

ROSA UNIT #036C
BLANCO MV / BASIN DK

Spud: 6/16/11

Completed: 8/3/11

1st Delivery:

Surface Location:

1830' FNL & 1970' FEL
Sec 11 (G), T31N, R06W
Rio Arriba, NM

Bottom Hole Location:

2523' FNL & 2483' FEL
Sec 11(G), T31N, R06W
Rio Arriba, NM

Elevation: 6421' GR

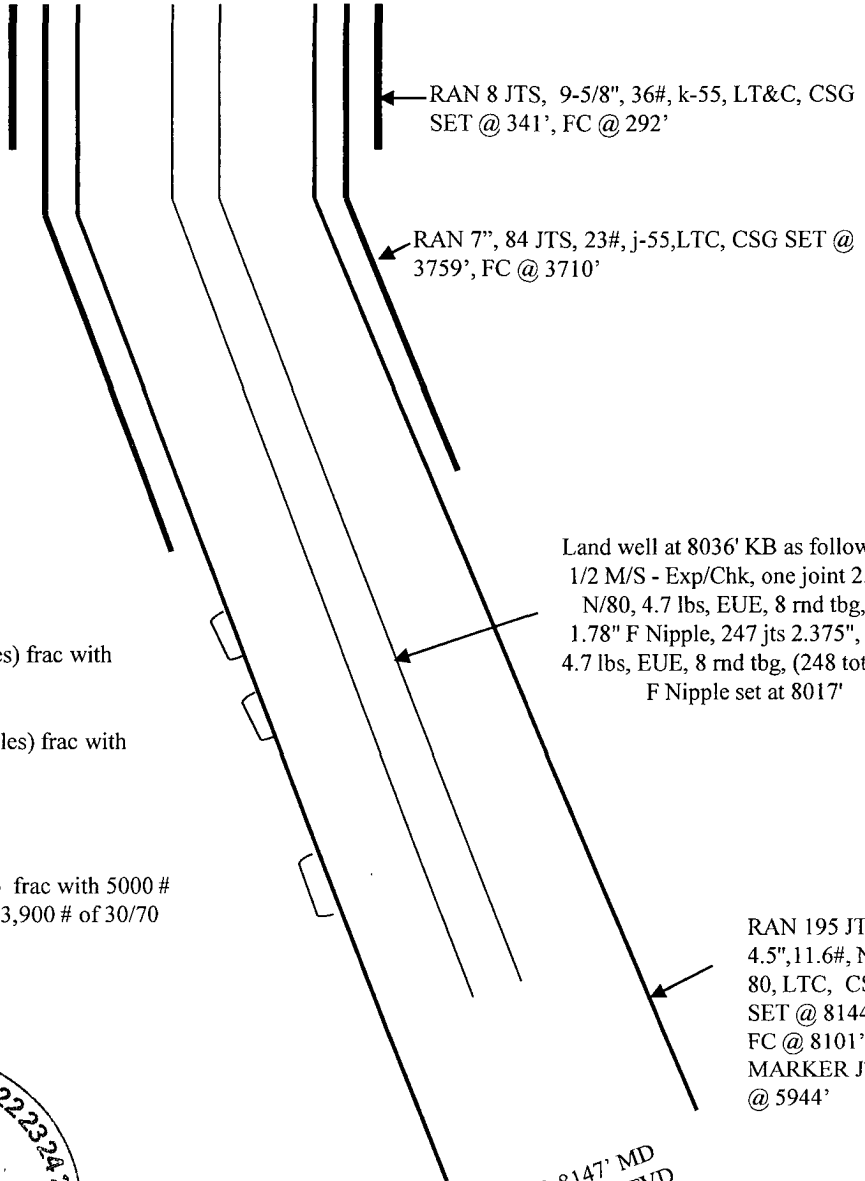
API # 30-039-30182

Top	TVD Depth
Pictured Cliffs	3479'
Cliffhouse Ss.	5489'
Menefee	5546'
Point Lookout	5786'
Mancos	6265'
Dakota	8009'

Upper MV: 5505'-5721' (30, 0.34" holes) frac with
102,800 # 20/40 Ottawa Sand

Lower MV: 5795'-5909' (18, 0.34" holes) frac with
54,800 # of 20/40 Ottawa sand

Dakota: 8011'-8104' (18, 0.34" Holes) frac with 5000 #
of 100 mesh Ottawa sand follow with 93,900 # of 30/70
Ottawa sand



