

# Minimum Radius of Curvature

**API: 05-123-51791**      **Well: HEN 12NHS**      **Wellhead Location N+/S- : 40.327960**  
**Operator: PDC**      **Area: DJ**      **E+/W- : -104.572340**  
**Rig:**      **Type: U-Lateral**      **Magnetic Declination: 7.67**  
**TD: 23,309'**      **Plane of Proposal: 91.00**

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			
160	0.88	10.68	160	159.5	105.47	1.20	0.23	1.22	10.68	0.55	0.55	6.70
250	1.32	8.22	90	249.5	105.71	2.91	0.50	2.95	9.82	0.49	0.49	-2.73
341	0.44	33.18	91	340.5	106.03	4.24	0.84	4.32	11.27	1.03	-0.97	27.43
457	0.79	268.73	116	456.5	105.47	4.59	0.29	4.60	3.60	0.95	0.30	203.06
546	2.29	256.95	89	545.4	103.13	4.18	-2.06	4.66	333.79	1.71	1.69	-13.24
630	3.52	255.54	84	629.3	99.02	3.16	-6.19	6.95	297.02	1.47	1.46	-1.68
716	5.54	251.15	86	715.0	92.57	1.16	-12.67	12.73	275.21	2.38	2.35	-5.10
802	7.56	250.44	86	800.5	83.36	-2.08	-21.94	22.03	264.58	2.35	2.35	-0.83
889	9.94	250.80	87	886.5	70.96	-6.47	-34.42	35.02	259.36	2.74	2.74	0.41
978	11.61	252.03	89	973.9	55.28	-11.76	-50.19	51.55	256.82	1.89	1.88	1.38
1067	13.45	253.08	89	1060.8	36.96	-17.53	-68.62	70.82	255.67	2.08	2.07	1.18
1152	14.25	254.14	85	1143.3	17.54	-23.27	-88.14	91.16	255.21	0.99	0.94	1.25
1238	13.81	256.24	86	1226.7	-2.51	-28.60	-108.29	112.00	255.20	0.78	-0.51	2.44
1323	13.89	258.35	85	1309.3	-22.28	-33.08	-128.14	132.34	255.53	0.60	0.09	2.48
1408	14.33	259.23	85	1391.7	-42.53	-37.10	-148.46	153.03	255.97	0.58	0.52	1.04
1496	13.72	256.77	88	1477.1	-63.31	-41.52	-169.32	174.34	256.22	0.97	-0.69	-2.80
1583	12.84	253.96	87	1561.7	-82.55	-46.56	-188.65	194.31	256.14	1.25	-1.01	-3.23
1648	11.34	250.09	65	1625.3	-95.43	-50.73	-201.61	207.89	255.88	2.62	-2.31	-5.95
1721	10.19	250.34	74	1697.5	-108.26	-55.38	-214.52	221.56	255.53	1.57	-1.56	0.34
1818	10.12	253.28	97	1793.0	-124.41	-60.72	-230.76	238.62	255.26	0.54	-0.07	3.03
1914	11.85	257.95	96	1887.2	-142.05	-65.20	-248.48	256.90	255.30	2.03	1.80	4.86
2011	13.82	255.91	97	1981.8	-162.94	-70.10	-269.46	278.43	255.42	2.08	2.03	-2.10
2108	14.39	257.04	97	2075.9	-185.82	-75.62	-292.45	302.07	255.50	0.65	0.59	1.16
2204	15.04	256.51	96	2168.7	-209.46	-81.21	-316.18	326.44	255.60	0.69	0.68	-0.55
2301	14.29	257.93	97	2262.6	-233.30	-86.64	-340.13	350.99	255.71	0.86	-0.77	1.46
2396	14.70	256.82	95	2354.5	-256.41	-91.84	-363.33	374.76	255.81	0.52	0.43	-1.17
2494	14.59	254.93	98	2449.4	-280.33	-97.89	-387.36	399.53	255.82	0.50	-0.11	-1.93
2591	14.35	253.92	97	2543.3	-303.56	-104.40	-410.70	423.76	255.74	0.36	-0.25	-1.04
2687	14.78	253.03	96	2636.2	-326.58	-111.26	-433.85	447.89	255.62	0.50	0.45	-0.93
2782	14.41	248.03	95	2728.1	-348.99	-119.22	-456.40	471.71	255.36	1.38	-0.39	-5.26
