

**CITY of FLINT WATER TREATMENT PLANT MONTHLY OPERATION REPORT**

**SUPPLY NAME:** CITY of FLINT WATER PLANT

**WSSN:** 2310

Michael Glasgow  
Operator-in-Charge

January 2015  
Month/Year

F-1R, F-2  
Certification of Operator-in-Charge

F-1  
Water Plant Classification

  
Signature of Operator-in-Charge

Genesee  
County

**Treatment Rate and Filter Data**

Maximum Treatment Rate:	<u>19.3</u>	Million Gallons per Day
Rated Plant Capacity:	<u>36</u>	Million Gallons per Day
Average Filter Run:	<u>76</u>	Hours
Average Head Loss:	<u>n/a</u>	Feet *(filter head loss meters not operational)
Average Filtration Rate:	<u>2.1</u>	Gallons Per Square Feet per Minute
Maximum Filtration Rate:	<u>3.6</u>	Gallons Per Square Feet per Minute
Average Wash Water Use:	<u>3.2%</u>	Percent of Treated Water

**Chemical Data**

Chlorine on hand:	<u>12,000</u> lb.	Est. supply:	<u>18</u> days
Primary Coagulant (Ferric Chloride) on hand:	<u>110,000</u> lb.	Est. supply:	<u>10</u> days
Lime (CaO) on hand:	<u>257</u> tons	Est. supply:	<u>22</u> days
Fluoride on Hand:	<u>16,630</u> lb.	Est. supply:	<u>42</u> days
Cost of All Chemicals per Million Gallons:	<u>n/a</u> dollars		
Total Power Cost per Million Gallons:	<u>n/a</u> dollars		

**Remarks**

	Confluence Point # 1 (N)	Confluence Point # 2 (S)
Number of filter confluence samples > 0.3 NTU:	<u>0</u>	<u>0</u>
Number of filter confluence samples collected:	<u>244</u>	<u>242</u>
Percent of filter confluence samples > 0.3 NTU:	<u>0.0%</u>	<u>0.0%</u>
Number of filter confluence samples > 1 NTU	<u>0</u>	<u>0</u>

**Did any individual filter exceed:**

1.0 NTU in two consecutive measurements taken 15 minutes apart? <b>If yes, attach specific filter(s) information and indicate required follow-up status.</b>	<u>NO</u>
0.5 NTU in two consecutive measurements taken 15 minutes apart after 4 hours of operation? <b>If yes, attach specific filter(s) information and indicate required follow-up status.</b>	<u>NO</u>
1.0 NTU in two consecutive measurements taken 15 minutes apart for 3 consecutive months? <b>If yes, attach specific filter(s) information and indicate required follow-up status.</b>	<u>NO</u>
2.0 NTU in two consecutive measurements taken 15 minutes apart for 2 consecutive months? <b>If yes, attach specific filter(s) information and indicate required follow-up status.</b>	<u>NO</u>
Was continuous (every 15 minutes) filter monitoring equipment off-line during the month? <b>If yes, indicate date(s), duration, and individual filter grab sampling frequency on a separate sheet.</b>	<u>NO</u>
Did POE disinfectant residual fall below 0.2 ppm during the month? <b>If yes, indicate date(s) and duration on a separate sheet.</b>	<u>NO</u>
Was minimum C*T credit achieved for the entire month? <b>If no, indicate on a separate sheet the date(s) not achieved.</b>	<u>YES</u>
Was continuous POE chlorine residual monitoring equipment off-line during the month? <b>If yes, indicate date(s) and duration on a separate sheet.</b>	<u>NO</u>



