



# ConocoPhillips

## Arapahoe County, Colorado

### Rush 4-65 29-30 1AH

### Design A

#### Casing Depths

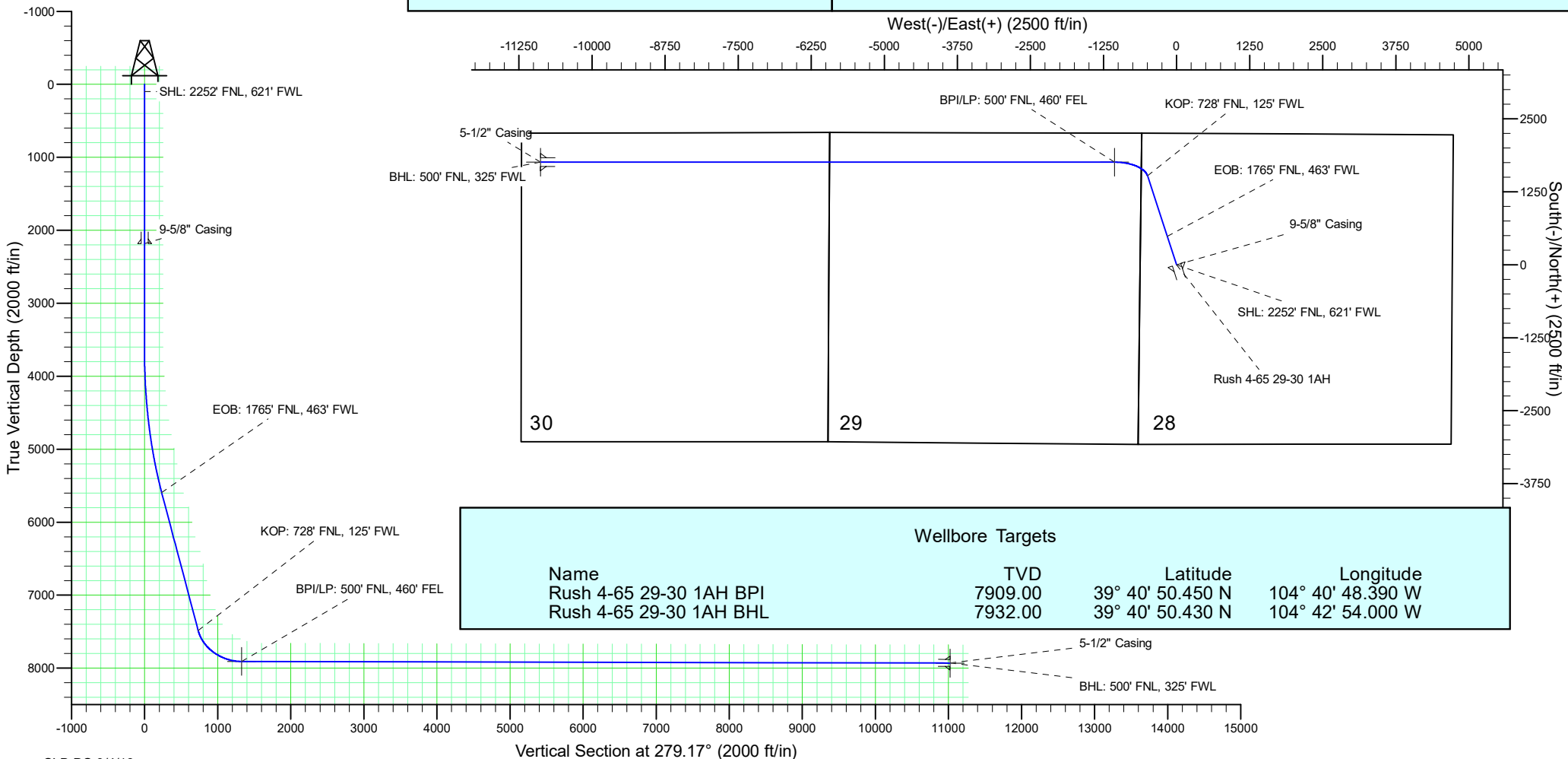
TVD	MD	Name	Size
2185.00	2185.00	9-5/8" Casing	9-5/8
7932.00	18497.30	5-1/2" Casing	5-1/2

Ground Level: 5648.90  
Surface Location Latitude: 39° 40' 33.090 N  
Surface Location Longitude: 104° 40' 34.820 W  
North Reference: True  
25' RKB @ 5673.90ft (25' RKB)

