Form 3160-3
(September 2001)

RECEIVED
FEB 01 2012
Farmington Field Office
Bureau of Land Management

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5 Lease Serial No
NMSF-078894

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

8. Lease Name and Well No
Rosa Unit #383A

2. Name of Operator
WPX Energy Production, LLC (FKA) Williams Production Company, LLC

9 API Well No
30-039-31111

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

3b Phone No *(include area code)*
(505) 333-1808

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 P 1043' FSL & 1056' FEL
At proposed prod Zone B 800' FNL & 2330' FEL

11. Sec , T., R., M , or Blk. and Survey or Area
Section 29, 31N, 4W

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 drlg. unit line, if any)	16. No. of Acres in lease	17. Spacing Unit dedicated to this well
1056'	2284 16	320.0 – (W/2)
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**
50'	7165'	UTB000178
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	**22. Approximate date work will start***	**23 Estimated duration**
6634' GR	April 1, 2012	1 month

RCVD MAR 29 '12
OIL CONS. DIV.
DIST. 3

Hold C104 for Directional Survey and "As Drilled" plat

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	2/1/12
Title: PERMIT SUPRV.		
Approved by *(Signature)* /s/ Maurice Gonzales	Name *(Printed/Typed)*	Date 3/26/12
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)*

WPX Energy Production, 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 surface is under Jurisdiction of the Carson National Forest, Jicarilla Ranger District

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

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 130 6 feet would be required for this well

NOTIFY AZTEC OCD 24 HRS. PRIOR TO CASING & CEMENT

A COMPLETE C-144 MUST BE SUBMITTED TO AND APPROVED BY THE NMOCD FOR: A PIT, CLOSED LOOP SYSTEM, BELOW GRADE TANK, OR PROPOSED ALTERNATIVE METHOD, PURSUANT TO NMOCD PART 19.15.17, PRIOR TO THE USE OR CONSTRUCTION OF THE ABOVE APPLICATIONS.

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

APR 0 2 2012

Hold C104
for Directional Survey
and "As Drilled" plat

NMOCD

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".

District I
1625 N. French Drive, Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First Street, Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Drive, Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

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

Form C-102
Revised August 1, 2011

Submit one copy to
Appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-039-31111	71629	BASIN FRUITLAND COAL

[4] Property Code	[5] Property Name	[6] Well Number
17033	ROSA UNIT	383A

[7] OGRID No.	[8] Operator Name	[9] Elevation
120782	WILLIAMS PRODUCTION COMPANY	6634'

