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Farmington Field Office
Bureau of Land Management

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

SONDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator **LOGOS Operating, LLC**

3a. Address **2010 Afton Place
Farmington, NM 87401**

3b. Phone No. (include area code)
(505) 324-4145

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
2410' FNL 330' FEL, SE/NE, H Sec 29, T24N, R06W,

5. Lease Serial No. **NMNM117140**

6. If Indian, Allottee or Tribe Name

7. If Unit of CA/Agreement, Name and/or No.
NMNM-135257

8. Well Name and No. **LOGOS 2406 29H Com 13**

9. API Well No.
30-039-31359

10. Field and Pool or Exploratory Area
Devils Fork Gallup (Associated)

11. Country or Parish, State
Rio Arriba County, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Hydraulic Fracturing	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input type="checkbox"/> Other
	<input checked="" type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomple horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recomple in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

LOGOS proposes to make the following changes:

Change the Production casing from 5-1/2" P110 17# to 4-1/2" P-110 11.6#.
Cement volumes will be adjusted accordingly.

LOGOS also proposes to drill deeper into the Dakota to assess that reservoir without producing any hydrocarbons and to thereafter seal off any possibility of production from the zone. This will enable LOGOS to get modern log data in the area for direct comparison.

BLM'S APPROVAL OF THIS ACTION DOES NOT CONSTITUTE AN ENDORSEMENT OF THE OPERATOR'S BUSINESS OR A GUARANTEE OF THE ACCURACY OF THE INFORMATION ON FEDERAL LANDS.

OIL CONS. DIV DIST. 3
MAY 23 2017

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)

Tamra Sessions

Title **Regulatory Specialist**

Signature

Tamra Sessions

Date

05/10/2017

THE SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Jack Savage

Title

PE

Date

5/23/17

Conditions of approval, if any, are attached. Approval of this notice 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.

Office

FFU

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.

(Instructions on page 2)

**LOGOS OPERATING, LLC.
DRILLING PLAN**

LOGOS 2406 29H Com 13

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

- I. Location: 2410' FNL & 330' FEL Date: May 10, 2017
 Sec 29, T24N, R06W Change in Plans
 Rio Arriba County, NM
- Field: Gallup Elev: GL 6,891'
Surface: BLM
Minerals: BLM

- II. Geology: Surface formation, San Jose

- a. Note: tops estimated

Formation Tops	Depths
Ojo Alamo	1658'
Kirtland	1805'
Fruitland	1971'
Pictured Cliffs	2229'
Lewis	2335'
Chacra	3061'
Cliff House	3798'
Menefee	3822'
Point Lookout	4532'
Mancos	4758'
Gallup	5458'
Greenhorn Member-Mancos	6452'
Graneros Shale	6506'
Dakota	6535'
Total Depth Proposed	6906'

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

Water and gas- 1971', 2229', 3061', 3798, and 4532'

Water, gas, and oil- 4758', and 5458'

- 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 PBDT to surface. Open hole, PEX, Litho Scan, and CMR logs will also be ran.
- c. No over pressured zones are expected in this well. No H₂S zones will be penetrated in this well. Max BHP = 2983 psig. Lost circulation zones may be encountered in the Mesa Verde group and Niobrara sections.

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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.

LOGOS target zone is the Gallup, but we will drill deeper into the Dakota, run open hole, PEX, Litho Scan, and CMR logs, run casing and cement to TD to plug back the Dakota. Perforations and frac stimulations will be above the Dakota top.

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"	6906'	4-1/2"	11.6# 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: 4-1/2" cement float shoe and self-fill insert float collar. Place float one joint above shoe. **Place DV tool at 4908'**. 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.

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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% CaCl₂ 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: 4-1/2" – Before cementing circulate hole with at least 1-1/2 hole volumes of mud. Precede cement with 30 bbls of fresh water.

1st stage: Lead with 94 sx (185 cu. ft.) of Cl "B" 65/35 poz with 6% gel, 1% CaCl₂, 4% Phenoseal, and ¼ #/sx Celloflake (Yield = 1.97 cu. ft./sk; slurry weight = 12.8 PPG) > **Tail** with 384 sx (503 cu. ft.) of Cl "B" 50/50 poz with 0.15% dispersant, 1% CaCl₂ and ¼ #/sk. Celloflake. (Yield 1.31 cu.ft./sk; slurry weight = 13.0 PPG).

2nd stage: Precede cement with 20 bbls of water. **Lead** with 769 sx (1499 cu. ft.) Cl "B" 65/35 poz with 6% gel, 1% CaCl₂, and ¼ #/sx Celloflake (Yield = 1.95 cu. ft./sk; slurry weight = 12.8 PPG). **Tail** with 148 sx (172 cu. ft.) of Cl "B" 50/50 poz with 0.15% dispersant, 1% CaCl₂, and ¼ #/sk. Celloflake. (Yield = 1.16 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

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)

