RCVD APR16'07
OIL CONS. DIV.
DIST. 3

Form 3160-3
(September 2001)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

2006 MAY 31 PM 12 34

APPLICATION FOR PERMIT TO DRILL OR REENTER

RECEIVED
070 FARMINGTON NM

5. Lease Serial No.
NMSF-078763

6. If Indian, Allottee or Tribe Name

1a. Type of Work: ☒ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No.
Rosa Unit

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

8. Lease Name and Well No.
359A

2. Name of Operator
Williams Production Company, LLC

9. API Well No.
30-039-29939

3a. Address
P.O. Box 640 Aztec, NM 87410

3b. Phone No. *(include area code)*
(505) 634-4208

10. Field and Pool, or Exploratory
Basin Fruitland Coal

4. Location of Well *(Report location clearly and in accordance with any State requirements. *)*
At surface 465' FSL & 360' FWL, Section 3, T 31N, R5W
At proposed prod. zone 2330' FSL & 2500' FEL, Section 4, T 31N, R 5W

11. Sec., T., R., M., or Blk. and Survey or Area
Section 4, 31N, 5W

14. Distance in miles and direction from nearest town or post office*
approximately 31 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)	16. No. of Acres in lease	17. Spacing Unit dedicated to this well
360'	2554.64	368.28 (Entire Section)
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	**19. Proposed Depth**	**20. BLM/BIA Bond No. on file**
500'	6566'	UTO847 899
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	**22. Approximate date work will start***	**23. Estimated duration**
6548' GR	August 1, 2006	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	Name *(Printed/Typed)*	Date
Larry Higgins	Larry Higgins	5-30-06

Title
Drilling COM

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
/s/ Manley Gonzales		4/13/07
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 450-foot on-lease access road and a 1675.50-foot pipeline tie 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.

HOLD C104 FOR directional survey H
file new plat (dated 10/12/05)

NOTIFY AZTEC OCD 24 HRS.
PRIOR TO CASING & CEMENT

NMOCD

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.

4/18/07

RCVD APR16'07

OIL CONS. DIV.
DIST. 3

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-039- 29939	71629	BASIN FRUITLAND COAL

[4] Property Code	[5] Property Name	[6] Well Number
17033	ROSA UNIT	359A

[7] OGRID No.	[8] Operator Name	[9] Elevation
120782	WILLIAMS PRODUCTION COMPANY	6548'

[10] Surface Location

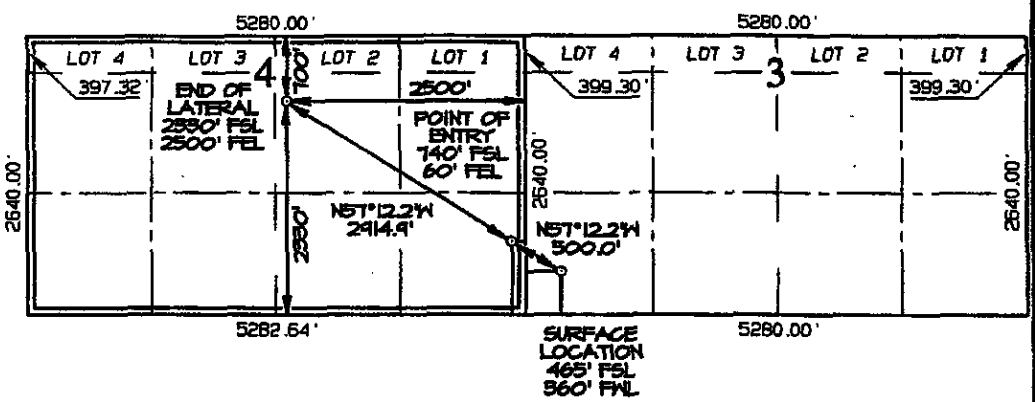
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	3	31N	5W		465	SOUTH	360	WEST	RIO ARRIBA

[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
J	4	31N	5W		2330	SOUTH	2500	EAST	RIO ARRIBA

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
368.28 Acres (Entire Section 4)			

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

Signature

Larry Higgins

Printed Name

Drilling Com

Title

5-30-06

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: OCTOBER 18, 2005

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. 30-039-29939
5. Indicate Type of Lease FEDERAL X STATE ☐ FEE ☐
6. State Oil & Gas Lease No. NMSF-078763

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.)