[10] Surface Location

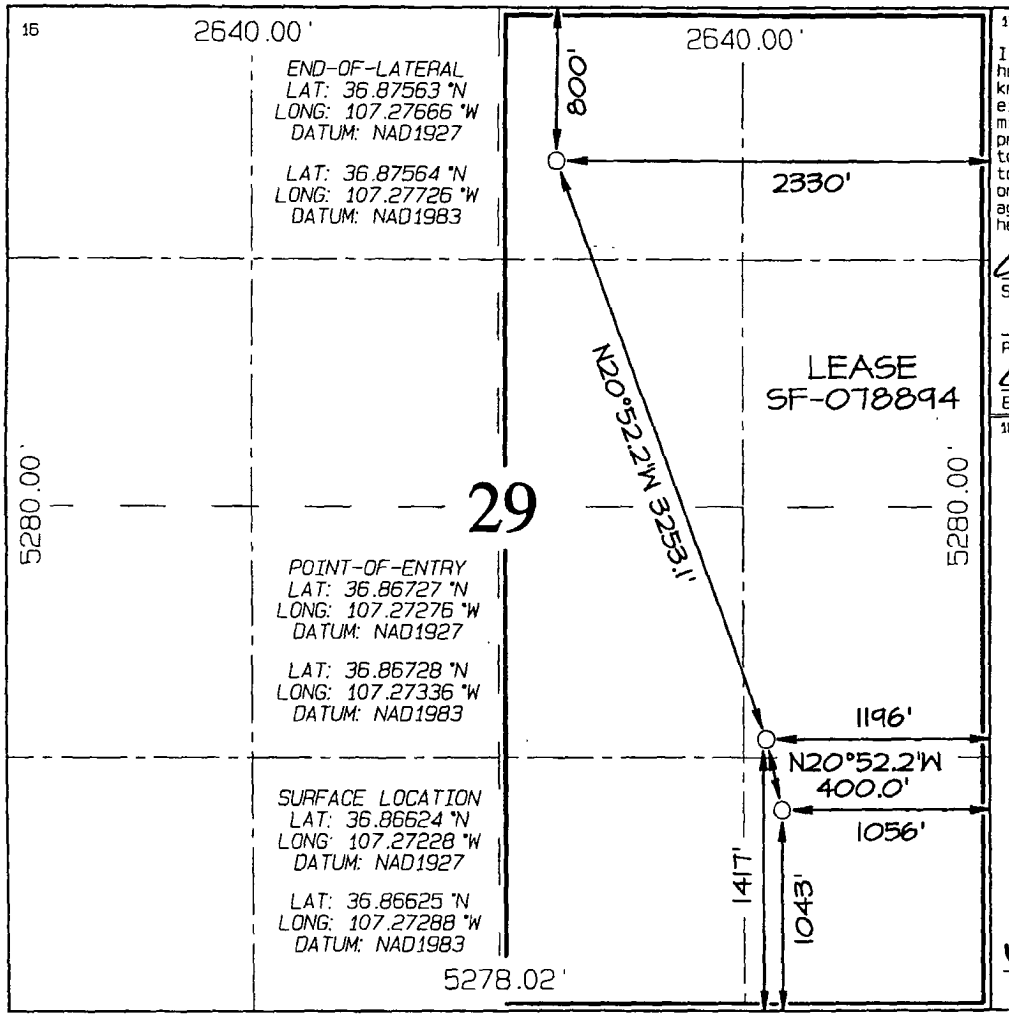
UL or lot no	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	29	31N	4W		1043	SOUTH	1056	EAST	RIO ARRIBA

[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
B	29	31N	4W		800	NORTH	2330	EAST	RIO ARRIBA

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No
320.0 Acres - (E/2)			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



[17] OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom-hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Larry Higgins — 2/1/12
Signature — Date

Larry Higgins
Printed Name

Larry.Higgins@WPXENERGY.com
E-mail Address

[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 28, 2011

Signature and Seal of Professional Surveyor

JASON C. EDWARDS
NEW MEXICO
15269
REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS
Certificate Number 15269

WPXENERGY

WPX Energy Production

Operations Plan

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

DATE:	1/24/2012		
WELLNAME:	**Rosa Unit #383-A**	**FIELD:**	Basin Fruitland Coal
BH LOCATION:	NWSW Sec. 29-T31N-R4W Rio Arriba, NM	**SURFACE:**	USFS
ELEVATION:	6,634' GR	**MINERALS:**	FED
TOTAL DEPTH:	**7,165'**	**LEASE #**	SF-078894

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

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

NAME		TVD	MD		NAME		TVD	MD
San Jose		Surface	Surface		Top Target Coal		3,460	3,994
Nacimiento		1,827	1,882		Bottom Target Coal		3,473	
Ojo Alamo		2,840	3,128		Base Coal		3,488	
Kirtland		2,948	3,237		Picture Cliffs		3,489	
Fruitland		3,251	3,546		**TD**		3,466	**7,165**

- **NOTE**: Well will be vertically drilled to 100' into Pictured Cliffs, logged through the PC, 7" csg will be run with shoe 100' into Pictured Cliffs. Cased hole whipstock will be set at KOP (+/-441') above top of target coal). Well will be geosteered in lateral.

B. **LOGGING PROGRAM:** HRI/SDL/DSN from pilot hole TD to surface csg. MWD Gamma Ray in curve and lateral.

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' to TD of intermediate casing. Then from mill out of intermediate casing to TD.

II. **DRILLING**

A. **MUD PROGRAM:** Clear water with benex to 7" casing point. Convert to a LSND mud to log and run pipe. Treat for lost circulation as necessary. Obtain 100% returns prior to cementing. Notify Engineering of any mud losses.