2878	14.49	247.93	96	2821.1	-371.04	-128.21	-478.61	495.48	255.00	0.09	0.08	-0.10
2974	14.01	244.13	96	2914.1	-392.45	-137.79	-500.19	518.82	254.60	1.09	-0.50	-3.96
3071	14.16	243.79	97	3008.2	-413.48	-148.15	-521.40	542.04	254.14	0.18	0.15	-0.35
3168	14.05	238.30	97	3102.3	-433.94	-159.58	-542.07	565.07	253.60	1.38	-0.11	-5.66
3264	14.56	237.50	96	3195.3	-453.81	-172.19	-562.16	587.94	252.97	0.57	0.53	-0.83
3361	14.46	237.31	97	3289.2	-474.05	-185.28	-582.63	611.38	252.36	0.11	-0.10	-0.20
3458	14.65	236.86	97	3383.1	-494.28	-198.53	-603.10	634.93	251.78	0.23	0.20	-0.46
3555	14.60	237.35	97	3477.0	-514.61	-211.83	-623.66	658.65	251.24	0.14	-0.05	0.51
3653	14.49	234.39	98	3571.8	-534.73	-225.63	-644.03	682.41	250.69	0.77	-0.11	-3.02
3751	14.83	234.14	98	3666.7	-554.61	-240.12	-664.16	706.23	250.12	0.35	0.35	-0.26
3846	14.04	232.96	95	3758.7	-573.41	-254.18	-683.21	728.96	249.59	0.89	-0.83	-1.24
3944	14.10	234.46	98	3853.7	-592.37	-268.28	-702.42	751.90	249.10	0.38	0.06	1.53
4042	14.56	233.01	98	3948.7	-611.67	-282.63	-721.97	775.32	248.62	0.60	0.47	-1.48
4139	14.06	234.75	97	4042.7	-630.78	-296.77	-741.33	798.52	248.18	0.68	-0.52	1.79
4236	14.60	236.41	97	4136.6	-650.34	-310.33	-761.14	821.97	247.82	0.70	0.56	1.71
4331	13.99	233.35	95	4228.7	-669.29	-323.81	-780.32	844.84	247.46	1.02	-0.64	-3.22
4427	14.08	234.85	96	4321.8	-687.91	-337.46	-799.18	867.51	247.11	0.39	0.09	1.56
4522	14.58	235.09	95	4413.9	-706.92	-350.95	-818.43	890.51	246.79	0.53	0.53	0.25
4619	14.37	233.99	97	4507.8	-726.43	-365.02	-838.18	914.22	246.47	0.36	-0.22	-1.13
4715	14.09	234.52	96	4600.8	-745.33	-378.80	-857.34	937.29	246.16	0.32	-0.29	0.55
4812	14.54	234.80	97	4694.8	-764.65	-392.68	-876.90	960.81	245.88	0.47	0.46	0.29
4908	14.64	234.67	96	4787.7	-784.15	-406.64	-896.64	984.54	245.61	0.11	0.10	-0.14
5006	14.29	234.95	98	4882.6	-803.91	-420.75	-916.65	1008.60	245.34	0.36	-0.36	0.29
5104	13.97	234.13	98	4977.7	-823.15	-434.62	-936.14	1032.11	245.10	0.39	-0.33	-0.84
5199	14.37	234.68	95	5069.8	-841.82	-448.16	-955.05	1054.97	244.86	0.44	0.42	0.58
5296	14.12	234.97	97	5163.8	-861.09	-461.91	-974.56	1078.48	244.64	0.27	-0.26	0.30
5393	12.43	234.24	97	5258.2	-879.02	-474.80	-992.72	1100.42	244.44	1.75	-1.74	-0.75

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						N-S Ft	E-W Ft	Distance FT	Direction Deg			
5489	10.64	233.83	96	5352.3	-894.36	-486.07	-1008.26	1119.31	244.26	1.87	-1.86	-0.43
5585	9.79	234.96	96	5446.7	-908.02	-495.99	-1022.10	1136.08	244.11	0.91	-0.89	1.18
5683	8.57	232.01	98	5543.5	-920.44	-505.27	-1034.67	1151.45	243.97	1.33	-1.24	-3.01
