



ConocoPhillips Arapahoe County Lussing Trust 4-64 19-20 3D3H Design A

Ground Level: 5714.70
Surface Location Latitude: 39° 41' 12.880 N
Surface Location Longitude: 104° 36' 4.040 W
North Reference: True
25' RKB @ 5739.70ft (25' RKB)

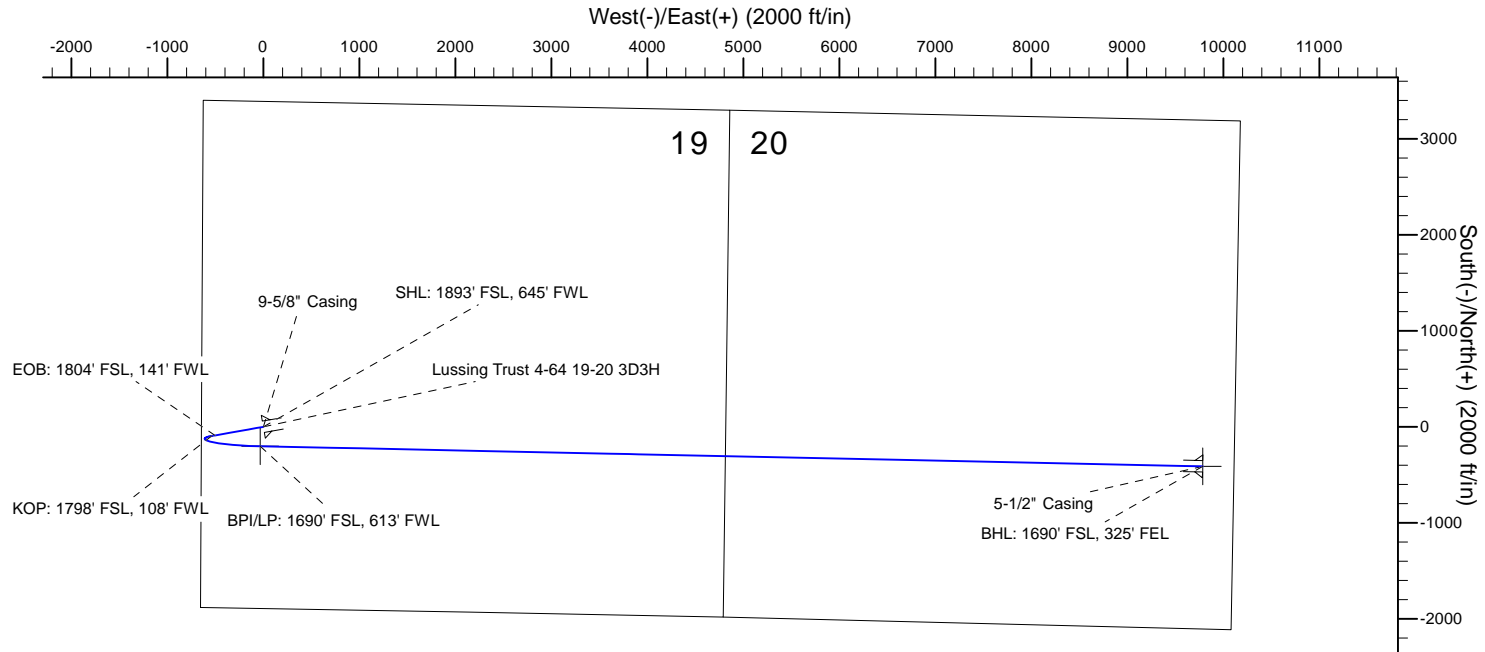
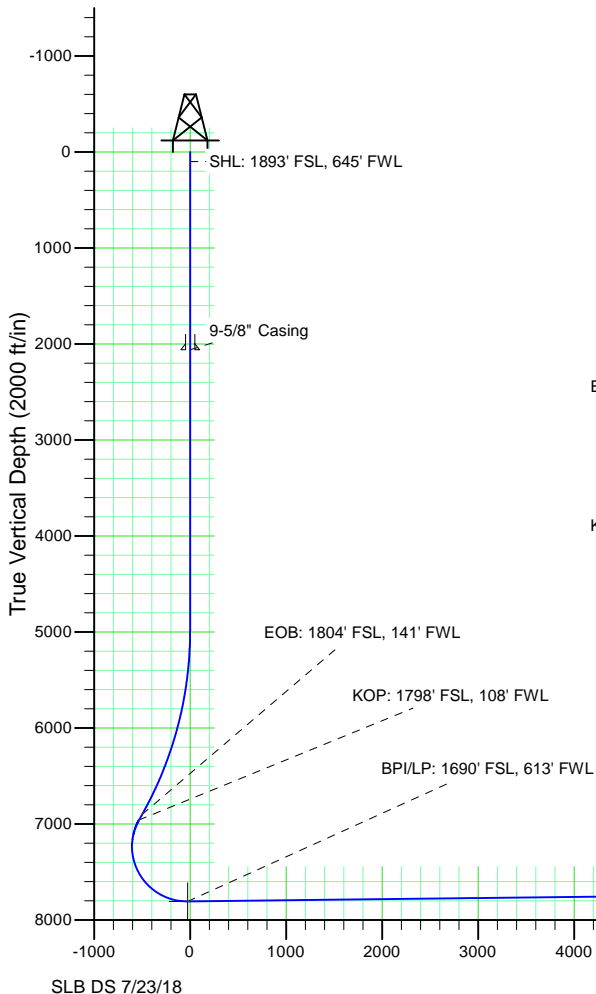
North American Datum 1983
GRS 1980
US State Plane 1983
Colorado Central Zone

