

MEASURED	INCL.	HOLE	COURSE	VERTICAL	RECTANGULAR	CLOSURE	DOG-LEG
DEPTH	ANGLE	DIRECTION	LENGTH	DEPTH	CORORDINATES	DISTANCE	SEVERITY
FEET	DEGS.	DEGS.	FEET	FEET	N/S	FEET	DEGS.
					feet	E/W	OG/100FT
12060.00	0.00	N 65.00 E	53.00	12052.93	47.47 N	296.84 E	300.61 at N 80.91 E
							0.00

CLOSURE DISTANCE = 300.61 FEET.
 CLOSURE DIRECTION = N 80.91 E

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OCD
HOMECOMING

MEASURED DEPTH FEET	INCL. ANGLE DEGS.	HOLE DIRECTION DEGS.	COURSE LENGTH FEET	1 IRIDE	VERTICAL DEPTH FEET	RECTANGULAR COORDINATES N/S	ULARS E/W	CROSS DISTANCE FEET	UR E DEGS.	DOG-LEG SEVERITY DG/100FT
9640.00	2.30	S 77.00 E	94.00	9635.84	20.12 N	195.46 E	196.49at N 84.12 E			.42
9734.00	2.00	S 76.00 E	94.00	9729.78	19.30 N	198.89 E	199.82at N 84.45 E			.32
9828.00	2.00	S 78.00 E	94.00	9823.72	18.56 N	202.07 E	202.94at N 84.75 E			.07
9922.00	1.80	S 84.00 E	94.00	9917.67	18.07 N	205.16 E	205.96at N 84.96 E			.30
10016.00	1.70	S 86.00 E	94.00	10011.62	17.82 N	208.02 E	208.78at N 85.10 E			.12
10110.00	1.80	N 87.00 E	94.00	10105.58	17.75 N	210.89 E	211.64at N 85.18 E			.19
10204.00	1.60	S 87.00 E	94.00	10199.54	17.70 N	213.68 E	214.41at N 85.26 E			.25
10298.00	1.40	N 88.00 E	94.00	10293.51	17.68 N	216.14 E	216.86at N 85.32 E			.25
10392.00	1.40	N 73.00 E	94.00	10387.48	18.05 N	218.40 E	219.14at N 85.27 E			.39
10486.00	1.90	N 67.00 E	94.00	10481.44	18.98 N	220.94 E	221.75at N 85.09 E			.56
10580.00	1.80	N 71.00 E	94.00	10575.39	20.07 N	223.77 E	224.67at N 84.87 E			.17
10674.00	1.50	N 69.00 E	94.00	10669.35	20.99 N	226.31 E	227.29at N 84.70 E			.32
10768.00	1.80	N 74.00 E	94.00	10763.31	21.85 N	228.08 E	229.92at N 84.54 E			.35
10862.00	1.90	N 70.00 E	95.00	10858.26	22.80 N	231.80 E	232.92at N 84.38 E			.17
10957.00	1.90	N 74.00 E	94.00	10952.21	23.76 N	234.76 E	235.96at N 84.22 E			.14
11051.00	1.90	N 80.00 E	94.00	11046.16	24.46 N	237.80 E	239.05at N 84.12 E			.21
11145.00	2.00	N 79.00 E	94.00	11140.10	25.05 N	240.94 E	242.24at N 84.06 E			.11
11239.00	2.30	N 84.00 E	94.00	11234.04	25.57 N	244.43 E	245.76at N 84.02 E			.38
11333.00	2.50	N 90.00 E	94.00	11327.96	25.77 N	248.36 E	249.67at N 84.07 E			.34
11427.00	3.80	N 79.00 E	94.00	11421.81	26.27 N	253.49 E	254.85at N 84.08 E			1.52
11521.00	4.40	N 72.00 E	94.00	11515.57	27.95 N	259.99 E	261.49at N 83.86 E			.83
11615.00	3.90	N 68.00 E	94.00	11609.32	30.27 N	266.38 E	268.10at N 83.51 E			.61
11709.00	3.90	N 60.00 E	94.00	11703.11	33.07 N	272.13 E	274.13at N 83.07 E			.58
11803.00	4.60	N 54.00 E	94.00	11796.85	36.87 N	277.96 E	280.40at N 82.44 E			.88
STATIONS BELOW 11803 ARE SINGLESHOT SURVEYS BY THE RIG CREW--NOT PART OF THE CERTIFIED REPORT.										
12007.00	5.00	N 65.00 E	204.00	12000.13	45.52 N	292.65 E	296.17at N 81.15 E			.49

