

ConocoPhillips RBU Gold Data_Niobrara

Niobrara - CO Central Zone

Lone Tree

Lone Tree 4-65 15-16 4H_D

Lone Tree 4-65 15-16 4H_D

Plan: Lone Tree 4-65 15-16 4H_D

Standard Planning Report

05 October, 2016

ConocoPhillips

Planning Report

Database:	EDM Central Planning	Local Co-ordinate Reference:	Well Lone Tree 4-65 15-16 4H_D
Company:	ConocoPhillips RBU Gold Data_Niobrara	TVD Reference:	25' RKB @ 5717.80ft
Project:	Niobrara - CO Central Zone	MD Reference:	25' RKB @ 5717.80ft
Site:	Lone Tree	North Reference:	True
Well:	Lone Tree 4-65 15-16 4H_D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lone Tree 4-65 15-16 4H_D		
Design:	Lone Tree 4-65 15-16 4H_D		

Project	Niobrara - CO Central Zone, Arapahoe, Douglas, Elbert County - Colorado, 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 Central Zone		Using geodetic scale factor

Site	Lone Tree			
Site Position:		Northing:	1,684,901.193 usft	Latitude: 39° 42' 39.550 N
From:	Lat/Long	Easting:	3,231,149.887 usft	Longitude: 104° 40' 42.172 W
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence: 0.52 °

Well	Lone Tree 4-65 15-16 4H_D			
Well Position	+N/-S	-1,811.30 ft	Northing:	1,683,179.569 usft
	+E/-W	9,905.60 ft	Easting:	3,241,071.369 usft
Position Uncertainty		2.00 ft	Wellhead Elevation:	0.00 ft
			Ground Level:	5,692.80 ft

Wellbore	Lone Tree 4-65 15-16 4H_D				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2016	10/5/2016	8.33	66.40	52,121

Design	Lone Tree 4-65 15-16 4H_D			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	264.16

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	
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,842.97	9.64	177.19	2,839.94	-53.92	2.65	1.50	1.50	0.00	177.19	
7,506.93	9.64	177.19	7,437.97	-834.36	40.96	0.00	0.00	0.00	0.00	
8,411.14	90.00	269.70	8,007.00	-933.92	-531.48	10.00	8.89	10.23	92.48	Lone Tree 4-65 15-16
17,465.19	90.00	269.70	8,007.00	-980.70	-9,585.41	0.00	0.00	0.00	0.00	Lone Tree 4-65 15-16

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Planning Report

Database:	EDM Central Planning	Local Co-ordinate Reference:	Well Lone Tree 4-65 15-16 4H_D
Company:	ConocoPhillips RBU Gold Data_Niobrara	TVD Reference:	25' RKB @ 5717.80ft
Project:	Niobrara - CO Central Zone	MD Reference:	25' RKB @ 5717.80ft
Site:	Lone Tree	North Reference:	True
Well:	Lone Tree 4-65 15-16 4H_D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lone Tree 4-65 15-16 4H_D		
Design:	Lone Tree 4-65 15-16 4H_D		

