

Minimum Radius of Curvature

API: 30-015-53278 **Well: Vanadium 32 State 175H** **Wellhead Location N+/S- : 32.269429**
Operator: Occidental **Area: New Mexico** **E+/W- : -103.795389**
Rig: **Type: U-Lateral** **Magnetic Declination: 6.66**
TD: 22,659' **Plane of Proposal: 179.68**

Measured Depth Ft	Drift Angle Deg	Azimuth Direction Deg	Course Length Ft	TVD Ft	Vertical Section Ft	COORDINATES		CLOSURE		Dog Leg Severity Deg/100'	Build / Drop Deg/100'	Left / Right Deg/100'
						N-S Ft	E-W Ft	Distance FT	Direction Deg			
0.00	0.00	0.00		0.0	0.00	0.00	0.00	0.00	0.00			
25	0.00	0.00	25	25.0	32.85	0.00	0.00	0.00	#DIV/0!	0.00		
34	0.14	188.55	9	34.2	32.86	-0.01	0.00	0.01	188.55	1.53	1.53	2053.92
96	0.32	188.43	62	95.7	33.10	-0.26	-0.04	0.26	188.47	0.29	0.29	-0.19
121	0.38	183.75	25	120.6	33.26	-0.41	-0.05	0.41	187.51	0.27	0.24	-18.80
150	0.34	168.28	29	149.9	33.44	-0.59	-0.04	0.59	184.12	0.36	-0.14	-52.89
178	0.19	166.40	28	178.4	33.57	-0.72	-0.01	0.72	181.13	0.53	-0.53	-6.60
208	0.13	169.23	30	208.1	33.65	-0.80	0.00	0.80	179.73	0.20	-0.20	9.51
237	0.11	162.75	29	236.6	33.70	-0.86	0.02	0.86	178.80	0.08	-0.07	-22.74
268	0.14	130.75	31	268.1	33.76	-0.91	0.06	0.91	176.47	0.24	0.10	-101.62
300	0.11	106.55	31	299.5	33.79	-0.94	0.11	0.95	173.11	0.19	-0.10	-77.12
362	0.10	182.82	63	362.5	33.87	-1.02	0.17	1.03	170.54	0.21	-0.02	121.14
394	0.10	144.99	31	393.9	33.92	-1.07	0.18	1.08	170.22	0.21	0.00	-120.40
414	0.19	161.52	21	414.4	33.96	-1.11	0.20	1.13	169.58	0.48	0.44	80.52
614	0.55	126.94	200	614.0	34.86	-2.00	1.08	2.27	151.76	0.20	0.18	-17.33
706	0.50	116.90	92	706.0	35.31	-2.45	1.79	3.03	143.90	0.11	-0.05	-10.91
887	0.36	115.29	181	887.0	35.91	-3.05	3.00	4.28	135.42	0.08	-0.08	-0.89
977	0.27	132.66	90	977.0	36.18	-3.31	3.42	4.76	134.13	0.14	-0.10	19.30
1068	0.29	121.41	91	1068.0	36.45	-3.58	3.77	5.20	133.51	0.06	0.02	-12.36
1159	0.11	111.75	91	1159.0	36.60	-3.73	4.05	5.51	132.67	0.20	-0.20	-10.62
1250	0.19	124.46	91	1250.0	36.72	-3.85	4.25	5.74	132.14	0.09	0.09	13.97
1341	0.16	136.97	91	1341.0	36.90	-4.03	4.46	6.01	132.05	0.05	-0.03	13.75
1431	0.09	133.83	90	1431.0	37.04	-4.17	4.60	6.21	132.17	0.08	-0.08	-3.49
1526	0.21	140.58	95	1526.0	37.23	-4.35	4.77	6.46	132.42	0.13	0.13	7.11
1621	0.24	132.77	95	1621.0	37.50	-4.62	5.02	6.83	132.64	0.05	0.03	-8.22
1715	0.15	137.40	94	1715.0	37.73	-4.85	5.25	7.15	132.72	0.10	-0.10	4.93
1810	0.19	119.38	95	1810.0	37.90	-5.02	5.47	7.42	132.52	0.07	0.04	-18.97
1905	0.13	134.49	95	1905.0	38.05	-5.17	5.69	7.68	132.28	0.08	-0.06	15.91
1999	0.10	165.75	94	1999.0	38.21	-5.32	5.78	7.86	132.64	0.07	-0.03	33.26
2094	0.05	176.23	95	2094.0	38.33	-5.45	5.81	7.96	133.17	0.05	-0.05	11.03