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
3685.00	0.00	0.00	3685.00	0.00	0.00	0.00	0.00
5685.19	30.00	341.97	5595.02	486.71	-158.42	1.50	233.97
7866.73	30.00	341.97	7484.24	1524.00	-496.06	0.00	732.63
8676.51	89.87	270.00	7909.00	1756.61	-1060.93	10.00	1327.35
18497.30	89.87	270.00	7932.00	1756.88	-10881.70	0.00	11022.61



#### Wellbore Targets

Name	TVD	Latitude	Longitude
Rush 4-65 29-30 1AH BPI	7909.00	39° 40' 50.450 N	104° 40' 48.390 W
Rush 4-65 29-30 1AH BHL	7932.00	39° 40' 50.430 N	104° 42' 54.000 W

# **ConocoPhillips RBU Gold Data**

**Niobrara Central Zone**

**Rush**

**Rush 4-65 29-30 1AH**

**Rush 4-65 29-30 1AH**

**Plan: Design A**

## **Standard Planning Report**

**04 September, 2018**

# ConocoPhillips

## Planning Report

<b>Database:</b>	EDT 14 Central Planning	<b>Local Co-ordinate Reference:</b>	Well Rush 4-65 29-30 1AH
<b>Company:</b>	ConocoPhillips RBU Gold Data	<b>TVD Reference:</b>	25' RKB @ 5673.90ft (25' RKB)
<b>Project:</b>	Niobrara Central Zone	<b>MD Reference:</b>	25' RKB @ 5673.90ft (25' RKB)
<b>Site:</b>	Rush	<b>North Reference:</b>	True
<b>Well:</b>	Rush 4-65 29-30 1AH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Rush 4-65 29-30 1AH		
<b>Design:</b>	Design A		

<b>Project</b>	Niobrara Central Zone, Colorado Central Zone, FIPS Zone: 0502		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Central Zone		Using geodetic scale factor

Site	Rush				
Site Position:		Northing:	1,674,265.179 usft	Latitude:	39° 40' 55.358 N
From:	Lat/Long	Easting:	3,220,614.549 usft	Longitude:	104° 42' 58.151 W
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.49 °

Well	Rush 4-65 29-30 1AH					
Well Position	+N/-S	-2,250.78 ft	Northing:	1,672,111.206 usft	Latitude:	39° 40' 33.090 N
	+E/-W	11,206.98 ft	Easting:	3,231,840.369 usft	Longitude:	104° 40' 34.820 W
Position Uncertainty		2.00 ft	Wellhead Elevation:	5,648.90 ft	Ground Level:	5,648.90 ft

<b>Wellbore</b>	Rush 4-65 29-30 1AH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2018	12/1/2018	8.14	66.27	51,842.56356118

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	279.17

Plan Survey Tool Program		Date	9/4/2018		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	2,185.00	Design A (Rush 4-65 29-30 1AH)	Gyro-BM-MS	Gyro - bat/mem drop m/s
2	2,185.00	3,685.00	Design A (Rush 4-65 29-30 1AH)	MWD+IFR_No SAG	MWD + IFR (No SAG) correctic
3	3,685.00	5,685.19	Design A (Rush 4-65 29-30 1AH)	MWD+IFR_No SAG	MWD + IFR (No SAG) correctic
4	5,685.19	7,866.73	Design A (Rush 4-65 29-30 1AH)	MWD+IFR_No SAG	MWD + IFR (No SAG) correctic
5	7,866.73	8,676.51	Design A (Rush 4-65 29-30 1AH)	MWD+IFR_No SAG	MWD + IFR (No SAG) correctic
6	8,676.51	18,497.30	Design A (Rush 4-65 29-30 1AH)	MWD+IFR_No SAG	MWD + IFR (No SAG) correctic

