

**RECEIVED**

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

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

**AUG 24 2007**

**APPLICATION FOR PERMIT TO DRILL OIL AND GAS WELLS**  
Bureau of Land Management  
Farmington Field Office

5a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		7. If Unit or CA Agreement, Name and No. Rosa Unit	
5b. 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. 264A	
2. Name of Operator Williams Production Company, LLC		9. API Well No. 30-039-30338	
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 2165' FSL & 100' FWL, Section 23 At proposed prod zone 1000' FSL 400' FEL, Section 22		10. Field and Pool, or Exploratory Basin Fruitland Coal	
14. Distance in miles and direction from nearest town or post office* approximately 45 miles northeast of Blanco, New Mexico		11. Sec., T, R, M, or Blk and Survey or Area 4 <sup>th</sup> 23, 31N, 5W Bottom Hole Section 22, 31N, 5W	
15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig. unit line, if any) 100'		16. No. of Acres in lease 2,560.00	
17. Spacing Unit dedicated to this well 320.0 (E/2)		18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft 1000'	
19. Proposed Depth 3,883'		20. BLM/BIA Bond No. on file 99 UT08 DIST. 3	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6,587' GR		22. Approximate date work will start* Spring 2008	
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   | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above)     |
| 2. A Drilling Plan  | 5. Operator certification.   |
| 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). | 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 8-24-07
Title Drilling COM		
Approved by (Signature) <i>[Signature]</i>	Name (Printed/Typed) AFM	Date 5/12/08
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 Basin Fruitland Coal 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.

A new access road of 50' will be needed to access this location. A pipeline tie of 194.6 feet would be required for this location. Williams Four Corners, LLC has filed a pipeline route plan for the associated pipeline. The pipeline would be owned and operated by Williams Four Corners, LLC

**NOTIFY AZTEC OGD 24 HRS.  
PRIOR TO CASING & CEMENT**

MAY 15 2008 *aw*

**NMOCD**

**NSL**  
Hold C104  
for Directional Survey  
and "As Drilled" plat

This action is subject to technical and procedural review pursuant to 43 C.F.R. 3165.3 and appeal pursuant to 43 C.F.R. 3165.4

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

District I  
1625 N French Dr., Hobbs, NM 88240  
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

State of New Mexico  
Energy, Minerals & Natural Resources Department

Form C-102  
Revised October 12, 2005  
Instructions on back  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

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

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number <b>30-039-30338</b>		2 Pool Code 71629		3 Pool Name BASIN FRUITLAND COAL	
4 Property Code 17033		5 Property Name ROSA UNIT		6 Well Number 264A	
7 GRID No. 120782		8 Operator Name WILLIAMS PRODUCTION COMPANY		9 Elevation 6587'	

10 Surface Location

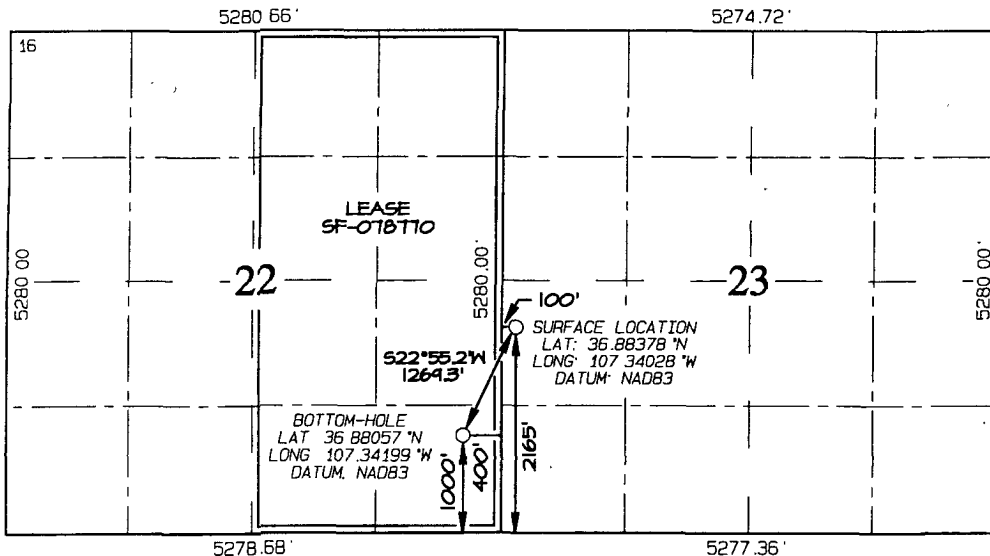
UL or Lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	23	31N	5W		2165	SOUTH	100	WEST	RIO ARRIBA

