



REPORT
of
SUB-SURFACE
DIRECTIONAL
SURVEY

ENERGY RESERVES GROUP, INC.

COMPANY

GULF STATE WELL NO. 1

WELL NAME

LEA COUNTY, NEW MEXICO

LOCATION

JOB NUMBER

WT 378 S 1449

TYPE OF SURVEY

MAGNETIC MULTI SHOT

DATE

MARCH 30, 1978

SURVEY BY

JAMES BLACKLEDGE

OFFICE

WEST TEXAS

ENERGY RESERVES GROUP, INC.
GULF STATE WELL NO. 1
LEA COUNTY, NEW MEXICO
MAGNETIC MULTI SHOT SURVEY
SURVEYOR - JAMES BLACKLEDGE
EASTMAN-WHIPSTOCK
WT378-S1449
MARCH 30, 1978

RECORD OF SURVEY

RADIUS OF CURVATURE METHOD

MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D	TRUE VERTICAL DEPTH FEET		R E C T A N G U L A R C O O R D I N A T E S FEET	DOG LEG SEVERITY DEG/100FT
3600.	0 0	0	3600.00		0.00	0.0
3700.	1 15	N 36 W	3699.99		.64 N	1.3
3800.	1 15	N 42 W	3799.97		2.01 W	.1
3900.	1 15	N 23 W	3899.94		4.41 N	.4
4000.	1 45	N 25 W	3999.91		6.80 N	.5
4100.	2 0	N 15 W	4099.86		9.87 W	.4
4200.	2 15	N 10 W	4199.79		13.49 N	.3
4300.	2 30	N 9 W	4299.70		17.58 N	.3
4400.	2 45	N 14 W	4399.60		22.06 N	.3
4500.	2 45	N 10 W	4499.48		26.75 N	.2
4600.	2 30	N 6 W	4599.38		31.29 N	.3
4700.	2 30	N 9 W	4699.28		35.61 N	.1
4800.	2 30	N 9 W	4799.19		39.92 N	0.0
4900.	2 15	N 12 W	4899.10		44.00 N	.3
5000.	2 15	N 9 W	4999.02		47.86 N	.1
5100.	2 30	N 9 W	5098.94		51.95 N	.3
5200.	2 30	N 8 W	5198.84		56.26 N	.0
5300.	2 30	N 5 W	5298.75		60.60 N	.1
5400.	2 15	N 1 W	5398.66		64.73 N	.3
5500.	2 15	N 2 E	5498.58		68.66 N	.1
5600.	2 15	N 8 E	5598.51		72.57 N	.2
5700.	2 15	N 5 E	5698.43		76.47 N	.1
5800.	2 30	N 1 W	5798.34		80.61 N	.4
5900.	2 30	N 7 W	5898.25		84.96 N	.3
6000.	3 0	N 7 W	5998.13		89.72 N	.5
6100.	3 0	N 5 W	6098.00		94.92 N	.1
6200.	3 0	N 1 W	6197.86		100.15 N	.2
6300.	3 0	N 2 W	6297.72		105.38 N	.1
6400.	3 15	N 3 W	6397.57		110.83 N	.3
6500.	3 45	N 5 W	6497.39		116.92 N	.5

