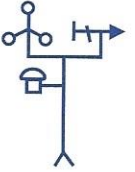




TECHNICAL ENVIRONMENTAL SERVICES, LLC



November 25, 2019

Mr. Jamie C. Foster
Department of Environmental Protection
Division of Solid Waste Services
16101 Frederick Road
Derwood, MD 20855

Dear Jamie:

Enclosed is the monthly meteorological report for the Gude Drive Landfill sites meteorological instrumentation for October 2019. This was the first month where everything was operational since the lightning strike in July. The temperature and RH were reinstalled on October 8th. Data recovery for the wind speed, direction and rainfall was near 100%, temperature and RH about 80%. October had a precipitation total of 5.15 inches.

Attached is a wind rose for the month of October 2019 and a table showing the data collection percentage for each parameter in 2019.

If you have any questions, please call or e-mail them to me.

Best regards,

Mark Abrams

Run Date: 11/25/2019 2:36:28 PM

WIND ROSE

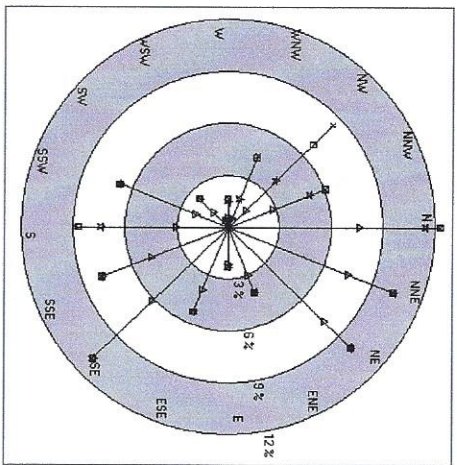
(WINDS FROM)

N
↓

0.00% PERCENT CALMS
(NOT INCLUDED IN PLOT)

Start Date: 10/1/2019 00:00
End Date: 10/31/2019 23:00

Sensors Selected:
3M_VIS
3M_WVD



- Legend
- △ WIND SPEED LESS THAN 39 MPH
 - ◊ WIND SPEED LESS THAN 75 MPH
 - WIND SPEED LESS THAN 125 MPH
 - * WIND SPEED GREATER THAN 125 MPH

GUDE DRIVE METEOROLOGICAL TOWER
DATA RECOVERY
JANUARY-OCTOBER 2019

PARAMETER	RECOVERY (percent)
Wind Speed 3m	70.7
Wind Direction 3m	70.4
Temperature 2m	59.1
Relative Humidity 2m	59.1
Precipitation	76.1

Date Time	Avg_WS (MPH)	Avg_WD (DEG)	Sigma (DEG)	Max_Wspd (MPH)	Avg_Temp (DEG F)	Min_Temp (DEG F)	Max_Temp (DEG F)	Avg_RelH (%)	Total_Rain (INCH)
10/1/19 0:00	2.2	155.0	025	5.31					0
10/1/19 1:00	1.9	146.8	017	4.49					0
10/1/19 2:00	2.0	147.9	016	5.68					0
10/1/19 3:00	1.7	154.4	018	4.40					0
10/1/19 4:00	0.9	115.5	033	2.70					0
10/1/19 5:00	0.6	148.6	016	2.11					0
10/1/19 6:00	1.2	148.2	018	2.57					0
10/1/19 7:00	1.6	182.9	016	4.72					0
10/1/19 8:00	2.8	204.7	022	6.50					0
10/1/19 9:00	3.8	205.1	024	7.83					0
10/1/19 10:00	5.2	230.7	031	11.13					0
10/1/19 11:00	4.9	220.5	026	11.18					0
10/1/19 12:00	4.5	209.2	034	10.17					0
10/1/19 13:00	4.4	184.9	034	11.72					0
10/1/19 14:00	4.6	202.2	031	10.99					0
10/1/19 15:00	4.8	197.8	033	10.26					0
10/1/19 16:00	5.2	192.5	037	12.46					0
10/1/19 17:00	4.9	222.4	030	10.99					0
10/1/19 18:00	4.5	193.4	030	10.99					0
10/1/19 19:00	3.0	195.8	023	8.06					0
10/1/19 20:00	2.7	193.9	020	6.14					0
10/1/19 21:00	1.7	195.4	018	4.95					0
10/1/19 22:00	1.3	170.9	014	3.53					0
10/1/19 23:00	1.0	163.0	012	3.44					0
10/2/19 0:00	1.7	170.6	014	3.66					0
10/2/19 1:00	2.0	189.3	017	4.81					0
10/2/19 2:00	2.2	205.0	019	5.54					0
10/2/19 3:00	2.3	225.8	026	5.73					0
10/2/19 4:00	1.2	229.3	027	3.80					0
10/2/19 5:00	0.3	39.2	029	2.15					0
10/2/19 6:00	1.3	48.5	029	2.84					0
10/2/19 7:00	0.6	49.0	018	1.97					0
10/2/19 8:00	0.2	55.7	006	1.51					0
10/2/19 9:00	0.4	285.4	070	1.83					0
10/2/19 10:00	2.2	276.4	039	5.86					0
10/2/19 11:00	3.7	264.4	023	7.51					0
10/2/19 12:00	5.4	266.9	025	13.51					0
10/2/19 13:00	9.1	289.2	029	18.96					0
10/2/19 14:00	8.7	300.2	023	19.19					0
10/2/19 15:00	7.6	302.4	020	14.98					0
10/2/19 16:00	5.9	274.2	031	13.19					0

