

UNITED STATES  
DEPARTMENT OF INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
Budget Bureau No. 1004-0135  
Expires: March 31, 1993

SUNDRY NOTICE AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir. Use "APPLICATION TO DRILL" for permit for such proposals

5. Lease Designation and Serial No.  
Fee

6. If Indian, Allottee or Tribe Name  
N/A

7. If Unit or CA, Agreement Designation  
Rosa Unit

8. Well Name and No.  
Rosa Unit #181D

9. API Well No.  
30-039-30795

10. Field and Pool, or Exploratory Area  
Blanco MV / Basin MC / Basin DK

11. County or Parish, State  
Rio Arriba, NM

SUBMIT IN TRIPPLICATE

1. Type of Well  
Oil Well Gas Well ☒ Other

2. Name of Operator  
WILLIAMS PRODUCTION COMPANY

3. Address and Telephone No.  
PO BOX 640 Aztec, NM 87410-0640

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)  
Surface: 1230' FNL & 730' FEL Sec. 15, T31N, R6W  
BHL: 100' FSL & 1400' FEL Sec 10, T31N, R6W

CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION
<input checked="" type="checkbox"/> Notice of Intent	Abandonment
<input type="checkbox"/> Subsequent Report	Recompletion
<input type="checkbox"/> Final Abandonment	Plugging Back
	Casing Repair
	Altering Casing
	<input checked="" type="checkbox"/> Other <u>Surface</u>
	<input checked="" type="checkbox"/> Change of Plans
	New Construction
	Non-Routine Fracturing
	Water Shut-Off
	Conversion to Injection
	Dispose Water
	(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

Williams Production Company, LLC. hereby requests authorization to drill the above well from a surface location sharing a pad with the Rosa Unit #12, Rosa #12C and Rosa #181A. The well will be drilled to a location under Navajo Lake per attached plans. The Spacing unit is 100% committed to the Rosa Unit. Well will be drilled utilizing a closed loop drilling system. The surface location is under Bureau of Reclamation authority. There was a site visit 6-18-09 including Bill Liess (BLM) and Mike Dombrowski (BOR). All agreed that this was the best site for surface location. This location has been archaeologically surveyed by La Plata Archaeological Consultants and copies of their report have been submitted directly to the BLM and BOR. This sundry is also serving as an application for a pipeline ROW from the BOR. An associated pipeline of 59.0 feet would be required for this well. Copies of the plat, operation plan, directional plan, surface use plan, pipeline plat and related plats and drawings are attached.

RCVD AUG 6 '09

OIL CONS. DIV.

DIST. 3

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

Signed

Larry Higgins  
Larry Higgins

Title Drilling COM

Date 6-30-09

(This space for Federal or State office use)

Approved by

Bill Liess

Title

Branch Chief

Environmental Protection and Realty

Date

8/4/09

Conditions of approval, if any.

See COA's

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

☐ AMENDED REPORT

### WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number	<sup>2</sup> Pool Code 97232 / 72319 / 71599	<sup>3</sup> Pool Name BASIN MANCOS / BLANCO MESAVERDE / BASIN DAKOTA
<sup>4</sup> Property Code 17033	<sup>5</sup> Property Name ROSA UNIT	<sup>6</sup> Well Number 181D
<sup>7</sup> GRID No. 120782	<sup>8</sup> Operator Name WILLIAMS PRODUCTION COMPANY	<sup>9</sup> Elevation 6268'

#### <sup>10</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	15	31N	6W		1230	NORTH	730	EAST	RIO ARriba

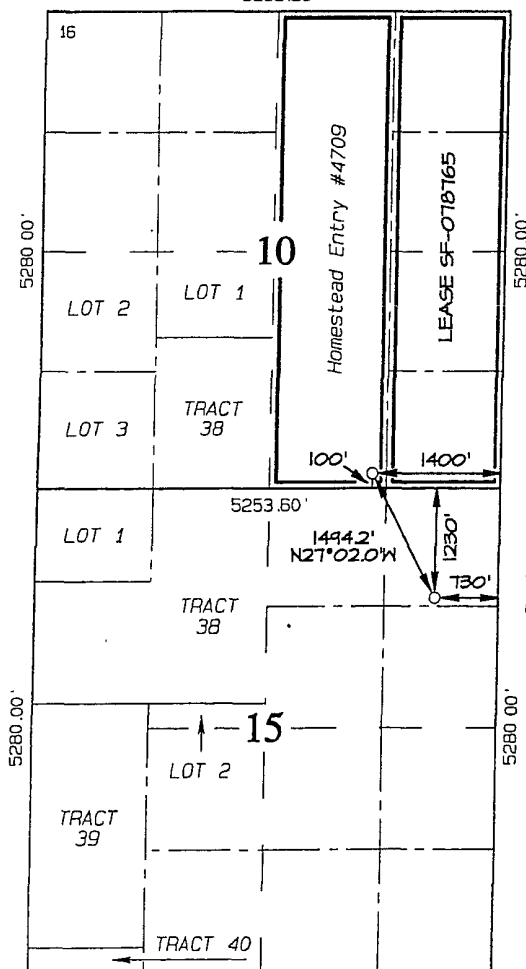
#### <sup>11</sup> Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
0	10	31N	6W		100	SOUTH	1400	EAST	RIO ARriba

<sup>12</sup> Dedicated Acres 320.0 Acres E/2 Section 10	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> 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

5252.28'



BOTTOM-HOLE  
LAT: 36.90720° N  
LONG: 107.44602° W  
DATUM: NAD1983

SURFACE LOCATION  
LAT: 36.90354° N  
LONG: 107.44372° W  
DATUM: NAD1983

#### <sup>17</sup> 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* 6-30-09  
Signature Date

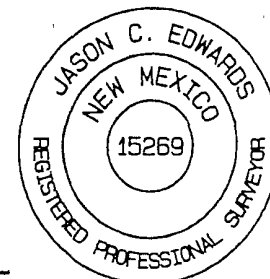
LARRY HIGGINS  
Printed Name

#### <sup>18</sup> SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief

Date of Survey: MAY 24, 2009

Signature and Seal of Professional Surveyor



JASON C. EDWARDS  
Certificate Number 15269



## WILLIAMS PRODUCTION COMPANY

### Operations Plan

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

**DATE:** 6/16/2009 **FIELD:** Basin DK/ Basin MC/BlancoMV  
**WELL NAME:** Rosa #181D **SURFACE:** BOR  
**BH LOCATION:** SWSE Sec 10-31N-6W **MINERALS:** FEE  
San Juan, NM  
**ELEVATION:** 6,268' GR **LEASE #** SF-078765  
**MEASURED DEPTH:** 8,511'

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

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

Name	TVD	MD	Name	TVD	MD
Ojo Alamo	2,307	2,608	Point Lookout	5,572	5,981
Kirtland	2,412	2,737	Mancos	5,877	6,286
Fruitland	2,807	3,195	Gallup	6,877	7,296
Pictured Cliffs	3,087	3,491	Greenhorn	7,617	8,026
Lewis	3,382	3,791	Graneros	7,667	8,076
Cliff House	5,272	5,681	Dakota	7,792	8,201
Menefee	5,322	5,731	Morrison	8,022	8,431
			<b>TD</b>	<b>8,102</b>	<b>8,511</b>

- B. MUD LOGGING PROGRAM:** Mudlogger on location from intermediate csg to TD. Mud logger to pick TD.
- C. LOGGING PROGRAM:** HRI/Temp from intermediate casing to TD. SDL/DSN over zones of interest.
- D. NATURAL GAUGES:** Gauge any noticeable increases in gas flow. Record all gauges in Tour book and on morning reports.

## **II. DRILLING**

- A. MUD PROGRAM:** Clear water with benex to 7-5/8" 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. Use air w/Air Hammer from 7-5/8in. csg. to TD.
- B. 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 BOP will be tested to **250 psi (Low) for 5 minutes** and **1500 psi (High) for 10 minutes**. Utilize a BOP 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	OH SIZE (IN)	DEPTH (MD) (FT)	CASING SIZE (IN)	WEIGHT (LB)	GRADE
Surface	14 3/4	300	10 3/4	40.5	K-55
Intermediate	9 7/8	3,971	7 5/8	26.4	K-55
Longstring	6 3/4	8,511	5 1/2	17	N-80

**B. FLOAT EQUIPMENT:**

- SURFACE CASING:** 10 3/4" notched regular pattern guide shoe. Run (1) standard centralizer on each of the bottom (4) joints of Surface Casing.
- INTERMEDIATE CASING:** 7 5/8" 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).
- PRODUCTION LINER / CASING:** 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)*

- SURFACE:** Slurry: 290sx (521 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 1500psi.
- INTERMEDIATE:** Lead - 525 sx (1430 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.). **NO EXCESS PUMP AS WRITTEN SHOULD CIRCULATE TO SURFACE** Total volume = 1548 cu.ft. Bump Plug to 1,500 psi. Notify engineering if cement is not circulated to surface
- PRODUCTION CASING:** 10 bbl Gelled Water spacer. Cement: 375 sx (525 ft<sup>3</sup>) of "FRACCEM" + 0.8% Halad-9 + 0.1% CFR-3 + 5 #/sk Gilsonite + 0.125 #/sk Poly-E-Flake + 0.15% HR-800. (Yield = 1.398 ft<sup>3</sup>/sk, Weight = 13.1 #/gal.). Displace cement at a minimum of 8 BPM. **NO EXCESS SHOULD COVER 150 FEET INTO 7-5/8" CASING** Total volume (525) ft<sup>3</sup>. WOC 12 hours.

