



**REPORT
OF
SUB-SURFACE
DIRECTIONAL
SURVEY**

Gulf Energy & Minerals Co. U.S.
COMPANY

Central Brinkard Unit 406
WELL NAME

Lea County, New Mexico
LOCATION

JOB NUMBER

WT1076-S0198

TYPE OF SURVEY

Magnetic Multishot

DATE

9,27,76

SURVEY BY

Jack L. Henderson

OFFICE

Midland, Texas



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

STATE OF Texas
COUNTY OF Midland

I, Jack Henderson, in the employ of the Directional Drilling Department of Eastman Whipstock, Inc. did on the days of Sept. 27, 19 76 thru _____, 19 _____ conduct or supervise the taking of a Magnetic Multishot Survey by the method of Magnetic Oriented Survey from a depth of 100 feet to 6569 feet, with records of inclination being taken at approximately every 100 feet.

This survey was conducted at the request of Gulf Energy and Minerals Co., U.S. for their Central Drinkard Unit Well No. 406, Lea county, State of New Mexico, in the _____ field.

STATE OF Texas
COUNTY OF Midland

Before me, the undersigned authority, on this day personally appeared Jack Henderson, 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 the same is a true and correct statement of facts therein recited.

Subscribed and sworn to before me on this Thirteenth day of October, 19 76.

Notary Public in and for the county of
Midland, Texas

GULF ENERGY AND MINERALS COMPANY U.S.
 LEA COUNTY, NEW MEXICO
 C.O.U.

WELL NO. 406
 MAGNETIC MULTISHOT SURVEY
 W1976-S0165 AND S0174
 SEPTEMBER 27, 1976

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 * SUBMITTED BY *
 * EASTMAN-WHIPSTOCK *
 * INC. *
 * *****

RECORD OF SURVEY
 PRO. DIRECTION 0 0

MEAS. DEPTH	COURSE LENGTH	TRUE COURSE LENGTH	TRUE VERT. DEPTH	ANGLE OF INCLIN D M	COURSE DIRECTION D M	VERT. SEC.	DOG LEG DEPPER 100	RECTANGULAR COORDINATES	
100	0.	0.00	100.00	0 0	S 0 0 E	0.00	0.00	0.00	0.00
200	100.	100.00	200.00	0 15	S 49 0 E	0.00	0.25	0.19 S	0.08 E
300	100.	100.00	300.00	0 15	S 24 0 E	0.00	0.11	0.54 S	0.35 E
400	100.	100.00	400.00	0 0	S 0 0 E	0.00	0.25	0.75 S	0.39 E
500	100.	100.00	500.00	0 15	S 1 0 E	0.00	0.25	0.97 S	0.39 E
600	100.	100.00	600.00	0 15	S 5 0 W	0.00	0.03	1.41 S	0.37 E
700	100.	100.00	700.00	0 15	S 22 0 W	0.00	0.07	1.83 S	0.27 E
800	100.	100.00	800.00	0 15	S 15 0 W	0.00	0.03	2.24 S	0.13 E
900	100.	100.00	899.99	0 15	S 21 0 W	0.00	0.03	2.66 S	0.01 W
1000	100.	100.00	999.99	0 30	S 20 0 W	0.00	0.25	3.27 S	0.23 W

