

# Minimum Radius of Curvature

**API: 42-109-34215**      **Well: Hay Valerie 0015WA**      **Wellhead Location**      **Lat: 31.797115**  
**Operator: Chevron**      **Area: Delaware**      **Long: -104.050910**  
**Rig: Patterson 289**      **Type: U Lateral**      **Magnetic Declination: 8.38**  
**TD: 20,356'**      **Plane of Proposal: 182.14**

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			
194	1.07	249.33	194	194.0	0.70	-0.64	-1.69	1.81	249.33	0.55	0.55	128.52
242	1.22	244.88	48	242.0	1.11	-1.01	-2.58	2.77	248.51	0.36	0.31	-9.27
340	1.23	256.79	98	340.0	1.87	-1.70	-4.55	4.85	249.52	0.26	0.01	12.15
438	1.13	260.95	98	437.9	2.33	-2.09	-6.52	6.85	252.23	0.13	-0.10	4.24
536	0.28	251.26	98	535.9	2.61	-2.32	-7.70	8.05	253.25	0.87	-0.87	-9.89
625	0.60	113.74	89	624.9	2.85	-2.58	-7.48	7.92	251.00	0.93	0.36	-154.52
714	0.64	143.55	89	713.9	3.41	-3.16	-6.76	7.47	244.93	0.36	0.04	33.49
804	0.69	182.46	90	803.9	4.35	-4.11	-6.49	7.68	237.64	0.49	0.06	43.23
895	0.93	211.16	91	894.9	5.54	-5.29	-6.89	8.69	232.50	0.51	0.26	31.54
985	1.91	242.37	90	984.9	6.93	-6.61	-8.60	10.85	232.45	1.35	1.09	34.68
1079	2.38	250.63	94	1078.8	8.42	-7.98	-11.83	14.27	235.98	0.60	0.50	8.79
1173	1.37	245.59	94	1172.8	9.64	-9.10	-14.69	17.28	238.24	1.09	-1.07	-5.36
1267	1.83	113.82	94	1266.7	10.69	-10.17	-14.34	17.58	234.67	3.11	0.49	-140.18
1361	1.66	105.19	94	1360.7	11.56	-11.13	-11.66	16.12	226.33	0.33	-0.18	-9.18
1456	1.67	101.09	95	1455.7	12.08	-11.76	-8.97	14.79	217.34	0.13	0.01	-4.32
1550	1.79	89.93	94	1549.6	12.24	-12.02	-6.16	13.50	207.13	0.38	0.13	-11.87
1644	1.71	68.44	94	1643.6	11.62	-11.50	-3.39	11.99	196.40	0.70	-0.09	-22.86
1738	1.84	62.83	94	1737.5	10.32	-10.30	-0.74	10.32	184.10	0.23	0.14	-5.97
1832	1.66	52.91	94	1831.5	8.72	-8.79	1.69	8.95	169.11	0.37	-0.19	-10.55
1927	1.59	36.69	95	1926.4	6.76	-6.90	3.58	7.77	152.60	0.49	-0.07	-17.07
2021	1.85	27.28	94	2020.4	4.31	-4.50	5.05	6.77	131.73	0.41	0.28	-10.01
2115	2.35	29.99	94	2114.3	1.24	-1.49	6.71	6.87	102.50	0.54	0.53	2.88
2209	2.76	27.66	94	2208.3	-2.51	2.19	8.72	8.99	75.93	0.45	0.44	-2.48
2304	3.09	33.82	95	2303.1	-6.75	6.34	11.21	12.88	60.51	0.48	0.35	6.48
2500	1.95	47.95	196	2498.9	-13.57	12.96	16.63	21.08	52.06	0.66	-0.58	7.21
2594	1.00	16.62	94	2592.9	-15.48	14.82	18.05	23.35	50.61	1.29	-1.01	-33.33
2688	2.01	283.00	94	2686.9	-16.59	15.98	16.68	23.09	46.23	2.45	1.07	283.38
2782	2.08	287.10	94	2780.8	-17.34	16.85	13.44	21.55	38.58	0.17	0.07	4.36
2876	1.92	287.85	94	2874.8	-18.21	17.83	10.31	20.60	30.04	0.17	-0.17	0.80
2970	1.31	140.23	94	2968.7	-17.83	17.49	9.50	19.90	28.51	3.30	-0.65	-157.04