TD @ 8147' MD
TD @ 8086' TVD
PBTd @ 8130' MD
PBTd @ 8067' TVD



Hole Size	Casing	Cement	Volume	Top of Cmt
12-1/4"	9-5/8", 36#	165 sxs	297 cu.ft.	Surface
8-3/4"	7", 23#	495 sxs	1196 cu.ft.	Surface
6-1/4"	4-1/2", 11.6#	445 sxs	623 cu.ft.	3160' CBL



Rosa Unit #36C
RIO ARRIBA CO. NM

SECTION DETAILS									
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec Target
1	0.00	0.00	215.14	0.00	0.00	0.00	0.00	0.00	0.00
2	400.00	0.00	215.14	400.00	0.00	0.00	0.00	0.00	0.00
3	755.17	10.66	215.14	753.13	-26.93	-18.96	3.00	215.14	32.93
4	3389.11	10.66	215.14	3341.65	-425.16	-299.29	0.00	0.00	519.94
5	4099.46	0.00	215.14	4047.91	-479.02	-337.20	1.50	180.00	585.80
6	8306.55	0.00	215.14	8255.00	-479.02	-337.20	0.00	0.00	585.80 Pbh

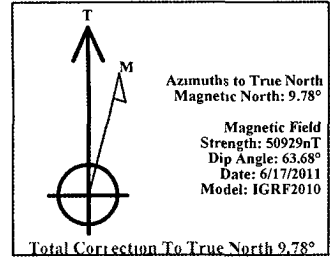
KB ELEV: 6435
GL ELEV: 6421

WELL DETAILS						
Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
#36C	0.00	0.00	2154987.69	1295509.57	36°54'58.932N	107°25'47.532W

TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Pbh	8255.00	-479.02	-337.20	36°54'54.196N	107°25'51.684W	Point

FORMATION TOP DETAILS		
No.	TVDPath	MDPath
1	1150.00	1159.01
2	2470.00	2502.17
3	2570.00	2603.92
4	2980.00	3021.11
5	3240.00	3285.68
6	3535.00	3584.99
7	5135.00	5186.55
8	5440.00	5491.55
9	5485.00	5536.55
10	5720.00	5771.55
11	6060.00	6111.55
12	7065.00	7116.55
13	7775.00	7826.55
14	7825.00	7876.55
15	7955.00	8006.55
16	8205.00	8256.55

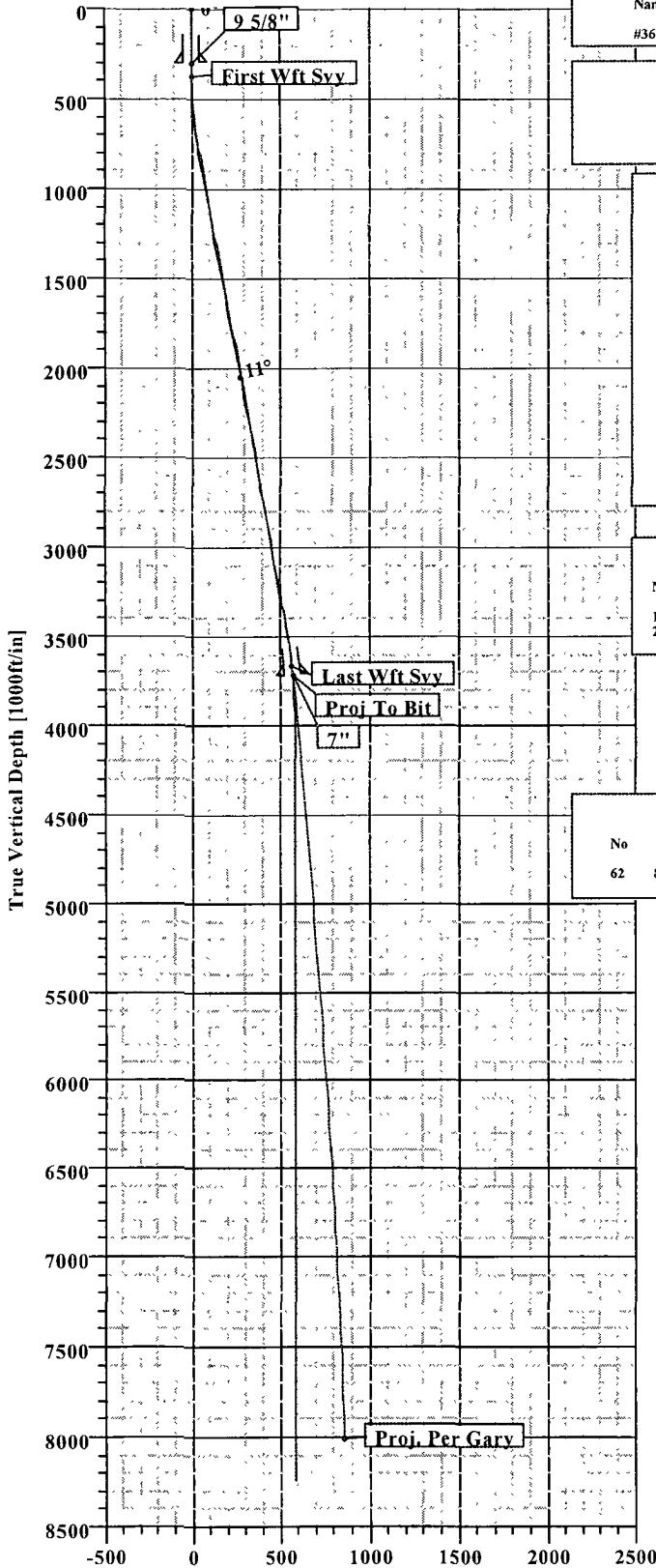
SITE DETAILS	
Rosa Unit #36C	
Site Centre Latitude: 36°54'58.932N	
Longitude: 107°25'47.532W	
Ground Level: 6421.00	
Positional Uncertainty: 0.00	
Convergence: -0.71	



