

ConocoPhillips RBU Gold

Data_Niobrara

Niobrara - CO Northern Zone

Left Hand

Left Hand 3-65 13-18 2DH

Wellbore #1

Plan: Left Hand 3-65 13-18 2DH Rev A.0

Standard Planning Report

02 November, 2017

ConocoPhillips

Planning Report

Database:	EDT 14 Central Planning	Local Co-ordinate Reference:	Well Left Hand 3-65 13-18 2DH
Company:	ConocoPhillips RBU Gold Data_Niobrara	TVD Reference:	B-16 @ 5453.30ft
Project:	Niobrara - CO Northern Zone	MD Reference:	B-16 @ 5453.30ft
Site:	Left Hand	North Reference:	True
Well:	Left Hand 3-65 13-18 2DH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Left Hand 3-65 13-18 2DH Rev A.0		

Project	Niobrara - CO Northern Zone, Adams County, CO, Definitive (Gold) Database		
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		Left Hand			
Site Position:		Northing:	1,168,564.763 usft	Latitude:	39° 47' 33.730 N
From:	Lat/Long	Easting:	3,247,612.206 usft	Longitude:	104° 37' 7.750 W
Position Uncertainty:	2.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.57 °

Well	Left Hand 3-65 13-18 2DH					
Well Position	+N/-S	-119.41 ft	Northing:	1,168,445.364 usft	Latitude:	39° 47' 32.550 N
	+E/-W	0.00 ft	Easting:	3,247,613.392 usft	Longitude:	104° 37' 7.750 W
Position Uncertainty		2.00 ft	Wellhead Elevation:		Ground Level:	5,428.30 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2017	11/2/2017	8.23	66.41	52,029.28223123

Design	Left Hand 3-65 13-18 2DH Rev A.0			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	7,542.00	0.00	0.00	93.46

Plan Survey Tool Program	Date	11/2/2017		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	2,005.00	Left Hand 3-65 13-18 2DH Rev A	Standard Keeper 104 Standard Wireline Keeper ver 1
2	2,005.00	18,081.73	Left Hand 3-65 13-18 2DH Rev A	MWD MWD - Standard ISCWSA

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Wellbore:	Wellbore #1		
Design:	Left Hand 3-65 13-18 2DH Rev A.0		

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,005.00	0.00	0.00	2,005.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,276.07	22.14	245.41	5,239.60	-117.21	-256.13	1.50	1.50	0.00	245.41	
7,042.15	22.14	245.41	6,875.45	-394.17	-861.38	0.00	0.00	0.00	0.00	
8,147.22	90.52	90.31	7,633.00	-528.19	-318.49	10.00	6.19	-14.04	-153.29	Left Hand 3-65 13-18
18,081.73	90.52	90.31	7,542.00	-581.99	9,615.46	0.00	0.00	0.00	0.00	Left Hand 3-65 13-18

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Well:	Left Hand 3-65 13-18 2DH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Left Hand 3-65 13-18 2DH Rev A.0		

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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,005.00	0.00	0.00	2,005.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	1.50	245.41	3,899.99	-0.54	-1.19	-1.16	1.50	1.50	0.00
4,000.00	3.00	245.41	3,999.91	-2.18	-4.76	-4.62	1.50	1.50	0.00
4,100.00	4.50	245.41	4,099.69	-4.90	-10.71	-10.39	1.50	1.50	0.00
4,200.00	6.00	245.41	4,199.27	-8.71	-19.03	-18.47	1.50	1.50	0.00
4,300.00	7.50	245.41	4,298.57	-13.60	-29.71	-28.84	1.50	1.50	0.00
4,400.00	9.00	245.41	4,397.54	-19.57	-42.76	-41.50	1.50	1.50	0.00
4,500.00	10.50	245.41	4,496.09	-26.62	-58.16	-56.45	1.50	1.50	0.00
4,600.00	12.00	245.41	4,594.16	-34.73	-75.90	-73.66	1.50	1.50	0.00
4,700.00	13.50	245.41	4,691.70	-43.92	-95.97	-93.14	1.50	1.50	0.00
4,800.00	15.00	245.41	4,788.62	-54.16	-118.35	-114.86	1.50	1.50	0.00
4,900.00	16.50	245.41	4,884.86	-65.45	-143.03	-138.82	1.50	1.50	0.00
5,000.00	18.00	245.41	4,980.36	-77.79	-170.00	-164.99	1.50	1.50	0.00
5,100.00	19.50	245.41	5,075.05	-91.17	-199.22	-193.35	1.50	1.50	0.00

