



**REPORT
of
SUB-SURFACE
DIRECTIONAL
SURVEY**

AMOCO PRODUCTION COMPANY
COMPANY

SOUTH HOBBS UNIT WELL NO. 188
WELL NAME

LEA COUNTY, NEW MEXICO BD2-155
LOCATION

JOB NUMBER

TYPE OF SURVEY

DATE

WT1284-S0125
WT1284-S0129
OD-MA-40139

MAGNETIC MULTI SHOT SURVEY
"
"

9-DEC-84
13-DEC-84
19-DEC-84

SURVEY BY
STEVE COVINGTON
"
JIMMY BREAUX

OFFICE
WEST TEXAS

RECEIVED

JAN - 8 1985

O.C.D.
HOBBS OFFICE

AMOCO PRODUCTION COMPANY
SOUTH HOBBS UNIT WELL NO. 188
LEA COUNTY, NEW MEXICO BD2-155
DECEMBER 9, 1984, DECEMBER 12, 1984

EASTMAN WHIPSTOCK, INC.
MAGNETIC MULTI SHOT SURVEY WT1284-S0125
SURVEYOR: STEVE COVINGTON (0'-1573')
MAGNETIC MULTI SHOT SURVEY WT1284-S0129
SURVEYOR: STEVE COVINGTON (1573'-3278')

NL SPERRY SUN INC.
MAGNETIC MULTI SHOT SURVEY OD-MA-40139
SURVEYOR: JIMMY BREAUX (3278'-4325')



VERTICAL SECTION CALCULATED IN PLANE OF PRODUCTION

RECORD OF SURVEY

RADIUS OF CURVATURE METHOD

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MEASURED DEPTH FEET	DRIFT		DIRECTION D	COURSE LENGTH FEET	TRUE		VERTICAL SECTION FEET	RECTANGULAR COORDINATES		DOBLEG SEVERITY DG/100FT
	ANGLE D M				DEPTH FEET			FEET		
0.	0 0		0	0.	0.00		0.00	0.00		0.00
81.	0 15	S 88 E		81.	81.00		-0.18	0.01 S	0.18 E	0.31
141.	0 15	S 81 E		60.	141.00		-0.44	0.03 S	0.44 E	0.05
202.	1 15	S 87 E		61.	201.99		-1.23	0.11 S	1.23 E	1.64
262.	1 30	S 85 E		60.	261.98		-2.66	0.22 S	2.67 E	0.42
323.	1 15	S 88 E		61.	322.96		-4.12	0.30 S	4.13 E	0.43
383.	1 15	S 80 E		60.	382.94		-5.41	0.44 S	5.43 E	0.29
444.	1 15	N 74 E		61.	443.93		-6.73	0.37 S	6.74 E	0.92
504.	1 0	N 66 E		60.	503.92		-7.85	0.03 N	7.85 E	0.49
565.	0 45	S 89		60.	564.91		-8.76	0.21 N	8.76 E	0.74
625.	1 15	N 69		60.	624.90		-9.79	0.40 N	9.78 E	1.04
686.	0 30	N 66 E		61.	685.89		-10.78	0.75 N	10.64 E	1.23
746.	0 45	N 36 E		61.	745.88		-11.77	1.16 N	11.14 E	0.67
807.	0 30	S 79 E		61.	806.89	PETROLATUM	-12.76	1.39 N	11.73 E	1.15
867.	0 15	S 83 E		60.	866.89		-12.15	1.33 N	12.12 E	0.42
928.	0 45	N 74 E		61.	927.88		-12.68	1.37 N	12.65 E	0.87
988.	1 0	N 53 E		60.	987.88		-13.50	1.78 N	13.46 E	0.67
1049.	0 30	N 32 E		61.	1048.87		-14.05	2.36 N	14.00 E	0.92
1109.	0 15	S 69 E		60.	1108.87		-14.40	2.48 N	14.34 E	0.86
1170.	0 0	0		61.	1169.87		-14.52	2.43 N	14.46 E	0.41
1230.	0 45	N 8 E		60.	1229.87		-14.59	2.82 N	14.52 E	1.25
1291.	0 15	N 46 E		61.	1290.86		-14.83	3.28 N	14.76 E	0.94
1351.	0 30	N 34 W		60.	1350.86		-14.88	3.64 N	14.79 E	0.86
1412.	0 45	N 6 W		61.	1411.86		-14.67	4.26 N	14.57 E	0.64
1472.	0 30	N 55 E		60.	1471.86		-14.94	4.83 N	14.83 E	1.12
1533.	0 45	N 2 E		61.	1532.85		-15.26	5.39 N	15.13 E	0.99
1573.	0 15	N 21 E		40.	1572.85		-15.34	5.73 N	15.20 E	1.30
1621.	0 30	N 7 W		48.	1620.85		-15.39	6.04 N	15.24 E	0.63
1682.	1 0	N 8 E		61.	1681.84		-15.42	6.84 N	15.25 E	0.87
1743.	1 0	N 10 E		61.	1742.83		-15.61	7.89 N	15.41 E	0.06

