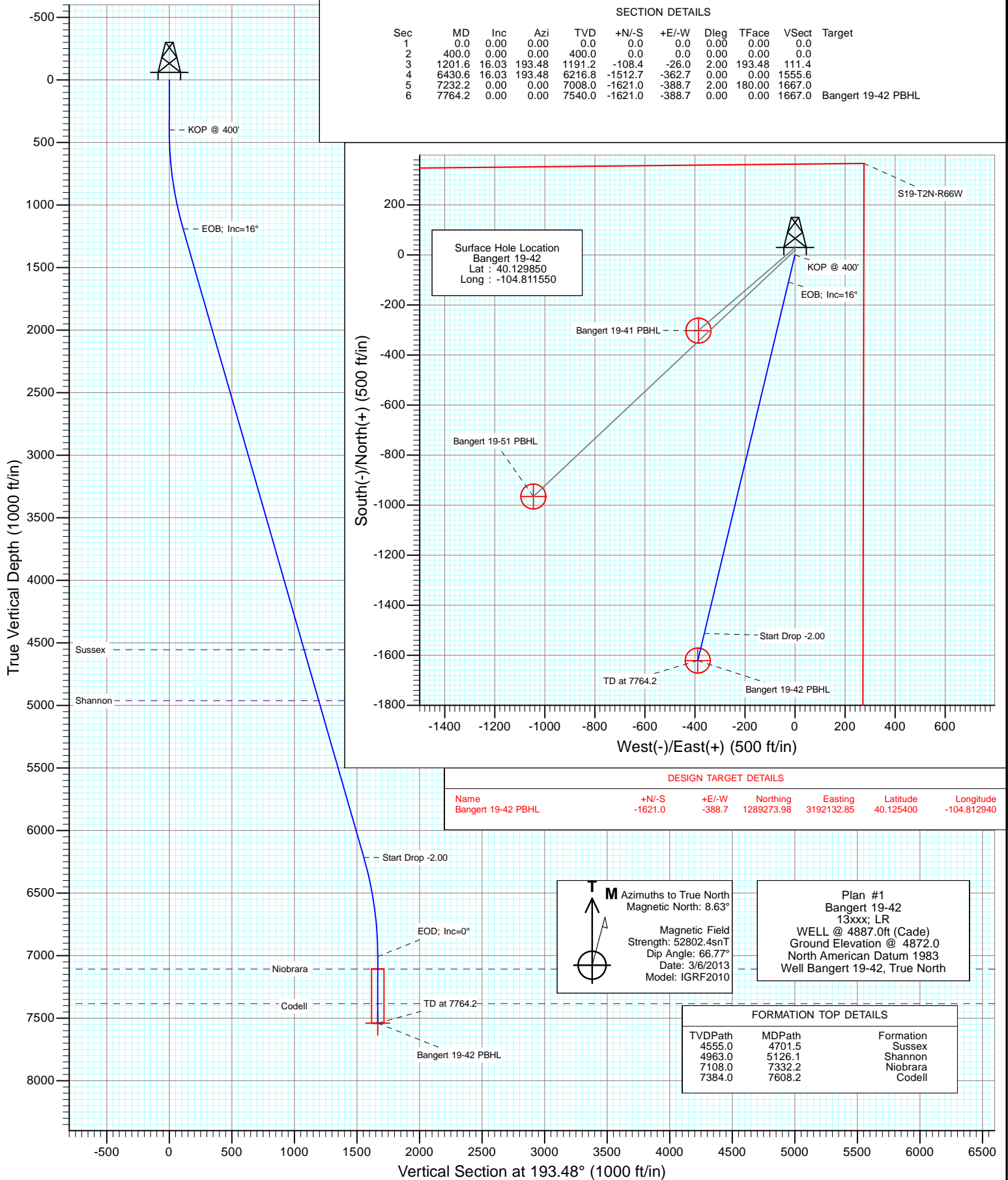




Project: Colorado
Site: SEC 19-T2N-R66W
Well: Bangert 19-42
Wellbore: DD
Design: Plan #1



Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Bangert 19-42
Company:	Sundance Energy	TVD Reference:	WELL @ 4887.0ft (Cade)
Project:	Colorado	MD Reference:	WELL @ 4887.0ft (Cade)
Site:	SEC 19-T2N-R66W	North Reference:	True
Well:	Bangert 19-42	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Project	Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		SEC 19-T2N-R66W			
Site Position:		Northing:	1,290,927.13 ft	Latitude:	40.129930
From:	Lat/Long	Easting:	3,192,508.73 ft	Longitude:	-104.811550
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.44 °

Well	Bangert 19-42					
Well Position	+N/-S	0.0 ft	Northing:	1,290,897.98 ft	Latitude:	40.129850
	+E/-W	0.0 ft	Easting:	3,192,508.96 ft	Longitude:	-104.811550
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,872.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/6/2013	8.63	66.77	52,802

Design	Plan #1				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	193.48	

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	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,201.6	16.03	193.48	1,191.2	-108.4	-26.0	2.00	2.00	0.00	193.48	
6,430.6	16.03	193.48	6,216.8	-1,512.7	-362.7	0.00	0.00	0.00	0.00	
7,232.2	0.00	0.00	7,008.0	-1,621.0	-388.7	2.00	-2.00	0.00	180.00	
7,764.2	0.00	0.00	7,540.0	-1,621.0	-388.7	0.00	0.00	0.00	0.00	Bangert 19-42 PBHL

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Bangert 19-42
Company:	Sundance Energy	TVD Reference:	WELL @ 4887.0ft (Cade)
Project:	Colorado	MD Reference:	WELL @ 4887.0ft (Cade)
Site:	SEC 19-T2N-R66W	North Reference:	True
Well:	Bangert 19-42	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