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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)
5,200.00	21.00	245.41	5,168.86	-105.57	-230.70	-223.90	1.50	1.50	0.00
5,276.07	22.14	245.41	5,239.60	-117.21	-256.13	-248.58	1.50	1.50	0.00
5,300.00	22.14	245.41	5,261.77	-120.96	-264.33	-256.54	0.00	0.00	0.00
5,400.00	22.14	245.41	5,354.40	-136.64	-298.60	-289.80	0.00	0.00	0.00
5,500.00	22.14	245.41	5,447.02	-152.32	-332.87	-323.06	0.00	0.00	0.00
5,600.00	22.14	245.41	5,539.65	-168.01	-367.14	-356.32	0.00	0.00	0.00
5,700.00	22.14	245.41	5,632.28	-183.69	-401.41	-389.58	0.00	0.00	0.00
5,800.00	22.14	245.41	5,724.90	-199.37	-435.68	-422.84	0.00	0.00	0.00
5,900.00	22.14	245.41	5,817.53	-215.05	-469.95	-456.10	0.00	0.00	0.00
6,000.00	22.14	245.41	5,910.15	-230.74	-504.22	-489.36	0.00	0.00	0.00
6,100.00	22.14	245.41	6,002.78	-246.42	-538.50	-522.62	0.00	0.00	0.00
6,200.00	22.14	245.41	6,095.40	-262.10	-572.77	-555.88	0.00	0.00	0.00
6,300.00	22.14	245.41	6,188.03	-277.79	-607.04	-589.15	0.00	0.00	0.00
6,400.00	22.14	245.41	6,280.66	-293.47	-641.31	-622.41	0.00	0.00	0.00
6,500.00	22.14	245.41	6,373.28	-309.15	-675.58	-655.67	0.00	0.00	0.00
6,600.00	22.14	245.41	6,465.91	-324.83	-709.85	-688.93	0.00	0.00	0.00
6,700.00	22.14	245.41	6,558.53	-340.52	-744.12	-722.19	0.00	0.00	0.00
6,800.00	22.14	245.41	6,651.16	-356.20	-778.39	-755.45	0.00	0.00	0.00
6,900.00	22.14	245.41	6,743.79	-371.88	-812.66	-788.71	0.00	0.00	0.00
7,000.00	22.14	245.41	6,836.41	-387.56	-846.93	-821.97	0.00	0.00	0.00
7,042.15	22.14	245.41	6,875.45	-394.17	-861.38	-835.99	0.00	0.00	0.00
7,100.00	17.16	236.58	6,929.93	-403.42	-878.43	-852.45	10.00	-8.61	-15.27
7,200.00	10.61	203.78	7,027.10	-420.01	-894.49	-867.49	10.00	-6.55	-32.79
7,300.00	11.34	149.41	7,125.52	-436.94	-893.20	-865.17	10.00	0.73	-54.38
7,400.00	18.51	121.29	7,222.20	-453.69	-874.58	-845.58	10.00	7.17	-28.12
7,500.00	27.47	109.70	7,314.21	-469.75	-839.21	-809.30	10.00	8.96	-11.59
