



**REPORT
of
SUB-SURFACE
DIRECTIONAL
SURVEY**

V.F. PETROLEUM INC.
COMPANY

GRAHAM #1
WELL NAME

LEA COUNTY, NEW MEXICO
LOCATION

JOB NUMBER

WT1081-G0044
WT1081-S0043

TYPE OF SURVEY

GYROSCOPIC MULTI SHOT
MAGNETIC MULTI SHOT

DATE

OCT. 15, 1981
OCT. 15, 1981

SURVEY BY

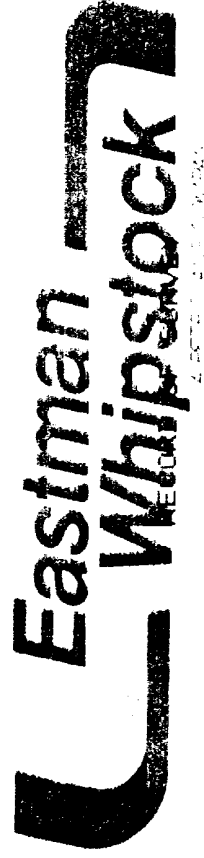
GARY DeSPAIN

OFFICE

WEST TEXAS DISTRICT

V.F. PETROLEUM INC.
GRAHAM WELL NO.1
LEA COUNTY NEW MEXICO BD1-324
OCTOBER 15, 1981

EASTMAN WHIPSTOCK INC.
GYROSCOPIC MULTISHOT SURVEY WT1081-G0044
SURVEYOR: GARY DESPAIN (0-4700')
MAGNETIC MULTISHOT SURVEY WT1081-S0043
SURVEYOR: GARY DESPAIN (4700'-10165')



RADIUS OF CURVATURE METHOD

TIME DATE
06:06:03 00--00

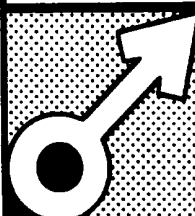
MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D	TRUE VERTICAL DEPTH FEET	R E C T A N G U L A R		DOG LEG SEVERITY DG/100FT
				C O O R D I N A T E S	F E E T	
0.	0 0	0	0.00	0.00	0.00	0.00
100.	0 15	N 3 W	100.00	0.22 N	0.01 W	0.25
200.	0 15	N 41 E	200.00	0.62 N	0.13 E	0.19
300.	0 30	S 21 E	300.00	0.52 N	0.66 E	0.66
400.	0 30	S 28 E	399.99	0.27 S	1.03 E	0.06
500.	0 45	S 30 E	499.99	1.22 S	1.55 E	0.25
600.	0 45	S 29 E	599.98	2.36 S	2.20 E	0.01
700.	0 45	S 29 E	699.97	3.51 S	2.83 E	0.00
800.	0 45	S 29 E	799.96	4.65 S	3.47 E	0.00
900.	0 30	S 25 E	899.96	5.62 S	3.96 E	0.25
1000.	0	S 34 E	999.95	6.57 S	4.49 E	0.26
1100.	0	S 34 E	1099.94	7.56 S	5.06 E	0.25
1200.	0	S 34 E	1199.94	8.29 S	5.52 E	0.03
1300.	0	S 25 E	1299.93	9.00 S	5.95 E	0.08
1400.	0 45	S 21 E	1399.93	10.00 S	6.39 E	0.25
1500.	0 30	S 4 E	1499.92	11.06 S	6.63 E	0.31
1600.	0 45	S 39 E	1599.92	12.06 S	7.02 E	0.45
1700.	1 0	S 33 E	1699.91	13.29 S	7.92 E	0.27
1800.	0 45	S 29 E	1799.89	14.60 S	8.71 E	0.26
1900.	0 30	S 43 E	1899.89	15.48 S	9.35 E	0.29
2000.	1 0	S 22 E	1999.88	16.58 S	10.04 E	0.56
2100.	0 45	S 22 E	2099.87	17.99 S	10.62 E	0.25
2200.	1 0	S 23 E	2199.86	19.40 S	11.20 E	0.25
2300.	0 45	S 39 E	2299.84	20.71 S	11.98 E	0.35
2400.	1 0	S 41 E	2399.83	21.87 S	12.96 E	0.25
2500.	1 0	S 47 E	2499.82	23.13 S	14.18 E	0.10
2600.	1 0	S 43 E	2599.80	24.36 S	15.41 E	0.07
2700.	1 0	S 70 E	2699.79	25.32 S	16.85 E	0.47
2800.	1 0	S 71 E	2799.77	25.90 S	18.50 E	0.02
2900.	1 15	S 69 E	2899.75	26.57 S	20.34 E	0.25

