



ConocoPhillips

Adams County, Colorado

Left Hand 3-65 13-18 2DH

Design B

Casing Depths

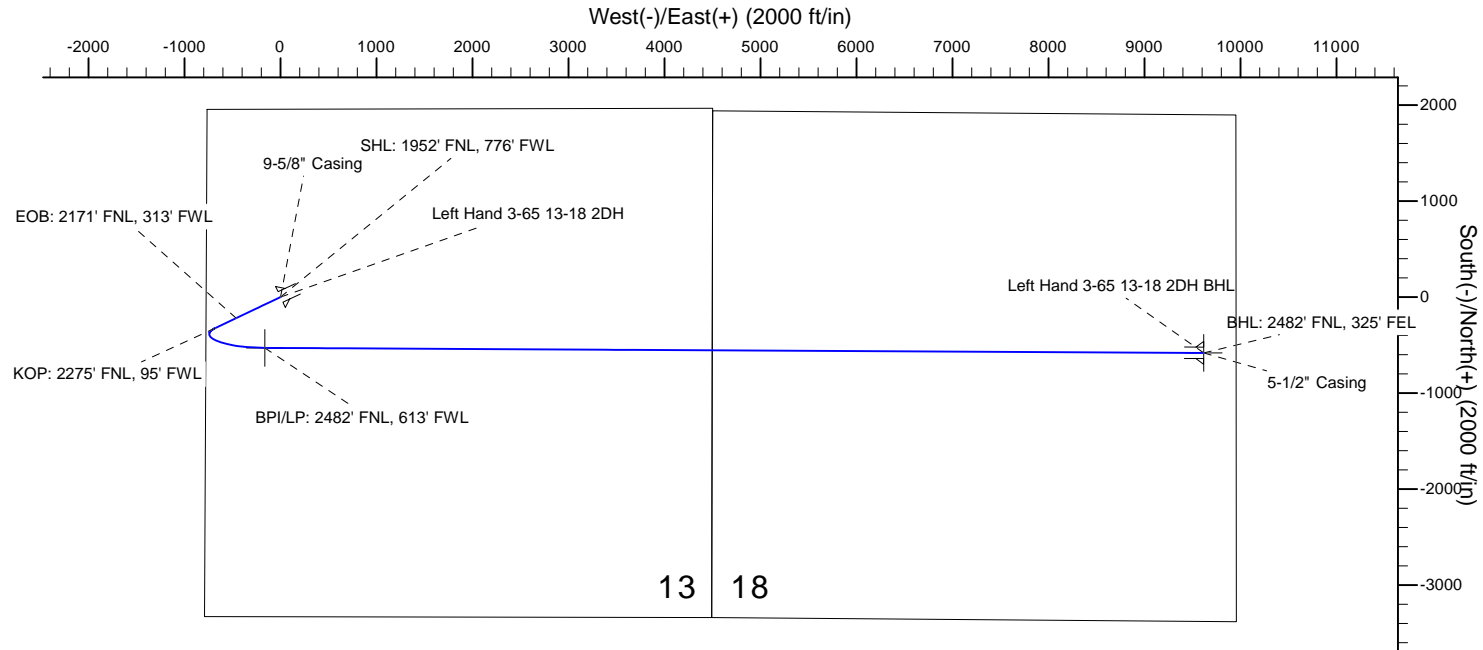
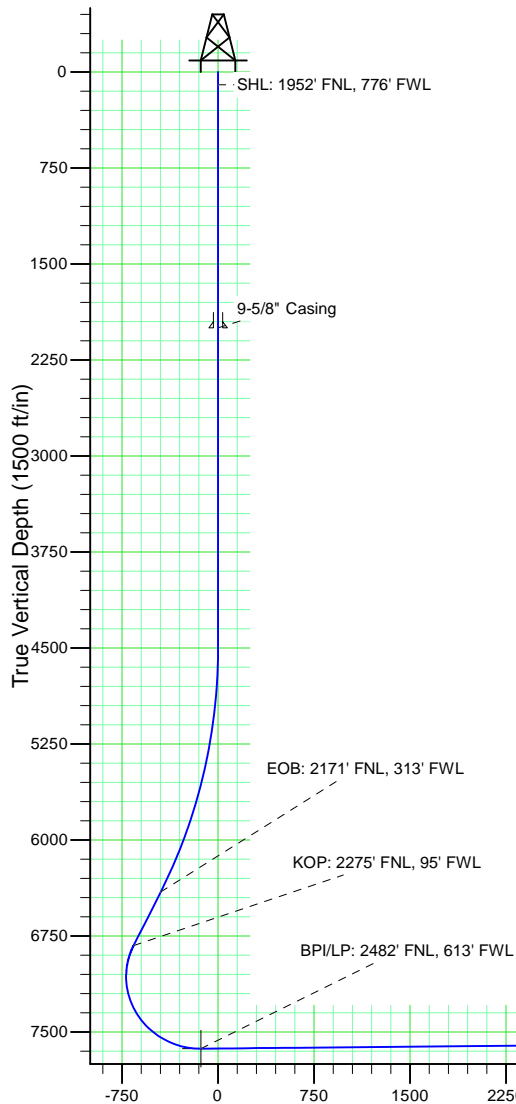
TVD	MD	Name	Size
2000.00	2000.00	9-5/8" Casing	9-5/8
7540.00	17934.71	5-1/2" Casing	5-1/2