B. **DRILLING FLUID**: Horizontal section will be drilled with produced 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"	+/- 3,589'	7"	23# K-55
Prod. Liner	6-1/4"	+/- 3,324'- 7,165'	4-1/2"	11.6# K-55

Note: Intermediate casing is set 100' into Pictured Cliffs in the pilot hole. Production liner is 4-1/2" 11.6# Pre-perforated K-55 and the liner will be set with liner hanger 5-10' outside of the window.

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: No centralization

C. CEMENTING:

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

1. SURFACE: Slurry: 150sx (269.4 cu.ft.) of "Type III" + 2% Cal-Seal 60 + ¼ # of poly-e-flake/sk + 0.3% Versaset + 2% Econolite + 6% Salt (Yield = 1.796 cu.ft./sk, Weight = 13.5 #/gal.). The 100% excess should circulate cement to the surface. WOC 12 hours. Test csg to 600 psi.

2. INTERMEDIATE: Lead - 350 sx (928.2 cu.ft.) of "EXTENDACEM" + 5 #/sk pheno-seal + 5% Cal-Seal 60 (Yield = 2.723 cu.ft./sk, Weight = 11.5 #/gal.). Tail - 100 sx (117.8cu.ft.) of Premium cement + 0.125 #/sk Poly-E-Flake, (Yield = 1.178 cu.ft./sk, Weight = 15.6#/gal.). Total volume = 1046 cu.ft. Bump Plug to 1,500 psi. Notify engineering if cement is not circulated to surface. WOC 12 hours. Test csg to 1500 psi.

3. PRODUCTION LINER: Open hole completion. No cement.

IV. COMPLETION

A. PRESSURE TEST

1. Pressure test 7" casing to 1500# for ~~15~~ 30 minutes.

B. STIMULATION

1. No stimulation

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 PBTD of 7" casing.

Larry Higgins
Permit Supervisor

Williams®

PATHFINDER®

A Schlumberger Company

Rosa Unit #383A ST01
Sec 29 T 31N R04W - 383A
Rio Arriba Co., NM

GE: 6634' / KB: 14'

