

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: 1/14/14

Well information;

Operator Logos, Well Name and Number Warner-Caldwell 3B

API# 30-045-35500, Section 8, Township 23 NS, Range 8 EW

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



NMOCD Approved by Signature

2-25-2014  
Date CA

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Form 3160-3  
(March 2012)

JAN 14 2014

FORM APPROVED  
OMB No. 1004-0137  
Expires October 31, 2014

UNITED STATES  
DEPARTMENT OF THE INTERIOR Farmington Field Office  
BUREAU OF LAND MANAGEMENT Bureau of Land Management

5. Lease Serial No.  
NM 109399

6. If Indian, Allottee or Tribe Name

7. If Unit or CA Agreement, Name and No.

8. Lease Name and Well No.  
Warner-Caldwell 3B

9. API Well No.  
3004535506

10. Field and Pool, or Exploratory  
Basin Dakota-Nageezi Gallup

11. Sec., T. R. M. or Blk. and Survey or Area  
Sec 8, T23N R08W, UL B NWN E

12. County or Parish  
San Juan

13. State  
NM

1a. Type of work:  DRILL  REENTER

1b. Type of Well:  Oil Well  Gas Well  Other  Single Zone  Multiple Zone

2. Name of Operator Logos Operating, LLC

3a. Address 4001 North Butler Ave, Bldg 7101  
Farmington, NM 87401

3b. Phone No. (include area code)  
505-330-9333

4. Location of Well (Report location clearly and in accordance with any State requirements.)  
At surface 384' FNL 1960' FEL  
At proposed prod. zone Same as above

14. Distance in miles and direction from nearest town or post office\*  
2.56 miles southeast of Nageezi, NM, 0.38 miles from the forty four store

15. Distance from proposed\* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)  
384' FNL

16. No. of acres in lease  
~~1137~~ acres 977.06

17. Spacing Unit dedicated to this well  
NE/4NE/4 = 40 acres  
NWN E

18. Distance from proposed location\* to nearest well, drilling, completed, applied for, on this lease, ft.  
1348' from Logos #006

19. Proposed Depth  
approx 6400'

20. BLM/BIA Bond No. on file  
BLM-1062415  
NMB000917

21. Elevations (Show whether DF, KDB, RT, GL, etc.)  
6867' GL

22. Approximate date work will start\*  
03/01/2014

23. Estimated duration  
45 days RCVD FEB 18 '14

24. Attachments OIL CONS. DIV.

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

DIST. 3

- 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 *Tam Sessions* Name (Printed/Typed) Tamra Sessions Date 01/14/2014

Title Operations Technician

Approved by (Signature) *D. Mankiewicz* Name (Printed/Typed) Date 2/12/14

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.

BLM'S APPROVAL OR ACCEPTANCE OF THIS

(Continued on page 2)  
**DRILLING OPERATIONS  
AUTHORIZED ARE SUBJECT TO  
COMPLIANCE WITH ATTACHED  
"GENERAL REQUIREMENTS"**

ACTION DOES NOT RELIEVE THE LESSEE AND OPERATOR FROM OBTAINING ANY OTHER AUTHORIZATION REQUIRED FOR OPERATIONS ON FEDERAL AND INDIAN LANDS

NMOC

AV

\*(Instructions on page 2)

**CONFIDENTIAL**

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

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 Bravos Ed., Aztec, N.M. 87410  
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone: (505) 476-3460 Fax: (505) 476-3463

State of New Mexico  
Energy, Minerals & Natural Resources Department

RECEIVED

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

JAN 14 2014

Farmington Field Office  AMENDED REPORT  
Bureau of Land Management

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number 30-045-35506		2 Pool Code 47540		3 Pool Name NAGEEZI GALLUP	
4 Property Code 40413		5 Property Name WARNER-CALDWELL		6 Well Number 3B	
7 OGRID No. 289408		8 Operator Name LOGOS OPERATING, LLC		9 Elevation 6867'	

