



ROSA UNIT #322A
Section 23 T31N R 5W
1945' FNL & 600' FWL
RIO ARRIBA COUNTY, NM
PLAN VS ACTUAL

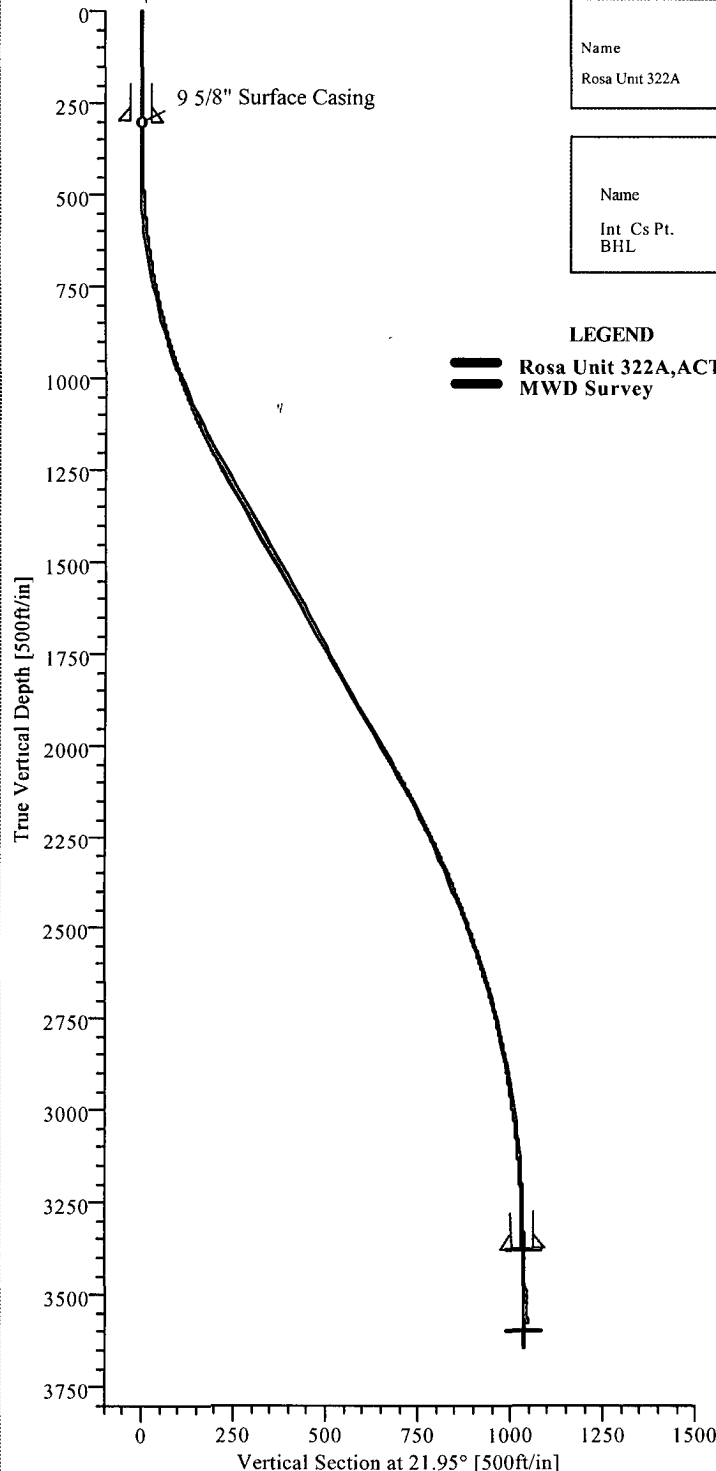
API # 30-039 299.41

Surface: 1945/N 600/W
BHL 976/N 990/W
md 3248 tvd 3574



Weatherford

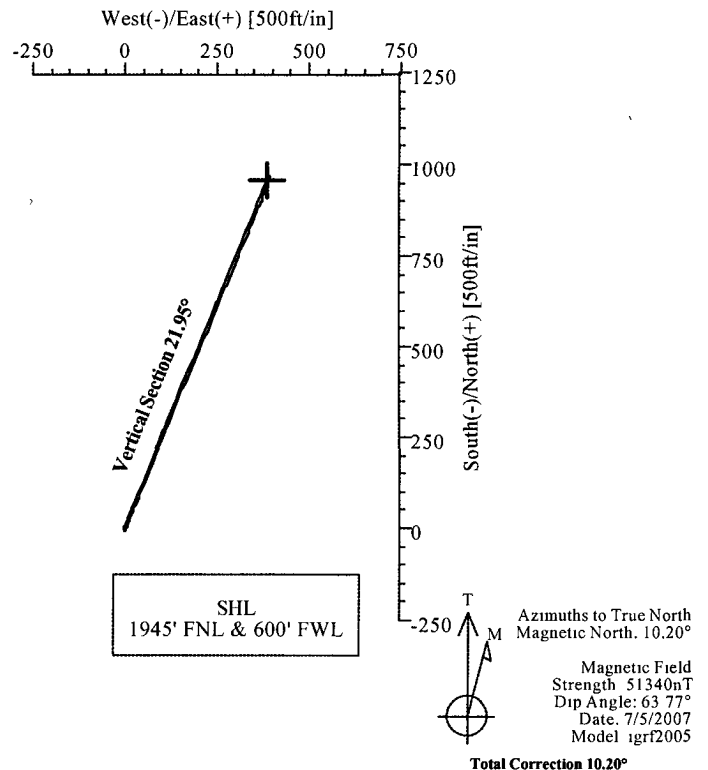
KB ELEVATION: 6660'
GR ELEVATION: 6646'



WELL DETAILS							
Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
Rosa Unit 322A	0 00	0 00	2142486 80	644843 00	36°53'13 000N	107°20'17.000W	N/A

TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape	
Int Cs Pt.	3380.00	958.67	386.36	36°53'22.480N	107°20'12.244W	Point	
BHL	3600.00	958.67	386.36	36°53'22.480N	107°20'12.244W	Point	

FORMATION TOP DETAILS			
No	TVDPath	MDPath	Formation
1	1530.00	1615.08	Nacimiento
2	2865.00	3084.78	Ojo Alamo
3	2985.00	3206.72	Kirtland
4	3315.00	3537.94	Fruitland
5	3400.00	3622.98	Top Coal Interval
6	3500.00	3723.12	Base Coal Interval
7	3500.00	3723.12	Pictured Chiffs



Plan, Plan #1 (Rosa Unit 322A/1)

Created By: Jose Perez Date: 09/25/07

Weatherford Drilling Services
3611 Plaza East Court
Granbury TX 76049
(817) 573 8500 MAIN
(817) 573 8001 FAX

Weatherford Drilling Services

Survey Report

Company: WILLIAMS PRODUCTION	Date: 9/25/2007	Time: 08:14:05	Page: 1
Field: RIO ARRIBA COUNTY (NAD 27)	Co-ordinate(NE) Reference: Site: Rosa Unit 322A, True North		
