

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMSF-0078763
6. If Indian, Allottee or Tribe Name
7. If Unit or CA Agreement, Name and No.

1a. Type of Work: ☒ DRILL ☐ REENTER

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

2. Name of Operator

Williams Exploration and Production Company

3a. Address

P.O. Box 316 Ignacio, CO 81137

3b. Phone No. (include area code)

(970) 563-3308

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

At surface 1290' FNL & 170' FWL, Section 11

At proposed prod. zone from 1165' FNL & 315' FEL to 660' FNL & 2310' FEL, Section 10

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

approximately 30 miles northeast of Blanco, NM

15. Distance from proposed*

location to nearest

property or lease line, ft.

(Also to nearest drig. unit line, if any)

170'

16. No. of Acres in lease

2,544.640

18. Distance from proposed location*

to nearest well, drilling, completed,

applied for, on this lease, ft.

800'

19. Proposed Depth

5,954

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

6,826' GR

22. Approximate date work will start*

April 1, 2005

8. Lease Name and Well No.

350

9. APL Well No.

30-039-29366

10. Field and Pool, or Exploratory

Basin Fruitland Coal

11. Sec., T., R., M., or Blk. and Survey or Area

Sections 10 and 11, T. 31N, R. 5W

12. County or Parish

Rio Arriba

13. State

NM

17. Spacing Unit dedicated to this well

320.00 (N/2) Sec 10

20. BLM/BIA Bond No. on file

UT 0847

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

Name (Printed/Typed)

Date

Title

Larry Higgins

12/06/04

Drilling COM

Approved by (Signature)

Name (Printed/Typed)

Date

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.

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 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 action is a twinned location with the proposed Rosa 351A.

This location has been culturally surveyed by La Plata Archaeological Consultants. Copies of their reports have been submitted directly to your office.

This APD is also serving as an application to obtain road and pipeline right-of-ways. An associated pipeline tie of 323.8 feet would be required for this location. Approximately 1,097 feet of existing 2-track road would be upgraded to access the site.

HOLD C164 FOR Directional Survey

NMOC

NMOC

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

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

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

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised February 21, 1994

District II
PO Drawer 00, Artesia, NM 88211-0719

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

Instructions on back
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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30039-29366		*Pool Code 71629	*Pool Name BASIN FRUITLAND COAL
*Property Code 17033	*Property Name ROSA UNIT		*Well Number 350
*OGRID No. 120782	*Operator Name WILLIAMS PRODUCTION COMPANY		*Elevation 6826'

¹⁰ Surface Location

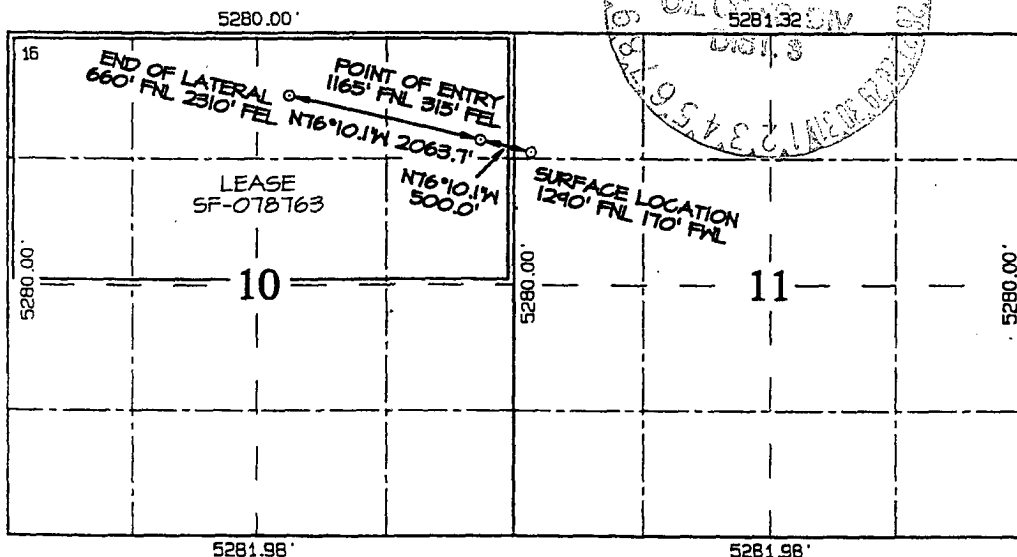
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	11	31N	5W		1290	NORTH	170	WEST	RIO ARriba

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
B	10	31N	5W		660	NORTH	2310	EAST	RIO ARriba

¹² Dedicated Acres 320.0 Acres - (N/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

Larry Higgins
Signature

LARRY HIGGINS
Printed Name

Drillwore COM
Title

12-6-04
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.

