



Phoenix Technology Services LP

Survey Report

30-015-43930



Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Site: HH SO 10 P3
Well: #15H
Wellbore: OH / Job #60837
Design: Surveys (Patterson 270)

Local Co-ordinate Reference: Well #15H
TVD Reference: GL + KB @ 3307.50usft (Patterson 270)
MD Reference: GL + KB @ 3307.50usft (Patterson 270)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Compass 5000 GCR

Project	Eddy County, NM (NAD27 NME)		
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	HH SO 10 P3			
Site Position:		Northing:	387,559.00 usft	Latitude: 32° 3' 55.51924 N
From:	Map	Easting:	547,567.00 usft	Longitude: 104° 10' 47.20699 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence: 0.08 °

Well	#15H			
Well Position	+N/-S	0.00 usft	Northing:	387,609.00 usft
	+E/-W	0.00 usft	Easting:	547,568.00 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level: 3,279.00 usft

Wellbore	OH / Job #60837				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	5/31/2017	7.38	59.80	48,023

Design	Surveys (Patterson 270)				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	177.31	

Survey Program	Date 11/2/2017				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
201.00	444.00	Teledrift Surveys (OH / Job #60837)	MWD	MWD - Standard	
618.00	20,471.00	Phoenix MWD Surveys (OH / Job #60837)	MWD+HDGM	OWSG Rev.2 MWD + HDGM	

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Bulld Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
201.00	1.80	115.40	200.97	-1.35	2.85	1.49	0.90	0.90	0.00
266.00	1.40	116.40	265.94	-2.15	4.49	2.35	0.62	-0.62	1.54
359.00	0.80	131.40	358.92	-3.08	5.99	3.36	0.71	-0.65	16.13
444.00	0.30	48.40	443.92	-3.32	6.60	3.63	0.96	-0.59	-97.65
Tie In									
618.00	0.31	298.31	617.92	-2.80	6.53	3.10	0.29	0.01	-63.27
First Phoenix MWD Survey									
680.00	0.56	284.15	679.92	-2.65	6.09	2.93	0.44	0.40	-22.84



