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ConocoPhillips MCBU - Permian-Panhandle Gold Data

Planning - NM East State Zone - 3001

ZIA HILLS 20 FEDERAL COM 108H

ZIA HILLS 20 FEDERAL COM 108H

OH / 64795

Survey: 1_Zia_Hills_20_Federal_Com_108H

Standard Survey Report

21 November, 2019

ConocoPhillips

Survey Report

Company:	ConocoPhillips MCBU - Permian-Panhandle Gold Data	Local Co-ordinate Reference:	Well ZIA HILLS 20 FEDERAL COM 108H
Project:	Planning - NM East State Zone - 3001	TVD Reference:	KB @ 3184.30ft (Nabors 894)
Site:	ZIA HILLS 20 FEDERAL COM 108H	MD Reference:	KB @ 3184.30ft (Nabors 894)
Well:	ZIA HILLS 20 FEDERAL COM 108H	North Reference:	Grid
Wellbore:	OH / 64795	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Nabors 894)	Database:	EDT 14 Central Planning

Project	Planning - NM East State Zone - 3001, Permian Basin - New Mexico - East/South East, Planning Project for Permian wells in NM Zone 3001		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		Using geodetic scale factor

Site	ZIA HILLS 20 FEDERAL COM 108H		
Site Position:		Northing:	374,419.260 usft
From:	Map	Easting:	697,952.970 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "
		Latitude:	32° 1' 40.023 N
		Longitude:	103° 41' 40.479 W
		Grid Convergence:	0.34 °

Well	ZIA HILLS 20 FEDERAL COM 108H		
Well Position	+N/-S	0.00 ft	Northing: 374,419.260 usft
	+E/-W	0.00 ft	Easting: 697,952.970 usft
Position Uncertainty	2.00 ft	Wellhead Elevation:	ft
		Latitude:	32° 1' 40.023 N
		Longitude:	103° 41' 40.479 W
		Ground Level:	3,153.80 ft

Wellbore	OH / 64795		
Magnetics	Model Name	Sample Date	Declination (°)
	BGGM2018	6/19/2019	6.87
			Dip Angle (°)
			59.77
			Field Strength (nT)
			47,632.88263108

Design	Surveys (Nabors 894)		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)
	0.00	0.00	0.00
			Direction (°)
			177.67

Survey Program	Date	11/21/2019		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
47.50	1,111.00	0_Zia_Hills_20_Federal_Com_108H (OH /	GOOD GYRO	GOOD GYRO
1,311.00	21,745.00	1_Zia_Hills_20_Federal_Com_108H (OH /	MWD+IFR1+MS_CoP	Fixed:v2:Eagleford, crustal dec + 3-axis corr.

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)	
1,111.00	2.06	2.26	1,110.92	-2.85	6.50	3.11	0.00	0.00	0.00	
1,311.00	2.56	0.84	1,310.76	5.21	6.71	-4.93	0.25	0.25	-0.71	
First Phoenix MWD Survey										
1,403.00	2.82	5.35	1,402.66	9.52	6.95	-9.23	0.36	0.28	4.90	
1,497.00	0.57	315.64	1,496.61	12.15	6.84	-11.86	2.65	-2.39	-52.88	
1,591.00	2.22	195.05	1,590.59	10.73	6.04	-10.47	2.72	1.76	-128.29	
1,685.00	1.99	190.19	1,684.53	7.36	5.27	-7.14	0.31	-0.24	-5.17	
1,778.00	1.44	190.49	1,777.49	4.63	4.78	-4.43	0.59	-0.59	0.32	
1,873.00	1.22	196.72	1,872.46	2.48	4.27	-2.31	0.28	-0.23	6.56	

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Design:	Surveys (Nabors 894)	Database:	EDT 14 Central Planning