3065	1.57	137.14	95	3063.7	-16.10	15.70	11.08	19.22	35.21	0.29	0.27	-3.25
3159	1.47	140.12	94	3157.7	-14.30	13.83	12.73	18.80	42.62	0.14	-0.11	3.17
3253	1.78	136.45	94	3251.6	-12.38	11.85	14.51	18.73	50.76	0.35	0.33	-3.90
3347	3.82	171.15	94	3345.5	-8.29	7.70	15.99	17.75	64.30	2.73	2.17	36.91
3441	4.07	178.65	94	3439.3	-1.88	1.27	16.56	16.60	85.62	0.61	0.27	7.98
3535	3.66	173.34	94	3533.1	4.41	-5.05	16.98	17.72	106.55	0.58	-0.44	-5.65
3629	3.39	174.25	94	3626.9	10.13	-10.79	17.61	20.65	121.51	0.29	-0.29	0.97
3723	3.65	176.14	94	3720.7	15.86	-16.54	18.09	24.51	132.45	0.30	0.28	2.01
3818	3.56	174.98	95	3815.6	21.79	-22.50	18.55	29.16	140.50	0.12	-0.09	-1.22
3912	3.73	177.50	94	3909.4	27.73	-28.46	18.94	34.19	146.36	0.25	0.18	2.68
4007	3.73	179.50	95	4004.2	33.90	-34.64	19.10	39.56	151.13	0.14	0.00	2.11
4101	4.66	170.43	94	4097.9	40.69	-41.46	19.76	45.93	154.52	1.21	0.99	-9.65
4195	9.88	161.33	94	4191.1	51.98	-52.87	22.98	57.65	156.51	5.67	5.55	-9.68
4289	10.23	160.89	94	4283.7	67.30	-68.40	28.29	74.02	157.53	0.38	0.37	-0.47
4384	9.69	161.59	95	4377.3	82.65	-83.96	33.58	90.43	158.20	0.58	-0.57	0.74
4478	8.76	161.47	94	4470.0	96.75	-98.25	38.35	105.47	158.68	0.99	-0.99	-0.13
4572	8.29	162.35	94	4563.0	109.82	-111.50	42.68	119.39	159.05	0.52	-0.50	0.94
4666	7.74	163.62	94	4656.1	122.20	-124.03	46.52	132.47	159.44	0.61	-0.59	1.35
4760	7.35	164.18	94	4749.3	133.93	-135.89	49.95	144.77	159.82	0.42	-0.41	0.60
4855	8.76	153.99	95	4843.3	146.09	-148.23	54.78	158.03	159.72	2.11	1.48	-10.73
4949	9.03	149.69	94	4936.2	158.62	-161.04	61.64	172.43	159.05	0.76	0.29	-4.57
5043	8.62	151.77	94	5029.1	170.92	-173.61	68.69	186.71	158.41	0.55	-0.44	2.21
5137	8.25	136.15	94	5122.1	181.69	-184.68	76.70	199.98	157.45	2.46	-0.39	-16.62
5231	7.54	133.11	94	5215.2	190.42	-193.76	85.87	211.94	156.10	0.88	-0.76	-3.23
5325	7.05	133.66	94	5308.4	198.29	-201.96	94.55	223.00	154.91	0.53	-0.52	0.59
5420	6.47	135.50	95	5402.8	205.83	-209.80	102.52	233.51	153.96	0.65	-0.61	1.94
5514	6.13	136.01	94	5496.2	212.94	-217.19	109.72	243.33	153.20	0.37	-0.36	0.54

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						N-S Ft	E-W Ft	Distance FT	Direction Deg			
5608	5.39	139.88	94	5589.7	219.69	-224.18	116.05	252.43	152.63	0.89	-0.79	4.12
5702	1.83	150.91	94	5683.5	224.24	-228.87	119.62	258.24	152.40	3.84	-3.79	11.73
5796	1.53	155.11	94	5777.5	226.64	-231.32	120.88	261.00	152.41	0.34	-0.32	4.47
5890	1.35	165.04	94	5871.5	228.82	-233.52	121.70	263.33	152.47	0.33	-0.19	10.56
5985	1.11	168.63	95	5966.4	230.78	-235.51	122.17	265.31	152.58	0.27	-0.25	3.78