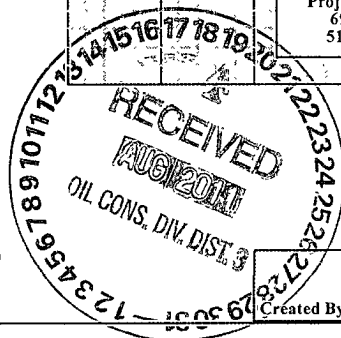
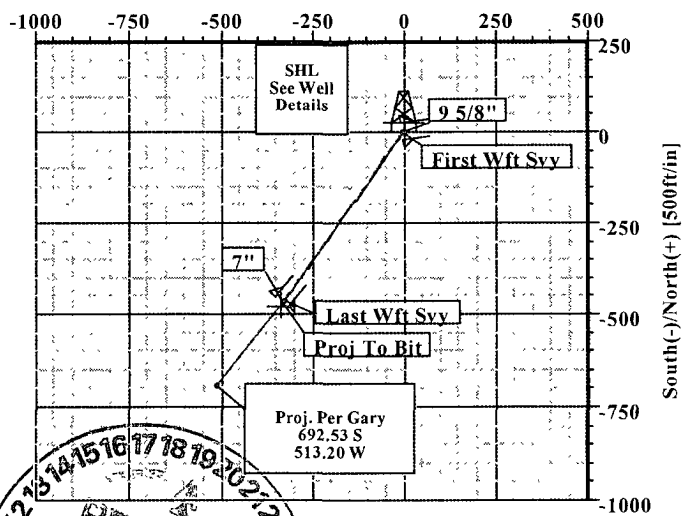
CASING DETAILS			
No.	TVD	MD	Name
1	300.00	300.00	9 5/8"
2	3714.94	3766.00	7"

LEGEND	
	#36C, 1, Plan #1
	Wft Svy

Survey: Wft Svy (#36C/1)								
No	MD	Inc	Az	TVD	+N/-S	+E/-W	DLeg	TFace
62	8070.00	2.00	219.34	8008.51	-692.53	-513.20	0.09	180.00



Vertical Section at 215.14° [1000ft/in]





Weatherford International Ltd.

WFT Plan Report Lat, Long



Weatherford

Company: Williams Production	Date: 6/27/2011	Time: 09:40:31	Page: 1
Field: RIO ARRIBA CO. NM (NAD 83)	Co-ordinate(NE) Reference: Well: #36C, True North		
Site: Rosa Unit #36C	Vertical (TVD) Reference: SITE 6435.0		
Well: #36C	Section (VS) Reference: Well (0.00N,0.00E,215.14Azi)		
Wellpath: 1	Survey Calculation Method: Minimum Curvature	Db: Sybase	

Plan:	Date Composed:
Principal:	Version:
	Tied-to:

Field: RIO ARRIBA CO. NM (NAD 83)

Map System: US State Plane Coordinate System 1983
Geo Datum: GRS 1980
Sys Datum: Mean Sea Level

Map Zone: New Mexico, Central Zone
Coordinate System: Well Centre
Geomagnetic Model: IGRF2010