7. Lease Name or Unit Agreement Name: Rosa Unit
1. Type of Well: Oil Well ☐ Gas Well ☒ Other
8. Well Number 359A
2. Name of Operator: Williams Production Company, LLC
9. OGRID Number 120782
3. Address of Operator: P.O. Box 640 Aztec, NM 87410
Basin Fruitland Coal

4. Well Location
Unit Letter M: 465 feet from the south line and 360 feet from the west line
Section 26 Township 31N Range 5W NMPM County Rio Arriba

11. Elevation *(Show whether DR, RKB, RT, GR, etc.)* 6,548' 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:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☐	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	☐
TEMPORARILY ABANDON	☐	CHANGE PLANS	☒	COMMENCE DRILLING OPNS.	☐	P AND A	☐
PULL OR ALTER CASING	☐	MULTIPLE COMPL	☐	CASING/CEMENT JOB	☐		
OTHER:	☐			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 5-30-06

Type or print name Larry Higgins E-mail address: larry.higgins@williams.com Telephone No. (505) 634-4208

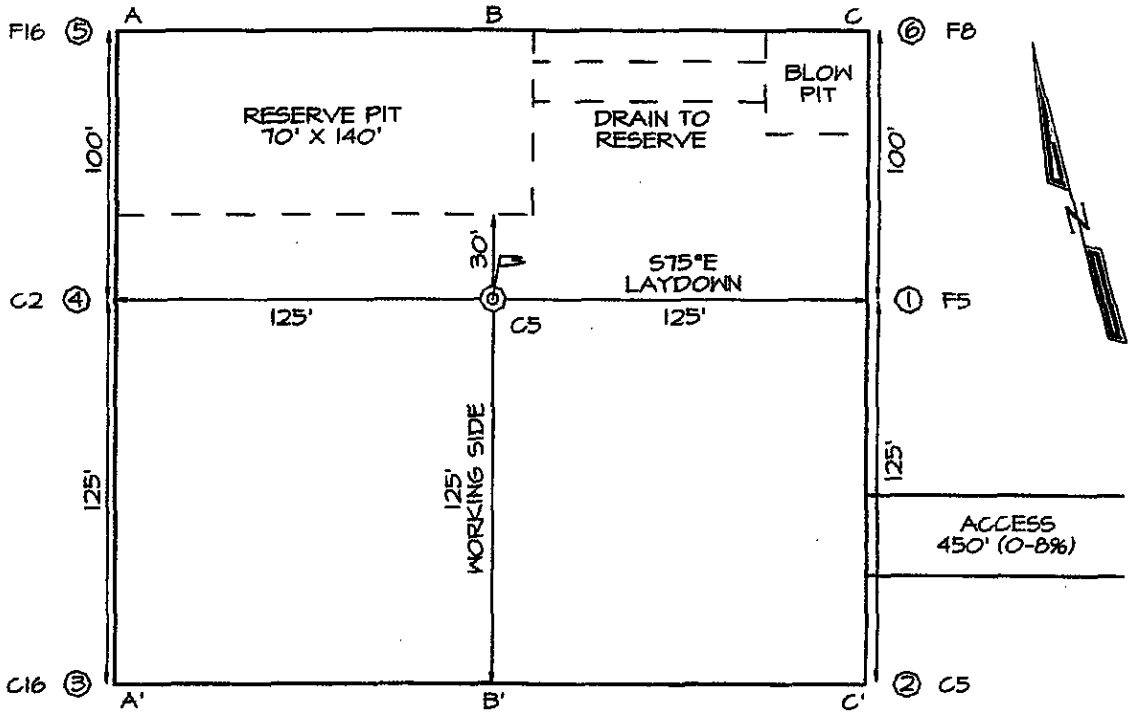
For State Use Only

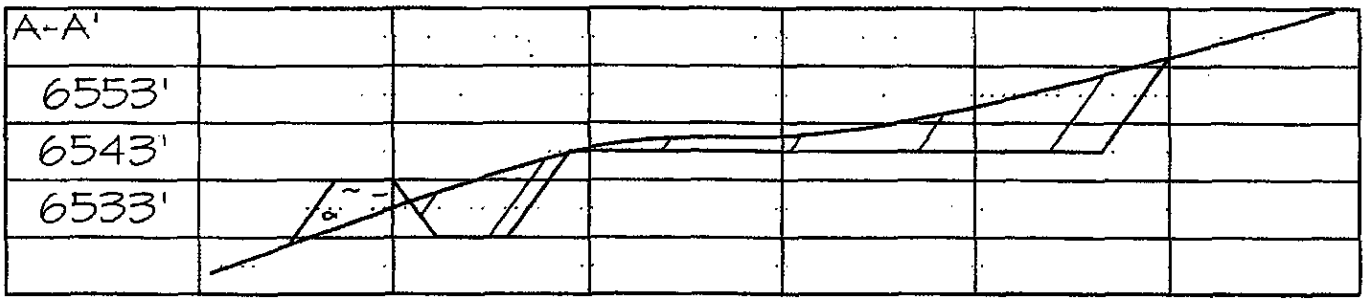
APPROVED BY: TITLE DEPUTY OIL & GAS INSPECTOR, DIST. #3 DATE APR 18 2007

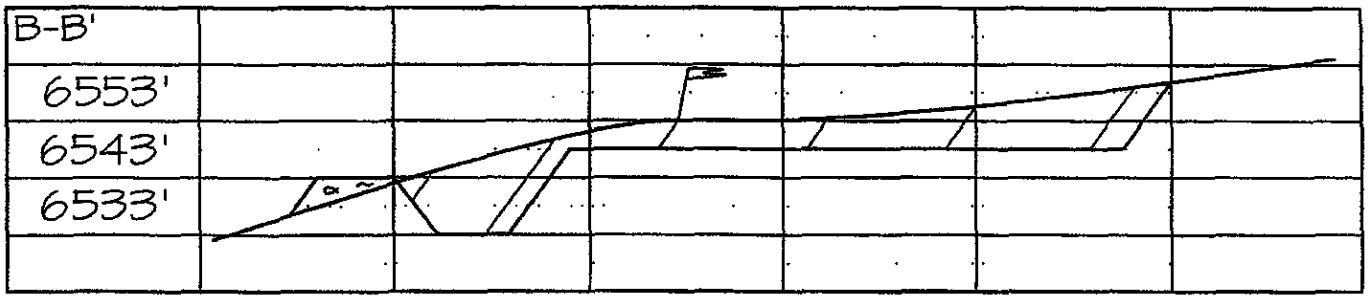
Conditions of Approval (if any):

