

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

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		2005 JUL 32 PM 4	5. Lease Serial No. NMSF-078767
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		RECEIVED 070 PARKING ST	6. If Indian, Allottee or Tribe Name
2. Name of Operator Williams Production Company, LLC			7. Unit or CA Agreement, Name and No. Rosa Unit
3a. Address P.O. Box 640 Aztec, NM 87410		3b. Phone No. (include area code) (505) 634-4208	8. Lease Name and Well No. 163C
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface Lot J: 1665' FSL & 1530' FEL At proposed prod. zone same			9. API Well No. 30-039-29611
14. Distance in miles and direction from nearest town or post office* approximately 13 miles northeast of Navajo City, New Mexico		10. Field and Pool, or Exploratory Blanco Mesaverde	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 1530'		16. No. of Acres in lease 2,518.04	11. Sec., T., R., M., or Blk. and Survey or Area J Section 24, 31N, 6W
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 700'		17. Spacing Unit dedicated to this well 223.92 (E/2)	12. County or Parish Rio Arriba
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6,302' GR		19. Proposed Depth 6,059'	13. State NM
22. Approximate date work will start* August 1, 2005		20. BLM/BIA Bond No. on file UT0847	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 <i>Larry Higgins</i>	Name (Printed/Typed) Larry Higgins	Date 7/27/05
Title Drilling COM		
Approved by (Signature) <i>D. Markiewicz</i>	Name (Printed/Typed)	Date 8/8/05
Title AFU	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 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 well pad surface is under jurisdiction of the New Mexico Department of Game and Fish. A grant of easement from NMGF has been applied for and will be submitted to the FFO/BLM upon receipt.

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

This APD is also serving as an application to obtain road a pipeline right-of-way. An associated pipeline tie of 609.4 feet would be required for this location. Approximately 500 feet of new road would be required to access the site.

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

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

NMOCB

B

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

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

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

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

State of New Mexico  
Energy, Minerals & Natural Resources Department

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

Form C-102

Revised February 21, 1994

Instructions on back

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease 3 Copies

1009 JUL 32 PM 4 02  
AMENDED REPORT

RECEIVED

070 FARMINGTON NM

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-039-29611		*Pool Code 72319	*Ponl Name BLANCO MESAVERDE
*Property Code 17033	*Property Name ROSA UNIT		*Well Number 163C
*GRID No. 1207B2	*Operator Name WILLIAMS PRODUCTION COMPANY		*Elevation 6302'

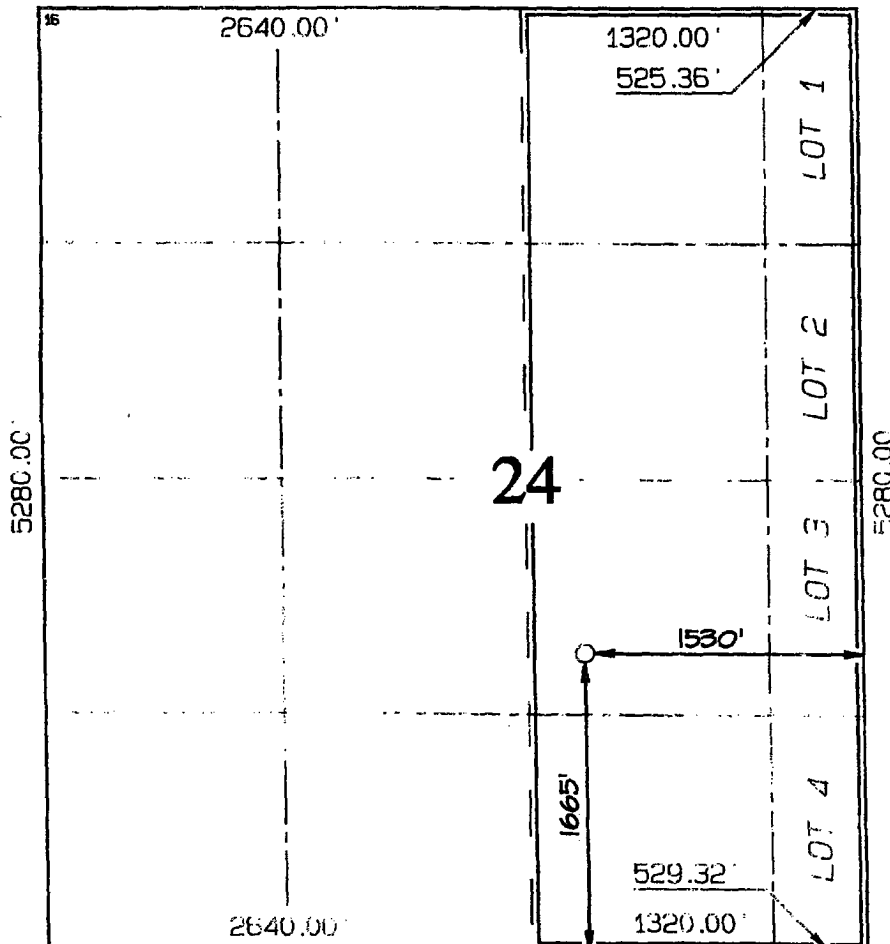
10 Surface Location

UL or Lot no J	Section 24	Township 31N	Range 6W	Lot Idn	Feet from the 1665	North/South line SOUTH	Feet from the 1530	East/West line EAST	County 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
Dedicated Acres 223.92 Acres - (E/2)					Joint or Infill	Consolidation Code	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



