

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No. 1004-0136
Expires January 31, 2004

5. Lease Serial No.
NMSF-0078769
6. If Indian, Allottee or Tribe Name

1a. Type of Work: ☒ DRILL ☐ REENTER

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

2. Name of Operator

Williams Production Company, LLC

3a. Address

P.O. Box 640 Aztec, NM 87410

3b. Phone No. (include area code)

(505) 634-4208

4. Location of Well (Report location clearly and in accordance with any State requirements. *)

At surface 1005' FNL & 1695' FEL

At proposed prod. zone 1650' FNL & 2310' FWL

14. Distance in miles and direction from nearest town or post office*

approximately 15 miles northeast of Navajo City, New Mexico

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

1005'

16. No. of Acres in lease

2,560.00

17. Spacing Unit dedicated to this well

320.0 (W/2)

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.

50'

19. Proposed Depth

6,884'

20. BLM/BIA Bond No. on file

UT0847

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

6,785' GR

22. Approximate date work will start*

April 1, 2007

23. Estimated duration

1 month

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, shall 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 shall 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 authorized officer.

25. Signature

Larry Higgins

Name (Printed/Typed)

Larry Higgins

Date

2-2-07

Title

Drilling COM

Approved by (Signature)

[Signature]

Name (Printed/Typed)

Office FFO

Date

4/13/07

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.

*(Instructions on reverse)

Williams Exploration and Production Company, LLC, proposes to drill a well to develop the Blanco Mesaverde formation at the above described location in accordance with the attached drilling and surface use plans.

The surface is under jurisdiction of the Carson National Forest, Jicarilla Ranger District.

This location has been archaeologically surveyed La Plata Archaeological Consultants. Copies of their report have been submitted directly to the CNF/JRD.

No access road is needed, as this is a twinned location. A pipeline tie of 484.2 feet would be required for this location. Williams Field Services has filed a pipeline route plan for the associated pipeline. The pipeline would be owned and operated by Williams Field Services.

HOLD 6104 FOR

directional survey
& BH dev.

NOTIFY AZTEC CDD 24 HRS
PRIOR TO CASING & CEMENT B

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

NMOCD

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

submit new plat
(revised dated 10/12/05)

4/18/07

B

District I
PO Box 1960, Hobbs, NM 88241-1980

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised February 21, 1994

District II
PO Drawer DD, Artesia, NM 88211-0719

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

District III
1000 Rio Brazos Rd., Aztec, NM 87410

District IV
PO Box 2088, Santa Fe, NM 87504-2088

207 FEB -2 PM 2:07 ☐ AMENDED REPORT
RCVD APR 16 '07

OIL CONS. DIV.

DIST. 3

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-039-30187	Pool Code 72319	Well Name BLANCO MESAVERDE
Property Code 17033	Property Name ROSA UNIT	Well Number 146C
GRID No 120782	Operator Name WILLIAMS PRODUCTION COMPANY	Elevation 6785

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	28	31N	5W		1005	NORTH	1695	EAST	RIO ARriba

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
F	28	31N	5W		1650	NORTH	2310	WEST	RIO ARriba

12 Dedicated Acres 320.0 Acres - (W/2)	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

<p>16</p> <p>5286.60'</p> <p>1650'</p> <p>1005'</p> <p>1695'</p> <p>2310'</p> <p>5280.00'</p> <p>28</p> <p>LEASE SF-078769</p> <p>BOTTOM HOLE LOCATION LAT: 36.87328°N LONG: 107.36879°W DATUM: NAD83</p> <p>SURFACE LOCATION LAT: 36.87505°N LONG: 107.36444°W DATUM: NAD83</p> <p>562°47.2'W 1426.1'</p>	<p>17 OPERATOR CERTIFICATION</p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief</p> <p><i>Larry Higgins</i> Signature LARRY HIGGINS Printed Name DRILLING CO Title 2-2-07 Date</p>
	<p>18 SURVEYOR CERTIFICATION</p> <p>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</p> <p>Survey Date: SEPTEMBER 18, 2006</p> <p>Signature and Seal of Professional Surveyor</p> <p> JASON C. EDWARDS Certificate Number 15269</p>

Submit 3 Copies To Appropriate District
Office
District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Ave., Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM
87505

State of New Mexico
Energy, Minerals and Natural Resources

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-103
May 27, 2004

WELL API NO.

