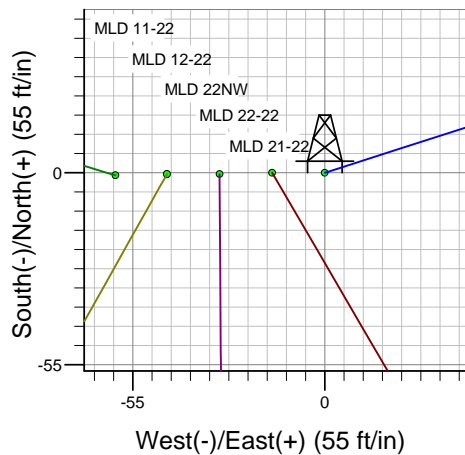
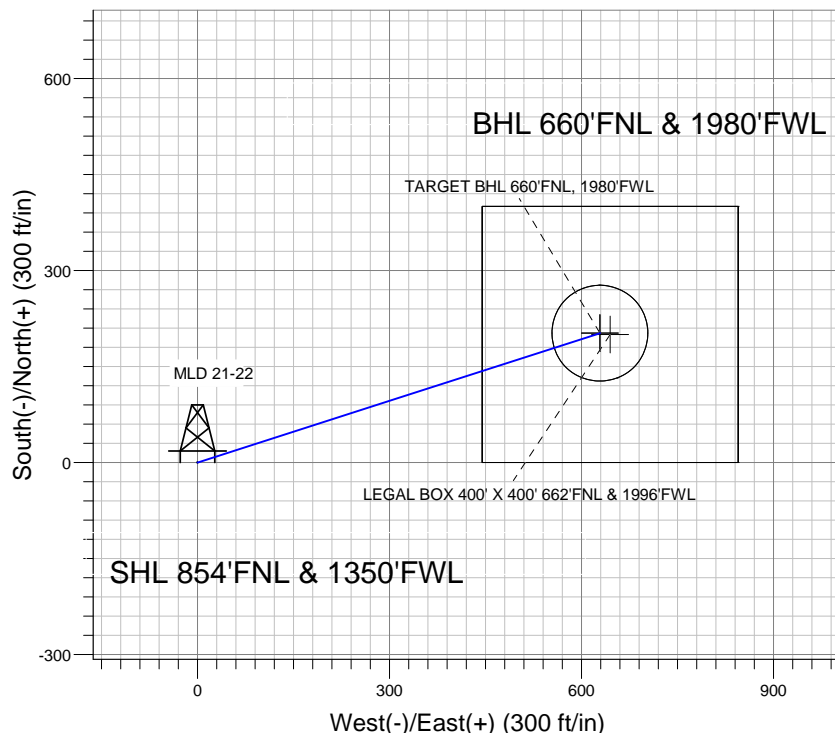
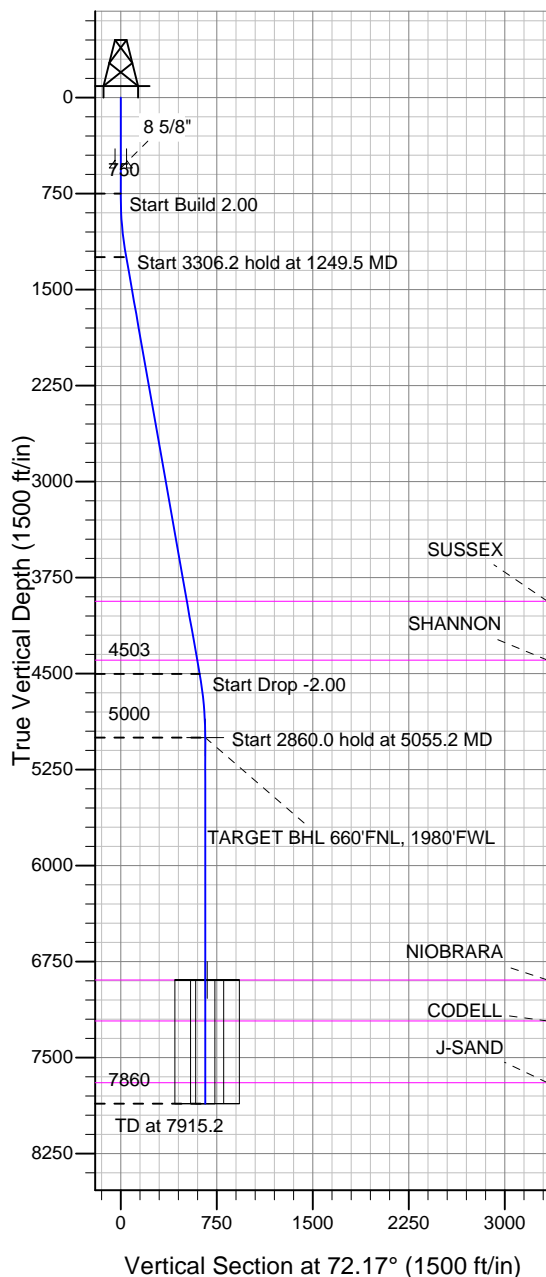


Well Name: MLD 21-22

Surface Location: MLD 5 Pad Sec.22-T4N-R68W
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
 Ground Elevation: 4877.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1353938.43	3141127.84	40.303856	-104.993991	
Original Well Elev WELL @ 4890.0ft (Original Well Elev)						

Sundance Energy, Weld County, CO



MLD 5 Pad Sec.22-T4N-R68W
 MLD 21-22
 Plan #2 (8-02-12)
 13:36, August 02 2012



Azimuths to True North
 Magnetic North: 8.83°
 Magnetic Field
 Strength: 52938.4snT
 Dip Angle: 66.90°
 Date: 7/26/2012
 Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 660'FNL, 1980'FWL	5000.0	202.2	628.7	40.304411	-104.991737	Point
LEGAL BOX 400' X 400' 662'FNL & 1996'FWL	6894.0	200.2	644.7	40.304405	-104.991680	Rectangle (Sides: L400.0 W400.0)
TARGET CIRCLE 660'FNL & 1980'FWL	6894.0	202.2	628.7	40.304411	-104.991737	Circle (Radius: 75.0)

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	750.0	0.00	0.00	750.0	0.0	0.0	0.00	0.00	0.0	
3	1249.5	9.99	72.17	1247.0	13.3	41.3	2.00	72.17	43.4	
4	4555.7	9.99	72.17	4503.0	188.9	587.3	0.00	0.00	617.0	
5	5055.2	0.00	0.00	5000.0	202.2	628.7	2.00	180.00	660.4	TARGET BHL 660'FNL, 1980'FWL
6	7915.2	0.00	0.00	7860.0	202.2	628.7	0.00	0.00	660.4	