MEAS. DEPTH	COURSE LENGTH	TRUE COURSE LENGTH	TRUE VERT. DEPTH	ANGLE OF INCLIN D M	COURSE DIRECTION	VERT. SEC.	DOG LEG DEGP	RECTANGULAR COORDINATES	
								100	S
1100	100.	100.00	1099.99	0 15	S 7 0 E	0.00	0.26	3.91 S	0.00W
1184	84.	84.00	1183.99	0 15	S 8 0 W	0.00	0.02	4.27 S	0.13W
1200	16.	16.00	1199.99	0 15	S 8 0 W	0.00	0.13	4.34 S	0.14W
1310	110.	110.00	1309.99	0 15	S 39 0 W	0.00	0.30	4.63 S	0.47W
1400	90.	90.00	1399.99	0 15	N 43 0 E	0.00	0.22	4.47 S	0.12W
1491	91.	91.00	1490.99	0 30	N 28 0 E	0.00	0.29	3.99 S	0.22E
1562	91.	91.00	1581.99	0 30	N 30 0 E	0.00	0.03	3.30 S	0.61E
1573	91.	90.99	1672.97	1 0	N 56 0 E	0.00	0.65	2.43 S	1.41E
1764	91.	90.99	1763.96	1 0	N 33 0 E	0.00	0.44	1.31 S	2.52E
1855	91.	90.98	1854.94	1 15	N 30 0 E	0.00	0.28	0.22 N	3.45E
1946	91.	90.97	1945.91	1 45	N 38 0 E	0.00	0.59	2.19 N	4.78E
2037	91.	90.96	2036.87	1 45	N 43 0 E	0.00	0.17	4.30 N	6.59E
2123	91.	90.96	2127.83	1 45	N 50 0 E	0.00	0.24	6.21 N	8.60E
2219	91.	90.96	2218.73	1 45	N 43 0 E	0.00	0.24	8.12 N	10.62E
2310	91.	90.95	2309.73	2 0	N 51 0 E	0.00	0.40	10.15 N	12.79E
2401	91.	90.94	2400.63	2 0	N 57 0 E	0.00	0.23	12.02 N	15.36E
2492	91.	90.94	2491.62	2 0	N 58 0 E	0.00	0.04	13.73 N	18.04E
2583	91.	90.96	2582.53	1 30	N 56 0 E	0.00	0.55	15.24 N	20.37E
2673	90.	89.97	2672.55	1 30	N 48 0 E	0.00	0.23	16.69 N	22.23E
2764	91.	90.97	2763.52	1 30	N 60 0 E	0.00	0.35	18.09 N	24.15E

MEAS. DEPTH	COURSE LENGTH	TRUE COURSE LENGTH	TRUE VERT. DEPTH	ANGLE OF INCLIN D M	COURSE DIRECTION D M	VERT. SEC.	DOG LEG DEGP 100	R E C T A N G U L A R C O O R D I N A T E S
2855	91.	90.97	2854.49	1 30	N 44 0 E	0.00	0.46	19.55 N 26.02E
2946	91.	90.98	2945.47	1 0	N 22 0 E	0.00	0.75	21.20 N 27.10E
3037	91.	90.99	3036.45	1 0	N 32 0 E	0.00	0.19	22.62 N 27.82E
3128	91.	90.99	3127.44	1 0	N 24 0 E	0.00	0.16	24.02 N 28.56E
3219	91.	90.98	3218.42	1 30	N 41 0 E	0.00	0.68	25.69 N 29.62E
3310	91.	90.97	3309.33	1 30	N 33 0 E	0.00	0.23	27.59 N 31.06E
3401	91.	90.98	3400.36	1 0	N 35 0 E	0.00	0.55	29.23 N 32.17E
3492	91.	90.99	3491.35	1 0	N 26 0 E	0.00	0.17	30.60 N 32.97E
3583	91.	90.99	3582.33	1 0	N 10 0 W	0.00	0.31	32.10 N 32.48E
3674	91.	90.99	3673.32	1 0	N 9 0 E	0.00	0.03	33.67 N 32.74E
3765	91.	90.99	3764.31	1 0	N 12 0 W	0.00	0.06	35.23 N 32.45E
3856	91.	90.99	3855.29	1 0	N 18 0 E	0.00	0.12	36.77 N 32.87E
3938	132.	131.93	3987.27	1 0	N 20 0 W	0.00	0.03	38.94 N 32.12E

BOTTOM HOLE CLOSURE 50.48 FEET AT N 39 30 38 E

*(METHOD OF COMPUTATION--RADIUS OF CURVATURE)**

GULF ENERGY AND MINERALS COMPANY U.S.
 LEA COUNTY, NEW MEXICO
 C.O.U.
 WELL NO. 406
 MAGNETIC MULTISHOT SURVEY
 WT1076S0198
 10-13-76

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 * SUBMITTED BY *
 * EASTMAN-WHIPSTOCK *
 * INC. *
 * *

