

ConocoPhillips RBU Gold Data

Niobrara Central Zone

Eastern Hills

Eastern Hills 4-65 17-18 3H_D

Eastern Hills 4-65 17-18 3H_D

Plan: Eastern Hills 4-65 17-18 3H_D

Standard Planning Report

16 August, 2017

ConocoPhillips

Planning Report

Database:	EDT 14 Central Planning	Local Co-ordinate Reference:	Well Eastern Hills 4-65 17-18 3H_D
Company:	ConocoPhillips RBU Gold Data	TVD Reference:	27' RKB @ 5659.30ft (27' RKB)
Project:	Niobrara Central Zone	MD Reference:	27' RKB @ 5659.30ft (27' RKB)
Site:	Eastern Hills	North Reference:	True
Well:	Eastern Hills 4-65 17-18 3H_D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Eastern Hills 4-65 17-18 3H_D		
Design:	Eastern Hills 4-65 17-18 3H_D		

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	Eastern Hills				
Site Position:		Northing:	1,684,847.875 usft	Latitude:	39° 42' 39.949 N
From:	Lat/Long	Easting:	3,220,540.398 usft	Longitude:	104° 42' 57.931 W
Position Uncertainty:	0.00 ft	Slot Radius:	26 "	Grid Convergence:	0.49 °

Well	Eastern Hills 4-65 17-18 3H_D					
Well Position	+N-S	-2,099.65 ft	Northing:	1,682,833.474 usft	Latitude:	39° 42' 19.180 N
	+E-W	9,868.15 ft	Easting:	3,230,426.202 usft	Longitude:	104° 40' 51.670 W
Position Uncertainty		2.00 ft	Wellhead Elevation:		Ground Level:	5,632.30 ft

Wellbore	Eastern Hills 4-65 17-18 3H_D				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2017	8/16/2017	8.28	66.35	52,001.14898267

Design	Eastern Hills 4-65 17-18 3H_D			
Audit Notes:	JM 8/16/2017 Rev B			
Version:	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	275.31

Plan Survey Tool Program		Date	8/16/2017		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	2,183.00	Eastern Hills 4-65 17-18 3H_D (E)	Gyro-BM-MS	Gyro - bat/mem drop m/s
2	2,183.00	7,429.79	Eastern Hills 4-65 17-18 3H_D (E)	MWD+IFR_No SAG	MWD + IFR (No SAG) correctic
3	7,429.79	18,124.82	Eastern Hills 4-65 17-18 3H_D (E)	MWD+IFR_No SAG	MWD + IFR (No SAG) correctic

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Wellbore:	Eastern Hills 4-65 17-18 3H_D		
Design:	Eastern Hills 4-65 17-18 3H_D		

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,629.28	16.94	44.68	4,612.90	117.84	116.52	1.50	1.50	0.00	44.68	
7,429.79	16.94	44.68	7,291.91	698.03	690.24	0.00	0.00	0.00	0.00	
8,447.44	89.99	270.24	7,966.00	846.93	130.00	10.00	7.18	-13.21	-133.17	Eastern Hills 4-65 17-
18,124.82	89.99	270.24	7,967.00	887.17	-9,547.29	0.00	0.00	0.00	0.00	Eastern Hills 4-65 17-

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Site:	Eastern Hills	North Reference:	True
Well:	Eastern Hills 4-65 17-18 3H_D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Eastern Hills 4-65 17-18 3H_D		
Design:	Eastern Hills 4-65 17-18 3H_D		