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)
1,967.00	0.98	190.26	1,966.44	0.73	3.84	-0.58	0.29	-0.26	-6.87
2,062.00	0.96	195.46	2,061.43	-0.83	3.48	0.97	0.09	-0.02	5.47
2,155.00	0.69	190.04	2,154.42	-2.13	3.17	2.26	0.30	-0.29	-5.83
2,250.00	0.52	185.41	2,249.41	-3.13	3.03	3.25	0.19	-0.18	-4.87
2,343.00	0.58	197.86	2,342.41	-4.00	2.85	4.11	0.14	0.06	13.39
2,437.00	0.81	217.71	2,436.40	-4.97	2.30	5.06	0.35	0.24	21.12
2,532.00	0.59	212.39	2,531.40	-5.92	1.62	5.98	0.24	-0.23	-5.60
2,626.00	0.73	233.80	2,625.39	-6.68	0.88	6.71	0.30	0.15	22.78
2,721.00	0.53	251.66	2,720.38	-7.18	-0.02	7.17	0.29	-0.21	18.80
2,816.00	0.39	207.15	2,815.38	-7.60	-0.59	7.57	0.39	-0.15	-46.85
2,911.00	0.29	205.13	2,910.38	-8.11	-0.84	8.07	0.11	-0.11	-2.13
3,005.00	0.44	185.97	3,004.38	-8.68	-0.98	8.64	0.20	0.16	-20.38
3,099.00	0.13	129.82	3,098.38	-9.11	-0.93	9.06	0.41	-0.33	-59.73
3,193.00	0.33	94.99	3,192.38	-9.20	-0.58	9.17	0.25	0.21	-37.05
3,288.00	0.35	58.60	3,287.37	-9.07	-0.06	9.06	0.22	0.02	-38.31
3,382.00	0.29	88.97	3,381.37	-8.92	0.42	8.93	0.19	-0.06	32.31
3,477.00	0.24	107.81	3,476.37	-8.98	0.85	9.00	0.11	-0.05	19.83
3,571.00	0.26	110.09	3,570.37	-9.11	1.24	9.15	0.02	0.02	2.43
3,666.00	0.27	94.07	3,665.37	-9.20	1.67	9.26	0.08	0.01	-16.86
3,760.00	0.66	106.97	3,759.37	-9.37	2.41	9.46	0.43	0.41	13.72
3,853.00	0.67	111.02	3,852.36	-9.72	3.43	9.86	0.05	0.01	4.35
3,948.00	0.78	120.30	3,947.35	-10.25	4.50	10.42	0.17	0.12	9.77
4,042.00	1.23	130.42	4,041.34	-11.23	5.82	11.45	0.51	0.48	10.77
4,137.00	0.49	115.80	4,136.33	-12.07	6.96	12.34	0.81	-0.78	-15.39
4,230.00	0.87	318.66	4,229.32	-11.71	6.86	11.98	1.44	0.41	-168.97
4,325.00	0.61	305.60	4,324.32	-10.87	5.97	11.11	0.32	-0.27	-13.75
4,419.00	0.22	289.52	4,418.31	-10.52	5.39	10.73	0.43	-0.41	-17.11
4,513.00	0.28	268.93	4,512.31	-10.46	4.99	10.66	0.11	0.06	-21.90
4,608.00	0.24	324.66	4,607.31	-10.31	4.64	10.49	0.26	-0.04	58.66
4,702.00	0.33	306.15	4,701.31	-9.99	4.31	10.15	0.14	0.10	-19.69
4,796.00	0.34	283.22	4,795.31	-9.76	3.82	9.91	0.14	0.01	-24.39
4,890.00	0.32	284.55	4,889.31	-9.63	3.30	9.76	0.02	-0.02	1.41
4,984.00	0.15	224.33	4,983.31	-9.66	2.96	9.77	0.30	-0.18	-64.06
5,079.00	0.28	238.20	5,078.31	-9.87	2.67	9.97	0.15	0.14	14.60
5,174.00	0.09	177.23	5,173.31	-10.06	2.48	10.16	0.26	-0.20	-64.18
5,269.00	0.16	238.50	5,268.30	-10.21	2.37	10.30	0.15	0.07	64.49
5,363.00	0.05	231.39	5,362.30	-10.30	2.23	10.38	0.12	-0.12	-7.56
5,457.00	0.13	245.16	5,456.30	-10.37	2.10	10.45	0.09	0.09	14.65
5,551.00	0.07	255.44	5,550.30	-10.43	1.94	10.50	0.07	-0.06	10.94
5,646.00	0.09	246.86	5,645.30	-10.47	1.82	10.54	0.02	0.02	-9.03
5,740.00	0.12	261.24	5,739.30	-10.52	1.65	10.58	0.04	0.03	15.30
5,834.00	0.16	331.15	5,833.30	-10.42	1.49	10.47	0.17	0.04	74.37

