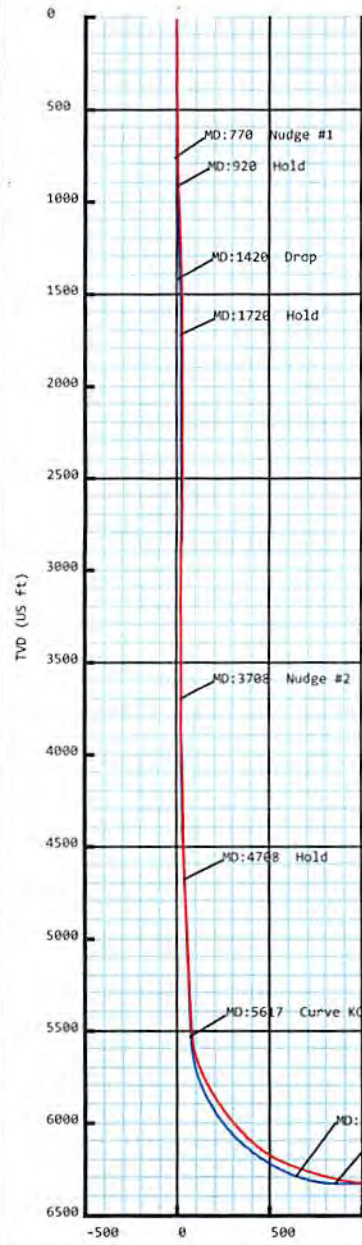




Melvin Kahle OHI 6H
Ohio Co, WV
SDC 41

Plan vs Actual



Plan Data for Melvin Kahle OHI 6H

Plan Point Information:
 Dogleg Severity Unit: °/100.00ft
 Position offsets from Slot centre

MD	Inc	Az	TVD	+N/-S	+E/-W	VSec	DLS	Toolface	Comments
(USft)	(°)	(°)	(USft)	(USft)	(USft)	(USft)	(DLSU)	(°)	(°)
0.00	0.00	0.00	-0.00	0.00	-0.00	0.00	0.00	0.0	0.0
770.00	0.00	0.00	770.00	0.00	-0.00	0.00	0.00	0.0	0.0 Nudge #1
920.00	3.00	220.00	919.93	-3.01	-2.52	2.50	2.00	220.0	0.0 Drop
1420.00	3.00	220.00	1419.25	-23.05	-19.34	19.18	0.00	0.0	0.0 Drop
1720.00	0.00	0.00	1719.11	-29.07	-24.39	24.18	1.00	180.0	0.0 Hold
3707.65	0.00	0.00	3706.76	-29.07	-24.39	24.18	0.00	0.0	0.0 Nudge #2
4707.65	20.00	253.15	4686.57	-79.16	-189.74	43.58	2.00	253.1	0.0 Hold
5617.33	20.00	253.15	5541.39	-169.37	-487.50	78.50	0.00	0.0	0.0 Curve KOP 7° DLS
6631.36	70.00	163.94	6289.47	-754.30	-526.82	646.69	7.00	263.6	0.0 Build/Turn 9° DLS
6852.32	89.81	162.21	6328.00	-961.33	-463.71	861.72	9.00	354.9	0.0 Landing Point
11750.66	89.81	162.21	6344.00	-5625.32	1033.19	5719.42	0.00	0.0	0.0 PBHL MK6H

Target Set Information:
 Name: Melvin Kahle OHI 6H
 Position offsets from Slot centre

Name	TVD	+N/-S	+E/-W	Northing	Easting	Lat	Long
(USft)	(USft)	(USft)	(USft)	(USft)	(USft)	(°)	(°)
LP MK6H	6328.00	-758.20	-528.89	14552305.51	1744751.21	40.069625	-80.627066
PBHL MK6H	6344.00	-5625.32	1033.19	14547438.39	1746313.29	40.056241	-80.621556

Plan Data for Melvin Kahle OHI 6H

Field: **SOUTHWESTERN OHIO CO, WV UTM NAD 83 (17N)**
 Map Unit: USFt Vertical Reference Datum (VRD): Mean Sea Level
 Projected Coordinate System: NAD83 / UTM zone 17N

