

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

SEP 12 2007

Case Serial No
NMSF-078769
If Indian, Allottee or Tribe Name

1a Type of Work <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		Bureau of Land Management Farmington Field Office		CA Agreement, Name and No.	
1b Type of Well. <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		8 Lease Name and Well No 189C		Rosa Unit	
2. Name of Operator Williams Production Company, LLC		9 API Well No 30-039-30355			
3a Address P.O. Box 640 Aztec, NM 87410		3b Phone No. (include area code) (505) 634-4208		10. Field and Pool, or Exploratory Blanco Mesaverde	
4. Location of Well (Report location clearly and in accordance with any State requirements *) At surface 2360' FNL & 180' FEL, Section 21, T. 31N., R. 5W. At proposed prod. zone 1650' FSL & 990' FEL, Section 21, T. 31N., R. 5W. "I"		11. Sec., T., R., M., or Blk and Survey or Area Section 21, T. 31N., R. 5W. NMPM			
14 Distance in miles and direction from nearest town or post office* approximately 35 miles northeast of Blanco, New Mexico		12 County or Parish Rio Arriba		13 State NM	
15 Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 180'		16 No. of Acres in lease 2,560 00		17. Spacing Unit dedicated to this well 320 0 (E/2) Section 21	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft 600'		19. Proposed Depth 6,686'		20 BLM/BIA Bond No on file UT0847 UT0899	
21. Elevations (Show whether DF, KDB, RT, GL, etc) 6537' GR		22 Approximate date work will start* Spring 2008		23. Estimated duration 1 month	

24. Attachments

RCVD MAR 13 '08

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

OIL CONS. DIV.

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

DIST. 3

25. Signature <i>Larry Higgins</i>		Name (Printed/Typed) Larry Higgins		Date 9-12-07	
Title Drilling COM					
Approved by (Signature) <i>[Signature]</i>		Name (Printed/Typed) AFM		Date 3/12/08	
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

*(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.

NOTIFY AZTEC OGD 24 HRS.

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

PRIOR TO CASING & CEMENT

This location has been archaeologically surveyed La Plata Archaeological Consultants. Copies of their report have been submitted directly to the USFS, Jicarilla Ranger District

This APD is also serving as an application to obtain an access road and gas pipeline.

Required for this location is a 450-foot access road. This road will be built for either the Rosa 258A or the Rosa 189C; whichever is to be drilled first.

A pipeline tie of 104.6' will be required.

HOLD C104 FOR directional survey
as drilled L-102

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".

8 NMOCD

MAR 19 2008

AV

District II
1301 W Grand Avenue, Artesia, NM 88210

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

District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

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

RECEIVED

SEP 12 2007

☐ AMENDED REPORT

**Bureau of Land Management
Farmington Field Office**

WELL LOCATION AND ACREAGE DEDICATION PLAT

'API Number 30-039-30355	'Pool Code 72319	'Pool Name BLANCO MESAVERDE
'Property Code 17033	'Property Name ROSA UNIT	'Well Number 189C
'OGRID No. 120782	'Operator Name WILLIAMS PRODUCTION COMPANY	'Elevation 6537'

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	21	31N	5W		2360	NORTH	180	EAST	RIO ARRIBA

¹¹Bottom 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
I	21	31N	5W		1650	SOUTH	990	EAST	RIO ARRIBA

¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No
320.0 Acres - (E/2)			

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

5287.26'

LEASE
SF-078769

2360'

180'

1446.4'
532°28'0"W

990'

1650'

5280.00'

21

5286.60'

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.

Larry Higgins 9-12-07
Signature Date
Larry Higgins
Printed Name

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: JUNE 21, 2006

Signature and Seal of Professional Surveyor

JASON C. EDWARDS
NEW MEXICO
15269
REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS
Certificate Number 15269

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.

30039-30355

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

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

7. Lease Name or Unit Agreement Name

Rosa Unit

8. Well Number: 189C

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:

Surface: Unit Letter H: 2360 feet from the north line and 180 feet from the east line

Section 21 Township 31N

Range 5W

NMPM

County Rio Arriba

Bottom Hole: Unit Letter I: 1650 feet from the south line and 990 feet from the east line

Section 21 Township 31N

Range 5W

NMPM

County Rio Arriba

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

6,537' 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 NMOCD 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 NMOCD guidelines ☒, a general permit ☐ or an (attached) alternative OCD-approved plan ☐.

