

Survey Certification Form

State of NM
Eddy County

30-015-40681

I, Randy W. Rakowitz, certify that; I am employed by LEAM Drilling Systems LLC, that I did on the day(s) of 05/03/2013 through 05/09/2013, conduct or supervise the taking of MWD Survey from a depth of 6,143' to 11,244' MD; that the data is true, correct, complete and within the limitations of the tools as set forth by LEAM Drilling Systems LLC, that I am authorized and qualified to make this report; that this survey was conducted at the request of Devon Energy for the Burton Flat Deep Unit #51H in Eddy County, NM; and that I reviewed this report and find that it conforms to the principals and procedures as set forth by LEAM Drilling Systems LLC.

A handwritten signature in black ink, appearing to read 'Randy W. Rakowitz', written over a horizontal line.

Randy W. Rakowitz
MWD Operations Coordinator



July 3, 2013

Devon Energy
Well: Burton Flat Deep Unit #51H
County/Parish: Eddy County, NM

Leam MWD: (OH) from 6,143' MD – 11,178' MD
Projection: 11,244'

This Borehole Survey taken between 05/03/2013 and 05/09/2013 has been conducted and calculated according to the highest professional standards and complies with all known State and federal requirements.

Reviewed and Approved:

Date: July 3, 2013

*Physical & Mailing: 2010 East Davis, Conroe, TX 77301
936-756-7577 • 936-756-7595 Fax • 1 (800) 756-7504*

