

## **Summary of City of Flint (City) Actions In Response to the EPA Emergency Administrative Order Updated: May 19, 2016**

Chapters 52, 57, 59a & 59b: Weekly Conference Call Regarding Flint Water Plant Operations May 19, 2016.

EPA Order Due Date: Weekly

MDEQ and the Flint Water Treatment Plant staff held the weekly conference call to review and discuss the weekly summary of water quality and corrosion control parameters that are reported on both the city's May operation report completed to date, and a summary of water quality parameters collected in the distribution system during the week of May 15<sup>th</sup>. These reports are being used to monitor the city's corrosion control treatment.

The following observations were noted:

- The supplemental phosphate dosage was consistent and ranged between 2.67 and 2.72 milligrams per liter. Included with this submission are the daily worksheets for the phosphoric acid feed system documenting the city's hourly oversight of this corrosion control treatment.
- All of the phosphate residuals in the distribution system at the sites monitored weekly were above the minimum of 3.1 milligrams per liter, ranging between 3.39 and 3.86 milligrams per liter.
- All pH measurements were greater than 7.0 at the Enhanced Water Quality Monitoring (EWQM) sites and the Point of Entry (Control Station #2) to the system. The pH levels ranged from 7.37 to 7.64 in the water received from Great Lakes Water Authority and from 7.18 to 7.34 at the distribution system sites. *A corrected EWQM report was submitted during the weekly conference call that indicated the initial pH results were incorrect, and for the most part, lower than the initial report but still above minimum.*
- Automatic flushing devices installed at distribution locations are continuing to serve the purpose of reducing water age and increasing chlorine residuals at some sites, although some are still being adjusted.
- Iron levels ranged between 0.01 and 0.05 milligrams per liter at all EWQM sites. Plant tap iron concentrations ranged from 0.02 to 0.05 in the last week.
- All but one of the lead samples collected from the EWQM sites reported no lead detected. The sample from 6204 N. Saginaw Street reported 3 ppb lead.
- The city submitted a narrative summary of their plans for supplemental chlorination and pH adjustment using caustic soda. MDEQ is preparing comments that will be provided to the city next week. These treatment systems will allow the city to better control chlorine residuals and maintain corrosion control throughout the distribution system. Plans and specifications will be submitted for a construction permit after which the city will install this equipment.

Overall, the corrosion control treatment is meeting expectations as demonstrated from the water quality monitoring submitted this week.

## 24hr Record of Ortho-Phosphate Used

Date: 5-12-16						Location of PO <sub>4</sub>		
	PO <sub>4</sub>	CS 2	PO <sub>4</sub>	Pump Setting		CS 2	Train Shed	Operator
	ml/min	MGD	PPM	Speed	Stroke	Gallons on Hand		
0:00	90	14.5	2.79	47	60	243	798	ET
1:00	90	14.8	2.73	47	60			ET
2:00	90	15.2	2.66	47	60			ET
3:00	90	15.2	2.66	47	60			ET
4:00	90	15.1	2.67	47	60			ET
5:00	90	14.5	2.79	47	60			ET
6:00	90	14.8	2.73	47	60			ET
7:00	70	12.0	2.62	35	60	251	798	ET
8:00	70	12.1	2.60	36	60	250	798	DS
9:00	70	11.9	2.64	36	60			TS
10:00	70	11.7	2.69	36	60			TS
11:00	70	11.5	2.73	36	60			TS
12:00	65	10.7	2.73	34	60			AG
13:00	65	10.6	2.75	34	60			TS
14:00	65	10.7	2.73	34	60			TS
15:00	65	11.4	2.56	34	60	242	798	TS
16:00	65	10.2	2.86	34	60	241	798	ET
17:00	65	11.1	2.63	34	60			ET
18:00	65	10.8	2.70	34	60			ET
19:00	65	10.7	2.73	34	60			ET
20:00	65	10.8	2.70	34	60			ET
21:00	70	12.1	2.60	38	60			ET
22:00	70	12.2	2.57	38	60			ET
23:00	90	15.0	2.69	49	60	235	798	ET
ml/min average : 74.791						Total gallons PO <sub>4</sub> Used:		
MGD average : 12.483						28 gallons		
PPM average : 2.69						Days of PO <sub>4</sub> on Hand: 4/3 days		
(Train Shed + CS2)								

