

ConocoPhillips RBU Gold Data

Niobrara North Zone

Reserve

Reserve 3-65 35-34 2DH

Reserve 3-65 35-34 2DH

Plan: Design A

Standard Planning Report

15 October, 2018

ConocoPhillips

Planning Report

Database:	EDT 14 Central Planning	Local Co-ordinate Reference:	Well Reserve 3-65 35-34 2DH
Company:	ConocoPhillips RBU Gold Data	TVD Reference:	25' RKB @ 5531.00ft (25' RKB)
Project:	Niobrara North Zone	MD Reference:	25' RKB @ 5531.00ft (25' RKB)
Site:	Reserve	North Reference:	True
Well:	Reserve 3-65 35-34 2DH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Reserve 3-65 35-34 2DH		
Design:	Design A		

Project	Niobrara North Zone, Colorado North Zone, FIPS Zone: 0501		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site		Reserve			
Site Position:		Northing:	1,153,729.825 usft	Latitude:	39° 45' 7.247 N
From:	Lat/Long	Easting:	3,246,381.347 usft	Longitude:	104° 37' 25.396 W
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.57 °

Well	Reserve 3-65 35-34 2DH					
Well Position	+N/-S	-273.90 ft	Northing:	1,153,455.941 usft	Latitude:	39° 45' 4.540 N
	+E/-W	0.47 ft	Easting:	3,246,384.523 usft	Longitude:	104° 37' 25.390 W
Position Uncertainty		2.00 ft	Wellhead Elevation:	5,506.00 ft	Ground Level:	5,506.00 ft

Wellbore	Reserve 3-65 35-34 2DH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2018	12/1/2018	8.11	66.33	51,887.71269766

Design	Design A			
Audit Notes:				
Version:	0	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	262.35

Plan Survey Tool Program		Date		10/15/2018	
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	1,999.00	Design A (Reserve 3-65 35-34 2D	Gyro-BM-MS	
				Gyro - bat/mem drop m/s	
2	1,999.00	4,172.00	Design A (Reserve 3-65 35-34 2D	MWD+IFR_No SAG	
				MWD + IFR (No SAG) correctic	
3	4,172.00	6,172.04	Design A (Reserve 3-65 35-34 2D	MWD+IFR_No SAG	
				MWD + IFR (No SAG) correctic	
4	6,172.04	7,401.25	Design A (Reserve 3-65 35-34 2D	MWD+IFR_No SAG	
				MWD + IFR (No SAG) correctic	
5	7,401.25	8,396.53	Design A (Reserve 3-65 35-34 2D	MWD+IFR_No SAG	
				MWD + IFR (No SAG) correctic	
6	8,396.53	17,945.59	Design A (Reserve 3-65 35-34 2D	MWD+IFR_No SAG	
				MWD + IFR (No SAG) correctic	

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Project:	Niobrara North Zone	MD Reference:	25' RKB @ 5531.00ft (25' RKB)
Site:	Reserve	North Reference:	True
Well:	Reserve 3-65 35-34 2DH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Reserve 3-65 35-34 2DH		
Design:	Design A		

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	
4,172.00	0.00	0.00	4,172.00	0.00	0.00	0.00	0.00	0.00	0.00	
6,172.04	30.00	159.94	6,081.89	-480.73	175.50	1.50	1.50	0.00	159.94	
7,401.25	30.00	159.94	7,146.41	-1,058.07	386.28	0.00	0.00	0.00	0.00	
8,396.53	89.39	270.40	7,740.00	-1,371.44	-174.71	10.00	5.97	11.10	108.19	Reserve 3-65 35-34 2
17,945.59	89.39	270.40	7,841.00	-1,305.42	-9,723.00	0.00	0.00	0.00	0.00	Reserve 3-65 35-34 2

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Site:	Reserve	North Reference:	True
Well:	Reserve 3-65 35-34 2DH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Reserve 3-65 35-34 2DH		
Design:	Design A		

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
SHL: 1109' FNL, 539' FEL									
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
1,559.00	0.00	0.00	1,559.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills Top									
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
1,799.00	0.00	0.00	1,799.00	0.00	0.00	0.00	0.00	0.00	0.00
Pierre Top - Fox Hills Base									
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
1,999.00	0.00	0.00	1,999.00	0.00	0.00	0.00	0.00	0.00	0.00
Surface Casing - 9-5/8" Casing									
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	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	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,172.00	0.00	0.00	4,172.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.42	159.94	4,200.00	-0.10	0.04	-0.02	1.50	1.50	0.00
4,300.00	1.92	159.94	4,299.98	-2.01	0.74	-0.46	1.50	1.50	0.00
4,400.00	3.42	159.94	4,399.86	-6.39	2.33	-1.46	1.50	1.50	0.00
4,500.00	4.92	159.94	4,499.60	-13.22	4.83	-3.02	1.50	1.50	0.00