Site: Rosa Unit 322A	Vertical (TVD) Reference: SITE 6660.0		
Well: Rosa Unit 322A	Section (VS) Reference: Well (0.00N,0.00E,21.95Azi)		
Wellpath: ACTUAL	Survey Calculation Method: Minimum Curvature	Db: Sybase	

Field: RIO ARRIBA COUNTY (NAD 27)
NEW MEXICO

Map System: US State Plane Coordinate System 1927
Geo Datum: NAD27 (Clarke 1866)
Sys Datum: Mean Sea Level

Map Zone: New Mexico, Western Zone
Coordinate System: Site Centre
Geomagnetic Model: igrf2005

Site: Rosa Unit 322A

Rio Arriba County, NM

Site Position:	Northing: 2142486.80 ft	Latitude: 36 53 13.000 N
From: Geographic	Easting: 644843.00 ft	Longitude: 107 20 17.000 W
Position Uncertainty: 0.00 ft		North Reference: True
Ground Level: 6646 00 ft		Grid Convergence: 0.30 deg

Well: Rosa Unit 322A
S well

Slot Name:

Well Position: +N/-S 0.00 ft	Northing: 2142486.80 ft	Latitude: 36 53 13.000 N
+E/-W 0.00 ft	Easting: 644843 00 ft	Longitude: 107 20 17.000 W
Position Uncertainty: 0.00 ft		

Wellpath: ACTUAL

Current Datum: SITE	Height 6660.00 ft	Drilled From: Surface
Magnetic Data: 7/5/2007		Tie-on Depth: 0.00 ft
Field Strength: 51340 nT		Above System Datum: Mean Sea Level
Vertical Section: Depth From (TVD)		Declination: 10.20 deg
ft	+N/-S ft	Mag Dip Angle: 63 77 deg
0.00	0 00	+E/-W ft
		Direction deg
		21.95