DEVON ENERGY

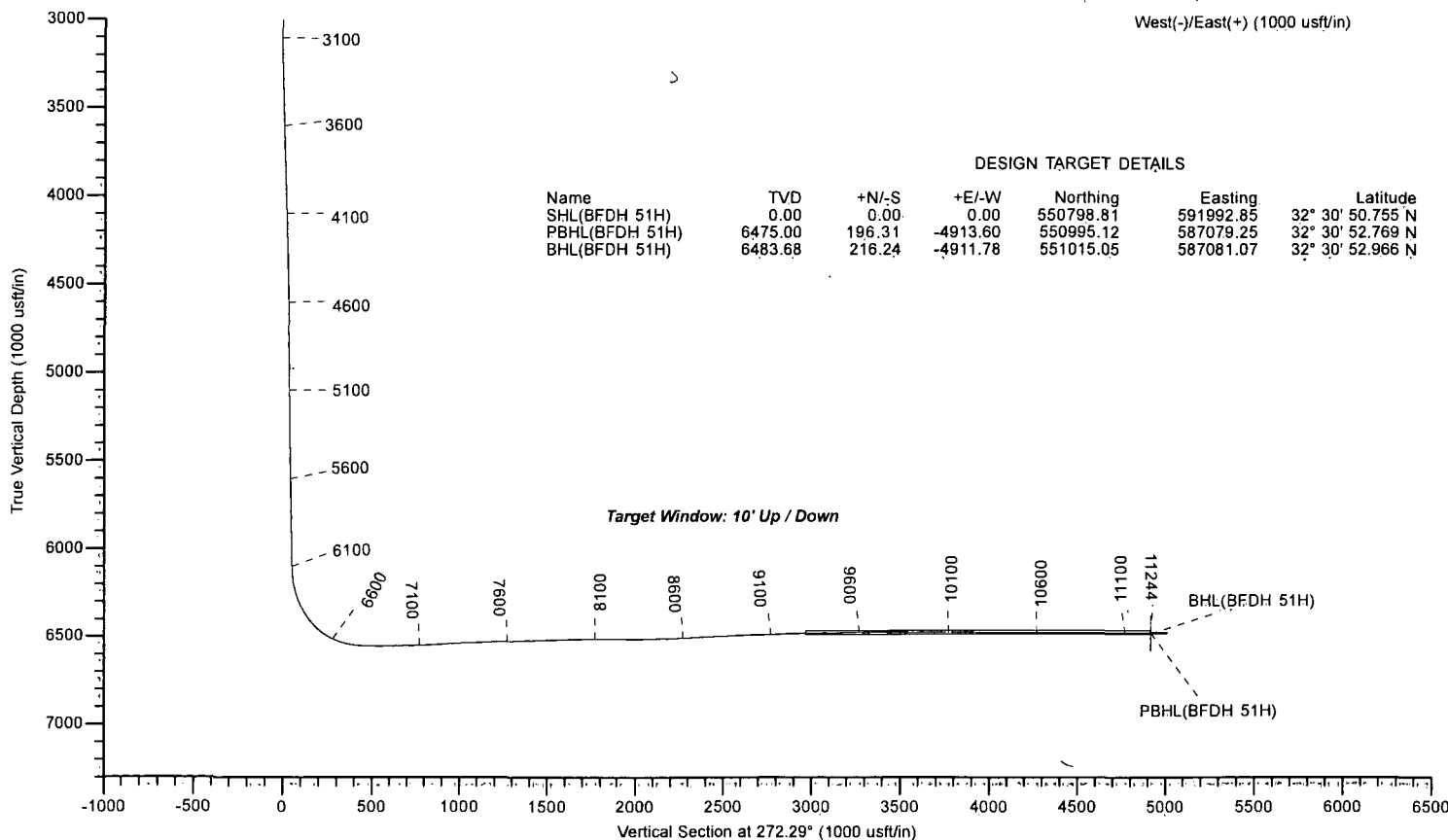
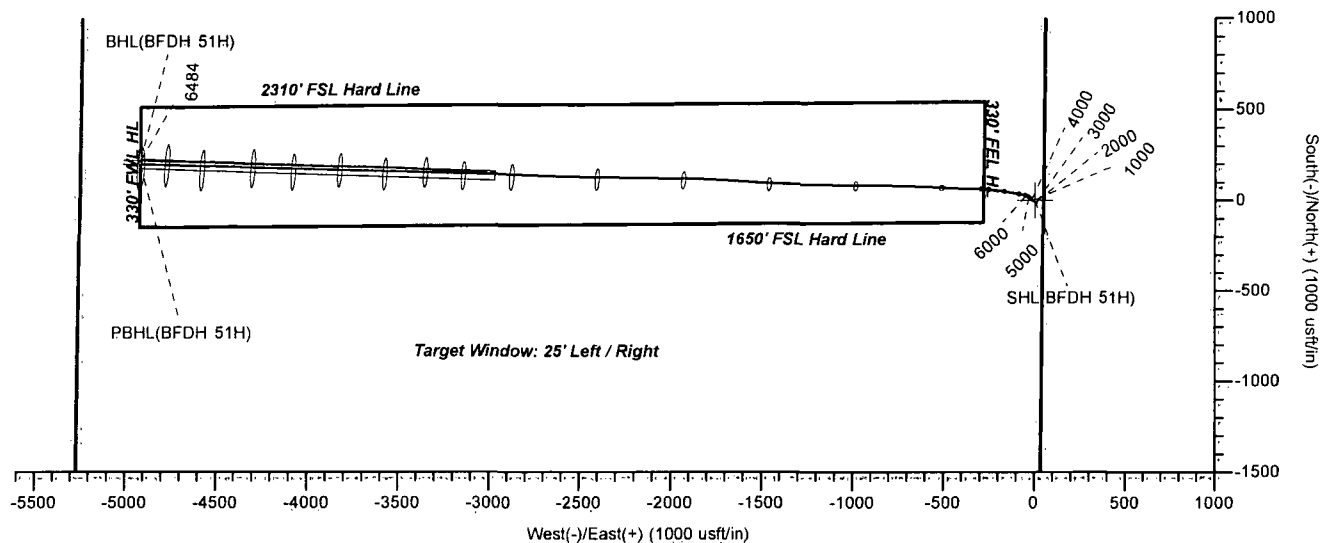
Project: Eddy County, NM (NAD-83)
 Site: Burton Flat Deep Unit
 Well: 51H
 Wellbore: OH
 Design: OH

devon



Azimuths to Grid North
 True North: -0.09°
 Magnetic North: 7.57°

Magnetic Field
 Strength: 48545.1snT
 Dip Angle: 60.31°
 Date: 04/08/2013
 Model: IGRF2010



DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL(BFDH 51H)	0.00	0.00	0.00	550798.81	591992.85	32° 30' 50.755 N	104° 10' 8.397 W
PBHL(BFDH 51H)	6475.00	196.31	-4913.60	550995.12	587079.25	32° 30' 52.769 N	104° 11' 5.780 W
BHL(BFDH 51H)	6483.68	216.24	-4911.78	551015.05	587081.07	32° 30' 52.966 N	104° 11' 5.758 W



LEAM DRILLING SYSTEMS LLC
 2010 East Davis, Conroe, Texas 77301
 Phone: 936/756-7577, Fax 936/756-7595

Design: OH (51H/OH)
 Burton Flat Deep Unit
 Created By: David Vogler
 Date: _____
 Approved: _____
 Date: 8:46, September 06 2013
 Date: _____

Leam Drilling Systems LLC

Survey Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 51H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE 3202' + KB 25' @ 3227.00usft (Cactus 126)
Site:	Burton Flat Deep Unit	MD Reference:	GE 3202' + KB 25' @ 3227.00usft (Cactus 126)
Well:	51H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Multi User DB

Project	Eddy County, NM (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	Burton Flat Deep Unit		
Site Position:		Northing:	548,073.21 usft
From:	Map	Easting:	592,066.43 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 30' 23.782 N
		Longitude:	104° 10' 7.587 W
		Grid Convergence:	0.09 °

Well	51H		
Well Position	+N/-S	0.00 usft	Northing: 550,798.81 usft
	+E/-W	0.00 usft	Easting: 591,992.85 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 30' 50.755 N
		Longitude:	104° 10' 8.397 W
		Ground Level:	3,202.00 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	04/08/13	(°)
			7.66
			Dip Angle (°)
			60.31
			Field Strength (nT)
			48,545

Design	OH		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction (°)
			272.29

Survey Program:	Date: 05/10/13		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
66.82	6,043.00	Survey #1 (OH)	NS-GYRO-MS
6,143.00	11,178.00	Survey #2 (OH)	LEAM MWD
11,244.00	11,244.00	Survey #3 (OH)	Project
			Description
			North sensing gyrocompassing m/s
			MWD - Standard
			Projection

Survey										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn	
Depth (usft)	(°)	(°)	Depth (usft)	(usft)	(usft)	Section (usft)	Rate (°/100usft)	Rate (°/100usft)	Rate (°/100usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
66.82	0.24	23.04	66.82	0.13	0.05	-0.05	0.36	0.36	0.00	
161.68	0.33	21.27	161.68	0.57	0.23	-0.21	0.10	0.09	-1.87	
256.54	0.54	22.53	256.54	1.23	0.50	-0.45	0.22	0.22	1.33	
351.40	0.51	23.09	351.39	2.03	0.84	-0.76	0.03	-0.03	0.59	
446.26	0.58	0.10	446.25	2.90	1.01	-0.89	0.24	0.07	-24.24	
541.12	0.71	35.05	541.10	3.86	1.34	-1.19	0.43	0.14	36.84	
635.98	0.74	69.20	635.95	4.56	2.25	-2.07	0.45	0.03	36.00	
730.84	0.75	39.32	730.81	5.26	3.22	-3.01	0.41	0.01	-31.50	

