

Devon Energy

Eddy County

Sec 5 - T17S - R28E U L E

Mark Twain 5 Fed Com #3H

30-015-37429

1490 FNL 330 FWL

Wellbore #1

Survey: Survey #1

Standard Survey Report

18 April, 2011

Great White Directional Services

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Mark Twain 5 Fed Com #3H
Project:	Eddy County	TVD Reference:	WELL @ 3611.0usft (Original Well Elev)
Site:	Sec 5 - T17S - R28E	MD Reference:	WELL @ 3611.0usft (Original Well Elev)
Well:	Mark Twain 5 Fed.Com #3H	North Reference:	Grid:
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000:1 Single User Db.

Project	Eddy County		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Sec 5 - T17S - R28E		
Site Position:		Northing:	677,501.83 usft
From:	Map	Easting:	585,152.74 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 51' 44.617 N
		Longitude:	104° 11' 26.292 W
		Grid Convergence:	0.08 °

Well	Mark Twain 5 Fed Com #3H		
Well Position	+N-S	0.0 usft	Northing: 678,394.92 usft
	+E-W	0.0 usft	Easting: 584,791.30 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft
		Latitude:	32° 51' 53.459 N
		Longitude:	104° 11' 30.516 W
		Ground Level:	0.0 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	03/08/11	(°)
			7.95
			60.68
			48,959

Design	Wellbore #1		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N-S	+E-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
		Direction	(°)
			275.57

Survey Program	Date	04/18/11		
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
5,871.0	10,504.0	Survey #1 (Wellbore #1)	MWD	MWD - Default

Survey									
Measured Depth	Inclination	Azimuth	Vertical Depth	+N-S	+E-W	Vertical Section	Dogleg Rate	Build Rate	Turn Rate
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)
5,800.0	0.63	49.45	5,799.7	22.1	-8.8	10.9	0.00	0.00	0.00
5,871.0	0.50	53.20	5,870.7	22.5	-8.3	10.4	0.19	-0.18	5.28
5,902.0	1.10	285.60	5,901.7	22.7	-8.4	10.6	4.71	1.94	-411.61
5,934.0	4.50	269.90	5,933.7	22.8	-10.0	12.2	10.79	10.63	-49.06
5,966.0	8.40	269.40	5,965.5	22.8	-13.6	15.7	12.19	12.19	-1.56
5,998.0	12.00	271.90	5,997.0	22.8	-19.2	21.4	11.33	11.25	7.81
6,029.0	14.90	273.40	6,027.1	23.2	-26.4	28.6	9.42	9.35	4.84
6,061.0	17.10	273.20	6,057.9	23.7	-35.2	37.4	6.88	6.88	-0.63
6,093.0	19.30	272.90	6,088.3	24.2	-45.2	47.4	6.88	6.88	-0.94
6,124.0	21.60	273.40	6,117.3	24.8	-56.0	58.2	7.44	7.42	1.61

