or 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. As required, drilling fluids will be disposed of at T-n-T Environmental, Inc.'s Commercial Surface Waste Management Facility Permit NM-01-0008 (evaporation ponds and landfarm).
3. HPOC will not discharge into or store any hazardous waste in the pit.
4. If the pit liner's integrity is compromised, or if any penetration of the liner occurs above the liquid's surface, then HPOC will notify the Aztec division district office within 48 hours of the discovery and repair the damage or replace the liner.
5. If the pit develops a leak, or if any penetration of the pit liner occurs below the liquid's surface, then HPOC will remove all liquid above the damage or leak line within 48 hours, notify the Aztec division district office within 48 hours of the discovery and repair the damage or replace the pit liner.
6. The injection or withdrawal of liquids from the pit shall 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.
7. HPOC will operate and install the pit to prevent the collection of surface water run-on.
8. HPOC will install, or maintain on site, an oil absorbent boom or other device to contain and remove oil from a pit's surface.
9. Only fluids used or generated during the drilling or workover process will be discharged into the temporary pit. HPOC will maintain the temporary pit free of miscellaneous solid waste or debris. HPOC will use a tank made of steel or other material, which the Aztec division district office approves, to contain hydrocarbon-based drilling fluids. Immediately after cessation of a drilling or workover operation, HPOC will remove any visible or measurable layer of oil from the surface of a drilling or workover pit.
10. HPOC will maintain at least two feet of freeboard for the temporary pit.
11. HPOC will inspect the temporary pit containing drilling fluids at least daily while the drilling or workover rig is on-site. Thereafter, HPOC will inspect the temporary pit weekly so long as liquids remain in the temporary pit. HPOC will maintain a log of such inspections and make the log available for the Aztec division district office's review upon request. HPOC will file a copy of the log with the Aztec division district office when the operator closes the temporary pit.
12. HPOC will remove all free liquids from the temporary pit within 30 days from the date of drilling or workover rig release. HPOC will note the date of the drilling or workover rig's release on form C-105 or C-103 upon well or workover completion. The Aztec division district office may grant an extension of up to three months upon HPOC's request.

## ***Temporary Pits Closure Plan for Ojo Encino 21 Federal #1H***

HPOC's temporary pit for the Ojo Encino 21 Federal #1H will be closed following all rules in NMAC 19.15 Part 17, "PITS, CLOSED-LOOP SYSTEMS, BELOW-GRADE TANKS AND SUMPS," #13, "CLOSURE REQUIREMENTS."

HPOC will close the temporary pit within six months from the date HPOC releases the drilling or workover rig. The Aztec division district office may grant an extension not to exceed three months upon HPOC's request. HPOC will remove all liquids from the temporary pit prior to closure and these fluids will be disposed of at T-n-T Environmental, Inc.'s Commercial Surface Waste Management Facility Permit NM-01-0008 (evaporation ponds and landfarm), or HPOC may recycle, reuse or reclaim the liquids in a manner that the Aztec division district office approves.

The proposed closure method of the temporary pit involves on-site burial. HPOC will place a steel marker at the center of the on-site burial. The steel marker shall be not less than four inches in diameter and shall be cemented in a three-foot deep hole at a minimum. The steel marker shall 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 shall be welded, stamped or otherwise permanently engraved into the metal of the steel marker. HPOC will report the exact location of the on-site burial on form C-105 filed with the division. HPOC will file a deed notice identifying the exact location of the on-site burial with the county clerk in the county where the on-site burial occurs.

During reclamation operations of the temporary pit, HPOC 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, 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.

HPOC will notify the BLM (surface owner) by certified mail, return receipt requested, that HPOC plans to close the temporary pit. HPOC will notify the Aztec division district office verbally or by other means at least 72 hours, but not more than one week, prior to any closure operation. HPOC will file a closure report within 60 days of closure completion on form C-144.

Following Paragraph (2) of Subsection F of 19.15.17.13 NMAC:

1. Prior to closing the temporary pit, HPOC will stabilize or solidify the contents to a bearing capacity sufficient to support the temporary pit's final cover. HPOC 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.
2. As the ground water is more than 100 feet below the bottom of the buried waste, HPOC will collect at a minimum, a five point, composite sample of the contents of the temporary pit after treatment or stabilization, if treatment or stabilization is required, to demonstrate that benzene, as determined by EPA SW-846 method 8021B or 8260B, does not exceed 0.2 mg/kg; total BTEX, as determined by EPA SW-846 method 8021B or 8260B, 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; 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. HPOC may collect the composite sample prior to treatment or stabilization to demonstrate that the contents do not exceed these concentrations. However, if the contents collected prior to treatment or stabilization exceed the specified concentrations HPOC 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.

3. Upon closure of the temporary pit, HPOC will cover the geomembrane lined, filled, temporary pit 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 shall comply with Subsections G, H and I of 19.15.17.13 NMAC.

### ***Closed-loop Design Plan for Ojo Encino 21 Federal #1H***

The closed-loop system for the final drilling phase of the High Plains Operating Company, LLC (HPOC) Ojo Encino 21 Federal #1H will be a above ground tanks suitable for holding the cuttings and fluids for rig operations. The tank will be of sufficient volume to maintain a safe free board between disposal of the liquids and solids from rig operations.