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
2,100.00	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	1.50	177.19	2,299.99	-1.31	0.06	0.07	1.50	1.50	0.00
2,400.00	3.00	177.19	2,399.91	-5.23	0.26	0.28	1.50	1.50	0.00
2,500.00	4.50	177.19	2,499.69	-11.76	0.58	0.62	1.50	1.50	0.00
2,600.00	6.00	177.19	2,599.27	-20.90	1.03	1.11	1.50	1.50	0.00
2,700.00	7.50	177.19	2,698.57	-32.64	1.60	1.73	1.50	1.50	0.00
2,800.00	9.00	177.19	2,797.54	-46.97	2.31	2.49	1.50	1.50	0.00
2,842.97	9.64	177.19	2,839.94	-53.92	2.65	2.86	1.50	1.50	0.00
2,900.00	9.64	177.19	2,896.16	-63.47	3.12	3.36	0.00	0.00	0.00
3,000.00	9.64	177.19	2,994.75	-80.20	3.94	4.25	0.00	0.00	0.00
3,100.00	9.64	177.19	3,093.34	-96.93	4.76	5.13	0.00	0.00	0.00
3,200.00	9.64	177.19	3,191.92	-113.67	5.58	6.02	0.00	0.00	0.00
3,300.00	9.64	177.19	3,290.51	-130.40	6.40	6.90	0.00	0.00	0.00
3,400.00	9.64	177.19	3,389.09	-147.13	7.22	7.79	0.00	0.00	0.00
3,500.00	9.64	177.19	3,487.68	-163.87	8.04	8.68	0.00	0.00	0.00
3,600.00	9.64	177.19	3,586.27	-180.60	8.86	9.56	0.00	0.00	0.00
3,700.00	9.64	177.19	3,684.85	-197.33	9.69	10.45	0.00	0.00	0.00
3,800.00	9.64	177.19	3,783.44	-214.07	10.51	11.33	0.00	0.00	0.00
3,900.00	9.64	177.19	3,882.03	-230.80	11.33	12.22	0.00	0.00	0.00
4,000.00	9.64	177.19	3,980.61	-247.53	12.15	13.11	0.00	0.00	0.00
4,100.00	9.64	177.19	4,079.20	-264.27	12.97	13.99	0.00	0.00	0.00
4,200.00	9.64	177.19	4,177.79	-281.00	13.79	14.88	0.00	0.00	0.00
4,300.00	9.64	177.19	4,276.37	-297.73	14.61	15.76	0.00	0.00	0.00
4,400.00	9.64	177.19	4,374.96	-314.47	15.44	16.65	0.00	0.00	0.00
4,500.00	9.64	177.19	4,473.55	-331.20	16.26	17.54	0.00	0.00	0.00
4,600.00	9.64	177.19	4,572.13	-347.93	17.08	18.42	0.00	0.00	0.00
4,700.00	9.64	177.19	4,670.72	-364.67	17.90	19.31	0.00	0.00	0.00
4,800.00	9.64	177.19	4,769.31	-381.40	18.72	20.19	0.00	0.00	0.00
4,900.00	9.64	177.19	4,867.89	-398.13	19.54	21.08	0.00	0.00	0.00
5,000.00	9.64	177.19	4,966.48	-414.87	20.36	21.97	0.00	0.00	0.00
5,100.00	9.64	177.19	5,065.07	-431.60	21.19	22.85	0.00	0.00	0.00
5,200.00	9.64	177.19	5,163.65	-448.33	22.01	23.74	0.00	0.00	0.00

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Project:	Niobrara - CO Central Zone	MD Reference:	25' RKB @ 5717.80ft
Site:	Lone Tree	North Reference:	True
Well:	Lone Tree 4-65 15-16 4H_D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lone Tree 4-65 15-16 4H_D		
Design:	Lone Tree 4-65 15-16 4H_D		