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)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	KOP @ 400'
500.0	2.00	193.48	500.0	-1.7	-0.4	1.7	2.00	2.00	
600.0	4.00	193.48	599.8	-6.8	-1.6	7.0	2.00	2.00	
700.0	6.00	193.48	699.5	-15.3	-3.7	15.7	2.00	2.00	
800.0	8.00	193.48	798.7	-27.1	-6.5	27.9	2.00	2.00	
900.0	10.00	193.48	897.5	-42.3	-10.1	43.5	2.00	2.00	
1,000.0	12.00	193.48	995.6	-60.9	-14.6	62.6	2.00	2.00	
1,100.0	14.00	193.48	1,093.1	-82.8	-19.8	85.1	2.00	2.00	
1,200.0	16.00	193.48	1,189.6	-107.9	-25.9	111.0	2.00	2.00	
1,201.6	16.03	193.48	1,191.2	-108.4	-26.0	111.4	2.00	2.00	EOB; Inc=16°
1,300.0	16.03	193.48	1,285.8	-134.8	-32.3	138.6	0.00	0.00	
1,400.0	16.03	193.48	1,381.9	-161.6	-38.8	166.2	0.00	0.00	
1,500.0	16.03	193.48	1,478.0	-188.5	-45.2	193.8	0.00	0.00	
1,600.0	16.03	193.48	1,574.1	-215.3	-51.6	221.4	0.00	0.00	
1,700.0	16.03	193.48	1,670.2	-242.2	-58.1	249.1	0.00	0.00	
1,800.0	16.03	193.48	1,766.3	-269.1	-64.5	276.7	0.00	0.00	
1,900.0	16.03	193.48	1,862.4	-295.9	-71.0	304.3	0.00	0.00	
2,000.0	16.03	193.48	1,958.5	-322.8	-77.4	331.9	0.00	0.00	
2,100.0	16.03	193.48	2,054.6	-349.6	-83.8	359.5	0.00	0.00	
2,200.0	16.03	193.48	2,150.7	-376.5	-90.3	387.2	0.00	0.00	
2,300.0	16.03	193.48	2,246.9	-403.3	-96.7	414.8	0.00	0.00	
2,400.0	16.03	193.48	2,343.0	-430.2	-103.2	442.4	0.00	0.00	
2,500.0	16.03	193.48	2,439.1	-457.1	-109.6	470.0	0.00	0.00	
2,600.0	16.03	193.48	2,535.2	-483.9	-116.0	497.6	0.00	0.00	
2,700.0	16.03	193.48	2,631.3	-510.8	-122.5	525.2	0.00	0.00	
2,800.0	16.03	193.48	2,727.4	-537.6	-128.9	552.9	0.00	0.00	
2,900.0	16.03	193.48	2,823.5	-564.5	-135.4	580.5	0.00	0.00	
3,000.0	16.03	193.48	2,919.6	-591.3	-141.8	608.1	0.00	0.00	
3,100.0	16.03	193.48	3,015.7	-618.2	-148.2	635.7	0.00	0.00	
3,200.0	16.03	193.48	3,111.9	-645.1	-154.7	663.3	0.00	0.00	
3,300.0	16.03	193.48	3,208.0	-671.9	-161.1	691.0	0.00	0.00	
3,400.0	16.03	193.48	3,304.1	-698.8	-167.6	718.6	0.00	0.00	
3,500.0	16.03	193.48	3,400.2	-725.6	-174.0	746.2	0.00	0.00	
3,600.0	16.03	193.48	3,496.3	-752.5	-180.4	773.8	0.00	0.00	
3,700.0	16.03	193.48	3,592.4	-779.3	-186.9	801.4	0.00	0.00	
3,800.0	16.03	193.48	3,688.5	-806.2	-193.3	829.0	0.00	0.00	
3,900.0	16.03	193.48	3,784.6	-833.0	-199.8	856.7	0.00	0.00	
4,000.0	16.03	193.48	3,880.7	-859.9	-206.2	884.3	0.00	0.00	
4,100.0	16.03	193.48	3,976.9	-886.8	-212.6	911.9	0.00	0.00	
4,200.0	16.03	193.48	4,073.0	-913.6	-219.1	939.5	0.00	0.00	
4,300.0	16.03	193.48	4,169.1	-940.5	-225.5	967.1	0.00	0.00	
4,400.0	16.03	193.48	4,265.2	-967.3	-232.0	994.8	0.00	0.00	
4,500.0	16.03	193.48	4,361.3	-994.2	-238.4	1,022.4	0.00	0.00	
4,600.0	16.03	193.48	4,457.4	-1,021.0	-244.8	1,050.0	0.00	0.00	
4,700.0	16.03	193.48	4,553.5	-1,047.9	-251.3	1,077.6	0.00	0.00	
4,701.5	16.03	193.48	4,555.0	-1,048.3	-251.4	1,078.0	0.00	0.00	Sussex
4,800.0	16.03	193.48	4,649.6	-1,074.8	-257.7	1,105.2	0.00	0.00	
4,900.0	16.03	193.48	4,745.7	-1,101.6	-264.1	1,132.8	0.00	0.00	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Bangert 19-42
Company:	Sundance Energy	TVD Reference:	WELL @ 4887.0ft (Cade)
Project:	Colorado	MD Reference:	WELL @ 4887.0ft (Cade)
Site:	SEC 19-T2N-R66W	North Reference:	True
Well:	Bangert 19-42	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