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Date	Turbidity, Units												Plant Tap NTU
	Confluence Point. No.1 (N) North						Confluence Point. No.2 (S) South						
	Number of Samples	Avg.	Max	No. of 4 Hr. Compliance periods	No. of 4 Hr. Compliance periods >0.3 NTU	No. of Samples >0.3 NTU	Number of Samples	Avg.	Max	No. of 4 Hr. Compliance periods	No. of 4 Hr. Compliance periods >0.3 NTU	No. of Samples >0.3 NTU	
1	8	0.07	0.08	6	0	0	8	0.06	0.09	6	0	0	0.08
2	7	0.07	0.09	6	0	0	7	0.06	0.07	6	0	0	0.07
3	8	0.06	0.08	6	0	0	8	0.06	0.07	6	0	0	0.08
4	8	0.07	0.09	6	0	0	8	0.07	0.11	6	0	0	0.07
5	8	0.06	0.09	6	0	0	8	0.06	0.09	6	0	0	0.07
6	8	0.08	0.09	6	0	0	8	0.07	0.10	6	0	0	0.07
7	8	0.09	0.15	6	0	0	8	0.07	0.09	6	0	0	0.08
8	8	0.08	0.10	6	0	0	8	0.07	0.11	6	0	0	0.08
9	8	0.06	0.08	6	0	0	8	0.05	0.07	6	0	0	0.07
10	8	0.06	0.08	6	0	0	8	0.07	0.09	6	0	0	0.07
11	8	0.06	0.08	6	0	0	8	0.07	0.09	6	0	0	0.07
12	8	0.07	0.09	6	0	0	8	0.07	0.10	6	0	0	0.09
13	8	0.06	0.12	6	0	0	8	0.05	0.07	6	0	0	0.06
14	8	0.07	0.09	6	0	0	8	0.06	0.09	6	0	0	0.07
15	8	0.06	0.09	6	0	0	8	0.07	0.09	6	0	0	0.07
16	8	0.07	0.09	6	0	0	8	0.07	0.10	6	0	0	0.09
17	8	0.07	0.08	6	0	0	8	0.07	0.10	6	0	0	0.07
18	8	0.08	0.11	6	0	0	8	0.07	0.08	6	0	0	0.07
19	8	0.07	0.09	6	0	0	8	0.07	0.11	6	0	0	0.07
20	8	0.07	0.08	6	0	0	8	0.07	0.10	6	0	0	0.11
21	8	0.08	0.11	6	0	0	8	0.07	0.08	6	0	0	0.09
22	8	0.09	0.11	6	0	0	8	0.08	0.09	6	0	0	0.09
23	7	0.08	0.10	6	0	0	7	0.07	0.09	6	0	0	0.08
24	8	0.07	0.09	6	0	0	8	0.06	0.10	6	0	0	0.07
25	8	0.06	0.07	6	0	0	8	0.07	0.09	6	0	0	0.07
26	8	0.07	0.09	6	0	0	6	0.08	0.10	6	0	0	0.07
27	7	0.08	0.11	6	0	0	7	0.07	0.10	6	0	0	0.08
28	7	0.07	0.09	6	0	0	7	0.07	0.10	6	0	0	0.07
29	7	0.07	0.10	6	0	0	7	0.07	0.08	6	0	0	0.07
30	8	0.07	0.09	6	0	0	8	0.07	0.08	6	0	0	0.08
31	8	0.06	0.10	6	0	0	8	0.06	0.08	6	0	0	0.07
Avg.	8	0.07	0.09	6	0	0	8	0.07	0.09	6	0	0	
Max.	8	0.09	0.15	6	0	0	8	0.08	0.11	6	0	0	0.11
Min.	7	0.06	0.07	6	0	0	6	0.05	0.07	6	0	0	

