



PHOENIX
TECHNOLOGY SERVICES

November 21, 2019

Oil Conservation Division
State of New Mexico
1625 N. French Drive
District 1 - Hobbs
Hobbs, New Mexico 88240

Attention: Regulatory Department

Re: Conoco Phillips
Zia Hills 20 Federal Com 105H
Lea County, NM
API #30-025-45715
Job No. 64792

HOBBS OCD

DEC 10 2019

RECEIVED

Enclosed please find the Survey Data Certification, and the original Plat and one copy of the Survey Report performed on the above referenced well by Phoenix Technology Services, Inc. (P-5 No. 664171). Other information required by your office is as follows:

Name & Title of Surveyor	Drain Hole Number	Surveyed Depths		Dates Performed		Type of Survey
		From	To	Start	End	
Brade Hendrickson	105H	1,310	21,750	9/29/19	11/2/19	MWD

A certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

Best Regards,

Brittany Carley

Brittany Carley
Operations Administrator

SURVEY DATA CERTIFICATION



PHOENIX
TECHNOLOGY SERVICES

Job #: 64792
Client: Conoco Phillips
County & State: Lea, New Mexico
Well: Zia Hills 20 Federal Com 105H
API No: 30-025-45715
Proposed Direction: 180.88°

TIE-IN DATA

MD	TVD	INC	AZM	N/-S	E/-W	DATA SOURCE
1134.00 ft	1133.92 ft	1.88°	4.58°	5.56 S	3.79 E	Velocity
Data Source Company:						Phoenix Technology

SURVEY DATA

First Survey Date	First Survey Depth	INC	AZM
29-Sep-19	1,310 ft	1.81°	355.83°

Last Survey Date	Last Survey Depth	INC	AZM
2-Nov-19	21,750 ft	90.28°	179.30°

Survey Instrument Type
Velocity

Projected TD Survey Date	Projected TD Survey Depth	INC	AZM
2-Nov-19	21,785 ft	90.28°	179.30°

CORRECTION INFORMATION

Magnetic Declination Used	6.75 degrees
Grid Convergence Used	0.34 degrees
Total Correction	6.41 degrees

Corrected to True/Grid North
Grid North

TO THE BEST OF MY KNOWLEDGE, I
CERTIFY THIS SURVEY DATA TO BE TRUE
AND CORRECT.

Brade Hendrickson

Signature

11/3/2019

Date

ConocoPhillips MCBU - Permian-Panhandle Gold Data

Planning - NM East State Zone - 3001

ZIA HILLS 20 FEDERAL COM 105H

ZIA HILLS 20 FEDERAL COM 105H

OH / 64792

Survey: 1_Zia_Hills_20_Federal_Com_105H

Standard Survey Report

03 November, 2019

ConocoPhillips

Survey Report

Company:	ConocoPhillips MCBU - Permian-Panhandle Gold Data	Local Co-ordinate Reference:	Well ZIA HILLS 20 FEDERAL COM 105H
Project:	Planning - NM East State Zone - 3001	TVD Reference:	KB @ 3185.90ft (Nabors 894)
Site:	ZIA HILLS 20 FEDERAL COM 105H	MD Reference:	KB @ 3185.90ft (Nabors 894)
Well:	ZIA HILLS 20 FEDERAL COM 105H	North Reference:	Grid
Wellbore:	OH / 64792	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 105H				
Site Position:		Northing:	374,418.350 usft	Latitude:	32° 1' 40.020 N
From:	Map	Easting:	697,853.910 usft	Longitude:	103° 41' 41.630 W
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.34 °

Well	ZIA HILLS 20 FEDERAL COM 105H					
Well Position	+N-S	0.00 ft	Northing:	374,418.350 usft	Latitude:	32° 1' 40.020 N
	+E-W	0.00 ft	Easting:	697,853.910 usft	Longitude:	103° 41' 41.630 W
Position Uncertainty		2.00 ft	Wellhead Elevation:	ft	Ground Level:	3,155.40 ft

Wellbore	OH / 64792				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2018	6/19/2019	6.87	59.77	47,632.85097816