2188	0.18	229.83	94	2188.0	38.46	-5.58	5.70	7.97	134.43	0.17	0.14	57.02
2283	0.12	236.49	95	2283.0	38.61	-5.73	5.50	7.94	136.20	0.07	-0.06	7.01
2378	0.13	257.88	95	2378.0	38.69	-5.81	5.31	7.87	137.58	0.05	0.01	22.52
2472	0.22	226.44	94	2472.0	38.83	-5.96	5.07	7.83	139.58	0.14	0.10	-33.45
2567	0.23	234.40	95	2567.0	39.07	-6.19	4.79	7.83	142.30	0.03	0.01	8.38
2662	0.22	227.19	95	2662.0	39.30	-6.43	4.50	7.85	145.02	0.03	-0.01	-7.59
2756	0.15	225.77	94	2756.0	39.51	-6.64	4.28	7.90	147.20	0.07	-0.07	-1.51
2851	0.14	244.02	95	2851.0	39.65	-6.78	4.08	7.91	148.91	0.05	-0.01	19.21
2945	0.17	245.07	94	2945.0	39.75	-6.88	3.86	7.89	150.75	0.03	0.03	1.12
3040	0.37	252.97	95	3040.0	39.90	-7.03	3.43	7.83	153.98	0.21	0.21	8.32
3135	0.44	261.41	95	3135.0	40.04	-7.18	2.78	7.70	158.83	0.10	0.07	8.88
3229	0.61	278.06	94	3229.0	40.02	-7.16	1.93	7.42	164.94	0.24	0.18	17.71
3324	0.76	283.12	95	3324.0	39.80	-6.95	0.81	7.00	173.32	0.17	0.16	5.33
3419	0.74	247.15	95	3419.0	39.89	-7.04	-0.37	7.05	182.97	0.49	-0.02	-37.86
3514	0.89	190.20	95	3513.9	40.85	-8.01	-1.06	8.08	187.55	0.83	0.16	-59.95
3608	1.14	192.91	94	3607.9	42.48	-9.64	-1.40	9.74	188.26	0.27	0.27	2.88
3703	1.65	177.35	95	3702.9	44.76	-11.92	-1.55	12.02	187.39	0.66	0.54	-16.38
3797	1.69	175.76	94	3796.9	47.50	-14.66	-1.38	14.72	185.39	0.07	0.04	-1.69
3892	1.35	175.05	95	3891.8	50.01	-17.17	-1.18	17.21	183.94	0.36	-0.36	-0.75
3986	0.25	244.45	94	3985.8	51.20	-18.36	-1.27	18.41	183.96	1.37	-1.17	73.83
4081	1.49	329.29	95	4080.8	50.23	-17.39	-2.09	17.52	186.85	1.57	1.31	89.31
4176	1.46	335.50	95	4175.8	48.06	-15.23	-3.22	15.56	191.95	0.17	-0.03	6.54
4214	1.40	330.75	38	4213.8	47.21	-14.38	-3.65	14.84	194.24	0.35	-0.16	-12.50
4348	0.04	286.09	134	4347.7	45.76	-12.94	-4.49	13.70	199.16	1.02	-1.01	-33.33
4443	0.09	29.66	95	4442.7	45.69	-12.87	-4.49	13.63	199.24	0.11	0.05	-269.93
4632	0.53	88.49	189	4631.7	45.54	-12.71	-3.54	13.20	195.57	0.26	0.23	31.13
4727	2.06	96.97	95	4726.7	45.75	-12.91	-1.41	12.99	186.23	1.62	1.61	8.93
4822	3.77	92.87	95	4821.6	46.14	-13.27	3.41	13.70	165.61	1.81	1.80	-4.32

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						N-S Ft	E-W Ft	Distance FT	Direction Deg			
4917	4.99	91.33	95	4916.3	46.43	-13.53	10.66	17.22	141.77	1.29	1.28	-1.62
5012	5.78	91.48	95	5010.9	46.70	-13.74	19.57	23.91	125.08	0.83	0.83	0.16
5106	6.37	90.34	94	5104.4	46.91	-13.90	29.52	32.62	115.21	0.64	0.63	-1.21
5201	7.54	87.52	95	5198.7	46.74	-13.66	41.01	43.23	108.42	1.28	1.23	-2.97
5391	7.84	86.88	190	5387.0	45.63	-12.41	66.41	67.56	100.59	0.16	0.16	-0.34
5486	7.81	84.46	95	5481.1	44.73	-11.44	79.30	80.12	98.21	0.35	-0.03	-2.55
5580	7.67	82.56	94	5574.2	43.37	-10.01	91.88	92.42	96.22	0.31	-0.15	-2.02
