

KZ

ConocoPhillips MCBU - Permian-Panhandle Gold Data

Planning - NM East State Zone - 3001

ZIA HILLS 20 FEDERAL COM 107H

ZIA HILLS 20 FEDERAL COM 107H

OH / 64794

Survey: Phoenix MWD Survey

Standard Survey Report

10 December, 2019

ConocoPhillips

Survey Report

Company:	ConocoPhillips MCBU - Permian-Panhandle Gold Data	Local Co-ordinate Reference:	Well ZIA HILLS 20 FEDERAL COM 107H
Project:	Planning - NM East State Zone - 3001	TVD Reference:	KB @ 3185.00ft (Nabors 894)
Site:	ZIA HILLS 20 FEDERAL COM 107H	MD Reference:	KB @ 3185.00ft (Nabors 894)
Well:	ZIA HILLS 20 FEDERAL COM 107H	North Reference:	Grid
Wellbore:	OH / 64794	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 107H		
Site Position:		Northing:	374,418.960 usft
From:	Map	Easting:	697,919.940 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "
		Latitude:	32° 1' 40.022 N
		Longitude:	103° 41' 40.863 W
		Grid Convergence:	0.34 °

Well	ZIA HILLS 20 FEDERAL COM 107H		
Well Position	+N/-S	0.00 ft	Northing: 374,418.960 usft
	+E/-W	0.00 ft	Easting: 697,919.940 usft
Position Uncertainty	2.00 ft	Wellhead Elevation:	ft
		Latitude:	32° 1' 40.022 N
		Longitude:	103° 41' 40.863 W
		Ground Level:	3,154.50 ft

Wellbore	OH / 64794				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2018	6/19/2019	6.87	59.77	47,632.87281495

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)	Direction (°)	
	0.00	0.00	0.00		179.37

Survey Program	Date	12/10/2019			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
147.40	1,111.00	VES Gyro Survey (OH / 64794)	NS-GYRO-MS	North sensing gyrocompassing m/s	
1,211.00	21,460.00	Phoenix MWD Survey (OH / 64794)	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	0.61	270.93	1,110.94	-6.50	-8.12	6.41	0.00	0.00	0.00	
Tie In										
1,311.00	0.96	294.47	1,310.92	-5.79	-10.71	5.67	0.23	0.18	11.77	
First Phoenix MWD Survey										
1,403.00	0.53	237.95	1,402.91	-5.69	-11.77	5.56	0.87	-0.47	-61.43	
1,497.00	1.37	176.43	1,496.90	-7.04	-12.07	6.91	1.29	0.89	-65.45	
1,591.00	1.50	175.48	1,590.87	-9.39	-11.90	9.26	0.14	0.14	-1.01	
1,685.00	1.17	171.82	1,684.85	-11.57	-11.67	11.44	0.36	-0.35	-3.89	
1,778.00	1.17	175.99	1,777.83	-13.46	-11.47	13.33	0.09	0.00	4.48	