5779	6.73	230.59	96	5638.6	-930.28	-513.24	-1044.66	1163.93	243.84	1.93	-1.92	-1.48
5876	4.46	226.80	97	5735.2	-937.31	-519.43	-1051.80	1173.07	243.72	2.37	-2.34	-3.91
5973	2.25	236.69	97	5832.0	-941.59	-523.06	-1056.14	1178.57	243.65	2.35	-2.28	10.20
6071	0.04	85.26	98	5930.0	-943.15	-524.11	-1057.71	1180.45	243.64	2.33	-2.26	-154.52
6168	0.04	313.64	97	6027.0	-943.14	-524.09	-1057.70	1180.43	243.64	0.08	0.00	235.44
6265	0.06	192.11	97	6124.0	-943.17	-524.11	-1057.74	1180.47	243.64	0.09	0.02	-125.29
6362	1.63	92.54	97	6220.9	-941.80	-524.22	-1056.37	1179.29	243.61	1.69	1.62	-102.65
6458	8.13	92.28	96	6316.5	-933.64	-524.56	-1048.22	1172.14	243.42	6.77	6.77	-0.27
6555	13.04	91.30	97	6411.9	-915.83	-525.08	-1030.41	1156.48	243.00	5.07	5.06	-1.01
6654	21.64	95.55	99	6506.3	-886.41	-527.10	-1001.02	1131.32	242.23	8.77	8.69	4.29
6749	32.93	90.01	95	6590.6	-842.98	-528.80	-957.62	1093.92	241.09	12.17	11.88	-5.83
6847	41.16	88.12	98	6668.7	-784.04	-527.75	-898.64	1042.15	239.58	8.48	8.40	-1.93
6945	48.32	86.64	98	6738.3	-715.25	-524.54	-829.79	981.68	237.70	7.38	7.31	-1.51
7041	56.89	86.87	96	6796.6	-639.26	-520.24	-753.71	915.82	235.39	8.93	8.93	0.24
7139	65.92	87.49	98	6843.4	-553.49	-516.03	-667.86	843.99	232.31	9.23	9.21	0.63
7236	74.65	89.66	97	6876.1	-462.35	-513.81	-576.66	772.36	228.30	9.24	9.00	2.24
7332	80.03	88.67	96	6897.1	-368.77	-512.43	-483.04	704.22	223.31	5.69	5.60	-1.03
7430	87.02	87.33	98	6908.2	-271.59	-509.03	-385.79	638.71	217.16	7.26	7.13	-1.37
7529	89.22	88.51	99	6911.4	-172.79	-505.44	-286.92	581.20	209.58	2.52	2.22	1.19
7624	89.28	88.33	95	6912.7	-77.90	-502.82	-191.96	538.22	200.90	0.20	0.06	-0.19
7721	89.40	88.11	97	6913.8	18.98	-499.81	-95.02	508.76	190.76	0.26	0.12	-0.23
7818	89.28	88.63	97	6914.9	115.87	-497.05	1.94	497.05	179.78	0.55	-0.12	0.54
7914	89.48	88.68	96	6915.9	211.79	-494.80	97.91	504.39	168.81	0.21	0.21	0.05
8010	89.48	89.23	96	6916.8	307.72	-493.04	193.89	529.80	158.53	0.57	0.00	0.57
8107	89.27	89.10	97	6917.9	404.67	-491.63	290.87	571.23	149.39	0.25	-0.22	-0.13
8202	88.64	89.43	95	6919.6	499.61	-490.41	385.85	624.00	141.81	0.75	-0.66	0.35
8299	88.68	89.35	97	6921.9	596.54	-489.38	482.81	687.46	135.39	0.09	0.04	-0.08
8398	88.55	89.60	99	6924.3	695.48	-488.47	581.78	759.65	130.02	0.28	-0.13	0.25
8495	88.60	89.48	97	6926.7	792.42	-487.69	678.75	835.79	125.70	0.13	0.05	-0.12
8593	88.75	89.84	98	6928.9	890.36	-487.11	776.72	916.83	122.09	0.40	0.15	0.37
8690	90.61	89.33	97	6929.5	987.33	-486.41	873.71	999.98	119.11	1.99	1.92	-0.53
8785	92.03	89.34	95	6927.3	1082.26	-485.31	968.68	1083.45	116.61	1.49	1.49	0.01
8881	92.15	89.10	96	6923.8	1178.15	-484.00	1064.60	1169.46	114.45	0.28	0.13	-0.25
