



REPORT
of
SUB-SURFACE
DIRECTIONAL
SURVEY

GULF ENERGY & MINERAL COMPANY
COMPANY

CENTRAL DRINKARD #422
WELL NAME

LEA COUNTY, NEW MEXICO
LOCATION

<u>JOB NUMBER</u>	<u>TYPE OF SURVEY</u>	<u>DATE</u>
WT178 S01107	Magnetic Multi-Shot	Jan. 12, 1978
WT178 S01117	Magnetic Multi-Shot	Jan. 16, 1978
WT178 D01115	Magnetic Single-Shot	Jan. 27, 1978

SURVEY BY James Blackledge
James Blackledge
Roy Smith

OFFICE West Texas Dist.
West Texas District
West Texas District

GULF ENERGY & MINERALS U.S.
CENTRAL DRINKARD UNIT WELL NO. 422
LEA COUNTY, NEW MEXICO
MAGNETIC MULTISHOT SURVEY
WT178-S01107
JANUARY 12, 1978

PLANE OF PROPOSED DIRECTION IS S 65 DEG. 53 MIN. E

RECORD OF SURVEY

RADIUS OF CURVATURE METHOD

MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D	TRUE VERTICAL DEPTH FEET	VERTICAL SECTION FEET	RECTANGULAR COORDINATES FEET		DOG LEG SEVERITY DEG/100FT
420.	0 0	0	420.00	0.00	0.00	0.00	0.0
482.	0 45	N 63 E	482.00	.25	.18 N	.36 E	1.2
575.	0 30	N 84 E	574.99	1.02	.47 N	1.33 E	.4
660.	0 45	S 86 E	667.99	1.94	.49 N	2.34 E	.3
761.	0 30	S 88 E	760.98	2.88	.44 N	3.35 E	.3
854.	0 45	S 85 E	853.98	3.83	.37 N	4.37 E	.3
947.	0 45	S 75 E	946.97	5.01	.16 N	5.56 E	.1
1040.	0 45	S 69 E	1039.96	6.22	.21 S	6.72 E	.1
1133.	1 0	S 72 E	1132.95	7.64	.69 S	8.06 E	.3
1226.	1 0	S 72 E	1225.93	9.25	1.19 S	9.60 E	0.0
1319.	1 0	N 86 E	1318.92	10.79	1.39 S	11.21 E	.4
1412.	1 15	N 73 E	1411.90	12.29	1.05 S	13.00 E	.4
1505.	1 0	N 52 E	1504.88	13.42	.22 S	14.61 E	.5
1598.	0 45	N 11 E	1597.87	13.60	.97 N	15.33 E	.7
1691.	1 0	N 14 E	1690.86	13.31	2.36 N	15.64 E	.3
1784.	1 45	N 9 E	1783.84	12.83	4.54 N	16.09 E	.8
1877.	1 30	N 8 E	1876.80	12.12	7.15 N	16.48 E	.3
1970.	1 45	N 13 E	1969.76	11.50	9.74 N	16.96 E	.3
2063.	1 45	N 22 E	2062.72	11.17	12.45 N	17.81 E	.3
2156.	1 30	N 26 E	2155.68	11.16	14.86 N	18.88 E	.3
2249.	1 45	N 25 E	2248.64	11.23	17.24 N	20.02 E	.3
2342.	2 0	N 44 E	2341.59	11.77	19.73 N	21.73 E	.7
2435.	2 15	N 40 E	2434.53	12.83	22.30 N	24.04 E	.3
2528.	2 0	N 42 E	2527.46	13.83	24.90 N	26.30 E	.3
2621.	1 45	N 45 E	2620.41	14.84	27.11 N	28.40 E	.3
2652.	1 30	N 46 E	2651.40	15.16	27.72 N	29.02 E	.8
2691.	1 30	N 41 E	2690.39	15.50	28.46 N	29.73 E	.3
FINAL CLOSURE - DIRECTION: N 46 DEGS 14 MINS 38 SECS E							
DISTANCE: 41.15 FEET							

GULF ENERGY & MINERALS U.S.
CENTRAL DRINKARD UNIT WELL NO. 422
LEA COUNTY, NEW MEXICO
MAGNETIC MULTISHOT SURVEY
WT178-S01117
SURVEYOR - JAMES BLACKLEDGE
LASTMAN WHIPSTOCK
JANUARY 16, 1978