Sundance Energy, Weld County, CO

SEC.22-T4N-R68W

MLD 5 Pad Sec.22-T4N-R68W

MLD 21-22

Wellbore #1

Plan: Plan #2 (8-02-12)

Standard Planning Report

02 August, 2012

Database:	Landmark	Local Co-ordinate Reference:	Well MLD 21-22
Company:	Sundance Energy, Weld County, CO	TVD Reference:	WELL @ 4890.0ft (Original Well Elev)
Project:	SEC.22-T4N-R68W	MD Reference:	WELL @ 4890.0ft (Original Well Elev)
Site:	MLD 5 Pad Sec.22-T4N-R68W	North Reference:	True
Well:	MLD 21-22	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (8-02-12)		

Project	SEC.22-T4N-R68W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site		MLD 5 Pad Sec.22-T4N-R68W			
Site Position:		Northing:	1,353,937.38 ft	Latitude:	40.303854
From:	Lat/Long	Easting:	3,141,067.88 ft	Longitude:	-104.994206
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.33 °

Well	MLD 21-22					
Well Position	+N/-S	0.7 ft	Northing:	1,353,938.43 ft	Latitude:	40.303856
	+E/-W	60.0 ft	Easting:	3,141,127.84 ft	Longitude:	-104.993991
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,877.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/26/2012	8.83	66.90	52,938

Design	Plan #2 (8-02-12)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	72.17

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
750.0	0.00	0.00	750.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,249.5	9.99	72.17	1,247.0	13.3	41.3	2.00	2.00	0.00	72.17	
4,555.7	9.99	72.17	4,503.0	188.9	587.3	0.00	0.00	0.00	0.00	
5,055.2	0.00	0.00	5,000.0	202.2	628.7	2.00	-2.00	0.00	180.00	TARGET BHL 660'I
7,915.2	0.00	0.00	7,860.0	202.2	628.7	0.00	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well MLD 21-22
Company:	Sundance Energy, Weld County, CO	TVD Reference:	WELL @ 4890.0ft (Original Well Elev)
Project:	SEC.22-T4N-R68W	MD Reference:	WELL @ 4890.0ft (Original Well Elev)
Site:	MLD 5 Pad Sec.22-T4N-R68W	North Reference:	True
Well:	MLD 21-22	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (8-02-12)		

Planned 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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
440.0	0.00	0.00	440.0	0.0	0.0	0.0	0.00	0.00	0.00
480.0	0.00	0.00	480.0	0.0	0.0	0.0	0.00	0.00	0.00
520.0	0.00	0.00	520.0	0.0	0.0	0.0	0.00	0.00	0.00
550.0	0.00	0.00	550.0	0.0	0.0	0.0	0.00	0.00	0.00
8 5/8"									
560.0	0.00	0.00	560.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
640.0	0.00	0.00	640.0	0.0	0.0	0.0	0.00	0.00	0.00
680.0	0.00	0.00	680.0	0.0	0.0	0.0	0.00	0.00	0.00
720.0	0.00	0.00	720.0	0.0	0.0	0.0	0.00	0.00	0.00
750.0	0.00	0.00	750.0	0.0	0.0	0.0	0.00	0.00	0.00
760.0	0.20	72.17	760.0	0.0	0.0	0.0	2.00	2.00	0.00
800.0	1.00	72.17	800.0	0.1	0.4	0.4	2.00	2.00	0.00
840.0	1.80	72.17	840.0	0.4	1.3	1.4	2.00	2.00	0.00
880.0	2.60	72.17	880.0	0.9	2.8	2.9	2.00	2.00	0.00
920.0	3.40	72.17	919.9	1.5	4.8	5.0	2.00	2.00	0.00
960.0	4.20	72.17	959.8	2.4	7.3	7.7	2.00	2.00	0.00
1,000.0	5.00	72.17	999.7	3.3	10.4	10.9	2.00	2.00	0.00
1,040.0	5.80	72.17	1,039.5	4.5	14.0	14.7	2.00	2.00	0.00
1,080.0	6.60	72.17	1,079.3	5.8	18.1	19.0	2.00	2.00	0.00
1,120.0	7.40	72.17	1,119.0	7.3	22.7	23.9	2.00	2.00	0.00
1,160.0	8.20	72.17	1,158.6	9.0	27.9	29.3	2.00	2.00	0.00
1,200.0	9.00	72.17	1,198.2	10.8	33.6	35.3	2.00	2.00	0.00
1,240.0	9.80	72.17	1,237.6	12.8	39.8	41.8	2.00	2.00	0.00
1,249.5	9.99	72.17	1,247.0	13.3	41.3	43.4	2.00	2.00	0.00
1,280.0	9.99	72.17	1,277.0	14.9	46.4	48.7	0.00	0.00	0.00
1,320.0	9.99	72.17	1,316.4	17.0	53.0	55.7	0.00	0.00	0.00
1,360.0	9.99	72.17	1,355.8	19.2	59.6	62.6	0.00	0.00	0.00
1,400.0	9.99	72.17	1,395.2	21.3	66.2	69.5	0.00	0.00	0.00
1,440.0	9.99	72.17	1,434.6	23.4	72.8	76.5	0.00	0.00	0.00
1,480.0	9.99	72.17	1,474.0	25.5	79.4	83.4	0.00	0.00	0.00
1,520.0	9.99	72.17	1,513.4	27.7	86.0	90.4	0.00	0.00	0.00
1,560.0	9.99	72.17	1,552.8	29.8	92.6	97.3	0.00	0.00	0.00
1,600.0	9.99	72.17	1,592.2	31.9	99.2	104.2	0.00	0.00	0.00
1,640.0	9.99	72.17	1,631.6	34.0	105.8	111.2	0.00	0.00	0.00
1,680.0	9.99	72.17	1,670.9	36.2	112.4	118.1	0.00	0.00	0.00
1,720.0	9.99	72.17	1,710.3	38.3	119.0	125.1	0.00	0.00	0.00
1,760.0	9.99	72.17	1,749.7	40.4	125.7	132.0	0.00	0.00	0.00
1,800.0	9.99	72.17	1,789.1	42.5	132.3	138.9	0.00	0.00	0.00
1,840.0	9.99	72.17	1,828.5	44.7	138.9	145.9	0.00	0.00	0.00
1,880.0	9.99	72.17	1,867.9	46.8	145.5	152.8	0.00	0.00	0.00
1,920.0	9.99	72.17	1,907.3	48.9	152.1	159.7	0.00	0.00	0.00
1,960.0	9.99	72.17	1,946.7	51.0	158.7	166.7	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well MLD 21-22
Company:	Sundance Energy, Weld County, CO	TVD Reference:	WELL @ 4890.0ft (Original Well Elev)
Project:	SEC.22-T4N-R68W	MD Reference:	WELL @ 4890.0ft (Original Well Elev)
Site:	MLD 5 Pad Sec.22-T4N-R68W	North Reference:	True
Well:	MLD 21-22	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (8-02-12)		