30-039-30187

5. Indicate Type of Lease FEDERAL ☒ X
STATE ☐ FEE ☐

6. State Oil & Gas Lease No.
SF-078769

7. Lease Name or Unit Agreement Name

Rosa Unit

8. Well Number 146C

9. OGRID Number 120782

Blanco Mesaverde

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A
DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH
PROPOSALS.)

1. Type of Well: Oil Well ☐ Gas Well ☒ Other

2. Name of Operator
Williams Production Company, LLC

3. Address of Operator
P.O. Box 640 Aztec, NM 87410

4. Well Location

Unit Letter B: 1005 feet from the north line and 1695 feet from the east line

Section 28 Township 31N Range 5W NMPM County Rio Arriba

11. Elevation (Show whether DR, RKB, RT, GR, etc.)
6,785' GR

Pit or Below-grade Tank Application ☒ or Closure ☐

Pit type reserve Depth to Groundwater >100' Distance from nearest fresh water well >1,000' Distance from nearest surface water >1,000'

Pit Liner Thickness: 12 mil Below-Grade Tank: Volume bbls; Construction Material

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐
TEMPORARILY ABANDON ☐ CHANGE PLANS ☐
PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐

OTHER: ☐

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐
COMMENCE DRILLING OPNS. ☐ P AND A ☐
CASING/CEMENT JOB ☐

OTHER: ☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Drilling/Completion pit to be located approximately 50 to 75 feet from well head. Pit multi-use drilling and completion to avoid additional site disturbance and pit will be considered out of service once production tubing set. Pit to be constructed, operated and closed in accordance with NMOCDC guidelines and Williams procedures.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that any pit or below-grade tank has been/will be constructed or closed according to NMOCDC guidelines ☒, a general permit ☐ or an (attached) alternative OCD-approved plan ☐.

SIGNATURE Larry Higgins TITLE _____ Drilling COM _____ DATE 2-2-07

Type or print name Larry Higgins E-mail address: larry.higgins@williams.com Telephone No. (505) 634-4208