PLANE OF PROPOSED DIRECTION IS S 65 DEG. 53 MIN. E

RECORD OF SURVEY

RADIUS OF CURVATURE METHOD

MEASURED DEPTH FEET	DRIFT ANGLE O M	DRIFT DIRECTION D	TRUE VERTICAL DEPTH FEET	VERTICAL SECTION FEET	RECTANGULAR COORDINATES FEET		DOG LEG SEVERITY DEG/100FT
2691.	1 30	N 41 E	2690.39	15.51	28.46 N	29.73 E	0.0
2798.	1 15	N 40 E	2797.36	16.23	30.41 N	31.40 E	.2
2891.	1 0	N 56 E	2890.34	16.97	31.63 N	32.75 E	.4
2984.	1 0	N 46 E	2983.33	17.70	32.65 N	34.01 E	.2
3077.	0 45	N 59 E	3076.32	18.37	33.51 N	35.13 E	.3
3170.	0 45	N 54 E	3169.31	19.03	34.18 N	36.15 E	.1
3263.	1 0	N 63 E	3262.30	19.83	34.93 N	37.36 E	.3
3356.	1 0	N 66 E	3355.28	20.88	35.62 N	38.82 E	.1
3449.	1 0	N 72 E	3448.27	22.02	36.21 N	40.34 E	.1
3542.	0 45	S 80 E	3541.26	23.26	36.30 N	41.74 E	.5
3635.	0 30	N 82 E	3634.25	24.19	36.29 N	42.75 E	.3
3728.	0 30	N 89 E	3727.25	24.90	36.35 N	43.56 E	.1
3821.	0 30	S 86 E	3820.25	25.65	36.33 N	44.37 E	.0
3914.	0 45	N 76 E	3913.24	26.54	36.42 N	45.38 E	.3
4007.	0 30	N 79 E	4006.23	27.35	36.64 N	46.37 E	.3
4100.	0 45	N 42 E	4099.23	27.94	37.13 N	47.23 E	.5
4193.	1 0	N 68 E	4192.22	28.66	37.94 N	48.39 E	.5
4286.	1 15	N 52 E	4285.20	29.73	38.85 N	49.96 E	.4
4379.	1 0	N 24 E	4378.18	30.17	40.27 N	51.08 E	.6
4472.	1 0	N 1 E	4471.17	29.84	41.84 N	51.43 E	.4
4565.	1 15	N 10 W	4564.15	28.97	43.66 N	51.28 E	.4
4658.	1 30	N 1 E	4657.12	27.90	45.88 N	51.11 E	.4
4751.	1 30	N 36 W	4750.09	26.31	48.16 N	50.39 E	1.0
4844.	1 30	N 36 W	4843.06	24.20	50.13 N	48.96 E	0.0
4937.	1 30	N 45 W	4936.03	22.00	51.98 N	47.38 E	.3