Ground Level: 5428.30
Surface Location Latitude: 39° 47' 32.550 N
Surface Location Longitude: 104° 37' 7.750 W
North Reference: True
25' RKB @ 5453.30ft (25' 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
4496.50	0.00	0.00	4496.50	0.00	0.00	0.00	0.00
6496.82	30.00	244.65	6406.63	-219.20	-462.60	1.50	-448.51
6980.11	30.00	244.65	6825.16	-322.69	-681.00	0.00	-660.26
8153.19	90.53	90.31	7631.00	-529.19	-165.49	10.00	-133.21
17934.71	90.53	90.31	7540.00	-581.98	9615.46	0.00	9633.06



Wellbore Targets

Name	TVD	Latitude	Longitude
Left Hand 3-65 13-18 2DH BHL	7540.00	39° 47' 26.780 N	104° 35' 4.570 W
Left Hand 3-65 13-18 2DH BPI	7631.00	39° 47' 27.320 N	104° 37' 9.870 W

ConocoPhillips RBU Gold Data

Niobrara North Zone

Left Hand

Left Hand 3-65 13-18 2DH

Left Hand 3-65 13-18 2DH

Plan: Design B

Standard Planning Report

26 April, 2018



ConocoPhillips

Adams County, Colorado

Left Hand 3-65 13-18 2DH

Design B

Casing Depths

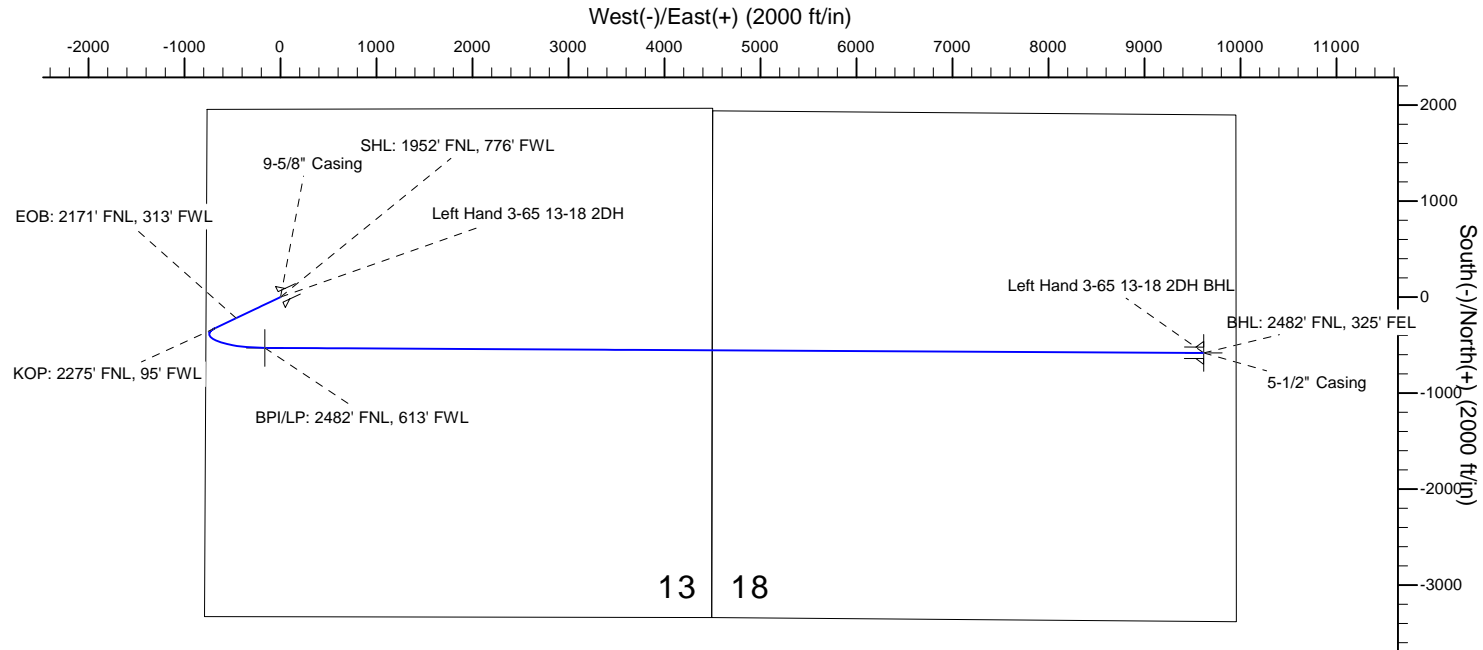
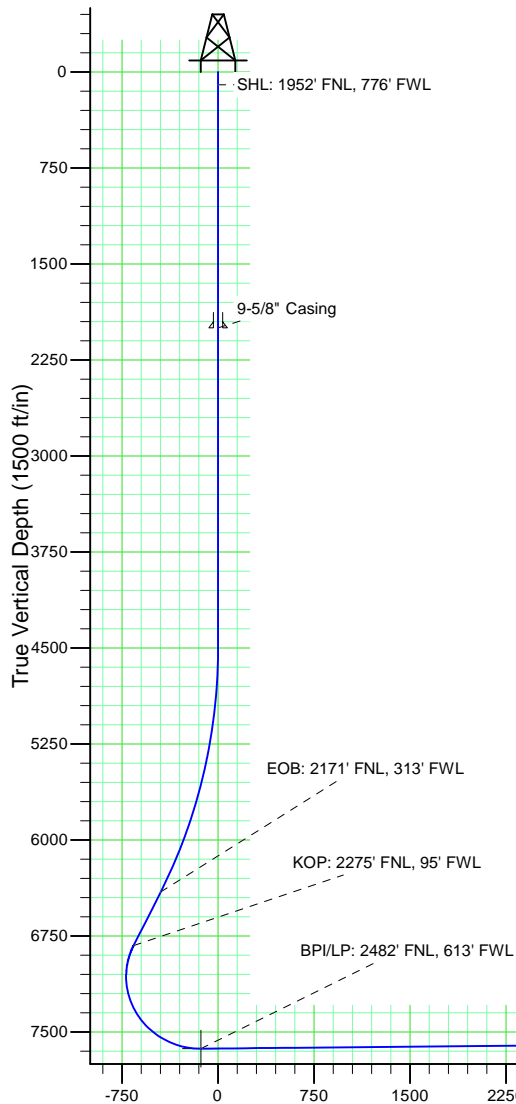
TVD	MD	Name	Size
2000.00	2000.00	9-5/8" Casing	9-5/8
7540.00	17934.71	5-1/2" Casing	5-1/2

