

# **ConocoPhillips RBU Gold Data**

**Niobrara North Zone**

**Big Sandy**

**Big Sandy 3-65 36-31 2CH**

**Big Sandy 3-65 36-31 2CH**

**Plan: Big Sandy 3-65 36-31 2CH**

## **Standard Planning Report**

**24 July, 2017**

# ConocoPhillips

## Planning Report

<b>Database:</b>	EDT 14 Central Planning	<b>Local Co-ordinate Reference:</b>	Well Big Sandy 3-65 36-31 2CH
<b>Company:</b>	ConocoPhillips RBU Gold Data	<b>TVD Reference:</b>	27' RKB @ 5550.90ft (27' RKB)
<b>Project:</b>	Niobrara North Zone	<b>MD Reference:</b>	27' RKB @ 5550.90ft (27' RKB)
<b>Site:</b>	Big Sandy	<b>North Reference:</b>	True
<b>Well:</b>	Big Sandy 3-65 36-31 2CH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Big Sandy 3-65 36-31 2CH		
<b>Design:</b>	Big Sandy 3-65 36-31 2CH		

<b>Project</b>	Niobrara North Zone, Colorado North Zone, FIPS Zone: 0501		
<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 Northern Zone		Using geodetic scale factor

Site	Big Sandy				
Site Position:		Northing:	1,154,567.170 usft	Latitude:	39° 45' 15.469 N
From:	Lat/Long	Easting:	3,246,918.586 usft	Longitude:	104° 37' 18.412 W
Position Uncertainty:	0.00 ft	Slot Radius:	26 "	Grid Convergence:	0.57 °

Well	Big Sandy 3-65 36-31 2CH					
Well Position	+N/-S	-2,692.49 ft	Northing:	1,151,870.076 usft	Latitude:	39° 44' 48.860 N
	+E/-W	-480.25 ft	Easting:	3,246,465.028 usft	Longitude:	104° 37' 24.560 W
Position Uncertainty		2.00 ft	Wellhead Elevation:		Ground Level:	5,523.90 ft

<b>Wellbore</b>	Big Sandy 3-65 36-31 2CH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2017	7/24/2017	8.26	66.39	52,037.88089968

<b>Design</b>	Big Sandy 3-65 36-31 2CH			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	82.92

Plan Survey Tool Program		Date 7/24/2017			
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	2,027.00	Big Sandy 3-65 36-31 2CH (Big S	Gyro-BM-MS	
				Gyro - bat/mem drop m/s	
2	2,027.00	8,326.73	Big Sandy 3-65 36-31 2CH (Big S	MWD+IFR_No SAG	
				MWD + IFR (No SAG) correctic	
3	8,326.73	18,353.33	Big Sandy 3-65 36-31 2CH (Big S	MWD+IFR_No SAG	
				MWD + IFR (No SAG) correctic	

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<b>Site:</b>	Big Sandy	<b>North Reference:</b>	True
<b>Well:</b>	Big Sandy 3-65 36-31 2CH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Big Sandy 3-65 36-31 2CH		
<b>Design:</b>	Big Sandy 3-65 36-31 2CH		

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	
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,716.34	18.25	14.95	3,695.88	185.53	49.55	1.50	1.50	0.00	14.95	
7,463.01	18.25	14.95	7,254.20	1,318.82	352.23	0.00	0.00	0.00	0.00	
8,326.73	90.85	90.66	7,757.00	1,475.32	933.36	10.00	8.41	8.76	76.14	Big Sandy 3-65 36-31
18,353.33	90.85	90.66	7,609.00	1,360.33	10,958.20	0.00	0.00	0.00	0.00	Big Sandy 3-65 36-31

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<b>Well:</b>	Big Sandy 3-65 36-31 2CH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Big Sandy 3-65 36-31 2CH		
<b>Design:</b>	Big Sandy 3-65 36-31 2CH		

