

Conoco Phillips

Lea County, New Mexico

Sec 28, T26S, R32E

Wilder Federal AC Com 28 #8H

Wellbore #1

Survey: MWD

DDC Survey Report

05 August, 2014

HOBBS OCD
MAR 10 2015
RECEIVED

30-025-41692

MAR 17 2015

dm



Survey Certification Sheet

Conoco Phillips
Company

GC-140633
Job Number

8/5/14
Date

Sec28, T26S,R32E
Lease

Wilder Federal AC Com 28 #8H
Well Name

Lea, NM
County & State

API: 30-025-41692

Surveyed from a depth of: 174 feet to 15925 feet MD

Type of Survey: MWD

Directional Supervisor/Surveyor: Andrew Fisher

The data and calculations for this survey have been checked by me and conform to the standards and procedures set forth by **The Directional Drilling Company (DDC)**. This report represents a true and correct Directional survey of this well based on the original data obtained at the well site. Wellbore Coordinates are calculated using minimum curvature.

Digitally signed by Larry
Wright
DN: cn=Larry Wright, o=The
Directional Drilling Company,
ou=GM of Guidance Services,
email=larryw@directionaldrill
ers.com, c=US
Date: 2014.08.08 12:34:17
-05'00'

Larry Wright
MWD General Manager

Survey Report

Company:	Conoco Phillips	Local Co-ordinate Reference:	Well Wilder Federal AC Com 28 #8H
Project:	Lea County, New Mexico	TVD Reference:	Well @ 3180.0usft
Site:	Sec 28, T26S, R32E	MD Reference:	Well @ 3180.0usft
Well:	Wilder Federal AC Com 28 #8H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM Compass

Project	Lea County, New Mexico		
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		

Site	Sec 28, T26S, R32E		
Site Position:		Northing:	371,284.70 usft
From:	Map	Easting:	704,476.40 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 1' 8.615 N
		Longitude:	103° 40' 24.926 W
		Grid Convergence:	0.35 °

Well	Wilder Federal AC Com 28 #8H		
Well Position	+N/-S	0.0 usft	Northing: 371,589.23 usft
	+E/-W	0.0 usft	Easting: 700,295.17 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft
		Latitude:	32° 1' 11.879 N
		Longitude:	103° 41' 13.469 W
		Ground Level:	3,155.0 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010	4/7/2014	7.28
			Dip Angle
			(°)
			59.91
			Field Strength
			(nT)
			48,202

Design	Wellbore #1		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			174.18

Survey Program	Date 8/5/2014		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
174.0	15,925.0	MWD (Wellbore #1)	MWD default
			Description
			MWD - Standard

Survey									
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Vertical Section	Dogleg Rate	Build Rate	Turn Rate
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)
First MWD Survey @ 174' MD / 174' TVD									
174.0	0.60	291.50	174.0	0.3	-0.8	-0.4	0.34	0.34	0.00
235.0	0.70	280.50	235.0	0.5	-1.5	-0.7	0.26	0.16	-18.03
326.0	0.80	260.80	326.0	0.5	-2.7	-0.8	0.30	0.11	-21.65
421.0	0.80	245.60	421.0	0.1	-3.9	-0.5	0.22	0.00	-16.00
512.0	1.00	234.70	512.0	-0.6	-5.2	0.1	0.29	0.22	-11.98
602.0	1.40	216.20	601.9	-1.9	-6.5	1.3	0.61	0.44	-20.56
693.0	1.50	216.30	692.9	-3.8	-7.8	3.0	0.11	0.11	0.11
788.0	1.60	227.80	787.9	-5.7	-9.5	4.7	0.34	0.11	12.11
878.0	2.80	244.50	877.8	-7.5	-12.5	6.2	1.50	1.33	18.56

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Well:	Wilder Federal AC Com 28 #8H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM Compass

