

RECEIVED

MAR 14 2011

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Farmington Field Office
Bureau of Land Management

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMSF-078767
6. If Indian, Allottee or Tribe Name

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

Rosa Unit NMNM-78407A-MV

8. Lease Name and Well No. NMNM-78407X-DK
Rosa Unit #72C

9. API Well No.

30-039-31046

10. Field and Pool, or Exploratory

Blanco Mesa Verde / Basin Dakota

11. Sec., T., R., M., or Blk. and Survey or Area

Section 6, 31N, 5W

12. County or Parish

Rio Arriba

13. State

NM

17. Spacing Unit dedicated to this well

264.56 (entire section)

20. BLM/BIA Bond No. on file

UT0000-8000178

23. Estimated duration

1 month

24. Attachments

1a. Type of Work: ☒ DRILL ☐ REENTER

1b. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other ☐ Single Zone ☒ 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) 634-4206

4. Location of Well (Report location clearly and in accordance with any State requirements. *)

At surface K 1675' FSL & 745' FWL Section 6, T31N., R5W

At proposed prod. zone N 990' FSL & 950' FWL Section 6, T31N R5W

14. Distance in miles and direction from nearest town or post office*

approximately 27 miles northeast of Blanco, New Mexico

15. Distance from proposed*

location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)

750'

16. No. of Acres in lease

2,518.040

18. Distance from proposed location*

to nearest well, drilling, completed, applied for, on this lease, ft.

30' Rosa 241A

19. Proposed Depth

8388'

21. Elevations (Show whether DF, KDB, RT, GL, etc.)

6,441' GR

22. Approximate date work will start*

April 15, 2011

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

Ben Mitchell

Name (Printed/Typed)

Ben Mitchell

Date

3/14/2011

Title

Regulatory Specialist

Approved by (Signature)

[Signature]
AFM

Name (Printed/Typed)

Office

FFO

Date

5/17/11

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 Blanco Mesa Verde / Basin Dakota formations 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 187.1 feet would be required for this well.

**NOTIFY AZTEC OCD 24 HRS.
PRIOR TO CASING & CEMENT**
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

Hold C104

for Directional Survey
and "As Drilled" plat

JUN 02 2011

NMOCD

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

RCVD MAY 20 '11
OIL CONS. DIV.

DIST. 3

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

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 14th day of March, 2011.

Name Ben Mitchell

Position Title Regulatory Specialist

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

Telephone (505) 634-4206

Field representative (if not above signatory) _____

E-mail ben.mitchell@williams.com

Date: 3-15-2011



Ben Mitchell
Regulatory Specialist
Williams Production Company, LLC

District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

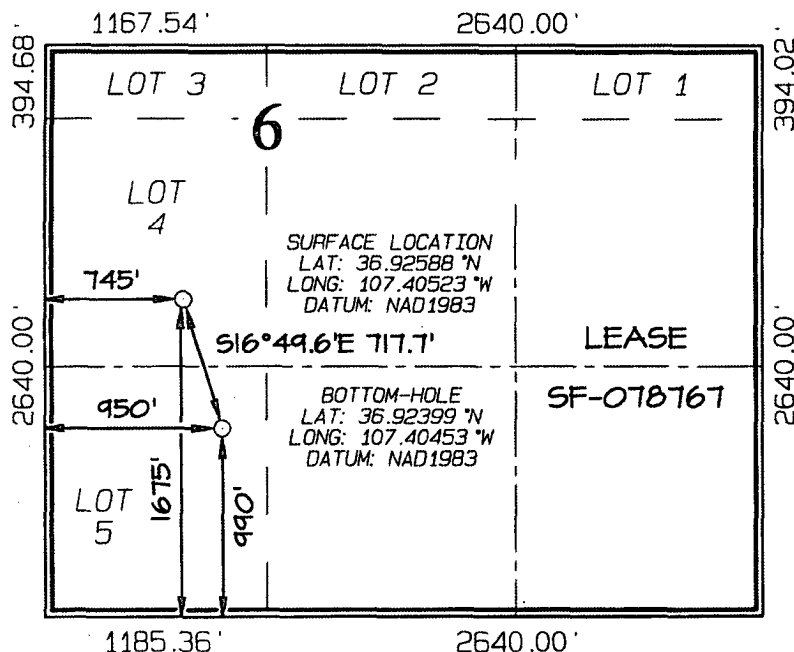
OIL CONSERVATION DIVISION
1220 South St. Francis
Santa Fe, NM 87505

MAR 14 2011 Submit

Form C-102
Revised October 12, 2005
Instructions on back
appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

Certificate Number 15269





WILLIAMS PRODUCTION COMPANY

Operations Plan

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

DATE: 2/15/2011 **FIELD:** Basin DK/ BlancoMV
WELL NAME: Rosa #72C **SURFACE:** BLM
BH LOCATION: SESW Sec 6-31N-5W **MINERALS:** BLM
Rio Arriba, NM
ELEVATION: 6,442' GR **LEASE #** SF-078767
MEASURED DEPTH: 8,388'

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

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

Name		TVD	MD		Name		TVD	MD
Ojo Alamo		2,520	2,571		Point Lookout		5,735	5,813
Kirtland		2,625	2,679		Mancos		6,015	6,093
Fruitland		3,050	3,116		Gallup		7,115	7,193
Pictured Cliffs		3,285	3,357		Greenhorn		7,825	7,903
Lewis		3,580	3,656		Graneros		7,885	7,963
Cliff House		5,495	5,573		Dakota		8,010	8,088
Menefee		5,540	5,618		Morrison		8,260	8,338
					TD		8,310	8,388

B. **MUD LOGGING PROGRAM:** Mudlogger on location from intermediate csg to TD. Mud logger to pick TD.

C. **LOGGING PROGRAM:** HRI/Temp/SDL/DSN from intermediate casing to TD

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" 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" 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 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	3,838	7	23	K-55
Longstring	6 1/4	8,388	4 1/2	11.6	P-110