SIGNATURE Larry Higgins TITLE Drilling COM DATE 9-12-07
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,
Conditions of Approval (if any): District #3 DATE MAR 19 2008



WILLIAMS PRODUCTION COMPANY

Operations Plan

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

DATE: 8/6/2007 **FIELD:** Blanco MV
WELL NAME: Rosa #189C **SURFACE:** USFS
BH LOCATION: NESE Sec 21-31N-5W
Rio Arriba, NM **MINERALS:** BLM
SURF LOCATION: SENE Sec 21-31N-5W
ELEVATION: 6,537' GR **LEASE #** SF-078769
MEASURED DEPTH: 6,686'

I. GEOLOGY: Surface formation - San Jose

A. FORMATION TOPS: (KB)

Name	TVD	MD	Name	TVD	MD
Ojo Alamo	2,701	3,013	Cliff House	5,621	5,995
Kirtland	2,811	3,140	Menefee	5,666	6,040
Fruitland	3,181	3,545	Point Lookout	5,861	6,235
Pictured Cliffs	3,396	3,766	Mancos	6,171	6,545
Lewis	3,696	4,070	TD	6,311	6,686

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	4,274	7	20	K-55
Liner	6 1/4	4,174 6,686	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 - 550 sx (1145) 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 = 1,215 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 (330 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

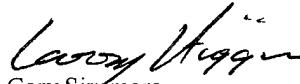
1. Pressure test 7" & 4-1/2" casing to max 3300 psi, hold at 1500 psi for 30 minutes.

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.

for 
Gary Sizemore
Sr. Drilling Engineer



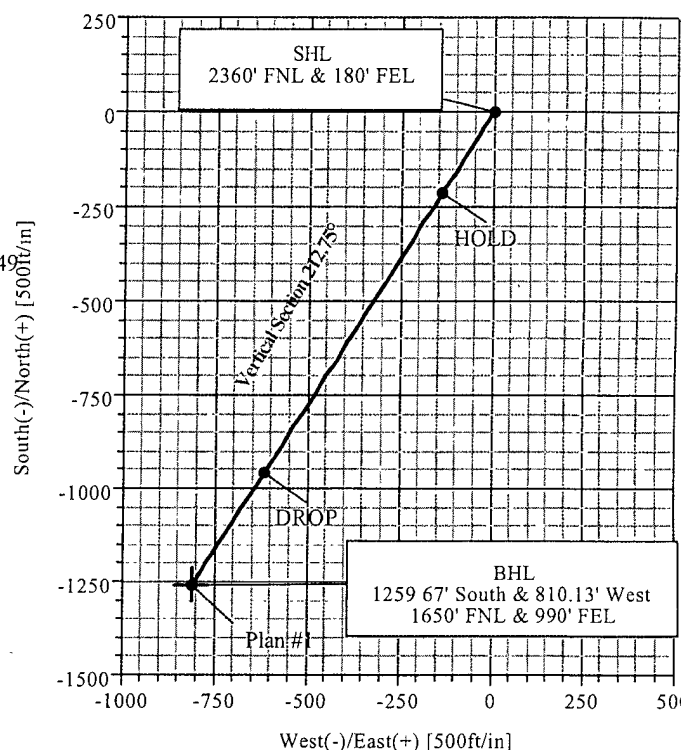
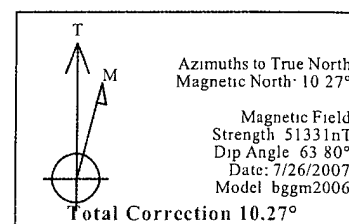
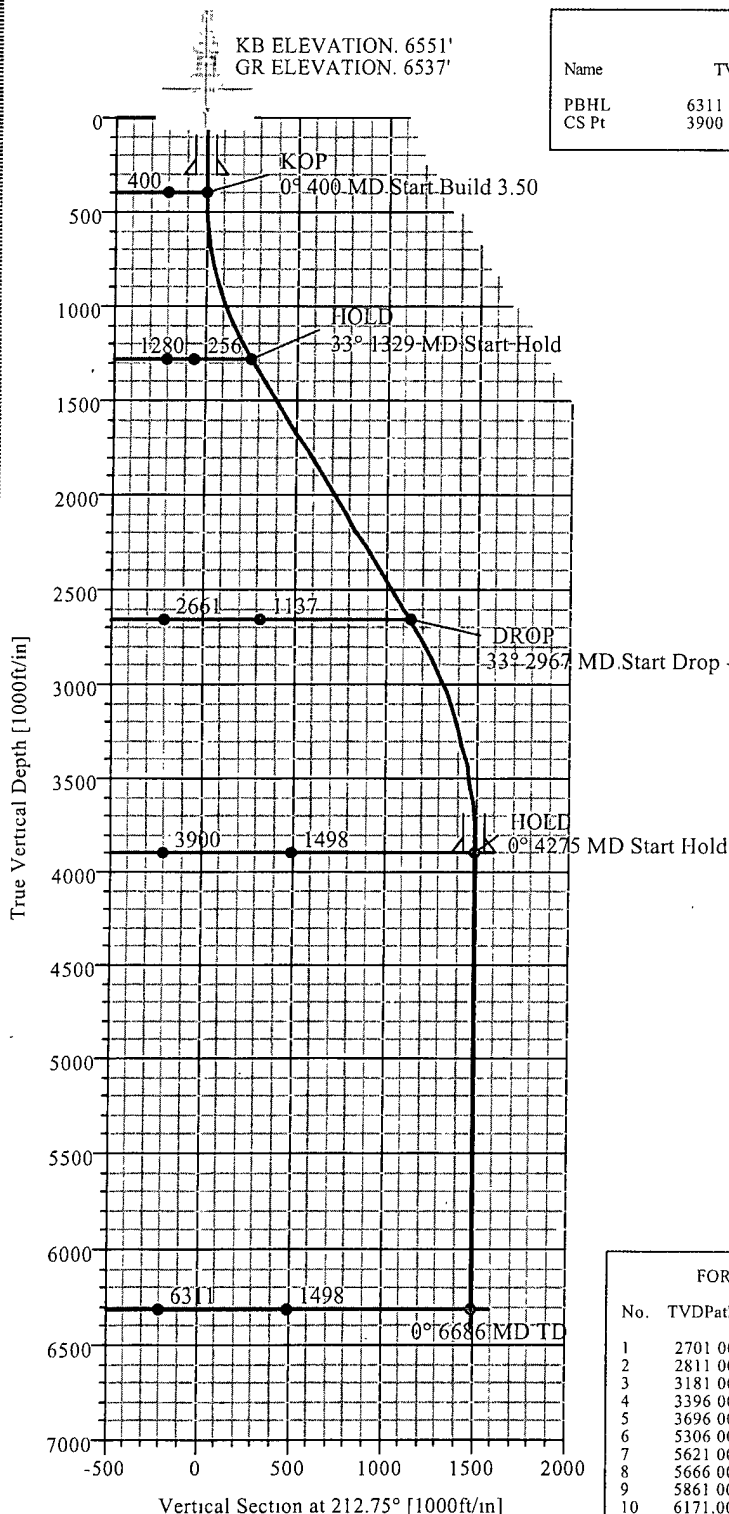
Weatherford

