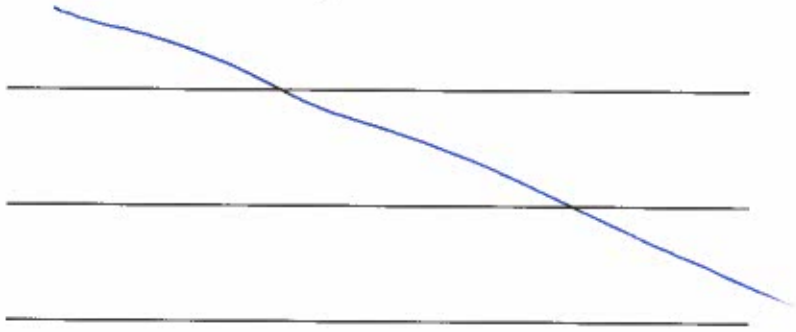
Department of Utilities

FLINT WATER PLANT

F&V operations and resource management

The City of Flint and F&V Operations and Resource Management are submitting the following report(s) to Michigan Department of Environment, Great Lakes and Energy:

MOR July 2020



"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons or persons who manage the system or those persons directly responsible for gathering such information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

City of Flint Representative: _____

Signature: _____ Date: _____

F&V Operations Representative: Robert Jones

Signature: _____ Date: 8/5/2020

23D-5a 1/86
Authority; Act 399, P.A. 1976

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

MONTHLY OPERATION REPORT
OF
WATER TREATMENT PLANT

For Month of July 2020

Flint Water Plant — 2310 — Genesee
NAME OF WATER SYSTEM — WSSN — COUNTY

Robert Jones — D-1
CERTIFIED OPERATOR — CLASSIFICATION

SIGNATURE OF APPROPRIATE OFFICIAL

TREATMENT RATE AND FILTER DATA

1. Treatment Rate, Maximum 11.84 Million Gallons Per Day
2. Treatment Rate, Approved Rated Plant Capacity 36 Million Gallons per Day
3. Average Filter Run N/A Hours, Average Head Loss N/A Feet
4. Average Filtration Rate N/A Gallons per Square Ft. per Minute
5. Maximum Filtration Rate N/A Gallons per Square Ft. per Minute
6. Average Wash Water Use N/A percent of Treated Water

CHEMICAL DATA

7. Sodium Hypochlorite on hand at CS2 3649 gal.: Estimated supply 35 days
8. Sodium Hypochlorite on hand at outstations 234 gal: Estimated supply 21 days.
9. Phosphoric Acid on hand 738 gal.: Estimated supply 35 days
9. Sodium Hydroxide on hand 2023 gal.: Estimated supply 26 days

Remarks:

Submit to: MDEQ - Office of Drinking Water & Municipal Assistance
LANSING DISTRICT OFFICE
525 West Allegan Street, 1st Floor South
(Constitution Hall)
PO Box 30242
Lansing, MI 48909-7742

Failure to complete this form is a violation of Act 399, P.A. 1976 and is subject to penalties as outlined in the Act.

Jul-20

DATE	Total Million Gallons Purchased	Phosphate as PO_4 (mg/L)	Phosphate applied as PO_4 (mg/L)	Phosphate as PO_4 (mg/L)	25% Caustic Soda (mg/l)	Turbidity, NTU units						
						Raw				Plant Tap		
		CSII		Tap		# of Samples	Avg.	Max		# of Samples	Avg.	Max
	1	1.29	18	6	6a	7	8	9	10	11	12	13
1	11.0	1.3	2.37	3.5	2.3					2	0.12	0.15
2	10.9	1.3	2.39	3.5	2.3					2	0.07	0.07
3	11.0	1.3	2.41	3.5	2.3					2	0.06	0.07
4	10.7	1.3	2.44	3.5	2.3					2	0.08	0.08
5	11.2	1.3	2.39	3.6	1.7					2	0.07	0.08
6	11.5	1.2	2.44	3.5	1.7					2	0.08	0.09
7	11.5	1.2	2.53	3.5	1.9					2	0.10	0.10
8	11.8	1.2	2.55	3.5	2.2					2	0.10	0.11
9	10.8	1.2	2.59	3.3	2.3					2	0.08	0.09
10	11.5	1.2	2.59	3.5	2.2					2	0.09	0.09
11	10.8	1.2	2.56	3.5	2.3					2	0.09	0.09
12	10.8	1.2	2.51	3.6	2.2					2	0.08	0.10
13	11.6	1.2	2.52	3.5	2.2					2	0.09	0.10
14	11.2	1.2	2.53	3.6	2.2					2	0.08	0.08
15	11.4	1.3	2.53	3.6	2.3					2	0.09	0.09
16	10.9	1.2	2.57	3.6	2.3					2	0.12	0.14
17	11.3	1.3	2.46	3.6	2.2					2	0.09	0.09
18	10.5	1.3	2.37	3.6	2.3					2	0.10	0.10
19	10.8	1.3	2.25	3.5	2.5					2	0.09	0.10
20	10.2	1.2	2.32	3.4	2.5					2	0.08	0.09
21	10.1	1.3	2.45	3.5	2.6					2	0.09	0.09
22	10.9	1.3	2.33	3.5	2.7					2	0.10	0.12
23	10.6	1.4	2.26	3.5	2.7					2	0.08	0.08
24	11.2	1.4	2.30	3.7	2.5					2	0.10	0.12
25	10.2	1.3	2.32	3.5	2.5					2	0.10	0.11
26	10.4	1.3	2.41	3.5	2.4					2	0.10	0.10
27	11.5	1.3	2.35	3.5	2.4					2	0.11	0.11
28	10.7	1.3	2.50	3.6	2.4					2	0.09	0.09
29	10.6	1.4	2.42	3.6	2.8					2	0.09	0.10
30	10.4	1.4	2.14	3.5	2.8					2	0.14	0.19
31	11.3	1.2	2.25	3.2	2.7					2	0.09	0.10
AVG	10.95	1.28	2.42	3.51	2.34					2	0.09	0.10
MAX	11.84	1.44	2.59	3.67	2.77					2	0.14	0.19
MIN	10.14	1.19	2.14	3.24	1.65					2	0.06	0.07
Total	339.33											