10/2/19 17:00	3.9	258.6	030	11.08					0
10/2/19 18:00	3.4	267.3	027	11.59					0
10/2/19 19:00	4.1	313.9	017	10.67					0
10/2/19 20:00	3.5	325.0	013	7.92					0
10/2/19 21:00	0.9	160.1	082	2.75					0
10/2/19 22:00	1.6	5.2	024	5.27					0
10/2/19 23:00	0.4	32.9	012	3.30					0
10/3/19 0:00	1.0	53.9	013	2.34					0
10/3/19 1:00	0.8	28.2	038	5.59					0
10/3/19 2:00	2.5	26.6	041	7.33					0
10/3/19 3:00	1.8	36.2	027	4.40					0
10/3/19 4:00	2.0	98.7	025	5.63					0
10/3/19 5:00	2.1	76.7	031	7.01					0
10/3/19 6:00	2.3	66.6	026	7.51					0
10/3/19 7:00	2.0	80.4	032	4.63					0
10/3/19 8:00	1.7	57.2	028	4.17					0.03
10/3/19 9:00	3.4	122.1	028	9.39					0
10/3/19 10:00	4.4	128.1	026	9.76					0
10/3/19 11:00	4.9	136.2	025	10.53					0
10/3/19 12:00	3.9	118.5	025	8.43					0
10/3/19 13:00	4.3	124.7	027	10.58					0
10/3/19 14:00	5.2	121.7	025	10.31					0
10/3/19 15:00	4.8	127.9	027	12.09					0
10/3/19 16:00	4.8	118.3	027	11.45					0
10/3/19 17:00	4.7	134.2	031	11.18					0
10/3/19 18:00	4.7	118.1	022	10.76					0
10/3/19 19:00	4.1	107.5	024	10.26					0
10/3/19 20:00	3.4	121.3	023	9.02					0
10/3/19 21:00	2.1	131.8	027	5.18					0
10/3/19 22:00	1.7	125.2	025	4.17					0
10/3/19 23:00	1.5	114.3	046	3.66					0
10/4/19 0:00	1.2	182.0	029	5.82					0
10/4/19 1:00	1.8	192.2	041	7.92					0
10/4/19 2:00	2.2	25.9	026	5.04					0
10/4/19 3:00	1.8	14.9	027	4.40					0
10/4/19 4:00	2.6	4.7	024	8.24					0
10/4/19 5:00	4.4	350.4	022	11.27					0
10/4/19 6:00	6.6	347.5	019	15.21					0
10/4/19 7:00	5.5	353.6	023	11.45					0
10/4/19 8:00	6.3	352.5	023	13.28					0
10/4/19 9:00	5.6	356.1	027	13.01					0
10/4/19 10:00	7.5	3.9	029	17.27					0

10/4/19 11:00	6.8	354.2	030	17.17					0
10/4/19 12:00	7.7	347.1	029	22.26					0
10/4/19 13:00	8.1	356.0	031	18.59					0
10/4/19 14:00	7.8	351.1	025	16.67					0
10/4/19 15:00	8.0	349.1	028	17.82					0
10/4/19 16:00	7.5	353.6	029	18.23					0
10/4/19 17:00	6.3	9.9	030	15.66					0
10/4/19 18:00	5.7	16.6	028	15.66					0
10/4/19 19:00	4.5	29.4	027	11.77					0
10/4/19 20:00	5.2	40.3	025	12.09					0
10/4/19 21:00	6.1	43.0	026	15.89					0
10/4/19 22:00	5.7	39.1	026	16.26					0
10/4/19 23:00	3.9	48.6	029	11.82					0
10/5/19 0:00	2.6	50.6	025	7.01					0
10/5/19 1:00	1.8	29.8	030	4.95					0
10/5/19 2:00	1.5	6.6	025	5.36					0
10/5/19 3:00	1.6	356.5	022	5.45					0
10/5/19 4:00	1.6	344.6	018	4.08					0
10/5/19 5:00	1.6	348.8	013	3.02					0
10/5/19 6:00	1.9	350.4	016	4.17					0
10/5/19 7:00	2.1	359.2	025	7.05					0
10/5/19 8:00	1.9	10.4	030	5.91					0
10/5/19 9:00	3.0	41.9	028	7.01					0
10/5/19 10:00	3.8	90.0	035	12.50					0
10/5/19 11:00	4.9	106.2	033	12.00					0
10/5/19 12:00	5.4	126.4	041	12.09					0
10/5/19 13:00	4.9	135.6	041	12.18					0
10/5/19 14:00	5.0	144.0	036	12.14					0
10/5/19 15:00	4.4	153.3	034	13.83					0
10/5/19 16:00	4.9	145.3	031	12.73					0
10/5/19 17:00	4.2	170.0	028	11.72					0
10/5/19 18:00	4.0	153.7	027	10.12					0
10/5/19 19:00	3.7	133.4	019	9.11					0
10/5/19 20:00	3.5	138.8	020	7.56					0
10/5/19 21:00	3.9	139.3	017	11.13					0
10/5/19 22:00	4.0	136.0	017	8.70					0
10/5/19 23:00	4.3	137.8	020	12.37					0
10/6/19 0:00	3.5	142.9	018	7.37					0
10/6/19 1:00	3.3	152.4	021	8.47					0
10/6/19 2:00	2.8	154.2	021	6.55					0
10/6/19 3:00	2.5	143.8	017	5.63					0
10/6/19 4:00	2.4	147.6	017	5.91					0

