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

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

2310

DEQ
RESOURCE MANAGEMENT DIVISION
JAN 10 2012
LANSING DISTRICT

MONTHLY OPERATION REPORT OF WATER TREATMENT PLANT

ENTERED

For Month of December 2011

Flint Water Plant
NAME OF WATER SYSTEM

2310
WSSN

Genesee
COUNTY

Michael Glasgow
CERTIFIED OPERATOR

F-1R S-3
CLASSIFICATION

Michael Glasgow
SIGNATURE OF APPROPRIATE OFFICIAL

TREATMENT RATE AND FILTER DATA

1. Treatment Rate, Maximum____ Million Gallons Per Day
2. Treatment Rate, Approved Rated Plant Capacity____Million Gallons per Day
3. Average Filter Run___ Hours, Average Head Loss _____Feet
4. Average Filtration Rate _____ Gallons per Square Ft. per Minute
5. Maximum Filtration Rate _____ Gallons per Square Ft. per Minute
6. Average Wash Water Use _____ percent of Treated Water

CHEMICAL DATA

7. Chlorine on hand _____ lbs.: Estimated supply _____ days
8. Lime (CaO) on hand _____ lbs.: Estimated supply _____ days
9. Alum (Al3+) on hand _____ lbs.: Estimated supply _____ days
10. Cost of All Chemicals per Million Gallons _____
11. Total Power Cost per Million Gallons _____

Remarks:

Submit to: Mike Prysby, P.E.
MDEQ-Water Division-Lansing District
P.O. Box 30242
Lansing, MI 48909

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

MP

Flow & Turbidity **WSSN 2310** **Dec-11**

DATE	Total Million Gallons Purchased	Million Gallons to County	Million Gallons to Flint			Ferric Chloride as Fe 3+ mg/l	Turbidity, NTU units						
							Raw				Plant Tap		
							# of Samples	Avg.	Max		# of Samples	Avg.	Max
	1	1A	1B	4	5	6	7	8	9	10	11	12	13
1	21.17	8.91	12.26								3	0.09	0.10
2	21.37	9.25	12.12								3	0.08	0.09
3	20.46	9.22	11.24								3	0.07	0.07
4	21.15	9.27	11.88								3	0.07	0.08
5	20.37	8.83	11.54								3	0.07	0.08
6	21.94	8.89	13.06								3	0.08	0.08
7	23.04	10.03	13.01								3	0.09	0.09
8	22.81	10.49	12.32								3	0.12	0.15
9	22.74	10.74	12.00								3	0.11	0.16
10	21.98	10.68	11.30								3	0.07	0.08
11	21.55	11.49	10.06								3	0.08	0.09
12	22.01	10.12	11.89								3	0.08	0.09
13	22.57	10.64	11.93								3	0.07	0.09
14	24.80	12.34	12.46								3	0.09	0.09
15	23.46	10.13	13.33								3	0.15	0.17
16	21.48	9.51	11.97								3	0.11	0.12
17	22.24	10.73	11.51								3	0.07	0.07
18	20.62	10.68	9.94								3	0.12	0.15
19	20.18	7.88	12.30								3	0.09	0.10
20	18.60	7.72	10.88								3	0.09	0.12
21	19.13	8.24	10.89								3	0.09	0.10
22	21.32	10.28	11.04								3	0.06	0.07
23	20.77	10.81	9.96								3	0.07	0.08
24	23.02	11.45	11.57								3	0.07	0.07
25	22.12	11.08	11.04								3	0.09	0.11
26	20.80	11.79	9.01								3	0.09	0.11
27	21.75	11.42	10.33								3	0.08	0.09
28	21.52	11.00	10.53								3	0.07	0.08
29	20.87	10.12	10.75								3	0.07	0.07
30	20.70	10.40	10.30								3	0.06	0.07
31	22.08	11.42	10.66								3	0.07	0.07
AVG	21.57	10.18	11.39								3	0.08	0.09
MAX	24.80	12.34	13.33								3	0.15	0.17
MIN	18.60	7.72	9.01								3	0.06	0.07
Total	668.63	315.56	353.06										

Flouride / Chlorination & Residuals **WSSN 2310** **Dec-11**

DATE	Fluoride Applied F- mg/l	Fluoride Analyses mg/l			Chlorine App. Mg/l			Chlorine Residual mg/l							
						Post Chlorine lbs/day	Post Chlorine mg/L	B&P	Sta II	Dort	3MG Well		Tap		
		Raw	Tap	Dist				Free	Free	Free	Free			Free	
	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1			0.70					0.9	0.9	0.5	0.4			0.8	
2			0.75					0.8	0.7	0.4	0.5			0.7	
3			0.62					0.8	0.9	0.4	0.5			0.8	
4			0.60					0.9	0.7	0.4	0.4			0.7	
5			0.68					0.8	0.8	0.4	0.4			0.7	
6			0.72					0.8	1.0	0.5	0.5			0.8	
7			0.70					0.7	0.7	0.5	0.5			0.7	
8			0.70					0.8	0.7	0.6	0.6			0.8	
9			0.67					0.8	0.8	0.6	0.7			0.7	
10			0.69					0.7	0.8	0.6	0.6			0.7	
11			0.71					0.7	0.7	0.6	0.6			0.6	
12			0.66					0.7	0.8	0.6	0.7			0.7	
13			0.66					0.8	0.7	0.6	0.6			0.8	
14			0.73					0.8	0.8	0.7	0.7			0.8	
15			0.71					0.9	0.8	0.7	0.7			0.8	
16			0.69					0.7	0.8	0.7	0.8			0.8	
17			0.73					0.8	0.8	0.6	0.8			0.8	
18			0.67					0.9	0.8	0.7	0.7			0.7	
19			0.68					0.8	0.9	0.7	0.7			0.7	
20			0.74					0.8	0.9	0.7	0.7			0.8	
21			0.72					0.8	0.7	0.6	0.7			0.8	
22			0.66					0.7	0.7	0.5	0.6			0.7	
23			0.69					0.7	0.7	0.6	0.7			0.7	
24			0.63					0.8	0.8	0.7	0.7			0.7	
25			0.67					0.8	0.8	0.7	0.6			0.7	
26			0.60					0.8	0.9	0.7	0.7			0.6	
27			0.61					0.8	0.8	0.7	0.7			0.8	
28			0.57					0.8	0.7	0.8	0.8			0.7	
29			0.57					0.8	0.8	0.8	0.8			0.8	
30			0.57					0.7	0.7	0.7	0.7			0.7	
31			0.57					0.7	0.9	0.8	0.7			0.7	
AVG			0.67					0.8	0.8	0.6	0.6			0.7	
MAX			0.75					0.9	1.0	0.8	0.8			0.8	
MIN			0.57					0.7	0.7	0.4	0.4			0.6	

Chemical Analyses **WSSN 2310** **Dec-11**

DATE	pH		Total Hardness (mg/L $CaCO_3$)		Total Alkalinity (mg/L $CaCO_3$)		Non-Carbonate Hardness (mg/L $CaCO_3$)				Calcium (mg/l Ca 2+)		Magnesium (mg/l Mg 2+)		Chloride as (mg/l Cl -)	
	Raw	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	39	40	41	42	43	44
1		7.40		96		71		25				29.7		5.3		
2		7.39		96		69		27				29.7		5.3		
3		7.42		96		72		24				28.9		5.8		
4		7.43		98		69		29				28.9		6.3		
5		7.60		98		67		31				29.7		5.8		
6		7.37		94		69		25				28.9		5.3		
7		7.30		104		68		36				28.9		7.8		
8		7.26		96		69		27				28.1		6.3		
9		7.20		96		68		28				28.9		5.8		
10		7.26		96		73		23				29.7		5.3		
11		7.36		96		72		24				26.5		7.3		
12		7.33		90		71		19				24.0		7.3		
13		7.22		96		68		28				28.9		5.8		
14		7.26		100		67		33				28.1		7.3		
15		7.36		100		69		31				28.9		6.8		
16		7.27		94		69		25				28.1		5.8		
17		7.22		94		69		25				28.1		5.8		
18		7.35		98		72		26				28.9		6.3		
19		7.34		98		70		28				29.7		5.8		
20		7.27		92		69		23				28.1		5.3		
21		7.29		92		66		26				27.3		5.8		
22		7.33		98		72		26				30.5		5.3		
23		7.34		98		73		25				29.7		5.8		
24		7.28		96		71		25				29.7		5.3		
25		7.34		94		71		23				24.8		7.8		
26		7.27		98		68		30				29.7		5.8		
27		7.29		96		63		33				26.5		7.3		
28		7.31		98		71		27				29.7		5.8		
29		7.28		98		68		30				29.7		5.8		
30		7.30		98		71		27				28.9		6.3		
31		7.27		98		70		28				28.9		6.3		
AVG		7.32		97		70		27				28.6		6.1		
MAX		7.60		104		73		36				30.5		7.8		
MIN		7.20		90		63		19				24.0		5.3		

Bacteriological & Physical Parameters **WSSN 2310** **Dec-11**

DATE	Total Coliform							Standard Plate Count		Wind Direction	Temp deg.C	Color		Odor	
	Plant Tap														
	B&P		Dort	3MG Well	Pump	Lab Tap		Raw	Tap			Raw	Tap	Raw	Tap
	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74
1	1/0		2/0	2/0	2/0	2/0					12.8				
2	1/0		2/0	2/0	2/0	2/0					14.1				
3	1/0		2/0	2/0	2/0	2/0					13.0				
4	1/0		2/0	2/0	2/0	2/0					13.0				
5	1/0		2/0	2/0	2/0	2/0					12.4				
6	1/0		2/0	2/0	2/0	2/0					13.5				
7	1/0		2/0	2/0	2/0	2/0					13.5				
8	1/0		2/0	2/0	2/0	2/0					13.5				
9	1/0		2/0	2/0	2/0	2/0					13.9				
10	1/0		2/0	2/0	2/0	2/0					12.9				
11	1/0		2/0	2/0	2/0	2/0					13.1				
12	1/0		2/0	2/0	2/0	2/0					14.1				
13	1/0		2/0	2/0	2/0	2/0					12.9				
14	1/0		2/0	2/0	2/0	2/0					11.8				
15	1/0		2/0	2/0	2/0	2/0			< 2		14.2				
16	1/0		2/0	2/0	2/0	2/0					12.7				
17	1/0		2/0	2/0	2/0	2/0					13.7				
18	1/0		2/0	2/0	2/0	2/0					13.1				
19	1/0		2/0	2/0	2/0	2/0					12.6				
20	1/0		2/0	2/0	2/0	2/0					12.2				
21	1/0		2/0	2/0	2/0	2/0					12.0				
22	1/0		2/0	2/0	2/0	2/0					12.9				
23	1/0		2/0	2/0	2/0	2/0					12.4				
24	1/0		2/0	2/0	2/0	2/0					12.5				
25	1/0		2/0	2/0	2/0	2/0					12.5				
26	1/0		2/0	2/0	2/0	2/0					13.1				
27	1/0		2/0	2/0	2/0	2/0					12.7				
28	1/0		2/0	2/0	2/0	2/0					11.1				
29	1/0		2/0	2/0	2/0	2/0					11.5				
30	1/0		2/0	2/0	2/0	2/0					11.0				
31	1/0		2/0	2/0	2/0	2/0					11.5				
											12.8				
											14.2				
											11.0				

Distribution System Monitoring **WSSN 2310** **Dec-11**

DATE	Free Chlorine Residual at Bacteriological Montioring Stations mg/l															
	1	2	3	4	5	6	7	8	9	10	11	CS	WR	STA II AM	STA II PM	Number of Samples
1														0.9	0.9	2
2												0.5	0.4	0.7	0.6	4
3														0.9	0.9	2
4														0.7	0.7	2
5												0.5	0.7	0.7	0.8	4
6	0.4	0.4		0.4		0.4	0.3		0.7	0.2	0.4	0.4	0.7	1.0	0.9	12
7												0.4	0.4	0.7	0.7	4
8	0.4	0.3		0.5		0.4	0.4		0.6	0.2	0.4	0.4	0.5	0.7	0.7	12
9												0.4	0.6	0.8	0.7	4
10														0.8	0.8	2
11														0.7	0.6	2
12												0.5	0.8	0.8	0.7	4
13														0.7	0.7	2
14	0.4	0.3		0.5		0.4	0.4			0.0	0.4	0.4	0.7	0.7	0.8	11
15	0.4	0.2		0.5		0.4	0.4		0.6	0.1	0.4	0.6	0.7	0.7	0.9	12
16												0.3	0.6	0.8	0.8	4
17														0.8	0.8	2
18														0.8	0.8	2
19												0.4	0.7	0.8	0.9	4
20	0.4	0.4		0.5		0.5	0.4		0.5	0.0	0.4	0.4	0.7	0.9	0.8	12
21	0.5	0.3		0.5		0.5	0.4			0.0	0.4	0.4	0.6	0.7	0.7	11
22												0.4	0.6	0.7	0.7	4
23														0.7	0.7	2
24														0.8	0.8	2
25														0.8	0.8	2
26														0.8	0.9	2
27														0.8	0.7	2
28														0.7	0.7	2
29												0.4	0.7	0.7	0.9	4
30														0.7	0.7	2
31														0.9	0.9	2

Monthly Cl_2 Avg.	**0.588**
Quarterly Cl_2 Avg.	**0.567**
Yearly Cl_2 Avg.	**0.657**
Total Samples	**138**

Distribution System Monitoring **WSSN 2310** **Dec-11**

DATE	Total Chlorine Residual at Bacteriological Montioring Stations mg/l															
	1	2	3	4	5	6	7	8	9	10	11	CS	WR	STA II AM	STA II PM	Number of Samples
1														1.0	1.0	2
2												0.8	0.6	1.1	0.9	4
3														1.0	1.0	2
4														0.9	0.8	2
5												0.7	0.9	0.9	0.9	4
6	0.5	0.5		0.6		0.6	0.4		0.9	0.3	0.6	0.5	0.9	1.1	1.0	12
7												0.6	0.6	0.9	0.9	4
8	0.6	0.4		0.6		0.5	0.5		0.8	0.3	0.5	0.5	0.7	0.9	0.9	12
9												0.5	0.7	0.9	0.9	4
10														0.9	0.9	2
11														0.9	0.9	2
12												n/a	n/a	1.2	1.0	2
13														0.9	0.9	2
14	0.5	0.4		0.7		0.6	0.5			0.1	0.6	0.6	1.0	0.9	1.0	11
15	0.6	0.3		0.7		0.6	0.5		0.8	0.2	0.6	0.7	0.8	0.9	1.0	12
16												0.4	0.7	1.0	1.0	4
17														1.0	1.0	2
18														1.0	0.9	2
19												0.5	0.8	0.9	1.0	4
20	0.5	0.6		0.7		0.7	0.5		0.7	0.1	0.5	0.5	0.8	1.0	0.9	12
21	0.7	0.5		0.7		0.7	0.5			0.1	0.5	0.6	0.8	0.9	1.0	11
22												0.5	0.7	0.9	0.9	4
23														0.8	0.9	2
24														0.9	1.0	2
25														1.1	1.1	2
26														0.9	1.0	2
27														1.2	1.1	2
28														0.9	0.9	2
29												0.5	0.8	0.9	1.0	4
30														0.9	0.9	2
31														1.0	1.0	2

Monthly Cl_2 Avg.	**0.752**
Quarterly Cl_2 Avg.	**0.717**
Yearly Cl_2 Avg.	**0.742**
Total Samples	**136**

ROUTINE POSITIVE DISTRIBUTION SAMPLES

Total number of positive routine samples:				Total Coliform: 0		Fecal Coliform: 0	
Date	Monitoring Station	Total Coliform	Fecal Coliform	Date	Retest of Station, Upstream & Downstream	Total Coliform	Fecal Coliform

Total number of routine distribution samples analyzed:	**138**
Total number of routine distribution samples required:	**100**

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

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

2310

DEQ
RESOURCE MANAGEMENT DIVISION
DEC 09 2011
LANSING DISTRICT
ENTERED

MONTHLY OPERATION REPORT OF WATER TREATMENT PLANT

For Month of November 2011

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

Michael Glasgow — CERTIFIED OPERATOR
F-1R S-3 — CLASSIFICATION

Michael Glasgow
SIGNATURE OF APPROPRIATE OFFICIAL

TREATMENT RATE AND FILTER DATA

1. Treatment Rate, Maximum____ Million Gallons Per Day
2. Treatment Rate, Approved Rated Plant Capacity____Million Gallons per Day
3. Average Filter Run___ Hours, Average Head Loss _____Feet
4. Average Filtration Rate _____ Gallons per Square Ft. per Minute
5. Maximum Filtration Rate _____ Gallons per Square Ft. per Minute
6. Average Wash Water Use _____ percent of Treated Water

CHEMICAL DATA

7. Chlorine on hand _____ lbs.: Estimated supply _____ days
8. Lime (CaO) on hand _____ lbs.: Estimated supply _____ days
9. Alum (Al3+) on hand _____ lbs.: Estimated supply _____ days
10. Cost of All Chemicals per Million Gallons _____
11. Total Power Cost per Million Gallons _____

Remarks:

Submit to: Mike Prysby, P.E.
MDEQ-Water Division-Lansing District
P.O. Box 30242
Lansing, MI 48909

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

MP

Flow & Turbidity **WSSN 2310** **Nov-11**

DATE	Total Million Gallons Purchased	Million Gallons to County	Million Gallons to Flint			Ferric Chloride as Fe 3+ mg/l	Turbidity, NTU units						
							Raw				Plant Tap		
							# of Samples	Avg.	Max		# of Samples	Avg.	Max
	1	1A	1B	4	5	6	7	8	9	10	11	12	13
1	21.01	9.45	11.56								3	0.11	0.12
2	21.74	8.97	12.77								3	0.11	0.13
3	22.42	10.47	11.95								3	0.12	0.14
4	21.84	10.50	11.34								3	0.10	0.12
5	21.41	10.60	10.81								3	0.11	0.12
6	20.21	10.51	9.70								3	0.09	0.09
7	22.18	8.61	13.57								3	0.10	0.11
8	21.19	8.38	12.81								3	0.10	0.11
9	21.27	9.48	11.79								3	0.12	0.12
10	21.59	8.61	12.98								3	0.10	0.11
11	20.98	9.45	11.53								3	0.10	0.12
12	19.97	9.59	10.38								3	0.09	0.09
13	21.08	9.92	11.16								3	0.09	0.09
14	20.35	9.30	11.05								3	0.09	0.09
15	21.24	9.24	12.00								3	0.10	0.11
16	20.20	8.65	11.55								3	0.09	0.09
17	19.56	8.97	10.59								3	0.10	0.12
18	19.78	9.15	10.63								3	0.09	0.09
19	19.96	9.96	10.00								3	0.08	0.09
20	19.61	10.38	9.23								3	0.08	0.10
21	20.99	10.01	10.98								3	0.10	0.11
22	21.55	10.10	11.45								3	0.10	0.11
23	22.88	10.53	12.35								3	0.11	0.13
24	22.25	10.86	11.39								3	0.11	0.12
25	21.94	10.88	11.06								3	0.11	0.14
26	21.61	10.16	11.45								3	0.08	0.09
27	20.87	10.00	10.88								3	0.09	0.10
28	22.28	10.02	12.26								3	0.09	0.10
29	22.63	10.17	12.46								3	0.10	0.10
30	22.00	9.04	12.96								3	0.13	0.15
AVG	21.22	9.73	11.49								3	0.10	0.11
MAX	22.88	10.88	13.57								3	0.13	0.15
MIN	19.56	8.38	9.23								3	0.08	0.09
Total	636.55	291.96	344.62										

Flouride / Chlorination & Residuals **WSSN 2310** **Nov-11**

DATE	Fluoride Applied F- mg/l	Fluoride Analyses mg/l			Chlorine App. Mg/l			Chlorine Residual mg/l							
						Post Chlorine lbs/day	Post Chlorine mg/L	B&P	Sta II	Dort	3MG Well		Tap		
		Raw	Tap	Dist				Free	Free	Free	Free			Free	
	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1			0.82					0.8	0.7	0.6	0.6			0.7	
2			0.84					0.8	0.9	0.8	0.7			0.8	
3			0.84					0.8	0.7	0.7	0.7			0.7	
4			0.83					0.7	0.8	0.6	0.7			0.7	
5			0.71					0.7	0.8	0.6	0.7			0.7	
6			0.70					0.7	0.7	0.6	0.6			0.7	
7			0.62					0.7	0.6	0.6	0.6			0.6	
8			0.66					0.7	0.7	0.6	0.6			0.7	
9			0.63					0.7	0.7	0.5	0.6			0.8	
10			0.68					0.8	0.8	0.6	0.6			0.8	
11			0.68					0.8	0.8	0.5	0.6			0.7	
12			0.63					0.6	0.8	0.5	0.5			0.7	
13			0.70					0.8	0.8	0.5	0.5			0.7	
14			0.68					0.7	0.8	0.4	0.5			0.8	
15			0.69					0.7	0.7	0.5	0.6			0.6	
16			0.64					0.6	0.7	0.5	0.5			0.6	
17			0.68					0.8	0.7	0.5	0.6			0.7	
18			0.71					0.8	0.7	0.5	0.6			0.7	
19			0.69					0.8	0.8	0.5	0.7			0.8	
20			0.68					0.7	0.7	0.7	0.6			0.7	
21			0.63					0.8	0.8	0.7	0.6			0.6	
22			0.68					0.8	0.7	0.6	0.6			0.8	
23			0.61					0.9	0.8	0.6	0.7			0.7	
24			0.62					0.8	0.8	0.7	0.6			0.7	
25			0.57					0.6	0.8	0.6	0.6			0.7	
26			0.63					0.7	0.8	0.6	0.5			0.6	
27			0.61					0.8	0.7	0.6	0.6			0.7	
28			0.61					0.9	0.9	0.6	0.6			0.7	
29			0.69					0.8	0.8	0.5	0.5			0.8	
30			0.70					0.9	0.9	0.5	0.4			0.8	
AVG			0.68					0.8	0.8	0.6	0.6			0.7	
MAX			0.84					0.9	0.9	0.8	0.7			0.8	
MIN			0.57					0.6	0.6	0.4	0.4			0.6	

Chemical Analyses **WSSN 2310** **Nov-11**

DATE	pH		Total Hardness (mg/L $CaCO_3$)		Total Alkalinity (mg/L $CaCO_3$)		Non-Carbonate Hardness (mg/L $CaCO_3$)				Calcium (mg/l Ca 2+)		Magnesium (mg/l Mg 2+)		Chloride as (mg/l Cl -)	
	Raw	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	39	40	41	42	43	44
1		7.34		98		73		25				28.9		6.3		
2		7.20		98		68		30				28.9		6.3		
3		7.22		96		70		26				28.9		5.8		
4		7.20		96		69		27				28.9		5.8		
5		7.25		96		69		27				28.9		5.8		
6		7.23		98		72		26				28.9		6.3		
7		7.39		98		72		26				28.9		6.3		
8		7.21		100		70		30				28.9		6.8		
9		7.26		96		69		27				28.9		5.8		
10		7.27		98		70		28				28.1		6.8		
11		7.29		100		72		28				28.9		6.8		
12		7.14		98		73		25				28.9		6.3		
13		7.30		98		72		26				28.1		6.8		
14		7.29		96		68		28				28.1		6.3		
15		7.25		98		71		27				28.9		6.3		
16		7.28		98		74		24				30.5		5.3		
17		7.22		96		72		24				27.3		6.8		
18		7.28		98		71		27				28.9		6.3		
19		7.24		94		71		23				29.7		4.9		
20		7.17		98		71		27				29.7		5.8		
21		7.25		98		68		30				28.9		6.3		
22		7.30		96		70		26				28.1		6.3		
23		7.45		96		71		25				28.1		6.3		
24		7.30		98		71		27				28.9		6.3		
25		7.32		98		72		26				28.9		6.3		
26		7.31		96		72		24				28.9		5.8		
27		7.34		96		69		27				28.9		5.8		
28		7.42		98		72		26				29.7		5.8		
29		7.47		98		73		25				28.9		6.3		
30		7.38		98		73		25				28.1		6.8		
AVG		7.29		97		71		26				28.8		6.2		
MAX		7.47		100		74		30				30.5		6.8		
MIN		7.14		94		68		23				27.3		4.9		