**IV. IV COMPLETION****A. CBL**

- Run Cement Bond Log across all intervals to be perforated and find Top of Cement behind all casing strings if cement not circulated to surface..

**B. PRESSURE TEST**


- Pressure test 5-1/2" casing to 6000 psi max, hold at 1500 psi for 30 minutes.

**C. STIMULATION**

1. Stimulate Dakota with approximately 10,000# of LiteProp 108™ sand in slick water.
2. Isolate Dakota with a RBP.
3. Perforate Mancos as determined from the open hole logs
4. Stimulate Mancos with 3 stages of approximates 117,000# 40/70 white sand and 7500# 100 mesh white sand
5. Stimulate Point Lookout with approximately 9300# of 14/30 LiteProp™ in slick water.
6. Isolate Point Lookout with a RBP.
7. Perforate the Menefee/Cliff House as determined from the open hole logs.
8. Stimulate with approximately 9300# of 14/30 LiteProp™ in slick water.
9. Test each zone before removing bridge plugs.

**D. RUNNING TUBING**

1. Production Tubing: Run 2-3/8", 4.7#, J-55, EUE tubing with a SN (1.91" ID) on top of bottom joint. Land tubing approximately 25' above the bottom Point Lookout perforation

  
Gary Sizemore  
S-001 Sr. Drilling Engineer



**Weatherford®**

## **Drilling Services**

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## **PROPOSAL**

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WILLIAMS PRODUCTION COMPANY  
ROSA UNIT #181-D  
RIO ARRIBA COUNTY, NEW MEXICO  
WELL FILE: **PLAN 1**

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Submitted: June 15, 2009

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**Weatherford International Ltd.**  
P.O. Box 61028  
Midland, Texas 79711 USA  
+1.432.561.8892 Main  
+1.432.561.8895 Fax  
[www.weatherford.com](http://www.weatherford.com)



ROSA UNIT #181D  
RIO ARriba COUNTY, NM

#### SITE DETAILS

Rosa Unit #181-D  
1230' FNL & 730' FEL

Site Centre Latitude: 36°54'12.740N  
Longitude: 107°26'37.390W

Ground Level: 6268.00  
Positional Uncertainty: 0.00  
Convergence: -0.72

#### SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	333.23	0.00	0.00	0.00	0.00	0.00	0.00	
2	400.00	0.00	333.23	400.00	0.00	0.00	0.00	0.00	0.00	
3	1288.11	35.52	333.23	1232.29	238.04	-120.09	4.00	333.23	266.61	
4	2787.11	35.52	333.23	2452.28	1015.67	-512.40	0.00	0.00	1137.60	
5	3971.25	0.00	333.23	3562.00	1333.05	-672.52	3.00	180.00	1493.08	Int. Csg. Pt.
6	8331.25	0.00	333.23	7922.00	1333.05	-672.52	0.00	333.23	1493.08	PBHL

#### WELL DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
181-D	0.00	0.00	2150366.52	1291402.35	36°54'12.740N	107°26'37.390W	N/A

#### TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Rosa #12	0.00	-36.00	257.16	36°54'12.384N	107°26'34.224W	Point
Int. Csg. Pt.	3562.00	1333.05	-672.52	36°54'25.920N	107°26'45.670W	Point
PBHL	7922.00	1333.05	-672.52	36°54'25.920N	107°26'45.670W	Point

#### CASING DETAILS

No.	TVD	MD	Name	Size
1	300.00	300.00	10 3/4"	10.750
2	3562.00	3971.25	7 5/8"	7.625

#### FIELD DETAILS

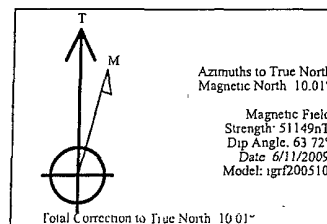
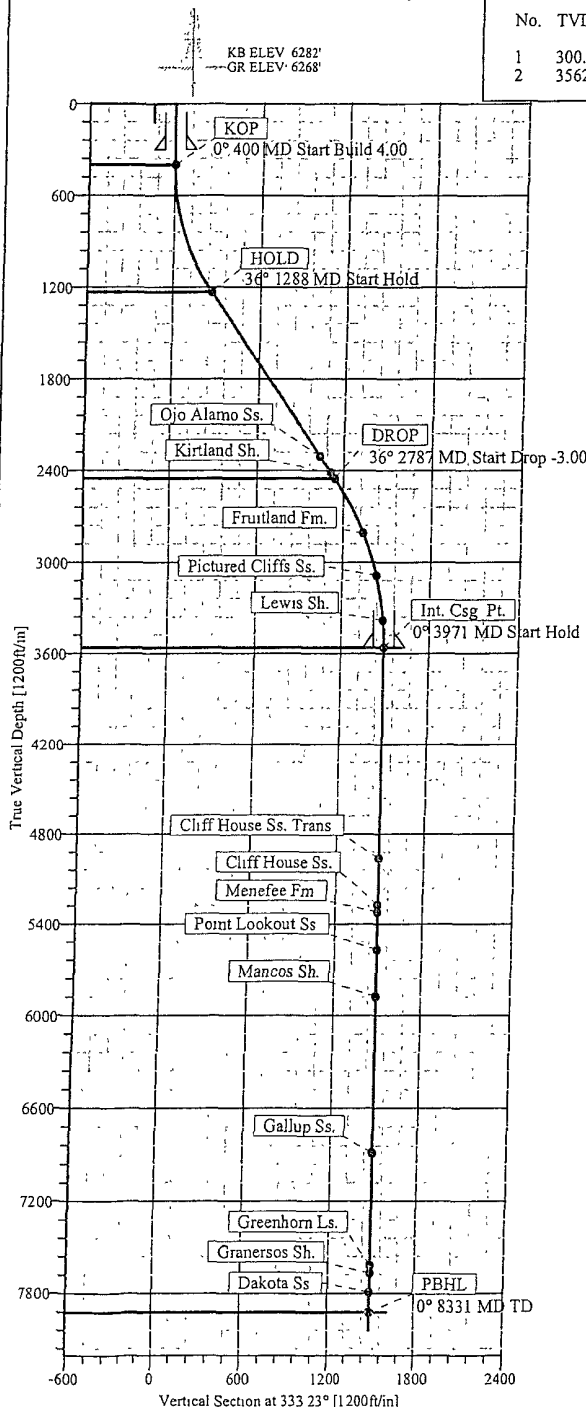
Rio Arriba Co., NM (NAD 83)

Geodetic System: US State Plane Coordinate System 1983  
Ellipsoid: GRS 1980  
Zone: New Mexico, Central Zone  
Magnetic Model: igrf200510

System Datum: Mean Sea Level  
Local North: True North

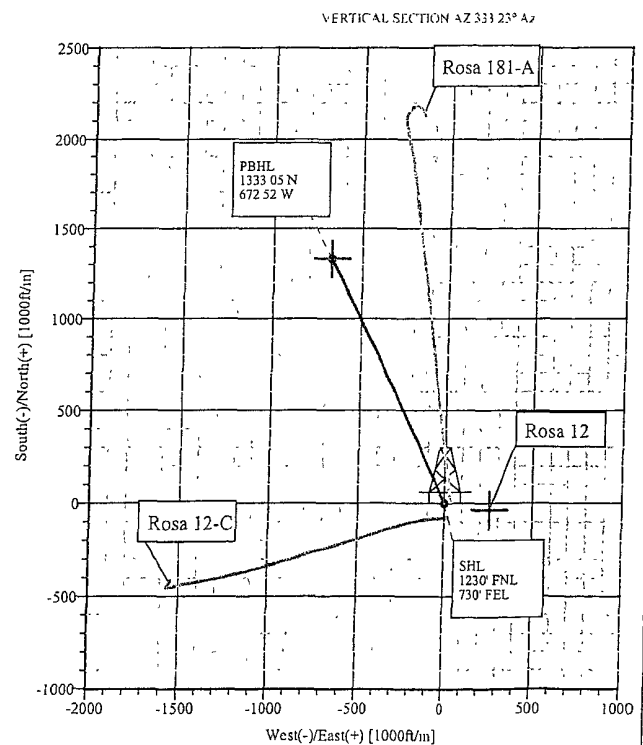
#### FORMATION TOP DETAILS

No.	TVDPath	MDPath	Formation
1	2307.00	2608.60	Ojo Alamo Ss.
2	2412.00	2737.61	Kirtland Sh.
3	2807.00	3195.06	Fruitland Fm.
4	3087.00	3491.21	Pictured Cliffs Ss.
5	3382.00	3790.98	Lewis Sh.
6	4962.00	5371.25	Cliff House Ss. Trans.
7	5272.00	5681.25	Cliff House Ss.
8	5322.00	5731.25	Menefee Fm.
9	5572.00	5981.25	Point Lookout Ss.
10	5877.00	6286.25	Mancos Sh.
11	6887.00	7296.25	Gallup Ss.
12	7617.00	8026.25	Greenhorn Ls.
13	7667.00	8076.25	Graneros Sh.
14	7792.00	8201.25	Dakota Ss.