10/6/19 5:00	1.0	117.2	024	3.39					0
10/6/19 6:00	1.3	108.9	047	3.02					0
10/6/19 7:00	1.0	132.5	013	3.16					0
10/6/19 8:00	0.5	129.1	023	2.47					0
10/6/19 9:00	1.9	152.8	020	5.04					0
10/6/19 10:00	2.9	197.1	030	7.65					0
10/6/19 11:00	3.9	194.2	025	12.82					0
10/6/19 12:00	5.2	190.3	028	13.60					0
10/6/19 13:00	4.5	190.7	027	9.80					0
10/6/19 14:00	6.3	196.2	025	14.56					0
10/6/19 15:00	6.2	192.9	023	12.27					0
10/6/19 16:00	4.9	186.9	025	11.59					0
10/6/19 17:00	5.2	189.9	025	11.68					0
10/6/19 18:00	5.5	186.5	023	13.60					0
10/6/19 19:00	5.2	187.8	024	12.00					0
10/6/19 20:00	4.6	184.0	023	10.72					0
10/6/19 21:00	4.0	186.7	022	10.31					0
10/6/19 22:00	3.4	200.6	019	7.92					0
10/6/19 23:00	2.7	180.0	019	7.10					0
10/7/19 0:00	3.0	185.9	019	6.55					0
10/7/19 1:00	3.8	185.9	021	9.53					0
10/7/19 2:00	5.9	193.8	025	14.24					0
10/7/19 3:00	6.5	197.2	024	16.53					0
10/7/19 4:00	6.2	192.3	024	14.66					0
10/7/19 5:00	7.2	195.3	024	18.64					0
10/7/19 6:00	5.9	195.0	023	14.29					0
10/7/19 7:00	4.8	196.3	023	10.95					0
10/7/19 8:00	5.5	198.0	021	10.67					0
10/7/19 9:00	5.4	194.6	024	13.51					0
10/7/19 10:00	6.3	206.0	022	12.92					0
10/7/19 11:00	5.7	208.9	025	13.19					0
10/7/19 12:00	6.8	216.6	028	18.00					0
10/7/19 13:00	6.6	212.9	024	16.63					0
10/7/19 14:00	7.1	207.1	025	15.11					0
10/7/19 15:00	6.9	197.8	026	13.65					0
10/7/19 16:00	5.7	200.5	027	11.77					0
10/7/19 17:00	5.2	202.0	027	10.95					0
10/7/19 18:00	3.3	222.3	029	7.33					0
10/7/19 19:00	1.3	285.5	075	4.63					0
10/7/19 20:00	5.2	1.7	031	15.89					0.02
10/7/19 21:00	9.1	359.7	026	24.41					0.02
10/7/19 22:00	6.7	358.6	025	15.11					0.01

10/7/19 23:00	6.3	24.6	027	16.95					0.01
10/8/19 0:00	4.9	15.9	027	12.05					0.05
10/8/19 1:00	4.1	16.8	025	10.76					0.03
10/8/19 2:00	3.3	4.2	023	7.88					0.07
10/8/19 3:00	4.7	14.5	025	11.40					0.06
10/8/19 4:00	3.8	10.1	025	9.80					0.02
10/8/19 5:00	4.9	14.5	027	12.73					0
10/8/19 6:00	3.7	28.4	026	9.89					0
10/8/19 7:00	4.1	30.1	026	9.80					0
10/8/19 8:00	3.8	33.6	028	9.71					0
10/8/19 9:00	3.1	23.5	027	7.42					0
10/8/19 10:00	3.9	12.5	025	9.80					0
10/8/19 11:00	5.4	28.9	027	13.05					0.01
10/8/19 12:00	5.7	57.4	028	14.15					0
10/8/19 13:00	6.7	55.0	032	16.76					0
10/8/19 14:00	6.1	48.8	031	16.95	65.21	64.3	66.0	55.72	0
10/8/19 15:00	6.5	66.1	029	14.06	65.19	64.6	66.0	48.79	0
10/8/19 16:00	5.1	75.0	028	12.09	65.23	65.0	65.6	47.11	0
10/8/19 17:00	3.8	39.5	029	10.08	64.99	64.8	65.3	51.05	0
10/8/19 18:00	2.4	26.4	029	7.88	64.44	63.6	64.9	52.86	0
10/8/19 19:00	2.8	355.8	020	8.56	62.63	61.8	63.6	61.56	0
10/8/19 20:00	3.0	354.2	023	7.47	61.15	60.7	61.8	62.11	0
10/8/19 21:00	3.0	16.5	026	9.30	60.56	60.3	60.8	60.00	0
10/8/19 22:00	2.7	27.2	027	6.82	60.04	59.7	60.4	60.17	0
10/8/19 23:00	1.6	355.0	020	4.67	58.74	57.9	59.6	63.79	0
10/9/19 0:00	2.6	5.6	026	6.73	57.89	57.8	58.0	66.64	0
10/9/19 1:00	2.8	17.6	026	6.92	57.95	57.8	58.2	61.75	0
10/9/19 2:00	2.6	5.8	029	7.88	57.76	57.2	58.2	59.72	0
10/9/19 3:00	2.5	10.4	027	7.05	56.77	56.6	57.2	64.02	0.02
10/9/19 4:00	2.5	343.9	029	5.63	54.03	52.2	56.6	81.70	0
10/9/19 5:00	2.5	8.2	025	6.87	52.63	52.4	52.8	92.80	0
10/9/19 6:00	1.5	359.9	025	4.53	52.59	52.5	52.8	93.10	0
10/9/19 7:00	2.1	357.5	023	5.08	52.51	52.3	52.7	93.10	0
10/9/19 8:00	2.6	0.2	024	7.24	52.40	52.2	52.6	92.20	0
10/9/19 9:00	2.9	10.2	025	7.37	52.86	52.6	53.4	88.40	0
10/9/19 10:00	4.6	30.6	027	11.45	55.40	53.4	57.2	79.95	0
10/9/19 11:00	5.3	51.5	034	12.32	58.94	57.2	60.5	70.33	0
10/9/19 12:00	5.1	46.2	036	13.42	60.44	59.7	61.6	67.48	0
10/9/19 13:00	4.4	57.4	038	11.31	62.66	60.9	64.4	62.10	0
10/9/19 14:00	4.1	32.3	045	12.18	64.95	63.5	66.4	56.16	0
10/9/19 15:00	4.4	40.0	041	10.63	66.99	66.2	67.6	52.25	0
10/9/19 16:00	5.1	32.7	030	11.13	66.57	66.0	67.6	53.90	0