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
4991.42	0.00	0.00	4991.42	0.00	0.00	0.00	0.00
6991.41	30.00	259.97	6901.27	-89.09	-503.92	1.50	-499.74
7057.61	30.00	259.97	6958.60	-94.85	-536.52	0.00	-532.07
8257.77	90.65	91.22	7807.00	-202.35	-32.87	10.00	-24.35
18077.56	90.65	91.22	7695.00	-410.95	9784.07	0.00	9792.70

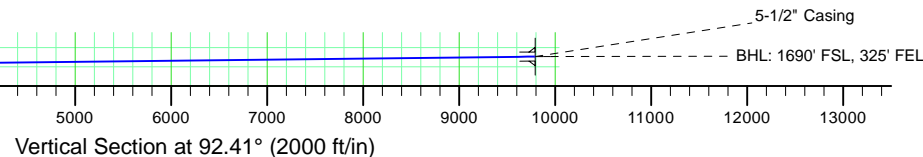
Casing Depths

TVD	MD	Name	Size
2060.00	2060.00	9-5/8" Casing	9-5/8
7695.00	18077.56	5-1/2" Casing	5-1/2



Wellbore Targets

Name	TVD	Latitude	Longitude
Lussing Trust 4-64 19-20 3D3H BHL	7695.00	39° 41' 8.800 N	104° 33' 58.890 W
Lussing Trust 4-64 19-20 3D3H BPI	7807.00	39° 41' 10.880 N	104° 36' 4.460 W



ConocoPhillips RBU Gold Data

Niobrara Central Zone

Lussing Trust

Lussing Trust 4-64 19-20 3D3H

Lussing Trust 4-64 19-20 3D3H

Plan: Design A

Standard Planning Report

23 July, 2018

ConocoPhillips

Planning Report

Database:	EDT 14 Central Planning	Local Co-ordinate Reference:	Well Lussing Trust 4-64 19-20 3D3H
Company:	ConocoPhillips RBU Gold Data	TVD Reference:	25' RKB @ 5739.70ft (25' RKB)
Project:	Niobrara Central Zone	MD Reference:	25' RKB @ 5739.70ft (25' RKB)
Site:	Lussing Trust	North Reference:	True
Well:	Lussing Trust 4-64 19-20 3D3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lussing Trust 4-64 19-20 3D3H		
Design:	Design A		

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

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

Well	Lussing Trust 4-64 19-20 3D3H		
Well Position	+N-S	-3,299.05 ft	Northing: 1,676,337.819 usft
	+E-W	-4,857.13 ft	Easting: 3,252,971.550 usft
Position Uncertainty	2.00 ft	Wellhead Elevation:	5,714.70 ft
		Latitude:	39° 41' 12.880 N
		Longitude:	104° 36' 4.040 W
		Ground Level:	5,714.70 ft