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Wellbore:	OH / 64794	Survey Calculation Method:	Minimum Curvature
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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)
1,873.00	1.16	174.50	1,872.81	-15.38	-11.31	15.25	0.03	-0.01	-1.57
1,967.00	0.82	143.98	1,966.80	-16.87	-10.82	16.75	0.66	-0.36	-32.47
2,062.00	1.10	109.68	2,061.78	-17.73	-9.56	17.62	0.66	0.29	-36.11
2,155.00	0.95	54.09	2,154.77	-17.58	-8.10	17.49	1.04	-0.16	-59.77
2,250.00	1.94	24.44	2,249.74	-15.65	-6.79	15.57	1.27	1.04	-31.21
2,343.00	1.35	35.22	2,342.70	-13.32	-5.51	13.26	0.71	-0.63	11.59
2,437.00	1.23	36.59	2,436.68	-11.61	-4.27	11.56	0.13	-0.13	1.46
2,532.00	1.06	35.77	2,531.66	-10.08	-3.15	10.04	0.18	-0.18	-0.86
2,626.00	0.68	34.85	2,625.65	-8.91	-2.32	8.89	0.40	-0.40	-0.98
2,721.00	0.61	35.07	2,720.64	-8.04	-1.71	8.02	0.07	-0.07	0.23
2,816.00	0.42	32.09	2,815.64	-7.33	-1.24	7.31	0.20	-0.20	-3.14
2,911.00	0.28	13.33	2,910.64	-6.81	-1.00	6.80	0.19	-0.15	-19.75
3,005.00	0.18	321.43	3,004.63	-6.47	-1.04	6.46	0.23	-0.11	-55.21
3,099.00	0.02	13.13	3,098.63	-6.34	-1.12	6.32	0.18	-0.17	55.00
3,193.00	0.24	38.47	3,192.63	-6.17	-1.00	6.15	0.24	0.23	26.96
3,288.00	0.78	56.39	3,287.63	-5.65	-0.34	5.65	0.59	0.57	18.86
3,382.00	1.42	55.13	3,381.61	-4.63	1.15	4.64	0.68	0.68	-1.34
3,477.00	1.21	16.74	3,476.59	-3.00	2.41	3.03	0.93	-0.22	-40.41
3,571.00	1.75	330.25	3,570.56	-0.80	1.98	0.82	1.35	0.57	-49.46
3,666.00	1.30	337.09	3,665.53	1.45	0.84	-1.44	0.51	-0.47	7.20
3,760.00	0.63	43.75	3,759.52	2.81	0.78	-2.80	1.28	-0.71	70.91
3,853.00	0.26	233.09	3,852.51	3.05	0.97	-3.04	0.95	-0.40	-183.51
3,948.00	1.76	223.81	3,947.50	1.87	-0.21	-1.87	1.58	1.58	-9.77
4,042.00	1.93	189.69	4,041.45	-0.74	-1.48	0.72	1.16	0.18	-36.30
4,137.00	2.34	171.10	4,136.39	-4.23	-1.45	4.21	0.84	0.43	-19.57
4,230.00	1.82	193.97	4,229.33	-7.54	-1.51	7.52	1.04	-0.56	24.59
4,325.00	1.72	261.58	4,324.29	-9.21	-3.29	9.17	2.07	-0.11	71.17
4,419.00	1.62	263.26	4,418.25	-9.57	-6.00	9.51	0.12	-0.11	1.79
4,513.00	1.44	265.17	4,512.22	-9.83	-8.50	9.74	0.20	-0.19	2.03
4,608.00	1.41	272.72	4,607.19	-9.87	-10.85	9.75	0.20	-0.03	7.95
4,702.00	1.34	270.08	4,701.16	-9.82	-13.11	9.67	0.10	-0.07	-2.81
4,796.00	1.31	275.02	4,795.13	-9.72	-15.28	9.55	0.13	-0.03	5.26
4,890.00	0.96	303.01	4,889.12	-9.20	-17.01	9.01	0.69	-0.37	29.78
4,984.00	1.16	14.21	4,983.10	-7.85	-17.44	7.66	1.32	0.21	75.74
5,079.00	1.10	14.92	5,078.09	-6.03	-16.96	5.85	0.06	-0.06	0.75
5,174.00	1.11	14.40	5,173.07	-4.26	-16.50	4.08	0.01	0.01	-0.55
5,269.00	1.12	16.09	5,268.05	-2.48	-16.01	2.30	0.04	0.01	1.78
5,363.00	1.12	12.71	5,362.03	-0.70	-15.56	0.53	0.07	0.00	-3.60
5,457.00	1.17	14.86	5,456.01	1.12	-15.11	-1.29	0.07	0.05	2.29
5,551.00	0.81	36.02	5,550.00	2.59	-14.47	-2.75	0.54	-0.38	22.51
5,646.00	0.87	106.47	5,644.99	2.93	-13.39	-3.07	1.02	0.06	74.16
5,740.00	1.07	107.92	5,738.98	2.46	-11.87	-2.59	0.21	0.21	1.54
5,834.00	0.98	102.39	5,832.96	2.01	-10.25	-2.13	0.14	-0.10	-5.88