8978	92.33	89.39	97	6920.0	1275.03	-482.73	1161.52	1257.84	112.57	0.35	0.19	0.30
9075	92.08	89.46	97	6916.3	1371.92	-481.75	1258.44	1347.50	110.95	0.27	-0.26	0.07
9170	92.30	89.29	95	6912.6	1466.81	-480.72	1353.37	1436.21	109.56	0.29	0.23	-0.18
9265	92.41	89.53	95	6908.7	1561.70	-479.74	1448.28	1525.67	108.33	0.28	0.12	0.25
9363	92.46	89.13	98	6904.6	1659.57	-478.59	1546.19	1618.56	107.20	0.41	0.05	-0.41
9461	92.34	89.51	98	6900.5	1757.44	-477.43	1644.10	1712.01	106.19	0.41	-0.12	0.39
9559	92.25	89.29	98	6896.6	1855.32	-476.41	1742.01	1805.98	105.30	0.24	-0.09	-0.22
9657	92.43	89.51	98	6892.6	1953.20	-475.38	1839.92	1900.34	104.49	0.29	0.18	0.22
9755	92.25	89.16	98	6888.6	2051.08	-474.25	1937.84	1995.02	103.75	0.40	-0.18	-0.36
9853	92.15	89.37	98	6884.8	2148.96	-472.99	2035.75	2089.98	103.08	0.24	-0.10	0.21
9951	92.29	89.01	98	6881.0	2246.84	-471.61	2133.67	2185.17	102.46	0.39	0.14	-0.37
10049	92.29	89.42	98	6877.1	2344.71	-470.26	2231.58	2280.60	101.90	0.42	0.00	0.42
10144	92.34	89.21	95	6873.2	2439.59	-469.13	2326.50	2373.33	101.40	0.23	0.05	-0.22
10241	92.07	89.20	97	6869.5	2536.47	-467.78	2423.42	2468.15	100.93	0.28	-0.28	-0.01
10337	92.18	89.13	96	6865.9	2632.36	-466.39	2519.34	2562.15	100.49	0.14	0.11	-0.07
10434	92.46	89.28	97	6862.0	2729.23	-465.04	2616.25	2657.26	100.08	0.33	0.29	0.15
10531	90.31	89.68	97	6859.7	2826.16	-464.16	2713.21	2752.63	99.71	2.25	-2.22	0.41
10627	90.08	89.27	96	6859.3	2922.13	-463.28	2809.21	2847.15	99.36	0.49	-0.24	-0.43
10724	90.12	89.52	97	6859.2	3019.09	-462.26	2906.20	2942.74	99.04	0.26	0.04	0.26
10821	90.31	89.10	97	6858.8	3116.05	-461.09	3003.20	3038.39	98.73	0.48	0.20	-0.43
10916	90.07	89.22	95	6858.5	3211.00	-459.70	3098.19	3132.10	98.44	0.28	-0.25	0.13
11012	90.21	88.97	96	6858.3	3306.94	-458.18	3194.17	3226.87	98.16	0.30	0.15	-0.26

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11109	89.42	89.27	97	6858.6	3403.89	-456.69	3291.16	3322.70	97.90	0.87	-0.81	0.31
11206	89.84	89.63	97	6859.2	3500.85	-455.76	3388.15	3418.67	97.66	0.57	0.43	0.37
11302	89.88	89.84	96	6859.4	3596.83	-455.32	3484.15	3513.78	97.45	0.22	0.04	0.22
11400	89.84	89.50	98	6859.7	3694.80	-454.75	3582.15	3610.90	97.23	0.35	-0.04	-0.35
11496	90.10	89.40	96	6859.7	3790.77	-453.83	3678.15	3706.04	97.03	0.29	0.27	-0.10
11593	90.15	89.55	97	6859.5	3887.73	-452.94	3775.14	3802.22	96.84	0.16	0.05	0.15
11691	90.28	89.89	98	6859.2	3985.71	-452.46	3873.14	3899.48	96.66	0.37	0.13	0.35
11787	91.24	89.68	96	6857.9	4081.67	-452.10	3969.13	3994.79	96.50	1.02	1.00	-0.22
11885	91.48	91.03	98	6855.6	4179.64	-452.71	4067.10	4092.21	96.35	1.40	0.24	1.38
11981	92.08	91.28	96	6852.6	4275.59	-454.64	4163.03	4187.78	96.23	0.68	0.62	0.26