Site: Rosa Unit #36C

Site Position:	Northing: 2154987.69 ft	Latitude: 36 54 58.932 N
From: Geographic	Easting: 1295509.57 ft	Longitude: 107 25 47.532 W
Position Uncertainty: 0.00 ft		North Reference: True
Ground Level: 6421.00 ft		Grid Convergence: -0.71 deg

Well: #36C	Slot Name:
Well Position: +N/-S 0.00 ft	Latitude: 36 54 58.932 N
+E/-W 0.00 ft	Longitude: 107 25 47.532 W
Position Uncertainty: 0.00 ft	

Wellpath: 1	Drilled From: Surface
Current Datum: SITE	Tie-on Depth: 0.00 ft
Magnetic Data: 6/17/2011	Above System Datum: Mean Sea Level
Field Strength: 50929 nT	Declination: 9.78 deg
Vertical Section: Depth From (TVD)	Mag Dip Angle: 63.68 deg
ft	+N/-S
	+E/-W
	Direction
	deg
0.00	0.00
0.00	215.14

Plan Section Information

MD	Incl	Azim	TVD	+N/-S	+E/-W	DLS	Build	Turn	TFO	Target
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Survey

MD	Incl	Azim	TVD	N/S	E/W	VS	DLS	Lat	Min	Sec	Long	Min	Sec	Comment
ft	deg	deg	ft	ft	ft	ft	deg/100ft							
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36	54	58.932	107	25	47.532	
300.00	0.41	262.29	300.00	-0.14	-1.07	0.73	0.14	36	54	58.931	107	25	47.545	9 5/8"
372.00	0.51	262.29	372.00	-0.22	-1.64	1.13	0.14	36	54	58.930	107	25	47.552	First Wft S
402.00	0.72	254.32	401.99	-0.29	-1.95	1.36	0.75	36	54	58.929	107	25	47.556	
433.00	1.25	218.21	432.99	-0.61	-2.35	1.85	2.55	36	54	58.926	107	25	47.561	
464.00	2.19	213.46	463.97	-1.37	-2.89	2.78	3.06	36	54	58.918	107	25	47.568	
493.00	3.06	217.34	492.94	-2.45	-3.66	4.11	3.06	36	54	58.908	107	25	47.577	
523.00	4.06	214.84	522.89	-3.96	-4.75	5.97	3.37	36	54	58.893	107	25	47.591	
552.00	5.31	219.46	551.79	-5.83	-6.19	8.34	4.50	36	54	58.874	107	25	47.608	
584.00	6.19	217.34	583.63	-8.35	-8.18	11.54	2.83	36	54	58.849	107	25	47.633	
616.00	7.50	217.09	615.40	-11.39	-10.49	15.35	4.09	36	54	58.819	107	25	47.661	
648.00	8.50	215.96	647.09	-14.97	-13.14	19.80	3.16	36	54	58.784	107	25	47.694	
709.00	10.00	214.59	707.29	-22.98	-18.79	29.60	2.49	36	54	58.705	107	25	47.763	
771.00	10.57	213.47	768.30	-32.15	-24.98	40.67	0.97	36	54	58.614	107	25	47.840	
834.00	10.56	213.71	830.23	-41.77	-31.37	52.22	0.07	36	54	58.519	107	25	47.918	
898.00	10.63	219.21	893.14	-51.23	-38.36	63.97	1.58	36	54	58.426	107	25	48.004	
961.00	10.63	215.71	955.06	-60.45	-45.42	75.58	1.02	36	54	58.334	107	25	48.091	
1024.00	10.56	215.09	1016.98	-69.89	-52.13	87.16	0.21	36	54	58.241	107	25	48.174	
1088.00	10.69	216.71	1079.89	-79.45	-59.05	98.96	0.51	36	54	58.147	107	25	48.259	
1150.00	11.13	213.84	1140.77	-89.03	-65.82	110.69	1.13	36	54	58.052	107	25	48.343	



Weatherford International Ltd.