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
2,027.00	0.00	0.00	2,027.00	0.00	0.00	0.00	0.00	0.00	0.00
Surface									
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	1.50	14.95	2,599.99	1.26	0.34	0.49	1.50	1.50	0.00
2,700.00	3.00	14.95	2,699.91	5.06	1.35	1.96	1.50	1.50	0.00
2,800.00	4.50	14.95	2,799.69	11.38	3.04	4.42	1.50	1.50	0.00
2,900.00	6.00	14.95	2,899.27	20.22	5.40	7.85	1.50	1.50	0.00
3,000.00	7.50	14.95	2,998.57	31.57	8.43	12.26	1.50	1.50	0.00
3,100.00	9.00	14.95	3,097.54	45.43	12.13	17.64	1.50	1.50	0.00
3,200.00	10.50	14.95	3,196.09	61.80	16.50	23.99	1.50	1.50	0.00
3,300.00	12.00	14.95	3,294.16	80.64	21.54	31.31	1.50	1.50	0.00
3,400.00	13.50	14.95	3,391.70	101.97	27.23	39.59	1.50	1.50	0.00
3,500.00	15.00	14.95	3,488.62	125.75	33.58	48.82	1.50	1.50	0.00
3,600.00	16.50	14.95	3,584.86	151.97	40.59	59.00	1.50	1.50	0.00
3,700.00	18.00	14.95	3,680.36	180.62	48.24	70.12	1.50	1.50	0.00
3,716.34	18.25	14.95	3,695.88	185.53	49.55	72.03	1.50	1.50	0.00
3,800.00	18.25	14.95	3,775.34	210.84	56.31	81.85	0.00	0.00	0.00
3,900.00	18.25	14.95	3,870.31	241.08	64.39	93.60	0.00	0.00	0.00
4,000.00	18.25	14.95	3,965.29	271.33	72.47	105.34	0.00	0.00	0.00
4,100.00	18.25	14.95	4,060.26	301.58	80.55	117.08	0.00	0.00	0.00
4,200.00	18.25	14.95	4,155.23	331.83	88.62	128.83	0.00	0.00	0.00
4,300.00	18.25	14.95	4,250.20	362.07	96.70	140.57	0.00	0.00	0.00
4,400.00	18.25	14.95	4,345.18	392.32	104.78	152.31	0.00	0.00	0.00
4,500.00	18.25	14.95	4,440.15	422.57	112.86	164.06	0.00	0.00	0.00
4,600.00	18.25	14.95	4,535.12	452.82	120.94	175.80	0.00	0.00	0.00
4,700.00	18.25	14.95	4,630.10	483.07	129.02	187.54	0.00	0.00	0.00
4,800.00	18.25	14.95	4,725.07	513.31	137.10	199.29	0.00	0.00	0.00
4,900.00	18.25	14.95	4,820.04	543.56	145.17	211.03	0.00	0.00	0.00
5,000.00	18.25	14.95	4,915.01	573.81	153.25	222.77	0.00	0.00	0.00

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<b>Wellbore:</b>	Big Sandy 3-65 36-31 2CH		
<b>Design:</b>	Big Sandy 3-65 36-31 2CH		