Ground Level: 5428.30
Surface Location Latitude: 39° 47' 32.550 N
Surface Location Longitude: 104° 37' 7.750 W
North Reference: True
25' RKB @ 5453.30ft (25' 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
4496.50	0.00	0.00	4496.50	0.00	0.00	0.00	0.00
6496.82	30.00	244.65	6406.63	-219.20	-462.60	1.50	-448.51
6980.11	30.00	244.65	6825.16	-322.69	-681.00	0.00	-660.26
8153.19	90.53	90.31	7631.00	-529.19	-165.49	10.00	-133.21
17934.71	90.53	90.31	7540.00	-581.98	9615.46	0.00	9633.06



Wellbore Targets

Name	TVD	Latitude	Longitude
Left Hand 3-65 13-18 2DH BHL	7540.00	39° 47' 26.780 N	104° 35' 4.570 W
Left Hand 3-65 13-18 2DH BPI	7631.00	39° 47' 27.320 N	104° 37' 9.870 W

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	TVD Reference:	25' RKB @ 5453.30ft (25' RKB)
Project:	Niobrara North Zone	MD Reference:	25' RKB @ 5453.30ft (25' RKB)
Site:	Left Hand	North Reference:	True
Well:	Left Hand 3-65 13-18 2DH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Left Hand 3-65 13-18 2DH		
Design:	Design B		

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	Left Hand				
Site Position:		Northing:	1,168,564.745 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	-119.40 ft	Northing:	1,168,445.351 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		0.00 ft	Wellhead Elevation:	5,428.30 ft	Ground Level:	5,428.30 ft

Wellbore	Left Hand 3-65 13-18 2DH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2017	12/1/2018	8.14	66.37	51,902.93094691