B. FLOAT EQUIPMENT:

1. SURFACE CASING: 9-5/8" notched regular pattern guide shoe. Run (1) standard centralizer on each of the bottom (4) joints of Surface Casing.
2. INTERMEDIATE CASING: 7" cement nose guide shoe with a self-fill insert float. Place float collar one joint above the shoe. Install (1) Turbulent centralizer on each of the bottom (3) joints and one standard centralizer every (3) joints to 2,500 ft. Run (1) Turbulent centralizer at 2,700 ft., 2,500 ft., 2,300ft., 2,000ft., 1,500 ft., and 1,000 ft. (NTL-FRA 90-1).
3. PRODUCTION LINER / CASING: 4-1/2" whirler type cement nose guide shoe with a latch collar on top of 20' bottom joint. Place marker joint above 5,400'. Place centralizers as needed across selected production intervals.

C. CEMENTING:

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

1. SURFACE: Slurry: 290sx (521 cu.ft.) of "Type III" + 2% Cal-Seal 60 + 1/4 # 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 600psi.
2. INTERMEDIATE: Lead - 550 sx (1498 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 = 1615 cu.ft. Bump Plug to 1,500 psi. Notify engineering if cement is not circulated to surface. WOC 12 hours. Test csg to 1500psi.
3. PRODUCTION CASING: 10 bbl Gelled Water spacer. Cement: 610 sx (853 ft³) 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 ft³/sk, Weight = 13.1 #/gal.). Displace cement at a minimum of 8 BPM. Total volume (853) ft³. WOC 12 hours.

IV. IV COMPLETION**A. CBL**

1. 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

1. Pressure test 4-1/2" casing to 6000 psi max, hold at 1500 psi for 30 minutes.

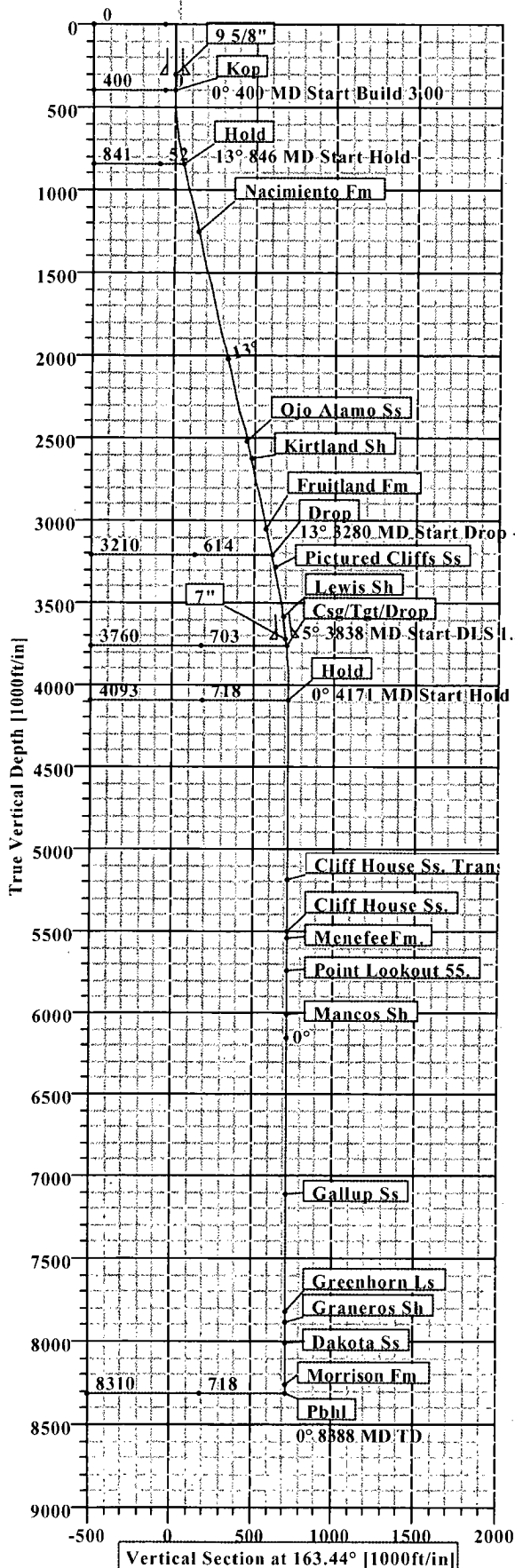
C. STIMULATION

1. Stimulate Dakota with approximately 5000# 100 mesh sand and 120,000# Ottawa Sand in slick water.
2. Isolate Dakota with a RBP.
3. Stimulate Point Lookout with approximately 40,000# 20/40 Ottawa sand in slick water.
4. Isolate Point Lookout with a RBP.
5. Perforate the Menefee/Cliff House as determined from the open hole logs.
6. Stimulate with approximately 40,000# 20/40 Ottawa sand in slick water.
7. Test each zone before removing bridge plugs.