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)
5,100.00	18.25	14.95	5,009.99	604.06	161.33	234.52	0.00	0.00	0.00
5,200.00	18.25	14.95	5,104.96	634.31	169.41	246.26	0.00	0.00	0.00
5,300.00	18.25	14.95	5,199.93	664.55	177.49	258.00	0.00	0.00	0.00
5,400.00	18.25	14.95	5,294.90	694.80	185.57	269.75	0.00	0.00	0.00
5,500.00	18.25	14.95	5,389.88	725.05	193.65	281.49	0.00	0.00	0.00
5,600.00	18.25	14.95	5,484.85	755.30	201.72	293.24	0.00	0.00	0.00
5,700.00	18.25	14.95	5,579.82	785.55	209.80	304.98	0.00	0.00	0.00
5,800.00	18.25	14.95	5,674.79	815.79	217.88	316.72	0.00	0.00	0.00
5,900.00	18.25	14.95	5,769.77	846.04	225.96	328.47	0.00	0.00	0.00
6,000.00	18.25	14.95	5,864.74	876.29	234.04	340.21	0.00	0.00	0.00
6,100.00	18.25	14.95	5,959.71	906.54	242.12	351.95	0.00	0.00	0.00
6,200.00	18.25	14.95	6,054.68	936.79	250.20	363.70	0.00	0.00	0.00
6,300.00	18.25	14.95	6,149.66	967.03	258.27	375.44	0.00	0.00	0.00
6,400.00	18.25	14.95	6,244.63	997.28	266.35	387.18	0.00	0.00	0.00
6,500.00	18.25	14.95	6,339.60	1,027.53	274.43	398.93	0.00	0.00	0.00
6,600.00	18.25	14.95	6,434.58	1,057.78	282.51	410.67	0.00	0.00	0.00
6,700.00	18.25	14.95	6,529.55	1,088.03	290.59	422.41	0.00	0.00	0.00
6,800.00	18.25	14.95	6,624.52	1,118.27	298.67	434.16	0.00	0.00	0.00
6,900.00	18.25	14.95	6,719.49	1,148.52	306.75	445.90	0.00	0.00	0.00
7,000.00	18.25	14.95	6,814.47	1,178.77	314.82	457.64	0.00	0.00	0.00
7,100.00	18.25	14.95	6,909.44	1,209.02	322.90	469.39	0.00	0.00	0.00
7,200.00	18.25	14.95	7,004.41	1,239.27	330.98	481.13	0.00	0.00	0.00
7,300.00	18.25	14.95	7,099.38	1,269.51	339.06	492.87	0.00	0.00	0.00
7,400.00	18.25	14.95	7,194.36	1,299.76	347.14	504.62	0.00	0.00	0.00
7,463.01	18.25	14.95	7,254.20	1,318.82	352.23	512.02	0.00	0.00	0.00
7,500.00	19.45	25.79	7,289.21	1,329.96	356.41	517.53	10.00	3.27	29.30
7,550.00	21.96	38.08	7,336.00	1,344.83	365.80	528.69	10.00	5.01	24.56
7,600.00	25.18	47.66	7,381.84	1,359.36	379.44	544.01	10.00	6.45	19.17
7,650.00	28.89	55.06	7,426.38	1,373.45	397.21	563.39	10.00	7.41	14.81
7,700.00	32.91	60.85	7,469.29	1,387.00	418.99	586.67	10.00	8.05	11.58
7,750.00	37.15	65.48	7,510.23	1,399.89	444.61	613.68	10.00	8.48	9.26
7,800.00	41.54	69.28	7,548.89	1,412.02	473.87	644.21	10.00	8.77	7.59
7,850.00	46.03	72.46	7,584.98	1,423.32	506.55	678.04	10.00	8.98	6.36
7,900.00	50.59	75.19	7,618.23	1,433.69	542.41	714.90	10.00	9.13	5.46
7,950.00	55.22	77.58	7,648.38	1,443.04	581.16	754.51	10.00	9.24	4.79
8,000.00	59.88	79.72	7,675.21	1,451.32	622.52	796.57	10.00	9.33	4.27
8,050.00	64.58	81.66	7,698.50	1,458.46	666.16	840.76	10.00	9.39	3.89
8,100.00	69.29	83.46	7,718.08	1,464.40	711.76	886.75	10.00	9.44	3.59
8,150.00	74.03	85.15	7,733.81	1,469.10	758.98	934.18	10.00	9.47	3.38
8,200.00	78.78	86.76	7,745.56	1,472.52	807.44	982.69	10.00	9.50	3.22
8,250.00	83.54	88.32	7,753.24	1,474.64	856.78	1,031.92	10.00	9.51	3.12
8,300.00	88.30	89.84	7,756.80	1,475.44	906.63	1,081.49	10.00	9.52	3.06
8,326.73	90.85	90.66	7,757.00	1,475.32	933.36	1,108.00	10.00	9.53	3.04
8,400.00	90.85	90.66	7,755.92	1,474.48	1,006.62	1,180.60	0.00	0.00	0.00
8,500.00	90.85	90.66	7,754.44	1,473.33	1,106.60	1,279.68	0.00	0.00	0.00
8,600.00	90.85	90.66	7,752.97	1,472.19	1,206.58	1,378.75	0.00	0.00	0.00
8,700.00	90.85	90.66	7,751.49	1,471.04	1,306.57	1,477.83	0.00	0.00	0.00
8,800.00	90.85	90.66	7,750.01	1,469.89	1,406.55	1,576.91	0.00	0.00	0.00
8,900.00	90.85	90.66	7,748.54	1,468.74	1,506.53	1,675.99	0.00	0.00	0.00
9,000.00	90.85	90.66	7,747.06	1,467.60	1,606.51	1,775.07	0.00	0.00	0.00
9,100.00	90.85	90.66	7,745.59	1,466.45	1,706.50	1,874.15	0.00	0.00	0.00
9,200.00	90.85	90.66	7,744.11	1,465.30	1,806.48	1,973.23	0.00	0.00	0.00
9,300.00	90.85	90.66	7,742.63	1,464.16	1,906.46	2,072.31	0.00	0.00	0.00
9,400.00	90.85	90.66	7,741.16	1,463.01	2,006.44	2,171.39	0.00	0.00	0.00