6079	1.19	175.71	94	6060.4	232.64	-237.37	122.42	267.08	152.72	0.17	0.09	7.53
6173	1.05	195.49	94	6154.4	234.44	-239.18	122.26	268.61	152.92	0.43	-0.15	21.04
6267	1.06	210.25	94	6248.4	236.05	-240.76	121.59	269.72	153.20	0.29	0.01	15.70
6362	0.94	212.07	95	6343.4	237.50	-242.18	120.74	270.60	153.50	0.13	-0.13	1.92
6456	0.95	229.78	94	6437.4	238.69	-243.33	119.73	271.20	153.80	0.31	0.01	18.84
6550	0.87	235.95	94	6531.3	239.64	-244.24	118.55	271.49	154.11	0.13	-0.09	6.56
6644	0.80	199.27	94	6625.3	240.69	-245.25	117.74	272.05	154.36	0.56	-0.07	-39.02
6738	0.78	174.03	94	6719.3	241.95	-246.51	117.59	273.12	154.50	0.37	-0.02	-26.85
6833	0.55	185.80	95	6814.3	243.04	-247.61	117.61	274.12	154.59	0.28	-0.24	12.39
6927	0.51	267.55	94	6908.3	243.53	-248.07	117.15	274.34	154.72	0.74	-0.04	86.97
7021	0.70	207.26	94	7002.3	244.08	-248.60	116.47	274.53	154.90	0.67	0.20	-64.14
7115	0.94	236.99	94	7096.3	245.04	-249.53	115.56	274.99	155.15	0.51	0.26	31.63
7209	0.89	274.28	94	7190.3	245.46	-249.90	114.18	274.75	155.44	0.62	-0.05	39.67
7304	2.17	355.81	95	7285.3	243.65	-248.05	113.31	272.71	155.45	2.34	1.35	85.82
7398	4.10	9.38	94	7379.1	238.54	-242.96	113.73	268.26	154.92	2.19	2.05	-368.54
7492	7.54	18.06	94	7472.6	229.28	-233.78	116.19	261.06	153.57	3.77	3.66	9.23
7587	6.03	12.75	95	7567.0	218.38	-222.98	119.23	252.86	151.87	1.72	-1.59	-5.59
7681	5.24	2.96	94	7660.5	209.23	-213.88	120.54	245.51	150.60	1.32	-0.84	-10.41
7775	5.71	354.20	94	7754.1	200.31	-204.94	120.29	237.63	149.59	1.02	0.50	373.66
7869	3.51	349.56	94	7847.8	192.87	-197.46	119.29	230.70	148.86	2.37	-2.34	-4.94
7963	2.16	341.63	94	7941.6	188.40	-192.95	118.21	226.28	148.51	1.49	-1.44	-8.44
8058	0.99	343.38	95	8036.6	185.94	-190.46	117.41	223.74	148.35	1.23	-1.23	1.84
8152	1.01	119.26	94	8130.6	185.55	-190.09	117.90	223.69	148.19	1.97	0.02	-238.43
8246	2.95	125.72	94	8224.5	187.27	-191.91	120.59	226.65	147.86	2.07	2.06	6.87
8340	2.45	132.47	94	8318.4	189.91	-194.67	124.04	230.83	147.50	0.63	-0.53	7.18
8435	7.13	174.42	95	8413.1	197.07	-201.92	126.11	238.07	148.01	5.85	4.93	44.16
8529	16.06	187.36	94	8505.1	215.84	-220.66	125.01	253.61	150.47	9.84	9.50	13.77
8571	19.21	188.52	42	8545.1	228.49	-233.26	123.24	263.81	152.15	7.55	7.50	2.76
8713	12.28	190.42	142	8681.7	266.70	-271.26	117.04	295.43	156.66	4.89	-4.88	1.34
8807	14.25	178.23	94	8773.2	288.14	-292.66	115.59	314.66	158.45	3.63	2.10	-12.97
8903	24.81	175.53	96	8863.6	320.03	-324.64	117.53	345.26	160.10	11.04	11.00	-2.81
8997	36.13	177.11	94	8944.5	367.38	-372.14	120.47	391.15	162.06	12.07	12.04	1.68