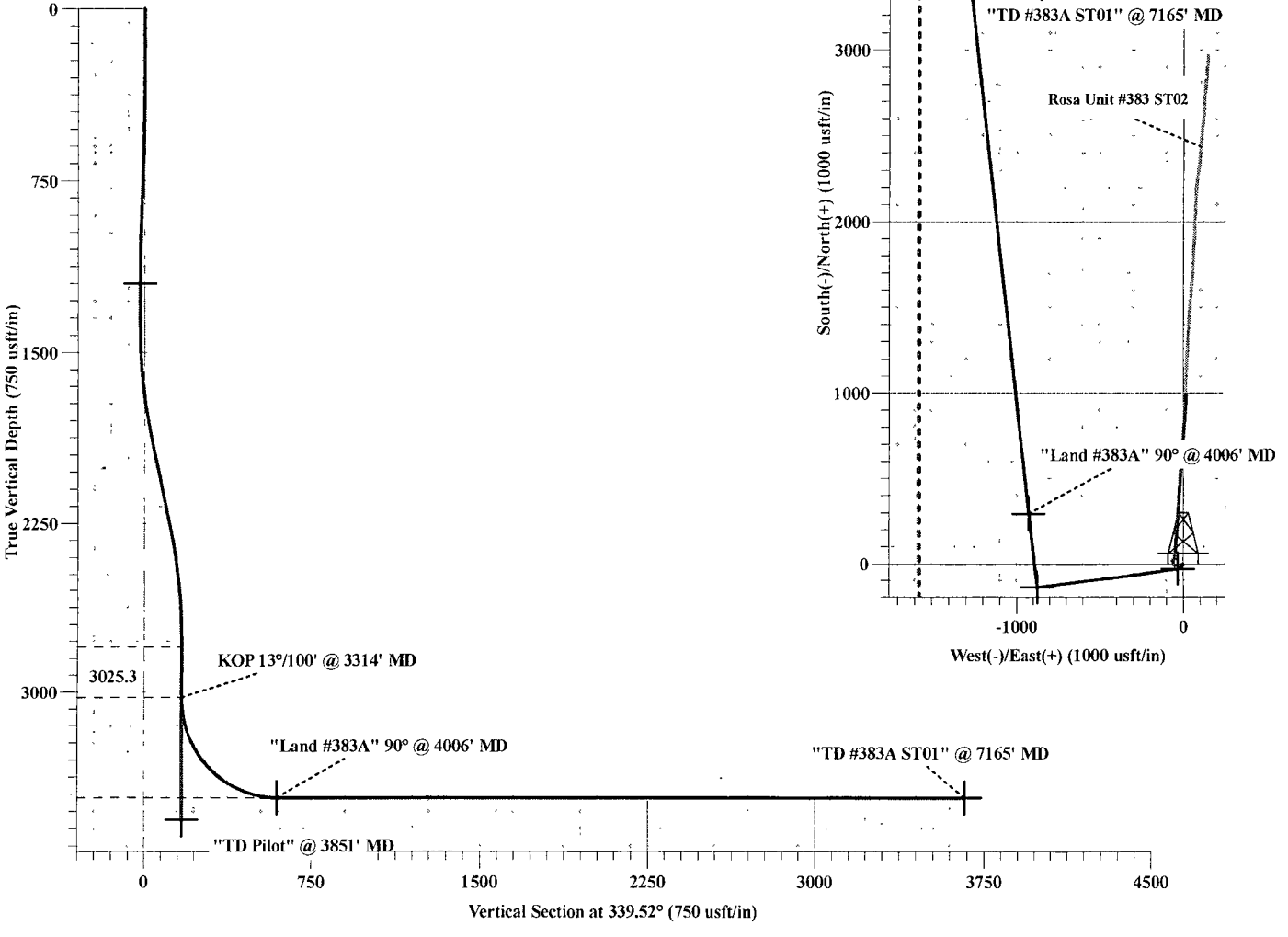
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Nudge	1200 0	-31 8	-31 8	2136107 10	200924 936°	51' 58 149 N	07° 16' 20 600 W
LAND 383A ST01	3466 0	293 3	-924 0	2136441 75	200036 28	36° 52' 1 364 N	07° 16' 31 578 W
TD 383A ST01	3466 0	3432 2	-1282 1	2139584 35	199711 83	36° 52' 32 401 N	07° 16' 35 987 W

WELL DETAILS Rosa Unit #383A

Ground Level. 6634 0

Northing	Easting	Latitude	Longitude
2136138.58	200957 09	36° 51' 58.464 N	07° 16' 20 208 W



SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
3088 6	0 00	0 00	2800 0	-144.6	-874.1	0 00	0.00	170 4	
3313 8	0 00	0.00	3025.3	-144 6	-874.1	0 00	0 00	170.4	
4006 1	90 00	353 49	3466 0	293 3	-924 0	13 00	353 49	598 1	
7165 4	90.00	353.49	3466.0	3432 2	-1282.1	0 00	0 00	3663 9	TD 383A ST01

Plan: Design #2 (Rosa Unit #383A/ST01)

Created By: Breck Enoch Date. 07-Dec-2011

Database:	EDM 5000 1 Single User Db	**Local Co-ordinate Reference:**	Site Sec 29 T 31N R04W - 383A
Company:	Williams Production Co	**TVD Reference:**	WELL @ 6648 0usft (Original Well Elev)
Project:	Rio Arriba Co , NM	**MD Reference:**	WELL @ 6648 0usft (Original Well Elev)
Site:	Sec 29 T 31N R04W - 383A	**North Reference:**	True
Well:	Rosa Unit #383A	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ST01		
Design:	Design #2		

Project Rio Arriba Co , NM

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico Central 3002		

Site Sec 29 T 31N R04W - 383A

Site Position:		**Northing:**	2,136,138 57 usft	**Latitude:**	36° 51' 58 464 N
From:	Lat/Long	**Easting:**	200,957 09 usft	**Longitude:**	107° 16' 20 208 W
Position Uncertainty:	0 0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	-0 61 °