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697.00	0.43	281.89	696.92	-2.61	5.94	2.89	0.77	-0.76	-13.29
866.00	0.42	291.46	865.91	-2.25	4.75	2.47	0.04	-0.01	5.66
961.00	0.06	227.13	960.91	-2.16	4.39	2.36	0.42	-0.38	-67.72
1,056.00	0.23	256.57	1,055.91	-2.24	4.16	2.43	0.19	0.18	30.99
1,151.00	0.39	261.53	1,150.91	-2.33	3.66	2.50	0.17	0.17	5.22
1,246.00	0.50	267.01	1,245.91	-2.40	2.92	2.53	0.12	0.12	5.77
1,342.00	0.72	266.52	1,341.90	-2.46	1.90	2.55	0.23	0.23	-0.51
1,437.00	0.94	260.64	1,436.89	-2.62	0.54	2.64	0.25	0.23	-6.19
1,532.00	1.09	265.39	1,531.88	-2.82	-1.13	2.76	0.18	0.16	5.00
1,627.00	0.26	333.31	1,626.87	-2.70	-2.13	2.60	1.07	-0.87	71.49
1,721.00	1.00	74.52	1,720.87	-2.29	-1.43	2.22	1.15	0.79	107.67
1,815.00	1.12	83.11	1,814.85	-1.96	0.27	1.97	0.21	0.13	9.14
1,910.00	1.38	88.39	1,909.83	-1.82	2.34	1.93	0.30	0.27	5.56
2,004.00	2.20	92.23	2,003.78	-1.86	5.27	2.10	0.88	0.87	4.09
2,099.00	2.81	94.53	2,098.69	-2.11	9.41	2.55	0.65	0.64	2.42
2,194.00	2.53	100.92	2,193.59	-2.69	13.79	3.34	0.43	-0.29	6.73
2,383.00	1.45	108.70	2,382.47	-4.25	20.15	5.19	0.59	-0.57	4.12
2,478.00	1.20	99.20	2,477.44	-4.79	22.27	5.83	0.35	-0.26	-10.00
2,573.00	2.30	142.32	2,572.40	-6.46	24.42	7.60	1.73	1.16	45.39
2,668.00	4.70	144.63	2,667.22	-11.15	27.84	12.44	2.53	2.53	2.43
2,763.00	7.47	145.50	2,761.67	-19.41	33.59	20.97	2.92	2.92	0.92
2,859.00	8.81	146.25	2,856.70	-30.67	41.21	32.57	1.40	1.40	0.78
2,954.00	8.35	147.92	2,950.64	-42.56	48.92	44.81	0.55	-0.48	1.76
3,049.00	8.31	149.02	3,044.64	-54.29	56.11	56.86	0.17	-0.04	1.16
3,144.00	7.96	149.15	3,138.68	-65.82	63.02	68.71	0.37	-0.37	0.14
3,239.00	8.45	143.22	3,232.71	-77.06	70.57	80.29	1.03	0.52	-6.24
3,334.00	9.33	138.14	3,326.57	-88.39	79.89	92.04	1.24	0.93	-5.35
3,429.00	9.34	138.71	3,420.31	-99.92	90.12	104.03	0.10	0.01	0.60
3,524.00	9.20	138.50	3,514.07	-111.40	100.24	115.98	0.15	-0.15	-0.22
3,619.00	9.17	138.87	3,607.85	-122.78	110.25	127.82	0.07	-0.03	0.39
3,713.00	8.91	138.88	3,700.69	-133.91	119.96	139.39	0.28	-0.28	0.01
3,808.00	8.88	140.72	3,794.54	-145.13	129.44	151.04	0.30	-0.03	1.94
3,902.00	8.64	140.56	3,887.45	-156.20	138.52	162.53	0.26	-0.26	-0.17
3,997.00	9.56	135.24	3,981.25	-167.31	148.61	174.10	1.31	0.97	-5.60
4,092.00	10.41	139.30	4,074.81	-179.42	159.76	186.72	1.16	0.89	4.27
4,186.00	10.11	139.49	4,167.31	-192.13	170.66	199.93	0.32	-0.32	0.20
4,280.00	9.82	139.97	4,259.89	-204.54	181.17	212.82	0.32	-0.31	0.51
4,375.00	9.46	139.81	4,353.55	-216.71	191.42	225.45	0.38	-0.38	-0.17
4,469.00	9.02	139.31	4,446.33	-228.20	201.21	237.39	0.48	-0.47	-0.53
4,564.00	8.86	136.86	4,540.18	-239.18	211.07	248.82	0.43	-0.17	-2.58
4,658.00	8.27	133.87	4,633.13	-249.15	220.89	259.24	0.79	-0.63	-3.18
4,753.00	6.98	134.60	4,727.29	-257.94	229.93	268.44	1.36	-1.36	0.77
4,846.00	7.09	136.15	4,819.59	-266.04	237.93	276.92	0.24	0.12	1.67



