



**REPORT
of
SUB-SURFACE
DIRECTIONAL
SURVEY**

NEARBURG PRODUCING COMPANY
COMPANY

HOWENSTEIN WELL NO. 1
WELL NAME

LEA COUNTY, NEW MEXICO
LOCATION

<u>JOB NUMBER</u>	<u>TYPE OF SURVEY</u>	<u>DATE</u>
430-0452	MAGNETIC MULTI SHOT SURVEY	1-14-87
430-0452	MAGNETIC MULTI SHOT SURVEY	2-20-87

SURVEY BY
TIM STEPHENS, JOE GRUBBS

OFFICE
WEST TEXAS BASE

EASTMAN CHRISTENSEN

RECORD OF SURVEY

FOR

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* * * * *
* OPERATOR      : NEARBURG PRODUCING COMPANY
* WELL NAME     : HOWENSTEIN WELL NO. 1
* LOCATION      : LEA COUNTY, NEW MEXICO
* JOB NUMBER    :
* RIG           : PETTERSON RIG NO. 1
* DECLINATION   : 10.00 E
*
*               PLANE OF VERTICAL SECTION
*
*               DIRECTION : S 70 43 E
* * * * *
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EC DISTRICT : WEST TEXAS BASE



NEARBURG PRODUCING COMPANY
HOWENSTEIN WELL NO. 1
LEA COUNTY, NEW MEXICO

PBHL : S 70 43 E

DATE PRINTED : 24-FEB-87
OUR REF. NO. : S01179.4NZ
JOB NUMBER :

PAGE NO. 2

MEASURED DEPTH	DRIFT ANGLE D M	DRIFT DIRECTION D M	COURSE LENGTH	TRUE VERTICAL DEPTH	VERTICAL SECTION	R E C T A N G U L A R C O O R D I N A T E S		C L O S U R E DISTANCE		DIRECTION D M	DOGLEG SEVERITY
4662.00	0 0 N 0	0 0 E	0.00	4662.00	0.00	0.00 N	0.00 E	0.00	S 90	0 E	0.00
4700.00	0 45 N 74	0 0 E	38.00	4700.00	0.20	0.07 N	0.24 E	0.25	N 74	0 E	1.97
4800.00	0 30 N 78	0 0 E	100.00	4799.99	1.12	0.33 N	1.30 E	1.34	N 75	38 E	0.25
4900.00	0 45 S 90	0 0 E	100.00	4899.99	2.10	0.45 N	2.38 E	2.43	N 79	23 E	0.28
5000.00	0 45 S 80	0 0 E	100.00	4999.98	3.37	0.33 N	3.69 E	3.70	N 84	50 E	0.13
5100.00	1 15 S 64	0 0 E	100.00	5099.96	5.11	0.20 S	5.34 E	5.34	S 87	48 E	0.17
5200.00	1 15 S 51	0 0 E	100.00	5199.94	7.23	1.37 S	7.18 E	7.31	S 79	10 E	0.28
5300.00	1 45 S 54	0 0 E	100.00	5299.90	9.71	2.97 S	9.25 E	9.72	S 72	13 E	0.51
5400.00	1 45 S 37	0 0 E	100.00	5399.86	12.47	5.10 S	11.42 E	12.51	S 65	57 E	0.52
5500.00	1 30 S 34	0 0 E	100.00	5499.82	14.78	7.41 S	13.07 E	15.02	S 60	27 E	0.26
5600.00	1 15 S 42	0 0 E	100.00	5599.79	16.80	9.30 S	14.55 E	17.24	S 57	25 E	0.31
5700.00	1 45 S 21	0 0 E	100.00	5699.75	18.82	11.52 S	15.91 E	19.64	S 54	6 E	0.74
5800.00	1 15 S 20	0 0 E	100.00	5799.72	20.49	13.97 S	16.82 E	21.87	S 50	18 E	0.50
5900.00	1 0 S 44	0 0 E	100.00	5899.70	22.01	15.62 S	17.86 E	23.72	S 48	49 E	0.53
6000.00	0 45 S 44	0 0 E	100.00	5999.69	23.38	16.72 S	18.92 E	25.25	S 48	32 E	0.25
6100.00	0 45 S 42	0 0 E	100.00	6099.68	24.53	17.68 S	19.81 E	26.55	S 48	15 E	0.03
6200.00	0 45 S 78	0 0 E	100.00	6199.67	25.80	18.32 S	20.92 E	27.81	S 48	48 E	0.46
6300.00	0 45 S 80	0 0 E	100.00	6299.66	27.09	18.57 S	22.21 E	28.95	S 50	6 E	0.03
6400.00	0 45 N 85	0 0 E	100.00	6399.65	28.34	18.63 S	23.51 E	30.00	S 51	37 E	0.20
6500.00	0 45 N 56	0 0 E	100.00	6499.64	29.35	18.19 S	24.73 E	30.70	S 53	40 E	0.3
6600.00	0 45 N 55	0 0 E	100.00	6599.64	30.13	17.45 S	25.81 E	31.16	S 55	56 E	0.01
6700.00	0 45 N 41	0 0 E	100.00	6699.63	30.75	16.58 S	26.78 E	31.50	S 58	14 E	0.18
6800.00	0 30 N 50	0 0 E	100.00	6799.62	31.24	15.81 S	27.56 E	31.78	S 60	9 E	0.27
6900.00	0 30 N 36	0 0 E	100.00	6899.62	31.59	15.18 S	28.15 E	31.98	S 61	40 E	0.12
7000.00	0 15 N 77	0 0 E	100.00	6999.61	31.97	14.82 S	28.69 E	32.29	S 62	41 E	0.35
7100.00	0 15 N 64	0 0 E	100.00	7099.61	32.31	14.68 S	29.10 E	32.59	S 63	14 E	0.06
7200.00	0 45 S 70	0 0 E	100.00	7199.61	33.10	14.63 S	29.95 E	33.33	S 63	58 E	0.60
7300.00	0 45 S 74	0 0 E	100.00	7299.60	34.41	15.04 S	31.19 E	34.63	S 64	16 E	0.05
7400.00	1 0 S 26	0 0 E	100.00	7399.59	35.80	15.99 S	32.33 E	36.07	S 63	41 E	0.75
7500.00	1 0 S 6	0 0 E	100.00	7499.57	36.80	17.66 S	32.81 E	37.26	S 61	42 E	0.35