WFT Plan Report Lat, Long



Weatherford

Company:	Williams Production	Date:	6/27/2011	Time:	09:40:31	Page:	2
Field:	RIO-ARRIBA CO. NM (NAD 83)	Co-ordinate(NE) Reference:	Well: #36C, True North				
Site:	Rosa Unit #36C	Vertical (TVD) Reference:	SITE 6435.0				
Well:	#36C	Section (VS) Reference:	Well (0.00N,0.00E,215.14Azi)				
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
1212.00	11.44	212.59	1201.57	-99.18	-72.47	122.81	0.64	36	54	57.951	107	25 48.424
1274.00	11.44	211.34	1262.34	-109.61	-78.98	135.09	0.40	36	54	57.848	107	25 48.504
1337.00	10.69	212.59	1324.16	-119.87	-85.37	147.16	1.25	36	54	57.747	107	25 48.583
1399.00	10.37	211.99	1385.12	-129.45	-91.43	158.48	0.55	36	54	57.652	107	25 48.658
1462.00	10.69	215.09	1447.06	-139.04	-97.79	169.98	1.03	36	54	57.557	107	25 48.736
1525.00	10.69	214.96	1508.97	-148.61	-104.50	181.67	0.04	36	54	57.463	107	25 48.819
1589.00	10.88	213.34	1571.84	-158.52	-111.22	193.64	0.56	36	54	57.365	107	25 48.901
1651.00	10.50	213.96	1632.76	-168.09	-117.59	205.14	0.64	36	54	57.270	107	25 48.980
1714.00	10.25	217.46	1694.73	-177.30	-124.21	216.48	1.08	36	54	57.179	107	25 49.061
1776.00	10.50	218.96	1755.72	-186.07	-131.11	227.63	0.59	36	54	57.092	107	25 49.146
1839.00	10.31	217.71	1817.68	-195.00	-138.17	238.99	0.47	36	54	57.004	107	25 49.233
1902.00	10.75	217.96	1879.62	-204.09	-145.23	250.49	0.70	36	54	56.914	107	25 49.320
1965.00	10.75	218.21	1941.51	-213.34	-152.48	262.22	0.07	36	54	56.823	107	25 49.410
2027.00	10.31	214.71	2002.47	-222.44	-159.22	273.54	1.25	36	54	56.733	107	25 49.493
2089.00	10.50	213.21	2063.45	-231.73	-165.47	284.74	0.53	36	54	56.641	107	25 49.570
2153.00	10.63	213.09	2126.37	-241.56	-171.89	296.47	0.21	36	54	56.544	107	25 49.649
2216.00	9.88	214.09	2188.36	-250.90	-178.09	307.68	1.22	36	54	56.451	107	25 49.725
2279.00	9.75	212.46	2250.44	-259.88	-183.98	318.41	0.49	36	54	56.363	107	25 49.797
2341.00	9.69	214.09	2311.55	-268.63	-189.73	328.87	0.45	36	54	56.276	107	25 49.868
2403.00	9.75	213.09	2372.66	-277.35	-195.52	339.33	0.29	36	54	56.190	107	25 49.939
2466.00	9.63	213.96	2434.76	-286.19	-201.37	349.93	0.30	36	54	56.102	107	25 50.012
2529.00	10.31	214.34	2496.81	-295.21	-207.50	360.84	1.08	36	54	56.013	107	25 50.087
2592.00	10.34	214.18	2558.79	-304.55	-213.85	372.13	0.07	36	54	55.921	107	25 50.165
2655.00	10.31	214.96	2620.77	-313.84	-220.26	383.42	0.23	36	54	55.829	107	25 50.244
2718.00	10.69	213.21	2682.71	-323.35	-226.69	394.90	0.79	36	54	55.735	107	25 50.323
2782.00	10.75	213.09	2745.59	-333.32	-233.20	406.80	0.10	36	54	55.636	107	25 50.403
2844.00	11.06	213.34	2806.47	-343.13	-239.63	418.52	0.51	36	54	55.539	107	25 50.483
2907.00	11.06	214.59	2868.30	-353.16	-246.38	430.60	0.38	36	54	55.440	107	25 50.566
2970.00	10.75	214.96	2930.17	-362.95	-253.17	442.52	0.50	36	54	55.343	107	25 50.649
3034.00	10.77	218.50	2993.04	-372.52	-260.32	454.46	1.03	36	54	55.249	107	25 50.737
3097.00	10.31	218.21	3054.98	-381.55	-267.47	465.96	0.73	36	54	55.160	107	25 50.825
3169.00	9.69	216.96	3125.88	-391.46	-275.10	478.45	0.91	36	54	55.062	107	25 50.919
3223.00	9.69	215.71	3179.11	-398.78	-280.48	487.54	0.39	36	54	54.989	107	25 50.986
3285.00	9.88	217.34	3240.21	-407.25	-286.75	498.07	0.54	36	54	54.905	107	25 51.063
3349.00	10.63	217.96	3303.19	-416.27	-293.72	509.46	1.18	36	54	54.816	107	25 51.149
3411.00	10.69	215.46	3364.12	-425.46	-300.57	520.92	0.75	36	54	54.725	107	25 51.233
3474.00	10.26	212.45	3426.07	-434.95	-306.97	532.36	1.10	36	54	54.632	107	25 51.312
3537.00	10.19	214.09	3488.07	-444.30	-313.10	543.54	0.48	36	54	54.539	107	25 51.387
3601.00	9.38	211.84	3551.14	-453.42	-319.03	554.41	1.40	36	54	54.449	107	25 51.460
3664.00	6.88	213.09	3613.50	-460.94	-323.80	563.31	3.98	36	54	54.375	107	25 51.519
3714.00	5.69	219.34	3663.20	-465.37	-327.00	568.77	2.74	36	54	54.331	107	25 51.558
3766.00	5.69	219.34	3714.94	-469.36	-330.27	573.91	0.00	36	54	54.291	107	25 51.599
8070.00	2.00	219.34	8008.51	-692.53	-513.20	861.71	0.09	36	54	52.085	107	25 53.851