10 Surface Location

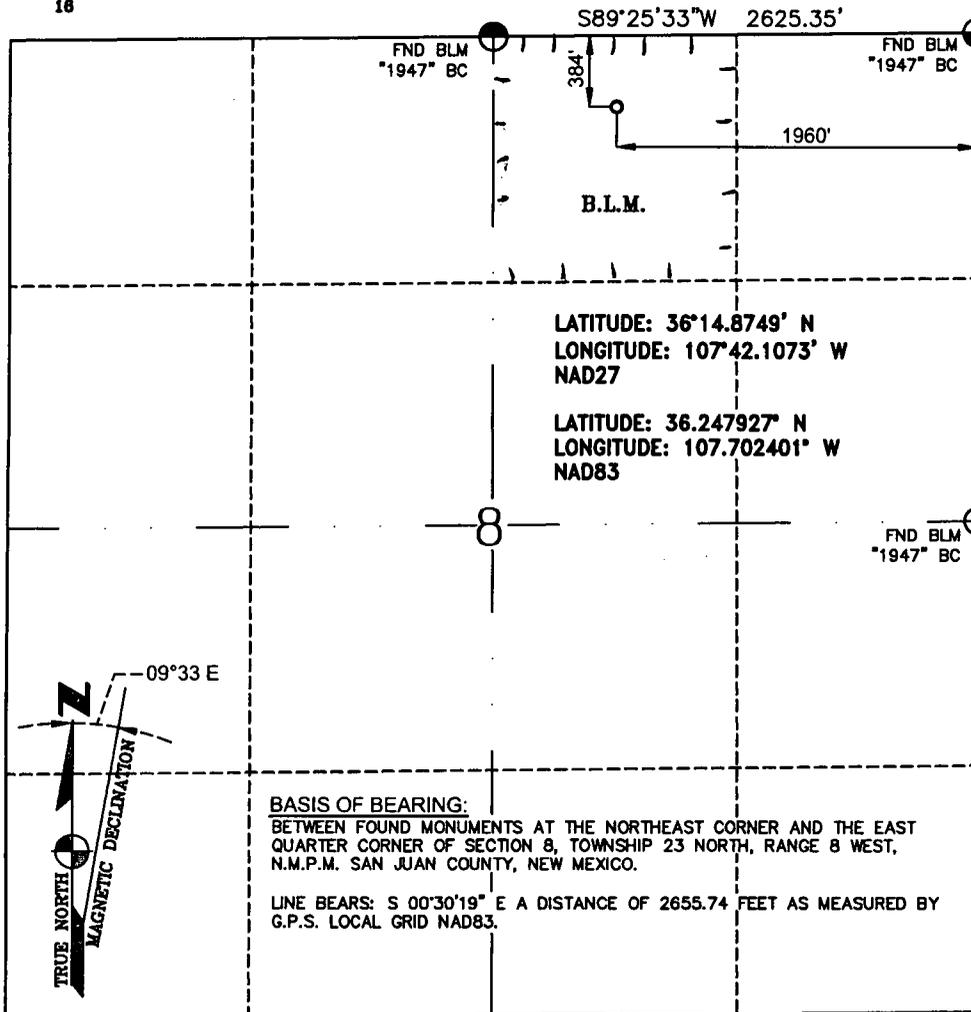
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	8	23-N	8-W		384	NORTH	1960	EAST	SAN JUAN

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
12 Dedicated Acres 40.00			13 Joint or Infill		14 Consolidation Code		15 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

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 a working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Tamra Sessions 1/13/14  
Signature Date  
Tamra Sessions  
Printed Name  
t.sessions@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 4, 2013  
Date of Survey  
Signature and Seal of Professional Surveyor  
GLEN W. RUSSELL  
15703  
LICENSED PROFESSIONAL SURVEYOR  
GLEN W. RUSSELL  
Certificate Number 15703

**Logos Operating, LLC  
Operations Plan  
Warner-Caldwell 3B**

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

- I. Location: 384' FNL and 1960' FEL Date: January 13, 2014  
 Sec 8, T23N R08W  
 San Juan County, NM

Field: Gallup Elev: GL 6,867'  
 Surface: Federal  
 Minerals: Federal

- II. Geology: Surface formation: Nacimiento Formation  
 a.

<b>Formation Tops</b>	<b>Depths</b>
Ojo Alamo	799'
Kirtland	1012'
Pictured Cliffs	1511'
Lewis	1587'
Chacra	1879'
Chacra Mrkr	2302'
Cliff House	2951'
Menefee	3007'
Point Lookout	4010'
Mancos	4098'
Niobrara B	4925'
Niobrara C	5026'
Greenhorn	5850'
Dakota	5996'
Morrison	6376'
Total Depth	6400'

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

Water and gas- 1511', 1879', 2951', 4010'  
 Water, gas, and oil- 4098', 4925', 5026', 5996'

- 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.
- 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 = 2850 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 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, 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"	330'	9-5/8"	36# J-55
7-7/8"	6400'	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 4,248'**. 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% 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% CaCl<sub>2</sub>, 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% CaCl<sub>2</sub> 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% CaCl<sub>2</sub>, 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% dispersand, 1% CaCl<sub>2</sub>, 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).

