



**REPORT
of
SUB-SURFACE
DIRECTIONAL
SURVEY**

YATES PETROLEUM CORPORATION
COMPANY

BROWN WELL NO. 1
WELL NAME

26-16-37

LEA COUNTY, NEW MEXICO
LOCATION

JOB NUMBER

430-0538

TYPE OF SURVEY

INCLINATION MULTI SHOT SURVEY

DATE

4-28-87

SURVEY BY
GARY DESPAIN

OFFICE
WEST TEXAS BASE

EASTMAN CHRISTENSEN

RECORD OF SURVEY

203

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**  
** OPERATOR : YATES PETROLEUM CORPORATION  
**  
** WELL NAME : BROWN WELL NO. 1  
**  
** LOCATION : LEA COUNTY, NEW MEXICO  
**  
** JOB NUMBER :  
**  
** RIG :  
**  
** DECLINATION : 10.00 E  
**
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EC DISTRICT : WEST TEXAS BASE

YATES PETROLEUM CORPORATION
BROWN WELL NO. 1
LEA COUNTY, NEW MEXICO

DATE PRINTED : 18-MAY-87
OUR REF. NO. : S01195.4YA
DECLINATION : 10.00 JOB NUMBER :

PAGE NO. 2

MEASURED DEPTH	D R I F T A N G L E D M	D R I F T D I R E C T I O N D M	C O U R S E L E N G T H	T R U E V E R T I C A L D E P T H	R E C T A N G U L A R C O O R D I N A T E S	D O G L E G S E V E R I T Y
0.00	0 0	N 0 0 E	0.00	0.00	0.00 N	0.00
100.00	0 45	N 0 0 E	100.00	100.00	0.66 N	0.75
200.00	1 0	N 0 0 E	100.00	199.99	2.18 N	0.25
300.00	1 45	N 0 0 E	100.00	299.96	4.58 N	0.75
400.00	2 0	N 0 0 E	100.00	399.90	7.85 N	0.25
500.00	2 45	N 0 0 E	100.00	499.82	12.00 N	0.75
600.00	2 30	N 0 0 E	100.00	599.71	16.58 N	0.25
700.00	2 15	N 0 0 E	100.00	699.62	20.72 N	0.25
800.00	2 0	N 0 0 E	100.00	799.56	24.43 N	0.25
900.00	2 45	N 0 0 E	100.00	899.47	28.57 N	0.75
1000.00	2 45	N 0 0 E	100.00	999.35	33.37 N	0.00
1100.00	3 0	N 0 0 E	100.00	1099.23	38.38 N	0.25
1200.00	3 0	N 0 0 E	100.00	1199.09	43.62 N	0.00
1300.00	3 15	N 0 0 E	100.00	1298.94	49.07 N	0.25
1400.00	3 15	N 0 0 E	100.00	1398.78	54.74 N	0.00
1500.00	3 0	N 0 0 E	100.00	1498.63	60.19 N	0.25
1600.00	3 0	N 0 0 E	100.00	1598.50	65.42 N	0.00
1700.00	2 45	N 0 0 E	100.00	1698.37	70.44 N	0.25
1800.00	2 15	N 0 0 E	100.00	1798.27	74.80 N	0.50
1900.00	2 15	N 0 0 E	100.00	1898.20	78.73 N	0.00
2000.00	2 0	N 0 0 E	100.00	1998.13	82.44 N	0.25
2100.00	1 30	N 0 0 E	100.00	2098.08	85.49 N	0.50
2200.00	1 30	N 0 0 E	100.00	2198.05	88.11 N	0.00
2300.00	1 0	N 0 0 E	100.00	2298.02	90.29 N	0.50
2400.00	1 0	N 0 0 E	100.00	2398.01	92.03 N	0.00
2500.00	0 30	N 0 0 E	100.00	2498.00	93.34 N	0.50
2600.00	0 30	N 0 0 E	100.00	2598.00	94.22 N	0.00
2700.00	0 45	N 0 0 E	100.00	2697.99	95.31 N	0.25
2800.00	0 30	N 0 0 E	100.00	2797.98	96.40 N	0.25
2900.00	1 0	N 0 0 E	100.00	2897.97	97.71 N	0.50