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
898.0	3.00	250.10	897.8	-7.9	-13.4	6.5	1.73	1.00	28.00
977.0	4.00	259.10	976.6	-9.1	-18.0	7.2	1.44	1.27	11.39
1,072.0	3.60	251.00	1,071.4	-10.7	-24.1	8.2	0.70	-0.42	-8.53
1,166.0	2.10	195.50	1,165.3	-13.3	-27.4	10.5	3.16	-1.60	-59.04
1,261.0	2.90	124.90	1,260.3	-16.3	-25.9	13.6	3.12	0.84	-74.32
1,356.0	4.90	105.80	1,355.0	-18.8	-20.0	16.7	2.48	2.11	-20.11
1,388.0	5.20	103.10	1,386.9	-19.5	-17.3	17.7	1.20	0.94	-8.44
1,419.0	5.50	100.30	1,417.8	-20.1	-14.4	18.5	1.28	0.97	-9.03
1,451.0	6.10	98.90	1,449.6	-20.7	-11.2	19.4	1.93	1.88	-4.38
1,545.0	7.10	94.50	1,543.0	-21.9	-0.5	21.7	1.19	1.06	-4.68
1,640.0	7.80	92.80	1,637.2	-22.7	11.8	23.7	0.77	0.74	-1.79
1,735.0	7.70	94.00	1,731.3	-23.4	24.6	25.8	0.20	-0.11	1.26
1,829.0	7.30	92.90	1,824.5	-24.2	36.8	27.8	0.45	-0.43	-1.17
1,914.0	6.90	89.00	1,908.9	-24.3	47.3	29.0	0.74	-0.47	-4.59
2,009.0	7.20	84.70	2,003.1	-23.7	58.9	29.5	0.64	0.32	-4.53
2,104.0	7.70	86.30	2,097.3	-22.7	71.2	29.8	0.57	0.53	1.68
2,208.0	8.50	88.50	2,200.3	-22.1	85.9	30.7	0.82	0.77	2.12
2,303.0	8.80	89.90	2,294.2	-21.9	100.1	31.9	0.39	0.32	1.47
2,398.0	8.10	98.90	2,388.2	-22.9	114.0	34.3	1.57	-0.74	9.47
2,492.0	6.80	101.10	2,481.4	-25.0	126.0	37.7	1.42	-1.38	2.34
2,587.0	6.80	86.40	2,575.7	-25.7	137.2	39.5	1.83	0.00	-15.47
2,681.0	8.80	79.50	2,668.9	-24.1	149.8	39.1	2.35	2.13	-7.34
2,776.0	9.90	82.20	2,762.6	-21.6	165.0	38.3	1.25	1.16	2.84
2,871.0	9.60	94.70	2,856.2	-21.2	181.0	39.4	2.25	-0.32	13.16
2,965.0	8.20	108.10	2,949.1	-23.9	195.2	43.6	2.65	-1.49	14.26
3,060.0	7.70	108.40	3,043.2	-28.0	207.7	48.9	0.53	-0.53	0.32
3,155.0	8.20	101.40	3,137.3	-31.4	220.4	53.5	1.15	0.53	-7.37
3,250.0	8.20	89.60	3,231.3	-32.7	233.8	56.2	1.77	0.00	-12.42
3,344.0	7.90	87.10	3,324.4	-32.3	246.9	57.2	0.49	-0.32	-2.66
3,439.0	7.20	88.50	3,418.6	-31.8	259.4	57.9	0.76	-0.74	1.47
3,534.0	6.20	89.30	3,512.9	-31.6	270.5	58.8	1.06	-1.05	0.84
3,628.0	6.30	81.10	3,606.4	-30.7	280.7	59.0	0.95	0.11	-8.72
3,723.0	7.20	75.10	3,700.7	-28.4	291.6	57.8	1.20	0.95	-6.32
3,818.0	7.60	78.30	3,794.9	-25.6	303.5	56.2	0.60	0.42	3.37
3,912.0	7.30	82.70	3,888.1	-23.6	315.5	55.4	0.69	-0.32	4.68
4,006.0	6.90	88.00	3,981.4	-22.6	327.0	55.6	0.82	-0.43	5.64
4,102.0	6.70	90.80	4,076.7	-22.5	338.4	56.7	0.40	-0.21	2.92
4,197.0	6.50	94.10	4,171.1	-22.9	349.3	58.2	0.45	-0.21	3.47
4,291.0	5.80	83.90	4,264.6	-22.8	359.3	59.1	1.38	-0.74	-10.85
4,386.0	6.30	73.50	4,359.0	-20.8	369.1	58.1	1.27	0.53	-10.95
4,426.0	6.40	75.20	4,398.8	-19.6	373.4	57.4	0.53	0.25	4.25
4,495.0	6.90	80.80	4,467.3	-18.0	381.2	56.5	1.19	0.72	8.12
4,557.0	6.90	81.50	4,528.9	-16.8	388.5	56.2	0.14	0.00	1.13
4,652.0	7.60	82.40	4,623.1	-15.2	400.4	55.7	0.75	0.74	0.95

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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM Compass

