



# ConocoPhillips

## Arapahoe County

### Lussing Trust 4-64 19-20 4C1H

#### Design A

Ground Level: 5714.70  
Surface Location Latitude: 39° 41' 12.570 N  
Surface Location Longitude: 104° 36' 4.040 W  
North Reference: True  
25' RKB @ 5739.70ft (25' RKB)

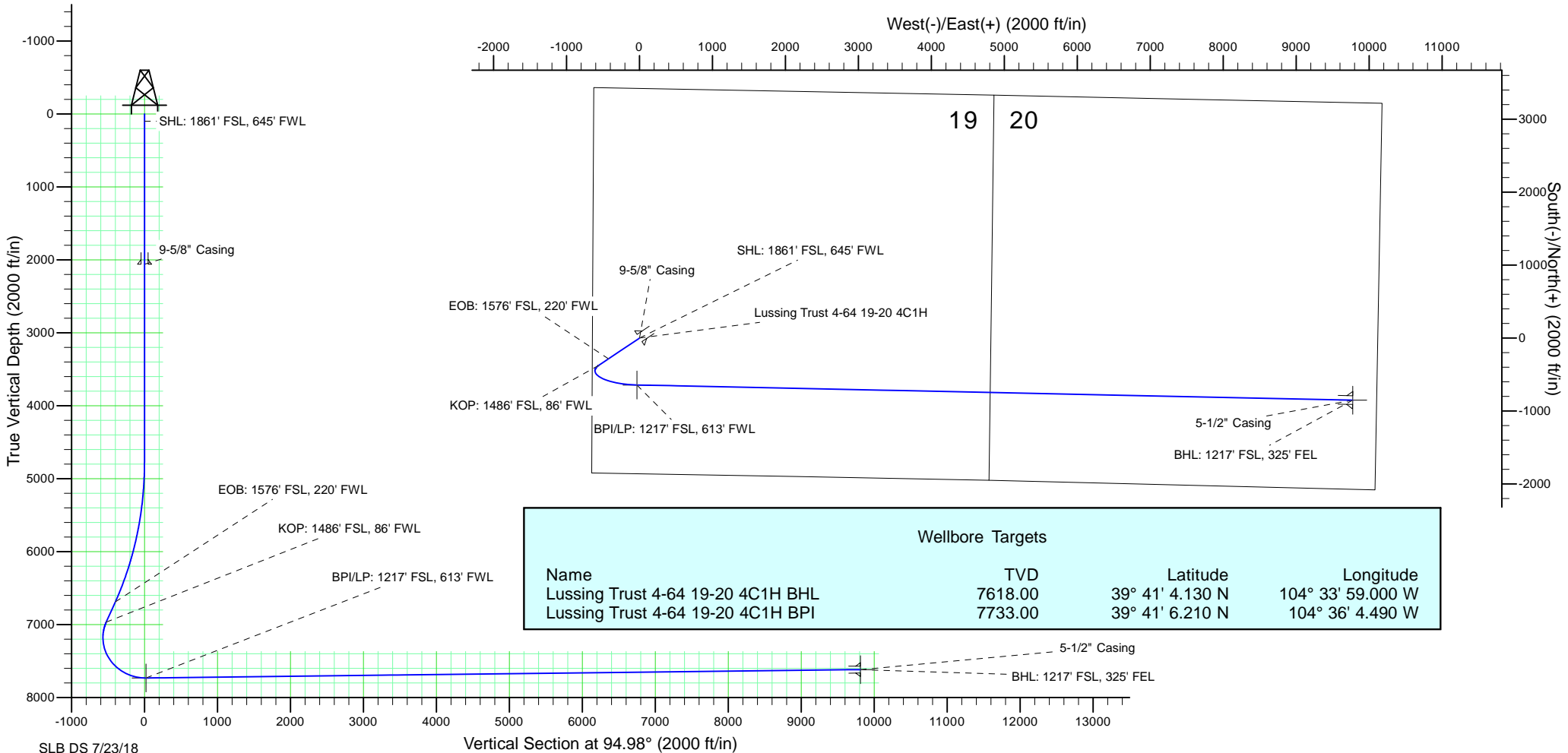
#### Well Profile Data

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
4778.75	0.00	0.00	4778.75	0.00	0.00	0.00	0.00
6778.61	30.00	236.14	6688.48	-285.11	-424.88	1.50	-398.51
7101.10	30.00	236.14	6967.78	-374.96	-558.76	0.00	-524.09
8248.98	90.67	91.22	7733.00	-643.53	-35.18	10.00	20.84
18062.67	90.67	91.22	7618.00	-852.13	9775.62	0.00	9812.69