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5,928.00	0.49	7.55	5,927.30	-9.91	1.48	9.96	0.40	0.35	38.72
6,023.00	1.35	17.32	6,022.29	-8.43	1.87	8.50	0.92	0.91	10.28
6,117.00	2.56	21.60	6,116.23	-5.43	2.97	5.54	1.30	1.29	4.55
6,211.00	3.92	24.04	6,210.08	-0.54	5.05	0.74	1.45	1.45	2.60
6,310.00	4.44	29.29	6,308.82	5.89	8.31	-5.55	0.65	0.53	5.30
6,404.00	5.63	32.43	6,402.45	12.96	12.56	-12.44	1.30	1.27	3.34
6,499.00	7.41	40.04	6,496.84	21.58	19.00	-20.79	2.08	1.87	8.01
6,593.00	7.40	54.10	6,590.06	29.77	27.80	-28.62	1.92	-0.01	14.96
6,688.00	7.32	54.66	6,684.28	36.86	37.70	-35.30	0.11	-0.08	0.59
6,782.00	6.65	62.29	6,777.58	42.86	47.40	-40.89	1.22	-0.71	8.12
6,877.00	6.13	68.75	6,871.99	47.25	57.00	-44.90	0.93	-0.55	6.80
6,971.00	5.75	69.84	6,965.49	50.70	66.10	-47.97	0.42	-0.40	1.16
7,066.00	5.49	71.70	7,060.03	53.76	74.88	-50.67	0.33	-0.27	1.96
7,160.00	5.11	66.92	7,153.63	56.82	83.00	-53.39	0.62	-0.40	-5.09
7,255.00	5.09	65.73	7,248.25	60.21	90.73	-56.47	0.11	-0.02	-1.25
7,349.00	5.09	67.61	7,341.88	63.51	98.39	-59.46	0.18	0.00	2.00
7,443.00	5.04	70.32	7,435.52	66.49	106.13	-62.12	0.26	-0.05	2.88
7,537.00	5.16	68.79	7,529.14	69.41	113.96	-64.72	0.19	0.13	-1.63
7,631.00	5.58	63.72	7,622.73	72.96	122.00	-67.94	0.67	0.45	-5.39
7,724.00	5.62	64.73	7,715.29	76.91	130.17	-71.55	0.11	0.04	1.09
7,819.00	5.60	64.69	7,809.83	80.87	138.57	-75.17	0.02	-0.02	-0.04
7,913.00	5.23	66.88	7,903.41	84.52	146.65	-78.48	0.45	-0.39	2.33
8,007.00	4.78	66.19	7,997.05	87.78	154.18	-81.44	0.48	-0.48	-0.73
8,102.00	4.60	64.40	8,091.74	91.02	161.23	-84.39	0.24	-0.19	-1.88
8,196.00	3.97	66.54	8,185.47	93.95	167.62	-87.06	0.69	-0.67	2.28
8,291.00	3.51	65.54	8,280.27	96.46	173.28	-89.34	0.49	-0.48	-1.05
8,385.00	3.06	65.50	8,374.12	98.69	178.19	-91.37	0.48	-0.48	-0.04
8,479.00	2.82	64.27	8,467.99	100.74	182.55	-93.23	0.26	-0.26	-1.31
8,573.00	2.23	63.16	8,561.90	102.57	186.27	-94.91	0.63	-0.63	-1.18
8,668.00	1.86	62.44	8,656.84	104.11	189.28	-96.33	0.39	-0.39	-0.76
8,761.00	1.98	43.62	8,749.79	105.98	191.73	-98.09	0.69	0.13	-20.24
8,856.00	1.19	70.61	8,844.75	107.49	193.79	-99.52	1.12	-0.83	28.41
8,948.00	1.61	59.58	8,936.72	108.46	195.81	-100.41	0.54	0.46	-11.99
9,041.00	1.24	55.12	9,029.70	109.70	197.76	-101.57	0.42	-0.40	-4.80
9,135.00	0.34	12.05	9,123.69	110.55	198.65	-102.39	1.08	-0.96	-45.82
9,229.00	0.29	260.98	9,217.69	110.79	198.48	-102.63	0.55	-0.05	-118.16
9,322.00	0.70	95.70	9,310.68	110.70	198.81	-102.52	1.06	0.44	-177.72
9,416.00	1.57	77.50	9,404.66	110.92	200.64	-102.67	0.99	0.93	-19.36
9,510.00	1.74	41.86	9,498.63	112.26	202.85	-103.92	1.09	0.18	-37.91
9,604.00	2.63	26.05	9,592.56	115.26	204.75	-106.84	1.13	0.95	-16.82
9,698.00	2.06	41.78	9,686.48	118.46	206.82	-109.95	0.91	-0.61	16.73
9,793.00	1.63	46.63	9,781.43	120.66	208.94	-112.06	0.48	-0.45	5.11
9,887.00	1.47	40.35	9,875.40	122.50	210.69	-113.83	0.25	-0.17	-6.68

