



**REPORT
of
SUB-SURFACE
DIRECTIONAL
SURVEY**

AMOCO PRODUCTION COMPANY
COMPANY

SOUTH HOBBS UNIT COOP. WELL NO. 11
WELL NAME

LEA COUNTY, NEW MEXICO BD2-136
LOCATION

JOB NUMBER

WT1184-S0084
WT1184-S0085
132-M-1184-115

TYPE OF SURVEY

MAGNETIC MULTI SHOT SURVEY
"
"

DATE

7-NOV-84
11-NOV-84
16-NOV-84

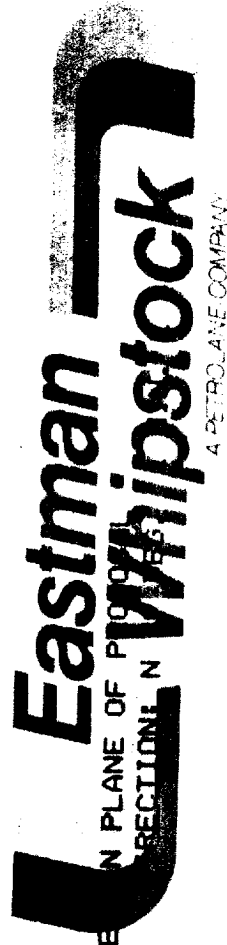
SURVEY BY
TROY ONEY
GARY DESPAIN
TROY DUNCAN

OFFICE
WEST TEXAS

AMOCO PRODUCTION COMPANY
SOUTH HOBBS UNIT COOP. WELL NO. 11
LEA COUNTY, NEW MEXICO BD2-136
NOVEMBER 7, 1984

EASTMAN WHIPSTOCK, INC.
MAGNETIC MULTI SHOT SURVEY
SURVEYOR: TROY ONEY
MAGNETIC MULTI-SHOT SURVEY
SURVEYOR: GARY DESPAIN
WT1184-S0084
(0'-1656')
WT1184-S0085
(1656'-3133')

AMF / SCIENTIFIC DRILLING
MAGNETIC MULTI SHOT SURVEY
SURVEYOR: TROY DUNCAN
132-M-1184-115
(3133'-4385')



VERTICAL SECTION CALCULATED IN PLANE OF PRODUCTION

SECTION N 1184-115

RECORD OF SURVEY

RADIUS OF CURVATURE METHOD

AMOCO PRODUCTION COMPANY

SOUTH HOBBS UNIT COOP. WELL NO. 11

LEA COUNTY, NEW MEXICO BD2-136

COMPUTATION

PAGE NO. 1

TIME DATE

15:24:00 20-NOV-84

MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D	COURSE LENGTH FEET	TRUE VERTICAL DEPTH FEET	VERTICAL SECTION FEET	R E C T A N G U L A R C O R D I N A T E S FEET	DOGLEG SEVERITY DG/100FT
0.	0 0	0	0.	0.00	0.00	0.00	0.00
48.	0 15	N 39 E	48.	48.00	0.08	0.08 N	0.07 E
79.	0 15	N 60 E	31.	79.00	0.20	0.17 N	0.17 E
109.	0 0	0	30.	109.00	0.26	0.20 N	0.22 E
168.	0 0	0	59.	168.00	0.26	0.20 N	0.22 E
228.	0 15	S 69 W	60.	228.00	0.13	0.15 N	0.10 E
287.	0 30	N 90 W	59.	287.00	-0.25	0.08 N	0.28 W
347.	0 15	S 75 W	60.	347.00	-0.65	0.03 N	0.66 W
406.	0 15	S 67 W	59.	406.00	-0.90	0.05 S	0.91 W
466.	0 30	S 87 W	61.	466.00	-1.29	0.14 S	1.29 W
527.	0 30	S 84 W	60.	527.00	-1.82	0.18 S	1.82 W
587.	0 15	S 35 W	60.	587.00	-2.18	0.37 S	2.15 W
648.	0 15	S 37 W	61.	648.00	-2.33	0.59 S	2.30 W
708.	0 15	S 53 W	60.	708.00	-2.39	0.77 S	2.49 W
769.	0 0	0	61.	769.00	-2.77	0.85 S	2.60 W
829.	0 30	S 18 E	60.	829.00	-2.68	1.10 S	2.51 W
890.	0 30	S 29 E	61.	890.00	-2.56	1.59 S	2.30 W
950.	0 30	S 10 E	60.	950.00	-2.49	2.08 S	2.13 W
1011.	0 30	S 15 E	61.	1011.00	-2.47	2.60 S	2.01 W
1071.	0 45	S 27 E	60.	1071.00	-2.36	3.21 S	1.78 W
1131.	0 45	S 18 W	60.	1131.00	-2.44	3.97 S	1.72 W
1192.	1 15	S 4 W	61.	1192.00	-2.84	5.02 S	1.92 W
1252.	0 45	S 2 W	60.	1252.00	-3.10	6.06 S	1.98 W
1313.	0 45	S 6 E	61.	1313.00	-3.22	6.86 S	1.95 W
1373.	0 45	S 54 E	60.	1373.00	-2.97	7.52 S	1.57 W
1434.	0 45	S 56 E	61.	1434.00	-2.42	7.98 S	0.91 W
1497.	0 30	S 45 E	63.	1497.00	-1.98	8.41 S	0.38 W
1559.	0 30	S 59 E	62.	1559.00	-1.63	8.75 S	0.04 E
1622.	0 30	S 45 E	63.	1622.00	-1.27	9.08 S	0.47 E
1656.	0 45	S 28 E	34.	1656.00	-1.11	9.38 S	0.69 E

MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D	COURSE LENGTH FEET	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	DOGLEG SEVERITY DG/100FT
1704.	0 45	S 26 E	48.	1703.92	-0.93	9.94 S	0.98 E
1735.	0 30	S 31 E	31.	1734.92	-0.83	10.24 S	1.14 E
1796.	1 0	S 38 E	61.	1795.92	-0.51	10.89 S	1.59 E
1857.	3 0	N 79 E	61.	1856.88	1.21	11.60 S	3.49 E
1917.	6 45	S 89 E	60.	1916.65	6.27	11.16 S	8.56 E
1978.	8 0	S 84 E	61.	1977.14	13.85	11.64 S	16.37 E
2039.	9 0	S 84 E	61.	2037.47	22.47	12.58 S	25.33 E
2100.	10 0	S 84 E	61.	2097.64	32.10	13.63 S	35.35 E
2160.	11 30	S 86 E	60.	2156.58	42.86	14.61 S	46.50 E
2221.	13 0	S 88 E	61.	2216.19	55.42	15.28 S	59.42 E
2282.	14 30	S 89 E	61.	2274.89	85.27	16.66 S	73.91 E
2343.	16 0	S 89 E	61.	2339.89	90.59	18.94 S	89.95 E
2404.	17 30	S 90 E	61.	2397.44	101.69	21.10 S	107.53 E
2464.	19 15	N 89 E	60.	2447.44	111.69	23.93 S	126.45 E
2525.	20 15	N 87 E	61.	2507.05	141.43	15.21 S	147.04 E
2586.	21 45	N 86 E	61.	2564.00	163.13	13.88 S	168.86 E
2647.	21 45	N 87 E	61.	2620.65	185.54	12.50 S	191.43 E
2707.	22 15	N 87 E	60.	2676.29	207.80	11.32 S	213.87 E
2768.	23 0	N 88 E	61.	2732.59	231.00	10.30 S	237.31 E
2829.	23 0	N 88 E	61.	2788.74	254.55	9.47 S	261.13 E
2890.	23 15	N 89 E	61.	2844.84	278.18	8.84 S	285.08 E
2951.	22 45	N 89 E	61.	2900.99	301.65	8.42 S	308.91 E
3012.	20 15	S 88 E	61.	2957.74	323.56	8.62 S	331.27 E
3072.	17 45	S 88 E	60.	3014.47	342.59	9.30 S	350.79 E
3133.	15 0	S 86 E	61.	3072.99	359.27	10.20 S	367.96 E

3186 FT. TO 4385 FT. SURVEYED BY SCIENTIFIC DRILLING

3186.	15 0	N 82 E	53.	3124.18	372.80	9.72 S	381.64 E
3247.	13 45	N 69 E	61.	3183.27	387.88	5.94 S	396.27 E
3308.	13 30	N 63 E	61.	3242.55	401.88	0.10 S	409.39 E
3369.	13 0	N 64 E	61.	3301.93	415.35	6.14 N	421.90 E
							5.85
							5.66
							2.35
							0.90