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
P	22	31N	5W		1000	SOUTH	400	EAST	RIO ARRIBA

12 Dedicated Acres 320.0 Acres - E/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



17 OPERATOR CERTIFICATION

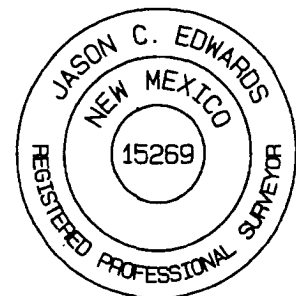
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom-hole location or has a right to drill this well at this 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* 8-24-07  
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

Survey Date: NOVEMBER 17, 2006  
Signature and Seal of 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

Form C-103  
 May 27, 2004

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

WELL API NO. <b>30-039-30338</b>	
5. Indicate Type of Lease FEDERAL <input checked="" type="checkbox"/> STATE <input type="checkbox"/> FEE <input type="checkbox"/>	
6. State Oil & Gas Lease No. SF-078770	
7. Lease Name or Unit Agreement Name Rosa Unit	
8. Well Number	264A
9. OGRID Number	120782
Basin Fruitland Coal	
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 6,587' GR	
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: <u>12 mil</u> Below-Grade Tank: Volume _____ bbls; Construction Material _____	

**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 L: 2165 feet from the south line and 100 feet from the west line  
 Section 23 Township 31N Range 5W NMPM County Rio Arriba

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

<b>NOTICE OF INTENTION TO:</b>		<b>SUBSEQUENT REPORT OF:</b>	
PERFORM REMEDIAL WORK <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>	P AND A <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	MULTIPLE COMPL <input type="checkbox"/>	CASING/CEMENT JOB <input type="checkbox"/>	
OTHER: <input type="checkbox"/>		OTHER: <input type="checkbox"/>	

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 8-24-07

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, District #3 DATE MAY 15 2008

Conditions of Approval (if any):



- C. **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	3,662	7	20	K-55
Liner	6 1/4	3,562   3,883	5 1/2	15.5	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 (4) 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 LINER / CASING: 5-1/2" whirler type cement nose guide shoe

#### C. CEMENTING:

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

1. SURFACE: Use 160 sx (224 cu.ft.) of "Type III" with 2% CaCl<sub>2</sub> and 1/4# of cello-flake/sk (Yield = 1.41 cu.ft./sk, Weight = 14.5 #/gal.). Use **100% excess** to circulate the surface. WOC 12 hours. Total volume = 206 cu.ft. Test to 1500#.
2. INTERMEDIATE: Lead - 460 sx (961 cu.ft.) of "Premium Light" 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 (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 = 1031 cu.ft. Bump Plug to 1,500 psi. Notify engineering if cement is not circulated to surface.
3. PRODUCTION LINER: Open hole completion. No cement.

IV. COMPLETION

A. PRESSURE TEST

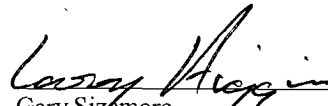
1. Pressure test 7" casing to 1500# for 30 minutes.