Leam Drilling Systems LLC

Survey Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 51H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE 3202' + KB 25' @ 3227.00usft (Cactus 126)
Site:	Burton Flat Deep Unit	MD Reference:	GE 3202' + KB 25' @ 3227.00usft (Cactus 126)
Well:	51H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Multi 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)
825.70	0.81	72.67	825.66	5.94	4.25	-4.01	0.48	0.06	35.16
920.56	0.57	64.42	920.51	6.34	5.32	-5.06	0.27	-0.25	-8.70
1,015.42	0.54	140.31	1,015.37	6.20	6.03	-5.78	0.72	-0.03	80.00
1,110.28	0.84	137.36	1,110.22	5.35	6.79	-6.57	0.32	0.32	-3.11
1,205.14	1.29	160.04	1,205.07	3.83	7.62	-7.46	0.64	0.47	23.91
1,300.00	1.39	148.86	1,299.90	1.85	8.58	-8.50	0.29	0.11	-11.79
1,394.86	1.18	135.46	1,394.74	0.16	9.86	-9.85	0.39	-0.22	-14.13
1,489.72	1.10	112.42	1,489.58	-0.88	11.39	-11.41	0.49	-0.08	-24.29
1,584.58	2.26	226.67	1,584.41	-2.51	10.87	-10.96	3.05	1.22	120.44
1,679.44	1.09	205.38	1,679.23	-4.61	9.12	-9.30	1.38	-1.23	-22.44
1,774.30	0.84	185.83	1,774.08	-6.12	8.66	-8.90	0.43	-0.26	-20.61
1,869.16	0.44	149.97	1,868.93	-7.12	8.78	-9.05	0.58	-0.42	-37.80
1,964.02	0.38	152.14	1,963.79	-7.72	9.11	-9.41	0.07	-0.06	2.29
2,058.88	0.45	147.64	2,058.65	-8.31	9.45	-9.78	0.08	0.07	-4.74
2,153.74	0.53	144.77	2,153.50	-8.98	9.90	-10.26	0.09	0.08	-3.03
2,248.60	0.48	146.32	2,248.36	-9.67	10.38	-10.76	0.05	-0.05	1.63
2,343.46	0.18	166.11	2,343.22	-10.15	10.63	-11.03	0.33	-0.32	20.86
2,438.32	0.12	201.69	2,438.08	-10.38	10.63	-11.04	0.11	-0.06	37.51
2,533.18	0.32	176.08	2,532.94	-10.74	10.61	-11.04	0.23	0.21	-27.00
2,628.04	0.40	197.58	2,627.80	-11.32	10.53	-10.98	0.16	0.08	22.66
2,722.90	0.26	218.02	2,722.65	-11.81	10.30	-10.76	0.19	-0.15	21.55
2,817.76	0.39	287.71	2,817.51	-11.88	9.86	-10.33	0.41	0.14	73.47
2,912.62	0.56	303.98	2,912.37	-11.52	9.17	-9.62	0.23	0.18	17.15
3,007.48	0.74	302.02	3,007.22	-10.94	8.26	-8.69	0.19	0.19	-2.07
3,102.34	1.01	312.15	3,102.07	-10.05	7.13	-7.52	0.33	0.28	10.68
3,197.20	1.67	310.98	3,196.91	-8.58	5.46	-5.80	0.70	0.70	-1.23
3,292.06	1.82	307.41	3,291.72	-6.76	3.22	-3.49	0.20	0.16	-3.76
3,386.92	1.82	309.59	3,386.53	-4.89	0.86	-1.06	0.07	0.00	2.30
3,481.78	1.73	299.14	3,481.35	-3.23	-1.55	1.42	0.35	-0.09	-11.02
3,576.64	1.79	292.80	3,576.16	-1.96	-4.16	4.08	0.21	0.06	-6.68
3,671.50	1.74	288.61	3,670.98	-0.92	-6.89	6.85	0.15	-0.05	-4.42
3,766.36	1.91	306.20	3,765.79	0.47	-9.53	9.55	0.61	0.18	18.54
3,861.22	1.94	321.29	3,860.60	2.66	-11.81	11.91	0.53	0.03	15.91
3,956.08	1.46	300.37	3,955.42	4.52	-13.86	14.03	0.82	-0.51	-22.05
4,050.94	1.36	290.41	4,050.25	5.52	-15.96	16.17	0.28	-0.11	-10.50
4,145.80	1.57	310.63	4,145.08	6.76	-18.00	18.26	0.58	0.22	21.32
4,240.66	1.59	313.23	4,239.90	8.51	-19.95	20.27	0.08	0.02	2.74
4,335.52	1.34	307.33	4,334.73	10.08	-21.79	22.17	0.31	-0.26	-6.22
4,430.38	1.31	322.20	4,429.57	11.61	-23.33	23.78	0.36	-0.03	15.68
4,525.24	1.35	311.69	4,524.40	13.21	-24.83	25.34	0.26	0.04	-11.08
4,620.10	1.52	292.26	4,619.23	14.43	-26.83	27.39	0.54	0.18	-20.48
4,714.96	1.43	303.15	4,714.06	15.56	-28.99	29.58	0.31	-0.09	11.48
4,809.82	1.11	308.67	4,808.90	16.78	-30.69	31.34	0.36	-0.34	5.82