Bacteriological & Physical Parameters **WSSN 2310** **Nov-11**

DATE	Total Coliform							Standard Plate Count		Wind Direction	Temp deg.C	Color		Odor	
	Plant Tap														
	B&P		Dort	3MG Well	Pump	Lab Tap		Raw	Tap			Raw	Tap	Raw	Tap
	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74
1	1/0		2/0	2/0	2/0	2/0					17.8				
2	1/0		2/0	2/0	2/0	2/0			2		18.5				
3	1/0		2/0	2/0	2/0	2/0					17.6				
4	1/0		2/0	2/0	2/0	2/0					18.3				
5	1/0		2/0	2/0	2/0	2/0					18.3				
6	1/0		2/0	2/0	2/0	2/0					18.0				
7	1/0		2/0	2/0	2/0	2/0					17.5				
8	1/0		2/0	2/0	2/0	2/0					18.7				
9	1/0		2/0	2/0	2/0	2/0					17.4				
10	1/0		2/0	2/0	2/0	2/0					16.8				
11	1/0		2/0	2/0	2/0	2/0					18.1				
12	1/0		2/0	2/0	2/0	2/0					16.9				
13	1/0		2/0	2/0	2/0	2/0					17.7				
14	1/0		2/0	2/0	2/0	2/0					18.1				
15	1/0		2/0	2/0	2/0	2/0					17.7				
16	1/0		2/0	2/0	2/0	2/0					15.5				
17	1/0		2/0	2/0	2/0	2/0					15.9				
18	1/0		2/0	2/0	2/0	2/0					15.8				
19	1/0		2/0	2/0	2/0	2/0					15.9				
20	1/0		2/0	2/0	2/0	2/0					15.7				
21	1/0		2/0	2/0	2/0	2/0					15.3				
22	1/0		2/0	2/0	2/0	2/0					15.6				
23	1/0		2/0	2/0	2/0	2/0					14.0				
24	1/0		2/0	2/0	2/0	2/0					14.8				
25	1/0		2/0	2/0	2/0	2/0					14.5				
26	1/0		2/0	2/0	2/0	2/0					15.7				
27	1/0		2/0	2/0	2/0	2/0					15.9				
28	1/0		2/0	2/0	2/0	2/0					14.1				
29	1/0		2/0	2/0	2/0	2/0					13.8				
30	1/0		2/0	2/0	2/0	2/0					14.1				
											16.5				
											18.7				
											13.8				

Distribution System Monitoring **WSSN 2310** **Nov-11**

DATE	Free Chlorine Residual at Bacteriological Montioring Stations mg/l															
	1	2	3	4	5	6	7	8	9	10	11	CS	WR	STA II AM	STA II PM	Number of Samples
1												0.3	0.4	0.7	0.7	4
2		0.3		0.3		0.3	0.4		0.7	0.0	0.2	0.3	0.6	0.9	0.9	11
3	0.3	0.3		0.6		0.4	0.3		0.6	0.0	0.4	0.4	0.6	0.7	0.7	12
4												0.3	0.6	0.8	0.7	4
5														0.8	0.8	2
6														0.7	0.7	2
7												0.4	0.4	0.6	0.6	4
8	0.5	0.3		0.3		0.3	0.3		0.3	0.1	0.3	0.3	0.5	0.7	0.7	12
9														0.7	0.7	2
10	0.4	0.2		0.3		0.4	0.4			0.2	0.4	0.4	0.7	0.7	0.8	11
11												0.3	0.6	0.7	0.8	4
12														0.7	0.8	2
13														0.8	0.7	2
14												0.4	0.5	0.8	0.7	4
15														0.6	0.8	2
16						0.3	0.2		0.4	0.1				0.7	0.6	6
17	0.3	0.3		0.3							0.3	0.3	0.4	0.7	0.7	8
18												0.3	0.4	0.7	0.7	4
19														0.8	0.8	2
20														0.7	0.7	2
21												0.4	0.5	0.8	0.7	4
22	0.3	0.4		0.4		0.3	0.3		0.4	0.1	0.4	0.2	0.5	0.7	0.6	12
23												0.2	0.4	0.8	0.7	4
24														0.7	0.9	2
25														0.8	0.7	2
26														0.7	0.8	2
27														0.7	0.7	2
28												0.3	0.5	0.9	0.8	4
29														0.7	0.8	2
30		0.5		0.6		0.6	0.6		0.8	0.2	0.6			0.9	0.9	9

Monthly Cl_2 Avg.	**0.527**
Quarterly Cl_2 Avg.	**0.544**
Yearly Cl_2 Avg.	**0.672**
Total Samples	**143**

Distribution System Monitoring **WSSN 2310** **Nov-11**

DATE	Total Chlorine Residual at Bacteriological Montioring Stations mg/l															
	1	2	3	4	5	6	7	8	9	10	11	CS	WR	STA II AM	STA II PM	Number of Samples
1												0.5	0.6	0.9	0.9	4
2		0.4		0.4		0.4	0.5		0.8	0.1	0.4	0.4	0.8	1.0	1.0	11
3	0.4	0.4		0.7		0.5	0.4		0.8	0.1	0.5	0.5	0.7	0.9	0.9	12
4												0.4	0.7	0.9	0.9	4
5														0.9	1.0	2
6														0.8	0.8	2
7												0.5	0.6	0.8	0.8	4
8	0.7	0.4		0.4		0.4	0.4		0.4	0.2	0.4	0.4	0.7	0.9	0.9	12
9														0.9	0.9	2
10	0.5	0.3		0.4		0.5	0.5			0.3	0.5	0.5	0.9	0.9	0.9	11
11												0.4	0.8	0.9	1.0	4
12														0.9	0.9	2
13														0.9	0.9	2
14												0.5	0.7	0.9	0.8	4
15														0.8	0.9	2
16						0.4	0.3		0.5	0.2				0.8	0.7	6
17	0.4	0.4		0.4							0.4	0.4	0.5	0.8	0.8	8
18												0.4	0.5	0.9	0.9	4
19														0.9	0.9	2
20														0.9	0.9	2
21												0.5	0.7	0.9	0.8	4
22	0.4	0.5		0.5		0.4	0.4		0.5	0.2	0.5	0.3	0.7	0.8	0.8	12
23												0.3	0.5	0.9	0.8	4
24														0.9	1.0	2
25														0.9	0.9	2
26														0.9	0.9	2
27														0.9	0.9	2
28												0.4	0.7	1.0	1.0	4
29														0.9	1.0	2
30		0.6		0.7		0.8	0.8		1.0	0.3	0.8			1.0	1.0	9

Monthly Cl_2 Avg.	**0.661**
Quarterly Cl_2 Avg.	**0.686**
Yearly Cl_2 Avg.	**0.757**
Total Samples	**143**

ROUTINE POSITIVE DISTRIBUTION SAMPLES

Total number of positive routine samples:				Total Coliform: 0		Fecal Coliform: 0	
Date	Monitoring Station	Total Coliform	Fecal Coliform	Date	Retest of Station, Upstream & Downstream	Total Coliform	Fecal Coliform
Total number of routine distribution samples analyzed:				**143**			
Total number of routine distribution samples required:				**100**			

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

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

ENTERED
2310

DEQ
RESOURCE MANAGEMENT DIVISION
NOV 10 2011
LANSING DISTRICT

MONTHLY OPERATION REPORT OF WATER TREATMENT PLANT

For Month of October 2011

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

Michael Glasgow — CERTIFIED OPERATOR
F-1R S-3 — CLASSIFICATION

Michael Glasgow
SIGNATURE OF APPROPRIATE OFFICIAL

TREATMENT RATE AND FILTER DATA

1. Treatment Rate, Maximum____ Million Gallons Per Day
2. Treatment Rate, Approved Rated Plant Capacity____Million Gallons per Day
3. Average Filter Run___ Hours, Average Head Loss _____Feet
4. Average Filtration Rate _____ Gallons per Square Ft. per Minute
5. Maximum Filtration Rate _____ Gallons per Square Ft. per Minute
6. Average Wash Water Use _____ percent of Treated Water

CHEMICAL DATA

7. Chlorine on hand _____ lbs.: Estimated supply _____ days
8. Lime (CaO) on hand _____ lbs.: Estimated supply _____ days
9. Alum (Al3+) on hand _____ lbs.: Estimated supply _____ days
10. Cost of All Chemicals per Million Gallons _____
11. Total Power Cost per Million Gallons _____

Remarks:

Submit to: Mike Prysby, P.E.
MDEQ-Water Division-Lansing District
P.O. Box 30242
Lansing, MI 48909

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

NP

Flow & Turbidity **WSSN 2310** **Oct-11**

DATE	Total Million Gallons Purchased	Million Gallons to County	Million Gallons to Flint			Ferric Chloride as Fe 3+ mg/l	Turbidity, NTU units						
							Raw				Plant Tap		
							# of Samples	Avg.	Max		# of Samples	Avg.	Max
	1	1A	1B	4	5	6	7	8	9	10	11	12	13
1	23.19	11.07	12.12								3	0.10	0.10
2	22.96	10.98	11.98								3	0.10	0.10
3	23.05	10.80	12.25								3	0.11	0.13
4	21.84	10.91	10.93								3	0.09	0.10
5	24.32	11.13	13.19								3	0.10	0.11
6	23.30	10.58	12.72								3	0.08	0.09
7	23.08	10.92	12.16								3	0.11	0.12
8	23.56	11.83	11.73								3	0.09	0.09
9	24.08	12.27	11.81								3	0.09	0.09
10	24.62	11.91	12.71								3	0.09	0.10
11	24.26	10.55	13.71								3	0.11	0.12
12	22.42	9.51	12.91								3	0.11	0.12
13	22.06	9.79	12.27								3	0.09	0.10
14	22.01	10.00	12.10								3	0.08	0.08
15	21.00	10.49	10.51								3	0.08	0.08
16	20.55	10.53	10.02								3	0.07	0.08
17	20.24	9.92	10.32								3	0.08	0.09
18	20.77	9.87	10.90								2	0.08	0.08
19	21.87	10.07	11.80								3	0.08	0.09
20	22.71	10.89	11.82								3	0.09	0.09
21	23.72	10.33	13.39								3	0.16	0.17
22	21.90	11.46	10.44								3	0.13	0.14
23	20.02	11.11	8.91								3	0.12	0.14
24	20.98	10.05	10.93								3	0.10	0.12
25	22.65	9.97	12.68								3	0.10	0.11
26	21.93	9.61	12.32								3	0.10	0.11
27	21.43	9.52	11.91								3	0.11	0.11
28	20.82	9.65	11.17								3	0.11	0.14
29	21.07	10.17	10.90								3	0.10	0.11
30	19.36	11.66	7.70								3	0.10	0.10
31	22.11	10.00	12.12								3	0.11	0.13
AVG	22.19	10.57	11.63								3	0.10	0.11
MAX	24.62	12.27	13.71								3	0.16	0.17
MIN	19.36	9.51	7.70								2	0.07	0.08
Total	687.86	327.55	360.42										

Flouride / Chlorination & Residuals **WSSN 2310** **Oct-11**

DATE	Fluoride Applied F- mg/l	Fluoride Analyses mg/l			Chlorine App. Mg/l			Chlorine Residual mg/l							
						Post Chlorine lbs/day	Post Chlorine mg/L	B&P	Sta II	Dort	3MG Well		Tap		
		Raw	Tap	Dist				Free	Free	Free	Free			Free	
	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1			0.92					0.9	0.9	0.7	0.7			0.7	
2			0.86					0.9	0.9	0.9	0.8			0.8	
3			0.87					0.9	0.9	0.8	0.8			0.8	
4			0.85					0.8	1.0	0.8	0.7			0.7	
5			0.86					0.9	0.9	0.8	0.8			0.8	
6			0.82					0.9	1.0	0.8	0.8			0.9	
7			0.84					0.9	0.9	0.8	0.8			0.8	
8			0.87					0.8	0.8	0.8	0.8			0.8	
9			0.84					0.7	0.8	0.7	0.7			0.6	
10			0.81					0.8	0.7	0.7	0.7			0.6	
11			0.81					0.8	0.8	0.7	0.7			0.7	
12			0.84					0.7	0.7	0.7	0.8			0.6	
13			0.88					0.8	0.7	0.7	0.7			0.7	
14			0.86					0.6	0.7	0.5	0.6			0.6	
15			0.85					0.8	0.7	0.6	0.7			0.7	
16			0.82					0.6	0.6	0.5	0.6			0.6	
17			0.82					0.8	0.7	0.6	0.7			0.6	
18			0.81					0.9	0.6	0.6	0.6			0.7	
19			0.78					0.8	0.6	0.6	0.6			0.7	
20			0.79					0.9	0.8	0.6	0.6			0.7	
21			0.77					0.8	0.7	0.6	0.6			0.6	
22			0.78					0.8	0.7	0.6	0.7			0.6	
23			0.75					0.8	0.7	0.7	0.7			0.6	
24			0.77					0.8	0.8	0.7	0.7			0.6	
25			0.77					0.8	0.7	0.6	0.7			0.7	
26			0.76					0.8	0.7	0.7	0.7			0.7	
27			0.78					0.8	0.7	0.7	0.7			0.7	
28			0.76					0.8	0.8	0.6	0.7			0.7	
29			0.83					0.8	0.8	0.7	0.7			0.7	
30			0.77					0.8	0.7	0.7	0.7			0.7	
31			0.82					0.8	0.8	0.6	0.8			0.7	
AVG			0.82					0.8	0.8	0.7	0.7			0.7	
MAX			0.92					0.9	1.0	0.9	0.8			0.9	
MIN			0.75					0.6	0.6	0.5	0.6			0.6	

Chemical Analyses **WSSN 2310** **Oct-11**

DATE	pH		Total Hardness (mg/L $CaCO_3$)		Total Alkalinity (mg/L $CaCO_3$)		Non-Carbonate Hardness (mg/L $CaCO_3$)				Calcium (mg/l Ca 2+)		Magnesium (mg/l Mg 2+)		Chloride as (mg/l Cl -)	
	Raw	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	39	40	41	42	43	44
1		7.21		98		71		27				28.9		6.3		
2		7.20		100		70		30				28.9		6.8		
3		7.32		100		71		29				29.7		6.3		
4		7.22		100		70		30				29.7		6.3		
5		7.22		100		70		30				30.5		5.8		
6		7.18		100		70		30				29.7		6.3		
7		7.16		94		68		26				27.3		6.3		
8		7.21		98		70		28				28.1		6.8		
9		7.16		100		70		30				28.9		6.8		
10		7.36		100		70		30				28.1		7.3		
11		7.25		98		71		27				28.9		6.3		
12		7.37		100		70		30				28.9		6.8		
13		7.24		100		69		31				28.9		6.8		
14		7.27		94		70		24				27.3		6.3		
15		7.22		100		72		28				29.7		6.3		
16		7.18		100		72		28				28.1		7.3		
17		7.21		102		70		32				29.7		6.8		
18		7.25		98		68		30				29.7		5.8		
19		7.25		98		69		29				29.7		5.8		
20		7.13		98		69		29				28.9		6.3		
21		7.31		98		71		27				28.9		6.3		
22		7.26		98		72		26				29.7		5.8		
23		7.19		100		73		27				28.9		6.8		
24		7.25		98		73		25				28.9		6.3		
25		7.31		98		70		28				28.9		6.3		
26		7.27		98		71		27				29.7		5.8		
27		7.23		98		70		28				28.9		6.3		
28		7.21		100		71		29				28.9		6.8		
29		7.32		98		72		26				29.7		5.8		
30		7.26		98		71		27				29.7		5.8		
31		7.31		98		69		29				28.9		6.3		
AVG		7.24		99		70		28				29.1		6.4		
MAX		7.37		102		73		32				30.5		7.3		
MIN		7.13		94		68		24				27.3		5.8		

Bacteriological & Physical Parameters **WSSN 2310** **Oct-11**

DATE	Total Coliform							Standard Plate Count		Wind Direction	Temp (deg.C)	Color		Odor	
	Plant Tap														
	B&P		Dort	3MG Well	Pump	Lab Tap		Raw	Tap			Raw	Tap	Raw	Tap
	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74
1	1/0		2/0	2/0	2/0	2/0					18.9				
2	1/0		2/0	2/0	2/0	2/0					18.4				
3	1/0		2/0	2/0	2/0	2/0					18.0				
4	1/0		2/0	2/0	2/0	2/0					17.8				
5	1/0		2/0	2/0	2/0	2/0					18.3				
6	1/0		2/0	2/0	2/0	2/0					18.2				
7	1/0		2/0	2/0	2/0	2/0					18.2				
8	1/0		2/0	2/0	2/0	2/0					17.9				
9	1/0		2/0	2/0	2/0	2/0					17.6				
10	1/0		2/0	2/0	2/0	2/0					17.8				
11	1/0		2/0	2/0	2/0	2/0					17.6				
12	1/0		2/0	2/0	2/0	2/0					17.9				
13	1/0		2/0	2/0	2/0	2/0					18.3				
14	1/0		2/0	2/0	2/0	2/0					18.3				
15	1/0		2/0	2/0	2/0	2/0					18.0				
16	1/0		2/0	2/0	2/0	2/0					17.5				
17	1/0		2/0	2/0	2/0	2/0					17.6				
18	1/0		2/0	2/0	2/0	2/0			< 2		17.7				
19	1/0		2/0	2/0	2/0	2/0					17.5				
20	1/0		2/0	2/0	2/0	2/0					17.1				
21	1/0		2/0	2/0	2/0	2/0					17.0				
22	1/0		2/0	2/0	2/0	2/0					16.5				
23	1/0		2/0	2/0	2/0	2/0					17.0				
24	1/0		2/0	2/0	2/0	2/0					16.4				
25	1/0		2/0	2/0	2/0	2/0					17.9				
26	1/0		2/0	2/0	2/0	2/0					19.0				
27	1/0		2/0	2/0	2/0	2/0					18.7				
28	1/0		2/0	2/0	2/0	2/0					18.1				
29	1/0		2/0	2/0	2/0	2/0					18.4				
30	1/0		2/0	2/0	2/0	2/0					18.1				
31	1/0		2/0	2/0	2/0	2/0					17.3				
											17.8				
											19.0				
											16.4				

Distribution System Monitoring **WSSN 2310** **Oct-11**

DATE	Free Chlorine Residual at Bacteriological Montioring Stations mg/l															
	1	2	3	4	5	6	7	8	9	10	11	CS	WR	STA II AM	STA II PM	Number of Samples
1														0.8	0.9	2
2														0.9	0.9	2
3												0.7	0.7	0.9	0.9	4
4				0.5		0.4	0.4			0.2				0.9	1.0	6
5	0.3	0.5							0.6		0.2			0.9	0.9	6
6	0.4	0.3		0.4		0.5	0.3		0.7	0.1	0.3	0.6	0.5	0.9	1.0	12
7												0.4	0.6	0.9	0.9	4
8														0.8	0.7	2
9														0.7	0.8	2
10												0.4	0.4	0.7	0.7	4
11														0.8	0.8	2
12												0.4	0.4	0.7	0.7	4
13	0.4	0.3		0.3		0.3	0.3		0.5	0.2	0.2	0.4	0.4	0.6	0.7	12
14												0.3	0.4	0.7	0.6	4
15														0.7	0.7	2
16														0.7	0.5	2
17												0.3	0.4	0.7	0.7	4
18	0.3	0.2		0.2		0.2	0.2		0.6	0.1	0.2	0.3	0.4	0.6	0.6	12
19												0.3	0.5	0.6	0.6	4
20	0.4	0.3		0.3		0.4	0.2		0.5	0.0		0.3	0.5	0.8	0.8	11
21												0.3	0.5	0.6	0.7	4
22														0.7	0.7	2
23														0.7	0.7	2
24												0.4	0.5	0.7	0.8	4
25												0.4	0.4	0.6	0.7	4
26												0.3	0.5	0.5	0.8	4
27	0.3	0.3		0.4		0.3	0.2		0.7	0.0	0.3	0.4	0.5	0.6	0.7	12
28														0.8	0.8	2
29														0.7	0.8	2
30														0.7	0.7	2
31												0.5	0.6	0.8	0.8	4

Monthly Cl_2 Avg.	**0.534**
Quarterly Cl_2 Avg.	**0.550**
Yearly Cl_2 Avg.	**0.681**
Total Samples	**143**

Distribution System Monitoring **WSSN 2310** **Oct-11**

DATE	Total Chlorine Residual at Bacteriological Montioring Stations mg/l															
	1	2	3	4	5	6	7	8	9	10	11	CS	WR	STA II AM	STA II PM	Number of Samples
1														1.0	1.1	2
2														1.0	1.1	2
3												0.9	0.9	1.0	1.1	4
4				0.8		0.6	0.7			0.3				1.1	1.1	6
5	0.5	0.6							0.8		0.3			1.1	1.1	6
6	0.5	0.4		0.5		0.6	0.4		0.9	0.2	0.4	0.7	0.7	1.1	1.1	12
7												0.5	0.8	1.1	1.1	4
8														0.9	0.9	2
9														0.9	0.9	2
10												0.5	0.6	0.9	0.9	4
11														0.9	0.9	2
12												0.5	0.6	0.9	0.9	4
13	0.5	0.4		0.4		0.4	0.4		0.7	0.3	0.3	0.5	0.6	0.8	0.9	12
14												0.5	0.5	1.1	1.0	4
15														0.9	0.8	2
16														1.1	0.9	2
17												0.5	0.6	0.9	0.9	4
18	0.4	0.3		0.3		0.3	0.3		0.8	0.2	0.3	0.5	0.6	0.8	0.8	12
19												0.4	0.7	0.8	0.8	4
20	0.5	0.4		0.4		0.6	0.3		0.6	0.1		0.4	0.7	1.0	0.9	11
21												0.4	0.7	0.8	0.9	4
22														0.9	0.9	2
23														0.8	0.8	2
24												0.5	0.7	0.9	0.9	4
25												0.6	0.5	0.8	0.8	4
26												0.5	0.7	0.7	0.9	4
27	0.4	0.4		0.5		0.4	0.3		0.8	0.1	0.4	0.6	0.7	0.8	0.8	12
28														1.0	1.0	2
29														0.9	0.9	2
30														0.9	0.9	2
31												0.6	0.8	0.9	0.9	4

Monthly Cl_2 Avg.	**0.693**
Quarterly Cl_2 Avg.	**0.693**
Yearly Cl_2 Avg.	**0.768**
Total Samples	**143**

ROUTINE POSITIVE DISTRIBUTION SAMPLES

Total number of positive routine samples:				Total Coliform: 0		Fecal Coliform: 0	
Date	Monitoring Station	Total Coliform	Fecal Coliform	Date	Retest of Station, Upstream & Downstream	Total Coliform	Fecal Coliform

Total number of routine distribution samples analyzed:	**143**
Total number of routine distribution samples required:	**100**

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

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

DEQ
RESOURCE MANAGEMENT DIVISION
OCT 11 2011
LANSING DISTRICT

2310

MONTHLY OPERATION REPORT OF WATER TREATMENT PLANT

For Month of September 2011

Flint Water Plant
NAME OF WATER SYSTEM

2310 WSSN

Genesee COUNTY

Michael Glasgow
CERTIFIED OPERATOR

F-1R S-3
CLASSIFICATION

Michael Glasgow
SIGNATURE OF APPROPRIATE OFFICIAL

TREATMENT RATE AND FILTER DATA

1. Treatment Rate, Maximum____ Million Gallons Per Day
2. Treatment Rate, Approved Rated Plant Capacity____Million Gallons per Day
3. Average Filter Run___ Hours, Average Head Loss _____Feet
4. Average Filtration Rate _____ Gallons per Square Ft. per Minute
5. Maximum Filtration Rate _____ Gallons per Square Ft. per Minute
6. Average Wash Water Use _____ percent of Treated Water

CHEMICAL DATA

7. Chlorine on hand _____ lbs.: Estimated supply _____ days
8. Lime (CaO) on hand _____ lbs.: Estimated supply _____ days
9. Alum (Al3+) on hand _____ lbs.: Estimated supply _____ days
10. Cost of All Chemicals per Million Gallons _____
11. Total Power Cost per Million Gallons _____

Remarks:

- Low distribution system chlorine residuals from the previous months prompted the continued addition of chlorine gas at the plant. Chlorine addition continued through September 20th at a dosage range of 0.7 mg/L to 0.8 mg/L.

