

SCIENTIFIC DRILLING CONTROLS

SURVEY CERTIFICATION

COMPANY Amoco Production Co. WELL NAME & NO. SHU #189
DATE of CERTIFICATION 3-20-85 LOCATION Lea County, New Mexico
TYPE of SURVEY Magnetic Multishot FROM 0 TO 3300
JOB NUMBER 132D285012 TICKET NUMBER 101003

THE ABOVE SURVEY WAS PERFORMED BY ME ON 3-14 19 85
THE RESULTS OBTAINED FROM ACTUAL FIELD DATA CONFORM TO ESTABLISHED
STANDARDS AND ARE TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE.

Edward G. Painter
SURVEYOR

Edward G. Painter

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.

Edward G. Painter
S.D.C. REPRESENTATIVE

Edward G. Painter

NL

STATE OF NEW MEXICO
LEA COUNTY

I, Tom Galley, in the employ of the Directional Surveying Department of NL Sperry-Sun, Inc., did on the 5th day of March, 1985 respectively conduct or supervise the taking of a Directional survey by method indicated:

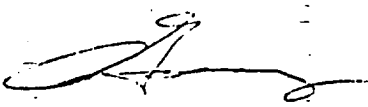
From a depth of 3300 feet to 4300 feet by BOSS Gyroscopic Survey

Records of inclination and the direction of inclination were taken at approximately 100 foot intervals.

This survey was conducted at the request of Amoco Production Company for their South Hobbs Unit, Well No. SHU-189 in Lea County, New Mexico.

I certify that this is a true and correct report of such survey and that it affords a true and correct representation of our findings as to the nature and conditions of the well at the time the survey was made.

Enclosed are a copy of our Directional Survey Report, and a copy of the surface plat for this location if it has been provided by the Oil Operator; if it is not enclosed, let it be known that we have requested a copy of the surface plat and are filing now, without it, to expedite completed filing in a timely manner. The enclosed surface location provided by the oil operator has been completed to indicate the bottom hole location of the well as represented by our survey only if the complete wellbore is represented by this survey.



Tom Galley
District Manager
NL Sperry-Sun, Inc.
PO Box 2133
Odessa, Tx. 79760

NL Sperry-Sun/NL Industries, Inc.
P.O. Box 69, Sugar Land, Texas 77478 Tel. (713) 491-2280

RECEIVED

MAR 22 1985

INVESTIGATIVE
DIVISION

MAGNETIC DIRECTIONAL SURVEY
FOR

 AMCO PRODUCTION CO

JOB NUMBER: 132-D-385-012

WELL NAME: SOUTH HOBBS UNIT 189

LOCATION: LEA COUNTY NEW MEXICO

SURVEY DATE: 03/14/85

SURVEY ENGINEER: TROY DUNCAN

METHOD OF CALCULATION: THE RADIUS OF CURVATURE

VERTICAL SECTION: CALCULATED USING PROPOSAL OF S O O E

COMMENTS:

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

RECEIVED

MAR 12 1985

100-100000

AMF / SCIENTIFIC DRILLING
MIDLAND, TEXAS

JOB NUMBER: 132-D-385-012

DATE: 03/14/85

INRUN SURVEY

BY

THE RADIUS OF CURVATURE

MEAS. DEPTH	VERT. DEPTH	VERT. SECT.	COURSE DEV.	INC D M	BEARING D M	COORDINATES LATITUDE DEPARTURE	D-LEG PER 100
50.00	50.00	.00	.00	0-0	N 70-0 E	0.00 E	.00
191.00	190.99	-.42	1.23	1-0	N 70-0 E	1.16 E	.71
284.00	283.98	-.83	1.62	1-0	N 81-0 E	2.73 E	.21
377.00	376.96	-1.16	1.62	1-0	N 75-0 E	4.31 E	.11
470.00	469.95	-1.65	1.42	0-45	N 65-0 E	5.65 E	.31
563.00	562.94	-2.03	1.42	1-0	N 84-0 E	7.01 E	.41
656.00	655.93	-1.97	1.62	1-0	S 80-0 E	8.63 E	.30
749.00	748.91	-1.42	1.62	1-0	S 60-0 E	10.14 E	.37
842.00	841.90	-.49	1.62	1-0	S 50-0 E	11.47 E	.19
935.00	934.89	.35	1.42	0-45	S 58-0 E	12.62 E	.30
1028.00	1027.88	.89	1.22	0-45	S 69-0 E	13.71 E	.15
1121.00	1120.87	1.60	1.22	0-45	S 38-0 E	14.67 E	.43
1214.00	1213.87	2.49	1.22	0-45	S 48-0 E	15.50 E	.14
1307.00	1306.85	3.56	1.62	1-15	S 50-0 E	16.73 E	.54
1400.00	1397.84	4.33	1.62	0-45	S 73-0 E	18.14 E	.68

