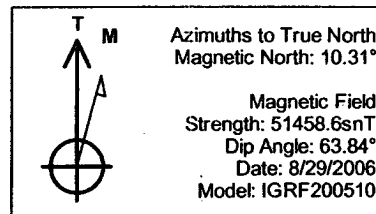
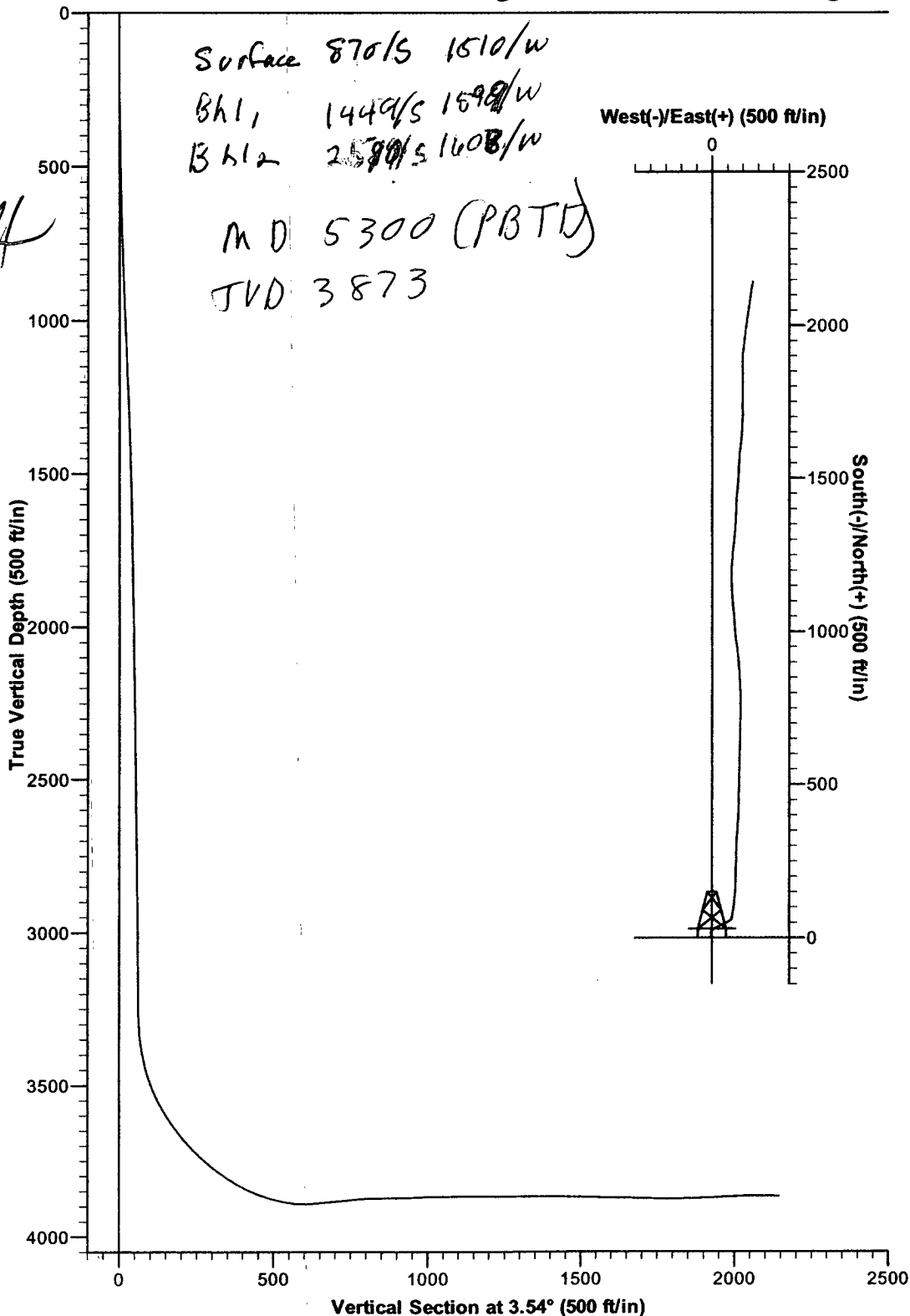


Project: Carracas 25 A #14
Site: Carson National Forest
Well: Directional Survey
Wellbore: Carracas 25 A 14 wellbore