Rosa Unit 72C RIO ARRIBA CO. NM

KB ELEV: 6445
GL ELEV: 6442



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	163.44	0.00	0.00	0.00	0.00	0.00	0.00	
2	400.00	0.00	163.44	400.00	0.00	0.00	0.00	0.00	0.00	
3	845.53	13.37	163.44	841.50	-49.58	14.74	3.00	163.44	51.73	
4	3279.88	13.37	163.44	3209.92	-588.99	175.14	0.00	0.00	614.47	
5	3837.60	5.00	163.44	3760.00	-674.22	200.49	1.50	180.00	703.40	Csg Tgt
6	4170.93	0.00	163.41	4092.91	-688.15	204.63	1.50	-180.00	717.94	
7	8388.03	0.00	163.41	8310.00	-688.16	204.63	0.00	0.00	717.94	Pbhl

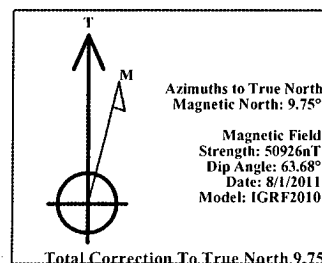
WELL DETAILS							
Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
72C	0.00	0.00	2158361.91	1302754.78	36°55'33.168N	107°24'18.828W	N/A

TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape	
Csg Tgt	3760.00	-674.22	200.49	36°55'26.502N	107°24'16.359W	Point	
Pbhl	8310.00	-688.16	204.63	36°55'26.364N	107°24'16.308W	Point	

FORMATION TOP DETAILS			
No.	TVDPath	MDPath	Formation
1	1255.00	1270.54	Nacimiento Fm
2	2520.00	2570.76	Ojo Alamo Ss
3	2625.00	2678.68	Kirtland Sh
4	3050.00	3115.51	Fruitland Fm
5	3285.00	3356.88	Pictured Cliffs Ss
6	3580.00	3656.47	Lewis Sh
7	5190.00	5268.03	Cliff House Ss. Trans
8	5495.00	5573.03	Cliff House Ss.
9	5540.00	5618.03	Menefee Fm.
10	5735.00	5813.03	Point Lookout 55.
11	6015.00	6093.03	Mancos Sh
12	7115.00	7193.03	Gallup Ss
13	7825.00	7903.03	Greenhorn Ls
14	7885.00	7963.03	Graneros Sh
15	8010.00	8088.03	Dakota Ss
16	8260.00	8338.03	Morrison Fm

CASING DETAILS				
No.	TVD	MD	Name	Size
1	300.00	300.00	9 5/8"	9.625
2	3721.00	3798.44	7"	7.000

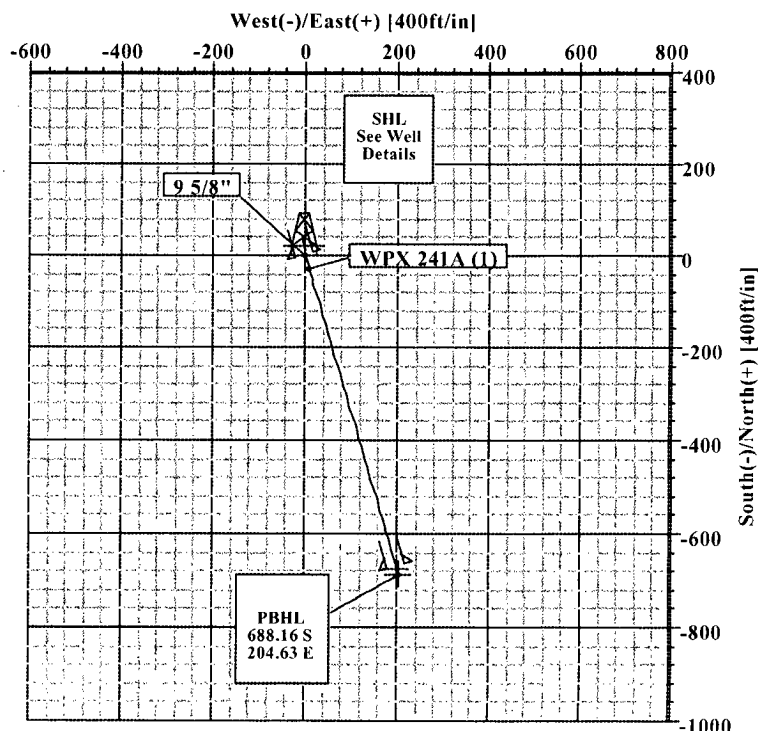
SITE DETAILS	
Rosa Unit 72C	
Site Centre Latitude: 36°55'33.168N	
Longitude: 107°24'18.828W	
Ground Level: 6441.00	
Positional Uncertainty: 0.00	
Convergence: -0.69	



LEGEND	
WPX 241A (1)	
1	
Plan #1	



Weatherford





Weatherford International Ltd.

WFT Plan Report Lat, Long

**Weatherford**

Company: Williams Production		Date: 2/10/2011	Time: 09:02:10	Page: 1
Field: RIO ARRIBA CO. NM (NAD.83)		Co-ordinate(NE) Reference: Well: 72C, True North		
Site: Rosa Unit 72C		Vertical (TVD) Reference: SITE 6445.0		
Well: 72C		Section (VS) Reference: Well (0.00N,0.00E,163.44Azi)		
Wellpath: 1		Survey Calculation Method: Minimum Curvature	Db: Sybase	

Plan: Plan #1	Date Composed: 2/10/2011
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: IGRF2010

Site: Rosa Unit 72C	
Site Position:	Northings: 2158361.91 ft
From: Geographic	Easting: 1302754.78 ft
Position Uncertainty: 0.00 ft	Latitude: 36 55 33.168 N
Ground Level: 6441.00 ft	Longitude: 107 24 18.828 W
	North Reference: True
	Grid Convergence: -0.69 deg

Well: 72C		Slot Name:	
Well Position:	+N/-S 0.00 ft	Northings: 2158361.91 ft	Latitude: 36 55 33.168 N
	+E/-W 0.00 ft	Easting : 1302754.78 ft	Longitude: 107 24 18.828 W
Position Uncertainty:	0.00 ft		

Wellpath: 1		Drilled From: Surface	
Current Datum: SITE		Tie-on Depth: 0.00 ft	
Magnetic Data: 8/1/2011		Above System Datum: Mean Sea Level	
Field Strength: 50926 nT		Declination: 9.75 deg	
Vertical Section: Depth From (TVD)		Mag Dip Angle: 63.68 deg	
		+N/-S ft	
		+E/-W ft	
		Direction deg	
0.00		0.00	
0.00		0.00	
0.00		163.44	