Design	Design B				
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	93.46	

Plan Survey Tool Program		Date	4/26/2018		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	2,000.00	Design B (Left Hand 3-65 13-18 2DH)	Gyro-BM-MS Gyro - bat/mem drop m/s	
2	2,000.00	4,496.50	Design B (Left Hand 3-65 13-18 2DH)	MWD+IFR_No SAG MWD + IFR (No SAG) corre	
3	4,496.50	6,496.82	Design B (Left Hand 3-65 13-18 2DH)	MWD+IFR_No SAG MWD + IFR (No SAG) corre	
4	6,496.82	6,980.11	Design B (Left Hand 3-65 13-18 2DH)	MWD+IFR_No SAG MWD + IFR (No SAG) corre	
5	6,980.11	8,153.19	Design B (Left Hand 3-65 13-18 2DH)	MWD+IFR_No SAG MWD + IFR (No SAG) corre	
6	8,153.19	17,934.71	Design B (Left Hand 3-65 13-18 2DH)	MWD+IFR_No SAG MWD + IFR (No SAG) corre	

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	TVD Reference:	25' RKB @ 5453.30ft (25' RKB)
Project:	Niobrara North Zone	MD Reference:	25' RKB @ 5453.30ft (25' RKB)
Site:	Left Hand	North Reference:	True
Well:	Left Hand 3-65 13-18 2DH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Left Hand 3-65 13-18 2DH		
Design:	Design B		

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	
4,496.50	0.00	0.00	4,496.50	0.00	0.00	0.00	0.00	0.00	0.00	
6,496.82	30.00	244.65	6,406.63	-219.20	-462.60	1.50	1.50	0.00	244.65	
6,980.11	30.00	244.65	6,825.16	-322.69	-681.00	0.00	0.00	0.00	0.00	
8,153.20	90.53	90.31	7,631.00	-529.19	-165.49	10.00	5.16	-13.16	-150.83	Left Hand 3-65 13-1
17,934.71	90.53	90.31	7,540.00	-581.98	9,615.46	0.00	0.00	0.00	0.00	Left Hand 3-65 13-1

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Planning Report

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Company:	ConocoPhillips RBU Gold Data	TVD Reference:	25' RKB @ 5453.30ft (25' RKB)
Project:	Niobrara North Zone	MD Reference:	25' RKB @ 5453.30ft (25' RKB)
Site:	Left Hand	North Reference:	True
Well:	Left Hand 3-65 13-18 2DH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Left Hand 3-65 13-18 2DH		
Design:	Design B		

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: 1952' FNL, 776' 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
1,537.00	0.00	0.00	1,537.00	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
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills Base									
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
Surface Casing - 9-5/8" Casing									
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
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,496.50	0.00	0.00	4,496.50	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.05	244.65	4,500.00	0.00	0.00	0.00	1.50	1.50	0.00
4,600.00	1.55	244.65	4,599.99	-0.60	-1.27	-1.23	1.50	1.50	0.00
4,700.00	3.05	244.65	4,699.90	-2.32	-4.90	-4.75	1.50	1.50	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	TVD Reference:	25' RKB @ 5453.30ft (25' RKB)
Project:	Niobrara North Zone	MD Reference:	25' RKB @ 5453.30ft (25' RKB)
Site:	Left Hand	North Reference:	True
Well:	Left Hand 3-65 13-18 2DH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Left Hand 3-65 13-18 2DH		
Design:	Design B		