Planned 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)
2,000.0	9.99	72.17	1,986.1	53.2	165.3	173.6	0.00	0.00	0.00
2,040.0	9.99	72.17	2,025.5	55.3	171.9	180.6	0.00	0.00	0.00
2,080.0	9.99	72.17	2,064.9	57.4	178.5	187.5	0.00	0.00	0.00
2,120.0	9.99	72.17	2,104.3	59.5	185.1	194.4	0.00	0.00	0.00
2,160.0	9.99	72.17	2,143.7	61.7	191.7	201.4	0.00	0.00	0.00
2,200.0	9.99	72.17	2,183.1	63.8	198.3	208.3	0.00	0.00	0.00
2,240.0	9.99	72.17	2,222.5	65.9	204.9	215.3	0.00	0.00	0.00
2,280.0	9.99	72.17	2,261.8	68.0	211.5	222.2	0.00	0.00	0.00
2,320.0	9.99	72.17	2,301.2	70.2	218.1	229.1	0.00	0.00	0.00
2,360.0	9.99	72.17	2,340.6	72.3	224.7	236.1	0.00	0.00	0.00
2,400.0	9.99	72.17	2,380.0	74.4	231.3	243.0	0.00	0.00	0.00
2,440.0	9.99	72.17	2,419.4	76.5	237.9	250.0	0.00	0.00	0.00
2,480.0	9.99	72.17	2,458.8	78.7	244.6	256.9	0.00	0.00	0.00
2,520.0	9.99	72.17	2,498.2	80.8	251.2	263.8	0.00	0.00	0.00
2,560.0	9.99	72.17	2,537.6	82.9	257.8	270.8	0.00	0.00	0.00
2,600.0	9.99	72.17	2,577.0	85.0	264.4	277.7	0.00	0.00	0.00
2,640.0	9.99	72.17	2,616.4	87.2	271.0	284.6	0.00	0.00	0.00
2,680.0	9.99	72.17	2,655.8	89.3	277.6	291.6	0.00	0.00	0.00
2,720.0	9.99	72.17	2,695.2	91.4	284.2	298.5	0.00	0.00	0.00
2,760.0	9.99	72.17	2,734.6	93.5	290.8	305.5	0.00	0.00	0.00
2,800.0	9.99	72.17	2,774.0	95.7	297.4	312.4	0.00	0.00	0.00
2,840.0	9.99	72.17	2,813.4	97.8	304.0	319.3	0.00	0.00	0.00
2,880.0	9.99	72.17	2,852.8	99.9	310.6	326.3	0.00	0.00	0.00
2,920.0	9.99	72.17	2,892.1	102.0	317.2	333.2	0.00	0.00	0.00
2,960.0	9.99	72.17	2,931.5	104.2	323.8	340.2	0.00	0.00	0.00
3,000.0	9.99	72.17	2,970.9	106.3	330.4	347.1	0.00	0.00	0.00
3,040.0	9.99	72.17	3,010.3	108.4	337.0	354.0	0.00	0.00	0.00
3,080.0	9.99	72.17	3,049.7	110.5	343.6	361.0	0.00	0.00	0.00
3,120.0	9.99	72.17	3,089.1	112.7	350.2	367.9	0.00	0.00	0.00
3,160.0	9.99	72.17	3,128.5	114.8	356.8	374.9	0.00	0.00	0.00
3,200.0	9.99	72.17	3,167.9	116.9	363.5	381.8	0.00	0.00	0.00
3,240.0	9.99	72.17	3,207.3	119.0	370.1	388.7	0.00	0.00	0.00
3,280.0	9.99	72.17	3,246.7	121.2	376.7	395.7	0.00	0.00	0.00
3,320.0	9.99	72.17	3,286.1	123.3	383.3	402.6	0.00	0.00	0.00
3,360.0	9.99	72.17	3,325.5	125.4	389.9	409.5	0.00	0.00	0.00
3,400.0	9.99	72.17	3,364.9	127.5	396.5	416.5	0.00	0.00	0.00
3,440.0	9.99	72.17	3,404.3	129.7	403.1	423.4	0.00	0.00	0.00
3,480.0	9.99	72.17	3,443.7	131.8	409.7	430.4	0.00	0.00	0.00
3,520.0	9.99	72.17	3,483.1	133.9	416.3	437.3	0.00	0.00	0.00
3,560.0	9.99	72.17	3,522.4	136.0	422.9	444.2	0.00	0.00	0.00
3,600.0	9.99	72.17	3,561.8	138.2	429.5	451.2	0.00	0.00	0.00
3,640.0	9.99	72.17	3,601.2	140.3	436.1	458.1	0.00	0.00	0.00
3,680.0	9.99	72.17	3,640.6	142.4	442.7	465.1	0.00	0.00	0.00
3,720.0	9.99	72.17	3,680.0	144.5	449.3	472.0	0.00	0.00	0.00
3,760.0	9.99	72.17	3,719.4	146.7	455.9	478.9	0.00	0.00	0.00
3,800.0	9.99	72.17	3,758.8	148.8	462.5	485.9	0.00	0.00	0.00
3,840.0	9.99	72.17	3,798.2	150.9	469.1	492.8	0.00	0.00	0.00
3,880.0	9.99	72.17	3,837.6	153.0	475.7	499.8	0.00	0.00	0.00
3,920.0	9.99	72.17	3,877.0	155.1	482.4	506.7	0.00	0.00	0.00
3,960.0	9.99	72.17	3,916.4	157.3	489.0	513.6	0.00	0.00	0.00
3,977.9	9.99	72.17	3,934.0	158.2	491.9	516.7	0.00	0.00	0.00
SUSSEX									
4,000.0	9.99	72.17	3,955.8	159.4	495.6	520.6	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well MLD 21-22
Company:	Sundance Energy, Weld County, CO	TVD Reference:	WELL @ 4890.0ft (Original Well Elev)
Project:	SEC.22-T4N-R68W	MD Reference:	WELL @ 4890.0ft (Original Well Elev)
Site:	MLD 5 Pad Sec.22-T4N-R68W	North Reference:	True
Well:	MLD 21-22	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (8-02-12)		