Submit to: Mike Prysby, P.E.
MDEQ-Water Division-Lansing District
P.O. Box 30242
Lansing, MI 48909

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

MP

Flow & Turbidity **WSSN 2310** **Sep-11**

DATE	Total Million Gallons Purchased	Million Gallons to County	Million Gallons to Flint			Ferric Chloride as Fe 3+ mg/l	Turbidity, NTU units						
							Raw				Plant Tap		
							# of Samples	Avg.	Max		# of Samples	Avg.	Max
	1	1A	1B	4	5	6	7	8	9	10	11	12	13
1	25.92	12.48	13.44								3	0.13	0.13
2	27.25	12.77	14.48								3	0.14	0.14
3	26.41	12.90	13.51								3	0.15	0.16
4	25.52	11.78	13.74								3	0.12	0.13
5	22.70	11.18	11.52								3	0.11	0.12
6	23.77	11.29	12.48								3	0.11	0.11
7	25.65	12.27	13.38								3	0.13	0.14
8	25.95	11.88	14.07								3	0.17	0.19
9	24.13	10.62	13.51								3	0.15	0.15
10	23.07	10.52	12.55								3	0.14	0.15
11	23.19	10.49	12.70								3	0.12	0.13
12	23.50	11.05	12.45								3	0.14	0.16
13	25.40	11.68	13.72								3	0.15	0.17
14	25.32	12.16	13.16								3	0.15	0.18
15	25.30	12.11	13.19								3	0.15	0.16
16	24.57	11.92	12.65								3	0.15	0.16
17	22.79	11.54	11.25								3	0.12	0.12
18	23.63	11.98	11.65								3	0.12	0.12
19	22.84	10.61	12.23								3	0.11	0.12
20	22.94	9.52	13.42								3	0.11	0.11
21	22.68	9.60	13.08								3	0.10	0.10
22	23.60	10.62	12.98								3	0.11	0.12
23	25.23	13.22	12.01								3	0.11	0.12
24	25.74	14.15	11.59								3	0.12	0.13
25	25.38	13.96	11.42								3	0.11	0.12
26	23.90	11.59	12.31								3	0.12	0.13
27	23.68	10.37	13.31								3	0.12	0.12
28	23.29	10.09	13.20								3	0.09	0.09
29	23.50	10.08	13.42								3	0.10	0.11
30	23.75	10.73	13.02								3	0.10	0.11
AVG	24.35	11.51	12.85								3	0.13	0.13
MAX	27.25	14.15	14.48								3	0.17	0.19
MIN	22.68	9.52	11.25								3	0.09	0.09
Total	730.58	345.16	385.44										

Flouride / Chlorination & Residuals **WSSN 2310** **Sep-11**

DATE	Fluoride Applied F- mg/l	Fluoride Analyses mg/l			Chlorine App. Mg/l			Chlorine Residual mg/l							
						Post Chlorine lbs/day	Post Chlorine mg/L	B&P Free	Sta II Free	Dort Free	3MG Well Free		Tap	Free	
		Raw	Tap	Dist											
	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1			1.22			35	0.7	0.7	0.7	0.6	1.4			0.7	
2			1.22			40	0.8	0.8	0.7	0.6	1.4			0.7	
3			1.04			40	0.8	0.9	0.8	0.5	1.4			0.7	
4			0.98			35	0.7	0.8	0.8	0.6	1.3			0.7	
5			0.93			35	0.7	0.8	0.7	0.6	1.2			0.5	
6			1.02			35	0.7	0.8	0.7	0.5	1.3			0.5	
7			1.03			35	0.7	0.9	0.8	0.5	1.5			0.7	
8			1.05			35	0.3	0.9	0.7	0.6	1.2			0.7	
9			0.98			35	0.7	0.8	0.8	0.5	1.4			0.7	
10			1.02			35	0.7	0.8	0.8	0.5	1.5			0.8	
11			0.95			35	0.7	0.9	0.8	0.6	1.3			0.6	
12			1.00			35	0.7	0.8	0.8	0.6	1.4			1.0	
13			0.98			35	0.7	0.8	0.8	0.6	1.2			0.7	
14			1.03			35	0.7	0.8	0.7	0.6	1.3			0.9	
15			1.01			35	0.7	0.8	0.7	0.7	1.4			0.8	
16			0.97			35	0.7	0.8	0.8	0.7	1.6			0.8	
17			1.09			38	0.8	0.8	0.7	0.6	1.2			0.7	
18			1.00			40	0.8	0.8	0.8	0.6	1.4			1.0	
19			0.97			40	0.8	1.0	0.8	0.6	1.2			0.8	
20			1.01			20	0.4	0.9	0.9	0.7	1.3			0.9	
21			0.93					0.8	0.8	0.7	0.9			0.8	
22			0.91					0.9	0.7	0.7	0.6			0.8	
23			0.93					0.8	0.8	0.6	0.7			0.8	
24			0.89					0.8	0.8	0.6	0.7			0.8	
25			0.89					0.9	0.8	0.6	0.7			0.7	
26			0.88					1.0	0.8	0.7	0.7			0.7	
27			0.88					0.9	0.8	0.6	0.8			0.8	
28			0.87					0.9	0.8	0.7	0.7			0.8	
29			0.93					1.0	0.8	0.7	0.7			0.9	
30			0.94					0.8	0.9	0.7	0.8			0.8	
AVG			0.98			35	0.7	0.8	0.8	0.6	1.1			0.8	
MAX			1.22			40	0.8	1.0	0.9	0.7	1.6			1.0	
MIN			0.87			20	0.3	0.7	0.7	0.5	0.6			0.5	

Chemical Analyses **WSSN 2310** **Sep-11**

DATE	pH		Total Hardness (mg/L $CaCO_3$)		Total Alkalinity (mg/L $CaCO_3$)		Non-Carbonate Hardness (mg/L $CaCO_3$)				Calcium (mg/l Ca 2+)		Magnesium (mg/l Mg 2+)		Chloride as (mg/l Cl -)	
	Raw	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	39	40	41	42	43	44
1		7.16		96		69		27				28.1		6.3		
2		7.23		102		70		32				28.1		7.8		
3		7.11		98		73		25				28.1		6.8		
4		7.20		100		71		29				28.9		6.8		
5		7.21		98		73		25				28.1		7.3		
6		7.31		98		70		28				28.1		7.3		
7		7.23		100		68		32				28.1		7.3		
8		7.24		98		70		28				28.1		6.8		
9		7.14		98		70		28				28.1		6.8		
10		7.41		100		72		28				29.7		6.3		
11		7.08		98		72		26				28.9		6.3		
12		7.21		100		72		28				28.9		6.8		
13		7.25		98		72		26				29.7		5.8		
14		7.27		100		70		30				28.9		6.8		
15		7.29		102		70		32				29.7		6.8		
16		7.27		98		72		26				28.9		6.3		
17		7.23		100		70		30				28.1		7.3		
18		7.26		100		70		30				28.1		7.3		
19		7.33		100		71		29				28.1		7.3		
20		7.24		100		69		31				28.9		6.8		
21		7.31		100		71		29				29.7		6.3		
22		7.18		100		70		30				28.9		6.8		
23		7.27		100		70		30				29.7		6.3		
24		7.25		100		70		30				29.7		6.3		
25		7.22		98		72		26				28.1		6.8		
26		7.28		100		71		29				28.9		6.8		
27		7.29		96		68		28				29.7		5.3		
28		7.30		98		70		28				28.9		6.3		
29		7.20		100		69		31				29.7		6.3		
30		7.27		100		69		31				29.7		6.3		
AVG		7.24		99		70		29				28.8		6.7		
MAX		7.41		102		73		32				29.7		7.8		
MIN		7.08		96		68		25				28.1		5.3		

Bacteriological & Physical Parameters **WSSN 2310** **Aug-11**

DATE	Total Coliform							Standard Plate Count		Wind Direction	Temp deg.C	Color		Odor	
	Plant Tap														
	B&P		Dort	3MG Well	Pump	Lab Tap		Raw	Tap			Raw	Tap	Raw	Tap
	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74
1	1/0		2/0	2/0	2/0	2/0					21.9				
2	1/0		2/0	2/0	2/0	2/0					22.4				
3	1/0		2/0	2/0	2/0	2/0					22.0				
4	1/0		2/0	2/0	2/0	2/0					22.1				
5	1/0		2/0	2/0	2/0	2/0					22.0				
6	1/0		2/0	2/0	2/0	2/0					21.7				
7	1/0		2/0	2/0	2/0	2/0					21.2				
8	1/0		2/0	2/0	2/0	2/0					21.3				
9	1/0		2/0	2/0	2/0	2/0					21.4				
10	1/0		2/0	2/0	2/0	2/0					n/a				
11	1/0		2/0	2/0	2/0	2/0					21.5				
12	1/0		2/0	2/0	2/0	2/0					21.3				
13	1/0		2/0	2/0	2/0	2/0					21.4				
14	1/0		2/0	2/0	2/0	2/0					20.9				
15	1/0		2/0	2/0	2/0	2/0		< 2			20.1				
16	1/0		2/0	2/0	2/0	2/0					20.8				
17	1/0		2/0	2/0	2/0	2/0					20.6				
18	1/0		2/0	2/0	2/0	2/0					20.6				
19	1/0		2/0	2/0	2/0	2/0					20.6				
20	1/0		2/0	2/0	2/0	2/0					20.5				
21	1/0		2/0	2/0	2/0	2/0					20.3				
22	1/0		2/0	2/0	2/0	2/0					20.4				
23	1/0		2/0	2/0	2/0	2/0					20.4				
24	1/0		2/0	2/0	2/0	2/0					20.2				
25	1/0		2/0	2/0	2/0	2/0					20.0				
26	1/0		2/0	2/0	2/0	2/0					20.0				
27	1/0		2/0	2/0	2/0	2/0					20.1				
28	1/0		2/0	2/0	2/0	2/0					19.9				
29	1/0		2/0	2/0	2/0	2/0					19.7				
30	1/0		2/0	2/0	2/0	2/0					19.5				
											20.9				
											22.4				
											19.5				

Distribution System Monitoring **WSSN 2310** **Aug-11**

DATE	Free Chlorine Residual at Bacteriological Montioring Stations mg/l															
	1	2	3	4	5	6	7	8	9	10	11	CS	WR	STA II AM	STA II PM	Number of Samples
1	0.4	0.3		0.6		0.4	0.3		0.9	0.0	0.3	0.8	0.6	0.7	0.7	12
2												0.6	0.6	0.7	0.7	4
3														0.8	0.8	2
4														0.8	0.8	2
5														0.7	0.7	2
6														0.7	0.7	2
7												0.7	0.6	0.7	0.8	4
8												0.9	0.6	0.7	0.7	4
9	0.4	0.4				0.4	0.4		0.8	0.2	0.3	0.7	0.8	0.8	0.8	11
10														0.8	0.8	2
11														0.8	0.8	2
12												0.7	0.8	0.7	0.8	4
13														0.8	0.7	2
14	0.6	0.5		0.4		0.4	0.3			0.1	0.4	0.6	0.7	0.7	0.7	11
15	0.8	0.6		0.7		0.6	0.5		0.8	0.2	0.5	0.7	0.8	0.7	0.7	12
16														0.7	0.8	2
17														0.7	0.7	2
18														0.8	0.7	2
19												0.9	0.8	0.7	0.8	4
20	0.4	0.6		0.7		0.4	0.6		0.9	0.2	0.4	1.0	0.9	0.9	0.8	12
21												0.7	0.7	0.8	0.8	4
22		0.4		0.4		0.4	0.3		0.8	0.0	0.4	0.5	0.6	0.7	0.7	11
23												0.4	0.5	0.8	0.8	4
24														0.8	0.8	2
25														0.8	0.8	2
26												0.6	0.5	0.8	0.8	4
27												0.4	0.6	0.8	0.8	4
28												0.4	0.5	0.8	0.8	4
29	0.2	0.3		0.4		0.3	0.3		0.7	0.1	0.3	0.4	0.5	0.8	0.8	12
30												0.4	0.6	0.8	0.9	4

Monthly Cl_2 Avg.	**0.617**
Quarterly Cl_2 Avg.	**0.566**
Yearly Cl_2 Avg.	**0.687**
Total Samples	**149**

Distribution System Monitoring **WSSN 2310** **Aug-11**

DATE	Total Chlorine Residual at Bacteriological Montioring Stations mg/l															
	1	2	3	4	5	6	7	8	9	10	11	CS	WR	STA II AM	STA II PM	Number of Samples
1	0.5	0.4		0.8		0.6	0.4		1.0	0.1	0.4	0.9	0.8	0.8	0.8	12
2												0.7	0.7	0.9	0.9	4
3														0.9	0.9	2
4														1.0	1.0	2
5														0.8	0.9	2
6														0.9	0.9	2
7												0.8	0.7	0.9	0.9	4
8												1.0	0.7	0.9	0.9	4
9	0.5	0.5				0.6	0.5		1.1	0.3	0.4	0.8	0.9	0.9	1.0	11
10														0.9	0.9	2
11														1.0	1.0	2
12												0.8	1.0	0.9	1.0	4
13														1.0	0.9	2
14	0.8	0.6		0.5		0.6	0.4			0.1	0.5	0.8	0.9	0.9	0.9	11
15	0.9	0.7		1.0		0.7	0.7		0.9	0.3	0.7	0.9	1.0	0.9	0.8	12
16														0.9	1.0	2
17														0.8	0.8	2
18														0.9	0.8	2
19												1.0	1.0	0.8	0.9	4
20	0.7	0.7		0.9		0.5	0.7		1.0	0.3	0.5	1.1	1.0	1.1	1.0	12
21												0.8	0.9	0.9	0.9	4
22		0.5		0.6		0.5	0.4		0.9	0.1	0.5	0.6	0.7	0.9	0.9	11
23												0.6	0.7	1.0	1.0	4
24														1.0	1.0	2
25														1.0	1.0	2
26												0.7	0.7	0.9	0.9	4
27												0.5	0.8	1.0	1.0	4
28												0.5	0.7	0.9	1.0	4
29	0.3	0.4		0.5		0.4	0.4		0.9	0.2	0.4	0.5	0.7	0.9	0.9	12
30												0.5	0.7	1.0	1.1	4

Monthly Cl_2 Avg.	**0.761**
Quarterly Cl_2 Avg.	**0.704**
Yearly Cl_2 Avg.	**0.773**
Total Samples	**149**

FLINT
WATER PLANT & FACILITIES

ROUTINE POSITIVE DISTRIBUTION SAMPLES

Total number of positive routine samples:				Total Coliform: 0		Fecal Coliform: 0	
Date	Monitoring Station	Total Coliform	Fecal Coliform	Date	Retest of Station, Upstream & Downstream	Total Coliform	Fecal Coliform
Total number of routine distribution samples analyzed:				149			
Total number of routine distribution samples required:				100			

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

DEQ
RESOURCE MANAGEMENT DIVISION
SEP 19 2011
LANSING DISTRICT

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

2310

MONTHLY OPERATION REPORT OF WATER TREATMENT PLANT

For Month of August 2011

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

Michael Glasgow — CERTIFIED OPERATOR
F-1R S-3 — CLASSIFICATION

Michael Glasgow — SIGNATURE OF APPROPRIATE OFFICIAL

TREATMENT RATE AND FILTER DATA

1. Treatment Rate, Maximum____ Million Gallons Per Day
2. Treatment Rate, Approved Rated Plant Capacity____Million Gallons per Day
3. Average Filter Run___ Hours, Average Head Loss _____Feet
4. Average Filtration Rate _____ Gallons per Square Ft. per Minute
5. Maximum Filtration Rate _____ Gallons per Square Ft. per Minute
6. Average Wash Water Use _____ percent of Treated Water

CHEMICAL DATA

7. Chlorine on hand _____ lbs.: Estimated supply _____ days
8. Lime (CaO) on hand _____ lbs.: Estimated supply _____ days
9. Alum (Al3+) on hand _____ lbs.: Estimated supply _____ days
10. Cost of All Chemicals per Million Gallons _____
11. Total Power Cost per Million Gallons _____

Remarks:

- Low distribution system chlorine residuals from the previous month prompted the addition of chlorine gas at the plant. Chlorine addition started on August 3rd at a dosage range of 0.8 to 1.2 mg/L and continued through the month. This resulted in a 1.5 mg/L free chlorine residual leaving the plant.
- After two weeks of chlorine addition at the plant the Cedar Street Reservoir residuals were still low (0.3 mg/L free) as was the surrounding distribution system. Chlorine (calcium hypochlorite) was added at the Cedar Street Reservoir from August 22nd through the 25th while the reservoir was filling. The following week a series of hydrants were flushed in the area, which has shown a dramatic improvement with residuals in the area.
- Since additional chlorine was introduced to the water supply, our 3rd quarter Disinfection By-Product monitoring will be conducted in early September.

Submit to: Mike Prysby, P.E.
MDEQ-Water Division-Lansing District
P.O. Box 30242
Lansing, MI 48909

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

Flow & Turbidity **WSSN 2310** **Aug-11**

DATE	Total Million Gallons Purchased	Million Gallons to County	Million Gallons to Flint			Ferric Chloride as Fe 3+ mg/l	Turbidity, NTU units						
							Raw				Plant Tap		
							# of Samples	Avg.	Max		# of Samples	Avg.	Max
	1	1A	1B	4	5	6	7	8	9	10	11	12	13
1	27.04	13.03	14.01								3	0.15	0.20
2	28.90	14.56	14.34								3	0.18	0.28
3	27.12	13.55	13.57								3	0.13	0.14
4	27.64	12.89	14.75								3	0.11	0.13
5	29.04	13.37	15.67								3	0.15	0.18
6	26.83	13.99	12.84								3	0.10	0.11
7	25.54	14.87	10.67								3	0.09	0.09
8	26.77	13.49	13.28								3	0.10	0.10
9	28.41	13.00	15.41								3	0.11	0.12
10	25.98	12.62	13.36								3	0.12	0.14
11	25.62	12.28	13.34								3	0.08	0.10
12	26.67	12.44	14.23								3	0.10	0.11
13	26.02	12.15	13.87								3	0.11	0.13
14	24.56	12.08	12.48								3	0.09	0.09
15	23.94	10.29	13.65								3	0.09	0.12
16	24.18	11.42	12.76								3	0.20	0.31
17	25.50	12.17	13.33								3	0.15	0.17
18	26.57	13.59	12.98								3	0.15	0.17
19	27.80	13.30	14.50								3	0.15	0.17
20	27.68	13.75	13.93								3	0.17	0.20
21	26.57	12.92	13.65								3	0.23	0.23
22	23.84	11.95	11.89								3	0.31	0.66
23	26.74	12.87	13.87								3	0.12	0.12
24	26.10	12.36	13.74								3	0.16	0.17
25	26.06	11.94	14.12								3	0.14	0.17
26	26.05	11.96	14.09								3	0.20	0.23
27	25.42	12.05	13.37								3	0.16	0.17
28	24.89	12.25	12.64								3	0.14	0.15
29	24.87	11.64	13.23								3	0.15	0.16
30	25.55	12.13	13.42								3	0.16	0.17
31	25.56	12.02	13.54								3	0.15	0.16
AVG	26.24	12.68	13.56								3	0.14	0.18
MAX	29.04	14.87	15.67								3	0.31	0.66
MIN	23.84	10.29	10.67								3	0.08	0.09
Total	787.84	380.91	406.97										

Flouride / Chlorination & Residuals **WSSN 2310** **Aug-11**

DATE	Fluoride Applied F- mg/l	Fluoride Analyses mg/l			Chlorine App. Mg/l			Chlorine Residual mg/l							
						Post Chlorine lbs/day	Post Chlorine mg/L	B&P	Sta II	Dort	3MG Well		Tap		
		Raw	Tap	Dist				Free	Free	Free	Free			Free	
	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1			1.09					0.8	0.6	0.5	0.5			0.5	
2			1.19					0.8	0.7	0.6	0.5			0.8	
3			1.04			50	1.0	0.8	0.7	0.6	0.9			0.5	
4			1.16			50	1.0	0.8	0.7	0.6	1.2			0.7	
5			1.09			50	1.0	0.8	0.8	0.5	0.8			0.7	
6			1.11			50	1.0	0.8	0.6	0.5	1.4			0.7	
7			1.05			50	1.0	0.8	0.6	0.5	1.1			0.7	
8			1.12			50	1.0	0.8	0.5	0.5	1.0			0.5	
9			1.10			50	1.0	0.8	0.6	0.4	1.2			0.7	
10			1.05			50	1.0	0.7	0.6	0.4	1.2			0.6	
11			1.14			50	1.0	0.7	0.6	0.4	1.2			0.7	
12			1.14			60	1.2	0.7	0.6	0.5	1.5			0.6	
13			0.99			55	1.1	0.8	0.7	0.3	1.3			0.6	
14			1.00			55	1.1	0.7	0.6	0.5	1.3			0.5	
15			0.99			55	1.1	0.7	0.6	0.4	1.3			0.5	
16			1.04			55	1.1	0.6	0.6	0.4	1.0			0.5	
17			1.08			40	0.8	0.7	0.6	0.4	1.5			0.5	
18			1.07			40	0.8	0.7	0.7	0.4	1.4			0.6	
19			1.02			45	0.9	0.7	0.7	0.5	1.3			0.6	
20			1.08			45	0.9	0.7	0.8	0.4	1.3			0.5	
21			1.05			45	0.9	0.7	0.7	0.4	1.2			0.5	
22			1.04			45	0.9	0.8	0.6	0.5	1.3			0.6	
23			1.09			45	0.9	0.8	0.6	0.5	1.2			0.6	
24			1.03			45	0.9	0.9	0.7	0.5	1.3			0.6	
25			1.14			40	0.8	0.8	0.7	0.5	1.2			0.8	
26			1.18			40	0.8	0.7	0.7	0.5	1.4			0.6	
27			1.20			40	0.8	0.9	0.7	0.6	1.5			0.7	
28			1.14			40	0.8	0.9	0.7	0.4	1.5			0.8	
29			1.17			35	0.7	0.8	0.7	0.6	1.4			0.7	
30			1.27			35	0.7	0.8	0.6	0.5	1.4			0.7	
31			1.18			40	0.8	0.8	0.7	0.5	1.3			0.6	
AVG			1.10			47	0.9	0.8	0.7	0.5	1.2			0.6	
MAX			1.27			60	1.2	0.9	0.8	0.6	1.5			0.8	
MIN			0.99			35	0.7	0.6	0.5	0.3	0.5			0.5	