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U.S. DEPT. OF JUSTICE
PROGRAM OFFICE

MEASURED	INCL.	HOLE	COURSE	TRUE	RECTANGULAR	C L U S U R E	DOG-LEG
DEPTH	ANGLE	DIRECTION	LENGTH	VERTICAL	C O O R D I N A T E S	DISTANCE	SEVERITY
FEET	DEGS.	DEGS.	FEET	FEET	N/S Feet E/W	FEET	DG/100FT
7289.00	2.30	N 81.00 E	94.00	7287.31	14.04 N 89.59 E	90.68at N 81.09 E	.22
7383.00	2.90	N 83.00 E	94.00	7381.19	14.69 N 94.22 E	95.35at N 81.13 E	.15
7477.00	2.70	N 81.00 E	94.00	7475.08	15.33 N 98.76 E	99.95at N 81.17 E	.24
7571.00	2.80	N 80.00 E	94.00	7568.97	16.07 N 103.21 E	104.45at N 81.14 E	.12
7665.00	2.50	N 81.00 E	94.00	7662.87	16.79 N 107.50 E	108.80at N 81.12 E	.32
7759.00	2.00	N 88.00 E	94.00	7756.80	17.14 N 111.17 E	112.48at N 81.23 E	.61
7853.00	2.40	N 88.00 E	94.00	7850.73	17.27 N 114.77 E	116.07at N 81.44 E	.43
7947.00	2.20	N 83.00 E	94.00	7944.65	17.50 N 118.54 E	119.82at N 81.60 E	.25
8041.00	2.50	N 87.00 E	94.00	8038.57	17.77 N 122.38 E	123.67at N 81.73 E	.33
8135.00	2.80	N 86.00 E	94.00	8132.47	18.04 N 126.72 E	128.00at N 81.90 E	.32
8229.00	2.90	N 81.00 E	94.00	8226.36	18.56 N 131.36 E	132.67at N 81.95 E	.28
8323.00	2.90	N 81.00 E	94.00	8320.24	19.31 N 136.06 E	137.42at N 81.92 E	0.00
8417.00	2.80	N 76.00 E	94.00	8414.12	20.24 N 140.64 E	142.09at N 81.81 E	.28
8511.00	2.70	N 83.00 E	94.00	8508.01	21.06 N 145.07 E	146.59at N 81.73 E	.37
8605.00	2.60	N 81.00 E	94.00	8601.91	21.67 N 149.38 E	150.94at N 81.74 E	.14
8699.00	2.80	N 84.00 E	94.00	8695.81	22.24 N 153.76 E	155.37at N 81.76 E	.26
8793.00	2.90	N 84.00 E	94.00	8789.69	22.73 N 158.41 E	160.04at N 81.83 E	.11
8887.00	3.10	N 89.00 E	94.00	8883.56	22.95 N 163.32 E	164.93at N 82.00 E	.44
8982.00	3.20	N 88.00 E	95.00	8978.42	22.99 N 168.54 E	170.11at N 82.23 E	.20
9076.00	2.90	N 89.00 E	94.00	9072.28	23.04 N 173.55 E	175.07at N 82.43 E	.36
9170.00	2.60	N 84.00 E	94.00	9166.18	22.76 N 178.05 E	179.49at N 82.71 E	.41
9264.00	2.10	N 84.00 E	94.00	9260.10	22.36 N 181.88 E	183.25at N 82.99 E	.53
9358.00	2.00	N 79.00 E	94.00	9354.04	21.86 N 185.20 E	186.49at N 83.26 E	.22
9452.00	2.10	N 77.00 E	94.00	9447.98	21.16 N 188.49 E	189.68at N 83.59 E	.13
9546.00	2.10	N 86.00 E	94.00	9541.91	20.65 N 191.89 E	193.00at N 83.85 E	.35

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OLD
FEDERAL OFFICE

MEASURED INCL. HOLE COURSE VERTICAL RECTANGULAR C L D S U R E DOG-LEG
 DEPTH ANGLE DIRECTION LENGTH DEPTH C O O R D I N A T E S DISTANCE DIRECTION SEVERITY
 FEET DEGS. DEGS. FEET FEET N/S feet E/W FEET DEGS. DG/100FT