RECORD OF SURVEY
 PRO. DIRECTION 0 0

MEAS. DEPTH	COURSE LENGTH	TRUE COURSE LENGTH	TRUE VERT. DEPTH	ANGLE OF INCLIN		COURSE DIRECTION	VERT. SEC.	DOG LEG		RECTANGULAR COORDINATES
				D	M			DEGPER	100	
3988	0.	0.00	3937.27	1	0	N 20 0 W	0.00	0.00		38.94 N 32.12E
4062	74.	73.97	4061.24	2	0	N 86 0 E	0.00	2.48		40.04 N 33.58E
4153	91.	90.85	4152.09	4	30	N 88 0 E	0.00	2.75		40.31 N 38.73E
4245	92.	91.63	4243.72	5	45	N 81 0 E	0.00	1.52		41.10 N 46.91E
4338	93.	92.42	4336.14	7	0	N 74 0 E	0.00	1.58		43.33 N 56.98E
4429	91.	90.14	4426.28	3	45	N 66 0 E	0.00	2.26		47.59 N 68.69E
4520	91.	89.75	4516.03	10	15	N 66 0 E	0.00	1.65		53.70 N 82.41E
4611	91.	89.32	4605.35	11	45	N 63 0 E	0.00	1.76		61.18 N 98.08E
4704	93.	90.70	4696.03	13	45	N 62 0 E	0.00	2.16		70.65 N 116.29E
4726	92.	89.12	4785.17	15	0	N 62 0 E	0.00	1.36		81.38 N 136.45E

LEAS. DEPTH	COURSE LENGTH	TRUE COURSE LENGTH	TRUE VERT. DEPTH	ANGLE OF INCLIN D M	COURSE DIRECTION	VERT. SEC.	DOG LEG DEGP 100	R E C T A N G U L A R C O O R D I N A T E S
4889	93.	89.83	4875.00	15 0	N 60 0 E	0.00	0.56	93.04 N 157.50E
4982	93.	89.83	4964.84	15 0	N 60 0 E	0.00	0.00	105.08 N 178.35E
5073	91.	87.85	5052.68	15 15	N 60 0 E	0.00	0.27	116.95 N 198.91E
5165	92.	88.71	5141.39	15 30	N 60 0 E	0.00	0.27	129.15 N 220.04E
5257	92.	93.71	5230.10	15 15	N 63 0 E	0.00	0.91	140.79 N 241.47E
5350	93.	89.67	5319.77	15 30	N 61 0 E	0.00	0.63	152.36 N 263.24E
5442	92.	89.02	5408.79	13 45	N 65 0 E	0.00	2.20	162.90 N 283.93E
5535	93.	90.38	5499.17	13 30	N 66 0 E	0.00	0.37	171.99 N 303.87E
5627	92.	89.50	5588.67	13 15	N 68 0 E	0.00	0.57	180.30 N 323.46E
5720	93.	90.48	5679.15	13 30	N 67 0 E	0.00	0.37	180.54 N 343.33E
5814	94.	91.50	5770.64	13 0	N 68 0 E	0.00	0.58	196.78 N 363.24E
5904	90.	87.74	5858.38	12 45	N 76 0 E	0.00	2.00	202.97 N 382.29E
5997	93.	90.66	5949.04	13 0	N 81 0 E	0.00	1.23	207.10 N 402.59E
6089	92.	89.60	6038.64	13 15	N 80 0 E	0.00	0.37	210.55 N 423.20E
6182	93.	90.71	6129.35	12 15	N 83 0 E	0.00	1.29	213.59 N 443.49E
6274	92.	89.91	6219.25	12 15	N 80 0 E	0.00	0.69	216.47 N 462.80E
6367	93.	90.57	6309.82	14 0	N 78 0 E	0.00	1.94	220.50 N 483.53E
6461	94.	91.60	6400.82	15 0	N 78 0 E	0.00	1.06	225.39 N 506.55E
6569	108.	104.20	6505.82	15 30	N 77 0 E	0.00	0.52	231.54 N 534.28E

