

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

RECEIVED

FEB 22 2010

Bureau of Land Management
Farmington Field Office

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

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NMSF-078771
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		6. If Indian, Allottee or Tribe Name
2. Name of Operator Williams Production Company, LLC		7. If Unit or CA Agreement, Name and No. Rosa Unit
3a. Address P.O. Box 640 Aztec, NM 87410		8. Lease Name and Well No. Rosa Unit #634B
3b. Phone No (include area code) (505) 634-4208		9. API Well No. 30-039-30937
4. Location of Well (Report location clearly and in accordance with any State requirements *) At surface 1485' FNL & 645' FEL Section 22, T31N., R6W At proposed prod. zone 1980' FNL & 20' FEL Section 23, T31N R6W		10. Field and Pool, or Exploratory Basin Mancos
14. Distance in miles and direction from nearest town or post office* approximately 30 miles northeast of Blanco, New Mexico		11. Sec., T., R., M., or Blk and Survey or Area B sec 23, T 31N, R 6W S Section 22, 31N, 6W
15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig unit line, if any) 645'	16. No. of Acres in lease 2,560.000	12. County or Parish Rio Arriba
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft 165' Rosa 18	19. Proposed Depth 6891'	13. State NM
21. Elevations (Show whether DF, KDB, RT, GL, etc) 6,260' GR	22. Approximate date work will start* April 1, 2010	17. Spacing Unit dedicated to this well 320.0 - (N/2)
24. Attachments		20. BLM/BIA Bond No on file UT0899
		23. Estimated duration 1 month

RCVD APR 8 '10

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, shall be attached to this form

OIL CONS. DIV.

- | | |
|--|--|
| 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. |

DIST. 3

25. Signature <i>Larry Higgins</i>	Name (Printed/Typed) Larry Higgins	Date 2-22-10
CONFIDENTIAL		
Approved by (Signature) <i>[Signature]</i>	Name (Printed/Typed) AFM	Date 4/6/2010
Title Drilling COM	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 develop the Basin Mancos 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 Bureau of Land Management, Farmington Field Office (BLM/FFO).

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

No new access road will be required for this proposed well.

This APD is also serving as an application to obtain a pipeline right-of-way. An associated pipeline tie of 24.6 feet would be required for this well

BLM'S APPROVAL OR ACCEPTANCE OF THIS ACTION DOES NOT RELIEVE THE LESSEE AND OPERATOR FROM OBTAINING ANY OTHER AUTHORIZATION REQUIRED FOR OPERATIONS ON FEDERAL AND INDIAN LANDS

NMOCD

NOTIFY AZTEC OCD 24 HRS.
PRIOR TO CASING & CEMENT

APR 13 2010

Hold C104

for Directional Survey
and "As Drilled" plat

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

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

APD Certification:

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

Executed this 22nd day of February, 2010.

Name Larry Higgins

Position Title Drilling COM

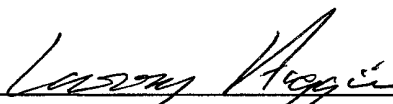
Address P.O. Box 640, Aztec, NM 87410

Telephone (505) 634-4208

Field representative (if not above signatory) _____

E-mail larry.higgins@williams.com

Date: 2-22-10



Larry Higgins
Drlg COM
Williams Production Company, LLC

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

RECEIVED

FEB 22 2010

☐ AMENDED REPORT

Bureau of Land Management
Farmington Field Office

WELL LOCATION AND ACREAGE DEDICATION

*API Number 30-039-30937		*Pool Code 97232	*Pool Name BASIN MANCOS
*Property Code 17033	*Property Name ROSA UNIT		*Well Number 634B
*GRID No. 120782	*Operator Name WILLIAMS PRODUCTION COMPANY.		*Elevation 6260'

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
H	22	31N	6W		1485	NORTH	645	EAST	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
H	23	31N	6W		1980	NORTH	20	EAST	RIO ARriba

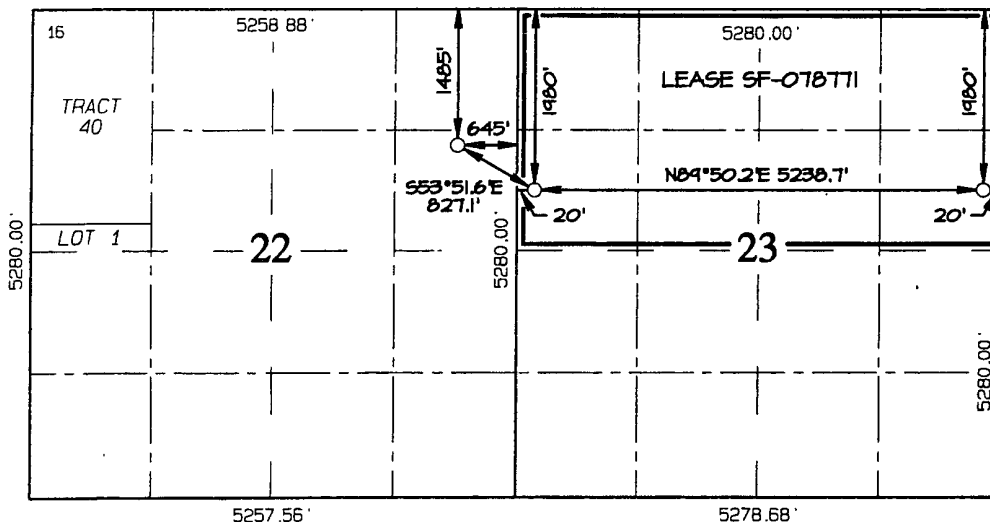
12 Dedicated Acres 320.0 Acres - (N/2)	13 Joint or Infill	14 Consolidation Code	15 Order No
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