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Survey									
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5,928.00	1.01	106.92	5,926.95	1.60	-8.67	-1.69	0.09	0.03	4.82
6,023.00	0.93	110.57	6,021.94	1.08	-7.15	-1.16	0.11	-0.08	3.84
6,117.00	1.01	117.36	6,115.92	0.44	-5.70	-0.50	0.15	0.09	7.22
6,211.00	1.06	123.82	6,209.91	-0.43	-4.24	0.38	0.13	0.05	6.87
6,305.00	1.12	126.61	6,303.89	-1.46	-2.78	1.43	0.09	0.06	2.97
6,400.00	1.17	128.83	6,398.87	-2.62	-1.28	2.61	0.07	0.05	2.34
6,494.00	1.07	130.10	6,492.85	-3.79	0.14	3.79	0.11	-0.11	1.35
6,589.00	1.02	130.55	6,587.84	-4.91	1.46	4.93	0.05	-0.05	0.47
6,683.00	0.72	190.61	6,681.83	-6.04	1.99	6.06	0.97	-0.32	63.89
6,777.00	1.63	246.30	6,775.81	-7.15	0.66	7.16	1.45	0.97	59.24
6,872.00	1.83	247.56	6,870.77	-8.28	-1.98	8.25	0.21	0.21	1.33
6,966.00	1.82	248.16	6,964.72	-9.40	-4.76	9.35	0.02	-0.01	0.64
7,061.00	1.79	253.55	7,059.67	-10.38	-7.58	10.30	0.18	-0.03	5.67
7,155.00	1.91	254.76	7,153.62	-11.21	-10.50	11.10	0.13	0.13	1.29
7,250.00	1.22	239.13	7,248.59	-12.15	-12.89	12.00	0.85	-0.73	-16.45
7,345.00	0.76	186.88	7,343.57	-13.29	-13.84	13.14	1.02	-0.48	-55.00
7,439.00	0.89	189.75	7,437.56	-14.63	-14.04	14.48	0.15	0.14	3.05
7,533.00	0.48	195.61	7,531.56	-15.73	-14.27	15.57	0.44	-0.44	6.23
7,626.00	0.37	104.99	7,624.56	-16.18	-14.08	16.03	0.66	-0.12	-97.44
7,720.00	1.27	77.69	7,718.55	-16.04	-12.77	15.90	1.02	0.96	-29.04
7,814.00	1.87	75.54	7,812.51	-15.43	-10.27	15.32	0.64	0.64	-2.29
7,908.00	3.32	67.07	7,906.41	-13.99	-6.27	13.92	1.59	1.54	-9.01
8,003.00	4.14	61.91	8,001.21	-11.30	-0.72	11.29	0.93	0.86	-5.43
8,097.00	4.12	63.12	8,094.96	-8.18	5.29	8.24	0.10	-0.02	1.29
8,191.00	3.64	63.82	8,188.75	-5.34	10.98	5.46	0.51	-0.51	0.74
8,286.00	3.25	66.16	8,283.58	-2.92	16.15	3.09	0.44	-0.41	2.46
8,381.00	3.57	66.48	8,378.41	-0.65	21.32	0.88	0.34	0.34	0.34
8,474.00	3.19	63.63	8,471.25	1.66	26.30	-1.37	0.45	-0.41	-3.06
8,568.00	2.59	56.71	8,565.13	3.98	30.42	-3.65	0.74	-0.64	-7.36
8,663.00	2.95	39.95	8,660.02	7.04	33.78	-6.66	0.93	0.38	-17.64
8,758.00	3.50	26.39	8,754.87	11.51	36.64	-11.10	0.99	0.58	-14.27
8,851.00	1.77	11.93	8,847.77	15.46	38.20	-15.04	1.98	-1.86	-15.55
8,946.00	1.42	342.73	8,942.73	18.02	38.15	-17.60	0.92	-0.37	-30.74
9,038.00	1.15	349.49	9,034.71	20.01	37.64	-19.60	0.34	-0.29	7.35
9,131.00	0.23	325.20	9,127.70	21.08	37.37	-20.67	1.02	-0.99	-26.12
9,225.00	0.46	273.20	9,221.70	21.26	36.88	-20.85	0.39	0.24	-55.32
9,319.00	0.60	260.17	9,315.70	21.20	36.02	-20.80	0.20	0.15	-13.86
9,412.00	0.82	139.31	9,408.69	20.61	35.98	-20.21	1.33	0.24	-129.96
9,506.00	2.68	130.10	9,502.64	18.68	38.10	-18.26	1.99	1.98	-9.80
9,600.00	2.40	129.75	9,596.55	16.01	41.29	-15.55	0.30	-0.30	-0.37
9,694.00	1.43	128.04	9,690.50	14.03	43.73	-13.55	1.03	-1.03	-1.82
9,788.00	0.78	157.92	9,784.48	12.71	44.89	-12.22	0.90	-0.69	31.79