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## Planning Report

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<b>Company:</b>	ConocoPhillips RBU Gold Data	<b>TVD Reference:</b>	25' RKB @ 5673.90ft (25' RKB)
<b>Project:</b>	Niobrara Central Zone	<b>MD Reference:</b>	25' RKB @ 5673.90ft (25' RKB)
<b>Site:</b>	Rush	<b>North Reference:</b>	True
<b>Well:</b>	Rush 4-65 29-30 1AH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Rush 4-65 29-30 1AH		
<b>Design:</b>	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	
3,685.00	0.00	0.00	3,685.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,685.19	30.00	341.97	5,595.02	486.71	-158.42	1.50	1.50	0.00	341.97	
7,866.73	30.00	341.97	7,484.24	1,524.00	-496.06	0.00	0.00	0.00	0.00	
8,676.51	89.87	270.00	7,909.00	1,756.61	-1,060.93	10.00	7.39	-8.89	-74.32	Rush 4-65 29-30 1AH
18,497.30	89.87	270.00	7,932.00	1,756.88	-10,881.70	0.00	0.00	0.00	0.00	Rush 4-65 29-30 1AH

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## Planning Report

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<b>Company:</b>	ConocoPhillips RBU Gold Data	<b>TVD Reference:</b>	25' RKB @ 5673.90ft (25' RKB)
<b>Project:</b>	Niobrara Central Zone	<b>MD Reference:</b>	25' RKB @ 5673.90ft (25' RKB)
<b>Site:</b>	Rush	<b>North Reference:</b>	True
<b>Well:</b>	Rush 4-65 29-30 1AH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Rush 4-65 29-30 1AH		
<b>Design:</b>	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: 2252' FNL, 621' FWL									
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
1,725.00	0.00	0.00	1,725.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills Top									
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
1,985.00	0.00	0.00	1,985.00	0.00	0.00	0.00	0.00	0.00	0.00
Pierre Top - Fox Hills Base									
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
2,185.00	0.00	0.00	2,185.00	0.00	0.00	0.00	0.00	0.00	0.00
Surface Casing - 9-5/8" Casing									
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
3,685.00	0.00	0.00	3,685.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.23	341.97	3,700.00	0.03	-0.01	0.01	1.50	1.50	0.00
3,800.00	1.73	341.97	3,799.98	1.65	-0.54	0.79	1.50	1.50	0.00
3,900.00	3.23	341.97	3,899.89	5.75	-1.87	2.77	1.50	1.50	0.00
4,000.00	4.73	341.97	3,999.64	12.34	-4.02	5.93	1.50	1.50	0.00
4,100.00	6.23	341.97	4,099.18	21.42	-6.97	10.30	1.50	1.50	0.00
4,200.00	7.73	341.97	4,198.44	32.96	-10.73	15.85	1.50	1.50	0.00
4,300.00	9.23	341.97	4,297.35	46.98	-15.29	22.58	1.50	1.50	0.00
4,400.00	10.73	341.97	4,395.83	63.45	-20.65	30.50	1.50	1.50	0.00
4,500.00	12.23	341.97	4,493.83	82.36	-26.81	39.59	1.50	1.50	0.00

