

SCIENTIFIC DRILLING

HORIZONTAL SURVEY PROGRAM
MINIMUM CURVATURE CALCULATIONS(SPE-332)

OPERATOR: TEXACO E. & P., INC.

WELL: V.G.W.U. #78 (WEST LATERAL)

LOCATION: LEA COUNTY, NEW MEXICO

JOB NO: 32D0900353

START: 09/00

FINISH:

INFORMATION PROVIDED BY: SDI

HORIZONTAL COORDINATOR: B. LAMB - B. HOFFMAN

DIP1 = -2.50 deg = 87.50 deg

TARGET1 = 5,930 ft TVD

VS1 = 207 ft

DIP2 = -2.16 deg = 97.84

TARGET2 = 5,980 ft TVD

VS2 = 1,000 ft

DECLINATION = 883 DIRECTION: 258.50

DATE: 09/13/00 TIME: 5:33 AM

TRUE

CENTER

SVY #	MEASURED DEPTH	INCL (DRIFT)	AZIMUTH (DIR)	VERTICAL DEPTH	VERTICAL SECTION	DL/100	ACTUAL BUR	ABOVE/BELOW	RIGHT(+) LEFT(-)	NORTH(+) SOUTH(-)	EAST(+) WEST(-)
TIE	5705	0.87	28.99	5704.5	-6.8	0.0	0.0	216.2	-0.2	1.2	6.7
1	5760	20.40	287.90	5758.4	2.5	37.0	36.5	162.7	1.7	1.2	-2.8
2	5809	34.70	259.50	5801.7	25.0	30.2	29.2	120.3	3.4	-1.7	-25.2
3	5840	41.30	259.50	5826.1	44.1	21.3	21.3	98.8	3.7	-5.1	-43.9
4	5872	47.30	258.40	5849.0	66.4	18.3	18.8	74.8	3.9	-9.4	-65.8
5	5904	53.70	255.60	5869.4	91.1	21.1	20.0	55.6	3.2	-15.0	-89.9
6	5935	60.50	255.60	5888.2	117.0	21.3	21.9	38.9	1.9	-21.5	-115.1
7	5987	66.90	266.00	5900.4	145.7	20.3	20.0	27.0	0.6	-26.5	-142.9
8	5999	72.50	258.70	5911.5	175.7	17.3	17.5	17.2	-0.6	-35.6	-172.0
9	6030	74.40	256.70	5920.3	205.4	6.1	6.1	9.6	-1.5	-42.4	-200.9
10	6082	79.70	256.30	5927.5	236.5	16.3	16.6	3.8	-2.0	-48.7	-231.2
11	6094	81.50	256.00	5932.7	268.1	5.1	5.8	0.0	-3.9	-57.3	-281.9
12	6125	86.20	268.30	5938.0	298.8	15.2	15.2	-2.0	-5.2	-84.6	-291.8
13	6158	87.80	267.40	5937.7	331.8	6.1	4.8	-2.3	-6.1	-72.1	-323.9
14	6188	83.90	258.40	5939.9	361.7	13.1	13.0	-3.2	-8.4	-78.4	-353.2
15	6220	80.20	267.70	5944.3	393.4	11.3	11.6	-6.2	-6.7	-85.0	-384.2
16	6252	85.70	260.50	5948.3	425.1	19.3	17.2	-8.7	-6.3	-91.0	-415.3
17	6283	87.60	261.30	5950.1	456.0	8.1	6.1	-9.2	-5.0	-95.8	-446.9
18	6315	88.20	257.40	5951.2	488.0	12.3	1.9	-9.0	-4.6	-101.8	-477.3
19	6346	89.60	254.90	5951.8	518.0	9.1	4.5	-8.2	-5.8	-109.2	-507.4
20	6378	90.60	258.00	5951.8	550.9	4.1	3.1	-6.8	-7.5	-117.2	-538.4
21	6409	89.70	267.00	5951.7	581.9	4.3	-2.9	-5.3	-8.8	-124.6	-588.5
22	6441	89.70	267.00	5951.9	613.9	0.1	0.0	-4.1	-9.4	-131.6	-599.7
23	6472	80.30	258.40	5951.9	644.9	4.1	1.9	-2.8	-9.9	-138.3	-630.0
24	6504	69.90	260.20	5951.8	676.9	5.1	-1.2	-1.3	-9.4	-144.2	-661.4

