District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., 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
Revised June 6, 2013

For temporary pits, below-grade tanks, and multi-well fluid management pits, submit to the appropriate NMOCD District Office.
For permanent pits submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

11453

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

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

Instructions: Please submit one application (Form C-144) per individual pit, 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: **Logos Operating, LLC.** OGRID #: **289408**
Address: 4001 North Butler Ave, Building 7101, Farmington, NM 87401
Facility or well name: **Jicarilla O 3E**
API Number: 30-043-21165 OCD Permit Number:
U/L or Qtr/Qtr O Section 10 Township 22N Range 03W County: Sandoval
Center of Proposed Design: Latitude 36.146806°N Longitude 107.140858°W NAD: ☐ 1927 ☒ 1983
Surface Owner: ☐ Federal ☐ State ☐ Private ☒ Tribal Trust or Indian Allotment

2.
☒ **Pit:** Subsection F, G or J of 19.15.17.11 NMAC

RCVD NOV 19 '13
OIL CONS. DIV.
DIST. 3

Temporary: ☒ Drilling ☐ Workover
☐ Permanent ☐ Emergency ☐ Cavitation ☐ P&A ☐ Multi-Well Fluid Management Low Chloride Drilling Fluid ☒ yes ☐ no
☒ Lined ☐ Unlined Liner type: Thickness 20 mil ☒ LLDPE ☐ HDPE ☐ PVC ☐ Other
☐ String-Reinforced
Liner Seams: ☒ Welded ☒ Factory ☐ Other Volume: 8,000 bbl Dimensions: L 130' x W 60' x D 10'

3.
☐ **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

4.
☐ **Alternative Method:**
Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

5.
Fencing: Subsection D of 19.15.17.11 NMAC *(Applies to permanent pits, temporary pits, and below-grade tanks)*
☐ Chain link, six feet in height, two strands of barbed wire at top *(Required if located within 1000 feet of a permanent residence, school, hospital, institution or church)*
☐ Four foot height, four strands of barbed wire evenly spaced between one and four feet
☒ Alternate. Please specify: 4' hog wire with one strand of barbed wire on top

6.

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)

7.

Signs: Subsection C of 19.15.17.11 NMAC

☐ 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers

☒ Signed in compliance with 19.15.16.8 NMAC

8.

Variances 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:

☒ Variance(s): Requests must be submitted to the appropriate division district for consideration of approval.

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

9.

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. **Siting criteria does not apply to drying pads or above-grade tanks.**

General siting	
Ground water is less than 25 feet below the bottom of a low chloride temporary pit or below-grade tank. - ☐ NM Office of the State Engineer - iWATERS database search; ☐ USGS; ☐ Data obtained from nearby wells	☐ Yes ☒ No ☐ NA
Ground water is less than 50 feet below the bottom of a Temporary pit, permanent pit, or Multi-Well Fluid Management pit . NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☒ No ☐ NA
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. **(Does not apply to below grade tanks)** - Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☒ No
Within the area overlying a subsurface mine. **(Does not apply to below grade tanks)** - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☒ No
Within an unstable area. **(Does not apply to below grade tanks)** - 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. **(Does not apply to below grade tanks)** - FEMA map	☐ Yes ☒ No
Below Grade Tanks	
Within 100 feet of a continuously flowing watercourse, significant watercourse, lake bed, sinkhole, wetland or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 200 horizontal feet of a spring or a fresh water well used for public or livestock consumption;. - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Temporary Pit using Low Chloride Drilling Fluid (maximum chloride content 15,000 mg/liter)	
Within 100 feet of a continuously flowing watercourse, or any other significant watercourse or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). (Applies to low chloride temporary pits.) - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within 300 feet from a occupied 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 200 horizontal feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 300feet of any other fresh water well or spring, in existence at the time of the initial application. NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes ☒ No

Within 100 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Temporary Pit Non-low chloride drilling fluid	
Within 300 feet of a continuously flowing watercourse, or any other significant watercourse, or within 200 feet of any 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 spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 1000 feet of any other fresh water well or spring, in the existence at the time of the initial application; - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 300 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Permanent Pit or Multi-Well Fluid Management Pit	
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 1000 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 spring or a fresh water well used for domestic or stock watering purposes, 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 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No

10.
Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

☐ Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
☒ Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9 NMAC
☒ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
☒ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
☒ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
☒ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

☐ Previously Approved Design (attach copy of design) API Number: _____ or Permit Number: _____

11.
Multi-Well Fluid Management Pit 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.

☐ 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
☐ A List of wells with approved application for permit to drill associated with the pit.
☐ 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
☐ Hydrogeologic Data - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC

☐ Previously Approved Design (attach copy of design) API Number: _____ or Permit Number: _____

12.
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

13.
Proposed Closure: 19.15.17.13 NMAC

Instructions: Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan.

Type: ☒ Drilling ☐ Workover ☐ Emergency ☐ Cavitation ☐ P&A ☐ Permanent Pit ☐ Below-grade Tank ☐ Multi-well Fluid Management Pit ☐ 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

14.
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 C 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 H of 19.15.17.13 NMAC
- ☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

15.
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 require justifications and/or demonstrations of equivalency. Please refer to 19.15.17.10 NMAC for guidance.

Ground water is less than 25 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 25-50 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 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 100 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, 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 300 horizontal feet of a private, domestic fresh water well or spring used for domestic or stock watering purposes, 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
Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☐ No
Within 300 feet of a wetland. US Fish and Wildlife Wetland Identification map; Topographic map; 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 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

16.
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 E of 19.15.17.13 NMAC
- ☐ Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of Subsection K of 19.15.17.11 NMAC
- ☐ Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☐ Waste Material Sampling Plan - based upon the appropriate requirements 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 H of 19.15.17.13 NMAC
- ☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

17.
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): Tamra Sessions Title: Operations Technician

Signature: Tamra Sessions Date: 11-19-13

e-mail address: tsessions@logosresourcesllc.com Telephone: 505-330-9333

18.
OCD Approval: ☒ Permit Application (including closure plan) ☐ Closure Plan (only) ☒ OCD Conditions (see attachment) See Closure Plan

OCD Representative Signature: Jonathan D. Kelly **Approval Date:** 11/25/2013

Title: Compliance Officer **OCD Permit Number:**

19.
Closure Report (required within 60 days of closure completion): 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:**

20.
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.

21.
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 for private land only)
- ☐ 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

.22.

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: _____

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

No records found.

PLSS Search:

Section(s): 4-14 **Township:** 22N **Range:** 03W

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.

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

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Twp	Rng	X	Y	Depth Well	Depth Water	Water Column
SJ 00403		SA	3	2	2	15	23N	03W			1403		

Average Depth to Water: --

Minimum Depth: --

Maximum Depth: --

Record Count: 1

PLSS Search:

Township: 23N **Range:** 03W

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.

New Mexico Office of the State Engineer
Point of Diversion Summary

POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
SJ 00403	3	2	2	15	23N	03W		

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest)
(NAD83 UTM in meters)

Driller License: MANESS, INC.
Driller Name: J.W. MANESS

Drill Start Date:		**Drill Finish Date:**	12/07/1977	**Plug Date:**	
Log File Date:		**PCW Rcv Date:**	02/01/1982	**Source:**	Artesian
Pump Type:	SUBMER	**Pipe Discharge Size:**	2	**Estimated Yield:**	
Casing Size:	6.63	**Depth Well:**	1403 feet	**Depth Water:**	

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.