Survey: MWD Survey

Start Date: 7/13/2007

Company: Weatherford Drilling Services
Tool:

Engineer:
Tied-to: From Surface

Survey: MWD Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
364.00	0.88	177.58	363.99	-2.79	0.12	-2.55	0.24	0.24	0.00	
387.00	0.88	136.20	386.98	-3.10	0.25	-2.78	2.70	0.00	-179.91	
417.00	0.25	53.95	416.98	-3.22	0.46	-2.82	2.94	-2.10	-274.17	
448.00	1.44	27.08	447.98	-2.84	0.69	-2.37	3.94	3.84	-86.68	
479.00	1.75	11.33	478.97	-2.03	0.96	-1.52	1.72	1.00	-50.81	
509.00	3.00	22.95	508.94	-0.85	1.36	-0.29	4.44	4.17	38.73	
540.00	3.88	22.20	539.88	0.86	2.07	1.57	2.84	2.84	-2.42	
571.00	5.06	16.83	570.79	3.14	2.86	3.99	4.03	3.81	-17.32	
601.00	6.81	18.20	600.63	6.10	3.80	7.08	5.85	5.83	4.57	
632.00	7.81	18.08	631.37	9.85	5.03	11.01	3.23	3.23	-0.39	
662.00	9.13	18.45	661.05	14.04	6.42	15.42	4.40	4.40	1.23	
693.00	9.44	21.20	691.64	18.75	8.11	20.42	1.75	1.00	8.87	
723.00	11.25	20.20	721.15	23.79	10.01	25.81	6.06	6.03	-3.33	
754.00	11.81	21.33	751.53	29.58	12.21	32.00	1.95	1.81	3.65	
785.00	12.69	20.95	781.82	35.72	14.58	38.58	2.85	2.84	-1.23	
815.00	14.06	23.33	811.01	42.14	17.20	45.52	4.92	4.57	7.93	
846.00	15.06	22.95	841.01	49.31	20.27	53.31	3.24	3.23	-1.23	
875.00	16.25	22.70	868.93	56.52	23.30	61.13	4.11	4.10	-0.86	
906.00	17.38	23.08	898.61	64.78	26.79	70.10	3.66	3.65	1.23	
936.00	18.56	23.45	927.14	73.28	30.45	79.35	3.95	3.93	1.23	
967.00	19.88	22.70	956.42	82.67	34.44	89.55	4.33	4.26	-2.42	
998.00	20.88	22.20	985.47	92.65	38.57	100.35	3.27	3.23	-1.61	
1029.00	22.25	22.08	1014.30	103.20	42.86	111.74	4.42	4.42	-0.39	

Weatherford Drilling Services

Survey Report

Company:	WILLIAMS PRODUCTION	Date:	9/25/2007	Time:	08:14:05	Page:	2
Field:	RIO ARriba COUNTY (NAD 27)	Co-ordinate(NE) Reference:	Site: Rosa Unit 322A, True North				
Site:	Rosa Unit 322A	Vertical (TVD) Reference:	SITE 6660.0				
Well:	Rosa Unit 322A	Section (VS) Reference:	Well (0.00N,0.00E,21.95Azi)				
Wellpath:	ACTUAL	Survey Calculation Method:	Minimum Curvature				Db: Sybase