## 24hr Record of Ortho-Phosphate Used

Date: 5-14-16 SATURDAY						Location of PO <sub>4</sub>		
	PO <sub>4</sub>	CS 2	PO <sub>4</sub>	Pump Setting		CS 2	Train Shed	Operator
	ml/min	MGD	PPM	Speed	Stroke	Gallons on Hand		
0:00	90	14.6	2.77	48	60	205	798	de
1:00	90	14.8	2.72	1	1			BE
2:00	85	14.4	2.65	45	60			BE
3:00	85	14.4	2.65	45	60			BE
4:00	85	13.6	2.80	45	60			BE
5:00	85	13.6	2.80	45	60			BE
6:00	85	13.9	2.74	45	60			BE
7:00	80	13.7	2.62	43	60	196	798	BE
8:00	80	13.0	2.76	42	60	195	798	TB
9:00	70	12.3	2.55	37	60			TB
10:00	70	11.6	2.71	37	60			TB
11:00	70	11.4	2.71	37	60			TB
12:00	70	11.4	2.76	37	60			TB
13:00	70	11.9	2.64	37	60			TC
14:00	70	11.1	2.83	37	60			TB
15:00	70	11.4	2.76	37	60	185	798	TB
16:00	70	11.7	2.69	37	60	184	798	MW
17:00	70	11.5	2.73	37	60			MW
18:00	70	11.5	2.73	37	60			MW
19:00	70	11.4	2.76	37	60			MW
20:00	70	11.5	2.73	37	60			MW
21:00	70	11.9	2.64	37	60			MW
22:00	70	11.6	2.71	37	60			MW
23:00	70	11.2	2.80	37	60	175	798	MW
ml/min average : 68.95						Total gallons PO <sub>4</sub> Used: 30 gal		
MGD average : 12.5								
PPM average : 2.71						Days of PO <sub>4</sub> on Hand: 32 days		
(Train Shed + CS2)								

## 24hr Record of Ortho-Phosphate Used

Date: 5-15-16						Location of PO <sub>4</sub>		
	PO <sub>4</sub>	CS 2	PO <sub>4</sub>	Pump Setting		CS 2	Train Shed	Operator
	ml/min	MGD	PPM	Speed	Stroke	Gallons on Hand		
0:00	80	13.1	2.74	42	60	174	798	mw
1:00	80	13.3	2.70	42	60			mw
2:00	80	13.5	2.66	42	60			mw
3:00	80	13.3	2.70	42	60			mw
4:00	80	13.3	2.70	42	60			mw
5:00	80	13.6	2.64	42	60			mw
6:00	80	13.5	2.66	42	60			mw
7:00	70	12.0	2.62	37	60	164	798	mw
8:00	65	10.5	2.78	34	60	163	798	BE
9:00	60	9.8	2.75	32	60			BE
10:00	60	10.1	2.67	32	60			BE
11:00	60	9.9	2.72	32	60			BE
12:00	60	9.8	2.75	32	60			BE
13:00	65	11.0	2.65	35	60			BE
14:00	65	10.9	2.68	35	60			BE
15:00	65	11.1	2.63	35	60	158	798	BE
16:00	70	11.4	2.76	38	60	157	798	<del>BE</del>
17:00	70	11.4	2.76	38	60			<del>BE</del>
18:00	70	11.4	2.76	38	60			<del>BE</del>
19:00	70	11.2	2.80	38	60			<del>BE</del>
20:00	70	12.0	2.62	38	60			<del>BE</del>
21:00	75	11.9	2.83	40	60			<del>BE</del>
22:00	75	12.5	2.69	40	60			<del>BE</del>
23:00	80	13.0	2.76	43	60	149	798	<del>BE</del>
ml/min average : 71.25						Total gallons PO <sub>4</sub> Used: 25 gal		
MGD average : 11.81								
PPM average : 2.70						Days of PO <sub>4</sub> on Hand: 37 days		
(Train Shed + CS2)								

## 24hr Record of Ortho-Phosphate Used

Date: 5-16-16						Location of PO <sub>4</sub>		
	PO <sub>4</sub>	CS 2	PO <sub>4</sub>	Pump Setting		CS 2	Train Shed	Operator
	ml/min	MGD	PPM	Speed	Stroke	Gallons on Hand		
0:00	80	12.9	2.78	43	60	148	798	mw
1:00	80	13.1	2.74	43	60			mw
2:00	80	13.2	2.72	43	60			mw
3:00	80	13.2	2.72	43	60			mw
4:00	80	13.3	2.70	43	60			mw
5:00	80	13.1	2.74	43	60			mw
6:00	80	12.9	2.78	43	60			mw
7:00	60	10.2	2.64	33	60	138	798	mw
8:00	60	10.4	2.65	32	60	137	798	AG
9:00	60	10.2	2.64	32	60			BE
10:00	60	10.2	2.64	32	60			BE
11:00	60	11.0	2.47	32	60			BE
12:00	70	11.5	2.73	37	60			BE
13:00	70	11.8	2.70	37	60			Sm
14:00	70	12.2	2.60	37	60			AG
15:00	70	12.1	2.60	37	60	149	798	AG
16:00	65	11.0	2.65	35	60	134	798	ET
17:00	65	11.0	2.65	35	60		798	ET
18:00	65	11.0	2.65	35	60			ET
19:00	65	10.8	2.70	35	60			ET
20:00	65	11.0	2.65	35	60			ET
21:00	65	11.3	2.58	35	60			ET
22:00	80	13.0	2.76	43	60			ET
23:00	90	15.0	2.69	48	60	123	798	
ml/min average : 70.83						Total gallons PO <sub>4</sub> Used: 25		
MGD average : 11.89								
PPM average : 2.67						Days of PO <sub>4</sub> on Hand: 36 days		
(Train Shed + CS2)								