Wellbore	Lussing Trust 4-64 19-20 3D3H				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2018	12/1/2018	8.09	66.29	51,857.76142756

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	92.41

Plan Survey Tool Program	Date	7/23/2018		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
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	4,991.42	Design A (Lussing Trust 4-64 19-MWD+IFR_No SAG)	MWD + IFR (No SAG) corre
3	4,991.42	6,991.42	Design A (Lussing Trust 4-64 19-MWD+IFR_No SAG)	MWD + IFR (No SAG) corre
4	6,991.42	7,057.61	Design A (Lussing Trust 4-64 19-MWD+IFR_No SAG)	MWD + IFR (No SAG) corre
5	7,057.61	8,257.77	Design A (Lussing Trust 4-64 19-MWD+IFR_No SAG)	MWD + IFR (No SAG) corre
6	8,257.77	18,077.56	Design A (Lussing Trust 4-64 19-MWD+IFR_No SAG)	MWD + IFR (No SAG) corre

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Planning Report

Database:	EDT 14 Central Planning	Local Co-ordinate Reference:	Well Lussing Trust 4-64 19-20 3D3H
Company:	ConocoPhillips RBU Gold Data	TVD Reference:	25' RKB @ 5739.70ft (25' RKB)
Project:	Niobrara Central Zone	MD Reference:	25' RKB @ 5739.70ft (25' RKB)
Site:	Lussing Trust	North Reference:	True
Well:	Lussing Trust 4-64 19-20 3D3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lussing Trust 4-64 19-20 3D3H		
Design:	Design A		

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,991.42	0.00	0.00	4,991.42	0.00	0.00	0.00	0.00	0.00	0.00	
6,991.41	30.00	259.97	6,901.27	-89.09	-503.92	1.50	1.50	0.00	259.97	
7,057.61	30.00	259.97	6,958.60	-94.85	-536.52	0.00	0.00	0.00	0.00	
8,257.77	90.65	91.22	7,807.00	-202.35	-32.87	10.00	5.05	-14.06	-166.99	Lussing Trust 4-64
18,077.56	90.65	91.22	7,695.00	-410.95	9,784.07	0.00	0.00	0.00	0.00	Lussing Trust 4-64

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Planning Report

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Company:	ConocoPhillips RBU Gold Data	TVD Reference:	25' RKB @ 5739.70ft (25' RKB)
Project:	Niobrara Central Zone	MD Reference:	25' RKB @ 5739.70ft (25' RKB)
Site:	Lussing Trust	North Reference:	True
Well:	Lussing Trust 4-64 19-20 3D3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lussing Trust 4-64 19-20 3D3H		
Design:	Design A		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
SHL: 1893' FSL, 645' 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
1,714.00	0.00	0.00	1,714.00	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
1,860.00	0.00	0.00	1,860.00	0.00	0.00	0.00	0.00	0.00	0.00
Pierre Top - 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
2,060.00	0.00	0.00	2,060.00	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
4,500.00	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