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<b>Design:</b>	Big Sandy 3-65 36-31 2CH		

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)	
9,500.00	90.85	90.66	7,739.68	1,461.86	2,106.43	2,270.47	0.00	0.00	0.00	
9,600.00	90.85	90.66	7,738.21	1,460.72	2,206.41	2,369.55	0.00	0.00	0.00	
9,700.00	90.85	90.66	7,736.73	1,459.57	2,306.39	2,468.63	0.00	0.00	0.00	
9,800.00	90.85	90.66	7,735.25	1,458.42	2,406.37	2,567.71	0.00	0.00	0.00	
9,900.00	90.85	90.66	7,733.78	1,457.28	2,506.36	2,666.79	0.00	0.00	0.00	
10,000.00	90.85	90.66	7,732.30	1,456.13	2,606.34	2,765.87	0.00	0.00	0.00	
10,100.00	90.85	90.66	7,730.83	1,454.98	2,706.32	2,864.95	0.00	0.00	0.00	
10,200.00	90.85	90.66	7,729.35	1,453.84	2,806.30	2,964.03	0.00	0.00	0.00	
10,300.00	90.85	90.66	7,727.87	1,452.69	2,906.29	3,063.11	0.00	0.00	0.00	
10,400.00	90.85	90.66	7,726.40	1,451.54	3,006.27	3,162.19	0.00	0.00	0.00	
10,500.00	90.85	90.66	7,724.92	1,450.40	3,106.25	3,261.27	0.00	0.00	0.00	
10,600.00	90.85	90.66	7,723.44	1,449.25	3,206.23	3,360.35	0.00	0.00	0.00	
10,700.00	90.85	90.66	7,721.97	1,448.10	3,306.22	3,459.43	0.00	0.00	0.00	
10,800.00	90.85	90.66	7,720.49	1,446.96	3,406.20	3,558.51	0.00	0.00	0.00	
10,900.00	90.85	90.66	7,719.02	1,445.81	3,506.18	3,657.59	0.00	0.00	0.00	
11,000.00	90.85	90.66	7,717.54	1,444.66	3,606.16	3,756.67	0.00	0.00	0.00	
11,100.00	90.85	90.66	7,716.06	1,443.51	3,706.15	3,855.75	0.00	0.00	0.00	
11,200.00	90.85	90.66	7,714.59	1,442.37	3,806.13	3,954.83	0.00	0.00	0.00	
11,300.00	90.85	90.66	7,713.11	1,441.22	3,906.11	4,053.91	0.00	0.00	0.00	
11,400.00	90.85	90.66	7,711.64	1,440.07	4,006.09	4,152.99	0.00	0.00	0.00	
11,500.00	90.85	90.66	7,710.16	1,438.93	4,106.08	4,252.06	0.00	0.00	0.00	
11,600.00	90.85	90.66	7,708.68	1,437.78	4,206.06	4,351.14	0.00	0.00	0.00	
11,700.00	90.85	90.66	7,707.21	1,436.63	4,306.04	4,450.22	0.00	0.00	0.00	
11,800.00	90.85	90.66	7,705.73	1,435.49	4,406.02	4,549.30	0.00	0.00	0.00	
11,900.00	90.85	90.66	7,704.26	1,434.34	4,506.01	4,648.38	0.00	0.00	0.00	
12,000.00	90.85	90.66	7,702.78	1,433.19	4,605.99	4,747.46	0.00	0.00	0.00	