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

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-basin Code	County	Q 64	Q 16	Q 4	Sec	Twp	Rng	X	Y	Depth Well	Depth Water	Water Column
SJ 00809		SA	2	3		09	22N	04W			322	145	177

Average Depth to Water: **145 feet**

Minimum Depth: **145 feet**

Maximum Depth: **145 feet**

Record Count: 1

PLSS Search:

Township: 22N **Range:** 04W

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.

New Mexico Office of the State Engineer
Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
SJ 00809	2	3		09	22N	04W		

Driller License: NEW MEXICO STATE HIGHWAY DEPT.
Driller Name:

Drill Start Date:	11/28/1978	**Drill Finish Date:**	04/19/1979	**Plug Date:**	
Log File Date:	05/15/1979	**PCW Rcv Date:**		**Source:**	Shallow
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	
Casing Size:	6.75	**Depth Well:**	322 feet	**Depth Water:**	145 feet

Water Bearing Stratifications:	Top	Bottom	Description
	145	300	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	264	322

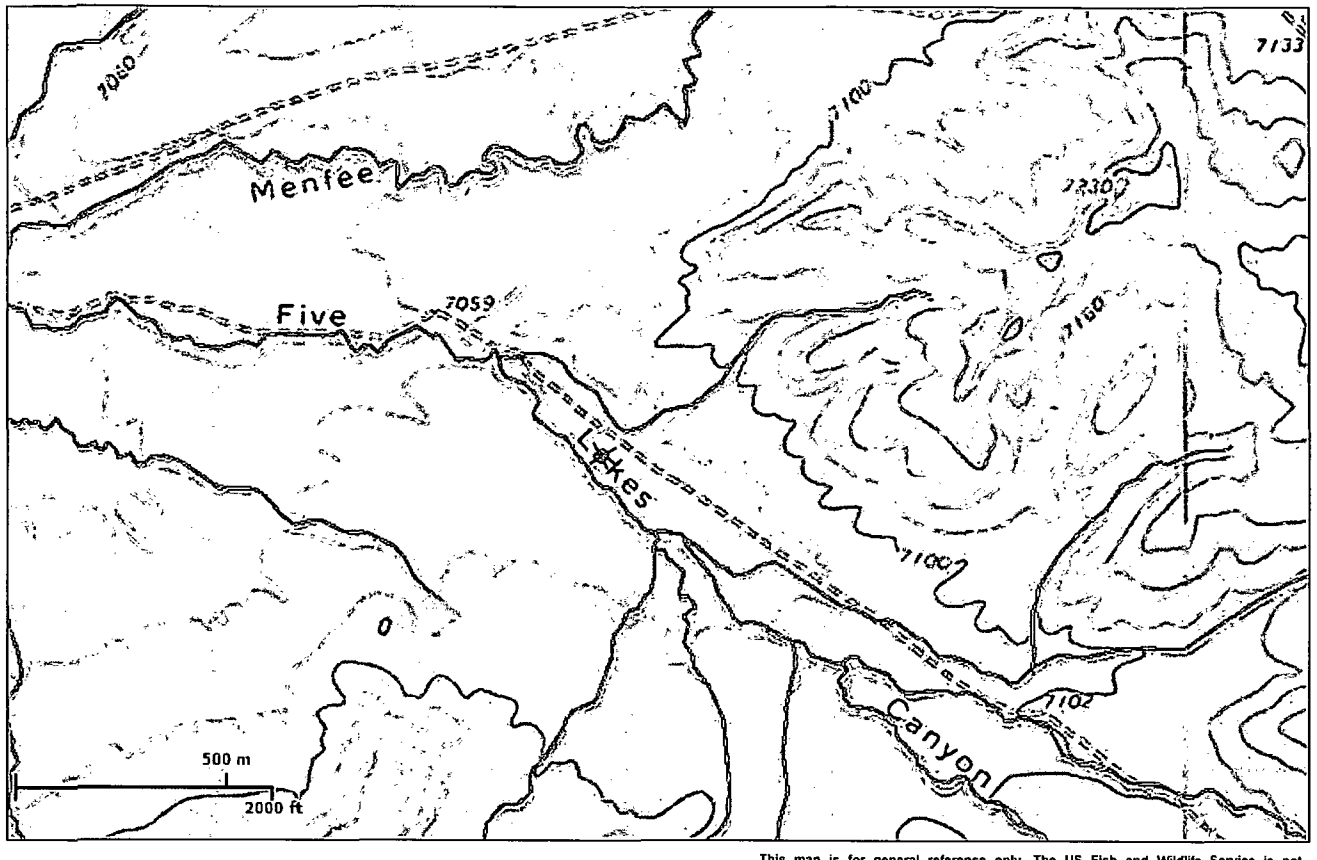
The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

U.S. Fish and Wildlife Service

National Wetlands Inventory

Jicarilla O 3E

Jul 30, 2013



Wetlands

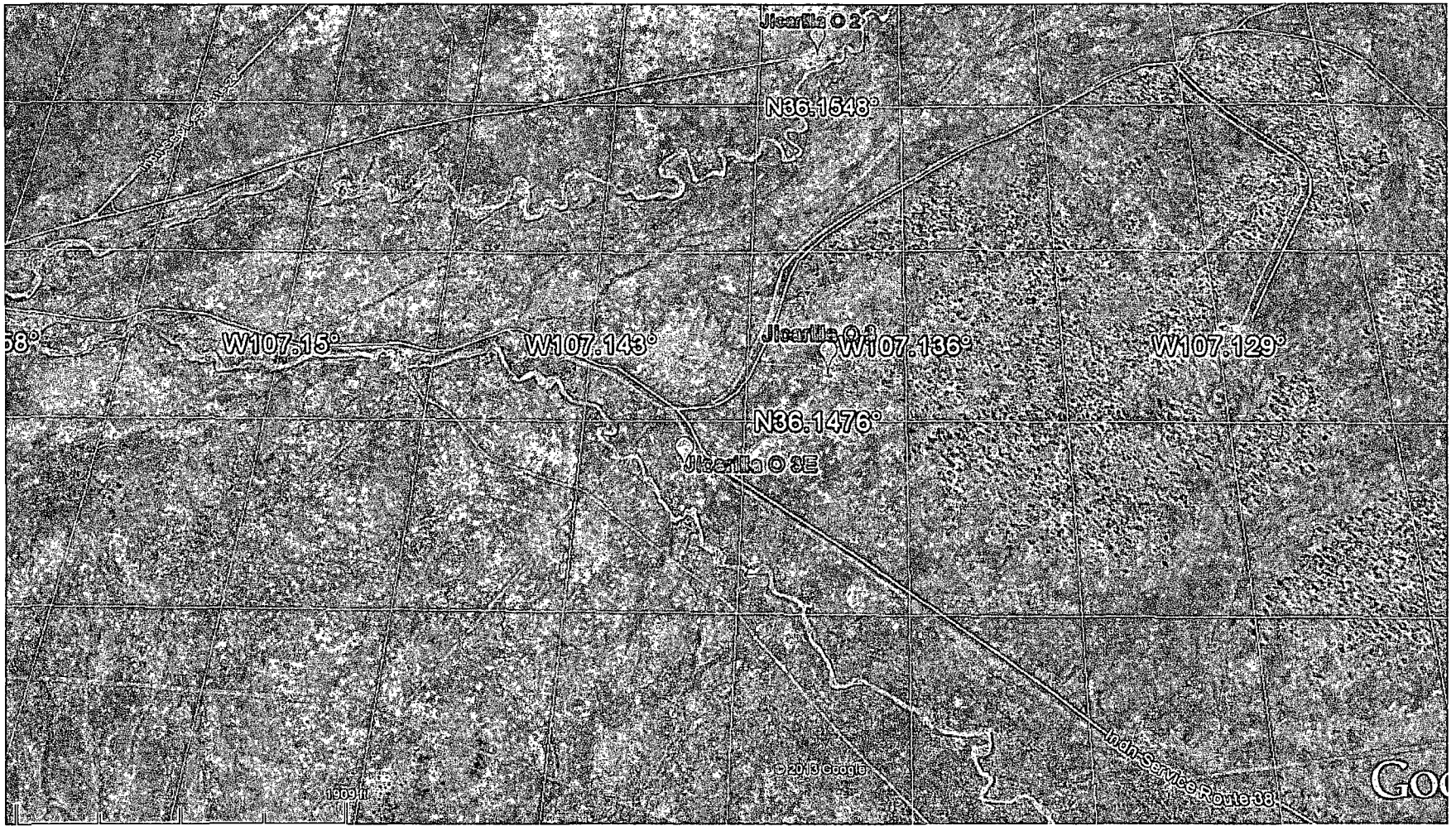
- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