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YATES PETROLEUM CORPORATION
BROWN WELL NO. 1
LEA COUNTY, NEW MEXICO

DATE PRINTED : 18-MAY-87
OUR REF. NO. : 801195.4YA
DECLINATION : 10.00 JOB NUMBER :

PAGE NO. 3

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
3000.00	0 45	N 0 0 E	100.00	2997.96	99.24 N 0.00 E	0.25
3100.00	1 0	N 0 0 E	100.00	3097.95	100.76 N 0.00 E	0.25
3200.00	1 30	N 0 0 E	100.00	3197.93	102.94 N 0.00 E	0.50
3300.00	1 0	N 0 0 E	100.00	3297.90	105.13 N 0.00 E	0.50
3400.00	0 45	N 0 0 E	100.00	3397.89	106.65 N 0.00 E	0.25
3500.00	0 30	N 0 0 E	100.00	3497.88	107.74 N 0.00 E	0.25
3600.00	0 30	N 0 0 E	100.00	3597.88	108.62 N 0.00 E	0.00
3700.00	1 0	N 0 0 E	100.00	3697.87	109.93 N 0.00 E	0.50
3800.00	1 0	N 0 0 E	100.00	3797.86	111.67 N 0.00 E	0.00
3900.00	1 0	N 0 0 E	100.00	3897.84	113.42 N 0.00 E	0.00
4000.00	0 45	N 0 0 E	100.00	3997.83	114.94 N 0.00 E	0.25
4100.00	0 30	N 0 0 E	100.00	4097.82	116.04 N 0.00 E	0.25
4200.00	0 45	N 0 0 E	100.00	4197.82	117.13 N 0.00 E	0.25
4300.00	0 30	N 0 0 E	100.00	4297.81	118.22 N 0.00 E	0.25
4400.00	0 30	N 0 0 E	100.00	4397.81	119.09 N 0.00 E	0.00
4500.00	0 45	N 0 0 E	100.00	4497.80	120.19 N 0.00 E	0.25
4600.00	0 45	N 0 0 E	100.00	4597.79	121.50 N 0.00 E	0.00
4700.00	1 0	N 0 0 E	100.00	4697.78	123.02 N 0.00 E	0.25
4800.00	1 0	N 0 0 E	100.00	4797.77	124.77 N 0.00 E	0.00
4900.00	0 45	N 0 0 E	100.00	4897.75	126.29 N 0.00 E	0.25
5000.00	0 15	N 0 0 E	100.00	4997.75	127.17 N 0.00 E	0.50
5100.00	0 30	N 0 0 E	100.00	5097.75	127.82 N 0.00 E	0.25
5200.00	0 15	N 0 0 E	100.00	5197.75	128.48 N 0.00 E	0.25
5300.00	0 30	N 0 0 E	100.00	5297.74	129.13 N 0.00 E	0.25
5400.00	0 45	N 0 0 E	100.00	5397.74	130.23 N 0.00 E	0.25
5500.00	1 0	N 0 0 E	100.00	5497.73	131.75 N 0.00 E	0.25
5600.00	0 15	N 0 0 E	100.00	5597.72	132.84 N 0.00 E	0.75
5700.00	1 0	N 0 0 E	100.00	5697.71	133.94 N 0.00 E	0.75
5800.00	0 45	N 0 0 E	100.00	5797.70	135.46 N 0.00 E	0.25
5900.00	0 15	N 0 0 E	100.00	5897.70	136.34 N 0.00 E	0.50

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YATES PETROLEUM CORPORATION
BROWN WELL NO. 1
LEA COUNTY, NEW MEXICO

DECLINATION : 10.00 JOB NUMBER :
DATE PRINTED : 18-MAY-87
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PAGE NO. 4