Fluoridation & Chlorination **WSSN 2310** **Jul-20**

DATE	Fluoride Applied F⁻ mg/l	Fluoride Analyses mg/l			Chlorine App. Mg/l			Chlorine Residual mg/l							
					Chlorine App. Mg/l	Chlorine (prior to filtration) mg/L OCl⁻	Post Chlorine mg/L		Sta II	Dort	3MG Well		Tap		
		Raw	Tap	Dist					Free	Free	Free			Free	
	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1		0.75	0.82		1.09				1.0					1.7	
2		0.78	0.76		1.06				1.0					1.7	
3		0.75	0.75		0.96				1.0					1.6	
4		0.74	0.74		0.99				0.9					1.6	
5		0.72	0.74		1.03				0.9					1.6	
6		0.81	0.88		0.99				0.9					1.6	
7		0.75	0.83		1.02				1.0					1.7	
8		0.80	0.93		1.09				0.9					1.6	
9		0.69	0.75		1.17				1.0					1.6	
10		0.76	0.79		1.09				1.0					1.6	
11		0.72	0.78		1.11				1.0					1.6	
12		0.76	0.86		1.13				1.0					1.7	
13		0.81	0.74		1.14				1.0					1.7	
14		0.77	0.83		1.17				0.9					1.7	
15		0.82	0.83		1.20				1.0					1.7	
16		0.79	0.64		1.17				1.0					1.7	
17		0.82	0.82		1.20				0.9					1.7	
18		0.76	0.84		1.24				0.8					1.6	
19		0.86	0.82		1.33				0.8					1.7	
20		0.88	0.85		1.31				0.8					1.7	
21		0.89	0.84		1.29				0.8					1.8	
22		0.69	0.70		1.36				0.8					1.7	
23		0.70	0.67		1.34				0.9					1.7	
24		0.91	0.87		1.30				0.8					1.7	
25		0.72	0.70		1.23				1.0					1.8	
26		0.69	0.69		1.23				0.9					1.8	
27		0.72	0.84		1.23				0.9					1.7	
28		0.73	0.79		1.28				0.9					1.6	
29		0.53	0.50		1.26				0.9					1.7	
30		0.78	0.79		1.19				0.9					1.7	
31		0.88	0.73		1.17				0.8					1.7	
AVG			0.78		1.17				0.9					1.7	
MAX			0.93		1.36				1.0					1.8	
MIN			0.50		0.96				0.8					1.6	