4937.00 30 N 70.00 E 94.00 4936.83 2.49 S 23.62 E 23.75at S 83.97 E .13
 5031.00 30 N 49.00 E 94.00 5030.82 2.25 S 24.04 E 24.15at S 84.66 E .12
 5126.00 10 N 11.00 E 95.00 5125.82 1.96 S 24.21 E 24.29at S 85.36 E .24
 5220.00 20 N 56.00 E 94.00 5219.82 1.76 S 24.34 E 24.40at S 85.85 E .16
 5314.00 10 N 44.00 E 94.00 5313.82 1.61 S 24.53 E 24.58at S 86.25 E .11

5408.00 10 N 04.00 W 94.00 5407.82 1.46 S 24.58 E 24.62at S 86.60 E .09
 5502.00 20 N 09.00 E 94.00 5501.82 1.21 S 24.59 E 24.62at S 87.18 E .11
 5596.00 20 N 51.00 E 94.00 5595.82 .93 S 24.75 E 24.77at S 87.84 E .15
 5690.00 60 N 55.00 E 94.00 5689.82 .54 S 25.28 E 25.28at S 88.77 E .43
 5784.00 60 N 63.00 E 94.00 5783.81 .03 S 26.12 E 26.12at S 89.92 E .09

5878.00 1.00 N 59.00 E 94.00 5877.81 .60 N 27.27 E 27.27at N 88.73 E .43
 5972.00 1.50 N 69.00 E 94.00 5971.78 1.50 N 29.11 E 29.15at N 87.04 E .58
 6066.00 2.10 N 65.00 E 94.00 6065.74 2.66 N 31.82 E 31.94at N 85.23 E .65
 6160.00 2.80 N 71.00 E 94.00 6159.65 4.16 N 35.55 E 35.79at N 83.32 E .79
 6254.00 2.70 N 81.00 E 94.00 6253.54 5.25 N 39.92 E 40.26at N 82.50 E .52

6348.00 2.50 N 84.00 E 94.00 6347.44 5.81 N 44.15 E 44.53at N 82.50 E .26
 6442.00 2.80 N 80.00 E 94.00 6441.34 6.41 N 48.45 E 48.87at N 82.46 E .37
 6536.00 2.70 N 81.00 E 94.00 6535.24 7.16 N 52.90 E 53.38at N 82.29 E .12
 6630.00 2.90 N 81.00 E 94.00 6629.12 7.87 N 57.43 E 57.97at N 82.19 E .21
 6724.00 3.00 N 78.00 E 94.00 6723.00 8.76 N 62.19 E 62.60at N 81.98 E .20

6818.00 2.90 N 75.00 E 94.00 6816.87 9.88 N 66.89 E 67.62at N 81.59 E .20
 6912.00 2.70 N 77.00 E 94.00 6910.76 11.00 N 71.35 E 72.19at N 81.23 E .24
 7006.00 2.80 N 80.00 E 94.00 7004.65 11.89 N 75.77 E 76.69at N 81.07 E .19
 7101.00 2.70 N 81.00 E 95.00 7099.54 12.65 N 80.26 E 81.25at N 81.04 E .12
 7195.00 3.00 N 82.00 E 94.00 7194.43 13.34 N 84.88 E 85.93at N 81.07 E .32

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D.C.D.
POLICE OFFICE

MEASURED INCL. HOLE COURSE VERTICAL RED TANGULAR C L O S U R E DOG-LEG
 DEPTH & ANGLE & DIRECTION & LENGTH & DEPTH & C O R D I N A T E S & DISTANCE DIRECTION & SEVERITY
 FEET & DEGS. & FEET & FEET & N/S feet E/W & FEET DEGS. & DG/100FT

2500.00	.60	S 44.00 E	100.00	2499.96	5.21 S	6.81 E	8.58at S	52.57 E	.34
2600.00	.40	S 15.00 E	100.00	2599.95	5.96 S	7.24 E	9.38at S	50.50 E	.32
2700.00	.30	S 01.00 W	100.00	2699.95	6.57 S	7.31 E	9.83at S	48.05 E	.14
2800.00	.10	S 11.00 E	100.00	2799.95	6.91 S	7.34 E	10.08at S	46.70 E	.20
2900.00	.10	S 34.00 E	100.00	2899.95	7.08 S	7.41 E	10.24at S	46.30 E	.04