TIME DATE
06:06:03 00--00

MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D	TRUE		RECTANGULAR COORDINATES FEET	DOG LEG SEVERITY DG/100FT
			VERTICAL DEPTH FEET	ANGULAR S		
3000.	1 0	S 66 E	2999.73	27.32 S	22.16 E	0.26
3100.	0 45	S 65 E	3099.72	27.96 S	23.55 E	0.25
3200.	0 45	S 47 E	3199.71	28.68 S	24.63 E	0.23
3300.	0 45	S 61 E	3299.70	29.45 S	25.68 E	0.18
3400.	0 45	S 48 E	3399.70	30.21 S	26.75 E	0.17
3500.	0 45	S 67 E	3499.69	30.91 S	27.85 E	0.25
3600.	0 30	S 56 E	3599.68	31.43 S	28.80 E	0.28
3700.	0 30	S 66 E	3699.68	31.85 S	29.56 E	0.09
3800.	0 30	S 75 E	3799.67	32.14 S	30.39 E	0.08
3900.	0 30	N 89 E	3899.67	32.25 S	31.25 E	0.14
4000.	0	N 89 E	3999.67	32.18 S	32.12 E	0.06
4100.	0	S 79 E	4099.66	32.33 S	32.77 E	0.29
4200.	0	S 79 E	4199.66	32.33 S	33.19 E	0.02
4300.	0	N 89 E	4299.65	32.33 S	33.84 E	0.26
4400.	0 30	S 66 E	4399.64	32.33 S	34.65 E	0.35
4500.	0 30	S 37 E	4499.65	33.30 S	35.25 E	0.11
4600.	0 30	S 52 E	4599.65	33.92 S	35.86 E	0.13
4700.	0 30	S 48 E	4699.64	34.48 S	36.53 E	0.03
4800.	0 15	S 65 E	4799.64	34.84 S	37.07 E	0.27
4900.	0 30	S 85 E	4899.64	35.01 S	37.70 E	0.28
5000.	0 45	S 63 E	4999.63	35.31 S	38.74 E	0.34
5100.	0 45	S 85 E	5099.62	35.67 S	39.99 E	0.29
5200.	0 45	S 68 E	5199.62	35.97 S	41.26 E	0.22
5300.	0 30	S 65 E	5299.61	36.41 S	42.26 E	0.25
5400.	0 45	S 77 E	5399.60	36.76 S	43.29 E	0.28
5500.	0 45	S 76 E	5499.60	37.07 S	44.56 E	0.01
5600.	0 45	S 48 E	5599.59	37.68 S	45.71 E	0.36
5700.	0 45	S 54 E	5699.58	38.50 S	46.72 E	0.08
5800.	0 45	S 30 E	5799.57	39.47 S	47.59 E	0.31
5900.	1 0	S 25 E	5899.56	40.82 S	48.30 E	0.26



DIRECTIONAL SURVEY



FILE NO.

COMPANY V F PETROLEUM

WELL GRAHAM NO. 1

FIELD CAUDILL

COUNTY LEA STATE NEW MEXICO

LOCATION: MAG. DEC. 10°E

INITIAL 1000' 100' 100' 100'

SEC 9 TWP 13-S RGE 10-E

Other Services: DEPT. CDN

Permanent Datum: GL Elev. 3919
Log Measured from: KB 3919
Drilling Measured from: GL 3919

Date 11-13-81

Run No.

Service Order 01800

Depth—Driller 13635

Depth—Logger 13635

Bottom Logged Interval 13635

Top Logged Interval 0

Casing—Driller 8 5/8 @ 1700

Casing—Logger NOT LOGGED

Bit Size 7 7/8

Type Fluid in Hole EN GEL

Density and Viscosity 9.1 47

pH and Fluid Loss 10 7 cc

Source of Sample FLOWLINE

Rm @ Meas. Temp. 83 @ 75 °F

Rmt @ Meas. Temp. 100 @ 75 °F

Rmc @ Meas. Temp. 100 @ 75 °F

Source of Rmt and Rmc MEAS

Rm @ BHT 39 @ 160 °F

Time Since Circ. 18 HRS.