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)
4,800.00	4.55	244.65	4,799.68	-5.16	-10.89	-10.56	1.50	1.50	0.00
4,900.00	6.05	244.65	4,899.25	-9.12	-19.24	-18.66	1.50	1.50	0.00
5,000.00	7.55	244.65	4,998.54	-14.19	-29.94	-29.03	1.50	1.50	0.00
5,100.00	9.05	244.65	5,097.49	-20.37	-42.99	-41.68	1.50	1.50	0.00
5,200.00	10.55	244.65	5,196.03	-27.66	-58.38	-56.60	1.50	1.50	0.00
5,300.00	12.05	244.65	5,294.09	-36.05	-76.09	-73.77	1.50	1.50	0.00
5,400.00	13.55	244.65	5,391.60	-45.54	-96.11	-93.19	1.50	1.50	0.00
5,500.00	15.05	244.65	5,488.50	-56.12	-118.44	-114.83	1.50	1.50	0.00
5,600.00	16.55	244.65	5,584.71	-67.78	-143.05	-138.69	1.50	1.50	0.00
5,700.00	18.05	244.65	5,680.19	-80.52	-169.92	-164.75	1.50	1.50	0.00
5,800.00	19.55	244.65	5,774.85	-94.32	-199.05	-192.99	1.50	1.50	0.00
5,900.00	21.05	244.65	5,868.63	-109.18	-230.40	-223.39	1.50	1.50	0.00
6,000.00	22.55	244.65	5,961.48	-125.08	-263.97	-255.93	1.50	1.50	0.00
6,100.00	24.05	244.65	6,053.32	-142.02	-299.71	-290.59	1.50	1.50	0.00
6,200.00	25.55	244.65	6,144.09	-159.98	-337.62	-327.34	1.50	1.50	0.00
6,300.00	27.05	244.65	6,233.73	-178.95	-377.66	-366.16	1.50	1.50	0.00
6,400.00	28.55	244.65	6,322.19	-198.93	-419.81	-407.03	1.50	1.50	0.00
6,496.82	30.00	244.65	6,406.64	-219.20	-462.60	-448.51	1.50	1.50	0.00
EOB: 2171' FNL, 313' FWL									
6,500.00	30.00	244.65	6,409.39	-219.88	-464.04	-449.90	0.00	0.00	0.00
6,600.00	30.00	244.65	6,495.99	-241.29	-509.23	-493.72	0.00	0.00	0.00
6,700.00	30.00	244.65	6,582.59	-262.71	-554.42	-537.53	0.00	0.00	0.00
6,800.00	30.00	244.65	6,669.19	-284.12	-599.61	-581.35	0.00	0.00	0.00
6,900.00	30.00	244.65	6,755.78	-305.53	-644.80	-625.16	0.00	0.00	0.00
6,980.11	30.00	244.65	6,825.16	-322.69	-681.00	-660.26	0.00	0.00	0.00
KOP: 2275' FNL, 95' FWL									
7,000.00	28.28	242.60	6,842.53	-326.99	-689.68	-668.66	10.00	-8.66	-10.29
7,050.00	24.12	236.30	6,887.39	-338.11	-708.71	-686.99	10.00	-8.32	-12.60
7,100.00	20.31	227.69	6,933.68	-349.63	-723.64	-701.19	10.00	-7.61	-17.22
7,150.00	17.10	215.68	6,981.05	-361.45	-734.35	-711.17	10.00	-6.42	-24.02
7,200.00	14.88	199.34	7,029.14	-373.49	-740.77	-716.85	10.00	-4.45	-32.68
7,250.00	14.11	179.50	7,077.58	-385.65	-742.84	-718.19	10.00	-1.53	-39.69
7,300.00	15.03	159.86	7,126.00	-397.83	-740.56	-715.17	10.00	1.84	-39.28
7,350.00	17.36	143.92	7,174.04	-409.96	-733.93	-707.82	10.00	4.68	-31.87
7,400.00	20.65	132.28	7,221.32	-421.92	-723.01	-696.19	10.00	6.56	-23.29
7,450.00	24.49	123.92	7,267.50	-433.64	-707.87	-680.38	10.00	7.69	-16.71
7,500.00	28.68	117.79	7,312.21	-445.03	-688.65	-660.50	10.00	8.37	-12.26
7,550.00	33.08	113.14	7,355.12	-455.99	-665.47	-636.71	10.00	8.79	-9.30
7,600.00	37.61	109.48	7,395.90	-466.45	-638.53	-609.18	10.00	9.06	-7.31
7,619.30	39.38	108.27	7,411.00	-470.33	-627.16	-597.60	10.00	9.20	-6.29
Niobrara Top									
7,650.00	42.23	106.51	7,434.24	-476.32	-608.02	-578.13	10.00	9.28	-5.71
7,700.00	46.92	104.03	7,469.85	-485.53	-574.17	-543.79	10.00	9.38	-4.96
7,750.00	51.65	101.91	7,502.45	-494.01	-537.25	-506.42	10.00	9.47	-4.25
7,800.00	56.42	100.05	7,531.81	-501.70	-497.53	-466.31	10.00	9.54	-3.73
7,850.00	61.21	98.38	7,557.69	-508.53	-455.32	-423.76	10.00	9.59	-3.33
7,900.00	66.02	96.86	7,579.90	-514.45	-410.93	-379.10	10.00	9.62	-3.04
7,950.00	70.85	95.45	7,598.27	-519.43	-364.71	-332.67	10.00	9.65	-2.82
8,000.00	75.69	94.12	7,612.66	-523.41	-317.01	-284.81	10.00	9.67	-2.66
8,038.70	79.43	93.13	7,621.00	-525.80	-279.31	-247.03	10.00	9.68	-2.56
D Chalk Top									
8,050.00	80.53	92.85	7,622.97	-526.38	-268.19	-235.90	10.00	9.69	-2.51
8,100.00	85.37	91.61	7,629.10	-528.30	-218.62	-186.31	10.00	9.69	-2.48

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	TVD Reference:	25' RKB @ 5453.30ft (25' RKB)
Project:	Niobrara North Zone	MD Reference:	25' RKB @ 5453.30ft (25' RKB)
Site:	Left Hand	North Reference:	True
Well:	Left Hand 3-65 13-18 2DH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Left Hand 3-65 13-18 2DH		
Design:	Design B		