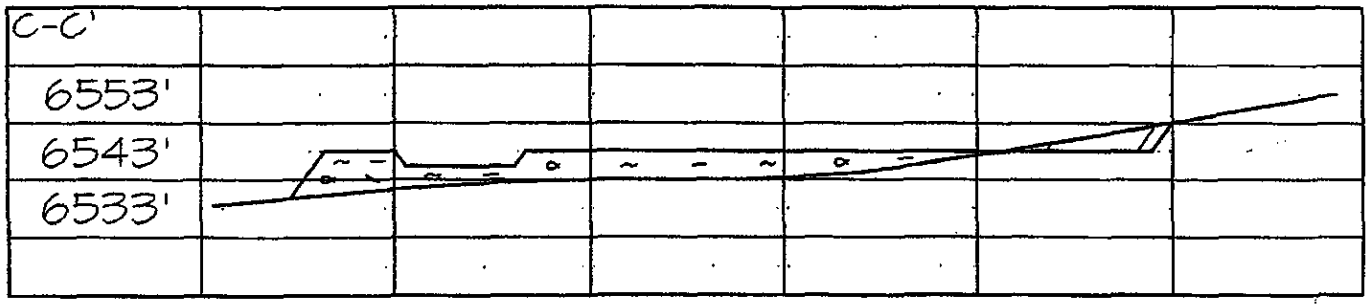
WILLIAMS PRODUCTION COMPANY ROSA UNIT #359A
465' FSL & 360' FWL, SECTION 3, T31N, R5W, NMPM
RIO ARRIBA COUNTY, NEW MEXICO ELEVATION: 6548'

LATITUDE: 36.92253° N
LONGITUDE: 107.35750° W
DATUM: NAD1983









WILLIAMS PRODUCTION COMPANY

Operations Plan

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

DATE:	**5/19/2006**		
WELLNAME:	Rosa Unit #359A	**FIELD:**	Basin Fruitland Coal
BH LOCATION:	NWSE Sec. 4-T31N-5W	**SURFACE:**	BLM
SURF LOCATION:	SWSW Sec 3-31N-5W Rio Arriba, NM	**MINERALS:**	BLM
		LEASE #	SF-078763
ELEVATION:	6,548' GR		
TOTAL DEPTH:	**6,566'**		

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

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

NAME		TVD	MD		NAME		TVD	MD
San Jose		Surface	Surface		Top Coal		3,232	3,333
Nacimiento		1,417	1,417		Top Target Coal		3,287	3,681
Ojo Alamo		2,677	2,677		Bottom Target Coal		3,297	4,356
Kirtland		2,787	2,787		Base Coal		3,347	
Fruitland		3,147	3,186		Picture Cliffs		3,347	
					TD		3,447	**6,566**

- **NOTE**: Well will be vertically drilled to 100' 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 from surface casing to TD of pilot hole. Geologist will pick Density/ Neutron log intervals.

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

D. **MUD LOGGING PRORAM:** Mud logger will be on location from 500' above Ojo Alamo to TD of intermediate casing. Then from drillout of intermediate casing to TD.

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 **3,282', DO NOT** drill deeper until Engineering is contacted.

B. DRILLING FLUID: Horizontal section will be drilled with Calcium Chloride water.

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	HOLE SIZE	DEPTH (MD)	CASING SIZE	WT. & GRADE
Surface	12-1/4"	+/- 300'	9-5/8"	36# K-55
Intermediate	8-3/4"	+/- 3,282'	7"	20# K-55
Prod. Liner	6-1/4"	+/- 2,705'- 6,566'	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 (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: 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: Use 160 sx (224 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 120% excess** to circulate the surface. WOC 12 hours. Total volume = ~~206~~ 324 cu.ft. Test to 1500#.

2. INTERMEDIATE: Lead - 415 sx (864 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 (139cu.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 = 1,003 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 3300# for 15 minutes.