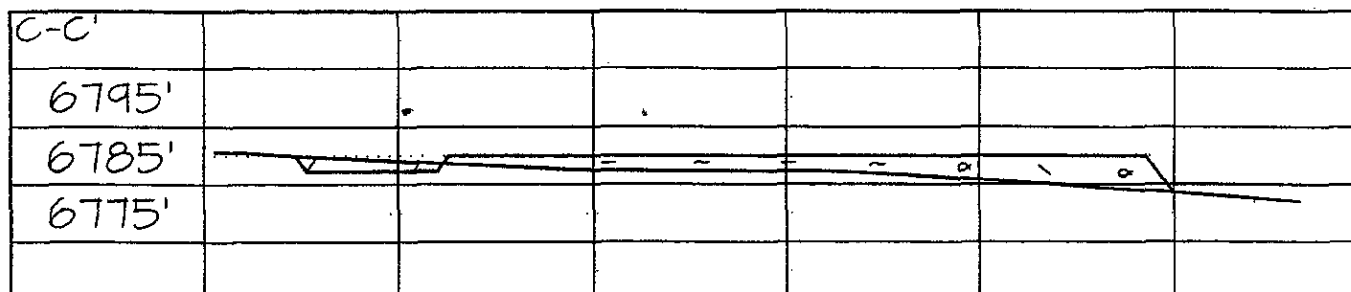
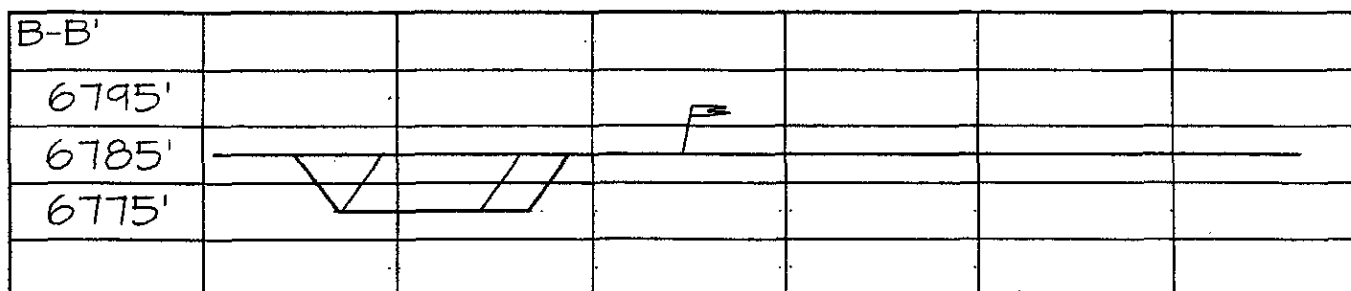
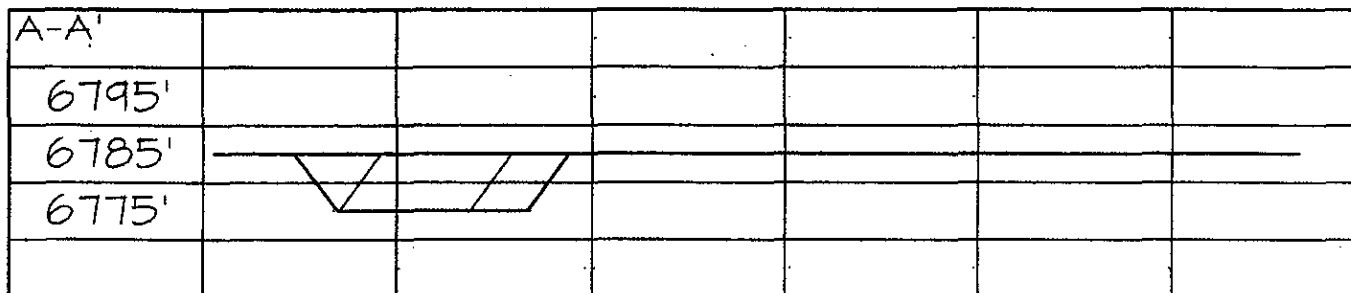
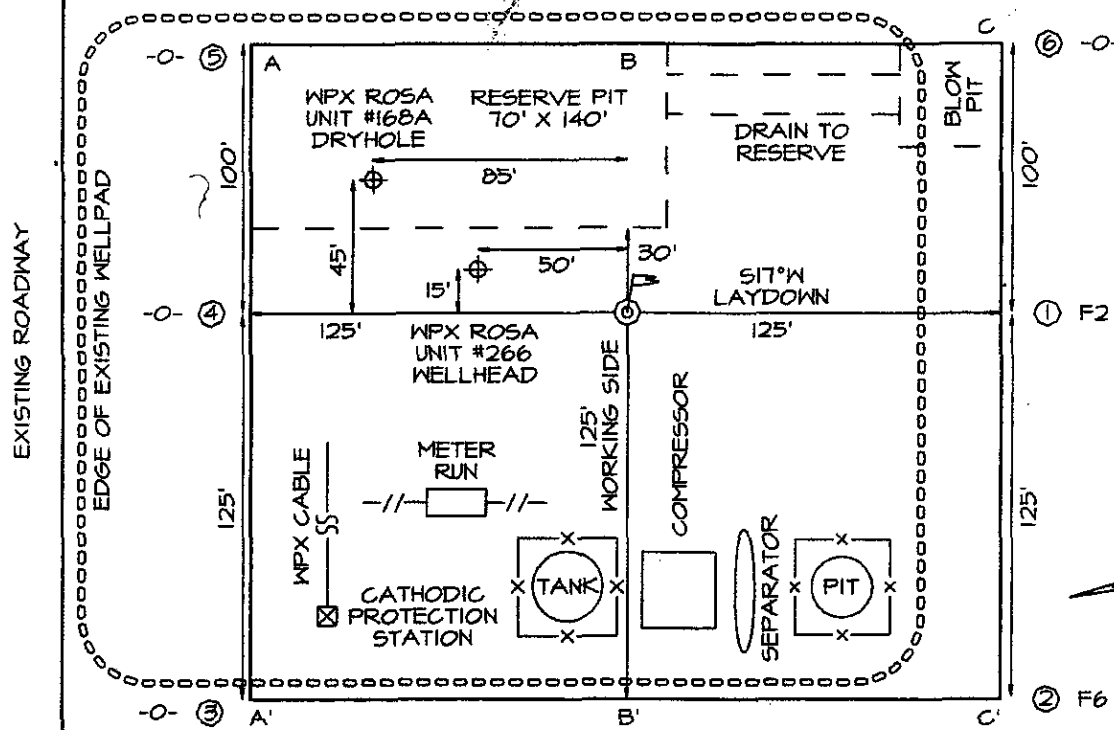
For State Use Only

