Form 3160-3 (September 2001)

UNITED STATES DEPARTMENT OF THE INTERIOR **BUREAU OF LAND MANAGEMENT**

FORM APPROVED OMB No. 1004-0130 Expires January 31, 2004

5. Lease Serial No.

NMSF-\$078770

6. If Indian, Allottee or Tribe Name APPLICATION FOR PERMIT TO DRILL OR REENTER : 3 AM 7: 7. If Unit or CA Agreement, Name and No. la. Type of Work: DRILL ☐ REENTER RECEIVED Rosa Unit NMNM -78407A MV F (1 - 1 8. Lease Name and Well No. Oil Well Gas Well Other ☑ Single Zone 1b. Type of Well: Multiple Zone 2. Name of Operator 9. API Well No. <u>30-039 - 30</u>181 Williams Production Company, U.C. 3a. Address 3b, Phone No. (include area code) P.O. Box 640 Aztec, NM 87410 (505) 634-4208 Blanco Mesaverde 11. Sec., T., R., M., or Bik. and Survey or Area 4. Location of Well (Report location clearly and in accordance with any State requirements. *) 755' FSL & 880' FWL At surface 1650' FSL 2310' FWL At proposed prod. zone Section 27, 31N, R.5W 14. Distance in miles and direction from nearest town or post office* 12. County or Parish 13. State approximately 32 miles northeast of Blanco, New Mexico Rio Arriba NM 15. Distance from proposed* 16. No. of Acres in lease 17. Spacing Unit dedicated to this well location to nearest property or lease line, ft. (Also to nearest drig, unit line, if any) 2,560.00 320.0 (S/2) Distance from proposed location' 19. Proposed Depth 20. BLM/BIA Bond No. on file to nearest well, drilling, completed, applied for, on this lease, ft. 7,052 22. Approximate date work will start 21. Elevations (Show whether DF, KDB, RT, GL, etc.) 23. Estimated duration 6,782' GR 1 month April 1, 2007 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. 4. Bond to cover the operations unless covered by an existing bond on file (see 2. A Drilling Plan. Item 20 above). Operator certification. 3. A Surface Use Plan (if the location is on National Forest System Lands, the 6. Such other site specific information and/or plans as may be required by the SUPO shall be filed with the appropriate Forest Service Office). authorized officer. 25. Signature Name (Printed/Typed) <u>Larry Higgins</u> Title **Drilling COM** Approved by (Signate Name (Printed/Typed) Title Office 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

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.

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

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

States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

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 148.1 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.

RCVD APR16'07

Bottomhole dev. PRIOR TO CASING & CEMENS: 3

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

This action is subject to technical and procedural review pursuant to,43 CFR 3165 3 and appeal pursuant to 43 CFR 3165.4

4/18/07 NMOCD

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

District I PO Box 1980, Hopps, NM 88241-1980

State of New Mexico Energy, Minerals & Natural Resources Department

Form C-102 Revised February 21, 1994 Instructions on back

PO Drawer DD, Artesia, NM 88211-0719

OIL CONSERVATION DIVISION PO Box 2088

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

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

Santa Fe, NM 87504-2088 207 JAN 31 AH 7: LS AMENDED REPORT

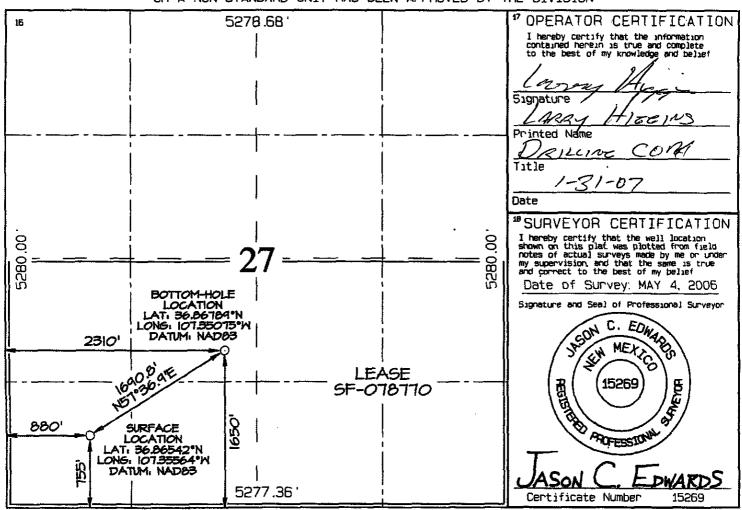
District IV PO Box 2088, Santa Fe, NM 87504-2088

RECENTRICULAR APRIL 107 DIL CONS. DIV.