Survey: MWD Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
1060.00	23.56	21.58	1042.86	114.40	47.34	123.81	4.27	4.23	-1.61	
1091.00	24.88	21.83	1071.13	126.22	52.05	136.52	4.27	4.26	0.81	
1123.00	26.06	21.45	1100.02	139.01	57.12	150.28	3.72	3.69	-1.19	
1155.00	27.06	21.45	1128.64	152.33	62.35	164.59	3.12	3.12	0.00	
1186.00	27.69	21.45	1156.17	165.59	67.57	178.85	2.03	2.03	0.00	
1218.00	28.00	21.20	1184.46	179.52	73.00	193.79	1.04	0.97	-0.78	
1248.00	28.50	21.08	1210.89	192.76	78.12	207.99	1.68	1.67	-0.40	
1280.00	29.13	20.83	1238.93	207.16	83.64	223.41	2.00	1.97	-0.78	
1311.00	29.69	20.83	1265.93	221.39	89.05	238.63	1.81	1.81	0.00	
1343.00	30.06	21.20	1293.68	236.27	94.77	254.57	1.29	1.16	1.16	
1373.00	30.25	21.58	1319.62	250.30	100.26	269.64	0.90	0.63	1.27	
1404.00	30.06	22.45	1346.43	264.74	106.10	285.21	1.54	-0.61	2.81	
1436.00	29.44	23.58	1374.21	279.35	112.31	301.08	2.61	-1.94	3.53	
1467.00	28.88	24.20	1401.28	293.17	118.42	316.18	2.05	-1.81	2.00	
1498.00	28.88	24.20	1428.42	306.82	124.56	331.14	0.00	0.00	0.00	
1530.00	29.69	22.70	1456.34	321.18	130.79	346.79	3.42	2.53	-4.69	
1562.00	30.19	21.33	1484.07	335.99	136.77	362.76	2.65	1.56	-4.28	
1592.00	30.06	20.08	1510.01	350.07	142.10	377.81	2.14	-0.43	-4.17	
1624.00	29.94	20.83	1537.73	365.06	147.69	393.80	1.23	-0.37	2.34	
1655.00	29.88	21.83	1564.60	379.46	153.31	409.26	1.62	-0.19	3.23	
1687.00	29.38	23.33	1592.41	394.07	159.38	425.08	2.79	-1.56	4.69	
1717.00	28.69	24.45	1618.64	407.38	165.28	439.63	2.93	-2.30	3.73	
1748.00	28.00	23.20	1645.93	420.84	171.22	454.34	2.94	-2.23	-4.03	
1779.00	27.19	23.20	1673.40	434.04	176.88	468.70	2.61	-2.61	0.00	
1809.00	27.44	22.83	1700.05	446.71	182.26	482.46	1.01	0.83	-1.23	
1841.00	27.56	22.70	1728.44	460.34	187.98	497.23	0.42	0.37	-0.41	
1873.00	27.69	22.08	1756.79	474.06	193.63	512.07	0.99	0.41	-1.94	
1903.00	28.06	22.33	1783.31	487.04	198.93	526.10	1.29	1.23	0.83	
1935.00	28.38	22.20	1811.51	501.05	204.67	541.23	1.02	1.00	-0.41	
1966.00	28.50	22.58	1838.77	514.70	210.29	555.99	0.70	0.39	1.23	
1997.00	28.63	22.70	1865.99	528.38	216.00	570.81	0.46	0.42	0.39	
2028.00	29.50	22.08	1893.09	542.30	221.73	585.87	2.97	2.81	-2.00	
2060.00	29.94	21.70	1920.88	557.02	227.65	601.74	1.50	1.37	-1.19	
2091.00	30.13	21.58	1947.72	571.44	233.37	617.25	0.64	0.61	-0.39	
2123.00	30.25	21.08	1975.38	586.43	239.22	633.34	0.87	0.37	-1.56	
2154.00	30.25	21.33	2002.15	600.99	244.87	648.96	0.41	0.00	0.81	
2186.00	30.13	21.45	2029.81	615.98	250.74	665.05	0.42	-0.37	0.37	
2218.00	29.69	21.70	2057.55	630.82	256.61	681.01	1.43	-1.37	0.78	
2250.00	29.44	21.95	2085.39	645.47	262.48	696.80	0.87	-0.78	0.78	
2281.00	28.88	22.08	2112.46	659.48	268.14	711.90	1.82	-1.81	0.42	
2312.00	28.31	22.07	2139.67	673.23	273.71	726.74	1.84	-1.84	-0.03	
2344.00	27.75	21.83	2167.92	687.17	279.34	741.78	1.79	-1.75	-0.75	
2375.00	26.81	21.58	2195.47	700.37	284.59	755.98	3.05	-3.03	-0.81	
2407.00	25.50	21.83	2224.20	713.48	289.81	770.09	4.11	-4.09	0.78	
2439.00	24.44	22.83	2253.20	725.98	294.94	783.60	3.57	-3.31	3.12	
2470.00	23.88	22.45	2281.49	737.69	299.82	796.28	1.87	-1.81	-1.23	
2502.00	23.25	22.83	2310.82	749.49	304.74	809.08	2.03	-1.97	1.19	
2533.00	23.00	22.33	2339.33	760.73	309.42	821.25	1.03	-0.81	-1.61	
2565.00	22.63	22.58	2368.83	772.20	314.16	833.66	1.20	-1.16	0.78	
2596.00	22.13	21.83	2397.49	783.13	318.62	845.46	1.86	-1.61	-2.42	
2627.00	21.69	21.70	2426.25	793.87	322.91	857.03	1.43	-1.42	-0.42	
2658.00	20.94	21.83	2455.13	804.34	327.09	868.30	2.42	-2.42	0.42	
2690.00	20.38	22.08	2485.07	814.81	331.31	879.59	1.77	-1.75	0.78	