Immediately above the Entrada pay section at a MD of approximately 6,165', HPOC will run and cement 7" casing. The water-based gel mud used to drill to this depth will be circulated out of the hole to the temporary pit using an oil-based mud system (OBM).

Remaining solids from the water-based portion of this operation will be cleaned from the mud tanks prior to any OBM being placed in the tank. These solids will also be placed in the reserve pit. If these cuttings, for whatever reason, do become contaminated with OBM, they will be disposed of at T-n-T Environmental, Inc.'s Commercial Surface Waste Management Facility Permit NM-01-0008 (evaporation ponds and landfarm).

The pay section in the Entrada formation will then be drilled to TD using the OBM system. We plan a TD at a MD of 7,803' and TVD of 5,898'. Upon completion of this phase of the drilling operation, all OBM will be recovered. Any remained sludge and oil-contaminated cuttings will be disposed of at T-n-T Environmental, Inc.'s Commercial Surface Waste Management Facility Permit NM-01-0008 (evaporation ponds and landfarm).

Fencing is not required for an above ground closed-loop system. It will be signed in compliance with NMAC 19.15.3.103—"SIGN ON WELLS."

### ***Closed-loop Operation and Maintenance Plan for Ojo Encino 21 Federal #1H***

The closed-loop tank for the final drilling of the Ojo Encino 21 Federal #1H well will be operated and maintained to contain liquids and solids and to aid in the prevention of contamination of fresh water sources, in order to protect the public health and the environment.

No hazardous waste, miscellaneous solid waste or debris will be discharged into or stored in the tank. Only the fluids or cuttings used or generated by rig operations as outlined in the Design Plan will be placed or stored in the tank. The Aztec District office of the NM OCD will be notified within 48 hours of the discovery of compromised integrity of the closed-loop tank. Upon discovery of the compromised tank, repairs will be enacted immediately.

All of the planned operations will be inspected by the operator or operator's representative and a log will be signed and dated. During rig operations, the inspection will be daily.

During the closed loop, OBM drilling operations, any excess liquids generated (potentially oil from the Entrada reservoir) will be contained in frac tanks or other suitable storage vessels. Any excess oil contaminated cuttings will be disposed of at T-n-T Environmental, Inc.'s Commercial Surface Waste Management Facility Permit NM-01-0008 (evaporation ponds and landfarm).

### ***Closed-loop Closure Plan for Ojo Encino 21 Federal #1H***

The closed-loop system for the drilling of the High Plains Operating Company, LLC (HPOC) Ojo Encino 21 Federal #1H will be closed in accordance with Subsection D of 19.15.17.13 NMAC.

HPOC will file a closure report within 60 days of closure completion on form C-144.



At the time of well abandonment, the site will be reclaimed and re-vegetated to as close to pre-existing conditions as possible.

Upon completion of the Ojo Encino 21 Federal #1H drilling operations, the tanks will be cleaned and the OBM system will be moved to storage tanks for future use. Any Entrada crude recovered during drilling will be hot-oiled and made ready for sale. Any excess oil contaminated cuttings and sludge will be disposed of at T-n-T Environmental, Inc.'s Commercial Surface Waste Management Facility Permit NM-01-0008 (evaporation ponds and landfarm).

September 15, 2009

Brandon Powell  
New Mexico Oil Conservation Division  
1000 Rio Brazos Road  
Aztec, NM 87410

Re: Ojo Encino School Non-potable Water Well for New School Construction

Dear Brandon:

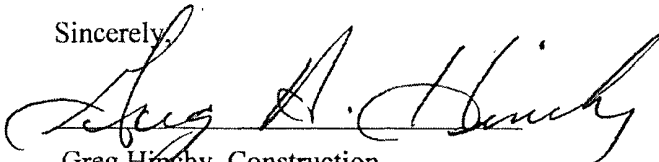
Mr. Butch Butler of High Plains Operating Company, LLC asked me to put in writing my understanding of the results of drilling a water well earlier this year at the Ojo Encino School construction project. This well was drilled for the purpose of providing non-potable water for use in constructing the school building. Coyote Drilling, Inc. located in Milan, New Mexico was the drilling contractor for the well drilling project.

The well is located at North 35 degrees 57.373 minutes North latitude and 107 degrees 20.663 minutes West longitude (NAD 83 coordinates) at an elevation of 6,699' above sea level.

Water was encountered at a depth of 260' during drilling, however the rate was about 4-6 GPM and was not enough to meet the needs for the construction project. The well was then drilled to a current total depth of 635' and steel casing was set, however the well still did not produce enough to meet our needs, so the well was fracture stimulated over the bottom depth of 367'. Following the fracture stimulation treatment, the well produced from 12 to 18 GPM, which was deemed adequate for our needs.

I can be reached on the construction site at 505-731-2211 if you have any further questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Greg A. Hinchy", written over a horizontal line.

Greg Hinchy, Construction  
Project Manager  
Alutiiq LLC  
General Contractor  
Ojo Encino School Project