



***REPORT
of
SUB-SURFACE
DIRECTIONAL
SURVEY***

ARCO OIL AND GAS COMPANY
COMPANY

ATLANTIC STATE 30 WELL NO. 1
WELL NAME

LEA COUNTY, NEW MEXICO
LOCATION

JOB NUMBER
430-0711

TYPE OF SURVEY
GYROSCOPIC MULTI-SHOT

DATE
14/MAR/88

SURVEY BY
TIM STEPHENS

OFFICE
MIDLAND

RECEIVED
MAR 16 1988
CCD
HOBBS OFFICE

ARCO OIL AND GAS COMPANY
ATLANTIC ST 30 WELL NO.1
LEA COUNTY, NEW MEXICO

DECLINATION : 10.00 JOB NUMBER :
DATE PRINTED : 15-MAR-88
OUR REF. NO. : S01269.7AR

PAGE NO. 2

MEASURED DEPTH	DRIFT ANGLE D M	DRIFT DIRECTION D M	COURSE LENGTH	TRUE VERTICAL DEPTH	R E C T A N G U L A R C O O R D I N A T E S	DOGLEG SEVERITY
0.00	0 0	N 0 0 E	0.00	0.00	0.00 N 0.00 E	0.00
100.00	0 15	N 70 48 E	100.00	100.00	0.07 N 0.21 E	0.25
200.00	0 15	N 87 58 E	100.00	200.00	0.15 N 0.63 E	0.07
300.00	1 15	N 72 10 E	100.00	299.99	0.38 N 1.92 E	1.01
400.00	1 15	N 76 20 E	100.00	399.97	0.97 N 4.02 E	0.09
500.00	0 30	S 21 31 W	100.00	499.95	0.03 N 4.83 E	1.59
600.00	0 30	S 27 42 W	100.00	599.95	0.76 S 4.47 E	0.05
700.00	0 45	S 79 53 W	100.00	699.94	1.38 S 3.62 E	0.59
800.00	0 30	S 59 4 W	100.00	799.94	1.76 S 2.60 E	0.33
900.00	0 30	N 81 46 W	100.00	899.93	1.93 S 1.76 E	0.34
1000.00	0 45	N 36 35 W	100.00	999.93	1.39 S 0.85 E	0.53
1100.00	0 30	N 60 24 W	100.00	1099.92	0.67 S 0.03 E	0.36
1200.00	0 45	N 56 13 W	100.00	1199.92	0.09 S 0.89 W	0.25
1300.00	0 45	N 45 2 W	100.00	1299.91	0.73 N 1.91 W	0.15
1320.00	0 30	N 33 51 W	20.00	1319.91	0.90 N 2.04 W	1.39
1340.00	0 45	N 23 41 W	20.00	1339.90	1.09 N 2.15 W	1.36
1360.00	1 0	N 5 30 E	20.00	1359.90	1.39 N 2.20 W	2.51
1380.00	1 15	N 2 41 E	20.00	1379.90	1.78 N 2.17 W	1.28
1400.00	1 30	N 4 53 W	20.00	1399.89	2.26 N 2.18 W	1.5
1420.00	1 30	N 3 57 E	20.00	1419.89	2.79 N 2.18 W	1.1
1440.00	1 30	N 3 52 W	20.00	1439.88	3.31 N 2.18 W	1.02
1460.00	1 30	N 4 41 W	20.00	1459.87	3.83 N 2.22 W	0.11
1480.00	1 30	N 8 30 W	20.00	1479.86	4.35 N 2.28 W	0.50
1500.00	1 30	N 22 16 W	20.00	1499.86	4.86 N 2.42 W	1.80
1520.00	1 30	N 24 58 W	20.00	1519.85	5.34 N 2.63 W	0.35
1540.00	1 30	N 32 37 W	20.00	1539.84	5.79 N 2.88 W	1.00
1560.00	2 0	N 50 14 W	20.00	1559.84	6.25 N 3.28 W	3.64
1580.00	1 45	N 62 46 W	20.00	1579.82	6.61 N 3.83 W	2.39
1600.00	2 0	N 58 16 W	20.00	1599.81	6.93 N 4.40 W	1.45
1620.00	2 0	N 64 41 W	20.00	1619.80	7.27 N 5.01 W	1.12