Date of Survey: JUNE 8, 2004

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

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

WELL API NO.

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

6. State Oil & Gas Lease No.
Federal NMSF-0078763

7. Lease Name or Unit Agreement Name

Rosa Unit

8. Well Number 350

9. OGRID Number 120782

10. Pool name or Wildcat
Basin Fruitland Coal

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 Exploration and Production Company

3. Address of Operator
P.O. Box 316, Ignacio, CO 81137

4. Well Location

Unit Letter D: 1290 feet from the south line and 170 feet from the west line

Section 11 Township 31N Range 5 W NMPM County Rio Arriba

11. Elevation (Show whether DR, RKB, RT, GR, etc.)
6,826' GR

Pit or Below-grade Tank Application ☒ or Closure ☐

Pit type production 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.

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

Production pit to be located approximately 50 feet south of the well head

Reserve pit to be located approximately 30 feet north of the well head, in the northwest corner of the 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 12-02-2004

Type or print name Larry Higgins E-mail address: larry.higgins@williams.com Telephone No. (970) 563-3308

For State Use Only

DEPUTY OIL & GAS INSPECTOR, DIST. #8

JUL 18 2005

APPROVED BY: [Signature] TITLE DATE

Conditions of Approval (if any):

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
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OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
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STATE ☐ FEE ☐

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Rosa Unit

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9. OGRID Number 120782

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Basin Fruitland Coal

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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: ☐

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SIGNATURE Larry Higgins TITLE Drilling COM DATE 12-02-2004

Type or print name Larry Higgins E-mail address: larry.higgins@williams.com Telephone No. (970) 563-3308

