

State of New Mexico  
Energy, Minerals and Natural Resources Department

**Susana Martinez**  
Governor

**David Martin**  
Cabinet Secretary

**Brett F. Woods, Ph.D.**  
Deputy Cabinet Secretary

**David R. Catanach** Division Director  
Oil Conservation Division



New Mexico Oil Conservation Division approval and conditions listed below are made in accordance with OCD Rule 19.15.7.11 and are in addition to the actions approved by BLM on the following 3160-3 APD form.

Operator Signature Date: 7-29-15

Well information;

Operator Logos, Well Name and Number Logos Jicarilla #24D

API# 30-039-31339, Section 24, Township 26 N/S, Range 05 E/W

Conditions of Approval:

(See the below checked and handwritten conditions)

- ☒ Notify Aztec OCD 24hrs prior to casing & cement.
  - ☐ Hold C-104 for directional survey & "As Drilled" Plat
  - ☒ Hold C-104 for NSI, NSP, DHC
  - ☐ Spacing rule violation. Operator must follow up with change of status notification on other well to be shut in or abandoned
- ☒ Regarding the use of a pit, closed loop system or below grade tank, the operator must comply with the following as applicable:
  - A pit requires a complete C-144 be submitted and approved prior to the construction or use of the pit, pursuant to 19.15.17.8.A
  - A closed loop system requires notification prior to use, pursuant to 19.15.17.9.A
  - A below grade tank requires a registration be filed prior to the construction or use of the below grade tank, pursuant to 19.15.17.8.C
- ☐ Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
- ☒ Regarding Hydraulic Fracturing, review EPA Underground Injection Control Guidance 84
- ☒ Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.
- ☒ Well-bore communication is regulated under 19.15.29 NMAC. This requires well-bore Communication to be reported in accordance with 19.15.29.8.

Charles Pen  
NMOCD Approved by Signature

11-6-2015  
Date

**HOLD C104 FOR** updated plat, sundry for pool change



NOV 02 2015

RECEIVED

JUL 30 2015

FORM APPROVED  
OMB No. 1004-0137  
Expires October 31, 2014UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

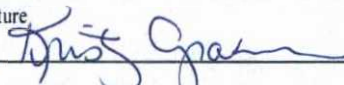
## APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. Jicarilla Apache Lease #108
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name Jicarilla Apache Nation
2. Name of Operator Logos Operating, LLC		7. If Unit or CA Agreement, Name and No.
3a. Address 4001 North Butler Ave, Building 7101 Farmington, NM 87401		8. Lease Name and Well No. Logos Jicarilla 24D
3b. Phone No. (include area code) 505-330-9333		9. API Well No. 30-039-31339
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 807' FNL 215' FWL, NW/NW At proposed prod. zone same as above		10. Field and Pool, or Exploratory Basin Mancos
14. Distance in miles and direction from nearest town or post office* 20 miles NE of Counselor, NM		11. Sec., T. R. M. or Blk. and Survey or Area Sec 24, T26N R05W, UL D
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 1833' FSL	16. No. of acres in lease 2560.0 acres	17. Spacing Unit dedicated to this well N/2 = 320 Acres
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1040' Jicarilla C 2N	19. Proposed Depth ~7336'	20. BLM/BIA Bond No. on file BIA 1062402
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6644' GL	22. Approximate date work will start* 10/01/2015	23. Estimated duration 45 days

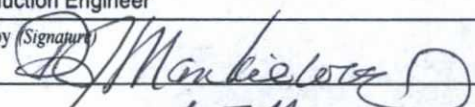
## 24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

- |  |   |
|--|---|
| 1. Well plat certified by a registered surveyor.   | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan.  | 5. Operator certification   |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be required by the BLM.             |

25. Signature 	Name (Printed Typed) Kristy Graham	Date 07/29/2015
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Title  
Production Engineer

Approved by (Signature) 	Name (Printed Typed) Markie Long	Date 10/30/15
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Title APM	Office TFO
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Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make 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.