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)	Comments / Formations
5,000.0	16.03	193.48	4,841.8	-1,128.5	-270.6	1,160.5	0.00	0.00	
5,100.0	16.03	193.48	4,938.0	-1,155.3	-277.0	1,188.1	0.00	0.00	
5,126.1	16.03	193.48	4,963.0	-1,162.3	-278.7	1,195.3	0.00	0.00	Shannon
5,200.0	16.03	193.48	5,034.1	-1,182.2	-283.5	1,215.7	0.00	0.00	
5,300.0	16.03	193.48	5,130.2	-1,209.0	-289.9	1,243.3	0.00	0.00	
5,400.0	16.03	193.48	5,226.3	-1,235.9	-296.3	1,270.9	0.00	0.00	
5,500.0	16.03	193.48	5,322.4	-1,262.8	-302.8	1,298.5	0.00	0.00	
5,600.0	16.03	193.48	5,418.5	-1,289.6	-309.2	1,326.2	0.00	0.00	
5,700.0	16.03	193.48	5,514.6	-1,316.5	-315.7	1,353.8	0.00	0.00	
5,800.0	16.03	193.48	5,610.7	-1,343.3	-322.1	1,381.4	0.00	0.00	
5,900.0	16.03	193.48	5,706.8	-1,370.2	-328.5	1,409.0	0.00	0.00	
6,000.0	16.03	193.48	5,803.0	-1,397.0	-335.0	1,436.6	0.00	0.00	
6,100.0	16.03	193.48	5,899.1	-1,423.9	-341.4	1,464.3	0.00	0.00	
6,200.0	16.03	193.48	5,995.2	-1,450.8	-347.9	1,491.9	0.00	0.00	
6,300.0	16.03	193.48	6,091.3	-1,477.6	-354.3	1,519.5	0.00	0.00	
6,400.0	16.03	193.48	6,187.4	-1,504.5	-360.7	1,547.1	0.00	0.00	
6,430.6	16.03	193.48	6,216.8	-1,512.7	-362.7	1,555.6	0.00	0.00	Start Drop -2.00
6,500.0	14.64	193.48	6,283.7	-1,530.5	-367.0	1,573.9	2.00	-2.00	
6,600.0	12.64	193.48	6,380.9	-1,553.5	-372.5	1,597.5	2.00	-2.00	
6,700.0	10.64	193.48	6,478.8	-1,573.1	-377.2	1,617.7	2.00	-2.00	
6,800.0	8.64	193.48	6,577.4	-1,589.4	-381.1	1,634.4	2.00	-2.00	
6,900.0	6.64	193.48	6,676.5	-1,602.3	-384.2	1,647.7	2.00	-2.00	
7,000.0	4.64	193.48	6,776.0	-1,611.9	-386.5	1,657.6	2.00	-2.00	
7,100.0	2.64	193.48	6,875.8	-1,618.1	-388.0	1,663.9	2.00	-2.00	
7,200.0	0.64	193.48	6,975.8	-1,620.9	-388.7	1,666.8	2.00	-2.00	
7,232.2	0.00	0.00	7,008.0	-1,621.0	-388.7	1,667.0	2.00	-2.00	EOD; Inc=0°
7,300.0	0.00	0.00	7,075.8	-1,621.0	-388.7	1,667.0	0.00	0.00	
7,332.2	0.00	0.00	7,108.0	-1,621.0	-388.7	1,667.0	0.00	0.00	Niobrara
7,400.0	0.00	0.00	7,175.8	-1,621.0	-388.7	1,667.0	0.00	0.00	
7,500.0	0.00	0.00	7,275.8	-1,621.0	-388.7	1,667.0	0.00	0.00	
7,600.0	0.00	0.00	7,375.8	-1,621.0	-388.7	1,667.0	0.00	0.00	
7,608.2	0.00	0.00	7,384.0	-1,621.0	-388.7	1,667.0	0.00	0.00	Codell
7,700.0	0.00	0.00	7,475.8	-1,621.0	-388.7	1,667.0	0.00	0.00	
7,764.2	0.00	0.00	7,540.0	-1,621.0	-388.7	1,667.0	0.00	0.00	TD at 7764.2

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									
Bangert 19-42 PBHL	0.00	0.00	7,540.0	-1,621.0	-388.7	1,289,273.98	3,192,132.85	40.125400	-104.812940
- plan hits target center									
- Circle (radius 50.0)									

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Bangert 19-42
Company:	Sundance Energy	TVD Reference:	WELL @ 4887.0ft (Cade)
Project:	Colorado	MD Reference:	WELL @ 4887.0ft (Cade)
Site:	SEC 19-T2N-R66W	North Reference:	True
Well:	Bangert 19-42	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,701.5	4,555.0	Sussex		0.00		
5,126.1	4,963.0	Shannon		0.00		
7,332.2	7,108.0	Niobrara		0.00		
7,608.2	7,384.0	Codell		0.00		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
400.0	400.0	0.0	0.0	KOP @ 400'	
1,201.6	1,191.2	-108.4	-26.0	EOB; Inc=16°	
6,430.6	6,216.8	-1,512.7	-362.7	Start Drop -2.00	
7,232.2	7,008.0	-1,621.0	-388.7	EOD; Inc=0°	
7,764.2	7,540.0	-1,621.0	-388.7	TD at 7764.2	

