



**REPORT
of
SUB-SURFACE
DIRECTIONAL
SURVEY**

ARCO OIL AND GAS COMPANY
COMPANY

SEVEN RIVERS QUEEN UNIT 61
WELL NAME

LEA COUNTY, NEW MEXICO
LOCATION

JOB NUMBER

WT0383-G0148

TYPE OF SURVEY

GYROSCOPIC MULTISHOT SURVEY

DATE

3/2/83

SURVEY BY
GARY DESPAIN

OFFICE
WEST TEXAS

ARCO OIL AND GAS COMPANY
SEVEN RIVERS QUEEN UNIT NO. 61
LEA COUNTY, NEW MEXICO B01-391
MARCH 2, 1983

EASIMAN WHIPSTOCK, INC.
GYROSCOPIC MULTI SHOT SURVEY WT0383-60148
SURVEYOR: GARY DESPAIN (0'-3,880')



RADIUS OF CURVATURE METHOD

TIME DATE

01:45:50 03-MAR-83

MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D	COURSE LENGTH FEET	TRUE VERTICAL DEPTH FEET	R E C T A N G U L A R C O O R D I N A T E S		DOGLEG SEVERITY DG/100FT
					FEET		
0.	0 0	0	0.	0.00	0.00	0.00	0.00
100.	0 30	N 15 W	100.	100.00	0.42 N	0.11 W	0.50
200.	0 30	N 32 W	100.	199.99	1.22 N	0.46 W	0.15
300.	0 30	N 47 W	100.	299.99	1.89 N	1.01 W	0.13
400.	0 30	N 81 W	100.	399.99	2.27 N	1.79 W	0.29
500.	0 15	N 44 W	100.	499.99	2.56 N	2.36 W	0.34
600.	0 30	N 53 W	100.	599.98	2.98 N	2.87 W	0.26
700.	0 30	N 69 W	100.	699.98	3.37 N	3.65 W	0.10
800.	1 0	S 72 W	100.	799.97	3.48 N	4.93 W	0.63
900.	1 0	S 85 W	100.	899.95	3.23 N	6.66 W	0.10
1000.	1 0	S 65 W	100.	999.94	2.73 N	8.34 W	0.35
1100.	1 0	S 59 W	100.	1099.92	1.11 N	9.88 W	0.10
1200.	1 30	S 69 W	100.	1199.90	1.11 N	11.84 W	0.54
1300.	1 15	S 57 W	100.	1299.87	0.43 S	13.97 W	0.38
1400.	1 30	S 60 W	100.	1399.84	1.33 S	16.01 W	0.26
1500.	1 30	S 50 W	100.	1499.81	2.83 S	18.16 W	0.26
1600.	1 30	S 60 W	100.	1599.77	4.33 S	20.30 W	0.26
1700.	1 30	S 60 W	100.	1699.74	5.64 S	22.56 W	0.00
1800.	1 45	S 57 W	100.	1799.70	7.12 S	24.23 W	0.26
1900.	1 45	S 55 W	100.	1899.65	8.83 S	27.51 W	0.06
2000.	2 0	S 28 W	100.	1999.60	11.26 S	29.66 W	0.91
2100.	2 0	S 53 W	100.	2099.54	13.89 S	31.91 W	0.87
2200.	2 0	S 54 W	100.	2199.48	15.96 S	34.72 W	0.03
2300.	2 0	S 53 W	100.	2299.42	18.04 S	37.52 W	0.03
2400.	2 0	S 40 W	100.	2399.36	20.44 S	40.05 W	0.45
2500.	2 15	S 42 W	100.	2499.29	23.24 S	42.48 W	0.26
2600.	2 45	S 41 W	100.	2599.19	26.50 S	45.37 W	0.50
2700.	2 30	S 53 W	100.	2699.09	29.62 S	48.72 W	0.60
2800.	2 45	S 55 W	100.	2798.98	32.31 S	52.42 W	0.27
2900.	2 45	S 57 W	100.	2898.87	35.00 S	56.40 W	0.10