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9,883.00	0.51	182.64	9,879.47	11.69	45.11	-11.19	0.40	-0.28	26.02
9,977.00	0.44	242.04	9,973.47	11.10	44.78	-10.61	0.50	-0.07	63.19
10,071.00	0.47	282.76	10,067.47	11.02	44.08	-10.53	0.34	0.03	43.32
10,166.00	0.63	288.24	10,162.47	11.27	43.21	-10.79	0.18	0.17	5.77
10,261.00	0.74	284.20	10,257.46	11.58	42.12	-11.12	0.13	0.12	-4.25
10,355.00	0.82	262.68	10,351.45	11.65	40.86	-11.20	0.32	0.09	-22.89
10,450.00	0.93	264.27	10,446.44	11.48	39.42	-11.05	0.12	0.12	1.67
10,544.00	0.44	287.71	10,540.43	11.52	38.32	-11.09	0.59	-0.52	24.94
10,638.00	0.32	356.22	10,634.43	11.89	37.95	-11.47	0.47	-0.13	72.88
10,731.00	0.25	1.84	10,727.43	12.35	37.94	-11.93	0.08	-0.08	6.04
10,826.00	0.35	348.95	10,822.43	12.84	37.89	-12.42	0.13	0.11	-13.57
10,931.00	0.56	161.52	10,927.43	12.67	38.00	-12.25	0.86	0.20	164.35
10,978.00	4.05	161.25	10,974.38	10.88	38.60	-10.45	7.43	7.43	-0.57
11,023.00	7.67	165.85	11,019.14	6.46	39.85	-6.02	8.11	8.04	10.22
11,070.00	12.72	169.65	11,065.38	-1.68	41.55	2.13	10.83	10.74	8.09
11,117.00	17.60	169.62	11,110.73	-13.76	43.76	14.24	10.38	10.38	-0.06
11,164.00	21.80	171.23	11,154.97	-29.38	46.37	29.89	9.01	8.94	3.43
11,211.00	25.51	173.81	11,198.02	-48.08	48.79	48.61	8.19	7.89	5.49
11,258.00	28.20	176.74	11,239.95	-69.23	50.51	69.78	6.38	5.72	6.23
11,306.00	29.77	178.80	11,281.93	-92.47	51.41	93.03	3.88	3.27	4.29
11,353.00	31.20	179.66	11,322.44	-116.31	51.73	116.87	3.18	3.04	1.83
11,400.00	32.55	180.20	11,362.35	-141.13	51.75	141.69	2.94	2.87	1.15
11,447.00	34.84	179.46	11,401.45	-167.20	51.84	167.76	4.95	4.87	-1.57
11,495.00	38.25	178.79	11,440.01	-195.77	52.28	196.34	7.15	7.10	-1.40
11,542.00	40.67	178.63	11,476.29	-225.64	52.95	226.20	5.15	5.15	-0.34
11,588.00	44.21	178.83	11,510.23	-256.66	53.64	257.24	7.70	7.70	0.43
11,648.00	47.83	179.78	11,551.89	-299.83	54.15	300.41	6.14	6.03	1.58
11,737.00	53.22	179.74	11,608.45	-368.50	54.44	369.08	6.06	6.06	-0.04
11,767.00	56.36	179.11	11,625.75	-393.01	54.69	393.59	10.61	10.47	-2.10
11,798.00	58.27	179.60	11,642.49	-419.10	54.98	419.68	6.30	6.16	1.58
11,829.00	60.42	179.92	11,658.29	-445.76	55.09	446.34	6.99	6.94	1.03
11,859.00	63.80	179.73	11,672.32	-472.27	55.17	472.85	11.28	11.27	-0.63
11,891.00	68.23	180.12	11,685.33	-501.50	55.21	502.08	13.89	13.84	1.22
11,922.00	72.19	179.79	11,695.82	-530.67	55.23	531.24	12.81	12.77	-1.06
11,953.00	74.85	180.50	11,704.61	-560.39	55.16	560.96	8.86	8.58	2.29
11,984.00	76.43	179.77	11,712.30	-590.42	55.09	590.99	5.58	5.10	-2.35
12,015.00	78.35	179.92	11,719.07	-620.67	55.17	621.24	6.21	6.19	0.48
12,046.00	80.19	180.17	11,724.84	-651.13	55.15	651.69	5.99	5.94	0.81
12,077.00	82.24	180.78	11,729.58	-681.76	54.89	682.32	6.89	6.61	1.97
12,108.00	85.41	180.24	11,732.91	-712.58	54.62	713.13	10.37	10.23	-1.74
12,140.00	88.28	180.36	11,734.67	-744.52	54.45	745.08	8.98	8.97	0.38
12,233.00	91.19	179.17	11,735.10	-837.51	54.83	838.06	3.38	3.13	-1.28
12,265.00	92.21	178.95	11,734.15	-869.49	55.36	870.05	3.26	3.19	-0.69