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
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,183.00	0.00	0.00	2,183.00	0.00	0.00	0.00	0.00	0.00	0.00
Surface									
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	1.50	44.68	3,599.99	0.93	0.92	-0.83	1.50	1.50	0.00
3,700.00	3.00	44.68	3,699.91	3.72	3.68	-3.32	1.50	1.50	0.00
3,800.00	4.50	44.68	3,799.69	8.37	8.28	-7.47	1.50	1.50	0.00
3,900.00	6.00	44.68	3,899.27	14.88	14.71	-13.27	1.50	1.50	0.00
4,000.00	7.50	44.68	3,998.57	23.24	22.98	-20.73	1.50	1.50	0.00
4,100.00	9.00	44.68	4,097.54	33.44	33.07	-29.83	1.50	1.50	0.00
4,200.00	10.50	44.68	4,196.09	45.48	44.97	-40.57	1.50	1.50	0.00
4,300.00	12.00	44.68	4,294.16	59.35	58.69	-52.95	1.50	1.50	0.00
4,400.00	13.50	44.68	4,391.70	75.05	74.21	-66.95	1.50	1.50	0.00
4,500.00	15.00	44.68	4,488.62	92.55	91.51	-82.56	1.50	1.50	0.00
4,600.00	16.50	44.68	4,584.86	111.85	110.60	-99.78	1.50	1.50	0.00
4,629.28	16.94	44.68	4,612.90	117.84	116.52	-105.12	1.50	1.50	0.00
4,700.00	16.94	44.68	4,680.55	132.49	131.01	-118.19	0.00	0.00	0.00
4,800.00	16.94	44.68	4,776.21	153.21	151.50	-136.67	0.00	0.00	0.00
4,900.00	16.94	44.68	4,871.88	173.92	171.98	-155.15	0.00	0.00	0.00
5,000.00	16.94	44.68	4,967.54	194.64	192.47	-173.63	0.00	0.00	0.00

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Design:	Eastern Hills 4-65 17-18 3H_D		

