

Well Name: HFE 34-22

Surface Location: HFE 5 Pad Sec.22-T4N-R68W
North American Datum 1983 US State Plane 1983 Colorado Northern Zone
Ground Elevation: 4942.0
Easting 3142841.99 Latitude 40.294832 Longitude -104.987913 Slot
Original Well Elev WELL @ 4955.0ft (Original Well Elev)

+N/-S +E/-W
0.0 0.0

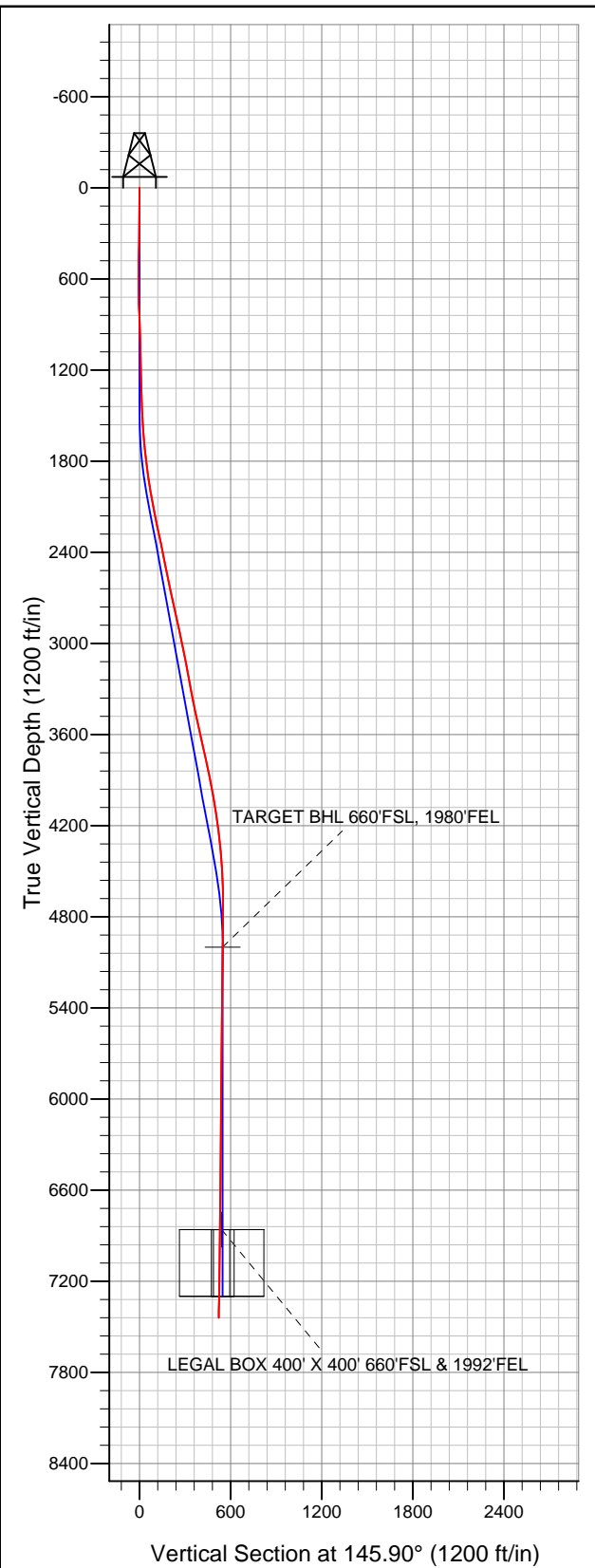
Northing
1350660.88

Easting
3142841.99

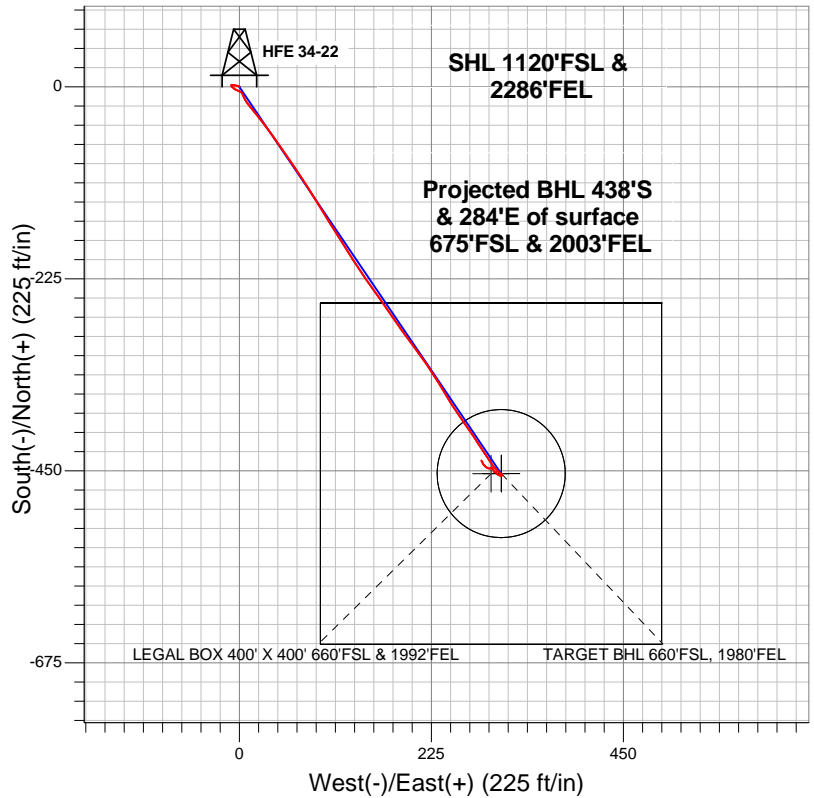
Latitude
40.294832

Longitude
-104.987913

Slot



Sundance Energy, Weld County, CO



LEGEND

- +— HFE 34-22, Wellbore #1, Plan #1 (8-02-12) V0
- +— Wellbore #1
- +— Survey #1

Final Survey Plot

**Projected Final Survey -
7490'MD & 7440'TVD @ 522'VS
0.70 deg Inc 327.20 deg AZ**

Project: SEC.22-T4N-R68W
Site: HFE 5 Pad Sec.22-T4N-R68W
Well: HFE 34-22
Plan: Wellbore #1



Directional

Sundance Energy, Weld County, CO

SEC.22-T4N-R68W

HFE 5 Pad Sec.22-T4N-R68W

HFE 34-22

