



30-039-29673

ROSA UNIT #271-A
Section 35 T31N R 5W
2410' FSL & 990' FEL
RIO ARRIBA COUNTY, NM

BHL 1631/S 981/EL

MD 3527

TV 3407

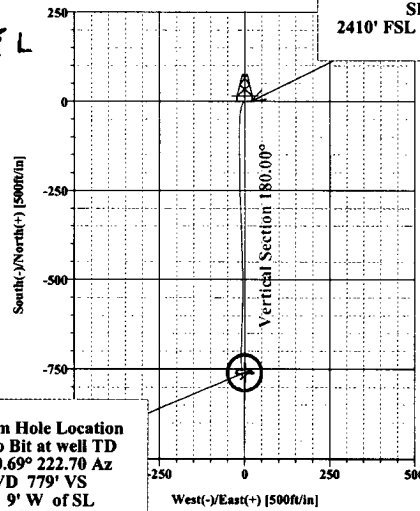


Azimuths to True North
Magnetic North: 10.33°
Magnetic Field
Strength: 51426nT
Dip Angle: 63.77°
Date: 6/9/2006
Model: Igrf2005



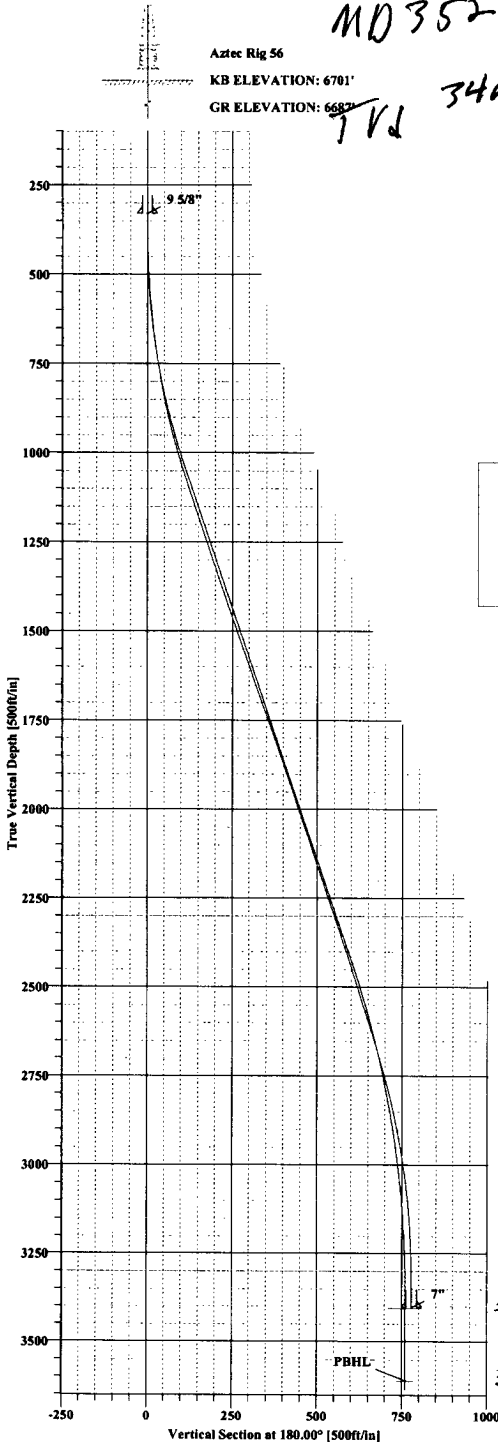
Weatherford

Total Correction 10.33°



SHL
2410' FSL & 990' FEL

Actual Bottom Hole Location
Projection to Bit at well TD
3527' MD 0.69° 222.70 Az
3408' TVD 779' VS
779' S & 9' W of SL
Closure: 779' @ 180.69° Az



TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Int. Cs. Pt.	3406.00	-760.00	0.00	36°51'12.485N	107°19'31.000W	Circle (Radius: 50)
PBHL	3611.00	-760.00	0.00	36°51'12.485N	107°19'31.000W	Point

WELL DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
Rosa Unit No. 271-A	0.00	0.00	2131079.12	648640.67	36°51'20.000N	107°19'31.000W	N/A

CASING DETAILS

No.	TVD	MD	Name	Size
1	330.00	330.00	9 5/8"	9.625
2	3403.78	3523.00	7"	7.000

LEGEND

- Rosa Unit No. 271-A (Planning Wellpath)
- Definitive Survey Wellpath
- Wft EM-MWD Survey