User Remarks:

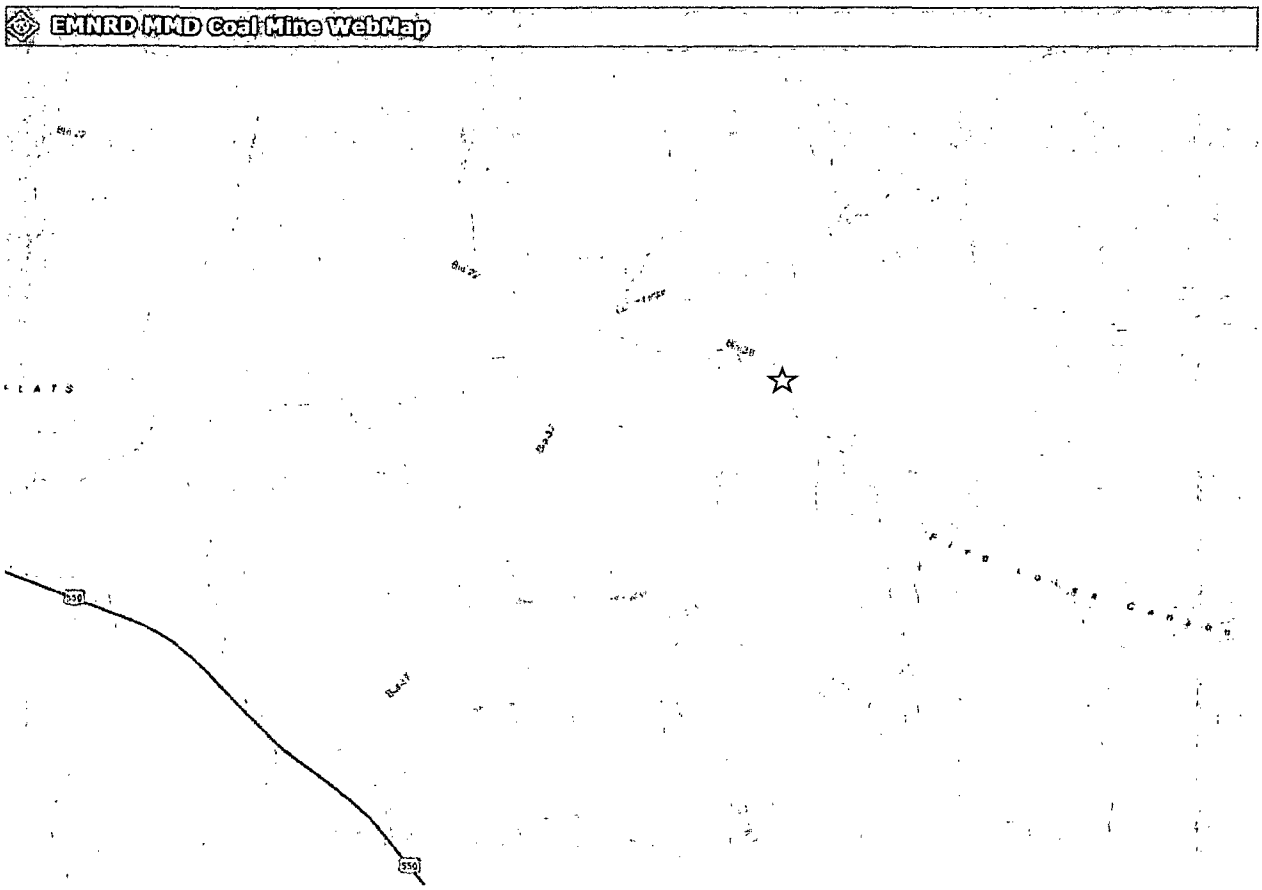
Unit Letter O, Section 10, T22N, R03W – No wetlands within 500' of drill sit

JICARILLA O 3E – AERIAL MAP **T22N R03W Sec 10** **7/30/13**



Jicarilla O 3E Temporary Pit Location with pad outline **11/19/13**

Mines, Mills & Quarries



Jicarilla O 3E - Latitude 3.14648° N / Longitude 107.14091° W (NAD83)

No mines, mills or quarries

MO-TE DRILLING, INC.

DAY

DRILLER Tim		LEFT TOWN	ARRIVED FIELD
HELPER Cameron		LEFT FIELD	ARRIVED TOWN
HELPER		TOTAL FOOTAGE TODAY	

RIG NO. 209 DATE 10/12/11 CLIENT Elm Ridge

BEGIN WORK ON HOLE NO. Charan Amigo's #10 AT FEET

BEGIN WORK ON HOLE NO. AT FEET

TIME FROM	TIME TO	ACTIVITY
		Move to location, Rig-up. Drill 6¼" to 98', bridged off. Drilled out of hole. Ran water probe to 87', No water detected. TIH. Drill 6¼" to 115', bridged off. Drilled out of hole. Ran water probe. water detected@ 115', RDMO. Filled in hole.
		0-115' - Sand/sandstone.

CEIVED
2011
NS. DIV. DIST. 3

BIT RECORD SIZE & MAKE	SERIAL NO	FOOTAGE
		Water

½ day rig	1750.00
Survey tool	100.00
Tax	116.78
Total	1966.78

CIRCULATION MATERIAL QUAN	UNIT	MATERIAL

NO OF LOADS OF WATER SOURCE

FORM 3160-4
(July 1992)

SUBMIT IN DUPLICATE*

FORM APPROVED
OMB NO 1004-0137
Expires February 28, 1995

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

(See other instructions ons reverse side)

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

RECEIVED
DEC 21 2011
Farmington Field Office
Bureau of Land Management

5 LEASE DESIGNATION AND SERIAL NO: BIA 360

6 IF INDIAN, ALLOTTEE OR TRIBE NAME: Jicarilla Apache

7 UNIT AGREEMENT NAME:

1a. TYPE OF WORK: OIL WELL [X] GAS WELL [X] DRY [ ] Other

1b. TYPE OF WELL: NEW WELL [X] WORK OVER [ ] DEEPEN [ ] PLUG BACK [ ] DIFF RESVR. [ ] Other

8 FARM OR LEASE NAME, WELL NO: Chacon Amgios 10

2 NAME OF OPERATOR: Elm Ridge Exploration Co. LLC

9 API WELL NO: 30-043-21006 - 0061

3 ADDRESS AND TELEPHONE NO: Po Box 156 Bloomfield NM 87413

10 FIELD AND POOL OR WILDCAT: Lindirth Gallup Dakota West

4 LOCATION OF WELL (Report locations clearly and in accordance with any State requirements *)

At Surface: 675' FNL X 675' FWL

At top prod. Interval reported below

At total depth

OR AREA: "D" Sec. 12-T22N-R3W

14 PERMIT NO	DATE ISSUED	12 COUNTY OR PARISH	13 STATE
		Sandoval	NM

15 DATE SPUDDED	16 DATE T.D. REACHED	17 DATE COMPL. (Ready to prod.)	18 ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19 ELEV. CASINGHEAD
11-2-11	11-16-11	12-21-11	7169' GL	

20 TOTAL DEPTH, MD & TVD	21. PLUG BACK T.D., MD & TVD	22 IF MULTIPLE COMPL., HOW MANY*	23 INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
7310' MD TVD	7265' MD TVD		→	X	

24 PRODUCING INTERVAL(S), OF THIS COMPLETION–TOP, BOTTOM, NAME (MD AND TVD)*

(6799' - 6918') Dakota

25 WAS DIRECTIONAL SURVEY MADE

RCVD DEC 22'11

26 TYPE ELECTRIC AND OTHER LOGS RUN

Spectral Density, high Resolution Induction Log, CBL LOG

27 WAS WELL CORED

OIL CONS. DIV.