CONTINUED ON NEXT PAGE ...



NEARBURG PRODUCING COMPANY
HOWENSTEIN WELL NO. 1
LEA COUNTY, NEW MEXICO

PBHL : S 70 43 E

DATE PRINTED : 24-FEB-87
OUR REF. NO. : S01179.4NZ
JOB NUMBER :

PAGE NO. 3

MEASURED DEPTH	DRIFT ANGLE D M	DRIFT DIRECTION D M	COURSE LENGTH	TRUE VERTICAL DEPTH	VERTICAL SECTION	R E C T A N G U L A R C O O R D I N A T E S		C L O S U R E DISTANCE		DOGLEG SEVERITY
7600.00	1 0 S 14	0 E	100.00	7599.56	37.65	19.38 S	33.11 E	38.36	S 59 40 E	0.14
7700.00	0 30 S 10	0 E	100.00	7699.55	38.33	20.66 S	33.38 E	39.26	S 58 15 E	0.50
7800.00	0 15 S 35	0 W	100.00	7799.55	38.41	21.28 S	33.24 E	39.47	S 57 23 E	0.37
7900.00	0 15 S 31	0 E	100.00	7899.55	38.53	21.69 S	33.23 E	39.68	S 56 52 E	0.27
8033.00	2 30 N 67	0 E	133.00	8032.50	41.46	22.60 S	36.01 E	42.52	S 57 54 E	1.86
8128.00	3 15 N 56	0 E	95.00	8127.38	44.65	20.33 S	40.19 E	45.04	S 63 10 E	0.3
8285.00	5 30 S 62	0 E	157.00	8283.91	55.20	19.73 S	51.58 E	55.22	S 69 4 E	3.12
8379.00	6 15 S 62	0 E	94.00	8377.42	64.71	24.25 S	60.07 E	64.78	S 68 1 E	0.80
8473.00	7 30 S 78	0 E	94.00	8470.74	75.93	28.08 S	70.61 E	75.99	S 68 19 E	2.42
8536.00	7 45 S 89	0 E	63.00	8533.18	84.06	29.03 S	78.90 E	84.08	S 69 48 E	2.35
8706.00	9 0 S 50	0 E	170.00	8701.37	108.34	37.53 S	101.65 E	108.36	S 69 44 E	3.35
8800.00	9 0 S 50	0 E	94.00	8794.21	122.10	46.99 S	112.92 E	122.30	S 67 24 E	0.00
8894.00	8 15 S 52	0 E	94.00	8887.15	135.37	55.86 S	123.87 E	135.88	S 65 44 E	0.86
8957.00	8 15 S 50	0 E	63.00	8949.49	143.88	61.55 S	130.90 E	144.64	S 64 49 E	0.46
9052.00	7 45 S 50	0 E	95.00	9043.57	156.24	70.04 S	141.02 E	157.46	S 63 35 E	0.53
9146.00	7 45 S 56	0 E	94.00	9136.71	168.31	77.67 S	151.14 E	169.93	S 62 48 E	0.86
9240.00	8 0 S 60	0 E	94.00	9229.82	180.87	84.49 S	162.06 E	182.77	S 62 28 E	0.64
9335.00	8 45 S 65	0 E	95.00	9323.81	194.56	90.88 S	174.33 E	196.60	S 62 28 E	1.10
9429.00	9 0 S 70	0 E	94.00	9416.68	209.04	96.43 S	187.73 E	211.04	S 62 49 E	0.86
9523.00	9 30 S 73	0 E	94.00	9509.46	224.15	101.22 S	202.05 E	225.99	S 63 23 E	0.4
9618.00	8 30 S 75	0 E	95.00	9603.29	238.98	105.32 S	216.34 E	240.61	S 64 3 E	1.10
9711.00	7 0 S 74	0 E	93.00	9695.44	251.49	108.67 S	228.42 E	252.95	S 64 33 E	1.62
9805.00	6 0 S 75	0 E	94.00	9788.83	262.11	111.51 S	238.68 E	263.44	S 64 57 E	1.07
9888.00	4 45 S 78	0 E	83.00	9871.47	269.85	113.33 S	246.24 E	271.06	S 65 17 E	1.54
10111.00	8 15 S 39	0 E	223.00	10093.00	294.04	126.26 S	267.34 E	295.66	S 64 43 E	2.44
10205.00	9 45 S 39	0 E	94.00	10185.84	306.55	137.69 S	276.60 E	308.97	S 63 32 E	1.60
10300.00	11 15 S 39	0 E	95.00	10279.24	321.28	151.14 S	287.49 E	324.80	S 62 16 E	1.58
10393.00	11 45 S 39	0 E	93.00	10370.38	337.05	165.55 S	299.16 E	341.91	S 61 2 E	0.54
10488.00	13 0 S 39	0 E	95.00	10463.17	354.37	181.37 S	311.97 E	360.87	S 59 50 E	1.32
10582.00	14 45 S 37	0 E	94.00	10554.42	373.33	199.14 S	325.85 E	381.88	S 58 34 E	1.93

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NEARBURG PRODUCING COMPANY
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LEA COUNTY, NEW MEXICO