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Well:	Reserve 3-65 35-34 2DH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Reserve 3-65 35-34 2DH		
Design:	Design A		

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)
4,600.00	6.42	159.94	4,599.11	-22.50	8.21	-5.15	1.50	1.50	0.00
4,700.00	7.92	159.94	4,698.32	-34.23	12.49	-7.83	1.50	1.50	0.00
4,800.00	9.42	159.94	4,797.17	-48.39	17.66	-11.07	1.50	1.50	0.00
4,900.00	10.92	159.94	4,895.60	-64.97	23.72	-14.86	1.50	1.50	0.00
5,000.00	12.42	159.94	4,993.53	-83.97	30.66	-19.21	1.50	1.50	0.00
5,100.00	13.92	159.94	5,090.90	-105.37	38.47	-24.11	1.50	1.50	0.00
5,200.00	15.42	159.94	5,187.64	-129.16	47.15	-29.55	1.50	1.50	0.00
5,300.00	16.92	159.94	5,283.68	-155.32	56.70	-35.53	1.50	1.50	0.00
5,400.00	18.42	159.94	5,378.96	-183.83	67.11	-42.05	1.50	1.50	0.00
5,500.00	19.92	159.94	5,473.41	-214.68	78.37	-49.11	1.50	1.50	0.00
5,600.00	21.42	159.94	5,566.97	-247.83	90.48	-56.69	1.50	1.50	0.00
5,700.00	22.92	159.94	5,659.57	-283.28	103.42	-64.80	1.50	1.50	0.00
5,800.00	24.42	159.94	5,751.16	-320.99	117.19	-73.43	1.50	1.50	0.00
5,900.00	25.92	159.94	5,841.66	-360.94	131.77	-82.57	1.50	1.50	0.00
6,000.00	27.42	159.94	5,931.02	-403.10	147.16	-92.21	1.50	1.50	0.00
6,100.00	28.92	159.94	6,019.17	-447.45	163.35	-102.36	1.50	1.50	0.00
6,172.04	30.00	159.94	6,081.89	-480.73	175.50	-109.97	1.50	1.50	0.00
EOB: 1590' FNL, 363' FEL									
6,200.00	30.00	159.94	6,106.11	-493.86	180.30	-112.98	0.00	0.00	0.00
6,300.00	30.00	159.94	6,192.71	-540.83	197.44	-123.72	0.00	0.00	0.00
6,400.00	30.00	159.94	6,279.31	-587.80	214.59	-134.47	0.00	0.00	0.00
6,500.00	30.00	159.94	6,365.91	-634.77	231.74	-145.21	0.00	0.00	0.00
6,600.00	30.00	159.94	6,452.52	-681.74	248.89	-155.96	0.00	0.00	0.00
6,700.00	30.00	159.94	6,539.12	-728.71	266.03	-166.70	0.00	0.00	0.00
6,800.00	30.00	159.94	6,625.72	-775.68	283.18	-177.44	0.00	0.00	0.00
6,900.00	30.00	159.94	6,712.32	-822.64	300.33	-188.19	0.00	0.00	0.00
7,000.00	30.00	159.94	6,798.92	-869.61	317.47	-198.93	0.00	0.00	0.00
7,100.00	30.00	159.94	6,885.53	-916.58	334.62	-209.68	0.00	0.00	0.00
7,200.00	30.00	159.94	6,972.13	-963.55	351.77	-220.42	0.00	0.00	0.00
7,300.00	30.00	159.94	7,058.73	-1,010.52	368.91	-231.17	0.00	0.00	0.00
7,401.25	30.00	159.94	7,146.42	-1,058.08	386.28	-242.05	0.00	0.00	0.00
KOP: 2167' FNL, 153' FEL									
7,450.00	28.82	169.59	7,188.91	-1,081.09	392.58	-245.23	10.00	-2.43	19.78
7,500.00	28.36	180.00	7,232.84	-1,104.84	394.76	-244.23	10.00	-0.91	20.83
7,550.00	28.71	190.46	7,276.79	-1,128.54	392.58	-238.92	10.00	0.69	20.91
7,600.00	29.83	200.43	7,320.43	-1,152.02	386.06	-229.33	10.00	2.24	19.96
7,650.00	31.64	209.56	7,363.43	-1,175.09	375.24	-215.53	10.00	3.63	18.26
7,700.00	34.04	217.67	7,405.46	-1,197.59	360.21	-197.64	10.00	4.79	16.21
7,750.00	36.90	224.74	7,446.20	-1,219.34	341.08	-175.79	10.00	5.72	14.15
7,800.00	40.12	230.89	7,485.33	-1,240.18	318.00	-150.14	10.00	6.45	12.29
7,850.00	43.63	236.23	7,522.57	-1,259.94	291.14	-120.90	10.00	7.02	10.69
7,863.14	44.59	237.52	7,532.00	-1,264.94	283.48	-112.64	10.00	7.31	9.81
Niobrara Top									
7,900.00	47.35	240.91	7,557.62	-1,278.48	260.71	-88.27	10.00	7.50	9.20
7,950.00	51.25	245.05	7,590.23	-1,295.66	226.95	-52.52	10.00	7.79	8.28
8,000.00	55.27	248.75	7,620.14	-1,311.34	190.10	-13.91	10.00	8.05	7.41
8,050.00	59.40	252.11	7,647.12	-1,325.40	150.44	27.26	10.00	8.25	6.71
8,100.00	63.61	255.18	7,670.98	-1,337.75	108.29	70.69	10.00	8.41	6.16
8,150.00	67.87	258.04	7,691.52	-1,348.28	63.95	116.03	10.00	8.53	5.72
8,200.00	72.19	260.74	7,708.59	-1,356.91	17.78	162.94	10.00	8.63	5.38
8,250.00	76.54	263.30	7,722.07	-1,363.59	-29.89	211.08	10.00	8.70	5.13
8,288.91	79.94	265.23	7,730.00	-1,367.39	-67.79	249.14	10.00	8.74	4.96
D Chalk Top									