Planned 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)
4,040.0	9.99	72.17	3,995.2	161.5	502.2	527.5	0.00	0.00	0.00
4,080.0	9.99	72.17	4,034.6	163.6	508.8	534.4	0.00	0.00	0.00
4,120.0	9.99	72.17	4,074.0	165.8	515.4	541.4	0.00	0.00	0.00
4,160.0	9.99	72.17	4,113.3	167.9	522.0	548.3	0.00	0.00	0.00
4,200.0	9.99	72.17	4,152.7	170.0	528.6	555.3	0.00	0.00	0.00
4,240.0	9.99	72.17	4,192.1	172.1	535.2	562.2	0.00	0.00	0.00
4,280.0	9.99	72.17	4,231.5	174.3	541.8	569.1	0.00	0.00	0.00
4,320.0	9.99	72.17	4,270.9	176.4	548.4	576.1	0.00	0.00	0.00
4,360.0	9.99	72.17	4,310.3	178.5	555.0	583.0	0.00	0.00	0.00
4,400.0	9.99	72.17	4,349.7	180.6	561.6	590.0	0.00	0.00	0.00
4,440.0	9.99	72.17	4,389.1	182.8	568.2	596.9	0.00	0.00	0.00
4,446.0	9.99	72.17	4,395.0	183.1	569.2	597.9	0.00	0.00	0.00
SHANNON									
4,480.0	9.99	72.17	4,428.5	184.9	574.8	603.8	0.00	0.00	0.00
4,520.0	9.99	72.17	4,467.9	187.0	581.4	610.8	0.00	0.00	0.00
4,555.7	9.99	72.17	4,503.0	188.9	587.3	617.0	0.00	0.00	0.00
4,560.0	9.90	72.17	4,507.3	189.1	588.0	617.7	2.00	-2.00	0.00
4,600.0	9.10	72.17	4,546.7	191.2	594.3	624.3	2.00	-2.00	0.00
4,640.0	8.30	72.17	4,586.3	193.0	600.1	630.4	2.00	-2.00	0.00
4,680.0	7.50	72.17	4,625.9	194.7	605.3	635.9	2.00	-2.00	0.00
4,720.0	6.70	72.17	4,665.6	196.2	610.0	640.8	2.00	-2.00	0.00
4,760.0	5.90	72.17	4,705.3	197.6	614.2	645.2	2.00	-2.00	0.00
4,800.0	5.10	72.17	4,745.2	198.7	617.9	649.0	2.00	-2.00	0.00
4,840.0	4.30	72.17	4,785.0	199.7	621.0	652.3	2.00	-2.00	0.00
4,880.0	3.50	72.17	4,824.9	200.6	623.6	655.0	2.00	-2.00	0.00
4,920.0	2.70	72.17	4,864.9	201.2	625.6	657.2	2.00	-2.00	0.00
4,960.0	1.90	72.17	4,904.8	201.7	627.2	658.8	2.00	-2.00	0.00
5,000.0	1.10	72.17	4,944.8	202.1	628.2	659.9	2.00	-2.00	0.00
5,040.0	0.30	72.17	4,984.8	202.2	628.6	660.4	2.00	-2.00	0.00
5,055.2	0.00	0.00	5,000.0	202.2	628.7	660.4	2.00	-2.00	0.00
TARGET BHL 660'FNL, 1980'FWL									
5,080.0	0.00	0.00	5,024.8	202.2	628.7	660.4	0.00	0.00	0.00
5,120.0	0.00	0.00	5,064.8	202.2	628.7	660.4	0.00	0.00	0.00
5,160.0	0.00	0.00	5,104.8	202.2	628.7	660.4	0.00	0.00	0.00
5,200.0	0.00	0.00	5,144.8	202.2	628.7	660.4	0.00	0.00	0.00
5,240.0	0.00	0.00	5,184.8	202.2	628.7	660.4	0.00	0.00	0.00
5,280.0	0.00	0.00	5,224.8	202.2	628.7	660.4	0.00	0.00	0.00
5,320.0	0.00	0.00	5,264.8	202.2	628.7	660.4	0.00	0.00	0.00
5,360.0	0.00	0.00	5,304.8	202.2	628.7	660.4	0.00	0.00	0.00
5,400.0	0.00	0.00	5,344.8	202.2	628.7	660.4	0.00	0.00	0.00
5,440.0	0.00	0.00	5,384.8	202.2	628.7	660.4	0.00	0.00	0.00
5,480.0	0.00	0.00	5,424.8	202.2	628.7	660.4	0.00	0.00	0.00
5,520.0	0.00	0.00	5,464.8	202.2	628.7	660.4	0.00	0.00	0.00
5,560.0	0.00	0.00	5,504.8	202.2	628.7	660.4	0.00	0.00	0.00
5,600.0	0.00	0.00	5,544.8	202.2	628.7	660.4	0.00	0.00	0.00
5,640.0	0.00	0.00	5,584.8	202.2	628.7	660.4	0.00	0.00	0.00
5,680.0	0.00	0.00	5,624.8	202.2	628.7	660.4	0.00	0.00	0.00
5,720.0	0.00	0.00	5,664.8	202.2	628.7	660.4	0.00	0.00	0.00
5,760.0	0.00	0.00	5,704.8	202.2	628.7	660.4	0.00	0.00	0.00
5,800.0	0.00	0.00	5,744.8	202.2	628.7	660.4	0.00	0.00	0.00
5,840.0	0.00	0.00	5,784.8	202.2	628.7	660.4	0.00	0.00	0.00
5,880.0	0.00	0.00	5,824.8	202.2	628.7	660.4	0.00	0.00	0.00
5,920.0	0.00	0.00	5,864.8	202.2	628.7	660.4	0.00	0.00	0.00
5,960.0	0.00	0.00	5,904.8	202.2	628.7	660.4	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well MLD 21-22
Company:	Sundance Energy, Weld County, CO	TVD Reference:	WELL @ 4890.0ft (Original Well Elev)
Project:	SEC.22-T4N-R68W	MD Reference:	WELL @ 4890.0ft (Original Well Elev)
Site:	MLD 5 Pad Sec.22-T4N-R68W	North Reference:	True
Well:	MLD 21-22	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (8-02-12)		

