

Summary of City of Flint (City) Actions In Response to the EPA Emergency Administrative Order Updated: June 9, 2016

Chapters 52, 57, 59a & 59b: Weekly Conference Call Regarding Flint Water Plant Operations June 9, 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 June operation report completed to date, and a summary of water quality parameters collected in the distribution system during the week of June 5th. 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 2.61 and 2.70 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.
- On June 8th, the phosphate feed system at Control Station #2 was converted to a flow-paced feed system that automatically adjusts dosage to remain proportional with changes in flows from GLWA.
- 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 3.42 and 3.83 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 7.33 to 7.49 in the water received from Great Lakes Water Authority and from 7.32 to 7.49 at the distribution system sites.
- In addition to the automatic flushing devices installed at distribution locations to reduce water age and increase chlorine residuals, the city has modified standard practices by once again lowering the levels in storage reservoirs to further reduce retention times and enhance water quality throughout the distribution system.
- Iron levels ranged between 0.01 and 0.10 milligrams per liter at all EWQM sites. Plant tap iron concentrations ranged from 0.01 to 0.10 in the last week.
- All the lead samples collected from the EWQM sites reported no lead detected, providing additional indication that water quality is stabilizing in the distribution system.
- The city is proceeding with installation of chemical feed systems for supplemental chlorination and pH adjustment using caustic soda. These treatment systems should be online Friday, June 10th. They will allow the city to better control chlorine residuals and maintain corrosion control throughout the distribution system.
- The city of Flint is working with Bob London to prepare and submit an up to date disinfection byproducts monitoring plan and a Revised Total Coliform site sampling plan.

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: 6-2-16						Location of PO ₄		
	PO ₄	CS 2	PO ₄	Pump Setting		CS 2	Train Shed	Operator
	ml/min	MGD	PPM	Speed	Stroke	Gallons on Hand		
0:00	85	14.0	2.73	45	60	192	798	MW
1:00	85	14.2	2.69	45	60			MW
2:00	85	14.5	2.64	45	60			MW
3:00	85	14.3	2.67	45	60			MW
4:00	85	14.5	2.64	45	60			MW
5:00	85	14.5	2.64	45	60			MW
6:00	85	14.6	2.61	45	60			MW
7:00	85	14.5	2.64	45	60	181	798	MW
8:00	85	13.7	2.78	45	60	179	798	AG
9:00	85	14.5	2.63	45 ⁴⁶	60			TC
10:00	85	14.1	2.71	46	60			AG
11:00	85	14.5	2.68	46	60			AG
12:00	70	12.0	2.62	40	60			AG
13:00	70	11.6	2.71	40	60			AG
14:00	70	11.6	2.71	40	60			TB
15:00	70	11.5	2.73	40	60	173	798	TB
16:00	70	11.7	2.69	40	60	172	798	ET
17:00	70	11.7	2.69	40	60			ET
18:00	70	12.1	2.60	40	60			ET
19:00	70	12.1	2.60	40	60			ET
20:00	70	11.9	2.64	40	60			ET
21:00	70	11.8	2.66	40	60			ET
22:00	85	14.3	2.77	46	60			ET
23:00	95	15.5	2.75	52	60	165	798	ET
ml/min average :		79.17				Total gallons PO ₄ Used: 27		
MGD average :		13.3						
PPM average :		2.67				Days of PO ₄ on Hand: 35.66		
(Train Shed + CS2)								

79
12

24hr Record of Ortho-Phosphate Used

Date: <u>6-3-16</u>						Location of PO ₄		
	PO ₄	CS 2	PO ₄	Pump Setting		CS 2	Train Shed	Operator
	ml/min	MGD	PPM	Speed	Stroke	Gallons on Hand		
0:00	95	15.4	3.82	52	60	164	798	BE
1:00	95	15.4	2.77	52	60			BE
2:00	95	15.5	2.75	52	60			BE
3:00	90	14.6	2.77	49	60			BE
4:00	85	14.1	2.71	45	60			BE
5:00	85	14.3	2.67	45	60			BE
6:00	80	12.5	2.87	43	60			BE
7:00	75	12.5	2.69	41	60	153	798	BE
8:00	80	13.5	2.66	43	60	152	798	AG
9:00	80	13.6	2.64	43	60			TB
10:00	80	13.7	2.62	43	60			TB
11:00	80	13.4	2.68	43	60			TB
12:00	70	11.9	2.64	39	60			AG
13:00	70	11.7	2.69	39	60			K
14:00	70	11.7	2.69	39	60			TB
15:00	70	11.8	2.67	39	60	143		
16:00	70	11.8	2.66	39	60	142	798	⊖
17:00	70	11.7	2.69	39	60			⊖
18:00	70	12.4	2.54	39	60			⊖
19:00	80	13.0	2.76	43	60			⊖
20:00	80	13.0	2.76	43	60			de
21:00	80	13.6	2.64	43	60			BE
22:00	80	13.8	2.60	43	60			BE
23:00	85	14.4	2.65	45	60	133	798	BE
ml/min average : 79.79						Total gallons PO ₄ Used: 31 gal		
MGD average : 13.3								
PPM average : 2.70						Days of PO ₄ on Hand: 30.03		
(Train Shed + CS2)								