23 CASING RECORD (Report all strings set in well)

CASING SIZE/GRADE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	TOP OF CEMENT, CEMENTING RECORD	AMOUNT PULLED
8 5/8"	24# J55	378'	12 1/4"	260 sks	DIST. 3
5 1/2"	15.5# J55	7308'	7 7/8"	1120 sks	

29 LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30 TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2 3/8"	6802'	

31. PERFORATION RECORD (Interval, size and number)

INTERVAL	SIZE	NUMBER
6799' - 6918'	.46	250

32 ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
6799' - 6918'	ACID . 7000 gals of 7 5% MCA w/ Additives
	FRAC . 2843 gals MSCF N2. 47619 gal of 17CP
	Delta 140 followed by 127969 gal of 17CP 70Q
	Delta Frac Fluid Follwed by 1035 sks of 20/40
	CRC sand.

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (Flowing, gas lift, pumping–size and type of pump)	L STATUS (Producing or sh
12-10-11	Flowing	Producing

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD	OIL–BBLS.	GAS–MCF.	WATER–BBL.	GAS-OIL RATIO
12-15-11	24	3/8"	→	94		94	

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE	OIL–BBL.	GAS–MCF.	WATER–BBL.	OIL GRAVITY-API (CORR
	50	→	94		94	

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)

TEST WITNESSED BY

35. LIST OF ATTACHMENTS

ACCEPTED FOR RECORD

36 I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED _____ TITLE Administrative Manager DATE 12/21/2011

DEC 21 2011
FARMINGTON FIELD OFFICE
BY

(See Instructions for Additional Data on Reverse Side)

Title 18 U.S.C. Section 1001 makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

NMOCD

MO-TE DRILLING, INC.

DAY

DRILLER Tim | LEFT TOWN | ARRIVED FIELD

HELPER Cameron | LEFT FIELD | ARRIVED TOWN

HELPER | TOTAL FOOTAGE TODAY

RIG NO 209 DATE 10/12/11 CLIENT Elm Ridge

BEGIN WORK ON HOLE NO Chacon Amigos #9 AT _____ FEET

BEGIN WORK ON HOLE NO. _____ AT _____ FEET

TIME FROM	TIME TO	ACTIVITY
		Move to location, Rig-up. Drill 6 1/4" to 65', TOH. Wait 1 hr. Run water probe. Hit bridge @ 32'. TIH. Clean-out to 65', Run water probe. Hit bridge @ 18'. RDMO
		No water detected. Filled in hole.
		0-30' sand
		30'-35' clay
		35'-65' sand/sandstone.

BIT RECORD SIZE & MAKE	SERIAL NO	FOOTAGE
		Water

CIRCULATION MATERIAL QUAN	UNIT	MATERIAL

1/2 day rig	1750.00
Survey tool	100.00
Tax	116.78
Total	1966.78

NO OF LOADS OF WATER _____ SOURCE _____

RECEIVED
OIL CONSERVATION DIVISION

FORM 3160-4
(July 1992)

SUBMIT IN DUPLICATE* FORM APPROVED
(See other instructions on reverse side) OMB NO 1004-0137
Expires February 28, 1995

RECEIVED
NOV 21 2011
Farmington Field Office
Bureau of Land Management

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5 LEASE DESIGNATION AND SERIAL NO: BIA 360
6 IF INDIAN, ALLOTTEE OR TRIBE NAME: Jicarilla Apache
7 UNIT AGREEMENT NAME:
8 FARM OR LEASE NAME, WELL NO: Chacon Amgios 9
9 API WELL NO: 30-043-21005
10 FIELD AND POOL, OR WILDCAT: Lindrith Gallup Dakota West

1a TYPE OF WORK: OIL WELL [X] GAS WELL [ ]
1b TYPE OF WELL: NEW WELL [X] WORK OVER [ ] DEEPEN [ ] PLUG BACK [ ] DIFF RESVR. [ ] Other

2 NAME OF OPERATOR: Elm Ridge Exploration Co. LLC
3 ADDRESS AND TELEPHONE NO: Po Box 156 Bloomfield NM 87413
4 LOCATION OF WELL (Report locations clearly and in accordance with any State requirements *)
At Surface: 1615' FNL X 820' FEL
At top prod. interval reported below
At total depth
OR AREA: "H" Sec. 2-T22N-R3W

14 PERMIT NO | DATE ISSUED | 12 COUNTY OR PARISH: Sendoval | 13 STATE: NM

15 DATE SPUDDED	16 DATE T.D. REACHED	17 DATE COMPL. (Ready to prod.)	18 ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19 ELEV. CASINGHEAD
10-14-11	10-29-11	11-19-11	7138' GL	

20 TOTAL DEPTH, MD & TVD	21 PLUG BACK T.D., MD & TVD	22 IF MULTIPLE COMPL., HOW MANY*	23 INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
7273' MD TVD	7216' MD TVD		→	X	

24 PRODUCING INTERVAL(S), OF THIS COMPLETION--TOP, BOTTOM, NAME (MD AND TVD)*
(6846' - 6959') Lindrith Gallup Dakota West

25 WAS DIRECTIONAL SURVEY MADE

26 TYPE ELECTRIC AND OTHER LOGS RUN
Spectral Density, high Resolution Induction Log, CBL LOG

27. WAS WELL CORED

RECEIVED
NOV 2011
OIL CONS. DIV. DIST. 3

23 CASING RECORD (Report all strings set in well)

CASING SIZE/GRADE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	TOP OF CEMENT, CEMENTING RECORD	AMOUNT PULLED
8 5/8"	24#	375' 384'	12 1/4"	260 sks	
5 1/2"	15.5#	7267'	7 7/8"	1120 sks	

29 LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30 TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2 3/8"	6837'	

31 PERFORATION RECORD (Interval, size and number)

INTERVAL	SIZE	NUMBER
6846' - 6959'	.46	250

32 ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
6846' - 6959'	ACID. 6000 gals of 7 1/2% MCA acid w/ double inhibitor, iron seq, flowback surfactant, clay stabilizer, and MUSOL. FRAC. Pumped 8500 gals of N2 followed by 38368 gal of 17 CP 70Q Delta w/ BBC frac fluid. Pumped 1054 sks of 20/40 CRC w/ max BH concentration

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (Flowing, gas lift, pumping--size and type of pump)	L STATUS (Producing or sh
11-12-11	Flowing	producing

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD	OIL--BBLS.	GAS--MCF.	WATER--BBL.	GAS-OIL RATIO
		3/4"	→	494	532	212	

FLOW. TUBING PRESS.	CASING PRESSU	CALCULATED 24-HOUR RATE	OIL--BBL.	GAS--MCF.	WATER--BBL.	OIL GRAVITY-API (CORR
150	500	→				

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)
Vented

TEST WITNESSED BY
Monty Striegel

35. LIST OF ATTACHMENTS

ACCEPTED FOR RECORD
NOV 21 2011
FARMINGTON FIELD OFFICE
BY

36 I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED _____ TITLE Administrative Manager DATE 11/21/2011

(See for Additional Data on Reverse Side)

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

NMOCD

Hydro geological report for Jicarilla O 3E

Regional Hydro geological context:

The Jicarilla O 3E is located on tribal land in Sandoval County, New Mexico. The proposed project area is located in a valley with a drainage directly south of the project in the Five Lakes Canyon area. The water drains west from this valley. A sandy loam serves as support for the project.