10/9/19 17:00	4.4	53.7	035	10.58	66.39	65.7	67.2	50.12	0
10/9/19 18:00	4.3	55.5	029	10.31	64.89	63.7	66.5	55.87	0
10/9/19 19:00	3.7	55.3	025	8.89	61.83	59.8	63.7	64.74	0
10/9/19 20:00	2.6	62.2	020	8.20	58.31	57.0	59.8	72.03	0
10/9/19 21:00	1.2	19.8	024	3.02	55.84	55.3	57.0	79.32	0
10/9/19 22:00	1.6	38.1	028	5.73	56.03	55.3	56.6	80.20	0
10/9/19 23:00	2.4	45.2	022	9.43	56.37	56.2	56.8	77.56	0
10/10/19 0:00	3.7	76.1	023	10.90	56.41	55.8	56.8	69.17	0
10/10/19 1:00	2.2	52.4	028	5.50	55.26	54.8	55.8	72.94	0
10/10/19 2:00	3.0	56.8	023	9.53	55.04	54.7	55.3	74.33	0
10/10/19 3:00	2.7	57.6	022	8.75	54.45	54.2	54.8	75.62	0
10/10/19 4:00	1.6	19.5	024	5.08	53.93	53.6	54.3	76.96	0
10/10/19 5:00	1.6	350.0	015	3.76	53.42	53.2	53.7	79.63	0
10/10/19 6:00	2.2	349.9	016	5.22	52.51	51.6	53.4	81.70	0
10/10/19 7:00	2.3	350.9	017	5.91	51.24	51.1	51.6	83.10	0
10/10/19 8:00	2.8	9.4	023	6.23	51.39	51.2	51.7	79.25	0
10/10/19 9:00	3.0	19.1	031	9.66	52.60	51.7	53.6	74.04	0
10/10/19 10:00	4.2	10.5	029	10.35	55.46	53.6	57.5	67.31	0
10/10/19 11:00	4.0	347.6	037	10.17	59.48	57.5	61.6	61.17	0
10/10/19 12:00	6.0	328.8	022	11.27	62.77	61.5	65.2	57.14	0
10/10/19 13:00	5.2	334.6	030	12.92	66.40	64.5	67.9	54.20	0
10/10/19 14:00	4.1	351.4	041	12.05	69.31	67.5	70.9	51.15	0
10/10/19 15:00	4.2	354.7	043	11.50	71.69	70.3	73.4	48.40	0
10/10/19 16:00	3.9	3.6	046	8.52	72.98	72.2	74.1	46.51	0
10/10/19 17:00	4.0	3.5	031	9.25	73.35	73.0	74.2	46.65	0
10/10/19 18:00	3.5	18.3	025	8.02	72.27	71.1	73.4	49.47	0
10/10/19 19:00	1.8	356.9	016	4.58	69.07	67.0	71.2	56.11	0
10/10/19 20:00	1.2	9.3	021	3.99	65.71	64.3	67.0	62.40	0
10/10/19 21:00	1.1	11.8	018	3.66	63.27	62.0	64.4	68.45	0
10/10/19 22:00	1.1	9.4	017	3.07	62.30	61.7	62.6	71.20	0
10/10/19 23:00	1.0	13.9	019	3.16	61.28	60.7	61.7	73.97	0
10/11/19 0:00	1.4	10.9	020	4.26	59.60	59.1	60.7	78.20	0
10/11/19 1:00	1.6	21.1	020	5.31	57.53	55.8	59.1	81.00	0
10/11/19 2:00	1.1	6.2	014	2.52	55.63	55.0	56.2	80.70	0
10/11/19 3:00	1.4	4.2	012	3.85	54.73	53.4	55.4	73.73	0
10/11/19 4:00	2.2	4.8	018	4.90	53.04	51.9	53.9	72.50	0
10/11/19 5:00	1.8	6.6	022	4.12	51.72	50.3	53.0	69.31	0
10/11/19 6:00	2.0	351.5	017	4.21	50.40	49.4	51.4	69.19	0
10/11/19 7:00	2.2	349.9	021	6.92	49.48	48.8	50.1	68.90	0
10/11/19 8:00	1.6	9.6	022	5.73	49.95	49.3	51.2	60.97	0
10/11/19 9:00	2.3	30.7	021	7.28	53.16	51.2	55.8	52.45	0
10/11/19 10:00	3.6	8.1	026	9.48	57.83	55.8	59.6	40.92	0