SURFACE LOCATION
1485' FNL 645' FEL
SECTION 22, T31N, R6W
LAT: 36.88830°N
LONG: 107.44339°W
DATUM: NAD1983

POINT-OF-ENTRY
1980' FNL 20' FWL
SECTION 23, T31N, R6W
LAT: 36.88695°N
LONG: 107.44111°W
DATUM: NAD1983

END-OF-LATERAL
1980' FNL 20' FEL
SECTION 23, T31N, R6W
LAT: 36.88693°N
LONG: 107.42320°W
DATUM: NAD1983



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

Signature: Larry Higgins
Date: 2-22-10
Printed Name: Larry Higgins

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: SEPTEMBER 11, 2009

Signature and Seal of Professional Surveyor



JASON C. EDWARDS
Certificate Number 15269

THE HORIZONTAL LATERAL REPRESENTED ON THIS PLAT CORRESPONDS TO THE BLACK SEGMENT WHICH VARIES IN THE ELEVATION FROM 6891.0' AT THE POINT-OF-ENTRY TO 6749.0' AT THE END-OF-LATERAL.

DRILLING PROGRAM

Operator: Williams Production Company LLC.

Well: Rosa Unit 634B

Surface: 1485' FNL & 645' FEL, Sec. 22, T31N, R6W, N.M.P.M.

Bottom Hole: 1980' FNL & 20' FEL Sec. 23, T31N, R6W, N.M.P.M.

Rio Arriba County, New Mexico

ONSHORE OIL & GAS ORDER NO. 1

Approval of Operations on Onshore Federal and Indian Oil and Gas Leases

All lease and/or unit operations are to be conducted in such a manner that full compliance is made with the applicable laws, regulations (CFR 43, Part 3160) and the approved Application for Permit to Drill. The operator is considered fully responsible for the actions of his subcontractors. A copy of the approved APD must be on location during construction, drilling and completion operations.

Approval of this application does not warrant or certify that the applicant holds legal of equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

1. FORMATION TOPS:

The estimated tops of important geologic markers are as follows:

The referenced surface elevation is 6256' ungraded.

Name	TVD	MD	Name	TVD	MD
Ojo Alamo	2,328	2,328	Menefee	5,341	5,354
Kirtland	2,428	2,428	Point Lookout	5,576	5,630
Fruitland	2,973	2,973	Mancos	5,871	5,951
Pictured Cliffs	3,111	3,111	Top of Black Zone	6,749	7,021
Lewis	3,401	3,401	Bottom of Black Zone	6,891	7,588
Cliff House	5,286	5,294	TD	6,749	13,320

2. ESTIMATED DEPTH OF WATER, OIL, GAS & OTHER MINERAL BEARING FORMATIONS:

The estimated depths at which the top and bottom of the anticipated water, oil, gas or other mineral bearing formations are expected to be encountered are as follows:

Substance	Formation	Depth TVD
Gas	Fruitland Coal	2973
Gas	Cliff House	5286
Gas	Point Lookout	5576

All shows of fresh water and minerals will be reported and protected.

3. BOPE EQUIPMENT:

Williams Production Company, LLC. minimum specifications for pressure control equipment are as follows:

The well control equipment will be a Class 3 – 5000 # W.P. with 2- Hydraulic Rams at 5000 # rating and 1- Annular at 3000 # rating. The choke manifold is a 2" 5000 # rating flange valves system & two (2) 2" valves per wing, one wing with one (1) Manual adjustable choke, second (2) wing is a fixed choke 5000 # rating, third (3) wing is a gate. Choke/ Kill outlets between rams or drilling spool 2" flanged gate, choke valves one(1) manual and one(1) hydraulic 2" flange 5000 # rating, the kill valves with two(2) manual 2" flange 5000# rating gate valves, and secondary kill with two(2) manual gate valves 2" flange 5000# rating with pressure gauge. See attached schematic of BOP stack and choke manifold system.

Ram type preventers and associated equipment shall be tested with a test plug to approved stack working pressure of up to 70 percent of internal yield pressure of casing. Pressure shall be maintained for at least 10 minutes or until requirements of test are met, whichever is longer. If a test plug is utilized, no bleed-off pressure is acceptable. Valve on casing head below test plug shall be open during test of BOPE stack.

Annular type preventers shall be tested with a test plug to 50 percent of rated working pressure. Pressure shall be maintained at least 10 minutes or until provisions of test are met, whichever is longer..

As a minimum, the above test shall be performed:

- a. when initially installed
- b. whenever any seal subject to test is broken
- c. following related repairs
- d. at 30-day intervals

Pressure tests are required before drilling out from under all casing strings set and cemented in place. Blowout preventer controls must be installed prior to drilling the surface casing plug and will remain in use until the well is completed or abandoned.

Preventers will be inspected and operated at least daily to insure good mechanical working order, and this inspection recorded on the daily drilling report. Preventers will be pressure tested before drilling casing cement plugs. All BOPE pressure tests must be recorded on the daily drilling report.

NOTIFY THE FIELD OFFICE PETROLEUM ENGINEER AT LEAST 24 HOURS IN ADVANCE OF PRESSURE TESTS.