ConocoPhillips

Planning Report

Database:	EDT 14 Central Planning	Local Co-ordinate Reference:	Well Lussing Trust 4-64 19-20 3D3H
Company:	ConocoPhillips RBU Gold Data	TVD Reference:	25' RKB @ 5739.70ft (25' RKB)
Project:	Niobrara Central Zone	MD Reference:	25' RKB @ 5739.70ft (25' RKB)
Site:	Lussing Trust	North Reference:	True
Well:	Lussing Trust 4-64 19-20 3D3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lussing Trust 4-64 19-20 3D3H		
Design:	Design A		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,991.42	0.00	0.00	4,991.42	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.13	259.97	5,000.00	0.00	-0.01	-0.01	1.50	1.50	0.00
5,100.00	1.63	259.97	5,099.99	-0.27	-1.52	-1.51	1.50	1.50	0.00
5,200.00	3.13	259.97	5,199.90	-0.99	-5.61	-5.56	1.50	1.50	0.00
5,300.00	4.63	259.97	5,299.66	-2.17	-12.27	-12.17	1.50	1.50	0.00
5,400.00	6.13	259.97	5,399.22	-3.80	-21.50	-21.32	1.50	1.50	0.00
5,500.00	7.63	259.97	5,498.50	-5.89	-33.29	-33.02	1.50	1.50	0.00
5,600.00	9.13	259.97	5,597.43	-8.42	-47.64	-47.24	1.50	1.50	0.00
5,700.00	10.63	259.97	5,695.94	-11.41	-64.53	-64.00	1.50	1.50	0.00
5,800.00	12.13	259.97	5,793.97	-14.84	-83.96	-83.26	1.50	1.50	0.00
5,900.00	13.63	259.97	5,891.46	-18.72	-105.91	-105.03	1.50	1.50	0.00
6,000.00	15.13	259.97	5,988.32	-23.05	-130.36	-129.28	1.50	1.50	0.00
6,100.00	16.63	259.97	6,084.50	-27.81	-157.30	-156.00	1.50	1.50	0.00
6,200.00	18.13	259.97	6,179.94	-33.01	-186.72	-185.17	1.50	1.50	0.00
6,300.00	19.63	259.97	6,274.55	-38.64	-218.58	-216.76	1.50	1.50	0.00
6,400.00	21.13	259.97	6,368.29	-44.71	-252.87	-250.77	1.50	1.50	0.00
6,500.00	22.63	259.97	6,461.09	-51.19	-289.56	-287.16	1.50	1.50	0.00
6,600.00	24.13	259.97	6,552.87	-58.10	-328.63	-325.91	1.50	1.50	0.00
6,700.00	25.63	259.97	6,643.59	-65.42	-370.06	-366.99	1.50	1.50	0.00
6,800.00	27.13	259.97	6,733.18	-73.16	-413.81	-410.38	1.50	1.50	0.00
6,900.00	28.63	259.97	6,821.57	-81.30	-459.86	-456.04	1.50	1.50	0.00
6,991.41	30.00	259.97	6,901.27	-89.09	-503.92	-499.74	1.50	1.50	0.00
6,991.42	30.00	259.97	6,901.28	-89.09	-503.93	-499.75	0.00	0.00	0.00
EOB: 1804' FSL, 141' FWL									
7,000.00	30.00	259.97	6,908.71	-89.84	-508.15	-503.94	0.00	0.00	0.00
7,057.61	30.00	259.97	6,958.60	-94.85	-536.52	-532.07	0.00	0.00	0.00
KOP: 1798' FSL, 108' FWL									
7,100.00	25.89	257.79	6,996.04	-98.66	-556.01	-551.38	10.00	-9.71	-5.15
7,150.00	21.09	254.21	7,041.89	-103.42	-575.34	-570.50	10.00	-9.59	-7.16
7,200.00	16.41	248.67	7,089.23	-108.44	-590.59	-585.52	10.00	-9.36	-11.07
7,250.00	11.99	239.05	7,137.69	-113.68	-601.63	-596.33	10.00	-8.85	-19.24
7,300.00	8.24	219.80	7,186.92	-119.11	-608.38	-602.85	10.00	-7.50	-38.49
7,350.00	6.47	182.35	7,236.53	-124.68	-610.80	-605.03	10.00	-3.55	-74.90
7,400.00	8.09	144.11	7,286.16	-130.34	-608.85	-602.84	10.00	3.26	-76.48
7,450.00	11.79	124.17	7,335.41	-136.07	-602.55	-596.31	10.00	7.39	-39.89
7,500.00	16.19	114.25	7,383.92	-141.80	-591.96	-585.49	10.00	8.81	-19.83
7,550.00	20.86	108.58	7,431.32	-147.51	-577.16	-570.46	10.00	9.34	-11.34
7,600.00	25.65	104.94	7,477.25	-153.14	-558.25	-551.33	10.00	9.58	-7.30
7,650.00	30.51	102.38	7,521.35	-158.65	-535.38	-528.25	10.00	9.71	-5.12
7,700.00	35.40	100.47	7,563.29	-164.01	-508.72	-501.39	10.00	9.78	-3.82
7,750.00	40.31	98.96	7,602.76	-169.16	-478.49	-470.97	10.00	9.83	-3.00
7,758.23	41.13	98.75	7,609.00	-169.99	-473.18	-465.63	10.00	9.85	-2.65
Niobrara Top									
7,800.00	45.24	97.74	7,639.45	-174.08	-444.90	-437.20	10.00	9.86	-2.41
7,850.00	50.19	96.71	7,673.08	-178.72	-408.21	-400.35	10.00	9.88	-2.06
7,900.00	55.14	95.82	7,703.40	-183.04	-368.71	-360.70	10.00	9.90	-1.78
7,950.00	60.09	95.03	7,730.17	-187.02	-326.69	-318.55	10.00	9.91	-1.58
8,000.00	65.05	94.31	7,753.19	-190.63	-282.47	-274.22	10.00	9.92	-1.43
8,050.00	70.01	93.65	7,772.30	-193.83	-236.39	-228.05	10.00	9.93	-1.32
8,100.00	74.98	93.03	7,787.33	-196.61	-188.80	-180.38	10.00	9.93	-1.24