B. STIMULATION

1. Cavitate well with reciprocation and rotation. Surge wells with water and air and then flow back. Cavitate for 2 to 3 weeks. Maximum pressure not expected to exceed 2,000 psi.

C. RUNNING TUBING

1. Fruitland Coal: Run 2-7/8", 6.5#, J-55, EUE tubing with a SN on top of bottom joint. Land tubing approximately 50' above TD.

  
\_\_\_\_\_  
Gary Sizemore  
for Sr. Drilling Engineer

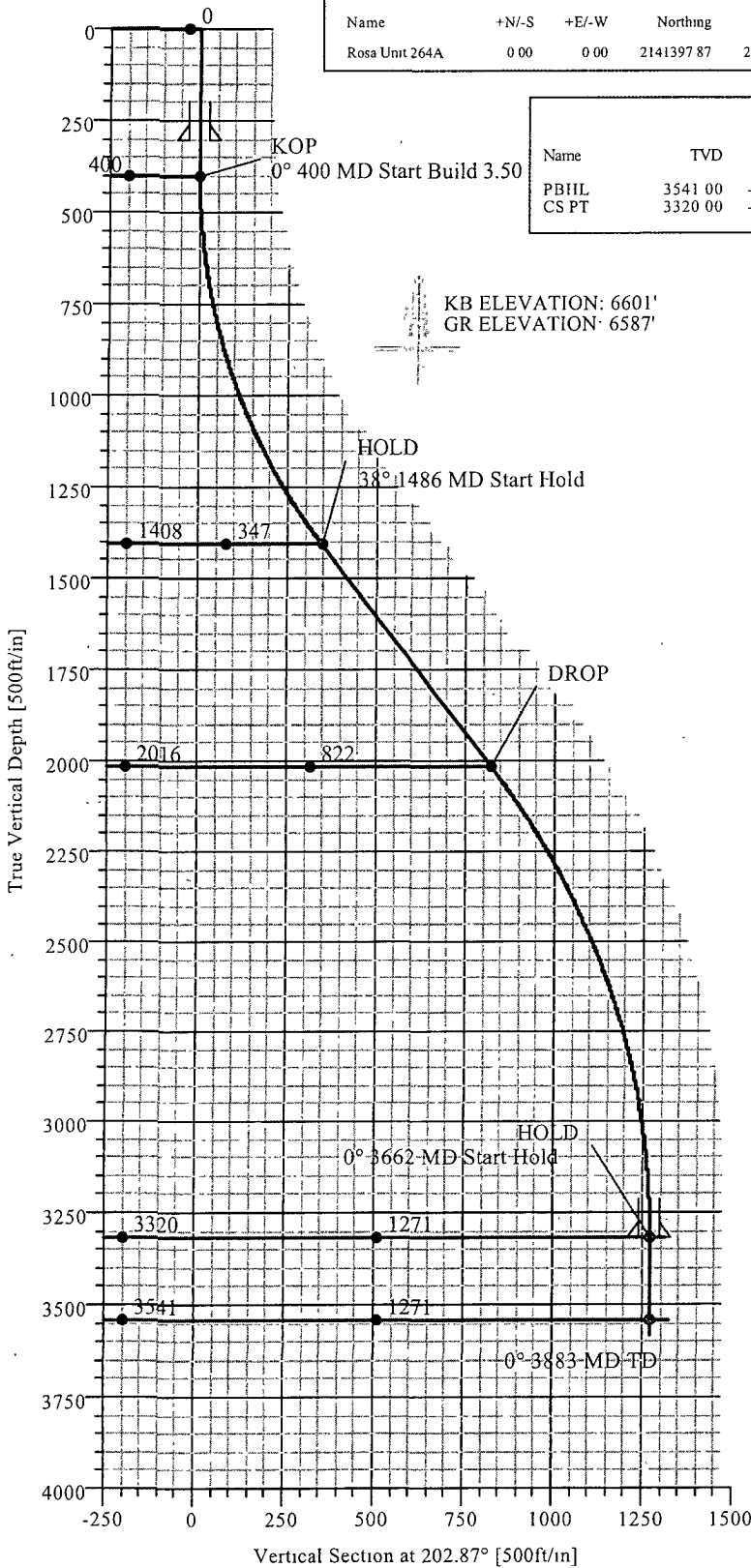


ROSA UNIT 264A  
 SECT 23 T31N R6W  
 2165' FSL & 100' FWL  
 RIO ARriba COUNTY, NM  
 PLAN 1

SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	202.87	0.00	0.00	0.00	0.00	0.00	0.00	
2	400.00	0.00	202.87	400.00	0.00	0.00	0.00	0.00	0.00	
