

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

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

5 Lease Serial No NMSF-0078765
6 If Indian, Allottee or Tribe Name
7 If Unit or CA Agreement, Name and No REENTER Rosa Unit
8 Lease Name and Well No 381A
9 API Well No 30-039-30236
10 Field and Pool, or Exploratory Basin Fruitland Coal
11 Sec, T, R, M, or Blk and Survey or Area Section 11, 31N, 6W surface
12 County or Parish Rio Arriba
13 State NM
17 Spacing Unit dedicated to this well 320 0 - (E/2) RCVD SEP 6 '07 OIL CONS. DIV. DIST. 3
20 BLM/BIA Bond No on file UT0047
23 Estimated duration 1 month

1a Type of Work <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER
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
2 Name of Operator Williams Production Company, LLC
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 430' FSL & 1120' FWL, Section 11, T. 31N., R. 6W 'M' At proposed prod zone 660' FSL & 50' FEL, Section 10, T. 31N., R. 6W 'P'
14 Distance in miles and direction from nearest town or post office* approximately 24 miles northeast of Blanco, New Mexico
15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drng unit line, if any) 50'
16 No. of Acres in lease 2460 230
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease ft 1500'
19 Proposed Depth 3622'
21 Elevations (Show whether DF, KDB, RT, GL, etc.) 6,388' GR
22 Approximate date work will start* April 1, 2007
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 G. Higgins</i>	Name (Printed/Typed) Larry Higgins	Date 3-30-07
Title Drilling COM		
Approved by (Signature) <i>[Signature]</i>	Name (Printed/Typed) AFED	Date 9/4/07
Title AFED	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 develop the Basin Fruitland Coal 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 BLM

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

An access road to the Rosa #9C (1950 feet) would also be used to access this well pad. A pipeline tie of 73.1 feet would be required for this well. The proposed pipeline would also be located on public lands.

HOLD 0104 FOR *Directional survey/
As Drilled C-102
N5L*

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

NMOCD

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

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.

Santa Fe, NM 87505

Form C-102

Revised October 12, 2005

Instructions on back

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

2007 MAR 30 PM 12:10

☐ AMENDED REPORT

RECEIVED

210 F&M DIVISION

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-039-302310		*Pool Code 71629	*Pool Name BASIN FRUITLAND COAL
*Property Code 17033	*Property Name ROSA UNIT		*Well Number 381A
*GRID No 120782	*Operator Name WILLIAMS PRODUCTION COMPANY		*Elevation 6388'

10 Surface Location

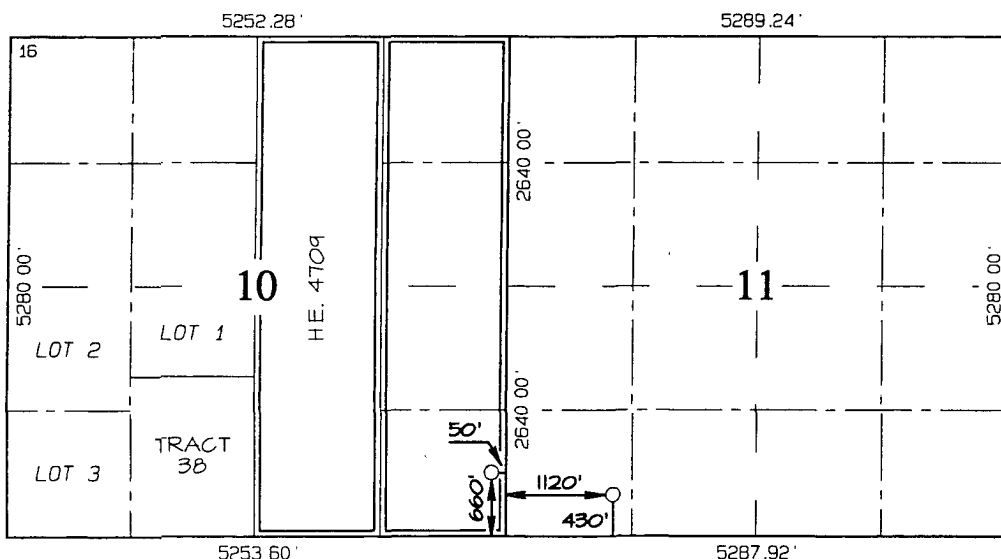
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	11	31N	6W		430	SOUTH	1120	WEST	RIO ARriba