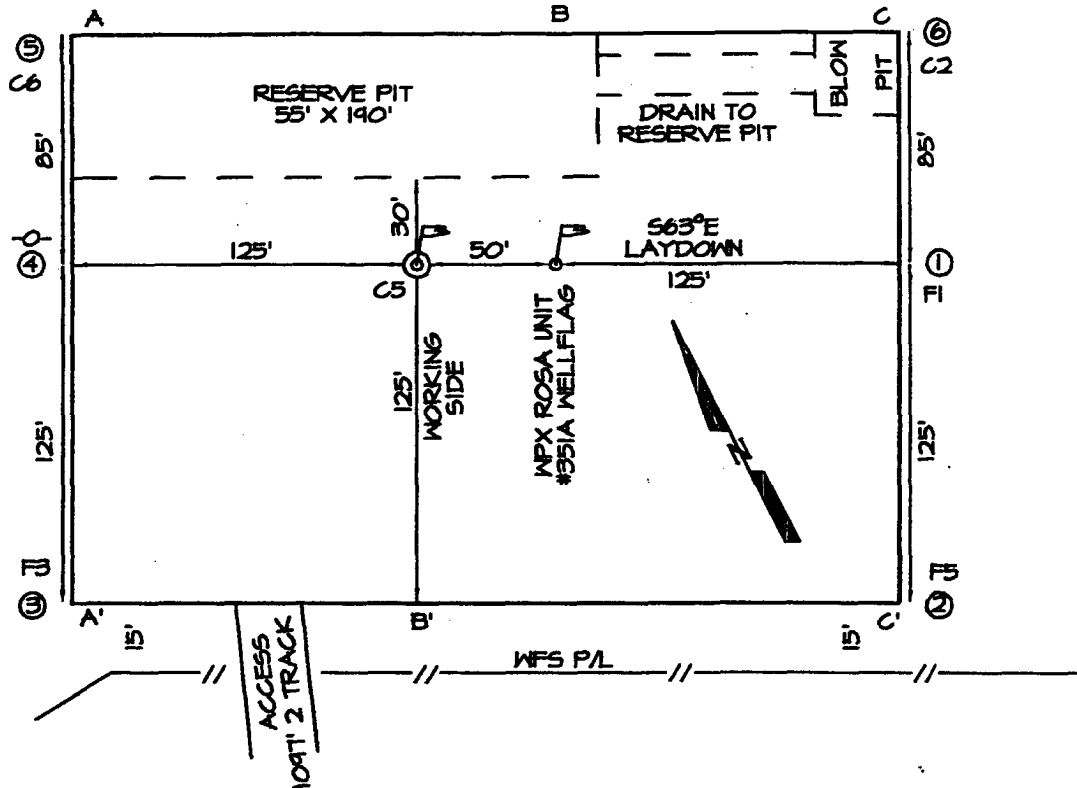
For State Use Only

APPROVED BY: [Signature] TITLE _____ DATE _____

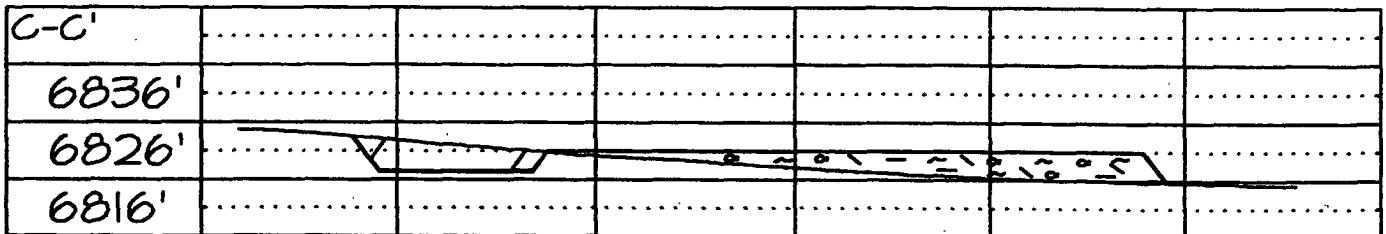
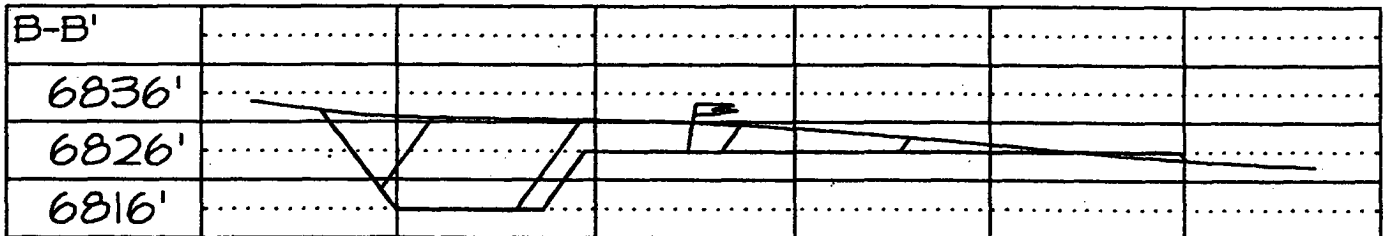
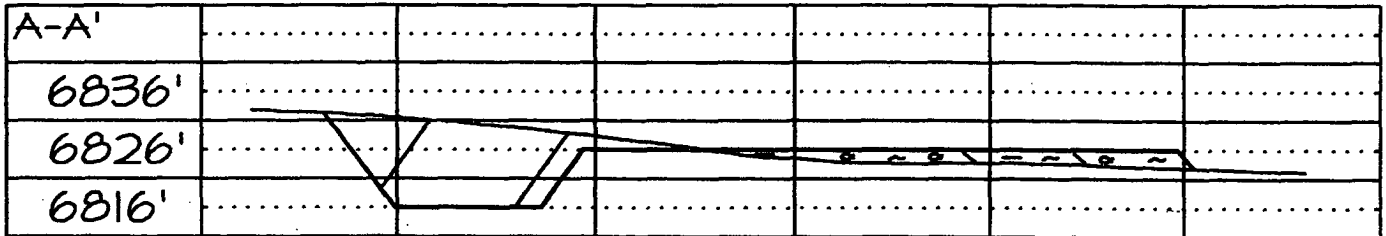
Conditions of Approval (if any):

WILLIAM PRODUCTION COMPANY ROSA UNIT #350
1290' FNL & 170' FWL, SECTION 11, T31N, R3W, NMPM
RIO ARriba COUNTY, NEW MEXICO
GROUND ELEVATION: 6826'