WELL LOCATION AND ACREAGE DEDICATION PLATERING DIST. 3 Pool: Name API Number Pool Code 30-039- 30181 72319 BLANCO MESAVERDE Property Code Property Name Well Number 17033 ROSA UNIT 60 'OGRID No *Operator Name Elevation WILLIAMS PRODUCTION COMPANY 120782 6782

¹⁰ Surface Location UL or lot no. Feet from the Sect 100 Township North/South line Feet from the East/Nest line RIÓ М 27 31N 5W 755 SOUTH 880 WEST ARRIBA 11 Bottom Hole Location Different From Surface UL or lot no Sect ion Townshap Feet from the North/South line Feet from the East/West line RIÓ SOUTH 2310 27 5W 1650 WEST К 31N ARRIBA 12 Dedicated Acres Dount or Infall ¹⁴ Consolidation Code S Order No. 320.0 Acres - (S/2)

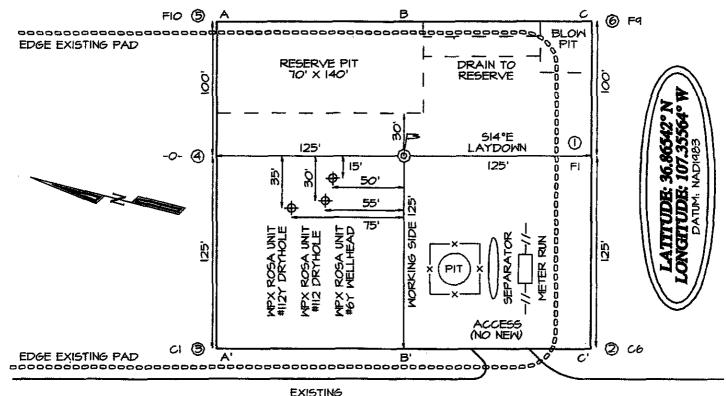
NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



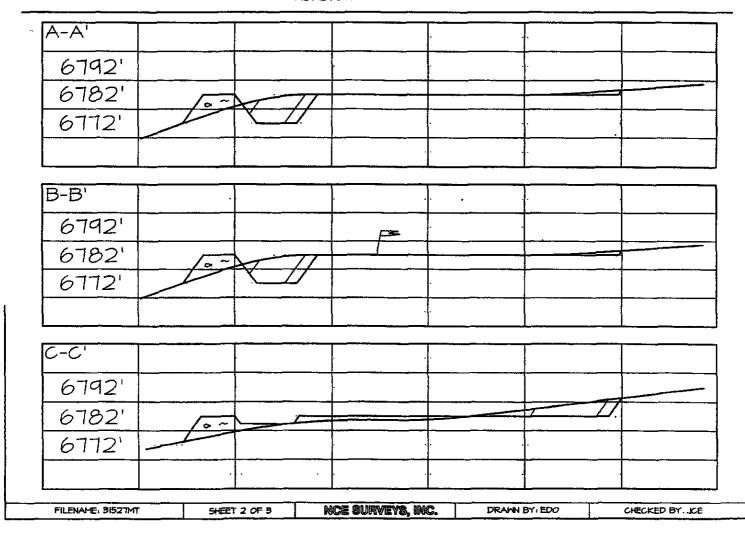
1.6.00.4
WELL API NO.
30-039-30181
5. Indicate Type of Lease FEDERAL X
STATE FEE
6. State Oil & Gas Lease No.
SF-078770
51-070770
7. Lease Name or Unit Agreement Name
Rosa Unit
8. Well Number 6C
9. OGRID Number 120782
). OCIAIS NAMEDI
Blanco Mesaverde
<u> </u>
County Rio Arriba
ance from nearest surface water>1,000'
Anterial
Report or Other Data
SECUENT DEDOCT OF
SEQUENT REPORT OF:
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YLAT1