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Wellbore:	Reserve 3-65 35-34 2DH		
Design:	Design A		

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)
8,300.00	80.91	265.77	7,731.85	-1,368.25	-78.69	260.06	10.00	8.76	4.89
8,350.00	85.30	268.18	7,737.85	-1,370.86	-128.24	309.52	10.00	8.78	4.82
8,396.53	89.39	270.40	7,740.00	-1,371.44	-174.71	355.65	10.00	8.80	4.76
BPI/LP: 2482' FNL, 705' FEL									
8,400.00	89.39	270.40	7,740.04	-1,371.42	-178.18	359.08	0.01	0.01	0.01
8,500.00	89.39	270.40	7,741.09	-1,370.72	-278.17	458.09	0.00	0.00	0.00
8,600.00	89.39	270.40	7,742.15	-1,370.03	-378.16	557.10	0.00	0.00	0.00
8,700.00	89.39	270.40	7,743.21	-1,369.34	-478.15	656.11	0.00	0.00	0.00
8,800.00	89.39	270.40	7,744.27	-1,368.65	-578.14	755.12	0.00	0.00	0.00
8,900.00	89.39	270.40	7,745.33	-1,367.96	-678.14	854.14	0.00	0.00	0.00
9,000.00	89.39	270.40	7,746.38	-1,367.27	-778.13	953.15	0.00	0.00	0.00
9,100.00	89.39	270.40	7,747.44	-1,366.58	-878.12	1,052.16	0.00	0.00	0.00
9,200.00	89.39	270.40	7,748.50	-1,365.89	-978.11	1,151.17	0.00	0.00	0.00
9,300.00	89.39	270.40	7,749.56	-1,365.19	-1,078.10	1,250.18	0.00	0.00	0.00
9,400.00	89.39	270.40	7,750.61	-1,364.50	-1,178.10	1,349.19	0.00	0.00	0.00
9,500.00	89.39	270.40	7,751.67	-1,363.81	-1,278.09	1,448.20	0.00	0.00	0.00
9,600.00	89.39	270.40	7,752.73	-1,363.12	-1,378.08	1,547.21	0.00	0.00	0.00
9,700.00	89.39	270.40	7,753.79	-1,362.43	-1,478.07	1,646.22	0.00	0.00	0.00
9,800.00	89.39	270.40	7,754.84	-1,361.74	-1,578.06	1,745.23	0.00	0.00	0.00
9,900.00	89.39	270.40	7,755.90	-1,361.05	-1,678.06	1,844.24	0.00	0.00	0.00
10,000.00	89.39	270.40	7,756.96	-1,360.35	-1,778.05	1,943.25	0.00	0.00	0.00
10,100.00	89.39	270.40	7,758.02	-1,359.66	-1,878.04	2,042.27	0.00	0.00	0.00
10,200.00	89.39	270.40	7,759.08	-1,358.97	-1,978.03	2,141.28	0.00	0.00	0.00
10,300.00	89.39	270.40	7,760.13	-1,358.28	-2,078.02	2,240.29	0.00	0.00	0.00
10,400.00	89.39	270.40	7,761.19	-1,357.59	-2,178.02	2,339.30	0.00	0.00	0.00
10,500.00	89.39	270.40	7,762.25	-1,356.90	-2,278.01	2,438.31	0.00	0.00	0.00
10,600.00	89.39	270.40	7,763.31	-1,356.21	-2,378.00	2,537.32	0.00	0.00	0.00
10,700.00	89.39	270.40	7,764.36	-1,355.51	-2,477.99	2,636.33	0.00	0.00	0.00
10,800.00	89.39	270.40	7,765.42	-1,354.82	-2,577.98	2,735.34	0.00	0.00	0.00
10,900.00	89.39	270.40	7,766.48	-1,354.13	-2,677.98	2,834.35	0.00	0.00	0.00
11,000.00	89.39	270.40	7,767.54	-1,353.44	-2,777.97	2,933.36	0.00	0.00	0.00
11,100.00	89.39	270.40	7,768.59	-1,352.75	-2,877.96	3,032.37	0.00	0.00	0.00
11,200.00	89.39	270.40	7,769.65	-1,352.06	-2,977.95	3,131.38	0.00	0.00	0.00
11,300.00	89.39	270.40	7,770.71	-1,351.37	-3,077.94	3,230.39	0.00	0.00	0.00
11,400.00	89.39	270.40	7,771.77	-1,350.67	-3,177.94	3,329.41	0.00	0.00	0.00
11,500.00	89.39	270.40	7,772.83	-1,349.98	-3,277.93	3,428.42	0.00	0.00	0.00
11,600.00	89.39	270.40	7,773.88	-1,349.29	-3,377.92	3,527.43	0.00	0.00	0.00
11,700.00	89.39	270.40	7,774.94	-1,348.60	-3,477.91	3,626.44	0.00	0.00	0.00
11,800.00	89.39	270.40	7,776.00	-1,347.91	-3,577.90	3,725.45	0.00	0.00	0.00
11,900.00	89.39	270.40	7,777.06	-1,347.22	-3,677.90	3,824.46	0.00	0.00	0.00
12,000.00	89.39	270.40	7,778.11	-1,346.53	-3,777.89	3,923.47	0.00	0.00	0.00
12,100.00	89.39	270.40	7,779.17	-1,345.84	-3,877.88	4,022.48	0.00	0.00	0.00
12,200.00	89.39	270.40	7,780.23	-1,345.14	-3,977.87	4,121.49	0.00	0.00	0.00
12,300.00	89.39	270.40	7,781.29	-1,344.45	-4,077.86	4,220.50	0.00	0.00	0.00
12,400.00	89.39	270.40	7,782.34	-1,343.76	-4,177.86	4,319.51	0.00	0.00	0.00
12,500.00	89.39	270.40	7,783.40	-1,343.07	-4,277.85	4,418.52	0.00	0.00	0.00
12,600.00	89.39	270.40	7,784.46	-1,342.38	-4,377.84	4,517.54	0.00	0.00	0.00
12,700.00	89.39	270.40	7,785.52	-1,341.69	-4,477.83	4,616.55	0.00	0.00	0.00
12,800.00	89.39	270.40	7,786.58	-1,341.00	-4,577.82	4,715.56	0.00	0.00	0.00
12,900.00	89.39	270.40	7,787.63	-1,340.30	-4,677.82	4,814.57	0.00	0.00	0.00
13,000.00	89.39	270.40	7,788.69	-1,339.61	-4,777.81	4,913.58	0.00	0.00	0.00
13,100.00	89.39	270.40	7,789.75	-1,338.92	-4,877.80	5,012.59	0.00	0.00	0.00
13,200.00	89.39	270.40	7,790.81	-1,338.23	-4,977.79	5,111.60	0.00	0.00	0.00

