

State of New Mexico  
Energy, Minerals and Natural Resources Department

Susana Martinez  
Governor

Ken McQueen  
Cabinet Secretary

Matthias Sayer  
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: 1/18/2017

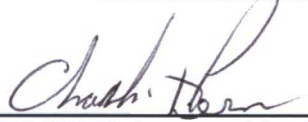
Well information;

Operator LOGOS, Well Name and Number LOGOS 2508 20D #15

API# 30-045-35828, Section 20, Township 25 N/S, Range 8 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 NSL, 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
- ☐ Submit Gas Capture Plan form prior to spudding or initiating recompletion operations
- ☒ 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.

  
NMOCD Approved by Signature

5-17-2017  
Date

RECEIVED

JAN 18 2017

FORM APPROVED  
OMB No. 1004-0137  
Expires: January 31, 2018

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

Farmington Field Office  
Bureau of Land Management


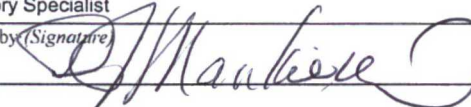
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No NMM118134
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		6. If Indian, Allottee or Tribe Name
1c. Type of Completion: <input checked="" type="checkbox"/> Hydraulic Fracturing <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		7. If Unit or CA Agreement, Name and No.
2. Name of Operator LOGOS Operating, LLC		8. Lease Name and Well No. LOGOS 2508 20D 15
3a. Address 2010 Afton Place, Farmington, NM 87415	3b. Phone No. (include area code) 505-324-4145	9. API Well No. 30-045-35828
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface 480' FNL 592' FWL, NW/NW At proposed prod. zone same		10. Field and Pool, or Exploratory Duffers Point-Gallup Dakota
11. Sec., T. R. M. or Blk. and Survey or Area Sec 20, T25N, R08W, UL D		12. County or Parish San Juan
13. State NM		14. Distance in miles and direction from nearest town or post office* 25 miles south of Bloomfield NM
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 480'	16. No of acres in lease 320	17. Spacing Unit dedicated to this well NW4 Sec 20 T25N R08W = 160 Acres
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 0'	19. Proposed Depth 6720'	20. BLM/BJA Bond No. in file BLM NMB000917
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6544' GL	22. Approximate date work will start* 3/18/2017	23. Estimated duration 45 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

- |  |  |
|--|--|
| 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 requested by the BLM.           |

25. Signature 	Name (Printed/Typed) Tamra Sessions	Date 1/18/17
Title Regulatory Specialist		
Approved by (Signature) 	Name (Printed/Typed)	Date 5/8/17
Title Regulatory Specialist	Office	

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

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

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

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

(Continued on page 2)

PM  
NMOCD  
\*(Instructions on page 2)



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 Branco Rd., Aztec, N.M. 87410  
Phone: (505) 334-6176 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

*API Number 30-045-35828		*Pool Code 19859	*Pool Name DUFFERS POINT-GALLUP DAKOTA
*Property Code 317770	*Property Name LOGOS 2508 20D		*Well Number 15
*OGRID No. 289408	*Operator Name LOGOS OPERATING, LLC		*Elevation 6544