ROSA UNIT 189C
SECT. 21 T31N R5W
2360'FNL & 180' FEL
RIO ARriba COUNTY, NM
PLAN 1

SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	212.75	0.00	0.00	0.00	0.00	0.00	0.00	
2	400.00	0.00	212.75	400.00	0.00	0.00	0.00	0.00	0.00	
3	1328.57	32.50	212.75	1279.57	-215.63	-138.68	3.50	212.75	256.37	
4	2966.92	32.50	212.75	2661.34	-956.01	-614.84	0.00	0.00	1136.65	
5	4274.58	0.00	212.75	3900.00	-1259.67	-810.13	2.49	180.00	1497.69	CS Pt
6	6685.58	0.00	212.75	6311.00	-1259.67	-810.13	0.00	212.75	1497.69	PBHL

WELL DETAILS							
Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
Rosa Unit 189C	0.00	0.00	2142108.80	2861734.91	36°53'08.916N	107°21'33.372W	N/A

TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
PBHL	6311.00	-1259.67	-810.13	36°52'56.460N	107°21'43.344W	Circle (Radius: 50)
CS Pt	3900.00	-1259.67	-810.13	36°52'56.460N	107°21'43.344W	Point



FORMATION TOP DETAILS			
No.	TVDPath	MDPath	Formation
1	2701.00	3013.65	Ojo Alamo
2	2811.00	3140.38	Kirtland
3	3181.00	3543.39	Fruitland
4	3396.00	3766.48	Pictured Cliffs
5	3696.00	4070.32	Lewis
6	5306.00	5680.58	Cliff House Trans
7	5621.00	5995.58	Cliff House
8	5666.00	6040.58	Menefee
9	5861.00	6235.58	Point Lookout
10	6171.00	6545.58	Mancos