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
6000.00	0 30	N 0 0 E	100.00	5997.69	136.99 N 0.00 E	0.25
6100.00	0 30	N 0 0 E	100.00	6097.69	137.86 N 0.00 E	0.00
6200.00	1 0	N 0 0 E	100.00	6197.68	139.17 N 0.00 E	0.50
6300.00	1 0	N 0 0 E	100.00	6297.67	140.92 N 0.00 E	0.00
6400.00	1 0	N 0 0 E	100.00	6397.65	142.66 N 0.00 E	0.00
6500.00	1 30	N 0 0 E	100.00	6497.63	144.85 N 0.00 E	0.50
6600.00	1 45	N 0 0 E	100.00	6597.59	147.68 N 0.00 E	0.25
6700.00	1 30	N 0 0 E	100.00	6697.55	150.52 N 0.00 E	0.25
6800.00	0 15	N 0 0 E	100.00	6797.53	152.05 N 0.00 E	1.25
6900.00	1 0	N 0 0 E	100.00	6897.53	153.14 N 0.00 E	0.75
7000.00	1 30	N 0 0 E	100.00	6997.50	155.32 N 0.00 E	0.50
7100.00	1 0	N 0 0 E	100.00	7097.48	157.50 N 0.00 E	0.50
7200.00	0 15	N 0 0 E	100.00	7197.47	158.59 N 0.00 E	0.75
7300.00	0 45	N 0 0 E	100.00	7297.47	159.47 N 0.00 E	0.50
7400.00	0 0	N 0 0 E	100.00	7397.46	160.12 N 0.00 E	0.75
7500.00	0 15	N 0 0 E	100.00	7497.46	160.34 N 0.00 E	0.25
7600.00	1 0	N 0 0 E	100.00	7597.46	161.43 N 0.00 E	0.75
7700.00	1 0	N 0 0 E	100.00	7697.44	163.17 N 0.00 E	0.00
7800.00	1 15	N 0 0 E	100.00	7797.42	165.14 N 0.00 E	0.25
7900.00	1 0	N 0 0 E	100.00	7897.40	167.10 N 0.00 E	0.25
8000.00	1 30	N 0 0 E	100.00	7997.38	169.28 N 0.00 E	0.50