17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief

*Larry Higgins*  
Signature

*Larry Higgins*  
Printed Name

*DRILLING CO.*  
Title

*7-27-05*  
Date

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

Survey Date: NOVEMBER 11 2005

Signature and Seal of Professional Surveyor



*JASON C. EDWARDS*  
Certificate Number 15269

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

<b>SUNDRY NOTICES AND REPORTS ON WELLS</b> (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.)		WELL API NO. <u>30-039-29611</u>
1. Type of Well: Oil Well <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other <input type="checkbox"/>		5. Indicate Type of Lease FEDERAL <input checked="" type="checkbox"/> STATE <input type="checkbox"/> FEE <input type="checkbox"/>
2. Name of Operator Williams Production Company, LLC		6. State Oil & Gas Lease No. Federal NMSF-0078767
3. Address of Operator P.O. Box 640 Aztec, NM 87410		7. Lease Name or Unit Agreement Name Rosa Unit
4. Well Location Unit Letter J: 1665' FSL & 1530' FEL Section 24 Township 31N Range 6W NMPM County Rio Arriba		8. Well Number 163C
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 6,059' GR		9. OGRID Number 120782
Pit or Below-grade Tank Application <input checked="" type="checkbox"/> or Closure <input type="checkbox"/>		
Pit type <u>reserve</u> Depth to Groundwater <u>&gt;100'</u> Distance from nearest fresh water well <u>&gt;1,000'</u> Distance from nearest surface water <u>&gt;1,000'</u>		
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.

Reserve pit to be constructed in accordance with NMOCD Interim Pit and Below-grade Tank Guidelines

Reserve pit to be located approximately 30 feet northwest of the well head, in the northwest corner of the well pad

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 7-27-2005

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. 58 DATE AUG 21 2005  
Conditions of Approval (if any): \_\_\_\_\_



## **WILLIAMS PRODUCTION COMPANY**

### **Operations Plan**

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

<b><u>DATE:</u></b>	7/27/2005	<b><u>FIELD:</u></b>	Blanco MV
<b><u>WELL NAME:</u></b>	Rosa #163C	<b><u>SURFACE:</u></b>	BLM
<b><u>BH LOCATION:</u></b>	NWSE Sec 24-31N-6W Rio Arriba, NM	<b><u>MINERALS:</u></b>	BLM
<b><u>ELEVATION:</u></b>	6,302' GR	<b><u>LEASE #</u></b>	SF-078767
<b><u>MEASURED DEPTH:</u></b>	6,059'		

#### **I. GEOLOGY:** Surface formation - San Jose

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

Name	MD	Name	MD
Ojo Alamo	2,414	Cliff House	5,349
Kirtland	2,524	Menefee	5,394
Fruitland	2,909	Point Lookout	5,609
Picture Cliffs	3,154	Mancos	5,934
Lewis	3,449	TD	6,059

##### **B. MUD LOGGING PROGRAM:** None

##### **C. LOGGING PROGRAM:** Cased Hole Logs

##### **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:

<u>CASING TYPE</u>	<u>HOLE SIZE</u>	<u>DEPTH (MD)</u>	<u>CASING SIZE</u>	<u>WT. &amp; GRADE</u>
Surface	12-1/4"	+/- 300'	9-5/8"	36# K-55
Intermediate	8-3/4"	+/- 3,629'	7"	20# K-55
Prod. Liner	6-1/4"	+/- 3,529'-6,059'	4-1/2"	10.5# K-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" & 5-1/2" 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.

#### C. CEMENTING:

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

1. SURFACE: Slurry: 150sx (205 cu.ft.) of "Type III" + 2% CaCl<sub>2</sub> + 1/4 # 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 - 455 sx (950) cu.ft.) of "Type III" 65/35 poz with 8% gel, 1% CaCl<sub>2</sub> 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, and 1% CaCl<sub>2</sub> (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 = 1,020 cu.ft. Bump Plug to 1,500 psi. Notify engineering if cement is not circulated to surface.
3. PRODUCTION LINER: 10 bbl Gelled Water space. Lead: 50sx (130ft<sup>3</sup>) of Premium Light HS + 1% FL-52 + .2% CD-32, 0.1% R-3, 3 #/sk CSE. (Yield = 2.59 cu.ft./sk, Weight = 11.6 #/gal.). Tail: 100 sx (215 ft<sup>3</sup>) of Premium Light HS + 1% FL-52 + .2% CD-32, 0.1% R-3, 3 #/sk CSE, 1/4 #/sk cello flake and 4% Phenoseal. (Yield = 2.15 ft<sup>3</sup>/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 330 ft<sup>3</sup>. WOC 12 hours

345

#### **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**

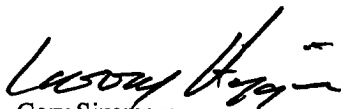
1. Pressure test 7" & 4-1/2" casing to 3300# for 15 minutes.

##### **C. STIMULATION**

1. Perforate the Point Lookout as determined from the open hole logs.
2. Stimulate with approximately 80,000# of 20/40 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 80,000# of 20/40 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

## 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
Nacimlento	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.

## Typical BOP setup

By: John Thompson (Walsh E&P)