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9,981.00	1.80	77.70	9,969.36	123.73	212.91	-114.97	1.16	0.35	39.73
10,076.00	2.14	91.96	10,064.31	123.99	216.14	-115.10	0.63	0.36	15.01
10,171.00	1.09	87.05	10,159.27	123.97	218.82	-114.97	1.11	-1.11	-5.17
10,265.00	0.56	112.66	10,253.26	123.84	220.14	-114.79	0.67	-0.56	27.24
10,360.00	0.61	92.36	10,348.25	123.64	221.07	-114.55	0.22	0.05	-21.37
10,454.00	0.36	94.14	10,442.25	123.60	221.86	-114.48	0.27	-0.27	1.89
10,548.00	0.15	156.15	10,536.25	123.47	222.21	-114.33	0.34	-0.22	65.97
10,641.00	0.31	173.32	10,629.25	123.10	222.29	-113.97	0.19	0.17	18.46
10,735.00	0.39	185.09	10,723.25	122.53	222.29	-113.39	0.11	0.09	12.52
10,829.00	0.37	208.56	10,817.24	121.95	222.12	-112.82	0.17	-0.02	24.97
10,923.00	0.48	189.51	10,911.24	121.29	221.90	-112.17	0.19	0.12	-20.27
11,051.00	0.28	208.26	11,039.24	120.49	221.67	-111.38	0.18	-0.16	14.65
11,117.00	0.52	198.27	11,105.24	120.06	221.50	-110.96	0.38	0.36	-15.14
11,164.00	2.73	182.47	11,152.21	118.74	221.38	-109.64	4.75	4.70	-33.62
11,211.00	4.82	181.47	11,199.11	115.65	221.28	-106.56	4.45	4.45	-2.13
11,258.00	7.64	180.66	11,245.83	110.55	221.20	-101.47	6.00	6.00	-1.72
11,306.00	10.66	176.83	11,293.21	102.92	221.41	-93.84	6.41	6.29	-7.98
11,353.00	14.93	176.44	11,339.03	92.54	222.02	-83.43	9.09	9.09	-0.83
11,400.00	20.09	175.16	11,383.84	78.44	223.08	-69.31	11.01	10.98	-2.72
11,447.00	25.16	174.98	11,427.21	60.43	224.64	-51.25	10.79	10.79	-0.38
11,494.00	29.18	174.46	11,469.02	39.07	226.62	-29.82	8.57	8.55	-1.11
11,541.00	32.99	173.90	11,509.26	14.93	229.08	-5.61	8.13	8.11	-1.19
11,588.00	36.37	172.58	11,547.90	-11.62	232.25	21.05	7.37	7.19	-2.81
11,675.00	41.87	169.64	11,615.38	-65.80	240.80	75.54	6.67	6.32	-3.38
11,705.00	45.45	166.86	11,637.08	-86.07	245.04	95.96	13.54	11.93	-9.27
11,734.00	49.69	165.10	11,656.65	-106.83	250.23	116.91	15.29	14.62	-6.07
11,765.00	52.48	165.06	11,676.12	-130.13	256.44	140.45	9.00	9.00	-0.13
11,795.00	54.24	164.95	11,694.02	-153.39	262.67	163.94	5.87	5.87	-0.37
11,825.00	55.32	166.35	11,711.32	-177.13	268.74	187.91	5.24	3.60	4.67
11,856.00	56.72	168.14	11,728.65	-202.20	274.41	213.19	6.58	4.52	5.77
11,887.00	58.17	169.52	11,745.33	-227.83	279.47	239.01	6.00	4.68	4.45
11,919.00	61.27	171.20	11,761.46	-255.07	284.09	266.41	10.70	9.69	5.25
11,949.00	65.65	171.57	11,774.87	-281.60	288.11	293.08	14.64	14.60	1.23
11,981.00	68.57	171.42	11,787.31	-310.75	292.47	322.39	9.14	9.13	-0.47
12,012.00	69.60	171.34	11,798.38	-339.38	296.81	351.17	3.33	3.32	-0.26
12,043.00	71.07	171.47	11,808.81	-368.25	301.17	380.19	4.76	4.74	0.42
12,073.00	71.74	172.18	11,818.38	-396.39	305.22	408.47	3.17	2.23	2.37
12,105.00	72.44	173.72	11,828.22	-426.61	308.95	438.82	5.07	2.19	4.81
12,135.00	72.97	174.65	11,837.14	-455.11	311.85	467.41	3.45	1.77	3.10
12,167.00	73.51	174.67	11,846.36	-485.61	314.71	498.01	1.69	1.69	0.06
12,199.00	74.78	173.96	11,855.11	-516.24	317.76	528.74	4.51	3.97	-2.22
12,230.00	77.18	173.02	11,862.62	-546.12	321.17	558.73	8.28	7.74	-3.03