12,100.00	90.85	90.66	7,701.30	1,432.05	4,705.97	4,846.54	0.00	0.00	0.00	
12,200.00	90.85	90.66	7,699.83	1,430.90	4,805.95	4,945.62	0.00	0.00	0.00	
12,300.00	90.85	90.66	7,698.35	1,429.75	4,905.94	5,044.70	0.00	0.00	0.00	
12,400.00	90.85	90.66	7,696.88	1,428.61	5,005.92	5,143.78	0.00	0.00	0.00	
12,500.00	90.85	90.66	7,695.40	1,427.46	5,105.90	5,242.86	0.00	0.00	0.00	
12,600.00	90.85	90.66	7,693.92	1,426.31	5,205.88	5,341.94	0.00	0.00	0.00	
12,700.00	90.85	90.66	7,692.45	1,425.17	5,305.87	5,441.02	0.00	0.00	0.00	
12,800.00	90.85	90.66	7,690.97	1,424.02	5,405.85	5,540.10	0.00	0.00	0.00	
12,900.00	90.85	90.66	7,689.50	1,422.87	5,505.83	5,639.18	0.00	0.00	0.00	
13,000.00	90.85	90.66	7,688.02	1,421.73	5,605.81	5,738.26	0.00	0.00	0.00	
13,100.00	90.85	90.66	7,686.54	1,420.58	5,705.80	5,837.34	0.00	0.00	0.00	
13,200.00	90.85	90.66	7,685.07	1,419.43	5,805.78	5,936.42	0.00	0.00	0.00	
13,300.00	90.85	90.66	7,683.59	1,418.29	5,905.76	6,035.50	0.00	0.00	0.00	
13,400.00	90.85	90.66	7,682.11	1,417.14	6,005.74	6,134.58	0.00	0.00	0.00	
13,500.00	90.85	90.66	7,680.64	1,415.99	6,105.73	6,233.66	0.00	0.00	0.00	
13,600.00	90.85	90.66	7,679.16	1,414.84	6,205.71	6,332.74	0.00	0.00	0.00	
13,700.00	90.85	90.66	7,677.69	1,413.70	6,305.69	6,431.82	0.00	0.00	0.00	
13,800.00	90.85	90.66	7,676.21	1,412.55	6,405.67	6,530.90	0.00	0.00	0.00	
13,900.00	90.85	90.66	7,674.73	1,411.40	6,505.66	6,629.98	0.00	0.00	0.00	
14,000.00	90.85	90.66	7,673.26	1,410.26	6,605.64	6,729.06	0.00	0.00	0.00	
14,100.00	90.85	90.66	7,671.78	1,409.11	6,705.62	6,828.14	0.00	0.00	0.00	
14,200.00	90.85	90.66	7,670.31	1,407.96	6,805.60	6,927.22	0.00	0.00	0.00	
14,300.00	90.85	90.66	7,668.83	1,406.82	6,905.59	7,026.30	0.00	0.00	0.00	
14,400.00	90.85	90.66	7,667.35	1,405.67	7,005.57	7,125.38	0.00	0.00	0.00	
14,500.00	90.85	90.66	7,665.88	1,404.52	7,105.55	7,224.45	0.00	0.00	0.00	
14,600.00	90.85	90.66	7,664.40	1,403.38	7,205.53	7,323.53	0.00	0.00	0.00	
14,700.00	90.85	90.66	7,662.93	1,402.23	7,305.52	7,422.61	0.00	0.00	0.00	
14,800.00	90.85	90.66	7,661.45	1,401.08	7,405.50	7,521.69	0.00	0.00	0.00	