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	10	31N	6W		660	SOUTH	50	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



BOTTOM-HOLE
LAT: 36.90871°N
LONG: 107.44080°W
DATUM: NAD1983
NTD*48.3W 1194.5'
SURFACE LOCATION
LAT: 36.90807°N
LONG: 107.43740°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.

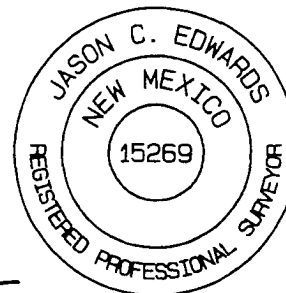
Larry Higgins 3-30-07
Signature Date
LARRY HIGGINS
Printed Name

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: DECEMBER 7, 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. 30-039-30236	
5. Indicate Type of Lease FEDERAL X STATE <input type="checkbox"/> FEE <input type="checkbox"/>	
6. State Oil & Gas Lease No. NMSF-0078765	
7. Lease Name or Unit Agreement Name Rosa	
8. Well Number 381A	
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 Production Company, LLC

3. Address of Operator
P.O. Box 640, Aztec, NM

4. Well Location: Surface
Unit Letter **M**: **430** feet from the **S** line and **1120** feet from the **W** line
Section **11** Township **31N** Range **6W** NMPM County **Rio Arriba**

11. Elevation (Show whether DR, RKB, RT, GR, etc.)
6388' GR

Pit or Below-grade Tank Application ☒ or Closure ☐

Pit type Drlg/Completion Depth to Groundwater >100 ft Distance from nearest fresh water well >1000 ft Distance from nearest surface water >500 ft

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.

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 7-30-07

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 **SEP 10 2007**

Conditions of Approval (if any):



WILLIAMS PRODUCTION COMPANY

Operations Plan

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

DATE: 3/26/2007

WELLNAME: Rosa Unit #381A **FIELD:** Basin Fruitland Coal

BH LOCATION: SESE Sec. 10-T31N-6W **SURFACE:** BLM

SURF LOCATION: SWSW Sec 11-31N-6W **MINERALS:** BLM
Rio Arriba, NM

ELEVATION: 6,388' GR **LEASE #** SF-078765

TOTAL DEPTH: 3,622'

I. GEOLOGY: Surface formation - San Jose

A. FORMATION TOPS: (KB)

NAME		TVD	MD		NAME		TVD	MD
San Jose		Surface	Surface		Top Coal		3,107	3,431
Nacimiento		1,262	1,324		Bottom Coal		3,197	3,521
Ojo Alamo		2,422	2,732		Pictured Cliffs		3,197	3,521
Kirtland		2,527	2,843		TD		3,297	3,622
Fruitland		2,922	3,246					

B. LOGGING PROGRAM: none

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 at drill out below 7" casing to TD. Mud Logger to pick 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 3,412', **DO NOT** drill deeper until Engineering is contacted.

B. DRILLING FLUID: Coal section will be drilled with Fruitland Coal 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:

<u>CASING TYPE</u>	<u>OH SIZE (IN)</u>	<u>DEPTH (MD) (FT)</u>	<u>CASING SIZE (IN)</u>	<u>WEIGHT(LB)</u>	<u>GRADE</u>
Surface	12 1/4	300	9 5/8	36	K-55
Intermediate	8 3/4	3,412	7	20	K-55
Liner	6 1/4	3,312 3,521	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% CaCl₂ 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 - 425 sx (886 cu.ft.) of "Premium Light" with 8% gel, 1% CaCl₂ 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 = 956 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

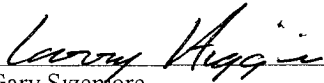
1. Pressure test 7" casing to 1500# for 30 minutes.