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	180.88	

Survey Program	Date	11/3/2019		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
61.80	1,134.00	0_Zia_Hills_20_Federal_Com_105H (OH /	GOOD GYRO	GOOD GYRO
1,310.00	21,785.00	1_Zia_Hills_20_Federal_Com_105H (OH /	MWD+HFR1+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)	
1,134.00	1.88	4.58	1,133.92	-5.56	3.79	5.50	0.00	0.00	0.00	
1,310.00	1.81	355.83	1,309.83	0.09	3.81	-0.15	0.16	-0.04	-4.97	
First Phoenix MWD Survey										
1,401.00	1.75	354.31	1,400.78	2.91	3.57	-2.96	0.08	-0.07	-1.67	
1,495.00	1.68	348.63	1,494.74	5.68	3.16	-5.73	0.20	-0.07	-6.04	
1,589.00	0.78	307.47	1,588.72	7.43	2.38	-7.46	1.28	-0.96	-43.79	
1,684.00	0.78	260.47	1,683.71	7.71	1.23	-7.73	0.65	0.00	-49.47	
1,777.00	0.72	271.46	1,776.70	7.62	0.02	-7.62	0.17	-0.06	11.82	
1,871.00	0.68	284.93	1,870.70	7.78	-1.11	-7.76	0.18	-0.04	14.33	

ConocoPhillips

Survey Report

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Site:	ZIA HILLS 20 FEDERAL COM 105H	MD Reference:	KB @ 3185.90ft (Nabors 894)
Well:	ZIA HILLS 20 FEDERAL COM 105H	North Reference:	Grid
Wellbore:	OH / 64792	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)
1,966.00	0.55	270.29	1,965.69	7.93	-2.11	-7.89	0.21	-0.14	-15.41
2,060.00	0.60	270.01	2,059.69	7.93	-3.05	-7.88	0.05	0.05	-0.30
2,154.00	0.47	274.26	2,153.68	7.96	-3.93	-7.90	0.14	-0.14	4.52
2,248.00	0.16	319.27	2,247.68	8.09	-4.40	-8.02	0.40	-0.33	47.88
2,341.00	0.32	298.30	2,340.68	8.31	-4.71	-8.24	0.19	0.17	-22.55
2,435.00	0.25	285.74	2,434.68	8.49	-5.14	-8.41	0.10	-0.07	-13.36
2,530.00	0.82	210.30	2,529.67	7.96	-5.68	-7.87	0.84	0.60	-79.41
2,624.00	1.45	198.47	2,623.66	6.25	-6.40	-6.15	0.71	0.67	-12.59
2,719.00	1.27	195.68	2,718.63	4.10	-7.07	-3.99	0.20	-0.19	-2.94
2,814.00	1.08	199.58	2,813.61	2.24	-7.65	-2.12	0.22	-0.20	4.11
2,909.00	0.91	197.77	2,908.59	0.68	-8.18	-0.55	0.18	-0.18	-1.91