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

#### Casing Depths

TVD	MD	Name	Size
2060.00	2060.00	9-5/8" Casing	9-5/8
7618.00	18062.67	5-1/2" Casing	5-1/2



# **ConocoPhillips RBU Gold Data**

**Niobrara Central Zone**

**Lussing Trust**

**Lussing Trust 4-64 19-20 4C1H**

**Lussing Trust 4-64 19-20 4C1H**

**Plan: Design A**

## **Standard Planning Report**

**23 July, 2018**

# ConocoPhillips

## Planning Report

<b>Database:</b>	EDT 14 Central Planning	<b>Local Co-ordinate Reference:</b>	Well Lussing Trust 4-64 19-20 4C1H
<b>Company:</b>	ConocoPhillips RBU Gold Data	<b>TVD Reference:</b>	25' RKB @ 5739.70ft (25' RKB)
<b>Project:</b>	Niobrara Central Zone	<b>MD Reference:</b>	25' RKB @ 5739.70ft (25' RKB)
<b>Site:</b>	Lussing Trust	<b>North Reference:</b>	True
<b>Well:</b>	Lussing Trust 4-64 19-20 4C1H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lussing Trust 4-64 19-20 4C1H		
<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

<b>Site</b>	Lussing Trust		
<b>Site Position:</b>		<b>Northing:</b>	1,679,685.638 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,257,795.102 usft
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13-3/16 "
		<b>Latitude:</b>	39° 41' 45.488 N
		<b>Longitude:</b>	104° 35' 1.910 W
		<b>Grid Convergence:</b>	0.58 °

<b>Well</b>	Lussing Trust 4-64 19-20 4C1H		
<b>Well Position</b>	<b>+N-S</b>	-3,330.41 ft	<b>Northing:</b> 1,676,306.462 usft
	<b>+E-W</b>	-4,857.13 ft	<b>Easting:</b> 3,252,971.860 usft
<b>Position Uncertainty</b>	2.00 ft	<b>Wellhead Elevation:</b>	5,714.70 ft
		<b>Latitude:</b>	39° 41' 12.570 N
		<b>Longitude:</b>	104° 36' 4.040 W
		<b>Ground Level:</b>	5,714.70 ft

<b>Wellbore</b>	Lussing Trust 4-64 19-20 4C1H				
<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	8.09	66.29	51,857.71974266

<b>Design</b>	Design A			
<b>Audit Notes:</b>				
<b>Version:</b>	0	<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	94.98

<b>Plan Survey Tool Program</b>	<b>Date</b>	7/23/2018		
<b>Depth From (ft)</b>	<b>Depth To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.00	2,060.00	Design A (Lussing Trust 4-64 19-Gyro-BM-MS)	Gyro - bat/mem drop m/s
2	2,060.00	4,778.75	Design A (Lussing Trust 4-64 19-MWD+IFR_No SAG)	MWD + IFR (No SAG) corre
3	4,778.75	6,778.61	Design A (Lussing Trust 4-64 19-MWD+IFR_No SAG)	MWD + IFR (No SAG) corre
4	6,778.61	7,101.10	Design A (Lussing Trust 4-64 19-MWD+IFR_No SAG)	MWD + IFR (No SAG) corre
5	7,101.10	8,248.98	Design A (Lussing Trust 4-64 19-MWD+IFR_No SAG)	MWD + IFR (No SAG) corre
6	8,248.98	18,062.67	Design A (Lussing Trust 4-64 19-MWD+IFR_No SAG)	MWD + IFR (No SAG) corre