ConocoPhillips

Survey Report

Company:	ConocoPhillips MCBU - Permian-Panhandle Gold Data	Local Co-ordinate Reference:	Well ZIA HILLS 20 FEDERAL COM 108H
Project:	Planning - NM East State Zone - 3001	TVD Reference:	KB @ 3184.30ft (Nabors 894)
Site:	ZIA HILLS 20 FEDERAL COM 108H	MD Reference:	KB @ 3184.30ft (Nabors 894)
Well:	ZIA HILLS 20 FEDERAL COM 108H	North Reference:	Grid
Wellbore:	OH / 64795	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Nabors 894)	Database:	EDT 14 Central Planning

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)
12,260.00	80.12	172.97	11,868.52	-575.31	324.75	588.04	9.80	9.80	-0.17
12,292.00	82.27	173.20	11,873.42	-606.71	328.56	619.56	6.76	6.72	0.72
12,355.00	89.36	175.49	11,878.01	-669.19	334.74	682.24	11.82	11.25	3.63
12,450.00	91.04	175.72	11,877.68	-763.90	342.02	777.18	1.78	1.77	0.24
12,544.00	89.99	179.30	11,876.84	-857.80	346.10	871.16	3.97	-1.12	3.81
12,637.00	89.88	179.27	11,876.94	-950.79	347.26	964.12	0.12	-0.12	-0.03
12,732.00	89.47	178.36	11,877.48	-1,045.77	349.23	1,059.10	1.05	-0.43	-0.96
12,826.00	87.99	175.54	11,879.56	-1,139.60	354.23	1,153.06	3.39	-1.57	-3.00
12,920.00	92.58	178.30	11,879.10	-1,233.43	359.28	1,247.01	5.70	4.88	2.94
13,014.00	91.66	179.15	11,875.62	-1,327.34	361.37	1,340.93	1.33	-0.98	0.90
13,108.00	86.08	177.36	11,877.47	-1,421.23	364.23	1,434.87	6.23	-5.94	-1.90
13,202.00	89.51	177.96	11,881.09	-1,515.07	368.06	1,528.78	3.70	3.65	0.64
13,295.00	89.51	176.99	11,881.88	-1,607.98	372.16	1,621.78	1.04	0.00	-1.04
13,390.00	91.01	175.86	11,881.45	-1,702.79	378.08	1,716.75	1.98	1.58	-1.19
13,484.00	93.43	180.79	11,877.81	-1,796.64	380.83	1,810.64	5.84	2.57	5.24
13,578.00	92.23	182.69	11,873.17	-1,890.48	377.98	1,904.28	2.39	-1.28	2.02
13,668.00	90.39	181.56	11,871.11	-1,980.38	374.64	1,993.98	2.40	-2.04	-1.26
13,762.00	86.64	180.45	11,873.55	-2,074.32	372.99	2,087.77	4.16	-3.99	-1.18
13,857.00	88.24	181.75	11,877.79	-2,169.20	371.17	2,182.50	2.17	1.68	1.37
13,951.00	88.81	181.18	11,880.21	-2,263.14	368.77	2,276.26	0.86	0.61	-0.61
14,045.00	89.36	181.73	11,881.71	-2,357.10	366.38	2,370.04	0.83	0.59	0.59