3,003.00	0.59	210.20	3,002.59	-0.45	-8.65	0.59	0.38	-0.34	13.22
3,098.00	0.36	192.09	3,097.58	-1.17	-8.96	1.30	0.29	-0.24	-19.06
3,191.00	0.41	182.84	3,190.58	-1.79	-9.04	1.92	0.09	0.05	-9.95
3,286.00	0.50	125.98	3,285.58	-2.37	-8.72	2.50	0.46	0.09	-59.85
3,381.00	0.51	111.30	3,380.57	-2.77	-7.99	2.89	0.14	0.01	-15.45
3,475.00	0.47	94.77	3,474.57	-2.95	-7.22	3.06	0.16	-0.04	-17.59
3,569.00	0.17	104.30	3,568.57	-3.02	-6.70	3.12	0.32	-0.32	10.14
3,664.00	0.28	93.06	3,663.57	-3.06	-6.33	3.16	0.12	0.12	-11.83
3,758.00	0.70	113.69	3,757.57	-3.31	-5.57	3.39	0.48	0.45	21.95
3,851.00	0.92	112.42	3,850.56	-3.82	-4.36	3.89	0.24	0.24	-1.37
3,946.00	1.16	128.80	3,945.54	-4.71	-2.91	4.76	0.40	0.25	17.24
4,040.00	1.65	132.06	4,039.51	-6.22	-1.16	6.23	0.53	0.52	3.47
4,135.00	1.18	125.73	4,134.48	-7.70	0.65	7.69	0.52	-0.49	-6.66
4,229.00	0.69	51.20	4,228.47	-7.91	1.87	7.88	1.27	-0.52	-79.29
4,323.00	0.42	68.50	4,322.47	-7.43	2.64	7.39	0.33	-0.29	18.40
4,417.00	0.50	79.80	4,416.47	-7.23	3.36	7.18	0.13	0.09	12.02
4,511.00	0.57	60.00	4,510.46	-6.93	4.17	6.86	0.21	0.07	-21.06
4,606.00	0.44	37.98	4,605.46	-6.40	4.80	6.33	0.24	-0.14	-23.18
4,700.00	0.35	31.16	4,699.46	-5.87	5.17	5.79	0.11	-0.10	-7.26
4,795.00	0.14	46.68	4,794.45	-5.55	5.41	5.46	0.23	-0.22	16.34
4,888.00	0.14	39.45	4,887.45	-5.38	5.56	5.29	0.02	0.00	-7.77
4,983.00	0.17	42.17	4,982.45	-5.19	5.73	5.10	0.03	0.03	2.86
5,077.00	0.24	35.64	5,076.45	-4.92	5.94	4.83	0.08	0.07	-6.95
5,172.00	0.22	1.01	5,171.45	-4.58	6.06	4.48	0.15	-0.02	-36.45
5,267.00	0.29	9.70	5,266.45	-4.16	6.10	4.06	0.08	0.07	9.15
5,362.00	0.30	22.06	5,361.45	-3.69	6.24	3.60	0.07	0.01	13.01
5,455.00	0.36	41.20	5,454.45	-3.25	6.52	3.15	0.13	0.06	20.58
5,550.00	0.23	18.11	5,549.45	-2.84	6.78	2.74	0.18	-0.14	-24.31
5,644.00	0.19	32.12	5,643.45	-2.53	6.92	2.42	0.07	-0.04	14.90
5,738.00	0.13	51.83	5,737.45	-2.33	7.08	2.22	0.09	-0.06	20.97
5,833.00	0.25	68.29	5,832.45	-2.19	7.36	2.07	0.14	0.13	17.33