SCIENTIFIC DRILLING

HORIZONTAL SURVEY PROGRAM

MINIMUM CURVATURE CALCULATIONS(SPE-3362)

OPERATOR: **TEXACO E. & P., INC**

START: 9/8/00

WELL: **V.G.W.U. #78 (WEST LATERAL)**

FINISH:

LOCATION: **LEA COUNTY, NEW MEXICO**

INFORMATION PROVIDED BY: **SDI**

JOB NO: **32D0900353**

HORIZONTAL COORDINATOR: **B. LAMB - B. HOFFMAN**

DIP1 = -2.50 deg = 87.50 deg

DIP2 = -2.16 deg = 87.84

TARGET1 = 5,930 RTVD

TARGET2 = 5,980 RTVD

VS1 = 207 ft

VS2 = 1,000 ft

DATE: 08/13/00 TIME: 5:33 AM DECLINATION=

0.83 DIRECTION: 258.50

TRUE

CENTER

SVY #	MEASURED DEPTH	INCL (DRIFT)	AZIMUTH (DIR)	VERTICAL DEPTH	VERTICAL SECTION	DLS/ 100	ACTUAL BUR	ABOVE(+) BELOW(-)	RIGHT(+) LEFT(-)	NORTH(+) SOUTH(-)	EAST(+) WEST(-)
25	8535	90.30	260.50	5951.8	707.9	1.6	1.3	0.1	-8.4	-149.4	-692.0
26	8567	89.20	260.20	5851.9	739.9	3.6	-3.4	1.4	-7.4	-154.8	-723.5
27	8599	88.90	260.50	5952.4	771.8	1.3	-0.9	2.2	-6.4	-160.1	-755.1
28	8631	88.30	260.50	5953.2	803.8	1.9	-1.9	2.8	-5.3	-165.4	-788.6
29	8682	89.40	260.50	5953.8	834.8	3.5	3.5	3.6	-4.2	-170.5	-817.2
30	8894	89.70	260.90	5954.1	866.8	1.6	0.9	4.7	-2.9	-175.7	-848.6
31	8728	88.20	260.50	5954.7	898.7	4.9	-4.7	5.5	-1.7	-180.8	-880.3
32	8757	87.30	259.90	5855.9	929.7	3.5	-2.9	5.7	-0.8	-188.1	-910.9
33	8788	86.70	260.20	5957.5	960.6	2.2	-1.9	5.4	0.0	-191.5	-941.4
34	8819	86.70	260.20	5959.3	991.6	0.0	0.0	5.0	1.0	-196.7	-971.8
TD	8828	86.70	260.20	5959.8	1000.0	0.0	0.0	0.2	1.2	-198.2	-980.2

FROM :

PHONE NO. :

Nov. 22 1999 01:10PM P3

SCIENTIFIC DRILLING

HORIZONTAL SURVEY PROGRAM

MINIMUM CURVATURE CALCULATIONS(SPE-3362)

OPERATOR: TEXACO E. & P., INC

WELL: V.G.W.U. #78

LOCATION: LEA COUNTY, NEW MEXICO

JOB NO: 32D0900353

START: 09/06/2000

FINISH:

INFORMATION PROVIDED BY: SDI

HORIZONTAL COORDINATOR: B. LAMB - B. HOFFMAN

DIP1 = 1.37 deg = 91.37 deg
 TARGET1 = 5,930 ft TVD
 VS1 = 203 ft
 DIP2 = 1.37 deg = 91.37 deg
 TARGET2 = 5,910 ft TVD
 VS2 = 1,000 ft