Wft Final PVA (Plan Vs Actual) Plot
Created by Lee Hoffpaur on 07-05-06
Weatherford Drilling Services
Midland, TX (432) 561-8892



Weatherford®

Evaluation, Drilling & Intervention

10000 West County Road 116

Midland, TX USA 79711

Tel. (432) 561-8892 Fax (432) 561-8895

I, **Lee Hoffpauir** certify that I am employed by Precision Energy Services, Inc., a Weatherford Company, and on the days of **6/9/2006** through **6/17/2006** I did conduct, or supervise the taking of a Measurement While Drilling survey from a depth of **372** ft. to a depth of **3476** ft., that the data is true, correct, complete, and within the limitations of the tool as set forth by Weatherford; that I am authorized and qualified to make this report, that this survey was conducted at the request of: **Williams Production Company** for the **Rosa 271-A** well, API Number: **30-039-29673** in **Rio Arriba** County, NM and find that it conforms to the principles and procedures as set forth by Weatherford.

Sincerely,

Lee Hoffpauir
Directional Drilling Coordinator

Weatherford Drilling Services

Definitive Survey Report



Company: WILLIAMS PRODUCTION Field: RIO ARRIBA COUNTY (NAD 27) Site: Rosa Unit 271-A Well: Rosa Unit No. 271-A Wellpath: Definitive Survey Wellpath	Date: 7/5/2006 Time: 15:18:25 Page: 1 Co-ordinate(NE) Reference: Site: Rosa Unit 271-A, True North Vertical (TVD) Reference: SITE 6701.0 Section (VS) Reference: Well (0.00N,0.00E,180.00Azi) Survey Calculation Method: Minimum Curvature Db: Sybase
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Survey: Wft EM-MWD Survey Wft PES ElectroMagnetic Survey Company: Weatherford Drilling Services Tool:	Start Date: 6/9/2006 Engineer: Lee Hoffpauir Tied-to: From Surface
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Well: Rosa Unit No. 271-A S well Well Position: +N/-S 0.00 ft Northing: 2131079.12 ft +E/-W 0.00 ft Easting : 648640.67 ft Position Uncertainty: 0.00 ft	Slot Name: Latitude: 36 51 20.00 N Longitude: 107 19 31.000 W
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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
Int. Cs. Pt.		3406.00	-760.00	0.00	2130319.13	648644.71	36 51 12.485 N	107 19 31.000 W
-Circle (Radius: 50)								
PBHL		3611.00	-760.00	0.00	2130319.13	648644.71	36 51 12.485 N	107 19 31.000 W

Annotation

MD ft	TVD ft	
330.00	330.00	Aztec Rig # 56 RKB of 6701' Total Elevation
372.00	371.99	Tie In at 9-5/8" Csg Shoe (Assume Vertical)
3476.00	3356.78	372' SMD_Start Wft EM-MWD Survey's
3527.00	3407.78	3476' SMD_Final Wft EM-MWD Survey_06-17-06.
		3527' MD_Projection to Bit at well TD on 06-17-06.