5675	7.85	80.23	95	5668.3	41.52	-8.09	104.56	104.87	94.42	0.38	0.19	-2.45
5770	7.77	79.07	95	5762.5	39.27	-5.77	117.26	117.40	92.82	0.19	-0.08	-1.22
5864	7.87	80.39	94	5855.6	37.06	-3.49	129.84	129.89	91.54	0.22	0.11	1.40
6054	7.80	80.29	190	6043.8	32.86	0.86	155.37	155.38	89.68	0.04	-0.04	-0.05
6243	7.92	78.71	189	6231.0	28.29	5.57	180.78	180.87	88.24	0.13	0.06	-0.84
6338	7.66	76.47	95	6325.2	25.60	8.33	193.36	193.54	87.53	0.42	-0.27	-2.36
6433	7.82	75.77	95	6419.3	22.60	11.40	205.78	206.10	86.83	0.20	0.17	-0.74
6528	7.70	73.66	95	6513.4	19.29	14.78	218.15	218.65	86.12	0.33	-0.13	-2.22
6622	7.89	74.26	94	6606.6	15.83	18.30	230.40	231.13	85.46	0.22	0.20	0.64
6717	7.51	75.70	95	6700.7	12.60	21.60	242.70	243.66	84.91	0.45	-0.40	1.52
6812	7.51	75.17	95	6794.9	9.55	24.73	254.71	255.91	84.46	0.07	0.00	-0.56
6907	7.72	78.90	95	6889.1	6.80	27.54	266.98	268.39	84.11	0.57	0.22	3.93
7001	7.64	80.43	94	6982.2	4.61	29.80	279.33	280.92	83.91	0.23	-0.09	1.63
7096	7.87	82.55	95	7076.3	2.79	31.69	292.01	293.72	83.81	0.39	0.24	2.23
7191	7.92	87.68	95	7170.4	1.75	32.80	305.00	306.76	83.86	0.74	0.05	5.40
7286	7.86	90.76	95	7264.5	1.65	32.98	318.03	319.74	84.08	0.45	-0.06	3.24
7380	7.82	90.35	94	7357.7	1.84	32.85	330.86	332.48	84.33	0.07	-0.04	-0.44
7475	7.66	91.65	95	7451.8	2.14	32.63	343.65	345.19	84.58	0.25	-0.17	1.37
7569	7.83	90.63	94	7544.9	2.46	32.38	356.31	357.78	84.81	0.23	0.18	-1.09
7664	7.82	89.91	95	7639.1	2.59	32.32	369.25	370.66	85.00	0.10	-0.01	-0.76
7759	7.77	87.34	95	7733.2	2.35	32.63	382.12	383.51	85.12	0.37	-0.05	-2.71
7853	7.64	86.63	94	7826.3	1.76	33.29	394.71	396.11	85.18	0.17	-0.14	-0.76
7948	7.59	82.88	95	7920.5	0.68	34.44	407.24	408.69	85.17	0.53	-0.05	-3.95
8043	7.32	80.96	95	8014.7	-0.98	36.17	419.44	421.00	85.07	0.39	-0.28	-2.02
8137	7.39	76.35	94	8107.9	-3.28	38.54	431.23	432.95	84.89	0.63	0.07	-4.90
8232	7.36	73.30	95	8202.1	-6.40	41.73	442.99	444.96	84.62	0.41	-0.03	-3.21
8326	7.65	71.30	94	8295.3	-10.07	45.46	454.69	456.96	84.29	0.42	0.31	-2.13
8421	7.55	66.85	95	8389.5	-14.49	49.94	466.42	469.08	83.89	0.63	-0.11	-4.68
8515	8.03	79.27	94	8482.6	-18.07	53.59	478.55	481.54	83.61	1.86	0.51	13.21
8610	7.56	83.94	95	8576.8	-19.90	55.49	491.28	494.40	83.56	0.83	-0.49	4.92
8705	7.98	82.97	95	8670.9	-21.29	56.96	504.04	507.25	83.55	0.46	0.44	-1.02
8799	7.82	87.43	94	8764.0	-22.30	58.04	516.90	520.15	83.59	0.67	-0.17	4.74
8894	7.94	91.83	95	8858.1	-22.31	58.12	529.92	533.10	83.74	0.65	0.13	4.63
8989	8.32	98.04	95	8952.1	-21.07	56.95	543.28	546.26	84.02	1.01	0.40	6.54
9089	8.24	100.87	100	9051.1	-18.62	54.59	557.48	560.15	84.41	0.42	-0.08	2.83
9183	7.98	103.08	94	9144.2	-15.80	51.84	570.45	572.81	84.81	0.43	-0.28	2.35