# ConocoPhillips

## Planning Report

<b>Database:</b>	EDT 14 Central Planning	<b>Local Co-ordinate Reference:</b>	Well Big Sandy 3-65 36-31 2CH
<b>Company:</b>	ConocoPhillips RBU Gold Data	<b>TVD Reference:</b>	27' RKB @ 5550.90ft (27' RKB)
<b>Project:</b>	Niobrara North Zone	<b>MD Reference:</b>	27' RKB @ 5550.90ft (27' RKB)
<b>Site:</b>	Big Sandy	<b>North Reference:</b>	True
<b>Well:</b>	Big Sandy 3-65 36-31 2CH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Big Sandy 3-65 36-31 2CH		
<b>Design:</b>	Big Sandy 3-65 36-31 2CH		

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)
14,900.00	90.85	90.66	7,659.97	1,399.94	7,505.48	7,620.77	0.00	0.00	0.00
15,000.00	90.85	90.66	7,658.50	1,398.79	7,605.46	7,719.85	0.00	0.00	0.00
15,100.00	90.85	90.66	7,657.02	1,397.64	7,705.45	7,818.93	0.00	0.00	0.00
15,200.00	90.85	90.66	7,655.55	1,396.50	7,805.43	7,918.01	0.00	0.00	0.00
15,300.00	90.85	90.66	7,654.07	1,395.35	7,905.41	8,017.09	0.00	0.00	0.00
15,400.00	90.85	90.66	7,652.59	1,394.20	8,005.40	8,116.17	0.00	0.00	0.00
15,500.00	90.85	90.66	7,651.12	1,393.06	8,105.38	8,215.25	0.00	0.00	0.00
15,600.00	90.85	90.66	7,649.64	1,391.91	8,205.36	8,314.33	0.00	0.00	0.00
15,700.00	90.85	90.66	7,648.17	1,390.76	8,305.34	8,413.41	0.00	0.00	0.00
15,800.00	90.85	90.66	7,646.69	1,389.62	8,405.33	8,512.49	0.00	0.00	0.00
15,900.00	90.85	90.66	7,645.21	1,388.47	8,505.31	8,611.57	0.00	0.00	0.00
16,000.00	90.85	90.66	7,643.74	1,387.32	8,605.29	8,710.65	0.00	0.00	0.00
16,100.00	90.85	90.66	7,642.26	1,386.17	8,705.27	8,809.73	0.00	0.00	0.00
16,200.00	90.85	90.66	7,640.78	1,385.03	8,805.26	8,908.81	0.00	0.00	0.00
16,300.00	90.85	90.66	7,639.31	1,383.88	8,905.24	9,007.89	0.00	0.00	0.00
16,400.00	90.85	90.66	7,637.83	1,382.73	9,005.22	9,106.97	0.00	0.00	0.00
16,500.00	90.85	90.66	7,636.36	1,381.59	9,105.20	9,206.05	0.00	0.00	0.00
16,600.00	90.85	90.66	7,634.88	1,380.44	9,205.19	9,305.13	0.00	0.00	0.00
16,700.00	90.85	90.66	7,633.40	1,379.29	9,305.17	9,404.21	0.00	0.00	0.00
16,800.00	90.85	90.66	7,631.93	1,378.15	9,405.15	9,503.29	0.00	0.00	0.00
16,900.00	90.85	90.66	7,630.45	1,377.00	9,505.13	9,602.37	0.00	0.00	0.00
17,000.00	90.85	90.66	7,628.98	1,375.85	9,605.12	9,701.45	0.00	0.00	0.00
17,100.00	90.85	90.66	7,627.50	1,374.71	9,705.10	9,800.53	0.00	0.00	0.00
17,200.00	90.85	90.66	7,626.02	1,373.56	9,805.08	9,899.61	0.00	0.00	0.00
17,300.00	90.85	90.66	7,624.55	1,372.41	9,905.06	9,998.69	0.00	0.00	0.00
17,400.00	90.85	90.66	7,623.07	1,371.27	10,005.05	10,097.76	0.00	0.00	0.00
17,500.00	90.85	90.66	7,621.60	1,370.12	10,105.03	10,196.84	0.00	0.00	0.00
17,600.00	90.85	90.66	7,620.12	1,368.97	10,205.01	10,295.92	0.00	0.00	0.00
17,700.00	90.85	90.66	7,618.64	1,367.83	10,304.99	10,395.00	0.00	0.00	0.00
17,800.00	90.85	90.66	7,617.17	1,366.68	10,404.98	10,494.08	0.00	0.00	0.00
17,900.00	90.85	90.66	7,615.69	1,365.53	10,504.96	10,593.16	0.00	0.00	0.00
18,000.00	90.85	90.66	7,614.22	1,364.39	10,604.94	10,692.24	0.00	0.00	0.00
18,100.00	90.85	90.66	7,612.74	1,363.24	10,704.92	10,791.32	0.00	0.00	0.00
18,200.00	90.85	90.66	7,611.26	1,362.09	10,804.91	10,890.40	0.00	0.00	0.00
18,300.00	90.85	90.66	7,609.79	1,360.94	10,904.89	10,989.48	0.00	0.00	0.00
18,353.33	90.85	90.66	7,609.00	1,360.33	10,958.20	11,042.32	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									
Big Sandy 3-65 36-31 2C - plan hits target center - Point	0.00	0.00	7,609.00	1,360.33	10,958.20	1,153,338.648	3,257,409.178	39° 45' 2.280 N	104° 35' 4.260 W
Big Sandy 3-65 36-31 2C - plan hits target center - Point	0.00	0.00	7,757.00	1,475.32	933.36	1,153,354.538	3,247,383.750	39° 45' 3.440 N	104° 37' 12.610 W