ConocoPhillips

Survey Report

Company:	ConocoPhillips MCBU - Permian-Panhandle Gold Data	Local Co-ordinate Reference:	Well ZIA HILLS 20 FEDERAL COM 107H
Project:	Planning - NM East State Zone - 3001	TVD Reference:	KB @ 3185.00ft (Nabors 894)
Site:	ZIA HILLS 20 FEDERAL COM 107H	MD Reference:	KB @ 3185.00ft (Nabors 894)
Well:	ZIA HILLS 20 FEDERAL COM 107H	North Reference:	Grid
Wellbore:	OH / 64794	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)
12,360.00	91.55	180.97	11,731.03	-964.43	55.42	964.99	2.24	-0.69	2.13
12,454.00	90.98	181.03	11,728.96	-1,058.40	53.78	1,058.92	0.61	-0.61	0.06
12,549.00	89.88	179.29	11,728.25	-1,153.39	53.52	1,153.91	2.17	-1.16	-1.83
12,642.00	89.88	179.14	11,728.44	-1,246.38	54.79	1,246.91	0.16	0.00	-0.16
12,737.00	89.25	179.10	11,729.16	-1,341.37	56.25	1,341.90	0.66	-0.66	-0.04
12,831.00	89.30	179.90	11,730.35	-1,435.35	57.07	1,435.89	0.85	0.05	0.85
12,924.00	88.73	179.93	11,731.95	-1,528.34	57.21	1,528.88	0.61	-0.61	0.03
13,019.00	88.22	180.04	11,734.48	-1,623.31	57.23	1,623.84	0.55	-0.54	0.12
13,113.00	88.00	180.17	11,737.58	-1,717.25	57.06	1,717.78	0.27	-0.23	0.14
13,207.00	87.60	179.97	11,741.19	-1,811.18	56.95	1,811.70	0.48	-0.43	-0.21
13,295.00	91.07	179.14	11,742.21	-1,899.16	57.63	1,899.68	4.05	3.94	-0.94
13,390.00	90.76	178.63	11,740.69	-1,994.13	59.48	1,994.66	0.63	-0.33	-0.54
13,485.00	90.73	178.77	11,739.46	-2,089.10	61.63	2,089.65	0.15	-0.03	0.15
13,578.00	90.81	179.04	11,738.21	-2,182.07	63.41	2,182.64	0.30	0.09	0.29
13,672.00	91.16	179.26	11,736.59	-2,276.05	64.80	2,276.62	0.44	0.37	0.23
13,766.00	90.48	178.22	11,735.25	-2,370.01	66.87	2,370.61	1.32	-0.72	-1.11
13,860.00	89.82	178.36	11,735.00	-2,463.97	69.68	2,464.59	0.72	-0.70	0.15
13,955.00	89.67	178.05	11,735.42	-2,558.92	72.65	2,559.57	0.36	-0.16	-0.33
14,049.00	89.81	180.06	11,735.85	-2,652.91	74.20	2,653.56	2.14	0.15	2.14
14,142.00	89.79	180.05	11,736.17	-2,745.90	74.11	2,746.55	0.02	-0.02	-0.01
14,237.00	89.78	180.19	11,736.53	-2,840.90	73.91	2,841.55	0.15	-0.01	0.15
14,331.00	89.72	180.02	11,736.94	-2,934.90	73.74	2,935.54	0.19	-0.06	-0.18
14,430.00	89.79	181.02	11,737.36	-3,033.90	72.84	3,034.51	1.01	0.07	1.01
14,524.00	89.76	181.04	11,737.73	-3,127.88	71.15	3,128.47	0.04	-0.03	0.02
14,618.00	89.81	180.21	11,738.09	-3,221.87	70.13	3,222.45	0.88	0.05	-0.88
14,711.00	89.72	180.35	11,738.47	-3,314.87	69.67	3,315.44	0.18	-0.10	0.15
14,805.00	90.13	179.06	11,738.59	-3,408.87	70.16	3,409.43	1.44	0.44	-1.37
14,898.00	89.75	177.95	11,738.69	-3,501.84	72.58	3,502.42	1.26	-0.41	-1.19
14,993.00	89.62	177.66	11,739.21	-3,596.76	76.22	3,597.38	0.33	-0.14	-0.31
15,087.00	89.39	178.96	11,740.02	-3,690.72	78.99	3,691.36	1.40	-0.24	1.38
15,181.00	89.79	180.88	11,740.69	-3,784.71	79.13	3,785.35	2.09	0.43	2.04
15,274.00	89.78	180.39	11,741.04	-3,877.70	78.09	3,878.33	0.53	-0.01	-0.53
15,368.00	89.79	181.29	11,741.40	-3,971.69	76.72	3,972.30	0.96	0.01	0.96
15,462.00	89.82	181.28	11,741.72	-4,065.67	74.61	4,066.24	0.03	0.03	-0.01
15,557.00	89.98	179.60	11,741.88	-4,160.66	73.88	4,161.22	1.78	0.17	-1.77
15,651.00	89.72	178.17	11,742.13	-4,254.64	75.71	4,255.22	1.55	-0.28	-1.52
15,745.00	89.75	178.32	11,742.56	-4,348.60	78.59	4,349.20	0.16	0.03	0.16
15,839.00	89.81	178.02	11,742.92	-4,442.55	81.59	4,443.18	0.33	0.06	-0.32
15,933.00	89.73	177.69	11,743.30	-4,536.48	85.11	4,537.14	0.36	-0.09	-0.35
16,027.00	89.61	179.00	11,743.84	-4,630.44	87.82	4,631.12	1.40	-0.13	1.39
16,122.00	89.79	180.25	11,744.34	-4,725.43	88.44	4,726.12	1.33	0.19	1.32
16,215.00	89.67	179.72	11,744.78	-4,818.43	88.47	4,819.11	0.58	-0.13	-0.57