BOTTOM HOLE CLOSURE 582.30 FEET AT N 66 34 10 E

** (METHOD OF COMPUTATION--RADIUS OF CURVATURE) **

WELL LOCATION AND ACREAGE DEDICATION PLAT

Form No. 1

All distances must be from the outer boundaries of the Section

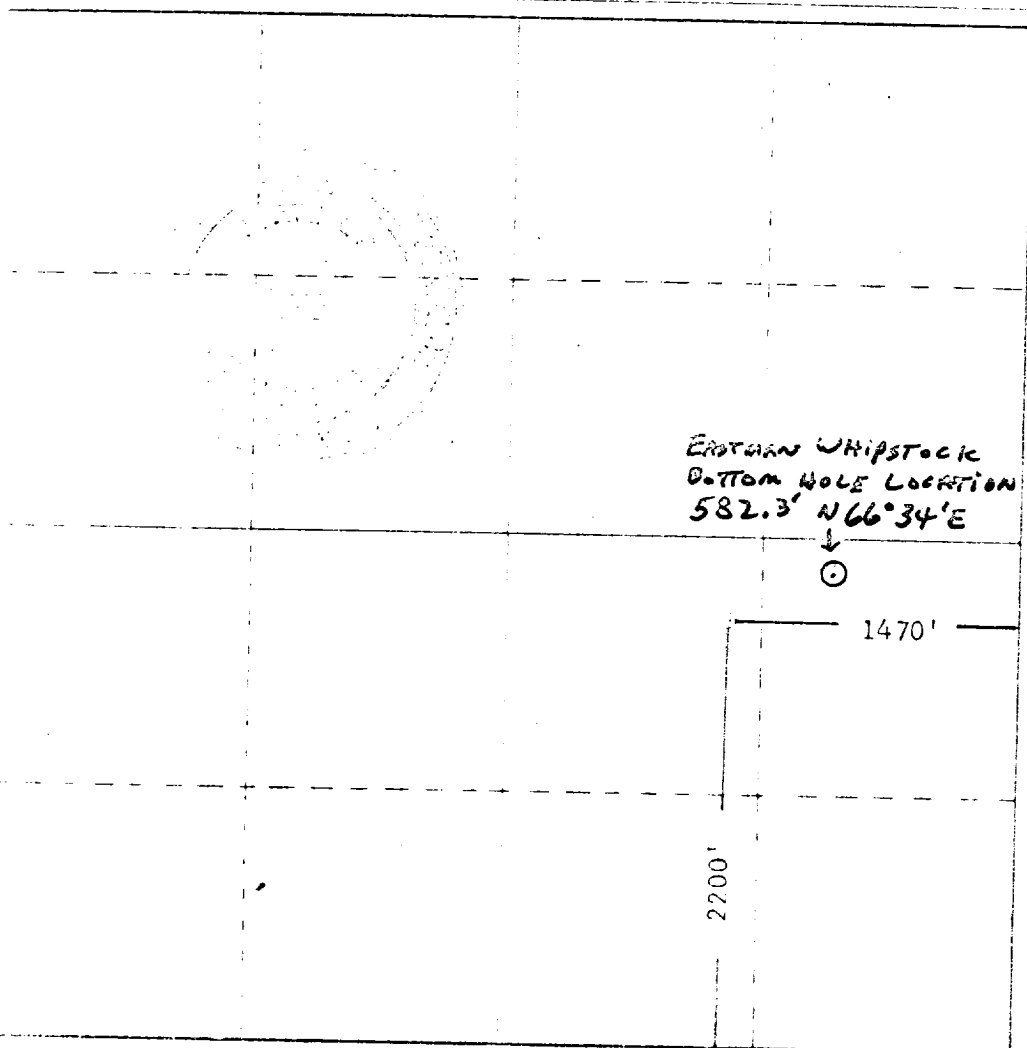
GULF OIL CORP.			Lease		CENTRAL DRINKARD UNIT		Well No. 406	
Section	Range	Township	Range	Township	County			
3	33	21 SOUTH	37 EAST	LEA				
Location of Well								
2200	feet from the	SOUTH	1470	feet from the	EAST			
3445.0	Elevation, feet above sea level							

- Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.
- If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
- If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

Yes ☐ No ☐ If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated, if so (enclose a list of this data if necessary.) _____

No allowance will be assigned to the well until all interests have been consolidated (by communitization, unitization, force-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

I hereby certify that the information furnished herein is true and complete to the best of my knowledge and belief.