12078	91.80	91.25	97	6849.3	4372.53	-456.78	4259.95	4284.37	96.12	0.29	-0.29	-0.03
12175	91.95	91.14	97	6846.1	4469.48	-458.80	4356.88	4380.97	96.01	0.19	0.15	-0.11
12270	91.89	91.02	95	6842.9	4564.43	-460.59	4451.81	4475.57	95.91	0.14	-0.06	-0.13
12367	91.86	91.17	97	6839.8	4661.38	-462.45	4548.74	4572.19	95.81	0.16	-0.03	0.15
12465	91.93	90.93	98	6836.5	4759.32	-464.24	4646.67	4669.80	95.71	0.25	0.07	-0.24
12564	92.01	91.10	99	6833.1	4858.26	-465.99	4745.59	4768.42	95.61	0.19	0.08	0.17
12661	91.95	91.05	97	6829.8	4955.21	-467.81	4842.52	4865.06	95.52	0.08	-0.06	-0.05
12758	92.26	91.60	97	6826.2	5052.14	-470.05	4939.43	4961.74	95.44	0.65	0.32	0.57
12854	92.14	92.40	96	6822.5	5148.05	-473.40	5035.30	5057.50	95.37	0.84	-0.13	0.83
12953	92.19	92.41	99	6818.8	5246.95	-477.55	5134.14	5156.30	95.31	0.05	0.05	0.01
13047	92.21	92.51	94	6815.2	5340.85	-481.59	5227.98	5250.12	95.26	0.11	0.02	0.11
13144	92.19	92.34	97	6811.4	5437.75	-485.69	5324.83	5346.93	95.21	0.18	-0.02	-0.18
13242	92.15	92.36	98	6807.7	5535.65	-489.70	5422.67	5444.74	95.16	0.05	-0.04	0.02
13339	92.05	91.19	97	6804.2	5632.58	-492.70	5519.56	5541.51	95.10	1.21	-0.10	-1.21
13435	92.17	91.62	96	6800.6	5728.51	-495.06	5615.47	5637.24	95.04	0.46	0.13	0.45
13530	92.15	91.21	95	6797.1	5823.44	-497.40	5710.37	5731.99	94.98	0.43	-0.02	-0.43
13628	92.24	91.40	98	6793.3	5921.37	-499.63	5808.27	5829.72	94.92	0.21	0.09	0.19
13726	92.13	91.46	98	6789.6	6019.29	-502.08	5906.17	5927.47	94.86	0.13	-0.11	0.06
13823	91.04	91.65	97	6786.9	6116.25	-504.71	6003.10	6024.27	94.81	1.14	-1.12	0.20
13920	89.90	91.66	97	6786.1	6213.24	-507.51	6100.05	6121.12	94.76	1.18	-1.18	0.01
14018	90.25	91.61	98	6786.0	6311.23	-510.30	6198.01	6218.98	94.71	0.36	0.36	-0.05
14113	90.37	91.17	95	6785.4	6406.23	-512.61	6292.98	6313.82	94.66	0.48	0.13	-0.46
14211	89.93	91.66	98	6785.2	6504.22	-515.03	6390.95	6411.67	94.61	0.67	-0.45	0.50
14308	90.09	91.82	97	6785.2	6601.22	-517.97	6487.90	6508.55	94.56	0.23	0.16	0.16
14405	90.07	91.13	97	6785.0	6698.21	-520.47	6584.87	6605.41	94.52	0.71	-0.02	-0.71
14502	90.11	99.66	97	6784.9	6794.84	-529.58	6681.35	6702.31	94.53	8.79	0.04	8.79
14596	90.18	110.76	94	6784.6	6885.82	-554.21	6771.92	6794.56	94.68	11.81	0.07	11.81
14695	90.32	120.30	99	6784.2	6975.78	-596.82	6861.15	6887.06	94.97	9.64	0.14	9.64
14793	90.17	125.66	98	6783.8	7058.87	-650.15	6943.32	6973.70	95.35	5.47	-0.15	5.47
14890	90.20	134.79	97	6783.5	7133.94	-712.72	7017.31	7053.41	95.80	9.41	0.03	9.41
14988	90.26	144.67	98	6783.1	7198.50	-787.41	7080.57	7124.22	96.35	10.08	0.06	10.08
15086	90.40	153.28	98	6782.5	7250.42	-871.31	7131.04	7184.07	96.97	8.79	0.14	8.79