3	1485.71	38.00	202.87	1407.85	-319.74	-134.88	3.50	202.87	347.03	
4	2257.49	38.00	202.87	2016.02	-757.54	-319.57	0.00	0.00	822.18	
5	3662.21	0.00	202.87	3320.00	-1171.23	-494.08	2.71	180.00	1271.18	CS PT
6	3883.21	0.00	202.87	3541.00	-1171.23	-494.08	0.00	202.87	1271.18	PBHL

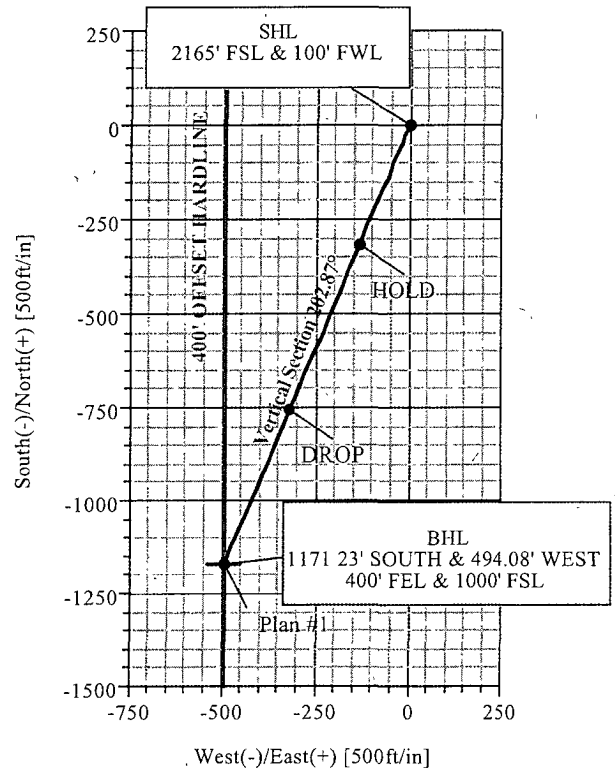
WELL DETAILS							
Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
Rosa Unit 264A	0.00	0.00	2141397.87	2867292.31	36°53'01.608N	107°20'25.008W	N/A

TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
PBHL	3541.00	-1171.23	-494.08	36°52'50.052N	107°20'31.164W	Circle (Radius 50)
CS PT	3320.00	-1171.23	-494.08	36°52'50.052N	107°20'31.164W	Point