SURFACE LOCATION	
Easting:	2873851.45
Northing:	2164217.76



30-039-27588



Surface 870/S 1510/W
Bh1, 1449/S 1599/W
Bh12 2589/S 1608/W

MD 5300 (PBTD)
JVD 3873



Energen

Energen Resources - Survey



Company: Energen Resources
Project: Carracas 25 A #14
Site: Carson National Forest
Well: Directional Survey
Wellbore: Carracas 25 A 14 wellbore
Design: Survey

Local Co-ordinate Reference: Well Directional Survey
TVD Reference: WELL @ 0.0ft (Original Well Elev)
MD Reference: WELL @ 0.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.16 Single User Db

Project	Carracas 25 A #14, Rio Arriba County, NM		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site	Carson National Forest		
Site Position:		Northing:	2,164,217.76 ft
From:	Lat/Long	Easting:	2,873,851.45 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	36° 56' 46.950 N
		Longitude:	107° 19' 2.680 W
		Grid Convergence:	0.31 °

Well	Directional Survey		
Well Position	+N/-S	0.0 ft	Northing: 2,164,217.76 ft
	+E/-W	0.0 ft	Easting: 2,873,851.45 ft
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	36° 56' 46.950 N
		Longitude:	107° 19' 2.680 W
		Ground Level:	0.0 ft

Wellbore	Carracas 25 A 14 wellbore				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	8/29/2006	10.31	63.84	51,459

Design	Survey			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	3.54

Survey Tool Program	Date	8/29/2006		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	0.0	Survey (Carracas 25 A 14 wellbore)		

Planned Survey						
MD (ft)	TVD (ft)	Inc (°)	Azi (°)	V. Sec (ft)	+FNL/-FSL (ft)	+FEL/-FWL (ft)
0.0	0.0	0.00	0.00	0.0	870.0	1,510.0
100.0	100.0	0.20	339.83	0.2	870.2	1,509.9
200.0	200.0	0.40	339.83	0.6	870.7	1,509.8
300.0	300.0	0.60	339.83	1.4	871.5	1,509.5
400.0	400.0	0.80	339.83	2.5	872.6	1,509.0
442.0	442.0	0.88	339.83	3.1	873.2	1,508.8
500.0	500.0	1.06	346.52	4.0	874.1	1,508.6
600.0	600.0	1.39	353.81	6.1	876.2	1,508.2
700.0	699.9	1.74	358.25	8.8	879.0	1,508.0
800.0	799.9	2.09	1.21	12.2	882.3	1,508.0
878.0	877.8	2.37	2.90	15.2	885.3	1,508.1
900.0	899.8	2.37	7.23	16.1	886.2	1,508.2

Energen

Energen Resources - Survey



Company: Energen Resources
Project: Carracas 25 A #14
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Well: Directional Survey
Wellbore: Carracas 25 A 14 wellbore
Design: Survey

Local Co-ordinate Reference: Well Directional Survey
TVD Reference: WELL @ 0.0ft (Original Well Elev)
MD Reference: WELL @ 0.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.16 Single User Db