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.

for 

Gary Sizenmore
Sr. Drilling Engineer

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	Manne 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.

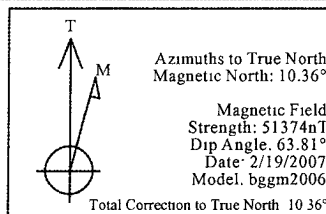
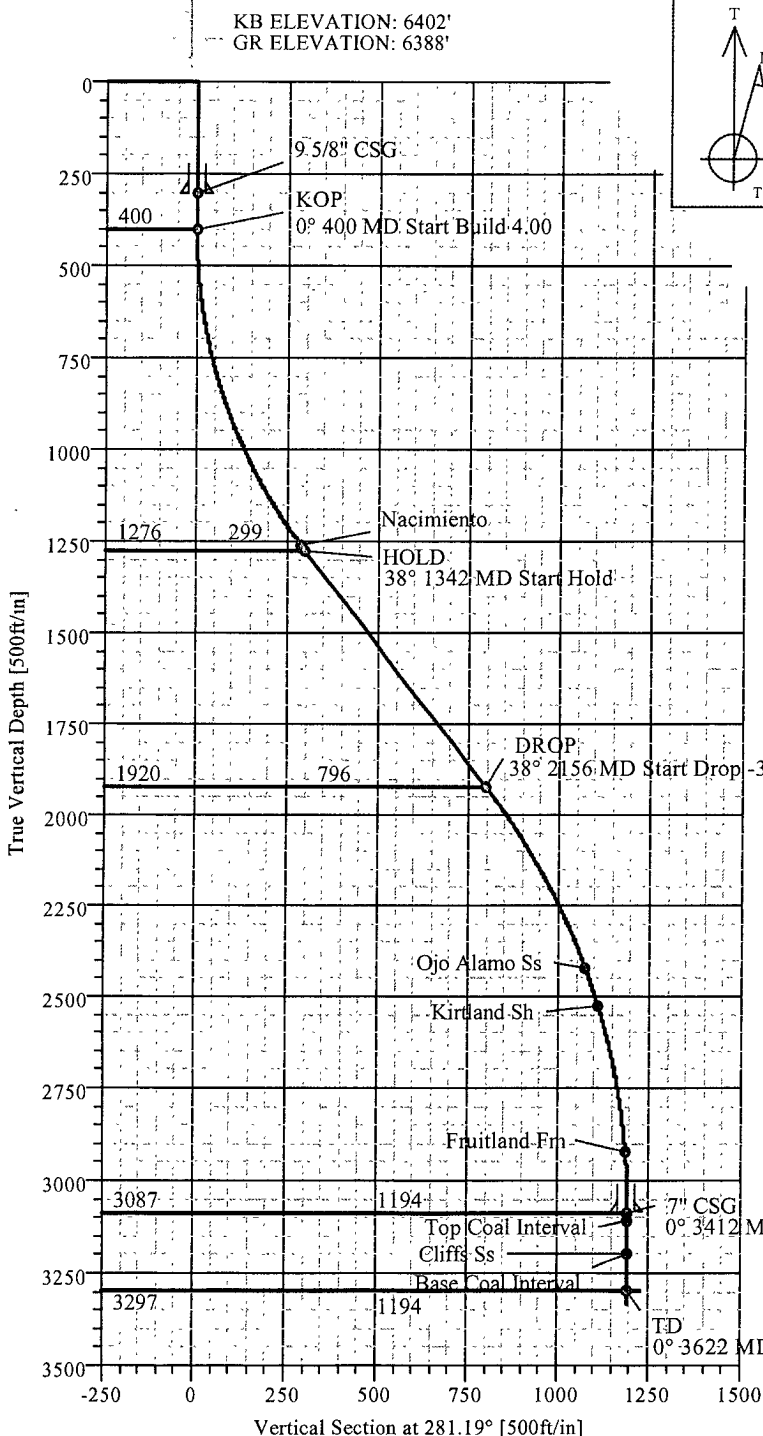