ConocoPhillips

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Survey										
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5,927.00	0.38	58.33	5,926.44	-1.95	7.82	1.83	0.15	0.14	-10.60	
6,021.00	0.31	67.49	6,020.44	-1.69	8.32	1.56	0.09	-0.07	9.74	
6,115.00	0.15	58.77	6,114.44	-1.53	8.66	1.39	0.17	-0.17	-9.28	
6,209.00	0.13	55.78	6,208.44	-1.40	8.85	1.27	0.02	-0.02	-3.18	
6,304.00	0.04	64.40	6,303.44	-1.33	8.97	1.19	0.10	-0.09	9.07	
6,398.00	0.04	157.52	6,397.44	-1.34	9.01	1.20	0.06	0.00	99.06	
6,492.00	0.12	259.37	6,491.44	-1.39	8.93	1.25	0.14	0.09	108.35	
6,587.00	0.13	224.57	6,586.44	-1.49	8.75	1.35	0.08	0.01	-36.63	
6,681.00	0.28	224.36	6,680.44	-1.73	8.52	1.60	0.16	0.16	-0.22	
6,776.00	0.48	240.25	6,775.44	-2.09	8.01	1.97	0.24	0.21	16.73	
6,870.00	0.89	240.33	6,869.43	-2.65	7.03	2.54	0.44	0.44	0.09	
6,965.00	1.05	240.19	6,964.42	-3.45	5.64	3.36	0.17	0.17	-0.15	
7,059.00	1.11	238.85	7,058.40	-4.34	4.11	4.28	0.07	0.06	-1.43	
7,154.00	1.07	234.75	7,153.38	-5.33	2.60	5.29	0.09	-0.04	-4.32	
7,248.00	1.13	224.40	7,247.37	-6.50	1.23	6.48	0.22	0.06	-11.01	
7,343.00	1.38	221.78	7,342.34	-8.02	-0.18	8.03	0.27	0.26	-2.76	
7,438.00	1.63	235.49	7,437.31	-9.64	-2.06	9.67	0.46	0.28	14.43	
7,532.00	2.06	254.95	7,531.26	-10.84	-4.79	10.91	0.80	0.46	20.70	
7,626.00	3.35	277.22	7,625.16	-10.93	-9.15	11.07	1.75	1.37	23.69	
7,720.00	3.52	288.29	7,718.99	-9.68	-14.61	9.90	0.73	0.18	11.78	
7,813.00	3.67	292.44	7,811.81	-7.65	-20.07	7.96	0.32	0.16	4.46	
7,908.00	3.88	291.20	7,906.60	-5.33	-25.88	5.72	0.24	0.22	-1.31	
8,002.00	3.92	290.83	8,000.38	-3.03	-31.85	3.52	0.05	0.04	-0.39	
8,096.00	3.90	289.58	8,094.17	-0.82	-37.86	1.40	0.09	-0.02	-1.33	
8,191.00	4.16	287.66	8,188.93	1.31	-44.19	-0.63	0.31	0.27	-2.02	
8,285.00	4.10	288.04	8,282.69	3.38	-50.64	-2.61	0.07	-0.06	0.40	
8,380.00	4.74	290.05	8,377.40	5.78	-57.55	-4.90	0.69	0.67	2.12	
8,474.00	5.26	294.06	8,471.05	8.87	-65.14	-7.87	0.67	0.55	4.27	
8,568.00	5.19	293.42	8,564.66	12.32	-72.97	-11.19	0.10	-0.07	-0.68	
8,662.00	5.92	291.20	8,658.21	15.76	-81.39	-14.51	0.81	0.78	-2.36	
8,757.00	5.70	292.15	8,752.73	19.31	-90.33	-17.92	0.25	-0.23	1.00	
8,850.00	5.52	289.16	8,845.28	22.52	-98.83	-21.00	0.37	-0.19	-3.22	
8,944.00	5.65	284.52	8,938.83	25.16	-107.58	-23.51	0.50	0.14	-4.94	
9,037.00	6.65	280.28	9,031.30	27.27	-117.31	-25.47	1.18	1.08	-4.56	
9,130.00	7.07	279.69	9,123.63	29.20	-128.25	-27.22	0.46	0.45	-0.63	
9,223.00	7.26	278.65	9,215.91	31.04	-139.70	-28.89	0.25	0.20	-1.12	
9,317.00	7.32	281.81	9,309.15	33.16	-151.44	-30.83	0.43	0.06	3.36	
9,410.00	7.58	291.26	9,401.37	36.60	-162.95	-34.09	1.35	0.28	10.16	
9,505.00	7.98	292.65	9,495.49	41.41	-174.88	-38.72	0.47	0.42	1.46	
9,598.00	8.21	294.90	9,587.56	46.69	-186.86	-43.82	0.42	0.25	2.42	
9,693.00	7.61	300.54	9,681.66	52.74	-198.43	-49.69	1.03	-0.63	5.94	
9,787.00	6.90	301.39	9,774.91	58.85	-208.61	-55.64	0.76	-0.76	0.90	
9,882.00	5.38	291.02	9,869.36	63.42	-217.64	-60.07	1.97	-1.60	-10.92	