#### LEGEND

- 12-C (1)
- 181-A (1)
- Plan #1



Created By Jayme Wilson

Date 6/15/2009



# Weatherford International Ltd.

## PROPOSAL PLAN REPORT



Weatherford

Company: WILLIAMS PRODUCTION Date: 6/15/2009 Time: 18:03:31 Page: 1  
 Field: Rio Arriba Co., NM (NAD 83) Co-ordinate(NE) Reference: Well 181-D, True North  
 Site: Rosa Unit #181-D Vertical (TVD) Reference: SITE 6282.0  
 Well: 181-D Section (VS) Reference: Well (0.00N,0.00E,333.23Azi)  
 Wellpath: 1 Survey Calculation Method: Minimum Curvature Db: Sybase

Plan: Plan #1 Date Composed: 6/11/2009  
 Principal: Yes Version: 1  
 Tied-to: From Surface

Field: Rio Arriba Co., NM (NAD 83)  
 Map System: US State Plane Coordinate System 1983 Map Zone: New Mexico, Central Zone  
 Geo Datum: GRS 1980 Coordinate System: Well Centre  
 Sys Datum: Mean Sea Level Geomagnetic Model: igrf200510

Site: Rosa Unit #181-D  
 1230' FNL & 730' FEL  
 Site Position: Northing: 2150366.52 ft Latitude: 36 54 12.740 N  
 From: Geographic Easting: 1291402.35 ft Longitude: 107 26 37.390 W  
 Position Uncertainty: 0.00 ft North Reference: True  
 Ground Level: 6268.00 ft Grid Convergence: -0.72 deg

Well: 181-D Slot Name:  
 Well Position: +N-S 0.00 ft Northing: 2150366.52 ft Latitude: 36 54 12.740 N  
 +E-W 0.00 ft Easting: 1291402.35 ft Longitude: 107 26 37.390 W  
 Position Uncertainty: 0.00 ft

Wellpath: 1 Drilled From: Surface  
 Current Datum: SITE Height 6282.00 ft Tie-on Depth: 0.00 ft  
 Magnetic Data: 6/11/2009 Above System Datum: Mean Sea Level  
 Field Strength: 51149 nT Declination: 10.01 deg  
 Vertical Section: Depth From (TVD) +N-S Mag Dip Angle: 63.72 deg  
 ft ft +E-W Direction  
 ft ft deg  
 0.00 0.00 0.00 333.23

### Plan Section Information

MD ft	Incl deg	Azim deg	TVD ft	+N-S ft	+E-W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	Target
0.00	0.00	333.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	333.23	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
1288.11	35.52	333.23	1232.29	238.04	-120.09	4.00	4.00	0.00	333.23	
2787.11	35.52	333.23	2452.28	1015.67	-512.40	0.00	0.00	0.00	0.00	
3971.25	0.00	333.23	3562.00	1333.05	-672.52	3.00	-3.00	0.00	180.00	Int. Csg. Pt.
8331.25	0.00	333.23	7922.00	1333.05	-672.52	0.00	0.00	0.00	333.23	PBHL

### Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	Build deg/100ft	Turn deg/100ft	DLS deg/100ft	TFO deg	Comment
300.00	0.00	333.23	300.00	0.00	0.00	0.00	0.00	0.00	0.00	333.23	
400.00	0.00	333.23	400.00	0.00	0.00	0.00	0.00	0.00	0.00	333.23	KOP
500.00	4.00	333.23	499.92	3.12	-1.57	3.49	4.00	0.00	4.00	0.00	
600.00	8.00	333.23	599.35	12.45	-6.28	13.94	4.00	0.00	4.00	0.00	
700.00	12.00	333.23	697.81	27.95	-14.10	31.30	4.00	0.00	4.00	0.00	
800.00	16.00	333.23	794.82	49.54	-24.99	55.49	4.00	0.00	4.00	0.00	
900.00	20.00	333.23	889.91	77.12	-38.91	86.38	4.00	0.00	4.00	0.00	
1000.00	24.00	333.23	982.61	110.56	-55.78	123.84	4.00	0.00	4.00	0.00	
1100.00	28.00	333.23	1072.47	149.69	-75.52	167.67	4.00	0.00	4.00	0.00	
1200.00	32.00	333.23	1159.05	194.33	-98.04	217.66	4.00	0.00	4.00	0.00	
1288.11	35.52	333.23	1232.29	238.04	-120.09	266.61	4.00	0.00	4.00	0.00	HOLD
1300.00	35.52	333.23	1241.97	244.21	-123.20	273.52	0.00	0.00	0.00	0.00	
1400.00	35.52	333.23	1323.36	296.08	-149.37	331.63	0.00	0.00	0.00	0.00	
1500.00	35.52	333.23	1404.74	347.96	-175.54	389.73	0.00	0.00	0.00	0.00	
1600.00	35.52	333.23	1486.13	399.84	-201.72	447.84	0.00	0.00	0.00	0.00	





# Weatherford International Ltd.

## PROPOSAL PLAN REPORT



Weatherford

Company:	WILLIAMS PRODUCTION	Date:	6/15/2009	Time:	18:03:31	Page:	2
Field:	Rio Arriba Co. NM (NAD:83)	Co-ordinate(NE) Reference:	Well: 181-D, True North				
Site:	Rosa Unit #181-D	Vertical (TVD) Reference:	SITE 6282.0				
Well:	181-D	Section (VS) Reference:	Well (0.00N,0.00E,333.23Azi)				
Wellpath:		Survey Calculation Method:	Minimum Curvature			Db:	Sybase

### Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	Build deg/100ft	Turn deg/100ft	DLS deg/100ft	TFO deg	Comment
1700.00	35.52	333.23	1567.52	451.71	-227.89	505.94	0.00	0.00	0.00	0.00	
1800.00	35.52	333.23	1648.90	503.59	-254.06	564.05	0.00	0.00	0.00	0.00	
1900.00	35.52	333.23	1730.29	555.47	-280.23	622.15	0.00	0.00	0.00	0.00	
2000.00	35.52	333.23	1811.68	607.34	-306.40	680.26	0.00	0.00	0.00	0.00	
2100.00	35.52	333.23	1893.07	659.22	-332.57	738.36	0.00	0.00	0.00	0.00	
2200.00	35.52	333.23	1974.45	711.10	-358.75	796.47	0.00	0.00	0.00	0.00	
2300.00	35.52	333.23	2055.84	762.97	-384.92	854.57	0.00	0.00	0.00	0.00	
2400.00	35.52	333.23	2137.23	814.85	-411.09	912.67	0.00	0.00	0.00	0.00	
2500.00	35.52	333.23	2218.61	866.73	-437.26	970.78	0.00	0.00	0.00	0.00	
2600.00	35.52	333.23	2300.00	918.60	-463.43	1028.88	0.00	0.00	0.00	0.00	
2700.00	35.52	333.23	2381.39	970.48	-489.60	1086.99	0.00	0.00	0.00	0.00	
2787.11	35.52	333.23	2452.28	1015.67	-512.40	1137.60	0.00	0.00	0.00	0.00	DROP
2800.00	35.14	333.23	2462.80	1022.33	-515.76	1145.06	-3.00	0.00	3.00	180.00	
2900.00	32.14	333.23	2546.05	1071.78	-540.71	1200.45	-3.00	0.00	3.00	180.00	
3000.00	29.14	333.23	2632.08	1117.27	-563.66	1251.40	-3.00	0.00	3.00	180.00	
3100.00	26.14	333.23	2720.66	1158.68	-584.55	1297.78	-3.00	0.00	3.00	180.00	
3200.00	23.14	333.23	2811.54	1195.90	-603.32	1339.46	-3.00	0.00	3.00	180.00	
3300.00	20.14	333.23	2904.49	1228.81	-619.93	1376.33	-3.00	0.00	3.00	180.00	
3400.00	17.14	333.23	2999.23	1257.34	-634.32	1408.29	-3.00	0.00	3.00	180.00	
3500.00	14.14	333.23	3095.52	1281.40	-646.46	1435.24	-3.00	0.00	3.00	180.00	
3600.00	11.14	333.23	3193.08	1300.94	-656.32	1457.12	-3.00	0.00	3.00	180.00	
3700.00	8.14	333.23	3291.66	1315.88	-663.86	1473.86	-3.00	0.00	3.00	180.00	
3800.00	5.14	333.23	3390.98	1326.20	-669.06	1485.41	-3.00	0.00	3.00	180.00	
3900.00	2.14	333.23	3490.77	1331.86	-671.92	1491.76	-3.00	0.00	3.00	180.00	
3971.25	0.00	333.23	3562.00	1333.05	-672.52	1493.08	-3.00	0.00	3.00	180.00	Int. Csg. Pt.
4000.00	0.00	333.23	3590.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
4100.00	0.00	333.23	3690.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
4200.00	0.00	333.23	3790.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
4300.00	0.00	333.23	3890.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
4400.00	0.00	333.23	3990.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
4500.00	0.00	333.23	4090.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
4600.00	0.00	333.23	4190.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
4700.00	0.00	333.23	4290.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
4800.00	0.00	333.23	4390.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
4900.00	0.00	333.23	4490.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
5000.00	0.00	333.23	4590.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
5100.00	0.00	333.23	4690.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
5200.00	0.00	333.23	4790.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
5300.00	0.00	333.23	4890.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
5400.00	0.00	333.23	4990.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
5500.00	0.00	333.23	5090.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
5600.00	0.00	333.23	5190.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
5700.00	0.00	333.23	5290.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
5800.00	0.00	333.23	5390.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
5900.00	0.00	333.23	5490.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
6000.00	0.00	333.23	5590.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
6100.00	0.00	333.23	5690.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
6200.00	0.00	333.23	5790.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
6300.00	0.00	333.23	5890.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
6400.00	0.00	333.23	5990.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
6500.00	0.00	333.23	6090.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
6600.00	0.00	333.23	6190.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
6700.00	0.00	333.23	6290.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	