9278	7.92	99.19	95	9238.2	-13.19	49.30	583.34	585.42	85.17	0.57	-0.06	-4.09
9373	8.23	93.90	95	9332.3	-11.61	47.79	596.58	598.50	85.42	0.85	0.33	-5.57
9467	7.64	95.08	94	9425.4	-10.53	46.78	609.52	611.31	85.61	0.65	-0.63	1.26
9562	8.11	93.52	95	9519.5	-9.49	45.81	622.50	624.18	85.79	0.54	0.49	-1.64
9657	8.10	89.48	95	9613.6	-9.06	45.46	635.88	637.50	85.91	0.60	-0.01	-4.25
9751	8.20	87.26	94	9706.6	-9.37	45.84	649.20	650.81	85.96	0.35	0.11	-2.36
9846	8.23	85.08	95	9800.6	-10.20	46.75	662.74	664.39	85.97	0.33	0.03	-2.29
9941	8.31	90.88	95	9894.7	-10.60	47.23	676.38	678.03	86.01	0.88	0.08	6.11
10035	7.80	96.47	94	9987.7	-9.70	46.40	689.51	691.07	86.15	0.99	-0.54	5.95
10130	8.37	101.56	95	10081.8	-7.52	44.29	702.69	704.08	86.39	0.96	0.60	5.36
10225	8.43	98.96	95	10175.8	-4.97	41.82	716.34	717.56	86.66	0.40	0.06	-2.74
10319	8.17	95.07	94	10268.8	-3.23	40.16	729.80	730.90	86.85	0.66	-0.28	-4.14
10414	7.15	99.53	95	10362.9	-1.59	38.58	742.36	743.36	87.02	1.24	-1.07	4.69
10508	6.20	102.42	94	10456.3	0.53	36.52	753.08	753.97	87.22	1.07	-1.01	3.07
10603	5.53	107.35	95	10550.8	3.05	34.05	762.46	763.22	87.44	0.88	-0.71	5.19

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10697	5.65	118.40	94	10644.4	6.65	30.50	770.86	771.46	87.73	1.15	0.13	11.76
10792	5.69	129.51	95	10738.9	11.91	25.28	778.60	779.01	88.14	1.15	0.04	11.69
10898	5.63	133.64	106	10844.4	18.89	18.35	786.42	786.63	88.66	0.39	-0.06	3.90
10932	8.64	153.37	34	10878.1	22.34	14.92	788.77	788.91	88.92	11.29	8.85	58.03
10993	15.02	166.61	61	10937.8	34.16	3.12	792.66	792.67	89.77	11.30	10.46	21.70
11087	25.17	168.54	94	11026.0	65.72	-28.41	799.47	799.98	92.03	10.82	10.80	2.05
11182	36.12	166.98	95	11107.6	113.00	-75.63	809.82	813.35	95.34	11.56	11.53	-1.64
11277	43.46	164.92	95	11180.5	171.99	-134.54	824.65	835.56	99.27	7.85	7.73	-2.17
11371	49.57	163.02	94	11245.2	237.60	-200.04	843.53	866.93	103.34	6.66	6.50	-2.02
11464	53.75	166.67	93	11302.9	308.09	-270.43	862.53	903.93	107.41	5.45	4.49	3.92
11466	53.80	166.96	2	11304.0	309.59	-271.93	862.88	904.71	107.49	12.52	2.62	15.18
11557	56.69	180.15	91	11356.1	383.74	-346.03	871.10	937.31	111.66	12.30	3.17	14.48
11651	60.45	186.88	94	11405.1	463.68	-426.00	866.09	965.19	116.19	7.30	4.00	7.16
11743	68.54	182.66	92	11444.7	546.30	-508.66	859.30	998.56	120.62	9.72	8.79	-4.59
11835	76.62	179.84	92	11472.2	633.96	-596.34	857.43	1044.42	124.82	9.26	8.78	-3.07
11837	76.80	179.78	2	11472.7	635.91	-598.28	857.44	1045.53	124.91	9.46	9.00	-3.00
11930	89.21	182.62	93	11484.0	728.00	-690.38	855.48	1099.30	128.90	13.68	13.34	3.05
12023	89.91	185.30	93	11484.7	820.72	-783.15	849.06	1155.08	132.69	2.98	0.75	2.88