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	163.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	163.44	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
845.53	13.37	163.44	841.50	-49.58	14.74	3.00	3.00	0.00	163.44	
3279.88	13.37	163.44	3209.92	-588.99	175.14	0.00	0.00	0.00	0.00	
3837.60	5.00	163.44	3760.00	-674.22	200.49	1.50	-1.50	0.00	180.00	Csg Tgt
4170.93	0.00	163.41	4092.91	-688.15	204.63	1.50	-1.50	-0.01	-180.00	
8388.03	0.00	163.41	8310.00	-688.16	204.63	0.00	0.00	0.00	0.00	Pbhl

Survey															
MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	Lat	Min	Sec	Long	Min	Sec	Comment	
400.00	0.00	163.44	400.00	0.00	0.00	0.00	0.00	36	55	33.168	107	24	18.828	Kop	
500.00	3.00	163.44	499.95	-2.51	0.75	2.62	3.00	36	55	33.143	107	24	18.819		
600.00	6.00	163.44	599.63	-10.03	2.98	10.46	3.00	36	55	33.069	107	24	18.791		
700.00	9.00	163.44	698.77	-22.54	6.70	23.51	3.00	36	55	32.945	107	24	18.745		
800.00	12.00	163.44	797.08	-40.00	11.90	41.74	3.00	36	55	32.772	107	24	18.682		
845.53	13.37	163.44	841.50	-49.58	14.74	51.73	3.00	36	55	32.678	107	24	18.646	Hold	
900.00	13.37	163.44	894.49	-61.65	18.33	64.32	0.00	36	55	32.558	107	24	18.602		
1000.00	13.37	163.44	991.79	-83.81	24.92	87.44	0.00	36	55	32.339	107	24	18.521		
1100.00	13.37	163.44	1089.08	-105.97	31.51	110.56	0.00	36	55	32.120	107	24	18.440		
1200.00	13.37	163.44	1186.37	-128.13	38.10	133.67	0.00	36	55	31.901	107	24	18.359		
1270.54	13.37	163.44	1255.00	-143.76	42.75	149.98	0.00	36	55	31.747	107	24	18.302	Nacimiento	
1300.00	13.37	163.44	1283.66	-150.29	44.69	156.79	0.00	36	55	31.682	107	24	18.278		
1400.00	13.37	163.44	1380.95	-172.44	51.28	179.91	0.00	36	55	31.463	107	24	18.197		
1500.00	13.37	163.44	1478.24	-194.60	57.87	203.02	0.00	36	55	31.244	107	24	18.115		
1600.00	13.37	163.44	1575.53	-216.76	64.46	226.14	0.00	36	55	31.025	107	24	18.034		



Weatherford International Ltd.

WFT Plan Report Lat, Long

**Weatherford**

Company: Williams Production
Field: RIO ARRIBA CO. NM (NAD 83)
Site: Rosa Unit 72C
Well: 72C
Wellpath: 1

Date: 2/10/2011 Time: 09:02:10 Page: 2
Co-ordinate(NE) Reference: Well: 72C, True North
Vertical (TVD) Reference: SITE 6445.0
Section (VS) Reference: Well (0.00N,0.00E,163.44Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	Lat	Min	Sec	Long	Min	Sec	Comment
1700.00	13.37	163.44	1672.83	-238.92	71.05	249.26	0.00	36	55	30.806	107	24	17.953	
1800.00	13.37	163.44	1770.12	-261.08	77.63	272.37	0.00	36	55	30.587	107	24	17.872	
1900.00	13.37	163.44	1867.41	-283.23	84.22	295.49	0.00	36	55	30.368	107	24	17.791	
2000.00	13.37	163.44	1964.70	-305.39	90.81	318.61	0.00	36	55	30.149	107	24	17.710	
2100.00	13.37	163.44	2061.99	-327.55	97.40	341.72	0.00	36	55	29.929	107	24	17.629	
2200.00	13.37	163.44	2159.28	-349.71	103.99	364.84	0.00	36	55	29.710	107	24	17.547	
2300.00	13.37	163.44	2256.57	-371.86	110.58	387.96	0.00	36	55	29.491	107	24	17.466	
2400.00	13.37	163.44	2353.87	-394.02	117.17	411.07	0.00	36	55	29.272	107	24	17.385	
2500.00	13.37	163.44	2451.16	-416.18	123.76	434.19	0.00	36	55	29.053	107	24	17.304	
2570.76	13.37	163.44	2520.00	-431.86	128.42	450.55	0.00	36	55	28.898	107	24	17.247	Ojo Alamo S
2600.00	13.37	163.44	2548.45	-438.34	130.35	457.31	0.00	36	55	28.834	107	24	17.223	
2678.68	13.37	163.44	2625.00	-455.77	135.53	475.50	0.00	36	55	28.662	107	24	17.159	Kirtland Sh
2700.00	13.37	163.44	2645.74	-460.50	136.93	480.42	0.00	36	55	28.615	107	24	17.142	
2800.00	13.37	163.44	2743.03	-482.65	143.52	503.54	0.00	36	55	28.396	107	24	17.061	
2900.00	13.37	163.44	2840.32	-504.81	150.11	526.66	0.00	36	55	28.177	107	24	16.979	
3000.00	13.37	163.44	2937.61	-526.97	156.70	549.77	0.00	36	55	27.958	107	24	16.898	
3100.00	13.37	163.44	3034.91	-549.13	163.29	572.89	0.00	36	55	27.739	107	24	16.817	
3115.51	13.37	163.44	3050.00	-552.56	164.31	576.48	0.00	36	55	27.705	107	24	16.805	Fruitland F
3200.00	13.37	163.44	3132.20	-571.29	169.88	596.01	0.00	36	55	27.520	107	24	16.736	
3279.88	13.37	163.44	3209.92	-588.99	175.14	614.47	0.00	36	55	27.345	107	24	16.671	Drop
3300.00	13.06	163.44	3229.50	-593.39	176.45	619.07	1.50	36	55	27.301	107	24	16.655	
3356.88	12.21	163.44	3285.00	-605.32	180.00	631.52	1.50	36	55	27.183	107	24	16.611	Pictured C
3400.00	11.56	163.44	3327.20	-613.84	182.53	640.40	1.50	36	55	27.099	107	24	16.580	
3500.00	10.06	163.44	3425.42	-631.82	187.88	659.16	1.50	36	55	26.921	107	24	16.514	
3600.00	8.56	163.44	3524.10	-647.33	192.49	675.35	1.50	36	55	26.768	107	24	16.458	
3656.47	7.72	163.44	3580.00	-655.00	194.77	683.34	1.50	36	55	26.692	107	24	16.429	Lewis Sh
3700.00	7.06	163.44	3623.17	-660.36	196.37	688.94	1.50	36	55	26.639	107	24	16.410	
3798.44	5.59	163.44	3721.00	-670.76	199.46	699.79	1.50	36	55	26.536	107	24	16.372	7"
3800.00	5.56	163.44	3722.56	-670.90	199.50	699.94	1.50	36	55	26.535	107	24	16.371	
3837.60	5.00	163.44	3760.00	-674.22	200.49	703.40	1.50	36	55	26.502	107	24	16.359	Csg Tgt
3900.00	4.06	163.44	3822.20	-678.95	201.89	708.33	1.50	36	55	26.455	107	24	16.342	
4000.00	2.56	163.44	3922.03	-684.49	203.54	714.11	1.50	36	55	26.400	107	24	16.321	
4100.00	1.06	163.44	4021.98	-687.52	204.44	717.28	1.50	36	55	26.370	107	24	16.310	
4170.93	0.00	163.41	4092.91	-688.15	204.63	717.94	1.50	36	55	26.364	107	24	16.308	Hold
4200.00	0.00	163.41	4121.97	-688.15	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
4300.00	0.00	163.41	4221.97	-688.15	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
4400.00	0.00	163.41	4321.97	-688.15	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
4500.00	0.00	163.41	4421.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
4600.00	0.00	163.41	4521.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
4700.00	0.00	163.41	4621.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
4800.00	0.00	163.41	4721.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
4900.00	0.00	163.41	4821.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
5000.00	0.00	163.41	4921.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
5100.00	0.00	163.41	5021.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
5200.00	0.00	163.41	5121.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
5268.03	0.00	163.41	5190.00	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	Cliff House
5300.00	0.00	163.41	5221.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
5400.00	0.00	163.41	5321.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
5500.00	0.00	163.41	5421.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
5573.03	0.00	163.41	5495.00	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	Cliff House
5600.00	0.00	163.41	5521.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
5618.03	0.00	163.41	5540.00	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	Menefee Fm