Wellbore #1

Survey: Survey #1

Standard Survey Report

08 October, 2012

Survey	Wellbore Data									
	Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
Main Survey	0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
	127.0	1.00	305.50	127.0	0.6	-0.9	-1.0	0.79	0.79	0.00
	249.0	0.80	277.90	249.0	1.4	-2.6	-2.6	0.39	-0.16	-22.62
	370.0	1.10	279.50	370.0	1.7	-4.6	-4.0	0.25	0.25	1.32
	491.0	1.20	284.80	490.9	2.2	-7.0	-5.7	0.12	0.08	4.38
	553.0	1.10	273.90	552.9	2.4	-8.2	-6.6	0.39	-0.16	-17.58
	610.0	0.90	250.00	609.9	2.3	-9.2	-7.0	0.80	-0.35	-41.93
	735.0	2.00	140.10	734.9	0.3	-8.7	-5.1	1.97	0.88	-87.92
	859.0	2.60	120.60	858.8	-2.8	-4.9	-0.4	0.79	0.48	-15.73
	984.0	1.80	107.30	983.7	-4.8	-0.6	3.7	0.76	-0.64	-10.64
	1,109.0	1.20	132.20	1,108.7	-6.3	2.3	6.5	0.70	-0.48	19.92
	1,234.0	1.50	156.30	1,233.6	-8.7	3.9	9.4	0.51	0.24	19.28
	1,358.0	1.20	160.50	1,357.6	-11.4	5.0	12.2	0.25	-0.24	3.39