14,138.00	90.88	181.13	11,881.51	-2,450.07	364.06	2,462.84	1.76	1.63	-0.65
14,233.00	89.87	179.70	11,880.89	-2,545.06	363.37	2,557.73	1.84	-1.06	-1.51
14,327.00	89.76	179.42	11,881.20	-2,639.05	364.09	2,651.67	0.32	-0.12	-0.30
14,421.00	89.98	179.66	11,881.41	-2,733.05	364.85	2,745.62	0.35	0.23	0.26
14,515.00	89.38	179.01	11,881.93	-2,827.04	365.94	2,839.58	0.94	-0.64	-0.69
14,609.00	90.44	180.07	11,882.08	-2,921.04	366.69	2,933.53	1.59	1.13	1.13
14,702.00	90.01	179.56	11,881.72	-3,014.03	366.99	3,026.46	0.72	-0.46	-0.55
14,795.00	90.33	179.91	11,881.44	-3,107.03	367.42	3,119.40	0.51	0.34	0.38
14,889.00	89.64	179.51	11,881.47	-3,201.03	367.90	3,213.34	0.85	-0.73	-0.43
14,984.00	89.52	180.09	11,882.16	-3,296.03	368.23	3,308.27	0.62	-0.13	0.61
15,078.00	89.53	180.24	11,882.94	-3,390.02	367.96	3,402.18	0.16	0.01	0.16
15,172.00	89.65	179.78	11,883.61	-3,484.02	367.95	3,496.10	0.51	0.13	-0.49
15,265.00	89.75	180.37	11,884.10	-3,577.02	367.82	3,589.02	0.64	0.11	0.63
15,359.00	89.67	181.21	11,884.58	-3,671.01	366.53	3,682.87	0.90	-0.09	0.89
15,453.00	89.53	180.31	11,885.23	-3,765.00	365.28	3,776.73	0.97	-0.15	-0.96
15,548.00	89.85	180.96	11,885.75	-3,859.99	364.23	3,871.60	0.76	0.34	0.68
15,642.00	89.61	178.42	11,886.19	-3,953.98	364.74	3,965.54	2.71	-0.26	-2.70
15,736.00	89.38	177.29	11,887.02	-4,047.91	368.25	4,059.53	1.23	-0.24	-1.20
15,830.00	89.84	177.63	11,887.66	-4,141.81	372.42	4,153.53	0.61	0.49	0.36
15,924.00	89.56	177.49	11,888.15	-4,235.73	376.42	4,247.53	0.33	-0.30	-0.15
16,018.00	90.04	177.32	11,888.48	-4,329.63	380.68	4,341.52	0.54	0.51	-0.18
16,113.00	89.35	177.17	11,888.98	-4,424.52	385.24	4,436.52	0.74	-0.73	-0.16

ConocoPhillips

Survey Report

Company:	ConocoPhillips MCBU - Permian-Panhandle Gold Data	Local Co-ordinate Reference:	Well ZIA HILLS 20 FEDERAL COM 108H
Project:	Planning - NM East State Zone - 3001	TVD Reference:	KB @ 3184.30ft (Nabors 894)
Site:	ZIA HILLS 20 FEDERAL COM 108H	MD Reference:	KB @ 3184.30ft (Nabors 894)
Well:	ZIA HILLS 20 FEDERAL COM 108H	North Reference:	Grid
Wellbore:	OH / 64795	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Nabors 894)	Database:	EDT 14 Central Planning