Planned Survey

MD (ft)	TVD (ft)	Inc (°)	Azi (°)	V. Sec (ft)	+FNL/FSL (ft)	+FEL/FWL (ft)
1,000.0	999.7	2.52	26.08	20.2	890.3	1,509.4
1,100.0	1,099.6	2.90	41.38	24.2	894.1	1,512.1
1,200.0	1,199.4	3.44	52.53	28.2	897.9	1,516.1
1,300.0	1,299.2	4.06	60.47	32.1	901.4	1,521.6
1,310.0	1,309.2	4.13	61.13	32.5	901.8	1,522.2
1,400.0	1,399.0	3.67	62.46	35.7	904.7	1,527.6
1,500.0	1,498.8	3.15	64.40	38.7	907.3	1,532.9
1,600.0	1,598.7	2.65	67.08	41.0	909.4	1,537.5
1,700.0	1,698.6	2.15	71.01	42.8	910.9	1,541.4
1,745.0	1,743.6	1.93	73.44	43.4	911.4	1,543.0
1,776.0	1,774.5	1.93	62.19	43.8	911.8	1,543.9
1,800.0	1,798.5	1.91	62.15	44.2	912.2	1,544.6
1,900.0	1,898.5	1.84	61.99	46.0	913.7	1,547.5
2,000.0	1,998.4	1.77	61.82	47.6	915.2	1,550.3
2,100.0	2,098.4	1.69	61.63	49.2	916.6	1,552.9
2,200.0	2,198.3	1.62	61.42	50.7	918.0	1,555.5
2,300.0	2,298.3	1.55	61.19	52.2	919.3	1,557.9
2,400.0	2,398.3	1.47	60.94	53.6	920.6	1,560.2
2,500.0	2,498.2	1.40	60.67	55.0	921.8	1,562.4
2,607.0	2,605.2	1.32	60.34	56.4	923.1	1,564.6
2,700.0	2,698.2	1.18	59.02	57.5	924.1	1,566.4
2,800.0	2,798.2	1.04	57.23	58.6	925.1	1,568.0
2,900.0	2,898.1	0.89	54.85	59.6	926.1	1,569.4
3,000.0	2,998.1	0.75	51.56	60.6	926.9	1,570.6
3,038.0	3,036.1	0.70	49.97	60.9	927.2	1,570.9
3,100.0	3,098.1	0.75	45.50	61.4	927.8	1,571.5
3,200.0	3,198.1	0.84	39.52	62.5	928.8	1,572.5
3,238.0	3,236.1	0.88	37.58	63.0	929.2	1,572.8
3,265.0	3,263.1	1.06	38.28	63.4	929.6	1,573.1
3,296.0	3,294.1	2.20	19.29	64.2	930.4	1,573.5
3,300.0	3,298.1	2.50	17.51	64.3	930.5	1,573.5
3,326.0	3,324.0	4.48	11.82	65.9	932.1	1,573.9
3,350.0	3,347.9	6.33	10.59	68.1	934.3	1,574.3
3,358.0	3,355.9	6.95	10.33	69.1	935.2	1,574.5
3,388.0	3,385.6	9.41	10.95	73.3	939.4	1,575.3
3,400.0	3,397.4	10.30	10.91	75.3	941.4	1,575.7
3,420.0	3,417.0	11.78	10.86	79.1	945.2	1,576.4
3,450.0	3,446.2	14.77	9.98	86.0	951.9	1,577.6
3,482.0	3,476.9	17.94	9.36	94.9	960.8	1,579.2
3,500.0	3,494.0	19.77	8.60	100.7	966.6	1,580.1
3,513.0	3,506.1	21.10	8.13	105.2	971.1	1,580.7
3,543.0	3,533.8	24.09	7.43	116.7	982.5	1,582.3
3,550.0	3,540.2	24.76	6.91	119.6	985.4	1,582.6
3,574.0	3,561.8	27.08	5.32	130.1	995.8	1,583.7

Energen

Energen Resources - Survey



Company: Energen Resources
Project: Carracas 25 A #14
Site: Carson National Forest
Well: Directional Survey
Wellbore: Carracas 25 A 14 wellbore
Design: Survey

Local Co-ordinate Reference: Well Directional Survey
TVD Reference: WELL @ 0.0ft (Original Well Elev)
MD Reference: WELL @ 0.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.16 Single User Db