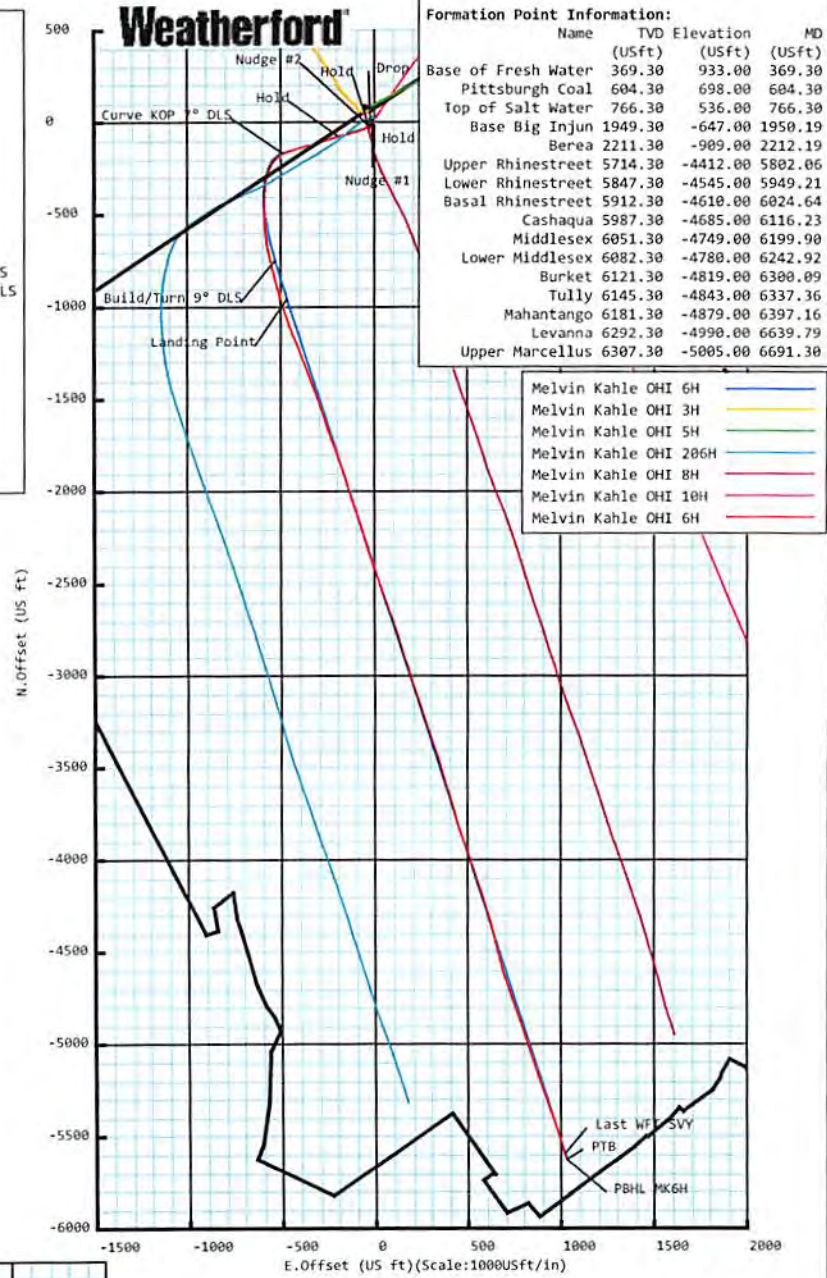
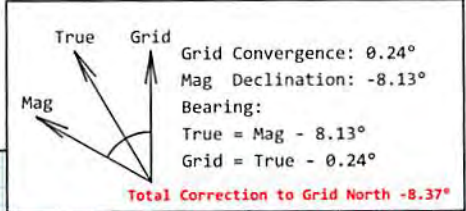
Site: Melvin Kahle OHI Pad
 Unit: USFeet TVD Reference:
 Company Name: SOUTHWESTERN ENERGY

Position:
 Northing: 14553145.90USft Latitude: 40.071927°
 Easting: 1745253.46USft Longitude: -80.625258°
 North Reference: Grid Grid Convergence: 0.24°
 Elevation Above VRD: 1276.00USft

Slot: Melvin Kahle OHI 6H
 Position:
 Offset is from Site centre
 +N/-S: -82.19USft Northing: 14553063.71USft Latitude: 40.071701°
 +E/-W: 26.64USft Easting: 1745280.10USft Longitude: -80.625164°
 Elevation Above VRD: 1276.30USft

Well: Melvin Kahle OHI 6H
 Type: Main-Well
 File Number:

Plan Folder: P1 Plan: P1:V4
 Vertical Section: Position offset of origin from Slot centre:
 +N/-S: 0.00USft Azimuth: 169.59°
 +E/-W: -0.00USft
 Magnetic Parameters:
 Model: Field Strength: Declination: Dip: Date:
 HDGM 52674(nT) -8.13° 67.43° 2018-01-20



Plan Data for Melvin Kahle OHI 6H

Formation Point Information:

Name	TVD Elevation (USft)	MD (USft)
Base of Fresh Water	369.30	933.00
Pittsburgh Coal	604.30	698.00
Top of Salt Water	766.30	536.00
Base Big Injun	1949.30	-647.00
Berea	2211.30	-909.00
Upper Rhinestreet	5714.30	-4412.00
Lower Rhinestreet	5847.30	-4545.00
Basal Rhinestreet	5912.30	-4610.00
Cashaqua	5987.30	-4685.00
Middlesex	6051.30	-4749.00
Lower Middlesex	6082.30	-4780.00
Burket	6121.30	-4819.00
Tully	6145.30	-4843.00
Mahantango	6181.30	-4879.00
Levanna	6292.30	-4990.00
Upper Marcellus	6307.30	-5005.00

Drawing By: Vilaphanh (Cot) Sinakone Date: 15 February 2018
 Office Name: Weatherford Drilling Services
 Address: 12101 Cullen Road
 Houston, TX 77066
 Phone: 281-701-4760

WV Department of Environmental Protection
 AUG 30 2018
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Weatherford®

Melvin Kahle OHI 6H

Field Name: SOUTHWESTER N_OHIO CO, WV UTM NAD 83 (17N)	Map Units: US ft	Company Name: SOUTHWESTERN ENERGY	
	Vertical Reference Datum (VRD): Mean Sea Level		
	Projected Coordinate System: NAD83 / UTM zone 17N		
Site: Melvin Kahle OHI Pad	Comment:		
	Units: US ft	North Reference: Grid	Convergence Angle: 0.24
	Position:	Northing: 14553145.90 US ft	Latitude: 40.071927
		Easting: 1745253.46 US ft	Longitude: -80.625258
Elevation above MSL: 1276.00 US ft			
Slot: Melvin Kahle OHI 6H	Comment:		
	Position (Relative to Site Centre)		
	+N/-S: -82.19 US ft	Northing: 14553063.71 US ft	Latitude: 40.071701
	+E/-W: 26.64 US ft	Easting: 1745280.10 US ft	Longitude: -80.625164
Elevation above MSL: 1276.30 US ft			
Well: Melvin Kahle OHI 6H	Type: Main well		UWI:
	File Number:	Comment:	RECEIVED Office of Oil and Gas
	Closure Distance: 5719.27 US ft	Closure Azimuth: 169.60°	AUG 30 2018
	Vertical Section: Position of Origin (Relative to Slot centre)		Az: 169.59° WV Department of Environmental Protection
+N/-S: 0.00 US ft	+E/-W: -0.00 US ft		

Drill floor: Survey Name: Definitive Survey

Rig Height (Well TVD Reference): 26.00 US ft	Elevation above MSL: 1302.30 US ft	Inclination: 0.00°	Azimuth: 0.00°
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Survey Name: Definitive Survey

Date: 28/Dec/2017	Survey Tool: See Survey Tool Ranges below.	Comment:	Company:
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Magnetic Model:

Model Name: HDGM	Date: 20/Jan/2018	Field Strength: 52674.0nT	Declination: -8.13°	Dip: 67.43°
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Tie Point:

MD: 0.00 US ft	Inclination: 0.00°	Azimuth: 0.00°	TVD: -0.00 US ft	North Offset: 0.00 US ft	East Offset: -0.00 US ft
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Survey Tool Ranges:

Name	Start MD (US Ft)	End MD (US Ft)	Source Survey
MFAC_US_V2	0.00	410.00	WFT MWD_01 MFAC

SD Survey Report

Survey Tool Ranges:

Name	Start MD(usft)	End MD(usft)	Source Survey
MWD	410.00	506.00	WFT MWD_02
MFAC_US_V2	506.00	598.00	WFT MWD_02 MFAC
MWD	598.00	1939.00	WFT MWD_03
MWD	1939.00	4152.00	WFT MWD_04
MWD	4152.00	6558.00	WFT MWD_05
MWD	6558.00	11707.00	WFT LWD_06

Wellpath created using minimum curvature.