Chemical Analyses **WSSN 2310** **Aug-11**

DATE	pH		Total Hardness (mg/L $CaCO_3$)		Total Alkalinity (mg/L $CaCO_3$)		Non-Carbonate Hardness (mg/L $CaCO_3$)				Calcium (mg/l Ca 2+)		Magnesium (mg/l Mg 2+)		Chloride as (mg/l Cl -)	
	Raw	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	39	40	41	42	43	44
1		7.46		98		71		27				28.1		6.8		
2		7.31		100		69		31				28.9		6.8		
3		7.28		98		73		25				29.7		5.8		
4		7.23		100		72		28				29.7		6.3		
5		7.27		98		71		27				28.1		6.8		
6		7.27		98		71		27				28.9		6.3		
7		7.21		98		76		22				28.9		5.3		
8		7.30		98		73		25				28.1		6.8		
9		7.19		100		70		30				28.9		6.8		
10		7.28		98		71		27				29.7		5.8		
11		7.30		100		69		31				29.7		6.3		
12		7.23		96		69		27				30.5		4.9		
13		7.21		98		73		25				29.7		5.8		
14		7.20		98		73		25				28.1		6.8		
15		7.19		98		75		23				28.1		6.8		
16		7.23		100		75		25				28.9		6.8		
17		7.25		100		72		28				28.9		6.8		
18		7.25		100		71		29				28.9		6.8		
19		7.26		100		70		30				28.9		7.3		
20		7.32		100		72		28				29.7		6.3		
21		7.18		98		71		27				28.1		6.8		
22		7.41		104		73		31				28.9		7.8		
23		7.23		100		73		27				29.7		6.3		
24		7.26		98		71		27				28.9		6.3		
25		7.27		100		72		28				28.9		6.8		
26		7.29		100		70		30				28.9		6.8		
27		7.18		100		71		29				28.9		6.8		
28		7.51		100		70		30				28.9		6.8		
29		7.29		100		71		29				29.7		6.3		
30		7.25		102		71		31				29.7		6.8		
31		7.31		98		71		27				29.7		5.8		
AVG		7.27		99		72		28				29.1		6.5		
MAX		7.51		104		76		31				30.5		7.8		
MIN		7.18		96		69		22				28.1		4.9		

Bacteriological & Physical Parameters **WSSN 2310** **Aug-11**

DATE	Total Coliform							Standard Plate Count		Wind Direction	Temp deg.C	Color		Odor	
	Plant Tap														
	B&P		Dort	3MG Well	Pump	Lab Tap		Raw	Tap			Raw	Tap	Raw	Tap
	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74
1	1/0		2/0	2/0	2/0	2/0					21.7				
2	1/0		2/0	2/0	2/0	2/0					20.8				
3	1/0		2/0	2/0	2/0	2/0					20.2				
4	1/0		2/0	2/0	2/0	2/0					20.1				
5	1/0		2/0	2/0	2/0	2/0					20.2				
6	1/0		2/0	2/0	2/0	2/0					19.9				
7	1/0		2/0	2/0	2/0	2/0					21.3				
8	1/0		2/0	2/0	2/0	2/0					22.1				
9	1/0		2/0	2/0	2/0	2/0			< 2		22.3				
10	1/0		2/0	2/0	2/0	2/0					22.4				
11	1/0		2/0	2/0	2/0	2/0					21.5				
12	1/0		2/0	2/0	2/0	2/0					22.2				
13	1/0		2/0	2/0	2/0	2/0					22.8				
14	1/0		2/0	2/0	2/0	2/0					22.5				
15	1/0		2/0	2/0	2/0	2/0					22.4				
16	1/0		2/0	2/0	2/0	2/0					22.3				
17	1/0		2/0	2/0	2/0	2/0					22.0				
18	1/0		2/0	2/0	2/0	2/0					22.2				
19	1/0		2/0	2/0	2/0	2/0					22.1				
20	1/0		2/0	2/0	2/0	2/0					22.4				
21	1/0		2/0	2/0	2/0	2/0					22.4				
22	1/0		2/0	2/0	2/0	2/0					22.1				
23	1/0		2/0	2/0	2/0	2/0					21.9				
24	1/0		2/0	2/0	2/0	2/0					22.3				
25	1/0		2/0	2/0	2/0	2/0					22.2				
26	1/0		2/0	2/0	2/0	2/0					21.7				
27	1/0		2/0	2/0	2/0	2/0					22.0				
28	1/0		2/0	2/0	2/0	2/0					21.8				
29	1/0		2/0	2/0	2/0	2/0					21.4				
30	1/0		2/0	2/0	2/0	2/0					21.7				
31	1/0		2/0	2/0	2/0	2/0					22.4				
											21.8				
											22.8				
											19.9				

Distribution System Monitoring **WSSN 2310** **Aug-11**

DATE	Free Chlorine Residual at Bacteriological Montioring Stations mg/l															
	1	2	3	4	5	6	7	8	9	10	11	CS	WR	STA II AM	STA II PM	Number of Samples
1												0.4	0.4	0.6	0.5	4
2	0.3	0.2				0.3	0.2	0.0	0.5	0.0	0.1	0.3	0.2	0.5	0.8	12
3												0.3	0.2	0.7	0.7	4
4	0.2	0.1				0.3	0.2	0.0	0.8	0.0	0.2	0.2	0.4	0.7	0.7	12
5												0.3	0.7	0.8	0.7	4
6														0.6	0.6	2
7														0.5	0.6	2
8												0.2	0.5	0.5	0.5	4
9	0.3	0.1				0.3	0.3	0.0	1.0	0.0	0.4	0.3	0.5	0.6	0.6	12
10												0.6	0.2	0.6	0.6	4
11	0.3	0.2				0.4	0.5	0.0	0.9	0.0	0.3	0.3	0.6	0.6	0.6	12
12												0.2	0.5	0.6	0.6	4
13														0.6	0.7	2
14														0.6	0.6	2
15														0.6	0.6	2
16														0.6	0.6	2
17	0.5	0.2				0.4	0.6		0.9		0.4	0.2	0.3	0.5	0.6	10
18	0.3	0.1				0.4	0.5	0.0	0.9	0.0	0.2	0.3	0.6	0.7	0.7	12
19														0.7	0.7	2
20														0.7	0.8	2
21														0.7	0.7	2
22												0.6	0.5	0.6	0.6	4
23	0.4	0.3				0.4	0.3		0.8	0.1	0.2	1.0	0.4	0.6	0.6	11
24												2.7	0.5	0.7	0.7	4
25	0.4	0.7	0.9		1.1	0.4	0.3		0.9	0.0	0.3	1.3	0.6	0.7	0.7	13
26												0.7	0.7	0.6	0.7	4
27														0.7	0.7	2
28														0.7	0.7	2
29												0.8	0.6	0.7	0.7	4
30	0.4	0.4	0.5		0.3	0.5	0.3			0.1	0.2	0.8	0.6	0.6	0.6	12
31												0.8	0.6	0.6	0.7	4

Monthly Cl_2 Avg.	**0.498**
Quarterly Cl_2 Avg.	**0.576**
Yearly Cl_2 Avg.	**0.682**
Total Samples	**172**

Distribution System Monitoring **WSSN 2310** **Aug-11**

DATE	Total Chlorine Residual at Bacteriological Montioring Stations mg/l															
	1	2	3	4	5	6	7	8	9	10	11	CS	WR	STA II AM	STA II PM	Number of Samples
1												0.5	0.5	0.7	0.7	4
2	0.4	0.3				0.4	0.3	0.1	0.6	0.1	0.2	0.4	0.3	0.7	0.9	12
3												0.4	0.3	0.8	0.8	4
4	0.3	0.2				0.4	0.3	0.1	0.9	0.1	0.3	0.3	0.6	0.8	0.8	12
5												0.4	0.8	0.9	0.9	4
6														0.8	0.8	2
7														0.7	0.8	2
8												0.3	0.6	0.7	0.7	4
9	0.4	0.2				0.4	0.4	0.1	1.1	0.1	0.5	0.4	0.6	0.7	0.8	12
10												0.7	0.3	0.7	0.7	4
11	0.4	0.3				0.5	0.7	0.1	1.1	0.1	0.4	0.4	0.7	0.7	0.7	12
12												0.3	0.7	0.7	0.7	4
13														0.7	0.8	2
14														0.7	0.7	2
15														0.7	0.7	2
16														0.7	0.7	2
17	0.6	0.3				0.6	0.7		1.0		0.5	0.4	0.5	0.7	0.8	10
18	0.4	0.2				0.6	0.7	0.1	1.1	0.1	0.3	0.4	0.7	0.8	0.8	12
19														0.8	0.9	2
20														0.9	0.9	2
21														0.8	0.8	2
22												0.7	0.6	0.8	0.7	4
23	0.5	0.4				0.5	0.4		1.0	0.2	0.3	1.2	0.6	0.8	0.8	11
24												2.7	0.7	0.8	0.8	4
25	0.5	0.8	1.0		1.3	0.5	0.4		1.0	0.1	0.4	1.5	0.8	0.9	0.9	13
26												0.9	0.9	0.8	0.8	4
27														0.9	0.9	2
28														0.9	0.9	2
29												1.0	0.8	0.9	0.8	4
30	0.5	0.5	0.6		0.4	0.7	0.4			0.2	0.3	0.9	0.8	0.8	0.8	12
31												0.9	0.8	0.8	0.9	4

Monthly Cl_2 Avg.	**0.628**
Quarterly Cl_2 Avg.	**0.712**
Yearly Cl_2 Avg.	**0.826**
Total Samples	**172**

ROUTINE POSITIVE DISTRIBUTION SAMPLES

Total number of positive routine samples:				Total Coliform: 0		Fecal Coliform: 0	
Date	Monitoring Station	Total Coliform	Fecal Coliform	Date	Retest of Station, Upstream & Downstream	Total Coliform	Fecal Coliform

Total number of routine distribution samples analyzed:	**172**
Total number of routine distribution samples required:	**100**

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

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

2310

Waste & Hazardous Materials Division

AUG 09 2011

Lansing District

MONTHLY OPERATION REPORT OF WATER TREATMENT PLANT

For Month of July 2011

Flint Water Plant
NAME OF WATER SYSTEM

2310
WSSN

Genesee
COUNTY

Michael Glasgow
CERTIFIED OPERATOR

F-1R S-3
CLASSIFICATION

SIGNATURE OF APPROPRIATE OFFICIAL

TREATMENT RATE AND FILTER DATA

1. Treatment Rate, Maximum____ Million Gallons Per Day
2. Treatment Rate, Approved Rated Plant Capacity____Million Gallons per Day
3. Average Filter Run___ Hours, Average Head Loss _____Feet
4. Average Filtration Rate _____ Gallons per Square Ft. per Minute
5. Maximum Filtration Rate _____ Gallons per Square Ft. per Minute
6. Average Wash Water Use _____ percent of Treated Water

CHEMICAL DATA

7. Chlorine on hand _____ lbs.: Estimated supply _____ days
8. Lime (CaO) on hand _____ lbs.: Estimated supply _____ days
9. Alum (Al3+) on hand _____ lbs.: Estimated supply _____ days
10. Cost of All Chemicals per Million Gallons _____
11. Total Power Cost per Million Gallons _____

Remarks:

- A turbidity spike was observed on July 10th at Baxter & Potter Rd (> 0.8 NTU). The spike lasted for 24 hours. An attempt was made to divert water to Dort well to hold and allow for any settling. After 2 days of negative coliform samples the water was released on July 12th. As a result plant tap turbidities on the 12th were elevated.
- A second turbidity spike was observed on July 21st at Baxter & Potter Rd. (> 0.8 NTU). The spike lasted about an hour. An extra coliform sample was collected and both samples from the day were negative. As a result, on July 22nd, plant tap turbidities were elevated.

Submit to: Mike Prysby, P.E.
MDEQ-Water Division-Lansing District
P.O. Box 30242
Lansing, MI 48909

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

MP

Flow & Turbidity **WSSN 2310** **Jul-11**

DATE	Total Million Gallons Purchased	Million Gallons to County	Million Gallons to Flint			Ferric Chloride as Fe 3+ mg/l	Turbidity, NTU units						
							Raw				Plant Tap		
							# of Samples	Avg.	Max		# of Samples	Avg.	Max
	1	1A	1B	4	5	6	7	8	9	10	11	12	13
1	29.73	14.39	15.34								3	0.12	0.15
2	30.25	14.83	15.42								3	0.16	0.17
3	28.43	14.15	14.28								3	0.12	0.13
4	29.97	14.73	15.24								3	0.10	0.11
5	31.64	16.41	15.23								3	0.14	0.15
6	31.94	16.38	15.56								3	0.14	0.15
7	32.87	18.49	14.38								3	0.14	0.16
8	37.15	22.21	14.94								3	0.21	0.22
9	33.38	18.02	15.36								3	0.20	0.21
10	32.66	19.27	13.39								3	0.18	0.18
11	31.40	15.99	15.41								3	0.25	0.29
12	31.65	16.26	15.39								3	0.42	0.55
13	30.89	14.97	15.92								3	0.13	0.14
14	32.36	16.04	16.32								3	0.14	0.16
15	32.13	17.57	14.56								3	0.13	0.13
16	33.24	17.38	14.86								3	0.11	0.12
17	33.77	19.71	14.06								3	0.12	0.13
18	34.34	18.82	15.52								3	0.19	0.21
19	33.80	17.84	15.96								3	0.13	0.15
20	33.84	17.66	16.18								3	0.13	0.13
21	36.73	18.53	18.20								3	0.21	0.24
22	36.80	19.32	17.48								3	0.37	0.41
23	34.66	19.12	15.54								3	0.15	0.19
24	33.28	17.93	15.35								3	0.11	0.11
25	33.52	17.35	16.17								3	0.12	0.13
26	34.29	18.75	15.54								3	0.11	0.12
27	33.85	18.23	15.62								3	0.15	0.16
28	26.91	13.29	13.62								3	0.12	0.12
29	27.01	12.48	14.53								3	0.12	0.14
30	25.45	12.48	12.97								3	0.10	0.10
31	27.29	12.91	14.38								3	0.13	0.14
AVG	32.10	16.82	15.25								3	0.16	0.18
MAX	37.15	22.21	18.20								3	0.42	0.55
MIN	25.45	12.48	12.97								3	0.10	0.10
Total	967.90	508.60	458.33										

Flouride / Chlorination & Residuals **WSSN 2310** **Jul-11**

DATE	Fluoride Applied F- mg/l	Fluoride Analyses mg/l			Chlorine App. Mg/l			Chlorine Residual mg/l							
						Post Chlorine lbs/day	Post Chlorine mg/L	B&P	Sta II	Dort	3MG Well		Tap		
		Raw	Tap	Dist				Free	Free	Free	Free			Free	
	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1			1.05					0.8	0.8	0.6	0.7			0.7	
2			1.00					0.8	0.9	0.8	0.8			0.7	
3			1.10					0.8	0.9	0.8	0.8			0.7	
4			1.04					0.8	0.8	0.7	0.7			0.7	
5			1.01					0.8	0.8	0.7	0.7			0.8	
6			0.95					0.8	0.8	0.7	0.8			0.8	
7			0.97					0.8	0.8	0.8	0.7			0.8	
8			0.98					0.8	0.8	0.8	0.8			0.8	
9			1.05					0.8	0.8	0.7	0.8			0.8	
10			1.06					0.9	0.7	0.7	0.7			0.6	
11			1.10					0.8	0.7	0.7	0.7			0.7	
12			0.95					0.9	0.7	0.6	0.7			0.7	
13			0.88					0.8	0.9	0.5	0.7			0.7	
14			1.13					0.8	0.7	0.6	0.6			0.8	
15			1.14					0.8	0.8	0.5	0.6			0.9	
16			0.87					0.7	0.7	0.6	0.6			0.7	
17			0.92					0.7	0.7	0.6	0.6			0.6	
18			1.04					0.7	0.7	0.5	0.6			0.7	
19			1.13					0.8	0.7	0.5	0.5			0.7	
20			1.07					0.8	0.7	0.5	0.5			0.7	
21			1.15					0.7	0.8	0.5	0.6			0.8	
22			1.07					0.8	0.7	0.6	0.6			0.8	
23			1.03					0.8	0.8	0.5	0.5			0.7	
24			1.07					0.8	0.8	0.5	0.6			0.7	
25			1.12					0.8	0.8	0.6	0.7			0.8	
26			1.10					0.9	0.7	0.6	0.6			0.8	
27			1.04					0.8	0.7	0.6	0.7			0.7	
28			1.16					0.8	0.8	0.6	0.7			0.8	
29			1.21					0.8	0.7	0.6	0.7			0.7	
30			1.24					0.7	0.7	0.5	0.7			0.7	
31			1.09					0.7	0.6	0.5	0.6			0.6	
AVG			1.06					0.8	0.8	0.6	0.7			0.7	
MAX			1.24					0.9	0.9	0.8	0.8			0.9	
MIN			0.87					0.7	0.7	0.5	0.5			0.6	

Chemical Analyses **WSSN 2310** **Jul-11**

DATE	pH		Total Hardness (mg/L $CaCO_3$)		Total Alkalinity (mg/L $CaCO_3$)		Non-Carbonate Hardness (mg/L $CaCO_3$)				Calcium (mg/l Ca 2+)		Magnesium (mg/l Mg 2+)		Chloride as (mg/l Cl -)	
	Raw	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	39	40	41	42	43	44
1		7.24		100		71		29				31.3		5.3		
2		7.20		100		71		29				30.5		5.8		
3		7.20		100		72		28				29.7		6.3		
4		7.18		102		73		29				30.5		6.3		
5		7.25		100		72		28				29.7		6.3		
6		7.28		98		69		29				28.9		6.3		
7		7.23		102		70		32				29.7		6.8		
8		7.15		102		73		29				28.9		7.3		
9		7.20		96		70		26				28.9		5.8		
10		7.29		100		73		27				29.7		6.3		
11		7.42		100		74		26				29.7		6.3		
12		7.21		100		70		30				28.9		6.8		
13		7.27		98		70		28				29.7		5.8		
14		7.36		100		70		30				29.7		6.3		
15		7.28		98		71		27				28.1		6.8		
16		7.23		98		74		24				29.7		5.8		
17		7.13		98		70		28				29.7		5.8		
18		7.33		98		71		27				29.7		5.8		
19		7.24		100		72		28				28.1		7.3		
20		7.26		98		72		26				28.9		6.3		
21		7.19		100		72		28				28.9		6.8		
22		7.27		100		72		28				28.9		6.8		
23		7.42		100		76		24				30.5		5.8		
24		7.22		98		75		23				29.7		5.8		
25		7.24		100		70		30				28.9		6.8		
26		7.30		98		69		29				28.9		6.3		
27		7.29		98		71		27				28.9		6.3		
28		7.30		100		72		28				28.1		7.3		
29		7.13		100		71		29				28.9		6.8		
30		7.18		100		71		29				28.1		7.3		
31		7.14		98		74		24				29.7		5.8		
AVG		7.25		99		72		28				29.3		6.4		
MAX		7.42		102		76		32				31.3		7.3		
MIN		7.13		96		69		23				28.1		5.3		

Bacteriological & Physical Parameters **WSSN 2310** **Jul-11**

DATE	Total Coliform							Standard Plate Count		Wind Direction	Temp deg.C	Color		Odor	
	Plant Tap														
	B&P		Dort	3MG Well	Pump	Lab Tap		Raw	Tap			Raw	Tap	Raw	Tap
	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74
1	1/0		2/0	2/0	2/0	2/0					17.3				
2	1/0		2/0	2/0	2/0	2/0					17.1				
3	1/0		2/0	2/0	2/0	2/0					17.8				
4	1/0		2/0	2/0	2/0	2/0					17.7				
5	1/0		2/0	2/0	2/0	2/0					19.0				
6	1/0		2/0	2/0	2/0	2/0					18.5				
7	1/0		2/0	2/0	2/0	2/0					18.2				
8	1/0		2/0	2/0	2/0	2/0					18.1				
9	1/0		2/0	2/0	2/0	2/0					18.3				
10	1/0		2/0	2/0	2/0	2/0					19.4				
11	2/0		2/0	2/0	2/0	2/0					18.2				
12	1/0		2/0	2/0	2/0	2/0			< 2		18.7				
13	1/0		2/0	2/0	2/0	2/0					18.3				
14	1/0		2/0	2/0	2/0	2/0					18.4				
15	1/0		2/0	2/0	2/0	2/0					18.4				
16	1/0		2/0	2/0	2/0	2/0					18.8				
17	1/0		2/0	2/0	2/0	2/0					19.6				
18	1/0		2/0	2/0	2/0	2/0					19.8				
19	1/0		2/0	2/0	2/0	2/0					20.5				
20	1/0		2/0	2/0	2/0	2/0					20.6				
21	2/0		2/0	2/0	2/0	2/0					21.2				
22	1/0		2/0	2/0	2/0	2/0					21.1				
23	1/0		2/0	2/0	2/0	2/0					20.6				
24	1/0		2/0	2/0	2/0	2/0					20.3				
25	1/0		2/0	2/0	2/0	2/0					20.3				
26	1/0		2/0	2/0	2/0	2/0					19.1				
27	1/0		2/0	2/0	2/0	2/0					19.8				
28	1/0		2/0	2/0	2/0	2/0					21.3				
29	1/0		2/0	2/0	2/0	2/0					22.4				
30	1/0		2/0	2/0	2/0	2/0					21.9				
31	1/0		2/0	2/0	2/0	2/0					21.6				
											19.4				
											22.4				
											17.1				

Distribution System Monitoring **WSSN 2310** **Jul-11**

DATE	Free Chlorine Residual at Bacteriological Montioring Stations mg/l															
	1	2	3	4	5	6	7	8	9	10	11	CS	WR	STA II AM	STA II PM	Number of Samples
1														0.7	0.8	2
2														0.9	0.8	2
3														0.9	0.8	2
4														0.8	0.7	2
5														0.8	0.7	2
6												0.6	0.7	0.8	0.8	4
7												0.6	0.6	0.8	0.8	4
8												0.5	0.7	0.7	0.9	4
9														0.8	0.8	2
10														0.7	0.7	2
11												0.5	0.6	0.7	0.7	4
12	0.5	0.3				0.4	0.3	0.0	0.2	0.1	0.2	0.5	0.7	0.7	0.7	12
13												0.5	0.6	0.8	0.9	4
14	0.2	0.4				0.3	0.5		0.7	0.5	0.3	0.5	0.5	0.7	0.7	11
15												0.4	0.7	0.8	0.8	4
16														0.7	0.6	2
17														0.7	0.6	2
18												0.5	0.5	0.6	0.8	4
19	0.4	0.3				0.3	0.3	0.0	0.5	0.1	0.3	0.4	0.5	0.6	0.8	12
20												0.4	0.5	0.7	0.7	4
21	0.3	0.2				0.3	0.3	0.0	0.5	0.1	0.2	0.4	0.5	0.7	0.9	12
22												0.4	0.5	0.7	0.7	4
23														0.7	0.8	2
24														0.8	0.7	2
25												0.4	0.5	0.8	0.7	4
26	0.3	0.1				0.4	0.4	0.0	0.6	0.1		0.6	0.3	0.7	0.7	11
27												0.5	0.4	0.6	0.7	4
28												0.4	0.4	0.8	0.8	4
29												0.3	0.5	0.6	0.7	4
30														0.7	0.6	2
31														0.6	0.6	2

Monthly Cl_2 Avg.	**0.549**
Quarterly Cl_2 Avg.	**0.632**
Yearly Cl_2 Avg.	**0.689**
Total Samples	**136**