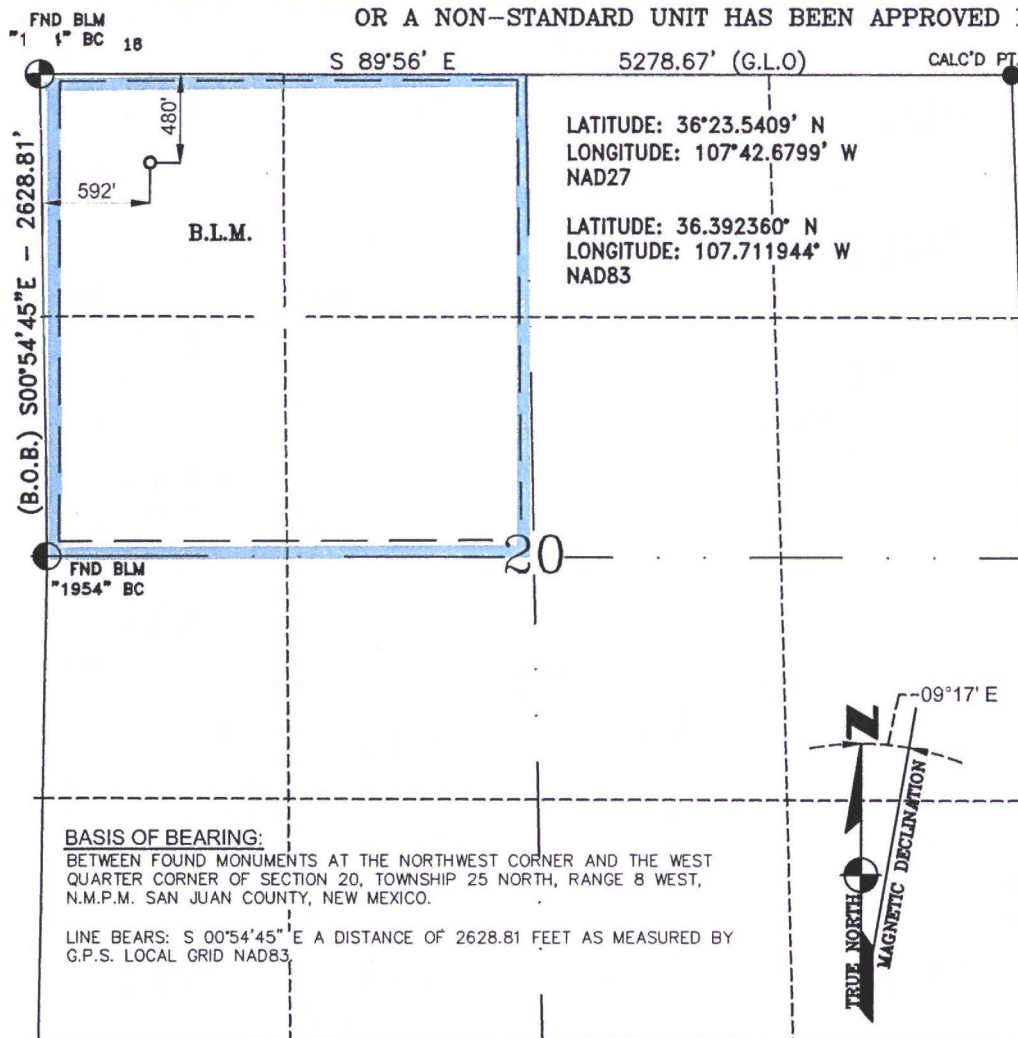
<sup>10</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	20	25-N	8-W		480	NORTH	592	WEST	SAN JUAN

<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 G-DK 160.00 ACRES NW/4			<sup>13</sup> Joint or Infill		<sup>14</sup> Consolidation Code		<sup>15</sup> Order No.		

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



17 OPERATOR CERTIFICATION

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

*Tamra Sessions* 1-17-17

Signature Date

Tamra Sessions

Printed Name

tssessions@logosresourcesllc.com

E-mail Address

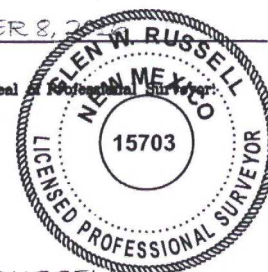
18 SURVEYOR CERTIFICATION

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.

SEPTEMBER 8, 2017

Date of Survey

Signature and Seal of Professional Surveyor



GLEN W. RUSSELL

Certificate Number

15703

**LOGOS OPERATING, LLC.**  
**DRILLING PLAN**  
**LOGOS 2508 20D 15**

APD 1/18/17

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

- I. Location: 480' FNL & 592' FWL Date: January 18, 2017  
Sec 20, T25N, R08W  
San Juan County, NM

Field: Gallup-Dakota Elev: GL 6,544'  
Surface: BLM  
Minerals: BLM

- II. Geology: Surface formation, San Jose

- a. Note: tops estimated

Formation Tops	Depths
Ojo Alamo	1208'
Kirtland	1358'
Fruitland	1578'
Pictured Cliffs	1988'
Lewis	2094'
Chacra	2843'
Cliff House	3553'
Menefee	3578'
Point Lookout	4361'
Mancos	4661'
Gallup	5373'
Greenhorn Member-Mancos	6303'
Graneros Shale	6356'
Burro Canyon	6680'
Morrison	6720'
Total Depth Proposed	6720'

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

Water and gas- 1578', 1988', 3553', and 4361'

Water, gas, and oil- 4661', 5373', and 6680'

- 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 PBTD 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 = 2909 psig. Lost circulation zones may be encountered in the Mesa Verde group and Niobrara sections.



**LOGOS OPERATING, LLC.**  
**DRILLING PLAN**  
**LOGOS 2508 20D 15**

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 Charca, Cliff House, Menefee, Point Lookout, 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"	330'	9-5/8"	36# J or K-55
7-7/8"	6720'	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 4661'**. 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**  
**LOGOS 2508 20D 15**

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  $\frac{1}{4}$  #/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  $\frac{1}{4}$  #/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  $\frac{1}{4}$  #/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  $\frac{1}{4}$  #/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  $\frac{1}{4}$  #/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.**

**DRILLING PLAN**

**LOGOS 2508 20D 15**

**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)