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4,941.00	8.01	135.00	4,913.76	-274.95	246.67	286.23	0.98	0.97	-1.21
5,035.00	8.81	130.60	5,006.75	-284.27	256.77	296.01	1.09	0.85	-4.68
5,129.00	8.63	129.20	5,099.66	-293.41	267.70	305.65	0.30	-0.19	-1.49
5,224.00	8.27	130.97	5,193.63	-302.39	278.38	315.13	0.47	-0.38	1.86
5,319.00	8.98	132.41	5,287.56	-311.87	289.01	325.10	0.78	0.75	1.52
5,414.00	10.45	139.32	5,381.20	-323.41	300.11	337.14	1.97	1.55	7.27
5,604.00	10.49	141.29	5,568.03	-349.97	322.15	364.71	0.19	0.02	1.04
5,699.00	9.21	138.66	5,661.63	-362.43	332.58	377.64	1.43	-1.35	-2.77
5,793.00	8.15	136.60	5,754.55	-372.92	342.13	388.57	1.17	-1.13	-2.19
5,887.00	7.68	139.29	5,847.66	-382.52	350.81	398.56	0.64	-0.50	2.86
5,982.00	5.39	141.82	5,942.04	-390.84	357.71	407.20	2.43	-2.41	2.66
6,071.00	4.62	149.19	6,030.70	-397.21	362.13	413.76	1.13	-0.87	8.28
6,076.00	5.01	149.48	6,035.68	-397.57	362.34	414.14	7.82	7.80	5.80
6,266.00	2.79	162.56	6,225.23	-409.13	367.94	425.95	1.25	-1.17	6.88
6,361.00	1.39	187.30	6,320.17	-412.48	368.49	429.32	1.72	-1.47	26.04
6,455.00	1.45	189.22	6,414.14	-414.78	368.15	431.60	0.08	0.06	2.04
6,550.00	1.65	183.01	6,509.10	-417.33	367.89	434.14	0.27	0.21	-6.54
6,739.00	1.57	193.84	6,698.03	-422.57	367.12	439.33	0.17	-0.04	5.73
6,834.00	1.40	178.95	6,793.00	-424.99	366.83	441.74	0.44	-0.18	-15.67
7,024.00	1.36	184.42	6,982.94	-429.56	366.70	446.30	0.07	-0.02	2.88
7,120.00	1.07	193.16	7,078.92	-431.57	366.41	448.29	0.36	-0.30	9.10
7,214.00	0.99	191.81	7,172.91	-433.22	366.04	449.92	0.09	-0.09	-1.44
7,309.00	0.64	226.97	7,267.90	-434.38	365.49	451.06	0.63	-0.37	37.01
7,403.00	0.84	254.03	7,361.89	-434.93	364.44	451.55	0.42	0.21	28.79
7,498.00	1.11	249.77	7,456.87	-435.44	362.91	451.99	0.29	0.28	-4.48
7,593.00	1.05	258.88	7,551.86	-435.93	361.19	452.40	0.19	-0.06	9.59
7,783.00	0.34	255.70	7,741.84	-436.40	358.94	452.77	0.37	-0.37	-1.67
7,878.00	0.45	100.39	7,836.84	-436.54	359.03	452.91	0.81	0.12	-163.48
7,973.00	0.62	120.85	7,931.84	-436.87	359.84	453.27	0.27	0.18	21.54
8,068.00	0.78	138.60	8,026.83	-437.62	360.71	454.06	0.28	0.17	18.68
8,163.00	0.79	161.94	8,121.82	-438.72	361.34	455.20	0.33	0.01	24.57
8,257.00	1.05	168.06	8,215.81	-440.18	361.72	456.67	0.30	0.28	6.51
8,352.00	0.98	161.08	8,310.80	-441.80	362.16	458.31	0.15	-0.07	-7.35
8,446.00	0.93	156.04	8,404.78	-443.26	362.73	459.80	0.10	-0.05	-5.36
8,541.00	0.62	145.05	8,499.77	-444.39	363.34	460.95	0.36	-0.33	-11.57
8,636.00	0.28	151.08	8,594.77	-445.01	363.75	461.59	0.36	-0.36	6.35
8,732.00	0.29	141.89	8,690.77	-445.41	364.01	462.00	0.05	0.01	-9.57
8,827.00	0.29	146.60	8,785.77	-445.80	364.29	462.40	0.03	0.00	4.96
8,921.00	0.14	116.46	8,879.77	-446.05	364.52	462.66	0.19	-0.16	-32.06
8,941.00	0.18	190.41	8,899.77	-446.09	364.54	462.71	0.98	0.20	369.75
9,111.00	0.18	145.00	9,069.77	-446.57	364.65	463.19	0.08	0.00	-26.71
9,205.00	0.22	207.15	9,163.77	-446.85	364.65	463.47	0.22	0.04	66.12
9,310.00	0.12	215.46	9,268.77	-447.12	364.49	463.73	0.10	-0.10	7.91
9,438.00	0.36	18.04	9,396.76	-446.85	364.54	463.46	0.37	0.19	127.02