Weatherford Drilling Services

Survey Report

Company: WILLIAMS PRODUCTION	Date: 9/25/2007	Time: 08:14:05	Page: 3
Field: RIO ARRIBA COUNTY (NAD 27)	Co-ordinate(NE) Reference:	Site: Rosa Unit 322A, True North	
Site: Rosa Unit 322A	Vertical (TVD) Reference:	SITE 6660.0	
Well: Rosa Unit 322A	Section (VS) Reference:	Well (0.00N,0.00E,21.95Azi)	
Wellpath: ACTUAL	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Survey: MWD Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
2720.00	20.06	22.58	2513.22	824.40	335.25	889.95	1.21	-1.07	1.67	
2752.00	19.06	22.08	2543.38	834.31	339.32	900.67	3.17	-3.12	-1.56	
2783.00	18.13	22.83	2572.76	843.45	343.09	910.55	3.10	-3.00	2.42	
2814.00	17.63	22.08	2602.26	852.24	346.73	920.07	1.78	-1.61	-2.42	
2846.00	16.69	21.33	2632.84	861.01	350.22	929.51	3.02	-2.94	-2.34	
2878.00	15.00	21.20	2663.62	869.15	353.39	938.25	5.28	-5.28	-0.41	
2909.00	13.94	22.58	2693.64	876.34	356.28	945.99	3.60	-3.42	4.45	
2940.00	13.19	23.58	2723.77	883.03	359.12	953.26	2.53	-2.42	3.23	
2972.00	13.44	24.95	2754.91	889.75	362.15	960.62	1.26	0.78	4.28	
3002.00	13.13	23.33	2784.11	896.04	364.97	967.51	1.61	-1.03	-5.40	
3032.00	12.31	21.08	2813.37	902.15	367.47	974.12	3.19	-2.73	-7.50	
3062.00	12.00	19.95	2842.70	908.07	369.69	980.43	1.30	-1.03	-3.77	
3094.00	11.31	20.58	2874.04	914.13	371.93	986.89	2.19	-2.16	1.97	
3126.00	10.63	20.70	2905.45	919.83	374.07	992.98	2.13	-2.12	0.37	
3157.00	10.19	19.95	2935.94	925.08	376.02	998.58	1.49	-1.42	-2.42	
3187.00	9.19	20.20	2965.52	929.83	377.75	1003.63	3.34	-3.33	0.83	
3219.00	8.25	21.80	2997.15	934.36	379.49	1008.48	3.03	-2.94	5.00	
3251.00	7.50	21.83	3028.84	938.43	381.12	1012.86	2.34	-2.34	0.09	
3282.00	6.25	19.33	3059.62	941.90	382.43	1016.57	4.15	-4.03	-8.06	
3314.00	5.81	21.58	3091.44	945.05	383.60	1019.93	1.56	-1.37	7.03	
3346.00	5.00	23.20	3123.30	947.83	384.74	1022.94	2.58	-2.53	5.06	
3377.00	3.88	23.95	3154.21	950.04	385.70	1025.34	3.62	-3.61	2.42	
3409.00	2.88	19.70	3186.15	951.78	386.41	1027.23	3.22	-3.12	-13.28	
3441.00	2.38	21.58	3218.12	953.16	386.93	1028.69	1.59	-1.56	5.87	
3472.00	2.00	9.07	3249.09	954.29	387.25	1029.87	1.96	-1.23	-40.35	
3503.00	1.81	24.56	3280.08	955.27	387.54	1030.88	1.76	-0.61	49.97	
3534.00	1.38	29.58	3311.07	956.04	387.93	1031.74	1.46	-1.39	16.19	
3551.00	1.31	6.95	3328.06	956.41	388.05	1032.13	3.13	-0.41	-133.12	last mwd survey
3798.00	4.75	6.95	3574.68	969.37	389.63	1044.74	1.39	1.39	0.00	TD survey

Annotation

MD ft	TVD ft	
3551.00	3328.06	last mwd survey
3798.00	3574.68	TD survey

**ROSA UNIT #322A
BASIN FRUITLAND COAL**

Spud: 07/06/07

Completed: 09/19/07

1st Delivered: 09/27/07

Surface Location:

1945' FNL and 600' FWL
SW/4 NW/4 Sec 23(E), T31N, R05W
Rio Arriba, NM

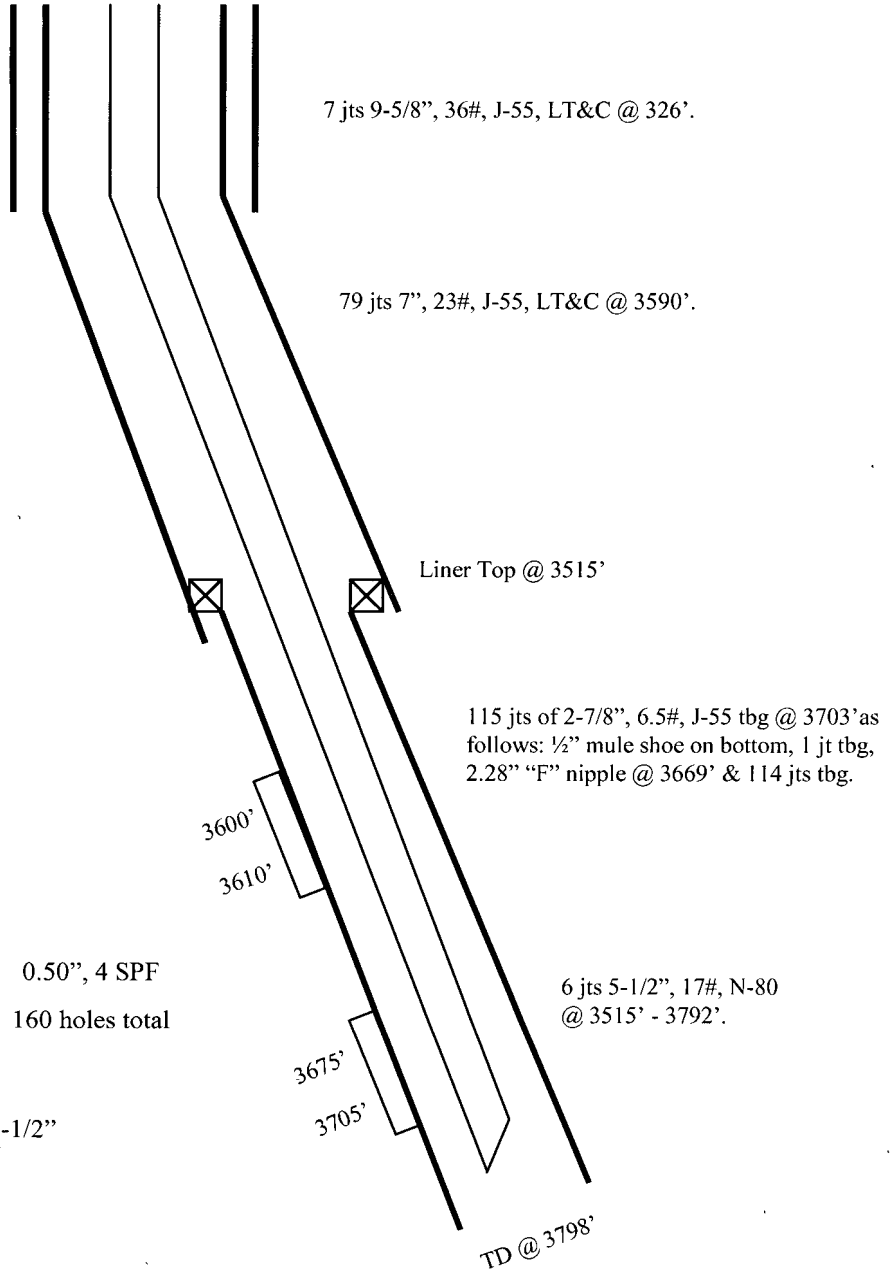
Bottom Hole Location:

976' FNL & 990' FWL
NW/4 NW/4 Sec 23(D), T31N, R05W
Rio Arriba, NM

Elevation: 6646' GR

API # 30-039-29941

<u>Top</u>	<u>MD Depth</u>
Ojo Alamo	3085'
Kirtland	3206'
Fruitland	3538'
Pictured Cliffs	3723'



Hole Size	Casing	Cement	Volume	Top of Cmt
12-1/4"	9-5/8", 36#	185 sxs	261 cu.ft.	Surface
8-3/4"	7", 23#	650 sxs	1314 cu.ft.	Surface
6-1/4"	5-1/2", 17#	Did Not Cmt		