Sundance Energy

Colorado

SEC 19-T2N-R66W

Bangert 19-42

DD

Plan #1

Anticollision Report

06 March, 2013

Anticollision Report

Company:	Sundance Energy	Local Co-ordinate Reference:	Well Bangert 19-42
Project:	Colorado	TVD Reference:	WELL @ 4887.0ft (Cade)
Reference Site:	SEC 19-T2N-R66W	MD Reference:	WELL @ 4887.0ft (Cade)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Bangert 19-42	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 500.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	3/6/2013		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	7,764.2	Plan #1 (DD)	MWD	Geolink MWD

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						
SEC 19-T2N-R66W						
Bangert 19-41 - DD - Plan #1	400.0	400.0	29.1	27.8	21.682	CC, ES
Bangert 19-41 - DD - Plan #1	600.0	599.8	36.0	33.9	17.632	SF
Bangert 19-51 - DD - Plan #1	400.0	400.0	18.2	16.9	13.556	CC, ES
Bangert 19-51 - DD - Plan #1	600.0	600.4	23.8	21.8	11.660	SF

Anticollision Report

Company:	Sundance Energy	Local Co-ordinate Reference:	Well Bangert 19-42
Project:	Colorado	TVD Reference:	WELL @ 4887.0ft (Cade)
Reference Site:	SEC 19-T2N-R66W	MD Reference:	WELL @ 4887.0ft (Cade)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Bangert 19-42	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SEC 19-T2N-R66W - Bangert 19-41 - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	0.00	29.1	0.0	29.1					
100.0	100.0	100.0	100.0	0.1	0.1	0.00	29.1	0.0	29.1	28.8	0.30	98.206		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	29.1	0.0	29.1	28.5	0.65	45.122		
300.0	300.0	300.0	300.0	0.5	0.5	0.00	29.1	0.0	29.1	28.1	0.99	29.289		
400.0	400.0	400.0	400.0	0.7	0.7	0.00	29.1	0.0	29.1	27.8	1.34	21.682 CC, ES		
500.0	500.0	500.0	500.0	0.8	0.8	167.26	29.1	0.0	30.8	29.1	1.69	18.221		
600.0	599.8	599.8	599.8	1.0	1.0	169.08	29.1	0.0	36.0	33.9	2.04	17.632 SF		
700.0	699.5	699.5	699.5	1.3	1.2	171.18	29.1	0.0	44.5	42.2	2.38	18.683		
800.0	798.7	800.1	800.1	1.5	1.4	171.83	28.0	-1.3	55.4	52.6	2.73	20.281		
900.0	897.5	900.9	900.8	1.8	1.6	170.57	24.5	-5.3	67.1	64.0	3.08	21.785		
1,000.0	995.6	1,000.7	1,000.2	2.1	1.8	168.64	19.3	-11.5	80.4	76.9	3.44	23.352		
1,100.0	1,093.1	1,099.3	1,098.5	2.5	2.0	167.59	13.9	-17.7	96.8	93.0	3.81	25.449		
1,200.0	1,189.6	1,197.3	1,196.1	3.0	2.2	167.19	8.6	-23.9	116.7	112.5	4.17	27.972		
1,300.0	1,285.8	1,295.0	1,293.4	3.5	2.4	167.14	3.3	-30.1	138.3	133.7	4.56	30.337		
1,400.0	1,381.9	1,392.6	1,390.7	4.0	2.6	167.11	-2.0	-36.3	159.9	154.9	4.95	32.312		
1,500.0	1,478.0	1,490.2	1,488.0	4.5	2.8	167.08	-7.4	-42.5	181.4	176.1	5.34	33.984		
1,600.0	1,574.1	1,587.9	1,585.3	5.0	3.0	167.06	-12.7	-48.7	203.0	197.3	5.73	35.415		
1,700.0	1,670.2	1,685.5	1,682.6	5.5	3.2	167.05	-18.0	-54.9	224.6	218.5	6.13	36.654		
1,800.0	1,766.3	1,783.2	1,780.0	6.0	3.4	167.03	-23.3	-61.1	246.2	239.6	6.52	37.736		
1,900.0	1,862.4	1,880.8	1,877.3	6.5	3.6	167.02	-28.6	-67.2	267.7	260.8	6.92	38.687		
2,000.0	1,958.5	1,978.5	1,974.6	7.0	3.9	167.01	-33.9	-73.4	289.3	282.0	7.32	39.531		
2,100.0	2,054.6	2,076.1	2,071.9	7.5	4.1	167.00	-39.3	-79.6	310.9	303.2	7.72	40.285		
2,200.0	2,150.7	2,173.8	2,169.2	8.0	4.3	167.00	-44.6	-85.8	332.5	324.3	8.12	40.961		
2,300.0	2,246.9	2,271.4	2,266.5	8.5	4.5	166.99	-49.9	-92.0	354.0	345.5	8.52	41.571		
2,400.0	2,343.0	2,369.0	2,363.8	9.0	4.7	166.98	-55.2	-98.2	375.6	366.7	8.92	42.124		
2,500.0	2,439.1	2,466.7	2,461.1	9.5	4.9	166.98	-60.5	-104.4	397.2	387.9	9.32	42.627		
2,600.0	2,535.2	2,564.3	2,558.4	10.0	5.2	166.98	-65.8	-110.6	418.8	409.0	9.72	43.088		
2,700.0	2,631.3	2,662.0	2,655.7	10.5	5.4	166.97	-71.1	-116.7	440.3	430.2	10.12	43.511		
2,800.0	2,727.4	2,759.6	2,753.0	11.0	5.6	166.97	-76.5	-122.9	461.9	451.4	10.52	43.900		
2,900.0	2,823.5	2,857.3	2,850.3	11.5	5.8	166.96	-81.8	-129.1	483.5	472.6	10.92	44.260		