10/11/19 11:00	4.7	11.3	028	11.36	61.18	59.6	62.7	36.45	0
10/11/19 12:00	4.8	11.8	030	10.58	63.81	62.5	65.9	37.57	0
10/11/19 13:00	5.8	356.6	030	13.65	66.36	64.8	68.0	39.14	0
10/11/19 14:00	5.5	0.6	036	10.49	68.74	67.3	70.0	37.98	0
10/11/19 15:00	5.4	352.3	030	11.72	70.52	69.0	71.1	37.18	0
10/11/19 16:00	4.8	13.9	032	10.44	71.32	70.5	72.4	37.63	0
10/11/19 17:00	5.0	8.2	029	11.82	71.31	71.0	71.9	38.47	0
10/11/19 18:00	3.3	9.2	026	8.24	70.53	69.6	71.5	40.85	0
10/11/19 19:00	1.1	17.3	020	3.71	67.11	64.6	69.5	48.06	0
10/11/19 20:00	1.6	13.5	011	2.89	62.33	59.6	64.6	60.03	0
10/11/19 21:00	2.0	22.0	011	3.02	58.94	56.7	61.4	68.44	0
10/11/19 22:00	2.2	36.8	014	3.85	55.74	53.9	57.6	79.69	0
10/11/19 23:00	1.8	42.2	041	3.57	54.82	51.6	56.6	80.60	0
10/12/19 0:00	1.7	36.3	017	3.07	52.11	50.6	54.3	89.40	0
10/12/19 1:00	0.8	21.3	025	2.52	49.73	47.8	50.6	95.50	0
10/12/19 2:00	1.1	20.7	027	2.15	48.61	46.9	49.8	96.80	0
10/12/19 3:00	1.2	47.9	016	2.24	48.40	47.9	48.8	96.80	0
10/12/19 4:00	0.4	48.1	004	1.83	47.15	46.2	48.0	97.50	0
10/12/19 5:00	0.4	33.3	014	2.70	46.85	46.4	47.3	98.20	0
10/12/19 6:00	0.5	349.6	015	2.93	46.47	45.6	47.0	98.30	0
10/12/19 7:00	0.2	33.9	011	2.02	46.78	45.9	47.4	97.70	0
10/12/19 8:00	0.4	39.7	031	2.34	47.05	45.8	49.3	98.60	0
10/12/19 9:00	0.5	338.8	023	1.74	51.33	49.3	53.1	91.50	0
10/12/19 10:00	0.8	131.9	073	3.66	55.23	53.1	57.9	81.40	0
10/12/19 11:00	2.3	148.6	032	6.73	59.94	57.9	62.2	70.43	0
10/12/19 12:00	2.7	185.3	032	7.15	63.66	61.7	66.5	63.81	0
10/12/19 13:00	3.5	204.0	037	9.39	67.28	66.1	68.5	56.51	0
10/12/19 14:00	3.7	227.8	038	8.20	67.22	66.3	67.7	57.16	0
10/12/19 15:00	3.8	290.9	039	8.93	67.51	66.9	68.1	57.28	0
10/12/19 16:00	5.1	325.6	021	9.71	66.37	66.0	66.9	59.33	0
10/12/19 17:00	3.8	342.7	020	8.24	66.43	66.2	66.7	59.50	0
10/12/19 18:00	6.2	339.2	016	14.24	66.95	66.1	67.7	59.95	0
10/12/19 19:00	4.3	340.5	013	10.44	64.44	62.8	66.1	64.21	0
10/12/19 20:00	2.1	14.9	023	3.62	62.02	60.6	62.9	70.71	0
10/12/19 21:00	1.8	359.7	016	6.23	59.30	58.5	60.8	77.26	0
10/12/19 22:00	3.7	345.5	017	8.06	59.53	58.6	60.5	65.23	0
10/12/19 23:00	3.1	330.7	009	8.11	57.08	55.8	58.7	57.58	0
10/13/19 0:00	3.2	337.2	018	7.01	55.70	54.7	56.3	56.52	0
10/13/19 1:00	3.8	338.2	009	7.05	53.77	52.9	54.8	59.19	0
10/13/19 2:00	2.9	347.8	014	5.77	53.10	52.9	53.4	60.24	0
10/13/19 3:00	2.4	345.0	018	7.05	52.42	51.5	53.1	61.64	0
10/13/19 4:00	1.1	1.6	017	3.30	50.44	49.5	51.6	69.25	0

10/13/19 5:00	0.8	2.4	014	2.98	49.14	48.4	49.6	72.73	0
10/13/19 6:00	0.9	37.2	047	3.57	48.75	48.4	49.0	78.76	0
10/13/19 7:00	1.2	343.8	031	3.39	47.95	47.6	48.8	87.30	0
10/13/19 8:00	1.4	42.0	050	3.80	48.47	48.0	49.0	84.30	0
10/13/19 9:00	2.6	24.3	034	6.18	50.03	48.8	50.8	73.63	0
10/13/19 10:00	3.0	52.5	030	8.56	52.15	50.9	53.3	62.51	0
10/13/19 11:00	3.0	83.6	050	7.01	55.31	53.2	57.4	52.67	0
10/13/19 12:00	2.4	106.5	050	7.51	58.02	56.2	60.8	46.28	0
10/13/19 13:00	2.5	115.4	059	6.69	61.28	60.2	62.3	40.21	0
10/13/19 14:00	2.1	118.5	074	6.37	62.98	62.0	64.2	37.01	0
10/13/19 15:00	2.5	150.8	035	6.37	63.18	62.8	63.7	39.73	0
10/13/19 16:00	2.4	164.1	032	7.65	63.10	62.7	63.5	42.81	0
10/13/19 17:00	2.8	149.4	024	7.65	62.22	61.8	62.8	49.92	0
10/13/19 18:00	3.3	143.3	023	7.19	60.91	60.1	62.0	59.69	0
10/13/19 19:00	2.3	155.6	023	6.78	59.32	58.7	60.2	69.95	0
10/13/19 20:00	1.8	132.9	020	4.49	58.08	57.3	58.7	74.36	0
10/13/19 21:00	1.4	95.4	043	3.89	56.86	56.7	57.3	79.07	0
10/13/19 22:00	1.9	137.4	017	4.17	57.10	56.9	57.3	79.05	0
10/13/19 23:00	1.0	102.4	057	3.02	57.27	57.0	57.5	78.97	0
10/14/19 0:00	0.6	67.1	027	2.24	56.26	55.0	57.0	83.20	0
10/14/19 1:00	1.4	57.5	025	3.44	53.66	51.8	55.0	88.90	0
10/14/19 2:00	1.2	37.3	018	2.66	50.53	49.2	51.8	95.90	0
10/14/19 3:00	0.6	17.0	018	2.02	48.42	46.7	49.2	97.80	0
10/14/19 4:00	0.1	359.6	001	1.47	47.65	46.7	48.2	99.00	0
10/14/19 5:00	1.0	33.4	016	2.29	47.42	46.4	48.4	98.40	0
10/14/19 6:00	1.4	38.9	025	4.03	45.62	44.2	46.7	98.60	0
10/14/19 7:00	0.6	75.8	007	2.06	44.85	44.3	45.2	99.00	0
10/14/19 8:00	0.4	47.1	015	2.52	45.03	44.3	46.4	98.80	0
10/14/19 9:00	0.1	135.8	007	2.38	51.11	46.4	55.2	87.60	0
10/14/19 10:00	0.9	199.1	035	4.17	57.75	55.2	60.3	74.96	0
10/14/19 11:00	3.7	302.0	036	9.02	62.46	59.9	64.6	59.45	0
10/14/19 12:00	6.8	301.0	026	16.81	65.54	64.3	66.8	43.76	0
10/14/19 13:00	6.3	293.8	033	16.85	67.97	66.5	69.6	37.88	0
10/14/19 14:00	5.9	271.8	037	12.82	70.50	68.2	72.6	31.66	0
10/14/19 15:00	5.9	269.5	033	14.84	72.66	71.5	73.5	28.19	0
10/14/19 16:00	4.8	287.3	050	10.72	73.81	73.0	74.6	25.81	0
10/14/19 17:00	5.2	254.4	040	12.82	74.03	73.5	74.6	26.29	0
10/14/19 18:00	4.1	228.1	025	9.43	72.84	71.5	74.1	28.91	0
10/14/19 19:00	1.7	229.8	016	4.67	69.73	67.0	71.5	34.72	0
10/14/19 20:00	0.3	117.0	049	2.24	64.51	60.5	67.2	44.92	0
10/14/19 21:00	2.4	24.2	043	11.18	59.92	56.3	61.3	57.22	0
10/14/19 22:00	3.2	353.3	026	8.79	59.62	57.2	61.6	57.26	0