Weatherford International Ltd.

WFT Plan Report Lat, Long



Weatherford

Company: Williams Production Date: 2/10/2011 Time: 09:02:10 Page: 3
Field: RIO ARRIBA CO. NM (NAD 83) Co-ordinate(NE) Reference: Well: 72C, True North
Site: Rosa Unit 72C Vertical (TVD) Reference: SITE 6445.0
Well: 72C Section (VS) Reference: Well (0.00N,0.00E,163.44Azi)
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	DLS deg/100ft	Lat	Min	Sec	Long	Min	Sec	Comment
5700.00	0.00	163.41	5621.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
5800.00	0.00	163.41	5721.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
5813.03	0.00	163.41	5735.00	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	Point Looko
5900.00	0.00	163.41	5821.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
6000.00	0.00	163.41	5921.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
6093.03	0.00	163.41	6015.00	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	Mancos Sh
6100.00	0.00	163.41	6021.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
6200.00	0.00	163.41	6121.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
6300.00	0.00	163.41	6221.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
6400.00	0.00	163.41	6321.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
6500.00	0.00	163.41	6421.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
6600.00	0.00	163.41	6521.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
6700.00	0.00	163.41	6621.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
6800.00	0.00	163.41	6721.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
6900.00	0.00	163.41	6821.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
7000.00	0.00	163.41	6921.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
7100.00	0.00	163.41	7021.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
7193.03	0.00	163.41	7115.00	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	Gallup Ss
7200.00	0.00	163.41	7121.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
7300.00	0.00	163.41	7221.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
7400.00	0.00	163.41	7321.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
7500.00	0.00	163.41	7421.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
7600.00	0.00	163.41	7521.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
7700.00	0.00	163.41	7621.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
7800.00	0.00	163.41	7721.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
7900.00	0.00	163.41	7821.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
7903.03	0.00	163.41	7825.00	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	Greenhorn L
7963.03	0.00	163.41	7885.00	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	Graneros Sh
8000.00	0.00	163.41	7921.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
8088.03	0.00	163.41	8010.00	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	Dakota Ss
8100.00	0.00	163.41	8021.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
8200.00	0.00	163.41	8121.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
8300.00	0.00	163.41	8221.97	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	
8338.03	0.00	163.41	8260.00	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	Morrison Fm
8388.03	0.00	163.41	8310.00	-688.16	204.63	717.94	0.00	36	55	26.364	107	24	16.308	Pbhl

Targets

Name	Description	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	Latitude Deg Min Sec	Longitude Deg Min Sec
Csg Tgt	-Plan hit target	3760.00	-674.22	200.49	2157685.31	1302947.08	36 55 26.502 N	107 24 16.359 W
Pbhl	-Plan hit target	8310.00	-688.16	204.63	2157671.32	1302951.06	36 55 26.364 N	107 24 16.308 W

Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
300.00	300.00	9.625	12.250	9 5/8"
3798.44	3721.00	7.000	8.500	7"



Weatherford International Ltd.