APPROVED BY: [Signature] TITLE DEPUTY OIL & GAS INSPECTOR, DIST. 4 DATE APR 18 2007

Conditions of Approval (if any):

WILLIAMS PRODUCTION COMPANY ROSA UNIT #146C
1005' FNL & 1695' FBL, SECTION 28, T31N, R5W, NMPM
RIO ARriba COUNTY, NEW MEXICO ELEVATION: 6785'

LATITUDE: 36.87505° N
LONGITUDE: 107.36444° W
 DATUM: NAD1983





WILLIAMS PRODUCTION COMPANY

Operations Plan

(Note: This procedure will be adjusted on site based upon actual conditions)

DATE: 1/23/2007 **FIELD:** Blanco MV
WELL NAME: Rosa #146C **SURFACE:** USFS
BH LOCATION: SENW Sec 28-31N-5W **MINERALS:** FED
Rio Arriba, NM
SURF LOCATION: NWNE Sec 28-31N-5W
ELEVATION: 6,785' GR **LEASE #** SF-078769
MEASURED DEPTH: 6,884'

I. GEOLOGY: Surface formation - San Jose

A. FORMATION TOPS: (KB)

Name	TVD	MD	Name	TVD	MD
Ojo Alamo	2,919	3,166	Cliff House	5,854	6,159
Kirtland	3,069	3,334	Menefee	5,894	6,199
Fruitland	3,429	3,721	Point Lookout	6,104	6,409
Picture Cliffs	3,699	4,000	Mancos	6,414	6,719
Lewis	3,944	4,249	TD	6,579	6,884

B. MUD LOGGING PROGRAM: none

C. LOGGING PROGRAM: Cased Hole logs only

D. NATURAL GAUGES: Gauge any noticeable increases in gas flow. Record all gauges in Tour book and on morning reports.

II. DRILLING:

A. MUD PROGRAM: Clear water with benex to 7" casing point. Convert to a LSND mud to log and run pipe. Treat for lost circulation as necessary. Obtain 100% returns prior to cementing. Notify Engineering of any mud losses. Use air w/Air Hammer from 7 in. csg.to TD.