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)
5,300.00	9.64	177.19	5,262.24	-465.07	22.83	24.62	0.00	0.00	0.00
5,400.00	9.64	177.19	5,360.83	-481.80	23.65	25.51	0.00	0.00	0.00
5,500.00	9.64	177.19	5,459.41	-498.53	24.47	26.40	0.00	0.00	0.00
5,600.00	9.64	177.19	5,558.00	-515.27	25.29	27.28	0.00	0.00	0.00
5,700.00	9.64	177.19	5,656.59	-532.00	26.11	28.17	0.00	0.00	0.00
5,800.00	9.64	177.19	5,755.17	-548.73	26.94	29.05	0.00	0.00	0.00
5,900.00	9.64	177.19	5,853.76	-565.47	27.76	29.94	0.00	0.00	0.00
6,000.00	9.64	177.19	5,952.35	-582.20	28.58	30.83	0.00	0.00	0.00
6,100.00	9.64	177.19	6,050.93	-598.93	29.40	31.71	0.00	0.00	0.00
6,200.00	9.64	177.19	6,149.52	-615.67	30.22	32.60	0.00	0.00	0.00
6,300.00	9.64	177.19	6,248.11	-632.40	31.04	33.49	0.00	0.00	0.00
6,400.00	9.64	177.19	6,346.69	-649.13	31.86	34.37	0.00	0.00	0.00
6,500.00	9.64	177.19	6,445.28	-665.87	32.69	35.26	0.00	0.00	0.00
6,600.00	9.64	177.19	6,543.87	-682.60	33.51	36.14	0.00	0.00	0.00
6,700.00	9.64	177.19	6,642.45	-699.33	34.33	37.03	0.00	0.00	0.00
6,800.00	9.64	177.19	6,741.04	-716.07	35.15	37.92	0.00	0.00	0.00
6,900.00	9.64	177.19	6,839.63	-732.80	35.97	38.80	0.00	0.00	0.00
7,000.00	9.64	177.19	6,938.21	-749.53	36.79	39.69	0.00	0.00	0.00
7,100.00	9.64	177.19	7,036.80	-766.27	37.61	40.57	0.00	0.00	0.00
7,200.00	9.64	177.19	7,135.39	-783.00	38.43	41.46	0.00	0.00	0.00
7,300.00	9.64	177.19	7,233.97	-799.73	39.26	42.35	0.00	0.00	0.00
7,400.00	9.64	177.19	7,332.56	-816.47	40.08	43.23	0.00	0.00	0.00
7,506.93	9.64	177.19	7,437.97	-834.36	40.96	44.18	0.00	0.00	0.00
7,550.00	10.38	201.79	7,480.41	-841.57	39.69	46.17	10.00	1.71	57.12
7,600.00	13.08	222.75	7,529.38	-849.91	34.17	52.51	10.00	5.39	41.92
7,650.00	16.85	235.60	7,577.69	-858.17	24.35	63.12	10.00	7.54	25.70
7,700.00	21.12	243.63	7,624.97	-866.27	10.29	77.93	10.00	8.55	16.06
7,750.00	25.65	249.00	7,670.86	-874.15	-7.90	96.83	10.00	9.06	10.73
7,800.00	30.32	252.83	7,715.00	-881.76	-30.07	119.66	10.00	9.34	7.66
7,850.00	35.07	255.71	7,757.07	-889.04	-56.07	146.26	10.00	9.51	5.77
7,900.00	39.88	257.98	7,796.74	-895.92	-85.68	176.43	10.00	9.61	4.54
7,950.00	44.72	259.83	7,833.71	-902.37	-118.70	209.92	10.00	9.68	3.71
8,000.00	49.59	261.39	7,867.71	-908.33	-154.86	246.50	10.00	9.74	3.12
8,050.00	54.47	262.74	7,898.46	-913.75	-193.88	285.88	10.00	9.77	2.70
8,100.00	59.37	263.94	7,925.74	-918.60	-235.49	327.76	10.00	9.80	2.39
8,150.00	64.28	265.01	7,949.34	-922.83	-279.34	371.82	10.00	9.82	2.16
8,200.00	69.20	266.01	7,969.08	-926.42	-325.13	417.73	10.00	9.83	1.98
8,250.00	74.12	266.94	7,984.81	-929.34	-372.48	465.13	10.00	9.84	1.86
8,300.00	79.05	267.82	7,996.41	-931.56	-421.05	513.68	10.00	9.85	1.77
8,350.00	83.97	268.68	8,003.79	-933.06	-470.46	562.99	10.00	9.86	1.71
8,400.00	88.90	269.52	8,006.89	-933.85	-520.34	612.69	10.00	9.86	1.68
8,411.14	90.00	269.70	8,007.00	-933.92	-531.48	623.78	10.00	9.86	1.67
8,500.00	90.00	269.70	8,007.00	-934.38	-620.34	712.22	0.00	0.00	0.00
8,600.00	90.00	269.70	8,007.00	-934.90	-720.34	811.75	0.00	0.00	0.00
8,700.00	90.00	269.70	8,007.00	-935.42	-820.34	911.29	0.00	0.00	0.00
8,800.00	90.00	269.70	8,007.00	-935.93	-920.34	1,010.82	0.00	0.00	0.00
8,900.00	90.00	269.70	8,007.00	-936.45	-1,020.34	1,110.35	0.00	0.00	0.00
9,000.00	90.00	269.70	8,007.00	-936.97	-1,120.34	1,209.88	0.00	0.00	0.00
9,100.00	90.00	269.70	8,007.00	-937.48	-1,220.33	1,309.41	0.00	0.00	0.00
9,200.00	90.00	269.70	8,007.00	-938.00	-1,320.33	1,408.95	0.00	0.00	0.00
9,300.00	90.00	269.70	8,007.00	-938.52	-1,420.33	1,508.48	0.00	0.00	0.00
9,400.00	90.00	269.70	8,007.00	-939.03	-1,520.33	1,608.01	0.00	0.00	0.00
9,500.00	90.00	269.70	8,007.00	-939.55	-1,620.33	1,707.54	0.00	0.00	0.00
9,600.00	90.00	269.70	8,007.00	-940.07	-1,720.33	1,807.07	0.00	0.00	0.00