Planned 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)
6,000.0	0.00	0.00	5,944.8	202.2	628.7	660.4	0.00	0.00	0.00
6,040.0	0.00	0.00	5,984.8	202.2	628.7	660.4	0.00	0.00	0.00
6,080.0	0.00	0.00	6,024.8	202.2	628.7	660.4	0.00	0.00	0.00
6,120.0	0.00	0.00	6,064.8	202.2	628.7	660.4	0.00	0.00	0.00
6,160.0	0.00	0.00	6,104.8	202.2	628.7	660.4	0.00	0.00	0.00
6,200.0	0.00	0.00	6,144.8	202.2	628.7	660.4	0.00	0.00	0.00
6,240.0	0.00	0.00	6,184.8	202.2	628.7	660.4	0.00	0.00	0.00
6,280.0	0.00	0.00	6,224.8	202.2	628.7	660.4	0.00	0.00	0.00
6,320.0	0.00	0.00	6,264.8	202.2	628.7	660.4	0.00	0.00	0.00
6,360.0	0.00	0.00	6,304.8	202.2	628.7	660.4	0.00	0.00	0.00
6,400.0	0.00	0.00	6,344.8	202.2	628.7	660.4	0.00	0.00	0.00
6,440.0	0.00	0.00	6,384.8	202.2	628.7	660.4	0.00	0.00	0.00
6,480.0	0.00	0.00	6,424.8	202.2	628.7	660.4	0.00	0.00	0.00
6,520.0	0.00	0.00	6,464.8	202.2	628.7	660.4	0.00	0.00	0.00
6,560.0	0.00	0.00	6,504.8	202.2	628.7	660.4	0.00	0.00	0.00
6,600.0	0.00	0.00	6,544.8	202.2	628.7	660.4	0.00	0.00	0.00
6,640.0	0.00	0.00	6,584.8	202.2	628.7	660.4	0.00	0.00	0.00
6,680.0	0.00	0.00	6,624.8	202.2	628.7	660.4	0.00	0.00	0.00
6,720.0	0.00	0.00	6,664.8	202.2	628.7	660.4	0.00	0.00	0.00
6,760.0	0.00	0.00	6,704.8	202.2	628.7	660.4	0.00	0.00	0.00
6,800.0	0.00	0.00	6,744.8	202.2	628.7	660.4	0.00	0.00	0.00
6,840.0	0.00	0.00	6,784.8	202.2	628.7	660.4	0.00	0.00	0.00
6,880.0	0.00	0.00	6,824.8	202.2	628.7	660.4	0.00	0.00	0.00
6,920.0	0.00	0.00	6,864.8	202.2	628.7	660.4	0.00	0.00	0.00
6,949.2	0.00	0.00	6,894.0	202.2	628.7	660.4	0.00	0.00	0.00
NIOBRARA - TARGET CIRCLE 660'FNL & 1980'FWL - LEGAL BOX 400' X 400' 662'FNL & 1996'FWL									
6,960.0	0.00	0.00	6,904.8	202.2	628.7	660.4	0.00	0.00	0.00
7,000.0	0.00	0.00	6,944.8	202.2	628.7	660.4	0.00	0.00	0.00
7,040.0	0.00	0.00	6,984.8	202.2	628.7	660.4	0.00	0.00	0.00
7,080.0	0.00	0.00	7,024.8	202.2	628.7	660.4	0.00	0.00	0.00
7,120.0	0.00	0.00	7,064.8	202.2	628.7	660.4	0.00	0.00	0.00
7,160.0	0.00	0.00	7,104.8	202.2	628.7	660.4	0.00	0.00	0.00
7,200.0	0.00	0.00	7,144.8	202.2	628.7	660.4	0.00	0.00	0.00
7,240.0	0.00	0.00	7,184.8	202.2	628.7	660.4	0.00	0.00	0.00
7,269.2	0.00	0.00	7,214.0	202.2	628.7	660.4	0.00	0.00	0.00
CODELL									
7,280.0	0.00	0.00	7,224.8	202.2	628.7	660.4	0.00	0.00	0.00
7,320.0	0.00	0.00	7,264.8	202.2	628.7	660.4	0.00	0.00	0.00
7,360.0	0.00	0.00	7,304.8	202.2	628.7	660.4	0.00	0.00	0.00
7,400.0	0.00	0.00	7,344.8	202.2	628.7	660.4	0.00	0.00	0.00
7,440.0	0.00	0.00	7,384.8	202.2	628.7	660.4	0.00	0.00	0.00
7,480.0	0.00	0.00	7,424.8	202.2	628.7	660.4	0.00	0.00	0.00
7,520.0	0.00	0.00	7,464.8	202.2	628.7	660.4	0.00	0.00	0.00
7,560.0	0.00	0.00	7,504.8	202.2	628.7	660.4	0.00	0.00	0.00
7,600.0	0.00	0.00	7,544.8	202.2	628.7	660.4	0.00	0.00	0.00
7,640.0	0.00	0.00	7,584.8	202.2	628.7	660.4	0.00	0.00	0.00
7,680.0	0.00	0.00	7,624.8	202.2	628.7	660.4	0.00	0.00	0.00
7,720.0	0.00	0.00	7,664.8	202.2	628.7	660.4	0.00	0.00	0.00
7,752.2	0.00	0.00	7,697.0	202.2	628.7	660.4	0.00	0.00	0.00
J-SAND									
7,760.0	0.00	0.00	7,704.8	202.2	628.7	660.4	0.00	0.00	0.00
7,800.0	0.00	0.00	7,744.8	202.2	628.7	660.4	0.00	0.00	0.00
7,840.0	0.00	0.00	7,784.8	202.2	628.7	660.4	0.00	0.00	0.00

Formations						
	Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
	3,977.9	3,934.0	SUSSEX		0.00	
	4,446.0	4,395.0	SHANNON		0.00	
	6,949.2	6,894.0	NIOBRARA		0.00	
	7,269.2	7,214.0	CODELL		0.00	
	7,752.2	7,697.0	J-SAND		0.00	



Sundance Energy, Weld County, CO

SEC.22-T4N-R68W

MLD 5 Pad Sec.22-T4N-R68W

MLD 21-22

Wellbore #1

Plan #2 (8-02-12)

Anticollision Report

02 August, 2012

Company:	Sundance Energy, Weld County, CO	Local Co-ordinate Reference:	Well MLD 21-22
Project:	SEC.22-T4N-R68W	TVD Reference:	WELL @ 4890.0ft (Original Well Elev)
Reference Site:	MLD 5 Pad Sec.22-T4N-R68W	MD Reference:	WELL @ 4890.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MLD 21-22	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (8-02-12)	Offset TVD Reference:	Offset Datum