ConocoPhillips

Planning Report

Database:	EDT 14 Central Planning	Local Co-ordinate Reference:	Well Reserve 3-65 35-34 2DH
Company:	ConocoPhillips RBU Gold Data	TVD Reference:	25' RKB @ 5531.00ft (25' RKB)
Project:	Niobrara North Zone	MD Reference:	25' RKB @ 5531.00ft (25' RKB)
Site:	Reserve	North Reference:	True
Well:	Reserve 3-65 35-34 2DH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Reserve 3-65 35-34 2DH		
Design:	Design A		

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)	
13,300.00	89.39	270.40	7,791.86	-1,337.54	-5,077.78	5,210.61	0.00	0.00	0.00	
13,400.00	89.39	270.40	7,792.92	-1,336.85	-5,177.78	5,309.62	0.00	0.00	0.00	
13,500.00	89.39	270.40	7,793.98	-1,336.16	-5,277.77	5,408.63	0.00	0.00	0.00	
13,600.00	89.39	270.40	7,795.04	-1,335.46	-5,377.76	5,507.64	0.00	0.00	0.00	
13,700.00	89.39	270.40	7,796.09	-1,334.77	-5,477.75	5,606.65	0.00	0.00	0.00	
13,800.00	89.39	270.40	7,797.15	-1,334.08	-5,577.74	5,705.66	0.00	0.00	0.00	
13,900.00	89.39	270.40	7,798.21	-1,333.39	-5,677.74	5,804.68	0.00	0.00	0.00	
14,000.00	89.39	270.40	7,799.27	-1,332.70	-5,777.73	5,903.69	0.00	0.00	0.00	
14,100.00	89.39	270.40	7,800.33	-1,332.01	-5,877.72	6,002.70	0.00	0.00	0.00	
14,200.00	89.39	270.40	7,801.38	-1,331.32	-5,977.71	6,101.71	0.00	0.00	0.00	
14,300.00	89.39	270.40	7,802.44	-1,330.62	-6,077.71	6,200.72	0.00	0.00	0.00	
14,400.00	89.39	270.40	7,803.50	-1,329.93	-6,177.70	6,299.73	0.00	0.00	0.00	
14,500.00	89.39	270.40	7,804.56	-1,329.24	-6,277.69	6,398.74	0.00	0.00	0.00	
14,600.00	89.39	270.40	7,805.61	-1,328.55	-6,377.68	6,497.75	0.00	0.00	0.00	
14,700.00	89.39	270.40	7,806.67	-1,327.86	-6,477.67	6,596.76	0.00	0.00	0.00	
14,800.00	89.39	270.40	7,807.73	-1,327.17	-6,577.67	6,695.77	0.00	0.00	0.00	
14,900.00	89.39	270.40	7,808.79	-1,326.48	-6,677.66	6,794.78	0.00	0.00	0.00	
15,000.00	89.39	270.40	7,809.84	-1,325.79	-6,777.65	6,893.79	0.00	0.00	0.00	
15,100.00	89.39	270.40	7,810.90	-1,325.09	-6,877.64	6,992.80	0.00	0.00	0.00	
15,200.00	89.39	270.40	7,811.96	-1,324.40	-6,977.63	7,091.82	0.00	0.00	0.00	
15,300.00	89.39	270.40	7,813.02	-1,323.71	-7,077.63	7,190.83	0.00	0.00	0.00	
