

sperry-sun



P.O. Box 2133
Odessa, Texas 79760

WELL: Empire ABO Unit J-24-1
FIELD: Empire

February 6, 1981

RECEIVED

APR 30 1981

Arco Oil And Gas Company
P.O. Box 1710
Hobbs, New Mexico 88240

O. C. D.
ARTESIA, OFFICE

The enclosed film and folders contain the results of our Gyroscopic Multishot survey job no. BOSS-6735, well Empire ABO Unit J-24-1, Empire field, in Eddy County, New Mexico on February 5, 1981. This survey was 0 feet to a depth of 6320 feet.

One of these folders contain the originals of the field data sheet and computation sheets.

It has been a pleasure to perform this survey for you.

Sincerely,

SPERRY-SUN, INC.

L.M. Snow
District Manager

LMS/re

enclosures

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ARC OIL AND GAS COMPANY
EMPIRE ABO UNIT J-24-1
EMPIRE ABO FIELD
EDDY COUNTY, NEW MEXICO
GYROSCOPIC MULTISHOT

PAGE: 1
DATE OF SURVEY FEBRUARY 5, 1981
VERTICAL SECTION DIRECTION
CLOSURE
ROSS-6735

APR 8 0 1981

ARTESIA OFFICE
O.C.D.

ARTESIA OFFICE, INC.
RECORD OF SURVEY

MEASURED DEPTH	TRUE VERTICAL DEPTH	SUB SEA TVD	COURSE		DIRECTION DEG	DOG-LEG SEV DEG/100	RECTANGULAR COORDINATES NORTH/SOUTH	COORDINATES EAST/WEST	VERTICAL SECTION
			INCLINATION DEG MIN	COURSE					
0	0.	0.	ORIGIN AT SURFACE			0. N	0. E	0.	
100	99.99	99.99	1 1	N	17 E	1.02	0.85 N	0.26 E	0.79
200	199.98	199.98	0 37	N	32 E	0.45	2.16 N	0.82 E	1.97
300	299.98	299.98	0 45	N	45 E	0.20	3.08 N	1.57 E	2.73
400	399.97	399.97	0 47	N	3 E	0.55	4.23 N	2.07 E	3.77
500	499.96	499.96	0 39	N	2 E	0.14	5.49 N	2.13 E	4.99
600	599.95	599.95	0 42	N	16 W	0.22	6.64 N	1.99 E	6.15
700	699.94	699.94	1 0	N	27 W	0.34	8.01 N	1.43 E	7.60
800	799.92	799.92	1 12	N	24 W	0.21	9.75 N	0.62 E	9.46
900	899.90	899.90	1 25	N	31 W	0.26	11.76 N	0.43 W	11.63
1000	999.86	999.86	1 38	N	32 W	0.22	14.03 N	1.81 W	14.12
1100	1099.82	1099.82	1 41	N	28 W	0.13	16.54 N	3.25 W	16.86
1200	1199.76	1199.76	2 22	N	37 W	0.76	19.49 N	5.19 W	20.12
1300	1299.68	1299.68	2 1	N	36 W	0.36	22.57 N	7.47 W	23.57
1400	1399.62	1399.62	1 57	N	33 W	0.13	25.43 N	9.41 W	26.75
1500	1499.56	1499.56	2 8	N	29 W	0.23	28.50 N	11.22 W	30.10
1600	1599.49	1599.49	2 7	N	27 W	0.07	31.78 N	12.96 W	33.64
1700	1699.41	1699.41	2 35	N	29 W	0.49	35.39 N	14.90 W	37.55
1800	1799.31	1799.31	2 35	N	29 W	0.02	39.33 N	17.10 W	41.83
1900	1899.20	1899.20	2 40	N	33 W	0.19	43.26 N	19.44 W	46.13
2000	1999.09	1999.09	2 40	N	28 W	0.23	47.29 N	21.77 W	50.53
2100	2099.00	2099.00	2 18	N	22 W	0.45	51.22 N	23.59 W	54.73
2200	2198.92	2198.92	2 16	N	20 W	0.06	54.94 N	25.02 W	58.65
2300	2298.85	2298.85	1 53	N	21 W	0.30	58.40 N	26.33 W	62.29
2400	2398.79	2398.79	1 57	N	26 W	0.17	61.53 N	27.70 W	65.63
2500	2498.74	2498.74	1 54	N	27 W	0.06	64.54 N	29.20 W	68.86
2600	2598.68	2598.68	1 55	N	17 W	0.33	67.62 N	30.45 W	72.12
2700	2698.62	2698.62	2 10	N	9 W	0.37	71.08 N	31.25 W	75.67
2800	2798.54	2798.54	2 25	N	9 W	0.25	75.04 N	31.90 W	79.68
2900	2898.45	2898.45	2 15	N	1 E	0.44	79.08 N	32.22 W	83.71

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ARCO OIL AND GAS COMPANY
 EMPIRE APO UNIT J-24-1
 EMPIRE APO FIELD
 EDDY COUNTY, NEW MEXICO
 GYROSCOPIC MULTISHOT

O. C. D.
 ARTESIA, OFFICE

DATE OF SURVEY FEBRUARY 5, 1981
 VERTICAL SECTION DIRECTION
 CLOSURE

PAGE 2
 BOSS-6735

SPERRY-SUN, INC.