# Weatherford International Ltd.

## PROPOSAL PLAN REPORT



Weatherford

Company: WILLIAMS PRODUCTION Date: 6/15/2009 Time: 18:03:31 Page: 3  
 Field: Rio Arriba Co. NM (NAD 83) Co-ordinate(N/E) Reference: Well: 181-D True North  
 Site: Rosa Unit #181-D Vertical (TVD) Reference: SITE 6282.0  
 Well: 181-D Section (VS) Reference: Well (0.00N,0.00E,333.23Az)  
 Wellpath: 1 Survey Calculation Method: Minimum Curvature Db: Sybase

### Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	Build deg/100ft	Turn deg/100ft	DLS deg/100ft	TFO deg	Comment
6800.00	0.00	333.23	6390.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
6900.00	0.00	333.23	6490.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
7000.00	0.00	333.23	6590.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
7100.00	0.00	333.23	6690.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
7200.00	0.00	333.23	6790.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
7300.00	0.00	333.23	6890.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
7400.00	0.00	333.23	6990.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
7500.00	0.00	333.23	7090.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
7600.00	0.00	333.23	7190.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
7700.00	0.00	333.23	7290.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
7800.00	0.00	333.23	7390.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
7900.00	0.00	333.23	7490.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
8000.00	0.00	333.23	7590.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
8100.00	0.00	333.23	7690.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
8200.00	0.00	333.23	7790.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
8300.00	0.00	333.23	7890.75	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	
8331.25	0.00	333.23	7922.00	1333.05	-672.52	1493.08	0.00	0.00	0.00	333.23	PBHL

### Targets

Name	Description Dip Dir	TVD ft	+N/S ft	+E/W ft	Map Northing ft	Map Easting ft	Latitude Deg Min Sec	Longitude Deg Min Sec
Rosa #12		0.00	-36.00	257.16	2150327.30	1291659.04	36 54 12.384 N	107 26 34.224 W
Int. Csg. Pt.		3562.00	1333.05	-672.52	2151707.88	1290746.56	36 54 25.920 N	107 26 45.670 W
-Plan hit target								
PBHL		7922.00	1333.05	-672.52	2151707.88	1290746.56	36 54 25.920 N	107 26 45.670 W
-Plan hit target								

### Formations

MD ft	TVD ft	Formations	Lithology	Dip Angle deg	Dip Direction deg
2608.60	2307.00	Ojo Alamo Ss.		0.00	0.00
2737.61	2412.00	Kirtland Sh.		0.00	0.00
3195.06	2807.00	Fruitland Fm.		0.00	0.00
3491.21	3087.00	Pictured Cliffs Ss.		0.00	0.00
3790.98	3382.00	Lewis Sh.		0.00	0.00
5371.25	4962.00	Cliff House Ss. Trans.		0.00	0.00
5681.25	5272.00	Cliff House Ss.		0.00	0.00
5731.25	5322.00	Menefee Fm.		0.00	0.00
5981.25	5572.00	Point Lookout Ss.		0.00	0.00
6286.25	5877.00	Mancos Sh.		0.00	0.00
7296.25	6887.00	Gallup Ss.		0.00	0.00
8026.25	7617.00	Greenhorn Ls.		0.00	0.00
8076.25	7667.00	Graneros Sh.		0.00	0.00
8201.25	7792.00	Dakota Ss.		0.00	0.00

### Annotation

MD ft	TVD ft	
400.00	400.00	KOP
1288.11	1232.29	HOLD
2787.11	2452.28	DROP
3971.25	3562.00	Int. Csg. Pt.
8331.24	7921.99	PBHL



# Weatherford International Ltd.

## PROPOSAL PLAN REPORT



Weatherford

Company:	WILLIAMS PRODUCTION	Date:	6/15/2009	Time:	18:03:31	Page:	4
Field:	Rio Arriba Co. NM (NAD 83)	Co-ordinate (NE) Reference:	Well: 181-D, True North				
Site:	Rosa Unit #181-D	Vertical (TVD) Reference:	SITE 6282.0				
Well:	181-D	Section (VS) Reference:	Well (0.00N, 0.00E, 333.23Azi)				
Wellpath:		Survey Calculation Method:	Minimum Curvature			Db:	Sybase

### Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
300.00	300.00	10.750	12.250	10 3/4"
3971.25	3562.00	7.625	8.500	7 5/8"

# Well Control Equipment Schematic for 2M Service

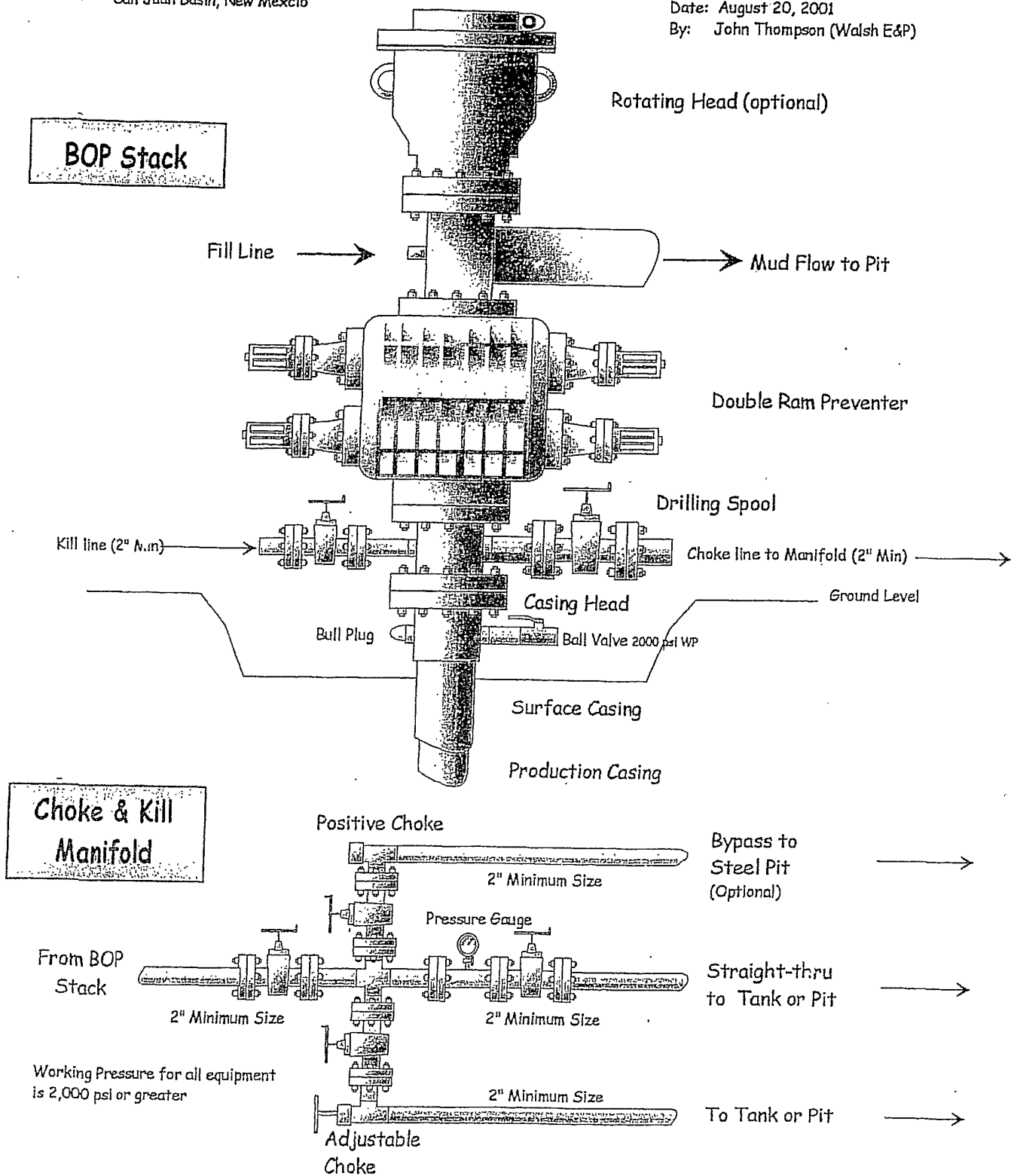
Attachment to Drilling Technical Program

## Exhibit #1 Typical BOP setup

Location: San Juan Basin, New Mexico

Date: August 20, 2001

By: John Thompson (Walsh E&P)



# **MULTI-POINT SURFACE USE PLAN**

## **Rosa Unit #181D**

**All Bureau of Land Management  
And  
All Bureau of Reclamation**

**General Conditions of Approval  
And  
Cultural Resource Requirements will Apply to this Action.**

1. Existing Roads:  
All existing roads used to access the proposed location are shown on attached maps (Figures 1.0 and 2.0) and shall be maintained to Bureau of Land Management (BLM) and current Gold Book standards.
2. Planned Access Roads:  
No new access road will be required to reach the proposed well pad, as it will be twinned with the existing Rosa Unit #s 12, 12C, and 181A well pad. The existing access roads will be upgraded, maintained, and eventually reclaimed as detailed in the approved COAs.
3. Location of Existing Wells:  
Attached map (Figure 2.0) shows existing wells within a one-mile radius of the proposed wells.
4. Location of Production Facilities:  
In the event of production, production facilities will be located on the drill pad. The actual placement of this equipment will be determined when the well's production characteristics can be evaluated after completion. Upon completion of drilling, the location and surrounding area will be cleared of all debris.