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)
8,153.19	90.53	90.31	7,631.00	-529.19	-165.49	-133.22	10.00	9.70	-2.44
BPI/LP: 2482' FNL, 613' FWL									
8,200.00	90.53	90.31	7,630.56	-529.44	-118.68	-86.48	0.00	0.00	0.00
8,300.00	90.53	90.31	7,629.63	-529.98	-18.69	13.36	0.00	0.00	0.00
8,400.00	90.53	90.31	7,628.70	-530.52	81.30	113.21	0.00	0.00	0.00
8,500.00	90.53	90.31	7,627.77	-531.06	181.30	213.05	0.00	0.00	0.00
8,600.00	90.53	90.31	7,626.84	-531.60	281.29	312.89	0.00	0.00	0.00
8,700.00	90.53	90.31	7,625.91	-532.14	381.29	412.74	0.00	0.00	0.00
8,800.00	90.53	90.31	7,624.98	-532.68	481.28	512.58	0.00	0.00	0.00
8,900.00	90.53	90.31	7,624.05	-533.22	581.27	612.43	0.00	0.00	0.00
9,000.00	90.53	90.31	7,623.12	-533.76	681.27	712.27	0.00	0.00	0.00
9,100.00	90.53	90.31	7,622.19	-534.30	781.26	812.12	0.00	0.00	0.00
9,200.00	90.53	90.31	7,621.26	-534.84	881.26	911.96	0.00	0.00	0.00
9,300.00	90.53	90.31	7,620.33	-535.38	981.25	1,011.80	0.00	0.00	0.00
9,400.00	90.53	90.31	7,619.40	-535.92	1,081.25	1,111.65	0.00	0.00	0.00
9,500.00	90.53	90.31	7,618.47	-536.46	1,181.24	1,211.49	0.00	0.00	0.00
9,600.00	90.53	90.31	7,617.54	-537.00	1,281.23	1,311.34	0.00	0.00	0.00
9,700.00	90.53	90.31	7,616.61	-537.54	1,381.23	1,411.18	0.00	0.00	0.00
9,800.00	90.53	90.31	7,615.68	-538.08	1,481.22	1,511.02	0.00	0.00	0.00
9,900.00	90.53	90.31	7,614.75	-538.62	1,581.22	1,610.87	0.00	0.00	0.00
10,000.00	90.53	90.31	7,613.82	-539.16	1,681.21	1,710.71	0.00	0.00	0.00
10,100.00	90.53	90.31	7,612.89	-539.70	1,781.21	1,810.56	0.00	0.00	0.00
10,200.00	90.53	90.31	7,611.96	-540.24	1,881.20	1,910.40	0.00	0.00	0.00
10,300.00	90.53	90.31	7,611.03	-540.78	1,981.19	2,010.25	0.00	0.00	0.00
10,400.00	90.53	90.31	7,610.10	-541.32	2,081.19	2,110.09	0.00	0.00	0.00
10,500.00	90.53	90.31	7,609.17	-541.86	2,181.18	2,209.93	0.00	0.00	0.00
10,600.00	90.53	90.31	7,608.24	-542.40	2,281.18	2,309.78	0.00	0.00	0.00
10,700.00	90.53	90.31	7,607.31	-542.94	2,381.17	2,409.62	0.00	0.00	0.00
10,800.00	90.53	90.31	7,606.38	-543.47	2,481.16	2,509.47	0.00	0.00	0.00
10,900.00	90.53	90.31	7,605.45	-544.01	2,581.16	2,609.31	0.00	0.00	0.00
11,000.00	90.53	90.31	7,604.52	-544.55	2,681.15	2,709.15	0.00	0.00	0.00
11,100.00	90.53	90.31	7,603.59	-545.09	2,781.15	2,809.00	0.00	0.00	0.00
11,200.00	90.53	90.31	7,602.65	-545.63	2,881.14	2,908.84	0.00	0.00	0.00
11,300.00	90.53	90.31	7,601.72	-546.17	2,981.14	3,008.69	0.00	0.00	0.00
11,400.00	90.53	90.31	7,600.79	-546.71	3,081.13	3,108.53	0.00	0.00	0.00
11,500.00	90.53	90.31	7,599.86	-547.25	3,181.12	3,208.38	0.00	0.00	0.00
11,600.00	90.53	90.31	7,598.93	-547.79	3,281.12	3,308.22	0.00	0.00	0.00
11,700.00	90.53	90.31	7,598.00	-548.33	3,381.11	3,408.06	0.00	0.00	0.00
11,800.00	90.53	90.31	7,597.07	-548.87	3,481.11	3,507.91	0.00	0.00	0.00
11,900.00	90.53	90.31	7,596.14	-549.41	3,581.10	3,607.75	0.00	0.00	0.00
12,000.00	90.53	90.31	7,595.21	-549.95	3,681.10	3,707.60	0.00	0.00	0.00
12,100.00	90.53	90.31	7,594.28	-550.49	3,781.09	3,807.44	0.00	0.00	0.00
12,200.00	90.53	90.31	7,593.35	-551.03	3,881.08	3,907.28	0.00	0.00	0.00
12,300.00	90.53	90.31	7,592.42	-551.57	3,981.08	4,007.13	0.00	0.00	0.00
12,400.00	90.53	90.31	7,591.49	-552.11	4,081.07	4,106.97	0.00	0.00	0.00
12,500.00	90.53	90.31	7,590.56	-552.65	4,181.07	4,206.82	0.00	0.00	0.00
12,600.00	90.53	90.31	7,589.63	-553.19	4,281.06	4,306.66	0.00	0.00	0.00
12,700.00	90.53	90.31	7,588.70	-553.73	4,381.05	4,406.51	0.00	0.00	0.00
12,800.00	90.53	90.31	7,587.77	-554.27	4,481.05	4,506.35	0.00	0.00	0.00
12,900.00	90.53	90.31	7,586.84	-554.81	4,581.04	4,606.19	0.00	0.00	0.00
13,000.00	90.53	90.31	7,585.91	-555.35	4,681.04	4,706.04	0.00	0.00	0.00
13,100.00	90.53	90.31	7,584.98	-555.89	4,781.03	4,805.88	0.00	0.00	0.00
13,200.00	90.53	90.31	7,584.05	-556.43	4,881.03	4,905.73	0.00	0.00	0.00

