

PathFinder – a Schlumberger company

Survey Report

CHEVRON USA INC.
SKEEN 23 26 26 FEDERAL #6H
EDDY COUNTY, NM
API#: 30-015-42883 Rig: Nabors M51
PathFinder Office Supervisor: Qun Xu
PathFinder Field Engineers: T.Cramer
S.Amador

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.1.17.1724 N LON:104.16.10.0884 W
GRID Reference:NAD27 new mexico east Transverse Mercator
Ref GRID Coord: X: 519793.0000 Y: 371531.0000
North Aligned To:GRID NORTH
Total Magnetic Correction: 7.57° EAST TO GRID
Vertical Section Plane: 0.05
Survey Vert. Reference: 22.00' Rotary Table To Ground
Altitude:3431.00' Ground To MSL

Survey Calculations by RX4 using Minimum Curvature

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
ORIGIN OF WELL AT SURFACE.										
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00@	0.00	0.00
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.										
427.00	3.08	193.04	426.79	427.00	-11.18	11.18 S	2.59 W	11.47@	193.04	0.72
522.00	2.20	192.39	521.69	95.00	-15.45	15.45 S	3.56 W	15.85@	192.97	0.93
609.00	1.67	186.95	608.64	87.00	-18.34	18.34 S	4.07 W	18.78@	192.51	0.64
702.00	1.67	187.86	701.60	93.00	-21.03	21.02 S	4.42 W	21.48@	191.87	0.03
795.00	1.67	188.92	794.56	93.00	-23.71	23.70 S	4.81 W	24.19@	191.48	0.03
889.00	0.88	197.36	888.54	94.00	-25.75	25.75 S	5.24 W	26.27@	191.50	0.86
980.00	0.70	199.58	979.53	91.00	-26.94	26.94 S	5.64 W	27.52@	191.82	0.20
1079.00	0.79	204.24	1078.52	99.00	-28.13	28.13 S	6.12 W	28.79@	192.27	0.11
1171.00	0.79	200.50	1170.51	92.00	-29.31	29.30 S	6.60 W	30.04@	192.69	0.06
1266.00	0.79	162.02	1265.51	95.00	-30.54	30.54 S	6.63 W	31.25@	192.25	0.55
1362.00	1.06	128.49	1361.49	96.00	-31.72	31.72 S	5.73 W	32.23@	190.24	0.62
1457.00	1.14	127.27	1456.48	95.00	-32.84	32.84 S	4.29 W	33.12@	187.44	0.09
1552.00	1.93	115.25	1551.44	95.00	-34.10	34.09 S	2.09 W	34.16@	183.51	0.89
1647.00	2.81	104.61	1646.36	95.00	-35.36	35.36 S	1.61 E	35.40@	177.39	1.03
1743.00	2.64	102.89	1742.25	96.00	-36.44	36.45 S	6.04 E	36.95@	170.59	0.20
1838.00	2.46	103.35	1837.16	95.00	-37.40	37.41 S	10.16 E	38.76@	164.81	0.19
1941.00	2.02	102.63	1940.08	103.00	-38.30	38.32 S	14.08 E	40.82@	159.82	0.43
2036.00	1.76	95.92	2035.03	95.00	-38.82	38.83 S	17.17 E	42.46@	156.15	0.36
2227.00	1.76	90.59	2225.94	191.00	-39.15	39.17 S	23.02 E	45.43@	149.56	0.09
2418.00	1.41	318.53	2416.90	191.00	-37.41	37.43 S	24.39 E	44.68@	146.91	1.52
2608.00	1.41	318.76	2606.85	190.00	-33.91	33.93 S	21.30 E	40.06@	147.87	0.00
2799.00	1.41	312.69	2797.79	191.00	-30.55	30.56 S	18.03 E	35.49@	149.47	0.08
2990.00	1.41	304.34	2988.73	191.00	-27.63	27.65 S	14.36 E	31.15@	152.55	0.11