A records search of the NM Office of the State Engineer – iWATERS database indicates that the closest known water well is approximately 4.5 miles to the north, SJ00403 located in Section 15, T23N, R3W. The depth to ground water is unknown and the drilled depth is 1403'.

According to the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) Web Soil Survey the proposed action area overlies Elias-Canyada-Sparank fine sandy loam, 0 to 3 percent slope.

The Elias-Canyada-Sparank complex is composed of approximately 45 percent Elias and similar soils, 30 percent Canyada and similar soils, 20 percent Sparank and similar soils, and 2 percent Riverwash. The Elias series consists of deep, well drained, moderately slowly permeable soils that formed in alluvium materials derived from shale and sandstone in stream terraces and tread. The Canyada series consists of very deep, well drained soils that formed in alluvium derived from shale and sandstone on stream terreces and tread. The Sparank series consists of very deep, well drained soils that formed in clayey alluvium derived from shale and sandstone on stream terreces, alluvial fans, valley sides, and flood plains. Riverwash consists of areas of sandy, loamy, clayey, or gravelly sediment on flood plains, streambeds, and riverbeds and in arroyos.

FEMA Map – 100 year floodplain

The FEMA map for the subject well is unavailable due to its location being on the reservation. FEMA does not provide floodplain information for Reservation Land.

Siting Criteria Compliance Demonstrations

The Jicarilla O 3E is not located in an unstable area. The location is not over a mine and is not on the side of a hill. The location of the excavated pit material will not be located within 100' of any continuously flowing watercourse or 200' from any other watercourse.

Logos Operating, LLC
Jicarilla O 3E
Temporary Reserve Pit Application
Siting Criteria

1. According to the iWaters Database from the State Engineers Office, the closest known water well is approximately 4.5 miles to the north, SJ00403 located in Section 15, T23N, R3W. The depth to ground water is unknown and the drilled depth is 1403'. A test water hole was drilled on the Chacon Amigos 10 to a depth of 115' and water was detected at 115'. This well is located 1.5 miles to the northeast in D – Sec 12 – T22N – R03W with ground elevation of 7169'. Another test water hole was drilled on the Chacon Amigos 9 to a depth of 65' and no water was detected. This well is located 1.8 miles to the northeast in H – Sec 12 – T22N – R03W with ground elevation of 7138'.

2. The pad diagram has been revised to move the pit location to corner 5 away from the wash. To meet the proof of ground water, Logos Operating will test for water depths at 40', 65' and 115' prior to drilling operations with air drill. NMOCD will be provided the results to determine if the pit can be utilized. Changes if needed will be reported at that time and paperwork provided as necessary.

3. As shown on the attached topographic map and aerial photos, there are no continuously flowing watercourses within 100' of the well, or any significant watercourses, lakebeds, sinkholes or playa lakes within 200' of the well.

4. There are no permanent residences, schools, hospitals, institutions, or churches within 300' of the well.

5. There are no domestic water wells or springs within 200' of the well. See iWaters Database printout.

6. The well is not located within any municipal boundaries.

7. The well is not within 100' of any wetlands. See attached topographic map and aerial photos.

8. There are no subsurface mines in Section 5, T22N, R5W. See attached map from the NM EMNRD Mining and Mineral Division.

9. The Jicarilla O 3E is not located in an "unstable" area. The location is not over a mine and is not on the side of a hill. The location of the excavated pit material will not be located within 100' of a continuously flowing watercourse or 200' from any other watercourse.

10. The FEMA map for the subject well is unavailable due to its location being on the reservation. FEMA does not provide floodplain information for Reservation Land.

11. In the event that the composite pit sample that is mixed 3:1 with native soils does not meet the requirements for onsite burial, the pit contents will be removed and disposed of at the Envirotech Land Farm #2 (NMOCD Permit #11).

LOGOS RESOURCES LLC

4001 N. Butler Ave
Farmington, NM 87401
Phone: (505) 436-2627
Fax: (505) 832-3095

Date: September 6, 2013

To: Jicarilla Apache Nation

Re: Surface Owner Notification for On-Site Burial

Ms. Merldine Oka
Jicarilla Apache Nation
Oil and Gas Administration
#6 Dulce Rock Road
Dulce, NM 87528

Re: Jicarilla O 3E
O – Sec 10 – T22N – R03W
919' FSL & 1738' FEL

Dear Ms. Oka,

According to NMOCD rules, Logos Operating, LLC is notifying you that there will be a temporary pit on the subject well and that they intend to bury the drill cuttings in the reserve pit, assuming that they qualify as per Subsection D of 19.15.17.13 NMAC. No action is required on your part. If you have any questions, please do not hesitate to call me.

Regards,

Tamra Sessions

Tamra Sessions
Operations Technician

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
DISTRICT II
811 S. First St., Artesia, N.M. 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

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 August 1, 2011

Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
	39189	Lindrith Gallup-Dakota, West

[4] Property Code	[5] Property Name	[6] Well Number
311962	JICARILLA O	3E

[7] OGRID No.	[8] Operator Name	[9] Elevation
289408	LOGOS RESOURCES, LLC	7072'

[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
O	10	22N	3W		919'	SOUTH	1738'	EAST	SANDOVAL

