

SUB-SURFACE
DIRECTIONAL
SURVEY
REPORT

PENNZOIL COMPANY

COMPANY

VIERSEN WELL NO. 3

WELL NAME

LEA COUNTY, NEW MEXICO

STATE AND COUNTY

CERTIFIED REPORT

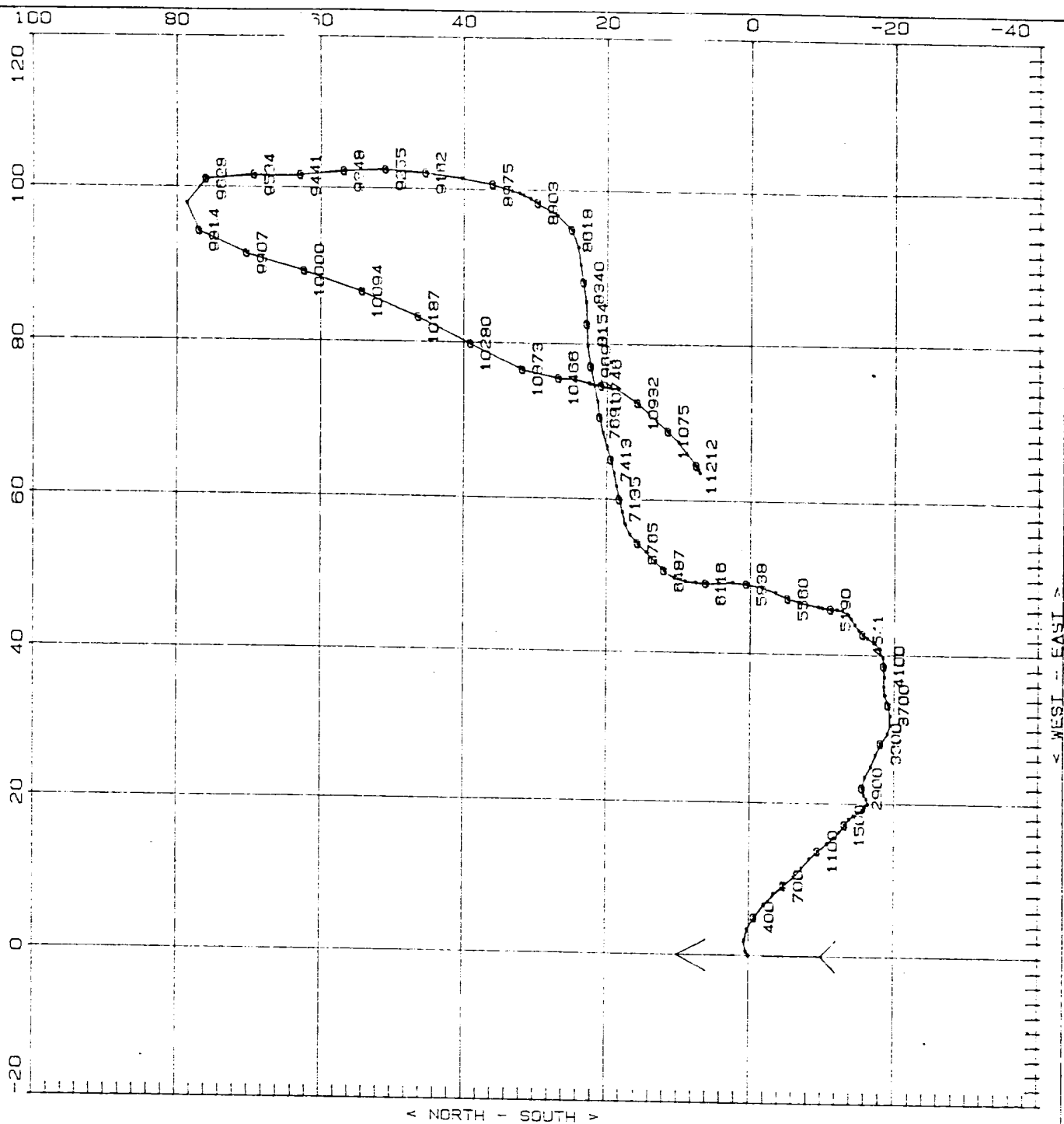
PENNZUII COMPANY

WELL # 1
 VIERSEN WELL NO. 2
 LOCATION :
 LEA COUNTY, NEW MEXICO
 DATE :
 1-19-87, 1-19-87, 2-01-87
 JOB TYPE :
 GYRO, MULTISHOT, MULTICHOOT
 JOB # :
 63-1809, NS-1807, NS-1815
 SURVEYOR :
 L. MASSEY, L. MASSEY, L. MASSEY
 DEPTHS :
 0'-4175', 4175'-9935', 9935'-11240'
 DECL. :
 9 DEGREES EAST
 ELEV. :
 3774.8'
 FILE # :
 WT-8875

 FINAL STATION DATA:
 MD. 11240.00
 TVD. 11234.41
 N/S 6.99
 E/W 63.47

CLOSURE DISTANCE
 63.85 FEET
 CLOSURE DIRECTION
 N 83.72 E

1 IN. = 20 FT.



STOMER : PENNZOIL COMPANY

LL # : VIERSEN WELL NO. 3

CATION : LEA COUNTY, NEW MEXICO

TE : 1-19-87, 1-19-87, 2-01-87

R TYPE : GYRO, MULTISHOT, MULTISHOT

R # : GS-1808, MS-1807, MS-1815

VEYOR : L.MASSEY, L.MASSEY, L.MASSEY

PTS 10'-4175', 4175'-8865', 8865'-11240'

CL. : 9 DEGREES EAST

EV. : 3774.6'

LE # : WT-BB78

MOD : RADIUS OF CURVATURE

ATION : S00E

AL STATION DATA!

RED INCL. HOLE COURSE VERTICAL SURSEA VERTICAL RECTANGULAR CLOSURE DOG-LEG
TH ANGLE DIRECTION LENGTH DEPTH DEPTH SECTION COORDINATES DISTANCE DIRECTION SEVERITY
T DEGS. DEGS. FEET FEET FEET FEET N/S FEET E/W FEET DEGS. DG/100F