15,400.00	89.39	270.40	7,814.08	-1,323.02	-7,177.62	7,289.84	0.00	0.00	0.00	
15,500.00	89.39	270.40	7,815.13	-1,322.33	-7,277.61	7,388.85	0.00	0.00	0.00	
15,600.00	89.39	270.40	7,816.19	-1,321.64	-7,377.60	7,487.86	0.00	0.00	0.00	
15,700.00	89.39	270.40	7,817.25	-1,320.95	-7,477.59	7,586.87	0.00	0.00	0.00	
15,800.00	89.39	270.40	7,818.31	-1,320.25	-7,577.59	7,685.88	0.00	0.00	0.00	
15,900.00	89.39	270.40	7,819.36	-1,319.56	-7,677.58	7,784.89	0.00	0.00	0.00	
16,000.00	89.39	270.40	7,820.42	-1,318.87	-7,777.57	7,883.90	0.00	0.00	0.00	
16,100.00	89.39	270.40	7,821.48	-1,318.18	-7,877.56	7,982.91	0.00	0.00	0.00	
16,200.00	89.39	270.40	7,822.54	-1,317.49	-7,977.55	8,081.92	0.00	0.00	0.00	
16,300.00	89.39	270.40	7,823.59	-1,316.80	-8,077.55	8,180.93	0.00	0.00	0.00	
16,400.00	89.39	270.40	7,824.65	-1,316.11	-8,177.54	8,279.95	0.00	0.00	0.00	
16,500.00	89.39	270.40	7,825.71	-1,315.41	-8,277.53	8,378.96	0.00	0.00	0.00	
16,600.00	89.39	270.40	7,826.77	-1,314.72	-8,377.52	8,477.97	0.00	0.00	0.00	
16,700.00	89.39	270.40	7,827.83	-1,314.03	-8,477.51	8,576.98	0.00	0.00	0.00	
16,800.00	89.39	270.40	7,828.88	-1,313.34	-8,577.51	8,675.99	0.00	0.00	0.00	
16,900.00	89.39	270.40	7,829.94	-1,312.65	-8,677.50	8,775.00	0.00	0.00	0.00	
17,000.00	89.39	270.40	7,831.00	-1,311.96	-8,777.49	8,874.01	0.00	0.00	0.00	
17,100.00	89.39	270.40	7,832.06	-1,311.27	-8,877.48	8,973.02	0.00	0.00	0.00	
17,200.00	89.39	270.40	7,833.11	-1,310.57	-8,977.47	9,072.03	0.00	0.00	0.00	
17,300.00	89.39	270.40	7,834.17	-1,309.88	-9,077.47	9,171.04	0.00	0.00	0.00	
17,400.00	89.39	270.40	7,835.23	-1,309.19	-9,177.46	9,270.05	0.00	0.00	0.00	
17,500.00	89.39	270.40	7,836.29	-1,308.50	-9,277.45	9,369.06	0.00	0.00	0.00	
17,600.00	89.39	270.40	7,837.34	-1,307.81	-9,377.44	9,468.07	0.00	0.00	0.00	
17,700.00	89.39	270.40	7,838.40	-1,307.12	-9,477.43	9,567.09	0.00	0.00	0.00	
17,800.00	89.39	270.40	7,839.46	-1,306.43	-9,577.43	9,666.10	0.00	0.00	0.00	
17,900.00	89.39	270.40	7,840.52	-1,305.74	-9,677.42	9,765.11	0.00	0.00	0.00	
17,945.59	89.39	270.40	7,841.00	-1,305.42	-9,723.00	9,810.24	0.00	0.00	0.00	
BHL: 2482' FNL, 325' FWL										