5. Water Supply:

- Water for drilling and completion operations will be hauled by truck from various water sources within the area, mainly from Navajo Lake, NM and produced water from locations close to the proposed location. Water haulers would be licensed and bonded as per BOR requirements. Reference BLM letter 3162.3-2.

6. Source of Construction Materials:

No additional construction materials will be required for the proposed well location.

7. Methods for Handling Waste Disposal:

a. Drilling and completion would use a closed-loop system, as per NMOCD requirements. The closed-loop system would be located in the southwestern corner of the well pad. Upon completion, the closed-loop system area and all areas of the well pad not needed for production will be ripped and reseeded with either a specified Farmington Field Office, Bureau of Land Management (FFO/BLM) seed mixture, or a Bureau of Reclamation seed mixture.

b. All garbage and trash will be placed in a metal trash basket. It will be hauled off and dumped in an approved landfill upon completion of operations.

c. Portable toilets will be provided and maintained during drilling operations. See Plat #3 for location.

8. Ancillary Facilities:

Ancillary facilities are to be based on well productivity. A 59.00-foot 4½" OD gas pipeline is anticipated for the proposed well. The pipeline will be entirely within the proposed and existing well pad disturbance. The Rosa #181D pipeline will tie into the existing Rosa Unit #12C Pipeline.

9. Well Site Layout:

A cross section of the drill pad with approximate cuts, fills, and pad orientation is attached as Plat #1. Location of drilling equipment and rig orientation is also attached as Plat #3.

## Plans for Restoration of Surface:

### Well Pad

- Utilize the existing 250-foot (north to south) by 195-foot (east to west) level well pad. No construction zone would be required for this well. The proposed well will be entirely contained within the existing Rosa Unit #s 12, 12C, and 181A well pad. No new disturbance will be required.
- No construction or drilling will be permitted during the winter closure period; 1<sup>st</sup> December through 31<sup>st</sup> March, for the Rosa Mesa Wildlife SDA.
  - All pits would meet State of New Mexico, Oil Conservation Division (NMOCD) pit guidelines and rules, NMAC 19.15.17.
  - Water haulers would be licensed and bonded as per Bureau of Reclamation requirements.
  - Drilling and completion would use a closed-loop system, as per NMOCD requirements. The closed-loop system would be located in the southwestern corner of the well pad.
  - All production equipment would be low profile.
  - Existing and proposed production equipment would be consolidated.
  - Existing and proposed production pits would be consolidated.
  - The original reserve pit area would be cleaned with a small dozer, creating a berm along the north side of the closed-loop system area. This berm would serve as a secondary containment.
  - Upon final reclamation of the closed-loop system area would be recontoured to the existing terrain.
  - All areas of the existing well pad would be recontoured to match the natural terrain, to the extent possible.
  - All areas that are used would be ripped and re-seeded.
  - All disturbed areas not needed for production would be seeded with a BOR specified seed mixture, containing native species only.
  - Above-ground structures would be painted to blend with the natural color of the landscape (Juniper Green Federal Standard 595a-17127).
  - Existing access road to the main road would be upgraded to meet Gold Book standards.
  - An additional access road may be constructed along the southeastern side of the well pad (between A' and B') to accommodate drilling and completion. This road would then be reclaimed as part of the cut slope.
  - All cultural resource stipulations would be followed.

- Well production activities would be in compliance with NTL 04-2 FFO, given the project location within a Noise Sensitive Area. and
- All disturbed areas not needed for production will be seeded with either a specified Farmington Field Office, Bureau of Land Management (FFO/BLM) seed mixture, or a Bureau of Reclamation seed mixture.

#### Pipeline Tie

- The proposed pipeline tie will be constructed entirely within the existing and proposed well pad disturbances.
- The pipeline will be owned and operated by Williams Four Corners, LLC, under a right-of-way (ROW) grant from the Bureau of Reclamation Mexico.
- There will be no new disturbance by the pipeline tie.

#### General

- Williams Production and Williams Field Services will be responsible for control of invasive species and noxious weeds within the reclaimed areas of the well pad, access road, and pipeline tie,
- All pits will be fenced to exclude livestock and wildlife,
- Pits that contain petroleum will be netted to exclude birds, especially any protected under the Migratory Bird Treaty Act,
- If impacts to management indicator species or migratory birds, nests, or eggs are observed during implementation, the FFO/BLM or the Bureau of Reclamation will be notified, and specific mitigation measures directed at the species' needs will be implemented under the direction of the FFO/BLM or the Bureau of Reclamation,
- All aspects of the proposed action will be in compliance with all applicable federal and State of New Mexico regulations, and
- All aspects of the proposed action will conform to Farmington Field Office Noise NTL (NTL 04-02 FFO) standards.

#### 11. Surface Ownership:

The surface ownership of the proposed well pad and well-tie pipeline is the Bureau of Reclamation.



12. Other Information:

The proposed project area is located on a mid-elevation west, southwestern facing terrace above the San Juan River Arm of Navajo Reservoir. The project area drains to the southwest into the San Juan River Arm of Navajo Reservoir (approximately 700 feet west of the proposed project area). Topography of the proposed project area consists of a smooth, gentle southwestern slope. No new disturbance would be required for the proposed well. Vegetation within the proposed project area is piñon/ juniper woodland with sagebrush shrubland. Understory vegetation is composed of big sagebrush, rabbitbrush, antelope bitterbrush, broom snakeweed, cheatgrass, galleta, blue grama and smooth brome. Crested wheatgrass and Russian thistle are present in previously disturbed areas.

All FFO/BLM and Bureau of Reclamation General Conditions of Approval will apply to this action.

There are no residents within a one-mile radius of the proposed action.

The proposed well pad will not impact any floodplains, riparian, springs, or stock ponds. There are no ephemeral washes that will be impacted.

The proposed Rosa Unit #181D Project has been surveyed by La Plata Archaeological Consultants. Copies of this report have been sent to the Bureau of Reclamation and the FFO/BLM.

13. Lessee's or Operator's Representative:

Larry Higgins  
Drilling COM  
P.O. Box 640  
Aztec, NM 87410  
Phone: (505) 634-4208  
(505) 320-4314

Figure 1: Vicinity Map  
Williams Production Company, LLC  
Proposed Rosa Unit No. 181D  
T31N, R06W, Section 15 NMPM  
Rio Arriba County, New Mexico