Distribution System Monitoring **WSSN 2310** **Jul-11**

DATE	Total Chlorine Residual at Bacteriological Montioring Stations mg/l															
	1	2	3	4	5	6	7	8	9	10	11	CS	WR	STA II AM	STA II PM	Number of Samples
1														0.8	0.9	2
2														1.0	0.9	2
3														1.0	0.9	2
4														0.9	0.9	2
5														0.9	0.9	2
6												0.7	0.8	1.0	0.9	4
7												0.7	0.8	1.0	0.9	4
8												0.7	0.9	1.0	1.1	4
9														0.9	0.9	2
10														0.8	0.8	2
11												0.7	0.9	0.8	0.8	4
12	0.3	0.3				0.5	0.4	0.1	0.7	0.2	0.3	0.7	0.9	0.9	0.9	12
13												0.6	0.8	1.0	1.0	4
14	0.6	0.5				0.5	0.7		0.8	0.3	0.4	0.6	0.7	0.9	0.8	11
15												0.6	0.8	1.0	1.0	4
16														0.9	0.8	2
17														0.8	0.8	2
18												0.6	0.7	0.8	0.9	4
19	0.5	0.4				0.4	0.4	0.1	0.7	0.2	0.4	0.5	0.7	0.8	0.9	12
20												0.5	0.7	0.8	0.8	4
21	0.4	0.3				0.5	0.4	0.1	0.7	0.2	0.3	0.6	0.7	0.8	1.0	12
22												0.5	0.7	0.8	1.0	4
23														0.8	1.0	2
24														0.9	0.8	2
25												0.5	0.7	1.0	0.9	4
26	0.4	0.2				0.5	0.5	0.1	0.8	0.2		0.7	0.4	0.8	0.9	11
27												0.6	0.6	0.8	0.8	4
28												0.6	0.6	1.0	0.9	4
29												0.4	0.6	0.8	0.8	4
30														0.8	0.8	2
31														0.8	0.8	2

Monthly Cl_2 Avg.	**0.690**
Quarterly Cl_2 Avg.	**0.772**
Yearly Cl_2 Avg.	**0.833**
Total Samples	**136**

ROUTINE POSITIVE DISTRIBUTION SAMPLES

Total number of positive routine samples:				Total Coliform: 0		Fecal Coliform: 0	
Date	Monitoring Station	Total Coliform	Fecal Coliform	Date	Retest of Station, Upstream & Downstream	Total Coliform	Fecal Coliform

Total number of routine distribution samples analyzed:	**136**
Total number of routine distribution samples required:	**100**

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

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

2310

Waste & Hazardous Materials Division

JUL 18 2011

Lansing District

MONTHLY OPERATION REPORT OF WATER TREATMENT PLANT

For Month of June 2011

Flint Water Plant
NAME OF WATER SYSTEM

2310
WSSN

Genesee
COUNTY

Michael Glasgow
CERTIFIED OPERATOR

F-1R S-3
CLASSIFICATION

Michael Glasgow
SIGNATURE OF APPROPRIATE OFFICIAL

TREATMENT RATE AND FILTER DATA

1. Treatment Rate, Maximum____ Million Gallons Per Day
2. Treatment Rate, Approved Rated Plant Capacity____Million Gallons per Day
3. Average Filter Run___ Hours, Average Head Loss _____Feet
4. Average Filtration Rate _____ Gallons per Square Ft. per Minute
5. Maximum Filtration Rate _____ Gallons per Square Ft. per Minute
6. Average Wash Water Use _____ percent of Treated Water

CHEMICAL DATA

7. Chlorine on hand _____ lbs.: Estimated supply _____ days
8. Lime (CaO) on hand _____ lbs.: Estimated supply _____ days
9. Alum (Al3+) on hand _____ lbs.: Estimated supply _____ days
10. Cost of All Chemicals per Million Gallons _____
11. Total Power Cost per Million Gallons _____

Remarks:

Submit to: Mike Prysby, P.E.
MDEQ-Water Division-Lansing District
P.O. Box 30242
Lansing, MI 48909

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

NP

Flow & Turbidity **WSSN 2310** **Jun-11**

DATE	Total Million Gallons Purchased	Million Gallons to County	Million Gallons to Flint			Ferric Chloride as Fe 3+ mg/l	Turbidity, NTU units						
							Raw				Plant Tap		
							# of Samples	Avg.	Max		# of Samples	Avg.	Max
	1	1A	1B	4	5	6	7	8	9	10	11	12	13
1	26.88	12.42	14.46								3	0.11	0.13
2	28.35	13.02	15.33								3	0.15	0.16
3	29.34	14.35	14.99								3	0.18	0.19
4	29.69	14.48	15.21								1	0.16	0.16
5	30.06	14.83	15.23								3	0.13	0.13
6	31.12	15.59	15.53								3	0.20	0.23
7	33.55	17.75	15.80								3	0.16	0.19
8	36.21	19.92	16.29								3	0.26	0.30
9	35.40	19.65	15.75								3	0.18	0.19
10	32.17	15.26	16.91								3	0.16	0.19
11	29.58	14.60	14.98								3	0.11	0.13
12	28.94	14.61	14.33								3	0.15	0.17
13	29.97	14.87	15.10								3	0.10	0.13
14	32.39	16.33	16.06								3	0.10	0.10
15	31.55	16.30	15.25								3	0.12	0.12
16	30.26	14.44	15.82								3	0.12	0.14
17	29.31	13.77	15.54								3	0.10	0.11
18	29.20	13.96	15.24								3	0.10	0.10
19	29.42	14.93	14.49								3	0.10	0.10
20	31.70	15.23	16.47								3	0.12	0.14
21	32.24	15.09	17.15								3	0.26	0.32
22	29.87	14.42	15.45								3	0.13	0.16
23	25.67	10.00	15.67								3	0.11	0.11
24	25.06	10.36	14.70								3	0.09	0.10
25	26.76	11.91	14.85								3	0.09	0.09
26	28.59	14.13	14.46								3	0.10	0.10
27	30.13	14.23	15.90								3	0.11	0.11
28	29.23	13.69	15.54								3	0.12	0.13
29	27.96	12.86	15.10								3	0.11	0.13
30	28.50	12.96	15.54								3	0.09	0.10
AVG	29.97	14.53	15.44								3	0.13	0.15
MAX	36.21	19.92	17.15								3	0.26	0.32
MIN	25.06	10.00	14.33								1	0.09	0.09
Total	899.10	435.96	463.10										

Flouride / Chlorination & Residuals **WSSN 2310** **Jun-11**

DATE	Fluoride Applied F- mg/l	Fluoride Analyses mg/l			Chlorine App. Mg/l			Chlorine Residual mg/l							
						Post Chlorine lbs/day	Post Chlorine mg/L	B&P	Sta II	Dort	3MG Well		Tap		
		Raw	Tap	Dist				Free	Free	Free	Free			Free	
	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1			1.02					0.8	0.8	0.8	0.7			0.8	
2			1.07					0.8	0.9	0.8	0.8			0.8	
3			0.97					0.9	0.9	0.7	0.9			0.9	
4			1.02					0.9	0.9	0.6	0.8			0.9	
5			1.01					0.9	0.8	0.7	0.8			0.9	
6			1.04					0.8	0.9	0.7	0.8			0.8	
7			1.09					0.9	0.8	0.7	0.8			0.9	
8			1.09					0.9	0.8	0.7	0.8			0.8	
9			0.99					0.9	0.9	0.7	0.8			0.8	
10			1.10					0.9	0.8	0.8	0.8			0.8	
11			1.04					0.9	0.8	0.8	0.8			0.8	
12			1.05					0.8	0.8	0.8	0.8			0.7	
13			1.07					0.8	0.8	0.8	0.8			0.8	
14			1.13					0.8	0.8	0.8	0.7			0.8	
15			1.07					0.9	0.8	0.7	0.8			0.8	
16			1.09					0.9	0.8	0.7	0.8			0.8	
17			1.08					0.9	0.8	0.7	0.8			0.9	
18			1.05					0.9	0.8	0.7	0.8			0.8	
19			1.12					0.8	0.8	0.8	0.8			0.7	
20			1.08					0.8	0.8	0.7	0.7			0.8	
21			1.07					0.8	0.8	0.8	0.8			0.7	
22			1.06					0.9	0.9	0.8	0.7			0.8	
23			1.04					0.9	0.8	0.8	0.7			0.9	
24			1.11					0.8	0.8	0.7	0.8			0.8	
25			1.08					0.8	0.8	0.7	0.8			0.8	
26			1.07					0.8	0.7	0.6	0.7			0.7	
27			1.05					0.8	0.8	0.7	0.8			0.7	
28			1.03					0.9	0.8	0.7	0.7			0.8	
29			1.12					0.8	0.8	0.7	0.7			0.8	
30			1.13					0.8	0.8	0.7	0.8			0.7	
AVG			1.06					0.9	0.8	0.7	0.8			0.8	
MAX			1.13					0.9	0.9	0.8	0.9			0.9	
MIN			0.97					0.8	0.7	0.6	0.7			0.7	

Chemical Analyses **WSSN 2310** **Jun-11**

DATE	pH		Total Hardness (mg/L $CaCO_3$)		Total Alkalinity (mg/L $CaCO_3$)		Non-Carbonate Hardness (mg/L $CaCO_3$)				Calcium (mg/l Ca 2+)		Magnesium (mg/l Mg 2+)		Chloride as (mg/l Cl -)	
	Raw	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	39	40	41	42	43	44
1		7.24		98		73		25				30.5		5.3		
2		7.27		96		71		25				31.3		4.4		
3		7.31		98		71		27				28.1		6.8		
4		7.37		100		69		31				28.9		6.8		
5		7.25		98		71		27				28.9		6.3		
6		7.19		98		69		29				29.7		5.8		
7		7.21		98		71		27				29.7		5.8		
8		7.18		98		72		26				28.9		6.3		
9		7.19		98		71		27				30.5		5.3		
10		7.28		98		70		28				28.1		6.8		
11		7.16		100		68		32				28.1		7.3		
12		7.17		96		69		27				28.1		6.3		
13		7.28		96		70		26				28.9		5.8		
14		7.24		98		72		26				31.3		4.9		
15		7.20		96		69		27				28.1		6.3		
16		7.26		98		71		27				28.9		6.3		
17		7.22		96		68		28				28.9		5.8		
18		7.26		96		70		26				28.1		6.3		
19		7.45		98		70		28				29.7		5.8		
20		7.25		100		71		29				28.9		6.8		
21		7.41		98		72		26				29.7		5.8		
22		7.21		100		70		30				28.1		7.3		
23		7.29		98		69		29				29.7		5.8		
24		7.20		98		72		26				28.9		6.3		
25		7.28		100		72		28				28.9		6.8		
26		7.20		98		74		24				29.7		5.8		
27		7.26		98		72		26				29.7		5.8		
28		7.30		100		71		29				28.1		7.3		
29		7.20		98		70		28				28.1		6.8		
30		7.35		98		73		25				32.1		4.4		
AVG		7.26		98		71		27				29.2		6.1		
MAX		7.45		100		74		32				32.1		7.3		
MIN		7.16		96		68		24				28.1		4.4		

Bacteriological & Physical Parameters **WSSN 2310** **Jun-11**

DATE	Total Coliform							Standard Plate Count		Wind Direction	Temp deg.C	Color		Odor	
	Plant Tap														
	B&P		Dort	3MG Well	Pump	Lab Tap		Raw	Tap			Raw	Tap	Raw	Tap
	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74
1	1/0		2/0	2/0	2/0	2/0					13.3				
2	1/0		2/0	2/0	2/0	2/0					13.3				
3	1/0		2/0	2/0	2/0	2/0					13.9				
4	1/0		2/0	2/0	2/0	2/0					14.2				
5	1/0		2/0	2/0	2/0	2/0					14.3				
6	1/0		2/0	2/0	2/0	2/0					14.0				
7	1/0		2/0	2/0	2/0	2/0			<2		17.3				
8	1/0		2/0	2/0	2/0	2/0					15.9				
9	1/0		2/0	2/0	2/0	2/0					16.5				
10	1/0		2/0	2/0	2/0	2/0					15.5				
11	1/0		2/0	2/0	2/0	2/0					15.1				
12	1/0		1/0	1/0	1/0	1/0					15.0				
13	1/0		2/0	2/0	2/0	2/0					14.9				
14	1/0		2/0	2/0	2/0	2/0					15.3				
15	1/0		2/0	2/0	2/0	2/0					15.9				
16	1/0		2/0	2/0	2/0	2/0					16.5				
17	1/0		2/0	2/0	2/0	2/0					17.3				
18	1/0		2/0	2/0	2/0	2/0					17.0				
19	1/0		2/0	2/0	2/0	2/0					15.8				
20	1/0		2/0	2/0	2/0	2/0					16.9				
21	1/0		2/0	2/0	2/0	2/0					16.4				
22	1/0		2/0	2/0	2/0	2/0					17.3				
23	1/0		2/0	2/0	2/0	2/0					18.3				
24	1/0		2/0	2/0	2/0	2/0					18.0				
25	1/0		2/0	2/0	2/0	2/0					17.6				
26	1/0		2/0	2/0	2/0	2/0					16.7				
27	1/0		2/0	2/0	2/0	2/0					15.7				
28	1/0		2/0	2/0	2/0	2/0					17.6				
29	1/0		2/0	2/0	2/0	2/0					17.0				
30	1/0		2/0	2/0	2/0	2/0					15.2				
											15.9				
											18.3				
											13.3				

Distribution System Monitoring **WSSN 2310** **Jun-11**

DATE	Free Chlorine Residual at Bacteriological Montioring Stations mg/l															
	1	2	3	4	5	6	7	8	9	10	11	CS	WR	STA II AM	STA II PM	Number of Samples
1												0.6	0.9	0.6	0.9	4
2	0.3	0.4	0.5			0.5	0.4	0.1	0.8	0.2	0.5	0.6	0.7	0.9	0.9	13
3												0.6	0.7	0.9	0.9	4
4														0.8	0.9	2
5														0.8	0.8	2
6												0.6	0.8	0.8	0.9	4
7						0.5	0.5	0.0		0.3				0.8	0.8	6
8												0.6	0.8	0.8	1.0	4
9	0.3	0.5	0.5						0.8		0.3			0.8	0.8	7
10														0.8	0.9	2
11														0.8	0.8	2
12															0.8	1
13												0.6	0.7	0.8	0.8	4
14														0.8	0.8	2
15												0.6	0.7	0.8	0.8	4
16	0.4	0.4	0.4			0.6	0.4	0.1		0.3	0.4	0.6	0.7	0.8	0.8	12
17												0.6	0.7	0.8	0.8	4
18														0.8	0.8	2
19														0.8	0.7	2
20												0.4	0.6	0.8	0.8	4
21														0.8	0.8	2
22	0.3	0.4	0.5			0.5	0.4	0.0	0.8	0.2	0.4	0.6	0.7	0.9	0.8	13
23	0.5	0.4				0.4	0.5	0.0	0.7	0.4	0.4	0.7	0.7	0.8	0.8	12
24												0.6	0.7	0.8	0.8	4
25														0.8	0.7	2
26														0.7	0.7	2
27												0.5	0.8	0.7	0.8	4
28	0.3	0.4	0.4			0.4	0.4	0.05	0.7	0.1	0.3	0.5	0.6	0.7	0.8	13
29	0.2	0.4				0.4	0.4	0.0	0.5	0.1		0.5	0.6	0.8	0.8	11
30														0.8	0.8	2

Monthly Cl_2 Avg.	**0.602**
Quarterly Cl_2 Avg.	**0.767**
Yearly Cl_2 Avg.	**0.692**
Total Samples	**150**

Distribution System Monitoring **WSSN 2310** **Jun-11**

DATE	Total Chlorine Residual at Bacteriological Montioring Stations mg/l															
	1	2	3	4	5	6	7	8	9	10	11	CS	WR	STA II AM	STA II PM	Number of Samples
1												0.7	1.0	0.7	1.0	4
2	0.4	0.5	0.7			0.7	0.5	0.2	1.0	0.3	0.6	0.7	0.9	1.0	1.0	13
3												0.7	0.8	1.0	1.1	4
4														0.9	1.0	2
5														1.0	1.0	2
6												0.8	1.0	1.0	1.0	4
7						0.7	0.7	0.1		0.4				1.0	1.0	6
8												0.7	0.9	1.0	1.0	4
9	0.4	0.7	0.7						1.0		0.4			1.0	1.1	7
10														1.2	1.2	2
11														0.9	0.9	2
12															1.0	1
13												0.7	0.9	0.9	0.9	4
14														0.9	0.9	2
15												0.7	0.9	0.9	1.0	4
16	0.5	0.5	0.6			0.7	0.5	0.2		0.4	0.5	0.7	0.9	0.9	0.9	12
17												0.7	0.8	1.0	1.0	4
18														1.0	1.0	2
19														0.9	0.9	2
20												0.5	0.8	0.9	1.0	4
21														0.9	0.9	2
22	0.4	0.5	0.7			0.6	0.5	0.1	1.0	0.3	0.5	0.7	0.8	1.0	0.9	13
23	0.6	0.5				0.5	0.6	0.1	0.9	0.5	0.5	0.8	0.9	0.9	0.9	12
24												0.7	0.9	0.9	0.9	4
25														0.9	0.9	2
26														0.8	0.9	2
27												0.6	1.0	0.8	0.9	4
28	0.4	0.5	0.6			0.6	0.5	0.15	0.8	0.2	0.4	0.7	0.8	0.9	1.0	13
29	0.3	0.5				0.5	0.5	0.1	0.7	0.2		0.6	0.8	0.9	0.9	11
30														0.9	0.9	2

Monthly Cl_2 Avg.	**0.738**
Quarterly Cl_2 Avg.	**0.908**
Yearly Cl_2 Avg.	**0.836**
Total Samples	**150**

ROUTINE POSITIVE DISTRIBUTION SAMPLES

Total number of positive routine samples:				Total Coliform: 0		Fecal Coliform: 0	
Date	Monitoring Station	Total Coliform	Fecal Coliform	Date	Retest of Station, Upstream & Downstream	Total Coliform	Fecal Coliform

Total number of routine distribution samples analyzed:	**150**
Total number of routine distribution samples required:	**100**

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

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

Waste & Hazardous Materials Division 2310

JUN 09 2011

Lansing District

MONTHLY OPERATION REPORT OF WATER TREATMENT PLANT

For Month of May 2011

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

Michael Glasgow — CERTIFIED OPERATOR
F-1R S-3 — CLASSIFICATION

Michael Glasgow — SIGNATURE OF APPROPRIATE OFFICIAL

TREATMENT RATE AND FILTER DATA

1. Treatment Rate, Maximum____ Million Gallons Per Day
2. Treatment Rate, Approved Rated Plant Capacity____Million Gallons per Day
3. Average Filter Run___ Hours, Average Head Loss _____Feet
4. Average Filtration Rate _____ Gallons per Square Ft. per Minute
5. Maximum Filtration Rate _____ Gallons per Square Ft. per Minute
6. Average Wash Water Use _____ percent of Treated Water

CHEMICAL DATA

7. Chlorine on hand _____ lbs.: Estimated supply _____ days
8. Lime (CaO) on hand _____ lbs.: Estimated supply _____ days
9. Alum (Al3+) on hand _____ lbs.: Estimated supply _____ days
10. Cost of All Chemicals per Million Gallons _____
11. Total Power Cost per Million Gallons _____

Remarks:

Submit to: Mike Prysby, P.E.
MDEQ-Water Division-Lansing District
P.O. Box 30242
Lansing, MI 48909

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

MP

Flow & Turbidity **WSSN 2310** **May-11**

DATE	Total Million Gallons Purchased	Million Gallons to County	Million Gallons to Flint			Ferric Chloride as Fe 3+ mg/l	Turbidity, NTU units						
							Raw				Plant Tap		
							# of Samples	Avg.	Max		# of Samples	Avg.	Max
	1	1A	1B	4	5	6	7	8	9	10	11	12	13
1	25.25	10.61	14.64								3	0.10	0.11
2	25.28	10.81	14.47								3	0.11	0.11
3	25.72	10.77	14.95								3	0.11	0.14
4	25.96	10.83	15.13								3	0.09	0.11
5	26.17	10.72	15.45								3	0.08	0.08
6	27.15	11.49	15.66								3	0.12	0.12
7	25.48	11.67	13.81								3	0.13	0.13
8	26.86	12.64	14.22								3	0.10	0.11
9	26.77	12.01	14.76								3	0.14	0.18
10	27.40	12.21	15.19								3	0.10	0.12
11	26.97	12.30	14.67								3	0.10	0.11
12	27.20	12.37	14.83								3	0.10	0.11
13	28.41	13.24	15.17								3	0.13	0.13
14	27.35	13.32	14.03								3	0.12	0.12
15	27.05	12.29	14.76								3	0.10	0.10
16	26.30	12.41	13.89								3	0.10	0.11
17	26.15	12.43	13.72								3	0.10	0.11
18	26.87	12.20	14.67								3	0.08	0.09
19	27.33	12.79	14.54								3	0.10	0.11
20	26.68	11.21	15.47								3	0.12	0.13
21	24.91	10.46	14.45								3	0.13	0.13
22	25.04	10.90	14.14								3	0.10	0.11
23	26.77	11.03	15.74								3	0.10	0.11
24	26.94	11.71	15.23								3	0.13	0.15
25	26.07	11.75	14.32								3	0.18	0.18
26	26.61	12.11	14.50								3	0.11	0.12
27	26.42	11.88	14.54								3	0.10	0.10
28	26.51	11.73	14.78								3	0.13	0.19
29	24.74	11.88	12.86								3	0.10	0.11
30	25.27	11.32	13.95								3	0.11	0.13
31	25.27	11.32	13.95								3	0.14	0.21
AVG	26.39	11.77	14.62								3	0.11	0.12
MAX	28.41	13.32	15.74								3	0.18	0.21
MIN	24.74	10.46	12.86								3	0.08	0.08
Total	791.63	353.09	438.51										

Flouride / Chlorination & Residuals **WSSN 2310** **May-11**

DATE	Fluoride Applied F- mg/l	Fluoride Analyses mg/l			Chlorine App. Mg/l			Chlorine Residual mg/l							
						Post Chlorine lbs/day	Post Chlorine mg/L	B&P	Sta II	Dort	3MG Well		Tap		
		Raw	Tap	Dist				Free	Free	Free	Free			Free	
	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1			1.00					0.8	0.8	0.8	0.8			0.8	
2			1.01					0.8	0.8	0.8	0.8			0.8	
3			1.11					0.8	0.8	0.8	0.9			0.8	
4			1.02					0.9	0.9	0.8	0.9			0.9	
5			1.01					0.9	0.9	0.8	0.8			0.9	
6			1.06					0.9	0.8	0.8	0.8			0.9	
7			1.04					0.7	0.9	0.8	0.8			0.7	
8			1.04					0.7	0.9	0.8	0.8			0.7	
9			1.01					0.8	0.8	0.8	0.8			0.7	
10			1.03					0.8	0.9	0.8	0.8			0.9	
11			1.06					0.9	0.8	0.8	0.9			0.9	
12			0.95					0.8	0.8	0.8	0.8			0.7	
13			1.04					0.9	0.9	0.8	0.8			0.9	
14			1.05					0.8	0.9	0.7	0.8			0.9	
15			0.89					0.7	0.8	0.7	0.7			0.7	
16			0.90					0.7	0.7	0.7	0.7			0.7	
17			1.02					0.8	0.8	0.8	0.7			0.8	
18			0.95					0.9	0.8	0.7	0.8			0.8	
19			0.96					0.8	0.9	0.7	0.7			1.0	
20			0.99					1.0	0.9	0.8	0.9			1.0	
21			0.99					0.9	0.9	0.8	0.9			0.9	
22			1.03					0.8	0.9	0.8	0.8			0.8	
23			1.05					0.7	0.8	0.8	0.8			0.8	
24			0.95					0.8	0.8	0.8	0.8			0.8	
25			1.02					0.8	0.9	0.8	0.7			0.8	
26			0.99					0.9	0.9	0.8	0.9			0.8	
27			0.99					0.9	0.9	0.8	0.8			0.9	
28			1.02					0.9	0.7	0.8	0.8			0.7	
29			0.99					0.8	0.9	0.8	0.7			0.8	
30			1.01					0.8	0.8	0.8	0.9			0.8	
31			1.03					0.9	0.9	0.8	0.9			0.8	
AVG			1.01					0.8	0.8	0.8	0.8			0.8	
MAX			1.11					1.0	0.9	0.8	0.9			1.0	
MIN			0.89					0.7	0.7	0.7	0.7			0.7	