12118	89.94	184.70	95	11484.8	915.31	-877.78	840.78	1215.49	136.23	0.63	0.03	-0.63
12212	89.31	180.20	94	11485.5	1009.18	-971.67	836.76	1282.31	139.27	4.83	-0.67	-4.79
12307	89.35	177.02	95	11486.6	1104.14	-1066.62	839.06	1357.10	141.81	3.35	0.04	-3.35
12402	89.82	175.51	95	11487.3	1198.97	-1161.42	845.25	1436.43	143.95	1.66	0.49	-1.59
12496	89.25	173.36	94	11488.0	1292.57	-1254.97	854.37	1518.18	145.75	2.37	-0.61	-2.29
12591	89.65	173.96	95	11488.9	1387.04	-1349.38	864.86	1602.75	147.34	0.76	0.42	0.63
12685	89.35	179.36	94	11489.8	1480.87	-1443.18	870.33	1685.30	148.91	5.75	-0.32	5.74
12780	89.76	182.07	95	11490.5	1575.84	-1538.16	869.15	1766.74	150.53	2.89	0.43	2.85
12875	89.89	181.31	95	11490.8	1670.78	-1633.12	866.34	1848.68	152.05	0.81	0.14	-0.80
12969	89.30	179.36	94	11491.5	1764.77	-1727.11	865.79	1931.97	153.38	2.17	-0.63	-2.07
13064	89.98	180.22	95	11492.0	1859.76	-1822.11	866.14	2017.49	154.58	1.15	0.72	0.91
13159	90.04	180.88	95	11492.0	1954.75	-1917.10	865.23	2103.31	155.71	0.70	0.06	0.69
13254	89.14	180.39	95	11492.7	2049.74	-2012.09	864.18	2189.82	156.76	1.08	-0.95	-0.52
13348	89.83	179.86	94	11493.6	2143.73	-2106.09	863.97	2276.41	157.70	0.93	0.73	-0.56
13537	89.93	179.14	189	11494.0	2332.73	-2295.08	865.62	2452.89	159.34	0.38	0.05	-0.38
13632	90.24	179.67	95	11493.8	2427.72	-2390.07	866.61	2542.33	160.07	0.65	0.33	0.56
13727	90.10	179.57	95	11493.5	2522.72	-2485.07	867.24	2632.05	160.76	0.18	-0.15	-0.11
13822	90.60	179.15	95	11492.9	2617.72	-2580.06	868.30	2722.25	161.40	0.69	0.53	-0.44
14011	90.79	179.48	189	11490.7	2806.70	-2769.03	870.56	2902.66	162.55	0.20	0.10	0.17
14105	89.62	179.15	94	11490.3	2900.70	-2863.02	871.68	2992.78	163.07	1.29	-1.24	-0.35
14200	89.55	180.28	95	11491.0	2995.69	-2958.02	872.16	3083.92	163.57	1.19	-0.07	1.19
14294	87.84	180.15	94	11493.1	3089.66	-3051.99	871.80	3174.07	164.06	1.82	-1.82	-0.14
14389	87.65	179.33	95	11496.9	3184.59	-3146.92	872.23	3265.56	164.51	0.89	-0.20	-0.86
14578	88.66	180.55	189	11503.0	3373.48	-3335.81	872.43	3448.01	165.34	0.84	0.53	0.65
14672	88.30	179.39	94	11505.5	3467.44	-3429.78	872.48	3539.01	165.73	1.29	-0.38	-1.23
14767	88.68	179.50	95	11508.0	3562.41	-3524.74	873.40	3631.34	166.08	0.42	0.40	0.12
14862	88.81	181.06	95	11510.1	3657.38	-3619.71	872.94	3723.48	166.44	1.65	0.14	1.64
14957	89.68	182.28	95	11511.3	3752.31	-3714.66	870.17	3815.22	166.82	1.58	0.92	1.28
15051	89.41	181.15	94	11512.0	3846.25	-3808.61	867.35	3906.13	167.17	1.24	-0.29	-1.20
15145	90.05	180.87	94	11512.5	3940.22	-3902.60	865.70	3997.46	167.49	0.74	0.68	-0.30
15240	89.88	180.79	95	11512.5	4035.20	-3997.59	864.32	4089.96	167.80	0.20	-0.18	-0.08