ConocoPhillips

Survey Report

Company:	ConocoPhillips MCBU - Permian-Panhandle Gold Data	Local Co-ordinate Reference:	Well ZIA HILLS 20 FEDERAL COM 107H
Project:	Planning - NM East State Zone - 3001	TVD Reference:	KB @ 3185.00ft (Nabors 894)
Site:	ZIA HILLS 20 FEDERAL COM 107H	MD Reference:	KB @ 3185.00ft (Nabors 894)
Well:	ZIA HILLS 20 FEDERAL COM 107H	North Reference:	Grid
Wellbore:	OH / 64794	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)
16,309.00	89.72	180.07	11,745.28	-4,912.43	88.64	4,913.11	0.38	0.05	0.37
16,403.00	89.56	179.76	11,745.87	-5,006.43	88.78	5,007.10	0.37	-0.17	-0.33
16,497.00	89.81	180.08	11,746.39	-5,100.43	88.91	5,101.09	0.43	0.27	0.34
16,591.00	89.65	180.48	11,746.83	-5,194.42	88.45	5,195.08	0.46	-0.17	0.43
16,686.00	89.65	180.76	11,747.41	-5,289.42	87.42	5,290.06	0.29	0.00	0.29
16,779.00	90.05	181.14	11,747.65	-5,382.40	85.88	5,383.02	0.59	0.43	0.41
16,874.00	90.33	180.47	11,747.34	-5,477.39	84.55	5,477.99	0.76	0.29	-0.71
16,968.00	90.33	179.81	11,746.80	-5,571.39	84.32	5,571.98	0.70	0.00	-0.70
17,062.00	90.32	179.52	11,746.26	-5,665.39	84.87	5,665.98	0.31	-0.01	-0.31
17,156.00	90.28	180.44	11,745.77	-5,759.38	84.90	5,759.97	0.98	-0.04	0.98
17,250.00	90.27	179.90	11,745.32	-5,853.38	84.62	5,853.96	0.57	-0.01	-0.57
17,344.00	90.21	180.02	11,744.93	-5,947.38	84.69	5,947.95	0.14	-0.06	0.13
17,439.00	90.18	180.20	11,744.60	-6,042.38	84.50	6,042.94	0.19	-0.03	0.19
17,534.00	90.18	178.71	11,744.30	-6,137.37	85.41	6,137.94	1.57	0.00	-1.57
17,628.00	90.21	178.48	11,743.98	-6,231.34	87.71	6,231.93	0.25	0.03	-0.24
17,721.00	90.28	178.77	11,743.59	-6,324.32	89.94	6,324.92	0.32	0.08	0.31
17,815.00	89.78	178.45	11,743.54	-6,418.29	92.22	6,418.91	0.63	-0.53	-0.34
17,909.00	89.59	178.83	11,744.05	-6,512.26	94.46	6,512.90	0.45	-0.20	0.40
18,003.00	88.90	179.23	11,745.29	-6,606.24	96.05	6,606.89	0.85	-0.73	0.43