FINAL CLOSURE - DIRECTION: N 42 DEGS 20 MINS 49 SECS E
DISTANCE: 70.33 FEET

GULF ENERGY & MINERALS U.S.
CENTRAL DRINKARD UNIT NO. 422
LEA COUNTY, NEW MEXICO
MAGNETIC SINGLE SHOT

WT178-001115

DIRECTIONAL SUPERVISOR ROY SMITH
JANUARY 27, 1978

PLANE OF PROPOSED DIRECTION IS S 65 DEG. 53 MIN. E

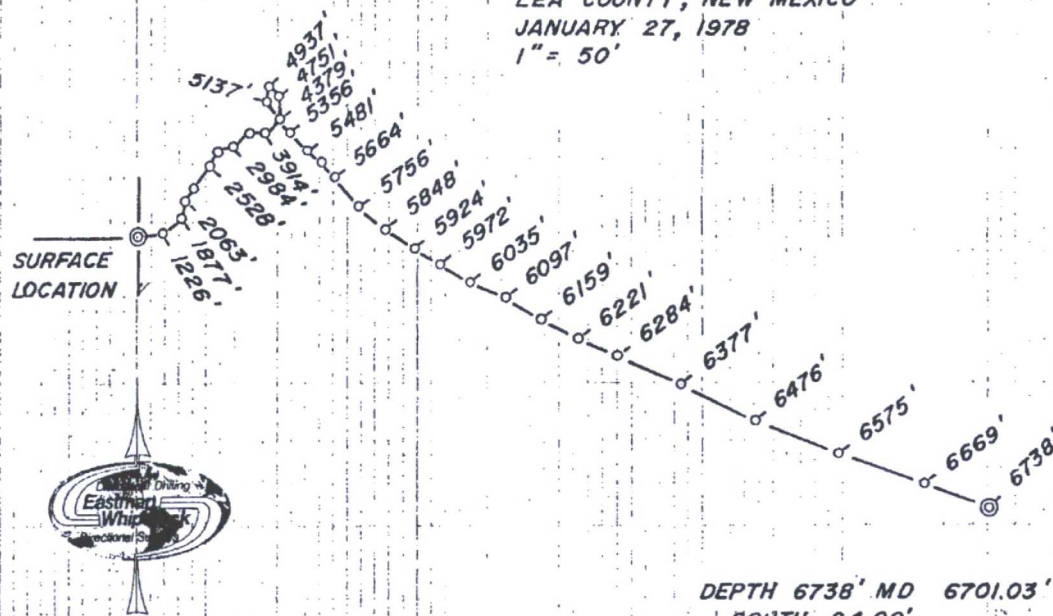
RECORD OF SURVEY

RADIUS OF CURVATURE METHOD

MEASURED DEPTH FEET	DRIFT ANGLE		DRIFT DIRECTION D	TRUE VERTICAL DEPTH FEET	VERTICAL SECTION FEET	R E C T A N G U L A R C O O R D I N A T E S FEET		C L O S U R E D I S T A N C E FEET		D O G D I R E C T I O N D M	L E G S E V E R I T Y D E G / 1 0 0 F T
	D	M				N	E	N	E		
4937.	1	30	N 45 W	4936.03	22.01	51.98 N	47.38 E	70.33	N 42 21 E		0.0
4998.	1	30	S 28 W	4997.01	20.85	51.78 N	46.02 E	69.27	N 41 38 E		4.0
5045.	2	0	S 10 E	5043.99	21.22	50.39 N	45.80 E	68.09	N 42 16 E		2.6
5137.	2	30	S 27 E	5135.92	23.65	46.97 N	46.94 E	66.41	N 44 59 E		.9
5231.	3	15	S 25 E	5229.80	27.27	42.73 N	49.01 E	65.02	N 48 55 E		.8
5356.	4	15	S 46 E	5354.53	34.28	36.12 N	53.73 E	64.74	N 56 5 E		1.3
5418.	4	15	S 42 E	5416.36	38.55	32.81 N	56.92 E	65.70	N 60 2 E		.5
5481.	4	30	S 49 E	5479.17	43.05	29.45 N	60.35 E	67.15	N 63 59 E		.9
5572.	4	0	S 50 E	5569.92	49.52	25.07 N	65.47 E	70.11	N 69 3 E		.6
5664.	6	30	S 38 E	5661.53	57.31	19.02 N	71.31 E	73.80	N 75 4 E		3.0
5756.	7	45	S 47 E	5752.82	67.78	10.62 N	79.01 E	79.72	N 82 21 E		1.8
5848.	8	30	S 52 E	5843.89	80.25	2.18 N	88.90 E	88.92	N 88 36 E		1.1
5924.	10	45	S 62 E	5918.82	92.79	4.74 S	99.54 E	99.65	S 87 17 E		3.7
5972.	12	0	S 62 E	5965.87	102.23	9.18 S	107.90 E	108.29	S 85 8 E		2.6
6035.	12	30	S 63 E	6027.44	115.57	15.35 S	119.75 E	120.73	S 82 42 E		.9
6097.	13	0	S 63 E	6087.91	129.24	21.56 S	131.95 E	133.70	S 80 43 E		.8
6159.	13	0	S 62 E	6148.32	143.16	28.00 S	144.32 E	147.01	S 79 1 E		.4
6221.	13	30	S 63 E	6208.67	157.35	34.57 S	156.92 E	160.68	S 77 35 E		.9
6284.	14	15	S 65 E	6269.83	172.45	41.19 S	170.50 E	175.40	S 76 25 E		1.4
6377.	16	0	S 65 E	6359.61	196.71	51.44 S	192.49 E	199.25	S 75 2 E		1.9
6476.	18	0	S 67 E	6454.28	225.65	63.21 S	218.93 E	227.87	S 73 54 E		2.1
6575.	19	30	S 70 E	6548.02	257.44	74.88 S	248.54 E	259.57	S 73 14 E		1.8
6669.	20	30	S 70 E	6636.35	289.50	85.87 S	278.75 E	291.67	S 72 53 E		1.1
6738.	20	15	S 70 E	6701.03	313.46	94.09 S	301.32 E	315.67	S 72 40 E		.4

FINAL CLOSURE - DIRECTION: S 72 DEGS 39 MINS 32 SECS E
DISTANCE: 315.67 FEET

GULF ENERGY and MINERALS U. S.
 CENTRAL DRINKARD UNIT WELL NO. 422
 LEA COUNTY, NEW MEXICO
 JANUARY 27, 1978
 1" = 50'



DEPTH 6738' MD 6701.03' TVD
 SOUTH 94.09'
 EAST 301.32'
 CLOSURE 315.67' S 72° 39' E