Well Rosa Unit #383A

Well Position	**+N/-S**	0 0 usft	**Northing:**	2,136,138 57 usft	**Latitude:**	36° 51' 58 464 N
	+E/-W	0 0 usft	**Easting:**	200,957 09 usft	**Longitude:**	107° 16' 20 208 W
Position Uncertainty		0 0 usft	**Wellhead Elevation:**		**Ground Level:**	6,634 0 usft

Wellbore ST01

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/2/2011	9 64	63 65	50,824

Design Design #2

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	3,088 6

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0 0	0 0	0 0	339.52

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
3,088 6	0 00	0 00	2,800 0	-144 6	-874.1	0 00	0 00	0 00	0.00	
3,313 8	0 00	0 00	3,025 3	-144 6	-874 1	0 00	0 00	0 00	0 00	
4,006 1	90 00	353.49	3,466 0	293 3	-924 0	13 00	13 00	0 00	353.49	
7,165 4	90 00	353 49	3,466 0	3,432 2	-1,282 1	0 00	0 00	0 00	0 00	TD 383A ST01

Database:	EDM 5000 1 Single User Db	**Local Co-ordinate Reference:**	Site Sec 29 T 31N R04W - 383A
Company:	Williams Production Co	**TVD Reference:**	WELL @ 6648 0usft (Original Well Elev)
Project:	Rio Arriba Co , NM	**MD Reference:**	WELL @ 6648 0usft (Original Well Elev)
Site:	Sec 29 T 31N R04W - 383A	**North Reference:**	True
Well:	Rosa Unit #383A	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ST01		
Design:	Design #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0 0	0 00	0 00	0 0	0 0	0 0	0 0	0 00	0 00	0 00
100 0	0 00	0 00	100 0	0 0	0 0	0 0	0 00	0 00	0 00
200 0	0 00	0 00	200 0	0 0	0 0	0 0	0 00	0 00	0 00
300 0	0 00	0 00	300 0	0 0	0 0	0 0	0 00	0 00	0 00
400 0	0 00	0 00	400 0	0 0	0 0	0 0	0 00	0 00	0 00
500 0	2 00	225.00	500 0	-1 2	-1 2	-0 7	2 00	2 00	0 00
600 0	4 00	225 00	599 8	-4 9	-4 9	-2 9	2 00	2 00	0 00
700 0	4 46	225 00	699 5	-10 4	-10 4	-6 1	0 46	0 46	0 00
800 0	4 46	225 00	799 2	-15 9	-15 9	-9 3	0 00	0 00	0 00
900.0	4 46	225 00	898 9	-21 4	-21 4	-12 5	0 00	0 00	0 00
1,000 0	4 03	225 00	998 6	-26 8	-26 8	-15 7	0 43	-0 43	0 00
1,100 0	2 03	225.00	1,098 5	-30 5	-30 5	-17 9	2 00	-2 00	0 00
1,200 0	0 03	225 00	1,198 5	-31 8	-31 8	-18 7	2 00	-2 00	0 00
1,300 0	0 00	0 00	1,298 5	-31 8	-31 8	-18 7	0 03	-0 03	0 00
1,400 0	3 93	262 37	1,398 4	-32 0	-33 5	-18 3	3 93	3 93	0 00
1,500 0	12 03	262 37	1,497 4	-33 9	-47 2	-15 2	8 10	8 10	0 00
1,600 0	20 13	262 37	1,593.4	-37 6	-74 6	-9 1	8 10	8 10	0 00
1,700 0	28 23	262 37	1,684 5	-43 0	-115 2	0 0	8 10	8 10	0 00
1,800 0	36 33	262 37	1,769 0	-50 1	-168 1	11 9	8 10	8 10	0 00
1,900 0	44 10	262 37	1,845 2	-58 7	-232 2	26 3	7 77	7 77	0 00
2,000 0	44 10	262 37	1,917 0	-67 9	-301 2	41 8	0 00	0 00	0 00
2,100 0	44 10	262 37	1,988 8	-77 1	-370 2	57 3	0 00	0 00	0 00
2,200 0	44 10	262 37	2,060 6	-86 4	-439.1	72 8	0 00	0 00	0 00
2,300 0	44 10	262 37	2,132 4	-95 6	-508 1	88 2	0 00	0 00	0 00
2,400 0	44 10	262 37	2,204 2	-104 8	-577 1	103 7	0 00	0 00	0 00
2,500 0	44 10	262 37	2,276 1	-114 1	-646 0	119 2	0 00	0 00	0 00
2,600 0	39 57	262 37	2,349 4	-123 1	-713 4	134 3	4 52	-4 52	0 00
2,700 0	31 47	262 37	2,430 7	-130 8	-771.0	147 3	8 10	-8 10	0 00
2,800 0	23 37	262.37	2,519 4	-136 9	-816 6	157 5	8 10	-8 10	0 00
2,900 0	15 27	262 37	2,613 7	-141 3	-849 3	164 9	8 10	-8 10	0 00
3,000 0	7 17	262 37	2,711 7	-143 9	-868 6	169 2	8 10	-8 10	0 00
3,088 6	0 00	0 00	2,800 0	-144 6	-874 1	170 4	8 10	-8 10	0 00
3,100 0	0 00	0 00	2,811 4	-144 6	-874 1	170.4	0 00	0 00	0 00
