

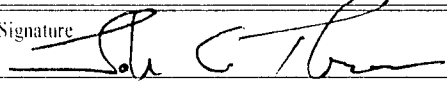
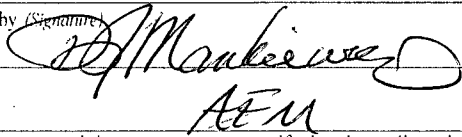
**CONFIDENTIAL**Form 3160-3  
(August 2007)**RECEIVED**UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT**OCT 22 2012****APPLICATION FOR PERMIT TO DRILL FOR REENTER**  
Field Office  
Bureau of Land ManagementFORM APPROVED  
OMB No. 1004-0137  
Expires July 31, 2010

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NM 109399
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input checked="" type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name RCVD JAN 9 '13 OIL CONS. DIV. DIST. 3
2. Name of Operator Logos Operating, LLC		7. If Unit or CA Agreement, Name and No. Logos #6
3a. Address 4001 North Butler Ave., Building 7101 Farmington, NM 87401		8. Lease Name and Well No. 30-045-35422
3b. Phone No. (include area code) 505-436-2627		9. API Well No.
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 1662' FNL, 1973' FEL At proposed prod. zone same as above		10. Field and Pool, or Exploratory Basin Dakota-Nageezi Gallup
14. Distance in miles and direction from nearest town or post office*		11. Sec., T. R. M. or Blk. and Survey or Area Sec 8, T23N, R8W, UL G
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No. of acres in lease 977 acres	12. County or Parish San Juan
17. Spacing Unit dedicated to this well Basin Dakota - E/2 320 acres Nageezi Gallup - SW/4NE/4	18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. No other wells on lease.	13. State NM
19. Proposed Depth ~6400'	20. BLM/BIA Bond No. on file 1062415	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6896' GL	22. Approximate date work will start* 11/15/2012	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:

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

25. Signature 	Name (Printed/Typed) John C. Thompson	Date 10/22/2012
Title Agent/Engineer		
Approved by 	Name (Printed/Typed) AEM	Date 1/4/13
Title FEO		

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)

**NOTIFY AZTEC OCD 24 HRS.  
PRIOR TO CASING & CEMENT**

**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**

**NMOCD**  
A

JAN 23 2013 ca

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".**

## DISTRICT I

1886 N. French Dr., Hobbs, N.M. 88240  
Phone: (505) 833-6161 Fax: (505) 833-0780

## DISTRICT II

611 S. First St., Artesia, N.M. 88210  
Phone: (505) 748-1883 Fax: (505) 748-0780

## DISTRICT III

1000 Rio Grande Rd., Aztec, N.M. 87410  
Phone: (505) 834-6176 Fax: (505) 834-6170

## DISTRICT IV

1280 S. St. Francis Dr., Santa Fe, NM 87505  
Phone: (505) 476-8460 Fax: (505) 476-8468

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 Dr.  
Santa Fe, NM 87505

☒ AMENDED REPORT

## WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-045-35422	*Pool Code 71599; 47540	*Pool Name BASIN DAKOTA-NAGEEZI GALLUP
*Property Code 311963	*Property Name LOGOS	*Well Number 6
*OGRID No. 289408	*Operator Name LOGOS Operating, LLC	*Elevation 6893'