WFT Plan Report Lat, Long



Weatherford

Company: Williams Production Date: 2/10/2011 Time: 09:02:10 Page: 4
Field: RIO ARRIBA CO. NM (NAD 83) Co-ordinate(NE) Reference: Well: 72C, True North
Site: Rosa Unit 72C Vertical (TVD) Reference: SITE 6445.0
Well: 72C Section (VS) Reference: Well (0.00N,0.00E,163.44Azi)
Wellpath: 1 Survey Calculation Method: Minimum Curvature Db: Sybase

Formations

MD ft	TVD ft	Formations	Lithology	Dip Angle deg	Dip Direction deg
1270.54	1255.00	Nacimiento Fm		0.00	0.00
2570.76	2520.00	Ojo Alamo Ss		0.00	0.00
2678.68	2625.00	Kirtland Sh		0.00	0.00
3115.51	3050.00	Fruitland Fm		0.00	0.00
3356.88	3285.00	Pictured Cliffs Ss		0.00	0.00
3656.47	3580.00	Lewis Sh		0.00	0.00
5268.03	5190.00	Cliff House Ss. Trans		0.00	0.00
5573.03	5495.00	Cliff House Ss.		0.00	0.00
5618.03	5540.00	Menefee Fm.		0.00	0.00
5813.03	5735.00	Point Lookout 55.		0.00	0.00
6093.03	6015.00	Mancos Sh		0.00	0.00
7193.03	7115.00	Gallup Ss		0.00	0.00
7903.03	7825.00	Greenhorn Ls		0.00	0.00
7963.03	7885.00	Graneros Sh		0.00	0.00
8088.03	8010.00	Dakota Ss		0.00	0.00
8338.03	8260.00	Morrison Fm		0.00	0.00

Annotation

MD ft	TVD ft	
400.00	400.00	Kop
845.53	841.50	Hold
3279.88	3209.91	Drop
3837.60	3760.00	Csg/Tgt/Drop
4170.93	4092.90	Hold
8388.03	8310.00	Pbhl



Weatherford International Ltd.

Anticollision Report



Weatherford

Company: Williams Production Date: 2/10/2011 Time: 09:15:41 Page: 1
 Field: RIO ARRIBA CO. NM (NAD 83)
 Reference Site: Rosa Unit 72C Co-ordinate(NE) Reference: Well: 72C; True North
 Reference Well: 72C Vertical (TVD) Reference: SITE 6445.0
 Reference Wellpath: 1 Db: Sybase

NO GLOBAL SCAN: Using user defined selection & scan criteria
 Interpolation Method: MD Interval: 100.00 ft
 Depth Range: 0.00 to 8388.03 ft
 Maximum Radius: 10000.00 ft

Reference: Plan: Plan #1
 Error Model: ISCWSA Ellipse
 Scan Method: Closest Approach 3D
 Error Surface: Ellipse

Plan: Plan #1
 Principal: Yes

Date Composed: 2/10/2011
 Version: 1
 Tied-to: From Surface

Summary

Site	Offset Wellpath	Wellpath	Reference MD ft	Offset MD ft	Ctr-Ctr Distance ft	Edge Distance ft	Separation Factor	Warning
Rosa Unit 72C	WPX 241A	1 V0	600.00	600.31	41.02	39.11	21.48	

Site: Rosa Unit 72C
 Well: WPX 241A
 Wellpath: 1 V0

Inter-Site Error: 0.00 ft

Reference MD ft	TVD ft	Offset MD ft	TVD ft	Semi-Major Axis Ref ft	Offset ft	TFO-HS deg	Offset Location North ft	East ft	Ctr-Ctr Distance ft	Edge Distance ft	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	351.00	34.92	-5.53	35.36			No Data
100.00	100.00	100.09	100.09	0.11	0.11	351.01	34.79	-5.50	35.22	35.00	160.04	
200.00	200.00	200.18	200.18	0.33	0.23	351.05	34.41	-5.42	34.83	34.27	62.52	
300.00	300.00	300.27	300.27	0.56	0.34	351.11	33.76	-5.28	34.17	33.28	38.22	
400.00	400.00	400.36	400.35	0.78	0.46	351.19	32.86	-5.09	33.26	32.03	27.02	
500.00	499.95	500.42	500.41	1.01	0.57	187.28	31.70	-4.85	34.67	33.10	22.08	
600.00	599.63	600.31	600.28	1.25	0.69	186.01	30.29	-4.55	41.02	39.11	21.48	
700.00	698.77	699.77	699.73	1.53	0.80	184.58	28.63	-4.19	52.33	50.08	23.27	
800.00	797.08	798.58	798.52	1.87	0.91	183.39	26.73	-3.79	68.57	65.98	26.47	
900.00	894.49	896.62	896.54	2.27	1.10	182.51	24.62	-3.34	88.98	85.96	29.48	
1000.00	991.79	994.60	994.49	2.70	1.33	181.94	22.33	-2.85	109.75	106.26	31.40	
1100.00	1089.08	1092.65	1092.51	3.16	1.55	181.54	19.89	-2.33	130.37	126.40	32.78	
1200.00	1186.37	1190.78	1190.60	3.62	1.78	181.25	17.27	-1.78	150.83	146.37	33.80	
1300.00	1283.66	1288.97	1288.75	4.09	2.01	181.02	14.49	-1.19	171.12	166.17	34.56	
1400.00	1380.95	1386.86	1386.60	4.56	2.22	180.84	11.61	-0.58	191.30	185.87	35.25	
1500.00	1478.24	1484.44	1484.14	5.03	2.42	180.70	8.87	0.01	211.62	205.72	35.91	
1600.00	1575.53	1581.95	1581.61	5.51	2.62	180.59	6.28	0.56	232.09	225.73	36.49	
1700.00	1672.83	1679.39	1679.02	5.99	2.82	180.49	3.86	1.07	252.74	245.91	37.01	
1800.00	1770.12	1776.76	1776.36	6.47	3.01	180.42	1.60	1.55	273.54	266.25	37.48	
1900.00	1867.41	1874.24	1873.82	6.96	3.21	180.35	-0.51	2.00	294.50	286.74	37.91	
2000.00	1964.70	1972.01	1971.56	7.44	3.42	180.30	-2.60	2.44	315.50	307.25	38.27	
2100.00	2061.99	2069.78	2069.31	7.93	3.62	180.25	-4.68	2.89	336.49	327.77	38.59	
2200.00	2159.28	2167.55	2167.06	8.41	3.82	180.21	-6.77	3.33	357.49	348.29	38.88	
2300.00	2256.57	2265.32	2264.81	8.90	4.03	180.17	-8.86	3.78	378.48	368.81	39.13	
2400.00	2353.87	2363.44	2362.90	9.38	4.24	180.14	-10.96	4.22	399.46	389.31	39.34	
2500.00	2451.16	2462.33	2461.77	9.87	4.46	180.10	-13.29	4.72	420.25	409.59	39.46	
2600.00	2548.45	2561.34	2560.74	10.36	4.69	180.07	-15.87	5.27	440.77	429.62	39.54	
2700.00	2645.74	2660.46	2659.81	10.84	4.92	180.04	-18.71	5.87	461.04	449.39	39.59	
2800.00	2743.03	2759.68	2758.98	11.33	5.14	180.01	-21.81	6.53	481.04	468.90	39.62	
2900.00	2840.32	2857.36	2856.61	11.82	5.36	179.97	-25.05	7.22	500.85	488.22	39.65	
3000.00	2937.61	2952.27	2951.48	12.31	5.56	179.95	-27.80	7.80	521.08	507.98	39.77	
3100.00	3034.91	3046.95	3046.12	12.79	5.76	179.93	-30.00	8.27	541.89	528.32	39.92	
3200.00	3132.20	3100.00	3099.17	13.28	5.87	179.93	-30.99	8.48	564.85	550.89	40.46	
3300.00	3229.50	3100.00	3099.17	13.75	5.87	179.93	-30.99	8.48	601.24	587.01	42.24	
3400.00	3327.20	3100.00	3099.17	14.09	5.87	179.93	-30.99	8.48	649.61	635.15	44.92	
3500.00	3425.42	3100.00	3099.17	14.40	5.87	179.93	-30.99	8.48	706.83	692.16	48.17	