18,097.00	88.96	178.96	11,747.05	-6,700.21	97.53	6,700.88	0.29	0.06	-0.29
18,191.00	89.16	178.74	11,748.59	-6,794.18	99.42	6,794.86	0.32	0.21	-0.23
18,286.00	90.13	178.23	11,749.18	-6,889.14	101.93	6,889.85	1.15	1.02	-0.54
18,380.00	90.15	178.37	11,748.95	-6,983.10	104.72	6,983.83	0.15	0.02	0.15
18,473.00	90.08	178.86	11,748.76	-7,076.07	106.97	7,076.82	0.53	-0.08	0.53
18,567.00	89.89	178.83	11,748.79	-7,170.05	108.86	7,170.82	0.20	-0.20	-0.03
18,662.00	89.78	178.45	11,749.06	-7,265.03	111.11	7,265.81	0.42	-0.12	-0.40
18,756.00	89.92	179.39	11,749.31	-7,359.01	112.89	7,359.80	1.01	0.15	1.00
18,851.00	90.25	180.09	11,749.17	-7,454.01	113.32	7,454.80	0.81	0.35	0.74
18,945.00	90.70	179.68	11,748.39	-7,548.00	113.51	7,548.79	0.65	0.48	-0.44
19,040.00	90.22	179.82	11,747.62	-7,643.00	113.92	7,643.79	0.53	-0.51	0.15
19,134.00	90.16	179.19	11,747.31	-7,736.99	114.73	7,737.79	0.67	-0.06	-0.67
19,228.00	90.21	179.81	11,747.01	-7,830.99	115.55	7,831.79	0.66	0.05	0.66
19,322.00	90.27	179.90	11,746.61	-7,924.99	115.79	7,925.78	0.12	0.06	0.10
19,416.00	90.24	179.87	11,746.20	-8,018.99	115.98	8,019.78	0.05	-0.03	-0.03
19,510.00	90.19	180.18	11,745.84	-8,112.99	115.94	8,113.77	0.33	-0.05	0.33
19,604.00	90.21	180.12	11,745.52	-8,206.98	115.69	8,207.76	0.07	0.02	-0.06
19,698.00	90.22	180.04	11,745.16	-8,300.98	115.56	8,301.75	0.09	0.01	-0.09
19,791.00	90.16	179.42	11,744.85	-8,393.98	116.00	8,394.75	0.67	-0.06	-0.67
19,885.00	90.24	179.94	11,744.53	-8,487.98	116.52	8,488.75	0.56	0.09	0.55
19,980.00	90.18	179.64	11,744.18	-8,582.98	116.87	8,583.74	0.32	-0.06	-0.32
20,075.00	90.27	179.31	11,743.80	-8,677.97	117.74	8,678.74	0.36	0.09	-0.35
20,169.00	89.50	180.05	11,743.99	-8,771.97	118.27	8,772.74	1.14	-0.82	0.79
20,262.00	89.70	180.03	11,744.64	-8,864.97	118.20	8,865.73	0.22	0.22	-0.02