Valves shall be tested from working pressure side during BOPE tests with all down stream valves open.

When testing the kill line valve(s) the check valve shall be held open of the ball removed.

Annular preventers shall be functionally operated at least weekly.

Pipe and blind rams shall be activated each trip; however, this function need not be performed more than once a day.

A BOPE pit level drill shall be conducted weekly for each drilling crew.

Pressure tests shall apply to all related well control equipment.

All of the above described tests and/or drills shall be recorded in the drilling log. Test charts, with individual test results identified, shall be maintained on location while drilling and shall be made available to a BLM representative upon request. A test plug will be used on all pressure testing BOPE.

The choke manifold, BOPE extension rods and hand wheels will be located outside the substructure. The hydraulic BOPE closing unit will be located at least 100 ft from the well head, with the remote control unit on the rig floor. The casing head and BOPE will be flanged 13-3/8" 5000 psi. Kill line will be 2" i.d. with burst pressure rating of at least 5,000 psi. These items will be pressure tested concurrently with BOPE's. The BOPE will be tested when the stack is first installed on the well. It will also be tested at each casing shoe and at least every 30 days. BOPE and choke manifold sizes will be in accordance with API-RP-53 as per the attached. See attached schematic of choke manifold.

- a. The size and rating of the BOPE stack is shown on the attached diagram.
- b. A choke line and a kill line are to be properly installed. The kill line is not to be used as a fill-up line.
- c. The accumulator system shall have a pressure capacity to provide for repeated operation of hydraulic preventers.
- d. Drill string safety valve(s), to fit all tools in the drill string, are to be maintained on the rig floor while drilling operations are in progress.

4. CASING AND CEMENTING PROGRAM:

The proposed casing and cementing program shall be conducted as approved to protect and/or isolate all usable water zones, potentially productive zones, lost circulation zones, abnormally pressured zones, and any prospectively valuable deposits of minerals. Any isolating medium other than cement shall receive approval prior to use. The casing setting depth shall be calculated to position the casing seat opposite a competent formation which will contain the maximum pressure to which it will be exposed during normal drilling operations. Determination of casing setting depth shall be based on all relevant factors, including; presence/absence of hydrocarbons; fracture gradients; usable water zones; formation pressures; lost circulation zones; other minerals; or other unusual characteristics. All indications of usable water shall be reported.

Casing design shall assume formation pressure gradients of 0.44 to 0.50 psi per foot for exploratory wells (lacking better data).

Casing design shall assume fracture gradients from 0.70 to 1.00 psi per foot for exploratory wells (lacking better data).

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Form 3160-5
(February 2005)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Bureau of Land Management
Farmington Field Office

MAR 01 2010

FORM APPROVED
OMB No 1004-0137
Expires March 31, 2007

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on page 2.

1 Type of Well

☐ Oil Well ☒ Gas Well ☐ Other

2 Name of Operator

Williams Production Company, LLC

3a Address

PO Box 640 Aztec, NM 87410

3b. Phone No. (include area code)

505-634-4208

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

1485' FNL & 645' FEL, sec 22, T31N, R6W

Lease Serial No.

NMSF 0078771

6 If Indian, Allottee or Tribe Name

7. If Unit of CA/Agreement, Name and/or No
Rosa Unit8. Well Name and No
Rosa Unit #634B

9. API Well No

30-039-30937

10. Field and Pool or Exploratory Area
Basin Mancos11. Country or Parish, State
Rio Arriba

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input type="checkbox"/> Other _____
	<input checked="" type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation. Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

Williams Production Company is submitting the attached operation plans and direction plans to reflect the correct formation tops that were incorrectly submitted on the APD.

RCVD APR 8 '10

OIL CONS. DIV.

CONFIDENTIAL

DIST. 3

14. I hereby certify that the foregoing is true and correct.

Name (Printed/Typed)

Larry Higgins

Title Permits Supervisor

Signature

Date 3-1-10

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Title

AFD

Date

4/6/2010

Conditions of approval, if any, are attached. Approval of this notice 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.

Office

FFO

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(Instructions on page 2)

NMOCD

DRILLING PROGRAM

Operator: Williams Production Company LLC.

Well: Rosa Unit 634B

Surface: 1485' FNL & 645' FEL, Sec. 22, T31N, R6W, N.M.P.M.

Bottom Hole: 1980' FNL & 20' FEL Sec. 23, T31N, R6W, N.M.P.M.

Rio Arriba County, New Mexico

ONSHORE OIL & GAS ORDER NO. 1

Approval of Operations on Onshore Federal and Indian Oil and Gas Leases

All lease and/or unit operations are to be conducted in such a manner that full compliance is made with the applicable laws, regulations (CFR 43, Part 3160) and the approved Application for Permit to Drill. The operator is considered fully responsible for the actions of his subcontractors. A copy of the approved APD must be on location during construction, drilling and completion operations.

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1. FORMATION TOPS:

The estimated tops of important geologic markers are as follows:

The referenced surface elevation is 6260' ungraded. KBm 6280'

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Kirtland	2,445	2,445	Point Lookout	5,585	5,640
Fruitland	2,945	2,945	Mancos	5,880	5,961
Pictured Cliffs	3,120	3,120	Top of Black Zone	6,749	7,021
Lewis	3,410	3,410	Bottom of Black Zone	6,891	7,588
Cliff House	5,295	5,304	TD	6,749	12,825

2. ESTIMATED DEPTH OF WATER, OIL, GAS & OTHER MINERAL BEARING FORMATIONS:

The estimated depths at which the top and bottom of the anticipated water, oil, gas or other mineral bearing formations are expected to be encountered are as follows:

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Gas	Point Lookout	5585

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Casing design shall assume formation pressure gradients of 0.44 to 0.50 psi per foot for exploratory wells (lacking better data).