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MEASURED DEPTH FEET	DRIFT ANGLE D M	BRIFT DIRECTION D	COURSE LENGTH FEET	TRUE		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		SEVERITY DG/100FT
				VERTICAL DEPTH FEET			FEET		
1805.	0 45	N 2 E	62.	1804.83		-15.73	8.83 N	15.51 E	0.45
1866.	0 45	N 12 E	61.	1865.82		-15.85	9.62 N	15.61 E	0.21
1927.	1 15	N 21 E	61.	1926.81		-16.18	10.64 N	15.91 E	0.86
1989.	1 0	N 29 E	62.	1988.80		-16.72	11.74 N	16.43 E	0.48
2050.	1 15	N 39 E	61.	2049.79		-17.41	12.74 N	17.10 E	0.52
2112.	1 15	N 36 E	62.	2111.77		-18.26	13.81 N	17.92 E	0.11
2173.	1 30	N 34 E	61.	2172.76		-19.13	15.01 N	18.76 E	0.42
2234.	1 45	N 84 W	61.	2233.73		-18.56	16.31 N	18.15 E	4.57
2296.	5 30	N 90 W	62.	2295.60		-14.65	16.52 N	14.24 E	6.07
2357.	7 0	S 86	62.	2356.83		-8.01	16.29 N	7.60 E	2.56
2418.	7 30	S 83	61.	2416.44		-0.33	15.55 N	0.06 W	1.03
2480.	8 45	S 84	62.	2478.88		-0.85	15.56 N	8.77 W	2.03
2541.	9 45	S 86 W	61.	2539.33		-3.33	13.70 N	18.53 W	1.72
2602.	10 45	S 86 W	61.	2598.55		-22.02	12.94 N	29.36 W	1.64
2664.	10 30	S 88 W	62.	2659.29		40.45	12.35 N	40.78 W	0.72
2725.	10 45	S 89 W	61.	2719.24		51.70	12.05 N	52.02 W	0.51
2786.	10 45	S 88 W	61.	2779.17		63.08	11.75 N	63.40 W	0.31
2848.	10 30	S 88 W	62.	2840.11		74.51	11.36 N	74.82 W	0.40
2909.	10 45	N 89 W	61.	2900.06		85.75	11.26 N	86.07 W	0.99
2971.	10 45	N 88 W	62.	2960.98		97.30	11.56 N	97.63 W	0.30
3032.	10 0	N 88 W	61.	3020.98		108.27	11.94 N	108.61 W	1.23
3093.	10 0	N 86 W	61.	3081.05		118.83	12.50 N	119.18 W	0.57
3155.	10 0	N 84 W	62.	3142.11		129.53	13.44 N	129.91 W	0.56
3216.	10 0	N 82 W	61.	3202.18		140.00	14.73 N	140.42 W	0.57
3247.	10 0	N 84 W	31.	3232.71		145.33	15.38 N	145.76 W	1.12
3278.	9 45	N 82 W	31.	3263.25		150.59	16.03 N	151.04 W	1.37
1336 FT. TO 4325 FT. SURVEYED BY SPERRY SUN.									
3336.	8 25	S 81 W	58.	3320.52		159.71	15.95 N	160.16 W	5.14
3398.	7 15	S 74 W	62.	3381.94		168.00	14.12 N	168.41 W	2.43