3,200 0	0 00	0 00	2,911 4	-144 6	-874 1	170 4	0 00	0 00	0 00
3,300 0	0 00	0 00	3,011 4	-144 6	-874 1	170 4	0 00	0.00	0 00
3,313 8	0 00	0 00	3,025 3	-144 6	-874 1	170 4	0 00	0 00	0 00
3,400 0	11 20	353 49	3,110 9	-136 3	-875 1	178 6	13 00	13 00	0 00
3,500 0	24 20	353 49	3,205 9	-106 1	-878 5	208.0	13 00	13 00	0 00
3,600 0	37 20	353 49	3,291 7	-55 5	-884 3	257 4	13 00	13 00	0 00
3,700 0	50 20	353 49	3,363 9	13 0	-892 1	324 3	13 00	13 00	0 00
3,800 0	63 20	353 49	3,418 7	95 9	-901 5	405 3	13 00	13 00	0 00
3,900 0	76 20	353 49	3,453 3	188 9	-912 1	496 1	13 00	13.00	0 00
4,000 0	89 20	353 49	3,466 0	287 2	-923 4	592.1	13 00	13 00	0 00
4,006 1	90 00	353 49	3,466 0	293 3	-924 0	598.1	13.00	13 00	0 00
4,100 0	90 00	353 49	3,466 0	386 6	-934 7	689 2	0 00	0.00	0 00
4,200 0	90 00	353 49	3,466 0	485 9	-946 0	786 2	0 00	0 00	0 00
4,300 0	90 00	353 49	3,466 0	585 3	-957 4	883 3	0 00	0 00	0 00
4,400 0	90 00	353 49	3,466 0	684 6	-968 7	980 3	0 00	0 00	0 00
4,500 0	90 00	353 49	3,466 0	784 0	-980 0	1,077 3	0 00	0 00	0.00
4,600 0	90 00	353 49	3,466 0	883 3	-991 4	1,174.4	0 00	0 00	0 00
4,700 0	90 00	353 49	3,466 0	982 7	-1,002 7	1,271.4	0 00	0 00	0 00
4,800 0	90 00	353 49	3,466 0	1,082 0	-1,014 0	1,368 5	0 00	0 00	0.00
4,900 0	90 00	353 49	3,466 0	1,181 4	-1,025 3	1,465 5	0 00	0 00	0 00
5,000 0	90 00	353 49	3,466 0	1,280 8	-1,036 7	1,562 5	0 00	0 00	0 00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Site Sec 29 T 31N R04W - 383A
Company:	Williams Production Co	**TVD Reference:**	WELL @ 6648.0usft (Original Well Elev)
Project:	Rio Arriba Co , NM	**MD Reference:**	WELL @ 6648 0usft (Original Well Elev)
Site:	Sec 29 T 31N R04W - 383A	**North Reference:**	True
Well:	Rosa Unit #383A	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ST01		
Design:	Design #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,100 0	90.00	353 49	3,466 0	1,380 1	-1,048 0	1,659 6	0 00	0 00	0 00
5,200 0	90 00	353 49	3,466 0	1,479 5	-1,059 3	1,756 6	0 00	0 00	0 00
5,300 0	90 00	353 49	3,466 0	1,578 8	-1,070 7	1,853.7	0.00	0 00	0 00
5,400 0	90 00	353 49	3,466 0	1,678 2	-1,082 0	1,950 7	0.00	0 00	0 00
5,500 0	90 00	353 49	3,466 0	1,777.5	-1,093 3	2,047.7	0 00	0 00	0 00
5,600 0	90 00	353 49	3,466 0	1,876.9	-1,104 7	2,144 8	0 00	0 00	0 00
5,700 0	90 00	353 49	3,466 0	1,976 2	-1,116 0	2,241 8	0 00	0 00	0 00
5,800 0	90 00	353 49	3,466 0	2,075 6	-1,127 3	2,338 9	0 00	0 00	0 00
5,900.0	90 00	353 49	3,466 0	2,175 0	-1,138 7	2,435 9	0 00	0 00	0 00
6,000 0	90 00	353 49	3,466 0	2,274 3	-1,150 0	2,532 9	0 00	0 00	0 00
6,100 0	90 00	353 49	3,466 0	2,373 7	-1,161 3	2,630 0	0.00	0 00	0 00
6,200 0	90 00	353 49	3,466 0	2,473 0	-1,172 7	2,727 0	0 00	0 00	0 00
6,300 0	90 00	353 49	3,466 0	2,572 4	-1,184 0	2,824 1	0 00	0 00	0 00
6,400 0	90 00	353.49	3,466 0	2,671 7	-1,195 3	2,921.1	0 00	0 00	0 00
6,500 0	90 00	353 49	3,466 0	2,771 1	-1,206 7	3,018 1	0 00	0 00	0 00
6,600 0	90 00	353 49	3,466 0	2,870 4	-1,218.0	3,115 2	0 00	0 00	0 00
6,700 0	90 00	353 49	3,466 0	2,969 8	-1,229 3	3,212.2	0.00	0 00	0 00
6,800 0	90 00	353 49	3,466 0	3,069 2	-1,240 7	3,309 3	0.00	0 00	0 00
6,900 0	90 00	353 49	3,466 0	3,168 5	-1,252.0	3,406 3	0 00	0 00	0 00
7,000 0	90 00	353 49	3,466.0	3,267 9	-1,263 3	3,503 3	0 00	0 00	0 00
7,100 0	90 00	353 49	3,466 0	3,367 2	-1,274 7	3,600 4	0 00	0 00	0 00
7,165 4	90 00	353 49	3,466 0	3,432 2	-1,282 1	3,663 9	0 00	0 00	0 00