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MEASURED DEPTH	DRIFT ANGLE D M	DRIFT DIRECTION D M	COURSE LENGTH	TRUE VERTICAL DEPTH	VERTICAL SECTION	RECTANGULAR COORDINATES	CLOSURE DISTANCE	DIRECTION D M	DOGLEG SEVERITY
10677.00	15 45	S 37 0 E	95.00	10646.08	394.12	219.09 S 340.89 E	405.22	S 57 16 E	1.05
10771.00	15 15	S 37 0 E	94.00	10736.66	415.01	239.15 S 356.01 E	428.88	S 56 6 E	0.53
10865.00	14 30	S 34 0 E	94.00	10827.50	434.72	258.80 S 370.02 E	451.54	S 55 2 E	1.14
10960.00	14 15	S 33 0 E	95.00	10919.53	453.50	278.46 S 383.03 E	473.56	S 53 59 E	0.37
11054.00	13 45	S 37 0 E	94.00	11010.74	471.96	297.09 S 396.07 E	495.11	S 53 8 E	1.16
11148.00	13 30	S 31 0 E	94.00	11102.09	489.71	315.44 S 408.45 E	516.08	S 52 19 E	1.33
11242.00	12 45	S 24 0 E	94.00	11193.64	505.25	334.36 S 418.30 E	535.51	S 51 22 E	1.87
11337.00	11 30	S 20 0 E	95.00	11286.52	518.42	352.86 S 425.78 E	552.99	S 50 21 E	1.58
11431.00	9 45	S 17 0 E	94.00	11378.90	529.03	369.29 S 431.27 E	567.78	S 49 26 E	1.95
11526.00	8 0	S 15 0 E	95.00	11472.76	537.50	383.38 S 435.31 E	580.07	S 48 38 E	1.87
11620.00	7 15	S 6 0 E	94.00	11565.93	543.69	395.63 S 437.58 E	589.92	S 47 53 E	1.50
11715.00	6 0	S 1 0 E	95.00	11660.29	547.93	406.57 S 438.25 E	597.80	S 47 9 E	1.45
11902.00	6 0	S 1 0 E	187.00	11846.27	554.71	426.11 S 438.59 E	611.50	S 45 50 E	0.00