AMOCO PRODUCTION COMPANY
SOUTH HOBBS UNIT COOP. WELL NO. 11
LEA COUNTY, NEW MEXICO BD2-136

COMPUTATION PAGE NO. 3
TIME DATE
15:24:00 20-NOV-84

MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D	COURSE LENGTH FEET	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	DOGLEG SEVERITY DG/100FT
3430.	13 0	N 63 E	61.	3361.37	428.57	12.26 N 434.18 E	0.37
3491.	13 0	N 60 E	61.	3420.80	441.65	18.81 N 446.24 E	1.11
3552.	12 45	N 55 E	61.	3480.27	454.29	26.11 N 457.70 E	1.87
3613.	12 15	N 48 E	61.	3539.82	466.00	34.33 N 468.03 E	2.61
3674.	12 0	N 44 E	61.	3599.46	476.74	43.22 N 477.24 E	1.44
3735.	13 15	N 56 E	61.	3658.99	488.37	51.78 N 487.44 E	4.75
3796.	16 0	N 66 E	61.	3718.00	503.00	59.23 N 500.89 E	6.10
3857.	16 30	N 67 E	61.	3776.57	519.66	66.04 N 516.54 E	0.94
3918.	16 45	N 67 E	61.	3835.02	536.73	72.86 N 532.61 E	0.41
3979.	16 45	N 67 E	61.	3893.43	553.93	79.73 N 548.79 E	0.00
4040.	17 0	N 67 E	61.	3951.84	571.23	87.63 N 565.09 E	0.41
4101.	17 30	N 67 E	61.	4010.26	588.94	97.72 N 581.74 E	0.82
4162.	18 0	N 67 E	61.	4068.68	606.70	107.98 N 598.86 E	0.82
4223.	18 45	N 66 E	61.	4126.64	625.90	118.65 N 616.49 E	1.33
4284.	19 45	N 66 E	61.	4183.63	645.30	116.83 N 634.87 E	1.64
4345.	21 0	N 66 E	61.	4240.82	666.19	125.47 N 654.27 E	2.05
4385.	21 0	N 66 E	40.	4278.16	680.15	131.30 N 667.36 E	0.00

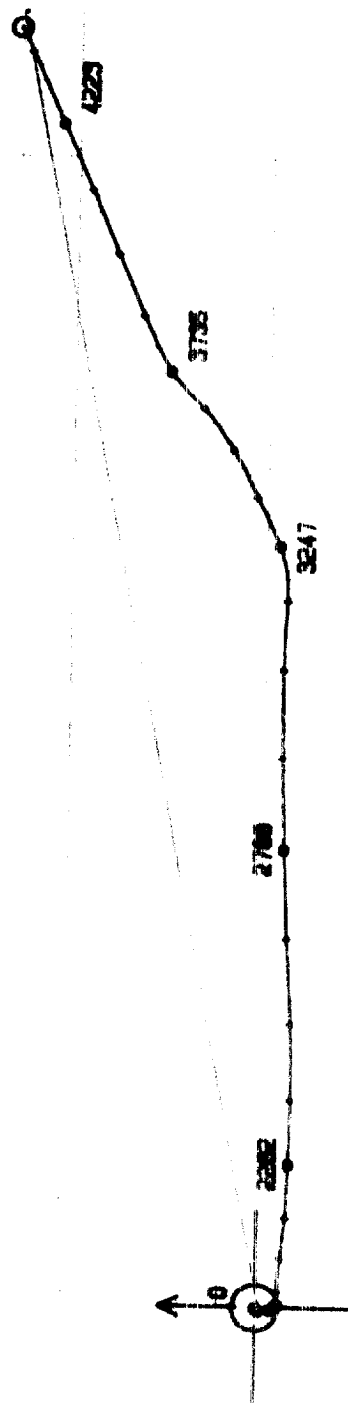
FINAL CLOSURE - DIRECTION: N 78 DEGS 52 MINS E
DISTANCE: 680.16 FEET

AMOCO PRODUCTION COMPANY
SOUTH HOBBS UNIT COOP. WELL NO. 11
LER COUNTY, NEW MEXICO 802-136

EASTMAN WHIPSTOCK, INC.

HORIZONTAL PROJECTION
SCALE 1 IN. = 100 FEET
DEPTH INDICATOR, MD

FINAL STATION:
DEPTH 4365 MD. 4278.15 TWD
NORTH 191.29 EAST 667.36
CLOSURE 680.15 N 78 52 11 E





P.O. Box 6341/Midland, Texas 79711-0341/(915) 563-0511

SURVEY CERTIFICATION SHEET

STATE OF TEXAS
COUNTY OF MIDLAND

I, Troy Oney, in the employ of Eastman Whipstock, Inc., did on the days of 11-7, 1984 thru 11-7, 1984 conduct or supervise the taking of a Magnetic Multi Shot survey by the method of magnetic orientation from a depth of 0 feet to 1656 feet, with recordings of inclination and direction being obtained at approximate intervals of 62 feet.