Plan Plan #1 (Rosa Unit 189C)
Created By Jose Perez Date 07/26/07
Weatherford Drilling Services
11943 FM 529
Houston TX USA 77041
(713) 896 8194 MAIN
(713) 896 0498 FAX

GEOLOGIC PROGNOSIS

Company: Williams Production Company. LLC
Project: 2007 Drilling Plan
Area: Rosa Unit

Operator: Williams Production Company. LLC
Well Name: Rosa Unit No. 189C (Kmv-Directional)
Location: SENE 21-31N-05W
Footage: 2360' FNL & 0180' FEL
County/State: Rio Arriba/New Mexico

Surveyed GL: 6537 Estimate (14') KB: 6551

<u>Formation</u>	<u>Thickness</u>	<u>TVD</u>	<u>Struct. Elev.</u>
San Jose Fm.	2701	Surface	6537
Ojo Alamo Ss.	110	2701	3850
Kirtland Sh.	370	2811	3740
Fruitland Fm.	215	3181	3370
Pictured Cliffs Ss.	300	3396	3155
Lewis Sh.	175	3696	2855
<u>Intermediate Casing Depth</u>	1435	<u>3871</u>	2680
Cliff House Ss. Trans.	315	5306	1245
Cliff House Ss.	45	5621	930
Menefee Fm.	195	5666	885
Point Lookout Ss.	310	5861	690
Mancos Sh.	140	6171	380
<u>Total Depth</u>	NA	<u>6311</u>	240

Mechanical Logs: Cased hole (TMDL, CBL) logs only

Correlation Logs: Rosa Unit No. 132 (SWSW 22-31N-05W)

Notes: This well will be directionally drilled to a BHL
1650' FSL & 0990' FEL 21-31N-05W

No log control in quarter section

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 Dadota	Marine sand and shales	No	Yes	Possible	No	Possible
Lwr Dakota	Fluvial sands, shales, & coal	Possible	Yes	Possible	No	Possible