- d. The pipeline ROW will be developed and reclaimed to BLM standards. A seed mix for use in reclamation has been developed and can be found in the Reclamation Plan (Appendix A).
- e. Construction equipment may include chain saws, a brush hog, scraper, maintainer, excavator, and dozer. Construction of the pipeline will take approximately 2 weeks.

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

1. Cuttings

- a. The drill cuttings and drilling fluids will be placed in a reserve pit. The reserve pit will be lined with a 20 mil string re-enforced material and constructed to meet the NMOCD pit guidelines. The reserve pit will be fenced prior to drilling. After drilling, any free liquids in the pit will be disposed of at the appropriate waste disposal facilities. The solids in the reserve pit will be allowed to dry, tested, and buried according to NMOCD pit rules.

2. Flowback Water

- a. The water-based solution that flows back to the surface during and after completion operations will be placed in storage tanks on location.
- b. Flowback water will be confined to a storage tank for a period not to exceed 90 days after initial production and will be disposed of at Basin Disposal, Inc. and/or Industrial Ecosystem, Inc. waste disposal facilities or recycled.

3. Spills - any spills of non-freshwater fluids will be immediately cleaned up and removed to an approved disposal site.

4. Sewage - self-contained, chemical toilets will be provided for human waste disposal. The toilet holding tanks will be pumped, as needed, and the contents thereof disposed of in an approved sewage disposal facility. The toilets will be onsite during all operations.

5. Garbage and other waste material - garbage, trash, and other waste materials will be collected in a portable, self-contained and fully-enclosed trash container during drilling and completion operations. The accumulated trash will be removed, as needed, and will be disposed of at an authorized sanitary landfill. No trash will be buried or burned on location.

6. Immediately after removal of the drilling rig, all debris and other waste materials not contained in the trash container will be cleaned up and removed from the well location.