Company:	Sundance Energy, Weld County, CO	Local Co-ordinate Reference:	Well HFE 34-22
Project:	SEC.22-T4N-R68W	TVD Reference:	WELL @ 4955.0ft (Original Well Elev)
Site:	HFE 5 Pad Sec.22-T4N-R68W	MD Reference:	WELL @ 4955.0ft (Original Well Elev)
Well:	HFE 34-22	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,483.0	3.00	150.90	1,482.5	-15.5	7.0	16.8	1.46	1.44	-7.68
1,608.0	4.40	141.00	1,607.2	-22.1	11.6	24.8	1.23	1.12	-7.92
1,733.0	5.70	141.00	1,731.7	-30.6	18.6	35.8	1.04	1.04	0.00
1,858.0	7.70	142.20	1,855.9	-42.1	27.6	50.3	1.60	1.60	0.96
1,982.0	9.00	144.50	1,978.6	-56.5	38.3	68.3	1.08	1.05	1.85
2,107.0	11.40	144.90	2,101.6	-74.6	51.1	90.4	1.92	1.92	0.32
2,232.0	11.70	145.80	2,224.1	-95.2	65.3	115.4	0.28	0.24	0.72
2,357.0	11.80	147.20	2,346.4	-116.4	79.4	140.9	0.24	0.08	1.12
2,481.0	11.50	149.10	2,467.9	-137.7	92.6	165.9	0.39	-0.24	1.53
2,606.0	12.10	147.90	2,590.2	-159.5	106.0	191.4	0.52	0.48	-0.96
2,731.0	12.00	147.30	2,712.5	-181.5	119.9	217.5	0.13	-0.08	-0.48
2,856.0	12.20	148.60	2,834.7	-203.7	133.8	243.7	0.27	0.16	1.04
2,980.0	12.40	144.20	2,955.9	-225.7	148.5	270.1	0.77	0.16	-3.55
3,105.0	11.30	144.70	3,078.2	-246.6	163.4	295.8	0.88	-0.88	0.40
3,230.0	10.60	145.40	3,200.9	-266.0	177.0	319.5	0.57	-0.56	0.56
3,355.0	10.40	144.70	3,323.8	-284.7	190.0	342.3	0.19	-0.16	-0.56
3,479.0	11.70	142.90	3,445.5	-303.9	204.1	366.0	1.08	1.05	-1.45
3,604.0	12.40	145.60	3,567.8	-325.0	219.3	392.1	0.72	0.56	2.16
3,729.0	12.80	148.40	3,689.8	-347.9	234.2	419.4	0.58	0.32	2.24
3,854.0	12.20	148.70	3,811.8	-371.0	248.3	446.4	0.48	-0.48	0.24
3,978.0	10.80	144.20	3,933.3	-391.6	261.9	471.1	1.34	-1.13	-3.63
4,103.0	9.30	146.60	4,056.4	-409.5	274.3	492.9	1.25	-1.20	1.92
4,228.0	8.40	146.80	4,179.9	-425.6	284.9	512.1	0.72	-0.72	0.16
4,353.0	6.10	145.90	4,303.9	-438.7	293.6	527.9	1.84	-1.84	-0.72
4,477.0	4.00	139.40	4,427.4	-447.5	300.1	538.8	1.75	-1.69	-5.24
4,602.0	2.70	126.20	4,552.2	-452.5	305.3	545.9	1.20	-1.04	-10.56
4,727.0	0.50	151.50	4,677.1	-454.8	307.9	549.2	1.81	-1.76	20.24
4,852.0	0.40	215.70	4,802.1	-455.6	307.9	549.9	0.39	-0.08	51.36
4,977.0	0.50	270.60	4,927.1	-455.9	307.1	549.7	0.34	0.08	43.92
5,049.9	0.85	284.20	5,000.0	-455.8	306.3	549.2	0.52	0.47	18.66
TARGET BHL 660'FSL, 1980'FEL									
5,101.0	1.10	288.50	5,051.1	-455.6	305.5	548.5	0.52	0.50	8.41