This survey was conducted at the request of Amoco Production Company for their South Hobbs Unit Coop. Well No. 11 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.

Troy Oney
Directional Supervisor/Surveyor

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

Harry Stephens
Before me, the undersigned authority, on this day personally appeared Troy Oney, 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 information is a true statement of facts therein recited.

Subscribed and sworn to before me on this 20th day of Nov, 1984.

Roy L. Steinke
Notary Public in and for the
County of Midland, Texas



ROY L. STEINKE
Notary Public, State of Texas
My Commission Expires July 8, 1985



P.O. Box 6341/Midland, Texas 79711-0341/(915) 563-0511

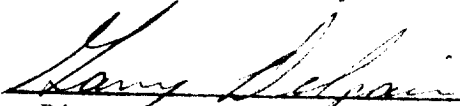
SURVEY CERTIFICATION SHEET

STATE OF TEXAS
COUNTY OF MIDLAND

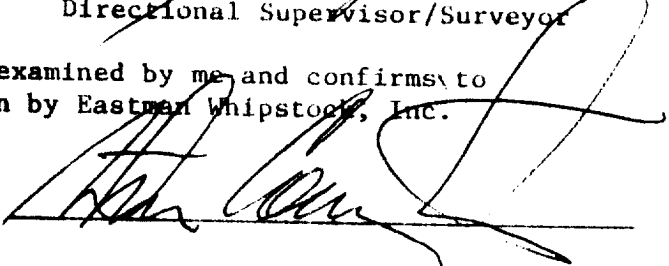
I, Gary DeSpain, in the employ of Eastman Whipstock, Inc., did on the days of Nov. 11, 1984 thru Nov. 11, 1984 conduct or supervise the taking of a Magnetic Multi Shot survey by the method of magnetic orientation from a depth of 1656 feet to 3133 feet, with recordings of inclination and direction being obtained at approximate intervals of 61 feet.

This survey was conducted at the request of Amoco Production Company for their South Hobbs Unit Coop. # 11, Lea County, State of New Mexico, in the _____ field.

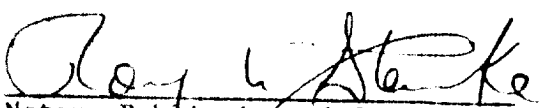
This data for this survey and the calculation were obtained and performed by me according to standards and procedures as set forth by Eastman Whipstock, Inc. and is true and correct to the best of my knowledge.


Directional Supervisor/Surveyor

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


Before me, the undersigned authority, on this day personally appeared Gary DeSpain, 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 information is a true statement of facts therein recited.

Subscribed and sworn to before me on this 20th day of Nov., 1984.


Notary Public in and for the
County of Midland, Texas



ROY L. STEINKE
Notary Public, State of Texas
My Commission Expires July 9, 1985

SCIENTIFIC DRILLING CONTROLS

SURVEY CERTIFICATION

COMPANY Amoco Production WELL NAME & NO. SHU Coop #11
DATE of CERTIFICATION 11-16-84 LOCATION Lea County, New Mexico
TYPE of SURVEY Mag. Directional FROM 3133 TO 4385
JOB NUMBER 132-M-1184-115 TICKET NUMBER 100531

THE ABOVE SURVEY WAS PERFORMED BY ME ON November 20 1984
THE RESULTS OBTAINED FROM ACTUAL FIELD DATA CONFORM TO ESTABLISHED
STANDARDS AND ARE TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE.



SURVEYOR
Troy Duncan

FILM TRANSFER RECEIPT

I HEREBY ACKNOWLEDGE RECEIPT OF ORIGINAL FILM OBTAINED ON THE ABOVE
SURVEY.

DATE RECEIVED 19____

COMPANY REPRESENTATIVE

SURVEY CONFIRMATION

I HAVE EXAMINED THE ABOVE SURVEY AND FOUND THE DATA AND RESULTS
ACCEPTABLE ACCORDING TO CURRENT SCIENTIFIC DRILLING CONTROLS STANDARDS.



S.D.C. REPRESENTATIVE
Troy Duncan