**Directions from the Intersection of Highway 550 and Highway  
64 in Bloomfield, NM**

**to**

**LOGOS OPERATING, LLC**

**WARNER-CALDWELL #3B**

**384' FNL 1960' FEL,**

**Section 8, T23N, R8W, N.M.P.M., San Juan County,  
New Mexico**

**Latitude: 36° 14' 52.54" N**

**Longitude: 107° 42' 08.64" W**

**Nad 1983**

**From the Intersection of Highway 550 & Highway 64**

**Go South on Hwy 550 for 39.3 miles,**

**To 44 store,**

**turn left (northerly) for 300 feet**

**just past 44 store parking lot,**

**to the beginning of new access**

**on the right (east) side of the road,**

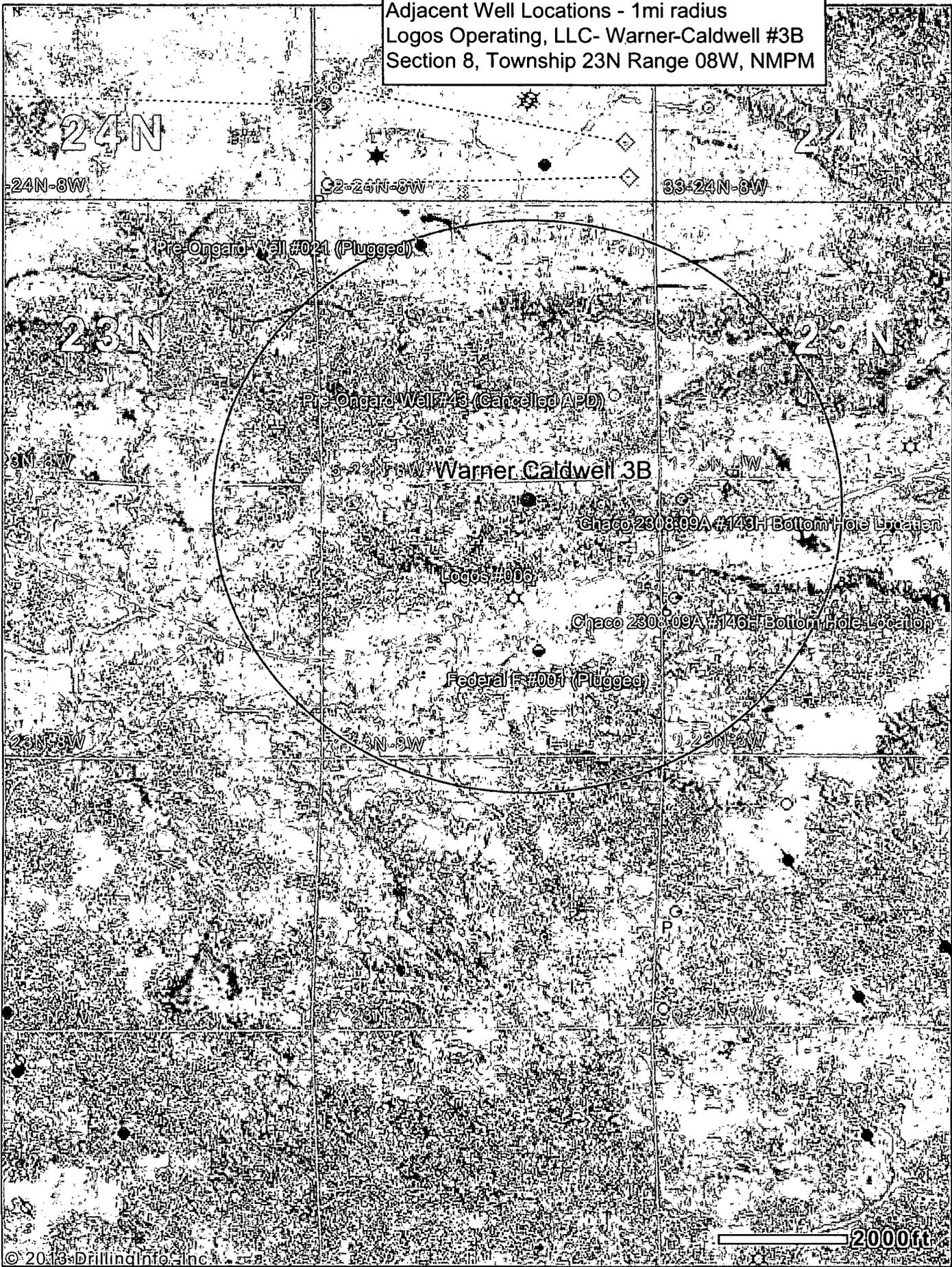
**From which the new access begins and**

**continues (easterly) for 0.2 miles**

**stay left (northerly) for 0.3 miles**

**to the new location.**

Sheet D  
Adjacent Well Locations - 1mi radius  
Logos Operating, LLC- Warner-Caldwell #3B  
Section 8, Township 23N Range 08W, NMPM