15335	90.27	184.62	95	11512.4	4130.05	-4092.46	859.84	4181.82	168.13	4.05	0.41	4.03
15428	89.41	186.73	93	11512.7	4222.54	-4185.00	850.64	4270.58	168.51	2.45	-0.92	2.27
15523	89.31	184.39	95	11513.7	4317.02	-4279.54	841.44	4361.48	168.88	2.47	-0.11	-2.46
15617	89.55	184.09	94	11514.7	4410.72	-4373.28	834.49	4452.19	169.20	0.41	0.26	-0.32
15681	89.15	184.17	64	11515.4	4474.52	-4437.11	829.88	4514.05	169.41	0.64	-0.62	0.12
15712	88.96	184.21	31	11515.9	4505.42	-4468.02	827.62	4544.03	169.51	0.63	-0.61	0.13
15807	89.05	184.46	95	11517.6	4600.10	-4562.74	820.44	4635.91	169.81	0.28	0.09	0.26
15901	88.67	191.12	94	11519.4	4693.09	-4655.80	807.71	4725.34	170.16	7.10	-0.40	7.09
15995	88.67	194.97	94	11521.6	4784.50	-4747.33	786.50	4812.04	170.59	4.09	0.00	4.10

Minimum Radius of Curvature

API: 30-015-53278 **Well: Vanadium 32 State 175H** **Wellhead Location N+/S- : 32.269429**
Operator: Occidental **Area: New Mexico** **E+/W- : -103.795389**
Rig: **Type: U-Lateral** **Magnetic Declination: 6.66**
TD: 22,659' **Plane of Proposal: 179.68**

Measured Depth Ft	Drift Angle Deg	Azimuth Direction Deg	Course Length Ft	TVD Ft	Vertical Section Ft	COORDINATES		CLOSURE		Dog Leg Severity Deg/100'	Build / Drop Deg/100'	Left / Right Deg/100'
						N-S Ft	E-W Ft	Distance FT	Direction Deg			
16090	88.74	205.12	95	11523.8	4873.42	-4836.44	753.99	4894.86	171.14	10.68	0.07	10.68
16185	89.02	213.04	95	11525.6	4956.10	-4919.38	707.86	4970.05	171.81	8.34	0.29	8.34
16279	88.67	218.92	94	11527.5	5031.81	-4995.40	652.67	5037.85	172.56	6.27	-0.37	6.26
16374	88.64	223.73	95	11529.8	5102.76	-5066.70	589.97	5100.93	173.36	5.06	-0.03	5.06
16468	89.05	229.17	94	11531.7	5167.11	-5131.43	521.89	5157.90	174.19	5.80	0.44	5.79
16563	88.87	230.76	95	11533.4	5227.80	-5192.52	449.16	5211.91	175.06	1.68	-0.19	1.67
16658	88.52	233.80	95	11535.5	5285.48	-5250.62	374.05	5263.93	175.93	3.22	-0.37	3.20
16752	88.98	243.24	94	11537.6	5334.05	-5299.64	293.99	5307.79	176.82	10.05	0.49	10.04
16847	88.77	251.74	95	11539.5	5369.89	-5335.97	206.33	5339.96	177.79	8.95	-0.22	8.95
16941	89.10	255.38	94	11541.2	5395.98	-5362.57	116.20	5363.82	178.76	3.89	0.35	3.87
17036	88.91	258.73	95	11542.9	5416.74	-5383.84	23.64	5383.89	179.75	3.53	-0.20	3.53
17131	88.70	261.72	95	11544.9	5432.34	-5399.96	-69.95	5400.42	180.74	3.15	-0.22	3.15
17148	88.83	262.74	17	11545.2	5434.54	-5402.26	-86.79	5402.96	180.92	6.05	0.76	6.00
17225	89.43	267.37	77	11546.4	5440.75	-5408.90	-163.47	5411.37	181.73	6.06	0.78	6.01
17320	91.73	275.01	95	11545.4	5438.25	-5406.93	-258.37	5413.10	182.74	8.40	2.42	8.04
17400	92.37	279.31	80	11542.6	5427.84	-5396.96	-337.68	5407.52	183.58	5.43	0.80	5.38
17414	92.48	280.06	14	11542.0	5425.41	-5394.61	-351.46	5406.05	183.73	5.41	0.79	5.36