Azimuths to Grid North  
 True North: -0.30°  
 Magnetic North: 9.97°

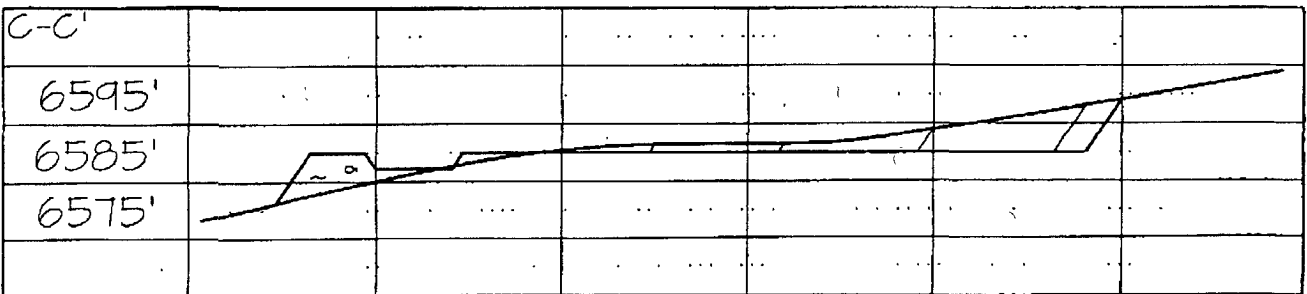
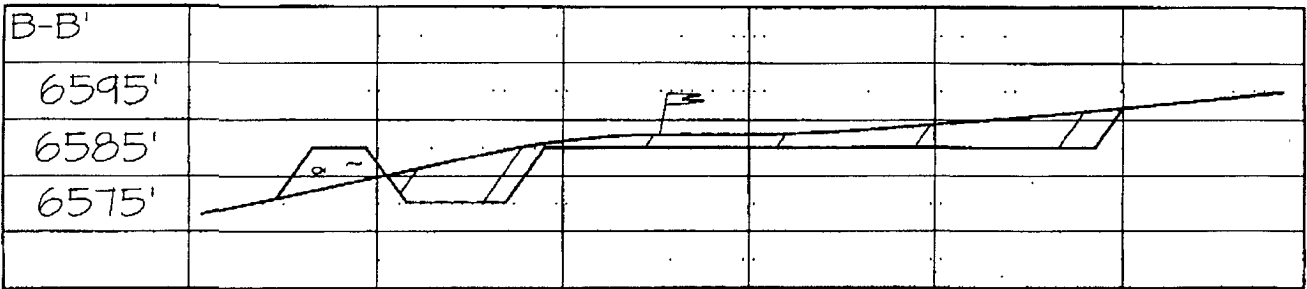
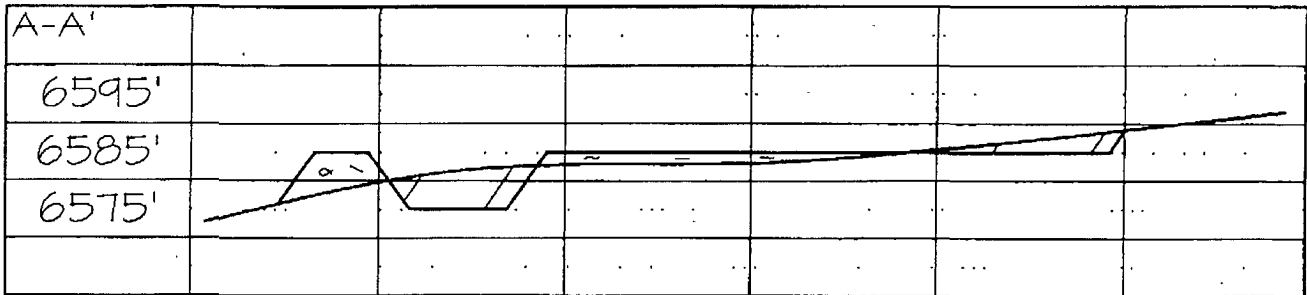