WILLIAMS PRODUCTION COMPANY ROSA UNIT #6C 755' FSL & 880' FWL, SECTION 27, T31N, R5W, NMPM RIO ARRIBA COUNTY, NEW MEXICO ELEVATION: 6782'



EXISTING ROADWAY





WILLIAMS PRODUCTION COMPANY

Operations Plan

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

DATE:

1/16/2007

FIELD:

Blanco MV

WELL NAME:

Rosa #6C

SURFACE:

FOREST

BH LOCATION:

NESW Sec 27-31N-5W

Rio Arriba, NM

MINERALS:

FED

SURF LOCATION:

SWSW Sec 27-31N-5W

ELEVATION:

6,782' GR

LEASE#

SF-078770

MEASURED DEPTH: 7,052

,,0

I. <u>GEOLOGY:</u>

Surface formation - San Jose

A. **FORMATION TOPS:** (KB)

Name	TVD	MD	Name	TVD	MD
Ojo Alamo	2,906	2,551	Cliff House	5,861	5,720
Kirtland	3,086	2,719	Menefee	5,906	5,770
Fruitland	3,446	3,204	Point Lookout	6,101	6,000
Pictured Cliffs	3,676	3,486	Mancos	6,406	6,320
Lewis	3,951	3,780	TD	7,052	6,476

Cet 6576 7057

- B. MUD LOGGING PROGRAM: none
- C. LOGGING PROGRAM: Cased Hole logs only
- D. <u>NATURAL GAUGES</u>: Gauge any noticeable increases in gas flow. Record all gauges in Tour book and on morning reports.

II. <u>DRILLING:</u>

- 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. <u>BOP TESTING:</u> 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	4,625	7	20 K-55
Liner	6 1/4	4,525 7,052	4 1/2	10.5 J-55

B. FLOAT EQUIPMENT:

- 1. <u>SURFACE CASING:</u> 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).
- 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. <u>CEMENTING:</u>

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

- 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. <u>INTERMEDIATE</u>: Lead 600 sx (1250) 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 = 1,320 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 (323 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 323 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 LitePropTM 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 LitePropTM sand in slick water.
- 6. Test each zone before removing bridge plugs.

D. RUNNING TUBING

1. <u>Mesa Verde:</u> 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.

Gary Sizemore

Sr. Drilling Engineer

Rosa #006C Dir Ops Plan.doc





Weatherford

Rosa Unit 6C Section 27 T31N R5W 755' FSL & 880' FWL Rio Arriba County, NM Plan 1

6500

7000

500

1000

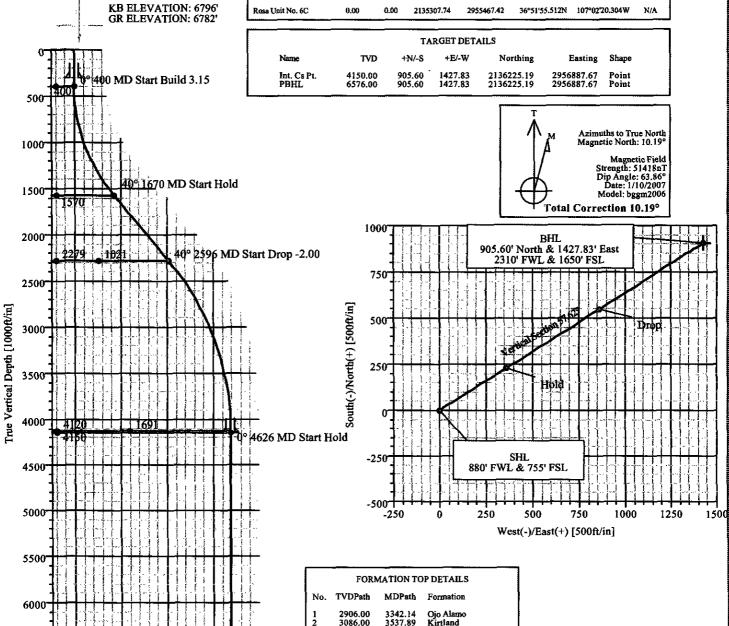
Vertical Section at 57.62° [1000ft/in]