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	16.94	44.68	5,063.20	215.36	212.95	-192.11	0.00	0.00	0.00	
5,200.00	16.94	44.68	5,158.86	236.08	233.44	-210.60	0.00	0.00	0.00	
5,300.00	16.94	44.68	5,254.52	256.79	253.93	-229.08	0.00	0.00	0.00	
5,400.00	16.94	44.68	5,350.18	277.51	274.41	-247.56	0.00	0.00	0.00	
5,500.00	16.94	44.68	5,445.84	298.23	294.90	-266.04	0.00	0.00	0.00	
5,600.00	16.94	44.68	5,541.51	318.95	315.38	-284.52	0.00	0.00	0.00	
5,700.00	16.94	44.68	5,637.17	339.66	335.87	-303.00	0.00	0.00	0.00	
5,800.00	16.94	44.68	5,732.83	360.38	356.36	-321.48	0.00	0.00	0.00	
5,900.00	16.94	44.68	5,828.49	381.10	376.84	-339.97	0.00	0.00	0.00	
6,000.00	16.94	44.68	5,924.15	401.82	397.33	-358.45	0.00	0.00	0.00	
6,100.00	16.94	44.68	6,019.81	422.53	417.81	-376.93	0.00	0.00	0.00	
6,200.00	16.94	44.68	6,115.47	443.25	438.30	-395.41	0.00	0.00	0.00	
6,300.00	16.94	44.68	6,211.14	463.97	458.79	-413.89	0.00	0.00	0.00	
6,400.00	16.94	44.68	6,306.80	484.69	479.27	-432.37	0.00	0.00	0.00	
6,500.00	16.94	44.68	6,402.46	505.40	499.76	-450.85	0.00	0.00	0.00	
6,600.00	16.94	44.68	6,498.12	526.12	520.25	-469.33	0.00	0.00	0.00	
6,700.00	16.94	44.68	6,593.78	546.84	540.73	-487.82	0.00	0.00	0.00	
6,800.00	16.94	44.68	6,689.44	567.56	561.22	-506.30	0.00	0.00	0.00	
6,900.00	16.94	44.68	6,785.10	588.27	581.70	-524.78	0.00	0.00	0.00	
7,000.00	16.94	44.68	6,880.77	608.99	602.19	-543.26	0.00	0.00	0.00	
7,100.00	16.94	44.68	6,976.43	629.71	622.68	-561.74	0.00	0.00	0.00	
7,200.00	16.94	44.68	7,072.09	650.43	643.16	-580.22	0.00	0.00	0.00	
7,300.00	16.94	44.68	7,167.75	671.14	663.65	-598.70	0.00	0.00	0.00	
7,400.00	16.94	44.68	7,263.41	691.86	684.13	-617.18	0.00	0.00	0.00	
7,429.79	16.94	44.68	7,291.91	698.03	690.24	-622.69	0.00	0.00	0.00	
7,450.00	15.62	39.20	7,311.31	702.24	694.03	-626.08	10.00	-6.51	-27.11	
7,500.00	13.14	21.60	7,359.76	712.75	700.38	-631.43	10.00	-4.96	-35.21	
7,550.00	12.27	359.06	7,408.57	723.35	702.39	-632.44	10.00	-1.74	-45.07	
7,600.00	13.33	336.85	7,457.35	733.97	700.03	-629.12	10.00	2.12	-44.42	
7,650.00	15.94	319.84	7,505.75	744.52	693.34	-621.47	10.00	5.21	-34.03	
7,700.00	19.48	308.17	7,553.39	754.93	682.35	-609.57	10.00	7.09	-23.34	
7,750.00	23.54	300.18	7,599.91	765.10	667.15	-593.50	10.00	8.12	-15.98	
7,800.00	27.90	294.49	7,644.95	774.98	647.86	-573.38	10.00	8.71	-11.38	
7,850.00	32.42	290.26	7,688.17	784.47	624.63	-549.37	10.00	9.06	-8.47	
7,900.00	37.06	286.97	7,729.25	793.52	597.63	-521.64	10.00	9.28	-6.57	
7,950.00	41.77	284.33	7,767.87	802.04	567.06	-490.42	10.00	9.42	-5.29	
8,000.00	46.53	282.13	7,803.74	809.98	533.16	-455.93	10.00	9.52	-4.39	
8,050.00	51.33	280.26	7,836.58	817.28	496.19	-418.45	10.00	9.59	-3.75	
8,100.00	56.15	278.62	7,866.14	823.87	456.43	-378.25	10.00	9.65	-3.27	
8,150.00	60.99	277.16	7,892.21	829.71	414.18	-335.64	10.00	9.68	-2.92	
8,200.00	65.85	275.83	7,914.57	834.76	369.77	-290.95	10.00	9.71	-2.66	
8,250.00	70.72	274.60	7,933.06	838.97	323.52	-244.51	10.00	9.73	-2.46	
8,300.00	75.59	273.44	7,947.55	842.32	275.80	-196.68	10.00	9.75	-2.32	
8,350.00	80.47	272.33	7,957.91	844.77	226.97	-147.83	10.00	9.76	-2.22	
8,400.00	85.36	271.25	7,964.08	846.32	177.39	-98.32	10.00	9.77	-2.16	
8,447.44	89.99	270.24	7,966.00	846.93	130.00	-51.08	10.00	9.77	-2.13	
8,500.00	89.99	270.24	7,966.01	847.15	77.44	1.27	0.00	0.00	0.00	
8,600.00	89.99	270.24	7,966.02	847.57	-22.56	100.88	0.00	0.00	0.00	
8,700.00	89.99	270.24	7,966.03	847.98	-122.55	200.49	0.00	0.00	0.00	
8,800.00	89.99	270.24	7,966.04	848.40	-222.55	300.10	0.00	0.00	0.00	
8,900.00	89.99	270.24	7,966.05	848.82	-322.55	399.71	0.00	0.00	0.00	
9,000.00	89.99	270.24	7,966.06	849.23	-422.55	499.31	0.00	0.00	0.00	
9,100.00	89.99	270.24	7,966.07	849.65	-522.55	598.92	0.00	0.00	0.00	
9,200.00	89.99	270.24	7,966.08	850.06	-622.55	698.53	0.00	0.00	0.00	

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Design:	Eastern Hills 4-65 17-18 3H_D		