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## Planning Report

<b>Database:</b>	EDT 14 Central Planning	<b>Local Co-ordinate Reference:</b>	Well Rush 4-65 29-30 1AH
<b>Company:</b>	ConocoPhillips RBU Gold Data	<b>TVD Reference:</b>	25' RKB @ 5673.90ft (25' RKB)
<b>Project:</b>	Niobrara Central Zone	<b>MD Reference:</b>	25' RKB @ 5673.90ft (25' RKB)
<b>Site:</b>	Rush	<b>North Reference:</b>	True
<b>Well:</b>	Rush 4-65 29-30 1AH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Rush 4-65 29-30 1AH		
<b>Design:</b>	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	13.73	341.97	4,591.27	103.71	-33.76	49.86	1.50	1.50	0.00
4,700.00	15.23	341.97	4,688.10	127.48	-41.50	61.28	1.50	1.50	0.00
4,800.00	16.73	341.97	4,784.23	153.65	-50.01	73.86	1.50	1.50	0.00
4,900.00	18.23	341.97	4,879.61	182.20	-59.31	87.59	1.50	1.50	0.00
5,000.00	19.73	341.97	4,974.18	213.12	-69.37	102.45	1.50	1.50	0.00
5,100.00	21.23	341.97	5,067.86	246.38	-80.20	118.44	1.50	1.50	0.00
5,200.00	22.73	341.97	5,160.59	281.97	-91.78	135.55	1.50	1.50	0.00
5,300.00	24.23	341.97	5,252.31	319.84	-104.11	153.76	1.50	1.50	0.00
5,400.00	25.73	341.97	5,342.96	359.99	-117.18	173.06	1.50	1.50	0.00
5,500.00	27.23	341.97	5,432.47	402.38	-130.98	193.44	1.50	1.50	0.00
5,600.00	28.73	341.97	5,520.78	446.98	-145.49	214.88	1.50	1.50	0.00
5,685.19	30.00	341.97	5,595.02	486.71	-158.42	233.97	1.50	1.50	0.00
EOB: 1765' FNL, 463' FWL									
5,700.00	30.00	341.97	5,607.85	493.75	-160.72	237.36	0.00	0.00	0.00
5,800.00	30.00	341.97	5,694.45	541.30	-176.19	260.22	0.00	0.00	0.00
5,900.00	30.00	341.97	5,781.05	588.85	-191.67	283.07	0.00	0.00	0.00
6,000.00	30.00	341.97	5,867.65	636.39	-207.15	305.93	0.00	0.00	0.00
6,100.00	30.00	341.97	5,954.25	683.94	-222.62	328.79	0.00	0.00	0.00
6,200.00	30.00	341.97	6,040.85	731.49	-238.10	351.65	0.00	0.00	0.00
6,300.00	30.00	341.97	6,127.45	779.04	-253.58	374.51	0.00	0.00	0.00
6,400.00	30.00	341.97	6,214.05	826.59	-269.06	397.36	0.00	0.00	0.00
6,500.00	30.00	341.97	6,300.65	874.14	-284.53	420.22	0.00	0.00	0.00
6,600.00	30.00	341.97	6,387.25	921.69	-300.01	443.08	0.00	0.00	0.00
6,700.00	30.00	341.97	6,473.85	969.24	-315.49	465.94	0.00	0.00	0.00
6,800.00	30.00	341.97	6,560.45	1,016.78	-330.96	488.80	0.00	0.00	0.00
6,900.00	30.00	341.97	6,647.05	1,064.33	-346.44	511.65	0.00	0.00	0.00
7,000.00	30.00	341.97	6,733.65	1,111.88	-361.92	534.51	0.00	0.00	0.00
7,100.00	30.00	341.97	6,820.25	1,159.43	-377.40	557.37	0.00	0.00	0.00
7,200.00	30.00	341.97	6,906.85	1,206.98	-392.87	580.23	0.00	0.00	0.00
7,300.00	30.00	341.97	6,993.45	1,254.53	-408.35	603.09	0.00	0.00	0.00
7,400.00	30.00	341.97	7,080.05	1,302.08	-423.83	625.94	0.00	0.00	0.00
7,500.00	30.00	341.97	7,166.65	1,349.63	-439.30	648.80	0.00	0.00	0.00
7,600.00	30.00	341.97	7,253.25	1,397.17	-454.78	671.66	0.00	0.00	0.00
7,700.00	30.00	341.97	7,339.85	1,444.72	-470.26	694.52	0.00	0.00	0.00
7,800.00	30.00	341.97	7,426.45	1,492.27	-485.74	717.38	0.00	0.00	0.00
7,866.73	30.00	341.97	7,484.24	1,524.00	-496.06	732.63	0.00	0.00	0.00
KOP: 728' FNL, 125' FWL									
7,900.00	31.05	335.75	7,512.90	1,539.74	-502.16	741.16	10.00	3.15	-18.69
7,950.00	33.14	327.19	7,555.28	1,563.00	-514.87	757.42	10.00	4.18	-17.11
8,000.00	35.75	319.65	7,596.53	1,585.64	-531.75	777.68	10.00	5.22	-15.09
8,050.00	38.78	313.06	7,636.33	1,607.47	-552.66	801.81	10.00	6.05	-13.17
8,100.00	42.12	307.33	7,674.39	1,628.35	-577.45	829.60	10.00	6.69	-11.47
8,150.00	45.72	302.32	7,710.41	1,648.09	-605.92	860.86	10.00	7.19	-10.03
8,200.00	49.51	297.90	7,744.12	1,666.57	-637.87	895.35	10.00	7.58	-8.84
8,250.00	53.45	293.96	7,775.26	1,683.63	-673.05	932.80	10.00	7.88	-7.88
8,275.36	55.49	292.11	7,790.00	1,691.71	-692.05	952.84	10.00	8.06	-7.27
Niobrara Top									
8,300.00	57.50	290.41	7,803.60	1,699.15	-711.19	972.92	10.00	8.16	-6.93
8,350.00	61.65	287.17	7,828.92	1,713.01	-752.00	1,015.42	10.00	8.29	-6.48
8,400.00	65.87	284.17	7,851.02	1,725.09	-795.17	1,059.96	10.00	8.44	-5.99
8,450.00	70.14	281.37	7,869.75	1,735.32	-840.37	1,106.22	10.00	8.55	-5.60
8,500.00	74.45	278.72	7,884.95	1,743.61	-887.26	1,153.83	10.00	8.63	-5.31
8,550.00	78.80	276.17	7,896.51	1,749.91	-935.48	1,202.43	10.00	8.69	-5.09