17509	92.79	282.58	95	11537.6	5406.27	-5375.99	-444.51	5394.33	184.73	2.67	0.33	2.65
17533	92.81	283.74	24	11536.4	5400.68	-5370.53	-467.85	5390.87	184.98	4.83	0.08	4.83
17603	92.86	287.14	70	11533.0	5381.69	-5351.92	-535.23	5378.61	185.71	4.85	0.07	4.86
17698	93.04	292.11	95	11528.1	5349.34	-5320.06	-624.57	5356.60	186.70	5.23	0.19	5.23
17793	93.92	301.84	95	11522.3	5305.91	-5277.11	-708.97	5324.52	187.65	10.26	0.93	10.24
17887	93.74	307.44	94	11516.0	5252.19	-5223.82	-786.11	5282.63	188.56	5.95	-0.19	5.96
17982	93.90	314.04	95	11509.7	5189.97	-5161.99	-857.89	5232.79	189.44	6.93	0.17	6.95
18077	93.96	322.27	95	11503.2	5119.07	-5091.45	-921.06	5174.09	190.25	8.64	0.06	8.66
18172	93.99	329.95	95	11496.6	5040.17	-5012.83	-973.87	5106.56	190.99	8.06	0.03	8.08
18267	93.92	336.30	95	11490.0	4955.43	-4928.34	-1016.69	5032.12	191.66	6.67	-0.07	6.68
18361	93.73	342.46	94	11483.7	4867.51	-4840.60	-1049.70	4953.11	192.24	6.54	-0.20	6.55
18456	93.75	350.16	95	11477.5	4775.35	-4748.57	-1072.12	4868.09	192.72	8.09	0.02	8.11
18550	92.98	355.70	94	11472.0	4682.20	-4655.48	-1083.66	4779.94	193.10	5.94	-0.82	5.89
18645	93.13	356.48	95	11466.9	4587.52	-4560.84	-1090.13	4689.31	193.44	0.83	0.16	0.82
18740	93.09	1.50	95	11461.8	4492.70	-4466.02	-1091.80	4597.54	193.74	5.28	-0.04	-373.66
18834	91.43	5.38	94	11458.1	4399.00	-4372.28	-1086.16	4505.18	193.95	4.49	-1.77	4.13
18928	91.26	4.50	94	11455.9	4305.42	-4278.66	-1078.07	4412.39	194.14	0.95	-0.18	-0.94
19023	93.26	358.28	95	11452.1	4210.59	-4183.81	-1075.77	4319.90	194.42	6.87	2.11	372.40
19118	95.11	356.61	95	11445.2	4115.92	-4089.17	-1079.99	4229.38	194.79	2.62	1.95	-1.76
19213	93.50	358.01	95	11438.0	4021.28	-3994.55	-1084.43	4139.13	195.19	2.24	-1.69	1.47
19307	93.38	358.92	94	11432.4	3927.47	-3900.75	-1086.95	4049.36	195.57	0.97	-0.13	0.97
19402	93.77	0.98	95	11426.5	3832.66	-3805.94	-1087.03	3958.13	195.94	2.20	0.41	-376.78
19497	91.20	358.97	95	11422.4	3737.76	-3711.04	-1087.07	3866.98	196.33	3.43	-2.71	376.83
19591	91.55	353.53	94	11420.1	3643.99	-3617.31	-1093.22	3778.89	196.82	5.80	0.37	-5.79
19686	90.20	348.17	95	11418.6	3550.17	-3523.56	-1108.32	3693.76	197.46	5.82	-1.42	-5.64
19780	91.47	357.96	94	11417.3	3456.92	-3430.38	-1119.65	3608.48	198.08	10.50	1.35	10.41
19875	90.15	2.28	95	11415.9	3361.95	-3335.41	-1119.45	3518.26	198.55	4.75	-1.39	-374.40
19970	91.21	4.46	95	11414.8	3267.17	-3240.59	-1113.87	3426.68	198.97	2.55	1.12	2.29
20064	90.96	3.46	94	11413.0	3173.45	-3146.83	-1107.38	3335.99	199.39	1.10	-0.27	-1.06
20158	91.43	358.36	94	11411.1	3079.52	-3052.89	-1105.89	3247.02	199.91	5.45	0.50	377.55