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9,533.00	0.31	137.31	9,491.76	-446.75	364.81	463.38	0.61	-0.05	125.55
9,628.00	13.47	175.56	9,585.88	-458.02	365.84	474.69	13.92	13.85	40.26
9,723.00	26.51	162.85	9,675.00	-489.46	372.98	506.43	14.39	13.73	-13.38
9,817.00	36.57	167.23	9,755.02	-536.95	385.39	554.44	10.97	10.70	4.66
9,912.00	45.31	175.97	9,826.77	-598.40	394.05	616.24	10.98	9.20	9.20
9,991.00	47.28	177.16	9,881.35	-655.41	397.46	673.34	2.72	2.49	1.51
10,029.00	47.06	176.78	9,907.19	-683.24	398.93	701.20	0.93	-0.58	-1.00
10,124.00	48.73	182.27	9,970.91	-753.66	399.47	771.58	4.63	1.76	5.78
10,220.00	57.92	187.33	10,028.21	-830.24	392.83	847.77	10.46	9.57	5.27
10,315.00	59.64	187.90	10,077.45	-910.77	382.07	927.69	1.88	1.81	0.60
10,376.00	62.82	185.70	10,106.81	-963.85	375.75	980.42	6.09	5.21	-3.60
FTP									
10,410.00	64.60	184.53	10,121.87	-994.21	373.04	1,010.62	6.09	5.25	-3.44
10,504.00	71.61	181.41	10,156.91	-1,081.25	368.58	1,097.35	8.07	7.46	-3.32
10,599.00	80.18	183.43	10,180.04	-1,173.21	364.66	1,189.03	9.25	9.02	2.13
10,694.00	88.70	182.92	10,189.24	-1,267.53	359.43	1,283.00	8.98	8.97	-0.54
10,789.00	88.42	182.58	10,191.62	-1,362.39	354.88	1,377.54	0.46	-0.29	-0.36
10,883.00	88.47	182.36	10,194.17	-1,456.27	350.83	1,471.13	0.24	0.05	-0.23
10,978.00	88.58	180.28	10,196.62	-1,551.21	348.64	1,565.86	2.19	0.12	-2.19
11,073.00	89.34	179.71	10,198.34	-1,646.19	348.65	1,660.74	1.00	0.80	-0.60
11,165.00	90.00	180.05	10,198.87	-1,738.19	348.84	1,752.64	0.81	0.72	0.37
11,258.00	89.81	179.73	10,199.03	-1,831.19	349.02	1,845.55	0.40	-0.20	-0.34
11,350.00	90.08	179.54	10,199.12	-1,923.18	349.60	1,937.47	0.36	0.29	-0.21
11,443.00	89.33	177.86	10,199.60	-2,016.15	351.71	2,030.44	1.98	-0.81	-1.81
11,536.00	89.60	177.41	10,200.46	-2,109.07	355.55	2,123.43	0.56	0.29	-0.48
11,628.00	91.15	177.53	10,199.86	-2,200.98	359.61	2,215.43	1.69	1.68	0.13
11,721.00	89.64	177.02	10,199.22	-2,293.87	364.03	2,308.42	1.71	-1.62	-0.55
11,815.00	88.24	177.04	10,200.96	-2,387.72	368.90	2,402.40	1.49	-1.49	0.02
11,909.00	87.43	176.59	10,204.51	-2,481.51	374.12	2,496.33	0.99	-0.86	-0.48
12,004.00	87.62	176.45	10,208.61	-2,576.24	379.88	2,591.23	0.25	0.20	-0.15
12,099.00	89.17	176.71	10,211.27	-2,671.04	385.55	2,686.19	1.65	1.63	0.27
12,194.00	86.82	177.06	10,214.60	-2,765.83	390.71	2,781.12	2.50	-2.47	0.37
12,290.00	87.22	176.76	10,219.59	-2,861.56	395.87	2,876.99	0.52	0.42	-0.31
12,385.00	87.58	176.18	10,223.90	-2,956.28	401.72	2,971.88	0.72	0.38	-0.61
12,479.00	85.16	173.36	10,229.85	-3,049.69	410.26	3,065.58	3.95	-2.57	-3.00
12,573.00	87.30	174.99	10,236.03	-3,142.99	419.78	3,159.23	2.86	2.28	1.73
12,669.00	86.87	178.66	10,240.91	-3,238.70	425.09	3,255.08	3.84	-0.45	3.82
12,763.00	88.05	179.98	10,245.08	-3,332.60	426.21	3,348.93	1.88	1.26	1.40
12,858.00	89.16	179.93	10,247.39	-3,427.57	426.28	3,443.80	1.17	1.17	-0.05
12,953.00	89.79	179.85	10,248.26	-3,522.57	426.46	3,538.70	0.67	0.66	-0.08
13,048.00	84.97	178.37	10,252.60	-3,617.42	427.93	3,633.52	5.31	-5.07	-1.56
13,143.00	85.47	178.22	10,260.52	-3,712.05	430.75	3,728.18	0.55	0.53	-0.16
13,238.00	87.73	178.79	10,266.16	-3,806.85	433.22	3,822.98	2.45	2.38	0.60