DATE: ###/###/### TIME: 7:24 PM DECLINATION= 8.63 DIRECTION 90.00

SVY #	MEASURED DEPTH	INCL (DRIFT)	AZIMUTH (DIR)	TRUE		CENTER				NORTH(+)		EAST(+)	
				VERTICAL DEPTH	VERTICAL SECTION	DLS/ 100	ACTUAL BUR	ABOVE(+) BELOW(-)	RIGHT(+) LEFT(-)	SOUTH(-)	WEST(-)		
TIE	5741	1.13	29.70	5739.5	7.0	0.0	0.0	195.1	-1.7	1.7	7.0		
1	5790	19.00	87.80	5787.6	15.3	37.6	38.5	146.8	-2.4	2.4	15.3		
2	5800	22.70	91.10	5796.9	18.8	38.7	37.0	137.4	-2.4	2.4	18.8		
3	5810	26.20	91.80	5806.0	23.0	35.1	35.0	128.2	-2.3	2.3	23.0		
4	5850	38.40	89.70	5839.6	44.6	33.1	33.0	94.1	-2.1	2.1	44.6		
5	5868	44.00	87.60	5851.5	55.2	30.0	28.8	81.9	-2.4	2.4	55.2		
6	5898	52.40	86.20	5872.8	78.0	26.5	26.3	60.0	-3.7	3.7	78.0		
7	5930	60.90	89.00	5880.4	105.7	27.5	26.6	41.8	-4.8	4.8	105.7		
8	5961	67.90	93.90	5903.8	133.6	26.7	22.6	27.8	-4.0	4.0	133.6		
9	5993	73.40	93.60	5914.4	163.7	17.2	17.2	18.4	-2.1	2.1	163.7		
10	6024	78.80	92.20	5921.8	193.8	18.0	17.4	8.3	-0.5	0.5	193.8		
11	6056	85.00	91.10	5926.3	225.4	19.7	19.4	3.0	0.4	-0.4	225.4		
12	6087	88.50	89.70	5928.1	256.4	12.2	11.3	0.5	0.6	-0.6	256.4		
13	6118	90.10	90.40	5928.5	288.4	5.5	5.0	-0.6	0.6	-0.6	288.4		
14	6151	92.40	90.40	5927.8	320.4	7.2	7.2	-0.7	0.8	-0.8	320.4		
15	6182	92.60	90.40	5926.4	351.3	0.6	0.6	-0.1	1.0	-1.0	351.3		
16	6214	89.60	89.00	5925.8	383.3	10.3	-8.4	-0.2	0.9	-0.9	383.3		
17	6246	89.70	90.00	5928.0	415.3	3.1	0.3	-1.2	0.8	-0.6	415.3		
18	6277	91.30	90.70	5925.6	446.3	5.6	5.2	-1.7	0.8	-0.8	446.3		
19	6308	92.20	90.70	5924.8	477.3	2.9	2.9	-1.5	1.2	-1.2	477.3		
20	6341	93.60	91.10	5923.1	510.3	4.4	4.2	-0.6	1.7	-1.7	510.3		
21	6372	93.30	90.00	5921.3	541.2	3.7	-1.0	0.5	2.0	-2.0	541.2		
22	6402	92.40	89.70	5918.8	571.2	3.2	-3.0	1.3	1.9	-1.9	571.2		
23	6436	91.10	89.70	5918.7	605.1	3.8	-3.8	1.5	1.7	-1.7	605.1		
24	6467	90.10	89.70	5918.4	636.1	3.2	-3.2	1.1	1.6	-1.6	636.1		

SCIENTIFIC DRILLING

HORIZONTAL SURVEY PROGRAM

MINIMUM CURVATURE CALCULATIONS(SPE-3362)

OPERATOR: **TEXACO E. & P., INC**

WELL: **V.G.W.U. #78**

LOCATION: **LEA COUNTY, NEW MEXICO**

JOB NO: **32D0900353**

START: **09/08/2000**

FINISH:

INFORMATION PROVIDED BY: **SDI**

HORIZONTAL COORDINATOR: **B. LAMB - B. HOFFMAN**

DIP1 = 1.37 deg = 91.37 deg = 91.37

TARGET1 = 5,930 ft TVD

VS1 = 203 ft

TARGET2 = 5,910 ft TVD

VS2 = 1,000 ft

DIRECTION **90.00**

DECLINATION = **8.63**

SVY #	MEASURED DEPTH	INCL (DRIFT)	AZIMUTH (DIR)	VERTICAL DEPTH	TRUE				CENTER				EAST(+) WEST(-)
					VERTICAL SECTION	DLS/ 100	ACTUAL BUR	ABOVE(+) BELOW(-)	RIGHT(+) LEFT(-)	NORTH(+) SOUTH(-)			
25	6499	90.30	89.30	5918.3	668.1	1.4	0.6	0.5	1.3	-1.3			668.1
26	6530	90.60	89.00	5918.0	699.1	1.9	1.6	0.0	0.8	-0.8			699.1
27	6562	90.60	90.00	5917.6	731.1	3.2	-0.8	-0.3	0.5	-0.5			731.1
28	6594	90.10	90.70	5917.4	763.1	2.7	-1.6	-0.9	0.7	-0.7			763.1
29	6626	89.70	90.70	5917.5	795.1	1.3	-1.2	-1.7	1.1	-1.1			795.1
30	6657	90.60	90.00	5917.4	826.1	3.7	2.9	-2.4	1.3	-1.3			826.1
31	6689	93.30	88.60	5916.3	858.1	8.5	8.4	-2.1	0.9	-0.9			858.1
32	6720	93.10	87.90	5914.6	889.0	2.3	-0.6	-1.1	0.0	0.0			889.0
33	6751	92.60	88.30	5913.0	920.0	2.1	-1.9	-0.3	-1.0	1.0			920.0
34	6783	91.50	91.40	5911.9	952.0	10.3	-3.4	0.1	-1.1	1.1			952.0
35	6814	91.70	90.70	5911.0	982.9	2.3	0.6	0.2	-0.6	0.6			982.9
TD	6831	91.70	90.70	5910.5	1000.0	0.0	0.0	-0.5	-0.3	0.3			1000.0

SCIENTIFIC DRILLING

HORIZONTAL SURVEY PROGRAM
MINIMUM CURVATURE CALCULATIONS(SPE-3362)

OPERATOR: TEXACO E. & P., INC

WELL: V.G.W.U. #78 (WEST LATERAL)

LOCATION: LEA COUNTY, NEW MEXICO

JOB NO: 32D0900353

START: 9/6/00

FINISH:

INFORMATION PROVIDED BY: SDI

HORIZONTAL COORDINATOR: B. LAMB - B. HOFFMAN

DIP1 = -2.50 deg = 87.50 deg = 87.84

TARGET1 = 5,930 ft TVD

TARGET2 = 5,960 ft TVD

VS1 = 207 ft

VS2 = 1,000 ft

8.83 DIRECTION: 258.50

DATE: 09/13/00 TIME: 5:33 AM DECLINATION=

DATE: 05/13/00		TIME: 0.50		TRUE		CENTER				NORTH(+)		EAST(+)	
SVY #	MEASURED DEPTH	INCL (DRIFT)	AZIMUTH (DIR)	VERTICAL DEPTH	VERTICAL SECTION	DLS/ 100	ACTUAL BUR	ABOVE(+) BELOW(-)	RIGHT(+) LEFT(-)	SOUTH(-)	NORTH(+)	WEST(-)	EAST(+)
TIE	5705	0.87	28.99	5704.5	-6.8	0.0	0.0	216.2	-0.2	1.2	1.2	6.7	
1	5760	20.40	267.90	5758.4	2.5	37.9	35.5	162.7	1.7	1.2	1.2	-2.8	
2	5809	34.70	259.50	5801.7	25.0	30.2	29.2	120.3	3.4	-1.7	-1.7	-25.2	
3	5840	41.30	259.50	5826.1	44.1	21.3	21.3	96.8	3.7	-5.1	-5.1	-43.9	
4	5872	47.30	258.40	5849.0	66.4	18.9	18.8	74.8	3.9	-9.4	-9.4	-65.8	
5	5904	53.70	255.60	5869.4	91.1	21.1	20.0	55.6	3.2	-15.0	-15.0	-89.9	
6	5935	60.50	255.60	5886.2	117.0	21.9	21.9	39.9	1.9	-21.5	-21.5	-115.1	
7	5967	66.90	256.00	5900.4	145.7	20.0	20.0	27.0	0.6	-28.5	-28.5	-142.9	
8	5999	72.50	256.70	5911.5	175.7	17.6	17.5	17.2	-0.6	-35.6	-35.6	-172.0	
9	6030	74.40	256.70	5920.3	205.4	6.1	6.1	9.6	-1.5	-42.4	-42.4	-200.9	
10	6062	79.70	256.30	5927.5	236.5	16.6	16.6	3.8	-2.6	-49.7	-49.7	-231.2	
11	6094	81.50	256.00	5932.7	268.1	5.7	5.6	0.0	-3.9	-57.3	-57.3	-261.9	
12	6125	86.20	256.30	5936.0	298.8	15.2	15.2	-2.0	-5.2	-64.6	-64.6	-291.8	
13	6158	87.80	257.40	5937.7	331.8	5.9	4.8	-2.3	-6.1	-72.1	-72.1	-323.9	
14	6188	83.90	258.40	5939.9	361.7	13.4	-13.0	-3.2	-6.4	-78.4	-78.4	-353.2	
15	6220	80.20	257.70	5944.3	393.4	11.8	-11.6	-6.2	-6.7	-85.0	-85.0	-384.2	
16	6252	85.70	260.50	5948.3	425.1	19.3	17.2	-8.7	-6.3	-91.0	-91.0	-415.3	
17	6283	87.60	261.30	5950.1	456.0	6.6	6.1	-9.2	-5.0	-95.8	-95.8	-445.9	
18	6315	88.20	257.40	5951.2	488.0	12.3	1.9	-9.0	-4.6	-101.8	-101.8	-477.3	
19	6346	89.60	254.90	5951.8	519.0	9.2	4.5	-8.2	-5.8	-109.2	-109.2	-507.4	
20	6378	90.60	256.00	5951.8	550.9	4.6	3.1	-6.8	-7.5	-117.2	-117.2	-538.4	
21	6409	89.70	257.00	5951.7	581.9	4.3	-2.9	-5.3	-8.6	-124.5	-124.5	-568.5	
22	6441	89.70	257.00	5951.9	613.9	0.0	0.0	-4.1	-9.4	-131.6	-131.6	-599.7	
23	6472	90.30	258.40	5951.9	644.9	4.9	1.9	-2.8	-9.9	-138.3	-138.3	-630.0	
24	6504	89.90	260.20	5951.8	676.9	5.8	-1.2	-1.3	-9.4	-144.2	-144.2	-661.4	

SCIENTIFIC DRILLING

HORIZONTAL SURVEY PROGRAM
MINIMUM CURVATURE CALCULATIONS(SPE-3362)

OPERATOR: TEXACO E. & P., INC

START: 9/6/00

WELL: V.G.W.U. #78 (WEST LATERAL)

FINISH:

LOCATION: LEA COUNTY, NEW MEXICO

INFORMATION PROVIDED BY: SDI

HORIZONTAL COORDINATOR: B. LAMB - B. HOFFMAN

JOB NO: 32D0900353

DIP1 = -2.50 deg = 87.50 deg
TARGET1 = 5,930 ft TVD
VS1 = 207 ft
DIP2 = -2.16 deg = 87.84
TARGET2 = 5,960 ft TVD
VS2 = 1,000 ft