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Nudge - plan hits target center - Point	0 00	0 00	1,200 0	-31.8	-31 8	2,136,107 10	200,924 93	36° 51' 58.149 N	107° 16' 20 600 W
TD 383A ST01 - plan hits target center - Point	0 00	0 00	3,466 0	3,432 2	-1,282.1	2,139,584 35	199,711 82	36° 52' 32 401 N	107° 16' 35 987 W
LAND 383A ST01 - plan hits target center - Point	0 00	0 00	3,466 0	451 5	-942 1	2,136,600 13	200,019 88	36° 52' 2 928 N	107° 16' 31 801 W
TD 383A Pilot - plan misses target center by 254.6usft at 3700.0usft MD (3363.9 TVD, 13 0 N, -892 1 E) - Point	0 00	0 00	3,563 0	-144 6	-874 1	2,136,003.34	200,081.49	36° 51' 57 034 N	107° 16' 30 964 W

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
3,088 6	2,800 0	-144 6	-874 1	Start 225 2 hold at 3088 6 MD
3,313 8	3,025 3	-144 6	-874 1	KOP 13°/100' @ 3314' MD
4,006 1	3,466.0	293 3	-924 0	"Land #383A" 90° @ 4006' MD
7,165 4	3,466 0	3,432 2	-1,282 1	"TD #383A ST01" @ 7165' MD