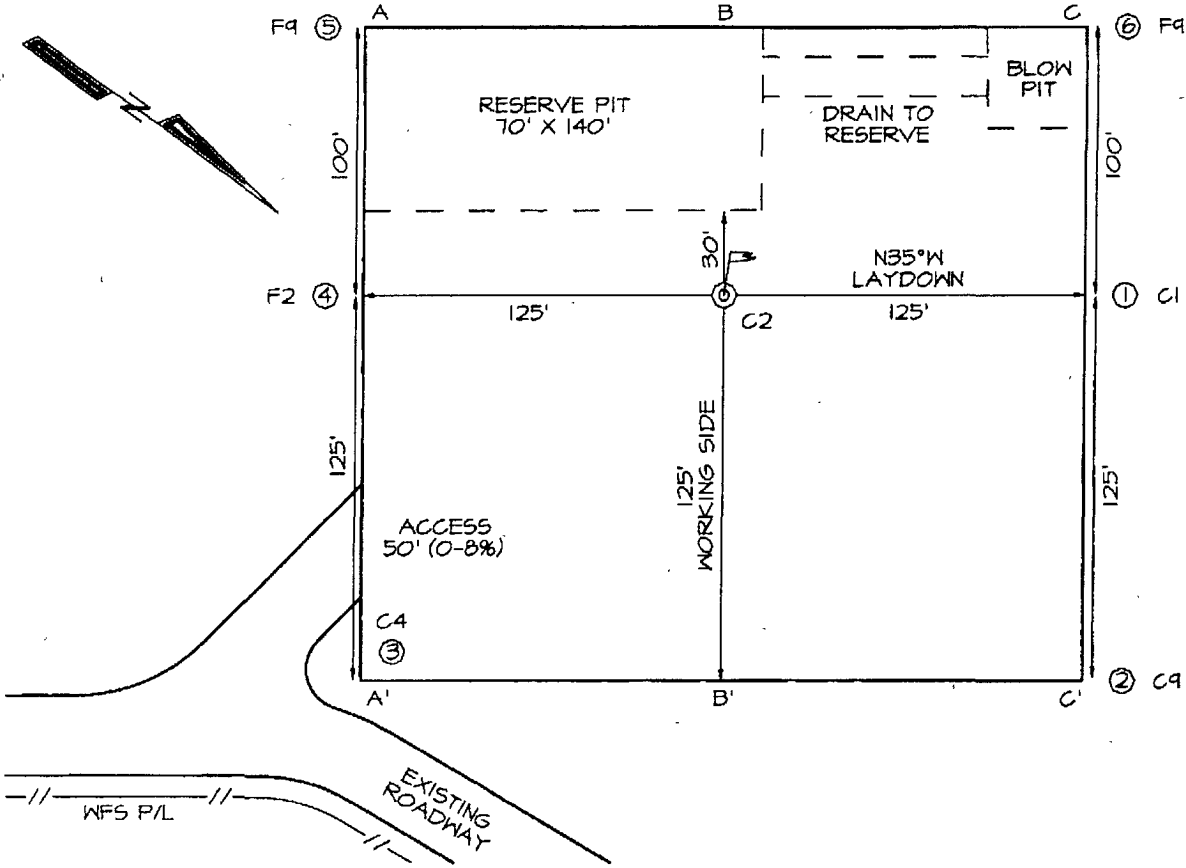
Magnetic Field  
 Strength: 51332nT  
 Dip Angle: 63.80°  
 Date 7/26/2007  
 Model: bggm2006  
**Total Correction 9.97°**