1.00 2.00 S 67.00 W 14.00 11234.41 7459.81 -6.99 6.99 N 63.47 E 63.85' N 83.72 E 0.00

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

APR 15 1987
OCD
HOBBS OFFICE

NZOIL COMPANY
RSEN WELL NO. 3
BR7S

PAGE 1
09:51:23
87/02/03

SURF	INCL.	ANGLE	HOLE	COURSE	VERTICAL	SURSEA	DEPTH	FEET	VERTICAL	SECTION	FEET	N/S	feet	E/W	FEET	C L O S U R E	DIRECTION	SEVERITY
PTH	DEGS.	DEGS.	DEGS.	FEET	FEET	FEET	FEET	FEET	FEET	FEET	FEET	FEET	FEET	FEET	FEET	FEET	FEET	FEET
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.70	.70	N 58.00 E	100.00	100.00	100.00	-3774.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.90	.90	S 82.00 E	100.00	199.99	199.99	-3574.61	-32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1.00	1.00	S 67.00 E	100.00	299.97	299.97	-3474.63	-61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1.20	1.20	S 53.00 E	100.00	399.96	399.96	-3374.64	-17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1.10	1.10	S 49.00 E	100.00	499.94	499.94	-3274.66	79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1.10	1.10	S 40.00 E	100.00	599.92	599.92	-3174.68	32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1.00	1.00	S 36.00 E	100.00	699.90	699.90	-3074.70	48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.90	.90	S 40.00 E	100.00	799.89	799.89	-2974.71	61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1.00	1.00	S 49.00 E	100.00	899.87	899.87	-2874.73	73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.90	.90	S 48.00 E	100.00	999.86	999.86	-2774.74	84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.90	.90	S 39.00 E	100.00	1099.85	1099.85	-2674.75	95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.90	.90	S 37.00 E	100.00	1199.83	1199.83	-2574.77	108	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.50	.50	S 39.00 E	100.00	1299.83	1299.83	-2474.77	117	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.80	.80	S 51.00 E	100.00	1399.82	1399.82	-2374.78	125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.60	.60	S 53.00 E	100.00	1499.81	1499.81	-2274.79	134	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.50	.50	S 51.00 E	100.00	1599.81	1599.81	-2174.79	139	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.40	.40	S 23.00 E	100.00	1699.80	1699.80	-2074.80	145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.40	.40	S 47.00 E	100.00	1799.80	1799.80	-1974.80	151	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.40	.40	S 22.00 E	100.00	1899.80	1899.80	-1874.80	156	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	S 53.00 E	100.00	1999.80	1999.80	-1774.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	S 51.00 E	100.00	2099.80	2099.80	-1674.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.10	.10	N 19.00 W	100.00	2199.80	2199.80	-1574.80	159	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.20	.20	S 06.00 E	100.00	2299.80	2299.80	-1474.80	159	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.30	.30	N 35.00 E	100.00	2399.80	2399.80	-1374.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	S 53.00 E	100.00	2499.80	2499.80	-1274.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	S 51.00 E	100.00	2599.80	2599.80	-1174.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.10	.10	N 19.00 W	100.00	2699.80	2699.80	-1074.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.20	.20	S 06.00 E	100.00	2799.80	2799.80	-974.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.30	.30	N 35.00 E	100.00	2899.80	2899.80	-874.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	S 53.00 E	100.00	2999.80	2999.80	-774.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	S 51.00 E	100.00	3099.80	3099.80	-674.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.10	.10	N 19.00 W	100.00	3199.80	3199.80	-574.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.20	.20	S 06.00 E	100.00	3299.80	3299.80	-474.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.30	.30	N 35.00 E	100.00	3399.80	3399.80	-374.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	S 53.00 E	100.00	3499.80	3499.80	-274.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	S 51.00 E	100.00	3599.80	3599.80	-174.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.10	.10	N 19.00 W	100.00	3699.80	3699.80	-74.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.20	.20	S 06.00 E	100.00	3799.80	3799.80	24.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.30	.30	N 35.00 E	100.00	3899.80	3899.80	124.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	S 53.00 E	100.00	3999.80	3999.80	224.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	S 51.00 E	100.00	4099.80	4099.80	324.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.10	.10	N 19.00 W	100.00	4199.80	4199.80	424.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.20	.20	S 06.00 E	100.00	4299.80	4299.80	524.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.30	.30	N 35.00 E	100.00	4399.80	4399.80	624.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	S 53.00 E	100.00	4499.80	4499.80	724.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	S 51.00 E	100.00	4599.80	4599.80	824.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.10	.10	N 19.00 W	100.00	4699.80	4699.80	924.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.20	.20	S 06.00 E	100.00	4799.80	4799.80	1024.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.30	.30	N 35.00 E	100.00	4899.80	4899.80	1124.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	S 53.00 E	100.00	4999.80	4999.80	1224.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	S 51.00 E	100.00	5099.80	5099.80	1324.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.10	.10	N 19.00 W	100.00	5199.80	5199.80	1424.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.20	.20	S 06.00 E	100.00	5299.80	5299.80	1524.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.30	.30	N 35.00 E	100.00	5399.80	5399.80	1624.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	S 53.00 E	100.00	5499.80	5499.80	1724.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	S 51.00 E	100.00	5599.80	5599.80	1824.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.10	.10	N 19.00 W	100.00	5699.80	5699.80	1924.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.20	.20	S 06.00 E	100.00	5799.80	5799.80	2024.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.30	.30	N 35.00 E	100.00	5899.80	5899.80	2124.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	S 53.00 E	100.00	5999.80	5999.80	2224.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	S 51.00 E	100.00	6099.80	6099.80	2324.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.10	.10	N 19.00 W	100.00	6199.80	6199.80	2424.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.20	.20	S 06.00 E	100.00	6299.80	6299.80	2524.80	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	.30	.30	N															