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Local Co-ordinate Reference: Well #15H
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MD Reference: GL + KB @ 3307.50usft (Patterson 270)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Compass 5000 GCR

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)
13,332.00	91.90	178.80	10,266.46	-3,900.80	435.20	3,916.93	4.44	4.44	0.01
13,427.00	89.39	177.62	10,265.39	-3,995.74	438.17	4,011.90	2.92	-2.64	-1.24
13,521.00	91.99	178.09	10,264.26	-4,089.66	441.68	4,105.88	2.81	2.77	0.50
13,616.00	89.33	177.35	10,263.16	-4,184.57	445.46	4,200.87	2.91	-2.80	-0.78
13,711.00	89.87	177.95	10,263.83	-4,279.49	449.36	4,295.86	0.85	0.57	0.63
13,806.00	92.87	178.12	10,261.56	-4,374.39	452.62	4,390.82	3.16	3.16	0.18
13,901.00	89.36	178.36	10,259.71	-4,469.32	455.53	4,485.77	3.70	-3.69	0.25
13,995.00	89.86	178.62	10,260.35	-4,563.28	458.01	4,579.75	0.60	0.53	0.28
14,091.00	90.49	178.05	10,260.05	-4,659.24	460.80	4,675.73	0.88	0.66	-0.59
14,186.00	89.09	175.34	10,260.40	-4,754.07	466.27	4,770.71	3.21	-1.47	-2.85
14,281.00	90.70	174.84	10,260.58	-4,848.72	474.41	4,865.64	1.77	1.69	-0.53
14,376.00	91.41	178.18	10,258.83	-4,943.51	480.19	4,960.60	3.59	0.75	3.52
14,471.00	93.45	180.81	10,254.80	-5,038.41	481.02	5,055.43	3.50	2.15	2.77
14,567.00	90.33	181.19	10,251.63	-5,134.33	479.35	5,151.17	3.27	-3.25	0.40
14,662.00	88.75	180.73	10,252.39	-5,229.31	477.76	5,245.97	1.73	-1.66	-0.48
14,756.00	89.40	181.30	10,253.91	-5,323.28	476.09	5,339.76	0.92	0.69	0.61
14,851.00	91.06	182.27	10,253.53	-5,418.23	473.13	5,434.46	2.02	1.75	1.02
14,945.00	89.68	180.49	10,252.92	-5,512.19	470.87	5,528.22	2.40	-1.47	-1.89
15,040.00	95.63	180.72	10,248.53	-5,607.04	469.87	5,622.92	6.27	6.26	0.24
15,135.00	92.41	179.30	10,241.87	-5,701.80	469.86	5,717.56	3.70	-3.39	-1.49