RECEIVED

MAR 5 2 1985

LIBRARY

ANF / SCIENTIFIC DRILLING
MIDLAND, TEXAS

JOB NUMBER: 132-D-385-012

DATE: 03/14/85

INRUN SURVEY

BY

THE RADIUS OF CURVATURE

MEAS. DEPTH	VERT. DEPTH	VERT. SECT.	COURSE DEV.	INC D M	BLANKING D M	COORDINATES LATITUDE DEPARTURE	D-LEG PER 100
1493.00	1492.03	4.64	1.22	0-45 S	77-00 E	DA164 S 19.32 E	.06
1533.00	1532.02	4.79	.52	0-45 S	70-00 E	DA164 S 19.82 E	.23
1612.00	1611.82	4.70	1.03	0-45 N	60-00 E	DA164 S 20.32 E	.50
1705.00	1704.02	4.40	.61	0-00 N	/ A	4.40 S 21.35 E	.81
1798.00	1797.02	4.40	.20	0-15 N	90-00 E	4.40 S 21.55 E	.27
1891.00	1890.01	4.40	.20	0-00 N	/ A	4.40 S 21.75 E	.27
1984.00	1983.01	4.12	.41	0-30 N	46-00 E	4.12 S 22.04 E	.54
2077.00	2076.01	3.56	.81	0-30 N	47-00 E	3.56 S 22.63 E	.01
2170.00	2169.00	3.04	1.02	0-45 N	71-00 E	3.04 S 23.50 E	.38
2263.00	2262.79	2.37	1.62	1-15 N	60-00 E	2.37 S 24.97 E	.57
2356.00	2355.76	1.09	2.23	1-30 N	50-00 E	1.09 S 26.80 E	.37
2449.00	2448.70	2.16	3.45	2-45 S	5-00 E	2.16 S 29.39 E	4.10
2542.00	2541.26	10.43	8.71	8-00 S	34-00 W	10.43 S 27.25 E	6.57
2635.00	2633.35	21.03	12.94	8-00 S	36-00 W	21.03 S 19.83 E	.30
2728.00	2725.47	31.28	12.74	7-45 S	37-00 W	31.27 S 12.25 E	.31

AMF / SCIENTIFIC DRILLING
MIDLAND, TEXAS

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INRUN SURVEY

BY

THE RADIUS OF CURVATURE

MEAS. DEPTH	VERT. DEPTH	VERT. SECT.	COURSE DEV.	INC D M	BLANKING D M	COORDINATES LATITUDE DEPARTURE S E	D-LEG PER 100
2821.00	2817.65	41.26	12.34	7-30 S	35-00 W	64N251S 5.00 E	.39
2914.00	2909.88	50.98	11.94	7-15 S	36-00 W	60.97 S 1.94 W	.20
3007.00	3002.16	60.31	11.54	7-00 S	36-00 W	60.31 S 3.72 W	.27
3100.00	3094.52	69.21	10.93	6-30 S	35-00 W	69.21 S 15.07 W	.55
3193.00	3186.97	77.60	10.12	6-00 S	33-00 W	77.60 S 20.73 W	.59
3286.00	3279.46	85.75	9.72	6-00 S	33-00 W	85.75 S 26.02 W	.00
3400.00	3392.85	96.83	11.73	5-42 S	0-48 W	96.83 S 29.39 W	2.37
3500.00	3492.31	106.93	10.37	6-05 S	23-00 E	106.93 S 27.41 W	2.46
3600.00	3591.74	116.55	10.66	6-10 S	28-06 E	116.55 S 22.81 W	.55
3700.00	3691.17	125.89	10.66	6-05 S	29-30 E	125.89 S 17.67 W	.17
3800.00	3790.60	135.25	10.64	6-08 S	27-30 E	135.24 S 12.59 W	.22
3900.00	3890.02	144.63	10.68	6-08 S	29-42 E	144.62 S 7.48 W	.24
4000.00	3989.42	154.04	10.94	6-26 S	31-42 E	154.03 S 1.89 W	.37
4100.00	4088.78	163.86	11.23	6-35 S	28-12 E	163.85 S 3.76 E	.42
4200.00	4188.11	174.17	11.54	6-40 S	25-06 E	174.17 S 8.94 E	.37