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## Planning Report

<b>Database:</b>	EDT 14 Central Planning	<b>Local Co-ordinate Reference:</b>	Well Rush 4-65 29-30 1AH
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<b>Project:</b>	Niobrara Central Zone	<b>MD Reference:</b>	25' RKB @ 5673.90ft (25' RKB)
<b>Site:</b>	Rush	<b>North Reference:</b>	True
<b>Well:</b>	Rush 4-65 29-30 1AH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Rush 4-65 29-30 1AH		
<b>Design:</b>	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)
8,563.50	79.98	275.50	7,899.00	1,751.25	-948.68	1,215.68	10.00	8.72	-4.98
<b>C Chalk Top</b>									
8,600.00	83.16	273.70	7,904.35	1,754.15	-984.66	1,251.66	10.00	8.74	-4.92
8,650.00	87.54	271.28	7,908.40	1,756.31	-1,034.43	1,301.14	10.00	8.76	-4.85
8,676.51	89.87	270.00	7,909.00	1,756.61	-1,060.93	1,327.35	10.00	8.76	-4.82
<b>BPI/LP: 500' FNL, 460' FEL</b>									
8,700.00	89.87	270.00	7,909.06	1,756.61	-1,084.42	1,350.54	0.00	0.00	0.00
8,800.00	89.87	270.00	7,909.29	1,756.61	-1,184.42	1,449.26	0.00	0.00	0.00
8,900.00	89.87	270.00	7,909.52	1,756.61	-1,284.42	1,547.98	0.00	0.00	0.00
9,000.00	89.87	270.00	7,909.76	1,756.61	-1,384.42	1,646.71	0.00	0.00	0.00
9,100.00	89.87	270.00	7,909.99	1,756.62	-1,484.42	1,745.43	0.00	0.00	0.00
9,200.00	89.87	270.00	7,910.23	1,756.62	-1,584.42	1,844.15	0.00	0.00	0.00
9,300.00	89.87	270.00	7,910.46	1,756.62	-1,684.42	1,942.87	0.00	0.00	0.00
9,400.00	89.87	270.00	7,910.69	1,756.63	-1,784.42	2,041.59	0.00	0.00	0.00
9,500.00	89.87	270.00	7,910.93	1,756.63	-1,884.42	2,140.32	0.00	0.00	0.00
9,600.00	89.87	270.00	7,911.16	1,756.63	-1,984.42	2,239.04	0.00	0.00	0.00
9,700.00	89.87	270.00	7,911.40	1,756.63	-2,084.42	2,337.76	0.00	0.00	0.00
9,800.00	89.87	270.00	7,911.63	1,756.64	-2,184.42	2,436.48	0.00	0.00	0.00
9,900.00	89.87	270.00	7,911.87	1,756.64	-2,284.42	2,535.20	0.00	0.00	0.00
10,000.00	89.87	270.00	7,912.10	1,756.64	-2,384.42	2,633.92	0.00	0.00	0.00
10,100.00	89.87	270.00	7,912.33	1,756.64	-2,484.42	2,732.65	0.00	0.00	0.00
10,200.00	89.87	270.00	7,912.57	1,756.65	-2,584.42	2,831.37	0.00	0.00	0.00
10,300.00	89.87	270.00	7,912.80	1,756.65	-2,684.42	2,930.09	0.00	0.00	0.00
10,400.00	89.87	270.00	7,913.04	1,756.65	-2,784.42	3,028.81	0.00	0.00	0.00
10,500.00	89.87	270.00	7,913.27	1,756.66	-2,884.42	3,127.53	0.00	0.00	0.00
10,600.00	89.87	270.00	7,913.50	1,756.66	-2,984.42	3,226.25	0.00	0.00	0.00
10,700.00	89.87	270.00	7,913.74	1,756.66	-3,084.42	3,324.98	0.00	0.00	0.00
10,800.00	89.87	270.00	7,913.97	1,756.66	-3,184.42	3,423.70	0.00	0.00	0.00
10,900.00	89.87	270.00	7,914.21	1,756.67	-3,284.42	3,522.42	0.00	0.00	0.00
11,000.00	89.87	270.00	7,914.44	1,756.67	-3,384.42	3,621.14	0.00	0.00	0.00
11,100.00	89.87	270.00	7,914.68	1,756.67	-3,484.42	3,719.86	0.00	0.00	0.00
11,200.00	89.87	270.00	7,914.91	1,756.68	-3,584.42	3,818.59	0.00	0.00	0.00
11,300.00	89.87	270.00	7,915.14	1,756.68	-3,684.42	3,917.31	0.00	0.00	0.00
11,400.00	89.87	270.00	7,915.38	1,756.68	-3,784.41	4,016.03	0.00	0.00	0.00
11,500.00	89.87	270.00	7,915.61	1,756.68	-3,884.41	4,114.75	0.00	0.00	0.00
11,600.00	89.87	270.00	7,915.85	1,756.69	-3,984.41	4,213.47	0.00	0.00	0.00
11,700.00	89.87	270.00	7,916.08	1,756.69	-4,084.41	4,312.19	0.00	0.00	0.00
11,800.00	89.87	270.00	7,916.32	1,756.69	-4,184.41	4,410.92	0.00	0.00	0.00
11,900.00	89.87	270.00	7,916.55	1,756.69	-4,284.41	4,509.64	0.00	0.00	0.00
12,000.00	89.87	270.00	7,916.78	1,756.70	-4,384.41	4,608.36	0.00	0.00	0.00
12,100.00	89.87	270.00	7,917.02	1,756.70	-4,484.41	4,707.08	0.00	0.00	0.00
12,200.00	89.87	270.00	7,917.25	1,756.70	-4,584.41	4,805.80	0.00	0.00	0.00
12,300.00	89.87	270.00	7,917.49	1,756.71	-4,684.41	4,904.52	0.00	0.00	0.00
12,400.00	89.87	270.00	7,917.72	1,756.71	-4,784.41	5,003.25	0.00	0.00	0.00
12,500.00	89.87	270.00	7,917.95	1,756.71	-4,884.41	5,101.97	0.00	0.00	0.00
12,600.00	89.87	270.00	7,918.19	1,756.71	-4,984.41	5,200.69	0.00	0.00	0.00
12,700.00	89.87	270.00	7,918.42	1,756.72	-5,084.41	5,299.41	0.00	0.00	0.00
12,800.00	89.87	270.00	7,918.66	1,756.72	-5,184.41	5,398.13	0.00	0.00	0.00
12,900.00	89.87	270.00	7,918.89	1,756.72	-5,284.41	5,496.86	0.00	0.00	0.00
13,000.00	89.87	270.00	7,919.13	1,756.72	-5,384.41	5,595.58	0.00	0.00	0.00
13,100.00	89.87	270.00	7,919.36	1,756.73	-5,484.41	5,694.30	0.00	0.00	0.00
13,200.00	89.87	270.00	7,919.59	1,756.73	-5,584.41	5,793.02	0.00	0.00	0.00
13,300.00	89.87	270.00	7,919.83	1,756.73	-5,684.41	5,891.74	0.00	0.00	0.00
13,400.00	89.87	270.00	7,920.06	1,756.74	-5,784.41	5,990.46	0.00	0.00	0.00