Eastman
Whipstock

MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D	COURSE LENGTH FEET	TRUE VERTICAL DEPTH 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
3000.	3 0	S 59 W	100.	2998.74	37.65 S 60.65 W	0.27
3100.	3 30	S 52 W	100.	3098.58	40.86 S 65.32 W	0.64
3200.	4 0	S 49 W	100.	3198.36	45.02 S 70.37 W	0.54
3300.	4 30	S 45 W	100.	3298.02	50.08 S 75.72 W	0.58
3400.	5 30	S 37 W	100.	3397.71	56.65 S 81.50 W	1.22
3500.	6 30	S 32 W	100.	3497.16	64.88 S 87.93 W	1.02
3600.	7 30	S 39 W	100.	3596.41	74.36 S 95.60 W	1.00
3700.	6 45	S 43 W	100.	3695.64	83.71 S 103.74 W	0.90
3800.	6 0	S 46 W	100.	3795.02	91.63 S 111.52 W	0.82
3880.	5 15	S 43 W	80.	3874.63	97.23 S 117.02 W	1.01

Eastman
Whipstock

FINAL CLOSURE - DIRECTION
DISTANCE

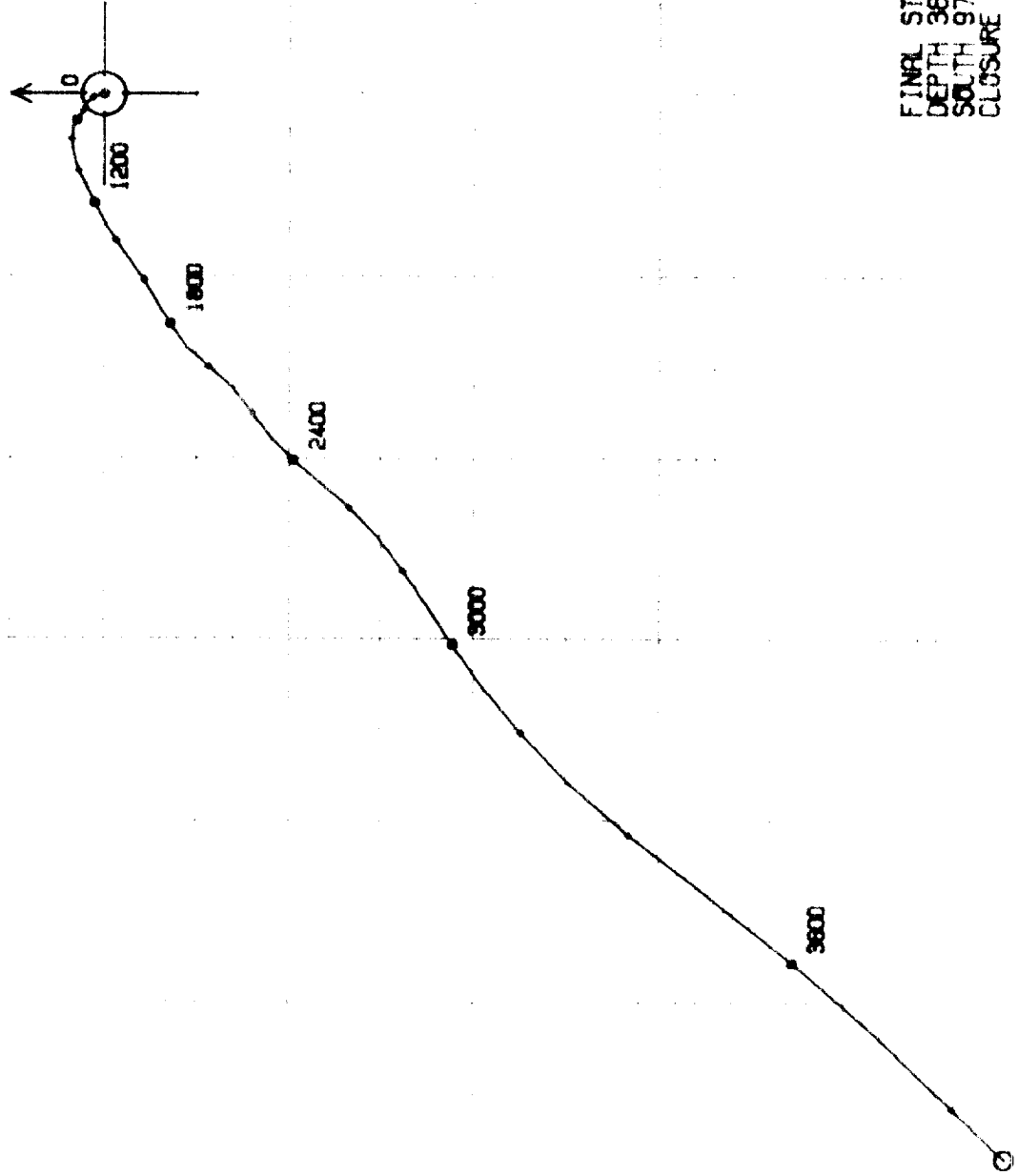
S 30 W 152.14 FEET

ARCO OIL AND GAS COMPANY
SEVEN RIVERS QUEEN UNIT NO. 61
LEA COUNTY, NEW MEXICO BDI-391

EASTMAN WHIPSTOCK, INC.

HORIZONTAL PROJECTION

SCALE 1 IN. = 20 FEET
DEPTH INDICATOR: MD



FINAL STATION:
DEPTH 3680 MD. 3874.63 TVD
SOUTH 97.22 WEST 117.01
CLOSURE 152.13 S 50 16 40 W



P. O. Box 5577/Midland, Texas 79704/(915) 563-0511

SURVEY CERTIFICATION SHEET

STATE OF TEXAS
COUNTY OF MIDLAND

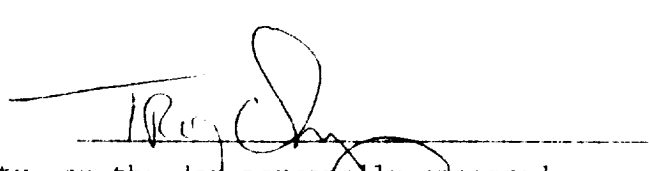