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Planning Report

Database:	EDT 14 Central Planning	Local Co-ordinate Reference:	Well Lussing Trust 4-64 19-20 3D3H
Company:	ConocoPhillips RBU Gold Data	TVD Reference:	25' RKB @ 5739.70ft (25' RKB)
Project:	Niobrara Central Zone	MD Reference:	25' RKB @ 5739.70ft (25' RKB)
Site:	Lussing Trust	North Reference:	True
Well:	Lussing Trust 4-64 19-20 3D3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lussing Trust 4-64 19-20 3D3H		
Design:	Design A		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,143.45	79.29	92.52	7,797.00	-198.66	-146.50	-138.04	10.00	9.93	-1.19
D Chalk Top									
8,150.00	79.95	92.44	7,798.18	-198.94	-140.06	-131.59	10.00	9.93	-1.16
8,200.00	84.91	91.87	7,804.77	-200.80	-90.55	-82.04	10.00	9.94	-1.15
8,250.00	89.88	91.30	7,807.04	-202.18	-40.64	-32.12	10.00	9.94	-1.13
8,257.77	90.65	91.22	7,807.00	-202.35	-32.87	-24.35	10.00	9.94	-1.13
BPI/LP: 1690' FSL, 613' FWL									
8,300.00	90.65	91.22	7,806.52	-203.25	9.35	17.87	0.00	0.00	0.00
8,400.00	90.65	91.22	7,805.38	-205.37	109.32	117.84	0.00	0.00	0.00
8,500.00	90.65	91.22	7,804.24	-207.50	209.29	217.81	0.00	0.00	0.00
8,600.00	90.65	91.22	7,803.10	-209.62	309.26	317.79	0.00	0.00	0.00
8,700.00	90.65	91.22	7,801.96	-211.75	409.23	417.76	0.00	0.00	0.00
8,800.00	90.65	91.22	7,800.82	-213.87	509.20	517.73	0.00	0.00	0.00
8,900.00	90.65	91.22	7,799.68	-216.00	609.17	617.70	0.00	0.00	0.00
9,000.00	90.65	91.22	7,798.53	-218.12	709.15	717.67	0.00	0.00	0.00
9,100.00	90.65	91.22	7,797.39	-220.24	809.12	817.65	0.00	0.00	0.00
9,200.00	90.65	91.22	7,796.25	-222.37	909.09	917.62	0.00	0.00	0.00
9,300.00	90.65	91.22	7,795.11	-224.49	1,009.06	1,017.59	0.00	0.00	0.00
9,400.00	90.65	91.22	7,793.97	-226.62	1,109.03	1,117.56	0.00	0.00	0.00
9,500.00	90.65	91.22	7,792.83	-228.74	1,209.00	1,217.53	0.00	0.00	0.00
9,600.00	90.65	91.22	7,791.69	-230.87	1,308.97	1,317.51	0.00	0.00	0.00
9,700.00	90.65	91.22	7,790.55	-232.99	1,408.94	1,417.48	0.00	0.00	0.00
9,800.00	90.65	91.22	7,789.41	-235.11	1,508.91	1,517.45	0.00	0.00	0.00
9,900.00	90.65	91.22	7,788.27	-237.24	1,608.88	1,617.42	0.00	0.00	0.00
10,000.00	90.65	91.22	7,787.13	-239.36	1,708.85	1,717.39	0.00	0.00	0.00
10,100.00	90.65	91.22	7,785.99	-241.49	1,808.83	1,817.37	0.00	0.00	0.00
10,200.00	90.65	91.22	7,784.85	-243.61	1,908.80	1,917.34	0.00	0.00	0.00
10,300.00	90.65	91.22	7,783.71	-245.73	2,008.77	2,017.31	0.00	0.00	0.00
10,400.00	90.65	91.22	7,782.57	-247.86	2,108.74	2,117.28	0.00	0.00	0.00
10,500.00	90.65	91.22	7,781.43	-249.98	2,208.71	2,217.25	0.00	0.00	0.00
10,600.00	90.65	91.22	7,780.29	-252.11	2,308.68	2,317.23	0.00	0.00	0.00
10,700.00	90.65	91.22	7,779.15	-254.23	2,408.65	2,417.20	0.00	0.00	0.00
10,800.00	90.65	91.22	7,778.00	-256.36	2,508.62	2,517.17	0.00	0.00	0.00
10,900.00	90.65	91.22	7,776.86	-258.48	2,608.59	2,617.14	0.00	0.00	0.00
11,000.00	90.65	91.22	7,775.72	-260.60	2,708.56	2,717.11	0.00	0.00	0.00
11,100.00	90.65	91.22	7,774.58	-262.73	2,808.53	2,817.09	0.00	0.00	0.00
11,200.00	90.65	91.22	7,773.44	-264.85	2,908.51	2,917.06	0.00	0.00	0.00
11,300.00	90.65	91.22	7,772.30	-266.98	3,008.48	3,017.03	0.00	0.00	0.00
11,400.00	90.65	91.22	7,771.16	-269.10	3,108.45	3,117.00	0.00	0.00	0.00
11,500.00	90.65	91.22	7,770.02	-271.23	3,208.42	3,216.97	0.00	0.00	0.00
11,600.00	90.65	91.22	7,768.88	-273.35	3,308.39	3,316.95	0.00	0.00	0.00
11,700.00	90.65	91.22	7,767.74	-275.47	3,408.36	3,416.92	0.00	0.00	0.00
11,800.00	90.65	91.22	7,766.60	-277.60	3,508.33	3,516.89	0.00	0.00	0.00
11,900.00	90.65	91.22	7,765.46	-279.72	3,608.30	3,616.86	0.00	0.00	0.00
12,000.00	90.65	91.22	7,764.32	-281.85	3,708.27	3,716.83	0.00	0.00	0.00
12,100.00	90.65	91.22	7,763.18	-283.97	3,808.24	3,816.81	0.00	0.00	0.00
12,200.00	90.65	91.22	7,762.04	-286.09	3,908.22	3,916.78	0.00	0.00	0.00
12,300.00	90.65	91.22	7,760.90	-288.22	4,008.19	4,016.75	0.00	0.00	0.00
12,400.00	90.65	91.22	7,759.76	-290.34	4,108.16	4,116.72	0.00	0.00	0.00
12,500.00	90.65	91.22	7,758.62	-292.47	4,208.13	4,216.69	0.00	0.00	0.00
12,600.00	90.65	91.22	7,757.47	-294.59	4,308.10	4,316.67	0.00	0.00	0.00
12,700.00	90.65	91.22	7,756.33	-296.72	4,408.07	4,416.64	0.00	0.00	0.00
12,800.00	90.65	91.22	7,755.19	-298.84	4,508.04	4,516.61	0.00	0.00	0.00
12,900.00	90.65	91.22	7,754.05	-300.96	4,608.01	4,616.58	0.00	0.00	0.00