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## Planning Report

<b>Database:</b>	EDT 14 Central Planning	<b>Local Co-ordinate Reference:</b>	Well Lussing Trust 4-64 19-20 4C1H
<b>Company:</b>	ConocoPhillips RBU Gold Data	<b>TVD Reference:</b>	25' RKB @ 5739.70ft (25' RKB)
<b>Project:</b>	Niobrara Central Zone	<b>MD Reference:</b>	25' RKB @ 5739.70ft (25' RKB)
<b>Site:</b>	Lussing Trust	<b>North Reference:</b>	True
<b>Well:</b>	Lussing Trust 4-64 19-20 4C1H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lussing Trust 4-64 19-20 4C1H		
<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	
4,778.75	0.00	0.00	4,778.75	0.00	0.00	0.00	0.00	0.00	0.00	
6,778.61	30.00	236.14	6,688.49	-285.11	-424.88	1.50	1.50	0.00	236.14	
7,101.10	30.00	236.14	6,967.78	-374.96	-558.76	0.00	0.00	0.00	0.00	
8,248.98	90.67	91.22	7,733.00	-643.53	-35.18	10.00	5.29	-12.62	-140.73	Lussing Trust 4-64
18,062.67	90.67	91.22	7,618.00	-852.13	9,775.62	0.00	0.00	0.00	0.00	Lussing Trust 4-64

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<b>Project:</b>	Niobrara Central Zone	<b>MD Reference:</b>	25' RKB @ 5739.70ft (25' RKB)
<b>Site:</b>	Lussing Trust	<b>North Reference:</b>	True
<b>Well:</b>	Lussing Trust 4-64 19-20 4C1H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lussing Trust 4-64 19-20 4C1H		
<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
<b>SHL: 1861' FSL, 645' FWL</b>									
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
1,714.00	0.00	0.00	1,714.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Fox Hills Top</b>									
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,860.00	0.00	0.00	1,860.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Pierre Top - Fox Hills Base</b>									
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
2,060.00	0.00	0.00	2,060.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Surface Casing - 9-5/8" Casing</b>									
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
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00