ConocoPhillips

Survey Report

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Survey

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9,977.00	4.34	285.47	9,964.02	65.97	-225.26	-62.51	1.20	-1.09	-5.84
10,071.00	4.16	283.80	10,057.76	67.74	-232.00	-64.17	0.23	-0.19	-1.78
10,165.00	3.42	283.55	10,151.56	69.21	-238.04	-65.54	0.79	-0.79	-0.27
10,260.00	2.58	289.32	10,246.43	70.58	-242.81	-66.84	0.94	-0.88	6.07
10,354.00	1.80	284.73	10,340.36	71.65	-246.23	-67.86	0.85	-0.83	-4.88
10,449.00	1.92	290.72	10,435.31	72.60	-249.17	-68.76	0.24	0.13	6.31
10,543.00	1.80	295.35	10,529.26	73.79	-251.97	-69.91	0.20	-0.13	4.93
10,637.00	1.37	290.28	10,623.22	74.81	-254.36	-70.89	0.48	-0.46	-5.39
10,731.00	0.53	272.18	10,717.21	75.21	-255.85	-71.27	0.94	-0.89	-19.26
10,825.00	0.34	259.03	10,811.20	75.18	-256.56	-71.23	0.23	-0.20	-13.99
10,918.00	0.34	238.70	10,904.20	74.98	-257.06	-71.02	0.13	0.00	-21.86
11,015.00	0.41	213.11	11,001.20	74.54	-257.50	-70.58	0.19	0.07	-26.38
11,117.00	1.28	178.39	11,103.19	73.10	-257.67	-69.13	0.95	0.85	-34.04
11,164.00	2.73	166.02	11,150.16	71.48	-257.38	-67.52	3.20	3.09	-26.32
11,211.00	4.26	170.86	11,197.07	68.67	-256.83	-64.72	3.31	3.26	10.30
11,305.00	7.92	173.84	11,290.52	58.79	-255.58	-54.85	3.91	3.89	3.17
11,352.00	10.24	176.55	11,336.93	51.40	-254.99	-47.47	5.02	4.94	5.77
11,399.00	12.31	179.80	11,383.02	42.21	-254.72	-38.30	4.61	4.40	6.91
11,446.00	15.21	183.10	11,428.67	31.04	-255.03	-27.12	6.39	6.17	7.02
11,494.00	17.99	182.98	11,474.67	17.35	-255.76	-13.42	5.79	5.79	-0.25
11,578.00	25.19	182.78	11,552.72	-13.50	-257.30	17.45	8.57	8.57	-0.24
11,637.00	27.99	182.58	11,605.48	-39.87	-258.53	43.84	4.75	4.75	-0.34
11,683.00	32.11	180.72	11,645.28	-62.89	-259.17	66.87	9.18	8.96	-4.04
11,743.00	35.39	181.65	11,695.17	-96.21	-259.88	100.19	5.53	5.47	1.55
11,775.00	38.64	181.14	11,720.71	-115.47	-260.34	119.46	10.20	10.16	-1.59
11,807.00	43.54	178.78	11,744.83	-136.49	-260.31	140.47	16.06	15.31	-7.38
11,838.00	47.70	176.68	11,766.50	-158.62	-259.41	162.59	14.26	13.42	-6.77
11,868.00	51.35	175.51	11,785.98	-181.39	-257.85	185.33	12.52	12.17	-3.80
11,900.00	55.81	173.83	11,804.97	-207.02	-255.45	210.92	14.56	13.94	-5.25
11,931.00	59.75	173.77	11,821.49	-233.08	-252.62	236.94	12.71	12.71	-0.19
11,963.00	64.65	173.92	11,836.41	-261.22	-249.59	265.02	15.32	15.31	0.47
11,994.00	69.42	175.84	11,848.51	-289.64	-247.05	293.40	16.41	15.39	6.19
12,026.00	72.98	177.57	11,858.82	-319.88	-245.31	323.61	12.25	11.13	5.41
12,057.00	75.75	177.86	11,867.17	-349.70	-244.12	353.41	8.98	8.94	0.94
12,089.00	79.08	177.79	11,874.14	-380.91	-242.94	384.59	10.41	10.41	-0.22
12,120.00	83.01	177.25	11,878.97	-411.49	-241.61	415.16	12.79	12.68	-1.74
12,152.00	86.43	175.77	11,881.91	-443.29	-239.67	446.92	11.64	10.69	-4.63
12,182.00	87.56	175.46	11,883.49	-473.16	-237.38	476.75	3.91	3.77	-1.03
12,214.00	88.54	175.21	11,884.57	-505.04	-234.78	508.58	3.16	3.06	-0.78
12,245.00	90.56	175.07	11,884.82	-535.92	-232.15	539.43	6.53	6.52	-0.45
12,276.00	90.59	174.97	11,884.51	-566.81	-229.46	570.26	0.34	0.10	-0.32
12,347.00	90.62	176.18	11,883.76	-637.59	-223.99	640.95	1.70	0.04	1.70