15184	90.13	162.25	98	6782.1	7289.04	-961.92	7168.08	7232.34	97.64	9.16	-0.28	9.15
15281	90.02	169.41	97	6781.9	7314.41	-1055.91	7191.81	7268.91	98.35	7.38	-0.11	7.38
15377	90.77	180.04	96	6781.3	7324.88	-1151.37	7200.63	7292.09	99.08	11.10	0.78	11.07
15474	90.92	187.99	97	6779.8	7319.79	-1248.04	7193.84	7301.30	99.84	8.20	0.15	8.20
15571	89.48	196.94	97	6779.5	7300.53	-1342.65	7172.92	7297.50	100.60	9.35	-1.48	9.23
15669	87.94	209.19	98	6781.7	7263.79	-1432.62	7134.62	7277.03	101.35	12.59	-1.57	12.50
15764	89.04	219.42	95	6784.2	7211.72	-1510.96	7081.16	7240.57	102.05	10.83	1.16	10.77
15862	88.88	228.77	98	6786.0	7144.85	-1581.26	7013.06	7189.11	102.71	9.54	-0.16	9.54
15958	90.91	239.69	96	6786.2	7068.07	-1637.28	6935.29	7125.93	103.28	11.57	2.11	11.38
16056	92.25	248.50	98	6783.5	6980.80	-1680.04	6847.26	7050.35	103.79	9.09	1.37	8.99
16153	90.83	257.57	97	6780.9	6888.66	-1708.30	6754.61	6967.29	104.19	9.46	-1.46	9.35
16251	90.63	266.75	98	6779.6	6791.93	-1721.65	6657.64	6876.65	104.50	9.37	-0.20	9.37
16348	91.01	269.16	97	6778.2	6695.09	-1725.11	6560.72	6783.73	104.73	2.51	0.39	2.48
16446	89.90	270.91	98	6777.5	6597.11	-1725.05	6462.73	6689.00	104.95	2.11	-1.13	1.79
16544	89.81	270.63	98	6777.7	6499.11	-1723.74	6364.74	6594.02	105.15	0.30	-0.09	-0.29
16642	90.00	270.29	98	6777.9	6401.12	-1722.95	6266.74	6499.28	105.37	0.40	0.19	-0.35

# Minimum Radius of Curvature

**API: 05-123-51791**      **Well: HEN 12NHS**      **Wellhead Location N+/S- : 40.327960**  
**Operator: PDC**      **Area: DJ**      **E+/W- : -104.572340**  
**Rig:**      **Type: U-Lateral**      **Magnetic Declination: 7.67**  
**TD: 23,309'**      **Plane of Proposal: 91.00**

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			
16739	90.00	269.10	97	6777.9	6304.14	-1723.47	6169.74	6405.94	105.61	1.23	0.00	-1.23
16835	89.95	268.93	96	6777.9	6208.20	-1725.12	6073.76	6314.00	105.86	0.18	-0.05	-0.18
16931	89.23	269.22	96	6778.6	6112.26	-1726.67	5977.77	6222.15	106.11	0.81	-0.75	0.30
17029	89.60	269.27	98	6779.6	6014.31	-1727.96	5879.79	6128.44	106.38	0.38	0.38	0.05
17125	89.53	268.91	96	6780.3	5918.37	-1729.48	5783.80	6036.84	106.65	0.38	-0.07	-0.37
17222	89.34	268.50	97	6781.3	5821.45	-1731.67	5686.83	5944.64	106.94	0.47	-0.20	-0.42
17320	89.44	269.14	98	6782.3	5723.53	-1733.69	5588.86	5851.58	107.23	0.66	0.10	0.65
17417	89.26	269.21	97	6783.4	5626.58	-1735.09	5491.88	5759.45	107.53	0.20	-0.19	0.07
17513	89.43	269.60	96	6784.5	5530.62	-1736.09	5395.89	5668.30	107.84	0.44	0.18	0.41
17610	89.55	268.70	97	6785.4	5433.68	-1737.52	5298.90	5576.50	108.15	0.94	0.12	-0.93
17707	89.46	269.47	97	6786.2	5336.74	-1739.07	5201.92	5484.92	108.49	0.80	-0.09	0.79