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## Planning Report

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<b>Company:</b>	ConocoPhillips RBU Gold Data	<b>TVD Reference:</b>	25' RKB @ 5739.70ft (25' RKB)
<b>Project:</b>	Niobrara Central Zone	<b>MD Reference:</b>	25' RKB @ 5739.70ft (25' RKB)
<b>Site:</b>	Lussing Trust	<b>North Reference:</b>	True
<b>Well:</b>	Lussing Trust 4-64 19-20 4C1H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lussing Trust 4-64 19-20 4C1H		
<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)
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,778.75	0.00	0.00	4,778.75	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.32	236.14	4,800.00	-0.03	-0.05	-0.05	1.50	1.50	0.00
4,900.00	1.82	236.14	4,899.98	-1.07	-1.60	-1.50	1.50	1.50	0.00
5,000.00	3.32	236.14	4,999.88	-3.57	-5.32	-4.99	1.50	1.50	0.00
5,100.00	4.82	236.14	5,099.62	-7.52	-11.21	-10.52	1.50	1.50	0.00
5,200.00	6.32	236.14	5,199.15	-12.93	-19.27	-18.07	1.50	1.50	0.00
5,300.00	7.82	236.14	5,298.38	-19.79	-29.49	-27.66	1.50	1.50	0.00
5,400.00	9.32	236.14	5,397.26	-28.09	-41.86	-39.26	1.50	1.50	0.00
5,500.00	10.82	236.14	5,495.72	-37.83	-56.38	-52.88	1.50	1.50	0.00
5,600.00	12.32	236.14	5,593.69	-49.00	-73.03	-68.50	1.50	1.50	0.00
5,700.00	13.82	236.14	5,691.09	-61.60	-91.80	-86.11	1.50	1.50	0.00
5,800.00	15.32	236.14	5,787.88	-75.62	-112.69	-105.70	1.50	1.50	0.00
5,900.00	16.82	236.14	5,883.97	-91.04	-135.67	-127.25	1.50	1.50	0.00
6,000.00	18.32	236.14	5,979.30	-107.86	-160.74	-150.76	1.50	1.50	0.00
6,100.00	19.82	236.14	6,073.81	-126.07	-187.86	-176.21	1.50	1.50	0.00
6,200.00	21.32	236.14	6,167.43	-145.64	-217.04	-203.57	1.50	1.50	0.00
6,300.00	22.82	236.14	6,260.10	-166.58	-248.23	-232.83	1.50	1.50	0.00
6,400.00	24.32	236.14	6,351.76	-188.86	-281.44	-263.97	1.50	1.50	0.00
6,500.00	25.82	236.14	6,442.34	-212.47	-316.62	-296.97	1.50	1.50	0.00
6,600.00	27.32	236.14	6,531.77	-237.39	-353.76	-331.81	1.50	1.50	0.00
6,700.00	28.82	236.14	6,620.01	-263.61	-392.83	-368.45	1.50	1.50	0.00
6,778.61	30.00	236.14	6,688.49	-285.11	-424.88	-398.51	1.50	1.50	0.00
<b>EOB: 1576' FSL, 220' FWL</b>									
6,800.00	30.00	236.14	6,707.01	-291.07	-433.76	-406.84	0.00	0.00	0.00
6,900.00	30.00	236.14	6,793.62	-318.93	-475.27	-445.78	0.00	0.00	0.00
7,000.00	30.00	236.14	6,880.22	-346.79	-516.79	-484.72	0.00	0.00	0.00
7,101.10	30.00	236.14	6,967.78	-374.96	-558.76	-524.09	0.00	0.00	0.00
<b>KOP: 1486' FSL, 86' FWL</b>									
7,150.00	26.38	229.16	7,010.88	-388.88	-577.14	-541.19	10.00	-7.40	-14.27
7,200.00	23.12	220.06	7,056.30	-403.67	-591.87	-554.58	10.00	-6.51	-18.19
7,250.00	20.54	208.52	7,102.73	-418.90	-602.39	-563.74	10.00	-5.17	-23.09
7,300.00	18.90	194.48	7,149.82	-434.46	-608.61	-568.58	10.00	-3.27	-28.08
7,350.00	18.47	178.88	7,197.22	-450.23	-610.48	-569.07	10.00	-0.87	-31.18
7,400.00	19.31	163.62	7,244.55	-466.09	-607.99	-565.22	10.00	1.69	-30.53
7,450.00	21.29	150.34	7,291.47	-481.92	-601.16	-557.04	10.00	3.95	-26.56
7,500.00	24.12	139.62	7,337.61	-497.60	-590.05	-544.61	10.00	5.66	-21.43
7,550.00	27.54	131.23	7,382.63	-513.01	-574.73	-528.01	10.00	6.84	-16.79
7,600.00	31.35	124.64	7,426.17	-528.03	-555.32	-507.37	10.00	7.63	-13.17
7,650.00	35.44	119.40	7,467.91	-542.55	-531.97	-482.85	10.00	8.17	-10.49
7,700.00	39.71	115.13	7,507.54	-556.46	-504.86	-454.63	10.00	8.54	-8.54
7,750.00	44.11	111.57	7,544.74	-569.65	-474.20	-422.94	10.00	8.80	-7.11
7,800.00	48.61	108.54	7,579.25	-582.02	-440.21	-388.01	10.00	8.99	-6.06
7,847.04	52.90	106.06	7,609.00	-592.82	-405.44	-352.43	10.00	9.13	-5.29
<b>Niobrara Top</b>									
7,850.00	53.17	105.91	7,610.78	-593.48	-403.17	-350.11	10.00	9.18	-4.96
7,900.00	57.79	103.58	7,639.11	-603.93	-363.34	-309.52	10.00	9.23	-4.67
7,950.00	62.44	101.47	7,664.02	-613.31	-321.03	-266.55	10.00	9.31	-4.21
8,000.00	67.13	99.53	7,685.32	-621.54	-276.56	-221.54	10.00	9.37	-3.87
8,050.00	71.83	97.73	7,702.84	-628.55	-230.28	-174.82	10.00	9.41	-3.61
8,100.00	76.55	96.02	7,716.46	-634.30	-182.53	-126.76	10.00	9.44	-3.42
8,131.59	79.54	94.97	7,723.00	-637.26	-151.77	-95.85	10.00	9.46	-3.31
<b>C Chalk Top</b>									