Date	Fluoride Applied as F-mg/L	Fluoride Analysis (mg/L)			Chlorine Application (mg/L)			Chlorine Residual (mg/L)					
					Intermediate Chlorine	Post Chlorine	Total Chlorine	Filtered		3 MG Well		Tap	
		Raw	Tap	Dist.				Free	Total	Free	Total	Free	Total
1	0.4	0.24	0.70		1.3	3.5	4.8	0.6	0.9	2.7	3.0	2.1	2.4
2	0.4	0.21	0.62		1.4	3.5	4.9	0.6	0.8	2.6	3.1	2.2	2.6
3	0.3	0.22	0.55		1.8	2.6	4.4	0.5	0.7	2.7	3.3	2.8	3.2
4	0.4	0.20	0.60		1.8	2.5	4.3	0.8	1.0	2.8	3.0	2.9	3.2
5	0.4	0.19	0.23		1.9	2.5	4.4	0.7	1.0	2.8	3.0	2.7	3.0
6	0.3	0.19	0.49	0.39	1.9	2.7	4.6	0.6	0.9	2.7	3.2	2.5	3.2
7	0.3	0.23	0.61		1.9	2.6	4.5	0.7	0.9	2.7	3.0	2.2	2.7
8	0.3	0.19	0.51		1.9	2.6	4.5	0.6	0.9	2.4	3.1	2.1	2.6
9	0.0	0.19	0.51		2.0	3.2	5.2	0.4	0.7	2.8	3.1	2.3	2.8
10	0.0	0.22	0.44		1.8	3.1	4.9	0.4	0.4	2.4	2.9	1.8	2.3
11	0.0	0.20	0.22		1.8	3.0	4.8	0.8	1.1	2.7	3.1	2.5	2.9
12	0.0	0.21	0.21		1.6	3.2	4.8	0.5	0.8	2.8	3.1	2.4	2.8
13	0.0	0.19	0.19	0.35	1.7	3.1	4.8	0.8	1.2	2.8	3.1	2.2	2.6
14	0.0	0.21	0.21		1.6	3.0	4.6	0.4	0.6	2.8	3.1	2.3	2.8
15	0.0	0.22	0.24		1.6	3.0	4.6	0.5	0.9	2.7	3.1	2.0	2.3
16	0.1	0.20	0.20		1.6	3.0	4.6	0.5	0.9	2.3	3.0	2.0	2.5
17	0.3	0.22	0.23		1.7	3.0	4.7	0.4	0.6	2.5	3.0	1.8	2.3
18	0.4	0.19	0.55		1.8	3.2	5.0	0.5	0.8	2.7	3.0	2.5	2.9
19	0.4	0.20	0.64		1.9	3.2	5.1	0.4	0.6	2.8	3.2	2.2	2.6
20	0.0	0.22	0.45	0.31	2.0	3.0	5.0	0.5	0.9	2.9	3.4	2.1	2.7
21	0.2	0.21	0.31		1.9	2.8	4.7	0.5	0.8	2.6	3.0	2.2	2.5
22	0.4	0.20	0.67		1.9	2.9	4.8	0.4	0.7	2.8	3.2	1.9	2.2
23	0.4	0.22	0.41		2.0	3.1	5.1	0.4	0.8	2.6	3.0	1.5	1.8
24	0.4	0.21	0.67		2.0	3.2	5.2	0.7	0.9	2.8	3.0	2.7	3.0
25	0.4	0.23	0.59		2.1	3.1	5.2	0.5	0.8	2.9	3.4	2.4	2.7
26	0.4	0.21	0.57		2.0	3.0	5.0	0.4	0.7	2.7	3.1	2.4	2.7
27	0.4	0.23	0.54	0.55	2.1	3.1	5.2	0.4	0.6	2.7	3.0	2.2	2.5
28	0.4	0.22	0.59		2.0	2.9	4.9	0.8	1.0	2.4	2.7	1.9	2.3
29	0.4	0.25	0.62		2.0	2.9	4.9	0.7	0.9	2.8	3.2	2.2	2.5
30	0.4	0.22	0.63		2.0	3.0	5.0	0.7	0.8	2.5	2.9	2.0	2.5
31	0.3	0.19	0.52		1.9	3.0	4.9	0.6	0.8	2.8	3.2	2.8	3.2

Avg.	0.26	0.21	0.47	0.40	1.8	3.0	4.8	0.6	0.8	2.7	3.1	2.3	2.7
Max.	0.40	0.25	0.70	0.55	2.1	3.5	5.2	0.8	1.2	2.9	3.4	2.9	3.2
Min.	0.00	0.19	0.19	0.31	1.3	2.5	4.3	0.4	0.4	2.3	2.7	1.5	1.8