CLOSURE - DISTANCE : 611.50
DIRECTION : S 45 50 E

REPORT UNITS : Feet
SURVEY CALCULATION METHOD : Radius of curvature

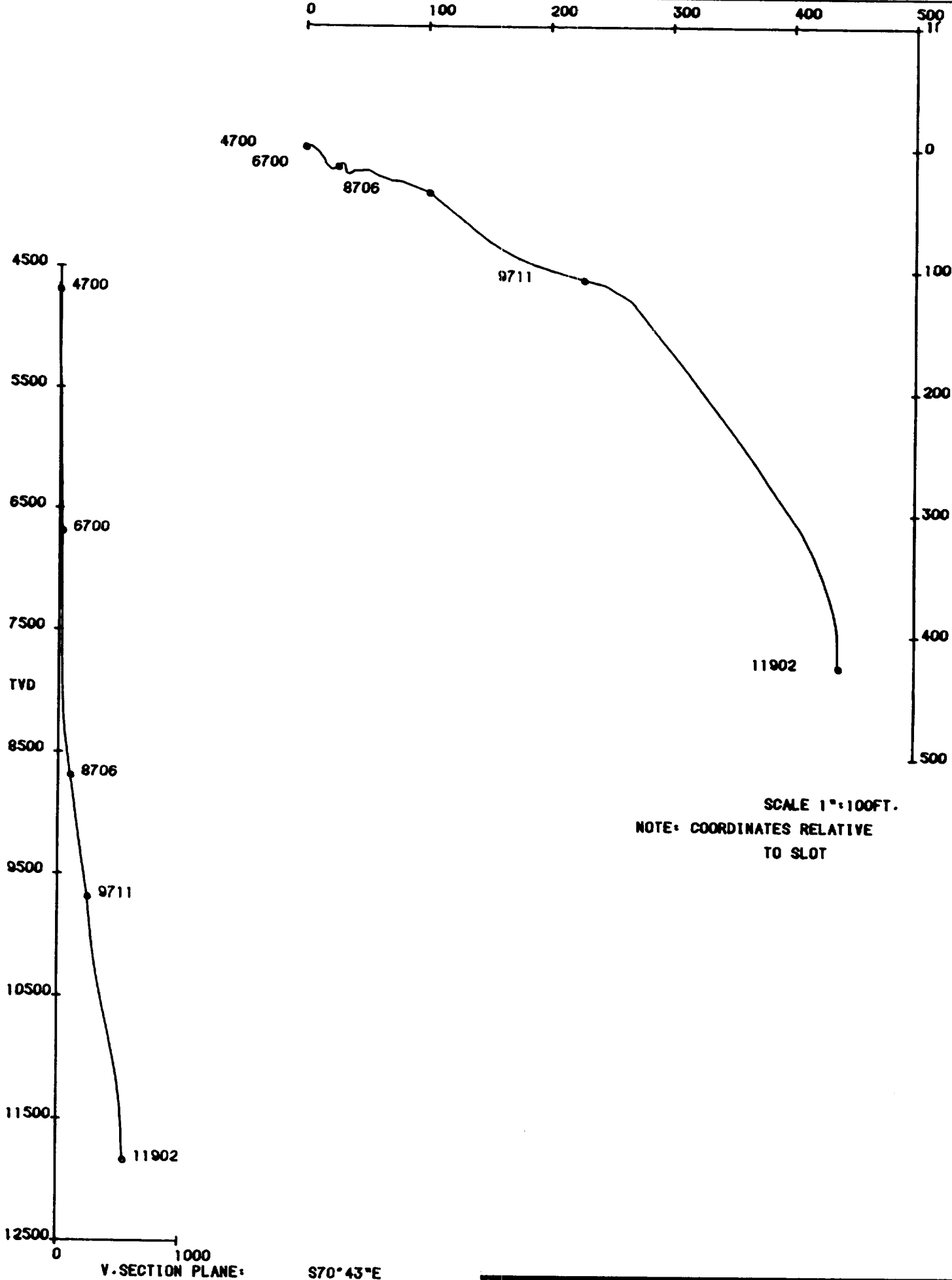
SURVEY RUN INFORMATION

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MAGNETIC MULTI SHOT SURVEY	430-0452
SURVEYOR: TIM STEPHENS	(4662' - 11,900')
MAGNETIC SINGLE SHOT SURVEY	430-0452
DIR. DRILLER: JOE L. GRUBBS	(8033' - 11,715')

STATION 11,902' IS A PROJECTION BASED ON THE PREVIOUS
STATION AT 11,715.







SURVEY CERTIFICATION SHEET
2103 Market, Midland, Texas 79703, Phone: (915) 694-9517, (915) 563-0511

STATE OF TEXAS
COUNTY OF MIDLAND

I, TIM STEPHENS, in the employ of Eastman Whipstock, Inc., did on the days of JANUARY 13, 19 87 thru JANUARY 14, 19 87 conduct or supervise the taking of a MAGNETIC MULTI-SHOT survey by the method of magnetic orientation from a depth of 4662 feet to 11,900 feet, with recordings of inclination and direction being obtained at approximate intervals of 100 feet.

This survey was conducted at the request of NEARBURG PRODUCING COMPANY for their HOWENSTEIN NO. 1, LEA _____ County, State of NEW MEXICO, in the _____ field.

This data for this survey and the calculation 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.

Tim Stephens
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.

Ray Harnes

Before me, the undersigned authority, on this day personally appeared TIM STEPHENS, 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 _____ day of _____, 19 _____

Notary Public in and for the
County of Midland, Texas
My commission expires _____



**EASTMAN
CHRISTENSEN**