I, Gary DeSpain in the employ of Eastman Whipstock, Inc. did on the days of March 2, 1983 thru March 3, 1983 conduct or supervise the taking of a Gyroscopic Multi Shot survey by the method of magnetic orientation from a depth of 0 feet to 3,880 feet, with recordings of inclination and direction being obtained at approximate intervals of 100 feet.

This survey was conducted at the request of Arco Oil & Gas Company for their Seven Rivers Queen Unit No. 61, Lea County State of New Mexico, in the _____ field.

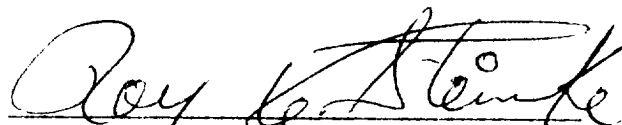
The data for this survey and the calculations were obtained and performed by me according to standards and procedures as set forth by Eastman Whipstock, Inc. and is true and correct to the best of my knowledge.


DIRECTIONAL SUPERVISOR/SURVEYOR

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


Before me, the undersigned authority, on the day personally appeared Gary DeSpain, known to me to be the person whose name is subscribed to the 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 27TH day of April, 1984


Notary Public in and for the County
Midland, Texas
My commission expires 7/9/85

NEW MEXICO OIL CONSERVATION COMMISSION
WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Superseded C-128
Effective 1-1-85