ConocoPhillips

Survey Report

Company:	ConocoPhillips MCBU - Permian-Panhandle Gold Data	Local Co-ordinate Reference:	Well ZIA HILLS 20 FEDERAL COM 107H
Project:	Planning - NM East State Zone - 3001	TVD Reference:	KB @ 3185.00ft (Nabors 894)
Site:	ZIA HILLS 20 FEDERAL COM 107H	MD Reference:	KB @ 3185.00ft (Nabors 894)
Well:	ZIA HILLS 20 FEDERAL COM 107H	North Reference:	Grid
Wellbore:	OH / 64794	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)
20,355.00	89.72	180.25	11,745.11	-8,957.97	117.98	8,958.72	0.24	0.02	0.24
20,450.00	89.68	179.76	11,745.61	-9,052.96	117.97	9,053.71	0.52	-0.04	-0.52
20,544.00	89.72	179.43	11,746.10	-9,146.96	118.63	9,147.71	0.35	0.04	-0.35
20,637.00	89.75	179.95	11,746.53	-9,239.96	119.14	9,240.71	0.56	0.03	0.56
20,732.00	89.62	179.70	11,747.06	-9,334.96	119.43	9,335.70	0.30	-0.14	-0.26
20,825.00	89.72	180.03	11,747.59	-9,427.95	119.64	9,428.70	0.37	0.11	0.35
20,919.00	89.64	179.52	11,748.12	-9,521.95	120.01	9,522.70	0.55	-0.09	-0.54
21,014.00	89.64	179.25	11,748.71	-9,616.94	121.03	9,617.69	0.28	0.00	-0.28
21,107.00	89.76	179.78	11,749.20	-9,709.94	121.82	9,710.69	0.58	0.13	0.57
21,202.00	89.78	180.02	11,749.58	-9,804.94	121.99	9,805.69	0.25	0.02	0.25
21,296.00	89.75	179.50	11,749.97	-9,898.94	122.38	9,899.68	0.55	-0.03	-0.55
21,427.00	89.98	179.19	11,750.27	-10,029.93	123.88	10,030.69	0.29	0.18	-0.24
Final Phoenix MWD Survey									
21,460.00	89.98	179.19	11,750.28	-10,062.93	124.34	10,063.69	0.00	0.00	0.00
Projection to TD									

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
1,200.07	1,200.00	13 3/8" Casing	13-3/8	17-1/2
12,130.00	11,734.29	9 5/8" Casing	9-5/8	12-1/4
21,353.01	11,750.17	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)	
1,111.00	1,110.94	-6.50	-8.12	Tie In
1,311.00	1,310.92	-5.79	-10.71	First Phoenix MWD Survey
21,427.00	11,750.27	-10,029.93	123.88	Final Phoenix MWD Survey
21,460.00	11,750.28	-10,062.93	124.34	Projection to TD