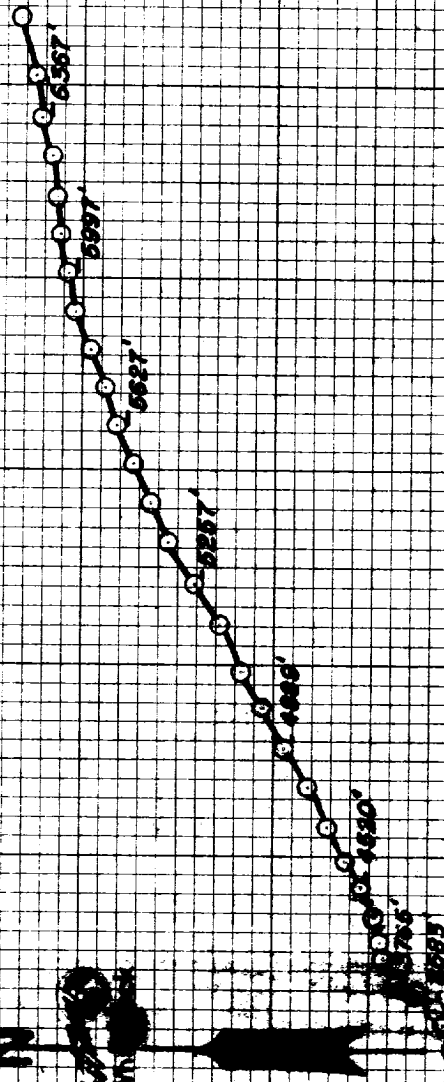
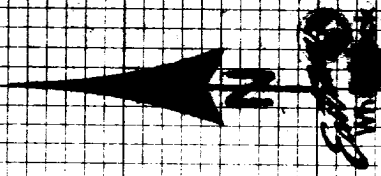
Signature	
Print Name	
Signature	
Print Name	

I hereby certify that the well shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date of survey
9-10-1975
 Registered Professional Surveyor and State Land Surveyor

John W. W.
 State No. 1011

GULF ENERGY AND MINERALS COMPANY U.S.
 LEA COUNTY, NEW MEXICO
 C.D.U. No 406



DEPTH 6869' M.D. 6506.02' T.V.D.
 NORTH 231.54'
 EAST 834.28'
 CLOSURE 682.30' N66°34'E

130' SURFACE LOCATION

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CORPORATION
A Division of A.C. Jones Company

COUNTY: LFA FIELD: Drinkard STATE: NM

OPR: GULF OIL CORP. API: 30-025-25335

NO: 406 LEASE: Central Drinkard Unit SERIAL: 11-2-25 NM

Sec 33, T21S, R37E MAP

2200' FSL, 1470' FEL of Sec CO ORD

Eunice Townsite ELEV

SPD 9-20-76 CMP 10-22-76 WELL CLASS: D FIN: DG

CSG

FORMATION	DATUM	FORMATION	DATUM
8 5/8" at 1200' w/350 ex			
5 1/2" at 6569' w/2000 ex			
TD 6569' (DRKD)		PBD 6554'	

IP (Drinkard) Perf's 6380-6414' P 1227 MCFGPD + 3 B Cond + 35 BW.
Pot based on 24 hr test thru 14/64" shk. GOR 409,000; gty (Cond)
42.6; IP 400#

CONTR: MCF OPR: ELEV 3443' GL 3453' KB PD 6595' RT

F.R. 9-20-76
(Drinkard)

9-27-76 Drlg 4000' lm & dolo

10-4-76 Drlg 5520' lm & dolo

10-11-76 Drlg 6362' dolo

10-18-76 TD 6569'; PBD 6505'; WOBH

10-25-76 TD 6569'; PBD 6554'; Testg

Perf (Drinkard) 6380-82', 6412-14' w/2 SPF

Acid (6380-6414') 1500 gals

Frac (6380-6414') 38,000 gals wtr + 47,000# sd

Flwd 1227 MCFGPD + 9 B Cond + 96 BW in 66 hrs
(6380-6414')

11-2-25 NM

LEA
GULF OIL CORP.

Drinkard
406 Central Drinkard Unit
Sec 33, T21S, R37E

NM
Page #2

11-1-76 TD 6569'; PBD 6554'; WOSP
Flwd 1227 MGFGPD + 3 E cond + 35 BW in 24 hrs
thru 14/64" chk (6380-6414')

11-8-76 TD 6569'; PBD 6554'; Complete
LOG TOPS: Yates 2572', Seven Rivers 2808',
Queen 3340', Grayburg 3627', San Andres 3845',
Glorieta 5068', Blinabry 5424', Tubb 6048',
Drinkard 6367'
LOGS RUN: GFD, GRDL
BHT 110 deg

11-13-76 COMPLETION ISSUED

11-2-25 NM
TG 30-025-70168-76