15,230.00	90.07	177.48	10,239.81	-5,796.73	472.52	5,812.51	3.12	-2.46	-1.92
15,325.00	91.27	176.38	10,238.70	-5,891.58	477.61	5,907.50	1.71	1.26	-1.16
15,420.00	94.48	176.95	10,233.93	-5,986.29	483.13	6,002.36	3.43	3.38	0.60
15,516.00	96.85	181.10	10,224.45	-6,081.78	484.76	6,097.83	4.96	2.47	4.32
15,611.00	97.05	181.06	10,212.96	-6,176.06	482.99	6,191.92	0.21	0.21	-0.04
15,705.00	95.41	180.44	10,202.76	-6,269.49	481.76	6,285.20	1.86	-1.74	-0.66
15,800.00	94.95	180.19	10,194.18	-6,364.10	481.24	6,379.68	0.55	-0.48	-0.26
15,894.00	91.00	179.72	10,189.30	-6,457.96	481.32	6,473.43	4.23	-4.20	-0.50
15,989.00	92.34	179.02	10,186.54	-6,552.91	482.36	6,568.33	1.59	1.41	-0.74
16,084.00	91.87	177.70	10,183.05	-6,647.80	485.08	6,663.24	1.47	-0.49	-1.39
16,178.00	91.11	177.84	10,180.60	-6,741.70	488.74	6,757.21	0.82	-0.81	0.15
16,274.00	93.19	177.92	10,177.00	-6,837.56	492.28	6,853.13	2.17	2.17	0.08
16,368.00	96.12	179.00	10,169.37	-6,931.21	494.80	6,946.79	3.32	3.12	1.15
16,463.00	92.42	179.59	10,162.30	-7,025.92	495.97	7,041.45	3.94	-3.89	0.62
16,558.00	90.10	179.26	10,160.21	-7,120.88	496.92	7,136.36	2.47	-2.44	-0.35
16,653.00	89.41	180.06	10,160.62	-7,215.88	497.48	7,231.28	1.11	-0.73	0.84
16,748.00	89.55	180.29	10,161.48	-7,310.88	497.19	7,326.15	0.28	0.15	0.24
16,843.00	89.35	180.63	10,162.39	-7,405.87	496.43	7,421.01	0.42	-0.21	0.36
16,938.00	88.96	180.20	10,163.79	-7,500.86	495.74	7,515.86	0.61	-0.41	-0.45
17,032.00	90.50	180.71	10,164.24	-7,594.85	495.00	7,609.71	1.73	1.64	0.54
17,127.00	90.78	181.41	10,163.17	-7,689.83	493.24	7,704.50	0.79	0.29	0.74
17,222.00	87.02	178.79	10,165.00	-7,784.78	493.07	7,799.35	4.82	-3.96	-2.76
17,317.00	88.07	178.93	10,169.07	-7,879.68	494.96	7,894.22	1.12	1.11	0.15
17,412.00	88.93	179.10	10,171.55	-7,974.63	496.59	7,989.15	0.92	0.91	0.18