Anticollision Report

Company:	Sundance Energy	Local Co-ordinate Reference:	Well Bangert 19-42
Project:	Colorado	TVD Reference:	WELL @ 4887.0ft (Cade)
Reference Site:	SEC 19-T2N-R66W	MD Reference:	WELL @ 4887.0ft (Cade)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Bangert 19-42	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SEC 19-T2N-R66W - Bangert 19-51 - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total	Separation	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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	0.00	18.2	0.0	18.2					
100.0	100.0	100.0	100.0	0.1	0.1	0.00	18.2	0.0	18.2	17.9	0.30	61.401		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	18.2	0.0	18.2	17.6	0.65	28.211		
300.0	300.0	300.0	300.0	0.5	0.5	0.00	18.2	0.0	18.2	17.2	0.99	18.313		
400.0	400.0	400.0	400.0	0.7	0.7	0.00	18.2	0.0	18.2	16.9	1.34	13.556 CC, ES		
500.0	500.0	500.0	500.0	0.8	0.8	167.68	18.2	0.0	19.9	18.2	1.69	11.770		
600.0	599.8	600.4	600.4	1.0	1.0	167.34	17.0	-1.3	23.8	21.8	2.04	11.660 SF		
700.0	699.5	700.9	700.8	1.3	1.2	163.57	13.4	-5.1	28.7	26.3	2.40	11.971		
800.0	798.7	801.4	800.8	1.5	1.4	158.19	7.4	-11.5	34.9	32.1	2.78	12.544		
900.0	897.5	901.7	900.4	1.8	1.7	152.42	-1.0	-20.5	42.7	39.4	3.22	13.237		
1,000.0	995.6	1,001.9	999.3	2.1	2.0	146.93	-11.8	-31.9	52.2	48.4	3.75	13.916		
1,100.0	1,093.1	1,101.9	1,097.5	2.5	2.3	142.03	-24.9	-45.9	63.6	59.2	4.38	14.497		
1,200.0	1,189.6	1,201.5	1,194.5	3.0	2.7	137.79	-40.3	-62.3	76.9	71.8	5.14	14.960		
1,300.0	1,285.8	1,300.4	1,290.5	3.5	3.1	134.86	-56.6	-79.5	91.5	85.5	5.95	15.374		
1,400.0	1,381.9	1,399.2	1,386.5	4.0	3.5	132.73	-72.8	-96.8	106.2	99.4	6.78	15.654		
1,500.0	1,478.0	1,498.1	1,482.4	4.5	3.9	131.13	-89.1	-114.1	121.0	113.4	7.64	15.852		
1,600.0	1,574.1	1,596.9	1,578.4	5.0	4.4	129.87	-105.3	-131.3	135.9	127.4	8.50	15.997		
1,700.0	1,670.2	1,695.7	1,674.3	5.5	4.8	128.87	-121.5	-148.6	150.9	141.5	9.37	16.108		
1,800.0	1,766.3	1,794.6	1,770.3	6.0	5.2	128.04	-137.8	-165.9	165.9	155.7	10.24	16.194		
1,900.0	1,862.4	1,893.4	1,866.2	6.5	5.7	127.35	-154.0	-183.1	180.9	169.8	11.13	16.262		
2,000.0	1,958.5	1,992.3	1,962.2	7.0	6.1	126.77	-170.3	-200.4	196.0	184.0	12.01	16.318		