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)	
9,300.00	89.99	270.24	7,966.09	850.48	-722.55	798.14	0.00	0.00	0.00	
9,400.00	89.99	270.24	7,966.10	850.89	-822.55	897.75	0.00	0.00	0.00	
9,500.00	89.99	270.24	7,966.11	851.31	-922.55	997.36	0.00	0.00	0.00	
9,600.00	89.99	270.24	7,966.12	851.73	-1,022.55	1,096.97	0.00	0.00	0.00	
9,700.00	89.99	270.24	7,966.13	852.14	-1,122.55	1,196.58	0.00	0.00	0.00	
9,800.00	89.99	270.24	7,966.14	852.56	-1,222.55	1,296.18	0.00	0.00	0.00	
9,900.00	89.99	270.24	7,966.15	852.97	-1,322.54	1,395.79	0.00	0.00	0.00	
10,000.00	89.99	270.24	7,966.16	853.39	-1,422.54	1,495.40	0.00	0.00	0.00	
10,100.00	89.99	270.24	7,966.17	853.80	-1,522.54	1,595.01	0.00	0.00	0.00	
10,200.00	89.99	270.24	7,966.18	854.22	-1,622.54	1,694.62	0.00	0.00	0.00	
10,300.00	89.99	270.24	7,966.19	854.64	-1,722.54	1,794.23	0.00	0.00	0.00	
10,400.00	89.99	270.24	7,966.20	855.05	-1,822.54	1,893.84	0.00	0.00	0.00	
10,500.00	89.99	270.24	7,966.21	855.47	-1,922.54	1,993.44	0.00	0.00	0.00	
10,600.00	89.99	270.24	7,966.22	855.88	-2,022.54	2,093.05	0.00	0.00	0.00	
10,700.00	89.99	270.24	7,966.23	856.30	-2,122.54	2,192.66	0.00	0.00	0.00	
10,800.00	89.99	270.24	7,966.24	856.71	-2,222.54	2,292.27	0.00	0.00	0.00	
10,900.00	89.99	270.24	7,966.25	857.13	-2,322.54	2,391.88	0.00	0.00	0.00	
11,000.00	89.99	270.24	7,966.26	857.55	-2,422.53	2,491.49	0.00	0.00	0.00	
11,100.00	89.99	270.24	7,966.27	857.96	-2,522.53	2,591.10	0.00	0.00	0.00	
11,200.00	89.99	270.24	7,966.28	858.38	-2,622.53	2,690.70	0.00	0.00	0.00	
11,300.00	89.99	270.24	7,966.29	858.79	-2,722.53	2,790.31	0.00	0.00	0.00	
11,400.00	89.99	270.24	7,966.31	859.21	-2,822.53	2,889.92	0.00	0.00	0.00	
11,500.00	89.99	270.24	7,966.32	859.62	-2,922.53	2,989.53	0.00	0.00	0.00	
11,600.00	89.99	270.24	7,966.33	860.04	-3,022.53	3,089.14	0.00	0.00	0.00	
11,700.00	89.99	270.24	7,966.34	860.46	-3,122.53	3,188.75	0.00	0.00	0.00	
11,800.00	89.99	270.24	7,966.35	860.87	-3,222.53	3,288.36	0.00	0.00	0.00	
11,900.00	89.99	270.24	7,966.36	861.29	-3,322.53	3,387.97	0.00	0.00	0.00	
12,000.00	89.99	270.24	7,966.37	861.70	-3,422.53	3,487.57	0.00	0.00	0.00	
12,100.00	89.99	270.24	7,966.38	862.12	-3,522.53	3,587.18	0.00	0.00	0.00	
12,200.00	89.99	270.24	7,966.39	862.53	-3,622.52	3,686.79	0.00	0.00	0.00	
12,300.00	89.99	270.24	7,966.40	862.95	-3,722.52	3,786.40	0.00	0.00	0.00	
12,400.00	89.99	270.24	7,966.41	863.37	-3,822.52	3,886.01	0.00	0.00	0.00	
12,500.00	89.99	270.24	7,966.42	863.78	-3,922.52	3,985.62	0.00	0.00	0.00	
12,600.00	89.99	270.24	7,966.43	864.20	-4,022.52	4,085.23	0.00	0.00	0.00	
12,700.00	89.99	270.24	7,966.44	864.61	-4,122.52	4,184.83	0.00	0.00	0.00	
12,800.00	89.99	270.24	7,966.45	865.03	-4,222.52	4,284.44	0.00	0.00	0.00	
12,900.00	89.99	270.24	7,966.46	865.45	-4,322.52	4,384.05	0.00	0.00	0.00	
13,000.00	89.99	270.24	7,966.47	865.86	-4,422.52	4,483.66	0.00	0.00	0.00	
13,100.00	89.99	270.24	7,966.48	866.28	-4,522.52	4,583.27	0.00	0.00	0.00	
13,200.00	89.99	270.24	7,966.49	866.69	-4,622.52	4,682.88	0.00	0.00	0.00	
13,300.00	89.99	270.24	7,966.50	867.11	-4,722.52	4,782.49	0.00	0.00	0.00	
13,400.00	89.99	270.24	7,966.51	867.52	-4,822.51	4,882.09	0.00	0.00	0.00	
13,500.00	89.99	270.24	7,966.52	867.94	-4,922.51	4,981.70	0.00	0.00	0.00	
13,600.00	89.99	270.24	7,966.53	868.36	-5,022.51	5,081.31	0.00	0.00	0.00	
13,700.00	89.99	270.24	7,966.54	868.77	-5,122.51	5,180.92	0.00	0.00	0.00	
13,800.00	89.99	270.24	7,966.55	869.19	-5,222.51	5,280.53	0.00	0.00	0.00	
13,900.00	89.99	270.24	7,966.56	869.60	-5,322.51	5,380.14	0.00	0.00	0.00	
14,000.00	89.99	270.24	7,966.57	870.02	-5,422.51	5,479.75	0.00	0.00	0.00	
14,100.00	89.99	270.24	7,966.58	870.43	-5,522.51	5,579.36	0.00	0.00	0.00	
14,200.00	89.99	270.24	7,966.59	870.85	-5,622.51	5,678.96	0.00	0.00	0.00	
14,300.00	89.99	270.24	7,966.60	871.27	-5,722.51	5,778.57	0.00	0.00	0.00	
14,400.00	89.99	270.24	7,966.62	871.68	-5,822.51	5,878.18	0.00	0.00	0.00	
14,500.00	89.99	270.24	7,966.63	872.10	-5,922.50	5,977.79	0.00	0.00	0.00	
14,600.00	89.99	270.24	7,966.64	872.51	-6,022.50	6,077.40	0.00	0.00	0.00	