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)
16,206.00	92.24	179.20	11,887.69	-4,517.45	388.19	4,529.49	3.80	3.11	2.18
16,300.00	92.79	179.77	11,883.57	-4,611.35	389.03	4,623.35	0.84	0.59	0.61
16,394.00	92.15	179.38	11,879.52	-4,705.26	389.73	4,717.21	0.80	-0.68	-0.41
16,488.00	92.12	179.62	11,876.02	-4,799.19	390.55	4,811.10	0.26	-0.03	0.26
16,581.00	88.84	177.35	11,875.24	-4,892.14	393.01	4,904.07	4.29	-3.53	-2.44
16,675.00	87.06	179.92	11,878.60	-4,986.04	395.25	4,997.98	3.32	-1.89	2.73
16,769.00	88.96	181.26	11,881.86	-5,079.97	394.28	5,091.80	2.47	2.02	1.43
16,864.00	88.73	182.70	11,883.78	-5,174.89	391.00	5,186.51	1.53	-0.24	1.52
16,957.00	88.88	181.28	11,885.72	-5,267.81	387.77	5,279.22	1.54	0.16	-1.53
17,052.00	89.30	182.12	11,887.23	-5,362.76	384.95	5,373.97	0.99	0.44	0.88
17,145.00	88.82	181.55	11,888.75	-5,455.70	381.97	5,466.72	0.80	-0.52	-0.61
17,240.00	88.68	181.78	11,890.83	-5,550.63	379.21	5,561.46	0.28	-0.15	0.24
17,334.00	89.38	181.88	11,892.42	-5,644.57	376.21	5,655.20	0.75	0.74	0.11
17,429.00	89.53	181.16	11,893.32	-5,739.53	373.69	5,749.98	0.77	0.16	-0.76
17,524.00	89.53	179.52	11,894.10	-5,834.53	373.13	5,844.87	1.73	0.00	-1.73
17,618.00	89.48	178.90	11,894.91	-5,928.51	374.43	5,938.83	0.66	-0.05	-0.66
17,711.00	89.82	179.09	11,895.48	-6,021.50	376.06	6,031.81	0.42	0.37	0.20
17,805.00	90.30	179.39	11,895.38	-6,115.49	377.30	6,125.77	0.60	0.51	0.32
17,900.00	89.35	178.43	11,895.67	-6,210.47	379.11	6,220.75	1.42	-1.00	-1.01
17,994.00	89.70	178.46	11,896.45	-6,304.43	381.66	6,314.73	0.37	0.37	0.03
18,088.00	89.70	178.55	11,896.94	-6,398.40	384.11	6,408.72	0.10	0.00	0.10
18,182.00	89.64	178.86	11,897.49	-6,492.37	386.24	6,502.71	0.34	-0.06	0.33
18,276.00	89.76	179.46	11,897.98	-6,586.36	387.62	6,596.67	0.65	0.13	0.64
18,371.00	89.39	179.25	11,898.68	-6,681.35	388.69	6,691.63	0.45	-0.39	-0.22
18,464.00	89.88	180.04	11,899.27	-6,774.35	389.26	6,784.57	1.00	0.53	0.85
18,557.00	89.85	180.10	11,899.49	-6,867.35	389.15	6,877.49	0.07	-0.03	0.06
18,652.00	89.42	179.23	11,900.10	-6,962.34	389.70	6,972.43	1.02	-0.45	-0.92
18,747.00	89.88	179.83	11,900.68	-7,057.34	390.48	7,067.38	0.80	0.48	0.63
18,841.00	90.04	178.83	11,900.74	-7,151.33	391.58	7,161.33	1.08	0.17	-1.06
18,936.00	89.73	179.98	11,900.94	-7,246.32	392.57	7,256.29	1.25	-0.33	1.21
19,030.00	89.68	179.77	11,901.42	-7,340.32	392.77	7,350.22	0.23	-0.05	-0.22
19,125.00	89.90	179.20	11,901.77	-7,435.31	393.63	7,445.17	0.64	0.23	-0.60
19,219.00	89.81	178.75	11,902.01	-7,529.30	395.31	7,539.14	0.49	-0.10	-0.48
19,313.00	89.90	178.66	11,902.24	-7,623.27	397.43	7,633.13	0.14	0.10	-0.10
19,407.00	89.72	179.37	11,902.56	-7,717.26	399.05	7,727.10	0.78	-0.19	0.76
19,501.00	89.30	178.54	11,903.36	-7,811.24	400.76	7,821.07	0.99	-0.45	-0.88
19,595.00	90.25	179.39	11,903.73	-7,905.22	402.46	7,915.05	1.36	1.01	0.90
19,689.00	89.65	180.21	11,903.81	-7,999.22	402.79	8,008.98	1.08	-0.64	0.87
19,782.00	88.18	179.55	11,905.57	-8,092.20	402.98	8,101.89	1.73	-1.58	-0.71
19,876.00	89.33	180.33	11,907.61	-8,186.17	403.08	8,195.79	1.48	1.22	0.83
19,971.00	89.84	181.69	11,908.30	-8,281.15	401.41	8,290.63	1.53	0.54	1.43
20,066.00	88.90	179.93	11,909.35	-8,376.13	400.06	8,385.47	2.10	-0.99	-1.85