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,747.0	7.80	83.70	4,717.3	-13.6	413.0	55.4	0.28	0.21	1.37	
4,841.0	7.30	83.50	4,810.5	-12.3	425.3	55.3	0.53	-0.53	-0.21	
4,936.0	6.90	82.40	4,904.7	-10.8	437.0	55.1	0.44	-0.42	-1.16	
5,031.0	7.00	82.10	4,999.0	-9.3	448.4	54.7	0.11	0.11	-0.32	
5,125.0	6.90	81.90	5,092.3	-7.7	459.6	54.3	0.11	-0.11	-0.21	
5,220.0	6.90	90.50	5,186.6	-6.9	471.0	54.7	1.09	0.00	9.05	
5,315.0	6.70	91.40	5,281.0	-7.1	482.2	56.0	0.24	-0.21	0.95	
5,410.0	6.20	91.40	5,375.4	-7.4	492.9	57.3	0.53	-0.53	0.00	
5,505.0	6.10	89.60	5,469.8	-7.5	503.1	58.4	0.23	-0.11	-1.89	
5,599.0	5.90	89.20	5,563.3	-7.4	512.9	59.3	0.22	-0.21	-0.43	
5,694.0	5.90	87.90	5,657.8	-7.1	522.7	60.1	0.14	0.00	-1.37	
5,789.0	7.40	86.30	5,752.2	-6.5	533.6	60.6	1.59	1.58	-1.68	
5,884.0	8.40	88.40	5,846.3	-6.0	546.7	61.4	1.10	1.05	2.21	
5,979.0	8.30	89.10	5,940.3	-5.7	560.5	62.5	0.15	-0.11	0.74	
6,073.0	8.00	91.30	6,033.3	-5.7	573.8	63.8	0.46	-0.32	2.34	
6,168.0	7.60	93.10	6,127.4	-6.2	586.7	65.6	0.49	-0.42	1.89	
6,263.0	7.60	90.70	6,221.6	-6.6	599.2	67.3	0.33	0.00	-2.53	
6,358.0	8.00	85.90	6,315.7	-6.2	612.1	68.2	0.80	0.42	-5.05	
6,452.0	7.90	87.20	6,408.8	-5.4	625.1	68.8	0.22	-0.11	1.38	
6,547.0	7.40	87.40	6,503.0	-4.8	637.7	69.5	0.53	-0.53	0.21	
6,642.0	6.90	89.00	6,597.2	-4.4	649.5	70.3	0.57	-0.53	1.68	
6,736.0	6.50	91.10	6,690.6	-4.4	660.5	71.4	0.50	-0.43	2.23	
6,831.0	6.20	94.90	6,785.0	-5.0	671.0	73.0	0.54	-0.32	4.00	
6,926.0	5.20	99.20	6,879.5	-6.1	680.4	75.1	1.14	-1.05	4.53	
7,020.0	4.00	97.30	6,973.2	-7.2	687.8	76.9	1.29	-1.28	-2.02	
7,115.0	2.10	100.00	7,068.1	-7.9	692.8	78.2	2.01	-2.00	2.84	
7,210.0	1.20	95.00	7,163.1	-8.3	695.5	78.8	0.96	-0.95	-5.26	
7,304.0	1.00	99.00	7,257.0	-8.5	697.3	79.2	0.23	-0.21	4.26	
7,399.0	1.00	107.80	7,352.0	-8.9	698.9	79.8	0.16	0.00	9.26	
7,494.0	1.00	86.50	7,447.0	-9.1	700.5	80.1	0.39	0.00	-22.42	
7,589.0	1.20	75.20	7,542.0	-8.8	702.3	80.0	0.31	0.21	-11.89	
7,683.0	1.00	50.80	7,636.0	-8.1	703.9	79.4	0.54	-0.21	-25.96	
7,778.0	0.70	34.80	7,731.0	-7.1	704.9	78.5	0.40	-0.32	-16.84	
7,872.0	0.60	51.00	7,825.0	-6.3	705.6	77.8	0.22	-0.11	17.23	
7,967.0	0.70	69.00	7,920.0	-5.8	706.5	77.4	0.24	0.11	18.95	
8,062.0	0.50	69.40	8,014.9	-5.4	707.5	77.1	0.21	-0.21	0.42	
8,156.0	0.40	79.80	8,108.9	-5.2	708.2	77.0	0.14	-0.11	11.06	
8,251.0	0.40	113.40	8,203.9	-5.3	708.8	77.1	0.24	0.00	35.37	
8,346.0	0.30	142.70	8,298.9	-5.6	709.2	77.5	0.21	-0.11	30.84	
8,440.0	0.30	247.20	8,392.9	-5.9	709.2	77.8	0.50	0.00	111.17	
8,535.0	0.60	232.80	8,487.9	-6.3	708.5	78.1	0.34	0.32	-15.16	
8,629.0	0.70	248.00	8,581.9	-6.8	707.6	78.5	0.21	0.11	16.17	
8,713.0	0.50	228.20	8,665.9	-7.2	706.9	78.9	0.34	-0.24	-23.57	