# ConocoPhillips

## Planning Report

<b>Database:</b>	EDT 14 Central Planning	<b>Local Co-ordinate Reference:</b>	Well Big Sandy 3-65 36-31 2CH
<b>Company:</b>	ConocoPhillips RBU Gold Data	<b>TVD Reference:</b>	27' RKB @ 5550.90ft (27' RKB)
<b>Project:</b>	Niobrara North Zone	<b>MD Reference:</b>	27' RKB @ 5550.90ft (27' RKB)
<b>Site:</b>	Big Sandy	<b>North Reference:</b>	True
<b>Well:</b>	Big Sandy 3-65 36-31 2CH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Big Sandy 3-65 36-31 2CH		
<b>Design:</b>	Big Sandy 3-65 36-31 2CH		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
2,027.00	2,027.00	Surface	9-5/8	12-1/4	
18,353.33	7,609.00	Production	5-1/2	8-1/2	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
2,000.00	2,000.00	0.00	0.00	SL 2585' FSL 465' FEL	
2,500.00	2,500.00	0.00	0.00	Start Build 1.50	
3,716.34	3,695.88	185.53	49.55	Start 3746.67 hold at 3716.34 MD	
7,463.01	7,254.20	1,318.82	352.23	Start DLS 10.00 TFO 76.14	
8,326.00	7,757.01	1,475.33	932.63	BPI 1216' FNL 460' FWL	
8,326.73	7,757.00	1,475.32	933.36	Start 10026.60 hold at 8326.73 MD	
18,218.00	7,611.00	1,361.89	10,822.90	EPI 1240' FNL 460' FEL	
18,353.00	7,609.00	1,360.34	10,957.88	BHL 1240' FNL 325' FEL	
18,353.33	7,609.00	1,360.33	10,958.20	TD at 18353.33	