ConocoPhillips

Survey Report

Company:	ConocoPhillips MCBU - Permian-Panhandle Gold Data	Local Co-ordinate Reference:	Well ZIA HILLS 20 FEDERAL COM 108H
Project:	Planning - NM East State Zone - 3001	TVD Reference:	KB @ 3184.30ft (Nabors 894)
Site:	ZIA HILLS 20 FEDERAL COM 108H	MD Reference:	KB @ 3184.30ft (Nabors 894)
Well:	ZIA HILLS 20 FEDERAL COM 108H	North Reference:	Grid
Wellbore:	OH / 64795	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Nabors 894)	Database:	EDT 14 Central Planning

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)
20,160.00	89.87	180.87	11,910.36	-8,470.13	399.41	8,479.36	1.44	1.03	1.00
20,252.00	89.68	180.73	11,910.72	-8,562.12	398.12	8,571.22	0.26	-0.21	-0.15
20,346.00	89.79	181.14	11,911.15	-8,656.10	396.59	8,665.07	0.45	0.12	0.44
20,441.00	90.36	181.28	11,911.03	-8,751.08	394.58	8,759.89	0.62	0.60	0.15
20,534.00	89.98	181.72	11,910.75	-8,844.05	392.15	8,852.68	0.63	-0.41	0.47
20,628.00	89.84	180.59	11,910.90	-8,938.03	390.25	8,946.50	1.21	-0.15	-1.20
20,723.00	88.56	178.27	11,912.23	-9,033.00	391.20	9,041.44	2.79	-1.35	-2.44
20,816.00	89.81	178.43	11,913.55	-9,125.95	393.88	9,134.42	1.36	1.34	0.17
20,910.00	89.38	178.90	11,914.21	-9,219.93	396.07	9,228.41	0.68	-0.46	0.50
21,005.00	89.67	179.84	11,915.00	-9,314.92	397.11	9,323.36	1.04	0.31	0.99
21,098.00	89.90	180.06	11,915.35	-9,407.91	397.19	9,416.28	0.34	0.25	0.24
21,193.00	89.99	179.68	11,915.44	-9,502.91	397.41	9,511.21	0.41	0.09	-0.40
21,287.00	90.04	179.17	11,915.42	-9,596.91	398.35	9,605.17	0.55	0.05	-0.54
21,381.00	89.55	179.49	11,915.75	-9,690.90	399.45	9,699.13	0.62	-0.52	0.34
21,475.00	89.92	179.44	11,916.19	-9,784.90	400.33	9,793.08	0.40	0.39	-0.05
21,570.00	89.24	178.93	11,916.88	-9,879.88	401.68	9,888.05	0.89	-0.72	-0.54
21,663.00	89.42	179.07	11,917.97	-9,972.86	403.30	9,981.01	0.25	0.19	0.15
21,712.00	89.65	179.45	11,918.37	-10,021.86	403.94	10,029.99	0.91	0.47	0.78
Final Phoenix MWD Survey									
21,745.00	89.65	179.45	11,918.57	-10,054.85	404.25	10,062.98	0.00	0.00	0.00
Projection to TD									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
1,200.14	1,200.00	13 3/8" Casing	13-3/8	17-1/2	
12,380.00	11,878.19	9 5/8" Casing	9-5/8	12-1/4	
21,657.33	11,917.91	5 1/2" Casing	5-1/2	8-1/2	

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,311.00	1,310.76	5.21	6.71	First Phoenix MWD Survey
21,712.00	11,920.40	-10,021.86	403.94	Final Phoenix MWD Survey
21,745.00	11,920.60	-10,054.85	404.25	Projection to TD