ROSA UNIT #381A
SEC11 T31N R6W
430' FSL, 1120' FWL
RIO ARriba COUNTY, NM

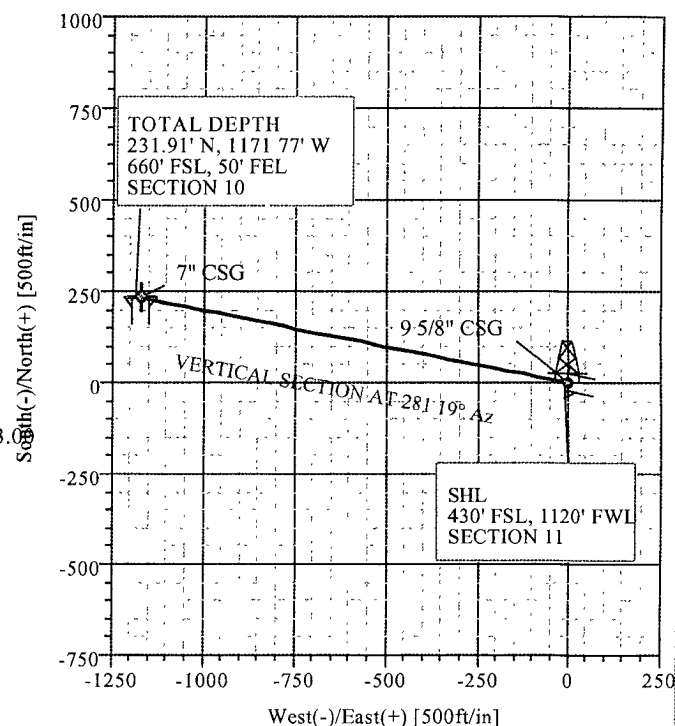
SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0 00	0 00	281 19	0 00	0 00	0 00	0 00	0 00	0 00	
2	400 00	0 00	281 19	400 00	0 00	0 00	0 00	0 00	0 00	KOP
3	1342 02	37 68	281 19	1275 57	58 00	-293 07	4 00	281 19	298 76	HOLD
4	2155 75	37 68	281 19	1919 58	154 57	-781 01	0 00	0 00	796 16	DROP
5	3411 77	0 00	281 19	3087 00	231 91	-1171 77	3 00	180 00	1194 50	INT CSG PT
6	3621 77	0 00	281 19	3297 00	231 91	-1171 77	0 00	281 19	1194 50	PBHL

WELL DETAILS						
Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
ROSA UNIT 381A	0 00	0 00	2150337 67	2837857 40	36°54'31 356N	107°26'26 880W

TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
PBHL	3297 00	231 91	-1171 77	2150564 75	2836684 69	Point



FORMATION TOP DETAILS			
No	TVDPath	MDPath	Formation
1	1262 00	1324 95	Nacimiento
2	2422 00	2732 55	Ojo Alamo Ss
3	2527 00	2843 42	Kirtland Sh
4	2922 00	3246 57	Fruitland Fm
5	3107 00	3431 77	Top Coal Interval
6	3197 00	3521 77	Base Coal Interval
7	3197 00	3521 77	Cliffs Ss