20253	91.39	355.94	95	11408.7	2984.65	-2958.05	-1110.61	3159.67	200.58	2.55	-0.04	-2.55
20348	91.05	353.02	95	11406.7	2890.07	-2863.52	-1119.74	3074.67	201.36	3.09	-0.36	-3.07
20443	90.92	358.77	95	11405.1	2795.33	-2768.82	-1126.54	2989.22	202.14	6.05	-0.14	6.05
20537	90.49	355.83	94	11403.9	2701.43	-2674.94	-1130.97	2904.20	202.92	3.16	-0.46	-3.13
20632	90.86	359.22	95	11402.8	2606.52	-2580.05	-1135.07	2818.69	203.75	3.59	0.39	3.57
20727	90.77	359.69	95	11401.4	2511.53	-2485.06	-1135.97	2732.39	204.57	0.50	-0.09	0.49
20821	91.24	0.31	94	11399.8	2417.55	-2391.08	-1135.97	2647.20	205.41	0.83	0.50	-382.32
21010	91.26	359.98	189	11395.7	2228.60	-2202.12	-1135.49	2477.64	207.28	0.17	0.01	190.30
21105	90.71	0.49	95	11394.0	2133.62	-2107.14	-1135.11	2393.43	208.31	0.79	-0.58	-378.41
21200	90.71	0.40	95	11392.9	2038.63	-2012.15	-1134.37	2309.88	209.41	0.09	0.00	-0.09
21294	90.56	359.81	94	11391.8	1944.64	-1918.16	-1134.20	2228.39	210.60	0.65	-0.16	382.35

Minimum Radius of Curvature

API: **30-015-53278** Well: **Vanadium 32 State 175H** Wellhead Location N+/S- : **32.269429**
 Operator: **Occidental** Area: **New Mexico** E+/W- : **-103.795389**
 Rig: Type: **U-Lateral** Magnetic Declination: **6.66**
 TD: **22,659'** Plane of Proposal: **179.68**

Measured Depth Ft	Drift Angle Deg	Azimuth Direction Deg	Course Length Ft	TVD Ft	Vertical Section Ft	COORDINATES		CLOSURE		Dog Leg Severity Deg/100'	Build / Drop Deg/100'	Left / Right Deg/100'
						N-S Ft	E-W Ft	Distance FT	Direction Deg			
21389	90.53	0.19	95	11390.9	1849.65	-1823.16	-1134.20	2147.16	211.89	0.40	-0.03	-378.55
21578	90.19	0.31	189	11389.7	1660.66	-1634.17	-1133.37	1988.73	214.74	0.19	-0.18	0.06
21673	90.25	0.24	95	11389.4	1565.67	-1539.17	-1132.91	1911.16	216.36	0.10	0.06	-0.07
21767	90.26	0.15	94	11388.9	1471.67	-1445.17	-1132.59	1836.11	218.09	0.10	0.01	-0.10
21862	90.17	0.30	95	11388.6	1376.68	-1350.17	-1132.22	1762.07	219.98	0.18	-0.09	0.16
21957	90.33	0.18	95	11388.2	1281.68	-1255.17	-1131.82	1690.11	222.04	0.21	0.17	-0.13
22052	90.28	0.12	95	11387.7	1186.69	-1160.17	-1131.57	1620.64	224.29	0.08	-0.05	-0.06
22241	90.57	0.55	189	11386.3	997.70	-971.18	-1130.47	1490.36	229.33	0.27	0.15	0.23
22335	90.32	0.14	94	11385.5	903.71	-877.19	-1129.90	1430.43	232.18	0.51	-0.27	-0.44
22430	90.22	359.93	95	11385.1	808.72	-782.19	-1129.85	1374.18	235.31	0.24	-0.11	378.73
22525	90.18	0.20	95	11384.8	713.72	-687.19	-1129.74	1322.32	238.69	0.29	-0.04	-378.66
22606	89.31	359.67	81	11385.1	632.72	-606.19	-1129.83	1282.18	241.78	1.26	-1.07	443.79
22620	89.16	359.58	14	11385.3	618.72	-592.19	-1129.92	1275.70	242.34	1.25	-1.07	-0.64
22659	89.16	359.58	39	11385.9	579.73	-553.20	-1130.21	1258.33	243.92	0.00	0.00	0.00