8.83 DIRECTION: 258.50

DATE: 09/13/00 TIME: 5:33 AM DECLINATION=

DATE.	SVY #	MEASURED DEPTH	INCL (DRIFT)	AZIMUTH (DIR)	TRUE		VERTICAL SECTION	DLS/ 100	ACTUAL BUR	CENTER		RIGHT(+) LEFT(-)	NORTH(+) SOUTH(-)	EAST(+) WEST(-)
					VERTICAL DEPTH	VERTICAL SECTION				ABOVE(+) BELOW(-)	ABOVE(+) BELOW(-)			
	25	6535	90.30	260.50	5951.8	707.9	1.6	1.3	0.1	-8.4	-149.4	-692.0		
	26	6567	89.20	260.20	5951.9	739.9	3.6	-3.4	1.4	-7.4	-154.8	-723.5		
	27	6599	88.90	260.50	5952.4	771.8	1.3	-0.9	2.2	-6.4	-160.1	-755.1		
	28	6631	88.30	260.50	5953.2	803.8	1.9	-1.9	2.8	-5.3	-165.4	-786.6		
	29	6662	89.40	260.50	5953.8	834.8	3.5	3.5	3.6	-4.2	-170.5	-817.2		
	30	6694	89.70	260.90	5954.1	866.8	1.6	0.9	4.7	-2.9	-175.7	-848.8		
	31	6726	88.20	260.50	5954.7	898.7	4.9	-4.7	5.5	-1.7	-180.9	-880.3		
	32	6757	87.30	259.90	5955.9	929.7	3.5	-2.9	5.7	-0.8	-186.1	-910.9		
	33	6788	86.70	260.20	5957.5	960.6	2.2	-1.9	5.4	0.0	-191.5	-941.4		
	34	6819	86.70	260.20	5959.3	991.6	0.0	0.0	5.0	1.0	-196.7	-971.8		
	TD	6828	86.70	260.20	5959.8	1000.0	0.0	0.0	0.2	1.2	-198.2	-980.2		

SCIENTIFIC DRILLING

HORIZONTAL SURVEY PROGRAM

MINIMUM CURVATURE CALCULATIONS(SPE-3362)

OPERATOR: **TEXACO E. & P., INC**

WELL: **V.G.W.U. #78 (EAST LATERAL)**

LOCATION: **LEA COUNTY, NEW MEXICO**

JOB NO: **32D0900353**

START: **9/6/00**

FINISH: **9/13/00**

INFORMATION PROVIDED BY: **SDI**

HORIZONTAL COORDINATOR: **B. LAMB - B. HOFFMAN**

DIP1 = 1.37 deg = 91.37 deg

TARGET1 = 5,930 ft TVD

VS1 = 203 ft

DIP2 = 1.37 deg = 91.37 deg

TARGET2 = 5,910 ft TVD

VS2 = 1,000 ft

DATE: **9/13/00** TIME: **6:20 AM** DECLINATION= **8.83** DIRECTION: **90.00**

CENTER

TRUE

SVY #	MEASURED DEPTH	INCL (DRIFT)	AZIMUTH (DIR)	VERTICAL DEPTH	VERTICAL SECTION	DLS/ 100	ACTUAL BUR	ABOVE(+) BELOW(-)	RIGHT(+) LEFT(-)	NORTH(+) SOUTH(-)	EAST(+) WEST(-)
TIE	5741	1.13	29.70	5739.5	7.0	0.0	0.0	195.1	-1.7	1.7	7.0
1	5790	19.00	87.90	5787.6	15.3	37.6	36.5	146.8	-2.4	2.4	15.3
2	5800	22.70	91.10	5796.9	18.8	38.7	37.0	137.4	-2.4	2.4	18.8
3	5810	26.20	91.80	5806.0	23.0	35.1	35.0	128.2	-2.3	2.3	23.0
4	5850	39.40	89.70	5839.6	44.6	33.1	33.0	94.1	-2.1	2.1	44.6
5	5866	44.00	87.60	5851.5	55.2	30.0	28.8	81.9	-2.4	2.4	55.2
6	5898	52.40	86.20	5872.8	79.0	26.5	26.3	60.0	-3.7	3.7	79.0
7	5930	60.90	89.00	5890.4	105.7	27.5	26.6	41.8	-4.8	4.8	105.7
8	5961	67.90	93.90	5903.8	133.6	26.7	22.6	27.8	-4.0	4.0	133.6
9	5993	73.40	93.60	5914.4	163.7	17.2	17.2	16.4	-2.1	2.1	163.7
10	6024	78.80	92.20	5921.8	193.8	18.0	17.4	8.3	-0.5	0.5	193.8
11	6056	85.00	91.10	5926.3	225.4	19.7	19.4	3.0	0.4	-0.4	225.4
12	6087	88.50	89.70	5928.1	256.4	12.2	11.3	0.5	0.6	-0.6	256.4
13	6119	90.10	90.40	5928.5	288.4	5.5	5.0	-0.6	0.6	-0.6	288.4
14	6151	92.40	90.40	5927.8	320.4	7.2	7.2	-0.7	0.8	-0.8	320.4
15	6182	92.60	90.40	5926.4	351.3	0.6	0.6	-0.1	1.0	-1.0	351.3
16	6214	89.60	89.00	5925.8	383.3	10.3	-9.4	-0.2	0.9	-0.9	383.3
17	6246	89.70	90.00	5926.0	415.3	3.1	0.3	-1.2	0.6	-0.6	415.3
18	6277	91.30	90.70	5925.8	446.3	5.6	5.2	-1.7	0.8	-0.8	446.3
19	6308	92.20	90.70	5924.8	477.3	2.9	2.9	-1.5	1.2	-1.2	477.3
20	6341	93.60	91.10	5923.1	510.3	4.4	4.2	-0.6	1.7	-1.7	510.3
21	6372	93.30	90.00	5921.3	541.2	3.7	-1.0	0.5	2.0	-2.0	541.2
22	6402	92.40	89.70	5919.8	571.2	3.2	-3.0	1.3	1.9	-1.9	571.2
23	6436	91.10	89.70	5918.7	605.1	3.8	-3.8	1.5	1.7	-1.7	605.1