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	TVD Reference:	25' RKB @ 5453.30ft (25' RKB)
Project:	Niobrara North Zone	MD Reference:	25' RKB @ 5453.30ft (25' RKB)
Site:	Left Hand	North Reference:	True
Well:	Left Hand 3-65 13-18 2DH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Left Hand 3-65 13-18 2DH		
Design:	Design B		

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	90.53	90.31	7,583.12	-556.97	4,981.02	5,005.57	0.00	0.00	0.00
13,400.00	90.53	90.31	7,582.19	-557.51	5,081.01	5,105.41	0.00	0.00	0.00
13,500.00	90.53	90.31	7,581.26	-558.05	5,181.01	5,205.26	0.00	0.00	0.00
13,600.00	90.53	90.31	7,580.33	-558.59	5,281.00	5,305.10	0.00	0.00	0.00
13,700.00	90.53	90.31	7,579.40	-559.12	5,381.00	5,404.95	0.00	0.00	0.00
13,800.00	90.53	90.31	7,578.47	-559.66	5,480.99	5,504.79	0.00	0.00	0.00
13,900.00	90.53	90.31	7,577.54	-560.20	5,580.99	5,604.64	0.00	0.00	0.00
14,000.00	90.53	90.31	7,576.61	-560.74	5,680.98	5,704.48	0.00	0.00	0.00
14,100.00	90.53	90.31	7,575.68	-561.28	5,780.97	5,804.32	0.00	0.00	0.00
14,200.00	90.53	90.31	7,574.75	-561.82	5,880.97	5,904.17	0.00	0.00	0.00
14,300.00	90.53	90.31	7,573.81	-562.36	5,980.96	6,004.01	0.00	0.00	0.00
14,400.00	90.53	90.31	7,572.88	-562.90	6,080.96	6,103.86	0.00	0.00	0.00
14,500.00	90.53	90.31	7,571.95	-563.44	6,180.95	6,203.70	0.00	0.00	0.00
14,600.00	90.53	90.31	7,571.02	-563.98	6,280.95	6,303.54	0.00	0.00	0.00
14,700.00	90.53	90.31	7,570.09	-564.52	6,380.94	6,403.39	0.00	0.00	0.00
14,800.00	90.53	90.31	7,569.16	-565.06	6,480.93	6,503.23	0.00	0.00	0.00
14,900.00	90.53	90.31	7,568.23	-565.60	6,580.93	6,603.08	0.00	0.00	0.00
15,000.00	90.53	90.31	7,567.30	-566.14	6,680.92	6,702.92	0.00	0.00	0.00
15,100.00	90.53	90.31	7,566.37	-566.68	6,780.92	6,802.77	0.00	0.00	0.00
15,200.00	90.53	90.31	7,565.44	-567.22	6,880.91	6,902.61	0.00	0.00	0.00
15,300.00	90.53	90.31	7,564.51	-567.76	6,980.90	7,002.45	0.00	0.00	0.00
15,400.00	90.53	90.31	7,563.58	-568.30	7,080.90	7,102.30	0.00	0.00	0.00
15,500.00	90.53	90.31	7,562.65	-568.84	7,180.89	7,202.14	0.00	0.00	0.00
15,600.00	90.53	90.31	7,561.72	-569.38	7,280.89	7,301.99	0.00	0.00	0.00
15,700.00	90.53	90.31	7,560.79	-569.92	7,380.88	7,401.83	0.00	0.00	0.00
15,800.00	90.53	90.31	7,559.86	-570.46	7,480.88	7,501.67	0.00	0.00	0.00
15,900.00	90.53	90.31	7,558.93	-571.00	7,580.87	7,601.52	0.00	0.00	0.00
16,000.00	90.53	90.31	7,558.00	-571.54	7,680.86	7,701.36	0.00	0.00	0.00
16,100.00	90.53	90.31	7,557.07	-572.08	7,780.86	7,801.21	0.00	0.00	0.00
16,200.00	90.53	90.31	7,556.14	-572.62	7,880.85	7,901.05	0.00	0.00	0.00
16,300.00	90.53	90.31	7,555.21	-573.16	7,980.85	8,000.90	0.00	0.00	0.00
16,400.00	90.53	90.31	7,554.28	-573.70	8,080.84	8,100.74	0.00	0.00	0.00
16,500.00	90.53	90.31	7,553.35	-574.24	8,180.84	8,200.58	0.00	0.00	0.00
16,600.00	90.53	90.31	7,552.42	-574.77	8,280.83	8,300.43	0.00	0.00	0.00
16,700.00	90.53	90.31	7,551.49	-575.31	8,380.82	8,400.27	0.00	0.00	0.00
16,800.00	90.53	90.31	7,550.56	-575.85	8,480.82	8,500.12	0.00	0.00	0.00
16,900.00	90.53	90.31	7,549.63	-576.39	8,580.81	8,599.96	0.00	0.00	0.00
17,000.00	90.53	90.31	7,548.70	-576.93	8,680.81	8,699.80	0.00	0.00	0.00
17,100.00	90.53	90.31	7,547.77	-577.47	8,780.80	8,799.65	0.00	0.00	0.00
17,200.00	90.53	90.31	7,546.84	-578.01	8,880.79	8,899.49	0.00	0.00	0.00
17,300.00	90.53	90.31	7,545.91	-578.55	8,980.79	8,999.34	0.00	0.00	0.00
17,400.00	90.53	90.31	7,544.97	-579.09	9,080.78	9,099.18	0.00	0.00	0.00
17,500.00	90.53	90.31	7,544.04	-579.63	9,180.78	9,199.03	0.00	0.00	0.00
17,600.00	90.53	90.31	7,543.11	-580.17	9,280.77	9,298.87	0.00	0.00	0.00
17,700.00	90.53	90.31	7,542.18	-580.71	9,380.77	9,398.71	0.00	0.00	0.00
17,800.00	90.53	90.31	7,541.25	-581.25	9,480.76	9,498.56	0.00	0.00	0.00
17,900.00	90.53	90.31	7,540.32	-581.79	9,580.75	9,598.40	0.00	0.00	0.00
17,934.71	90.53	90.31	7,540.00	-581.98	9,615.46	9,633.06	0.00	0.00	0.00
BHL: 2482' FNL, 325' FEL									