Max Rec. Temp. Deg. F. 160 °F

Equip. No. and Location 9372 ARDMORE

Recorded By D. JUMP

Witnessed By M. W. BIER

FOLD HERE

Remarks:

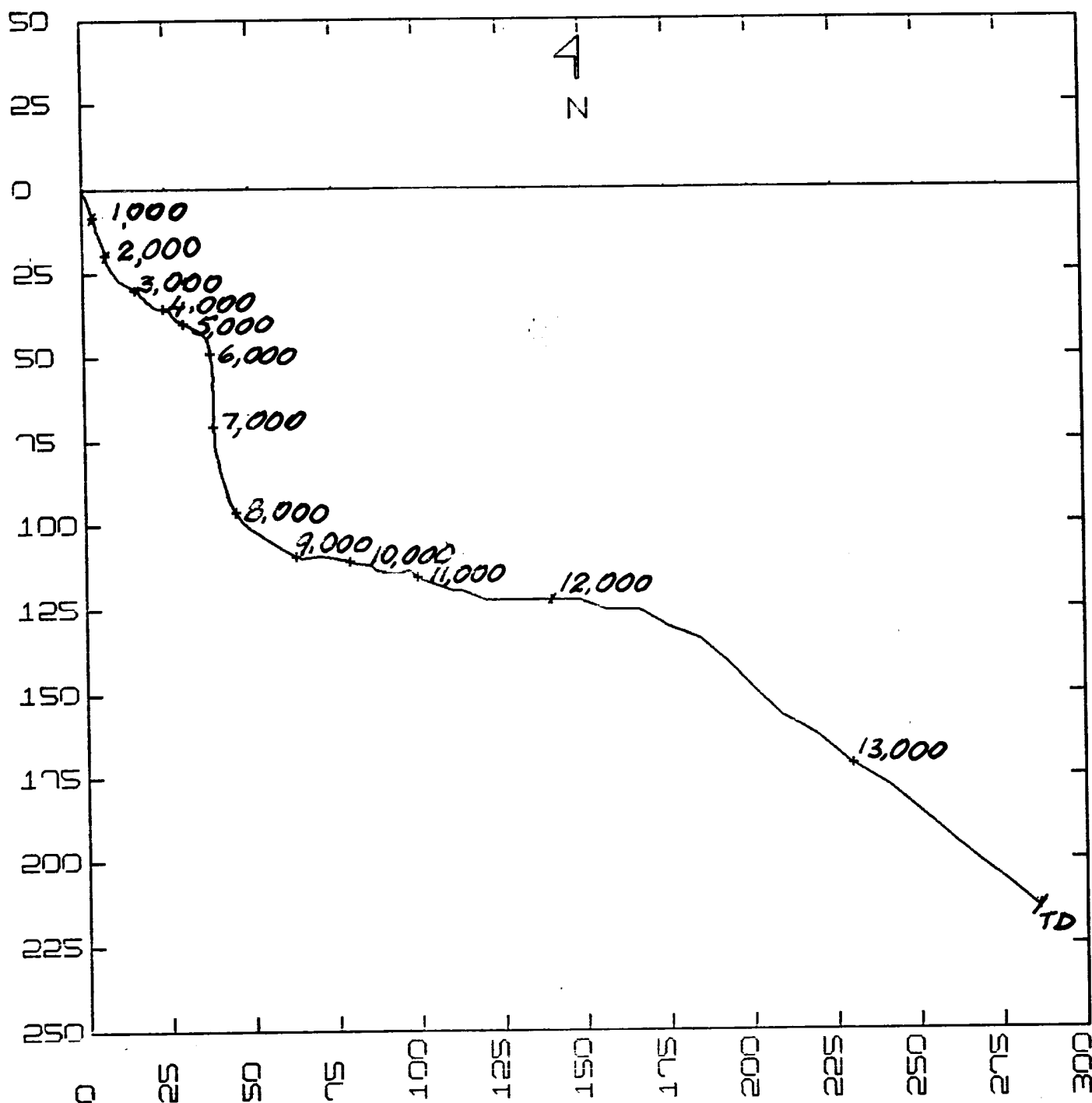
THIS DIRECTIONAL SURVEY WAS PERFORMED BY C. F. PETROLEUM, INC.
GEOSCOPIC MULTISHOT SURVEY FROM 0 TO 1000'