Planned Survey

MD (ft)	TVD (ft)	Inc (°)	Azi (°)	V. Sec (ft)	+FNL/-FSL (ft)	+FEL/-FWL (ft)
3,600.0	3,584.7	29.30	4.16	142.4	1,008.0	1,584.8
3,606.0	3,589.9	29.81	3.91	145.3	1,011.0	1,585.0
3,636.0	3,615.6	32.62	2.77	160.9	1,026.5	1,585.9
3,650.0	3,627.3	33.93	2.36	168.6	1,034.2	1,586.2
3,667.0	3,641.3	35.53	1.89	178.2	1,043.8	1,586.6
3,697.0	3,665.2	38.25	1.45	196.2	1,061.8	1,587.1
3,700.0	3,667.6	38.52	1.44	198.1	1,063.7	1,587.1
3,727.0	3,688.4	40.98	1.37	215.4	1,081.0	1,587.6
3,750.0	3,705.5	42.94	1.23	230.7	1,096.3	1,587.9
3,758.0	3,711.3	43.62	1.19	236.2	1,101.8	1,588.0
3,790.0	3,733.9	46.34	1.28	258.8	1,124.4	1,588.5
3,800.0	3,740.8	47.13	1.43	266.1	1,131.7	1,588.7
3,821.0	3,754.8	48.80	1.72	281.7	1,147.3	1,589.1
3,851.0	3,774.1	51.35	2.77	304.7	1,170.3	1,590.0
3,883.0	3,793.5	54.08	3.74	330.1	1,195.7	1,591.5
3,900.0	3,803.3	55.57	3.83	344.0	1,209.6	1,592.4
3,915.0	3,811.6	56.89	3.91	356.5	1,222.0	1,593.2
3,946.0	3,827.8	59.97	3.65	382.9	1,248.4	1,595.0
3,950.0	3,829.8	60.48	3.51	386.4	1,251.8	1,595.2
3,975.0	3,841.5	63.66	2.68	408.5	1,273.9	1,596.4
4,000.0	3,852.0	66.50	2.19	431.1	1,296.5	1,597.3
4,006.0	3,854.4	67.18	2.07	436.6	1,302.0	1,597.5
4,025.0	3,861.4	69.35	1.23	454.3	1,319.7	1,598.0
4,036.0	3,865.2	70.61	0.75	464.6	1,330.0	1,598.2
4,050.0	3,869.7	72.16	0.59	477.8	1,343.3	1,598.4
4,067.0	3,874.6	74.04	0.40	494.1	1,359.6	1,598.5
4,097.0	3,882.0	77.47	0.49	523.1	1,388.6	1,598.7
4,100.0	3,882.6	77.80	0.54	526.0	1,391.6	1,598.8
4,127.0	3,887.7	80.81	1.01	552.5	1,418.1	1,599.1
4,150.0	3,890.4	85.44	1.47	575.4	1,440.9	1,599.6
4,158.0	3,890.9	87.05	1.63	583.3	1,448.9	1,599.8
4,175.0	3,891.4	90.04	1.82	600.3	1,465.9	1,600.4
4,189.0	3,891.0	92.51	1.98	614.3	1,479.9	1,600.8
4,200.0	3,890.5	93.29	1.65	625.3	1,490.8	1,601.2
4,221.0	3,889.0	94.79	1.01	646.2	1,511.8	1,601.7
4,250.0	3,886.4	95.50	0.84	675.1	1,540.7	1,602.1
4,281.0	3,883.6	94.97	0.31	705.9	1,571.5	1,602.4
4,301.0	3,881.8	95.32	0.22	725.8	1,591.4	1,602.5
4,355.0	3,876.8	95.32	0.22	779.5	1,645.2	1,602.7
4,375.0	3,875.3	93.22	359.27	799.4	1,665.2	1,602.6
4,381.0	3,875.0	92.59	358.99	805.3	1,671.1	1,602.5
4,400.0	3,874.2	92.28	357.06	824.2	1,690.1	1,601.9
4,413.0	3,873.7	92.07	355.74	837.1	1,703.1	1,601.1
4,445.0	3,872.7	91.36	356.88	868.8	1,735.0	1,599.0

Energen

Energen Resources - Survey



Company: Energen Resources
Project: Carracas 25 A #14
Site: Carson National Forest
Well: Directional Survey
Wellbore: Carracas 25 A 14 wellbore
Design: Survey

Local Co-ordinate Reference: Well Directional Survey
TVD Reference: WELL @ 0.0ft (Original Well Elev)
MD Reference: WELL @ 0.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.16 Single User Db