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## Planning Report

<b>Database:</b>	EDT 14 Central Planning	<b>Local Co-ordinate Reference:</b>	Well Lussing Trust 4-64 19-20 4C1H
<b>Company:</b>	ConocoPhillips RBU Gold Data	<b>TVD Reference:</b>	25' RKB @ 5739.70ft (25' RKB)
<b>Project:</b>	Niobrara Central Zone	<b>MD Reference:</b>	25' RKB @ 5739.70ft (25' RKB)
<b>Site:</b>	Lussing Trust	<b>North Reference:</b>	True
<b>Well:</b>	Lussing Trust 4-64 19-20 4C1H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lussing Trust 4-64 19-20 4C1H		
<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)
8,150.00	81.29	94.37	7,726.07	-638.74	-133.68	-77.71	10.00	9.47	-3.26
8,200.00	86.03	92.77	7,731.59	-641.83	-84.10	-28.04	10.00	9.48	-3.21
8,248.98	90.67	91.22	7,733.00	-643.53	-35.18	20.84	10.00	9.49	-3.17
<b>BPI/LP: 1217' FSL, 613' FWL</b>									
8,300.00	90.67	91.22	7,732.40	-644.61	15.82	71.74	0.00	0.00	0.00
8,400.00	90.67	91.22	7,731.23	-646.74	115.79	171.52	0.00	0.00	0.00
8,500.00	90.67	91.22	7,730.06	-648.87	215.77	271.30	0.00	0.00	0.00
8,600.00	90.67	91.22	7,728.89	-650.99	315.74	371.07	0.00	0.00	0.00
8,700.00	90.67	91.22	7,727.71	-653.12	415.71	470.85	0.00	0.00	0.00
8,800.00	90.67	91.22	7,726.54	-655.24	515.68	570.63	0.00	0.00	0.00
8,900.00	90.67	91.22	7,725.37	-657.37	615.65	670.41	0.00	0.00	0.00
9,000.00	90.67	91.22	7,724.20	-659.49	715.62	770.18	0.00	0.00	0.00
9,100.00	90.67	91.22	7,723.03	-661.62	815.59	869.96	0.00	0.00	0.00
9,200.00	90.67	91.22	7,721.86	-663.74	915.56	969.74	0.00	0.00	0.00
9,300.00	90.67	91.22	7,720.68	-665.87	1,015.53	1,069.52	0.00	0.00	0.00
9,400.00	90.67	91.22	7,719.51	-668.00	1,115.50	1,169.29	0.00	0.00	0.00
9,500.00	90.67	91.22	7,718.34	-670.12	1,215.47	1,269.07	0.00	0.00	0.00
9,600.00	90.67	91.22	7,717.17	-672.25	1,315.44	1,368.85	0.00	0.00	0.00
9,700.00	90.67	91.22	7,716.00	-674.37	1,415.41	1,468.63	0.00	0.00	0.00
9,800.00	90.67	91.22	7,714.82	-676.50	1,515.38	1,568.40	0.00	0.00	0.00
9,900.00	90.67	91.22	7,713.65	-678.62	1,615.35	1,668.18	0.00	0.00	0.00
10,000.00	90.67	91.22	7,712.48	-680.75	1,715.32	1,767.96	0.00	0.00	0.00
10,100.00	90.67	91.22	7,711.31	-682.87	1,815.29	1,867.74	0.00	0.00	0.00
10,200.00	90.67	91.22	7,710.14	-685.00	1,915.26	1,967.51	0.00	0.00	0.00
10,300.00	90.67	91.22	7,708.97	-687.13	2,015.23	2,067.29	0.00	0.00	0.00
10,400.00	90.67	91.22	7,707.79	-689.25	2,115.21	2,167.07	0.00	0.00	0.00
10,500.00	90.67	91.22	7,706.62	-691.38	2,215.18	2,266.85	0.00	0.00	0.00
10,600.00	90.67	91.22	7,705.45	-693.50	2,315.15	2,366.62	0.00	0.00	0.00
10,700.00	90.67	91.22	7,704.28	-695.63	2,415.12	2,466.40	0.00	0.00	0.00
10,800.00	90.67	91.22	7,703.11	-697.75	2,515.09	2,566.18	0.00	0.00	0.00
10,900.00	90.67	91.22	7,701.93	-699.88	2,615.06	2,665.96	0.00	0.00	0.00
11,000.00	90.67	91.22	7,700.76	-702.00	2,715.03	2,765.73	0.00	0.00	0.00
11,100.00	90.67	91.22	7,699.59	-704.13	2,815.00	2,865.51	0.00	0.00	0.00
11,200.00	90.67	91.22	7,698.42	-706.26	2,914.97	2,965.29	0.00	0.00	0.00
11,300.00	90.67	91.22	7,697.25	-708.38	3,014.94	3,065.07	0.00	0.00	0.00
11,400.00	90.67	91.22	7,696.08	-710.51	3,114.91	3,164.84	0.00	0.00	0.00
11,500.00	90.67	91.22	7,694.90	-712.63	3,214.88	3,264.62	0.00	0.00	0.00
11,600.00	90.67	91.22	7,693.73	-714.76	3,314.85	3,364.40	0.00	0.00	0.00
11,700.00	90.67	91.22	7,692.56	-716.88	3,414.82	3,464.18	0.00	0.00	0.00
11,800.00	90.67	91.22	7,691.39	-719.01	3,514.79	3,563.95	0.00	0.00	0.00
11,900.00	90.67	91.22	7,690.22	-721.13	3,614.76	3,663.73	0.00	0.00	0.00
12,000.00	90.67	91.22	7,689.04	-723.26	3,714.73	3,763.51	0.00	0.00	0.00
12,100.00	90.67	91.22	7,687.87	-725.39	3,814.70	3,863.29	0.00	0.00	0.00
12,200.00	90.67	91.22	7,686.70	-727.51	3,914.68	3,963.06	0.00	0.00	0.00
12,300.00	90.67	91.22	7,685.53	-729.64	4,014.65	4,062.84	0.00	0.00	0.00
12,400.00	90.67	91.22	7,684.36	-731.76	4,114.62	4,162.62	0.00	0.00	0.00
12,500.00	90.67	91.22	7,683.19	-733.89	4,214.59	4,262.40	0.00	0.00	0.00
12,600.00	90.67	91.22	7,682.01	-736.01	4,314.56	4,362.17	0.00	0.00	0.00
12,700.00	90.67	91.22	7,680.84	-738.14	4,414.53	4,461.95	0.00	0.00	0.00
12,800.00	90.67	91.22	7,679.67	-740.26	4,514.50	4,561.73	0.00	0.00	0.00
12,900.00	90.67	91.22	7,678.50	-742.39	4,614.47	4,661.51	0.00	0.00	0.00
13,000.00	90.67	91.22	7,677.33	-744.52	4,714.44	4,761.28	0.00	0.00	0.00
13,100.00	90.67	91.22	7,676.15	-746.64	4,814.41	4,861.06	0.00	0.00	0.00