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MEASURED DEPTH	DRIFT ANGLE D M	DRIFT DIRECTION D M	COURSE LENGTH	TRUE VERTICAL DEPTH	R E C T A N G U L A R C O O R D I N A T E S	DOGLEG SEVERITY
1640.00	2 15	N 65 5 W	20.00	1639.79	7.58 N 5.68 W	1.25
1660.00	2 15	N 66 27 W	20.00	1659.77	7.90 N 6.40 W	0.27
1680.00	2 15	N 54 50 W	20.00	1679.76	8.29 N 7.08 W	2.28
1700.00	2 15	N 71 11 W	20.00	1699.74	8.64 N 7.78 W	3.20
1800.00	2 15	N 62 24 W	100.00	1799.66	10.19 N 11.38 W	0.34
1900.00	2 0	N 67 46 W	100.00	1899.60	11.75 N 14.74 W	0.32
2000.00	2 0	N 74 8 W	100.00	1999.53	12.89 N 18.04 W	0.22
2100.00	2 0	N 74 31 W	100.00	2099.47	13.83 N 21.40 W	0.01
2200.00	1 30	N 57 57 W	100.00	2199.43	15.06 N 24.19 W	0.71
2300.00	0 45	N 38 25 W	100.00	2299.41	16.36 N 25.64 W	0.83
2400.00	0 30	N 39 56 W	100.00	2399.40	17.21 N 26.33 W	0.25
2500.00	0 30	N 46 29 W	100.00	2499.40	17.84 N 26.93 W	0.06
2600.00	0 45	N 33 6 W	100.00	2599.39	18.68 N 27.63 W	0.29
2700.00	0 45	N 12 46 W	100.00	2699.38	19.88 N 28.14 W	0.26
2800.00	1 0	N 13 29 W	100.00	2799.37	21.36 N 28.48 W	0.25
2900.00	1 0	N 19 46 E	100.00	2899.36	23.08 N 28.39 W	0.57
3000.00	1 15	N 8 0 E	100.00	2999.34	24.99 N 27.92 W	0.34
3100.00	1 30	N 16 14 E	100.00	3099.31	27.33 N 27.41 W	0.32
3200.00	1 30	N 17 28 E	100.00	3199.27	29.83 N 26.66 W	0.07
3300.00	1 30	N 17 51 E	100.00	3299.24	32.33 N 25.86 W	0.07
3400.00	1 30	N 11 5 E	100.00	3399.20	34.86 N 25.21 W	0.18
3500.00	1 30	N 7 18 E	100.00	3499.17	37.45 N 24.79 W	0.10
3600.00	1 45	N 5 33 E	100.00	3599.13	40.26 N 24.47 W	0.25
3700.00	1 30	N 6 10 W	100.00	3699.09	43.09 N 24.49 W	0.41
3800.00	1 30	N 14 49 W	100.00	3799.06	45.67 N 24.96 W	0.23
3900.00	1 30	N 25 26 W	100.00	3899.02	48.12 N 25.86 W	0.28
4000.00	2 0	N 35 59 W	100.00	3998.97	50.74 N 27.42 W	0.59
4100.00	1 45	N 46 28 W	100.00	4098.92	53.20 N 29.57 W	0.42
4200.00	1 45	N 39 55 W	100.00	4198.88	55.43 N 31.66 W	0.20
4300.00	2 0	N 45 18 W	100.00	4298.82	57.83 N 33.88 W	0.31