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Site:	Sec 5 - T17S - R28E	MD Reference:	WELL: @ 3611.0usft (Original Well Elev)
Well:	Mark Twain 5 Fed Com #3H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,156.0	24.50	273.60	6,146.8	25.6	-68.5	70.7	9.07	9.06	0.63
6,188.0	27.40	274.20	6,175.5	26.6	-82.5	84.7	9.10	9.06	1.88
6,220.0	29.90	275.00	6,203.6	27.8	-97.8	100.0	7.90	7.81	2.50
6,251.0	32.60	275.10	6,230.1	29.2	-113.8	116.1	8.71	8.71	0.32
6,283.0	35.60	274.90	6,256.6	30.8	-131.7	134.1	9.38	9.38	-0.63
6,315.0	37.80	274.70	6,282.3	32.4	-150.8	153.2	6.89	6.88	-0.63
6,346.0	40.00	274.00	6,306.4	33.8	-170.2	172.6	7.24	7.10	-2.26
6,378.0	42.40	274.00	6,330.5	35.3	-191.2	193.7	7.50	7.50	0.00
6,410.0	45.20	274.50	6,353.6	36.9	-213.3	215.9	8.82	8.75	1.56
6,441.0	47.30	275.40	6,375.0	38.9	-235.6	238.2	7.09	6.77	2.90
6,473.0	49.90	276.10	6,396.2	41.3	-259.5	262.2	8.29	8.13	2.19
6,505.0	53.40	276.70	6,416.0	44.1	-284.4	287.3	11.04	10.94	1.88
6,536.0	57.30	277.20	6,433.6	47.2	-309.7	312.8	12.65	12.58	1.61
6,568.0	60.40	277.20	6,450.2	50.6	-336.9	340.2	9.69	9.69	0.00
6,600.0	63.60	277.00	6,465.2	54.1	-364.9	368.4	10.02	10.00	-0.63
6,632.0	66.50	276.60	6,478.7	57.5	-393.7	397.4	9.13	9.06	-1.25
6,663.0	69.80	276.50	6,490.2	60.8	-422.3	426.2	10.65	10.65	-0.32
6,695.0	73.00	276.30	6,500.4	64.2	-452.4	456.5	10.02	10.00	-0.63
6,727.0	75.20	276.30	6,509.2	67.6	-483.0	487.3	6.88	6.88	0.00
6,759.0	78.10	275.80	6,516.6	70.9	-514.0	518.4	9.19	9.06	-1.56
6,790.0	81.10	275.50	6,522.2	73.9	-544.3	548.9	9.72	9.68	-0.97
6,822.0	84.50	275.40	6,526.2	76.9	-575.9	580.7	10.63	10.63	-0.31
6,854.0	86.40	275.10	6,528.7	79.8	-607.7	612.6	6.01	5.94	-0.94
6,885.0	89.00	276.90	6,530.0	83.0	-638.5	643.5	10.20	8.39	5.81
6,917.0	89.40	276.80	6,530.4	86.8	-670.2	675.5	1.29	1.25	-0.31
6,948.0	89.80	277.00	6,530.7	90.6	-701.0	706.5	1.44	1.29	0.65
7,012.0	90.20	276.90	6,530.7	98.3	-764.6	770.5	0.64	0.63	-0.16
7,106.0	89.60	275.80	6,530.8	108.7	-858.0	864.5	1.33	-0.64	-1.17
7,202.0	88.00	275.00	6,532.8	117.7	-953.5	960.4	1.86	-1.67	-0.83
7,297.0	89.10	275.30	6,535.2	126.3	-1,048.1	1,055.4	1.20	1.16	0.32
7,391.0	89.60	275.20	6,536.3	134.9	-1,141.7	1,149.4	0.54	0.53	-0.11
7,487.0	90.70	274.80	6,536.0	143.2	-1,237.3	1,245.4	1.22	1.15	-0.42
7,519.0	90.40	275.20	6,535.7	146.0	-1,269.2	1,277.4	1.56	-0.94	1.25
7,550.0	89.50	275.40	6,535.8	148.9	-1,300.1	1,308.4	2.97	-2.90	0.65
7,582.0	89.50	275.30	6,536.0	151.9	-1,331.9	1,340.4	0.31	0.00	-0.31
7,614.0	89.60	275.20	6,536.3	154.8	-1,363.8	1,372.4	0.44	0.31	-0.31
7,645.0	89.80	275.30	6,536.5	157.6	-1,394.7	1,403.4	0.72	0.65	0.32
7,677.0	90.00	275.30	6,536.5	160.6	-1,426.5	1,435.4	0.63	0.63	0.00
7,709.0	89.50	275.00	6,536.7	163.5	-1,458.4	1,467.4	1.82	-1.56	-0.94
7,740.0	89.40	275.00	6,537.0	166.2	-1,489.3	1,498.4	0.32	-0.32	0.00
7,772.0	89.50	274.90	6,537.3	168.9	-1,521.2	1,530.4	0.44	0.31	-0.31
7,867.0	89.70	275.30	6,537.9	177.4	-1,615.8	1,625.4	0.47	0.21	0.42
7,962.0	89.40	276.00	6,538.7	186.7	-1,710.3	1,720.4	0.80	-0.32	0.74
8,057.0	89.60	276.10	6,539.5	196.7	-1,804.8	1,815.4	0.24	0.21	0.11