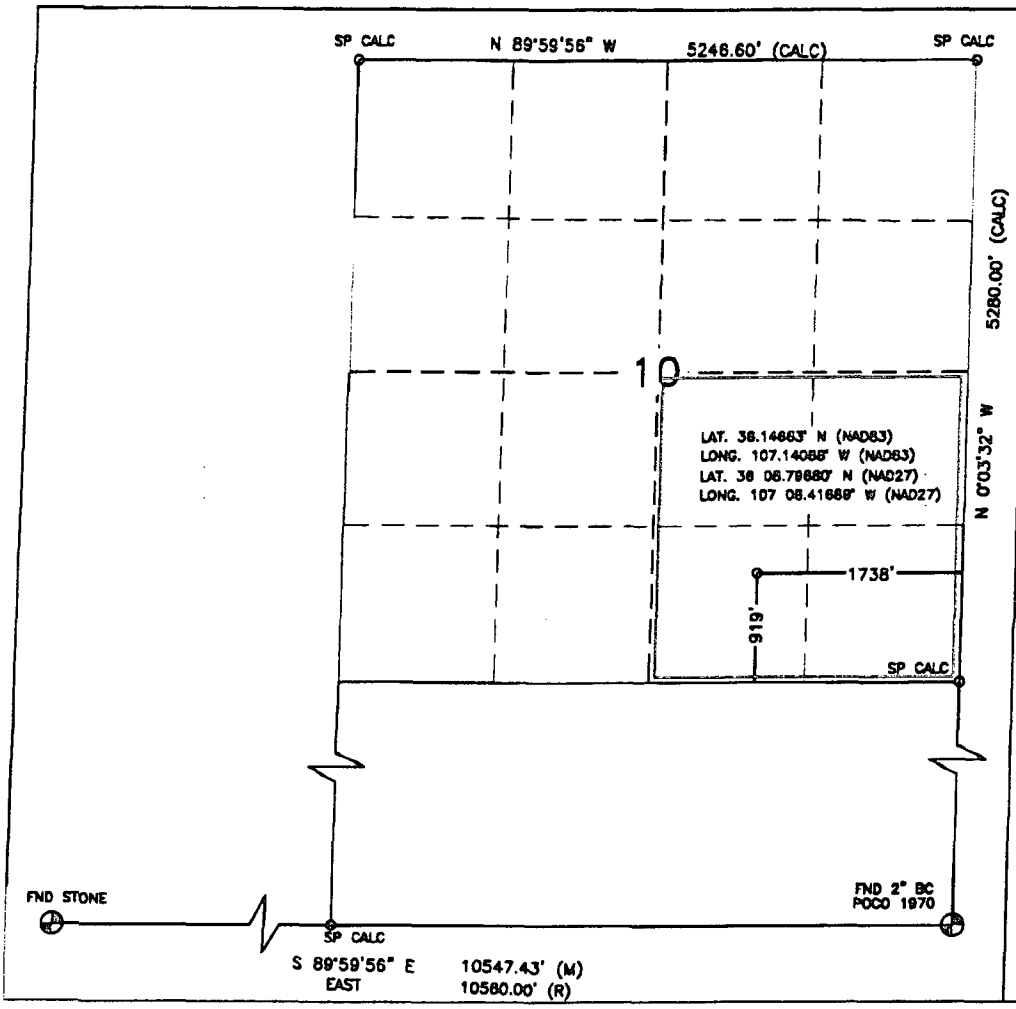
[11] Bottom Hole Location If Different From Surface

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.
160 acres			

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

16



[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 a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature — Date: 07/09/13

Tamra Sessions
Printed Name

tsessions@logosresourcesllc.com
E-mail Address

[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.

AUGUST 14, 2012
Date of Survey

Signature and Seal of Professional Surveyor:

DAVID RUSSELL
NEW MEXICO
10201
REGISTERED PROFESSIONAL LAND SURVEYOR

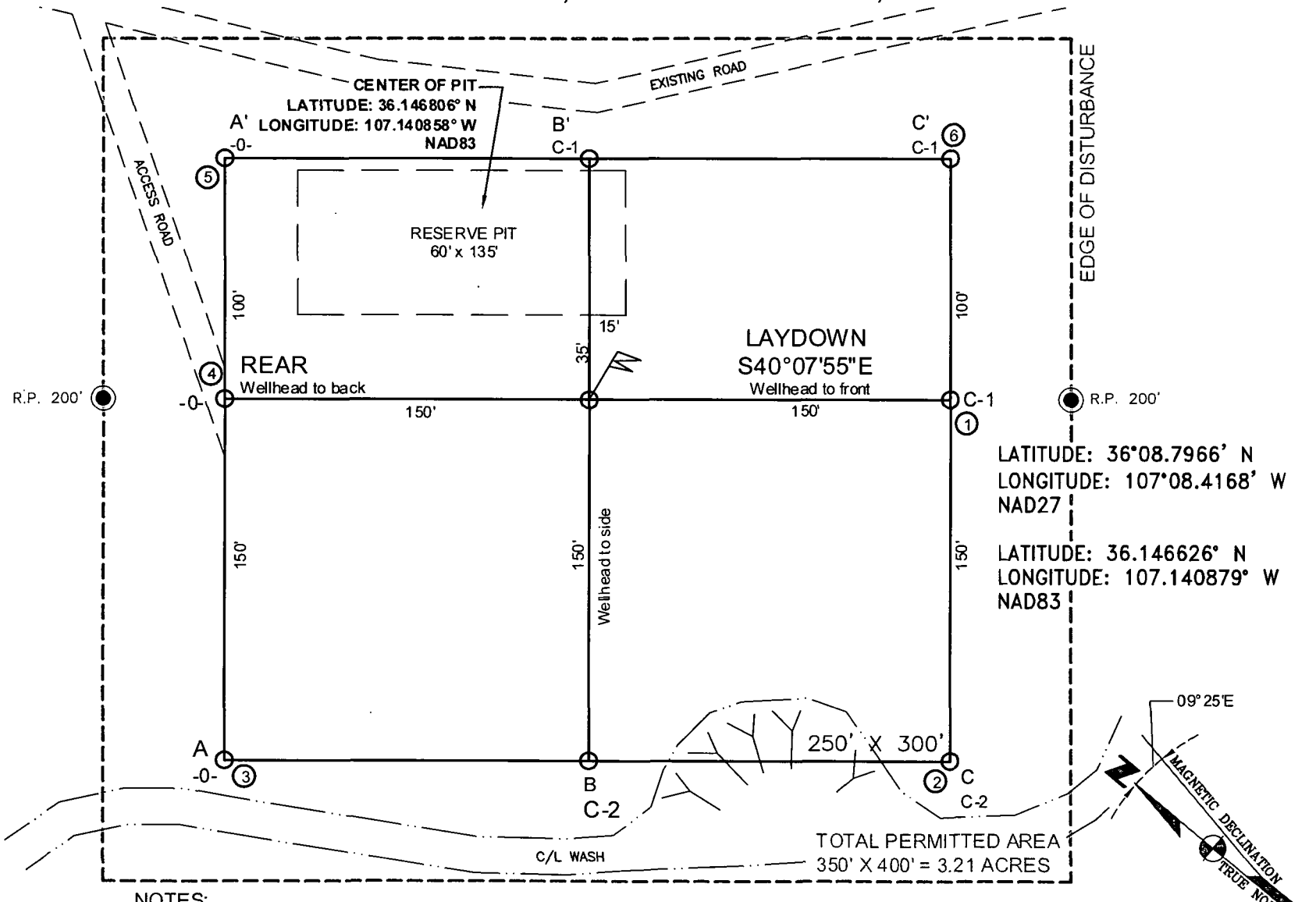
DAVID RUSSELL
Certificate Number 10201

LOGOS OPERATING, LLC

JICARILLA O #3E, 919' FSL & 1738' FEL

SECTION 10, T-22-N, R-3-W, NMPM, SANDOVAL COUNTY, NM

GROUND ELEVATION: 7072', DATE: NOVEMBER 11, 2013



NOTES:

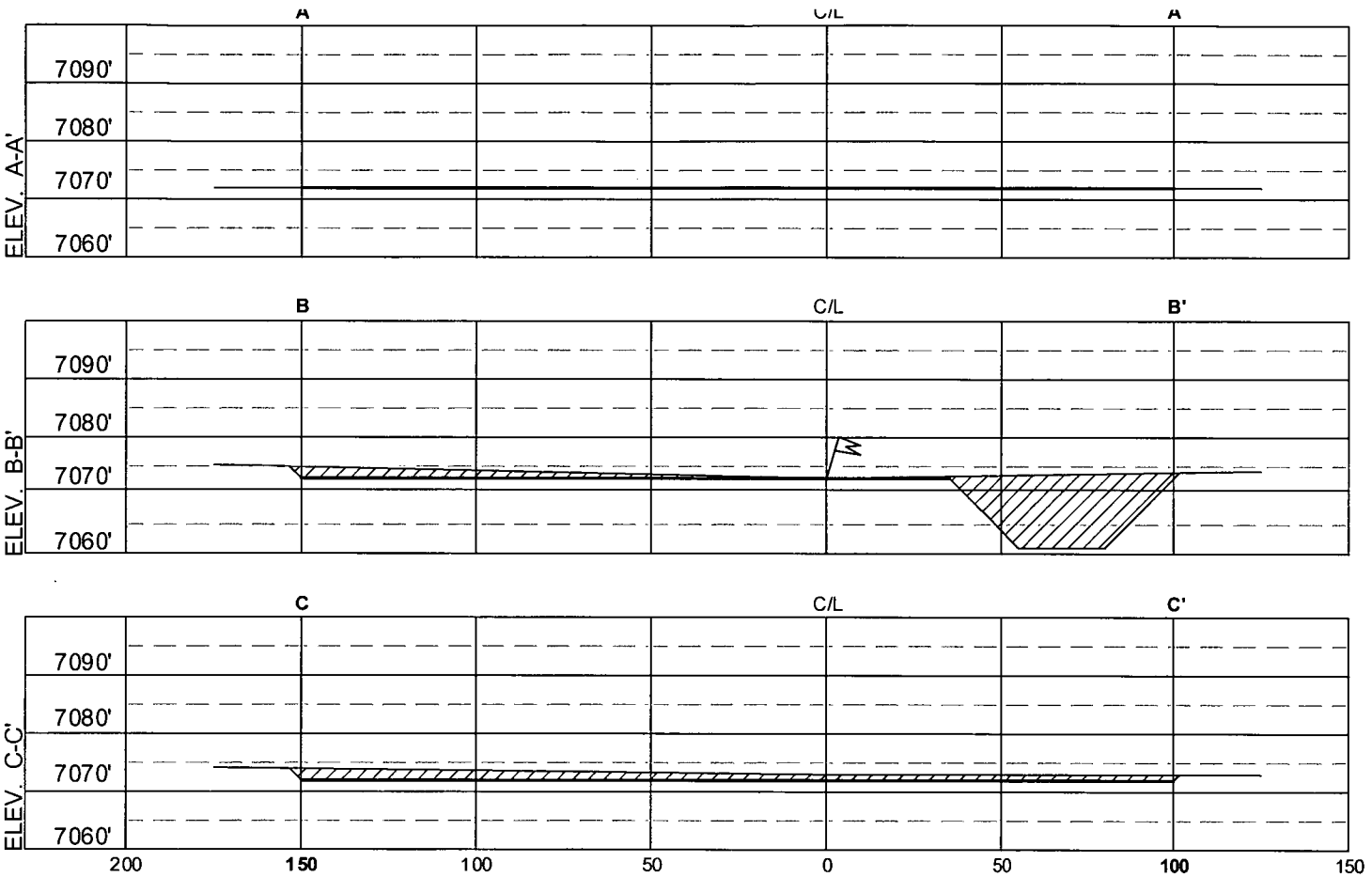
1. VECTOR SURVEYS IS NOT LIABLE FOR UNDERGROUND UTILITIES OR PIPELINES. CONTRACTOR SHOULD CALL ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED BURIED PIPELINES OR CABLES ON WELL PAD AND OR ACCESS ROAD AT LEAST TWO (2) WORKING DAYS PRIOR TO CONSTRUCTION.
2. RESERVE PIT DIKE: TO BE 8' ABOVE DEEP SIDE (OVERFLOW - 3' WIDE AND 1' ABOVE SHALLOW SIDE).

30' 0 30' 60'

Scale: 1" = 60'

LOGOS OPERATING, LLC

JICARILLA O #3E, 919' FSL & 1738' FEL
SECTION 10, T-22-N, R-3-W, NMPM, SANDOVAL COUNTY, NM
GROUND ELEVATION: 7072', DATE: NOVEMBER 11, 2013



HORIZ. SCALE: 1" = 50'
VERT. SCALE: 1" = 30'

NOTE:
VECTOR SURVEYS IS NOT LIABLE FOR UNDERGROUND UTILITIES OR PIPELINES. CONTRACTOR SHOULD CALL ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED BURIED PIPELINES OR CABLES ON WELL PAD AND OR ACCESS ROAD AT LEAST TWO (2) WORKING DAYS PRIOR TO CONSTRUCTION.

Logos Operating, LLC
San Juan Basin
Temporary Pit Design and Construction Plan

In accordance with Rule 19 15 17 the following information describes the design and construction for temporary pits on Logos Operating Company's locations; this is Logos Operating's standard procedure for all temporary pits. A separate plan will be submitted for any temporary pit that does not conform to this plan.

General Plan

1 Logos Operating will design and construct a temporary pit to contain liquids and solids and prevent contamination of fresh water and protect public health and environment
2 Prior to constructing the pit, topsoil will be stockpiled in the construction zone for later use in restoration
3 Logos Operating will post a well sign, not less than 12' by 14', on the well site prior to construction of the temporary pit. The sign will list the operator on record as the operator, the location of the well by unit letter, section, township rang, and emergency telephone numbers
4 Logos Operating shall construct all new fences unitizing 48' steel mesh field-fence (hogwire) on the bottom with a single strand of barbed wire on top. T-posts shall be installed every 12 feet and corners shall be anchored utilizing a secondary T-post. Temporary pits will be fenced at all times excluding drilling or overwork operations, when the front side of the fence will be temporarily removed for operational purposes
5 Logos Operating shall construct the temporary pit so that the foundation and interior slopes are firm and free of rocks, debris, sharp edges or irregularities to prevent liner failure
6 Logos Operating shall construct the pit so that the slopes are no steeper than two horizontal feet to 1 vertical foot
7 Pit walls will be walked down by a crawler type tractor following construction
8 All temporary pits will be lined with a 20-mil, string reinforced, LLDPE liner, complying with EPA SW-846 method 9090A requirements
9 Geotextile will be installed beneath the liner when rocks, debris, sharp edges or irregularities cannot be avoided
10 All liners will be anchored in the bottom of a compacted earth-filled trench at least 18 inches deep
11 Logos Operating will minimize liner seams and orient them up and down, not across a slope. Factory seams will be used whenever possible. Logos Operating will ensure all field seams are welded by qualified personnel. Field seams will be overlapped four to six inches and will be oriented parallel to the line of maximum slope. Logos Operating will minimize the number of field seams in corners and irregularly shaped areas
12 The liner shall be protected from any fluid force or mechanical damage through the use of mud pit slides, or a manifold system
13 The pit shall be protected from run-off by constructing and maintaining diversion ditched around the location or around the perimeter of the pit in some cases
14 The volume of the pit shall not exceed 10 acre-feet, including freeboard
15 Temporary blow pits will be constructed to allow gravity flow to discharge into lined drill pit
16 The lower half of the blow pit (nearest lined pit) will be lined with the same 20 mil liner. The upper half of the blow pit will remain unlined as allowed in Rule 19 15 17 11 F 11
17 Logos Operating will not allow freestanding liquids to remain on the unlined portion of temporary blow pit

Logos Operating, LLC
San Juan Basin
Temporary Pit Maintenance and Operating Plan

In accordance with Rule 19 15 17 the following information described the operation and maintenance of temporary pits on Logos Operating Company locations. This is Logos Operating's standard procedure for all temporary pits. A separate plan will be submitted for any temporary pit that does not conform to this plan.