Chemical Analyses **WSSN 2310** **May-11**

DATE	pH		Total Hardness (mg/L $CaCO_3$)		Total Alkalinity (mg/L $CaCO_3$)		Non-Carbonate Hardness (mg/L $CaCO_3$)				Calcium (mg/l Ca 2+)		Magnesium (mg/l Mg 2+)		Chloride as (mg/l Cl -)	
	Raw	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	39	40	41	42	43	44
1		7.13		98		69		29				28.9		6.3		
2		7.21		100		69		31				28.9		6.8		
3		7.24		96		71		25				29.7		5.3		
4		7.26		96		69		27				28.9		5.8		
5		7.18		98		69		29				31.3		4.9		
6		7.19		96		67		29				32.9		3.4		
7		7.24		96		69		27				29.7		5.3		
8		7.13		96		72		24				29.7		5.8		
9		7.30		96		65		31				29.7		5.3		
10		7.12		96		69		27				29.7		5.3		
11		7.22		98		69		29				29.7		5.8		
12		7.23		96		70		26				28.9		5.8		
13		7.19		100		68		32				29.7		6.3		
14		7.35		100		70		30				31.3		5.3		
15		7.15		96		76		20				29.7		5.3		
16		7.45		96		71		25				30.5		4.9		
17		7.21		98		71		27				32.1		4.4		
18		7.44		100		73		27				28.9		6.8		
19		7.05		100		70		30				29.7		6.3		
20		7.15		98		71		27				31.3		4.9		
21		7.08		100		71		29				30.5		5.8		
22		7.18		100		74		26				31.3		5.3		
23		7.19		100		74		26				29.7		6.3		
24		7.24		100		75		25				30.5		5.8		
25		7.14		100		69		31				29.7		6.3		
26		7.27		100		74		26				31.3		5.3		
27		7.38		100		71		29				29.7		6.3		
28		7.19		98		74		24				30.5		5.3		
29		7.21		98		75		23				30.5		5.3		
30		7.13		98		72		26				28.9		6.3		
31		7.18		98		72		26				28.9		6.3		
AVG		7.21		98		71		27				30.1		5.6		
MAX		7.45		100		76		32				32.9		6.8		
MIN		7.05		96		65		20				28.9		3.4		

Bacteriological & Physical Parameters WSSN 2310 May-11

DATE	Total Coliform							Standard Plate Count		Wind Direction	Temp deg.C	Color		Odor	
	Plant Tap														
	B&P		Dort	3MG Well	Pump	Lab Tap		Raw	Tap			Raw	Tap	Raw	Tap
	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74
1	1/0		2/0	2/0	2/0	2/0					11.7				
2	1/0		2/0	2/0	2/0	2/0					11.3				
3	1/0		2/0	2/0	2/0	2/0					11.8				
4	1/0		2/0	2/0	2/0	2/0					13.2				
5	1/0		2/0	2/0	2/0	2/0					12.5				
6	1/0		2/0	2/0	2/0	2/0					10.9				
7	1/0		2/0	2/0	2/0	2/0					12.1				
8	1/0		2/0	2/0	2/0	2/0					11.3				
9	1/0		2/0	2/0	2/0	2/0					10.8				
10	1/0		2/0	2/0	2/0	2/0					12.5				
11	1/0		2/0	2/0	2/0	2/0					12.5				
12	1/0		2/0	2/0	2/0	2/0					12.5				
13	1/0		2/0	2/0	2/0	2/0					12.2				
14	1/0		2/0	2/0	2/0	2/0					13.3				
15	1/0		2/0	2/0	2/0	2/0					11.8				
16	1/0		2/0	2/0	2/0	2/0					12.6				
17	1/0		2/0	2/0	2/0	2/0					12.4				
18	1/0		2/0	2/0	2/0	2/0					11.9				
19	1/0		2/0	2/0	2/0	2/0					12.9				
20	1/0		2/0	2/0	2/0	2/0					12.6				
21	1/0		2/0	2/0	2/0	2/0					13.5				
22	1/0		2/0	2/0	2/0	2/0					12.2				
23	1/0		2/0	2/0	2/0	2/0					12.3				
24	1/0		2/0	2/0	2/0	2/0					12.6				
25	1/0		2/0	2/0	2/0	2/0			2		12.6				
26	1/0		2/0	2/0	2/0	2/0					12.5				
27	1/0		2/0	2/0	2/0	2/0					12.8				
28	1/0		2/0	2/0	2/0	2/0					12.0				
29	1/0		2/0	2/0	2/0	2/0					12.5				
30	1/0		2/0	2/0	2/0	2/0					13.1				
31	1/0		2/0	2/0	2/0	2/0					14.3				
											12.4				
											14.3				
											10.8				

Distribution System Monitoring **WSSN 2310** **May-11**

DATE	Free Chlorine Residual at Bacteriological Montioring Stations mg/l															
	1	2	3	4	5	6	7	8	9	10	11	CS	WR	STA II AM	STA II PM	Number of Samples
1														0.8	0.8	2
2														0.7	0.8	2
3														0.8	0.8	2
4												0.6	0.9	0.9	0.8	4
5	0.4	0.5	0.4			0.5	0.5	0.3	0.7	0.3	0.7	0.7	0.8	0.9	0.9	13
6												0.7	0.8	0.8	0.8	4
7														0.9	0.9	2
8														0.9	0.9	2
9												0.6	0.7	0.8	0.8	4
10	0.4	0.4	0.4			0.6	0.5	0.4	0.8	0.3	0.4	0.7	0.8	0.8	0.9	13
11		0.5	0.5			0.5	0.5	0.4	0.8	0.3	0.6	0.7	0.8	0.6	0.9	12
12												0.6	0.8	0.7	0.8	4
13												0.6	0.7	0.8	0.9	4
14														0.8	0.8	2
15														0.7	0.8	2
16												0.5	0.7	0.6	0.8	4
17	0.3	0.4	0.5			0.6	0.4	0.0	0.8	0.2	0.5	0.5	0.7	0.7	0.8	13
18												0.5	0.7	0.8	0.7	4
19		0.4	0.5			0.4	0.4	0.0		0.3	0.5	0.6	0.7	0.9	0.9	11
20												0.6	0.6	0.8	0.9	4
21														0.8	0.9	2
22														0.8	0.9	2
23														0.8	0.7	2
24														0.8	0.7	2
25	0.3	0.5				0.6	0.4	0.1	0.9	0.3	0.5	0.6	0.8	0.8	0.9	12
26														0.8	0.9	2
27												0.6	0.7	0.9	0.9	4
28														0.7	0.7	2
29														0.9	0.9	2
30														0.8	0.8	2
31														0.8	0.9	2

Monthly Cl_2 Avg.	**0.656**
Quarterly Cl_2 Avg.	**0.781**
Yearly Cl_2 Avg.	**0.696**
Total Samples	**142**

Distribution System Monitoring **WSSN 2310** **May-11**

DATE	Total Chlorine Residual at Bacteriological Montioring Stations mg/l															
	1	2	3	4	5	6	7	8	9	10	11	CS	WR	STA II AM	STA II PM	Number of Samples
1														0.9	0.9	2
2														0.9	0.9	2
3														0.9	0.9	2
4												0.7	1.0	1.0	0.9	4
5	0.5	0.7	0.5			0.7	0.7	0.5	0.9	0.4	0.9	0.8	0.9	1.0	1.0	13
6												0.8	1.0	1.0	1.0	4
7														1.0	1.0	2
8														1.0	1.0	2
9												0.7	0.9	0.8	0.8	4
10	0.5	0.6	0.6			0.8	0.7	0.5	0.9	0.5	0.7	0.8	0.9	0.9	1.0	13
11		0.7	0.7			0.6	0.7	0.5	0.9	0.4	0.8	0.8	0.9	0.7	1.0	12
12												0.7	1.0	0.9	0.9	4
13												0.8	0.9	1.0	1.0	4
14														0.9	1.0	2
15														0.9	0.9	2
16												0.6	0.9	0.7	0.9	4
17	0.4	0.5	0.7			0.7	0.5	0.1	0.9	0.3	0.6	0.6	0.9	0.9	0.9	13
18												0.6	0.9	0.9	0.9	4
19		0.5	0.7			0.6	0.5	0.1		0.4	0.7	0.7	0.9	1.0	1.0	11
20												0.7	0.8	1.0	1.0	4
21														1.0	1.0	2
22														0.9	1.1	2
23														0.9	0.9	2
24														0.9	0.8	2
25	0.4	0.7				0.8	0.6	0.2	1.0	0.4	0.6	0.7	1.0	1.0	1.0	12
26														1.0	1.0	2
27												0.7	0.9	1.0	1.0	4
28														0.9	0.9	2
29														1.0	1.0	2
30														0.9	0.9	2
31														0.9	1.0	2

Monthly Cl_2 Avg.	**0.792**
Quarterly Cl_2 Avg.	**0.921**
Yearly Cl_2 Avg.	**0.841**
Total Samples	**142**

ROUTINE POSITIVE DISTRIBUTION SAMPLES

Total number of positive routine samples:				Total Coliform: 0		Fecal Coliform: 0	
Date	Monitoring Station	Total Coliform	Fecal Coliform	Date	Retest of Station, Upstream & Downstream	Total Coliform	Fecal Coliform

Total number of routine distribution samples analyzed:	**142**
Total number of routine distribution samples required:	**100**

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

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

2310

Waste & Hazardous Materials Division

MAY 10 2011

Lansing District

MONTHLY OPERATION REPORT OF WATER TREATMENT PLANT

For Month of April 2011

Flint Water Plant
NAME OF WATER SYSTEM

2310
WSSN

Genesee
COUNTY

Michael Glasgow
CERTIFIED OPERATOR

F-1R S-3
CLASSIFICATION

Michael Glasgow
SIGNATURE OF APPROPRIATE OFFICIAL

TREATMENT RATE AND FILTER DATA

1. Treatment Rate, Maximum____ Million Gallons Per Day
2. Treatment Rate, Approved Rated Plant Capacity____Million Gallons per Day
3. Average Filter Run___ Hours, Average Head Loss _____Feet
4. Average Filtration Rate _____ Gallons per Square Ft. per Minute
5. Maximum Filtration Rate _____ Gallons per Square Ft. per Minute
6. Average Wash Water Use _____ percent of Treated Water

CHEMICAL DATA

7. Chlorine on hand _____ lbs.: Estimated supply _____ days
8. Lime (CaO) on hand _____ lbs.: Estimated supply _____ days
9. Alum (Al3+) on hand _____ lbs.: Estimated supply _____ days
10. Cost of All Chemicals per Million Gallons _____
11. Total Power Cost per Million Gallons _____

Remarks:

Submit to: Mike Prysby, P.E.
MDEQ-Water Division-Lansing District
P.O. Box 30242
Lansing, MI 48909

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

MP

Coagulation Parameters **WSSN 2310** **Apr-11**

DATE	Total Million Gallons Purchased	Million Gallons to County	Million Gallons to Flint			Ferric Chloride as Fe 3+ mg/l	Turbidity, NTU units						
							Raw				Plant Tap		
							# of Samples	Avg.	Max		# of Samples	Avg.	Max
	1	1A	1B	4	5	6	7	8	9	10	11	12	13
1	24.58	10.11	14.47								3	0.08	0.09
2	24.09	9.85	14.24								3	0.07	0.08
3	23.51	9.92	13.59								3	0.08	0.08
4	24.34	9.72	14.62								3	0.08	0.08
5	25.38	9.76	15.62								3	0.11	0.13
6	24.30	9.64	14.66								3	0.08	0.09
7	23.74	9.65	14.09								3	0.08	0.09
8	23.52	9.68	13.84								3	0.09	0.10
9	23.69	9.76	13.93								3	0.07	0.08
10	23.67	9.53	14.14								3	0.08	0.09
11	23.68	9.41	14.27								3	0.09	0.09
12	24.52	9.66	14.86								3	0.13	0.19
13	24.58	9.57	15.01								3	0.11	0.11
14	24.66	9.40	15.26								3	0.15	0.15
15	23.96	9.78	14.18								3	0.09	0.10
16	24.10	9.78	14.32								3	0.08	0.09
17	23.67	9.76	13.91								3	0.10	0.11
18	24.33	9.71	14.62								3	0.10	0.11
19	24.06	9.75	14.31								3	0.09	0.10
20	24.39	9.90	14.49								3	0.08	0.09
21	24.05	9.97	14.08								3	0.09	0.10
22	23.78	9.87	13.91								3	0.10	0.11
23	23.68	9.82	13.86								3	0.09	0.10
24	23.25	9.56	13.69								3	0.08	0.09
25	23.06	9.41	13.65								3	0.08	0.08
26	24.05	9.58	14.47								3	0.12	0.15
27	25.24	9.76	15.48								3	0.10	0.13
28	24.72	9.82	14.90								3	0.10	0.12
29	25.05	10.16	14.89								3	0.11	0.12
30	25.00	10.44	14.56								3	0.12	0.13
AVG	24.15	9.76	14.40								3	0.09	0.11
MAX	25.38	10.44	15.62								3	0.15	0.19
MIN	23.06	9.40	13.59								3	0.07	0.08
Total	724.64	292.73	431.92										

Flouridation & Chlorination **WSSN 2310** **Apr-11**

DATE	Fluoride Applied F- mg/l	Fluoride Analyses mg/l			Chlorine App. Mg/l			Chlorine Residual mg/l							
						Chlorine (prior to filtration) mg/L OCl-	Post Chlorine mg/L	B&P	Sta II	Dort	3MG Well		Tap		
		Raw	Tap	Dist				Free	Free	Free	Free			Free	
	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1			0.93					0.9	1.0	0.9	0.9			1.0	
2			0.93					0.9	1.0	0.9	0.9			0.9	
3			0.98					0.9	0.9	0.8	1.0			0.9	
4			0.93					0.8	0.9	0.9	0.9			0.9	
5			0.96					0.9	0.8	0.8	0.9			0.9	
6			0.95					0.9	0.8	0.8	0.8			0.8	
7			0.96					0.9	0.9	0.9	0.9			0.9	
8			0.93					0.9	0.8	0.8	0.9			0.9	
9			0.92					0.9	0.9	0.8	0.9			0.9	
10			0.98					0.9	0.9	0.9	0.8			0.9	
11			1.01					0.9	0.9	0.8	0.8			0.9	
12			0.93					0.9	0.9	0.8	0.8			0.9	
13			0.97					0.9	0.9	0.9	0.9			0.9	
14			0.91					0.9	0.9	0.9	0.8			0.9	
15			0.86					0.9	0.9	0.8	0.9			0.9	
16			0.87					0.9	0.8	0.8	0.8			0.9	
17			1.03					0.8	0.9	0.8	0.8			0.8	
18			1.18					0.8	0.9	0.8	0.8			0.9	
19			1.17					0.9	0.9	0.8	0.8			0.8	
20			1.05					0.8	0.8	0.7	0.7			0.7	
21			1.15					0.7	0.6	0.7	0.8			0.9	
22			1.14					0.8	0.8	0.8	0.8			0.8	
23			1.12					0.9	0.8	0.7	0.8			0.8	
24			1.03					0.8	0.8	0.8	0.8			0.7	
25			1.03					0.8	0.8	0.8	0.8			0.8	
26			1.03					0.8	0.8	0.8	0.8			0.9	
27			1.05					0.9	1.0	0.7	0.8			1.0	
28			1.00					0.8	0.9	0.7	0.7			0.8	
29			1.00					0.7	0.8	0.8	0.8			0.9	
30			1.07					1.0	0.9	0.8	0.8			0.9	
AVG			1.00					0.9	0.9	0.8	0.8			0.9	
MAX			1.18					1.0	1.0	0.9	1.0			1.0	
MIN			0.86					0.7	0.6	0.7	0.7			0.7	

Chemical Analyses **WSSN 2310** **Apr-11**

DATE	pH		Total Hard as $CaCO_3$ mg/l		Total Alk as $CaCO_3$ mg/l		NonCarbonate Hardness as $CaCO_3$ mg/l				Calcium Ca ++ mg/l		Magnesium as Mg ++ mg/l		Chloride as Cl - mg/l	
	Raw	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	39	40	41	42	43	44
1		7.12		96		69		27				25.7		7.8		
2		7.41		96		70		26				29.7		5.3		
3		7.16		100		72		28				29.7		6.3		
4		7.32		98		69		29				27.3		7.3		
5		7.19		100		69		31				27.3		7.8		
6		7.26		96		72		24				28.1		6.3		
7		7.14		96		67		29				28.1		6.3		
8		7.16		96		65		31				28.1		6.3		
9		7.16		98		68		30				28.1		6.8		
10		7.11		96		71		25				28.9		5.8		
11		7.34		96		72		24				28.9		5.8		
12		7.21		98		69		29				28.9		6.3		
13		7.36		98		68		30				28.1		6.8		
14		7.29		100		68		32				28.9		6.8		
15		7.30		98		69		29				27.3		7.3		
16		7.20		98		70		28				28.9		6.3		
17		7.17		98		70		28				28.9		6.3		
18		7.17		96		68		28				28.9		5.8		
19		7.11		100		68		32				28.1		7.3		
20		7.20		98		71		27				28.9		6.3		
21		7.11		102		70		32				28.1		7.8		
22		7.24		98		70		28				28.1		6.8		
23		7.24		100		70		30				27.3		7.8		
24		7.20		96		70		26				28.9		5.8		
25		7.26		100		68		32				28.1		7.3		
26		7.26		96		71		25				29.7		5.3		
27		7.24		98		71		27				31.3		4.9		
28		7.25		100		71		29				31.3		5.3		
29		7.24		102		71		31				31.3		5.8		
30		7.24		106		70		36				31.3		6.8		
AVG		7.22		98		70		29				28.7		6.5		
MAX		7.41		106		72		36				31.3		7.8		
MIN		7.11		96		65		24				25.7		4.9		

Bacteriological & Physical Parameters WSSN 2310 Apr-11

DATE	Total Coliform Plant Tap							Standard Plate Count		Wind Direction	Temp deg.C	Color		Odor	
	B&P		Dort	3MG Well	Pump	Lab Tap		Raw	Tap			Raw	Tap	Raw	Tap
	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74
1	1/0		2/0	2/0	2/0	2/0					9.7				
2	1/0		2/0	2/0	2/0	2/0					8.3				
3	1/0		2/0	2/0	2/0	2/0					9.7				
4	1/0		2/0	2/0	2/0	2/0					10.7				
5	1/0		2/0	2/0	2/0	2/0					9.5				
6	1/0		2/0	2/0	2/0	2/0					9.4				
7	1/0		2/0	2/0	2/0	2/0			< 2		9.5				
8	1/0		2/0	2/0	2/0	2/0					9.4				
9	1/0		2/0	2/0	2/0	2/0					10.4				
10	1/0		2/0	2/0	2/0	2/0					9.4				
11	1/0		2/0	2/0	2/0	2/0					10.1				
12	1/0		2/0	2/0	2/0	2/0					10.5				
13	1/0		2/0	2/0	2/0	2/0					10.5				
14	1/0		2/0	2/0	2/0	2/0					9.2				
15	1/0		2/0	2/0	2/0	2/0					9.7				
16	1/0		2/0	2/0	2/0	2/0					8.7				
17	1/0		2/0	2/0	2/0	2/0					9.1				
18	1/0		2/0	2/0	2/0	2/0					8.0				
19	1/0		2/0	2/0	2/0	2/0					9.4				
20	1/0		2/0	2/0	2/0	2/0					8.4				
21	1/0		2/0	2/0	2/0	2/0					9.4				
22	1/0		2/0	2/0	2/0	2/0					9.3				
23	1/0		2/0	2/0	2/0	2/0					11.6				
24	1/0		2/0	2/0	2/0	2/0					12.1				
25	1/0		2/0	2/0	2/0	2/0					11.7				
26	1/0		2/0	2/0	2/0	2/0					10.4				
27	1/0		2/0	2/0	2/0	2/0					11.4				
28	1/0		2/0	2/0	2/0	2/0					11.6				
29	1/0		2/0	2/0	2/0	2/0					10.8				
30	1/0		2/0	2/0	2/0	2/0					11.6				
											10.0				
											12.1				
											8.0				

Distribution System Monitoring **WSSN 2310** **Apr-11**

DATE	Free Chlorine Residual at Bacteriological Montioring Stations mg/l															
	1	2	3	4	5	6	7	8	9	10	11	CS	WR	STA II AM	STA II PM	Number of Samples
1												0.8	1.0	0.9	1.0	4
2														1.0	1.0	2
3														0.9	0.9	2
4												0.8	1.0	0.9	0.9	4
5	0.4	0.6	0.6			0.8	0.7	0.4	0.7	0.5	0.8	0.8	1.0	0.7	0.9	13
6												0.7	0.9	0.8	0.8	4
7	0.4	0.7				0.8	0.6	0.6		0.4	0.7	0.7	0.9	0.8	0.9	11
8												0.7	0.9	0.8	0.8	4
9														0.8	0.9	2
10														0.8	0.9	2
11														0.9	0.9	2
12												0.7	0.8	0.8	0.9	4
13	0.4	0.4				0.7	0.5	0.4	0.9	0.3	0.8	0.7	0.9	0.8	0.9	12
14												0.7	0.8	0.8	0.9	4
15												0.7	0.9	0.9	0.9	4
16														0.7	0.9	2
17														0.9	0.9	2
18												0.5	0.9	0.9	0.9	4
19		0.4	0.5			0.5	0.5	0.4		0.4	0.5	0.7	0.8	0.9	0.9	11
20												0.7	0.8	0.8	0.7	4
21	0.4	0.5	0.5			0.6	0.5	0.3	0.7	0.3	0.6	0.7	0.9	0.6	0.6	13
22												0.7	0.8	0.8	0.8	4
23														0.8	0.8	2
24														0.8	0.8	2
25														0.8	0.8	2
26														0.8	0.8	2
27						0.8	0.6	0.4		0.3				1.0	0.9	6
28	0.3	0.4	0.4						0.8		0.6	0.6	0.5	0.9	0.9	9
29												0.5	0.7	0.6	1.0	4
30														0.9	0.8	2

Monthly Cl_2 Avg.	**0.722**
Quarterly Cl_2 Avg.	**0.828**
Yearly Cl_2 Avg.	**0.696**
Total Samples	**143**

Distribution System Monitoring **WSSN 2310** **Apr-11**

DATE	Total Chlorine Residual at Bacteriological Montioring Stations mg/l															
	1	2	3	4	5	6	7	8	9	10	11	CS	WR	STA II AM	STA II PM	Number of Samples
1												1.0	1.1	1.1	1.1	4
2														1.1	1.1	2
3														1.0	1.0	2
4												0.9	1.1	1.0	1.0	4
5	0.5	0.7	0.8			0.9	0.9	0.6	0.9	0.7	0.9	0.9	1.2	0.9	1.0	13
6												0.9	1.1	1.0	0.9	4
7	0.5	0.9				0.9	0.8	0.7		0.5	0.9	0.9	1.1	0.9	1.0	11
8												0.8	1.1	1.0	1.0	4
9														1.0	1.0	2
10														0.9	1.0	2
11														1.0	1.0	2
12												0.9	1.0	1.0	1.0	4
13	0.5	0.6				0.9	0.7	0.5	1.0	0.4	1.0	0.9	1.1	1.0	1.0	12
14												0.8	0.9	1.0	1.0	4
15												0.8	1.0	1.0	1.0	4
16														0.9	1.0	2
17														1.0	1.0	2
18												0.7	1.1	1.0	1.0	4
19		0.5	0.7			0.7	0.7	0.5		0.5	0.7	0.8	0.9	1.0	1.0	11
20												0.8	1.0	0.9	0.9	4
21	0.5	0.7	0.7			0.7	0.7	0.4	0.8	0.4	0.8	0.8	1.0	0.7	0.8	13
22												0.8	1.0	1.0	1.0	4
23														1.0	1.0	2
24														0.9	0.9	2
25														0.9	0.9	2
26														0.9	0.9	2
27						0.9	0.7	0.5		0.4				1.0	1.0	6
28	0.4	0.6	0.6						1.1		0.8	0.8	0.7	1.0	1.0	9
29												0.9	0.9	0.9	1.2	4
30														1.1	1.0	2