All distances must be from the outer boundaries of the Section

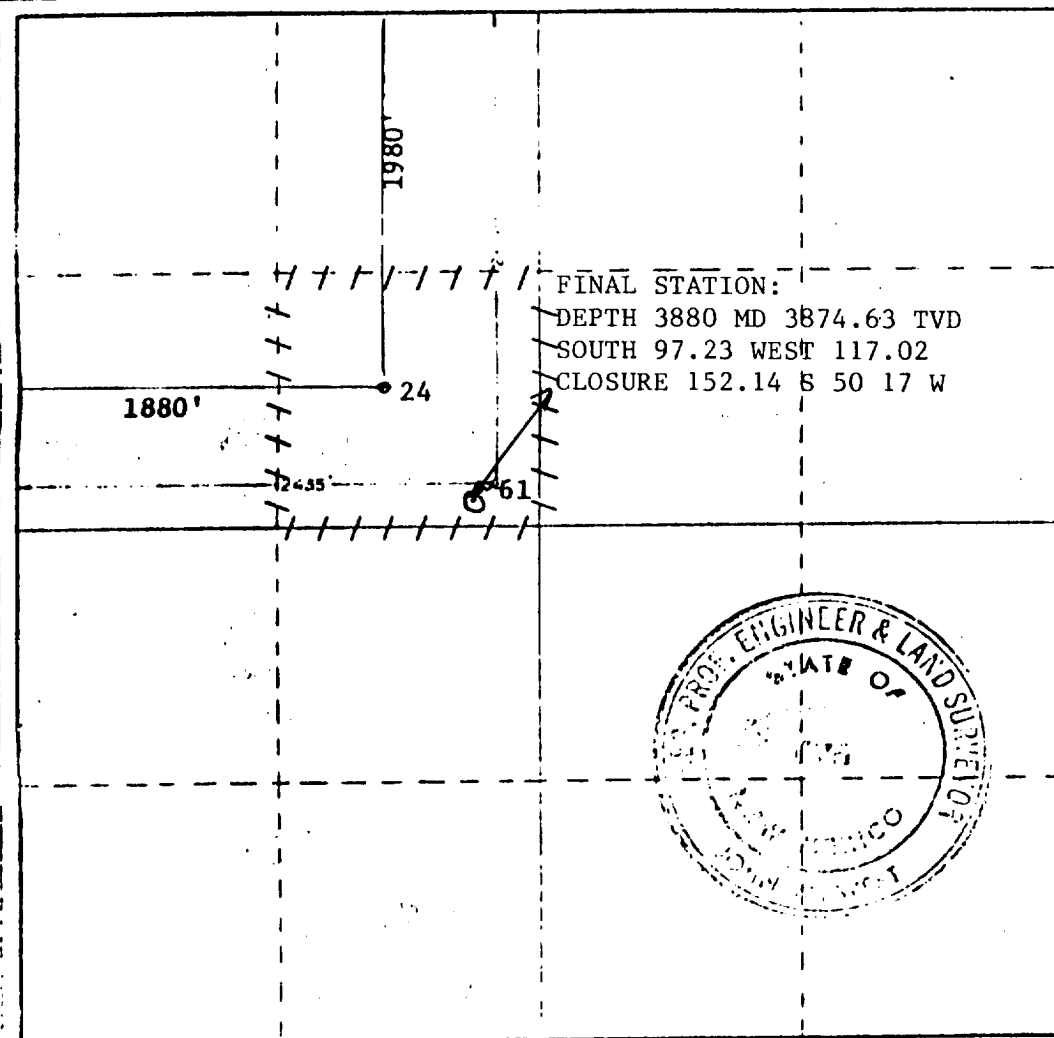
Operator: Div of Atlantic Richfield Co. ARCO OIL & GAS COMPANY		Section: SEVEN RIVERS QUEEN UNIT		Acres: 61	
Grid Letter: E	Section: 34	Township: 22 SOUTH	Range: 36 EAST	LEA	
Actual Section: 2440		Feet from the NORTH line and 2435		Feet from the WEST line	
Original Acreage: 3496.7	Containing Formation: 7R Queen		Field: Eunice South		Dedicated Acreage: 40

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, forced-pooling, etc?

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

If answer is "no," list the owners and unit 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.

Robert E. Balch
Dr. Engr.

For my ARCO Oil and Gas Co.
Div of Atlantic Richfield Co.

Date
12/30/82

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
12-14-82

Registered Professional Engineer
and Land Surveyor

John W. West

Certificate No. 676
John W. West No. 676



**REPORT
of
SUB-SURFACE
DIRECTIONAL
SURVEY**

ARCO OIL AND GAS COMPANY
COMPANY

SEVEN RIVERS QUEEN UNIT 61
WELL NAME

LEA COUNTY, NEW MEXICO
LOCATION

JOB NUMBER

WT0383-G0148

TYPE OF SURVEY

GYROSCOPIC MULTISECT SURVEY

DATE

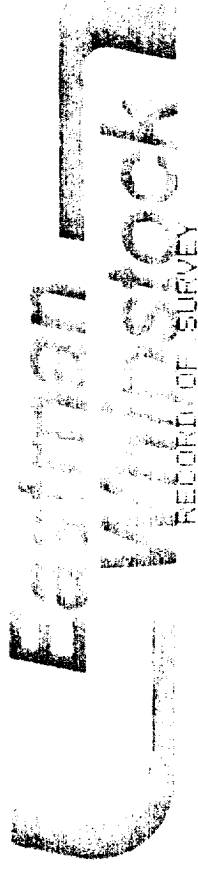
3/2/83

SURVEY BY
GARY DESPAIN

OFFICE
WEST TEXAS

ARCO OIL AND GAS COMPANY
SEVEN RIVERS QUEEN UNIT NO. 61
LEA COUNTY, NEW MEXICO EDI-291
MARCH 2, 1983

EASTMAN WHIPSTOCK, INC.
GYROSCOPIC MULTI SHOT SURVEY WT0383-50148
SURVEYOR: GARY DESPAIN (0'-3,880')