(Continued on page 2)

This action is subject to technical and procedural review pursuant to 43 CFR 3165.3 and appeal pursuant to 43 CFR 3165.4

BLM'S APPROVAL OR ACCEPTANCE OF THIS ACTION DOES NOT RELIEVE THE LESSEE AND OPERATOR FROM OBTAINING ANY OTHER AUTHORIZATION REQUIRED FOR OPERATIONS ON FEDERAL AND INDIAN LANDS

NMOCDA

\*(Instructions on page 2)

**CONFIDENTIAL**

DRILLING OPERATIONS  
AUTHORIZED ARE SUBJECT TO  
COMPLIANCE WITH ATTACHED  
"GENERAL REQUIREMENTS"



DISTRICT I  
1626 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) 748-8720

DISTRICT III  
1000 Rio Brazos Rd., Aztec, N.M. 87410  
Phone: (505) 334-8178 Fax: (505) 334-8170

DISTRICT IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone: (505) 476-3480 Fax: (505) 476-3482

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

<sup>1</sup> API Number 30-039-31339	<sup>2</sup> Pool Code 97232	<sup>3</sup> Pool Name BASIN MANCOS
<sup>4</sup> Property Code 315641	<sup>5</sup> Property Name LOGOS JICARILLA	<sup>6</sup> Well Number 24D
<sup>7</sup> OGRD No. 289408	<sup>8</sup> Operator Name LOGOS OPERATING, LLC	<sup>9</sup> Elevation 6644

<sup>10</sup> Surface Location

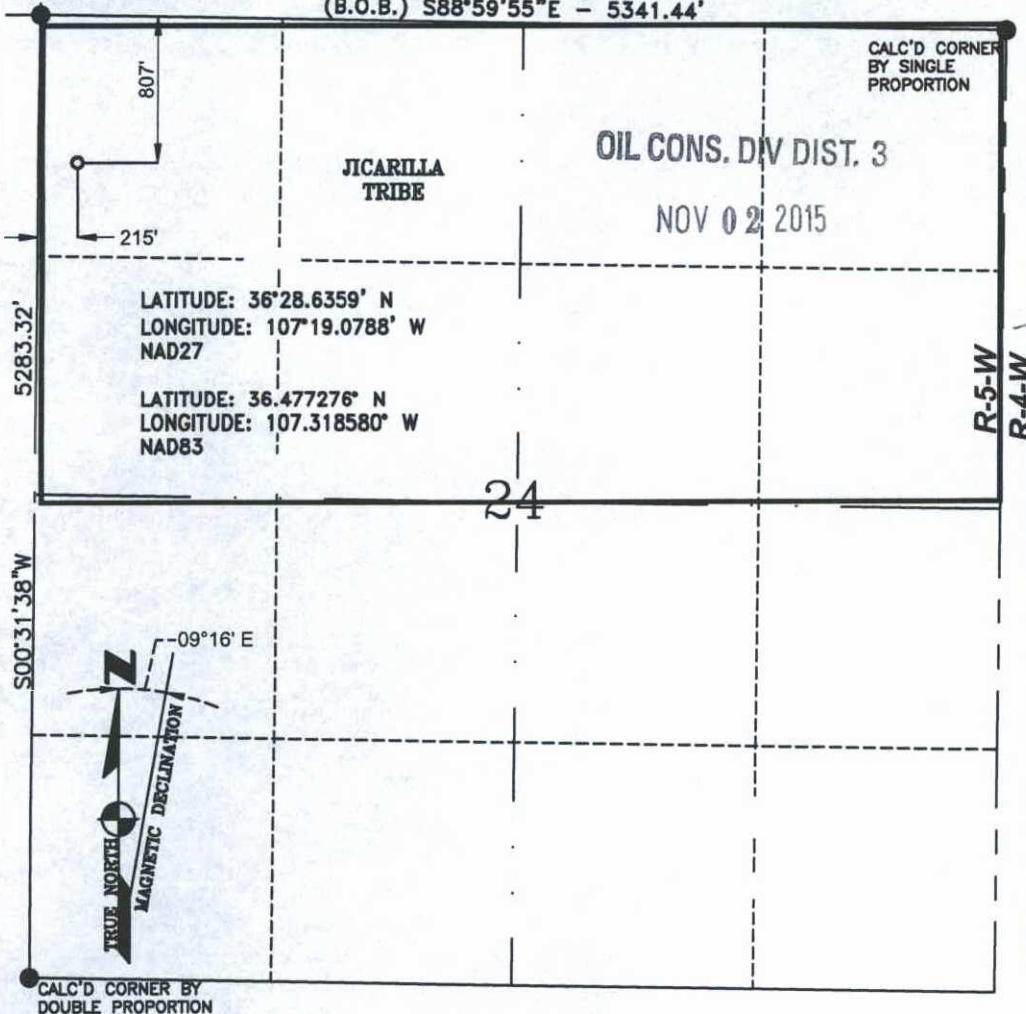
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	24	26-N	5-W		807	NORTH	215	WEST	RIO ARriba