7,600.00	36.94	103.61	7,398.74	-484.64	-788.16	-757.44	10.00	9.47	-6.09
7,700.00	46.61	99.75	7,473.24	-497.90	-722.98	-691.58	10.00	9.67	-3.86
7,800.00	56.37	96.97	7,535.44	-509.13	-645.65	-613.71	10.00	9.76	-2.79
7,900.00	66.18	94.75	7,583.44	-517.99	-558.52	-526.20	10.00	9.81	-2.21
8,000.00	76.02	92.85	7,615.80	-524.21	-464.24	-431.72	10.00	9.84	-1.90
8,100.00	85.87	91.11	7,631.52	-527.61	-365.67	-333.12	10.00	9.85	-1.74
8,147.22	90.52	90.31	7,633.00	-528.19	-318.49	-285.99	10.00	9.86	-1.70
8,200.00	90.52	90.31	7,632.52	-528.48	-265.71	-233.29	0.00	0.00	0.00
8,300.00	90.52	90.31	7,631.60	-529.02	-165.71	-133.45	0.00	0.00	0.00
8,400.00	90.52	90.31	7,630.68	-529.56	-65.72	-33.61	0.00	0.00	0.00
8,500.00	90.52	90.31	7,629.77	-530.10	34.27	66.24	0.00	0.00	0.00
8,600.00	90.52	90.31	7,628.85	-530.64	134.27	166.08	0.00	0.00	0.00
8,700.00	90.52	90.31	7,627.94	-531.18	234.26	265.93	0.00	0.00	0.00
8,800.00	90.52	90.31	7,627.02	-531.73	334.26	365.77	0.00	0.00	0.00
8,900.00	90.52	90.31	7,626.10	-532.27	434.25	465.62	0.00	0.00	0.00
9,000.00	90.52	90.31	7,625.19	-532.81	534.25	565.46	0.00	0.00	0.00
9,100.00	90.52	90.31	7,624.27	-533.35	634.24	665.30	0.00	0.00	0.00
9,200.00	90.52	90.31	7,623.36	-533.89	734.23	765.15	0.00	0.00	0.00
9,300.00	90.52	90.31	7,622.44	-534.43	834.23	864.99	0.00	0.00	0.00
9,400.00	90.52	90.31	7,621.52	-534.98	934.22	964.84	0.00	0.00	0.00
9,500.00	90.52	90.31	7,620.61	-535.52	1,034.22	1,064.68	0.00	0.00	0.00
9,600.00	90.52	90.31	7,619.69	-536.06	1,134.21	1,164.53	0.00	0.00	0.00
9,700.00	90.52	90.31	7,618.78	-536.60	1,234.21	1,264.37	0.00	0.00	0.00
9,800.00	90.52	90.31	7,617.86	-537.14	1,334.20	1,364.22	0.00	0.00	0.00
9,900.00	90.52	90.31	7,616.94	-537.68	1,434.20	1,464.06	0.00	0.00	0.00
10,000.00	90.52	90.31	7,616.03	-538.22	1,534.19	1,563.90	0.00	0.00	0.00
10,100.00	90.52	90.31	7,615.11	-538.77	1,634.18	1,663.75	0.00	0.00	0.00
10,200.00	90.52	90.31	7,614.20	-539.31	1,734.18	1,763.59	0.00	0.00	0.00