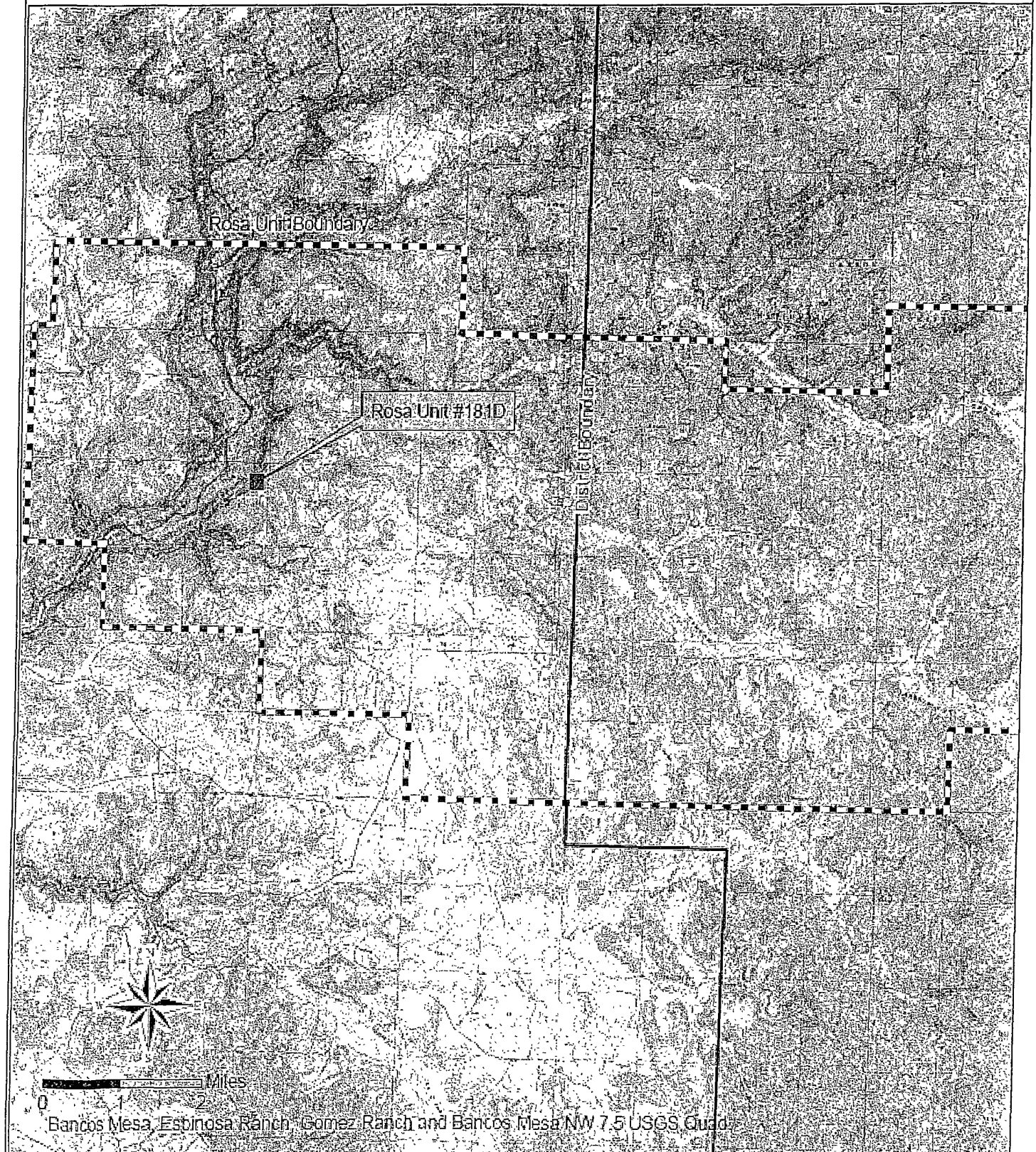
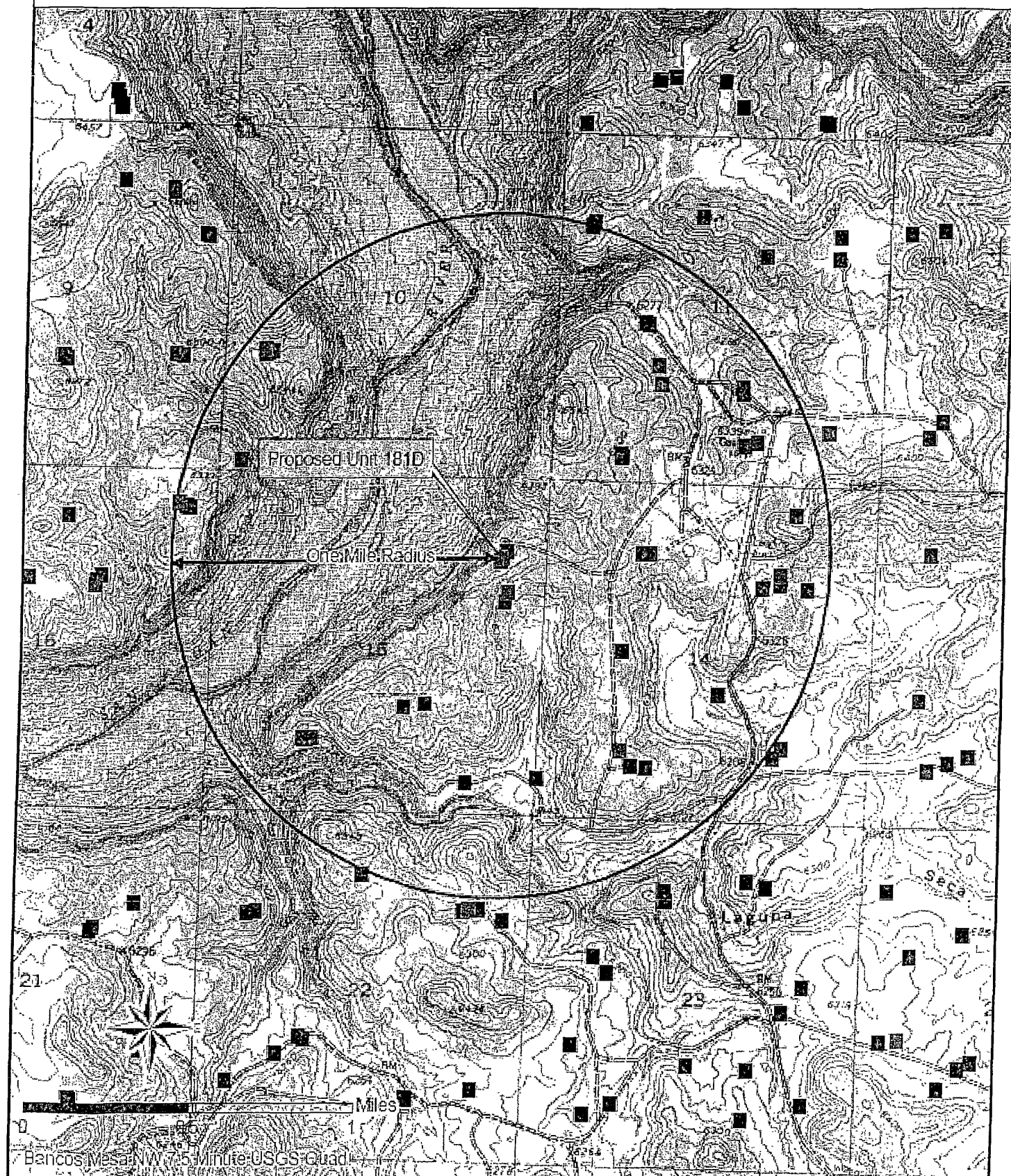
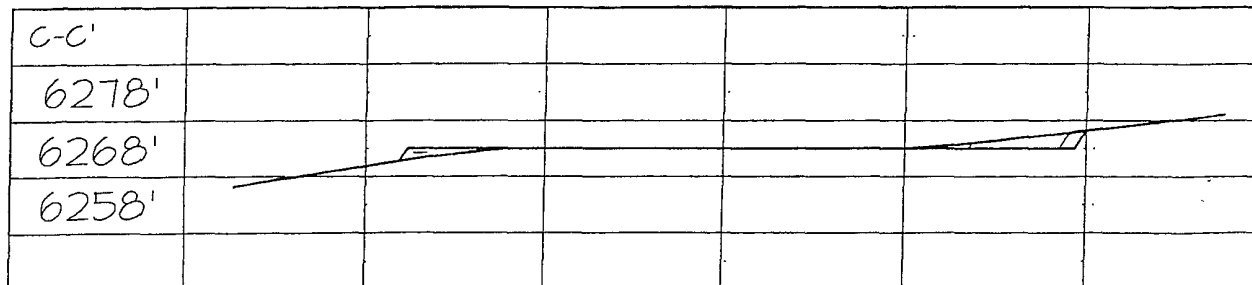
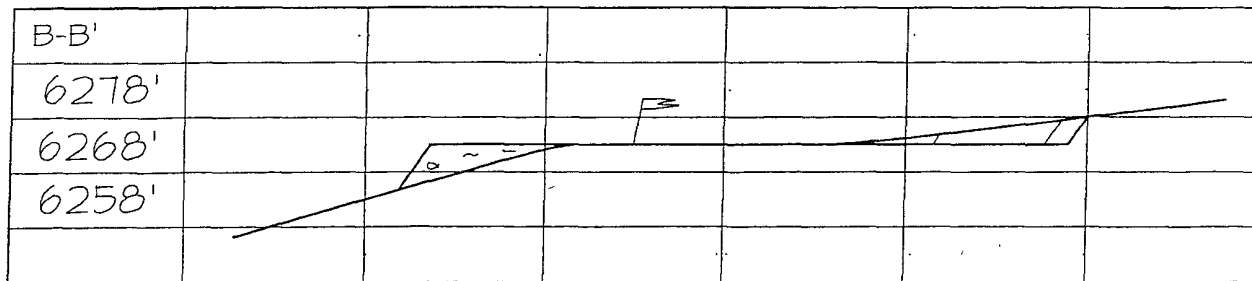
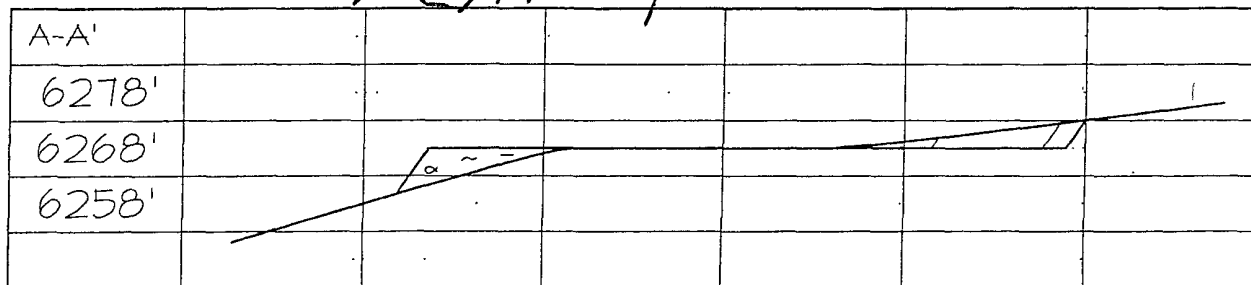
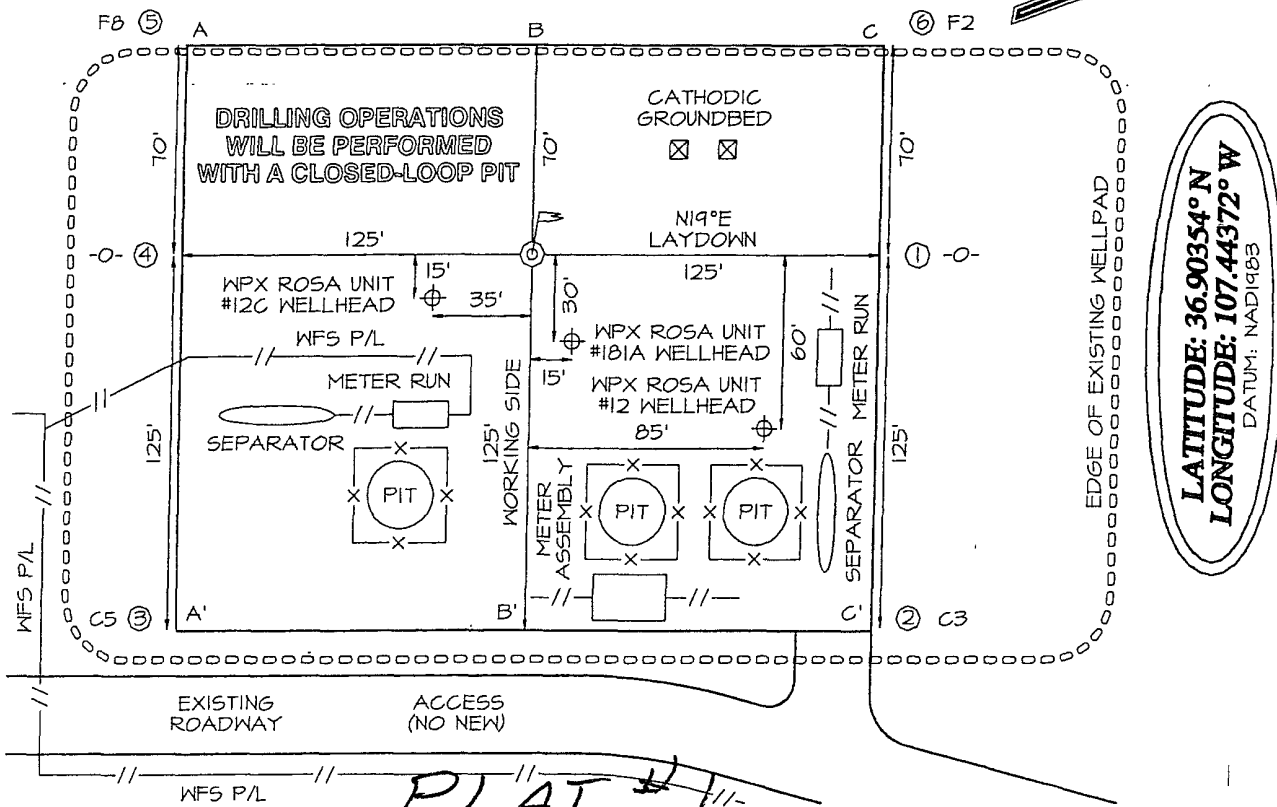