ConocoPhillips

Planning Report

Database:	EDT 14 Central Planning	Local Co-ordinate Reference:	Well Lussing Trust 4-64 19-20 3D3H
Company:	ConocoPhillips RBU Gold Data	TVD Reference:	25' RKB @ 5739.70ft (25' RKB)
Project:	Niobrara Central Zone	MD Reference:	25' RKB @ 5739.70ft (25' RKB)
Site:	Lussing Trust	North Reference:	True
Well:	Lussing Trust 4-64 19-20 3D3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lussing Trust 4-64 19-20 3D3H		
Design:	Design A		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
13,000.00	90.65	91.22	7,752.91	-303.09	4,707.98	4,716.55	0.00	0.00	0.00	
13,100.00	90.65	91.22	7,751.77	-305.21	4,807.95	4,816.53	0.00	0.00	0.00	
13,200.00	90.65	91.22	7,750.63	-307.34	4,907.92	4,916.50	0.00	0.00	0.00	
13,300.00	90.65	91.22	7,749.49	-309.46	5,007.90	5,016.47	0.00	0.00	0.00	
13,400.00	90.65	91.22	7,748.35	-311.59	5,107.87	5,116.44	0.00	0.00	0.00	
13,500.00	90.65	91.22	7,747.21	-313.71	5,207.84	5,216.41	0.00	0.00	0.00	
13,600.00	90.65	91.22	7,746.07	-315.83	5,307.81	5,316.39	0.00	0.00	0.00	
13,700.00	90.65	91.22	7,744.93	-317.96	5,407.78	5,416.36	0.00	0.00	0.00	
13,800.00	90.65	91.22	7,743.79	-320.08	5,507.75	5,516.33	0.00	0.00	0.00	
13,900.00	90.65	91.22	7,742.65	-322.21	5,607.72	5,616.30	0.00	0.00	0.00	
14,000.00	90.65	91.22	7,741.51	-324.33	5,707.69	5,716.27	0.00	0.00	0.00	
14,100.00	90.65	91.22	7,740.37	-326.45	5,807.66	5,816.25	0.00	0.00	0.00	
14,200.00	90.65	91.22	7,739.23	-328.58	5,907.63	5,916.22	0.00	0.00	0.00	
14,300.00	90.65	91.22	7,738.09	-330.70	6,007.60	6,016.19	0.00	0.00	0.00	
14,400.00	90.65	91.22	7,736.94	-332.83	6,107.58	6,116.16	0.00	0.00	0.00	
14,500.00	90.65	91.22	7,735.80	-334.95	6,207.55	6,216.13	0.00	0.00	0.00	
14,600.00	90.65	91.22	7,734.66	-337.08	6,307.52	6,316.11	0.00	0.00	0.00	
14,700.00	90.65	91.22	7,733.52	-339.20	6,407.49	6,416.08	0.00	0.00	0.00	
14,800.00	90.65	91.22	7,732.38	-341.32	6,507.46	6,516.05	0.00	0.00	0.00	
14,900.00	90.65	91.22	7,731.24	-343.45	6,607.43	6,616.02	0.00	0.00	0.00	
15,000.00	90.65	91.22	7,730.10	-345.57	6,707.40	6,715.99	0.00	0.00	0.00	
15,100.00	90.65	91.22	7,728.96	-347.70	6,807.37	6,815.97	0.00	0.00	0.00	
15,200.00	90.65	91.22	7,727.82	-349.82	6,907.34	6,915.94	0.00	0.00	0.00	