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Project:	Niobrara - CO Northern Zone	MD Reference:	B-16 @ 5453.30ft
Site:	Left Hand	North Reference:	True
Well:	Left Hand 3-65 13-18 2DH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Left Hand 3-65 13-18 2DH Rev A.0		

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)
10,300.00	90.52	90.31	7,613.28	-539.85	1,834.17	1,863.44	0.00	0.00	0.00
10,400.00	90.52	90.31	7,612.36	-540.39	1,934.17	1,963.28	0.00	0.00	0.00
10,500.00	90.52	90.31	7,611.45	-540.93	2,034.16	2,063.13	0.00	0.00	0.00
10,600.00	90.52	90.31	7,610.53	-541.47	2,134.16	2,162.97	0.00	0.00	0.00
10,700.00	90.52	90.31	7,609.62	-542.02	2,234.15	2,262.82	0.00	0.00	0.00
10,800.00	90.52	90.31	7,608.70	-542.56	2,334.14	2,362.66	0.00	0.00	0.00
10,900.00	90.52	90.31	7,607.78	-543.10	2,434.14	2,462.50	0.00	0.00	0.00
11,000.00	90.52	90.31	7,606.87	-543.64	2,534.13	2,562.35	0.00	0.00	0.00
11,100.00	90.52	90.31	7,605.95	-544.18	2,634.13	2,662.19	0.00	0.00	0.00
11,200.00	90.52	90.31	7,605.04	-544.72	2,734.12	2,762.04	0.00	0.00	0.00
11,300.00	90.52	90.31	7,604.12	-545.26	2,834.12	2,861.88	0.00	0.00	0.00
11,400.00	90.52	90.31	7,603.20	-545.81	2,934.11	2,961.73	0.00	0.00	0.00
11,500.00	90.52	90.31	7,602.29	-546.35	3,034.10	3,061.57	0.00	0.00	0.00
11,600.00	90.52	90.31	7,601.37	-546.89	3,134.10	3,161.41	0.00	0.00	0.00
11,700.00	90.52	90.31	7,600.46	-547.43	3,234.09	3,261.26	0.00	0.00	0.00
11,800.00	90.52	90.31	7,599.54	-547.97	3,334.09	3,361.10	0.00	0.00	0.00
11,900.00	90.52	90.31	7,598.62	-548.51	3,434.08	3,460.95	0.00	0.00	0.00
12,000.00	90.52	90.31	7,597.71	-549.06	3,534.08	3,560.79	0.00	0.00	0.00
12,100.00	90.52	90.31	7,596.79	-549.60	3,634.07	3,660.64	0.00	0.00	0.00
12,200.00	90.52	90.31	7,595.88	-550.14	3,734.07	3,760.48	0.00	0.00	0.00
12,300.00	90.52	90.31	7,594.96	-550.68	3,834.06	3,860.33	0.00	0.00	0.00
12,400.00	90.52	90.31	7,594.04	-551.22	3,934.05	3,960.17	0.00	0.00	0.00
12,500.00	90.52	90.31	7,593.13	-551.76	4,034.05	4,060.01	0.00	0.00	0.00
12,600.00	90.52	90.31	7,592.21	-552.30	4,134.04	4,159.86	0.00	0.00	0.00
12,700.00	90.52	90.31	7,591.30	-552.85	4,234.04	4,259.70	0.00	0.00	0.00