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MEASURED DEPTH	DRIFT ANGLE D M	DRIFT DIRECTION D M	COURSE LENGTH	TRUE VERTICAL DEPTH	R E C T A N G U L A R C O O R D I N A T E S	DOGLEG SEVERITY
4400.00	2 0	N 49 38 W	100.00	4398.76	60.19 N 36.45 W	0.15
4500.00	2 15	N 45 57 W	100.00	4498.69	62.68 N 39.19 W	0.28
4600.00	2 15	N 35 17 W	100.00	4598.61	65.66 N 41.74 W	0.42
4700.00	2 15	N 54 50 W	100.00	4698.54	68.42 N 44.51 W	0.76
4800.00	2 15	N 44 31 W	100.00	4798.46	70.95 N 47.50 W	0.40
4900.00	2 0	N 49 50 W	100.00	4898.39	73.47 N 50.22 W	0.32
5000.00	2 0	N 62 8 W	100.00	4998.33	75.42 N 53.10 W	0.43
5100.00	2 15	N 59 28 W	100.00	5098.26	77.23 N 56.34 W	0.27
5200.00	2 0	N 57 51 W	100.00	5198.19	79.16 N 59.51 W	0.26
5300.00	1 30	N 38 19 W	100.00	5298.15	81.19 N 61.77 W	0.77
5400.00	1 30	N 40 49 W	100.00	5398.11	83.21 N 63.44 W	0.07
5500.00	1 15	N 38 22 W	100.00	5498.08	85.06 N 64.96 W	0.26
5600.00	1 15	N 32 0 W	100.00	5598.06	86.84 N 66.22 W	0.14
5700.00	1 15	N 27 41 W	100.00	5698.03	88.73 N 67.31 W	0.09
5800.00	1 15	N 16 26 W	100.00	5798.01	90.75 N 68.12 W	0.25
5900.00	1 30	N 35 14 W	100.00	5897.98	92.90 N 69.16 W	0.51
6000.00	1 15	N 34 3 W	100.00	5997.95	94.87 N 70.53 W	0.25
6100.00	1 30	N 34 52 W	100.00	6097.92	96.85 N 71.89 W	0.25
6200.00	1 30	N 46 26 W	100.00	6197.89	98.83 N 73.59 W	0.30
6300.00	1 30	N 47 36 W	100.00	6297.86	100.62 N 75.50 W	0.06
6400.00	1 45	N 53 25 W	100.00	6397.82	102.42 N 77.69 W	0.30
6500.00	1 30	N 54 14 W	100.00	6497.77	104.09 N 79.98 W	0.25
6600.00	1 45	N 50 3 W	100.00	6597.73	105.83 N 82.22 W	0.28
6700.00	1 45	N 43 52 W	100.00	6697.69	107.92 N 84.45 W	0.19
6800.00	2 0	N 44 41 W	100.00	6797.63	110.26 N 86.73 W	0.25
6900.00	2 0	N 42 29 W	100.00	6897.57	112.79 N 89.14 W	0.08
7000.00	2 0	N 30 17 W	100.00	6997.51	115.59 N 91.20 W	0.42
7100.00	1 45	N 23 4 W	100.00	7097.46	118.51 N 92.67 W	0.34
7200.00	1 30	N 15 51 W	100.00	7197.42	121.18 N 93.62 W	0.32
7300.00	1 45	N 24 38 W	100.00	7297.38	123.84 N 94.60 W	0.35

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MEASURED DEPTH	DRIFT ANGLE D M	DRIFT DIRECTION D M	COURSE LENGTH	TRUE VERTICAL DEPTH	R E C T A N G U L A R C O O R D I N A T E S	DOGLEG SEVERITY
7400.00	1 45	N 21 24 W	100.00	7397.33	126.65 N 95.79 W	0.10
7500.00	2 15	N 17 11 W	100.00	7497.27	129.95 N 96.94 W	0.52
7600.00	2 45	N 15 57 W	100.00	7597.17	134.13 N 98.19 W	0.50
7700.00	3 0	N 21 44 W	100.00	7697.05	138.87 N 99.81 W	0.38
7800.00	3 15	N 15 21 W	100.00	7796.90	144.04 N 101.54 W	0.43
7900.00	3 30	N 16 8 W	100.00	7896.73	149.70 N 103.14 W	0.25
8000.00	3 30	N 16 54 W	100.00	7996.54	155.56 N 104.87 W	0.05
8100.00	3 45	N 11 39 W	100.00	8096.34	161.68 N 106.43 W	0.41
8200.00	4 0	N 9 21 W	100.00	8196.11	168.33 N 107.66 W	0.29
8300.00	3 45	N 12 56 W	100.00	8295.88	174.96 N 108.96 W	0.35
8400.00	4 0	N 16 27 W	100.00	8395.65	181.49 N 110.68 W	0.34
8500.00	4 15	N 16 53 W	100.00	8495.39	188.38 N 112.74 W	0.25
8600.00	4 30	N 3 15 W	100.00	8595.10	195.88 N 114.07 W	1.07
8700.00	4 30	N 5 30 E	100.00	8694.79	203.71 N 113.92 W	0.69
8800.00	4 45	N 0 19 E	100.00	8794.47	211.76 N 113.51 W	0.49
8900.00	4 30	N 4 13 E	100.00	8894.14	219.82 N 113.19 W	0.40
9000.00	4 45	N 0 51 W	100.00	8993.82	227.88 N 112.95 W	0.48
9040.00	4 45	N 3 55 W	40.00	9033.68	231.19 N 113.09 W	0.63
9100.00	4 45	N 3 55 W	60.00	9093.48	236.13 N 113.43 W	0.00
9200.00	4 45	N 3 55 W	100.00	9193.13	244.39 N 113.99 W	0.00
9300.00	4 45	N 3 55 W	100.00	9292.79	252.65 N 114.56 W	0.00
9400.00	4 45	N 3 55 W	100.00	9392.44	260.92 N 115.12 W	0.00
9486.00	4 45	N 3 55 W	86.00	9478.15	268.02 N 115.61 W	0.00