Survey

MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	ClsD ft	ClsA deg
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
330.00	0.00	0.00	330.00	0.00	0.00	0.00	0.00	0.00	0.00
372.00	1.69	265.57	371.99	0.05	-0.05	-0.62	4.02	0.62	265.57
463.00	3.38	214.82	462.91	2.35	-2.35	-3.49	2.92	4.21	235.98
523.00	4.75	209.82	522.76	5.96	-5.96	-5.73	2.36	8.27	223.88
584.00	5.75	201.07	583.50	11.00	-11.00	-8.09	2.10	13.66	216.31
645.00	7.00	196.82	644.13	17.41	-17.41	-10.26	2.19	20.21	210.51
706.00	8.25	191.32	704.59	25.26	-25.26	-12.20	2.37	28.05	205.77
767.00	9.56	186.07	764.85	34.59	-34.59	-13.59	2.53	37.17	201.45
828.00	10.94	182.82	824.88	45.41	-45.41	-14.41	2.45	47.64	197.61
889.00	13.19	182.57	884.52	58.15	-58.15	-15.01	3.69	60.05	194.47
1009.00	17.44	180.95	1000.24	89.82	-89.82	-15.92	3.56	91.22	190.05
1068.00	18.56	179.95	1056.35	108.05	-108.05	-16.06	1.97	109.24	188.45
1129.00	19.06	178.95	1114.09	127.72	-127.72	-15.87	0.98	128.70	187.08
1189.00	19.44	178.70	1170.74	147.49	-147.49	-15.46	0.65	148.30	185.98
1250.00	19.25	178.82	1228.29	167.70	-167.70	-15.03	0.32	168.37	185.12
1313.00	19.38	180.95	1287.75	188.53	-188.53	-14.98	1.14	189.12	184.54
1376.00	19.50	179.07	1347.16	209.50	-209.50	-14.99	1.01	210.03	184.09
1438.00	19.25	178.70	1405.64	230.06	-230.06	-14.59	0.45	230.52	183.63
1502.00	19.88	177.82	1465.95	251.48	-251.48	-13.93	1.09	251.87	183.17
1565.00	20.44	177.57	1525.09	273.18	-273.18	-13.06	0.90	273.49	182.74
1629.00	20.00	177.95	1585.14	295.28	-295.28	-12.20	0.72	295.53	182.36
1693.00	19.88	177.07	1645.31	317.08	-317.08	-11.25	0.51	317.28	182.03
1757.00	20.44	178.07	1705.39	339.12	-339.12	-10.31	1.03	339.28	181.74
1820.00	20.60	178.07	1764.39	361.19	-361.19	-9.57	0.25	361.32	181.52
1883.00	19.75	177.95	1823.52	382.91	-382.91	-8.82	1.35	383.01	181.32
1946.00	19.69	178.32	1882.83	404.15	-404.15	-8.12	0.22	404.23	181.15
2009.00	19.19	178.20	1942.24	425.11	-425.11	-7.49	0.80	425.18	181.01
2072.00	19.38	177.82	2001.70	445.90	-445.90	-6.77	0.36	445.96	180.87

Weatherford Drilling Services

Definitive Survey Report



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Survey

MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	ClsD ft	ClsA deg
2135.00	19.31	177.95	2061.14	466.76	-466.76	-6.00	0.13	466.80	180.74
2198.00	19.19	178.70	2120.62	487.52	-487.52	-5.39	0.44	487.55	180.63
2262.00	19.13	179.07	2181.08	508.52	-508.52	-4.98	0.21	508.55	180.56
2336.00	19.50	181.32	2250.91	532.99	-532.99	-5.07	1.12	533.02	180.54
2389.00	19.13	180.82	2300.93	550.52	-550.52	-5.39	0.76	550.55	180.56
2452.00	19.25	181.82	2360.43	571.22	-571.22	-5.87	0.56	571.25	180.59
2515.00	19.06	182.07	2419.94	591.88	-591.88	-6.57	0.33	591.92	180.64
2579.00	18.00	181.95	2480.62	612.21	-612.21	-7.29	1.66	612.25	180.68
2643.00	18.13	182.57	2541.47	632.04	-632.04	-8.07	0.36	632.09	180.73
2706.00	18.25	180.07	2601.32	651.70	-651.70	-8.52	1.25	651.75	180.75
2770.00	17.50	181.45	2662.23	671.34	-671.34	-8.78	1.35	671.39	180.75
2834.00	17.00	183.32	2723.35	690.30	-690.30	-9.56	1.17	690.36	180.79
2895.00	15.00	182.57	2781.99	707.09	-707.09	-10.43	3.30	707.16	180.85
2958.00	12.94	176.95	2843.12	722.28	-722.28	-10.42	3.91	722.35	180.83
3007.00	12.19	174.95	2890.95	732.91	-732.91	-9.68	1.77	732.97	180.76
3069.00	10.19	175.57	2951.77	744.90	-744.90	-8.68	3.23	744.95	180.67
3132.00	8.69	179.43	3013.91	755.22	-755.22	-8.20	2.58	755.26	180.62
3196.00	7.06	181.82	3077.31	763.98	-763.98	-8.28	2.60	764.03	180.62
3260.00	4.56	178.45	3140.97	770.46	-770.46	-8.33	3.94	770.50	180.62
3323.00	2.81	170.70	3203.84	774.49	-774.49	-8.01	2.88	774.53	180.59
3387.00	1.44	187.45	3267.80	776.83	-776.83	-7.87	2.33	776.87	180.58
3451.00	1.06	215.95	3331.78	778.11	-778.11	-8.32	1.12	778.15	180.61
3476.00	0.69	222.70	3356.78	778.41	-778.41	-8.56	1.53	778.45	180.63
3523.00	0.69	222.70	3403.78	778.82	-778.82	-8.94	0.00	778.87	180.66
3525.22	0.69	222.70	3406.00	778.84	-778.84	-8.96	0.00	778.89	180.66
3527.00	0.69	222.70	3407.78	778.86	-778.86	-8.97	0.00	778.91	180.66