ConocoPhillips

Planning Report

Database:	EDT 14 Central Planning	Local Co-ordinate Reference:	Well Eastern Hills 4-65 17-18 3H_D
Company:	ConocoPhillips RBU Gold Data	TVD Reference:	27' RKB @ 5659.30ft (27' RKB)
Project:	Niobrara Central Zone	MD Reference:	27' RKB @ 5659.30ft (27' RKB)
Site:	Eastern Hills	North Reference:	True
Well:	Eastern Hills 4-65 17-18 3H_D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Eastern Hills 4-65 17-18 3H_D		
Design:	Eastern Hills 4-65 17-18 3H_D		

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)
14,700.00	89.99	270.24	7,966.65	872.93	-6,122.50	6,177.01	0.00	0.00	0.00
14,800.00	89.99	270.24	7,966.66	873.34	-6,222.50	6,276.62	0.00	0.00	0.00
14,900.00	89.99	270.24	7,966.67	873.76	-6,322.50	6,376.22	0.00	0.00	0.00
15,000.00	89.99	270.24	7,966.68	874.18	-6,422.50	6,475.83	0.00	0.00	0.00
15,100.00	89.99	270.24	7,966.69	874.59	-6,522.50	6,575.44	0.00	0.00	0.00
15,200.00	89.99	270.24	7,966.70	875.01	-6,622.50	6,675.05	0.00	0.00	0.00
15,300.00	89.99	270.24	7,966.71	875.42	-6,722.50	6,774.66	0.00	0.00	0.00
15,400.00	89.99	270.24	7,966.72	875.84	-6,822.50	6,874.27	0.00	0.00	0.00
15,500.00	89.99	270.24	7,966.73	876.25	-6,922.50	6,973.88	0.00	0.00	0.00
15,600.00	89.99	270.24	7,966.74	876.67	-7,022.50	7,073.49	0.00	0.00	0.00
15,700.00	89.99	270.24	7,966.75	877.09	-7,122.49	7,173.09	0.00	0.00	0.00
15,800.00	89.99	270.24	7,966.76	877.50	-7,222.49	7,272.70	0.00	0.00	0.00
15,900.00	89.99	270.24	7,966.77	877.92	-7,322.49	7,372.31	0.00	0.00	0.00
16,000.00	89.99	270.24	7,966.78	878.33	-7,422.49	7,471.92	0.00	0.00	0.00
16,100.00	89.99	270.24	7,966.79	878.75	-7,522.49	7,571.53	0.00	0.00	0.00
16,200.00	89.99	270.24	7,966.80	879.16	-7,622.49	7,671.14	0.00	0.00	0.00
16,300.00	89.99	270.24	7,966.81	879.58	-7,722.49	7,770.75	0.00	0.00	0.00
16,400.00	89.99	270.24	7,966.82	880.00	-7,822.49	7,870.35	0.00	0.00	0.00
16,500.00	89.99	270.24	7,966.83	880.41	-7,922.49	7,969.96	0.00	0.00	0.00
16,600.00	89.99	270.24	7,966.84	880.83	-8,022.49	8,069.57	0.00	0.00	0.00
16,700.00	89.99	270.24	7,966.85	881.24	-8,122.49	8,169.18	0.00	0.00	0.00
16,800.00	89.99	270.24	7,966.86	881.66	-8,222.48	8,268.79	0.00	0.00	0.00
16,900.00	89.99	270.24	7,966.87	882.07	-8,322.48	8,368.40	0.00	0.00	0.00
17,000.00	89.99	270.24	7,966.88	882.49	-8,422.48	8,468.01	0.00	0.00	0.00
17,100.00	89.99	270.24	7,966.89	882.91	-8,522.48	8,567.61	0.00	0.00	0.00