# Well Control Equipment Schematic for 2M Service

Attachment to Drilling Technical Program

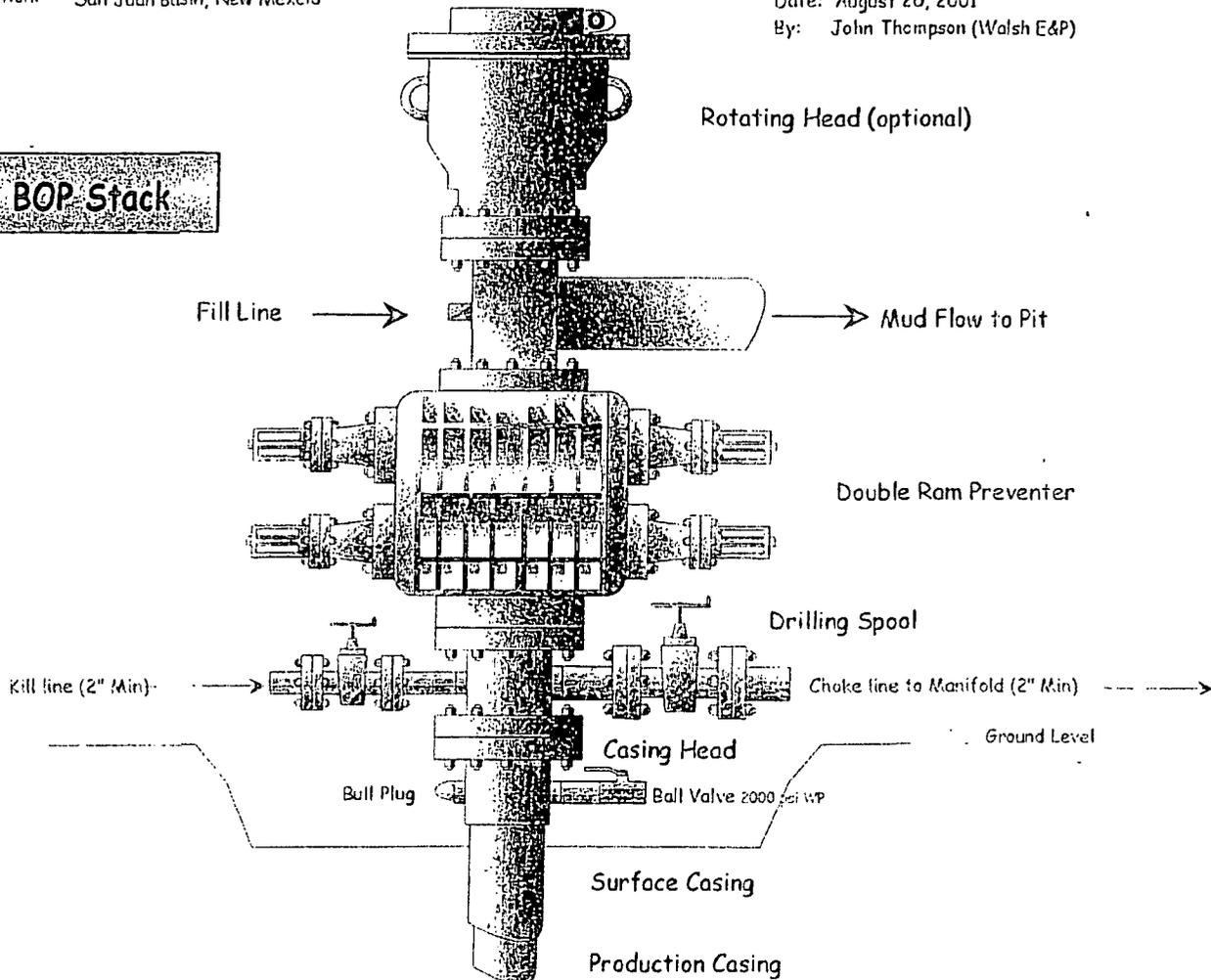
## Exhibit #1 Typical BOP setup

Location: San Juan Basin, New Mexico

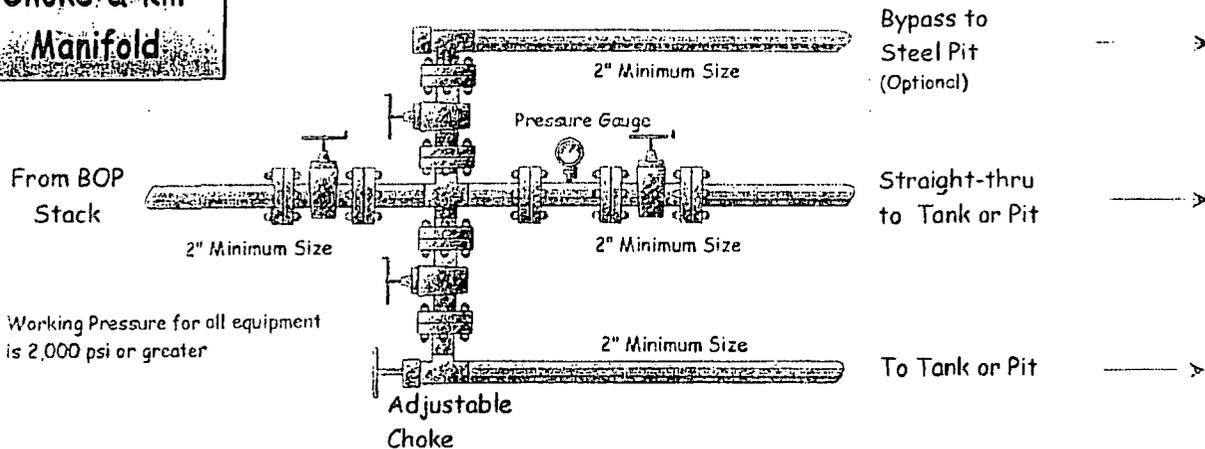
Date: August 20, 2001

By: John Thompson (Walsh E&P)

**BOP Stack**



**Choke & Kill  
Manifold**



Working Pressure for all equipment is 2,000 psi or greater