Plat #2 Location Layout



LATITUDE: 36°55'04"
LONGITUDE: 107°20'22"
 DATUM: NAD1982





WILLIAMS PRODUCTION COMPANY

Operations Plan

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

<u>DATE:</u>	10/19/2004		
<u>WELLNAME:</u>	Rosa #350	<u>FIELD:</u>	Basin Fruitland Coal
<u>SURF LOCATION:</u>	NWNW Sec. 11-T31N-R5W San Juan, NM	<u>SURFACE:</u>	Forest
<u>BH LOCATION</u>	NENE Sec 10-31N-5W		
<u>ELEVATION:</u>	6826' GR	<u>MINERALS:</u>	Federal
<u>TOTAL DEPTH:</u>	5,954'	<u>LEASE #</u>	SF-078763

I. GEOLOGY: Surface formation - San Jose

A. FORMATION TOPS: (KB)

	Pilot Hole	Horizontal Section		Pilot Hole	Horizontal Section
	TVD	MD		TVD	MD
San Jose	Surface	Surface	Top Coal	3,491	3,542
Nancimiento	1,601	1,601	Top Target Coal	3,601	3,863
Ojo Alomo	2,941	2,941	Bottom Target Coal	3,606	
Kirtland	3,056	3,056	Base Coal	3,611	
Fruitland	3,341	3,349	Picture Cliffs	3,611	
			TD	3,711	5,954

- **NOTE:** Well will be vertically drilled to 95' into Picture Cliff, logged through the PC, plug back the PC and 8-3/4" hole to 200 ft. above adjusted KOP. Dress / Kick-off cement plug and horizontally drill through the coal.

B. LOGGING PROGRAM: High Resolution Induction/ GR and Density. Neutron log from surface to intermediate casing point and High Resolution Induction/ GR and Density/ Neutron log from intermediate shoe to TD. Onsite geologist will pick Density/ Neutron log intervals on both logging runs.

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

D. SURVEYING: Run Single Shot surveys every 500 ft. while drilling the Pilot Hole to 3,469 ft. (MD).

II. DRILLING

A. **MUD PROGRAM:** Clear water with benex to 7" casing point. Treat for lost circulation as necessary. Expect 100% returns prior to cementing. Notify Engineering of any mud losses. If coal is detected before 3459' DO NOT drill deeper until Engineering is contacted.

B. **Drilling Fluid:** Horizontal section will be drilled with Calcium Chloride water.

C. **MUD LOGGING PRORAM:** Mud logger will pick intermediate casing point and TD.

D. **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 rams will be tested to 1500 psi. The surface and intermediate casing strings will be pressure tested to 1500 psi in conjunction with the BOP test before drilling out cement. The drum brakes will be inspected and tested each tour. All tests, inspections and SPR's 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</u>	<u>CASING SIZE</u>	<u>WT. & GRADE</u>
Surface	12-1/4"	- - 300'	9-5/8"	36# K-55
Intermediate	8-3/4"	- - 3,863'	7"	20# K-55
Prod. Liner	6-1/4"	- - 3,300-5,954'	4-1/2" perfed	10.5# K-55

*Note: All casing depths are measured depths.

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:** 4-1/2" perforated liner with guide shoe on bottom.

C. CEMENTING:

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

1. SURFACE: Use 155 sx (206 cu.ft.) of "Type III" with 2% CaCl_2 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 - 465 sx (971 cu.ft.) of "Type III" 65/35 poz with 8% gel, 1% CaCl_2 and 1/4# cello-flake/sk (Yield = 2.09 cu.ft./sk, Weight = 12.1 #/gal.). Tail - 100 sx (139 cu.ft.) of "Type III" with 1.4# cello-flake/sk. and 1% CaCl_2 (Yield = 1.4 cu.ft./sk, Weight = 14.5#/gal.). Use **120% excess in Lead Slurry** to circulate to surface. **No excess in Tail Slurry.** Total volume = 1,110 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

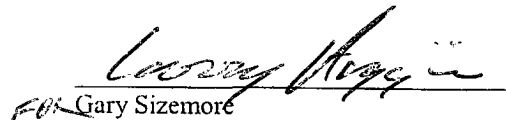
Pressure test 7" casing to 3300# for 15 minutes.

B. STIMULATION

None

C. RUNNING TUBING

1. Fruitland Coal: Run 2-3/8", 4.7#, J-55, EUE tubing with a SN (1.375" ID) on top of bottom joint. Land tubing at approximately 3,730'.


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
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.

Williams Production Company, LLC
Well Control Equipment Schematic for LM 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
is 2,000 psi or greater

2" Minimum Size

To Tank or Pit

Adjustable
Choke