ConocoPhillips

Survey Report

Company:	ConocoPhillips MCBU - Permian-Panhandle Gold Data	Local Co-ordinate Reference:	Well ZIA HILLS 20 FEDERAL COM 105H
Project:	Planning - NM East State Zone - 3001	TVD Reference:	KB @ 3185.90ft (Nabors 894)
Site:	ZIA HILLS 20 FEDERAL COM 105H	MD Reference:	KB @ 3185.90ft (Nabors 894)
Well:	ZIA HILLS 20 FEDERAL COM 105H	North Reference:	Grid
Wellbore:	OH / 64792	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)
12,442.00	91.63	175.56	11,881.89	-732.32	-217.14	735.57	1.25	1.06	-0.65
12,536.00	91.41	173.99	11,879.40	-825.90	-208.59	829.00	1.69	-0.23	-1.67
12,629.00	91.16	175.53	11,877.31	-918.48	-200.10	921.45	1.68	-0.27	1.66
12,724.00	88.95	176.72	11,877.22	-1,013.26	-193.68	1,016.11	2.64	-2.33	1.25
12,818.00	89.68	179.73	11,878.35	-1,107.19	-190.77	1,109.99	3.29	0.78	3.20
12,912.00	90.89	180.47	11,877.88	-1,201.19	-190.93	1,203.98	1.51	1.29	0.79
13,006.00	91.18	177.74	11,876.18	-1,295.15	-189.46	1,297.91	2.92	0.31	-2.90
13,100.00	90.25	179.05	11,875.01	-1,389.11	-186.83	1,391.81	1.71	-0.99	1.39
13,194.00	89.73	181.57	11,875.02	-1,483.10	-187.34	1,485.80	2.74	-0.55	2.68
13,287.00	91.07	181.34	11,874.37	-1,578.06	-189.70	1,578.79	1.46	1.44	-0.25
13,382.00	91.03	180.58	11,872.63	-1,671.03	-191.29	1,673.77	0.80	-0.04	-0.80
13,477.00	89.50	181.27	11,872.19	-1,766.02	-192.82	1,768.77	1.77	-1.61	0.73
13,570.00	89.75	182.32	11,872.80	-1,858.97	-195.74	1,861.75	1.16	0.27	1.13
13,664.00	89.93	181.49	11,873.06	-1,952.91	-198.86	1,955.74	0.90	0.19	-0.88
13,758.00	89.79	181.55	11,873.29	-2,046.88	-201.36	2,049.73	0.16	-0.15	0.06
13,852.00	89.53	181.23	11,873.85	-2,140.85	-203.64	2,143.73	0.44	-0.28	-0.34
13,947.00	89.85	179.88	11,874.37	-2,235.84	-204.56	2,238.72	1.46	0.34	-1.42
14,041.00	90.79	181.99	11,873.84	-2,329.82	-206.09	2,332.71	2.46	1.00	2.24
14,134.00	90.95	179.61	11,872.43	-2,422.80	-207.39	2,425.70	2.56	0.17	-2.56
14,229.00	90.98	178.39	11,870.83	-2,517.77	-205.73	2,520.63	1.28	0.03	-1.28
14,323.00	90.86	178.13	11,869.32	-2,611.71	-202.88	2,614.52	0.30	-0.13	-0.28
14,417.00	90.47	177.89	11,868.23	-2,705.65	-199.61	2,708.39	0.49	-0.41	-0.26
14,511.00	91.41	179.00	11,866.69	-2,799.60	-197.06	2,802.29	1.55	1.00	1.18
14,605.00	90.67	179.76	11,864.98	-2,893.58	-196.05	2,896.24	1.13	-0.79	0.81
14,698.00	90.08	179.58	11,864.37	-2,986.57	-195.51	2,989.22	0.66	-0.63	-0.19
14,791.00	90.19	179.92	11,864.15	-3,079.57	-195.10	3,082.20	0.38	0.12	0.37
14,885.00	90.02	180.12	11,863.98	-3,173.57	-195.14	3,176.19	0.28	-0.18	0.21
14,980.00	90.01	180.70	11,863.96	-3,268.57	-195.82	3,271.19	0.61	-0.01	0.61
15,074.00	90.50	180.66	11,863.54	-3,362.56	-196.93	3,365.19	0.52	0.52	-0.04
15,168.00	89.75	178.73	11,863.33	-3,456.55	-196.43	3,459.16	2.20	-0.80	-2.05
15,261.00	89.87	179.43	11,863.84	-3,549.54	-194.94	3,552.11	0.76	0.13	0.75
15,355.00	90.22	178.83	11,863.57	-3,643.53	-193.51	3,646.07	0.74	0.37	-0.64
15,449.00	89.53	179.92	11,863.77	-3,737.52	-192.49	3,740.04	1.37	-0.73	1.16
15,544.00	89.54	182.18	11,864.54	-3,832.49	-194.23	3,835.03	2.38	0.01	2.38
15,637.00	88.84	180.28	11,865.86	-3,925.46	-196.22	3,928.01	2.18	-0.75	-2.04
15,732.00	90.19	179.13	11,866.66	-4,020.45	-195.73	4,022.98	1.87	1.42	-1.21
15,826.00	89.90	177.33	11,866.59	-4,114.40	-192.83	4,116.88	1.94	-0.31	-1.91
15,920.00	88.84	179.73	11,867.62	-4,208.36	-190.42	4,210.79	2.79	-1.13	2.55
16,014.00	89.98	180.46	11,868.59	-4,302.35	-190.57	4,304.77	1.44	1.21	0.78
16,108.00	88.44	182.30	11,869.89	-4,396.31	-192.84	4,398.75	2.55	-1.64	1.96
16,202.00	89.53	180.59	11,871.55	-4,490.26	-195.21	4,492.73	2.16	1.16	-1.82
16,296.00	89.38	178.94	11,872.45	-4,584.25	-194.82	4,586.70	1.76	-0.16	-1.76
16,390.00	90.08	179.29	11,872.89	-4,678.24	-193.37	4,680.65	0.83	0.74	0.37