<sup>11</sup> 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
<sup>12</sup> Dedicated Acres BM 320.00 ACRES N/2			<sup>13</sup> Joint or Infill		<sup>14</sup> Consolidation Code		<sup>15</sup> Order No.		

<sup>16</sup> 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

(B.O.B.) S88°59'55"E - 5341.44'



<sup>17</sup> 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 a working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

*Tamra Sessions* 7/15/15  
Signature Date  
Tamra Sessions  
Printed Name  
tsessions@logosresourcesllc.com  
E-mail Address

<sup>18</sup> 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.

APRIL 24, 2015

Date of Survey

Signature and Seal of Registered Surveyor

GLEN W. RUSSELL

Certificate Number



15703



**LOGOS OPERATING, LLC.  
DRILLING PLAN**

**LOGOS JICARILLA 24D**

**Note: This procedure will be adjusted on site based on actual conditions.**

- I. Location: 807' FNL & 215' FWL Date: July 27, 2015  
Sec 24, T26N, R05W  
Rio Arriba County, NM

Field: Mancos Elev: GL 6,644'  
Surface: Tribal  
Minerals: Tribal

- II. Geology: Surface formation, San Jose

a. Note: tops estimated

<b>Formation Tops</b>	<b>Depths</b>
Ojo Alamo	2556'
Kirtland	2765'
Fruitland	2836'
Pictured Cliffs	3127'
Lewis	3185'
Chacra	4033'
Cliff House	4809'
Menefee	4893'
Point Lookout	5321'
Mancos	5531'
Gallup	6347'
Greenhorn Member-Mancos	7237'
Graneros Shale	7293'
Dakota	7336'
Total Depth Proposed	7336'

Estimated depths of anticipated water, oil, gas, and other mineral bearing formations, which are expected to be encountered:

Water and gas- 3127', 4033', 4809', and 5321'

Water, gas, and oil- 5531', and 6347'

- b. Logging Program: Induction/GR and density/neutron logs from TD to the surface casing point. Mud logs will be run from below the surface casing to TD. No DST's or cores are planned for this well. Cased hole GR/CCI and CBL logs will be run from PBD to surface.
- c. No over pressured zones are expected in this well. No H<sub>2</sub>S zones will be penetrated in this well. Max BHP = 3176 psig. Lost circulation zones may be encountered in the Mesa Verde group and Niobrara sections.

**LOGOS OPERATING, LLC.  
DRILLING PLAN**

III. Drilling

- a. Contractor: To be determined.
- b. Mud Program:

The surface hole will be drilled with a fresh water mud.