10/14/19 23:00	1.2	8.0	033	4.26	58.08	53.2	60.0	56.68	0
10/15/19 0:00	1.7	28.4	028	3.80	52.25	51.5	54.4	75.71	0
10/15/19 1:00	2.4	25.8	011	4.81	55.84	52.0	57.7	57.64	0
10/15/19 2:00	1.3	27.3	024	4.86	51.24	48.7	55.6	70.89	0
10/15/19 3:00	1.4	62.5	049	5.08	47.08	46.0	50.4	89.50	0
10/15/19 4:00	0.7	24.5	021	2.98	44.97	44.3	46.0	94.70	0
10/15/19 5:00	0.5	26.2	013	1.92	43.69	43.3	44.3	96.10	0
10/15/19 6:00	1.0	25.5	021	3.30	42.98	42.6	43.7	96.40	0
10/15/19 7:00	1.3	43.4	007	3.11	42.33	41.6	43.2	96.10	0
10/15/19 8:00	0.4	42.4	007	4.17	41.33	40.5	43.1	97.00	0
10/15/19 9:00	1.9	26.3	012	5.18	48.37	43.2	51.4	78.25	0
10/15/19 10:00	2.8	29.7	019	6.50	54.61	51.4	57.4	63.66	0
10/15/19 11:00	2.4	81.9	048	6.41	60.84	57.4	64.1	50.92	0
10/15/19 12:00	2.9	110.3	055	8.02	64.06	62.5	66.5	42.73	0
10/15/19 13:00	3.0	157.9	090	7.51	66.10	64.1	67.6	38.95	0
10/15/19 14:00	3.1	207.9	082	9.16	67.65	66.3	69.2	36.49	0
10/15/19 15:00	3.5	183.1	055	8.66	68.75	67.2	70.2	35.77	0
10/15/19 16:00	4.1	186.6	037	8.98	69.30	68.2	70.0	34.61	0
10/15/19 17:00	3.7	162.7	037	10.81	69.46	68.8	70.3	34.38	0
10/15/19 18:00	3.9	152.5	027	9.66	68.40	66.4	70.0	37.42	0
10/15/19 19:00	3.9	138.8	017	9.53	63.99	62.2	66.4	47.34	0
10/15/19 20:00	3.2	131.3	013	6.18	60.71	59.4	62.2	51.19	0
10/15/19 21:00	2.9	130.8	012	6.14	58.60	57.8	59.6	54.32	0
10/15/19 22:00	2.3	134.5	016	5.59	56.51	55.9	58.3	60.09	0
10/15/19 23:00	2.3	146.3	011	4.44	56.34	56.0	56.8	63.02	0
10/16/19 0:00	2.2	146.4	012	4.63	55.57	55.0	56.4	70.30	0
10/16/19 1:00	2.9	136.1	012	4.67	55.76	55.2	56.1	78.17	0
10/16/19 2:00	2.3	75.2	025	3.99	53.00	51.8	55.3	86.90	0
10/16/19 3:00	1.3	93.8	038	3.62	53.44	51.6	55.2	89.60	0
10/16/19 4:00	0.6	124.4	011	2.61	55.69	55.2	56.2	89.70	0
10/16/19 5:00	1.3	140.9	014	4.12	56.68	56.0	57.6	92.30	0
10/16/19 6:00	2.7	149.4	022	6.69	57.99	57.6	58.3	96.00	0
10/16/19 7:00	3.3	151.7	023	8.93	58.53	58.3	58.8	96.80	0
10/16/19 8:00	3.5	171.8	024	10.03	59.63	58.8	60.2	94.70	0
10/16/19 9:00	4.2	155.0	024	9.89	60.13	59.9	60.5	94.30	0
10/16/19 10:00	4.4	164.6	024	11.45	60.77	60.5	61.3	93.60	0
10/16/19 11:00	5.6	167.5	028	12.96	62.52	61.3	63.3	89.30	0
10/16/19 12:00	4.5	222.6	038	13.69	60.37	59.1	62.9	92.80	0.22
10/16/19 13:00	5.0	290.4	025	11.72	58.36	57.7	59.2	97.60	0.26
10/16/19 14:00	3.3	273.8	051	9.11	57.13	56.5	57.7	98.90	0.35
10/16/19 15:00	3.9	331.1	019	6.60	56.57	56.5	56.7	99.20	0.08
10/16/19 16:00	6.3	330.4	022	19.33	57.12	56.7	57.6	98.50	0.01