# ConocoPhillips

## Planning Report

<b>Database:</b>	EDT 14 Central Planning	<b>Local Co-ordinate Reference:</b>	Well Rush 4-65 29-30 1AH
<b>Company:</b>	ConocoPhillips RBU Gold Data	<b>TVD Reference:</b>	25' RKB @ 5673.90ft (25' RKB)
<b>Project:</b>	Niobrara Central Zone	<b>MD Reference:</b>	25' RKB @ 5673.90ft (25' RKB)
<b>Site:</b>	Rush	<b>North Reference:</b>	True
<b>Well:</b>	Rush 4-65 29-30 1AH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Rush 4-65 29-30 1AH		
<b>Design:</b>	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)
13,500.00	89.87	270.00	7,920.30	1,756.74	-5,884.41	6,089.19	0.00	0.00	0.00
13,600.00	89.87	270.00	7,920.53	1,756.74	-5,984.41	6,187.91	0.00	0.00	0.00
13,700.00	89.87	270.00	7,920.77	1,756.74	-6,084.41	6,286.63	0.00	0.00	0.00
13,800.00	89.87	270.00	7,921.00	1,756.75	-6,184.41	6,385.35	0.00	0.00	0.00
13,900.00	89.87	270.00	7,921.23	1,756.75	-6,284.41	6,484.07	0.00	0.00	0.00
14,000.00	89.87	270.00	7,921.47	1,756.75	-6,384.41	6,582.79	0.00	0.00	0.00
14,100.00	89.87	270.00	7,921.70	1,756.75	-6,484.41	6,681.52	0.00	0.00	0.00
14,200.00	89.87	270.00	7,921.94	1,756.76	-6,584.41	6,780.24	0.00	0.00	0.00
14,300.00	89.87	270.00	7,922.17	1,756.76	-6,684.41	6,878.96	0.00	0.00	0.00
14,400.00	89.87	270.00	7,922.40	1,756.76	-6,784.41	6,977.68	0.00	0.00	0.00
14,500.00	89.87	270.00	7,922.64	1,756.77	-6,884.41	7,076.40	0.00	0.00	0.00
14,600.00	89.87	270.00	7,922.87	1,756.77	-6,984.41	7,175.13	0.00	0.00	0.00
14,700.00	89.87	270.00	7,923.11	1,756.77	-7,084.41	7,273.85	0.00	0.00	0.00
14,800.00	89.87	270.00	7,923.34	1,756.77	-7,184.41	7,372.57	0.00	0.00	0.00
14,900.00	89.87	270.00	7,923.58	1,756.78	-7,284.41	7,471.29	0.00	0.00	0.00
15,000.00	89.87	270.00	7,923.81	1,756.78	-7,384.40	7,570.01	0.00	0.00	0.00
15,100.00	89.87	270.00	7,924.04	1,756.78	-7,484.40	7,668.73	0.00	0.00	0.00
15,200.00	89.87	270.00	7,924.28	1,756.79	-7,584.40	7,767.46	0.00	0.00	0.00
15,300.00	89.87	270.00	7,924.51	1,756.79	-7,684.40	7,866.18	0.00	0.00	0.00
15,400.00	89.87	270.00	7,924.75	1,756.79	-7,784.40	7,964.90	0.00	0.00	0.00
15,500.00	89.87	270.00	7,924.98	1,756.79	-7,884.40	8,063.62	0.00	0.00	0.00
15,600.00	89.87	270.00	7,925.21	1,756.80	-7,984.40	8,162.34	0.00	0.00	0.00