B. STIMULATION

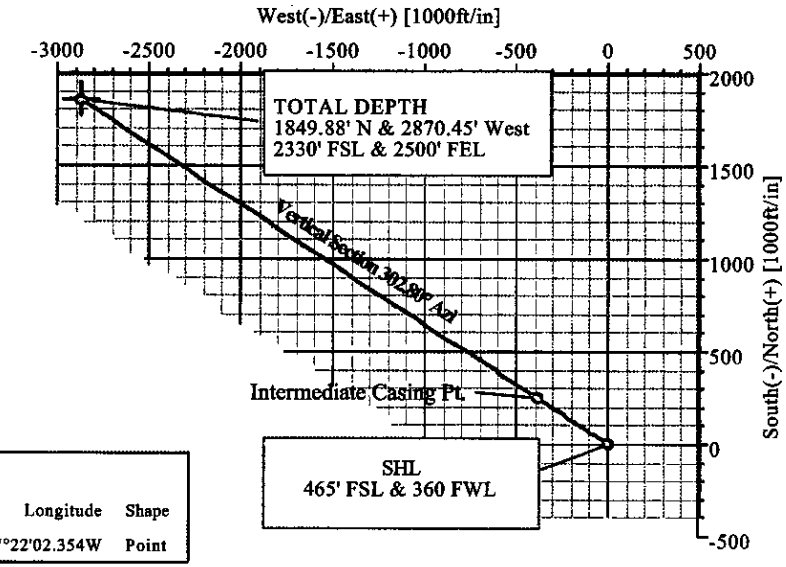
1. Cavitate well with reciprocation and rotation. Surge wells with water and air and then flow back. Cavitate for 2 to 3 weeks. Maximum pressure not expected to exceed 2,000 psi.

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.

for Gary Sizemore
Sr. Drilling Engineer

ROSA UNIT 359 A
Section 3 T31N R 5W
465' FSL & 360' FWL
RIO ARRIBA COUNTY, NM



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	302.80	0.00	0.00	0.00	0.00	0.00	0.00	
2	2804.83	0.00	302.80	2804.83	0.00	0.00	0.00	302.80	0.00	
3	3538.16	88.00	302.80	3282.00	249.62	-387.33	12.00	-57.20	460.80	
4	3791.25	88.00	302.80	3290.84	386.63	-599.94	0.00	0.00	713.73	
5	3857.92	90.00	302.80	3292.00	422.74	-655.97	3.00	0.00	780.39	
6	6492.43	90.00	302.80	3292.00	1849.88	-2870.45	0.00	0.00	3414.90	BHL

WELL DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
Rosa Unit 359A	0.00	0.00	2155479.92	2862185.88	36°55'21.108N	107°21'27.000W	N/A

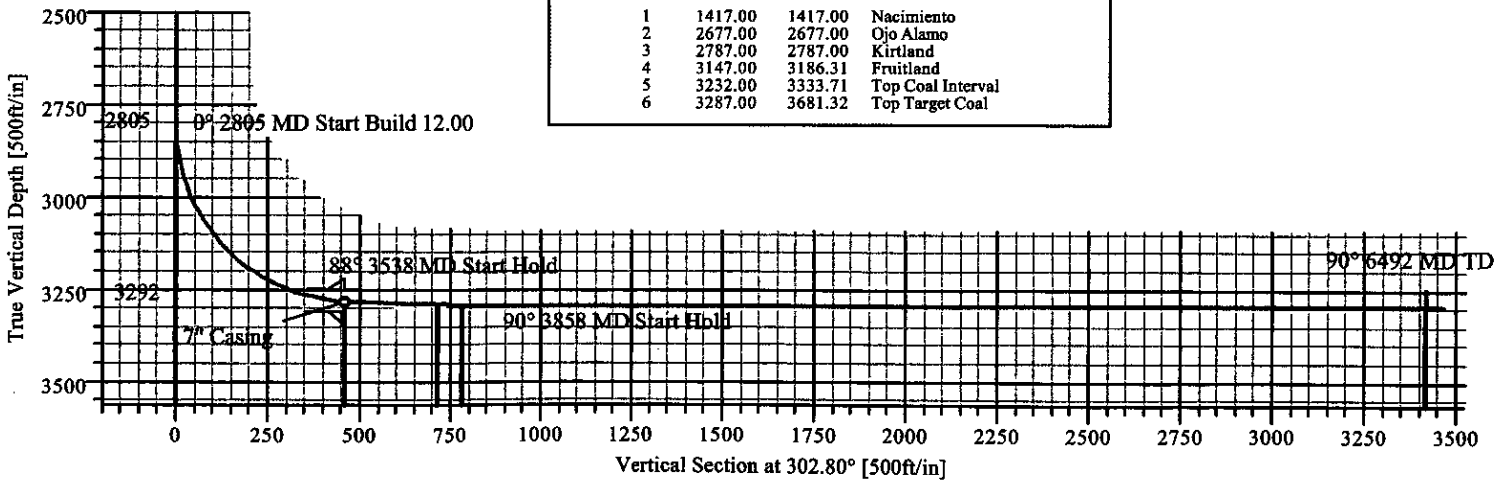
KB ELEVATION: 6562'
GR ELEVATION: 6548'