15,300.00	90.65	91.22	7,726.68	-351.95	7,007.31	7,015.91	0.00	0.00	0.00	
15,400.00	90.65	91.22	7,725.54	-354.07	7,107.28	7,115.88	0.00	0.00	0.00	
15,500.00	90.65	91.22	7,724.40	-356.19	7,207.26	7,215.85	0.00	0.00	0.00	
15,600.00	90.65	91.22	7,723.26	-358.32	7,307.23	7,315.83	0.00	0.00	0.00	
15,700.00	90.65	91.22	7,722.12	-360.44	7,407.20	7,415.80	0.00	0.00	0.00	
15,800.00	90.65	91.22	7,720.98	-362.57	7,507.17	7,515.77	0.00	0.00	0.00	
15,900.00	90.65	91.22	7,719.84	-364.69	7,607.14	7,615.74	0.00	0.00	0.00	
16,000.00	90.65	91.22	7,718.70	-366.81	7,707.11	7,715.71	0.00	0.00	0.00	
16,100.00	90.65	91.22	7,717.56	-368.94	7,807.08	7,815.69	0.00	0.00	0.00	
16,200.00	90.65	91.22	7,716.41	-371.06	7,907.05	7,915.66	0.00	0.00	0.00	
16,300.00	90.65	91.22	7,715.27	-373.19	8,007.02	8,015.63	0.00	0.00	0.00	
16,400.00	90.65	91.22	7,714.13	-375.31	8,106.99	8,115.60	0.00	0.00	0.00	
16,500.00	90.65	91.22	7,712.99	-377.44	8,206.97	8,215.57	0.00	0.00	0.00	
16,600.00	90.65	91.22	7,711.85	-379.56	8,306.94	8,315.55	0.00	0.00	0.00	
16,700.00	90.65	91.22	7,710.71	-381.68	8,406.91	8,415.52	0.00	0.00	0.00	
16,800.00	90.65	91.22	7,709.57	-383.81	8,506.88	8,515.49	0.00	0.00	0.00	
16,900.00	90.65	91.22	7,708.43	-385.93	8,606.85	8,615.46	0.00	0.00	0.00	
17,000.00	90.65	91.22	7,707.29	-388.06	8,706.82	8,715.43	0.00	0.00	0.00	
17,100.00	90.65	91.22	7,706.15	-390.18	8,806.79	8,815.41	0.00	0.00	0.00	
17,200.00	90.65	91.22	7,705.01	-392.31	8,906.76	8,915.38	0.00	0.00	0.00	
17,300.00	90.65	91.22	7,703.87	-394.43	9,006.73	9,015.35	0.00	0.00	0.00	
17,400.00	90.65	91.22	7,702.73	-396.55	9,106.70	9,115.32	0.00	0.00	0.00	
17,500.00	90.65	91.22	7,701.59	-398.68	9,206.67	9,215.29	0.00	0.00	0.00	
17,600.00	90.65	91.22	7,700.45	-400.80	9,306.65	9,315.27	0.00	0.00	0.00	
17,700.00	90.65	91.22	7,699.31	-402.93	9,406.62	9,415.24	0.00	0.00	0.00	
17,800.00	90.65	91.22	7,698.17	-405.05	9,506.59	9,515.21	0.00	0.00	0.00	
17,900.00	90.65	91.22	7,697.03	-407.17	9,606.56	9,615.18	0.00	0.00	0.00	
18,000.00	90.65	91.22	7,695.88	-409.30	9,706.53	9,715.15	0.00	0.00	0.00	
18,077.56	90.65	91.22	7,695.00	-410.95	9,784.07	9,792.69	0.00	0.00	0.00	
BHL: 1690' FSL, 325' FEL - 5-1/2" Casing										