12,800.00	90.52	90.31	7,590.38	-553.39	4,334.03	4,359.55	0.00	0.00	0.00
12,900.00	90.52	90.31	7,589.46	-553.93	4,434.03	4,459.39	0.00	0.00	0.00
13,000.00	90.52	90.31	7,588.55	-554.47	4,534.02	4,559.24	0.00	0.00	0.00
13,100.00	90.52	90.31	7,587.63	-555.01	4,634.01	4,659.08	0.00	0.00	0.00
13,200.00	90.52	90.31	7,586.72	-555.55	4,734.01	4,758.93	0.00	0.00	0.00
13,300.00	90.52	90.31	7,585.80	-556.10	4,834.00	4,858.77	0.00	0.00	0.00
13,400.00	90.52	90.31	7,584.88	-556.64	4,934.00	4,958.61	0.00	0.00	0.00
13,500.00	90.52	90.31	7,583.97	-557.18	5,033.99	5,058.46	0.00	0.00	0.00
13,600.00	90.52	90.31	7,583.05	-557.72	5,133.99	5,158.30	0.00	0.00	0.00
13,700.00	90.52	90.31	7,582.14	-558.26	5,233.98	5,258.15	0.00	0.00	0.00
13,800.00	90.52	90.31	7,581.22	-558.80	5,333.97	5,357.99	0.00	0.00	0.00
13,900.00	90.52	90.31	7,580.30	-559.34	5,433.97	5,457.84	0.00	0.00	0.00
14,000.00	90.52	90.31	7,579.39	-559.89	5,533.96	5,557.68	0.00	0.00	0.00
14,100.00	90.52	90.31	7,578.47	-560.43	5,633.96	5,657.52	0.00	0.00	0.00
14,200.00	90.52	90.31	7,577.56	-560.97	5,733.95	5,757.37	0.00	0.00	0.00
14,300.00	90.52	90.31	7,576.64	-561.51	5,833.95	5,857.21	0.00	0.00	0.00
14,400.00	90.52	90.31	7,575.72	-562.05	5,933.94	5,957.06	0.00	0.00	0.00
14,500.00	90.52	90.31	7,574.81	-562.59	6,033.93	6,056.90	0.00	0.00	0.00
14,600.00	90.52	90.31	7,573.89	-563.14	6,133.93	6,156.75	0.00	0.00	0.00
14,700.00	90.52	90.31	7,572.98	-563.68	6,233.92	6,256.59	0.00	0.00	0.00
14,800.00	90.52	90.31	7,572.06	-564.22	6,333.92	6,356.44	0.00	0.00	0.00
14,900.00	90.52	90.31	7,571.14	-564.76	6,433.91	6,456.28	0.00	0.00	0.00
15,000.00	90.52	90.31	7,570.23	-565.30	6,533.91	6,556.12	0.00	0.00	0.00
15,100.00	90.52	90.31	7,569.31	-565.84	6,633.90	6,655.97	0.00	0.00	0.00
15,200.00	90.52	90.31	7,568.40	-566.38	6,733.90	6,755.81	0.00	0.00	0.00
15,300.00	90.52	90.31	7,567.48	-566.93	6,833.89	6,855.66	0.00	0.00	0.00
15,400.00	90.52	90.31	7,566.56	-567.47	6,933.88	6,955.50	0.00	0.00	0.00
15,500.00	90.52	90.31	7,565.65	-568.01	7,033.88	7,055.35	0.00	0.00	0.00
15,600.00	90.52	90.31	7,564.73	-568.55	7,133.87	7,155.19	0.00	0.00	0.00