B. BOP TESTING: While drill pipe is in use, the pipe rams and the blind rams will be function tested once each trip. The anticipated reservoir is expected to be less than 1300 psi, so the BOPE will be tested to **250 psi (Low) for 5 minutes and 1500 psi (High) for 10 minutes**. Utilize a BOPE Testing Unit with a recording chart and appropriate test plug for testing. The drum brakes will be inspected and tested each tour. **All tests and inspections will be recorded in the tour book as to time and results.**

III. MATERIALS**A. CASING PROGRAM:**

CASING TYPE	OH SIZE (IN)	DEPTH (MD) (FT)	CASING SIZE (IN)	WEIGHT(LB)	GRADE
Surface	12 1/4	300	9 5/8	36	K-55
Intermediate	8 3/4	4,479	7	20	K-55
Liner	6 1/4	4,379 6,884	4 1/2	10.5	J-55

B. FLOAT EQUIPMENT:

1. **SURFACE CASING:** 9-5/8" notched regular pattern guide shoe. Run (1) standard centralizer on each of the bottom (3) joints of Surface Casing.
2. **INTERMEDIATE CASING:** 7" cement nose guide shoe with a self-fill insert float. Place float collar one joint above the shoe. Install (1) Turbulent centralizer on each of the bottom (3) joints and one standard centralizer every (3) joints to 2,500 ft. Run (1) Turbulent centralizer at 2,700 ft., 2,500 ft., 2,300ft., 2,000ft., 1,500 ft., and 1,000 ft. (NTL-FRA 90-1).
3. **PRODUCTION CASING:** 4-1/2" whirler type cement nose guide shoe with a latch collar on top of 20' bottom joint. Place marker joint above 5,400'. Place centralizers as needed across selected production intervals.

IV. CEMENTING:

(Note: Volumes may be adjusted onsite due to actual conditions)

1. **SURFACE:** Slurry: 150sx (205 cu.ft.) of "Type III" + 2% CaCl₂ + ¼ # of cello-flake/sk (Yield = 1.39 cu.ft./sk, Weight = 14.5 #/gal.). The 100% excess should circulate cement to the surface. WOC 12 hours. Test csg to 1500psi.
2. **INTERMEDIATE:** Lead - 580 sx (1206) cu.ft.) of "Premium Light" with 8% gel, 1% CaCl₂ and 1/4# cello-flake/sk (Yield = 2.09 cu.ft./sk, Weight = 12.1 #/gal.). Tail - 50 sx (70cu.ft.) of "Type III" with 1/4# cello-flake/sk (Yield = 1.4 cu.ft./sk, Weight = 14.5#/gal.). Use **100% excess in Lead Slurry** to circulate to surface. **No excess in Tail Slurry.** Total volume = 1,276 cu.ft. Bump Plug to 1,500 psi. Notify engineering if cement is not circulated to surface.
3. **PRODUCTION LINER:** 10 bbl Gelled Water spacer. Cement: 150 sx (321 ft³) of Premium Light HS + 1% FL-52 + .2% CD-32, 0.1% R-3, 3 #/sk CSE, ¼ #/sk cello flake and 4% Phenoseal. (Yield = 2.15 ft³/sk, Weight = 12.3 #/gal.). Displace cement at a minimum of 8 BPM. The 20% excess in lead and tail should cover 100 ft into intermediate casing. Total volume 321 ft³. WOC 12 hours

V. IV COMPLETION**A. CBL**

1. Run Cement Bond Log across all intervals to be perforated and find Top of Cement behind all casing strings if cement is not circulated to surface.

