

Results of Directional Survey

LAT 1 ST 1

API number:	30-025-40016			
OGRID:		Operator:	DEVON ENERGY PRODUCTION COMPANY, LP	
		Property:	THISTLE UNIT	# 32H

surface	ULSTR:	P	33	T	23S	R	33E
				150	FSL	150	FEL

BH Loc ST 1	ULSTR:	A	33	T	23S	R	33E
13162	MD	8993.0	TVD	4505	FSL	1180	FEL
				775	FNL		

Top Perf/OH	ULSTR:	I	33	T	23S	R	33E
10160 *	MD	8968.1	TVD	1568	FSL	452	FEL

* Tie in to Lateral 1

Bot Perf/OH	ULSTR:	H	33	T	23S	R	33E
11586	MD	8968.1	TVD	2961	FSL	756	FEL

TIE in to sidetrack 2

	MD	N/S	E/W	VD
	10098	1358.63	-285.44	8966.51
TOP PERFS/OH	10160	1418.44	-301.58	8968.78
	10160	1418.44	-301.58	8968.78
	11578	2803.55	-604.01	8962.65
BOT PERFS/OH	11586	2811.35	-605.81	8962.65
	11586	2811.35	-605.81	8962.65

NEXT TO LAST	13066	4260.99	-1014.90	8994.59
LAST READING	13162	4355.21	-1029.74	8992.91
TD	13162	4355.21	-1029.74	8992.91

Surface Location	150	FS	150	FE
Projected BHL	4505	FS	1180	FE
Location of				
Top Perfs/OH	1568	FS	452	FE
Bottom Perfs/OH	2961	FS	756	FE

SUMMARY of Subsurface Locations

Surface Location	P-33-23S-33E	150	FS	150	FE	Vert. Depth
Top Perfs/OH	I-33-23S-33E	1568	FS	452	FE	8968.78
Bottom Perfs/OH	H-33-23S-33E	2961	FS	756	FE	8962.65
Projected TD	A-33-23S-33E	4505	FS	1180	FE	8992.91



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Devon Energy Production Co, LP

Lea Co., New Mexico (Nad 83)

Thistle Unit #32H

Thistle Unit #32H

30-025-40016

Lateral #1

Survey: Sidetrack #1

SUR: P-33-23s-33e, 150/S & 150/E

LAT 1, Sidetrack #1

BHL: A-33-23s-33e, 4505/S & 1180/E

API # 30-025-40016

Standard Survey Report

31 August, 2011



CUDD Drilling and Measurement Survey Report

Company:	Devon Energy Production Co, LP	Local Co-ordinate Reference:	Site Thistle Unit #32H
Project:	Lea Co., New Mexico (Nad 83)	TVD Reference:	WELL @ 3663.00ft (Original Well Elev)
Site:	Thistle Unit #32H	MD Reference:	WELL @ 3663 00ft (Original Well Elev)
Well:	Thistle Unit #32H	North Reference:	Grid
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Lateral #1	Database:	EDM 5000.1 Single User Db

Project	Lea Co., New Mexico (Nad 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Thistle Unit #32H, Sec 33, T-23S, R-33E		
Site Position:		Northing:	457,042 52 usft
From:	Map	Easting:	777,566 44 usft
Position Uncertainty:	0 00 ft	Slot Radius:	13-3/16 "
		Latitude:	32° 15' 15 026 N
		Longitude:	103° 34' 9 010 W
		Grid Convergence:	0.41 °

Well	Thistle Unit #32H		
Well Position	+N/-S	0 00 ft	Northing: 457,042.52 usft
	+E/-W	0 00 ft	Easting: 777,566 44 usft
Position Uncertainty	0.00 ft	Wellhead Elevation:	3,663.00 ft
		Ground Level:	3,644 00 ft

Wellbore	Lateral #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	6/15/2011	7.58	60 24	48,670

Design	Lateral #1				
Audit Notes:					
Version:	1 0	Phase:	ACTUAL	Tie On Depth:	0 00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0 00	0.00	348 02	

Survey Program	Date	8/31/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
99 00	8,362 60	Gyro (Lateral #1)	NS-GYRO-MS	North sensing gyrocompassing m/s	
8,394.00	10,098 00	Lateral #1 (Lateral #1)	CUDD MWD	MWD - Standard CUDD MWD	
10,160 00	11,578 00	Sidetrack #1 (Lateral #1)	CUDD MWD	MWD - Standard CUDD MWD	
11,586 00	13,792 00	Sidetrack #2 (Lateral #1)	CUDD MWD	MWD - Standard CUDD MWD	

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,098 00	88.50	344 90	8,966.51	1,358.63	-285.44	1,388.28	0 00	0 00	0.00
Tie-in to OH									
10,160.00	87.30	344 90	8,968 78	1,418.44	-301.58	1,450 15	1 94	-1 94	0 00
10,170 00	87.00	345 80	8,969 28	1,428.11	-304.10	1,460.12	9.48	-3 00	9 00
10,180.00	87 20	346 70	8,969.79	1,437.81	-306 48	1,470 11	9.21	2 00	9 00
10,190 00	87 90	347 20	8,970 22	1,447.54	-308 73	1,480 10	8.60	7.00	5 00
10,200 00	88 80	348.00	8,970 50	1,457.30	-310 88	1,490 09	12 04	9 00	8 00
10,224.00	90 30	349 20	8,970 69	1,480.83	-315.62	1,514 09	8 00	6 25	5 00