Survey Points: (Relative to Slot centre)(TVD relative to Well TVD Reference)

MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Latitude (° ' ")	Longitude (° ' ")	DLS (°/100US ft)	Comment
0.00	0.00	0.00	-0.00	-0.00	0.00	-0.00	40.071701	-80.625164	0.00	
228.00	0.56	164.14	228.00	1.11	-1.07	0.30	40.071698	-80.625163	0.25	
319.00	0.52	166.53	318.99	1.96	-1.90	0.52	40.071696	-80.625162	0.05	
410.00	0.40	193.69	409.99	2.67	-2.61	0.54	40.071694	-80.625162	0.27	
506.00	0.25	186.67	505.99	3.17	-3.14	0.44	40.071692	-80.625162	0.16	
598.00	0.95	187.51	597.98	4.09	-4.10	0.32	40.071690	-80.625163	0.76	
721.00	0.99	219.87	720.97	5.74	-5.93	-0.50	40.071685	-80.625166	0.44	
753.00	1.01	212.67	752.96	6.12	-6.38	-0.83	40.071683	-80.625167	0.40	
786.00	1.36	221.88	785.95	6.57	-6.91	-1.25	40.071682	-80.625169	1.20	
882.00	3.43	226.50	881.86	8.84	-9.74	-4.09	40.071674	-80.625179	2.16	
978.00	5.23	230.08	977.59	12.56	-14.52	-9.53	40.071661	-80.625198	1.90	
1074.00	5.01	225.84	1073.20	17.05	-20.25	-15.89	40.071646	-80.625221	0.46	
1170.00	3.40	213.35	1168.94	21.43	-25.55	-20.46	40.071631	-80.625238	1.92	
1267.00	1.90	203.23	1265.84	24.85	-29.43	-22.68	40.071620	-80.625246	1.61	
1363.00	1.31	180.94	1361.80	27.25	-31.99	-23.33	40.071613	-80.625248	0.88	
1459.00	1.19	181.00	1457.78	29.30	-34.08	-23.36	40.071608	-80.625248	0.13	
1555.00	0.79	202.21	1553.76	30.84	-35.69	-23.63	40.071603	-80.625249	0.56	
1651.00	0.44	223.75	1649.76	31.61	-36.57	-24.13	40.071601	-80.625251	0.43	
1747.00	0.64	228.69	1745.75	32.10	-37.19	-24.79	40.071599	-80.625253	0.21	
1844.00	0.74	199.08	1842.75	32.92	-38.14	-25.40	40.071597	-80.625255	0.38	
1939.00	0.17	183.44	1937.74	33.60	-38.86	-25.61	40.071595	-80.625256	0.61	
2045.00	0.28	11.59	2043.74	33.51	-38.77	-25.57	40.071595	-80.625256	0.42	
2136.00	0.23	30.14	2134.74	33.16	-38.39	-25.43	40.071596	-80.625255	0.11	
2226.00	0.49	347.46	2224.74	32.64	-37.86	-25.43	40.071597	-80.625255	0.40	
2323.00	0.32	353.19	2321.74	31.96	-37.18	-25.55	40.071599	-80.625256	0.18	
2419.00	0.32	350.44	2417.74	31.42	-36.65	-25.62	40.071601	-80.625256	0.02	
2515.00	0.42	341.35	2513.74	30.80	-36.06	-25.78	40.071602	-80.625257	0.12	
2611.00	0.67	353.10	2609.73	29.90	-35.17	-25.96	40.071605	-80.625257	0.28	
2708.00	0.67	4.71	2706.72	28.78	-34.04	-25.98	40.071608	-80.625257	0.14	
2804.00	0.70	343.88	2802.72	27.66	-32.91	-26.10	40.071611	-80.625258	0.26	
2900.00	0.71	348.40	2898.71	26.48	-31.77	-26.38	40.071614	-80.625259	0.06	
2997.00	0.88	342.40	2995.70	25.14	-30.47	-26.73	40.071618	-80.625260	0.19	
3093.00	0.92	330.63	3091.69	23.68	-29.10	-27.33	40.071621	-80.625262	0.20	
3190.00	0.26	243.03	3188.68	23.00	-28.52	-27.91	40.071623	-80.625264	0.97	
3286.00	0.85	163.49	3284.68	23.78	-29.30	-27.90	40.071621	-80.625264	0.88	
3383.00	0.63	156.64	3381.67	25.01	-30.48	-27.48	40.071618	-80.625263	0.24	
3478.00	0.46	170.93	3476.67	25.90	-31.33	-27.22	40.071615	-80.625262	0.23	
3574.00	0.23	152.16	3572.67	26.47	-31.88	-27.07	40.071614	-80.625261	0.26	
3670.00	0.74	261.62	3668.66	26.63	-32.15	-27.59	40.071613	-80.625263	0.88	
3766.00	2.59	264.23	3764.62	26.43	-32.45	-30.36	40.071612	-80.625273	1.93	
3863.00	4.30	259.11	3861.44	26.29	-33.36	-36.11	40.071610	-80.625294	1.79	
3959.00	5.84	248.43	3957.06	27.26	-35.84	-44.19	40.071603	-80.625322	1.87	
4056.00	7.18	244.49	4053.44	29.80	-40.26	-54.25	40.071591	-80.625359	1.46	
4152.00	7.77	250.23	4148.62	32.42	-45.04	-65.77	40.071578	-80.625400	0.99	
4248.00	8.89	253.10	4243.61	34.31	-49.39	-78.98	40.071566	-80.625447	1.24	
4345.00	12.15	254.90	4338.97	35.99	-54.23	-96.01	40.071553	-80.625508	3.38	
4441.00	14.88	256.78	4432.30	37.42	-59.68	-117.77	40.071538	-80.625586	2.88	