B. PRESSURE TEST


1. Pressure test 7" & 4-1/2" casing to max 3300 psi, hold at 1500 psi for 30 minutes.

C. STIMULATION

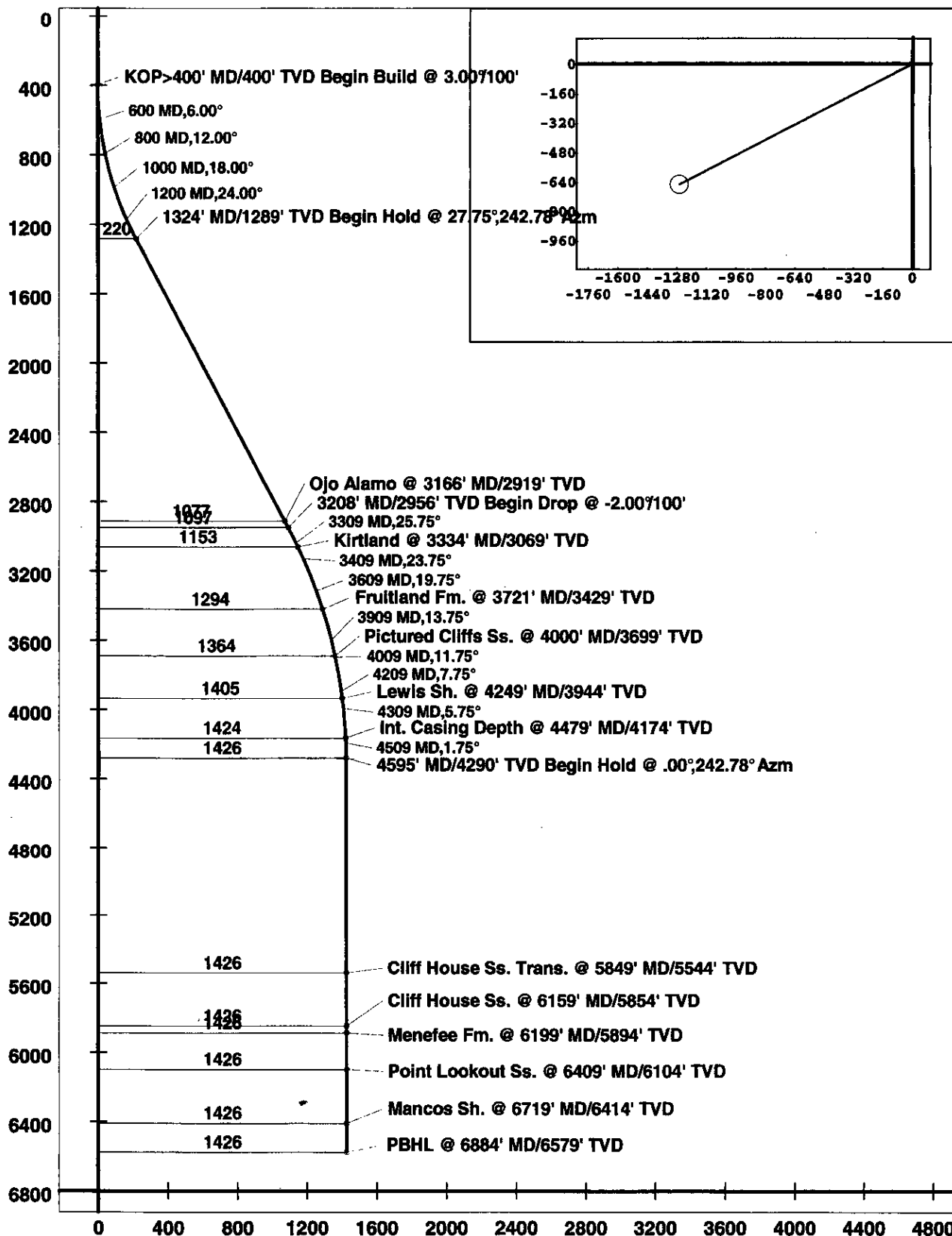
1. Perforate the Point Lookout as determined from the open hole logs.
2. Stimulate with approximately 9,300# of 14/30 LiteProp™ sand in slick water.
3. Isolate Point Lookout with a CIBP.
4. Perforate the Menefee/Cliff House as determined from the open hole logs.
5. Stimulate with approximately 9,300# of 14/30 LiteProp™ sand in slick water.
6. Test each zone before removing bridge plugs.