Leam Drilling Systems LLC

Survey Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 51H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE 3202' + KB 25' @ 3227.00usft (Cactus 126)
Site:	Burton Flat Deep Unit	MD Reference:	GE 3202' + KB 25' @ 3227.00usft (Cactus 126)
Well:	51H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Multi 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)
4,904.68	1.07	302.64	4,903.74	17.83	-32.16	32.84	0.13	-0.04	-6.36
4,999.54	1.06	314.39	4,998.58	18.92	-33.53	34.26	0.23	-0.01	12.39
5,094.40	0.65	296.92	5,093.43	19.78	-34.64	35.40	0.51	-0.43	-18.42
5,189.26	0.76	299.53	5,188.29	20.33	-35.66	36.45	0.12	0.12	2.75
5,284.12	0.71	292.50	5,283.14	20.87	-36.75	37.56	0.11	-0.05	-7.41
5,378.98	1.31	294.94	5,377.98	21.55	-38.28	39.11	0.63	0.63	2.57
5,473.84	1.23	308.18	5,472.82	22.64	-40.06	40.94	0.32	-0.08	13.96
5,568.70	0.90	283.21	5,567.66	23.44	-41.59	42.49	0.59	-0.35	-26.32
5,663.56	1.11	265.82	5,662.51	23.54	-43.23	44.14	0.39	0.22	-18.33
5,758.42	1.02	269.54	5,757.35	23.47	-44.99	45.89	0.12	-0.09	3.92
5,853.28	1.03	298.96	5,852.20	23.87	-46.58	47.50	0.55	0.01	31.01
5,948.14	1.36	323.12	5,947.04	25.19	-48.00	48.97	0.63	0.35	25.47
6,043.00	1.39	316.15	6,041.87	26.92	-49.48	50.51	0.18	0.03	-7.35
6,143.00	3.43	299.19	6,141.78	29.25	-52.93	54.06	2.14	2.04	-16.96
6,175.00	6.77	285.83	6,173.65	30.23	-55.58	56.74	11.01	10.44	-41.75
6,207.00	10.90	281.26	6,205.26	31.34	-60.36	61.57	13.08	12.91	-14.28
6,238.00	14.68	279.86	6,235.49	32.58	-67.11	68.36	12.23	12.19	-4.52
6,270.00	18.38	279.68	6,266.16	34.13	-76.08	77.39	11.56	11.56	-0.56
6,301.00	22.16	280.38	6,295.23	36.00	-86.66	88.02	12.22	12.19	2.26
6,333.00	25.59	280.03	6,324.49	38.29	-99.40	100.85	10.73	10.72	-1.09
6,364.00	28.84	280.56	6,352.06	40.83	-113.35	114.89	10.51	10.48	1.71
6,396.00	32.89	279.86	6,379.52	43.73	-129.50	131.15	12.71	12.66	-2.19
6,427.00	37.37	279.68	6,404.87	46.76	-147.08	148.83	14.46	14.45	-0.58
6,459.00	42.12	278.98	6,429.46	50.07	-167.26	169.13	14.91	14.84	-2.19
6,490.00	46.96	278.45	6,451.55	53.36	-188.75	190.73	15.66	15.61	-1.71
6,522.00	51.97	277.57	6,472.34	56.74	-212.82	214.92	15.79	15.66	-2.75
6,553.00	56.63	275.99	6,490.43	59.70	-237.81	240.01	15.59	15.03	-5.10
6,585.00	61.64	274.58	6,506.84	62.22	-265.16	267.43	16.11	15.66	-4.41
6,616.00	66.74	271.59	6,520.34	63.71	-293.01	295.32	18.60	16.45	-9.65
6,648.00	71.40	270.19	6,531.76	64.16	-322.89	325.19	15.12	14.56	-4.38
6,679.00	76.24	269.84	6,540.40	64.17	-352.65	354.93	15.65	15.61	-1.13
6,711.00	81.51	270.01	6,546.57	64.13	-384.04	386.29	16.48	16.47	0.53
6,743.00	85.65	272.47	6,550.15	64.82	-415.82	418.08	15.02	12.94	7.69
6,837.00	89.43	273.18	6,554.18	69.45	-509.60	511.97	4.09	4.02	0.76
6,932.00	92.24	272.47	6,552.80	74.13	-604.47	606.95	3.05	2.96	-0.75
7,026.00	92.51	272.12	6,548.90	77.89	-698.31	700.86	0.47	0.29	-0.37
7,121.00	91.80	270.71	6,545.33	80.24	-793.21	795.78	1.66	-0.75	-1.48
7,216.00	92.59	270.54	6,541.69	81.27	-888.13	890.67	0.85	0.83	-0.18
7,311.00	93.47	270.89	6,536.67	82.45	-982.99	985.50	1.00	0.93	0.37
7,406.00	92.42	270.89	6,531.79	83.93	-1,077.86	1,080.35	1.11	-1.11	0.00
7,501.00	93.12	271.07	6,527.20	85.55	-1,172.73	1,175.21	0.76	0.74	0.19
7,596.00	91.28	271.24	6,523.55	87.46	-1,267.64	1,270.12	1.95	-1.94	0.18
7,690.00	92.24	272.30	6,520.67	90.37	-1,361.54	1,364.07	1.52	1.02	1.13