17804	89.53	268.78	97	6787.1	5239.79	-1740.56	5104.94	5393.50	108.83	0.71	0.07	-0.71
17901	89.50	268.61	97	6787.9	5142.88	-1742.76	5007.96	5302.54	109.19	0.18	-0.03	-0.18
17999	89.28	269.30	98	6788.9	5044.95	-1744.55	4909.99	5210.70	109.56	0.74	-0.22	0.70
18096	89.58	268.68	97	6789.9	4948.01	-1746.26	4813.01	5120.01	109.94	0.71	0.31	-0.64
18193	89.56	268.99	97	6790.6	4851.08	-1748.23	4716.03	5029.64	110.34	0.32	-0.02	0.32
18291	89.35	268.95	98	6791.6	4753.15	-1749.99	4618.05	4938.51	110.75	0.22	-0.21	-0.04
18389	89.48	269.15	98	6792.6	4655.21	-1751.62	4520.07	4847.60	111.18	0.24	0.13	0.20
18486	89.53	268.93	97	6793.4	4558.27	-1753.24	4423.09	4757.89	111.62	0.23	0.05	-0.23
18584	89.34	269.14	98	6794.4	4460.33	-1754.90	4325.10	4667.57	112.08	0.29	-0.19	0.21
18681	89.31	268.96	97	6795.5	4363.40	-1756.50	4228.12	4578.47	112.56	0.19	-0.03	-0.19
18777	89.50	269.16	96	6796.5	4267.46	-1758.08	4132.14	4490.60	113.05	0.29	0.20	0.21
18873	89.49	268.90	96	6797.4	4171.52	-1759.70	4036.16	4403.08	113.56	0.27	-0.01	-0.27
18969	89.33	268.97	96	6798.3	4075.58	-1761.49	3940.18	4316.00	114.09	0.18	-0.17	0.07
19067	89.30	269.16	98	6799.5	3977.65	-1763.09	3842.20	4227.41	114.65	0.20	-0.03	0.19
19164	89.43	269.42	97	6800.6	3880.70	-1764.29	3745.22	4139.97	115.22	0.30	0.13	0.27
19263	89.63	269.59	99	6801.4	3781.73	-1765.14	3646.22	4051.01	115.83	0.27	0.20	0.17
19358	89.40	269.33	95	6802.2	3686.77	-1766.04	3551.23	3966.12	116.44	0.37	-0.24	-0.27
19456	89.46	270.05	98	6803.2	3588.80	-1766.57	3453.24	3878.87	117.09	0.74	0.06	0.73
19553	89.42	269.69	97	6804.1	3491.83	-1766.79	3356.24	3792.88	117.76	0.37	-0.04	-0.37
19651	88.95	269.77	98	6805.5	3393.86	-1767.25	3258.25	3706.67	118.48	0.49	-0.48	0.08
19749	89.05	269.78	98	6807.2	3295.90	-1767.64	3160.27	3621.03	119.22	0.10	0.10	0.01
19846	88.96	270.48	97	6808.9	3198.92	-1767.42	3063.29	3536.59	119.98	0.73	-0.09	0.72
19945	88.86	270.76	99	6810.8	3099.94	-1766.34	2964.31	3450.67	120.79	0.30	-0.10	0.28
20043	89.07	271.10	98	6812.6	3001.96	-1764.75	2866.34	3366.04	121.62	0.41	0.21	0.35
20139	88.97	271.43	96	6814.2	2905.98	-1762.64	2770.38	3283.57	122.47	0.36	-0.10	0.34
20235	88.88	271.21	96	6816.0	2809.99	-1760.42	2674.42	3201.81	123.35	0.25	-0.09	-0.23
20331	88.84	270.80	96	6817.9	2714.01	-1758.74	2578.45	3121.15	124.30	0.43	-0.04	-0.43
20429	88.96	270.94	98	6819.8	2616.03	-1757.25	2480.48	3039.86	125.31	0.19	0.12	0.14
20527	88.93	271.20	98	6821.6	2518.05	-1755.42	2382.52	2959.37	126.38	0.27	-0.03	0.27
20623	89.06	271.09	96	6823.3	2422.06	-1753.51	2286.55	2881.51	127.48	0.18	0.14	-0.11
20720	89.02	271.22	97	6824.9	2325.08	-1751.55	2189.58	2803.96	128.66	0.14	-0.04	0.13