MEASURED INCL. HOLE DIRECTION DEGS. COURSE LENGTH FEET VERTICAL DEPTH FEET SUBSEA DEPTH FEET VERTICAL SECTION FEET RECORDING COORDINATES N/S FEET E/W FEET CLOSURE DISTANCE DEGS. DOG-LEI SEVERITY DG/1000

0.00	.10	S 14.00 E	100.00	2499.80	-1274.80	16.11	16.11 S	19.67 E	25.42'	S 50.68 E	37
0.00	.50	S 66.00 E	100.00	2599.80	-1174.80	16.50	16.50 S	19.99 E	25.92'	S 50.47 E	45
0.00	.40	N 39.00 E	100.00	2699.79	-1074.81	16.33	16.33 S	20.70 E	26.36'	S 51.74 E	55
0.00	.30	N 67.00 E	100.00	2799.79	-974.81	15.96	15.96 S	21.19 E	26.52'	S 53.00 E	20
0.00	.80	N 87.00 E	100.00	2899.79	-874.81	15.75	15.75 S	22.12 E	27.15'	S 54.55 E	53
0.00	.90	S 61.00 E	100.00	2999.77	-774.83	16.08	16.08 S	23.54 E	28.51'	S 55.67 E	48
0.00	1.00	S 61.00 E	100.00	3099.76	-674.84	16.88	16.88 S	24.99 E	30.16'	S 55.97 E	10
0.00	1.00	S 74.00 E	100.00	3199.75	-574.85	17.55	17.55 S	26.60 E	31.87'	S 56.59 E	23
0.00	1.00	S 55.00 E	100.00	3299.73	-474.87	18.29	18.29 S	28.17 E	33.59'	S 57.00 E	33
0.00	.80	S 58.00 E	100.00	3399.72	-374.88	19.16	19.16 S	29.48 E	35.16'	S 56.98 E	21
0.00	.60	S 88.00 E	100.00	3499.71	-274.89	19.51	19.51 S	30.63 E	36.32'	S 57.50 E	41
0.00	.90	S 89.00 E	100.00	3599.70	-174.90	19.55	19.55 S	31.94 E	37.45'	S 58.53 E	30
0.00	.80	N 69.00 E	100.00	3699.69	-74.91	19.29	19.29 S	33.39 E	38.57'	S 59.98 E	34
0.00	.80	N 67.00 E	100.00	3799.68	25.08	18.77	18.77 S	34.69 E	39.44'	S 61.58 E	03
0.00	.60	S 77.00 E	100.00	3899.67	125.07	18.66	18.66 S	35.89 E	40.45'	S 62.52 E	47
0.00	.80	N 84.00 E	100.00	3999.67	225.07	18.74	18.74 S	37.10 E	41.56'	S 63.20 E	30
0.00	.90	N 88.00 E	100.00	4099.65	325.05	18.64	18.64 S	38.58 E	42.84'	S 64.22 E	12
5.00	.90	N 81.00 E	75.00	4174.65	400.05	18.52	18.52 S	39.75 E	43.86'	S 65.02 E	15
3.00	.70	N 56.00 E	88.00	4262.64	488.04	18.08	18.08 S	40.89 E	44.70'	S 66.15 E	45
6.00	.80	N 36.00 E	93.00	4355.63	581.03	17.23	17.23 S	41.76 E	45.17'	S 67.57 E	30
3.00	.50	N 34.00 E	92.00	4447.62	673.02	16.38	16.38 S	42.36 E	45.41'	S 68.86 E	33
1.00	.50	N 37.00 E	93.00	4540.62	766.02	15.72	15.72 S	42.83 E	45.62'	S 69.85 E	03
1.00	.50	N 56.00 E	93.00	4633.62	859.02	15.16	15.16 S	43.41 E	45.90'	S 70.75 E	18
0.00	.60	N 53.00 E	92.00	4725.61	951.01	14.65	14.65 S	44.13 E	46.50'	S 71.64 E	11
0.00	.60	N 56.00 E	93.00	4818.61	1044.01	14.08	14.08 S	44.92 E	47.00'	S 72.59 E	03