Weatherford International Ltd.

Anticollision Report



Weatherford

Company: Williams Production Date: 2/10/2011 Time: 09:15:41 Page: 2
 Field: RIO ARRIBA CO. NM (NAD 83)
 Reference Site: Rosa Unit 72C Co-ordinate(NE) Reference: Well: 72C, True North
 Reference Well: 72C Vertical (TVD) Reference: SITE 6445.0
 Reference Wellpath: 1 Db: Sybase

Site: Rosa Unit 72C
 Well: WPX 241A
 Wellpath: 1 VO

Inter-Site Error: 0.00 ft

Reference MD ft	TVD ft	Offset MD ft	TVD ft	Semi-Major Axis Ref ft	Offset ft	TFO-HS deg	Offset Location North ft	East ft	Ctr-Ctr Distance ft	Edge Distance ft	Separation Factor	Warning
3600.00	3524.10	3100.00	3099.17	14.68	5.87	179.93	-30.99	8.48	770.91	756.03	51.82	
3700.00	3623.17	3100.00	3099.17	14.93	5.87	179.93	-30.99	8.48	840.23	825.16	55.78	
3800.00	3722.56	3100.00	3099.17	15.16	5.87	179.93	-30.99	8.48	913.56	898.32	59.96	
3900.00	3822.20	3100.00	3099.17	15.35	5.87	179.94	-30.99	8.48	989.96	974.57	64.31	
4000.00	3922.03	3100.00	3099.17	15.52	5.87	179.94	-30.99	8.48	1068.74	1053.20	68.78	
4100.00	4021.98	3100.00	3099.17	15.65	5.87	179.94	-30.99	8.48	1149.35	1133.68	73.35	
4200.00	4121.97	3100.00	3099.17	15.76	5.87	179.97	-30.99	8.48	1231.45	1215.64	77.92	
4300.00	4221.97	3100.00	3099.17	15.89	5.87	179.97	-30.99	8.48	1315.68	1299.69	82.26	
4400.00	4321.97	3100.00	3099.17	16.02	5.87	179.97	-30.99	8.48	1401.99	1385.81	86.62	
4500.00	4421.97	3100.00	3099.17	16.15	5.87	179.97	-30.99	8.48	1490.02	1473.64	90.98	
4600.00	4521.97	3100.00	3099.17	16.29	5.87	179.97	-30.99	8.48	1579.47	1562.89	95.31	
4700.00	4621.97	3100.00	3099.17	16.42	5.87	179.97	-30.99	8.48	1670.11	1653.34	99.61	
4800.00	4721.97	3100.00	3099.17	16.56	5.87	179.97	-30.99	8.48	1761.77	1744.81	103.86	
4900.00	4821.97	3100.00	3099.17	16.70	5.87	179.97	-30.99	8.48	1854.29	1837.13	108.06	
5000.00	4921.97	3100.00	3099.17	16.84	5.87	179.97	-30.99	8.48	1947.55	1930.19	112.20	
5100.00	5021.97	3100.00	3099.17	16.99	5.87	179.97	-30.99	8.48	2041.45	2023.89	116.28	
5200.00	5121.97	3100.00	3099.17	17.13	5.87	179.97	-30.99	8.48	2135.90	2118.15	120.29	
5300.00	5221.97	3100.00	3099.17	17.28	5.87	179.97	-30.99	8.48	2230.84	2212.88	124.23	
5400.00	5321.97	3100.00	3099.17	17.43	5.87	179.97	-30.99	8.48	2326.20	2308.04	128.10	
5500.00	5421.97	3100.00	3099.17	17.58	5.87	179.97	-30.99	8.48	2421.93	2403.57	131.90	
5600.00	5521.97	3100.00	3099.17	17.73	5.87	179.97	-30.99	8.48	2518.00	2499.43	135.63	
5700.00	5621.97	3100.00	3099.17	17.89	5.87	179.97	-30.99	8.48	2614.36	2595.59	139.29	
5800.00	5721.97	3100.00	3099.17	18.04	5.87	179.97	-30.99	8.48	2710.99	2692.01	142.88	
5900.00	5821.97	3100.00	3099.17	18.20	5.87	179.97	-30.99	8.48	2807.85	2788.67	146.40	
6000.00	5921.97	3100.00	3099.17	18.35	5.87	179.97	-30.99	8.48	2904.92	2885.54	149.86	
6100.00	6021.97	3100.00	3099.17	18.51	5.87	179.97	-30.99	8.48	3002.19	2982.60	153.24	
6200.00	6121.97	3100.00	3099.17	18.67	5.87	179.97	-30.99	8.48	3099.63	3079.83	156.56	
6300.00	6221.97	3100.00	3099.17	18.84	5.87	179.97	-30.99	8.48	3197.23	3177.22	159.82	