9092	46.78	181.69	95	9015.6	430.09	-434.90	120.87	451.39	164.47	11.65	11.21	4.82
9187	57.01	181.99	95	9074.1	504.74	-509.52	118.46	523.11	166.91	10.77	10.77	0.32
9280	59.47	183.34	93	9123.1	583.80	-588.50	114.77	599.58	168.96	2.92	2.65	1.45
9375	59.86	181.89	95	9171.1	665.79	-670.40	111.03	679.53	170.60	1.38	0.41	-1.53
9470	59.45	180.62	95	9219.0	747.76	-752.37	109.23	760.25	171.74	1.23	-0.43	-1.34
9564	68.02	181.73	94	9260.6	831.97	-836.56	107.47	843.44	172.68	9.18	9.12	1.18
9659	78.34	181.67	95	9288.1	922.78	-927.33	104.78	933.24	173.55	10.86	10.86	-0.06
9700	83.42	182.23	41	9294.6	963.24	-967.78	103.40	973.29	173.90	12.46	12.39	1.37
9753	86.68	183.31	53	9299.1	1016.03	-1020.51	100.85	1025.48	174.36	6.48	6.15	2.04
9848	90.57	182.87	95	9301.4	1110.98	-1115.33	95.73	1119.43	175.09	4.12	4.09	-0.46
9942	90.41	182.41	94	9300.6	1204.97	-1209.23	91.40	1212.67	175.68	0.52	-0.17	-0.49
10037	89.62	182.70	95	9300.6	1299.97	-1304.13	87.17	1307.04	176.18	0.89	-0.83	0.31
10131	89.99	184.12	94	9300.9	1393.94	-1397.96	81.58	1400.34	176.66	1.56	0.39	1.51
10226	87.01	183.63	95	9303.4	1488.85	-1492.70	75.16	1494.59	177.12	3.18	-3.14	-0.52
10320	88.22	182.30	94	9307.3	1582.76	-1586.49	70.30	1588.05	177.46	1.91	1.29	-1.41
10415	89.31	182.41	95	9309.3	1677.73	-1681.38	66.40	1682.70	177.74	1.15	1.15	0.12
10510	89.76	182.48	95	9310.1	1772.73	-1776.30	62.35	1777.39	177.99	0.48	0.47	0.07
10605	89.65	183.06	95	9310.6	1867.72	-1871.18	57.75	1872.07	178.23	0.62	-0.12	0.61
10700	89.68	183.18	95	9311.2	1962.71	-1966.04	52.58	1966.74	178.47	0.13	0.03	0.13
10890	90.13	182.29	190	9311.5	2152.69	-2155.82	43.52	2156.26	178.84	0.52	0.24	-0.47
10984	89.96	182.11	94	9311.4	2246.69	-2249.75	39.91	2250.11	178.98	0.26	-0.18	-0.19

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11173	88.39	182.89	189	9314.1	2435.66	-2438.54	31.67	2438.75	179.26	0.93	-0.83	0.41
11268	90.46	182.58	95	9315.1	2530.65	-2533.43	27.13	2533.57	179.39	2.20	2.18	-0.33
11361	90.41	182.49	93	9314.4	2623.64	-2626.33	23.02	2626.43	179.50	0.11	-0.05	-0.10
11452	90.21	183.33	91	9313.9	2714.63	-2717.21	18.40	2717.28	179.61	0.95	-0.22	0.92
11543	89.09	182.50	91	9314.4	2805.62	-2808.09	13.77	2808.13	179.72	1.53	-1.23	-0.91
11634	89.59	183.10	91	9315.5	2896.61	-2898.98	9.33	2898.99	179.82	0.86	0.55	0.66
11725	89.06	181.37	91	9316.6	2987.60	-2989.90	5.78	2989.90	179.89	1.99	-0.58	-1.90
11816	88.95	182.08	91	9318.1	3078.58	-3080.84	3.04	3080.84	179.94	0.79	-0.12	0.78
11908	88.61	182.57	92	9320.1	3170.56	-3172.74	-0.69	3172.74	180.01	0.65	-0.37	0.53
11999	89.34	182.84	91	9321.7	3261.54	-3263.63	-4.98	3263.63	180.09	0.86	0.80	0.30