Eastman
Whipstock

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TIME DATE

15:32:33 27-DEC-84

TRUE

MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D	COURSE LENGTH FEET	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
3460.	6 55	S 73 W	62.	3443.47	175.38	11.95 N 175.74 W	0.57
3522.	6 50	S 71 W	62.	3505.03	182.49	9.66 N 182.80 W	0.41
3585.	6 5	S 75 W	63.	3567.63	189.32	7.59 N 189.57 W	1.39
3645.	6 10	S 73 W	60.	3627.28	195.51	5.82 N 195.72 W	0.38
3710.	5 50	S 77 W	65.	3691.93	202.12	4.06 N 202.28 W	0.82
3772.	5 30	S 75 W	62.	3753.62	208.09	2.58 N 208.22 W	0.62
3835.	6 0	S 74 W	63.	3816.31	214.22	0.90 N 214.31 W	0.81
3897.	6 25	S 76 W	62.	3877.94	220.73	0.84 S 220.78 W	0.76
3959.	7 0	S 70 W	62.	3939.52	227.71	2.95 S 227.71 W	1.47
4020.	8 0	S 65	62.	4001.21	235.14	6.00 S 235.06 W	1.96
4082.	9 5	S 64	62.	4061.21	243.55	7.97 S 243.37 W	1.76
4144.	10 15	S 70	62.	4121.21	251.22	4.03 S 252.95 W	2.48
4207.	10 10	S 68 W	62.	4181.21	258.49	8.03 S 263.37 W	0.58
4269.	10 55	S 70 W	62.	4245.38	271.49	22.10 S 273.96 W	1.35
4325.	10 55	S 70 W	56.	4300.37	284.49	25.72 S 283.93 W	0.00

S 84 DEGS 49 MINS W

FINAL CLOSURE - DIRECTION:

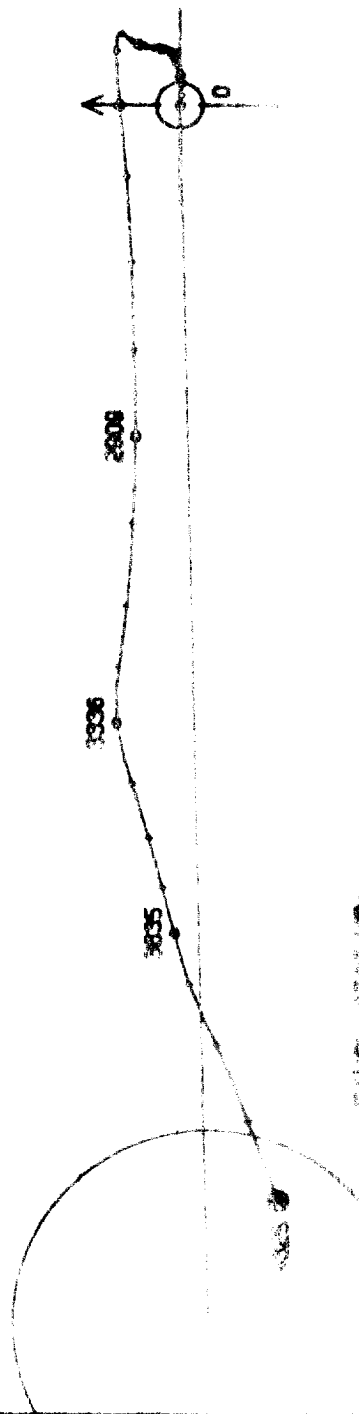
DISTANCE: 285.09 FEET

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BRIDGES PRODUCTION COMPANY
 SOUTH BRIDGES UNIT WELL NO. 188
 LEA COUNTY, NEW MEXICO 802-155

HORIZONTAL PROJECTION
 SCALE 1 IN. = 50 FEET
 DEPTH INDICATOR, NO

BRIDGES PRODUCTION, INC.