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
BHL	3292.00	1849.88	-2870.45	36°55'39.398N	107°22'02.354W	Point

FORMATION TOP DETAILS

No.	TVDPath	MDPath	Formation
1	1417.00	1417.00	Nacimiento
2	2677.00	2677.00	Ojo Alamo
3	2787.00	2787.00	Kirtland
4	3147.00	3186.31	Fruitland
5	3232.00	3333.71	Top Coal Interval
6	3287.00	3681.32	Top Target Coal



Azimuths to True North
Magnetic North: 10.36°

Magnetic Field
Strength: 51468nT
Dip Angle: 63.82°
Date: 5/10/2006
Model: igrf2005

Total Correction 10.36°

Plan: Plan #1 (Rosa Unit 359 A/1)

Created By: Jose Perez Date: 5/10/2006
Weatherford Drilling Services
3611 Plaza East Court
Granbury TX 76049
(817) 573 8500 MAIN
(817) 573 8001 FAX

GEOLOGIC PROGNOSIS

Company:	***Williams Production Company. LLC***
Project:	***2006 Drilling Plan (Fruitland Fm. Coal)***
Area:	***Rosa Unit***
Operator:	**Williams Production Company. LLC**
Well Name:	***Rosa Unit No. 359A (Kfc-Horizontal)***
Location:	SWSW 03-31N-05W
Footage:	0465' FSL & 0360' FWL
County/State:	Rio Arriba/New Mexico

Surveyed GL: 6548 Est: (14') KB: 6562

Formation	***Thickness***	***TVD***	***Struct. Elev.***
San Jose Fm.	1417	Surface	6548
Nacimiento Fm.	1260	1417	5145
Ojo Alamo Ss.	110	2677	3885
Kirtland Sh.	360	2787	3775
Fruitland Fm.	85	3147	3415
Top Coal Interval	55	3232	3330
Int. Csg. Depth	0	**3287**	3275
Top Target Coal	10	3287	**3275**
Base Target Coal	50	3297	3265
Base Coal Interval	0	3347	3215
Pictured Cliffs Ss.	100	3347	3215
Total Depth	NA	**3447**	3115

Mud Log: Mud log (5"=100') from **500'** above Ojo Alamo Ss. to TD
(Mud Logger to pick intermediate casing point and TD)

Mechanical Logs: HRI from surface casing to TD;
SDL (EVR)/DSN from TD through minimums

Correlation Logs: Rosa Unit No. 70 (NWNW 10-31N-05W)
Rosa Unit No. 359 (NESW 04-31N-05W)
Schalk 62 No. 3 (SESE 33-32N-05W)

Notes: This well will be drilled 100-feet into the Pictured Cliffs Ss. for logs. After logs are run, the Rosa Unit No. 359A will be plugged back above the target coal and horizontally drilled to a BHL 2330' FSL & 2500' FEL 04-31N-05W.

Target coal in surrounding wells:
Rosa Unit No. 70 (3358'-3367')
Rosa Unit No. 359 (2930'-2941')
Schalk 62 No. 3 (3046'-3056')

There appears to be an elevation error on the log header for the Schalk 62 No. 3. The GL should be 6301' and the KB 6313'.

John E. Bircher May 03, 2006

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

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 2M Service

Attachment to Drilling Technical Program

Typical BOP setup

Location: San Juan Basin, New Mexcio

Date: August 20, 2001
By: John Thompson (Walsh E&P)