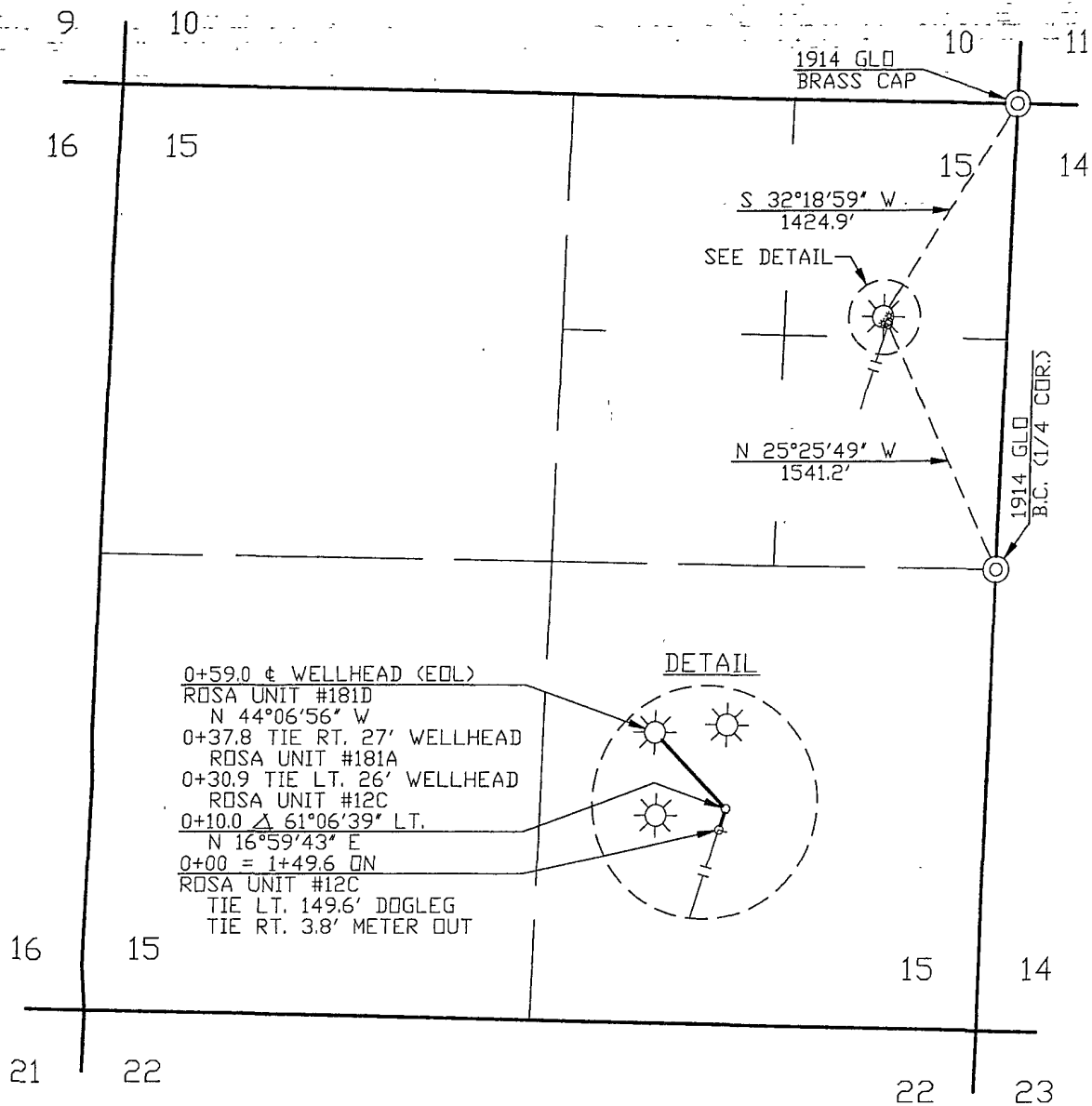
Figure 2: Project Area Map  
Williams Production Company, LLC  
Proposed Rosa Unit No. 181D  
T31N, R06W, Section 15 NMPM  
Rio Arriba County, New Mexico



**WILLIAMS PRODUCTION COMPANY ROSA UNIT #181D**  
**1230' FNL & 730' FEL, SECTION 15, T31N, R6W, NMPM**  
**RIO ARriba COUNTY, NEW MEXICO ELEVATION: 6268'**



NOTE: BEARINGS ARE BASED ON A GRID BEARING.  
ALONG THE EAST LINE OF THE NE 1/4 OF  
SECTION 15, T-31-N, R-6-W, NMPM  
BEARS: S 1°29'31" W - 2641.7'



0+59.0 ± WELLHEAD (EOL)  
ROSA UNIT #181D  
N 44°06'56" W  
0+37.8 TIE RT. 27' WELLHEAD  
ROSA UNIT #181A  
0+30.9 TIE LT. 26' WELLHEAD  
ROSA UNIT #12C  
0+10.0 Δ 61°06'39" LT.  
N 16°59'43" E  
0+00 = 1+49.6 ON  
ROSA UNIT #12C  
TIE LT. 149.6' DOGLEG  
TIE RT. 3.8' METER OUT