PLUG STATION
 DEPTH 3025' 40"
 SOUTH 25° 12' 45" 200' 0"
 11/15/74 10:30 AM

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U.S. AIR FORCE
HONOLULU OFFICE



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

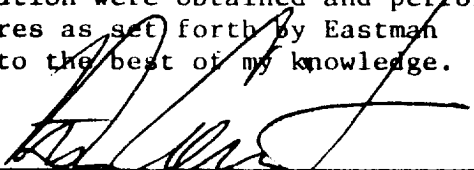
SURVEY CERTIFICATION SHEET

STATE OF TEXAS
COUNTY OF MIDLAND

I, STEVE COVINGTON, in the employ of Eastman Whipstock, Inc., did on the days of DECEMBER 8, 1984 thru DECEMBER 9, 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 1573 feet, with recordings of inclination and direction being obtained at approximate intervals of 61 feet.

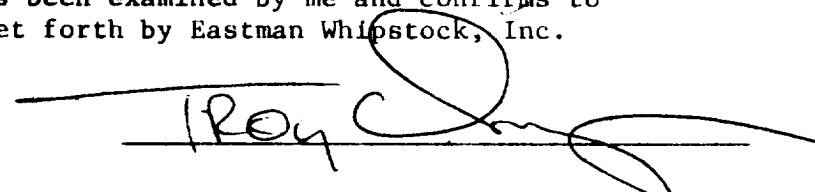
This survey was conducted at the request of AMOCO PRODUCTION COMPANY for their SOUTH HOBBS UNIT WELL NO. 188, LEA County, State of NEW MEXICO, in the _____ field.

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 STEVE COVINGTON, 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 27th day of DEC., 1984.



Notary Public in and for the
County of Midland, Texas



ROY L. STENKE
Notary Public, State of Texas
My Commission Expires July 2, 1985

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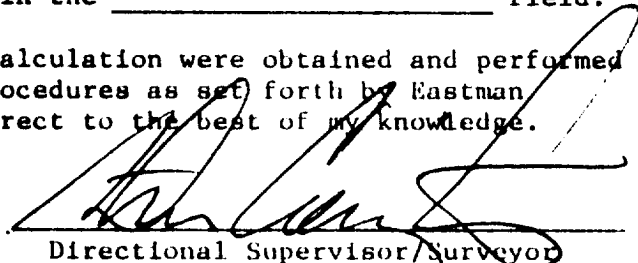
SURVEY CERTIFICATION SHEET

STATE OF TEXAS
COUNTY OF MIDLAND

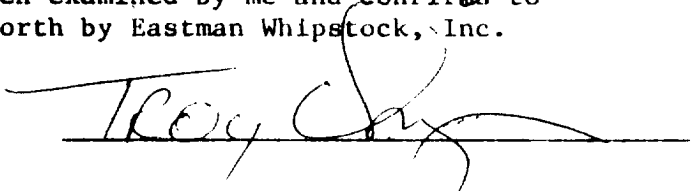
I, STEVE COVINGTON, in the employ of Eastman Whipstock, Inc., did on the days of DECEMBER 12, 1984 thru DECEMBER 13, 1984 conduct or supervise the taking of a MAGNETIC MULTI-SHOT survey by the method of magnetic orientation from a depth of 1573 feet to 3278 feet, with recordings of inclination and direction being obtained at approximate intervals of 61 feet.

This survey was conducted at the request of AMOCO PRODUCTION COMPANY for their SOUTH HOBBS UNIT WELL 188, 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.

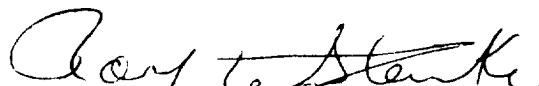

Directional Supervisor/Surveyor

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 STEVE COVINGTON, 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 27th day of DEC, 1984.


Notary Public in and for the
County of Midland, Texas



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

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I/We, Jimmy Breaux

Jimmy Breaux
Jimmy Breaux

day of December 1984
La Bonta Box

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HCSB Office