10/16/19 17:00	8.8	317.1	013	19.01	56.49	56.3	56.8	93.10	0
10/16/19 18:00	11.3	321.1	014	21.30	55.81	54.9	56.7	86.30	0
10/16/19 19:00	10.9	317.1	012	23.68	54.67	53.8	55.2	80.30	0
10/16/19 20:00	10.2	316.1	013	21.71	52.84	52.1	53.8	69.37	0
10/16/19 21:00	9.8	314.6	014	20.56	52.33	51.9	52.8	68.53	0
10/16/19 22:00	13.7	311.9	015	25.69	51.95	50.9	53.0	62.89	0
10/16/19 23:00	12.1	311.3	015	22.21	50.49	50.0	51.0	61.48	0
10/17/19 0:00	10.3	310.6	014	20.98	49.69	49.3	50.0	63.83	0
10/17/19 1:00	10.8	303.1	015	21.98	49.86	49.6	50.3	63.38	0
10/17/19 2:00	7.6	299.2	018	18.73	50.20	49.7	50.5	63.48	0
10/17/19 3:00	10.8	301.3	016	21.89	49.90	49.6	50.6	65.11	0
10/17/19 4:00	10.2	293.8	017	20.01	51.09	50.6	51.6	63.77	0
10/17/19 5:00	11.7	294.2	015	21.16	51.48	51.2	51.7	62.18	0
10/17/19 6:00	8.8	285.9	019	16.44	51.05	50.7	51.4	62.53	0
10/17/19 7:00	10.1	298.6	016	17.86	50.79	50.4	51.0	61.10	0
10/17/19 8:00	10.9	301.8	017	21.25	50.50	50.3	50.8	61.21	0
10/17/19 9:00	11.9	301.6	017	22.44	51.02	50.5	52.1	60.00	0
10/17/19 10:00	15.0	305.4	016	28.85	52.62	51.8	53.7	56.27	0
10/17/19 11:00	14.5	302.4	018	27.21	54.43	53.4	55.6	52.58	0
10/17/19 12:00	15.2	305.0	016	25.37	54.52	54.0	55.1	51.44	0
10/17/19 13:00	16.0	318.1	015	28.63	54.31	53.7	55.3	50.74	0
10/17/19 14:00	15.6	306.6	015	27.71	55.66	54.7	57.5	48.96	0
10/17/19 15:00	13.7	307.4	016	26.01	53.98	53.7	54.7	52.08	0
10/17/19 16:00	13.5	312.9	013	31.88	53.91	53.3	54.1	52.92	0
10/17/19 17:00	16.9	315.8	012	30.41	53.00	52.8	53.3	53.80	0
10/17/19 18:00	14.2	317.0	013	28.58	53.03	52.4	53.6	53.03	0
10/17/19 19:00	11.2	316.0	016	24.00	52.96	52.5	53.3	52.05	0
10/17/19 20:00	10.6	315.1	013	19.56	52.25	51.8	52.5	53.53	0
10/17/19 21:00	13.4	319.6	014	29.63	51.86	51.6	52.2	52.65	0
10/17/19 22:00	9.7	323.0	017	20.93	51.18	50.6	51.9	51.51	0
10/17/19 23:00	10.2	321.4	014	20.70	50.48	49.5	51.1	51.01	0
10/18/19 0:00	9.1	321.8	015	18.64	49.48	49.2	49.8	51.88	0
10/18/19 1:00	9.1	325.0	011	18.00	48.73	48.2	49.5	54.57	0
10/18/19 2:00	8.6	325.2	012	17.77	48.15	47.8	48.5	57.61	0
10/18/19 3:00	6.0	327.7	016	16.40	47.41	46.8	48.0	60.79	0
10/18/19 4:00	7.9	326.1	014	16.03	47.37	46.9	47.7	62.59	0
10/18/19 5:00	8.0	328.8	013	17.50	47.10	46.7	47.4	63.23	0
10/18/19 6:00	5.4	318.4	012	13.51	46.26	45.7	47.0	65.44	0
10/18/19 7:00	5.1	317.6	014	11.08	45.49	45.0	45.8	67.75	0
10/18/19 8:00	6.5	322.0	013	13.97	46.03	45.7	46.8	66.52	0
10/18/19 9:00	7.8	331.4	015	15.48	48.02	46.8	49.1	61.87	0
10/18/19 10:00	9.8	329.7	016	18.55	50.08	49.1	51.4	57.87	0