Casing design shall assume fracture gradients from 0.70 to 1.00 psi per foot for exploratory wells (lacking better data).

Casing collars shall have a minimum clearance of 0.422 inches of all sides in the hole/casing annulus, with recognition that variances can be granted for justified exceptions.

All waiting on cement times shall be adequate to achieve a minimum of 500 psi compressive strength at the casing shoe prior to drilling out.

All indications of usable water shall be reported to the authorized officer prior to running the next string of casing or before plugging orders are requested, whichever occurs first.

Top plugs shall be used to reduce contamination of cement by displacement fluid. A bottom plug or other acceptable technique, such as a suitable pre-flush fluid, inner string cement method, etc. shall be utilized to help isolate the cement from contamination by the mud fluid being displaced ahead of the cement slurry.

All casing strings below the conductor shall be pressure tested to 0.22 psi per foot of casing string length or 1500 psi, whichever is greater, but not to exceed 70 percent of the minimum internal yield. If pressure declines more than 10 percent in 30 minutes, corrective action shall be taken.

The proposed casing program will be as follows:

Purpose	Depth MD	Hole Size	O.D.	Weight #/ft.	Grade	Type
Conductor	0-80'	26"	20"	94	J55	ST&C
Surface	0-500'	17-1/2"	13-3/8"	54.5	J55	ST&C
Intermediate	0-6169	12-1/4"	9-5/8"	43.5	HCP110	LT&C
Drilling Liner	5969-7587	8-1/2"	7"	23	N-80	LT&C
Production	5869-12824'	6-1/8"	4-1/2"	11.6	HCP110	LT&C

Casing Design Subject to revision based on geologic conditions encountered.

Conductor: No centralization

Surface: One centralizer every other joint beginning with shoe joint. 6 total centralizers

Intermediate: One centralizer every other joint beginning with shoe joint up to 5000' MD, every 3rd joint from 5000' MD to surface. 75 total centralizers

Drilling Liner: One centralizer every joint. 46 total centralizers (solid body turbolizer style)

Production Liner: One centralizer every joint. 180 total centralizers (solid body turbolizer style)

The cement program will be as follows:

Conductor Cement Program:

Rosa Unit 634B-Black-South Lateral

0-80 ft depth 20" Conductor Cement with 120 cuft or 105 sacks of Type I cement or Neat cement with Yield of 1.14 cuft./ft. and weight of slurry is 14.8 ppg which is 100 % excess of hole capacity volume.

Surface Cement Program:

Fluid Instructions

Fluid 1: Water Based Spacer

Water

Fluid Density: 8.34 lbm/gal

Fluid Volume: 10 bbl

Fluid 2: Lead Cement

VARICEM (TM) CEMENT

0.25 lbm/sk Poly-E-Flake (Lost Circulation Additive)

1 % Cal-Seal 60 (Accelerator)

Fluid Weight 12.70 lbm/gal

Slurry Yield: 1.78 ft³/sk

Total Mixing Fluid: 9.13 Gal/sk

Top of Fluid: 0 ft

Calculated Fill: 334 ft

Volume: 80.11 bbl (450 ft³)

Calculated Sacks: 252.98 sks

Proposed Sacks: 255 sks

Fluid 3: Tail Cement

Premium Plus - Type III

94 lbm/sk Premium Plus - Type III (Cement-non-api)

0.25 lbm/sk Poly-E-Flake (Lost Circulation Additive)

0.3 % Versaset (Thixotropic Additive)

2 % Econolite (Light Weight Additive)

6 % Salt (Salt)

Fluid Weight 13.50 lbm/gal

Slurry Yield: 1.77 ft³/sk

Total Mixing Fluid: 9.26 Gal/sk

Top of Fluid: 334 ft

Calculated Fill: 166 ft

Volume: 47.15 bbl (265 ft³)

Calculated Sacks: 150 sks

Proposed Sacks: 150 sks

Fluid 4: Water Based Spacer

Water Displacement

Fluid Density: 8.34 lbm/gal

TOTAL SURFACE VOLUME: 715 ft³

SUFFICIENT VOLUME IN SLURRY TO CIRCULATE CEMENT TO SURFACE

Intermediate Casing Cement Program:

Fluid Instructions

Fluid 1: Water Spacer

Water

Fluid Density: 8.40 lbm/gal

Fluid Volume: 20 bbl

Fluid 2: Reactive Spacer

SUPER FLUSH 101

Fluid Density: 10 lbm/gal

Fluid Volume: 20 bbl

Fluid 3: Water Spacer

Water

Fluid Density: 8.40 lbm/gal

Fluid Volume: 20 bbl

Rosa Unit 634B-Black-South Lateral

Fluid 4: Lead Cement

FILLSEAL (TM) SYSTEM

0.2 % Versaset (Thixotropic Additive)
0.1 % HALAD-766 (Low Fluid Loss Control)
1 % ZoneSeal 4000 (Foamer)