DRILLING

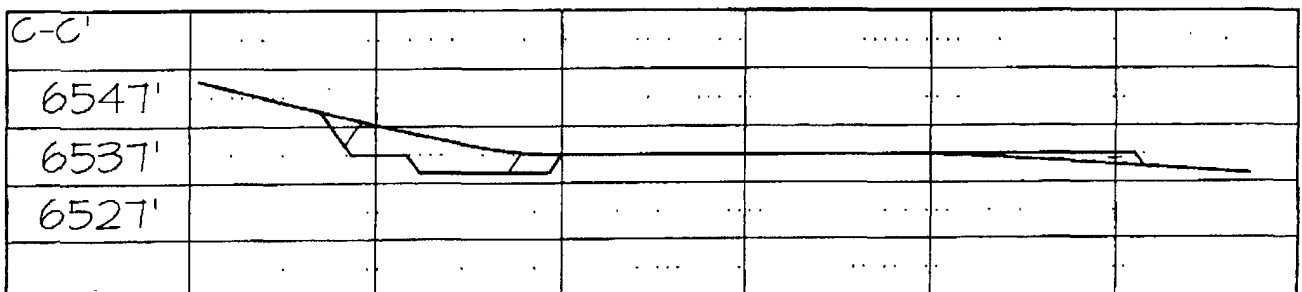
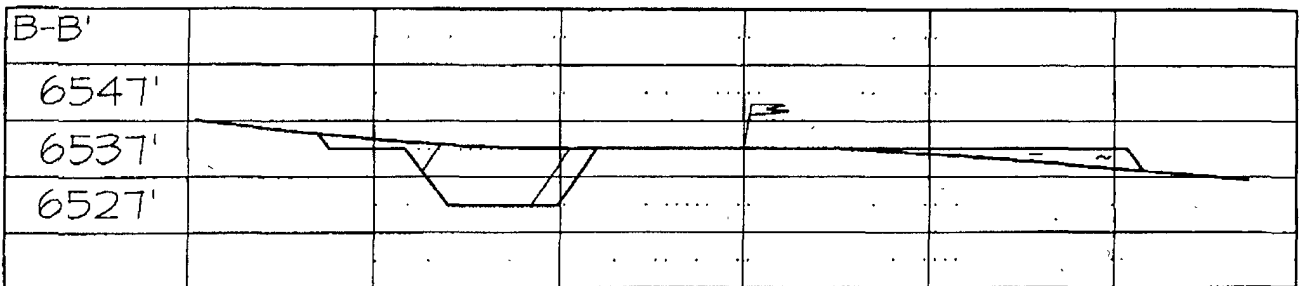
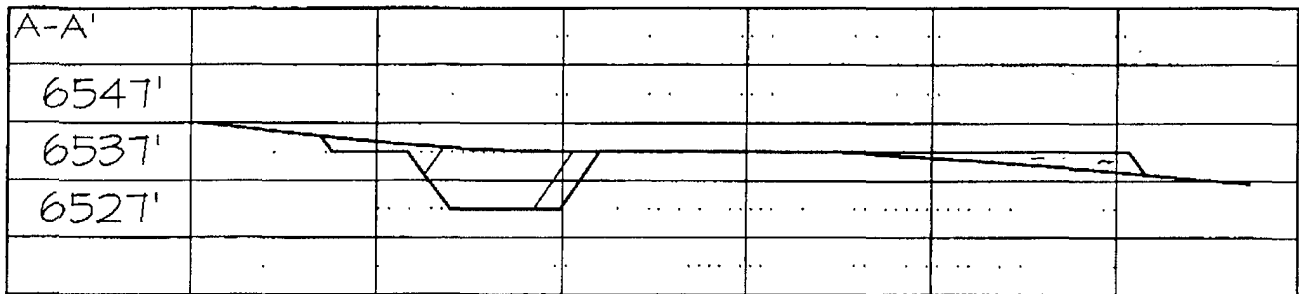
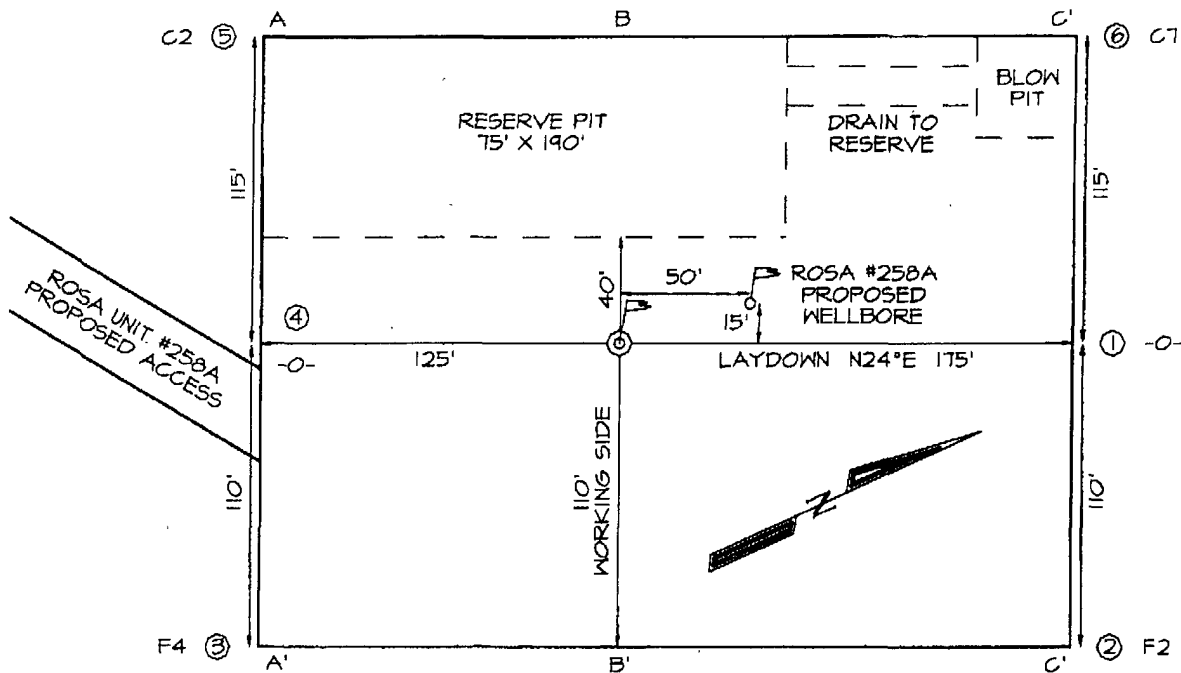
Potential Hazards:

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.

LATITUDE: 36.88581° N
LONGITUDE: 107.35927° W
DATUM: NAD1983



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)