ConocoPhillips

Planning Report

Database:	EDT 14 Central Planning	Local Co-ordinate Reference:	Well Lussing Trust 4-64 19-20 3D3H
Company:	ConocoPhillips RBU Gold Data	TVD Reference:	25' RKB @ 5739.70ft (25' RKB)
Project:	Niobrara Central Zone	MD Reference:	25' RKB @ 5739.70ft (25' RKB)
Site:	Lussing Trust	North Reference:	True
Well:	Lussing Trust 4-64 19-20 3D3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lussing Trust 4-64 19-20 3D3H		
Design:	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	7,695.00	-410.95	9,784.07	1,676,023.703	3,262,759.069	39° 41' 8.800 N	104° 33' 58.890 W
Lussing Trust 4-64 19 - plan hits target center - Point	0.00	0.00	7,807.00	-202.35	-32.87	1,676,135.153	3,252,940.688	39° 41' 10.880 N	104° 36' 4.460 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
18,077.56	7,695.00	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	
7,758.23	7,609.00	Niobrara Top		0.00	
8,143.45	7,797.00	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: 1893' FSL, 645' FWL
6,991.42	6,901.28	-89.09	-503.93	EOB: 1804' FSL, 141' FWL
7,057.61	6,958.60	-94.85	-536.52	KOP: 1798' FSL, 108' FWL
8,257.77	7,807.00	-202.35	-32.87	BPI/LP: 1690' FSL, 613' FWL
18,077.56	7,695.00	-410.95	9,784.07	BHL: 1690' FSL, 325' FEL