5,226.0	1.40	296.20	5,176.1	-454.5	303.0	546.2	0.27	0.24	6.16
5,351.0	1.00	349.70	5,301.1	-452.8	301.4	543.9	0.91	-0.32	42.80
5,476.0	0.70	277.60	5,426.1	-451.6	300.4	542.4	0.82	-0.24	-57.68
5,600.0	0.90	286.20	5,550.0	-451.2	298.8	541.1	0.19	0.16	6.94
5,725.0	0.50	39.10	5,675.0	-450.5	298.2	540.2	0.95	-0.32	90.32
5,850.0	0.50	329.80	5,800.0	-449.6	298.2	539.5	0.45	0.00	-55.44
5,975.0	0.70	324.20	5,925.0	-448.5	297.5	538.2	0.17	0.16	-4.48
6,099.0	1.10	324.50	6,049.0	-446.9	296.4	536.3	0.32	0.32	0.24
6,224.0	0.80	226.60	6,174.0	-446.6	295.0	535.2	1.16	-0.24	-78.32
6,349.0	0.90	264.80	6,299.0	-447.3	293.4	534.9	0.45	0.08	30.56
6,474.0	0.60	295.20	6,424.0	-447.1	291.9	533.8	0.39	-0.24	24.32
6,598.0	1.00	296.70	6,548.0	-446.3	290.3	532.3	0.32	0.32	1.21
6,723.0	0.30	316.40	6,673.0	-445.6	289.1	531.0	0.58	-0.56	15.76
6,848.0	0.50	313.10	6,798.0	-445.0	288.5	530.2	0.16	0.16	-2.64
6,909.8	0.65	317.31	6,859.8	-444.5	288.1	529.6	0.25	0.24	6.81
TARGET CIRCLE 660'FSL & 1980'FEL									
6,909.9	0.65	317.31	6,859.9	-444.5	288.1	529.6	0.00	0.00	0.00
LEGAL BOX 400' X 400' 660'FSL & 1992'FEL									
6,973.0	0.80	320.00	6,922.9	-443.9	287.5	528.8	0.25	0.24	4.26
7,097.0	0.80	313.60	7,046.9	-442.7	286.3	527.1	0.07	0.00	-5.16
7,222.0	0.80	336.50	7,171.9	-441.3	285.4	525.4	0.25	0.00	18.32
7,347.0	0.80	333.30	7,296.9	-439.7	284.6	523.7	0.04	0.00	-2.56

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7,444.0	0.70	327.20	7,393.9	-438.6	284.0	522.4	0.13	-0.10	-6.29
7,490.0	0.70	327.20	7,439.9	-438.1	283.7	521.8	0.00	0.00	0.00

Wellbore Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
TARGET BHL 660'FS	0.00	0.00	5,000.0	-453.2	306.9	1,350,209.49	3,143,151.44	40.293588	-104.986813
- survey misses target center by 2.7ft at 5049.9ft MD (5000.0 TVD, -455.8 N, 306.3 E)									
- Point									
TARGET CIRCLE 660'	0.00	0.00	6,860.0	-453.2	306.9	1,350,209.49	3,143,151.44	40.293588	-104.986813
- survey misses target center by 20.7ft at 6909.8ft MD (6859.8 TVD, -444.5 N, 288.1 E)									
- Circle (radius 75.0)									
LEGAL BOX 400' X 400'	0.00	0.00	6,860.0	-453.2	294.9	1,350,209.41	3,143,139.49	40.293588	-104.986856
- survey misses target center by 11.1ft at 6909.9ft MD (6859.9 TVD, -444.5 N, 288.1 E)									
- Rectangle (sides W400.0 H400.0 D440.0)									

Checked By: _____ Approved By: _____ Date: _____