Planned Survey

MD (ft)	TVD (ft)	Inc (°)	Azi (°)	V. Sec (ft)	+FNL/-FSL (ft)	+FEL/-FWL (ft)
4,476.0	3,872.1	90.92	356.36	899.6	1,765.9	1,597.2
4,500.0	3,871.7	90.99	353.02	923.3	1,789.8	1,595.0
4,507.0	3,871.6	91.01	352.05	930.2	1,796.8	1,594.1
4,539.0	3,870.7	92.15	351.79	961.5	1,828.4	1,589.6
4,550.0	3,870.3	92.18	353.12	972.3	1,839.3	1,588.1
4,571.0	3,869.5	92.24	355.65	993.0	1,860.2	1,586.1
4,603.0	3,868.6	90.75	356.80	1,024.8	1,892.1	1,584.0
4,635.0	3,868.2	90.84	354.25	1,056.4	1,924.0	1,581.5
4,667.0	3,867.6	91.19	354.60	1,088.0	1,955.9	1,578.4
4,698.0	3,867.2	90.40	356.00	1,118.7	1,986.8	1,575.8
4,700.0	3,867.2	90.38	356.13	1,120.7	1,988.8	1,575.7
4,729.0	3,867.1	90.04	358.02	1,149.5	2,017.7	1,574.2
4,761.0	3,867.2	89.52	359.34	1,181.4	2,049.7	1,573.5
4,775.0	3,867.4	89.29	1.23	1,195.4	2,063.7	1,573.5
4,793.0	3,867.6	88.99	3.65	1,213.4	2,081.7	1,574.3
4,800.0	3,867.7	89.24	3.86	1,220.4	2,088.7	1,574.8
4,825.0	3,867.9	90.13	4.62	1,245.3	2,113.6	1,576.6
4,857.0	3,867.7	90.66	6.20	1,277.3	2,145.5	1,579.6
4,889.0	3,867.4	90.31	6.11	1,309.3	2,177.3	1,583.1
4,900.0	3,867.3	90.34	5.72	1,320.3	2,188.2	1,584.2
4,921.0	3,867.2	90.40	4.97	1,341.3	2,209.1	1,586.1
4,952.0	3,867.0	90.40	2.33	1,372.3	2,240.1	1,588.1
4,984.0	3,866.8	90.22	0.31	1,404.2	2,272.1	1,588.9
5,000.0	3,866.8	89.69	2.55	1,420.2	2,288.0	1,589.3
5,016.0	3,867.0	89.16	4.79	1,436.2	2,304.0	1,590.3
5,048.0	3,867.5	88.90	5.58	1,468.2	2,335.9	1,593.2
5,080.0	3,868.1	88.99	3.91	1,500.2	2,367.8	1,595.8
5,100.0	3,868.6	88.33	2.65	1,520.2	2,387.7	1,597.0
5,112.0	3,869.0	87.93	1.89	1,532.2	2,399.7	1,597.4
5,144.0	3,869.9	88.53	3.04	1,564.2	2,431.7	1,598.8
5,150.0	3,870.1	88.64	3.67	1,570.2	2,437.6	1,599.2
5,175.0	3,870.6	89.08	6.29	1,595.1	2,462.5	1,601.3
5,207.0	3,871.1	89.08	5.67	1,627.1	2,494.4	1,604.7
5,239.0	3,871.7	88.72	4.18	1,659.1	2,526.2	1,607.4
5,271.0	3,872.5	88.46	2.51	1,691.1	2,558.2	1,609.3
5,275.0	3,872.6	88.41	2.01	1,695.1	2,562.2	1,609.4
5,302.0	3,873.4	88.11	358.64	1,722.0	2,589.2	1,609.6
5,334.0	3,874.3	88.81	1.10	1,753.9	2,621.1	1,609.5
5,366.0	3,874.6	90.22	1.10	1,785.9	2,653.1	1,610.1
5,398.0	3,874.2	91.01	359.52	1,817.9	2,685.1	1,610.3
5,400.0	3,874.2	91.07	359.44	1,819.9	2,687.1	1,610.3
5,429.0	3,873.4	91.89	358.29	1,848.7	2,716.1	1,609.7
5,450.0	3,872.7	92.29	359.50	1,869.7	2,737.1	1,609.3
5,461.0	3,872.2	92.50	0.14	1,880.6	2,748.1	1,609.3
5,475.0	3,871.6	92.39	2.49	1,894.6	2,762.1	1,609.6

PBD 5300
 2589/5 1607W

Energen
Energen Resources - Survey



Company: Energen Resources
Project: Carracas 25 A #14
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Design: Survey

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Database: EDM 2003.16 Single User Db

Planned Survey

MD (ft)	TVD (ft)	Inc (°)	Azi (°)	V. Sec (ft)	+FNL/-FSL (ft)	+FEL/-FWL (ft)
5,493.0	3,870.9	92.24	5.50	1,912.6	2,780.0	1,610.8
5,500.0	3,870.6	92.20	5.85	1,919.6	2,787.0	1,611.5
5,525.0	3,869.7	92.07	7.08	1,944.5	2,811.8	1,614.3
5,556.0	3,868.5	92.33	7.61	1,975.4	2,842.5	1,618.3
5,588.0	3,867.0	92.95	6.99	2,007.3	2,874.2	1,622.4
5,600.0	3,866.5	92.46	7.42	2,019.3	2,886.1	1,623.9
5,620.0	3,865.7	91.63	8.13	2,039.2	2,905.9	1,626.6
5,654.0	3,865.2	90.22	8.66	2,073.1	2,939.5	1,631.5
5,700.0	3,865.5	89.09	8.66	2,118.9	2,985.0	1,638.5
5,728.0	3,866.1	88.40	8.66	2,146.8	3,012.7	1,642.7

Checked By: _____ Approved By: _____ Date: _____