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Site:	Thistle Unit #32H	MD Reference:	WELL @ 3663.00ft (Original Well Elev)
Well:	Thistle Unit #32H	North Reference:	Grnd
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Lateral #1	Database:	EDM 5000 1 Single User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,283.00	90.40	348.90	8,970.33	1,538.75	-326.83	1,573.08	0.54	0.17	-0.51
10,375.00	90.50	348.80	8,969.61	1,629.01	-344.62	1,665.06	0.15	0.11	-0.11
10,467.00	91.40	348.50	8,968.08	1,719.20	-362.72	1,757.05	1.03	0.98	-0.33
10,560.00	89.80	347.50	8,967.11	1,810.16	-382.06	1,850.04	2.03	-1.72	-1.08
10,652.00	90.60	348.10	8,966.79	1,900.08	-401.50	1,942.03	1.09	0.87	0.65
10,745.00	91.70	348.60	8,964.92	1,991.14	-420.27	2,035.01	1.30	1.18	0.54
10,838.00	90.20	347.50	8,963.38	2,082.11	-439.53	2,127.99	2.00	-1.61	-1.18
10,930.00	89.30	348.00	8,963.78	2,172.01	-459.05	2,219.99	1.12	-0.98	0.54
11,023.00	89.20	347.10	8,965.00	2,262.82	-479.09	2,312.98	0.97	-0.11	-0.97
11,115.00	90.20	347.20	8,965.48	2,352.51	-499.55	2,404.97	1.09	1.09	0.11
11,209.00	90.30	347.10	8,965.07	2,444.16	-520.46	2,498.96	0.15	0.11	-0.11
11,301.00	91.20	346.90	8,963.87	2,533.79	-541.15	2,590.93	1.00	0.98	-0.22
11,394.00	89.90	347.30	8,962.97	2,624.44	-561.91	2,683.91	1.46	-1.40	0.43
11,486.00	90.00	346.60	8,963.05	2,714.06	-582.69	2,775.90	0.77	0.11	-0.76
11,578.00	90.50	346.60	8,962.65	2,803.55	-604.01	2,867.87	0.54	0.54	0.00
11,671.00	90.30	348.30	8,962.00	2,894.33	-624.21	2,960.86	1.84	-0.22	1.83
11,763.00	91.30	348.30	8,960.72	2,984.41	-642.87	3,052.85	1.09	1.09	0.00
11,855.00	92.20	347.90	8,957.91	3,074.38	-661.83	3,144.80	1.07	0.98	-0.43
11,956.00	88.80	348.70	8,957.03	3,173.27	-682.31	3,245.78	3.46	-3.37	0.79
12,048.00	88.20	348.70	8,959.44	3,263.45	-700.33	3,337.74	0.65	-0.65	0.00
12,141.00	88.10	348.70	8,962.44	3,354.60	-718.54	3,430.69	0.11	-0.11	0.00
12,234.00	87.70	348.50	8,965.85	3,445.71	-736.91	3,523.62	0.48	-0.43	-0.22
12,327.00	88.00	348.10	8,969.34	3,536.71	-755.76	3,616.55	0.54	0.32	-0.43
12,418.00	87.00	348.70	8,973.30	3,625.76	-774.04	3,707.46	1.28	-1.10	0.66
12,511.00	86.80	348.30	8,978.33	3,716.76	-792.55	3,800.32	0.48	-0.22	-0.43
12,603.00	86.80	348.70	8,983.47	3,806.78	-810.87	3,892.18	0.43	0.00	0.43
12,696.00	86.50	348.70	8,988.90	3,897.82	-829.06	3,985.01	0.32	-0.32	0.00
12,788.00	87.80	349.30	8,993.48	3,988.01	-846.59	4,076.88	1.56	1.41	0.65
12,880.00	89.10	349.00	8,995.97	4,078.33	-863.90	4,168.83	1.45	1.41	-0.33
12,973.00	90.80	349.30	8,996.05	4,169.67	-881.41	4,261.81	1.86	1.83	0.32
13,066.00	91.00	349.00	8,994.59	4,260.99	-898.91	4,354.78	0.39	0.22	-0.32
Last CUDD survey									
13,162.00	91.00	349.00	8,992.91	4,355.21	-917.23	4,450.75	0.00	0.00	0.00
Projection to bit									

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
10,098.00	8,966.51	1,358.63	-285.44	Tie-in to OH
13,066.00	8,994.59	4,260.99	-898.91	Last CUDD survey
13,162.00	8,992.91	4,355.21	-917.23	Projection to bit



CUDD Drilling and Measurement

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Checked By: _____ Approved By: _____ Date: _____