12089	89.76	182.47	90	9322.4	3351.53	-3353.53	-9.15	3353.54	180.16	0.62	0.47	-0.41
12180	89.62	182.13	91	9322.9	3442.53	-3444.45	-12.80	3444.48	180.21	0.40	-0.15	-0.37
12272	89.51	180.75	92	9323.6	3534.52	-3536.42	-15.12	3536.45	180.24	1.50	-0.12	-1.50
12363	87.91	180.74	91	9325.7	3625.46	-3627.39	-16.30	3627.42	180.26	1.76	-1.76	-0.01
12454	88.42	184.81	91	9328.6	3716.39	-3718.21	-20.70	3718.27	180.32	4.51	0.56	4.47
12548	88.39	182.57	94	9331.2	3810.32	-3811.98	-26.75	3812.07	180.40	2.38	-0.03	-2.38
12643	88.89	181.79	95	9333.5	3905.29	-3906.88	-30.36	3907.00	180.45	0.98	0.53	-0.82
12745	87.44	182.96	102	9336.7	4007.23	-4008.73	-34.59	4008.88	180.49	1.83	-1.42	1.15
12840	88.89	183.66	95	9339.8	4102.16	-4103.52	-40.07	4103.72	180.56	1.69	1.53	0.74
13029	89.03	182.03	189	9343.2	4291.11	-4292.25	-49.45	4292.54	180.66	0.87	0.07	-0.86
13123	89.71	182.44	94	9344.2	4385.10	-4386.18	-53.11	4386.50	180.69	0.84	0.72	0.44
13218	90.04	182.87	95	9344.4	4480.10	-4481.07	-57.51	4481.44	180.74	0.57	0.35	0.45
13312	89.99	182.60	94	9344.4	4574.09	-4574.97	-62.00	4575.39	180.78	0.29	-0.05	-0.29
13408	90.29	183.48	96	9344.2	4670.08	-4670.83	-67.09	4671.31	180.82	0.97	0.31	0.92
13597	89.48	182.44	189	9344.6	4859.05	-4859.57	-76.85	4860.18	180.91	0.70	-0.43	-0.55
13788	89.03	179.06	191	9347.0	5049.95	-5050.51	-79.35	5051.14	180.90	1.79	-0.24	-1.77
13883	88.59	170.04	95	9349.0	5144.00	-5144.96	-70.34	5145.45	180.78	9.50	-0.46	-9.49
13978	88.08	163.62	95	9351.8	5235.54	-5237.38	-48.71	5237.60	180.53	6.78	-0.54	-6.76
14073	88.78	156.89	95	9354.4	5323.61	-5326.71	-16.65	5326.73	180.18	7.12	0.74	-7.08
14167	88.73	149.18	94	9356.4	5405.66	-5410.40	25.93	5410.47	179.73	8.20	-0.05	-8.20
14262	89.62	141.75	95	9357.8	5481.79	-5488.60	79.75	5489.18	179.17	7.88	0.94	-7.82
14356	92.23	135.32	94	9356.3	5549.81	-5558.99	141.94	5560.80	178.54	7.38	2.78	-6.84
14451	86.99	128.02	95	9356.9	5610.22	-5622.08	212.83	5626.11	177.83	9.46	-5.52	-7.68
14487	86.40	125.27	36	9359.0	5630.57	-5643.53	241.66	5648.70	177.55	7.80	-1.64	-7.64
14546	88.08	121.34	59	9361.8	5661.06	-5675.88	290.90	5683.33	177.07	7.24	2.85	-6.66
14639	89.73	105.73	93	9363.6	5694.87	-5712.89	375.89	5725.25	176.24	16.87	1.77	-16.78
14733	88.45	90.42	94	9365.1	5704.56	-5726.06	468.66	5745.21	175.32	16.34	-1.36	-16.29
14827	88.70	79.51	94	9367.5	5692.84	-5717.82	562.13	5745.39	174.39	11.61	0.27	-11.61
14921	88.03	69.87	94	9370.2	5664.70	-5693.04	652.65	5730.33	173.46	10.28	-0.71	-10.26
15015	88.89	64.73	94	9372.7	5625.24	-5656.79	739.31	5704.90	172.55	5.54	0.91	-5.47
