

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

David Martin
Cabinet Secretary-Designate

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

Jami Bailey, 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: 5/21/13

Well information;

Operator Logos, Well Name and Number Logos 9

API# 30-043-21157, Section 5, Township 22 NS, Range 5 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
- ☐ 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

Charles
NMOCD Approved by Signature

9-16-2013
Date ca

RECEIVED

FORM APPROVED
OMB No. 1004-0137
Expires July 31, 2010

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

MAY 23 2013

APPLICATION FOR PERMIT TO DRILL OR REENTER Field On Bureau of Land Management

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. Jicarilla Apache Lease #424
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 #9
3b. Phone No. (include area code) 505-436-2627		9. API Well No. 30-043-21157
4. Location of Well (Report location clearly and in accordance with any State requirements.)* At surface 1400' FNL, 355' FEL At proposed prod. zone same as above		10. Field and Pool, or Exploratory Wildcat Dakota
14. Distance in miles and direction from nearest town or post office* 4 miles SW of Counselors, NM		11. Sec., T. R. M. or Blk. and Survey or Area Sec 5, T22N, R5W, UL H
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 355'	16. No. of acres in lease 2561.60 acres	12. County or Parish Sandoval
17. Spacing Unit dedicated to this well SE/4 NE/4 40 acres	13. State NM	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 3396'	19. Proposed Depth ~6500'	20. BLM/BIA Bond No. on file 1062402
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6857' GL	22. Approximate date work will start* 08/01/2013	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.
2. A Drilling Plan.
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).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the BLM.

25. Signature 	Name (Printed/Typed) Kristy Graham	Date 05/21/2013
Title Production Engineer		
Approved by (Signature) 	Name (Printed/Typed) AFM	Date 9/6/13
Title AFM	Office FFO	

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)

*(Instructions on page 2)

CONFIDENTIAL

This action is subject to technical and procedural review pursuant to 43 CFR 3160.5 and appeal pursuant to 43 CFR 3160.4

DRILLING OPERATIONS AUTHORIZED
SUBJECT TO COMPLIANCE WITH ALL OF THE
"GENERAL REQUIREMENTS".

NMOC

A

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

District I
1625 N. French Drive, Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

District II
811 S. First Street, Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV
1220 S. St. Francis Drive, Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised August 1, 2011

Submit one copy to
Appropriate District Office

OIL CONSERVATION DIVISION

1220 South St. Francis Drive MAY 28 2013
Santa Fe, NM 87505

Farmington Field Office
Bureau of Land Management

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-043-21157	*Pool Code 97977	*Pool Name WC 22N5W5, WILDCAT DAKOTA (LO)
*Property Code 311963	*Property Name LOGOS	*Well Number 9
*GRID No. 289408	*Operator Name LOGOS RESOURCES, LLC	*Elevation 6857'

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
H	5	22N	5W		1400	NORTH	355	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 40 acres SE/4 NE/4	13 Joint or Infill	14 Consolidation Code	15 Order No.
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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	5280.00'				17 OPERATOR CERTIFICATION
1339.80'	LOT 4	LOT 3	LOT 2	LOT 1	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.
1320.00'					Signature: <i>Kristy Graham</i> Date: 5/21/13
					Printed Name: Kristy Graham
					E-mail Address: kgraham@logosresourcesllc.com
					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.
					Date of Survey: MARCH 21, 2013
					Signature and Seal of Professional Surveyor
					
					JASON C. EDWARDS
					Certificate Number 15269

5277.36'

LOGOS OPERATING, LLC.
OPERATIONS PLAN
LOGOS #9

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

I. Location: 1400' FNL & 355' FEL Date: May 21, 2013
 Sec 5, T22N, R5W
 Sandoval County, NM

Field: Wildcat Dakota Elev: GL 6,857'
Surface: Jicarilla Apache
Minerals: Jicarilla Apache #424

II. Geology: Surface formation _ Nacimiento

A. Formation Tops	Depths
Ojo Alamo	1,340'
Kirtland	1,620'
Pictured Cliffs	1,853'
Lewis	1,944'
Chacra	2,276'
Cliff House	3,332'
Menefee	3,413'
Point Lookout	4,092'
Mancos	4,283'
Niobrara A	5,027'
Niobrara B	5,130'
Niobrara C	5,247'
Greenhorn	6,093'
Graneros	6,140'
Dakota	6,160'
Morrison	6,540'
Total Depth	6,550'

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

Water and gas - 1,853', 2,276', 3,332', 4,092'

Water, gas, and oil - 4,283', 5,027', 5,130', 5,247', and 6,160'

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/CCL and CBL logs will be run from PBTD to surface.

C. No over pressured zones are expected in this well. No H₂S zones will be penetrated in this well. Max. BHP = 2,850 psig. Lost circulation zones may be encountered in the Mesa Verde group and Niobrara sections.

III. Drilling

A. Contractor:

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 is 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 Chacra, Cliff House, Menefee, and Point Lookout, Mancos, Niobrara, and Dakota 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-55
7-7/8"	6,550'	5-1/2"	17# P-110

B. Float Equipment:

a) Surface Casing: Notched collar, aluminum insert float in the first collar, and 3 centralizers on the bottom 3 joints.

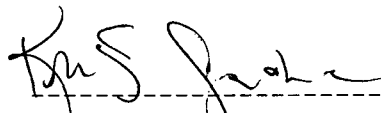
b) Production Casing: Production Casing: 5-1/2" cement float shoe and self-fill insert float collar. Place float one joint above shoe. **Place DV tool at 4,386'**. Place ten centralizers spaced every other joint above the shoe, two turbolizers on the collars below the DV tool and two turbolizers above the DV tool. Place five turbolizers every third joint from the top of the well.

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: 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. **1st Stage: Lead** with 260 sx (458 cu.ft.) of Cl "B" 65/35 poz with 6% gel, 1% CaCl_2 , 4% phenoseal, 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% CaCl_2 and $\frac{1}{4}$ #/sk. celloflake. (Yield = 1.46 cu. ft./sk; slurry weight = 13.0 PPG). **2nd Stage:** Precede cement with 20 bbls of water. **Lead** with 600 sx (1056 cu.ft) Cl "B" 65/35 poz with 6% gel, 1% 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% 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).



Kristy Graham, Production Engineer

1400' FNL & 355' FEL, SECTION 5, T22N, R5W, N.M.P.M.
SANDOVAL COUNTY, NEW MEXICO



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 20, 2001

By: John Thompson (Walsh E&P)