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Company:	ConocoPhillips RBU Gold Data_Niobrara	TVD Reference:	25' RKB @ 5717.80ft
Project:	Niobrara - CO Central Zone	MD Reference:	25' RKB @ 5717.80ft
Site:	Lone Tree	North Reference:	True
Well:	Lone Tree 4-65 15-16 4H_D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lone Tree 4-65 15-16 4H_D		
Design:	Lone Tree 4-65 15-16 4H_D		

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)
9,700.00	90.00	269.70	8,007.00	-940.58	-1,820.33	1,906.61	0.00	0.00	0.00
9,800.00	90.00	269.70	8,007.00	-941.10	-1,920.32	2,006.14	0.00	0.00	0.00
9,900.00	90.00	269.70	8,007.00	-941.62	-2,020.32	2,105.67	0.00	0.00	0.00
10,000.00	90.00	269.70	8,007.00	-942.13	-2,120.32	2,205.20	0.00	0.00	0.00
10,100.00	90.00	269.70	8,007.00	-942.65	-2,220.32	2,304.73	0.00	0.00	0.00
10,200.00	90.00	269.70	8,007.00	-943.17	-2,320.32	2,404.27	0.00	0.00	0.00
10,300.00	90.00	269.70	8,007.00	-943.68	-2,420.32	2,503.80	0.00	0.00	0.00
10,400.00	90.00	269.70	8,007.00	-944.20	-2,520.32	2,603.33	0.00	0.00	0.00
10,500.00	90.00	269.70	8,007.00	-944.72	-2,620.32	2,702.86	0.00	0.00	0.00
10,600.00	90.00	269.70	8,007.00	-945.23	-2,720.31	2,802.39	0.00	0.00	0.00
10,700.00	90.00	269.70	8,007.00	-945.75	-2,820.31	2,901.93	0.00	0.00	0.00
10,800.00	90.00	269.70	8,007.00	-946.27	-2,920.31	3,001.46	0.00	0.00	0.00
10,900.00	90.00	269.70	8,007.00	-946.78	-3,020.31	3,100.99	0.00	0.00	0.00
11,000.00	90.00	269.70	8,007.00	-947.30	-3,120.31	3,200.52	0.00	0.00	0.00
11,100.00	90.00	269.70	8,007.00	-947.82	-3,220.31	3,300.05	0.00	0.00	0.00
11,200.00	90.00	269.70	8,007.00	-948.33	-3,320.31	3,399.59	0.00	0.00	0.00
11,300.00	90.00	269.70	8,007.00	-948.85	-3,420.30	3,499.12	0.00	0.00	0.00
11,400.00	90.00	269.70	8,007.00	-949.37	-3,520.30	3,598.65	0.00	0.00	0.00
11,500.00	90.00	269.70	8,007.00	-949.88	-3,620.30	3,698.18	0.00	0.00	0.00
11,600.00	90.00	269.70	8,007.00	-950.40	-3,720.30	3,797.71	0.00	0.00	0.00
11,700.00	90.00	269.70	8,007.00	-950.92	-3,820.30	3,897.24	0.00	0.00	0.00
11,800.00	90.00	269.70	8,007.00	-951.43	-3,920.30	3,996.78	0.00	0.00	0.00
11,900.00	90.00	269.70	8,007.00	-951.95	-4,020.30	4,096.31	0.00	0.00	0.00
12,000.00	90.00	269.70	8,007.00	-952.47	-4,120.30	4,195.84	0.00	0.00	0.00