The production hole will be drilled with a fresh water mud and will use bentonite to increase the viscosity. The weighting material will be drill solids or if conditions dictate, barite. The maximum mud weight expected in 9.2 ppg. The water loss will be controlled to a 6-8 cc/30 min. and loss circulation will be controlled with cedar fiber, paper, etc.

The Mancos, and Gallup formations will all be considered for completion in this well. A completion procedure will be developed after evaluating the wireline and mud logs.

- c. Minimum Blowout Control Specifications:

Double ram type 2000 psi working pressure BOP with a rotating head. See the attached Exhibit #1 for details on the BOP equipment. All ram type preventers and related equipment will be hydraulically tested at nipple-up to 250 psi (Low) for 5 minutes and 1,500 psi (High) for 10 minutes. All tests and inspections will be recorded in the daily drilling tour book.

The blind rams will be hydraulically activated and checked for operational readiness each time pipe is pulled out of the hole. All checks of the BOP stack and equipment will be noted on the daily drilling report. The BOP equipment will include a kelly cock, floor safety valve, and choke manifold all rated to 2000 psi.

IV. Materials

- a. Casing Program

Hole Size	Depth	Casing Size	Wt. & Grade
12-1/4"	500'	9-5/8"	36# J or K-55
7-7/8"	7336'	5-1/2"	17# P-110

- b. Float Equipment:

- i. Surface Casing: Notched collar, aluminum insert float in the first collar, and 3 centralizers on the bottom 3 joints.
- ii. Production Casing: 5-1/2" cement float shoe and self-fill insert float collar. Place float one joint above shoe. **Place DV tool at 5681'**. Place ten centralizers spaced every other joint above the shoe, two turbolizers on the collars below the DV tool and two turbolizers above the DV tool. Place five turbolizers every third joint from the top of the well.



**LOGOS OPERATING, LLC.  
DRILLING PLAN**

V. Cementing:

**Note: Cement volumes will be adjusted based on actual conditions.**

**Surface casing: 9-5/8"** – use 225 sx (266) cu. ft.) of Type V with 2%  $\text{CaCl}_2$  and ¼ #/sk Celloflake (Yield = 1.18 cu. ft./sk; slurry weight = 15.6 PPG). 100% excess to circulate cement to surface. WOC 12 hours. Pressure test surface casing to 1500 psi.

**Production casing: 5-1/2"** – Before cementing circulate hole with at least 1-1/2 hole volumes of mud. Precede cement with 30 bbls of fresh water. **1<sup>st</sup> stage: Lead** with 260 sx (458 cu. ft.) of Cl "B" 65/35 poz with 6% gel, 1%  $\text{CaCl}_2$ , 4% Phenoseal, and ¼ #/sx Celloflake (Yield = 1.6 cu. ft./sk; slurry weight = 12.8 PPG) > **Tail** with 100 sx (146 cu. ft.) of Cl "B" 50/50 poz with 0.15% dispersant, 1%  $\text{CaCl}_2$  and ¼ #/sk. Celloflake. (Yield 1.46 cu.ft./sk; slurry weight = 13.0 PPG). **2<sup>nd</sup> stage:** Precede cement with 20 bbls of water. **Lead** with 600 sx (1056 cu. ft.) Cl "B" 65/35 poz with 6% gel, 1%  $\text{CaCl}_2$ , and ¼ #/sx Celloflake (Yield = 1.76 cu. ft./sk; slurry weight = 12.8 PPG). **Tail** with 100 sx (146 cu. ft.) of Cl "B" 50/50 poz with 0.15% dispersant, 1%  $\text{CaCl}_2$ , and ¼ #/sk. Celloflake. (Yield = 1.46 cu. ft./sk; slurry weight = 13.0 PPG). Total cement volume is 1806 cu. ft. (50% excess to hole volume to circulate cement to surface).