GYRO SURVEY ENDS AT 4175'...MULTISHOT SURVEY COMMENCES AT 4175'

DEPTH FEET	INCL. ANGLE DEGS.	HOLE DIRECTION DEGS.	COURSE LENGTH FEET	TRUE VERTICAL DEPTH FEET	SURSEA DEPTH FEET	VERTICAL SECTION FEET	RECTOR CORDINATES N/S	ANGULAR FEET E/W	C L O S U R E DISTANCE FEET	DIRECTION DEGS.	DUG-LE SEVERIT DG/100F
12.00	.40	N 38.00 E	93.00	4911.60	1137.00	13.53	13.53 S	45.52 E	47.48'	S 73.44 E	.27
14.00	.50	N 22.00 E	92.00	5003.60	1229.00	12.91	12.91 S	45.88 E	47.66'	S 74.28 E	.17
17.00	.50	N 05.00 E	93.00	5096.60	1322.00	12.12	12.12 S	46.06 E	47.63'	S 75.26 E	.16
17.00	.60	N 00.00 E	93.00	5189.59	1414.99	11.23	11.23 S	46.10 E	47.45'	S 76.31 E	.12
32.00	.90	N 13.00 E	92.00	5281.58	1506.98	10.04	10.04 S	46.24 E	47.32'	S 77.75 E	.37
15.00	1.00	N 15.00 E	33.00	5314.58	1539.98	9.51	9.51 S	46.37 E	47.34'	S 78.41 E	.32
18.00	1.00	N 12.00 E	153.00	5467.56	1692.96	6.91	6.91 S	47.00 E	47.50'	S 81.63 E	.03
20.00	1.10	N 18.00 E	92.00	5559.54	1784.94	5.28	5.28 S	47.43 E	47.72'	S 83.64 E	.16
13.00	1.20	N 27.00 E	93.00	5652.52	1877.92	3.56	3.56 S	48.14 E	48.28'	S 85.77 E	.22
16.00	1.40	N 12.00 E	93.00	5745.50	1970.90	1.58	1.58 S	48.85 E	48.87'	S 88.15 E	.42
18.00	1.20	N 11.00 E	92.00	5837.47	2062.87	-4.7	.47 N	49.26 E	49.27'	N 89.46 E	.22
1.00	1.20	N 00.00 E	93.00	5930.45	2155.85	-2.40	2.40 N	49.45 E	49.51'	N 87.22 E	.25
4.00	1.20	N 09.00 W	93.00	6023.43	2248.83	-4.34	4.34 N	49.30 E	49.49'	N 84.96 E	.20
6.00	1.00	N 06.00 E	92.00	6115.42	2340.82	-6.10	6.10 N	49.25 E	49.63'	N 82.93 E	.38
9.00	.80	N 04.00 E	93.00	6208.41	2433.81	-7.56	7.56 N	49.38 E	49.95'	N 81.30 E	.22
1.00	1.00	N 06.00 E	92.00	6300.39	2525.79	-9.00	9.00 N	49.50 E	50.32'	N 79.70 E	.22
4.00	1.00	N 26.00 E	93.00	6393.38	2618.78	-10.55	10.55 N	49.95 E	51.05'	N 78.07 E	.37
7.00	1.10	N 42.00 E	93.00	6486.36	2711.76	-11.96	11.96 N	50.90 E	52.29'	N 76.78 E	.33
7.00	1.10	N 43.00 E	92.00	6578.35	2803.75	-13.26	13.26 N	52.09 E	53.75'	N 75.72 E	.02
2.00	1.00	N 44.00 E	93.00	6671.33	2896.73	-14.50	14.50 N	53.27 E	55.20'	N 74.77 E	.11
5.00	1.00	N 45.00 E	93.00	6764.32	2989.72	-15.66	15.66 N	54.40 E	56.61'	N 73.95 E	.02
7.00	.90	N 53.00 E	92.00	6856.30	3081.70	-16.66	16.66 N	55.55 E	58.00'	N 73.31 E	.18
1.00	1.00	N 76.00 E	93.00	6949.29	3174.69	-17.31	17.31 N	56.94 E	59.51'	N 73.09 E	.42
5.00	1.00	N 77.00 E	93.00	7042.28	3267.68	-17.69	17.69 N	58.51 E	61.13'	N 73.18 E	.02
5.00	1.00	N 74.00 E	92.00	7134.26	3359.66	-18.10	18.10 N	60.07 E	62.73'	N 73.24 E	.06