12,100.00	90.00	269.70	8,007.00	-952.98	-4,220.29	4,295.37	0.00	0.00	0.00
12,200.00	90.00	269.70	8,007.00	-953.50	-4,320.29	4,394.90	0.00	0.00	0.00
12,300.00	90.00	269.70	8,007.00	-954.02	-4,420.29	4,494.44	0.00	0.00	0.00
12,400.00	90.00	269.70	8,007.00	-954.53	-4,520.29	4,593.97	0.00	0.00	0.00
12,500.00	90.00	269.70	8,007.00	-955.05	-4,620.29	4,693.50	0.00	0.00	0.00
12,600.00	90.00	269.70	8,007.00	-955.57	-4,720.29	4,793.03	0.00	0.00	0.00
12,700.00	90.00	269.70	8,007.00	-956.08	-4,820.29	4,892.56	0.00	0.00	0.00
12,800.00	90.00	269.70	8,007.00	-956.60	-4,920.28	4,992.10	0.00	0.00	0.00
12,900.00	90.00	269.70	8,007.00	-957.12	-5,020.28	5,091.63	0.00	0.00	0.00
13,000.00	90.00	269.70	8,007.00	-957.63	-5,120.28	5,191.16	0.00	0.00	0.00
13,100.00	90.00	269.70	8,007.00	-958.15	-5,220.28	5,290.69	0.00	0.00	0.00
13,200.00	90.00	269.70	8,007.00	-958.67	-5,320.28	5,390.22	0.00	0.00	0.00
13,300.00	90.00	269.70	8,007.00	-959.18	-5,420.28	5,489.76	0.00	0.00	0.00
13,400.00	90.00	269.70	8,007.00	-959.70	-5,520.28	5,589.29	0.00	0.00	0.00
13,500.00	90.00	269.70	8,007.00	-960.22	-5,620.28	5,688.82	0.00	0.00	0.00
13,600.00	90.00	269.70	8,007.00	-960.73	-5,720.27	5,788.35	0.00	0.00	0.00
13,700.00	90.00	269.70	8,007.00	-961.25	-5,820.27	5,887.88	0.00	0.00	0.00
13,800.00	90.00	269.70	8,007.00	-961.77	-5,920.27	5,987.42	0.00	0.00	0.00
13,900.00	90.00	269.70	8,007.00	-962.28	-6,020.27	6,086.95	0.00	0.00	0.00
14,000.00	90.00	269.70	8,007.00	-962.80	-6,120.27	6,186.48	0.00	0.00	0.00
14,100.00	90.00	269.70	8,007.00	-963.32	-6,220.27	6,286.01	0.00	0.00	0.00
14,200.00	90.00	269.70	8,007.00	-963.83	-6,320.27	6,385.54	0.00	0.00	0.00
14,300.00	90.00	269.70	8,007.00	-964.35	-6,420.26	6,485.08	0.00	0.00	0.00
14,400.00	90.00	269.70	8,007.00	-964.87	-6,520.26	6,584.61	0.00	0.00	0.00
14,500.00	90.00	269.70	8,007.00	-965.38	-6,620.26	6,684.14	0.00	0.00	0.00
14,600.00	90.00	269.70	8,007.00	-965.90	-6,720.26	6,783.67	0.00	0.00	0.00
14,700.00	90.00	269.70	8,007.00	-966.42	-6,820.26	6,883.20	0.00	0.00	0.00
14,800.00	90.00	269.70	8,007.00	-966.93	-6,920.26	6,982.74	0.00	0.00	0.00
14,900.00	90.00	269.70	8,007.00	-967.45	-7,020.26	7,082.27	0.00	0.00	0.00
15,000.00	90.00	269.70	8,007.00	-967.97	-7,120.26	7,181.80	0.00	0.00	0.00