Targets

Name	Description	TVD	+N/S	+E/W	Map Northing	Map Easting	Latitude Deg Min Sec	Longitude Deg Min Sec
	Dip Dir.							



Weatherford International Ltd.

WFT Plan Report Lat, Long

**Weatherford**

Company:	Williams Production	Date:	6/27/2011	Time:	09:40:31	Page:	3
Field:	RIO ARRIBA CO NM (NAD 83)	Co-ordinate(NE) Reference:	Well: #36C; True North				
Site:	Rosa Unit #36C	Vertical (TVD) Reference:	SITE 6435.0				
Well:	#36C	Section (VS) Reference:	Well (0.00N;0.00E;215.14Az)				
Wellpath:	1	Survey Calculation Method:	Minimum Curvature	Db:	Sybase		

Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
300.00	300.00	9.625	12.250	9 5/8"
3766.00	3714.94	7.000	8.500	7"

Formations

MD ft	TVD ft	Formations	Lithology	Dip Angle deg	Dip Direction deg
1159.41	1150.00	Nacimiento Fm.		0.00	0.00
2501.77	2470.00	Ojo Alamo Ss.		0.00	0.00
2603.40	2570.00	Kirtland Sh.		0.00	0.00
3020.72	2980.00	Fruitland Fm.		0.00	0.00
3284.78	3240.00	Pictured Cliffs Ss.		0.00	0.00
3584.64	3535.00	Lewis Sh.		0.00	0.00
5191.68	5135.00	Cliff House Ss. Trans.		0.00	0.00
5497.56	5440.00	Cliff House Ss.		0.00	0.00
5542.68	5485.00	Menefee Fm.		0.00	0.00
5778.27	5720.00	Point Lookout Ss.		0.00	0.00
6119.03	6060.00	Mancos Sh.		0.00	0.00
7125.65	7065.00	Gallup Ss.		0.00	0.00
7836.33	7775.00	Greenhorn Ls.		0.00	0.00
7886.37	7825.00	Graneros Sh.		0.00	0.00
8016.45	7955.00	Dakota Ss.		0.00	0.00
	0.00	Morrison Fm		0.00	0.00

Annotation

MD ft	TVD ft	
372.00	372.00	First Wft Svy
3714.00	3663.20	Last Wft Svy
3766.00	3714.94	Proj To Bit
8070.00	8008.51	Proj Per Gary



Weatherford International Ltd.