# ConocoPhillips

## Planning Report

<b>Database:</b>	EDT 14 Central Planning	<b>Local Co-ordinate Reference:</b>	Well Lussing Trust 4-64 19-20 4C1H
<b>Company:</b>	ConocoPhillips RBU Gold Data	<b>TVD Reference:</b>	25' RKB @ 5739.70ft (25' RKB)
<b>Project:</b>	Niobrara Central Zone	<b>MD Reference:</b>	25' RKB @ 5739.70ft (25' RKB)
<b>Site:</b>	Lussing Trust	<b>North Reference:</b>	True
<b>Well:</b>	Lussing Trust 4-64 19-20 4C1H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lussing Trust 4-64 19-20 4C1H		
<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)	
13,200.00	90.67	91.22	7,674.98	-748.77	4,914.38	4,960.84	0.00	0.00	0.00	
13,300.00	90.67	91.22	7,673.81	-750.89	5,014.35	5,060.62	0.00	0.00	0.00	
13,400.00	90.67	91.22	7,672.64	-753.02	5,114.32	5,160.39	0.00	0.00	0.00	
13,500.00	90.67	91.22	7,671.47	-755.14	5,214.29	5,260.17	0.00	0.00	0.00	
13,600.00	90.67	91.22	7,670.30	-757.27	5,314.26	5,359.95	0.00	0.00	0.00	
13,700.00	90.67	91.22	7,669.12	-759.39	5,414.23	5,459.73	0.00	0.00	0.00	
13,800.00	90.67	91.22	7,667.95	-761.52	5,514.20	5,559.50	0.00	0.00	0.00	
13,900.00	90.67	91.22	7,666.78	-763.65	5,614.17	5,659.28	0.00	0.00	0.00	
14,000.00	90.67	91.22	7,665.61	-765.77	5,714.15	5,759.06	0.00	0.00	0.00	
14,100.00	90.67	91.22	7,664.44	-767.90	5,814.12	5,858.84	0.00	0.00	0.00	
14,200.00	90.67	91.22	7,663.26	-770.02	5,914.09	5,958.61	0.00	0.00	0.00	
14,300.00	90.67	91.22	7,662.09	-772.15	6,014.06	6,058.39	0.00	0.00	0.00	
14,400.00	90.67	91.22	7,660.92	-774.27	6,114.03	6,158.17	0.00	0.00	0.00	
14,500.00	90.67	91.22	7,659.75	-776.40	6,214.00	6,257.95	0.00	0.00	0.00	
14,600.00	90.67	91.22	7,658.58	-778.52	6,313.97	6,357.72	0.00	0.00	0.00	
14,700.00	90.67	91.22	7,657.41	-780.65	6,413.94	6,457.50	0.00	0.00	0.00	
14,800.00	90.67	91.22	7,656.23	-782.78	6,513.91	6,557.28	0.00	0.00	0.00	
14,900.00	90.67	91.22	7,655.06	-784.90	6,613.88	6,657.06	0.00	0.00	0.00	
15,000.00	90.67	91.22	7,653.89	-787.03	6,713.85	6,756.83	0.00	0.00	0.00	
15,100.00	90.67	91.22	7,652.72	-789.15	6,813.82	6,856.61	0.00	0.00	0.00	
15,200.00	90.67	91.22	7,651.55	-791.28	6,913.79	6,956.39	0.00	0.00	0.00	