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	TVD Reference:	25' RKB @ 5453.30ft (25' RKB)
Project:	Niobrara North Zone	MD Reference:	25' RKB @ 5453.30ft (25' RKB)
Site:	Left Hand	North Reference:	True
Well:	Left Hand 3-65 13-18 2DH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Left Hand 3-65 13-18 2DH		
Design:	Design B		

Design Targets

Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Left Hand 3-65 13-18 - plan hits target center - Point	0.00	0.00	7,540.00	-581.98	9,615.46	1,167,958.958	3,257,234.032	39° 47' 26.780 N	104° 35' 4.570 W
Left Hand 3-65 13-18 - plan hits target center - Point	0.00	0.00	7,631.00	-529.19	-165.49	1,167,914.549	3,247,453.174	39° 47' 27.320 N	104° 37' 9.870 W

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
2,000.00	2,000.00	9-5/8" Casing	9-5/8	12-1/4
17,934.71	7,540.00	5-1/2" Casing	5-1/2	8-1/2

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,537.00	1,537.00	Fox Hills Top		0.00	
1,800.00	1,800.00	Fox Hills Base		0.00	
2,000.00	2,000.00	Surface Casing		0.00	
7,619.30	7,411.00	Niobrara Top		0.00	
8,038.70	7,621.00	D Chalk Top		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
100.00	100.00	0.00	0.00	SHL: 1952' FNL, 776' FWL
6,496.82	6,406.64	-219.20	-462.60	EOB: 2171' FNL, 313' FWL
6,980.11	6,825.16	-322.69	-681.00	KOP: 2275' FNL, 95' FWL
8,153.19	7,631.00	-529.19	-165.49	BPI/LP: 2482' FNL, 613' FWL
17,934.71	7,540.00	-581.98	9,615.46	BHL: 2482' FNL, 325' FEL