Reference	Plan #2 (8-02-12)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date 8/2/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	7,915.2	Plan #2 (8-02-12) (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
MLD 5 Pad Sec.22-T4N-R68W						
MLD 22-22 - Wellbore #1 - Plan #2 (8-02-12)	750.0	750.0	15.1	11.9	4.786 CC, ES	
MLD 22-22 - Wellbore #1 - Plan #2 (8-02-12)	800.0	800.0	15.5	12.1	4.597 SF	

Offset Design MLD 5 Pad Sec.22-T4N-R68W - MLD 22-22 - Wellbore #1 - Plan #2 (8-02-12)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
0.0	0.0	0.0	0.0	0.0	0.0	-89.97	0.0	-15.1	15.1	15.1	0.00	N/A		
100.0	100.0	100.0	100.0	0.1	0.1	-89.97	0.0	-15.1	15.1	14.8	0.22	67.010		
200.0	200.0	200.0	200.0	0.3	0.3	-89.97	0.0	-15.1	15.1	14.4	0.67	22.337		
300.0	300.0	300.0	300.0	0.6	0.6	-89.97	0.0	-15.1	15.1	13.9	1.12	13.402		
400.0	400.0	400.0	400.0	0.8	0.8	-89.97	0.0	-15.1	15.1	13.5	1.57	9.573		
500.0	500.0	500.0	500.0	1.0	1.0	-89.97	0.0	-15.1	15.1	13.0	2.02	7.446		
600.0	600.0	600.0	600.0	1.2	1.2	-89.97	0.0	-15.1	15.1	12.6	2.47	6.092		
700.0	700.0	700.0	700.0	1.5	1.5	-89.97	0.0	-15.1	15.1	12.1	2.92	5.155		
750.0	750.0	750.0	750.0	1.6	1.6	-89.97	0.0	-15.1	15.1	11.9	3.15	4.786 CC, ES		
800.0	800.0	800.0	800.0	1.7	1.7	-162.63	0.0	-15.1	15.5	12.1	3.37	4.597 SF		
900.0	899.9	899.9	899.9	1.9	1.9	-165.78	0.0	-15.1	18.8	15.0	3.80	4.958		
1,000.0	999.7	999.9	999.8	2.1	2.1	-170.50	-0.4	-14.8	25.5	21.3	4.22	6.042		
1,100.0	1,099.1	1,099.6	1,099.6	2.4	2.3	-178.67	-3.4	-13.1	34.9	30.3	4.60	7.571		
1,200.0	1,198.2	1,198.8	1,198.5	2.6	2.5	172.77	-9.3	-9.6	47.7	42.6	5.01	9.515		
1,249.5	1,247.0	1,247.6	1,247.1	2.8	2.6	168.96	-13.3	-7.3	55.4	50.2	5.22	10.617		
1,300.0	1,296.7	1,297.3	1,296.4	2.9	2.7	165.38	-18.2	-4.5	64.0	58.6	5.45	11.742		
1,400.0	1,395.2	1,395.1	1,393.3	3.3	2.9	158.80	-29.8	2.3	81.8	75.9	5.95	13.749		
1,500.0	1,493.7	1,492.1	1,488.9	3.6	3.2	152.76	-44.2	10.7	101.1	94.6	6.51	15.539		
1,600.0	1,592.2	1,588.2	1,582.9	3.9	3.5	147.22	-61.1	20.6	122.2	115.1	7.11	17.174		
1,700.0	1,690.6	1,683.0	1,675.1	4.3	3.9	142.18	-80.6	31.9	145.4	137.6	7.77	18.708		
1,800.0	1,789.1	1,776.5	1,765.1	4.7	4.3	137.63	-102.3	44.6	171.0	162.5	8.47	20.185		
1,900.0	1,887.6	1,868.5	1,852.8	5.0	4.8	133.54	-126.1	58.5	199.1	189.9	9.20	21.638		
2,000.0	1,986.1	1,960.6	1,939.8	5.4	5.3	129.87	-152.2	73.7	229.6	219.6	9.95	23.068		
2,100.0	2,084.6	2,054.7	2,028.6	5.8	5.8	126.89	-179.2	89.4	261.1	250.4	10.72	24.365		
2,200.0	2,183.1	2,148.8	2,117.4	6.2	6.4	124.55	-206.2	105.2	293.1	281.6	11.48	25.538		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