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DEPTH	INCL.	HOLE	COURSE	VERTICAL	SUBCLA	VERTICAL	RECTANGULAR	CLOSURE	DIRECTION	DOG-LEG
FEET	ANGLE	DIRECTION	LENGTH	DEPTH	DEPTH	SECTION	COORDINATES	DISTANCE	DEGS.	SEVERITY
			FEET	FEET	FEET	FEET	N/S	FEET		
148.00	3.70	N 07.00 W	93.00	9346.00	5571.40	-56.67	56.67 N	102.28 E	116.93' N 61.01 E	58
141.00	3.90	N 04.00 W	93.00	9438.79	5664.19	-62.80	62.80 N	101.69 E	119.52' N 58.30 E	50
134.00	4.00	N 04.00 E	93.00	9531.57	5756.97	-69.20	69.20 N	101.69 E	123.00' N 55.76 E	60
128.00	4.20	N 14.00 W	94.00	9625.33	5850.73	-75.87	75.87 N	101.10 E	126.40' N 53.12 E	1.38
121.00	1.30	N 85.00 W	93.00	9718.21	5943.61	-78.58	78.58 N	97.92 E	125.56' N 51.25 E	4.27
114.00	3.80	S 33.00 W	93.00	9811.11	6036.51	-76.86	76.86 N	94.38 E	121.72' N 50.84 E	3.64
107.00	5.20	S 14.00 W	93.00	9903.82	6129.22	-70.20	70.20 N	91.49 E	115.32' N 52.50 E	2.18
100.00	5.00	S 18.00 W	93.00	9996.46	6221.86	-62.25	62.25 N	89.21 E	108.78' N 55.09 E	.44
94.00	5.50	S 18.00 W	94.00	10090.06	6315.46	-54.07	54.07 N	86.55 E	102.05' N 58.01 E	.53
87.00	5.00	S 27.00 W	93.00	10182.67	6408.07	-46.22	46.22 N	83.30 E	95.26' N 60.98 E	1.03
80.00	4.90	S 23.00 W	93.00	10275.32	6500.72	-38.95	38.95 N	79.91 E	88.89' N 64.02 E	.39
73.00	4.90	S 25.00 W	93.00	10367.98	6593.38	-31.69	31.69 N	76.68 E	82.97' N 67.55 E	.18
66.00	1.50	S 01.00 E	93.00	10460.83	6686.23	-26.66	26.66 N	75.61 E	80.17' N 70.58 E	3.88
60.00	1.50	S 05.00 W	94.00	10554.79	6780.19	-24.20	24.20 N	75.52 E	79.30' N 72.23 E	.17
53.00	.90	S 27.00 W	93.00	10647.77	6873.17	-22.34	22.34 N	74.99 E	78.24' N 73.41 E	.80
46.00	1.20	S 05.00 E	93.00	10740.76	6966.16	-20.69	20.69 N	74.67 E	77.48' N 74.51 E	.70
39.00	1.80	S 24.00 W	93.00	10833.72	7059.12	-18.31	18.31 N	74.27 E	76.49' N 76.15 E	1.02
32.00	2.20	S 45.00 W	93.00	10926.67	7152.07	-15.65	15.65 N	72.44 E	74.11' N 77.81 E	.89
25.00	2.20	S 38.00 W	93.00	11019.60	7245.00	-12.98	12.98 N	70.08 E	71.27' N 79.51 E	.29
18.00	2.47	S 41.76 W	50.00	11069.56	7294.96	-11.42	11.42 N	68.77 E	69.71' N 80.57 E	.62
11.00	2.70	S 45.00 W	43.00	11112.51	7337.91	-10.01	10.01 N	67.44 E	68.18' N 81.56 E	.64
4.00	2.20	S 55.00 W	94.00	11206.43	7431.83	-7.43	7.43 N	64.37 E	64.79' N 83.42 E	.70
0.00	2.00	S 67.00 W	14.00	11220.42	7445.82	-7.18	7.18 N	63.92 E	64.32' N 83.59 E	3.44
THE STATION AT 11240' MD IS A PROJECTION USING PREVIOUS STATIONS DATA										
0.00	2.00	S 67.00 W	14.00	11234.41	7459.81	-6.99	6.99 N	63.47 E	63.85' N 83.72 E	0.00