15,700.00	89.87	270.00	7,925.45	1,756.80	-8,084.40	8,261.06	0.00	0.00	0.00
15,800.00	89.87	270.00	7,925.68	1,756.80	-8,184.40	8,359.79	0.00	0.00	0.00
15,900.00	89.87	270.00	7,925.92	1,756.80	-8,284.40	8,458.51	0.00	0.00	0.00
16,000.00	89.87	270.00	7,926.15	1,756.81	-8,384.40	8,557.23	0.00	0.00	0.00
16,100.00	89.87	270.00	7,926.39	1,756.81	-8,484.40	8,655.95	0.00	0.00	0.00
16,200.00	89.87	270.00	7,926.62	1,756.81	-8,584.40	8,754.67	0.00	0.00	0.00
16,300.00	89.87	270.00	7,926.85	1,756.82	-8,684.40	8,853.40	0.00	0.00	0.00
16,400.00	89.87	270.00	7,927.09	1,756.82	-8,784.40	8,952.12	0.00	0.00	0.00
16,500.00	89.87	270.00	7,927.32	1,756.82	-8,884.40	9,050.84	0.00	0.00	0.00
16,600.00	89.87	270.00	7,927.56	1,756.82	-8,984.40	9,149.56	0.00	0.00	0.00
16,700.00	89.87	270.00	7,927.79	1,756.83	-9,084.40	9,248.28	0.00	0.00	0.00
16,800.00	89.87	270.00	7,928.03	1,756.83	-9,184.40	9,347.00	0.00	0.00	0.00
16,900.00	89.87	270.00	7,928.26	1,756.83	-9,284.40	9,445.73	0.00	0.00	0.00
17,000.00	89.87	270.00	7,928.49	1,756.83	-9,384.40	9,544.45	0.00	0.00	0.00
17,100.00	89.87	270.00	7,928.73	1,756.84	-9,484.40	9,643.17	0.00	0.00	0.00
17,200.00	89.87	270.00	7,928.96	1,756.84	-9,584.40	9,741.89	0.00	0.00	0.00
17,300.00	89.87	270.00	7,929.20	1,756.84	-9,684.40	9,840.61	0.00	0.00	0.00
17,400.00	89.87	270.00	7,929.43	1,756.85	-9,784.40	9,939.33	0.00	0.00	0.00
17,500.00	89.87	270.00	7,929.66	1,756.85	-9,884.40	10,038.06	0.00	0.00	0.00
17,600.00	89.87	270.00	7,929.90	1,756.85	-9,984.40	10,136.78	0.00	0.00	0.00
17,700.00	89.87	270.00	7,930.13	1,756.85	-10,084.40	10,235.50	0.00	0.00	0.00
17,800.00	89.87	270.00	7,930.37	1,756.86	-10,184.40	10,334.22	0.00	0.00	0.00
17,900.00	89.87	270.00	7,930.60	1,756.86	-10,284.40	10,432.94	0.00	0.00	0.00
18,000.00	89.87	270.00	7,930.84	1,756.86	-10,384.40	10,531.67	0.00	0.00	0.00
18,100.00	89.87	270.00	7,931.07	1,756.86	-10,484.40	10,630.39	0.00	0.00	0.00
18,200.00	89.87	270.00	7,931.30	1,756.87	-10,584.40	10,729.11	0.00	0.00	0.00
18,300.00	89.87	270.00	7,931.54	1,756.87	-10,684.40	10,827.83	0.00	0.00	0.00
18,400.00	89.87	270.00	7,931.77	1,756.87	-10,784.40	10,926.55	0.00	0.00	0.00
18,497.30	89.87	270.00	7,932.00	1,756.88	-10,881.70	11,022.61	0.00	0.00	0.00
BHL: 500' FNL, 325' FWL - 5-1/2" Casing									