**LOGOS OPERATING, LLC.**  
**MULTI-POINT SURFACE USE PLAN**

- b. **Pipeline:** A 106.0' up to 3-inch outside diameter, steel gas pipeline is proposed, see attached Plat #5. The entire length of the pipeline will parallel the proposed access road on tribal land. This well will be connected to the Williams Four Corners W-6 pipeline in the NW/NW of Section 24, T26N, R05W. Operator will request a 30-foot right-of-way for the pipeline. When parallel with the access road, construction width of the pipeline workspace will be restricted to 50-feet of disturbance. All buried pipelines will be buried to a minimum depth of 3-feet, except at road crossings where they will be buried to a depth of 4-feet.

5. **Water Supply:**

Water for drilling and completion operations will be hauled by truck from various permitted water sources within the area as agreed with the Jicarilla Apache Tribe. Produced water may also be recycled for use in drilling and completion activities. New Mexico Administrative Code (NMAC) Rule 19.15.34.12 allows the disposition of produced water for use as a drilling or completion fluid at a drilling site. Drill pit water will be recycled as much as reasonable.

6. **Source of Construction Materials:**

No additional construction materials will be required to build the proposed location.

7. **Methods for Handling Waste Disposal:**

- a. The drill cuttings and fluids will be placed in the reserve pit. The reserve pit will be lined with a 20 mil liner and fenced prior to drilling. The reserve pit will be allowed to dry, and materials remaining in the reserve pit buried. The reserve pit will be backfilled, leveled and contoured so as to prevent any materials being carried into the watershed. Upon completion, the pad will be leveled, contoured and reseeded with the appropriate seed mixture.
- b. If the NMOCD does not approve the use of a temporary pit the well will be drilled with a closed loop system and the fluids/cutting will be hauled to an approved disposal facility.
- c. Drilling mud that cannot be re-used will be disposed of at a properly permitted facility.
- d. All garbage and trash will be placed in a metal trash basket. It will be hauled off and dumped in an approved land fill upon completion of operations.
- e. Portable toilets will be provided and maintained during drilling operations. See Plat #9 for location.

8. **Ancillary Facilities:**

No ancillary facilities are required.

9. **Well Site Layout:**

A cross section of the drill pad with approximate cuts, fills, and pad orientation are attached as Plats #7 and #8. Location of drilling equipment, rig orientation, and access road approach is also attached as Plat #9.

As per the on-site on July 21, 2015 the following will apply for location construction:

- a. The pit will be "stepped-down" into the cut.
- b. 18" or greater culvert at take-off for access.
- c. Divert water around pad with top soil.
- d. Plan to use top soil for interim reclamation.

Please note "Conditions of Approval" for any additional stipulations.



Directions from the Intersection of  
Hwy 550 & Hwy 64 in Bloomfield, NM

To:

LOGOS OPERATING, LLC.

LOGOS JICARILLA #24D

807' FNL & 215' FWL,

Section 24, T26N, R5W, N.M.P.M., Rio Arriba,

New Mexico

Latitude:  $36^{\circ} 28' 38.194''$  N

Longitude:  $107^{\circ} 19' 06.888''$  W

NAD 1983

Go south on Hwy 550 for 66.2 miles

To the Int. Hwy 550 and Hwy 537,

Turn left (northerly) on Hwy 537 for 28.1 miles to J-6 road

Turn left (west) on J-6 road 7.0 miles,

Stay right (northwest) 0.6 miles,

Turn left (westerly) 0.4 miles,

Turn right (northwesterly) 0.5 miles,

beginning of new access on left (west) side of the field road,

which continues for 237.96' to newly staked location.



LOGOS OPERATING, LLC.  
DRILLING PLAN

Well Control Equipment Schematic for 2M Service

Attachment to Drilling Technical Program

**Exhibit #1**  
**Typical BOP setup**

Location: San Juan Basin, New Mexico

Date: August 24, 2004

By: John Thompson (Walsh E&P)