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5D Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Well TVD Reference)											
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Latitude (° '' ''')	Longitude (° '' ''')	DLS (°/100US ft)	Comment	
4537.00	16.68	256.55	4524.68	38.76	-65.71	-143.17	40.071522	-80.625677	1.88		
4633.00	18.14	254.89	4616.28	40.71	-72.81	-171.00	40.071503	-80.625776	1.61		
4729.00	19.13	252.70	4707.24	43.82	-81.38	-200.44	40.071480	-80.625882	1.26		
4825.00	18.88	251.41	4798.01	47.92	-91.01	-230.18	40.071454	-80.625988	0.51		
4921.00	19.34	251.37	4888.72	52.40	-101.04	-259.97	40.071427	-80.626095	0.48		
5018.00	21.50	252.83	4979.62	56.79	-111.42	-292.18	40.071398	-80.626210	2.29		
5114.00	22.34	254.42	5068.68	60.51	-121.51	-326.56	40.071371	-80.626333	1.07		
5211.00	21.74	253.97	5158.59	63.93	-131.43	-361.58	40.071344	-80.626458	0.64		
5307.00	20.98	252.59	5248.00	67.76	-141.48	-395.07	40.071317	-80.626578	0.95		
5403.00	19.96	251.26	5337.93	72.23	-151.89	-426.99	40.071289	-80.626693	1.17		
5499.00	18.75	250.05	5428.51	77.16	-162.41	-457.01	40.071260	-80.626800	1.33		
5595.00	18.45	247.82	5519.49	82.82	-173.41	-485.58	40.071230	-80.626902	0.80		
5643.00	20.80	236.59	5564.72	87.70	-180.98	-499.73	40.071210	-80.626953	9.24		
5691.00	23.98	225.86	5609.11	96.45	-192.47	-513.86	40.071178	-80.627004	10.76		
5739.00	26.23	219.01	5652.59	108.77	-207.51	-527.54	40.071137	-80.627053	7.65		
5787.00	27.71	212.81	5695.37	123.81	-225.14	-540.27	40.071089	-80.627099	6.62		
5835.00	29.21	205.75	5737.58	141.41	-245.07	-551.40	40.071034	-80.627139	7.67		
5884.00	31.02	201.06	5779.97	161.83	-267.63	-561.14	40.070973	-80.627174	6.06		
5932.00	32.48	195.79	5820.80	183.95	-291.58	-569.09	40.070907	-80.627203	6.53		
5980.00	33.13	189.99	5861.15	207.82	-316.91	-574.88	40.070837	-80.627224	6.68		
6028.00	33.95	186.23	5901.16	232.95	-343.15	-578.61	40.070765	-80.627237	4.65		
6076.00	36.83	182.99	5940.29	259.80	-370.85	-580.81	40.070689	-80.627246	7.16		
6124.00	39.20	180.04	5978.11	288.72	-400.39	-581.57	40.070608	-80.627249	6.22		
6172.00	42.17	179.98	6014.51	319.49	-431.68	-581.58	40.070522	-80.627249	6.19		
6220.00	44.24	179.76	6049.49	351.82	-464.54	-581.50	40.070432	-80.627249	4.32		
6269.00	46.25	179.17	6083.99	386.10	-499.33	-581.17	40.070336	-80.627249	4.19		
6317.00	49.13	178.05	6116.30	421.16	-534.81	-580.30	40.070239	-80.627246	6.24		
6365.00	53.72	176.33	6146.22	458.34	-572.28	-578.45	40.070136	-80.627240	9.96		
6413.00	59.53	173.62	6172.62	498.23	-612.19	-574.91	40.070027	-80.627228	12.99		