SCIENTIFIC DRILLING

HORIZONTAL SURVEY PROGRAM

MINIMUM CURVATURE CALCULATIONS(SPE-3362)

OPERATOR: **TEXACO E. & P., INC**

WELL: **V.G.W.U. #78 (EAST LATERAL)**

LOCATION: **LEA COUNTY, NEW MEXICO**

JOB NO: **32D0900353**

START: **9/6/00**

FINISH: **9/13/00**

INFORMATION PROVIDED BY: **SDI**

HORIZONTAL COORDINATOR: **B. LAMB - B. HOFFMAN**

DIP1 = 1.37 deg = 91.37 deg

TARGET1 = 5,930 ft TVD

VS1 = 203 ft

DIP2 = 1.37 deg

TARGET2 = 5,910 ft TVD

VS2 = 1,000 ft

DATE: **9/13/00** TIME: **6:20 AM** DECLINATION = **8.83** DIRECTION: **90.00**

TRUE

CENTER

SVY #	MEASURED DEPTH	INCL (DRIFT)	AZIMUTH (DIR)	VERTICAL DEPTH	VERTICAL SECTION	DLS/ 100	ACTUAL BUR	ABOVE(+) BELOW(-)	RIGHT(+) LEFT(-)	NORTH(+) SOUTH(-)	EAST(+) WEST(-)
24	6467	90.10	89.70	5918.4	636.1	3.2	-3.2	1.1	1.6	-1.6	636.1
25	6499	90.30	89.30	5918.3	668.1	1.4	0.6	0.5	1.3	-1.3	668.1
26	6530	90.80	89.00	5918.0	699.1	1.9	1.6	0.0	0.8	-0.8	699.1
27	6562	90.60	90.00	5917.6	731.1	3.2	-0.6	-0.3	0.5	-0.5	731.1
28	6594	90.10	90.70	5917.4	763.1	2.7	-1.6	-0.9	0.7	-0.7	763.1
29	6626	89.70	90.70	5917.5	795.1	1.3	-1.2	-1.7	1.1	-1.1	795.1
30	6657	90.60	90.00	5917.4	826.1	3.7	2.9	-2.4	1.3	-1.3	826.1
31	6689	93.30	88.60	5916.3	858.1	9.5	8.4	-2.1	0.9	-0.9	858.1
32	6720	93.10	87.90	5914.6	889.0	2.3	-0.6	-1.1	0.0	0.0	889.0
33	6751	92.60	88.30	5913.0	920.0	2.1	-1.6	-0.3	-1.0	1.0	920.0
34	6783	91.50	91.40	5911.9	952.0	10.3	-3.4	0.1	-1.1	1.1	952.0
35	6814	91.70	90.70	5911.0	982.9	2.3	0.6	0.2	-0.6	0.6	982.9
TD	6831	91.70	90.70	5910.5	1000.0	0.0	0.0	-0.5	-0.3	0.3	1000.0