RADIUS OF CURVATURE METHOD

TIME DATE

01:45:50 03-MAR-83

MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D	COURSE LENGTH FEET	TRUE		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
				VERTICAL DEPTH FEET			
0.	0 0	0	0.	0.00		0.00	0.00
100.	0 30	N 15 W	100.	100.00		0.42 N	0.50
200.	0 30	N 32 W	100.	199.99		1.22 N	0.15
300.	0 30	N 47 W	100.	299.99		1.89 N	0.13
400.	0 30	N 81 W	100.	399.99		2.27 N	0.29
500.	0 15	N 44 W	100.	499.99		2.56 N	0.34
600.	0 30	N 53 W	100.	599.98		2.98 N	0.26
700.	0 30	N 69 W	100.	699.98		3.37 N	0.10
800.	1 0	S 79 W	100.	799.97		3.48 N	0.63
900.	1 0	S 85 W	100.	899.95		3.23 N	0.10
1000.	1 0	S 65 W	100.	999.94		3.79 N	0.35
1100.	1 0	S 59 W	100.	1099.92		1.37 N	0.10
1200.	1 30	S 69 W	100.	1199.90		11.84 W	0.54
1300.	1 15	S 57 W	100.	1299.87		13.97 W	0.38
1400.	1 30	S 60 W	100.	1399.84		13.01 W	0.26
1500.	1 30	S 50 W	100.	1499.81		18.16 W	0.26
1600.	1 30	S 60 W	100.	1599.77		20.30 W	0.26
1700.	1 30	S 60 W	100.	1699.74		22.53 W	0.00
1800.	1 45	S 57 W	100.	1799.70		24.93 W	0.26
1900.	1 45	S 55 W	100.	1899.65		27.51 W	0.06
2000.	2 0	S 28 W	100.	1999.60		29.66 W	0.91
2100.	2 0	S 53 W	100.	2099.54		31.91 W	0.87
2200.	2 0	S 54 W	100.	2199.48		34.72 W	0.03
2300.	2 0	S 53 W	100.	2299.42		37.52 W	0.03
2400.	2 0	S 40 W	100.	2399.36		40.05 W	0.45
2500.	2 15	S 42 W	100.	2499.29		42.43 W	0.26
2600.	2 45	S 41 W	100.	2599.19		45.37 W	0.50
2700.	2 30	S 53 W	100.	2699.09		48.72 W	0.60
2800.	2 45	S 55 W	100.	2798.98		52.42 W	0.27
2900.	2 45	S 57 W	100.	2898.87		56.40 W	0.10