6462.00	63.79	171.25	6195.88	541.29	-654.92	-569.21	40.069909	-80.627208	9.68		
6510.00	66.59	168.21	6216.02	584.85	-697.78	-561.43	40.069791	-80.627181	8.19		
6558.00	68.59	167.17	6234.32	629.20	-741.13	-551.97	40.069672	-80.627148	4.62		
6636.00	72.13	166.48	6260.53	702.56	-812.65	-535.23	40.069476	-80.627089	4.61		
6684.00	74.41	166.11	6274.35	748.45	-857.30	-524.34	40.069353	-80.627051	4.81		
6732.00	75.43	165.17	6286.84	794.68	-902.20	-512.84	40.069229	-80.627011	2.84		
6780.00	76.44	163.66	6298.50	841.05	-947.05	-500.33	40.069106	-80.626967	3.71		
6828.00	78.95	162.46	6308.73	887.64	-991.90	-486.66	40.068983	-80.626918	5.77		
6876.00	82.40	161.81	6316.51	934.60	-1036.98	-472.13	40.068859	-80.626867	7.31		
6924.00	84.76	161.51	6321.87	981.84	-1082.25	-457.13	40.068734	-80.626814	4.96		
6962.00	86.61	160.75	6324.73	1019.32	-1118.11	-444.87	40.068636	-80.626771	5.26		
7020.00	88.46	158.57	6327.23	1076.39	-1172.43	-424.73	40.068486	-80.626700	4.93		
7115.00	89.14	158.49	6329.22	1169.60	-1260.82	-389.97	40.068243	-80.626577	0.72		
7212.00	89.38	159.36	6330.47	1264.92	-1351.32	-355.09	40.067994	-80.626454	0.93		
7308.00	89.38	159.76	6331.51	1359.45	-1441.27	-321.57	40.067747	-80.626335	0.42		
7404.00	89.20	160.44	6332.70	1454.12	-1531.53	-288.89	40.067499	-80.626220	0.73		
7500.00	89.14	162.38	6334.09	1549.13	-1622.51	-258.29	40.067248	-80.626112	2.02		
7597.00	89.08	160.42	6335.60	1645.13	-1714.43	-227.36	40.066996	-80.626002	2.02		
7693.00	89.14	160.72	6337.09	1739.93	-1804.95	-195.43	40.066747	-80.625890	0.32		
7788.00	89.32	161.15	6338.36	1833.84	-1894.73	-164.40	40.066500	-80.625780	0.49		
7884.00	88.89	163.60	6339.86	1929.06	-1986.21	-135.34	40.066248	-80.625678	2.59		
7981.00	89.32	162.28	6341.38	2025.39	-2078.93	-106.89	40.065993	-80.625577	1.43		
8077.00	89.51	161.17	6342.36	2120.48	-2170.08	-76.79	40.065743	-80.625471	1.17		
8174.00	89.69	163.27	6343.04	2216.67	-2262.44	-47.17	40.065489	-80.625367	2.17		
8269.00	89.51	162.42	6343.70	2311.01	-2353.21	-19.15	40.065239	-80.625268	0.91		
8366.00	89.69	160.83	6344.38	2407.07	-2445.26	11.43	40.064986	-80.625160	1.65		
8462.00	89.57	160.62	6345.00	2501.92	-2535.87	43.12	40.064737	-80.625048	0.25		
8559.00	89.38	160.77	6345.88	2597.75	-2627.41	75.18	40.064485	-80.624935	0.25		
8655.00	89.57	161.21	6346.76	2692.67	-2718.17	106.45	40.064235	-80.624824	0.50		
8751.00	89.38	162.93	6347.64	2787.84	-2809.51	136.01	40.063984	-80.624720	1.80		

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