CLOSURE - DISTANCE : 291.89
DIRECTION : N 23 20 W

REPORT UNITS : Feet
SURVEY CALCULATION METHOD : Radius of curvature

SURVEY RUN INFORMATION

=====

GYROSCOPIC MULTI-SHOT SURVEY (0'-9040')

SURVEYOR: TIM STEPHENS 430-0711

9100 TO 9486 IS A PROJECTION BASED ON GYROSCOPIC SURVEY.





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

SURVEY CERTIFICATION SHEET

STATE OF TEXAS
COUNTY OF MIDLAND

I, TIM STEPHENS, in the employ of Eastman Christensen, Inc. did on the days of MARCH 14, 19 88 thru MARCH 14, 1988 conduct or supervise the taking of a GYROSCOPIC MULTI-SHOT survey by the method of magnetic orientation from a depth of 0 feet to 9040 feet, with recordings of inclination and direction being obtained at approximate intervals of 100 feet.

This survey was conducted at the request of ARCO OIL AND GAS COMPANY for their ATLANTIC STATE 30 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 Christensen, 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 Christensen, Inc.

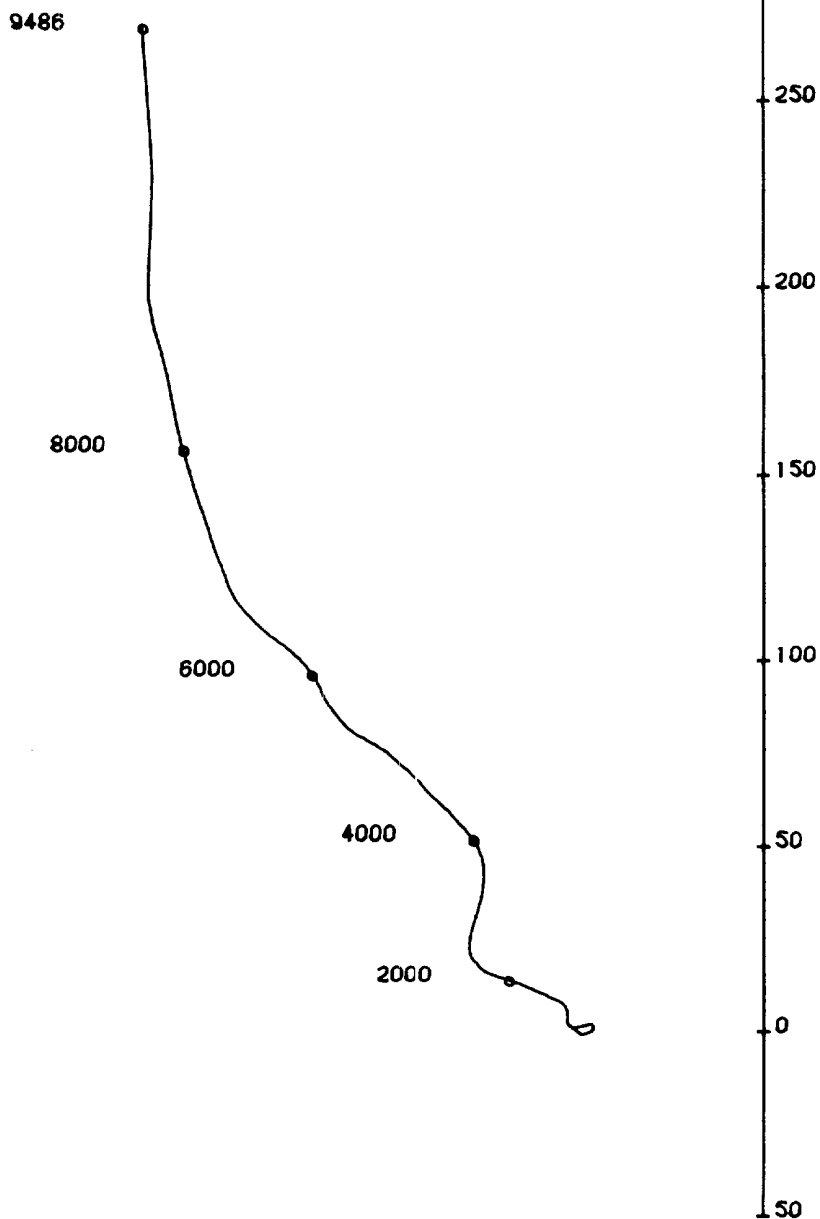
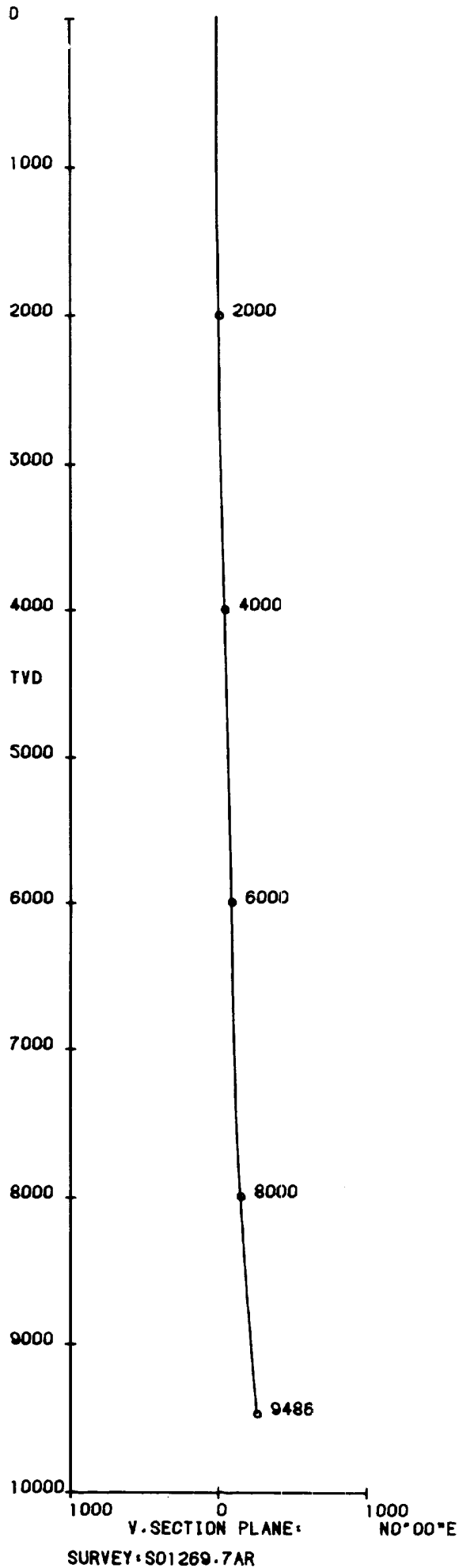
Before me, the undersigned authority, on this day personally appeared TIM STEPHENS, known to me to be the person whose name is subscribed to this instrument, who after being by me duly sworn on oath, states that he has knowledge of all the facts stated above and that this instrument is a true statement 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 _____

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SCALE 1"=50FT.
NOTE: COORDINATES RELATIVE
TO SLOT

SCALE 1"=1000FT.

ARCO OIL AND GAS COMPANY
ATLANTIC ST 30 WELL NO. 1
LEA COUNTY, NEW MEXICO
WELL: ATLANTIC 30 1 SLOT: 2

NEW MEXICO OIL CONSERVATION COMMISSION
WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-101
Effective 1-4-65

All distances must be from the outer boundaries of the Section.