15,300.00	90.67	91.22	7,650.37	-793.40	7,013.76	7,056.17	0.00	0.00	0.00	
15,400.00	90.67	91.22	7,649.20	-795.53	7,113.73	7,155.94	0.00	0.00	0.00	
15,500.00	90.67	91.22	7,648.03	-797.66	7,213.70	7,255.72	0.00	0.00	0.00	
15,600.00	90.67	91.22	7,646.86	-799.78	7,313.67	7,355.50	0.00	0.00	0.00	
15,700.00	90.67	91.22	7,645.69	-801.91	7,413.64	7,455.27	0.00	0.00	0.00	
15,800.00	90.67	91.22	7,644.51	-804.03	7,513.61	7,555.05	0.00	0.00	0.00	
15,900.00	90.67	91.22	7,643.34	-806.16	7,613.59	7,654.83	0.00	0.00	0.00	
16,000.00	90.67	91.22	7,642.17	-808.28	7,713.56	7,754.61	0.00	0.00	0.00	
16,100.00	90.67	91.22	7,641.00	-810.41	7,813.53	7,854.38	0.00	0.00	0.00	
16,200.00	90.67	91.22	7,639.83	-812.53	7,913.50	7,954.16	0.00	0.00	0.00	
16,300.00	90.67	91.22	7,638.66	-814.66	8,013.47	8,053.94	0.00	0.00	0.00	
16,400.00	90.67	91.22	7,637.48	-816.79	8,113.44	8,153.72	0.00	0.00	0.00	
16,500.00	90.67	91.22	7,636.31	-818.91	8,213.41	8,253.49	0.00	0.00	0.00	
16,600.00	90.67	91.22	7,635.14	-821.04	8,313.38	8,353.27	0.00	0.00	0.00	
16,700.00	90.67	91.22	7,633.97	-823.16	8,413.35	8,453.05	0.00	0.00	0.00	
16,800.00	90.67	91.22	7,632.80	-825.29	8,513.32	8,552.83	0.00	0.00	0.00	
16,900.00	90.67	91.22	7,631.62	-827.41	8,613.29	8,652.60	0.00	0.00	0.00	
17,000.00	90.67	91.22	7,630.45	-829.54	8,713.26	8,752.38	0.00	0.00	0.00	
17,100.00	90.67	91.22	7,629.28	-831.66	8,813.23	8,852.16	0.00	0.00	0.00	
17,200.00	90.67	91.22	7,628.11	-833.79	8,913.20	8,951.94	0.00	0.00	0.00	
17,300.00	90.67	91.22	7,626.94	-835.92	9,013.17	9,051.71	0.00	0.00	0.00	
17,400.00	90.67	91.22	7,625.77	-838.04	9,113.14	9,151.49	0.00	0.00	0.00	
17,500.00	90.67	91.22	7,624.59	-840.17	9,213.11	9,251.27	0.00	0.00	0.00	
17,600.00	90.67	91.22	7,623.42	-842.29	9,313.08	9,351.05	0.00	0.00	0.00	
17,700.00	90.67	91.22	7,622.25	-844.42	9,413.06	9,450.82	0.00	0.00	0.00	
17,800.00	90.67	91.22	7,621.08	-846.54	9,513.03	9,550.60	0.00	0.00	0.00	
17,900.00	90.67	91.22	7,619.91	-848.67	9,613.00	9,650.38	0.00	0.00	0.00	
18,000.00	90.67	91.22	7,618.73	-850.79	9,712.97	9,750.16	0.00	0.00	0.00	
18,062.67	90.67	91.22	7,618.00	-852.13	9,775.62	9,812.69	0.00	0.00	0.00	
BHL: 1217' FSL, 325' FEL - 5-1/2" Casing										