2103 Market, Midland, Texas 79703, Phone: (915) 694-9517, (915) 563-0511

STATE OF TEXAS
COUNTY OF MIDLAND

I, Joe L. Grubbs, in the employ of Eastman Whipstock, Inc., did on the days of January 16, 1987 thru February 20, 1987 conduct or supervise the taking of a Single Shot survey by the method of magnetic orientation from a depth of 8033 feet to 11715 feet, with recordings of inclination and direction being obtained at approximate intervals of 100 feet.

This survey was conducted at the request of Nearburg Production Co. for their Hovenstein #1, Lea County, State of New Mexico, in the _____ field.

This data for this survey and the calculation 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.

Joe L. Grubbs
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.

Ken Karnes

Before me, the undersigned authority, on this day personally appeared Joe Grubbs, 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 26 day of FEBRUARY, 1987



Timothy R. Stephens
Notary Public, State of Texas
My Commission Expires 4-1-89

Timothy R. Stephens
Notary Public in and for the
County of Midland, Texas
My commission expires _____

Form C-102
Supersedes C-128
Effective 1-1-65

Operator Nearburg Producing Co.		Lease Howenstein		Well No. 1	
Unit Letter H	Section 12	Township 17-S	Range 37-E	County LEA	
Actual Footage Location of Well: 1665 feet from the North line and 830 feet from the East line					
Ground Level Elev. 3730.2	Producing Formation STRAWN	Pool SOUTH HUMBLE CITY STRAWN		Dedicated Acreage: 80 Acres	

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



Certificate No.	JOHN W. WEST,	676
	RONALD J. EIDSON,	3239

RECEIVED DEC 08 1986