Chemical Analyses **WSSN 2310** **Jul-20**

DATE	pH		Total Hardness as $CaCO_3$ mg/l		Total Alkalinity as $CaCO_3$ mg/l		NonCarbonate Hardness as $CaCO_3$ mg/l		Iron mg/L		Calcium Ca^{2+} mg/l		Magnesium as Mg^{2+} mg/l		Chloride as Cl^- mg/l	
	CSII	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap
	29	30	31	32	33	34	35	36	37	38.00	39	40	41	42	43	44
1	7.34	7.58		100		80		28	0	0.01		28.9		7.8		14
2	7.33	7.56		104		82		34	0.0	0.00		28.1		8.3		15
3	7.42	7.52		102		84		32	0.02	0.02		28.1		7.8		16
4	7.36	7.39		102		80		36	0.02	0.00		26.5		8.7		17
5	7.45	7.54		94		76		30	0.02	0.01		25.7		7.3		14
6	7.39	7.56		98		74		32	0	0.01		26.5		7.8		15
7	7.35	7.51	100	100	78	78	32	28	0.02	0.01	27.3	28.9	7.8	6.8	14	15
8	7.32	7.50		96		80		26	0.02	0.01		28.1		6.3		14
9	7.34	7.51		96		80		24	0	0.00		28.9		5.8		15
10	7.35	7.52		96		78		26	0.01	0.01		28.1		6.3		15
11	7.41	7.52		96		76		32	0.01	0.01		25.7		7.8		14
12	7.35	7.40		96		80		26	0	0.00		28.1		6.3		14
13	7.33	7.54		98		78		28	0.01	0.02		28.1		6.8		14
14	7.36	7.56	98	100	76	74	28	34	0.02	0.02	28.1	26.5	6.8	8.3	14	14
15	7.35	7.54		98		80		28	0.01	0.01		28.1		6.8		15
16	7.33	7.56		96		78		26	0.01	0.02		28.1		6.3		15
17	7.29	7.52		100		80		30	0.01	0.01		28.1		7.3		15
18	7.39	7.48		100		78		34	0	0.02		26.5		8.3		14
19	7.38	7.50		100		82		32	0.02	0.01		27.3		7.8		16
20	7.30	7.53		100		82		32	0	0.00		27.3		7.8		15
21	7.31	7.53	100	98	76	78	30	32	0.02	0.02	28.1	26.5	7.3	7.8	15	16
22	7.32	7.53		100		80		30	0.01	0.01		28.1		7.3		15
23	7.27	7.56		96		80		28	0	0.00		27.3		6.8		15
24	7.31	7.59		98		80		28	0.01	0.01		28.1		6.8		15
25	7.53	7.61		96		78		32	0.03	0.01		25.7		7.8		14
26	7.46	7.55		100		82		34	0.01	0.02		26.5		8.3		15
27	7.33	7.59		98		78		30	0.01	0.01		27.3		7.3		14
28	7.32	7.57	96	96	76	78	28	28	0.02	0.00	27.3	27.3	6.8	6.8	14	15
29	7.29	7.55		100		82		30	0.02	0.02		28.1		7.3		14
30	7.27	7.53		102		80		30	0.01	0.01		28.9		7.3		15
31	7.39	7.57		98		82		26	0.01	0.01		28.9		6.3		15
AVG	7.35	7.53		99		79		30		0.01		27.6		7.3		15
MAX	7.53	7.61		104		84		36		0.02		28.9		8.7		17.0
MIN	7.27	7.39		94		74		24		0.00		25.7		5.8		14.0

WSSN 2310 **Jul-20**

DATE	Total Coliform							Standard Plate Count		Conductivity (mS)	Temp deg.C	Color		Odor	
	Plant Tap														
			Dort	3MG Well	Sta II	Lab Tap		Raw	Tap			Raw	Tap	Raw	Tap
	60	61	62	63	64	65	66	67	68	69		71	72	73	74
1						2/0				0.23	15.1				
2						2/0				0.23	15.2				
3						2/0				0.23	14.6				
4						2/0				0.22	16.4				
5						2/0				0.23	15.6				
6						2/0				0.22	16.0				
7						2/0				0.22	16.3				
8						2/0				0.22	16.6				
9						2/0				0.23	17.0				
10						2/0				0.23	17.5				
11						2/0				0.22	17.5				
12						2/0				0.23	17.6				
13						2/0				0.22	16.9				
14						2/0				0.22	16.9				
15						2/0				0.22	17.0				
16						2/0				0.23	17.2				
17						2/0				0.22	17.4				
18						2/0				0.23	18.3				
19						2/0				0.23	19.6				
20						2/0				0.23	18.7				
21						2/0				0.23	19.1				
22						2/0				0.23	19.2				
23						2/0				0.23	19.3				
24						2/0				0.23	18.7				
25						2/0				0.23	18.5				
26						2/0				0.23	17.8				
27						2/0				0.22	18.6				
28						2/0				0.23	18.5				
29						2/0				0.23	19.2				
30						2/0				0.23	20.0				
31						2/0				0.23	20.1				
AVG										0.23	17.6				
MAX										0.23	20.1				
MIN										0.22	14.6				