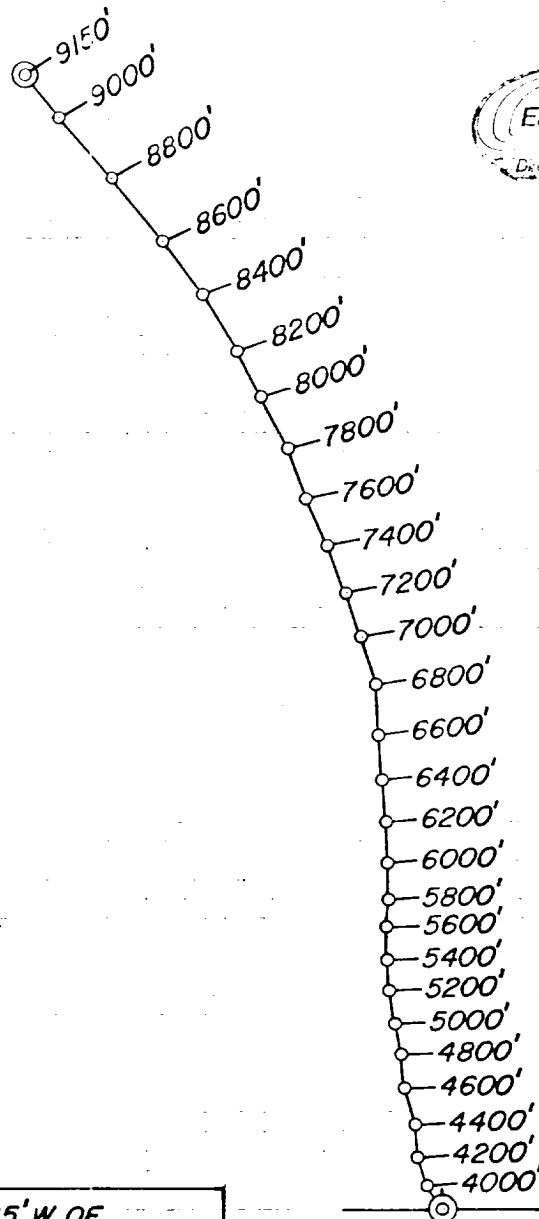
MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D	TRUE VERTICAL DEPTH FEET	R E C T A N G U L A R C O O R D I N A T E S FEET	DOG LEG SEVERITY DEG/100FT
6600.	3 45	N 5 W	6597.17	123.43 N 16.24 W	0.0
6700.	3 45	N 5 W	6696.96	129.95 N 16.81 W	0.0
6800.	3 30	N 11 W	6796.76	136.21 N 17.69 W	.5
6900.	3 45	N 13 W	6896.56	142.39 N 19.00 W	.3
7000.	3 30	N 15 W	6996.36	148.52 N 20.53 W	.3
7100.	3 30	N 24 W	7096.17	154.27 N 22.57 W	.5
7200.	3 15	N 20 W	7196.00	159.73 N 24.77 W	.3
7300.	3 45	N 23 W	7295.81	165.41 N 27.01 W	.5
7400.	4 0	N 21 W	7395.58	171.68 N 29.54 W	.3
7500.	3 30	N 25 W	7495.37	177.69 N 32.09 W	.6
7600.	3 30	N 22 W	7595.18	183.29 N 34.53 W	.2
7700.	4 15	N 21 W	7694.95	189.58 N 37.01 W	.8
7800.	4 30	N 23 W	7794.66	196.65 N 39.86 W	.3
7900.	4 0	N 24 W	7894.38	203.45 N 42.82 W	.5
8000.	4 0	N 25 W	7994.14	209.80 N 45.71 W	.1
8100.	4 0	N 26 W	8093.90	216.09 N 48.71 W	.1
8200.	4 15	N 31 W	8193.64	222.41 N 52.14 W	.4
8300.	4 30	N 32 W	8293.35	228.92 N 56.13 W	.3
8400.	4 45	N 36 W	8393.02	235.60 N 60.64 W	.4
8500.	5 15	N 37 W	8492.64	242.61 N 65.82 W	.5
8600.	5 30	N 40 W	8592.20	249.94 N 71.65 W	.4
8700.	5 45	N 39 W	8691.72	257.50 N 77.87 W	.3
8800.	5 45	N 41 W	8791.22	265.17 N 84.33 W	.2
8900.	5 45	N 41 W	8890.71	272.73 N 90.90 W	0.0
9000.	6 0	N 41 W	8990.19	280.46 N 97.62 W	.2
9100.	5 45	N 42 W	9089.66	288.13 N 104.40 W	.3
* 9150.	5 45	N 42 W	9139.41	291.85 N 107.75 W	0.0

FINAL CLOSURE - DIRECTION: N 20 DEGS 15 MINS 51 SECS W
 DISTANCE: 311.10 FEET

* DRIFT ANGLE AND DRIFT DIRECTION WAS PROJECTED FROM 9100 TO 9150ft.