WFT Survey Report Lat, Long

**Weatherford**

Company:	Williams Production	Date:	7/6/2011	Time:	08:58:02	Page:	3
Field:	SAN JUAN CO. NM (NAD83)	Co-ordinate(NE) Reference:	Well: #60C True North				
Site:	Rosa Unit Com #60C	Vertical (TVD) Reference:	SITE 6465 0				
Well:	#60C	Section (VS) Reference:	Well (0.00N;0.00E;18.24Azi)				
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
2649.00	43.19	16.68	2291.10	1022.17	333.44	1075.18	1.78	36	55	29.343	107	27	51.981	
2680.00	42.90	17.66	2313.75	1042.39	339.69	1096.33	2.35	36	55	29.543	107	27	51.904	
2711.00	43.56	17.93	2336.34	1062.61	346.17	1117.57	2.21	36	55	29.743	107	27	51.824	
2743.00	43.69	19.43	2359.51	1083.52	353.25	1139.64	3.26	36	55	29.950	107	27	51.737	
2775.00	43.13	19.18	2382.75	1104.27	360.52	1161.63	1.83	36	55	30.155	107	27	51.648	
2806.00	43.06	18.93	2405.39	1124.29	367.43	1182.81	0.60	36	55	30.353	107	27	51.563	
2837.00	44.50	19.55	2427.77	1144.54	374.50	1204.25	4.85	36	55	30.553	107	27	51.476	
2868.00	45.31	20.05	2449.73	1165.13	381.91	1226.13	2.85	36	55	30.757	107	27	51.384	
2900.00	45.38	20.80	2472.22	1186.46	389.86	1248.87	1.68	36	55	30.968	107	27	51.286	
2932.00	45.63	21.80	2494.65	1207.73	398.15	1271.66	2.36	36	55	31.178	107	27	51.184	
2963.00	46.06	21.30	2516.24	1228.42	406.32	1293.87	1.81	36	55	31.383	107	27	51.084	
2995.00	45.62	20.86	2538.53	1249.84	414.57	1316.80	1.69	36	55	31.595	107	27	50.982	
3026.00	44.69	20.68	2560.39	1270.39	422.37	1338.75	3.03	36	55	31.798	107	27	50.886	
3058.00	44.63	19.93	2583.16	1291.48	430.17	1361.23	1.66	36	55	32.006	107	27	50.790	
3089.00	42.94	20.93	2605.54	1311.58	437.66	1382.67	5.89	36	55	32.205	107	27	50.698	
3119.00	41.31	21.05	2627.79	1330.37	444.87	1402.77	5.44	36	55	32.391	107	27	50.609	
3151.00	40.81	21.43	2651.91	1349.96	452.48	1423.76	1.75	36	55	32.585	107	27	50.515	
3182.00	39.25	21.43	2675.65	1368.52	459.77	1443.66	5.03	36	55	32.768	107	27	50.425	
3214.00	37.94	20.55	2700.66	1387.16	466.92	1463.60	4.44	36	55	32.952	107	27	50.337	
3246.00	37.50	20.30	2725.97	1405.50	473.75	1483.16	1.46	36	55	33.134	107	27	50.253	
3278.00	37.31	20.05	2751.39	1423.75	480.45	1502.59	0.76	36	55	33.314	107	27	50.171	
3309.00	36.19	20.31	2776.23	1441.16	486.85	1521.13	3.65	36	55	33.486	107	27	50.092	
3340.00	35.56	19.93	2801.35	1458.21	493.10	1539.29	2.16	36	55	33.655	107	27	50.015	
3372.00	35.13	19.55	2827.45	1475.64	499.35	1557.79	1.51	36	55	33.827	107	27	49.938	
3404.00	34.75	19.18	2853.68	1492.93	505.43	1576.11	1.36	36	55	33.998	107	27	49.863	
3437.00	33.23	18.54	2881.04	1510.39	511.40	1594.56	4.73	36	55	34.171	107	27	49.789	
3469.00	32.13	17.93	2907.98	1526.80	516.80	1611.84	3.59	36	55	34.333	107	27	49.723	
3500.00	30.75	17.30	2934.43	1542.21	521.70	1628.01	4.58	36	55	34.486	107	27	49.663	
3532.00	29.69	16.68	2962.08	1557.61	526.41	1644.11	3.45	36	55	34.638	107	27	49.605	
3563.00	28.50	17.30	2989.17	1572.02	530.81	1659.18	3.96	36	55	34.780	107	27	49.550	
3595.00	26.31	17.43	3017.57	1586.08	535.21	1673.90	6.85	36	55	34.919	107	27	49.496	
3626.00	25.00	17.43	3045.52	1598.89	539.23	1687.32	4.23	36	55	35.046	107	27	49.447	
3658.00	25.06	16.93	3074.51	1611.82	543.22	1700.86	0.69	36	55	35.174	107	27	49.397	
3690.00	23.50	17.18	3103.68	1624.40	547.08	1714.02	4.89	36	55	35.298	107	27	49.350	
3721.00	22.38	16.68	3132.23	1635.96	550.60	1726.10	3.67	36	55	35.413	107	27	49.307	
3753.00	21.45	16.35	3161.91	1647.41	554.00	1738.03	2.93	36	55	35.526	107	27	49.265	
3784.00	20.00	16.68	3190.91	1657.93	557.12	1749.00	4.69	36	55	35.630	107	27	49.226	
3815.00	19.31	16.93	3220.10	1667.91	560.13	1759.42	2.24	36	55	35.729	107	27	49.189	
3847.00	19.13	16.80	3250.32	1677.99	563.19	1769.95	0.58	36	55	35.828	107	27	49.152	
3879.00	18.88	16.68	3280.57	1687.97	566.19	1780.37	0.79	36	55	35.927	107	27	49.115	
3910.00	18.63	16.80	3309.93	1697.51	569.06	1790.33	0.82	36	55	36.021	107	27	49.079	
3942.00	17.81	17.30	3340.32	1707.08	571.99	1800.34	2.61	36	55	36.116	107	27	49.043	
3973.00	17.50	17.55	3369.86	1716.05	574.81	1809.74	1.03	36	55	36.205	107	27	49.008	
4004.00	16.69	18.43	3399.49	1724.72	577.62	1818.85	2.74	36	55	36.290	107	27	48.974	
4036.00	16.01	19.04	3430.20	1733.25	580.51	1827.86	2.19	36	55	36.375	107	27	48.938	
4068.00	15.31	20.18	3461.01	1741.39	583.41	1836.49	2.39	36	55	36.455	107	27	48.902	
4100.00	14.13	21.43	3491.96	1748.99	586.29	1844.62	3.82	36	55	36.530	107	27	48.867	
4131.00	13.31	21.80	3522.07	1755.82	589.00	1851.96	2.66	36	55	36.598	107	27	48.834	
4162.00	12.75	22.18	3552.28	1762.30	591.62	1858.93	1.83	36	55	36.662	107	27	48.801	
4194.00	11.00	23.55	3583.59	1768.37	594.17	1865.49	5.54	36	55	36.722	107	27	48.770	
4225.00	9.25	22.80	3614.11	1773.38	596.32	1870.92	5.66	36	55	36.772	107	27	48.743	
4257.00	8.50	21.80	3645.72	1777.95	598.19	1875.85	2.39	36	55	36.817	107	27	48.720	
4288.00	7.25	20.05	3676.43	1781.91	599.71	1880.09	4.11	36	55	36.856	107	27	48.702	