D. RUNNING TUBING

1. Mesa Verde: Run 2-3/8", 4.7#, J-55, EUE tubing with a SN (1.91" ID) on top of bottom joint. Land tubing approximately 25' above the bottom Point Lookout perforation.


1-01- Gary Sizemore
Sr. Drilling Engineer

Company: Williams Production
Lease/Well: Rosa # 146-C
Location: Rio Arriba County
State/Country: NM



GENERAL ROSA DRILLING PLAN

Rosa Unit boundaries:

T31N, R4W: all except sections 32-36

T31N, R5W: all except sections 1 & 2

T31N, R6W: all except sections 6,7,18,20, & 27-36

T32N, R6W: sections 32-36

FORMATION	LITHOLOGY	WATER	GAS	OIL/COND	OVER-PRES	LOST CIRC
Nacimiento	Interbedded shales, siltstones and sandstones	Possible	Possible	No	No	No
Ojo Alamo	Sandstone and conglomerates with lenses of shale	Fresh	No	No	No	No
Kirtland	Shale w/interbedded sandstones	No	Possible	No	No	No
Fruitland	Inter, SS, SiltSt, SH & Coals w/carb, SS, SiltSt, SH	Yes	Yes	No	Possible	Possible
Pictured Cliffs	Massive Sandstone w/thin interbedded shales	Possible	Yes	Possible	No	Possible
Lewis	Shale w/thin interbedded sandstones and siltstones	No	Possible	No	No	No
Cliff House	Transgressive sandstones	Possible	Yes	No	No	No
Menefee	Sandstones, carb shales and coal	Possible	Yes	No	No	No
Point Lookout	Regressive coastal barrier sandstone	Possible	Yes	Possible	No	Yes
Mancos	Marine shale and interbedded sandstone	No	Possible	Possible	No	Possible
Upr Dakota	Marine sand and shales	No	Yes	Possible	No	Possible
Lwr Dakota	Fluvial sands, shales, & coal	Possible	Yes	Possible	No	Possible

DRILLING

Potential Hazards:

1. There are no overpressured zones expected in this well.
2. No H₂S zones will be penetrated while drilling this well.

Mud System:

1. Surface - The surface hole will be drilled with a low-solids, non-dispersed system with starch and lost circulation material as needed. Expected mud weights will be in the 8.4 to 9.0 lb per gal range. Viscosities will be in the 30 to 60 sec/qrt range as needed to remove drill cuttings.
2. Intermediate - The intermediate hole will be drilled with clear water and Benex to TD where the well will be mudded up to log and run casing. The mud system will be low-solids, non-dispersed with mud weights in the 9 to 10 lb per gal range as needed to control the well. Viscosities will be in the 45 to 55 range as needed to support any weight material. The weight material will consist of Barite.
3. Production - The well will be drilled using air from the intermediate casing point to TD. For Fruitland Coal wells, the coal section will be drilled with air/mist.

WILLIAMS PRODUCTION COMPANY, LLC

Well Control Equipment Schematic for 2M Service

Attachment to Drilling Technical Program

Typical BOP setup

Location: San Juan Basin, New Mexico

Date: August 20, 2001

By: John Thompson (Walsh E&P)

BOP Stack

Rotating Head (optional)

Fill Line

Mud Flow to Pit

Double Ram Preventer

Drilling Spool

Kill line (2" Min)

Choke line to Manifold (2" Min)

Ground Level

Casing Head

Bull Plug

Ball Valve 2000 psi WP

Surface Casing

Production Casing

Choke & Kill Manifold

Positive Choke

Bypass to Steel Pit (Optional)

2" Minimum Size

Pressure Gauge

From BOP Stack

Straight-thru to Tank or Pit

2" Minimum Size

2" Minimum Size

Working Pressure for all equipment
2,000 psi or greater

2" Minimum Size

To Tank or Pit

Adjustable Choke