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3181.00	1.32	305.31	3179.68	191.00	-25.04	25.05 S	10.63 E	27.21@	157.01	0.05
3371.00	1.32	299.88	3369.63	190.00	-22.69	22.69 S	6.94 E	23.73@	162.99	0.07
3562.00	1.41	293.85	3560.57	191.00	-20.64	20.65 S	2.89 E	20.85@	172.05	0.09
3752.00	1.41	295.94	3750.51	190.00	-18.68	18.68 S	1.36 W	18.73@	184.15	0.03
3943.00	1.32	282.12	3941.46	191.00	-17.19	17.19 S	5.62 W	18.08@	198.10	0.18
4133.00	1.06	287.64	4131.42	190.00	-16.21	16.20 S	9.43 W	18.74@	210.22	0.15
4324.00	1.85	348.42	4322.37	191.00	-12.65	12.64 S	11.74 W	17.25@	222.87	0.85
4514.00	1.67	353.29	4512.28	190.00	-6.90	6.89 S	12.68 W	14.43@	241.48	0.12
4705.00	1.58	350.52	4703.20	191.00	-1.54	1.53 S	13.43 W	13.52@	263.52	0.06
4895.00	1.41	352.92	4893.13	190.00	3.36	3.38 N	14.15 W	14.55@	283.42	0.10
4991.00	0.88	184.32	4989.13	96.00	3.80	3.81 N	14.36 W	14.85@	284.88	2.38
5086.00	5.35	170.76	5083.96	95.00	-1.30	1.29 S	13.70 W	13.76@	264.63	4.74
5182.00	6.41	165.30	5179.46	96.00	-10.90	10.89 S	11.62 W	15.92@	226.86	1.25
5277.00	6.23	171.20	5273.88	95.00	-21.12	21.11 S	9.49 W	23.15@	204.19	0.71
5373.00	5.74	167.60	5369.36	96.00	-30.96	30.95 S	7.66 W	31.88@	193.90	0.64
5468.00	5.52	173.41	5463.90	95.00	-40.13	40.13 S	6.11 W	40.59@	188.66	0.64
5563.00	5.63	174.43	5558.45	95.00	-49.31	49.30 S	5.14 W	49.57@	185.95	0.16
5754.00	4.46	171.54	5748.71	191.00	-65.98	65.98 S	3.13 W	66.05@	182.72	0.63
5849.00	3.78	174.24	5843.46	95.00	-72.75	72.74 S	2.28 W	72.78@	181.79	0.74
6040.00	4.56	174.61	6033.96	191.00	-86.57	86.57 S	0.93 W	86.57@	180.62	0.41
6230.00	3.78	170.48	6223.45	190.00	-100.26	100.26 S	0.81 E	100.27@	179.54	0.44
6326.00	3.43	173.27	6319.26	96.00	-106.24	106.24 S	1.67 E	106.25@	179.10	0.41
6516.00	6.01	175.10	6508.60	190.00	-121.79	121.79 S	3.19 E	121.84@	178.50	1.36
6612.00	5.04	177.99	6604.15	96.00	-131.01	131.02 S	3.77 E	131.07@	178.35	1.05
6675.00	4.84	174.47	6666.92	63.00	-136.42	136.43 S	4.12 E	136.49@	178.27	0.58
6703.00	4.66	174.36	6694.82	28.00	-138.73	138.74 S	4.35 E	138.80@	178.21	0.64
6735.00	2.90	166.93	6726.75	32.00	-140.81	140.82 S	4.66 E	140.89@	178.11	5.70
6767.00	1.58	22.27	6758.74	32.00	-141.19	141.20 S	5.01 E	141.29@	177.97	13.40