ConocoPhillips

Planning Report

Database:	EDM Central Planning	Local Co-ordinate Reference:	Well Lone Tree 4-65 15-16 4H_D
Company:	ConocoPhillips RBU Gold Data_Niobrara	TVD Reference:	25' RKB @ 5717.80ft
Project:	Niobrara - CO Central Zone	MD Reference:	25' RKB @ 5717.80ft
Site:	Lone Tree	North Reference:	True
Well:	Lone Tree 4-65 15-16 4H_D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lone Tree 4-65 15-16 4H_D		
Design:	Lone Tree 4-65 15-16 4H_D		

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)	
15,100.00	90.00	269.70	8,007.00	-968.48	-7,220.25	7,281.33	0.00	0.00	0.00	
15,200.00	90.00	269.70	8,007.00	-969.00	-7,320.25	7,380.86	0.00	0.00	0.00	
15,300.00	90.00	269.70	8,007.00	-969.52	-7,420.25	7,480.39	0.00	0.00	0.00	
15,400.00	90.00	269.70	8,007.00	-970.03	-7,520.25	7,579.93	0.00	0.00	0.00	
15,500.00	90.00	269.70	8,007.00	-970.55	-7,620.25	7,679.46	0.00	0.00	0.00	
15,600.00	90.00	269.70	8,007.00	-971.07	-7,720.25	7,778.99	0.00	0.00	0.00	
15,700.00	90.00	269.70	8,007.00	-971.58	-7,820.25	7,878.52	0.00	0.00	0.00	
15,800.00	90.00	269.70	8,007.00	-972.10	-7,920.24	7,978.05	0.00	0.00	0.00	
15,900.00	90.00	269.70	8,007.00	-972.62	-8,020.24	8,077.59	0.00	0.00	0.00	
16,000.00	90.00	269.70	8,007.00	-973.13	-8,120.24	8,177.12	0.00	0.00	0.00	
16,100.00	90.00	269.70	8,007.00	-973.65	-8,220.24	8,276.65	0.00	0.00	0.00	
16,200.00	90.00	269.70	8,007.00	-974.17	-8,320.24	8,376.18	0.00	0.00	0.00	
16,300.00	90.00	269.70	8,007.00	-974.68	-8,420.24	8,475.71	0.00	0.00	0.00	
16,400.00	90.00	269.70	8,007.00	-975.20	-8,520.24	8,575.25	0.00	0.00	0.00	
16,500.00	90.00	269.70	8,007.00	-975.72	-8,620.24	8,674.78	0.00	0.00	0.00	
16,600.00	90.00	269.70	8,007.00	-976.23	-8,720.23	8,774.31	0.00	0.00	0.00	
16,700.00	90.00	269.70	8,007.00	-976.75	-8,820.23	8,873.84	0.00	0.00	0.00	
16,800.00	90.00	269.70	8,007.00	-977.27	-8,920.23	8,973.37	0.00	0.00	0.00	
16,900.00	90.00	269.70	8,007.00	-977.78	-9,020.23	9,072.91	0.00	0.00	0.00	
17,000.00	90.00	269.70	8,007.00	-978.30	-9,120.23	9,172.44	0.00	0.00	0.00	
17,100.00	90.00	269.70	8,007.00	-978.82	-9,220.23	9,271.97	0.00	0.00	0.00	
17,200.00	90.00	269.70	8,007.00	-979.33	-9,320.23	9,371.50	0.00	0.00	0.00	
17,300.00	90.00	269.70	8,007.00	-979.85	-9,420.22	9,471.03	0.00	0.00	0.00	
17,400.00	90.00	269.70	8,007.00	-980.37	-9,520.22	9,570.57	0.00	0.00	0.00	
17,465.19	90.00	269.70	8,007.00	-980.70	-9,585.41	9,635.45	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										
Lone Tree 4-65 15-16 4H	0.00	0.00	8,007.00	-980.70	-9,585.41	1,682,108.518	3,231,495.732	39° 42' 11.920 N	104° 40' 38.070 W	
- plan hits target center										
- Point										
Lone Tree 4-65 15-16 4H	0.00	0.00	8,007.00	-933.92	-531.48	1,682,240.683	3,240,548.726	39° 42' 12.400 N	104° 38' 42.230 W	
- plan hits target center										
- Point										