EQUIPMENT DATA

	RUN NO. 1	RUN NO. 2	RUN NO. 3	RUN NO. 4
Series No. Tool	1012			
Pad Type	#8			
Pad Section Serial No.	45896			
Electronics Serial No.				
Orientation Type	0-45°			
Orientation Serial No.	154			
Panel Series No.	1054			
Panel Serial No.	31633			
Tape Unit Series No.				
Tape Unit Serial No.				
Correlated by	YAMOUT			
Plotted by	TAYLOR			

C F PETROLEUM
285.44 W
213.93 S

553.14 W
356.71 E



Company V F PETROLEUM
Well GRAHAM NO. 1
Field CAUDILL
County LEA
State NEW MEXICO

Drillers T.D. 13629'
Log F.R. 13634'
Log T.D. 13635'
Elevations:
K.B. 3912' D.F. - G.L. 3919'

TIME DATE

06:06:03 00--00

MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D	TRUE VERTICAL DEPTH FEET	R E C T A N G U L A R		DOG LEG SEVERITY DG/100FT
				C O O R D I N A T E S	F E E T	
6000.	1 0	S 15 E	5999.54	42.46 S	48.89 E	0.17
6100.	1 0	S 18 E	6099.53	44.13 S	49.39 E	0.05
6200.	1 0	S 23 E	6199.51	45.77 S	50.00 E	0.09
6300.	1 15	S 13 E	6299.49	47.63 S	50.61 E	0.32
6400.	1 15	S 15 E	6399.47	49.75 S	51.13 E	0.04
6500.	1 0	S 5 E	6499.45	51.68 S	51.48 E	0.32
6600.	1 45	S 12 E	6599.42	54.05 S	51.83 E	0.77
6700.	1 15	S 10 E	6699.38	56.62 S	52.33 E	0.50
6800.	1 30	S 13 E	6799.36	58.97 S	52.81 E	0.26
6900.	1 15	S 7 E	6899.33	61.33 S	53.22 E	0.29
7000.	1	S	6999.30	63.71 S	53.54 E	0.25
7100.	1	S	7099.27	66.04 S	54.08 E	0.35
7200.	1	S 13 E	7199.24	68.34 S	54.72 E	0.28
7300.	1	S 14 E	7299.21	70.64 S	55.33 E	0.03
7400.	1 45	S 27 E	7399.18	72.94 S	56.32 E	0.44
7500.	1 45	S 18 E	7499.12	76.37 S	57.49 E	0.27
7600.	2 0	S 28 E	7599.07	79.38 S	58.76 E	0.41
7700.	1 45	S 24 E	7699.01	82.32 S	60.20 E	0.28
7800.	1 30	S 28 E	7798.97	84.87 S	61.44 E	0.27
7900.	1 30	S 33 E	7898.94	87.13 S	62.77 E	0.13
8000.	1 0	S 43 E	7998.91	88.84 S	64.11 E	0.54
8100.	1 0	S 46 E	8098.90	90.09 S	65.33 E	0.05
8200.	1 15	S 44 E	8198.88	91.48 S	66.72 E	0.25
8300.	1 45	S 63 E	8298.84	93.03 S	68.82 E	0.70
8400.	1 45	S 68 E	8398.80	94.29 S	71.60 E	0.15
8500.	1 30	S 68 E	8498.76	95.35 S	74.23 E	0.25
8600.	1 30	S 66 E	8598.72	96.38 S	76.63 E	0.05
8700.	1 30	S 69 E	8698.69	97.38 S	79.05 E	0.08
8800.	1 15	S 66 E	8798.66	98.30 S	81.27 E	0.26
8900.	1 0	S 77 E	8898.64	98.92 S	83.13 E	0.33