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6798.00	5.89	6.59	6789.67	31.00	-139.22	139.22 S	5.35 E	139.32@	177.80	14.16
6830.00	10.55	1.57	6821.33	32.00	-134.65	134.66 S	5.62 E	134.78@	177.61	14.72
6862.00	14.07	0.39	6852.59	32.00	-127.83	127.84 S	5.73 E	127.97@	177.43	11.03
6894.00	16.53	1.90	6883.46	32.00	-119.39	119.40 S	5.90 E	119.54@	177.17	7.79
6926.00	19.35	1.60	6913.90	32.00	-109.54	109.55 S	6.20 E	109.72@	176.76	8.82
6957.00	22.34	0.41	6942.86	31.00	-98.51	98.52 S	6.39 E	98.73@	176.29	9.74
6989.00	24.45	358.41	6972.23	32.00	-85.81	85.82 S	6.25 E	86.04@	175.84	7.04
7021.00	25.94	357.73	7001.19	32.00	-72.20	72.20 S	5.79 E	72.43@	175.42	4.74
7053.00	28.05	358.37	7029.70	32.00	-57.68	57.69 S	5.30 E	57.93@	174.75	6.66
7085.00	29.63	358.24	7057.73	32.00	-42.25	42.26 S	4.84 E	42.53@	173.47	4.94
7117.00	30.25	358.60	7085.46	32.00	-26.29	26.29 S	4.40 E	26.66@	170.50	2.02
7148.00	31.48	358.62	7112.07	31.00	-10.39	10.39 S	4.01 E	11.14@	158.89	3.97
7180.00	33.41	359.14	7139.07	32.00	6.77	6.77 N	3.68 E	7.70@	28.54	6.09
7212.00	36.67	0.02	7165.27	32.00	25.14	25.14 N	3.55 E	25.39@	8.04	10.31
7243.00	39.31	0.16	7189.70	31.00	44.22	44.22 N	3.58 E	44.36@	4.63	8.52
7275.00	41.94	0.55	7213.98	32.00	65.05	65.05 N	3.71 E	65.16@	3.27	8.26
7307.00	45.11	1.63	7237.18	32.00	87.08	87.08 N	4.14 E	87.18@	2.72	10.17
7339.00	48.98	2.49	7258.99	32.00	110.49	110.48 N	4.99 E	110.59@	2.58	12.25
7370.00	52.14	2.49	7278.68	31.00	134.40	134.40 N	6.03 E	134.53@	2.57	10.19
7402.00	56.01	2.51	7297.45	32.00	160.29	160.28 N	7.16 E	160.44@	2.56	12.09
7434.00	59.97	2.53	7314.41	32.00	187.39	187.38 N	8.35 E	187.57@	2.55	12.37
7466.00	63.93	2.11	7329.45	32.00	215.60	215.59 N	9.49 E	215.80@	2.52	12.43
7497.00	68.24	0.83	7342.02	31.00	243.93	243.92 N	10.21 E	244.13@	2.40	14.41
7529.00	72.63	0.54	7352.73	32.00	274.07	274.06 N	10.57 E	274.26@	2.21	13.75
7561.00	76.59	0.57	7361.22	32.00	304.91	304.90 N	10.87 E	305.10@	2.04	12.37
7592.00	81.16	0.49	7367.20	31.00	335.32	335.31 N	11.15 E	335.50@	1.90	14.74
7624.00	85.56	0.48	7370.90	32.00	367.10	367.09 N	11.42 E	367.27@	1.78	13.75
7656.00	89.60	358.99	7372.25	32.00	399.06	399.05 N	11.27 E	399.21@	1.62	13.45