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
2,115.00	2,115.00	Surface	9-5/8	13-1/2	
17,465.19	8,007.00	5 1/2"	5-1/2	8-3/4	



ConocoPhillips

Arapahoe County, Colorado

Lone Tree 4-65 15-16 4H_D

Ground Level: 5692.80
Surface Location Latitude: 39° 42' 21.630 N
Surface Location Longitude: 104° 38' 35.430 W
North Reference: True
25' RKB @ 5717.80ft

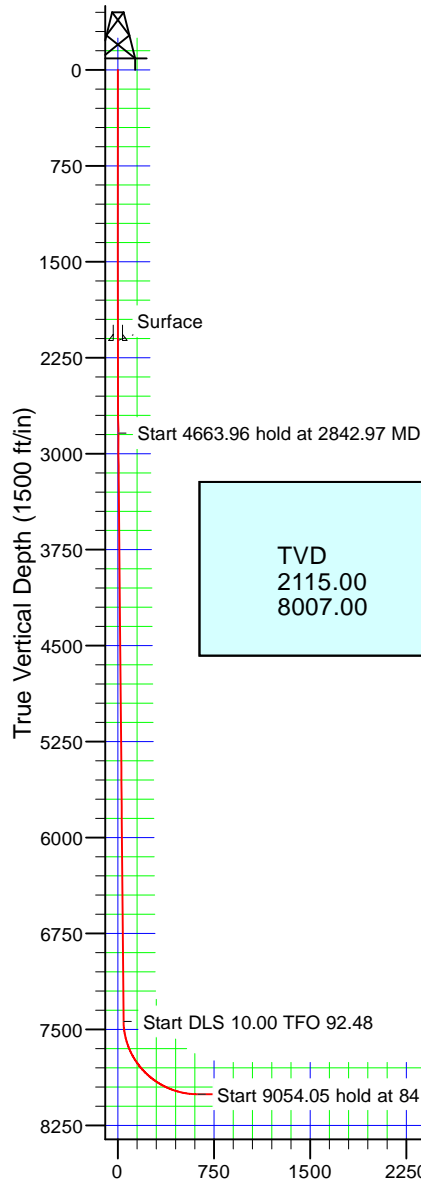
North American Datum 1983
GRS 1980
US State Plane 1983
Colorado Central Zone

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
2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00
2842.97	9.64	177.19	2839.94	-53.92	2.65	1.50	2.86
7506.93	9.64	177.19	7437.97	-834.36	40.96	0.00	44.18
8411.14	90.00	269.70	8007.00	-933.92	-531.48	10.00	623.78
17465.19	90.00	269.70	8007.00	-980.70	-9585.41	0.00	9635.45