2,100.0	2,054.6	2,091.1	2,058.2	7.5	6.6	126.27	-186.5	-217.7	211.0	198.1	12.90	16.364		
2,200.0	2,150.7	2,190.0	2,154.1	8.0	7.0	125.84	-202.7	-235.0	226.1	212.3	13.79	16.402		
2,300.0	2,246.9	2,288.8	2,250.1	8.5	7.5	125.46	-219.0	-252.2	241.2	226.5	14.68	16.434		
2,400.0	2,343.0	2,387.6	2,346.0	9.0	7.9	125.13	-235.2	-269.5	256.3	240.7	15.57	16.462		
2,500.0	2,439.1	2,486.5	2,442.0	9.5	8.4	124.83	-251.5	-286.8	271.4	254.9	16.46	16.486		
2,600.0	2,535.2	2,585.3	2,537.9	10.0	8.8	124.56	-267.7	-304.0	286.5	269.2	17.36	16.507		
2,700.0	2,631.3	2,684.2	2,633.9	10.5	9.3	124.33	-284.0	-321.3	301.6	283.4	18.25	16.526		
2,800.0	2,727.4	2,783.0	2,729.9	11.0	9.7	124.11	-300.2	-338.6	316.8	297.6	19.15	16.542		
2,900.0	2,823.5	2,881.9	2,825.8	11.5	10.2	123.91	-316.4	-355.9	331.9	311.8	20.05	16.557		
3,000.0	2,919.6	2,980.7	2,921.8	12.1	10.6	123.73	-332.7	-373.1	347.0	326.1	20.94	16.570		
3,100.0	3,015.7	3,079.5	3,017.7	12.6	11.1	123.57	-348.9	-390.4	362.2	340.3	21.84	16.582		
3,200.0	3,111.9	3,178.4	3,113.7	13.1	11.5	123.42	-365.2	-407.7	377.3	354.5	22.74	16.592		
3,300.0	3,208.0	3,277.2	3,209.7	13.6	12.0	123.28	-381.4	-424.9	392.4	368.8	23.64	16.602		
3,400.0	3,304.1	3,376.1	3,305.6	14.1	12.4	123.15	-397.7	-442.2	407.6	383.0	24.54	16.611		
3,500.0	3,400.2	3,474.9	3,401.6	14.6	12.9	123.03	-413.9	-459.5	422.7	397.3	25.44	16.619		
3,600.0	3,496.3	3,573.8	3,497.5	15.1	13.3	122.92	-430.1	-476.8	437.8	411.5	26.33	16.626		
3,700.0	3,592.4	3,672.6	3,593.5	15.6	13.8	122.81	-446.4	-494.0	453.0	425.8	27.23	16.633		
3,800.0	3,688.5	3,771.5	3,689.4	16.2	14.2	122.72	-462.6	-511.3	468.1	440.0	28.13	16.640		
3,900.0	3,784.6	3,870.3	3,785.4	16.7	14.7	122.63	-478.9	-528.6	483.3	454.3	29.03	16.645		
4,000.0	3,880.7	3,969.1	3,881.4	17.2	15.1	122.54	-495.1	-545.8	498.4	468.5	29.93	16.651		

Anticollision Report

Company:	Sundance Energy	Local Co-ordinate Reference:	Well Bangert 19-42
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Reference Site:	SEC 19-T2N-R66W	MD Reference:	WELL @ 4887.0ft (Cade)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Bangert 19-42	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4887.0ft (Cade)

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Bangert 19-42

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.44°