## 24hr Record of Ortho-Phosphate Used

Date: 5-17-16						Location of PO <sub>4</sub>		
	PO <sub>4</sub>	CS 2	PO <sub>4</sub>	Pump Setting		CS 2	Train Shed	Operator
	ml/min	MGD	PPM	Speed	Stroke	Gallons on Hand		
0:00	90	15.0	2.69	47	60	122	798	MW
1:00	95	16.0	2.66	49	60			MW
2:00	95	15.7	2.72	49	60			MW
3:00	90	15.2	2.66	47	60			MW
4:00	90	14.1	2.87	47	60			MW
5:00	80	12.9	2.78	42	60			MW
6:00	65	10.6	2.75	33	60			MW
7:00	65	10.3	2.84	33	60	112	798	MW
8:00	65	10.2	2.88	<del>33</del> 33	60	111	798	AG
9:00	<del>65</del> 70 <sup>AG syn</sup>	11.5	2.73	36	60			AG
10:00	70	11.6	2.71	36	60			AG
11:00	70	11.7	2.69	36	60			TB
12:00	70	11.2	2.80	36	60			TB
13:00	70	11.3	2.78	36	60	237	662	TB
14:00	60	10.3	2.6	32	60			DS
15:00	60	10.4	2.59	32	60	236	662	TB
16:00	60	10.4	2.59	32	60	235	662	BE
17:00	60	10.1	2.67	32	60			BE
18:00	60	10.2	2.64	32	60			BE
19:00	60	10.1	2.67	32	60			BE
20:00	70	11.9	2.64	36	60			BE
21:00	70	11.6	2.71	36	60			BE
22:00	70	11.9	2.64	36	60			BE
23:00	70	11.6	2.71	36	60	227	662	BE
ml/min average : 71.87				Total gallons PO <sub>4</sub> Used: 26				
MGD average : 11.90								
PPM average : 2.70				Days of PO <sub>4</sub> on Hand: 34 days				
(Train Shed + CS2)								

## 24hr Record of Ortho-Phosphate Used

Date: 5-18-16						Location of PO <sub>4</sub>		
	PO <sub>4</sub>	CS 2	PO <sub>4</sub>	Pump Setting		CS 2	Train Shed	Operator
	ml/min	MGD	PPM	Speed	Stroke	Gallons on Hand		
0:00	75	11.7	2.88	38	60	226	662	MW
1:00	75	12.3	2.74	38	60			MW
2:00	75	12.7	2.65	38	60			MW
3:00	75	12.7	2.65	38	60			MW
4:00	75	12.5	2.69	38	60			MW
5:00	75	12.8	2.63	38	60			MW
6:00	75	12.7	2.65	38	60			MW
7:00	75	12.8	2.63	38	60	216	662	MW
8:00	80	12.8	2.8	40	60	215	662	AG
9:00	80	12.1	2.97	40	60			TB
10:00	75	12.2	2.76	39	60			TC
11:00	75	11.7	2.88	39	60			TB
12:00	75	11.8	2.85	39	60			TB
13:00	65	11.0	2.66	34	60			TC
14:00	65	11.1	2.62	34	60			AG
15:00	65	11.1	2.62	34	60	207	662	TB
16:00	65	11.2	2.61	34	60	206	662	ET
17:00	60	10.0	2.70	31	60			ET
18:00	60	10.0	2.70	31	60			ET
19:00	60	10.0	2.70	31	60			ET
20:00	60	10.0	2.70	31	60			ET
21:00	70	11.2	2.81	37	60			ET
22:00	80	13.0	2.76	40	60			ET
23:00	85	14.2	2.69	43	60	200	662	ET
ml/min average : 71.66						Total gallons PO <sub>4</sub> Used: 26		
MGD average : 11.81								
PPM average : 2.72						Days of PO <sub>4</sub> on Hand: 33 days		
(Train Shed + CS2) WEEKLY Avg = 27gal = 31.9 days on Hand ETW								