FORMATION TOP DETAILS			
No.	TVDPath	MDPath	Formation
1	1506.00	1610.27	San Jose
2	2741.00	3075.75	Nacimiento
3	2851.00	3189.29	Ojo Alamo
4	3221.00	3563.18	Kirtland
5	3341.00	3683.21	Fruitland
6	3441.00	3783.21	Top Coal
7	3441.00	3783.21	Base Coal

Plan Plan #1 (Rosa Unit 264A)  
 Created By Jose Perez Date 07/27/07  
 Weatherford Drilling Services  
 11943 FM 529  
 Houston TX USA 77041  
 (713) 896 8194 MAIN  
 (713) 896 0498 FAX

**WILLIAMS PRODUCTION COMPANY ROSA UNIT #264A**  
**2165' FSL & 100' FWL, SECTION 23, T31N, R5W, NMPM**  
**RIO ARriba COUNTY, NEW MEXICO ELEVATION: 6587'**





## GEOLOGIC PROGNOSIS

Company: Williams Production Company, LLC  
Project: 2007 Drilling Plan (Fruitland Fm. Coal)  
Area: Rosa Unit

Operator: Williams Production Company, LLC  
Well Name: Rosa Unit No. 264A (Kfc-Directional)  
Location: NWSW 23-31N-05W  
Footage: 2165' FSL & 0100' FWL  
County/State: Rio Arriba/New Mexico

Surveyed GL: 6587 Est: (14') KB: 6601

<u>Formation</u>	<u>Thickness</u>	<u>TVD</u>	<u>Struct. Elev.</u>
San Jose Fm.	1506	Surface	6587
Nacimiento Fm.	1235	1506	5095
Ojo Alamo Ss.	110	2741	3860
Kirtland Sh.	370	2851	3750
Fruitland Fm.	100	3221	3380
<u>Int. Csg. Depth</u>	20	<u>3321</u>	3280
Top Coal Interval	100	3341	<b>3260</b>
Base Coal Interval	0	3441	3160
Pictured Cliffs Ss.	100	3441	3160
<u>Total Depth</u>	NA	<u>3541</u>	3060

**Mud Log** Mud log (5"=100') from intermediate casing to TD  
(Mud Logger to pick TD)

**Mechanical Logs:** None

**Correlation Logs:** Rosa Unit No. 345 (NWSW 23-31N-05W)  
Rosa Unit No. 132 (SWSW 22-31N-05W)

**Notes:** This well will be directionally drilled to a BHL  
1000' FSL & 0400' FEL 22-31N-05W

## 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 H<sub>2</sub>S 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.