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Date	pH (S.U.)		Total Hardness as CaCO3 (mg/L)		Total Alkalinity as CaCO3 (mg/L)		Non-Carbonate Hardness as CaCO3 (mg/L)		Calcium as Ca2+ (mg/L)		Magnesium as Mg2+ (mg/L)		Chloride as Cl- (mg/L)	
	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap
1	8.23	7.65	323	185	264	65	59	120	108.2	55.3	13.6	11.7	47	85
2	7.84	7.31	324	193	258	76	66	117	121.0	65.7	6.3	4.9	47	87
3	7.77	7.38	323	212	257	98	66	114	120.0	77.0	5.8	4.9	48	87
4	8.15	7.86	325	218	261	96	64	122	105.8	64.9	14.6	13.1	48	88
5	8.31	7.80	318	206	262	94	56	112	103.4	60.9	14.6	13.6	45	78
6	8.09	7.97	320	208	256	95	64	113	121.0	69.7	4.9	8.7	48	85
7	8.04	7.91	313	194	256	97	57	97	101.8	61.7	15.6	10.7	43	82
8	8.19	8.04	313	202	251	87	62	115	121.0	72.9	2.9	3.9	48	83
9	8.08	7.96	311	205	248	93	63	112	115.4	70.5	5.8	6.3	47	84
10	7.98	7.75	316	181	255	73	61	108	114.6	64.1	6.8	3.4	47	88
11	8.01	8.24	321	174	256	63	65	111	100.2	44.9	17.5	14.6	44	80
12	8.09	7.68	318	177	250	57	68	120	101.0	46.5	16.0	14.6	49	81
13	7.94	7.69	320	165	245	46	75	119	105.8	44.1	14.1	13.1	47	87
14	7.80	7.52	321	172	252	58	69	114	115.4	56.9	7.8	6.8	48	88
15	7.96	7.64	323	173	258	48	65	125	105.8	48.9	14.1	13.1	45	91
16	7.94	7.47	324	172	257	44	67	128	117.8	58.5	6.8	6.8	47	88
17	7.82	7.95	320	174	252	54	68	120	119.4	58.5	4.9	5.3	46	89
18	8.02	7.72	322	185	258	69	64	116	104.2	55.3	15.1	11.2	48	83
19	8.03	7.62	321	184	255	59	66	125	102.6	54.5	16.0	11.7	48	86
20	7.89	7.59	321	184	255	67	66	117	116.2	64.9	7.8	4.9	49	91
21	7.86	7.79	324	183	257	72	67	111	105.0	51.3	15.1	13.1	50	83
22	7.59	7.42	325	193	262	81	63	112	116.2	68.9	8.3	4.9	49	84
23	7.70	7.44	344	186	256	78	88	108	112.2	59.3	15.6	9.2	52	87
24	7.91	7.51	327	187	259	72	68	115	101.0	48.1	18.5	16.0	48	85
25	7.93	7.71	326	188	260	75	66	113	100.2	50.5	18.5	14.6	47	85
26	7.95	7.82	328	194	259	71	69	123	105.8	54.5	15.6	13.6	51	88
27	7.77	7.99	332	191	266	68	66	123	111.4	60.1	13.1	9.2	51	89
28	7.99	7.98	334	188	264	76	70	112	107.4	51.3	16.0	14.6	48	85
29	7.80	7.83	334	196	268	76	66	120	106.6	57.7	16.5	12.6	55	86
30	7.84	7.78	331	193	272	78	59	115	113.0	59.3	13.1	10.7	55	90
31	7.96	7.91	335	197	267	69	68	128	108.2	56.1	15.6	13.6	51	92

Avg.	7.95	7.74	324	189	258	73	66	116	109.9	58.5	12.2	10.2	48	86
Max.	8.31	8.24	344	218	272	98	88	128	121.0	77	18.5	16.0	55	92
Min.	7.59	7.31	311	165	245	44	56	97	100.2	44.1	2.9	3.4	43	78

Date	Total Coliform						Standard Plate Count (Simplate MPN)		Conductivity (mS)	Temp. C	Color		Odor	
	Raw (Colilert MPN)		Filter Confluence (N&S)		Plant Tap		Raw	Tap			Raw	Tap	Raw	Tap
	# Samples	Count	# Samples	# pos	# Samples	# pos	Raw	Tap	Tap	Raw	Raw	Tap	Raw	Tap
1	1	2592	12	0	1	0	800	<2	0.37	5.6				
2	1	1684	12	0	1	0	600	<2	0.36	4.5				
3	1	960	12	0	1	0	2400	<2	0.42	4.0				
4	1	718	12	0	1	0	200	<2	0.44	3.8				
5	1	1732	12	0	1	0	5980	<2	0.41	3.0				
6	1	874	12	0	1	0	200	<2	0.41	4.5				
7	1	2086	12	0	1	0	200	<2	0.39	4.2				
8	1	960	12	0	1	0	120	<2	0.39	5.5				
9	1	1146	12	0	1	0	420	<2	0.40	2.6				
10	1	2994	12	0	1	0	760	38	0.31	2.6				
11	1	978	12	0	1	0	520	10	0.36	2.1				
12	1	1042	12	0	1	0	600	<2	0.36	1.9				
13	1	862	12	0	1	0	340	<2	0.37	1.4				
14	1	646	12	0	1	0	200	<2	0.36	1.9				
15	1	736	12	0	1	0	300	<2	0.36	3.5				
16	1	2224	12	0	1	0	200	<2	0.37	1.9				
17	1	320	12	0	1	0	200	<2	0.36	4.9				
18	1	40	12	0	1	0	200	2	0.38	4.9				
19	1	148	12	0	1	0	120	<2	0.40	5.2				
20	1	770	12	0	1	0	146	<2	0.38	4.9				
21	1	148	12	0	1	0	80	<2	0.37	5.9				
22	1	201	12	0	1	0	190	<2	0.39	5.8				
23	1	345	12	0	1	0	120	<2		4.9				
24	1	97	12	0	1	0	150	<2	0.38	6.4				
25	1	146	12	0	1	0	60	<2	0.39	4.4				
26	1	181	12	0	1	0	230	<2	0.40	3.8				
27	1	146	12	0	1	0	120	<2	0.38	4.9				
28	1	172	12	0	1	0	128	<2	0.38	4.3				
29	1	261	12	0	1	0	137	<2	0.49	4.2				
30	1	155	12	0	1	0	93	<2	0.43	4.0				
31	1	41	12	0	1	0	60	<2	0.53	4.0				