15110	87.60	59.57	95	9375.6	5577.80	-5612.45	823.24	5672.51	171.66	5.60	-1.36	-5.43
15204	88.81	57.45	94	9378.6	5525.77	-5563.38	903.35	5636.24	170.78	2.60	1.29	-2.26
15299	88.61	48.14	95	9380.7	5465.62	-5506.01	978.91	5592.35	169.92	9.80	-0.21	-9.80
15393	88.30	43.09	94	9383.2	5397.45	-5440.31	1046.04	5539.96	169.12	5.38	-0.33	-5.37
15488	88.78	42.02	95	9385.7	5325.15	-5370.35	1110.27	5483.92	168.32	1.23	0.51	-1.13
15582	88.42	38.58	94	9388.0	5251.27	-5298.69	1171.04	5426.55	167.54	3.68	-0.38	-3.66
15676	89.51	26.69	94	9389.7	5170.43	-5219.69	1221.63	5360.74	166.83	12.70	1.16	-12.65
15771	88.98	10.91	95	9390.9	5079.71	-5130.05	1252.15	5280.65	166.28	16.62	-0.56	-16.61
15865	90.10	0.83	94	9391.7	4986.04	-5036.67	1261.75	5192.30	165.94	10.79	1.19	-10.72
15960	89.82	3.52	95	9391.7	4891.05	-4941.74	1265.35	5101.17	165.64	2.85	-0.29	2.83
16054	90.10	1.98	94	9391.8	4797.06	-4847.86	1269.86	5011.41	165.32	1.67	0.30	-1.64
16148	89.54	1.84	94	9392.1	4703.06	-4753.91	1272.99	4921.40	165.01	0.61	-0.60	-0.15
16243	90.55	3.35	95	9392.0	4608.06	-4659.01	1277.30	4830.93	164.67	1.91	1.06	1.59
16337	90.43	3.45	94	9391.2	4514.09	-4565.18	1282.87	4742.01	164.30	0.17	-0.13	0.11
16431	90.46	2.50	94	9390.5	4420.10	-4471.31	1287.75	4653.05	163.93	1.01	0.03	-1.01
16526	90.80	2.74	95	9389.4	4325.11	-4376.41	1292.09	4563.17	163.55	0.44	0.36	0.25
16621	90.94	2.48	95	9388.0	4230.13	-4281.52	1296.42	4473.49	163.15	0.31	0.15	-0.27
16716	91.22	1.49	95	9386.2	4135.15	-4186.60	1299.71	4383.70	162.75	1.08	0.29	-1.04

# Minimum Radius of Curvature

**API: 42-109-34215**      **Well: Hay Valerie 0015WA**      **Wellhead Location**      **Lat: 31.797115**  
**Operator: Chevron**      **Area: Delaware**      **Long: -104.050910**  
**Rig: Patterson 289**      **Type: U Lateral**      **Magnetic Declination: 8.38**  
**TD: 20,356'**      **Plane of Proposal: 182.14**

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			
16811	89.71	1.12	95	9385.4	4040.16	-4091.63	1301.87	4293.75	162.35	1.64	-1.59	-0.39
16905	89.79	1.11	94	9385.9	3946.18	-3997.65	1303.70	4204.86	161.94	0.09	0.09	-0.01
17000	89.65	0.80	95	9386.3	3851.20	-3902.66	1305.28	4115.16	161.51	0.36	-0.15	-0.33
17095	89.87	1.34	95	9386.7	3756.22	-3807.68	1307.06	4025.77	161.05	0.61	0.23	0.57
17189	90.66	2.67	94	9386.3	3662.22	-3713.74	1310.35	3938.13	160.57	1.65	0.84	1.41
17283	90.18	1.67	94	9385.6	3568.23	-3619.81	1313.90	3850.90	160.05	1.18	-0.51	-1.06
17378	90.69	3.07	95	9384.9	3473.23	-3524.90	1317.83	3763.19	159.50	1.57	0.54	1.47
17473	91.13	2.46	95	9383.4	3378.25	-3430.02	1322.41	3676.12	158.92	0.79	0.46	-0.64