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Survey

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8,732.0	0.40	244.90	8,684.9	-7.3	706.7	78.9	0.86	-0.53	87.89
8,827.0	7.10	194.80	8,779.7	-13.1	704.9	84.6	7.21	7.05	-52.74
8,858.0	11.40	195.90	8,810.3	-17.9	703.6	89.2	13.88	13.87	3.55
8,890.0	15.60	196.30	8,841.4	-25.1	701.5	96.1	13.13	13.13	1.25
8,922.0	19.10	194.50	8,871.9	-34.3	699.0	105.0	11.06	10.94	-5.63
8,953.0	22.30	188.30	8,900.9	-45.1	696.9	115.5	12.50	10.32	-20.00
8,985.0	25.50	186.10	8,930.2	-57.9	695.3	128.1	10.38	10.00	-6.88
9,016.0	28.60	185.60	8,957.8	-71.9	693.9	141.9	10.03	10.00	-1.61
9,048.0	32.40	185.40	8,985.3	-88.1	692.3	157.8	11.88	11.88	-0.63
9,079.0	35.50	182.10	9,011.1	-105.4	691.2	174.9	11.63	10.00	-10.65
9,111.0	39.40	179.90	9,036.5	-124.8	690.9	194.2	12.88	12.19	-6.88
9,142.0	43.90	178.10	9,059.6	-145.4	691.2	214.8	15.02	14.52	-5.81
9,174.0	47.80	179.20	9,081.9	-168.4	691.8	237.6	12.43	12.19	3.44
9,206.0	50.30	179.40	9,102.9	-192.5	692.1	261.7	7.83	7.81	0.63
9,237.0	51.90	180.10	9,122.3	-216.6	692.2	285.7	5.45	5.16	2.26
9,269.0	54.10	179.70	9,141.6	-242.2	692.2	311.1	6.95	6.88	-1.25
9,300.0	55.80	181.50	9,159.4	-267.6	692.0	336.4	7.26	5.48	5.81
9,332.0	58.40	181.30	9,176.8	-294.4	691.3	363.0	8.14	8.13	-0.63
9,363.0	62.30	180.20	9,192.1	-321.4	690.9	389.8	12.95	12.58	-3.55
9,395.0	65.90	180.20	9,206.1	-350.1	690.8	418.4	11.25	11.25	0.00
9,426.0	69.00	179.50	9,218.0	-378.8	690.9	446.9	10.22	10.00	-2.26
9,458.0	71.30	180.90	9,228.8	-408.9	690.8	476.8	8.28	7.19	4.38
9,489.0	72.90	179.90	9,238.4	-438.4	690.6	506.1	6.01	5.16	-3.23
9,521.0	75.10	179.70	9,247.2	-469.1	690.7	536.7	6.90	6.88	-0.63
9,550.0	79.40	180.90	9,253.6	-497.4	690.6	564.9	15.37	14.83	4.14
9,581.0	82.70	178.80	9,258.4	-528.0	690.7	595.3	12.57	10.65	-6.77
9,613.0	84.60	179.30	9,261.9	-559.8	691.2	627.0	6.14	5.94	1.56
9,645.0	85.70	178.00	9,264.6	-591.7	691.9	658.8	5.31	3.44	-4.06
9,676.0	87.80	176.60	9,266.4	-622.6	693.4	689.7	8.14	6.77	-4.52
9,708.0	89.20	176.70	9,267.2	-654.5	695.3	721.7	4.39	4.38	0.31
9,802.0	90.70	178.90	9,267.3	-748.5	698.9	815.5	2.83	1.60	2.34
9,897.0	90.00	180.30	9,266.7	-843.5	699.5	910.0	1.65	-0.74	1.47
9,992.0	88.90	181.50	9,267.7	-938.4	698.0	1,004.4	1.71	-1.16	1.26
10,087.0	89.10	182.60	9,269.3	-1,033.4	694.6	1,098.5	1.18	0.21	1.16
10,181.0	87.70	181.20	9,271.9	-1,127.3	691.5	1,191.6	2.11	-1.49	-1.49
10,276.0	88.70	180.50	9,274.9	-1,222.2	690.1	1,285.9	1.28	1.05	-0.74
10,371.0	89.80	179.60	9,276.2	-1,317.2	690.0	1,380.4	1.50	1.16	-0.95
10,465.0	90.10	181.70	9,276.2	-1,411.2	689.0	1,473.8	2.26	0.32	2.23
10,560.0	90.70	181.40	9,275.6	-1,506.1	686.4	1,568.0	0.71	0.63	-0.32
10,655.0	87.50	180.90	9,277.1	-1,601.1	684.5	1,662.3	3.41	-3.37	-0.53
10,749.0	87.50	179.80	9,281.2	-1,695.0	683.9	1,755.6	1.17	0.00	-1.17
10,844.0	88.60	180.10	9,284.4	-1,790.0	684.0	1,850.1	1.20	1.16	0.32
10,939.0	88.10	181.20	9,287.1	-1,884.9	682.9	1,944.4	1.27	-0.53	1.16