Distribution System Monitoring **WSSN 2310** **Jul-20**

DATE	Free Chlorine Residual at Bacteriological Monitoring Stations mg/l																								Chlorine only sites mg/l					
	1	2	3	4	CS	6	7	8	9	10	WR	12	13	14	15	16	17	18	19	20	26	27	28	29	30	21	22	23	24	25	Number of Samples
1													1.48	1.51	1.34	1.37	1.32		1.32					1.59		1.32		1.78			9
2	1.21			1.45	1.78						1.44									1.20		1.75			1.49						7
3																1.33	1.49		1.33												3
4																															0
5																															0
6	0.78	1.27		1.50	1.01	1.49												0.82					1.27							0.98	8
7								1.49	0.96	1.51	1.32	0.82	1.61								1.37						1.00				8
8														1.57	1.31	1.55	1.58		1.39					1.49		1.31		1.69	0.92		9
9	1.23			1.42	1.72						1.34									0.42		1.50			1.52						7
10																1.44	1.56		1.28												3
11																															0
12																															0
13	1.13	1.54		1.38	1.19	1.33												0.93					1.51							1.09	8
14								1.47	1.05	1.31	1.38	0.92	1.59								1.43						0.97				8
15														1.50	1.33	1.42	1.52		1.04					1.49		1.19		1.76	1.05		9
16	1.07			1.47	1.49						1.29									1.14		1.52			1.36						7
17																1.46	1.45		1.27												3
18																															0
19																															0
20	1.19			1.43	1.15	1.33												0.95					0.66							1.03	7
21								1.56	0.82	1.38	1.10	0.56	1.61								1.38						0.99				8
22														1.55	1.08	1.32	1.51		1.24					1.43		1.00		1.70	0.99		9
23	1.17			1.41	1.41						1.23									1.04		1.61			1.23						7
24																1.36	1.56		1.07												3
25																															0
26																															0
27	0.93			1.37	1.42	1.41												1.04					1.28							0.88	7
28								1.50	0.95	1.02	1.41	0.79	1.62								1.35						1.01				8
29														1.42	1.23	1.23	1.57		1.31					1.50		0.90		1.61	1.10		9
30	1.04			1.39	1.50						1.30									1.13		1.58			1.34						7
31																1.40	1.52		1.26												3

Monthly Cl_2 Avg.	**1.32**
Total Samples	**135**

Distribution System Monitoring **WSSN 2310** **Jul-20**

DATE	Total Chlorine Residual at Bacteriological Monitoring Stations mg/l																								Chlorine only sites mg/l					
	1	2	3	4	CS	6	7	8	9	10	WR	12	13	14	15	16	17	18	19	20	26	27	28	29	30	21	22	23	24	25	Number of Samples
1													1.87	1.67	1.62	1.63	1.45		1.48					1.71		1.48		1.90			9
2	1.29			1.62	1.96						1.46									1.37		1.90			1.73						7
3																1.50	1.65		1.46												3
4																															0
5																															0
6	1.28	1.48		1.50	1.64	1.73												1.32					1.44							1.20	8
7								1.64	1.08	1.61	1.49	1.19	1.83								1.55						1.17				8
8														1.78	1.54	1.67	1.74		1.49					1.71		1.44		1.82	1.15		9
9	1.37			1.55	1.84						1.51									1.28		1.72			1.69						7
10																1.50	1.64		1.46												3
11																															0
12																															0
13	1.21	1.74		1.49	1.64	1.68												1.19					1.59							1.15	8
14								1.68	1.13	1.53	1.50	1.16	1.77								1.56						1.14				8
15														1.65	1.56	1.55	1.58		1.44					1.66		1.35		1.92	1.11		9
16	1.17			1.57	1.58						1.43									1.25		1.83			1.74						7
17																1.62	1.54		1.47												3
18																															0
19																															0
20	1.48			1.60	1.53	1.52												1.15					0.77							1.21	7
21								1.73	1.13	1.63	1.57	0.72	1.79								1.56						1.20				8
22														1.78	1.37	1.61	1.71		1.40					1.70		1.20		1.85	1.23		9
23	1.43			1.63	1.65						1.48									1.21		1.80			1.75						7
24																1.58	1.75		1.45												3
25																															0
26																															0
27	1.21			1.60	1.58	1.65												1.24					1.58							1.14	7
28								1.65	1.15	1.63	1.55	1.02	1.82								1.55						1.19				8
29														1.57	1.38	1.49	1.81		1.52					1.64		1.00		1.74	1.25		9
30	1.17			1.51	1.90						1.48									1.26		1.82			1.62						7
31																1.62	1.67		1.38												3

Monthly Cl_2 Avg.	**1.53**
Total Samples	**135**

ROUTINE POSITIVE DISTRIBUTION SAMPLES

Jul-20

Total number of positive routine samples:				Total Coliform: 0			E.coli Bacteria: 0		Chlorine Residual (mg/L)	
Date	Monitoring Station	Total Coliform	E.coli Bacteria	Date	Time	Retest of Station, Upstream & Downstream	Total Coliform	E.coli Bacteria	Free	Total

Total number of routine distribution samples analyzed:	135
Total number of routine distribution samples required:	100