6400.00	6321.97	3100.00	3099.17	19.00	5.87	179.97	-30.99	8.48	3294.97	3274.75	163.01	
6500.00	6421.97	3100.00	3099.17	19.16	5.87	179.97	-30.99	8.48	3392.84	3372.42	166.13	
6600.00	6521.97	3100.00	3099.17	19.33	5.87	179.97	-30.99	8.48	3490.84	3470.20	169.20	
6700.00	6621.97	3100.00	3099.17	19.50	5.87	179.97	-30.99	8.48	3588.94	3568.10	172.21	
6800.00	6721.97	3100.00	3099.17	19.66	5.87	179.97	-30.99	8.48	3687.15	3666.10	175.15	
6900.00	6821.97	3100.00	3099.17	19.83	5.87	179.97	-30.99	8.48	3785.45	3764.19	178.05	
7000.00	6921.97	3100.00	3099.17	20.00	5.87	179.97	-30.99	8.48	3883.84	3862.36	180.88	
7100.00	7021.97	3100.00	3099.17	20.17	5.87	179.97	-30.99	8.48	3982.30	3960.62	183.66	
7200.00	7121.97	3100.00	3099.17	20.35	5.87	179.97	-30.99	8.48	4080.85	4058.95	186.39	
7300.00	7221.97	3100.00	3099.17	20.52	5.87	179.97	-30.99	8.48	4179.46	4157.35	189.06	
7400.00	7321.97	3100.00	3099.17	20.69	5.87	179.97	-30.99	8.48	4278.13	4255.81	191.69	
7500.00	7421.97	3100.00	3099.17	20.87	5.87	179.97	-30.99	8.48	4376.87	4354.34	194.26	
7600.00	7521.97	3100.00	3099.17	21.05	5.87	179.97	-30.99	8.48	4475.66	4452.92	196.79	
7700.00	7621.97	3100.00	3099.17	21.22	5.87	179.97	-30.99	8.48	4574.51	4551.55	199.26	
7800.00	7721.97	3100.00	3099.17	21.40	5.87	179.97	-30.99	8.48	4673.40	4650.23	201.70	
7900.00	7821.97	3100.00	3099.17	21.58	5.87	179.97	-30.99	8.48	4772.34	4748.96	204.08	
8000.00	7921.97	3100.00	3099.17	21.76	5.87	179.97	-30.99	8.48	4871.32	4847.73	206.43	
8100.00	8021.97	3100.00	3099.17	21.94	5.87	179.97	-30.99	8.48	4970.35	4946.53	208.73	
8200.00	8121.97	3100.00	3099.17	22.12	5.87	179.97	-30.99	8.48	5069.41	5045.38	210.99	
8300.00	8221.97	3100.00	3099.17	22.30	5.87	179.97	-30.99	8.48	5168.51	5144.27	213.21	
8388.03	8310.00	3100.00	3099.17	22.47	5.87	179.97	-30.99	8.48	5255.77	5231.34	215.13	

**Weatherford****Weatherford Drilling Services**

GeoDec v5.03

Report Date: February 09, 2011
Job Number: _____
Customer: Williams
Well Name: Rosa Unit 72C
API Number: _____
Rig Name: _____
Location: Rio Arriba Co, NM (Nad 83)
Block: _____
Engineer: RWJ

Geodetic Latitude / Longitude	Geodetic Latitude / Longitude
System: Latitude / Longitude	System: Latitude / Longitude
Projection: Geodetic Latitude and Longitude	Projection: Geodetic Latitude and Longitude
Datum: North American Datum 1983	Datum: North American Datum 1983
Ellipsoid: GRS 1980	Ellipsoid: GRS 1980
Latitude 36.9258800 DEG	Latitude 36.9258800 DEG
Longitude -107.4052300 DEG	Longitude -107.4052300 DEG

Geodetic Location WGS84	Elevation =	0.0 Meters
Latitude =	36.92588° N	36° 55 min 33.168 sec
Longitude =	107.40523° W	107° 24 min 18.828 sec

Magnetic Declination =	9.75°	[True North Offset]	
Local Gravity =	.9992 g	Checksum =	6783
Local Field Strength =	50922 nT	Magnetic Vector X =	22248 nT
Magnetic Dip =	63.69°	Magnetic Vector Y =	3825 nT
Magnetic Model =	IGRF-2010g11	Magnetic Vector Z =	45645 nT
Spud Date =	Aug 01, 2011	Magnetic Vector H =	22574 nT

Signed: _____

Date: _____

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)