ConocoPhillips

Adams County, Colorado

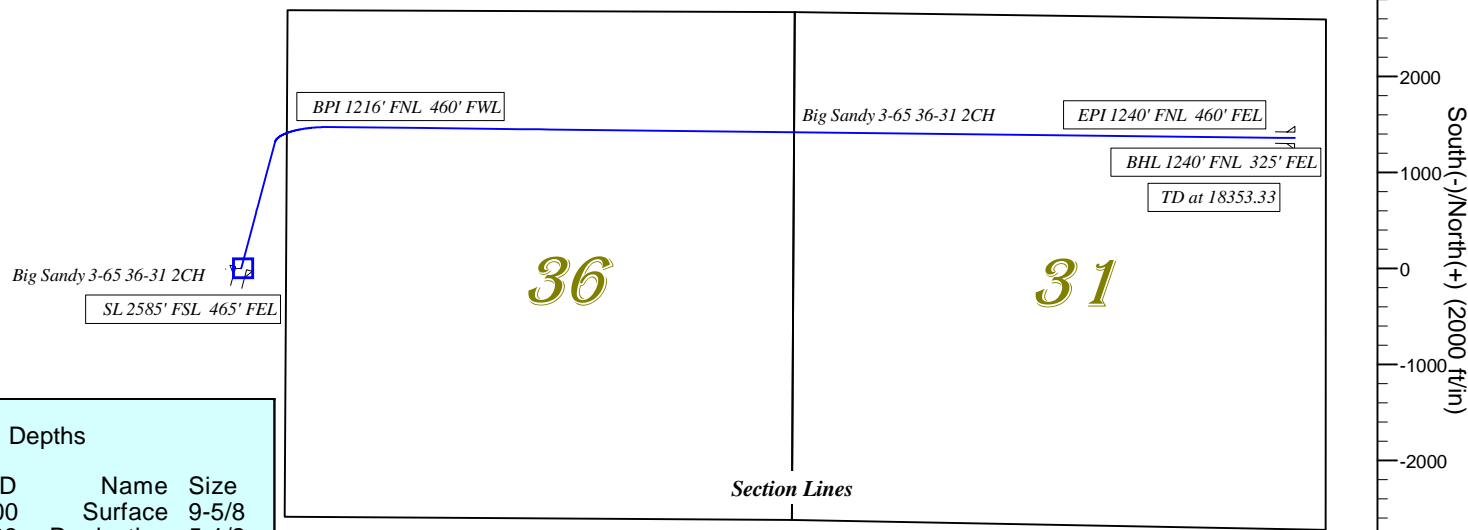
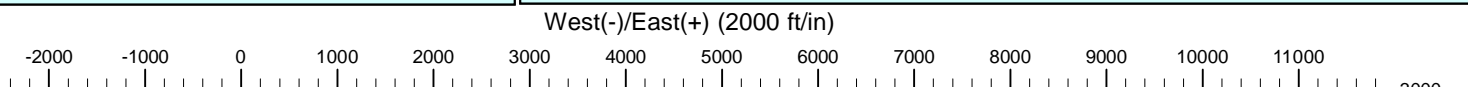
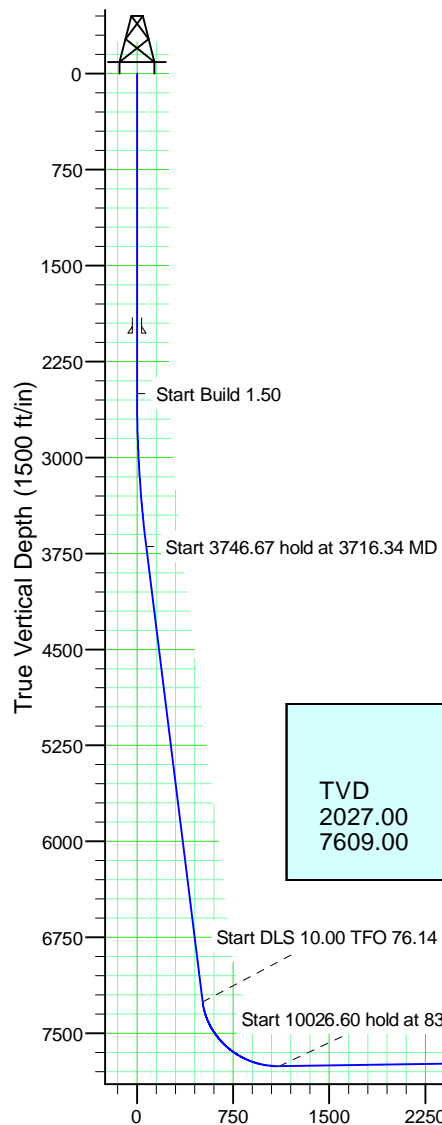
## Big Sandy 3-65 36-31 2CH

Ground Level: 5523.90  
Surface Location Latitude: 39° 44' 48.860 N  
Surface Location Longitude: 104° 37' 24.560 W  
North Reference: True  
27' RKB @ 5550.90ft (27' RKB)

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
2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	0.00
3716.34	18.25	14.95	3695.88	185.53	49.55	1.50	72.03
7463.01	18.25	14.95	7254.20	1318.82	352.23	0.00	512.02
8326.73	90.85	90.66	7757.00	1475.32	933.36	10.00	1108.00
18353.33	90.85	90.66	7609.00	1360.33	10958.20	0.00	11042.32



### Casing Depths

TVD	MD	Name	Size
2027.00	2027.00	Surface	9-5/8
7609.00	18353.33	Production	5-1/2

### Wellbore Targets

Name	TVD	Latitude	Longitude
Big Sandy 3-65 36-31 2CH BHL	7609.00	39° 45' 2.280 N	104° 35' 4.260 W
Big Sandy 3-65 36-31 2CH BPI	7757.00	39° 45' 3.440 N	104° 37' 12.610 W