3000.00	0.00	N 00.00 E	100.00	2999.95	7.15 S	7.45 E	10.33at S	46.20 E	.10
3100.00	.20	S 22.00 E	100.00	3099.95	7.31 S	7.52 E	10.49at S	45.81 E	.20
3200.00	.40	S 00.00 E	100.00	3199.95	7.82 S	7.62 E	10.92at S	44.25 E	.23
3300.00	.30	S 57.00 E	100.00	3299.95	8.33 S	7.90 E	11.48at S	43.46 E	.35
3400.00	.50	N 86.00 E	100.00	3399.94	8.51 S	8.56 E	12.07at S	45.19 E	.32

3500.00	.80	N 69.00 E	100.00	3499.94	8.26 S	9.67 E	12.72at S	49.48 E	.35
3600.00	1.00	N 61.00 E	100.00	3599.93	7.60 S	11.09 E	13.44at S	55.57 E	.24
3700.00	1.20	N 04.00 E	100.00	3699.91	7.03 S	12.91 E	14.70at S	61.44 E	.48
3800.00	1.00	S 88.00 E	100.00	3799.89	6.96 S	14.82 E	16.38at S	64.85 E	.25
3900.00	.90	N 80.00 E	100.00	3899.88	6.84 S	16.48 E	17.84at S	67.44 E	.22

4000.00	.80	N 56.00 E	100.00	3999.86	6.29 S	17.84 E	18.92at S	70.57 E	.37
4100.00	.80	N 43.00 E	100.00	4099.85	5.39 S	18.90 E	19.65at S	74.07 E	.18
4200.00	.80	N 52.00 E	100.00	4199.84	4.44 S	19.93 E	20.42at S	77.42 E	.13
4300.00	.80	N 77.00 E	100.00	4299.84	3.85 S	21.18 E	21.53at S	79.70 E	.35
4400.00	.30	S 85.00 E	100.00	4399.83	3.70 S	22.13 E	22.45at S	80.30 E	.52

4500.00	.30	N 28.00 E	100.00	4499.83	3.55 S	22.57 E	22.84at S	81.07 E	.33
4592.00	.20	N 31.00 E	92.00	4591.83	3.20 S	22.76 E	22.99at S	82.00 E	.11
4655.00	.20	N 45.00 E	63.00	4654.83	3.02 S	22.90 E	23.10at S	82.47 E	.08
4749.00	.10	N 47.00 E	94.00	4748.83	2.85 S	23.08 E	23.25at S	82.95 E	.11
4843.00	.20	N 52.00 E	94.00	4842.83	2.69 S	23.26 E	23.42at S	83.39 E	.11

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HONORARY OFFICE

MEASURED	INCL.	HOLE	COURSE	TRUE	RECTANGULAR	C L U S U R E	DOG-LEG
DEPTH	ANGLE	DIRECTION	LENGTH	VERTICAL	C O O R D I N A T E S	DISTANCE	SEVERITY
FEET	DEGS.	DEGS.	FEET	FEET	N/S	FEET	DEGS.
					feet	E/W	OG/100FT
0.00	0.00	N 00.00 E	0.00	0.00	0.00 N	0.00 E	0.00
100.00	.20	N 64.00 W	100.00	100.00	.08 N	.16 W	.20
200.00	.20	N 65.00 W	100.00	200.00	.23 N	.47 W	0.00
300.00	.30	N 76.00 W	100.00	300.00	.37 N	.88 W	.11
400.00	.30	S 00.00 E	100.00	400.00	.09 N	1.24 W	.47
500.00	.30	S 10.00 E	100.00	500.00	.43 S	1.20 W	.05
600.00	.30	S 17.00 E	100.00	599.99	.94 S	1.07 W	.04
700.00	.20	S 36.00 E	100.00	699.99	1.33 S	.88 W	.13
800.00	.10	S 50.00 E	100.00	799.99	1.52 S	.70 W	.11
900.00	.10	S 52.00 E	100.00	899.99	1.63 S	.57 W	0.00
1000.00	.20	S 54.00 E	100.00	999.99	1.78 S	.36 W	.10
1100.00	.30	S 70.00 E	100.00	1099.99	1.99 S	.03 E	.12
1200.00	.30	S 56.00 E	100.00	1199.99	2.23 S	.49 E	.07
1300.00	.30	S 81.00 E	100.00	1299.99	2.42 S	.98 E	.13
1400.00	.30	S 14.00 E	100.00	1399.99	2.75 S	1.34 E	.33
1500.00	.20	S 08.00 E	100.00	1499.99	3.18 S	1.42 E	.10
1600.00	0.00	N 00.00 E	100.00	1599.99	3.35 S	1.45 E	.20
1700.00	.10	N 01.00 W	100.00	1699.99	3.26 S	1.45 E	.10
1800.00	.30	N 61.00 E	100.00	1799.99	2.98 S	1.61 E	.27
1900.00	.30	S 71.00 E	100.00	1899.98	2.93 S	2.12 E	.24
2000.00	.40	S 35.00 E	100.00	1999.98	3.29 S	2.60 E	.24
2100.00	.20	S 54.00 E	100.00	2099.98	3.67 S	2.96 E	.22
2200.00	.90	S 69.00 E	100.00	2199.98	4.12 S	3.81 E	.71
2300.00	.60	S 74.00 E	100.00	2299.97	4.54 S	5.05 E	.31
2400.00	.50	S 79.00 E	100.00	2399.96	4.76 S	5.98 E	.11

