

SURVEY REPORT
YATES PETROLEUM
LOWE STAPLES AWR FED #1
EDDY COUNTY, NEW MEXICO
DISTRICT TWO

SEPTEMBER 19, 2001



A Gyrodata Directional Survey

for

Yates Petroleum

Location: PATTERSON/UTI #512, EDDY COUNTY NEW MEXICO
Well: LOWE STAPLES AWR FED #1, 7-1/2" CASING

Job Number: MD0601GMW228

Run Date: 6/3/01

Surveyor: James Taylor Reed Ellis

Calculation Method: MINIMUM CURVATURE

Survey Latitude: 32.461780 deg. N

Azimuth Correction:

Gyro: Bearings are Relative to True North

Vertical Section Calculated from Well Head Location

Closure Calculated from Well Head Location

Horizontal Coordinates Calculated from Local Horizontal Reference

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MEASURED DEPTH feet	I N C L deg.	A Z I M U T H deg.	B O R E H O L E B E A R I N G deg. min.	D O G L E G S E V E R I T Y deg./ 100 ft.	V E R T I C A L D E P T H feet	C L O S U R E D I S T. A Z I M U T H feet deg.	H O R I Z O N T A L C O O R D I N A T E S feet
0.0	0.00	0.00	N 0 0 E	0.00	0.0	0.0 0.0	0.00 N 0.00 E

0 - 4000 FT RATE GYROSCOPIC MULTISHOT RUN INSIDE 7-1/2" CASING							
ALL MEASURED DEPTHS AND COORDINATES REFERENCED TO PATTERSON/UTI #512							

100.0	0.47	276.87	N 83 8 W	0.47	100.0	0.4 276.9	0.05 N 0.40 W
200.0	0.55	271.00	N 89 0 W	0.10	200.0	1.3 274.7	0.11 N 1.28 W
300.0	0.26	252.40	S 72 24 W	0.31	300.0	2.0 271.3	0.05 N 1.97 W
400.0	0.27	212.02	S 32 1 W	0.18	400.0	2.3 264.5	0.22 S 2.32 W
500.0	0.50	182.40	S 2 24 W	0.29	500.0	2.6 250.7	0.86 S 2.46 W
600.0	0.56	147.92	S 32 5 E	0.32	600.0	2.8 232.4	1.71 S 2.22 W
700.0	0.95	126.41	S 53 35 E	0.48	700.0	2.9 206.3	2.62 S 1.29 W
800.0	0.10	79.77	N 79 46 E	0.89	800.0	3.1 189.9	3.09 S 0.54 W
900.0	0.12	156.79	S 23 12 E	0.14	900.0	3.2 187.3	3.18 S 0.41 W
1000.0	0.33	168.23	S 11 46 E	0.21	1000.0	3.6 185.0	3.56 S 0.31 W
1100.0	0.14	216.77	S 36 46 W	0.26	1100.0	3.9 184.7	3.93 S 0.32 W
1200.0	0.22	19.57	N 19 34 E	0.36	1200.0	3.9 184.9	3.85 S 0.33 W
1300.0	0.52	353.39	N 6 37 W	0.33	1300.0	3.2 185.7	3.22 S 0.32 W
1400.0	0.48	357.89	N 2 6 W	0.05	1400.0	2.4 189.3	2.35 S 0.39 W
1500.0	0.56	354.20	N 5 48 W	0.08	1500.0	1.5 197.4	1.44 S 0.45 W
1600.0	0.52	352.00	N 8 0 W	0.05	1600.0	0.8 227.6	0.51 S 0.56 W
1700.0	0.41	331.65	N 28 21 W	0.19	1700.0	0.8 287.3	0.25 N 0.79 W
1800.0	0.34	297.12	N 62 53 W	0.23	1799.9	1.4 299.6	0.70 N 1.23 W
1900.0	0.69	281.28	N 78 43 W	0.37	1899.9	2.3 294.5	0.95 N 2.09 W
2000.0	1.09	283.91	N 76 6 W	0.41	1999.9	3.8 289.8	1.30 N 3.60 W

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MEASURED DEPTH feet	I N C L deg.	A Z I M U T H deg.	B O R E H O L E B E A R I N G deg. min.	D O G L E G S E V E R I T Y deg./ 100 ft.	V E R T I C A L D E P T H feet	C L O S U R E D I S T. A Z I M U T H feet deg.	H O R I Z O N T A L C O O R D I N A T E S feet
2100.0	1.20	282.98	N 77 1 W	0.11	2099.9	5.8 287.6	1.76 N 5.55 W
2200.0	1.18	288.26	N 71 44 W	0.11	2199.9	7.9 287.1	2.32 N 7.55 W
2300.0	1.07	284.23	N 75 46 W	0.14	2299.9	9.9 287.0	2.87 N 9.43 W
2400.0	0.87	290.37	N 69 38 W	0.23	2399.9	11.5 287.0	3.36 N 11.04 W
2500.0	0.90	290.16	N 69 50 W	0.04	2499.8	13.1 287.3	3.90 N 12.48 W
2600.0	0.77	292.54	N 67 27 W	0.14	2599.8	14.5 287.7	4.43 N 13.84 W
2700.0	0.63	295.55	N 64 27 W	0.14	2699.8	15.7 288.2	4.92 N 14.95 W
2800.0	0.52	308.63	N 51 22 W	0.17	2799.8	16.7 289.0	5.44 N 15.80 W
2900.0	0.33	309.28	N 50 43 W	0.19	2899.8	17.4 289.8	5.90 N 16.38 W
3000.0	0.38	306.21	N 53 47 W	0.06	2999.8	18.0 290.4	6.28 N 16.87 W
3100.0	0.41	301.30	N 58 42 W	0.04	3099.8	18.7 290.9	6.67 N 17.44 W
3200.0	0.43	327.39	N 32 37 W	0.19	3199.8	19.3 291.8	7.16 N 17.95 W
3300.0	0.31	301.17	N 58 50 W	0.20	3299.8	19.9 292.5	7.62 N 18.38 W
3400.0	0.27	323.90	N 36 6 W	0.12	3399.8	20.4 293.0	7.95 N 18.75 W
3500.0	0.23	282.89	N 77 6 W	0.18	3499.8	20.8 293.2	8.19 N 19.08 W
3600.0	0.13	272.10	N 87 54 W	0.11	3599.8	21.1 293.0	8.24 N 19.39 W
3700.0	0.24	280.44	N 79 33 W	0.12	3699.8	21.4 292.8	8.28 N 19.71 W
3800.0	0.33	288.70	N 71 18 W	0.10	3799.8	21.9 292.6	8.41 N 20.19 W
3900.0	0.30	253.59	S 73 35 W	0.19	3899.8	22.4 292.1	8.43 N 20.71 W
4000.0	0.21	216.16	S 36 10 W	0.18	3999.8	22.6 291.3	8.21 N 21.06 W

Final Station Closure: Distance: 22.61 ft Az: 291.29 deg.