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Planning Report

Database:	EDT 14 Central Planning	Local Co-ordinate Reference:	Well Left Hand 3-65 13-18 2DH
Company:	ConocoPhillips RBU Gold Data_Niobrara	TVD Reference:	B-16 @ 5453.30ft
Project:	Niobrara - CO Northern Zone	MD Reference:	B-16 @ 5453.30ft
Site:	Left Hand	North Reference:	True
Well:	Left Hand 3-65 13-18 2DH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Left Hand 3-65 13-18 2DH Rev A.0		

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)
15,700.00	90.52	90.31	7,563.82	-569.09	7,233.87	7,255.04	0.00	0.00	0.00
15,800.00	90.52	90.31	7,562.90	-569.63	7,333.86	7,354.88	0.00	0.00	0.00
15,900.00	90.52	90.31	7,561.98	-570.18	7,433.86	7,454.72	0.00	0.00	0.00
16,000.00	90.52	90.31	7,561.07	-570.72	7,533.85	7,554.57	0.00	0.00	0.00
16,100.00	90.52	90.31	7,560.15	-571.26	7,633.84	7,654.41	0.00	0.00	0.00
16,200.00	90.52	90.31	7,559.24	-571.80	7,733.84	7,754.26	0.00	0.00	0.00
16,300.00	90.52	90.31	7,558.32	-572.34	7,833.83	7,854.10	0.00	0.00	0.00
16,400.00	90.52	90.31	7,557.40	-572.88	7,933.83	7,953.95	0.00	0.00	0.00
16,500.00	90.52	90.31	7,556.49	-573.42	8,033.82	8,053.79	0.00	0.00	0.00
16,600.00	90.52	90.31	7,555.57	-573.97	8,133.82	8,153.63	0.00	0.00	0.00
16,700.00	90.52	90.31	7,554.66	-574.51	8,233.81	8,253.48	0.00	0.00	0.00
16,800.00	90.52	90.31	7,553.74	-575.05	8,333.80	8,353.32	0.00	0.00	0.00
16,900.00	90.52	90.31	7,552.82	-575.59	8,433.80	8,453.17	0.00	0.00	0.00
17,000.00	90.52	90.31	7,551.91	-576.13	8,533.79	8,553.01	0.00	0.00	0.00
17,100.00	90.52	90.31	7,550.99	-576.67	8,633.79	8,652.86	0.00	0.00	0.00
17,200.00	90.52	90.31	7,550.08	-577.22	8,733.78	8,752.70	0.00	0.00	0.00
17,300.00	90.52	90.31	7,549.16	-577.76	8,833.78	8,852.55	0.00	0.00	0.00
17,400.00	90.52	90.31	7,548.24	-578.30	8,933.77	8,952.39	0.00	0.00	0.00
17,500.00	90.52	90.31	7,547.33	-578.84	9,033.77	9,052.23	0.00	0.00	0.00
17,600.00	90.52	90.31	7,546.41	-579.38	9,133.76	9,152.08	0.00	0.00	0.00
17,700.00	90.52	90.31	7,545.50	-579.92	9,233.75	9,251.92	0.00	0.00	0.00
17,800.00	90.52	90.31	7,544.58	-580.46	9,333.75	9,351.77	0.00	0.00	0.00
17,900.00	90.52	90.31	7,543.66	-581.01	9,433.74	9,451.61	0.00	0.00	0.00
18,000.00	90.52	90.31	7,542.75	-581.55	9,533.74	9,551.46	0.00	0.00	0.00
18,081.00	90.52	90.31	7,542.01	-581.99	9,614.73	9,632.33	0.00	0.00	0.00
5 1/2" x 8 1/2"									
18,081.73	90.52	90.31	7,542.00	-581.99	9,615.46	9,633.06	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Left Hand 3-65 13-18 2C	0.00	0.00	7,542.00	-581.99	9,615.46	1,167,958.958	3,257,234.032	39° 47' 26.780 N	104° 35' 4.570 W
- plan hits target center									
- Point									
Left Hand 3-65 13-18 2C	0.00	0.00	7,633.00	-528.19	-318.49	1,167,914.042	3,247,300.176	39° 47' 27.330 N	104° 37' 11.830 W
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
2,005.00	2,005.00	9 5/8"	9-5/8	12-1/4	
18,081.00	7,542.01	5 1/2" x 8 1/2"	5-1/2	8-1/2	



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Left Hand 3-65 13-18 2DH Rev A.0

Ground Level: 5428.30
Surface Location Latitude: 39° 47' 32.550 N
Surface Location Longitude: 104° 37' 7.750 W
North Reference: True
B-16 @ 5453.30ft

North American Datum 1983
GRS 1980
US State Plane 1983
Colorado Northern Zone

Well Profile Data

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	Vsect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005.00	0.00	0.00	2005.00	0.00	0.00	0.00	0.00
3800.00	0.00	0.00	3800.00	0.00	0.00	0.00	0.00
5276.07	22.14	245.41	5239.60	-117.21	-256.13	1.50	-248.58
7042.15	22.14	245.41	6875.45	-394.17	-861.38	0.00	-835.99
8147.22	90.52	90.31	7633.00	-528.19	-318.49	10.00	-285.99
18081.73	90.52	90.31	7542.00	-581.99	9615.46	0.00	9633.06

West(-)/East(+) (2000 ft/in)

-2000 -1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 11000

Casing Depths

TVD	MD	Name	Size
2005.00	2005.00	9 5/8"	9-5/8
7542.01	18081.005	1/2" x 8 1/2"	5-1/2

11

12