Well Control Equipment Schematic for 2M Service

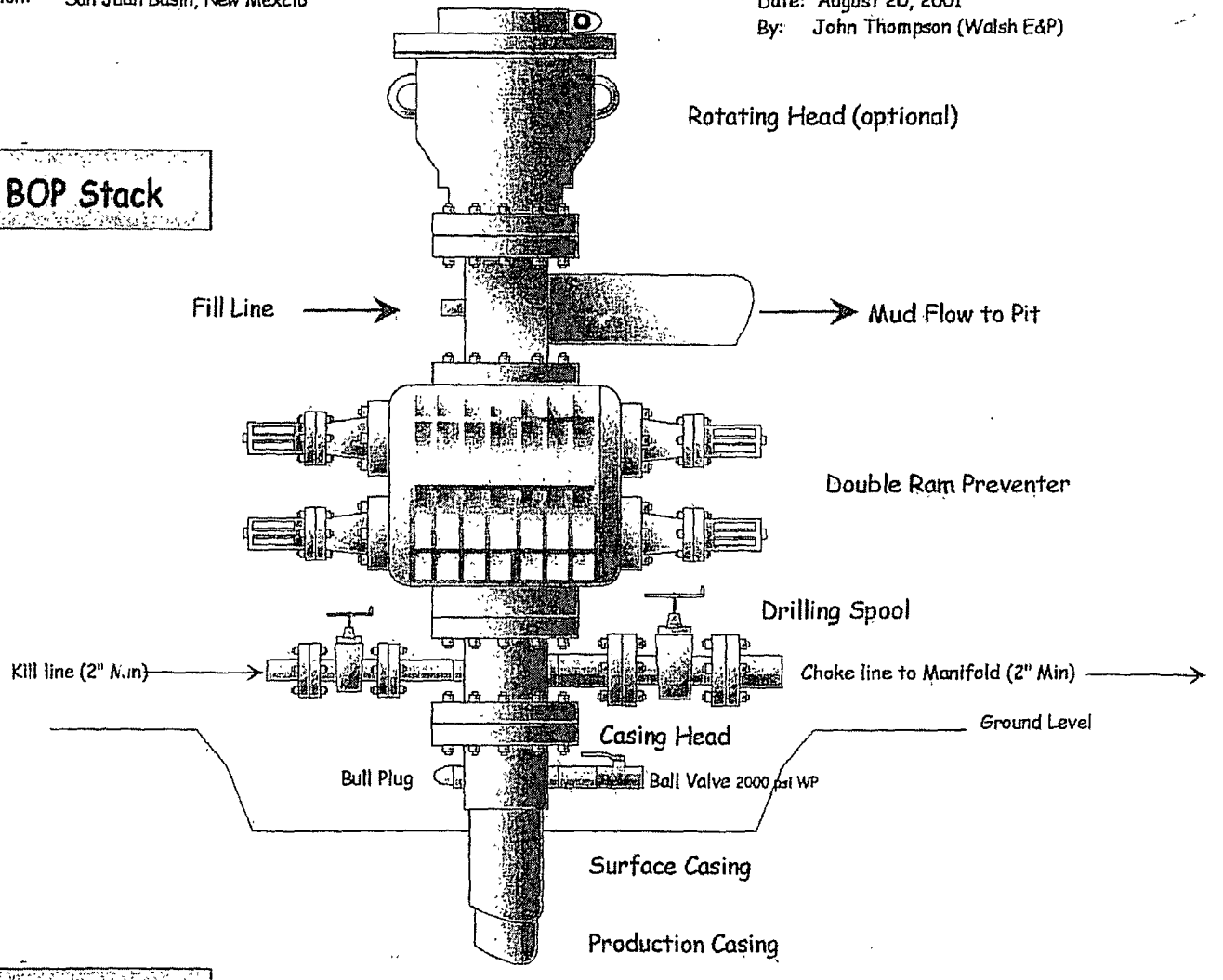
Attachment to Drilling Technical Program

Exhibit #1
Typical BOP setup

Location: San Juan Basin, New Mexcio

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

BOP Stack



Choke & Kill Manifold