17,200.00	89.99	270.24	7,966.90	883.32	-8,622.48	8,667.22	0.00	0.00	0.00
17,300.00	89.99	270.24	7,966.91	883.74	-8,722.48	8,766.83	0.00	0.00	0.00
17,400.00	89.99	270.24	7,966.93	884.15	-8,822.48	8,866.44	0.00	0.00	0.00
17,500.00	89.99	270.24	7,966.94	884.57	-8,922.48	8,966.05	0.00	0.00	0.00
17,600.00	89.99	270.24	7,966.95	884.98	-9,022.48	9,065.66	0.00	0.00	0.00
17,700.00	89.99	270.24	7,966.96	885.40	-9,122.48	9,165.27	0.00	0.00	0.00
17,800.00	89.99	270.24	7,966.97	885.82	-9,222.48	9,264.88	0.00	0.00	0.00
17,900.00	89.99	270.24	7,966.98	886.23	-9,322.48	9,364.48	0.00	0.00	0.00
18,000.00	89.99	270.24	7,966.99	886.65	-9,422.47	9,464.09	0.00	0.00	0.00
18,100.00	89.99	270.24	7,967.00	887.06	-9,522.47	9,563.70	0.00	0.00	0.00
18,124.82	89.99	270.24	7,967.00	887.17	-9,547.29	9,588.42	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									
Eastern Hills 4-65 17-18 - plan hits target center - Point	0.00	0.00	7,966.00	846.93	130.00	1,683,681.537	3,230,548.561	39° 42' 27.550 N	104° 40' 50.007 W
Eastern Hills 4-65 17-18 - plan hits target center - Point	0.00	0.00	7,967.00	887.17	-9,547.29	1,683,634.528	3,220,871.402	39° 42' 27.930 N	104° 42' 53.830 W

ConocoPhillips

Planning Report

Database:	EDT 14 Central Planning	Local Co-ordinate Reference:	Well Eastern Hills 4-65 17-18 3H_D
Company:	ConocoPhillips RBU Gold Data	TVD Reference:	27' RKB @ 5659.30ft (27' RKB)
Project:	Niobrara Central Zone	MD Reference:	27' RKB @ 5659.30ft (27' RKB)
Site:	Eastern Hills	North Reference:	True
Well:	Eastern Hills 4-65 17-18 3H_D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Eastern Hills 4-65 17-18 3H_D		
Design:	Eastern Hills 4-65 17-18 3H_D		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
2,183.00	2,183.00	Surface	9-5/8	12-1/4	
18,124.82	7,967.00	Production	5-1/2	8-1/2	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,000.00	1,000.00	0.00	0.00	SL 2063' FNL 740' FEL	
3,500.00	3,500.00	0.00	0.00	Start Build 1.50	
4,629.28	4,612.90	117.84	116.52	Start 2800.51 hold at 4629.28 MD	
7,429.00	7,291.15	697.87	690.07	KOP 1365' FNL 50' FEL	
7,429.79	7,291.91	698.03	690.24	Start DLS 10.00 TFO -133.17	
8,447.00	7,966.00	846.93	130.44	BPI 1216' FNL 611' FEL	
8,447.44	7,966.00	846.93	130.00	Start 9677.38 hold at 8447.44 MD	
17,989.00	7,966.99	886.60	-9,411.47	EPI 1216' FNL 460' FWL	
18,124.00	7,967.00	887.16	-9,546.47	BHL 1216' FNL 325' FWL	
18,124.82	7,967.00	887.17	-9,547.29	TD at 18124.82	