TIME 06:06:03 DATE 00--00

MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D	TRUE		R E C T A N G U L A R C O O R D I N A T E S FEET	D O G L E G S E V E R I T Y D G / 1 0 0 F T
			VERTICAL DEPTH FEET			
9000.	0 45	S 73 E	8998.63		99.31 S 84.60 E	0.26
9100.	1 0	S 77 E	9098.62		99.71 S 86.08 E	0.26
9200.	1 0	N 75 E	9198.60		99.68 S 87.80 E	0.48
9300.	1 0	N 68 E	9298.59		99.13 S 89.46 E	0.12
9400.	1 0	N 72 E	9398.57		98.53 S 91.10 E	0.07
9500.	1 15	N 86 E	9498.55		98.15 S 93.02 E	0.37
9600.	1 0	S 87 E	9598.53		98.14 S 94.98 E	0.28
9700.	0 45	N 88 E	9698.52		98.15 S 96.51 E	0.26
9800.	1 0	S 90 E	9798.51		98.12 S 98.03 E	0.25
9900.	0 30	S 88 E	9898.50		98.15 S 99.34 E	0.50
10000.	1	S 88 E	9998.49		98.24 S 100.65 E	0.50
10100.	1	S 88 E	10098.48		98.46 S 102.60 E	0.25
10165.	1	N 87 E	10168.46		98.50 S 103.87 E	0.49



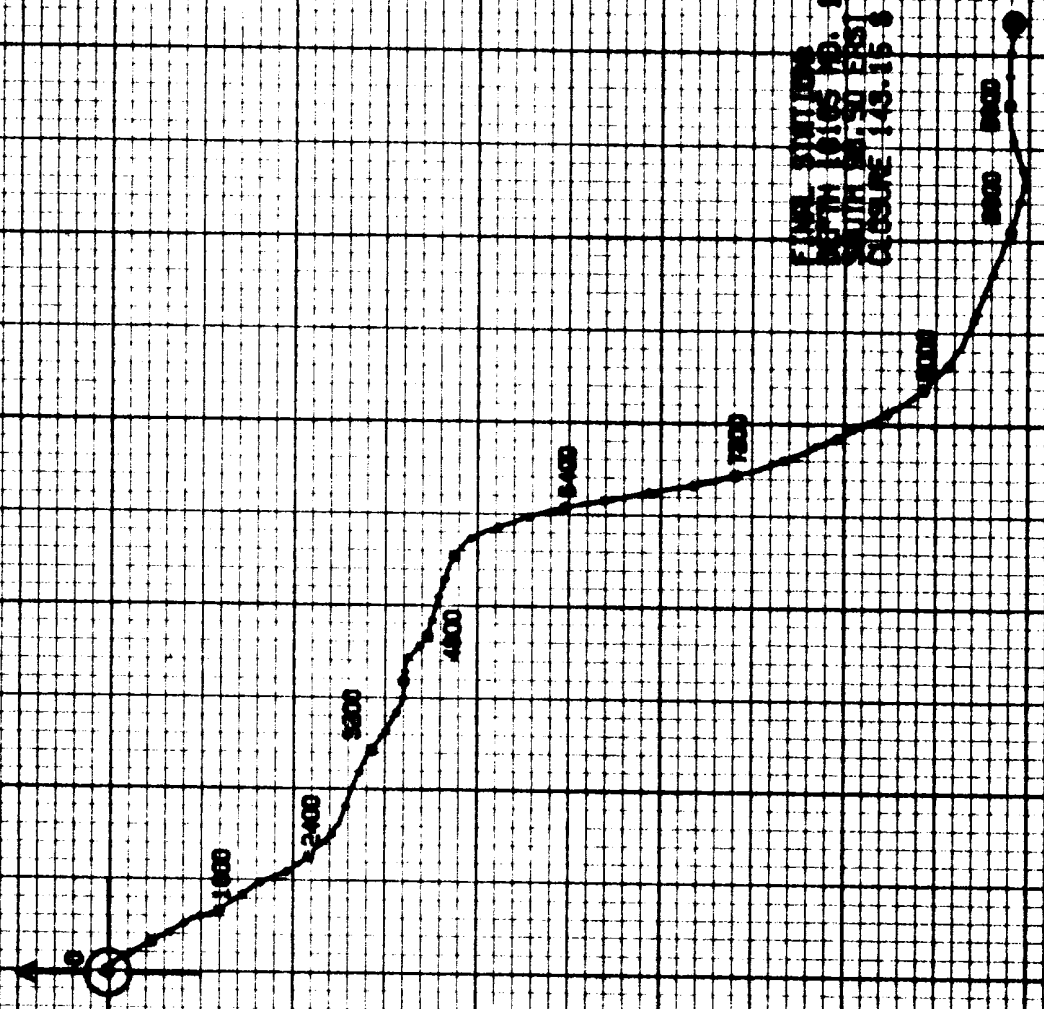
FINAL CLOSURE - DIRECTION: S 46 DEGS 31 MINS E