20817	88.96	271.06	97	6826.6	2228.09	-1749.62	2092.62	2727.68	129.90	0.18	-0.06	-0.16
20914	88.88	271.02	97	6828.5	2131.11	-1747.86	1995.65	2652.85	131.21	0.09	-0.08	-0.04
21011	89.00	271.17	97	6830.3	2034.13	-1746.01	1898.68	2579.45	132.60	0.20	0.12	0.15
21108	89.01	271.03	97	6831.9	1937.14	-1744.14	1801.72	2507.63	134.07	0.14	0.01	-0.14
21205	89.03	271.63	97	6833.6	1840.16	-1741.89	1704.76	2437.29	135.62	0.62	0.02	0.62
21303	88.91	271.00	98	6835.4	1742.18	-1739.65	1606.80	2368.16	137.27	0.65	-0.12	-0.64
21400	88.73	271.24	97	6837.4	1645.20	-1737.75	1509.84	2302.04	139.01	0.31	-0.19	0.25
21497	88.51	271.37	97	6839.7	1548.23	-1735.54	1412.89	2237.94	140.85	0.26	-0.23	0.13
21593	88.39	271.13	96	6842.3	1452.26	-1733.45	1316.95	2176.97	142.78	0.28	-0.13	-0.25
21691	88.36	271.00	98	6845.1	1354.30	-1731.63	1219.01	2117.67	144.86	0.14	-0.03	-0.13
21789	88.54	271.10	98	6847.7	1256.34	-1729.83	1121.06	2061.33	147.05	0.21	0.18	0.10
21887	88.33	270.80	98	6850.4	1158.38	-1728.21	1023.11	2008.35	149.37	0.37	-0.21	-0.31
21985	88.43	270.98	98	6853.2	1060.41	-1726.69	925.16	1958.92	151.82	0.21	0.10	0.18
22081	88.38	270.99	96	6855.8	964.45	-1725.04	829.21	1913.99	154.33	0.05	-0.05	0.01
22179	88.39	271.12	98	6858.6	866.49	-1723.23	731.27	1871.97	157.01	0.13	0.01	0.13
22276	88.29	271.20	97	6861.4	769.53	-1721.27	634.33	1834.43	159.77	0.13	-0.10	0.08

## Minimum Radius of Curvature

API: **05-123-51791**      Well: **HEN 12NHS**      Wellhead Location N+/S- : **40.327960**  
 Operator: **PDC**      Area: **DJ**      E+/W- : **-104.572340**  
 Rig:      Type: **U-Lateral**      Magnetic Declination: **7.67**  
 TD: **23,309'**      Plane of Proposal: **91.00**

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			
22374	88.72	270.98	98	6864.0	671.57	-1719.41	536.38	1801.13	162.67	0.49	0.44	-0.22
22470	89.00	271.25	96	6865.9	575.59	-1717.54	440.42	1773.11	165.62	0.41	0.29	0.28
22665	88.94	271.12	195	6869.4	380.62	-1713.51	245.49	1731.00	171.85	0.07	-0.03	-0.07
22762	88.90	271.41	97	6871.2	283.64	-1711.37	148.53	1717.80	175.04	0.30	-0.04	0.30
22858	88.97	271.33	96	6873.0	187.65	-1709.07	52.58	1709.88	178.24	0.11	0.07	-0.08
22955	88.92	271.10	97	6874.8	90.67	-1707.01	-44.39	1707.59	181.49	0.24	-0.05	-0.24
23051	89.01	271.38	96	6876.5	-5.31	-1704.94	-140.35	1710.70	184.71	0.31	0.09	0.29
23148	89.00	271.40	97	6878.2	-102.29	-1702.58	-237.31	1719.04	187.93	0.02	-0.01	0.02
23246	88.95	271.10	98	6880.0	-200.28	-1700.45	-335.27	1733.18	191.15	0.31	-0.05	-0.31
23275	89.00	271.23	29	6880.5	-229.27	-1699.86	-364.26	1738.45	192.09	0.48	0.17	0.45
23309	89.00	271.23	34	6881.1	-263.27	-1699.13	-398.24	1745.17	193.19	0.00	0.00	0.00