ARCO OIL AND GAS COMPANY
SEVEN RIVERS QUEEN UNIT NO. 61
LEA COUNTY, NEW MEXICO BD1-391

COMPUTATION PAGE NO.
TIME DATE
01:45:50 03-MAR-83

MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D	COURSE LENGTH FEET	TRUE VERTICAL DEPTH FEET	R E C T A N G U L A R C O O R D I N A T E S FEET	DOG LEG SEVERITY DG/100FT
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3300.	4 30	S 45 W	100.	3298.09	50.03 S 75.72 W	0.53
3400.	5 30	S 37 W	100.	3397.71	56.65 S 81.50 W	1.22
3500.	6 30	S 39 W	100.	3497.16	64.83 S 87.93 W	1.02
3600.	7 30	S 39 W	100.	3596.41	74.36 S 95.60 W	1.00
3700.	6 45	S 43 W	100.	3695.64	83.71 S 103.74 W	0.90
3800.	6 0	S 46 W	100.	3795.02	91.63 S 111.52 W	0.82
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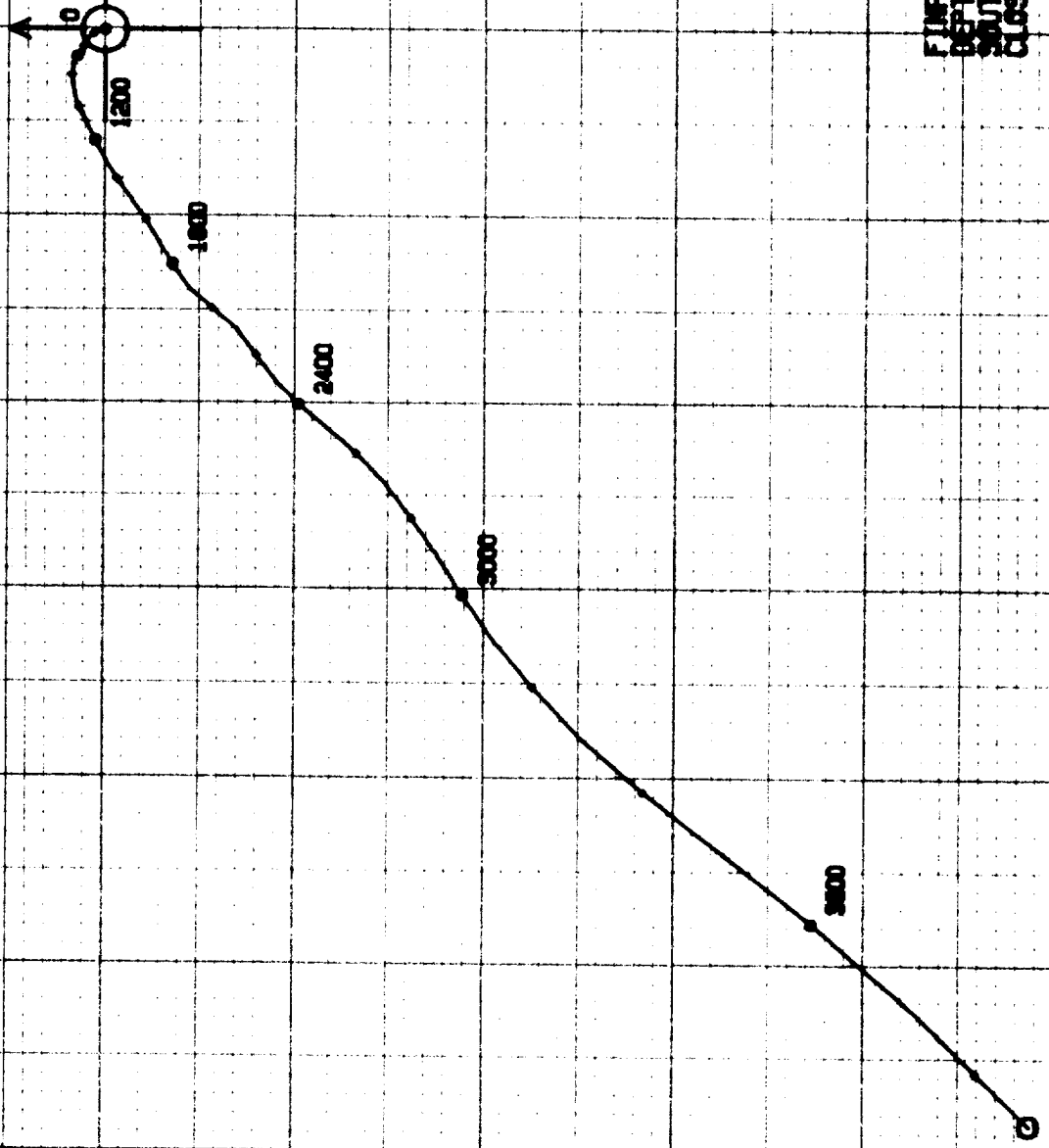
FINAL CLOSURE - DIRECTION: S 30 E
DISTANCE: 152.14 FEET

Estimated Block

ARCO OIL AND GAS COMPANY
SEVEN RIVERS QUEEN UNIT NO. 61
LEA COUNTY, NEW MEXICO 801-991

EASTMAN WHIPSTOCK, INC.

HORIZONTAL PROJECTION
SCALE 1 IN. = 20 FEET
DEPTH INDICATOR: NO



FINAL STATION
DEPTH 3600 MDL 3874-63 TWD
SOUTH 87.22 WEST 117.01
CLOSURE 152.15 S 50 16 40 W

RECEIVED
MAY 12 1983
O.C.D.
HOBBS CRIST