10/18/19 11:00	10.9	341.4	020	21.30	52.21	51.1	53.2	52.89	0
10/18/19 12:00	10.8	336.5	020	20.79	54.27	53.0	55.6	49.15	0
10/18/19 13:00	12.4	326.1	015	21.94	56.20	54.8	57.4	45.90	0
10/18/19 14:00	12.3	331.6	018	25.01	57.98	56.8	59.4	42.60	0
10/18/19 15:00	12.6	322.7	017	21.53	59.19	58.5	59.7	41.90	0
10/18/19 16:00	9.7	325.1	018	18.59	60.22	59.1	61.1	41.19	0
10/18/19 17:00	9.9	322.5	014	17.27	60.18	59.7	60.6	40.87	0
10/18/19 18:00	8.6	323.8	014	16.12	59.04	58.0	59.9	43.20	0
10/18/19 19:00	6.2	309.9	015	14.43	56.17	54.6	58.1	47.99	0
10/18/19 20:00	4.5	315.1	012	9.25	53.54	52.2	54.6	52.91	0
10/18/19 21:00	3.4	323.8	013	7.10	51.29	50.2	52.5	58.70	0
10/18/19 22:00	2.9	342.9	015	4.53	50.05	48.6	51.2	61.28	0
10/18/19 23:00	1.4	352.4	020	4.03	48.28	47.4	49.9	66.03	0
10/19/19 0:00	2.9	18.5	016	5.08	46.42	43.8	48.2	73.23	0
10/19/19 1:00	1.2	31.0	014	3.34	42.67	41.4	44.1	87.50	0
10/19/19 2:00	0.6	20.9	013	2.06	42.29	40.5	43.7	86.10	0
10/19/19 3:00	1.2	17.0	022	2.84	40.95	39.7	42.0	87.10	0
10/19/19 4:00	0.8	7.6	023	3.07	39.03	38.1	40.7	92.70	0
10/19/19 5:00	0.7	334.4	013	1.88	40.29	39.6	40.6	89.20	0
10/19/19 6:00	1.1	36.2	013	3.48	37.89	36.4	40.0	94.20	0
10/19/19 7:00	0.2	49.1	006	1.65	35.90	35.5	36.4	97.80	0
10/19/19 8:00	0.0	0.0	000	0.00	35.06	34.3	36.1	97.90	0
10/19/19 9:00	0.5	45.8	001	1.47	41.40	36.1	45.6	89.90	0
10/19/19 10:00	1.6	46.6	027	4.99	48.41	45.6	52.5	73.96	0
10/19/19 11:00	3.0	140.2	045	8.15	54.96	52.5	57.1	55.23	0
10/19/19 12:00	3.7	183.1	044	8.43	57.91	56.3	60.0	46.20	0
10/19/19 13:00	4.4	192.6	044	13.28	59.89	58.6	60.8	43.14	0
10/19/19 14:00	4.7	220.5	038	12.05	60.92	59.3	62.6	43.65	0
10/19/19 15:00	4.3	195.4	036	11.40	61.40	60.4	63.1	44.19	0
10/19/19 16:00	4.0	197.0	027	9.16	61.02	60.4	61.9	45.89	0
10/19/19 17:00	4.1	191.5	030	9.34	61.04	60.4	61.7	47.11	0
10/19/19 18:00	3.4	183.0	024	9.43	59.41	58.6	60.4	52.45	0
10/19/19 19:00	1.8	145.5	017	4.95	57.54	56.4	58.6	57.36	0
10/19/19 20:00	1.2	136.5	007	2.98	55.07	54.3	56.4	65.27	0
10/19/19 21:00	1.6	115.1	024	2.98	53.90	52.0	55.0	71.24	0
10/19/19 22:00	1.2	66.4	025	3.48	51.43	50.6	52.3	82.00	0
10/19/19 23:00	0.9	69.8	011	2.70	50.55	50.1	50.9	85.10	0
10/20/19 0:00	1.6	130.1	020	4.26	50.54	49.7	51.5	85.00	0
10/20/19 1:00	1.9	141.0	019	4.40	52.02	51.1	52.8	80.70	0
10/20/19 2:00	2.0	139.6	013	5.18	51.67	51.1	52.1	83.20	0
10/20/19 3:00	2.5	134.9	012	4.99	52.60	52.1	52.9	83.10	0
10/20/19 4:00	1.2	130.3	015	2.47	52.80	52.6	53.0	84.50	0

10/20/19 5:00	0.9	54.2	024	2.02	52.23	51.9	52.8	88.40	0
10/20/19 6:00	1.0	15.0	027	2.52	51.67	51.4	52.0	94.00	0.04
10/20/19 7:00	1.7	68.5	032	3.16	51.37	51.2	51.6	98.00	0.06
10/20/19 8:00	1.7	28.4	016	3.21	51.19	51.1	51.4	99.60	0.05
10/20/19 9:00	2.5	51.8	019	6.60	51.64	51.3	52.1	99.30	0.04
10/20/19 10:00	2.2	80.0	018	5.91	52.64	52.1	53.0	98.60	0.05
10/20/19 11:00	3.6	65.9	021	8.34	53.23	52.9	53.5	98.80	0.05
10/20/19 12:00	5.0	74.6	021	10.95	53.64	53.5	53.8	97.60	0.03
10/20/19 13:00	5.8	70.1	023	13.10	53.31	53.2	53.6	97.10	0.07
10/20/19 14:00	5.1	53.2	025	11.95	53.84	53.3	54.5	97.10	0.04
10/20/19 15:00	6.0	38.6	024	13.51	54.75	54.4	54.9	97.00	0.01
10/20/19 16:00	5.4	27.4	024	15.34	54.92	54.8	55.1	97.80	0
10/20/19 17:00	4.7	15.2	025	9.85	54.79	54.5	55.0	98.40	0.01
10/20/19 18:00	5.4	7.3	024	12.82	54.24	54.1	54.5	98.10	0.01
10/20/19 19:00	4.1	6.2	027	8.38	54.36	54.2	54.6	97.30	0
10/20/19 20:00	5.1	3.0	025	11.31	54.28	54.1	54.5	96.10	0.01
10/20/19 21:00	4.7	15.1	025	10.85	54.00	53.9	54.2	95.00	0
10/20/19 22:00	3.5	3.1	026	7.51	53.73	53.6	53.9	95.30	0
10/20/19 23:00	3.4	353.1	025	8.06	53.49	53.4	53.7	95.00	0
10/21/19 0:00	2.6	346.9	019	6.37	53.36	53.2	53.5	95.50	0
10/21/19 1:00	4.2	337.7	014	8.61	53.15	53.0	53.3	95.90	0
10/21/19 2:00	5.4	341.1	017	11.13	52.73	52.4	53.0	95.50	0
10/21/19 3:00	5.3	351.1	022	12.69	52.40	52.3	52.5	92.70	0
10/21/19 4:00	4.8	353.8	023	12.46	52.40	52.2	52.5	90.80	0
10/21/19 5:00	3.8	350.4	024	9.34	52.24	52.2	52.4	90.70	0
10/21/19 6:00	3.7	359.5	023	10.81	52.32	52.2	52.5	89.00	0
10/21/19 7:00	3.3	0.3	025	8.15	52.09	52.0	52.3	89.50	0
10/21/19 8:00	2.6	358.5	025	7.83	52.09	52.0	52.2	89.10	0
10/21/19 9:00	2.3	11.9	025	6.32	52.58	52.2	53.1	88.00	0