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OSG
HONORARY OFFICE

CUSTOMER : ECHO PRODUCTION CO.

WELL # : LOWE WELL NO. 1

LOCATION : LEA COUNTY, NEW MEXICO

DATE : 12-13-84, 12-13-84

TYPE : GYRO, MULTISHOT, MAG, MULTISHOT

LOG # : GS-1519, MS-1518

SURVEYOR : A. HARBERT, A. HARBERT

DEPTHS : 0'-4500', 4500'-11803'

DECL. : 10 DEGREES EAST

ELEV. : 0'

FILE # : WT-075

METHOD : RADIUS OF CURVATURE

SECTION : 0

FINAL STATION DATA:

MEASURED	INCL.	HOLE	COURSE	VERTICAL	RECTANGULAR	CLOSURE	DOG-LEG
DEPTH	ANGLE	DIRECTION	LENGTH	DEPTH	CORDINATES	DISTANCE	SEVERITY
FEET	DEGS.	DEGS.	FEET	FEET	N/S	feet	DEGS.
12060.00	5.00	N 65.00 E	53.00	12052.93	47.47 N	296.84 E	300.61 at N 80.91 E
							0.00

THIS SURVEY IS CORRECT TO THE
BEST OF MY KNOWLEDGE AND IS
SUPPORTED BY ACTUAL FIELD DATA.

Mary Docke
DIG REPRESENTATIVE

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FEB 18 1980

CLERK
HOLERS OFFICE

MGF DRILLING COMPANY - MIDLAND
P. O. Box 6370
Midland, Texas 79711-0370
(915) 563-4850

INCLINATION REPORT

OPERATOR: Echo Production Company
P. O. Box 1210
Graham, Texas 76046

LOCATION: Lowland #1,
Lea County, New Mexico,
Sec. 3, T-13-S, R-37-E.

Depth Feet	Inclination Degrees	Depth Feet	Inclination Degrees	Depth Feet	Inclination Degrees
244	1/2	7,720	2-3/4		
410	1/2	7,962	2-1/2		
915	1/2	8,101	2-1/2		
1,411	1/4	8,608	2-3/4		
1,900	3/4	9,146	2-3/4		
2,265	1	9,590	2-1/4		
2,700	1	10,083	3/4		
3,100	1/4	10,629	1-7/8		
3,595	1/4	10,882	1-5/8		
4,076	1/2	11,156	2-1/4		
4,424	1/2	11,480	4-1/4		
4,565	1/4	11,695	3-3/4		
5,060	1/4	11,803	4-1/2		
5,530	0	12,070	4-1/2		
5,918	1				
6,414	2-1/2				
6,769	2-1/2				
6,985	2-3/4				
7,244	3-3/4				
7,402	2-3/4				
7,593	2-3/4				

STATE OF TEXAS
COUNTY OF MIDLAND

The undersigned states that he has knowledge of the facts and matter herein set forth and that the same are true and correct.

Norman Van Liew
Norman Van Liew, Operations Manager

SUBSCRIBED AND SWORN TO BEFORE ME this the 2nd day of January, 19 85

Marilyn J. Joliva
Notary Public in and for the State
of Texas

My Commission Expires: 11-2-85

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FEB 18 1985

C. C. C.
HOMER LUTCH