17568	90.18	4.19	95	9382.3	3283.28	-3335.19	1327.92	3589.83	158.29	2.08	-1.00	1.82
17662	90.35	1.74	94	9381.8	3189.30	-3241.33	1332.79	3504.64	157.65	2.61	0.18	-2.61
17758	90.15	1.74	96	9381.4	3093.30	-3145.37	1335.70	3417.23	156.99	0.21	-0.21	0.00
17852	90.15	0.53	94	9381.2	2999.32	-3051.39	1337.56	3331.68	156.33	1.29	0.00	-1.29
17947	90.57	0.94	95	9380.6	2904.35	-2956.40	1338.78	3245.41	155.64	0.62	0.44	0.43
18041	90.35	2.56	94	9379.8	2810.36	-2862.45	1341.65	3161.28	154.89	1.74	-0.23	1.72
18136	91.13	3.12	95	9378.6	2715.38	-2767.58	1346.36	3077.69	154.06	1.01	0.82	0.59
18231	91.08	3.89	95	9376.8	2620.42	-2672.78	1352.17	2995.34	153.17	0.81	-0.05	0.81
18325	90.60	2.93	94	9375.4	2526.45	-2578.95	1357.76	2914.53	152.23	1.14	-0.51	-1.02
18515	91.19	2.90	190	9372.4	2336.50	-2389.22	1367.42	2752.86	150.22	0.31	0.31	-0.02
18609	90.27	1.84	94	9371.2	2242.51	-2295.31	1371.30	2673.75	149.14	1.49	-0.98	-1.13
18704	91.05	3.36	95	9370.1	2147.52	-2200.42	1375.61	2595.03	147.99	1.80	0.82	1.60
18798	90.60	3.47	94	9368.8	2053.55	-2106.60	1381.21	2519.03	146.75	0.49	-0.48	0.12
18892	90.60	0.79	94	9367.8	1959.57	-2012.68	1384.70	2443.01	145.47	2.85	0.00	-2.85
18987	90.91	359.69	95	9366.5	1864.63	-1917.69	1385.10	2365.59	144.16	1.20	0.33	377.79
19082	90.55	2.29	95	9365.3	1769.66	-1822.72	1386.74	2290.27	142.74	2.76	-0.38	-376.21
19176	90.29	1.41	94	9364.6	1675.67	-1728.77	1389.78	2218.14	141.20	0.98	-0.28	-0.94
19271	91.08	1.80	95	9363.5	1580.68	-1633.82	1392.44	2146.68	139.56	0.93	0.83	0.41
19366	90.18	2.07	95	9362.5	1485.69	-1538.88	1395.65	2077.49	137.79	0.99	-0.95	0.28
19461	90.15	1.30	95	9362.2	1390.69	-1443.92	1398.44	2010.11	135.92	0.81	-0.03	-0.81
19555	90.32	1.10	94	9361.8	1296.71	-1349.94	1400.41	1945.12	133.95	0.28	0.18	-0.21
19650	89.90	1.19	95	9361.6	1201.72	-1254.96	1402.31	1881.86	131.83	0.45	-0.44	0.09
19745	89.87	0.28	95	9361.8	1106.75	-1159.97	1403.52	1820.83	129.57	0.96	-0.03	-0.96
19840	89.29	359.81	95	9362.5	1011.82	-1064.97	1403.60	1761.89	127.19	0.79	-0.61	378.45
19934	90.21	0.69	94	9362.9	917.87	-970.98	1404.01	1707.06	124.67	1.35	0.98	-382.04
20029	90.35	358.27	95	9362.4	822.98	-875.99	1403.15	1654.14	121.98	2.55	0.15	376.40
20124	90.74	1.47	95	9361.5	728.07	-781.00	1402.93	1605.67	119.10	3.39	0.41	-375.58
20219	90.49	0.87	95	9360.5	633.09	-686.03	1404.87	1563.43	116.03	0.68	-0.26	-0.63
20314	90.10	358.94	95	9360.0	538.17	-591.04	1404.71	1523.99	112.82	2.07	-0.41	376.92
20324	90.29	359.59	10	9360.0	528.18	-581.04	1404.59	1520.02	112.47	6.77	1.90	6.50
20356	90.29	359.59	32	9359.8	496.22	-549.04	1404.36	1507.87	111.35	0.00	0.00	0.00