# ConocoPhillips

## Planning Report

<b>Database:</b>	EDT 14 Central Planning	<b>Local Co-ordinate Reference:</b>	Well Rush 4-65 29-30 1AH
<b>Company:</b>	ConocoPhillips RBU Gold Data	<b>TVD Reference:</b>	25' RKB @ 5673.90ft (25' RKB)
<b>Project:</b>	Niobrara Central Zone	<b>MD Reference:</b>	25' RKB @ 5673.90ft (25' RKB)
<b>Site:</b>	Rush	<b>North Reference:</b>	True
<b>Well:</b>	Rush 4-65 29-30 1AH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Rush 4-65 29-30 1AH		
<b>Design:</b>	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									
Rush 4-65 29-30 1AH BI - plan hits target center - Point	0.00	0.00	7,909.00	1,756.61	-1,060.93	1,673,858.094	3,230,763.570	39° 40' 50.450 N	104° 40' 48.390 W
Rush 4-65 29-30 1AH BI - plan hits target center - Point	0.00	0.00	7,932.00	1,756.88	-10,881.70	1,673,769.325	3,220,943.363	39° 40' 50.430 N	104° 42' 54.000 W

Casing Points					
Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter	
(ft)	(ft)		(")	(")	
2,185.00	2,185.00	9-5/8" Casing	9-5/8	12-1/4	
18,497.30	7,932.00	5-1/2" Casing	5-1/2	8-1/2	

Formations					
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(ft)	(ft)			(°)	(°)
1,725.00	1,725.00	Fox Hills Top		0.00	
1,985.00	1,985.00	Pierre Top - Fox Hills Base		0.00	
2,185.00	2,185.00	Surface Casing		0.00	
8,275.36	7,790.00	Niobrara Top		0.00	
8,563.50	7,899.00	C Chalk Top		0.00	

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S	+E/-W	
(ft)	(ft)	(ft)	(ft)	
100.00	100.00	0.00	0.00	SHL: 2252' FNL, 621' FWL
5,685.19	5,595.02	486.71	-158.42	EOB: 1765' FNL, 463' FWL
7,866.73	7,484.24	1,524.00	-496.06	KOP: 728' FNL, 125' FWL
8,676.51	7,909.00	1,756.61	-1,060.93	BPI/LP: 500' FNL, 460' FEL
18,497.30	7,932.00	1,756.88	-10,881.70	BHL: 500' FNL, 325' FWL