ENERGY RESERVES GROUP, INC.
GULF STATE WELL NO. 1
LEA COUNTY, NEW MEXICO

SCALE: 1" = 50'



311.10' N 20° 15' W OF
SURFACE LOCATION
9150' MD 9139.4' TVD
NORTH 291.85' WEST 107.75'

SURFACE
LOCATION



P. O. Box 5577/Midland, Texas 79701/(915) 563-0511
TWX 910-881-5066/Cable: EASTCO

SURVEY CERTIFICATION SHEET

STATE OF TEXAS
COUNTY OF MIDLAND

I, James Blackledge, in the employ of Eastman Whipstock, Inc., did on the days of March 30, 1978 thru March 30, 1978 conduct or supervise the taking of a Magnetic Multi-Shot survey by the method of magnetic orientation from a depth of 3600 feet to 9150 feet, with recordings of inclination and direction being obtained at approximate intervals of 100 feet.

This survey was conducted at the request of Energy Reserves Group, Inc. for their Gulf State #1, Lea County, State of New Mexico, in the _____ field.

The data for this survey and the calculations were obtained and performed by me according to standards and procedures as set forth by Eastman Whipstock, Inc. and is true and correct to the best of my knowledge.

James Blackledge
Directional Supervisor/Surveyor

The data for this survey has been examined by me and conforms to principles and procedures set forth by Eastman Whipstock, Inc.

Larry Massey

Before me, the undersigned authority, on this day personally appeared James Blackledge, known to me to be the person whose name is subscribed to this instrument, who after being by me duly sworn on oath, states that he has knowledge of all the facts stated above and that this instrument is a true statement of facts therein recited.

Subscribed and sworn to before me on this 31st day of March, 1978.

Wanda J. Howell
Notary Public in and for the County of
Midland, Texas
My commission expires 10/31/78

COUNTY	LEA	FIELD	Vacuum	STATE	NM
OPR	ENERGY RESERVES GROUP, INC.			API	30-025-25826
NO	1	LEASE	State	MAP	
	Sec 9, T18S, R35E			CO-ORD	
	760' FNL, 760' FEL of Sec			5-3-8	NM
	3 mi SE/Buckeye			SPD	2-24-78
				CMP	4-29-78

CSC	WELL CLASS: INIT D FIN DO ELEV L & S			
	FORMATION	DATUM	FORMATION	DATUM
	ID	9155' (ABRF)	PBD	9070'

IP (Abo Reef) Perfs 8948-9052' F 296 BOPD + 3 BW. Pot based on 24 hr test thru 18/64" chk. GOR 891; gty 41; CP 100#; TP 100#

CONTR	MGF #1	OPRSELEV	3928' GL	PD	9100' RT
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	F.R. 2-6-78
	(Abo Detrital)
3-2-78	TD 3603'; WOC
3-7-78	Drlg 5042'
3-14-78	Drlg 7242' dolo & lm
3-20-78	Drlg 8204' dolo & cht
3-28-78	TD 9000'; Rng DST
	DST (Seven Rivers) 3603-75', open 1 hr 20 mins, rec 368' DF, (Sampler rec 2200 cc's DF), 1 hr ISIP 163#, FP 87-125#, 1 hr 30 min FSIP 163#, HP 1617-1617#, BHT 95 deg
	DST (Yeso) 7185-7242', open 50 mins, rec 40' DF w/trace oil, (Sampler rec 1700 cc's DF + 60 cc's oil), 1 hr ISIP 2276#, FP 71-98#, 1 hr 30 min FSIP 2302#
4-5-78	TD 9155'; WOC
4-18-78	TD 9155'; Tstg

5-3-8 NM

LEA
ENERGY RESERVES GROUP, INC. 1 State
Sec 9, T18S,

Vacuum

NM
Page #7

5-10-78 TD 9155'; PBD 9070'; WT
Perf (Abo) 8948-80', 8948-80'
Acid (8948-9052') 9000
Flwd 296 EO + 3 BW in
TP 100#; CP 100# (8948-11
5-15-78 TD 9155'; PBD 9070'; Co
LOG TOPS: Yates 3177',
4620', Glorieta 6548', 3614', Alc
Detrital 8884'
5-20-78 COMPLETION ISSUED
Gray Aug
11
5-21-78