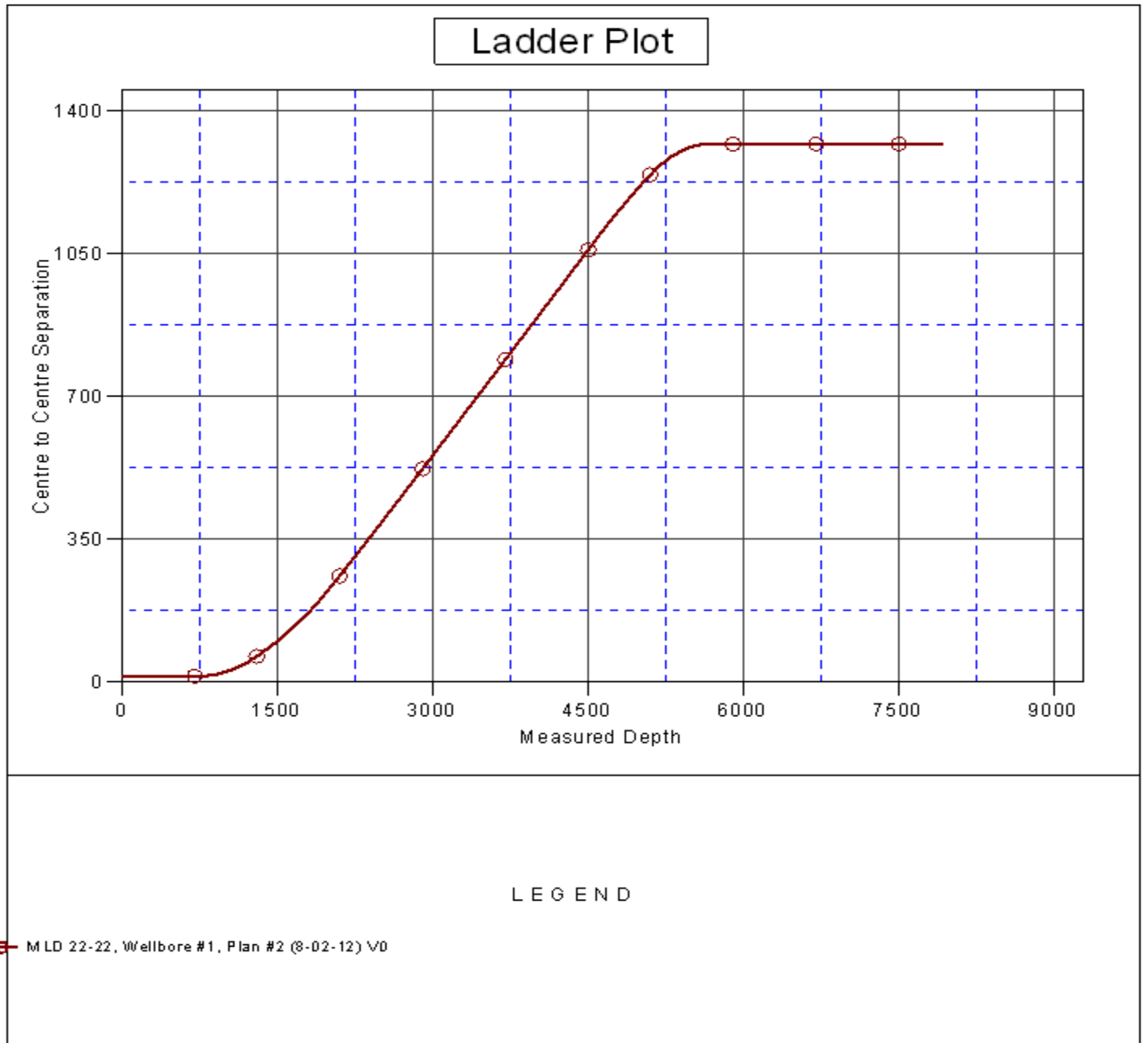
MLD 5 Pad Sec.22-T4N-R68W - MLD 22-22 - Wellbore #1 - Plan #2 (8-02-12)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (ft)	Offset Wellbore Centre +E-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2,300.0	2,281.5	2,242.9	2,206.1	6.6	7.0	122.67	-233.3	120.9	325.5	313.2	12.24	26.593		
2,400.0	2,380.0	2,337.0	2,294.9	6.9	7.6	121.12	-260.3	136.7	358.1	345.1	13.00	27.542		
2,500.0	2,478.5	2,431.2	2,383.7	7.3	8.2	119.84	-287.3	152.5	390.9	377.2	13.77	28.398		
2,600.0	2,577.0	2,525.3	2,472.4	7.7	8.8	118.75	-314.4	168.2	423.9	409.4	14.53	29.171		
2,700.0	2,675.5	2,619.4	2,561.2	8.1	9.4	117.82	-341.4	184.0	457.0	441.7	15.30	29.873		
2,800.0	2,774.0	2,713.5	2,649.9	8.5	10.1	117.01	-368.5	199.7	490.2	474.2	16.07	30.511		
2,900.0	2,872.4	2,807.6	2,738.7	8.9	10.7	116.31	-395.5	215.5	523.5	506.6	16.84	31.093		
3,000.0	2,970.9	2,901.8	2,827.5	9.3	11.3	115.69	-422.5	231.3	556.8	539.2	17.61	31.625		
3,100.0	3,069.4	2,995.9	2,916.2	9.7	12.0	115.14	-449.6	247.0	590.2	571.8	18.38	32.114		
3,200.0	3,167.9	3,090.0	3,005.0	10.0	12.6	114.65	-476.6	262.8	623.6	604.5	19.15	32.565		
3,300.0	3,266.4	3,184.1	3,093.8	10.4	13.2	114.21	-503.6	278.6	657.1	637.2	19.92	32.980		
3,400.0	3,364.9	3,278.2	3,182.5	10.8	13.9	113.81	-530.7	294.3	690.6	669.9	20.70	33.365		
3,500.0	3,463.4	3,372.4	3,271.3	11.2	14.5	113.44	-557.7	310.1	724.1	702.6	21.47	33.722		
3,600.0	3,561.8	3,466.5	3,360.1	11.6	15.2	113.11	-584.7	325.8	757.6	735.4	22.25	34.055		
3,700.0	3,660.3	3,560.6	3,448.8	12.0	15.8	112.81	-611.8	341.6	791.2	768.2	23.02	34.364		
3,800.0	3,758.8	3,654.7	3,537.6	12.4	16.5	112.54	-638.8	357.4	824.8	801.0	23.80	34.654		
3,900.0	3,857.3	3,748.8	3,626.4	12.8	17.1	112.28	-665.8	373.1	858.4	833.8	24.58	34.925		
4,000.0	3,955.8	3,843.0	3,715.1	13.2	17.7	112.04	-692.9	388.9	892.0	866.6	25.36	35.179		
4,100.0	4,054.3	3,937.1	3,803.9	13.6	18.4	111.82	-719.9	404.6	925.6	899.5	26.13	35.418		
4,200.0	4,152.7	4,031.2	3,892.7	14.0	19.0	111.62	-747.0	420.4	959.3	932.4	26.91	35.643		
4,300.0	4,251.2	4,125.3	3,981.4	14.4	19.7	111.43	-774.0	436.2	992.9	965.2	27.69	35.855		
4,400.0	4,349.7	4,219.4	4,070.2	14.8	20.3	111.25	-801.0	451.9	1,026.6	998.1	28.47	36.056		
4,500.0	4,448.2	4,313.6	4,159.0	15.2	21.0	111.09	-828.1	467.7	1,060.2	1,031.0	29.25	36.245		
4,555.7	4,503.0	4,366.0	4,208.4	15.4	21.3	111.00	-843.1	476.5	1,079.0	1,049.3	29.69	36.346		
4,600.0	4,546.7	4,407.7	4,247.7	15.5	21.6	111.20	-855.1	483.5	1,093.8	1,063.7	30.07	36.379		
4,700.0	4,645.7	4,502.1	4,336.7	15.8	22.3	111.53	-882.2	499.3	1,126.4	1,095.5	30.84	36.525		
4,800.0	4,745.2	4,596.6	4,425.9	16.0	22.9	111.69	-909.4	515.1	1,157.7	1,126.2	31.55	36.695		
4,900.0	4,844.9	4,691.2	4,515.1	16.2	23.6	111.68	-936.5	530.9	1,188.0	1,155.8	32.20	36.892		
5,000.0	4,944.8	4,785.7	4,604.2	16.4	24.2	111.52	-963.7	546.8	1,217.2	1,184.4	32.79	37.120		
5,055.2	5,000.0	4,841.3	4,656.7	16.5	24.6	-176.48	-979.7	556.1	1,232.9	1,199.8	33.09	37.253		
5,100.0	5,044.8	4,908.4	4,720.3	16.5	25.0	-177.05	-998.1	566.8	1,244.9	1,211.6	33.32	37.358		
5,200.0	5,144.8	5,061.7	4,867.3	16.7	25.7	-178.14	-1,035.4	588.5	1,268.9	1,235.1	33.79	37.557		
5,300.0	5,244.8	5,219.4	5,020.8	16.8	26.3	-179.01	-1,066.6	606.7	1,288.6	1,254.3	34.24	37.634		
5,400.0	5,344.8	5,380.8	5,179.7	17.0	26.8	-179.66	-1,090.9	620.9	1,303.6	1,268.9	34.67	37.597		
5,500.0	5,444.8	5,544.9	5,342.7	17.1	27.2	179.91	-1,107.7	630.7	1,313.9	1,278.8	35.08	37.449		
5,600.0	5,544.8	5,710.7	5,508.2	17.3	27.4	179.69	-1,116.4	635.8	1,319.1	1,283.7	35.47	37.187		
5,700.0	5,644.8	5,847.4	5,644.8	17.4	27.6	179.66	-1,117.7	636.5	1,319.9	1,284.1	35.81	36.862		
5,800.0	5,744.8	5,947.4	5,744.8	17.6	27.7	179.66	-1,117.7	636.5	1,319.9	1,283.8	36.09	36.571		
5,900.0	5,844.8	6,047.4	5,844.8	17.7	27.7	179.66	-1,117.7	636.5	1,319.9	1,283.5	36.38	36.283		
6,000.0	5,944.8	6,147.4	5,944.8	17.9	27.8	179.66	-1,117.7	636.5	1,319.9	1,283.2	36.67	35.996		
6,100.0	6,044.8	6,247.4	6,044.8	18.0	27.9	179.66	-1,117.7	636.5	1,319.9	1,282.9	36.96	35.710		
6,200.0	6,144.8	6,347.4	6,144.8	18.2	28.0	179.66	-1,117.7	636.5	1,319.9	1,282.6	37.26	35.427		
6,300.0	6,244.8	6,447.4	6,244.8	18.4	28.1	179.66	-1,117.7	636.5	1,319.9	1,282.3	37.56	35.144		
6,400.0	6,344.8	6,547.4	6,344.8	18.5	28.2	179.66	-1,117.7	636.5	1,319.9	1,282.0	37.86	34.864		
6,500.0	6,444.8	6,647.4	6,444.8	18.7	28.3	179.66	-1,117.7	636.5	1,319.9	1,281.7	38.16	34.585		
6,600.0	6,544.8	6,747.4	6,544.8	18.9	28.4	179.66	-1,117.7	636.5	1,319.9	1,281.4	38.47	34.309		
6,700.0	6,644.8	6,847.4	6,644.8	19.0	28.5	179.66	-1,117.7	636.5	1,319.9	1,281.1	38.78	34.034		
6,800.0	6,744.8	6,947.4	6,744.8	19.2	28.6	179.66	-1,117.7	636.5	1,319.9	1,280.8	39.09	33.762		
6,900.0	6,844.8	7,047.4	6,844.8	19.4	28.7	179.66	-1,117.7	636.5	1,319.9	1,280.5	39.41	33.491		
7,000.0	6,944.8	7,147.4	6,944.8	19.5	28.8	179.66	-1,117.7	636.5	1,319.9	1,280.2	39.73	33.223		
7,100.0	7,044.8	7,247.4	7,044.8	19.7	28.9	179.66	-1,117.7	636.5	1,319.9	1,279.9	40.05	32.957		
7,200.0	7,144.8	7,347.4	7,144.8	19.9	29.0	179.66	-1,117.7	636.5	1,319.9	1,279.5	40.37	32.693		