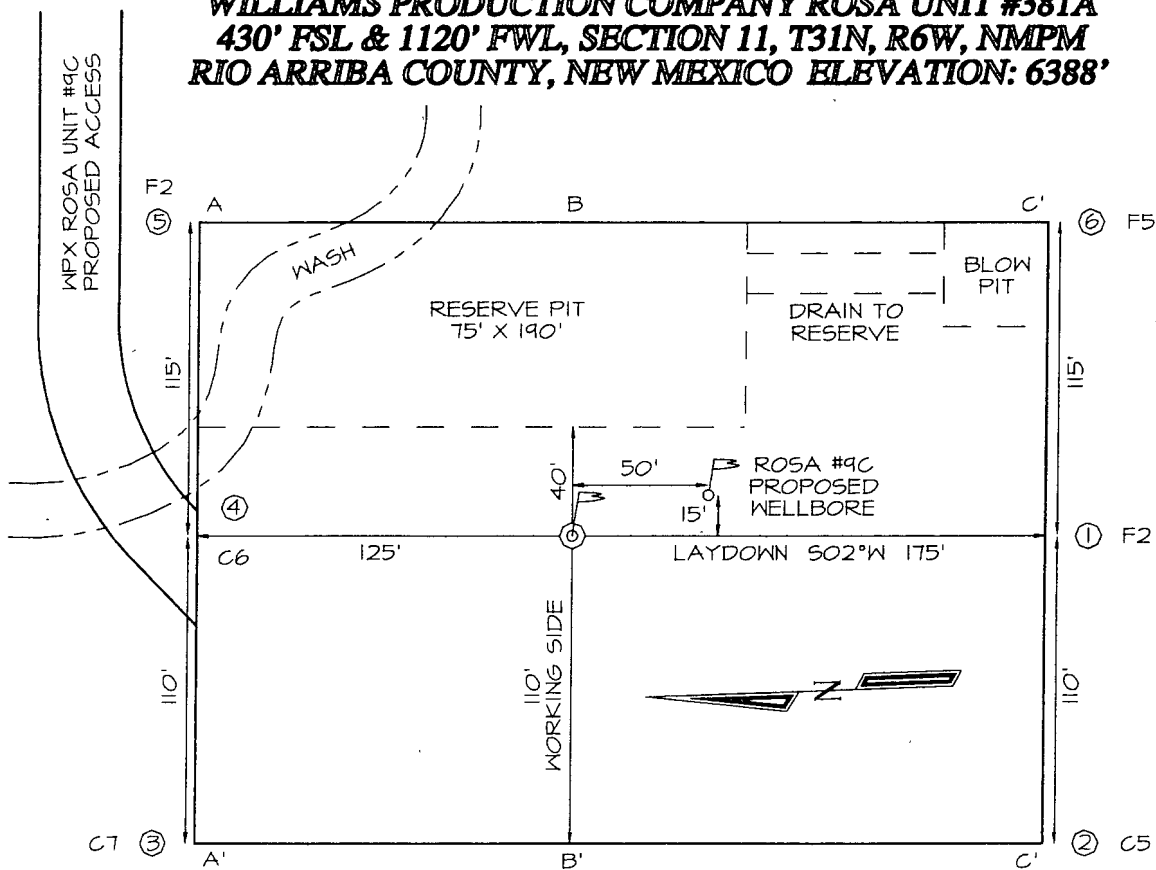
Weatherford®

Plan: Plan #1 (ROSA UNIT 381A/1)