## 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
G	B	23N	8W		1662'	NORTH	1973'	EAST	SAN JUAN

## 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

\*Dedicated Acres  
☐ Basin Dakota (320) E2  
☒ Nageezi Gallup (40) SWNE

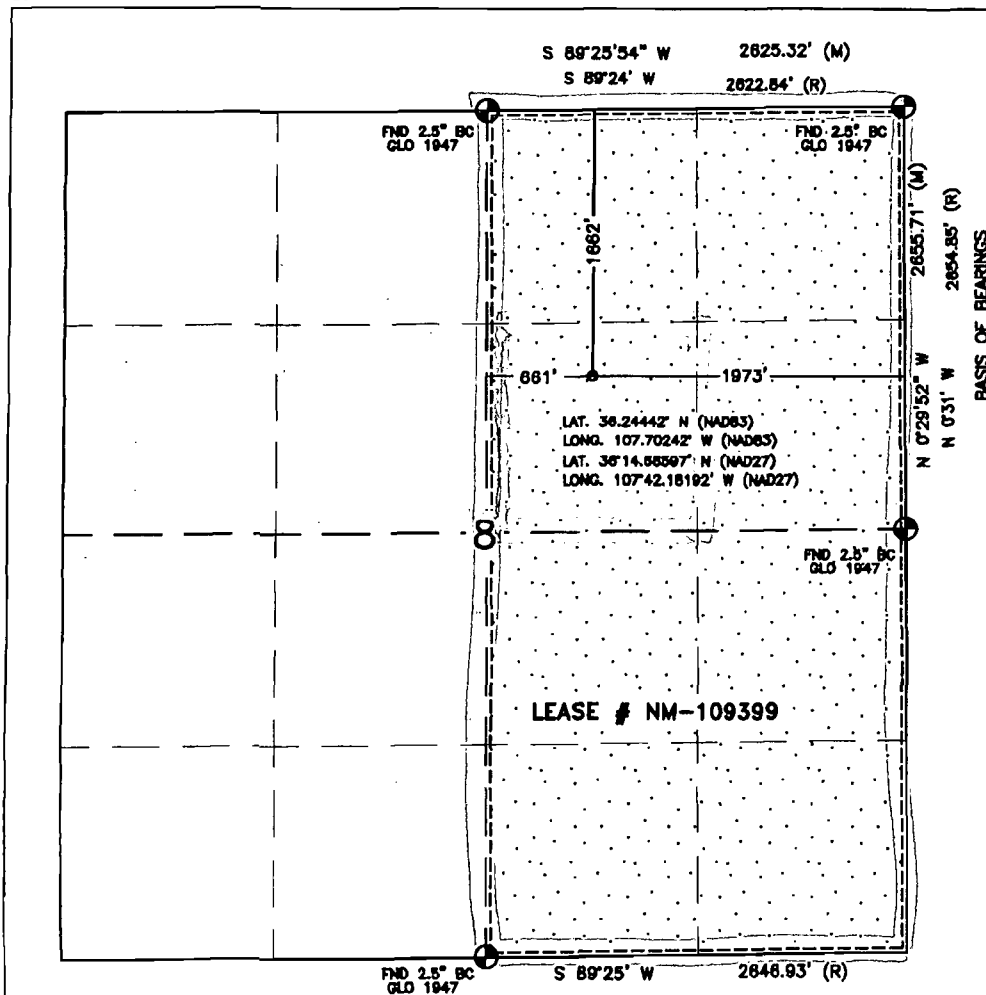
\*Joint or Infill

\*Consolidation Code

\*Order No.  
RCVD JAN 18 '13  
OIL CON. DIV.  
DIST. 3

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 1/17/2013

Printed Name Jay Paul McWilliams

E-mail Address jmcwilliams@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.

OCTOBER 19, 2012

Date of Survey

Signature and Seal of Professional Surveyor:

DAVID R. RUSSELL  
NEW MEXICO  
REGISTERED PROFESSIONAL LAND SURVEYOR  
10201

Certificate Number

10201

LOGOS OPERATING, LLC.  
OPERATIONS PLAN  
LOGOS #6

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

I. Location: 1662' FNL & 1973' FEL Date: October 31, 2012  
Sec 8, T23N, R8W  
San Juan County, NM

Field: Basin Dakota/Nageezi Gallup Elev: GL 6,900'  
Surface: Federal  
Minerals: Federal

II. Geology: Surface formation \_ Nacimiento

A. Formation Tops	Depths
Ojo Alamo	799'
Kirtland	1,012'
Pictured Cliffs	1,511'
Lewis	1,587'
Chacra	1,879'
Chacra Mrkr	2,302'
Cliff House	2,951'
Menefee	3,007'
Point Lookout	4,010'
Mancos	4,098'
Niobrara B	4,925'
Niobrara C	5,026'
Greenhorn	5,850'
Dakota	5,996'
Morrison	6,376'
Total Depth	6,386'

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

Water and gas - 1,511', 1,879', 2,951', 4,010'

Water, gas, and oil - 4,098', 4,925', 5,026', and 5,996'

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 H<sub>2</sub>S 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 Charca, 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"	320'	8-5/8"	32# J-55
7-7/8"	6,386'	5-1/2"	15.5# J-55

##### 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 4,148'**. 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: 8-5/8"** - Use 225 sx (266 cu. ft.) of Type V with 2% CaCl<sub>2</sub> 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 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 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 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 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).

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John C. Thompson, Engineer

LOGOS OPERATING, LLC  
LOGOS #6  
1662' FNL & 1973' FEL  
LOCATED IN THE SW/4 NE/4 OF SECTION 8,  
T23N, R8W, N.M.P.M.,  
SAN JUAN COUNTY, NEW MEXICO

### DIRECTIONS

- 1) FROM THE INTERSECTION OF HWY 550 AND HWY 64 IN BLOOMFIELD, TRAVEL SOUTH ON HWY 550 FOR 44.2 MILES TO THE "44" CONVIENT STORE ON THE LEFT.
- 2) TURN LEFT ON 2-TRACK JUST EAST OF "44" CONVIENT STORE PARKING LOT TO BEGIN ACCESS ON RIGHT SIDE.

WELL FLAG LOCATED AT LAT. 36.24442° N, LONG. 107.70242° W (NAD 83).



# 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)