Company:	Sundance Energy, Weld County, CO	Local Co-ordinate Reference:	Well MLD 21-22
Project:	SEC.22-T4N-R68W	TVD Reference:	WELL @ 4890.0ft (Original Well Elev)
Reference Site:	MLD 5 Pad Sec.22-T4N-R68W	MD Reference:	WELL @ 4890.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MLD 21-22	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (8-02-12)	Offset TVD Reference:	Offset Datum

Offset Design MLD 5 Pad Sec.22-T4N-R68W - MLD 22-22 - Wellbore #1 - Plan #2 (8-02-12)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,300.0	7,244.8	7,447.4	7,244.8	20.1	29.1	179.66	-1,117.7	636.5	1,319.9	1,279.2	40.70	32.431	
7,400.0	7,344.8	7,547.4	7,344.8	20.2	29.2	179.66	-1,117.7	636.5	1,319.9	1,278.9	41.03	32.172	
7,500.0	7,444.8	7,647.4	7,444.8	20.4	29.3	179.66	-1,117.7	636.5	1,319.9	1,278.5	41.36	31.915	
7,600.0	7,544.8	7,747.4	7,544.8	20.6	29.4	179.66	-1,117.7	636.5	1,319.9	1,278.2	41.69	31.661	
7,700.0	7,644.8	7,847.4	7,644.8	20.8	29.5	179.66	-1,117.7	636.5	1,319.9	1,277.9	42.02	31.409	
7,800.0	7,744.8	7,947.4	7,744.8	20.9	29.6	179.66	-1,117.7	636.5	1,319.9	1,277.5	42.36	31.159	
7,900.0	7,844.8	8,047.4	7,844.8	21.1	29.7	179.66	-1,117.7	636.5	1,319.9	1,277.2	42.70	30.912	
7,915.2	7,860.0	8,062.6	7,860.0	21.1	29.8	179.66	-1,117.7	636.5	1,319.9	1,277.2	42.75	30.875	

Company:	Sundance Energy, Weld County, CO	Local Co-ordinate Reference:	Well MLD 21-22
Project:	SEC.22-T4N-R68W	TVD Reference:	WELL @ 4890.0ft (Original Well Elev)
Reference Site:	MLD 5 Pad Sec.22-T4N-R68W	MD Reference:	WELL @ 4890.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MLD 21-22	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (8-02-12)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4890.0ft (Original Well Elev) Coordinates are relative to: MLD 21-22
 Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
 Central Meridian is -105.500000 ° Grid Convergence at Surface is: 0.33°



Company:	Sundance Energy, Weld County, CO	Local Co-ordinate Reference:	Well MLD 21-22
Project:	SEC.22-T4N-R68W	TVD Reference:	WELL @ 4890.0ft (Original Well Elev)
Reference Site:	MLD 5 Pad Sec.22-T4N-R68W	MD Reference:	WELL @ 4890.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MLD 21-22	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (8-02-12)	Offset TVD Reference:	Offset Datum

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