Survey Report

Company:	Conoco Phillips	Local Co-ordinate Reference:	Well Wilder Federal AC Com 28 #8H
Project:	Lea County, New Mexico	TVD Reference:	Well @ 3180.0usft
Site:	Sec 28, T26S, R32E	MD Reference:	Well @ 3180.0usft
Well:	Wilder Federal AC Com 28 #8H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM Compass

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,034.0	88.00	180.30	9,290.4	-1,979.8	681.7	2,038.8	0.95	-0.11	-0.95
11,128.0	88.80	179.50	9,293.0	-2,073.8	681.8	2,132.3	1.20	0.85	-0.85
11,223.0	90.90	178.20	9,293.3	-2,168.8	683.8	2,226.9	2.60	2.21	-1.37
11,317.0	90.30	179.00	9,292.3	-2,262.7	686.0	2,320.6	1.06	-0.64	0.85
11,412.0	90.90	177.80	9,291.3	-2,357.7	688.7	2,415.4	1.41	0.63	-1.26
11,507.0	90.00	177.40	9,290.5	-2,452.6	692.7	2,510.2	1.04	-0.95	-0.42
11,601.0	90.60	178.60	9,290.0	-2,546.6	696.0	2,604.0	1.43	0.64	1.28
11,696.0	89.60	178.70	9,289.9	-2,641.5	698.2	2,698.7	1.06	-1.05	0.11
11,790.0	90.60	179.30	9,289.7	-2,735.5	699.8	2,792.4	1.24	1.06	0.64
11,885.0	89.80	179.40	9,289.4	-2,830.5	700.9	2,887.0	0.85	-0.84	0.11
11,980.0	88.70	178.70	9,290.6	-2,925.5	702.5	2,981.6	1.37	-1.16	-0.74
12,074.0	89.30	179.60	9,292.3	-3,019.4	703.9	3,075.3	1.15	0.64	0.96
12,169.0	91.10	180.10	9,291.9	-3,114.4	704.1	3,169.8	1.97	1.89	0.53
12,263.0	90.40	180.30	9,290.7	-3,208.4	703.8	3,263.3	0.77	-0.74	0.21
12,358.0	89.40	180.70	9,290.9	-3,303.4	703.0	3,357.7	1.13	-1.05	0.42
12,452.0	89.80	180.10	9,291.5	-3,397.4	702.3	3,451.1	0.77	0.43	-0.64
12,547.0	89.90	179.60	9,291.8	-3,492.4	702.6	3,545.7	0.54	0.11	-0.53
12,642.0	90.20	179.30	9,291.7	-3,587.4	703.5	3,640.3	0.45	0.32	-0.32
12,736.0	92.80	181.40	9,289.2	-3,681.4	702.9	3,733.7	3.55	2.77	2.23
12,831.0	92.00	180.70	9,285.2	-3,776.3	701.2	3,827.9	1.12	-0.84	-0.74
12,926.0	91.70	181.40	9,282.2	-3,871.2	699.4	3,922.2	0.80	-0.32	0.74
13,020.0	89.60	181.70	9,281.1	-3,965.2	696.9	4,015.4	2.26	-2.23	0.32
13,115.0	89.60	182.40	9,281.8	-4,060.1	693.5	4,109.5	0.74	0.00	0.74
13,209.0	88.80	180.20	9,283.1	-4,154.1	691.4	4,202.7	2.49	-0.85	-2.34
13,303.0	88.60	180.30	9,285.2	-4,248.0	690.9	4,296.2	0.24	-0.21	0.11
13,398.0	88.40	181.20	9,287.7	-4,343.0	689.7	4,390.5	0.97	-0.21	0.95
13,492.0	90.80	181.10	9,288.4	-4,437.0	687.8	4,483.8	2.56	2.55	-0.11
13,586.0	91.50	180.40	9,286.5	-4,530.9	686.6	4,577.2	1.05	0.74	-0.74
13,680.0	89.70	179.20	9,285.5	-4,624.9	686.9	4,670.7	2.30	-1.91	-1.28
13,774.0	89.80	178.70	9,285.9	-4,718.9	688.6	4,764.4	0.54	0.11	-0.53
13,869.0	90.10	180.30	9,286.0	-4,813.9	689.5	4,859.0	1.71	0.32	1.68
13,963.0	90.30	179.70	9,285.7	-4,907.9	689.5	4,952.5	0.67	0.21	-0.64
14,057.0	90.80	181.10	9,284.8	-5,001.9	688.8	5,046.0	1.58	0.53	1.49
14,152.0	89.70	180.70	9,284.3	-5,096.9	687.3	5,140.3	1.23	-1.16	-0.42
14,246.0	90.00	180.40	9,284.6	-5,190.9	686.4	5,233.7	0.45	0.32	-0.32
14,340.0	90.80	180.70	9,283.9	-5,284.9	685.5	5,327.1	0.91	0.85	0.32
14,434.0	89.30	181.90	9,283.8	-5,378.8	683.4	5,420.4	2.04	-1.60	1.28
14,528.0	88.20	180.50	9,285.9	-5,472.8	681.4	5,513.7	1.89	-1.17	-1.49
14,623.0	88.00	180.60	9,289.0	-5,567.7	680.5	5,608.0	0.24	-0.21	0.11
14,717.0	89.20	178.90	9,291.3	-5,661.7	680.9	5,701.6	2.21	1.28	-1.81
14,811.0	89.60	178.40	9,292.3	-5,755.7	683.1	5,795.3	0.68	0.43	-0.53
14,905.0	90.10	179.00	9,292.6	-5,849.6	685.3	5,889.0	0.83	0.53	0.64
14,999.0	88.10	178.80	9,294.1	-5,943.6	687.1	5,982.6	2.14	-2.13	-0.21
15,094.0	88.20	179.30	9,297.1	-6,038.5	688.6	6,077.2	0.54	0.11	0.53