Fluid Weight 13 lbm/gal
Slurry Yield: 1.43 ft³/sk
Total Mixing Fluid: 6.76 Gal/sk
Top of Fluid: 0 ft
Calculated Fill: 5000 ft
Volume: 484.12 bbl(2178 ft³)
Calculated Sacks: 1278.83 sks
Proposed Sacks: 1280 sks

Fluid 5: Lead Cement

FILLSEAL (TM) SYSTEM

0.2 % Versaset (Thixotropic Additive)
0.1 % HALAD-766 (Low Fluid Loss Control)
1 % ZoneSeal 4000 (Foamer)

Fluid Weight 13 lbm/gal
Slurry Yield: 1.43 ft³/sk
Total Mixing Fluid: 6.76 Gal/sk
Top of Fluid: 5000 ft
Calculated Fill: 1000 ft
Volume: 100.41 bbl (564 ft³)
Calculated Sacks: 273.98 sks
Proposed Sacks: 275 sks

Fluid 6: Tail Cement

HALCEM (TM) SYSTEM

0.2 % Versaset (Thixotropic Additive)
0.1 % HALAD-766 (Low Fluid Loss Control)
1 % ZoneSeal 4000 (Foamer)

Fluid Weight 13 lbm/gal
Slurry Yield: 1.43 ft³/sk
Total Mixing Fluid: 6.76 Gal/sk
Top of Fluid: 6000 ft
Calculated Fill: 506 ft
Volume: 53.78 bbl (302 ft³)
Calculated Sacks: 211.02 sks
Proposed Sacks: 215 sks

Fluid 7: Oil Based Mud
OBM Displacement

Fluid Density: 9 lbm/gal
Fluid Volume: 481.46 bbl

TOTAL INTERMEDIATE VOLUME: 3,044 ft³

SUFFICIENT VOLUME IN SLURRY TO CIRCULATE CEMENT TO SURFACE

Drilling Liner Cement Program:

Fluid 1: Water Based Spacer

MUD FLUSH III

0.1 gal/bbl SEM-7 (Emulsifier)
0.1 gal/bbl Musol(R) A (Mutual Solvent)

Fluid Density: 8.40 lbm/gal
Fluid Volume: 20 bbl

Rosa Unit 634B-Black-South Lateral

Fluid 2: Primary Cement

HALCEM (TM) SYSTEM

0.4 % Halad(R)-9 (Low Fluid Loss Control)
0.4 % Halad(R)-413 (Low Fluid Loss Control)
2.5 lbm/sk Kol-Seal (Lost Circulation Additive)
0.3 % D-AIR 3000 (Defoamer)
0.05 % HR-5 (Retarder)

Fluid Weight 13.50 lbm/gal
Slurry Yield: 1.30 ft³/sk
Total Mixing Fluid: 5.52 Gal/sk
Top of Fluid: 5200 ft
Calculated Fill: 2647 ft
Volume: 81.61 bbl (458 ft³)
Calculated Sacks: 352.72 sks
Proposed Sacks: 355 sks

Fluid 3: Oil Based Mud

Displacement

Fluid Density: 9 lbm/gal
Fluid Volume: 174.06 bbl

TOTAL DRILLING LINER VOLUME: 458 ft³

SUFFICIENT VOLUME IN SLURRY TO CIRCULATE CEMENT ABOVE TOP OF LINER

Lateral Production Casing Cement Program:

Fluid 1: Water Based Spacer

MUD FLUSH III

0.1 gal/bbl SEM-7 (Emulsifier)
0.1 gal/bbl Musol(R) A (Mutual Solvent)

Fluid Density: 8.40 lbm/gal
Fluid Volume: 20 bbl

Fluid 2: Primary Cement

HALCEM (TM) SYSTEM

0.4 % Halad(R)-9 (Low Fluid Loss Control)
0.4 % Halad(R)-413 (Low Fluid Loss Control)
2.5 lbm/sk Kol-Seal (Lost Circulation Additive)
0.3 % D-AIR 3000 (Defoamer)
0.05 % HR-5 (Retarder)

Fluid Weight 13.50 lbm/gal
Slurry Yield: 1.30 ft³/sk
Total Mixing Fluid: 5.52 Gal/sk
Top of Fluid: 6050 ft
Calculated Fill: 2165 ft
Volume: 74.95 bbl (421 ft³)
Calculated Sacks: 323.95 sks
Proposed Sacks: 325 sks

Fluid 3: Oil Based Mud

Displacement

Fluid Density: 9 lbm/gal
Fluid Volume: 163.90 bbl

TOTAL PRODUCTION LINER VOLUME: 421 ft³

SUFFICIENT VOLUME IN SLURRY TO CIRCULATE CEMENT ABOVE TOP OF LINER

Note: Actual volumes to be calculated as determined by conditions on site. All cement slurries will meet or exceed minimum BLM and New Mexico Oil Conservation Division requirements. Slurries used will be the slurries listed above, or equivalent slurries depending on service provider selected. Cement yield may change depending on slurries selected, but cement volume in cubic feet will be based on the above excess numbers.

After cementing but before commencing any test, the casing string shall stand cemented until the cement has reached a compressive strength of at least 500 psi at the shoe. WOC time shall be recorded in the driller's log.

The following reports shall be filed with the Area manager within 30 days after the work is completed.

Progress reports, Form 3160-5 "Sundry notices and Reports on Wells", must include complete information concerning: Setting of each string of casing, showing the size, grade, weight of casing set, hole size, setting depth, amounts and type of cement used, whether cement circulated or the top of the cement behind the casing, depth of cementing tools used, casing test method and results, and the date work was done. Show the spud date on the first reports submitted.