Leam Drilling Systems LLC

Survey Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 51H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE 3202' + KB 25' @ 3227.00usft (Cactus 126)
Site:	Burton Flat Deep Unit	MD Reference:	GE 3202' + KB 25' @ 3227.00usft (Cactus 126)
Well:	51H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Multi 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)	
7,785.00	90.75	272.12	6,518.19	94.03	-1,456.44	1,459.03	1.58	-1.57	-0.19	
7,880.00	92.42	273.53	6,515.56	98.71	-1,551.28	1,553.99	2.30	1.76	1.48	
7,974.00	91.71	274.41	6,512.17	105.21	-1,644.99	1,647.88	1.20	-0.76	0.94	
8,068.00	89.87	273.53	6,510.88	111.72	-1,738.75	1,741.83	2.17	-1.96	-0.94	
8,162.00	89.60	272.12	6,511.31	116.35	-1,832.64	1,835.82	1.53	-0.29	-1.50	
8,257.00	89.34	270.54	6,512.19	118.56	-1,927.60	1,930.80	1.69	-0.27	-1.66	
8,351.00	89.52	270.71	6,513.13	119.58	-2,021.59	2,024.76	0.26	0.19	0.18	
8,446.00	91.63	270.36	6,512.17	120.47	-2,116.58	2,119.70	2.25	2.22	-0.37	
8,540.00	92.42	270.89	6,508.85	121.49	-2,210.51	2,213.60	1.01	0.84	0.56	
8,635.00	93.03	271.24	6,504.33	123.26	-2,305.39	2,308.47	0.74	0.64	0.37	
8,729.00	91.80	271.07	6,500.37	125.15	-2,399.28	2,402.37	1.32	-1.31	-0.18	
8,824.00	92.59	271.42	6,496.74	127.21	-2,494.19	2,497.28	0.91	0.83	0.37	
8,918.00	92.86	271.42	6,492.27	129.54	-2,588.06	2,591.17	0.29	0.29	0.00	
9,013.00	91.36	271.77	6,488.77	132.18	-2,682.95	2,686.09	1.62	-1.58	0.37	
9,108.00	92.77	272.65	6,485.35	135.84	-2,777.82	2,781.03	1.75	1.48	0.93	
9,203.00	91.89	272.30	6,481.48	139.94	-2,872.65	2,875.95	1.00	-0.93	-0.37	
9,298.00	91.45	273.00	6,478.71	144.33	-2,967.51	2,970.90	0.87	-0.46	0.74	
9,393.00	90.13	272.82	6,477.40	149.15	-3,062.37	3,065.89	1.40	-1.39	-0.19	
9,488.00	92.07	274.05	6,475.58	154.84	-3,157.18	3,160.84	2.42	2.04	1.29	
9,583.00	90.31	274.05	6,473.61	161.55	-3,251.92	3,255.77	1.85	-1.85	0.00	
9,677.00	89.52	273.35	6,473.75	167.62	-3,345.72	3,349.74	1.12	-0.84	-0.74	
9,771.00	89.34	272.47	6,474.68	172.39	-3,439.59	3,443.73	0.96	-0.19	-0.94	
9,865.00	91.01	271.95	6,474.40	176.01	-3,533.52	3,537.73	1.86	1.78	-0.55	
9,959.00	89.60	271.24	6,473.90	178.63	-3,627.48	3,631.72	1.68	-1.50	-0.76	
10,054.00	89.69	271.07	6,474.48	180.55	-3,722.46	3,726.70	0.20	0.09	-0.18	
10,148.00	89.96	271.42	6,474.77	182.59	-3,816.43	3,820.68	0.47	0.29	0.37	
10,243.00	89.52	271.42	6,475.20	184.94	-3,911.40	3,915.67	0.46	-0.46	0.00	
10,338.00	88.81	270.71	6,476.59	186.71	-4,006.38	4,010.64	1.06	-0.75	-0.75	
10,433.00	89.34	271.07	6,478.12	188.18	-4,101.35	4,105.60	0.67	0.56	0.38	
10,527.00	89.52	272.12	6,479.06	190.80	-4,195.31	4,199.58	1.13	0.19	1.12	
10,621.00	89.87	272.30	6,479.56	194.42	-4,289.24	4,293.58	0.42	0.37	0.19	
10,716.00	90.31	273.18	6,479.41	198.97	-4,384.13	4,388.58	1.04	0.46	0.93	
10,811.00	89.60	272.47	6,479.48	203.65	-4,479.01	4,483.57	1.06	-0.75	-0.75	
10,905.00	88.90	271.42	6,480.71	206.84	-4,572.95	4,577.56	1.34	-0.74	-1.12	
10,999.00	88.72	271.59	6,482.66	209.31	-4,666.89	4,671.53	0.26	-0.19	0.18	
11,094.00	89.87	271.24	6,483.83	211.65	-4,761.86	4,766.51	1.27	1.21	-0.37	
11,178.00	90.13	271.95	6,483.83	213.99	-4,845.82	4,850.50	0.90	0.31	0.85	
11,244.00	90.13	271.95	6,483.68	216.24	-4,911.78	4,916.50	0.00	0.00	0.00	