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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,152.0	89.10	276.30	6,540.6	207.0	-1,899.2	1,910.4	0.57	-0.53	0.21
8,247.0	89.50	276.20	6,541.7	217.3	-1,993.7	2,005.3	0.43	0.42	-0.11
8,342.0	90.40	276.50	6,541.8	227.8	-2,088.1	2,100.3	1.00	0.95	0.32
8,437.0	89.20	276.90	6,542.1	238.9	-2,182.4	2,195.3	1.33	-1.26	0.42
8,533.0	89.60	275.90	6,543.2	249.6	-2,277.8	2,291.3	1.12	0.42	-1.04
8,628.0	88.70	275.60	6,544.6	259.1	-2,372.3	2,386.3	1.00	-0.95	-0.32
8,723.0	88.80	275.00	6,546.6	267.9	-2,466.9	2,481.3	0.64	0.11	-0.63
8,818.0	89.50	275.00	6,548.0	276.2	-2,561.5	2,576.2	0.74	0.74	0.00
8,913.0	90.50	274.40	6,548.0	284.0	-2,656.2	2,671.2	1.23	1.05	-0.63
9,008.0	88.60	274.00	6,548.8	290.9	-2,750.9	2,766.2	2.04	-2.00	-0.42
9,103.0	89.60	273.90	6,550.3	297.5	-2,845.7	2,861.1	1.06	1.05	-0.11
9,198.0	89.10	274.10	6,551.4	304.1	-2,940.5	2,956.1	0.57	-0.53	0.21
9,293.0	88.80	275.50	6,553.1	312.1	-3,035.1	3,051.1	1.51	-0.32	1.47
9,388.0	89.70	275.60	6,554.3	321.2	-3,129.7	3,146.1	0.95	0.95	0.11
9,483.0	89.30	274.90	6,555.2	329.9	-3,224.3	3,241.1	0.85	-0.42	-0.74
9,578.0	88.30	274.80	6,557.2	338.0	-3,318.9	3,336.0	1.06	-1.05	-0.11
9,673.0	88.90	274.60	6,559.5	345.7	-3,413.5	3,431.0	0.67	0.63	-0.21
9,768.0	89.10	275.30	6,561.1	353.9	-3,508.2	3,526.0	0.77	0.21	0.74
9,863.0	89.00	275.10	6,562.7	362.5	-3,602.8	3,621.0	0.24	-0.11	-0.21
9,959.0	89.60	274.70	6,563.9	370.7	-3,698.4	3,716.9	0.75	0.63	-0.42
10,054.0	89.70	276.00	6,564.5	379.6	-3,793.0	3,811.9	1.37	0.11	1.37
10,149.0	90.50	276.00	6,564.3	389.5	-3,887.5	3,906.9	0.84	0.84	0.00
10,244.0	89.80	276.10	6,564.1	399.5	-3,981.9	4,001.9	0.74	-0.74	0.11
10,339.0	90.50	275.80	6,563.8	409.4	-4,076.4	4,096.9	0.80	0.74	-0.32
10,434.0	90.60	274.70	6,562.9	418.1	-4,171.0	4,191.9	1.16	0.11	-1.16
10,504.0	90.60	274.70	6,562.2	423.8	-4,240.8	4,261.9	0.00	0.00	0.00

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Target #1	0.00	0.00	6,530.0	413.7	-4,242.3	678,808.61	580,549.05	32° 51' 57.606 N	104° 12' 20.249 W
- survey misses target center by 33.8usft at 10504.0usft MD (6562.2 TVD, 423.8 N, -4240.8 E)									
- Point									

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates	Comment
10,434.0	6,562.9	418.1	Last MWD Survey
10,504.0	6,562.2	423.8	Projection to TD

Checked By: _____

Approved By: _____

Date: _____