General Plan

1 Logos Operating will operate and maintain a temporary pit to contain liquids and solids and prevent contamination of fresh water and protect public health and environment
2 Logos Operating will conserve drilling fluids by transferring liquids to pits ahead of the rigs whenever possible. All other drilling fluids will be disposed at Basin Disposal, Inc. Permit # NM-01-005
3 Logos Operating will not discharge or store any hazardous waste in any temporary pit
4 If any pit liner's integrity is compromised or if any penetration of the liner occurs above the liquid's surface, then Logos Operating shall notify the Aztec Division office by phone or email within 48 hours of the discovery and repair the damage or replace the liner
5 If a leak develops below the liquid's level, Logos Operating shall remove all liquids above the damaged liner within 48 hours and repair the damage or replace the liner. Logos Operating shall notify the Aztec Division office by phone or email within 48 hours of the discovery for leaks less than 25 barrels. Logos Operating shall notify the Aztec division office as required pursuant to Subsection B of 19 15 3 116 NMAC shall be reported within twenty-four (24) hours of discovery of leaks greater than 25 barrels. In addition, immediate verbal notification pursuant to Subsection B, Paragraph (1) and Subparagraph (d) of 19 15 3 116 NMAC shall be reported to the division's Environmental Bureau Chief
6 The liner shall be protected from any fluid force or mechanical damage through the use of mud pit slides, or manifold system
7 The pit shall be protected from run-off by constructing and maintaining diversion ditches around the location or around the perimeter of the pit in some cases
8 Logos Operating shall immediately remove any visible layer or oil from the surface of temporary pit after cessation of a drilling or workover operation. Oil absorbent booms will be utilized to contain and remove oil from the pit's surface. An oil absorbent boom will be stored on-site until closure of pit
9 Only fluids generated during the drilling or workover process may be discharged into a temporary pit
10 Logos Operating will maintain the temporary pit free of miscellaneous solid waste or debris
11 During drilling or workover operations, Logos Operating will inspect the temporary pit at least once daily to ensure compliance with this plan. Inspections will be logged in the IADC reports. Logos Operating will file this log with the Aztec Division office upon closure of the pit
12 After drilling or workover operations, Logos Operating will inspect the temporary pit weekly so long as liquids remain in the temporary pit. A log of the inspections will be stored at Logos Operating's office electronically and will be filed with the Aztec Division office upon closure of the pit
13 Logos Operating shall maintain at least two feet of freeboard for a temporary pit
14 Logos Operating shall remove all free liquids from a temporary pit within 60 days from the date the operator releases the drilling or workover rig
15 Logos Operating shall remove all free liquids from cavitations put within 48 hours after completing cavitations. Logos Operating may request additional time to remove liquids from Aztec Division office if it is not feasible to remove liquids within 48 hours

Logos Operating, LLC
San Juan Basin
Temporary Pit Closure Plan

In accordance with Rule 19.15.17.13 NMAC the following information describes the closure requirements of temporary pits on Logos Operating Company's locations. This is Logos Operating's standard procedure for all temporary pits. A Separate plan will be submitted for any temporary pit that does not conform to this plan.

All closure activities will include proper documentation and be available for review upon request and will be submitted to OCD within 60 days of the pit closure. Closure report will be filed on C-144 and incorporated the following:

- Detail on Capping and Covering, where applicable
- Plot Plan (Pit diagram)
- Inspection reports
- Sampling Results
- C-105
- Copy of Deed Notice will be filed with County Clerk

General Plan

1. All free standing liquids will be removed at the start of the pit closure process from the pit and disposed of in a division-approved facility or recycle, reuse or reclaim the liquids in a manner that the appropriate division district office approves
2. The preferred method of closure for all temporary pits will be on-site burial, assuming that all criteria listed in sub-section (D) of 19.15.17.13 are met
3. The surface owner shall be notified of Logos Operating's proposed closure plan using a means that provides proof of notice i.e., certified mail, return receipt requested
4. Within 6 months of the Rig Off status occurring Logos Operating will ensure that temporary pits are closed, re-contoured, and reseeded
5. Notice of Closure will be given to the Aztec Division office between 72 hours and one week of closure via email, or verbally, The notification of closure will include the following:
    i. Operator's name
    ii. Location by Unit Letter, Section, Township, and Range. Well name and API Number
6. Pit contents shall be mixed with non-waste containing, earthen material in order to achieve the solidification process. The solidification process will be accomplished using a combination of natural drying and mechanically mixing. Pit contents will be mixed with non-waste, earthen material to a consistency that is deemed a safe and stable. The mixing ratio shall not exceed 3 parts clean soil to 1 part pit contents
7. A five point composite sample will be taken of the pit using sampling tools and all samples tested per 19.15.17.13 (D)(5). In the event that the criteria are not met, all contents will be handled per 19.15.17.13 (D)(7) i.e., Dig and haul

Components	Tests Method	Limit (mg/Kg)
Benzene	EPA SW-846 8021B or 8015M	10
BTEX	EPA SW-846 8021B or 8260B	50
TPH	EPA SW-846 418.1	2500
GRO/DRO	EPA SW-846 8015M	1000
Chlorides	EPA 300.0	80,000

* Submit Modification Permit with test well log and appropriate test standards.

8 Upon completion of solidification and testing, Logos will fold the outer edges of the trench liner to overlap the waste material in the pit area, then install a geomembrane cover over the waste material in the pit to prevent collections of infiltration water after the soil cover is in place; geomembrane a 20-mil, string reinforced, LLDPE liner, or equivalent complying with EPA SW-846 method 9090A requirements.

9 Pit area will be backfilled with compacted, non-waste containing, earthen material with chloride concentrations less than 600 mg/kg as analyzed by EPA Method 300.0. A minimum of four feet of cover shall be achieved and the cover shall include one foot of suitable material to establish vegetation at the site, or the background thickness of topsoil, whichever is greater

10 Re-contouring of location will match fit, shape, line, form and texture of the surrounding area. Re-shaping will include drainage control, prevent ponding, and prevent erosion. Natural drainages will be unimpeded and water bars and/or silt traps will be placed in areas where needed to prevent erosion on a large scale. Final re-contour shall have a uniform appearance with smooth surface, fitting the natural landscape

11 Notification will be sent to OCD when the reclaimed area is seeded

12 Logos Operating shall seed the disturbed areas the first growing season after the operator closes the pit. Seeding will be accomplished via drilling on the contour whenever practical or by other division-approved methods. BLM or Forest Service stipulated seed mixed will be used on federal lands. Vegetative cover will be established that will reflect a life-form ratio of plus or minus fifty percent (50%) of pre-disturbance levels and will equal seventy (70%) of the native perennial vegetative cover (un-impacted) consisting of at least three native plant species, including at least one grass, but not including noxious weeds, and maintain that cover thorough two successive growing seasons. Repeat seeding or planting will be continued until successful vegetative growth occurs

13 The temporary pit will be located with a steel marker, no less than four inches in diameter, cemented in a hole three feet deep in the center of the onsite burial upon the abandonment of all the wells on the pad. The marker will be a four foot tall riser with the operator's information at the time of all wells on the pad are abandoned. The operator's information will include the following: Operator Name, Lease Name, Well Name and Number, unit Number, Section, Township, Range and an indicator that the marker is an onsite burial location

    a. If the well goes into production, then an alternate interim marking system will be used to allow for safer and more efficient operations. A minimum 4" O.D. steel pipe will be set at least 36" deep at the center of the pit. A threaded collar will be on the top of the pipe. A minimum 12" x 12" steel plate will be welded atop the threaded collar. Top of the plate will be flush with ground level. The steel plate will contain the Operator Name, Lease Name, Well Number, and location information including unit letter, section, township and range, and that the marker designates an onsite burial location. This information will be welded, stamped or otherwise permanently engraved into the metal of the plate. Upon the abandonment of all the wells on the pad, the plate will be removed and replaced with a four foot tall riser containing the same information as described for the steel plate.