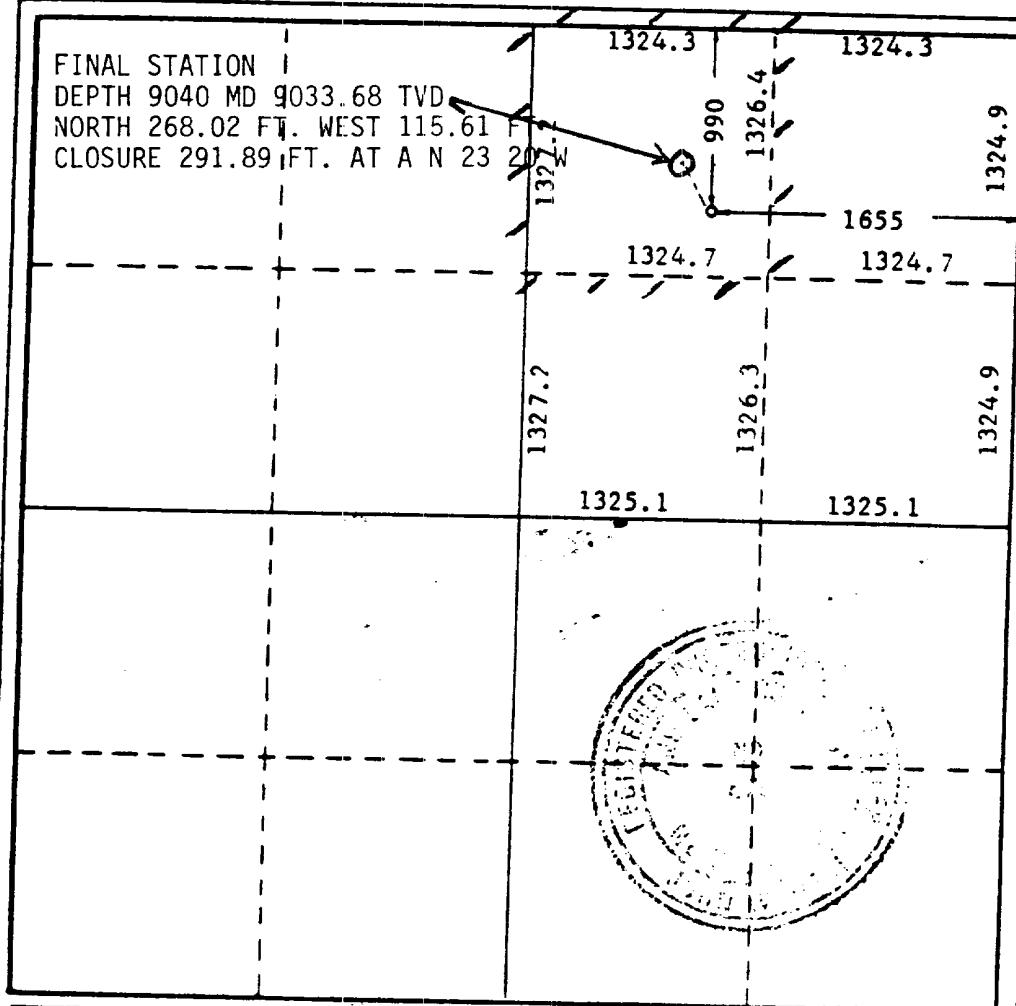
Operator ARCO OIL & GAS COMPANY			Lease ATLANTIC STATE 30		Well No. 1
Unit Letter B	Section 30	Township 17 SOUTH	Range 36 EAST	County LEA	
Actual Footage Location of Well: 990 feet from the NORTH line and 1655 feet from the EAST line					
Ground Level Elev. 3878.6	Producing Formation Abo Detrital		Pool Double-A, South		Dedicated Acreage: 40 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

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.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Ken W. Gosnell

Name

Ken W. Gosnell

Position

Engr. Tech.

Company

ARCO Oil & Gas Company

Date

10-27-87

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed

OCTOBER 23 & 24, 1987

Registered Professional Engineer and/or Land Surveyor

John W. West

Certificate No. **JOHN W. WEST, 676**

RONALD J. EIDSON, 3239

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