Monthly Cl_2 Avg.	**0.869**
Quarterly Cl_2 Avg.	**0.974**
Yearly Cl_2 Avg.	**0.841**
Total Samples	**143**

ROUTINE POSITIVE DISTRIBUTION SAMPLES

Total number of positive routine samples:				Total Coliform: 0		Fecal Coliform: 0	
Date	Monitoring Station	Total Coliform	Fecal Coliform	Date	Retest of Station, Upstream & Downstream	Total Coliform	Fecal Coliform
Total number of routine distribution samples analyzed:				**143**			
Total number of routine distribution samples required:				**100**			

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

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

2310

MONTHLY OPERATION REPORT
OF
WATER TREATMENT PLANT

Water Chemistry Unit
Water Division
APR 15 2011
Lansing District

For Month of March 2011

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

Michael Glasgow — CERTIFIED OPERATOR
F-1R S-3 — CLASSIFICATION

Michael Glasgow
SIGNATURE OF APPROPRIATE OFFICIAL

TREATMENT RATE AND FILTER DATA

1. Treatment Rate, Maximum____ Million Gallons Per Day
2. Treatment Rate, Approved Rated Plant Capacity____Million Gallons per Day
3. Average Filter Run___ Hours, Average Head Loss _____Feet
4. Average Filtration Rate _____ Gallons per Square Ft. per Minute
5. Maximum Filtration Rate _____ Gallons per Square Ft. per Minute
6. Average Wash Water Use _____ percent of Treated Water

CHEMICAL DATA

7. Chlorine on hand _____ lbs.: Estimated supply _____ days
8. Lime (CaO) on hand _____ lbs.: Estimated supply _____ days
9. Alum (Al3+) on hand _____ lbs.: Estimated supply _____ days
10. Cost of All Chemicals per Million Gallons _____
11. Total Power Cost per Million Gallons _____

Remarks:

Submit to: Mike Prysby, P.E.
MDEQ-Water Division-Lansing District
P.O. Box 30242
Lansing, MI 48909

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

MP

Coagulation Parameters **WSSN 2310** **Mar-11**

DATE	Total Million Gallons Purchased	Million Gallons to County	Million Gallons to Flint			Ferric Chloride as Fe 3+ mg/l	Turbidity, NTU units						
							Raw				Plant Tap		
							# of Samples	Avg.	Max		# of Samples	Avg.	Max
	1	1A	1B	4	5	6	7	8	9	10	11	12	13
1	25.51	8.86	16.65								3	0.06	0.06
2	26.26	10.47	15.79								3	0.06	0.07
3	24.59	9.47	15.12								3	0.07	0.07
4	25.19	10.82	14.37								1	0.09	0.09
5	25.28	10.68	14.60								3	0.07	0.08
6	24.31	10.33	13.98								1	0.08	0.08
7	25.35	10.26	15.09								3	0.07	0.08
8	25.67	10.49	15.18								3	0.07	0.07
9	25.39	10.36	15.03								3	0.06	0.08
10	25.21	10.46	14.75								3	0.06	0.06
11	25.09	10.43	14.66								3	0.08	0.08
12	24.73	10.69	14.04								3	0.06	0.06
13	24.86	10.58	14.28								3	0.06	0.07
14	25.70	10.51	15.19								3	0.07	0.08
15	25.28	10.42	14.86								3	0.09	0.12
16	24.95	10.01	14.94								3	0.08	0.09
17	25.08	9.89	15.19								3	0.09	0.09
18	24.65	9.86	14.79								3	0.08	0.09
19	24.44	9.99	14.45								3	0.08	0.09
20	23.93	9.91	14.02								3	0.11	0.11
21	24.99	10.17	14.82								3	0.09	0.13
22	24.72	9.89	14.83								3	0.10	0.11
23	24.47	9.76	14.71								3	0.09	0.10
24	24.47	9.73	14.74								3	0.09	0.10
25	24.84	10.15	14.69								3	0.09	0.09
26	25.07	10.04	15.03								3	0.09	0.09
27	23.93	10.49	13.44								3	0.08	0.10
28	25.54	10.45	15.09								3	0.08	0.11
29	25.20	10.17	15.03								3	0.08	0.09
30	24.87	10.01	14.86								3	0.09	0.09
31	24.85	10.16	14.69								3	0.08	0.08
AVG	24.98	10.18	14.80								3	0.08	0.09
MAX	26.26	10.82	16.65								3	0.11	0.13
MIN	23.93	8.86	13.44								1	0.06	0.06
Total	774.38	315.51	458.89										

Flouridation & Chlorination **WSSN 2310** **Mar-11**

DATE	Fluoride Applied F- mg/l	Fluoride Analyses mg/l			Chlorine App. Mg/l			Chlorine Residual mg/l							
						Chlorine (prior to filtration) mg/L OCl-	Post Chlorine mg/L	B&P	Sta II	Dort	3MG Well		Tap		
		Raw	Tap	Dist				Free	Free	Free	Free			Free	
	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1			0.74					1.0	0.9	0.9	1.0			1.1	
2			0.65					0.9	1.0	1.0	0.9			0.9	
3			0.74					0.9	1.0	1.0	1.0			1.0	
4			0.72					0.9	1.0	0.8	0.9			1.0	
5			0.73					1.0	1.0	0.9	1.0			0.9	
6			0.71					1.0	1.0	0.8	0.8			1.0	
7			0.76					0.9	1.0	1.0	1.0			1.0	
8			0.73					1.0	1.0	0.9	1.0			1.0	
9			0.73					1.0	1.0	1.0	1.0			0.9	
10			0.70					1.0	1.1	1.0	0.9			1.0	
11			0.68					0.9	0.9	0.9	0.9			1.0	
12			0.67					0.9	0.9	0.9	0.9			0.9	
13			0.67					0.9	0.9	0.8	0.9			0.8	
14			0.77					0.9	1.0	0.9	0.9			0.9	
15			0.90					1.0	0.9	0.9	0.9			1.0	
16			0.93					0.9	1.0	0.9	0.9			0.9	
17			0.96					0.9	0.9	0.9	0.8			1.0	
18			1.06					0.9	0.9	0.9	0.9			1.0	
19			1.05					0.9	0.9	0.9	0.9			0.9	
20			1.04					0.9	0.9	0.9	1.0			0.9	
21			1.05					0.9	1.0	0.8	1.0			0.8	
22			1.02					0.9	1.0	0.9	0.9			0.9	
23			1.00					0.9	1.0	0.9	1.0			1.0	
24			0.96					0.9	0.9	0.9	1.0			1.0	
25			0.99					0.8	0.9	0.9	1.0			1.0	
26			0.99					0.9	0.9	0.9	1.0			1.0	
27			0.99					0.9	0.9	0.9	0.9			0.9	
28			0.89					1.0	1.0	0.9	0.9			0.9	
29			0.96					1.0	1.0	0.9	0.9			0.9	
30			0.90					0.9	1.1	0.9	0.9			1.0	
31			0.86					1.0	1.0	1.0	1.0			0.9	
AVG			0.86					0.9	1.0	0.9	0.9			0.9	
MAX			1.06					1.0	1.1	1.0	1.0			1.1	
MIN			0.65					0.8	0.9	0.8	0.8			0.8	

Chemical Analyses **WSSN 2310** **Mar-11**

DATE	pH		Total Hard as $CaCO_3$ mg/l		Total Alk as $CaCO_3$ mg/l		NonCarbonate Hardness as $CaCO_3$ mg/l				Calcium Ca ++ mg/l		Magnesium as Mg ++ mg/l		Chloride as Cl - mg/l	
	Raw	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	39	40	41	42	43	44
1		7.22		92		70		22				28.9		4.9		
2		7.26		98		75		23				28.9		6.3		
3		7.13		100		71		29				28.1		7.3		
4		7.39		100		76		24				29.7		6.3		
5		7.23		98		65		33				30.5		5.3		
6		7.37		98		77		21				30.5		5.3		
7		7.18		98		74		24				29.7		5.8		
8		7.20		98		71		27				28.9		6.3		
9		7.23		98		71		27				30.5		5.3		
10		7.21		96		70		26				28.9		5.8		
11		7.16		102		72		30				27.3		8.3		
12		7.15		102		70		32				28.9		7.3		
13		7.19		96		72		24				28.9		5.8		
14		7.34		96		74		22				28.9		5.8		
15		7.24		100		71		29				28.1		7.3		
16		7.31		98		70		28				28.9		6.3		
17		7.21		100		68		32				28.9		6.8		
18		7.28		96		67		29				28.9		5.8		
19		7.20		98		71		27				28.1		6.8		
20		7.17		96		67		29				28.1		6.3		
21		7.27		98		70		28				28.1		6.8		
22		7.25		96		67		29				28.1		6.3		
23		7.20		100		69		31				28.1		7.3		
24		7.33		96		67		29				27.3		6.8		
25		7.33		94		70		24				27.3		6.3		
26		7.34		96		67		29				28.1		6.3		
27		7.19		96		70		26				28.9		5.8		
28		7.27		96		70		26				28.1		6.3		
29		7.34		98		66		32				29.7		5.8		
30		7.24		96		68		28				25.7		7.8		
31		7.14		100		69		31				28.1		7.3		
AVG		7.24		98		70		27				28.6		6.4		
MAX		7.39		102		77		33				30.5		8.3		
MIN		7.13		92		65		21				25.7		4.9		

Bacteriological & Physical Parameters **WSSN 2310** **Mar-11**

DATE	Total Coliform							Standard Plate Count		Wind Direction	Temp deg.C	Color		Odor	
	Plant Tap														
	B&P		Dort	3MG Well	Pump	Lab Tap		Raw	Tap			Raw	Tap	Raw	Tap
	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74
1	1/0		2/0	2/0	2/0	2/0					11.3				
2	1/0		2/0	2/0	2/0	2/0					10.7				
3	1/0		2/0	2/0	2/0	2/0					10.1				
4	1/0		2/0	2/0	2/0	2/0					N/A				
5	1/0		2/0	2/0	2/0	2/0					11.1				
6	1/0		1/0	1/0	1/0	1/0					N/A				
7	1/0		2/0	2/0	2/0	2/0					8.9				
8	1/0		2/0	2/0	2/0	2/0					12.1				
9	1/0		2/0	2/0	2/0	2/0					9.5				
10	1/0		2/0	2/0	2/0	2/0					9.5				
11	1/0		2/0	2/0	2/0	2/0					8.6				
12	1/0		2/0	2/0	2/0	2/0					10.5				
13	1/0		2/0	2/0	2/0	2/0					9.2				
14	1/0		2/0	2/0	2/0	2/0					8.9				
15	1/0		2/0	2/0	2/0	2/0					10.2				
16	1/0		2/0	2/0	2/0	2/0					9.4				
17	1/0		2/0	2/0	2/0	2/0			< 2		10.5				
18	1/0		2/0	2/0	2/0	2/0					11.5				
19	1/0		2/0	2/0	2/0	2/0					10.9				
20	1/0		2/0	2/0	2/0	2/0					10.4				
21	1/0		2/0	2/0	2/0	2/0					11.7				
22	1/0		2/0	2/0	2/0	2/0					10.4				
23	1/0		2/0	2/0	2/0	2/0					11.3				
24	1/0		2/0	2/0	2/0	2/0					10.6				
25	1/0		2/0	2/0	2/0	2/0					11.1				
26	1/0		2/0	2/0	2/0	2/0					10.2				
27	1/0		2/0	2/0	2/0	2/0					9.7				
28	1/0		2/0	2/0	2/0	2/0					9.0				
29	1/0		2/0	2/0	2/0	2/0					8.6				
30	1/0		2/0	2/0	2/0	2/0					10.3				
31	1/0		2/0	2/0	2/0	2/0					9.4				
											10.2				
											12.1				
											8.6				

Distribution System Monitoring **WSSN 2310** **Mar-11**

DATE	Free Chlorine Residual at Bacteriological Montioring Stations mg/l															
	1	2	3	4	5	6	7	8	9	10	11	CS	WR	STA II AM	STA II PM	Number of Samples
1	0.5	0.7	0.7					0.4	1.1	0.4	1.0	0.8	1.1	0.9	0.9	11
2												0.8	1.1	1.0	1.0	4
3	0.4	0.8	0.7			0.9	0.8	0.4	1.1	0.6	0.8	0.8	1.1	1.0	1.0	13
4												0.7	0.9	1.0	1.0	4
5														0.9	1.1	2
6															1.0	1
7												0.8	1.1	0.9	1.0	4
8	1.0	0.7	0.6			0.9	0.7	0.5	1.0	0.9	0.7	0.9	1.1	0.9	1.0	13
9												0.8	1.1	1.0	0.9	4
10												0.8	1.1	1.1	1.0	4
11												0.7	1.1	0.9	0.9	4
12														0.9	0.9	2
13														0.9	0.9	2
14												0.9	1.0	0.9	1.0	4
15	0.7	0.8	0.7			0.8	0.8	0.4	1.1	0.7	0.8	0.8	1.1	0.9	0.9	13
16												0.8	1.1	1.0	1.0	4
17	0.6	0.7				0.9	0.6	0.4	1.0	0.4	0.8	0.8	1.0	0.9	0.9	12
18												0.8	1.0	0.9	0.9	4
19														0.9	0.9	2
20														0.9	0.9	2
21														0.9	1.0	2
22												0.7	1.0	1.0	1.0	4
23												1.0	1.1	1.0	1.0	4
24	0.7	0.8	0.7			0.7	0.7	0.4	1.0	0.5	0.6	0.8	1.1	0.7	1.0	13
25												0.6	1.1	0.9	0.9	4
26														0.9	0.9	2
27														0.8	1.0	2
28												0.8	1.1	0.9	1.1	4
29												0.6	1.1	1.0	1.1	4
30		0.8				0.8	0.7	0.4		0.5	0.7	0.8	1.1	1.0	1.1	10
31												0.6	1.0	1.0	1.0	4

Monthly Cl_2 Avg.	**0.859**
Quarterly Cl_2 Avg.	**0.840**
Yearly Cl_2 Avg.	**0.699**
Total Samples	**162**

Distribution System Monitoring **WSSN 2310** **Mar-11**

DATE	Total Chlorine Residual at Bacteriological Montioring Stations mg/l															
	1	2	3	4	5	6	7	8	9	10	11	CS	WR	STA II AM	STA II PM	Number of Samples
1	0.7	0.8	0.8					0.5	1.2	0.5	1.1	0.9	1.3	1.0	1.0	11
2												1.0	1.3	1.1	1.1	4
3	0.5	0.9	0.9			1.2	0.9	0.5	1.2	0.8	1.0	0.9	1.3	1.1	1.2	13
4												0.8	1.1	1.1	1.1	4
5														1.1	1.2	2
6															1.1	1
7												0.9	1.3	1.1	1.1	4
8	1.1	0.9	0.7			1.0	0.8	0.6	1.1	1.0	0.9	1.0	1.3	1.0	1.1	13
9												0.9	1.2	1.1	1.0	4
10												1.0	1.3	1.2	1.1	4
11												0.8	1.3	1.1	1.1	4
12														1.0	1.0	2
13														1.0	1.0	2
14												1.0	1.2	1.0	1.1	4
15	0.9	0.9	0.9			1.0	1.0	0.5	1.2	0.8	1.0	0.9	1.2	1.0	1.0	13
16												1.0	1.2	1.1	1.1	4
17	0.7	0.8				1.1	0.8	0.6	1.2	0.6	1.0	0.9	1.2	1.0	1.0	12
18												1.0	1.2	1.0	1.0	4
19														1.0	1.0	2
20														1.0	1.0	2
21														1.0	1.1	2
22												0.9	1.2	1.1	1.1	4
23												1.1	1.2	1.1	1.1	4
24	0.9	0.9	0.8			0.9	0.9	0.6	1.1	0.7	0.8	0.9	1.2	0.9	1.1	13
25												0.7	1.2	1.1	1.1	4
26														1.1	1.1	2
27														1.0	1.1	2
28												1.0	1.3	1.1	1.2	4
29												0.8	1.3	1.2	1.2	4
30		1.0				0.9	0.9	0.5		0.6	0.8	0.9	1.2	1.1	1.2	10
31												0.8	1.2	1.1	1.1	4

Monthly Cl_2 Avg.	**0.998**
Quarterly Cl_2 Avg.	**0.990**
Yearly Cl_2 Avg.	**0.842**
Total Samples	**162**

ROUTINE POSITIVE DISTRIBUTION SAMPLES

Total number of positive routine samples:				Total Coliform: 0		Fecal Coliform: 0	
Date	Monitoring Station	Total Coliform	Fecal Coliform	Date	Retest of Station, Upstream & Downstream	Total Coliform	Fecal Coliform

Total number of routine distribution samples analyzed:	**162**
Total number of routine distribution samples required:	**100**

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

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

2310

MONTHLY OPERATION REPORT OF WATER TREATMENT PLANT

Waste & Hazardous Materials Division

MAR 09 2011

Lansing District

For Month of February 2011

Flint Water Plant — NAME OF WATER SYSTEM

2310 — WSSN

Genesee — COUNTY

Michael Glasgow — CERTIFIED OPERATOR

F-1R S-3 — CLASSIFICATION

SIGNATURE OF APPROPRIATE OFFICIAL

TREATMENT RATE AND FILTER DATA

1. Treatment Rate, Maximum____ Million Gallons Per Day
2. Treatment Rate, Approved Rated Plant Capacity____Million Gallons per Day
3. Average Filter Run___ Hours, Average Head Loss _____Feet
4. Average Filtration Rate _____ Gallons per Square Ft. per Minute
5. Maximum Filtration Rate _____ Gallons per Square Ft. per Minute
6. Average Wash Water Use _____ percent of Treated Water

CHEMICAL DATA

7. Chlorine on hand _____ lbs.: Estimated supply _____ days
8. Lime (CaO) on hand _____ lbs.: Estimated supply _____ days
9. Alum (Al3+) on hand _____ lbs.: Estimated supply _____ days
10. Cost of All Chemicals per Million Gallons _____
11. Total Power Cost per Million Gallons _____

Remarks:

Submit to: Mike Prysby, P.E.
MDEQ-Water Division-Lansing District
P.O. Box 30242
Lansing, MI 48909

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

NP

Coagulation Parameters **WSSN 2310** **Feb-11**

DATE	Total Million Gallons Purchased	Million Gallons to County	Million Gallons to Flint			Ferric Chloride as Fe 3+ mg/l	Turbidity, NTU units						
							Raw				Plant Tap		
							# of Samples	Avg.	Max		# of Samples	Avg.	Max
	1	1A	1B	4	5	6	7	8	9	10	11	12	13
1	27.32	10.68	16.64								3	0.09	0.09
2	27.68	10.83	16.85								3	0.11	0.13
3	27.92	10.59	17.33								3	0.11	0.12
4	28.50	11.10	17.40								3	0.13	0.14
5	26.53	11.05	15.48								0	N/A	N/A
6	26.36	10.65	15.71								3	0.09	0.10
7	27.43	10.56	16.56								3	0.12	0.13
8	27.38	10.99	16.39								3	0.10	0.12
9	28.10	11.00	17.10								3	0.09	0.09
10	28.15	10.96	17.19								3	0.13	0.20
11	29.17	11.13	18.04								1	0.12	0.12
12	28.92	11.30	17.62								3	0.11	0.12
13	28.45	11.19	17.26								3	0.09	0.10
14	28.45	11.61	16.84								3	0.11	0.13
15	30.07	10.68	19.39								3	0.14	0.15
16	30.85	10.96	19.89								3	0.14	0.16
17	30.88	10.77	20.11								3	0.12	0.14
18	30.96	10.74	20.22								3	0.15	0.16
19	31.26	10.85	20.41								3	0.11	0.11
20	29.75	10.78	18.97								3	0.09	0.10
21	28.78	10.45	18.33								3	0.09	0.10
22	29.14	10.47	18.67								2	0.07	0.07
23	29.39	10.62	18.77								3	0.11	0.17
24	28.66	10.63	18.03								3	0.09	0.09
25	28.14	10.89	17.25								3	0.07	0.07
26	26.90	10.46	16.44								3	0.06	0.07
27	26.65	10.65	16.00								3	0.06	0.07
28	26.86	10.49	16.37								3	0.06	0.07
AVG	28.52	10.82	17.69								3	0.10	0.12
MAX	31.26	11.61	20.41								3	0.15	0.20
MIN	26.36	10.45	15.48								0	0.06	0.07
Total	798.61	303.08	495.24										

Flouridation & Chlorination **WSSN 2310** **Feb-11**

DATE	Fluoride Applied F- mg/l	Fluoride Analyses mg/l			Chlorine App. Mg/l			Chlorine Residual mg/l							
						Chlorine (prior to filtration) mg/L OCl-	Post Chlorine mg/L	B&P	Sta II	Dort	3MG Well		Tap		
		Raw	Tap	Dist				Free	Free	Free	Free			Free	
	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1			0.85					1.0	1.0	0.9	1.0			1.0	
2			0.85					0.9	1.0	0.9	1.0			1.0	
3			0.82					0.9	1.0	0.9	1.1			1.0	
4			0.83					0.9	1.0	0.9	1.0			1.0	
5			0.79					0.9	1.0	0.9	0.9			1.1	
6			0.78					0.9	0.9	0.9	0.8			0.9	
7			0.92					0.9	1.0	0.9	0.9			0.9	
8			1.02					0.9	0.9	0.9	1.0			0.9	
9			0.95					1.0	0.9	0.9	0.9			0.9	
10			1.00					0.9	0.9	0.9	1.0			0.9	
11			1.06					0.9	1.0	0.7	0.8			1.0	
12			1.09					0.9	0.9	0.8	0.8			0.9	
13			1.16					0.9	1.0	0.8	0.9			1.0	
14			1.17					1.0	1.1	0.9	1.0			1.0	
15			1.01					0.9	1.0	0.9	0.9			1.0	
16			0.90					0.9	1.1	0.9	1.0			1.0	
17			1.01					1.0	1.0	0.9	1.0			1.0	
18			1.05					1.0	1.1	0.9	1.0			1.1	
19			1.02					1.0	1.1	0.9	1.0			1.1	
20			1.02					1.0	1.0	1.0	0.9			1.0	
21			1.15					1.0	1.0	0.9	0.9			1.0	
22			0.90					1.0	1.0	0.9	1.0			1.0	
23			0.98					0.9	1.1	0.9	1.0			1.0	
24			0.80					1.0	1.0	0.9	0.9			1.0	
25			0.76					1.0	1.0	0.9	1.0			1.0	
26			0.76					0.9	1.0	0.9	0.9			0.9	
27			0.78					1.0	1.0	0.9	0.9			1.0	
28			0.81					0.9	0.9	0.9	0.9			0.8	
AVG			0.94					0.9	1.0	0.9	0.9			1.0	
MAX			1.17					1.0	1.1	1.0	1.1			1.1	
MIN			0.76					0.9	0.9	0.7	0.8			0.8	