Created By: M.LAINEZ Date: 2/19/2007

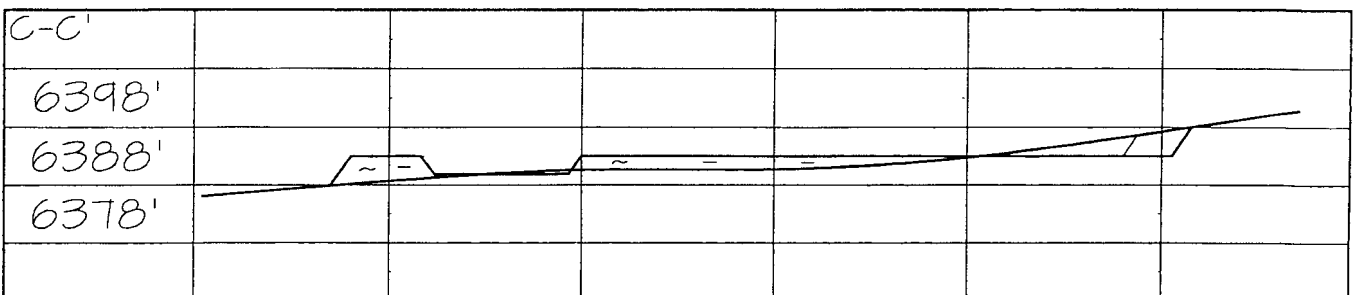
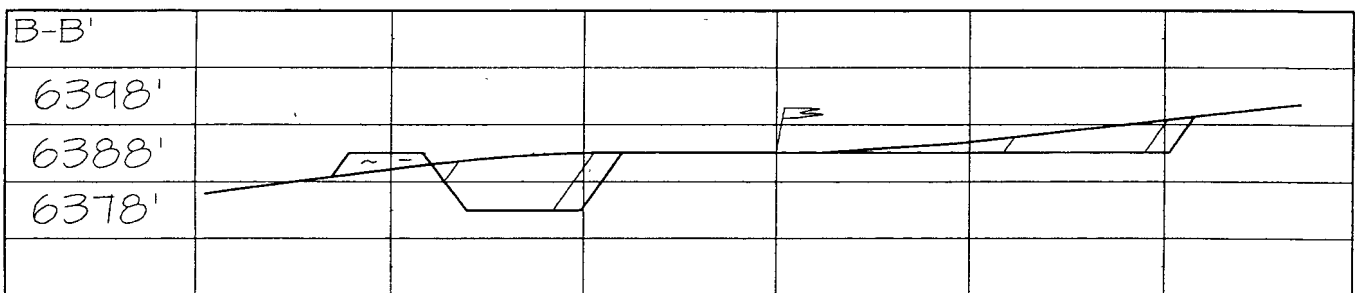
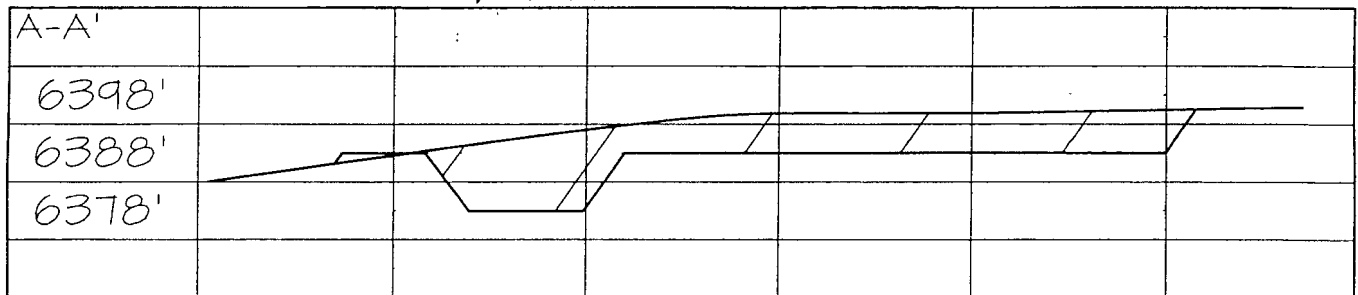
Checked: _____ Date: _____

WILLIAMS PRODUCTION COMPANY ROSA UNIT #381A
430' FSL & 1120' FWL, SECTION 11, T31N, R6W, NMPM
RIO ARriba COUNTY, NEW MEXICO ELEVATION: 6388'



LATITUDE: 36.90807° N
LONGITUDE: 107.43740° W
 DATUM NAD1983

PLAT #1



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)