Well Targets

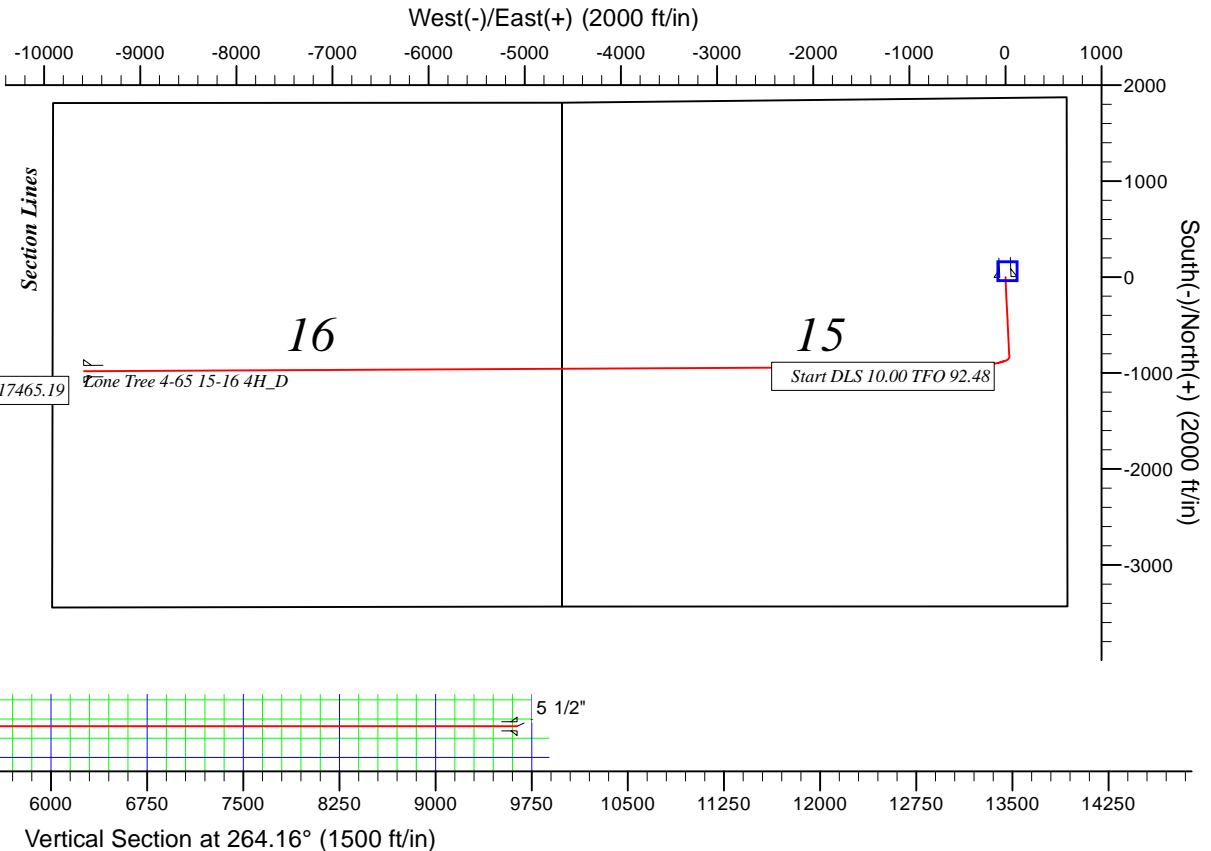
Name	TVD	Latitude	Longitude
Lone Tree 4-65 15-16 4H_D BHL8007.00	39° 42' 11.920 N	104° 40' 38.070 W	
Lone Tree 4-65 15-16 4H_D BPI8007.00	39° 42' 12.400 N	104° 38' 42.230 W	



Casing Depths

TVD	MD	Name	Size
2115.00	2115.00	Surface	9-5/8
8007.00	17465.19	5 1/2"	5-1/2

TD at 17465.19



Vertical Section at 264.16° (1500 ft/in)