5. MUD PROGRAM:

The proposed circulating mediums to be employed in drilling are as follows:

Mud Type: Fresh Water / NewGel / NewPHPA Sweeps/ LSND:

Hole Size (in)	TVD (ft)	Mud Wt.	Visc.	Yield Point (lb/100ft ²)	API Fluid Loss (ml/30min)	Total Solids (%)
26"	0-80'	8.3 - 9.2 ppg	38-100	4-28	4-28	6-30

Hole Size (in)	TVD (ft)	Mud Type	Mud Wt.	Visc.	Yield Point (lb/100ft ²)	API Fluid Loss (ml/30min)	pH Range	Total Solids (%)
17-1/2"	0-500'	Fresh Water	8.4-8.6	60-70	25-35	NC	8.5-9.5	<4
12-1/4"	500-6079'	Fresh Water LSND	8.5 - 8.8 w/ air mist	40-50	10-12	8-10	8.5-9.5	<4
8-1/2"	6079-6891	Oil Based	8.6-9.0	15-25	8-15	<15	NA	<4
6-1/8"	6891-6749	Oil Based	8.6-9.0	15-25	8-15	<10	NA	<4

There will be sufficient mud on location to control a blowout should one occur.

Mud test shall be performed every 24 hours after mudding up to determine, as applicable: density, viscosity, gel strength, filtration, and pH.

7. **ABNORMAL PRESSURES AND HYDROGEN SULFIDE:**

The expected bottom hole pressure is +/- 3200 psi based on a 9.0 ppg at 6800' TVD. No abnormal pressures or temperatures are anticipated.

No hydrogen sulfide gas is anticipated, however, if H₂S is encountered the guidelines in Onshore Order No. 6 will be complied with.

8. **OTHER INFORMATION AND NOTIFICATION REQUIREMENTS:**

Drilling is planned to commence on **April 1, 2010**. It is anticipated that completion operations will begin within 30- 40 days after the well has been drilled pending on frac treatment schedule with various pump service companies.

It is anticipated that the drilling of this well will take **approximately 45 days**.

The proposed completion program is as follows: zones with porosity and permeability as determined by open hole logging will be perforated and stimulated with 2% KCl slick water and Ottawa sand. Number of stages will be determined after examining logs. Stages will be treated using the "perf and plug" method.

Date

Brian Alleman
Drilling Engineer I

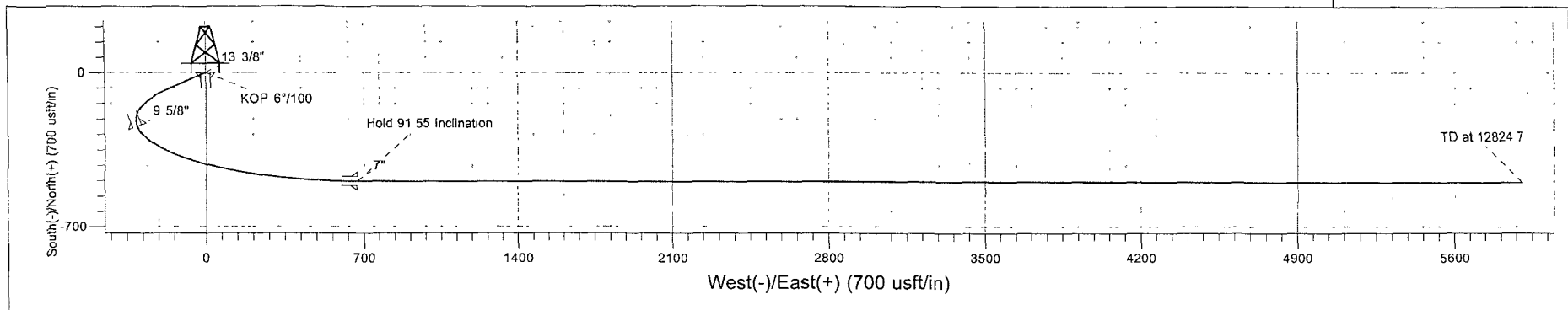


Well Name: Rosa Unit 634B - Black
Surface Location: Rosa Unit 634 Pad
North American Datum 1983 , US State Plane 1983 , New Mexico Western Zone
Ground Elevation: 6260 0
+N/-S +E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 2142899.85 2837124.61 36° 53' 17.881 N 107° 26' 36.207 W
KELLY BUSHING @ 6280.0usft (Rig 232 (20' KB) kjs)

Project SJ 22-31N-06W
Site Rosa Unit 634 Pad
Well Rosa Unit 634B - Black
Design #1 31Dec09 kjs