2000

1500

	SECTION DETAILS									
Sec	MD	Inc	And	avt	+N/-S	+ E/-W	BLeg	TFace	VSec	Target
1	0.00	0.00	57.62	0.00	0.00	0.00	0.00	0.00	0.00	
2	400.00	0.00	57.62	400.00	6.00	0.00	0.00	0.00	0.00	
3	1670.33	40.00	57,62	1569.62	228.01	359.50	3.15	57.62	425.71	
4	2595.76	40.00	57.62	2278.55	546.62	861.84	0.00	0.00	1020.57	
5	4595.76	0.00	57.62	4120.00	905.60	1427.83	2.00	180.00	1690.80	
6	4625,76	0.00	57.62	4150.00	905.60	1427.83	0.00	0.00	1690.80	Int. Cs Pt
7	7051.76	0.00	57.62	6576.00	905.60	1427.83	0.00	57.62	1690.80	PBHL

		WELL DETAILS								
	Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot		
KB ELEVATION: 6796' GR ELEVATION: 6782'	Rosa Unit No. 6C	0.00	0.00	2135307.74	2955467.42	36°51'55.512N	107°02'20.304W	N/A		
OR BLEVATION: 0702										



FORMATION TOP DETAILS							
No.	TVDPath	MDPath	Formation				
1	2906.00	3342.14	Ojo Alamo				
2	3086.00	3537.89	Kirtland				
3	3446.00	3915.39	Fruitland				
4	3676.00	4149.97	Pictured Cliffs				
4 5	3951.00	4426.67	Lewis				
6	5546.00	6021.76	Cliff House SS Trans				
7	5861.00	6336.76	Cliff House				
8	5906.00	6381.76	Menefee				
ğ	6101.00	6576.76	Point Lookout				
10	6406.00	6881.76	Mancos				

Plan: Plan #1 (Rosa Unit 6C) Created By: Jose Perez Dat Weatherford Drilling Services 11943 FM 529 Houston TX USA 77041 (713) 896 8194 MAIN (713) 896 6498 FAX

GEOLOGIC PROGNOSIS

Company: Project:

Willams Production Company. LLC

2007 Drilling Plan

Area:

Rosa Unit

Surveyed GL:

Operator: Well Name: Williams Production Company. LLC

Rosa Unit No. 6C (Kmy-Directional)

Estimate (14') KB:

6796

Location: Footage: County/State: SWSW 27-31N-05W 0755' FSL & 0880' FWL

Rio Arriba/New Mexico

6782

	3,32	Couriete (14) ND.	0130
	<u>Thickness</u>	<u> 1VD</u>	Struct. Elev.
	2906	Surface	6782
	180	2906	3890
	360	3086	3710
	230	3446	3350
-	275	3676	3120
	200	3951	2845
<u>epth</u>	1395	<u>4151</u>	2645
	315	5546	1250
	45	5861	935
	195	5906	890
	305	6101	695
	170	6406	390
	NA	<u>6576</u>	220
	epth	2906 180 360 230 275 200 1395 315 45 195 305	Thickness TVD 2906 Surface 180 2906 360 3086 230 3446 275 3676 200 3951 epth 1395 4151 315 5546 45 5861 195 5906 305 6101 170 6406

Mechanical Logs:

Cased hole (TMDL, CBL.) logs only

Correlation Logs:

Rosa Unit No. 112 (SWSW 27-31N-05W)

Notes:

This well will be directionally drilled to a BHL 1650' FSL & 2310' FWL 27-31N-05W

GENERAL ROSA DRILLING PLAN

Rosa Unit boundries:

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

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

- 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.
- 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