DISTANCE: 143.15 FEET

V.F. PETROLEUM INC.
 GRAHAM WELL NO. 1
 LEA COUNTY NEW MEXICO 801-324

EASTMAN WHIPSTOCK, INC.

HORIZONTAL PROJECTION
 SCALE 1 IN. = 20 FEET
 DEPTH INDICATOR MD



NEW MEXICO OIL CONSERVATION COMMISSION
WELL LOCATION AND ACREAGE DEDICATION PLAT

Form No. 1
Supersedes O-12, 6
and O-12, 1A

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

V-F Petroleum Co.			Graham		1
L	9	15 South	36 East	Lea	
2310		South	430	West	
3919.3'	Devonian		Caudill Devonian		40

- Outline the acreage dedicated to the subject well by colored pencil or hatch marks on the plat below.
- If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
- 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 (attach 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.

<u>AMENDED LOCATION</u>		FINAL STATION: DEPTH 10165 MD 10163.46 TVD SOUTH 98.50 EAST 103.87 CLOSURE 143.15 Ft. S 46 31 E



CERTIFICATION

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

V. F. Varick

President

Company

V-F Petroleum Inc.

Date

10-12-81

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

Aug. 18, 1981

Registered Professional Engineer
and Land Surveyor

John V. West

Certificate No. JOHN V. WEST 676
PATRICK A. ROMERO 8883



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

SURVEY CERTIFICATION SHEET

STATE OF TEXAS
COUNTY OF MIDLAND

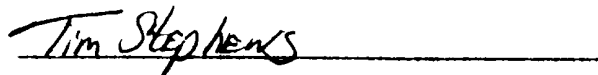
I, GARY DeSPAIN in the employ of Eastman Whipstock, Inc. did on the days of OCTOBER 15, 19 81 thru OCTOBER 15, 19 81 conduct or supervise the taking of a GYROSCOPIC MULTI SHOT survey by the method of magnetic orientation from a depth of 0 feet to 4700 feet, with recordings of inclination and direction being obtained at approximate intervals of 100 feet.

This survey was conducted at the request of V.F. PETROLEUM INC. for their GRAHAM #1, 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.

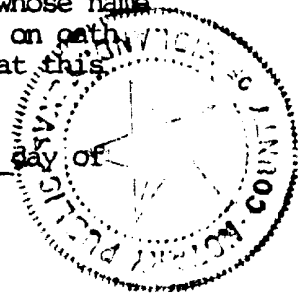

DIRECTIONAL SUPERVISOR/SURVEYOR

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 29TH day of DEC., 19 81.




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



P. O. Box 5577 / Midland, Texas 79701 / (915) 563-0511
TWX 910-881-5066 / Cable: EASTCO

SURVEY CERTIFICATION SHEET

STATE OF TEXAS
COUNTY OF MIDLAND

I, GARY DeSPAIN, in the employ of Eastman Whipstock, Inc., did on the days of 10-14, 1981 thru 10-14, 1981 conduct or supervise the taking of a Magnetic Multi Shot Survey survey by the method of magnetic orientation from a depth of 4700' feet to 10165' feet, with recordings of inclination and direction being obtained at approximate intervals of 100' feet.

This survey was conducted at the request of V. F. Petroleum, Inc. for their Graham Well No. 1, 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.

Gary DeSpain
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.

Troy Shoy

Before me, the undersigned authority, on this day personally appeared GARY DeSPAIN, 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 29th day of DEC., 19 81.

Roy C. Stenke
Notary Public in and for the County of
Midland, Texas
My commission expires 7/9/85