AMF / SCIENTIFIC DRILLING
MIDLAND, TEXAS

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INRUN SURVEY

BY

THE RADIUS OF CURVATURE

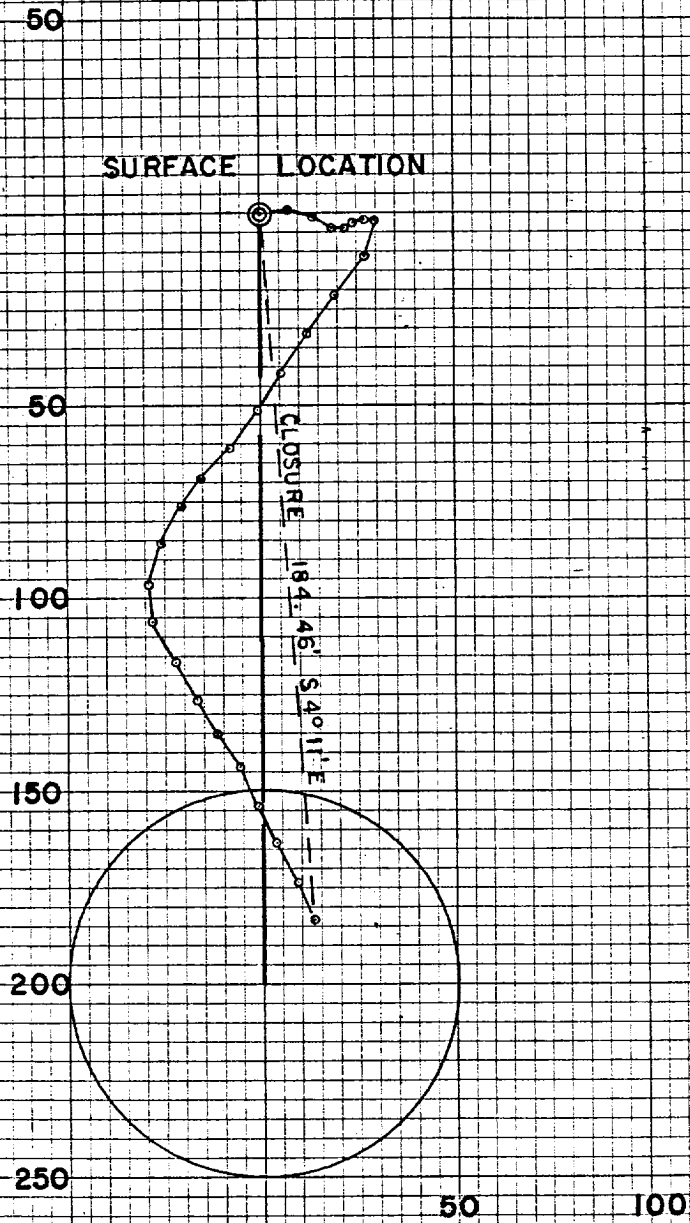
MEAS. DEPTH	VERT. DEPTH	VERT. SECT.	COURSE DEV.	INC D M	BEARING D M	COORDINATES LATITUDE DEPARTURE	D-LEG PER 100
4300.00	4287.52	183.97	10.80	5-44 S	24-36 E	13.48 E	.93

SCIENTIFIC INTERNATIONAL

THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF

4300.00 FEET EQUALS 184.46 FEET AT S 4-11 E.

AMOCO PRODUCTION CO.
SOUTH HOBBS UNIT Nº 189
LEA Co. NEW MEXICO



PLAN VIEW

SCALE
1" = 50'