ConocoPhillips

Survey Report

Company:	ConocoPhillips MCBU - Permian-Panhandle Gold Data	Local Co-ordinate Reference:	Well ZIA HILLS 20 FEDERAL COM 105H
Project:	Planning - NM East State Zone - 3001	TVD Reference:	KB @ 3185.90ft (Nabors 894)
Site:	ZIA HILLS 20 FEDERAL COM 105H	MD Reference:	KB @ 3185.90ft (Nabors 894)
Well:	ZIA HILLS 20 FEDERAL COM 105H	North Reference:	Grid
Wellbore:	OH / 64792	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)
16,484.00	89.67	178.79	11,873.09	-4,772.22	-191.80	4,774.60	0.69	-0.44	-0.53
16,578.00	89.03	180.76	11,874.16	-4,866.21	-191.43	4,868.58	2.20	-0.68	2.10
16,672.00	90.05	180.69	11,874.91	-4,960.20	-192.62	4,962.57	1.09	1.09	-0.07
16,766.00	88.10	180.14	11,876.43	-5,054.18	-193.30	5,056.55	2.16	-2.07	-0.59
16,860.00	90.61	180.79	11,877.49	-5,148.16	-194.06	5,150.53	2.76	2.67	0.69
16,954.00	90.93	181.61	11,876.23	-5,242.13	-196.03	5,244.52	0.94	0.34	0.87
17,048.00	91.15	181.61	11,874.52	-5,336.08	-198.67	5,338.50	0.23	0.23	0.00
17,142.00	89.85	180.56	11,873.70	-5,430.06	-200.45	5,432.49	1.78	-1.38	-1.12
17,236.00	89.42	179.32	11,874.30	-5,524.05	-200.35	5,526.48	1.40	-0.46	-1.32
17,331.00	89.56	180.91	11,875.14	-5,619.04	-200.54	5,621.46	1.68	0.15	1.67
17,425.00	89.88	179.99	11,875.60	-5,713.04	-201.28	5,715.46	1.04	0.34	-0.98
17,520.00	90.13	179.29	11,875.60	-5,808.04	-200.68	5,810.43	0.78	0.26	-0.74
17,614.00	89.65	178.16	11,875.78	-5,902.01	-198.59	5,904.36	1.31	-0.51	-1.20
17,707.00	89.22	177.04	11,876.69	-5,994.92	-194.70	5,997.21	1.29	-0.46	-1.20
17,801.00	88.36	175.89	11,878.68	-6,088.72	-188.90	6,090.90	1.53	-0.91	-1.22
17,895.00	89.76	175.31	11,880.22	-6,182.43	-181.69	6,184.49	1.61	1.49	-0.62
17,990.00	90.98	174.52	11,879.61	-6,277.05	-173.27	6,278.97	1.53	1.28	-0.83
18,083.00	91.01	173.34	11,877.99	-6,369.51	-163.44	6,371.27	1.27	0.03	-1.27
18,177.00	93.51	173.50	11,874.29	-6,462.81	-152.68	6,464.40	2.67	2.66	0.17
18,272.00	93.41	173.76	11,868.55	-6,557.06	-142.16	6,558.47	0.29	-0.11	0.27
18,366.00	92.33	173.98	11,863.85	-6,650.40	-132.13	6,651.64	1.17	-1.15	0.23
18,459.00	92.24	176.48	11,860.14	-6,743.00	-124.40	6,744.11	2.69	-0.10	2.69
18,553.00	90.61	180.12	11,857.80	-6,836.91	-121.62	6,837.97	4.24	-1.73	3.87
18,648.00	89.70	184.28	11,857.54	-6,931.81	-125.26	6,932.92	4.48	-0.96	4.38
18,743.00	89.93	184.83	11,857.85	-7,026.51	-132.81	7,027.72	0.63	0.24	0.58
18,837.00	89.81	185.93	11,858.06	-7,120.10	-141.62	7,121.43	1.18	-0.13	1.17
18,931.00	89.76	184.86	11,858.41	-7,213.68	-150.46	7,215.14	1.14	-0.05	-1.14
19,026.00	89.85	183.79	11,858.74	-7,308.41	-157.62	7,309.97	1.13	0.09	-1.13
19,121.00	89.84	182.52	11,858.99	-7,403.26	-162.85	7,404.89	1.34	-0.01	-1.34
19,214.00	89.93	181.97	11,859.18	-7,496.19	-166.50	7,497.86	0.60	0.10	-0.59
19,308.00	89.76	181.63	11,859.44	-7,590.14	-169.45	7,591.85	0.40	-0.18	-0.36
19,403.00	89.82	181.34	11,859.78	-7,685.11	-171.91	7,686.84	0.31	0.06	-0.31
19,496.00	89.79	180.62	11,860.10	-7,778.09	-173.50	7,779.84	0.77	-0.03	-0.77
19,591.00	89.78	180.85	11,860.46	-7,873.09	-174.72	7,874.84	0.24	-0.01	0.24
19,685.00	89.82	180.15	11,860.78	-7,967.08	-175.54	7,968.84	0.75	0.04	-0.74
19,778.00	89.96	179.87	11,860.98	-8,060.08	-175.56	8,061.83	0.34	0.15	-0.30
19,872.00	89.79	179.72	11,861.17	-8,154.08	-175.22	8,155.81	0.24	-0.18	-0.16
19,967.00	89.87	179.64	11,861.45	-8,249.08	-174.69	8,250.79	0.12	0.08	-0.08
20,061.00	89.85	179.03	11,861.68	-8,343.07	-173.60	8,344.75	0.65	-0.02	-0.65
20,155.00	89.82	179.31	11,861.95	-8,437.06	-172.24	8,438.71	0.30	-0.03	0.30
20,248.00	89.84	179.07	11,862.23	-8,530.05	-170.92	8,531.67	0.26	0.02	-0.26
20,342.00	89.81	179.21	11,862.51	-8,624.04	-169.51	8,625.63	0.15	-0.03	0.15