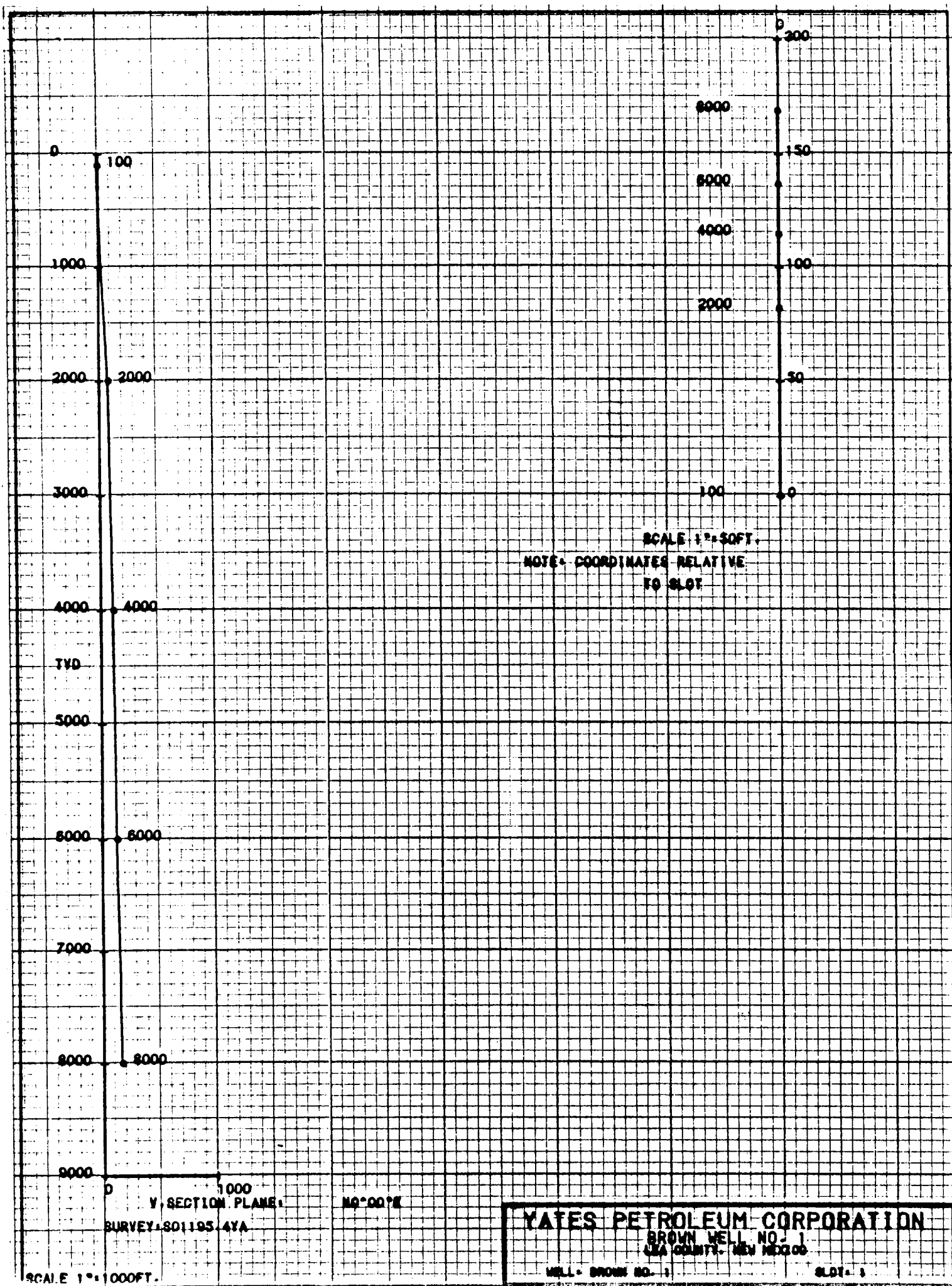
CLOSURE - DISTANCE : 169.28
DIRECTION : N 0 0 E

REPORT UNITS : Feet
SURVEY CALCULATION METHOD : Radius of curvature

SURVEY RUN INFORMATION
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INCLINATION MULTI SHOT SURVEY 430-0538
SURVEYOR: GARY DESPAIN (0-8000')
A DIRECTION OF N 0 0 E WAS SELECTED FOR PURPOSES OF
CALCULATION ONLY, AND DOES NOT REFLECT THE ACTUAL
HOLE DIRECTION OF THE WELL PATH.





0 100

1000

2000 2000

3000

4000 4000

TVD

5000

6000 6000

7000

8000 8000

9000

6000

5000

4000

2000

100

0 200

150

100

50

0

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

V SECTION PLANE
SURVEY 801195-4YA

N9°00'E

YATES PETROLEUM CORPORATION
BROWN WELL NO. 1
USA COUNTY- NEW MEXICO
WELL- BROWN NO. 1
SLOT- 1

SCALE 1"=1000FT.



EASTMAN CHRISTENSEN

2103 Market, Midland, Texas 79703, Phone: (915) 694-9517, (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 April 28, 1987 thru April 28, 1987 conduct or supervise the taking of a Inclination Multi Shot survey by the method of magnetic orientation from a depth of 0 feet to 8,000 feet, with recordings of inclination and direction being obtained at approximate intervals of 100 feet.

This survey was conducted at the request of Yates Petroleum Corporation for their Brown Well No. 1, Lea County, State of New Mexico, in the Lea 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 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.

Gary DeSpain

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 18 day of

May, 1987



Timothy R. Stephens
Notary Public, State of Texas
My Commission Expires 4-1-88

Timothy R. Stephens
Notary Public in and for the
County of Midland, Texas
My commission expires _____