ConocoPhillips

Arapahoe County, Colorado

Eastern Hills 4-65 17-18 3H_D

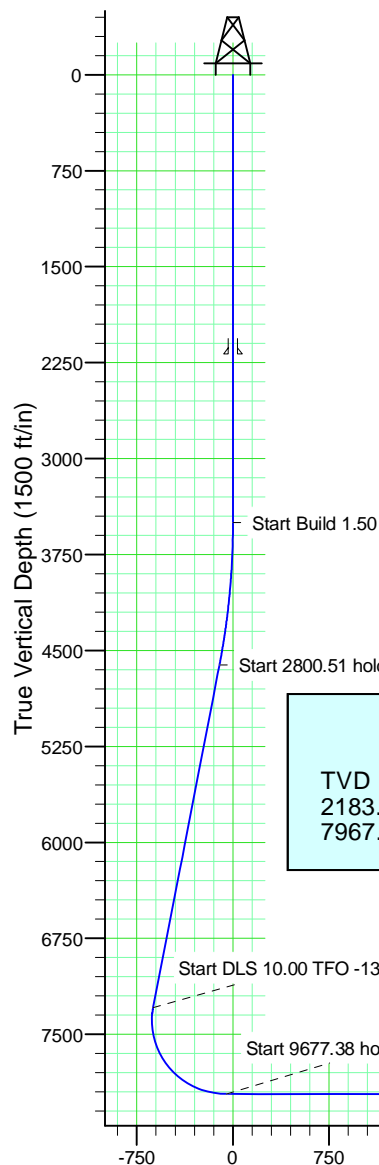
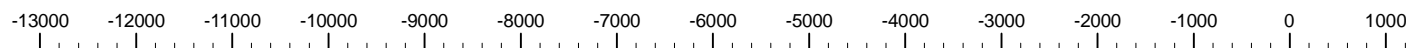
Ground Level: 5632.30
Surface Location Latitude: 39° 42' 19.180 N
Surface Location Longitude: 104° 40' 51.670 W
North Reference: True
27' RKB @ 5659.30ft (27' RKB)

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
3500.00	0.00	0.00	3500.00	0.00	0.00	0.00	0.00
4629.28	16.94	44.68	4612.90	117.84	116.52	1.50	-105.12
7429.79	16.94	44.68	7291.91	698.03	690.24	0.00	-622.69
8447.44	89.99	270.24	7966.00	846.93	130.00	10.00	-51.08
18124.82	89.99	270.24	7967.00	887.17	-9547.29	0.00	9588.42

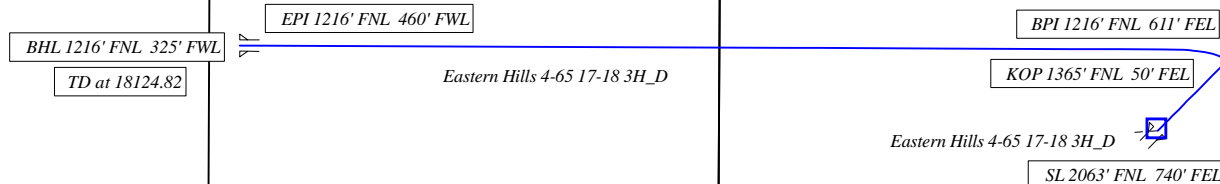
West(-)/East(+) (2000 ft/in)



Casing Depths

TVD	MD	Name	Size
2183.00	2183.00	Surface	9-5/8
7967.00	18124.82	Production	5-1/2

Section Lines



Wellbore Targets

Name	TVD	Latitude	Longitude
Eastern Hills 4-65 17-18 3H_D BPI	7966.00	39° 42' 27.550 N	104° 40' 50.007 W
Eastern Hills 4-65 17-18 3H_D BHL	7967.00	39° 42' 27.930 N	104° 42' 53.830 W

TD at 18124.82

Vertical Section at 275.31° (1500 ft/in)