# Well Control Equipment Schematic for 2M Service

Attachment to Drilling Technical Program

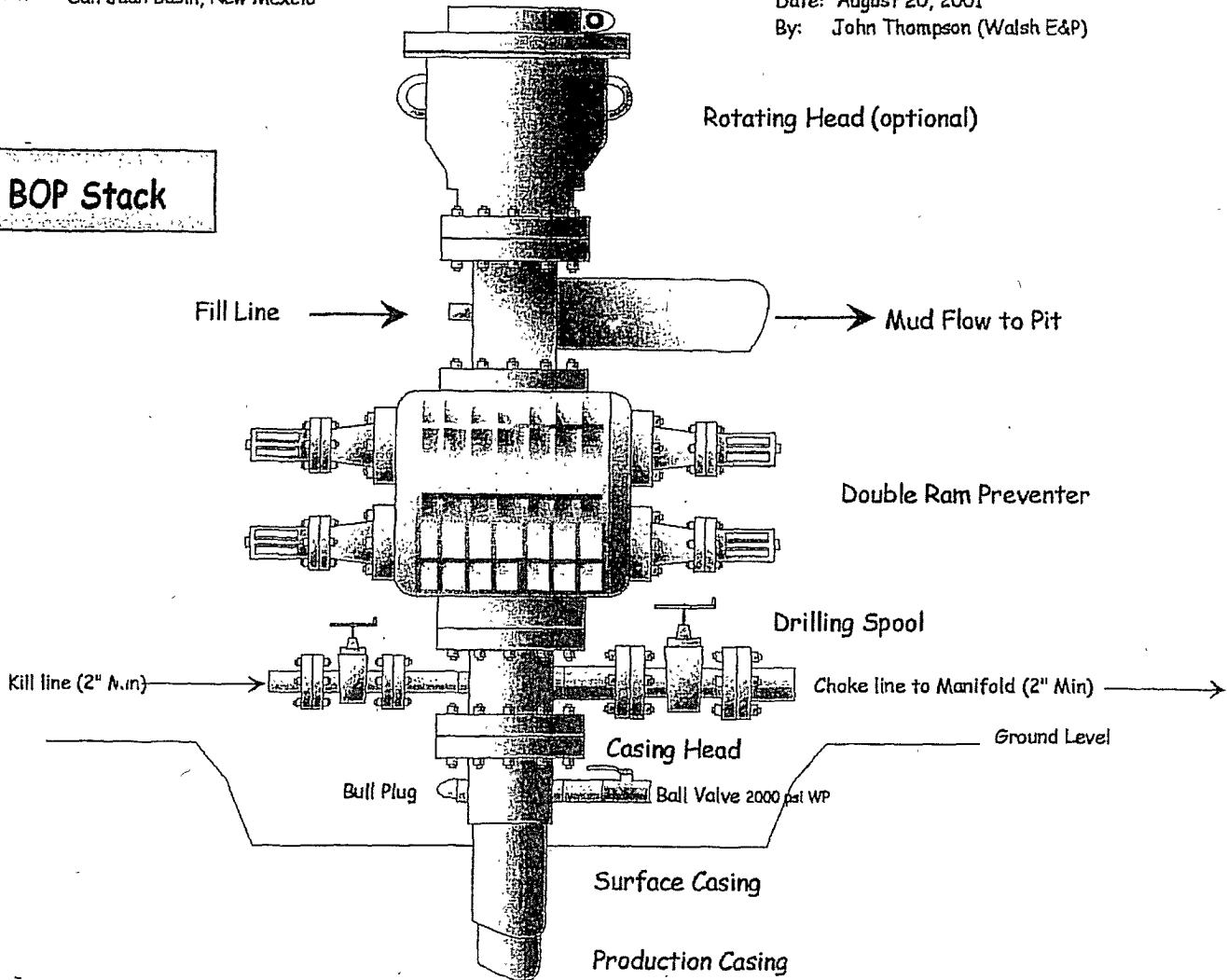
## Exhibit #1 Typical BOP setup

Location: San Juan Basin, New Mexico

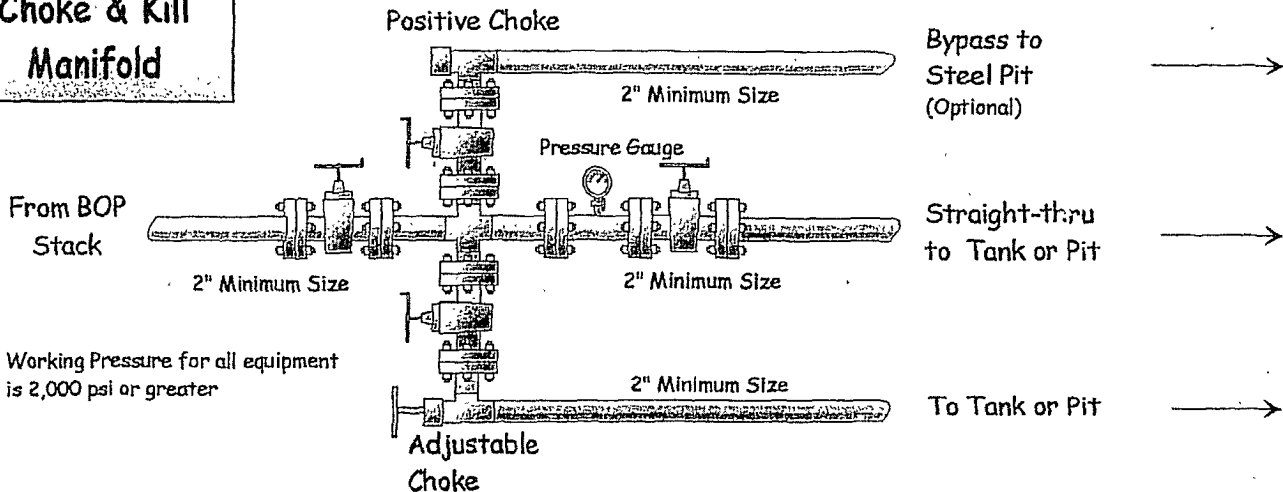
Date: August 20, 2001

By: John Thompson (Walsh E&P)

**BOP Stack**



**Choke & Kill  
Manifold**



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