Survey Report

Company:	Conoco Phillips	Local Co-ordinate Reference:	Well Wilder Federal AC Com 28 #8H
Project:	Lea County, New Mexico	TVD Reference:	Well @ 3180.0usft
Site:	Sec 28, T26S, R32E	MD Reference:	Well @ 3180.0usft
Well:	Wilder Federal AC Com 28 #8H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM Compass

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,188.0	88.20	180.40	9,300.1	-6,132.5	688.9	6,170.7	1.17	0.00	1.17
15,282.0	88.30	180.10	9,302.9	-6,226.4	688.5	6,264.2	0.34	0.11	-0.32
15,377.0	88.40	180.90	9,305.7	-6,321.4	687.6	6,358.5	0.85	0.11	0.84
15,471.0	88.80	181.00	9,308.0	-6,415.4	686.1	6,451.9	0.44	0.43	0.11
15,565.0	89.20	182.70	9,309.6	-6,509.3	683.0	6,545.0	1.86	0.43	1.81
15,659.0	87.80	181.00	9,312.1	-6,603.2	680.0	6,638.1	2.34	-1.49	-1.81
15,753.0	87.80	181.30	9,315.7	-6,697.1	678.1	6,731.4	0.32	0.00	0.32
15,847.0	87.50	182.60	9,319.5	-6,791.0	674.9	6,824.4	1.42	-0.32	1.38
15,870.0	87.40	181.90	9,320.6	-6,813.9	674.0	6,847.2	3.07	-0.43	-3.04
TD @ 15925' MD / 9323.1' TVD									
15,925.0	87.40	181.90	9,323.1	-6,868.9	672.2	6,901.6	0.00	0.00	0.00

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
174.0	174.0	0.3	-0.8	First MWD Survey @ 174' MD / 174' TVD
15,925.0	9,323.1	-6,868.9	672.2	TD @ 15925' MD / 9323.1' TVD

Checked By: _____ Approved By: _____ Date: _____