Weatherford International Ltd.

WFT Survey Report Lat, Long



Weatherford®

Company: Williams Production Date: 7/6/2011 Time: 08.58 02 Page: 4
Field: SAN JUAN CO. NM (NAD83) Co-ordinate(NE) Reference: Well: #60C True North
Site: Rosa Unit Com #60C Vertical (TVD) Reference: SITE 6465.0
Well: #60C Section (VS) Reference: Well (0.00N,0.00E,18.24Azi)
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
4320.00	5.86	20 36	3708.22	1785.34	600.97	1883.74	4.35	36	55	36.890	107	27	48 686	
4351.00	4.80	20 85	3739.09	1788.04	601.99	1886.62	3.42	36	55	36.916	107	27	48 674	
4382.00	3.55	23 46	3770.00	1790.13	602.83	1888.87	4.08	36	55	36.937	107	27	48 663	Last Wft Svy
4437.00	3.55	23 46	3824.90	1793.25	604.19	1892.26	0.00	36	55	36.968	107	27	48.647	7"
8700.00	0.50	23.46	8084.73	1931.42	664.15	2042.25	0.07	36	55	38.334	107	27	47.908	Proj. Per Ga
8732.00	0.50	23.46	8116.73	1931.68	664.26	2042.53	0.00	36	55	38.337	107	27	47.907	Proj To Bit

Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
320.01	320.00	9.625	12.250	9 5/8"
4437.00	3824.90	7.000	8.500	7"

Annotation

MD ft	TVD ft	
346.00	345.98	First Wft Svy
4382.00	3770.00	Last Wft Svy
4437.00	3824.90	Proj. To Bit
8700.00	8084.73	Proj. Per Gary
8732.00	8116.73	Proj. To Bit

Formations

MD ft	TVD ft	Formations	Lithology	Dip Angle deg	Dip Direction deg
1142.88	1124.00	Nacimiento Fm		0.00	0.00
2826.15	2420.00	Ojo Alamo SS.		0.00	0.00
2989.94	2535.00	Kirtland Sh		0.00	0.00
3529.61	2960.00	Fruitland Fm		0.00	0.00
3836.08	3240.00	Pictured Cliffs SS		0.00	0.00
4154.54	3545.00	Lewis Sh		0.00	0.00
5744.01	5130.00	Cliff House SS Trans		0.00	0.00
6059.31	5445.00	Cliff House SS		0.00	0.00
6104.35	5490.00	Menefee Fm.		0.00	0.00
6344.54	5730.00	Point Lookout SS.		0.00	0.00
6679.75	6065.00	Mancos Sh.		0.00	0.00
7670.14	7055.00	Gallup SS.		0.00	0.00
8385.25	7770.00	Greenhorn Ls		0.00	0.00
8425.25	7810.00	Graneros Sh		0.00	0.00
8561.26	7946.00	Dakota SS		0.00	0.00
	0.00	Morrison Fm.		0.00	0.00