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7752.00	92.95	358.31	7370.11	96.00	495.00	494.99 N	9.01 E	495.07@	1.04	3.56
7847.00	89.96	357.36	7367.70	95.00	589.88	589.88 N	5.42 E	589.90@	0.53	3.30
7942.00	91.63	357.25	7366.38	95.00	684.76	684.76 N	0.96 E	684.76@	0.08	1.76
8037.00	91.54	358.85	7363.76	95.00	779.66	779.67 N	2.27 W	779.67@	359.83	1.69
8132.00	91.28	358.91	7361.42	95.00	874.61	874.62 N	4.13 W	874.63@	359.73	0.28
8228.00	91.63	358.46	7358.98	96.00	970.56	970.56 N	6.33 W	970.58@	359.63	0.59
8323.00	91.19	358.35	7356.64	95.00	1065.49	1065.50 N	8.98 W	1065.53@	359.52	0.48
8418.00	91.89	358.81	7354.09	95.00	1160.42	1160.43 N	11.33 W	1160.49@	359.44	0.88
8513.00	87.85	0.63	7354.31	95.00	1255.40	1255.41 N	11.79 W	1255.46@	359.46	4.66
8608.00	89.34	1.35	7356.63	95.00	1350.35	1350.36 N	10.15 W	1350.40@	359.57	1.74
8704.00	89.34	0.45	7357.74	96.00	1446.33	1446.34 N	8.65 W	1446.37@	359.66	0.94
8799.00	88.99	359.84	7359.13	95.00	1541.32	1541.33 N	8.41 W	1541.35@	359.69	0.74
8894.00	90.66	359.33	7359.42	95.00	1636.32	1636.32 N	9.09 W	1636.35@	359.68	1.84
8989.00	88.64	358.87	7360.00	95.00	1731.30	1731.31 N	10.59 W	1731.34@	359.65	2.18
9084.00	91.01	359.11	7360.29	95.00	1826.27	1826.28 N	12.26 W	1826.32@	359.62	2.51
9179.00	90.04	0.85	7359.42	95.00	1921.26	1921.28 N	12.29 W	1921.31@	359.63	2.10
9274.00	92.07	0.70	7357.67	95.00	2016.23	2016.24 N	11.01 W	2016.27@	359.69	2.14
9370.00	90.13	1.96	7355.82	96.00	2112.19	2112.20 N	8.78 W	2112.21@	359.76	2.41
9465.00	89.87	2.50	7355.82	95.00	2207.12	2207.12 N	5.08 W	2207.13@	359.87	0.63
9560.00	89.60	3.25	7356.26	95.00	2302.00	2302.00 N	0.32 W	2302.00@	359.99	0.84
9655.00	89.78	1.84	7356.78	95.00	2396.91	2396.90 N	3.90 E	2396.91@	0.09	1.50
9751.00	88.90	0.70	7357.88	96.00	2492.88	2492.87 N	6.03 E	2492.88@	0.14	1.50
9846.00	88.81	0.70	7359.78	95.00	2587.85	2587.85 N	7.19 E	2587.86@	0.16	0.09
9941.00	88.37	0.79	7362.12	95.00	2682.81	2682.81 N	8.42 E	2682.82@	0.18	0.47
10036.00	88.46	0.25	7364.75	95.00	2777.77	2777.77 N	9.28 E	2777.78@	0.19	0.58
10131.00	88.64	0.40	7367.15	95.00	2872.74	2872.74 N	9.82 E	2872.75@	0.20	0.25
10227.00	86.35	0.18	7371.35	96.00	2968.64	2968.64 N	10.31 E	2968.65@	0.20	2.40
10322.00	88.11	359.81	7375.94	95.00	3063.53	3063.52 N	10.30 E	3063.54@	0.19	1.89

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10417.00	89.87	359.67	7377.61	95.00	3158.51	3158.50 N	9.87 E	3158.52@	0.18	1.86
10513.00	86.88	359.77	7380.33	96.00	3254.46	3254.45 N	9.40 E	3254.46@	0.17	3.12
10608.00	89.78	359.48	7383.10	95.00	3349.40	3349.40 N	8.78 E	3349.41@	0.15	3.07
10703.00	90.13	359.23	7383.18	95.00	3444.40	3444.39 N	7.71 E	3444.40@	0.13	0.45
10798.00	90.48	359.71	7382.67	95.00	3539.39	3539.39 N	6.83 E	3539.39@	0.11	0.63
10894.00	90.31	359.84	7382.01	96.00	3635.39	3635.38 N	6.45 E	3635.39@	0.10	0.22
10989.00	89.96	359.48	7381.78	95.00	3730.38	3730.38 N	5.89 E	3730.39@	0.09	0.53
11084.00	89.25	359.78	7382.44	95.00	3825.38	3825.38 N	5.28 E	3825.38@	0.08	0.81
11179.00	88.55	359.11	7384.26	95.00	3920.36	3920.35 N	4.36 E	3920.36@	0.06	1.02
11274.00	90.75	358.85	7384.84	95.00	4015.33	4015.33 N	2.66 E	4015.33@	0.04	2.33
11370.00	88.81	358.62	7385.21	96.00	4111.30	4111.30 N	0.55 E	4111.30@	0.01	2.03
11465.00	89.16	358.72	7386.89	95.00	4206.26	4206.26 N	1.66 W	4206.26@	359.98	0.38
11560.00	89.34	357.68	7388.14	95.00	4301.20	4301.20 N	4.64 W	4301.21@	359.94	1.11
11655.00	89.87	358.04	7388.79	95.00	4396.13	4396.14 N	8.19 W	4396.14@	359.89	0.67
11750.00	89.25	356.45	7389.52	95.00	4491.01	4491.02 N	12.76 W	4491.04@	359.84	1.80
11845.00	89.87	357.47	7390.25	95.00	4585.86	4585.88 N	17.79 W	4585.92@	359.78	1.26
11940.00	89.78	358.95	7390.54	95.00	4680.81	4680.83 N	20.76 W	4680.88@	359.75	1.56
12036.00	91.89	357.68	7389.14	96.00	4776.75	4776.77 N	23.58 W	4776.83@	359.72	2.57