ConocoPhillips

Survey Report

Company: ConocoPhillips MCBU - Permian-Panhandle Gold Data	Local Co-ordinate Reference: Well ZIA HILLS 20 FEDERAL COM 105H	
Project: Planning - NM East State Zone - 3001	TVD Reference: KB @ 3185.90ft (Nabors 894)	
Site: ZIA HILLS 20 FEDERAL COM 105H	MD Reference: KB @ 3185.90ft (Nabors 894)	
Well: ZIA HILLS 20 FEDERAL COM 105H	North Reference: Grid	
Wellbore: OH / 64792	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)
20,437.00	89.87	180.06	11,862.78	-8,719.04	-168.91	8,720.60	0.90	0.06	0.89
20,530.00	89.81	179.61	11,863.04	-8,812.04	-168.64	8,813.59	0.49	-0.06	-0.48
20,623.00	89.78	179.51	11,863.37	-8,905.03	-167.92	8,906.56	0.11	-0.03	-0.11
20,718.00	89.72	179.41	11,863.79	-9,000.03	-167.03	9,001.53	0.12	-0.06	-0.11
20,811.00	89.73	178.72	11,864.23	-9,093.01	-165.51	9,094.48	0.74	0.01	-0.74
20,906.00	90.30	179.34	11,864.21	-9,188.00	-163.90	9,189.43	0.89	0.60	0.65
21,000.00	89.81	180.26	11,864.12	-9,282.00	-163.57	9,283.41	1.11	-0.52	0.98
21,093.00	89.44	179.51	11,864.73	-9,374.99	-163.39	9,376.40	0.90	-0.40	-0.81
21,188.00	89.84	179.35	11,865.32	-9,469.99	-162.44	9,471.36	0.45	0.42	-0.17
21,283.00	89.75	179.23	11,865.66	-9,564.98	-161.27	9,566.33	0.16	-0.09	-0.13
21,377.00	90.45	181.11	11,865.50	-9,658.97	-161.54	9,660.32	2.13	0.74	2.00
21,471.00	89.76	180.58	11,865.33	-9,752.96	-162.93	9,754.31	0.93	-0.73	-0.56
21,565.00	90.27	180.97	11,865.30	-9,846.95	-164.20	9,848.31	0.68	0.54	0.41
21,659.00	89.85	179.31	11,865.20	-9,940.95	-164.43	9,942.30	1.82	-0.45	-1.77
21,750.00	90.28	179.30	11,865.10	-10,031.94	-163.33	10,033.27	0.47	0.47	-0.01
Final Phoenix MWD Survey									
21,785.00	90.28	179.30	11,864.93	-10,066.94	-162.90	10,068.25	0.00	0.00	0.00
Projection to TD									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
1,200.12	1,200.00	13 3/8" Casing	13-3/8	17-1/2
12,370.00	11,883.46	9 5/8" Casing	9-5/8	12-1/4
21,650.00	11,865.18	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)	
1,310.00	1,309.83	0.09	3.81	First Phoenix MWD Survey
21,750.00	11,865.10	-10,031.94	-163.33	Final Phoenix MWD Survey
21,785.00	11,864.93	-10,066.94	-162.90	Projection to TD