M

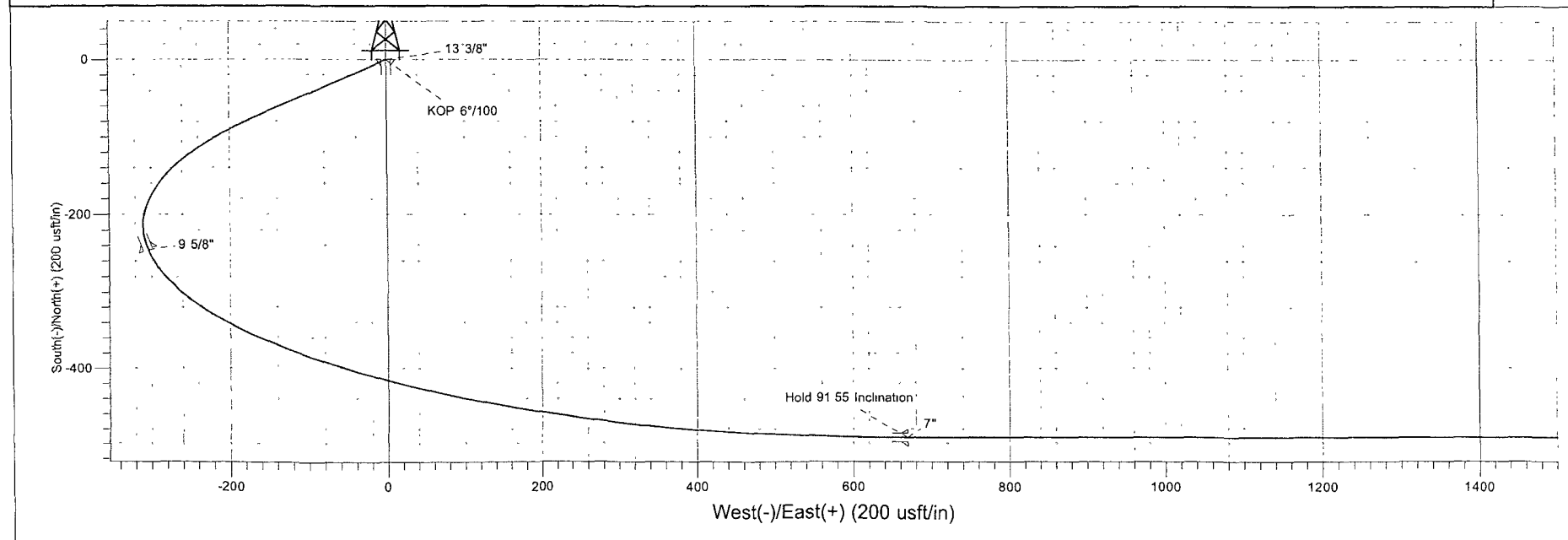
Azimuths to True North
Magnetic North 9 94°
Magnetic Field
Strength 51038 4snT
Dip Angle 63 70°
Date 12/31/2009
Model IGRF2005-10



DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
TD / PBHL (634B - Black)	6749 0	-497.9	5904.7	2142426.08	2843031.27	36° 53' 12.952 N	107° 25' 23.521 W	Point
Entry Point (634B - Black)	6891.0	-492.5	669.6	2142410.12	2837796.22	36° 53' 13.012 N	107° 26' 27.964 W	Point

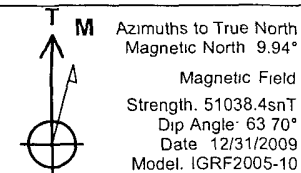
Surface Location
1485 FNL 645 FEL
Sec 22 T31N R6W
NMPM