RECORD OF SURVEY

MEASURED DEPTH	TRUE VERTICAL DEPTH	SUB SEA TVD	COURSE		DIRECTION DEG	DOG-LEG		RECTANGULAR NORTH/SOUTH	COORDINATES		VERTICAL SECTION
			INCLINATION DEG MIN	DEG		SEV DEG/100	TOTAL		EAST/WEST		
3000	2998.38	2998.38	2 15	N	5	W	0.23	83.00 N	32.37 W		87.59
3100	3098.29	3098.29	2 24	N	2	E	0.32	87.05 N	32.48 W		91.58
3200	3198.21	3198.21	2 17	N	2	W	0.20	91.14 N	32.50 W		95.60
3300	3298.13	3298.13	2 15	N	4	W	0.10	95.09 N	32.73 W		99.53
3400	3398.06	3398.06	2 14	N	10	W	0.22	98.96 N	33.23 W		103.43
3500	3497.99	3497.99	2 0	N	12	W	0.25	102.58 N	33.95 W		107.12
3600	3597.90	3597.90	2 40	N	13	W	0.67	106.55 N	34.86 W		111.19
3700	3697.81	3697.81	2 23	N	11	W	0.30	110.87 N	35.78 W		115.60
3800	3797.72	3797.72	2 14	N	10	W	0.16	114.83 N	36.51 W		119.63
3900	3897.63	3897.63	2 40	N	14	W	0.47	119.01 N	37.42 W		123.90
4000	3997.54	3997.54	2 15	N	5	W	0.58	123.22 N	38.15 W		128.18
4100	4097.46	4097.46	2 20	N	7	W	0.13	127.20 N	38.56 W		132.17
4200	4197.38	4197.38	2 14	N	4	W	0.16	131.17 N	38.95 W		136.14
4300	4297.30	4297.30	2 31	N	13	W	0.46	135.24 N	39.58 W		140.26
4400	4397.19	4397.19	2 46	N	12	W	0.25	139.74 N	40.56 W		144.85
4500	4497.08	4497.08	2 39	N	7	W	0.23	144.38 N	41.35 W		149.57
4600	4596.96	4596.96	2 55	N	6	W	0.28	149.21 N	41.92 W		154.4
4700	4696.82	4696.82	3 4	N	3	W	0.21	154.41 N	42.36 W		159.61
4800	4796.67	4796.67	3 12	N	7	W	0.26	159.85 N	42.88 W		165.05
4900	4896.53	4896.53	3 1	N	6	W	0.19	165.24 N	43.54 W		170.47
5000	4996.37	4996.37	3 17	N	9	W	0.30	170.69 N	44.26 W		175.96
5100	5096.20	5096.20	3 28	N	2	W	0.42	176.56 N	44.81 W		181.82
5200	5195.97	5195.97	4 23	N	6	E	1.07	183.39 N	44.53 W		188.48
5300	5295.61	5295.61	5 18	N	8	E	0.93	191.76 N	43.46 W		196.51
5400	5395.20	5395.20	5 3	N	0	E	0.78	200.73 N	42.77 W		205.19
5500	5494.81	5494.81	5 8	N	2	E	0.17	209.81 N	42.62 W		213.88
5600	5594.41	5594.41	5 7	N	8	W	0.88	218.51 N	43.10 W		222.71
5700	5694.04	5694.04	4 43	N	9	W	0.41	226.99 N	44.38 W		231.28
5800	5793.74	5793.74	4 13	N	7	W	0.54	234.70 N	45.46 W		239.06
5900	5893.44	5893.44	4 35	N	11	W	0.51	242.26 N	46.69 W		246.72

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BOSS-6735

SPERRY-SUN, INC									
RECORD OF SURVEY									
MEASURED DEPTH	TRUE VERTICAL DEPTH	SUB SEA TVD	COURSE		DIRECTION DEG	DOG-LEG		RECTANGULAR NORTH/SOUTH	
			INCLINATION DEG	MIN		SEV DEG/100	W	EAST/WEST	VERTICAL SECTION
6000	5993.15	5993.15	4	12	N 13 W	0.40	249.76 N	48.27 W	254.38
6100	6092.79	6092.79	5	29	N 14 W	1.29	257.98 N	50.20 W	262.82
6200	6192.31	6192.31	5	40	N 9 W	0.46	267.51 N	52.12 W	272.54
6300	6291.88	6291.88	5	4	N 1 W	0.97	276.80 N	52.99 W	281.83
6320	6311.80	6311.80	4	59	N 0 E	0.66	278.55 N	53.01 W	283.55

** THE CALCULATIONS ARE BASED ON THE MINIMUM RADIUS OF CURVATURE METHOD **

HORIZONTAL DISPLACEMENT = 283.55 FEET AT NORTH 10 DEG. 46 MIN. WEST (TRUE)