DETAIL

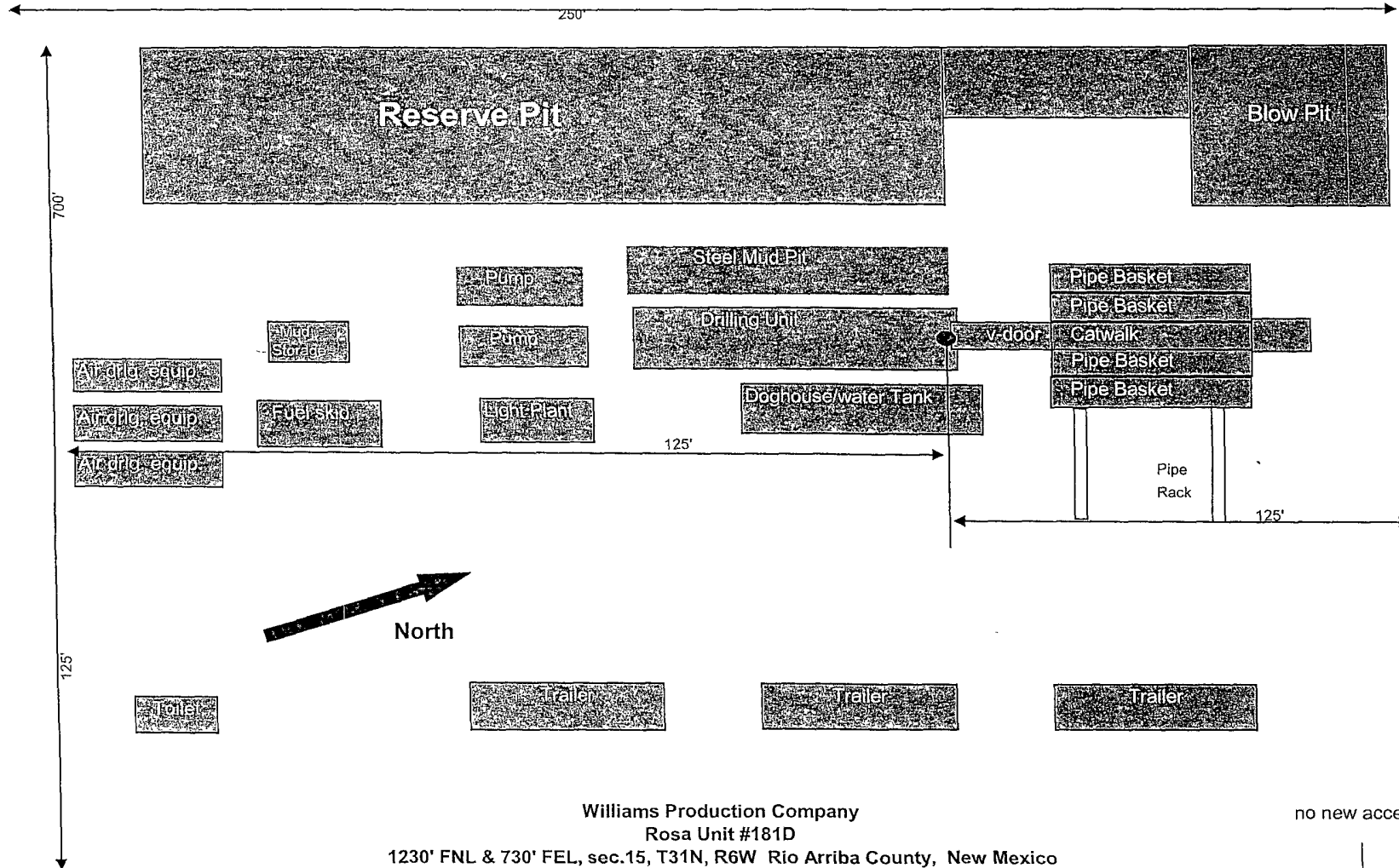
PLAT #2

PIPE DATA	PLAT #2									
OWNERSHIP	SUBDIVISION		OWNER		FEET	MILES	ACRES	RODS	R.O.W. WIDTH	
	0+00 TO 0+59.0		BLM/BOR		59.0	0.011	0.054	3.576	40'	
REVISION	2	6/12/09	HS	LINE CHANGE (5/24/09)			PB			
	1	01/26/09	LB	ISSUED FOR REVIEW			PB			
	NO.	DATE	BY	DESCRIPTION	W.D.NO.	CHK.	APP.	NO.	DATE	BY
INFO				DRAFTING	BY	DATE	STATE: NEW MEXICO			
R/W #1 07489				DRAWN BY	LB	01/26/09	COUNTY: RIO ARriba			
METER #1				CHECKED BY	PB	01/30/09	WILLIAMS FOUR CORNERS, LLC <i>Williams</i>			
SURVEYED: 11/29/08				APPROVED BY			ONE OF THE WILLIAMS COMPANIES			
REF DWG. 48A765.0-133-1				ENGINEER	BY	DATE	SAN JUAN GATHERING SYSTEM			
				DESIGNED BY			WPX - ROSA UNIT #181D			
				PROJ. APPROVED			(STAKED FOOTAGES 1230' FNL, 730' FEL)			
							SEC. 15, T-31-N, R-6-W, NMPM			
							0+00 = 1+49.6 ON ROSA UNIT #12C			
							SCALE: 1" = 1000'			
							DWG NO. 48A765.0-164-1			
							SHEET 1 OF 1			
							REV 2			



# Plat #3 Location Diagram

Location Dimensions 195'x250'

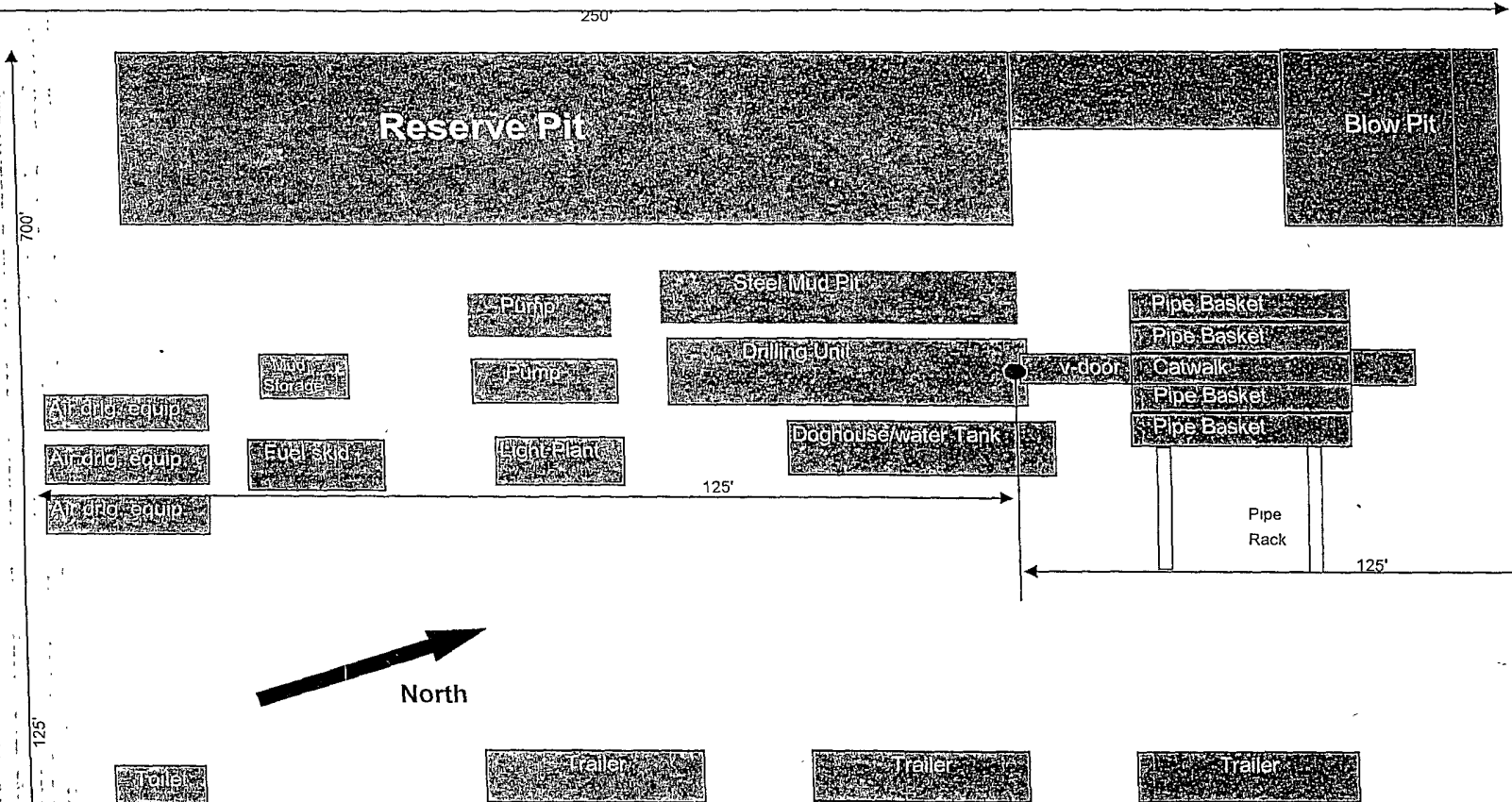


Williams Production Company  
Rosa Unit #181D

1230' FNL & 730' FEL, sec.15, T31N, R6W Río Arriba County, New Mexico

# Plat #3 Location Diagram

Location Dimensions 195'x250'



Williams Production Company  
Rosa Unit #181D

1230' FNL & 730' FEL, sec.15, T31N, R6W Rio Arriba County, New Mexico

no new access