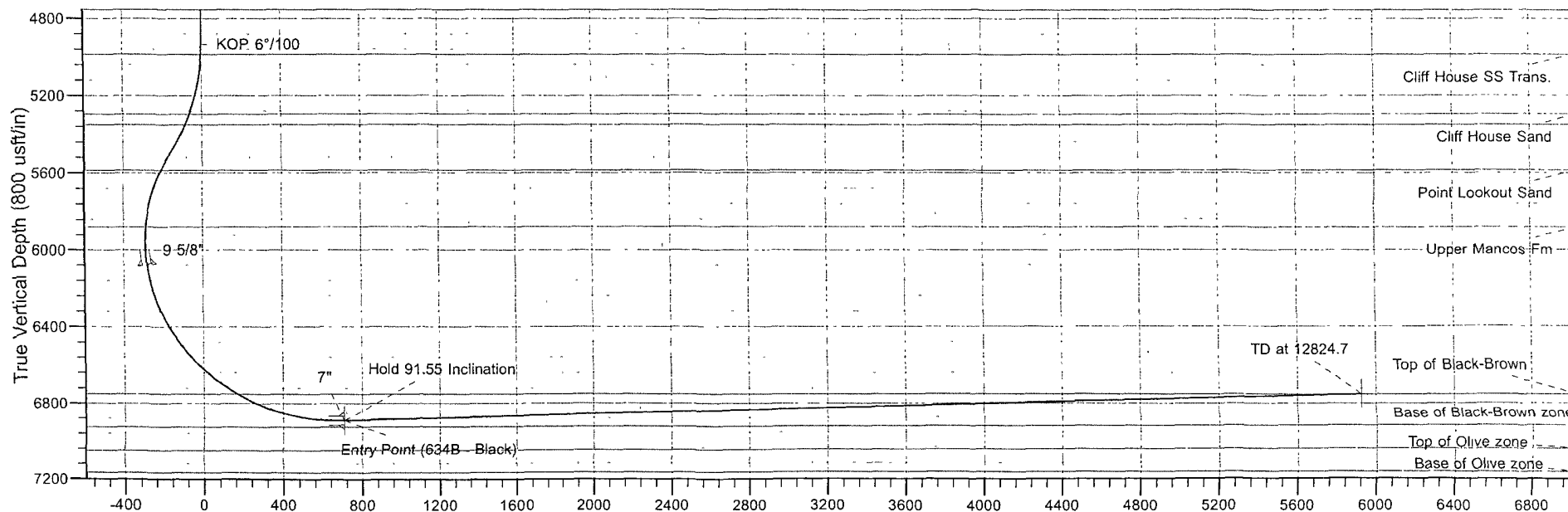
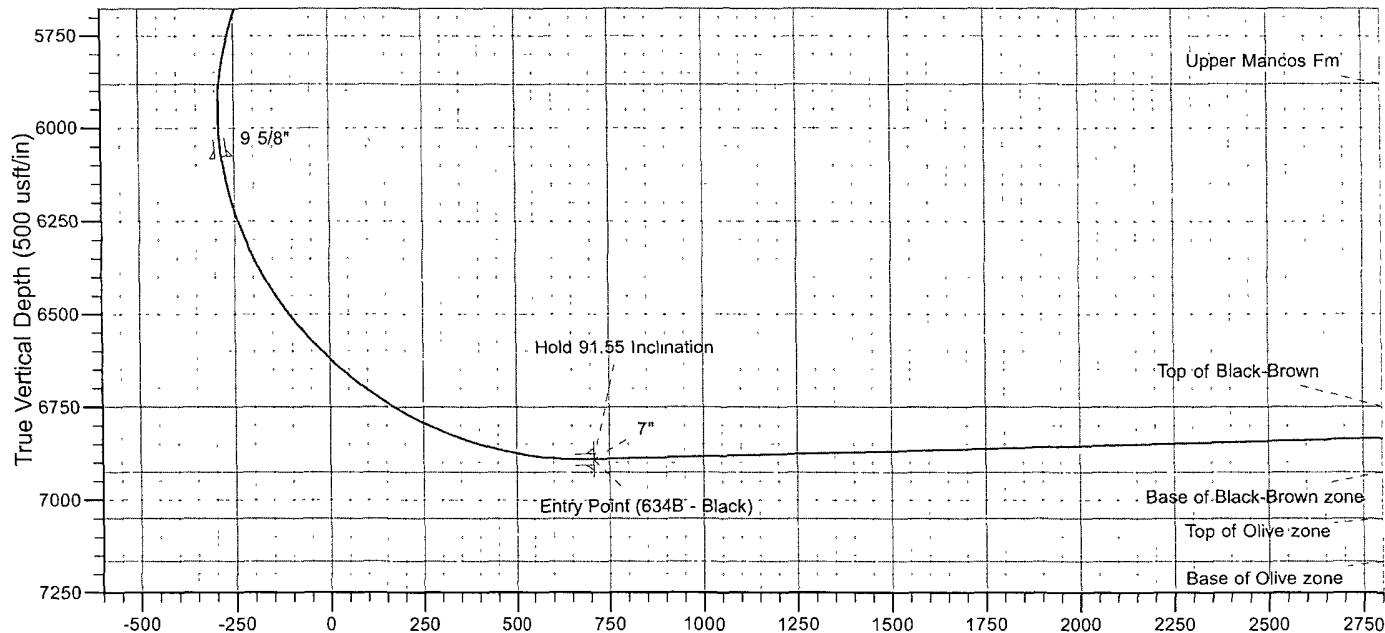


Well Name: Rosa Unit 634B - Black
 Surface Location: Rosa Unit 634 Pad
 North American Datum 1983 , US State Plane 1983 , New Mexico Western Zone
 Ground Elevation: 6260.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 2142899.85 2837124.61 36° 53' 17.881 N 107° 26' 36.207 W
 KELLY BUSHING @ 6280.0usft (Rig 232 (20' KB) kjs)

Project SJ 22-31N-06W
 Site Rosa Unit 634 Pad
 Well: Rosa Unit 634B - Black
 Design #1 31Dec09 kjs



Surface Location
 1485 FNL 645 FEL
 Sec 22 T31N R6W
 NMPM



Vertical Section at 94.82° (800 usft/in)

Williams

Planning Report - Geographic

Database: Compass R5000 WIN AUTH
Company: SAN JUAN BASIN
Project: SJ 22-31N-06W
Site: Rosa Unit 634 Pad
Well: Rosa Unit 634B - Black
Wellbore: Wellbore #1
Design: Design #1 31Dec09 kjs

Local Co-ordinate Reference: Well Rosa Unit 634B - Black
TVD Reference: KELLY BUSHING @ 6280.0usft (Rig 232 (20' KB) kjs)
MD Reference: KELLY BUSHING @ 6280.0usft (Rig 232 (20' KB) kjs)
North Reference: True
Survey Calculation Method: Minimum Curvature

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,345.0	2,345.0	Ojo Alamo		0.000		
2,445.0	2,445.0	Kirkland		0.000		
2,945.0	2,945.0	Fruitland Coal top		0.000		
3,120.0	3,120.0	Pictured Cliffs Sand		0.000		
3,410.0	3,410.0	Lewis Shale		0.000		
4,085.0	4,085.0	Huerfano Ben		0.000		
4,985.0	4,985.0	Cliff House SS Trans.		0.000		
5,304.3	5,295.0	Cliff House Sand		0.000		
5,364.5	5,350.0	Menefee Fm		0.000		
5,640.5	5,585.0	Point Lookout Sand		0.000		
5,961.3	5,880.0	Upper Mancos Fm		0.000		
7,021.2	6,749.0	Top of Black-Brown		0.000		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
4,933.0	4,933.0	0.0	0.0	KOP 6°/100	
7,587.7	6,891.0	-492.5	669.6	Hold 91.55 Inclination	
12,824.7	6,749.0	-497.9	5,904.6	TD at 12824.7	