# ConocoPhillips

## Planning Report

<b>Database:</b>	EDT 14 Central Planning	<b>Local Co-ordinate Reference:</b>	Well Lussing Trust 4-64 19-20 4C1H
<b>Company:</b>	ConocoPhillips RBU Gold Data	<b>TVD Reference:</b>	25' RKB @ 5739.70ft (25' RKB)
<b>Project:</b>	Niobrara Central Zone	<b>MD Reference:</b>	25' RKB @ 5739.70ft (25' RKB)
<b>Site:</b>	Lussing Trust	<b>North Reference:</b>	True
<b>Well:</b>	Lussing Trust 4-64 19-20 4C1H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lussing Trust 4-64 19-20 4C1H		
<b>Design:</b>	Design A		

### 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
Lussing Trust 4-64 19 - plan hits target center - Point	0.00	0.00	7,618.00	-852.13	9,775.62	1,675,551.111	3,262,755.295	39° 41' 4.130 N	104° 33' 59.000 W
Lussing Trust 4-64 19 - plan hits target center - Point	0.00	0.00	7,733.00	-643.53	-35.18	1,675,662.625	3,252,943.049	39° 41' 6.210 N	104° 36' 4.490 W

### Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
2,060.00	2,060.00	9-5/8" Casing	9-5/8	12-1/4
18,062.67	7,618.00	5-1/2" Casing	5-1/2	8-1/2

### Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,714.00	1,714.00	Fox Hills Top		0.00	
1,860.00	1,860.00	Pierre Top - Fox Hills Base		0.00	
2,060.00	2,060.00	Surface Casing		0.00	
7,847.04	7,609.00	Niobrara Top		0.00	
8,131.59	7,723.00	C 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: 1861' FSL, 645' FWL
6,778.61	6,688.49	-285.11	-424.88	EOB: 1576' FSL, 220' FWL
7,101.10	6,967.78	-374.96	-558.76	KOP: 1486' FSL, 86' FWL
8,248.98	7,733.00	-643.53	-35.18	BPI/LP: 1217' FSL, 613' FWL
18,062.67	7,618.00	-852.13	9,775.62	BHL: 1217' FSL, 325' FEL