ConocoPhillips

Planning Report

Database:	EDT 14 Central Planning	Local Co-ordinate Reference:	Well Reserve 3-65 35-34 2DH
Company:	ConocoPhillips RBU Gold Data	TVD Reference:	25' RKB @ 5531.00ft (25' RKB)
Project:	Niobrara North Zone	MD Reference:	25' RKB @ 5531.00ft (25' RKB)
Site:	Reserve	North Reference:	True
Well:	Reserve 3-65 35-34 2DH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Reserve 3-65 35-34 2DH		
Design:	Design A		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
- Shape									
Reserve 3-65 35-34 2DH - plan hits target center - Point	0.00	0.00	7,740.00	-1,371.44	-174.71	1,152,082.851	3,246,223.375	39° 44' 50.986 N	104° 37' 27.627 W
Reserve 3-65 35-34 2DH - plan hits target center - Point	0.00	0.00	7,841.00	-1,305.42	-9,723.00	1,152,054.514	3,236,674.968	39° 44' 51.620 N	104° 39' 29.870 W

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(ft)	(ft)			(")	(")
1,999.00	1,999.00	9-5/8" Casing		9-5/8	12-1/4
17,945.59	7,841.00	5-1/2" Casing		5-1/2	8-1/2

Formations					
Measured Depth	Vertical Depth	Name		Lithology	Dip
(ft)	(ft)				(°)
1,559.00	1,559.00	Fox Hills Top			0.00
1,799.00	1,799.00	Pierre Top - Fox Hills Base			0.00
1,999.00	1,999.00	Surface Casing			0.00
7,863.14	7,532.00	Niobrara Top			0.00
8,288.91	7,730.00	D Chalk Top			0.00

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
100.00	100.00	0.00	0.00	SHL: 1109' FNL, 539' FEL
6,172.04	6,081.89	-480.73	175.50	EOB: 1590' FNL, 363' FEL
7,401.25	7,146.42	-1,058.08	386.28	KOP: 2167' FNL, 153' FEL
8,396.53	7,740.00	-1,371.44	-174.71	BPI/LP: 2482' FNL, 705' FEL
17,945.59	7,841.00	-1,305.42	-9,723.00	BHL: 2482' FNL, 325' FWL