Phoenix Technology Services LP

Survey Report



Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Site: HH SO 10 P3
Well: #15H
Wellbore: OH / Job #60837
Design: Surveys (Patterson 270)

Local Co-ordinate Reference: Well #15H
TVD Reference: GL + KB @ 3307.50usft (Patterson 270)
MD Reference: GL + KB @ 3307.50usft (Patterson 270)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Compass 5000 GCR

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)
17,507.00	92.50	181.34	10,170.37	-8,069.60	496.23	8,084.00	4.44	3.76	2.36
17,602.00	91.98	180.95	10,166.66	-8,164.51	494.33	8,178.71	0.68	-0.55	-0.41
17,696.00	91.10	179.33	10,164.13	-8,258.47	494.10	8,272.56	1.96	-0.94	-1.72
17,790.00	91.25	178.06	10,162.20	-8,352.42	496.24	8,366.51	1.36	0.16	-1.35
17,885.00	91.32	177.12	10,160.07	-8,447.31	500.24	8,461.48	0.99	0.07	-0.99
17,980.00	90.92	180.25	10,158.21	-8,542.26	502.42	8,556.42	3.32	-0.42	3.29
18,075.00	90.18	180.77	10,157.30	-8,637.25	501.57	8,651.27	0.95	-0.78	0.55
18,171.00	90.47	180.87	10,156.76	-8,733.24	500.20	8,747.09	0.32	0.30	0.10
18,266.00	90.56	181.32	10,155.90	-8,828.22	498.38	8,841.88	0.48	0.09	0.47
18,361.00	91.94	181.34	10,153.83	-8,923.17	496.18	8,936.62	1.45	1.45	0.02
18,456.00	88.18	181.65	10,153.73	-9,018.12	493.70	9,031.35	3.97	-3.96	0.33
18,551.00	88.70	181.30	10,156.32	-9,113.05	491.26	9,126.06	0.66	0.55	-0.37
18,646.00	88.41	179.41	10,158.71	-9,208.01	490.67	9,220.89	2.01	-0.31	-1.99
18,740.00	90.25	180.25	10,159.81	-9,302.00	490.95	9,314.79	2.15	1.96	0.89
18,836.00	90.12	179.33	10,159.50	-9,398.00	491.30	9,410.70	0.97	-0.14	-0.96
18,931.00	90.67	179.51	10,158.85	-9,492.99	492.26	9,505.63	0.61	0.58	0.19
19,026.00	90.02	178.54	10,158.28	-9,587.97	493.88	9,600.59	1.23	-0.68	-1.02
19,121.00	89.41	179.36	10,158.75	-9,682.96	495.62	9,695.55	1.08	-0.64	0.86
19,216.00	89.76	180.33	10,159.44	-9,777.95	495.87	9,790.45	1.09	0.37	1.02
19,312.00	89.91	180.25	10,159.71	-9,873.95	495.39	9,886.32	0.18	0.16	-0.08
19,407.00	90.25	179.94	10,159.58	-9,968.95	495.23	9,981.21	0.48	0.36	-0.33
19,502.00	90.86	180.55	10,158.66	-10,063.94	494.82	10,076.08	0.91	0.64	0.64
19,597.00	90.54	178.93	10,157.50	-10,158.93	495.25	10,170.98	1.74	-0.34	-1.71
19,693.00	91.64	178.41	10,155.67	-10,254.89	497.48	10,266.93	1.27	1.15	-0.54
19,787.00	91.70	178.41	10,152.93	-10,348.81	500.09	10,360.88	0.06	0.06	0.00
19,882.00	90.84	175.45	10,150.83	-10,443.64	505.18	10,455.84	3.24	-0.91	-3.12
19,977.00	91.18	175.58	10,149.15	-10,538.33	512.60	10,550.78	0.38	0.36	0.14
20,071.00	91.25	174.54	10,147.16	-10,631.96	520.70	10,644.68	1.11	0.07	-1.11
20,166.00	91.44	174.84	10,144.93	-10,726.53	529.49	10,739.56	0.37	0.20	0.32
20,261.00	91.27	173.96	10,142.68	-10,821.05	538.75	10,834.41	0.94	-0.18	-0.93
20,319.00	92.21	174.12	10,140.92	-10,878.71	544.77	10,892.29	1.64	1.62	0.27
LTP									
20,356.00	92.81	174.22	10,139.30	-10,915.48	548.53	10,929.19	1.64	1.62	0.27
20,419.00	93.34	174.57	10,135.92	-10,978.09	554.67	10,992.02	1.01	0.84	0.56
Final Phoenix MWD Survey									
20,471.00	93.34	174.57	10,132.89	-11,029.77	559.59	11,043.87	0.00	0.00	0.00
Projection to TD									



Phoenix Technology Services LP

Survey Report



Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Site: HH SO 10 P3
Well: #15H
Wellbore: OH / Job #60837
Design: Surveys (Patterson 270)

Local Co-ordinate Reference: Well #15H
TVD Reference: GL + KB @ 3307.50usft (Patterson 270)
MD Reference: GL + KB @ 3307.50usft (Patterson 270)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Compass 5000 GCR

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
444.00	443.92	-3.32	6.60	Tie In
618.00	617.92	-2.80	6.53	First Phoenix MWD Survey
10,376.00	10,106.81	-963.85	375.75	FTP
20,319.00	10,140.92	-10,878.71	544.77	LTP
20,419.00	10,135.92	-10,978.09	554.67	Final Phoenix MWD Survey
20,471.00	10,132.89	-11,029.77	559.59	Projection to TD