Avg.									0.39	4.0				
Max.							5980	38	0.53	6.4				
Min.									0.31	1.4				

Date	Free Chlorine Residual at Bacteriological Monitoring Stations mg/l										Number of Samples
	1	2	3	4	5	6	7	8	CS	WS	
1	0.7	0.1	1.3	1.6	0.7	0.2	0.2		1.5	1.4	9
2											0
3											0
4											0
5											0
6	0.6	0.7	1.5	2.0	0.8	0.1	1.4	1.8	1.8	1.8	10
7	0.6	0.7	1.7	1.5	0.7	0.2	1.1	2.0	0.8	1.7	10
8	0.8	0.3	1.0	1.3	0.8	0.1	1.4	1.8	0.8	1.7	10
9											0
10											0
11											0
12											0
13	0.4	1.0	1.7	1.4	0.7	0.2	1.4	1.7	0.4	1.7	10
14	0.2	0.5	1.8	1.6	0.5	0.1	2.1	2.2	0.4	2.0	10
15											0
16											0
17											0
18											0
19											0
20	0.1	1.6	1.7	1.4	0.9	0.3	1.9	2.0	1.3	1.8	10
21											0
22											0
23											0
24											0
25											0
26									1.6	1.8	2
27	0.9	1.3	1.2	1.7	0.7	0.2	1.3	1.8	1.4	0.8	10
28	0.8	0.5	1.4	1.5	0.8	0.2	1.8	1.8	1.5	1.8	10
29	0.9	1.7	1.6	1.7	1.0	0.1	2.0	1.9	0.9	2.0	10
30											0
31											0

Distribution Sample Summary	
Total # of routine distribution samples analyzed	101
Total # of routine distribution samples required	100

Distribution Bacteriological Summary	
Total # of positive routine distribution samples	0
Percent of routine distribution samples positive	0%

See page 9 for positive sample information.

Distribution Disinfectant Total Residual Summary	
Percentage of samples with a detectable disinfectant residual	100%
Average disinfectant residual this month	1.15

Date	Total Chlorine Residual at Bacteriological Monitoring Stations mg/l										
	1	2	3	4	5	6	7	8	CS	WS	Number of Samples
1	0.8	0.2	1.5	1.8	0.9	0.3	0.3		1.7	1.5	9
2											0
3											0
4											0
5											0
6	0.9	0.9	1.4	2.3	1.0	0.2	1.6	2.1	2.2	2.1	10
7	0.8	0.9	1.9	1.8	1.0	0.2	1.3	2.2	1.0	2.0	10
8	1.0	0.5	1.2	1.5	1.1	0.3	1.6	2.0	1.0	2.0	10
9											0
10											0
11											0
12											0
13	0.7	1.5	2.0	1.7	0.9	0.2	1.7	2.3	0.6	2.1	10
14	0.4	1.8	2.1	1.8	0.8	0.3	2.4	2.5	0.5	2.3	10
15											0
16											0
17											0
18											0
19											0
20	0.3	1.9	2.0	1.6	1.2	0.6	2.2	2.3	1.5	2.2	10
21											0
22											0
23											0
24											0
25											0
26									1.9	2.2	2
27	1.3	1.9	1.7	2.1	0.9	0.4	1.7	2.0	1.8	1.0	10
28	1.2	0.8	1.7	1.8	1.2	0.4	2.1	2.3	1.9	2.2	10
29	1.2	2.0	1.9	1.9	1.3	0.2	2.3	2.3	1.1	2.3	10
30											0
31											0

Distribution Disinfectant Total Residual Summary	
Percent samples with a detectable disinfectant residual	100%
Average disinfectant residual this month	1.4