CLOSURE DISTANCE = 63.85 FEET.
CLOSURE DIRECTION = N 83.72 E



DIRECTIONAL
INVESTMENT
GUIDANCE, INC.

SURVEY CERTIFICATION

STATE TEXAS

COUNTY OF MIDLAND

I, Larry Massey, in the employ of D.I.G., Inc., did on the days of January 19, 1987 through January 19, 1987 conduct or supervise the taking of a Gyroscopic Multiple Shot survey by the method of magnetic orientation from a depth of 0 feet to 4175 feet, with recordings of inclination being obtained at approximate intervals of 100 feet.

This survey was conducted at the request of Pennzoil Company for their Viersen Well No. 3, Lea County, State of New Mexico in the Shipp Strawn field.

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

Larry Massey

Larry Massey

The data for this survey has been examined by me and conforms to the principles and procedures as set forth by D.I.G., Inc.

Ralph Rice

Ralph Rice

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DIRECTIONAL
INVESTMENT
GUIDANCE, INC.

SURVEY CERTIFICATION

STATE TEXAS

COUNTY OF MIDLAND

I, Larry Massey, in the employ of D.I.G., Inc., did
on the days of January 19, 1987 through January 19, 1987 conduct or
supervise the taking of a Magnetic Multiple Shot survey by the
method of magnetic orientation from a depth of 4175 feet to 8865
feet, with recordings of inclination being obtained at approximate intervals of 93
feet.

This survey was conducted at the request of Pennzoil Company
for their Viersen Well No. 3, Lea County,
State of New Mexico in the Shipp Strawn field.

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

Larry Massey

Larry Massey

The data for this survey has been examined by me and conforms to the principles
and procedures as set forth by D.I.G., Inc.

Ralph Rice

Ralph Rice



SURVEY CERTIFICATION

STATE TEXAS

COUNTY OF MIDLAND

I, Larry Massey, in the employ of D.I.G., Inc., did on the days of February 1, 1987 through February 1, 1987 conduct or supervise the taking of a Magnetic Multiple Shot survey by the method of magnetic orientation from a depth of 8865 feet to 11240 feet, with recordings of inclination being obtained at approximate intervals of 93 feet.

This survey was conducted at the request of Pennzoil Company for their Viersen Well No. 3, Lea County, State of New Mexico in the Shipp Strawn field.

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

Larry Massey
Larry Massey

The data for this survey has been examined by me and conforms to the principles and procedures as set forth by D.I.G., Inc.

Ralph Rice
Ralph Rice