Chemical Analyses **WSSN 2310** **Feb-11**

DATE	pH		Total Hard as $CaCO_3$ mg/l		Total Alk as $CaCO_3$ mg/l		NonCarbonate Hardness as $CaCO_3$ mg/l				Calcium Ca ++ mg/l		Magnesium as Mg ++ mg/l		Chloride as Cl - mg/l	
	Raw	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	39	40	41	42	43	44
1		7.23		96		70		26				27.3		6.3		
2		7.19		100		67		33				27.3		7.8		
3		7.26		100		70		30				28.9		6.8		
4		7.26		102		71		31				28.9		7.3		
5		7.39		102		80		22				30.5		5.8		
6		7.19		98		68		30				29.7		5.8		
7		7.23		98		79		19				30.5		5.3		
8		7.40		98		74		24				29.7		5.8		
9		7.29		98		69		29				28.9		6.3		
10		7.37		98		72		26				30.5		4.9		
11		7.24		100		72		28				29.7		6.3		
12		7.23		96		71		25				29.7		5.3		
13		7.21		96		72		24				28.1		6.3		
14		7.30		98		71		27				28.9		6.3		
15		7.32		90		68		22				27.3		5.3		
16		7.28		96		69		27				29.7		5.3		
17		7.20		98		67		31				27.3		7.3		
18		7.23		98		65		33				27.3		7.3		
19		7.19		98		66		32				26.5		7.8		
20		7.15		96		68		28				27.3		6.8		
21		7.27		98		72		26				28.9		6.3		
22		7.12		92		66		26				27.3		5.8		
23		7.25		96		67		29				28.1		6.3		
24		7.12		96		67		29				27.3		6.8		
25		7.19		98		67		31				28.1		6.8		
26		7.23		96		71		25				28.1		6.3		
27		7.25		96		69		27				28.9		5.8		
28		7.35		98		69		29				28.9		6.3		
AVG		7.25		97		70		27				28.6		6.3		
MAX		7.40		102		80		33				30.5		7.8		
MIN		7.12		90		65		19				26.5		4.9		

Distribution System Monitoring **WSSN 2310** **Feb-11**

DATE	Free Chlorine Residual at Bacteriological Montioring Stations mg/l															
	1	2	3	4	5	6	7	8	9	10	11	CS	WR	STA II AM	STA II PM	Number of Samples
1												0.7	1.1	1.0	1.0	4
2												0.9	1.1	1.0	1.0	4
3	0.4	0.6	0.7			0.7	0.7	0.5	1.0	0.7	0.6	0.7	1.1	1.0	0.9	13
4												0.6	0.9	0.9	1.0	4
5														1.0	1.0	2
6														0.9	0.9	2
7												0.7	1.2	1.0	1.0	4
8														0.9	0.8	2
9												0.7	1.1	0.9	0.9	4
10														0.8	1.0	2
11															1.0	1
12														0.8	1.0	2
13														0.9	1.0	2
14												0.6	1.4	1.0	1.1	4
15	0.6	0.8	0.4			0.6	0.8	0.6		0.5	0.8	0.7	1.1	1.0	1.0	12
16												0.8	1.0	1.2	1.0	4
17	0.5	0.7	0.7			0.9	0.7	0.6	0.9	0.4	0.9	0.8	1.1	1.0	1.0	13
18												0.9	1.2	1.0	1.0	4
19														1.1	1.1	2
20														1.0	1.0	2
21												1.0	1.0	0.9	1.0	4
22	0.6	0.8	0.7			1.0	0.9	0.6	1.2	0.7	0.8	0.8	1.1	1.0	1.0	13
23												0.8	1.1	1.1	1.1	4
24	0.8	0.8	0.9			0.9	0.8	0.5	1.0	0.7	0.9	1.0	1.1	1.0	1.0	13
25												0.8	1.2	1.0	1.0	4
26														0.9	1.0	2
27														0.9	1.0	2
28												0.9	1.1	0.8	0.9	4

Monthly Cl_2 Avg.	**0.886**
Quarterly Cl_2 Avg.	**0.785**
Yearly Cl_2 Avg.	**0.693**
Total Samples	**133**

Bacteriological & Physical Parameters **WSSN 2310** **Feb-11**

DATE	Total Coliform							Standard Plate Count		Wind Direction	Temp deg.C	Color		Odor	
	Plant Tap														
	B&P		Dort	3MG Well	Pump	Lab Tap		Raw	Tap			Raw	Tap	Raw	Tap
	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74
1	1/0		2/0	2/0	2/0						13.9				
2	1/0		2/0	2/0	2/0						14.0				
3	1/0		2/0	2/0	2/0						14.4				
4	1/0		2/0	2/0	2/0						14.8				
5	1/0		2/0	2/0	2/0						N/A				
6	1/0		2/0	2/0	2/0						13.1				
7	1/0		2/0	2/0	2/0						11.4				
8	1/0		2/0	2/0	2/0						11.9				
9	1/0		2/0	2/0	2/0						11.0				
10	1/0		2/0	2/0	2/0						9.9				
11	1/0		1/0	1/0	1/0						9.6				
12	1/0		2/0	2/0	2/0						9.9				
13	1/0		2/0	2/0	2/0						9.7				
14	1/0		2/0	2/0	2/0						9.5				
15	1/0		2/0	2/0	2/0						11.2				
16	1/0		2/0	2/0	2/0						10.1				
17	1/0		2/0	2/0	2/0				2		11.3				
18	1/0		2/0	2/0	2/0						9.3				
19	1/0		2/0	2/0	2/0						10.9				
20	1/0		2/0	2/0	2/0						10.5				
21	1/0		2/0	2/0	2/0						10.8				
22	1/0		2/0	2/0	2/0						10.3				
23	1/0		2/0	2/0	2/0						9.7				
24	1/0		2/0	2/0	2/0						11.3				
25	1/0		2/0	2/0	2/0						12.1				
26	1/0		2/0	2/0	2/0						10.8				
27	1/0		2/0	2/0	2/0						8.9				
28	1/0		2/0	2/0	2/0						11.6				
											11.2				
											14.8				
											8.9				

Distribution System Monitoring **WSSN 2310** **Feb-11**

DATE	Total Chlorine Residual at Bacteriological Montioring Stations mg/l															
	1	2	3	4	5	6	7	8	9	10	11	CS	WR	STA II AM	STA II PM	Number of Samples
1												0.9	1.2	1.2	1.1	4
2												1.1	1.3	1.1	1.1	4
3	0.6	0.7	0.8			0.9	0.9	0.6	1.0	0.8	0.7	0.9	1.3	1.1	1.1	13
4												0.8	1.1	1.0	1.1	4
5														1.2	1.2	2
6														1.0	1.0	2
7												0.9	1.4	1.1	1.2	4
8														1.0	1.0	2
9												0.9	1.3	1.0	1.0	4
10														1.0	1.0	2
11															1.1	1
12														0.9	1.1	2
13														1.0	1.1	2
14												0.8	1.5	1.1	1.2	4
15	0.8	0.9	0.6			0.7	0.9	0.7		0.6	1.0	0.8	1.3	1.1	1.1	12
16												1.0	1.2	1.3	1.1	4
17	0.6	0.9	0.8			1.1	0.9	0.8	1.1	0.5	1.1	0.9	1.3	1.2	1.1	13
18												1.0	1.3	1.2	1.2	4
19														1.2	1.2	2
20														1.1	1.1	2
21												1.1	1.2	1.0	1.1	4
22	0.7	1.0	0.9			1.1	1.0	0.7	1.4	0.8	1.1	1.0	1.3	1.1	1.1	13
23												0.9	1.2	1.2	1.2	4
24	0.9	1.0	1.0			1.1	1.0	0.7	1.1	0.8	1.0	1.1	1.3	1.2	1.1	13
25												0.9	1.3	1.1	1.1	4
26														1.0	1.1	2
27														1.0	1.2	2
28												1.0	1.2	1.0	1.0	4

Monthly Cl_2 Avg.	**1.03**
Quarterly Cl_2 Avg.	**0.938**
Yearly Cl_2 Avg.	**0.836**
Total Samples	**133**

ROUTINE POSITIVE DISTRIBUTION SAMPLES

Total number of positive routine samples:				Total Coliform: 0		Fecal Coliform: 0	
Date	Monitoring Station	Total Coliform	Fecal Coliform	Date	Retest of Station, Upstream & Downstream	Total Coliform	Fecal Coliform
Total number of routine distribution samples analyzed:				133			
Total number of routine distribution samples required:				100			

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

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

Waste & Hazardous Materials Division

FEB 14 2011

Lansing District

2310

MONTHLY OPERATION REPORT OF WATER TREATMENT PLANT

For Month of January 2011

Flint Water Plant
NAME OF WATER SYSTEM

2310 Genesee
WSSN COUNTY

Brent F. Wright
CERTIFIED OPERATOR

F-2 S-3
CLASSIFICATION

SIGNATURE OF APPROPRIATE OFFICIAL

TREATMENT RATE AND FILTER DATA

1. Treatment Rate, Maximum____ Million Gallons Per Day
2. Treatment Rate, Approved Rated Plant Capacity____Million Gallons per Day
3. Average Filter Run___ Hours, Average Head Loss _____Feet
4. Average Filtration Rate _____ Gallons per Square Ft. per Minute
5. Maximum Filtration Rate _____ Gallons per Square Ft. per Minute
6. Average Wash Water Use _____ percent of Treated Water

CHEMICAL DATA

7. Chlorine on hand _____ lbs.: Estimated supply _____ days
8. Lime (CaO) on hand _____ lbs.: Estimated supply _____ days
9. Alum (Al3+) on hand _____ lbs.: Estimated supply _____ days
10. Cost of All Chemicals per Million Gallons _____
11. Total Power Cost per Million Gallons _____

Remarks:

Submit to: Mike Prysby, P.E.
MDEQ-Water Division-Lansing District
P.O. Box 30242
Lansing, MI 48909

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

MP

Coagulation Parameters **WSSN 2310** **Dec-10**

DATE	Total Million Gallons Purchased	Million Gallons to County	Million Gallons to Flint			Ferric Chloride as Fe 3+ mg/l	Turbidity, NTU units						
							Raw				Plant Tap		
							# of Samples	Avg.	Max		# of Samples	Avg.	Max
	1	1A	1B	4	5	6	7	8	9	10	11	12	13
1	24.27	9.89	14.38								3	0.11	0.11
2	23.80	9.59	14.21								3	0.11	0.11
3	24.49	9.48	15.01								3	0.11	0.12
4	25.78	10.20	15.58								3	0.13	0.16
5	26.18	11.00	15.18								3	0.14	0.17
6	25.92	10.91	15.01								3	0.10	0.12
7	26.37	10.99	15.38								3	0.08	0.09
8	26.56	11.08	15.48								1	0.10	0.10
9	25.92	11.14	14.78								3	0.06	0.07
10	25.88	10.77	15.11								3	0.07	0.09
11	26.13	10.68	15.45								3	0.11	0.11
12	26.27	11.00	15.27								3	0.10	0.13
13	26.92	11.18	15.74								3	0.09	0.11
14	25.66	10.87	14.79								3	0.08	0.09
15	25.95	10.84	15.11								3	0.08	0.09
16	25.68	10.13	15.55								3	0.06	0.06
17	26.22	10.93	15.29								3	0.07	0.07
18	27.13	10.93	16.20								3	0.08	0.09
19	26.78	11.43	15.35								3	0.08	0.09
20	27.42	10.93	16.49								3	0.08	0.09
21	26.34	10.75	15.59								0	N/A	N/A
22	26.50	10.61	15.89								3	0.09	0.10
23	26.39	10.74	15.65								1	0.08	0.08
24	27.36	10.73	16.63								3	0.07	0.07
25	28.11	11.24	16.87								3	0.08	0.08
26	28.18	11.33	16.85								3	0.09	0.09
27	28.21	11.12	17.09								3	0.08	0.08
28	27.60	11.05	16.55								3	0.07	0.08
29	27.05	11.37	15.68								3	0.07	0.07
30	27.35	11.15	16.20								3	0.06	0.07
31	27.26	11.17	16.09								3	0.07	0.07
AVG	26.44	10.81	15.63								3	0.09	0.09
MAX	28.21	11.43	17.09								3	0.14	0.17
MIN	23.80	9.48	14.21								0	0.06	0.06
Total	819.68	335.23	484.43										

Flouridation & Chlorination **WSSN 2310** **Dec-10**

DATE	Fluoride Applied F- mg/l	Fluoride Analyses mg/l			Chlorine App. Mg/l			Chlorine Residual mg/l							
						Chlorine (prior to filtration) mg/L OCl-	Post Chlorine mg/L	B&P	Sta II	Dort	3MG Well		Tap		
		Raw	Tap	Dist				Free	Free	Free	Free			Free	
	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1			1.12					1.0	1.1	0.9	1.1			1.2	
2			1.14					0.9	1.0	1.0	1.0			1.1	
3			1.17					1.0	1.0	0.9	1.1			1.0	
4			1.19					1.0	0.8	0.9	1.0			0.9	
5			1.05					1.1	1.0	0.9	1.0			0.9	
6			1.01					1.0	0.9	0.9	0.9			1.0	
7			1.03					1.0	1.0	0.9	1.0			1.0	
8			N/A					0.9	0.9	0.7	0.9			1.0	
9			0.99					1.0	1.0	0.8	1.0			1.1	
10			1.05					0.8	1.0	0.9	1.0			1.0	
11			1.03					1.0	1.0	0.9	1.0			1.0	
12			1.06					1.0	1.0	1.0	1.0			1.0	
13			1.05					1.0	1.0	1.0	0.9			1.0	
14			1.06					0.9	1.0	0.9	0.9			1.0	
15			1.05					1.1	1.0	0.9	1.0			1.0	
16			0.94					1.0	1.0	0.9	1.1			1.0	
17			1.02					1.0	1.0	0.9	1.0			1.0	
18			1.07					0.9	1.0	0.9	1.0			1.0	
19			1.03					0.9	1.0	0.9	1.0			1.0	
20			1.03					0.9	1.0	0.9	1.0			1.1	
21			1.04					0.9	0.9	0.8	0.9			1.0	
22			0.98					1.0	0.9	0.9	0.9			1.0	
23			0.99					0.9	1.0	0.8	0.9			1.0	
24			1.02					0.9	1.1	0.9	1.0			1.1	
25			0.97					0.9	1.0	0.9	1.0			1.0	
26			0.99					0.9	1.1	0.9	1.0			1.0	
27			0.93					0.9	1.1	0.9	1.1			1.0	
28			1.00					1.0	1.1	0.9	1.1			1.1	
29			1.00					1.0	1.0	0.9	1.1			1.0	
30			0.99					1.0	1.0	0.9	1.0			1.0	
31			0.94					0.9	1.0	0.9	1.0			1.0	
AVG			1.03					1.0	1.0	0.9	1.0			1.0	
MAX			1.19					1.1	1.1	1.0	1.1			1.2	
MIN			0.93					0.8	0.8	0.7	0.9			0.9	

Chemical Analyses **WSSN 2310** **Dec-10**

DATE	pH		Total Hard as $CaCO_3$ mg/l		Total Alk as $CaCO_3$ mg/l		NonCarbonate Hardness as $CaCO_3$ mg/l				Calcium Ca ++ mg/l		Magnesium as Mg ++ mg/l		Chloride as Cl - mg/l	
	Raw	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	39	40	41	42	43	44
1		7.16		100		68		32				24.8		9.2		
2		7.18		94		70		24				27.3		6.3		
3		7.22		90		67		23				28.1		4.9		
4		7.24		96		64		32				28.1		6.3		
5		7.22		96		64		32				28.9		5.8		
6		7.23		96		62		34				28.9		5.8		
7		7.29		94		67		27				27.3		6.3		
8		N/A		N/A		N/A		N/A				N/A		N/A		
9		7.26		98		66		32				28.1		6.8		
10		7.22		98		67		31				28.1		6.8		
11		7.24		98		64		34				28.1		6.8		
12		7.19		98		68		30				28.9		6.3		
13		7.11		96		64		32				28.9		5.8		
14		7.16		96		66		30				28.9		5.8		
15		7.12		98		66		32				28.9		6.3		
16		7.24		94		66		28				26.5		6.8		
17		7.21		96		65		31				27.3		6.8		
18		7.20		100		65		35				28.1		7.3		
19		7.27		100		67		33				28.1		7.3		
20		7.18		96		68		28				27.3		6.8		
21		7.39		100		72		28				28.1		7.3		
22		7.20		94		68		26				28.9		5.3		
23		7.18		102		71		31				28.1		7.8		
24		7.21		100		66		34				28.1		7.3		
25		7.30		100		68		32				28.1		7.3		
26		7.09		96		72		24				28.1		6.3		
27		7.03		104		68		36				28.9		7.8		
28		7.16		102		71		31				28.9		7.3		
29		7.17		98		67		31				28.1		6.8		
30		7.24		100		69		31				28.1		7.3		
31		7.15		96		68		28				24.8		8.3		
AVG		7.20		98		67		30				28.0		6.8		
MAX		7.39		104		72		36				28.9		9.2		
MIN		7.03		90		62		23				24.8		4.9		

Bacteriological & Physical Parameters **WSSN 2310** **Dec-10**

DATE	Total Coliform							Standard Plate Count		Wind Direction	Temp deg.C	Color		Odor	
	Plant Tap														
	B&P		Dort	3MG Well	Pump	Lab Tap		Raw	Tap			Raw	Tap	Raw	Tap
	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74
1	1/0		2/0	2/0	2/0	2/0					13.8				
2	1/0		2/0	2/0	2/0	2/0					13.5				
3	1/0		2/0	2/0	2/0	2/0					13.2				
4	1/0		2/0	2/0	2/0	2/0					11.3				
5	1/0		2/0	2/0	2/0	2/0			<2		10.8				
6	1/0		2/0	2/0	2/0	2/0					11.2				
7	1/0		2/0	2/0	2/0	2/0					14.7				
8	1/0		2/0	2/0	2/0	2/0					13.0				
9	1/0		2/0	2/0	2/0	2/0					12.9				
10	1/0		2/0	2/0	2/0	2/0					15.0				
11	1/0		2/0	2/0	2/0	2/0					14.2				
12	1/0		2/0	2/0	2/0	2/0					13.6				
13	1/0		2/0	2/0	2/0	2/0					14.5				
14	1/0		2/0	2/0	2/0	2/0					12.9				
15	1/0		2/0	2/0	2/0	2/0					12.7				
16	1/0		2/0	2/0	2/0	2/0					12.3				
17	1/0		2/0	2/0	2/0	2/0					13.1				
18	1/0		2/0	2/0	2/0	2/0					12.3				
19	1/0		2/0	2/0	2/0	2/0					11.9				
20	1/0		2/0	2/0	2/0	2/0					12.1				
21	1/0		2/0	2/0	2/0	2/0					N/A				
22	1/0		2/0	2/0	2/0	2/0					11.3				
23	1/0		2/0	2/0	2/0	2/0					N/A				
24	1/0		2/0	2/0	2/0	2/0					11.9				
25	1/0		2/0	2/0	2/0	2/0					12.5				
26	1/0		2/0	2/0	2/0	2/0					13.6				
27	1/0		2/0	2/0	2/0	2/0					14.0				
28	1/0		2/0	2/0	2/0	2/0					14.9				
29	1/0		2/0	2/0	2/0	2/0					15.1				
30	1/0		2/0	2/0	2/0	2/0					14.8				
31	1/0		2/0	2/0	2/0	2/0					13.9				
											13.1				
											15.1				
											10.8				

Distribution System Monitoring **WSSN 2310** **Dec-10**

DATE	Free Chlorine Residual at Bacteriological Montioring Stations mg/l															
	1	2	3	4	5	6	7	8	9	10	11	CS	WR	STA II AM	STA II PM	Number of Samples
1														1.1	1.2	2
2														0.9	1.0	2
3												0.7	1.0	1.0	1.0	4
4												0.6	0.9	0.8	0.8	4
5	0.3	0.7				0.6	0.7	0.4	1.0	0.4	0.7			0.9	1.0	10
6												0.6	0.8	0.9	0.9	4
7												0.5	0.8	0.9	1.0	4
8														0.9	0.9	2
9														1.0	0.9	2
10												0.7	0.9	1.0	1.0	4
11												0.7	1.0	1.0	0.9	4
12	0.5	0.8				0.8	0.8	0.6	1.1	0.7	0.9	0.6	0.9	0.9	1.0	12
13	0.5	0.8	0.8			0.8	0.9	0.6	1.1	0.6	0.8	0.6	0.9	1.0	0.9	13
14												0.6	0.9	1.0	0.9	4
15														1.0	1.0	2
16														1.0	1.0	2
17												0.9	1.0	1.0	1.0	4
18														1.0	1.0	2
19								0.4	0.9	0.5		0.6	1.0	1.0	1.0	7
20	0.3	0.5				0.7	0.6				0.6	0.6	0.9	0.9	1.0	9
21												0.5	0.8	0.9	0.8	4
22														0.9	0.9	2
23														1.0	0.9	2
24												1.0	1.0	1.0	1.1	4
25														1.0	1.0	2
26	0.7	0.7				0.8	0.7	0.4	1.0	0.7	0.8	0.6	1.0	1.1	1.0	12
27												0.7	1.1	1.1	1.0	4
28												0.7	1.0	1.0	1.1	4
29														1.0	1.0	2
30														1.0	1.0	2
31												0.7	1.1	1.0	1.0	4

Monthly Cl_2 Avg.	**0.845**
Quarterly Cl_2 Avg.	**0.715**
Yearly Cl_2 Avg.	**0.681**
Total Samples	**139**

Distribution System Monitoring **WSSN 2310** **Dec-10**

DATE	Total Chlorine Residual at Bacteriological Montioring Stations mg/l															
	1	2	3	4	5	6	7	8	9	10	11	CS	WR	STA II AM	STA II PM	Number of Samples
1														1.3	1.4	2
2														1.1	1.2	2
3												0.9	1.1	1.1	1.1	4
4												0.8	1.0	1.0	1.0	4
5	0.4	0.9				0.8	0.9	0.6	1.2	0.5	0.9			1.1	1.1	10
6												0.8	1.0	1.1	1.1	4
7												0.7	1.0	1.0	1.1	4
8														1.0	1.0	2
9														1.1	1.0	2
10												0.9	1.1	1.1	1.2	4
11												0.8	1.1	1.1	1.1	4
12	0.6	1.0				0.9	1.0	0.7	1.3	0.9	1.1	0.8	1.1	1.0	1.1	12
13	0.6	0.9	0.9			1.0	1.0	0.7	1.2	0.7	1.0	0.8	1.0	1.2	1.1	13
14												0.7	1.1	1.1	1.1	4
15														1.1	1.2	2
16														1.2	1.2	2
17												1.1	1.2	1.1	1.2	4
18														1.2	1.2	2
19								0.6	1.1	0.7		0.8	1.1	1.1	1.2	7
20	0.4	0.6				0.9	0.8				0.8	0.8	1.1	1.1	1.1	9
21												0.6	1.0	1.0	1.1	4
22														1.1	1.1	2
23														1.1	1.1	2
24												1.1	1.1	1.1	1.2	4
25														1.1	1.2	2
26	0.8	0.9				0.9	0.9	0.5	1.1	0.8	0.9	0.8	1.2	1.2	1.2	12
27												0.8	1.2	1.2	1.2	4
28												0.9	1.2	1.1	1.3	4
29														1.1	1.2	2
30														1.2	1.2	2
31												0.9	1.3	1.2	1.2	4

Monthly Cl_2 Avg.	**1.004**
Quarterly Cl_2 Avg.	**0.870**
Yearly Cl_2 Avg.	**0.826**
Total Samples	**139**

ROUTINE POSITIVE DISTRIBUTION SAMPLES

Total number of positive routine samples:				Total Coliform: 0		Fecal Coliform: 0	
Date	Monitoring Station	Total Coliform	Fecal Coliform	Date	Retest of Station, Upstream & Downstream	Total Coliform	Fecal Coliform

Total number of routine distribution samples analyzed:	**139**
Total number of routine distribution samples required:	**100**