24hr Record of Ortho-Phosphate Used

Date: 6-5-16						Location of PO ₄		
	PO ₄	CS 2	PO ₄	Pump Setting		CS 2	Train Shed	Operator
	ml/min	MGD	PPM	Speed	Stroke	Gallons on Hand		
0:00	85	14.5	2.63	45	60	245	654	MW
1:00	85	14.7	2.60	45	60			MW
2:00	90	15.2	2.66	48	60			MW
3:00	90	15.1	2.68	48	60			MW
4:00	90	14.9	2.71	48	60			MW
5:00	90	14.9	2.71	48	60			MW
6:00	90	15.0	2.69	48	60			MW
7:00	90	15.3	2.64	48	60	235	654	MW
8:00	85	14.9	2.56	45	60	238	654	BE
9:00	85	14.2	2.69	45	60			BE
10:00	85	14.4	2.65	45	60			BE
11:00	85	14.5	2.63	45	60			BE
12:00	70	11.6	2.71	38	60			BE
13:00	70 ⁶⁻⁵⁻¹⁶	12.1 12.1	2.60 2.60	38	60			BE
14:00	70	12.1	2.60	38	60	227	654	BE
15:00	70 ⁶⁻⁵⁻¹⁶	11.6 11.6	2.71 2.71	38	60	226	654	BE
16:00	70	11.6	2.71	38	60	225	654	MW
17:00	70	11.6	2.71	38	60			MW
18:00	70	11.5	2.73	38	60			MW
19:00	70	11.1	2.83	38	60			MW
20:00	70	11.3	2.78	38	60			MW
21:00	70	11.5	2.73	38	60			MW
22:00	80	13.0	2.77	43	60			MW
23:00	80	14.0	2.57	43	60	216	654	MW
ml/min average : 79.58				Total gallons PO ₄ Used: 29 gal				
MGD average : 12.75								
PPM average : 2.68				Days of PO ₄ on Hand: 30 days				
(Train Shed + CS2)								

24hr Record of Ortho-Phosphate Used

Date: 6-6-16						Location of PO ₄			
	PO ₄	CS 2	PO ₄	Pump Setting		CS 2	Train Shed	Operator	
	ml/min	MGD	PPM	Speed	Stroke	Gallons on Hand			
0:00	85	14.1	2.71	45	60	215	654	MW	
1:00	85	14.2	2.69	45	60			MW	
2:00	85	14.1	2.71	45	60			MW	
3:00	85	15.2	2.51	45	60			MW	
4:00	85	14.6	2.61	45	60			MW	
5:00	85	14.2	2.69	45	60			MW	
6:00	85	14.4	2.65	45	60			MW	
7:00	80	14.9	2.41	43	60	204	654	MW	
8:00	Shut down!!			off	off	208	654	BE	
9:00	←	off	Line	→				BE	
10:00	60	10.0	2.69	32	60			BE	
11:00	65	10.8	2.71	35	60			SD	
12:00	65	10.9	2.68	35	60			BE	
13:00	65	10.9	2.68	35	60			BE	
14:00	65	11.1	2.63	35	60			BE	
15:00	65	11.0	2.65	35	60	203	654	BE	
16:00	65	10.9	2.68	36	60	203	654	SD	
17:00	65	11.0	2.65	36	60			↓	
18:00	65	10.9	2.68	41 ³⁶ _{SD}	60				
19:00	75	10.8	2.70	41	60				
20:00	75	12.7	2.65	41	60				
21:00	80 ⁷⁵ _{SD}	12.5	2.69	41	60				
22:00	80	13.9	2.74	45	60	192	654		
23:00	85	14.3	2.67	45	60				
ml/min average :				74.77		Total gallons PO ₄ Used: 23 gal			
MGD average :				12.61					
PPM average :				2.65		Days of PO ₄ on Hand: 37 Days			
(Train Shed + CS2)									

9:30
10:30
14:30
BACK

8⁴⁰ Am Shutdown of the 36" water main at CS II
for inspection installation of Sodium Hydroxide & Sodium Hypochlorite

No problems were observed in the reenergizing of the water supply line.

24hr Record of Ortho-Phosphate Used

Date: 6-7-16						Location of PO ₄		
	PO ₄	CS 2	PO ₄	Pump Setting		CS 2	Train Shed	Operator
	ml/min	MGD	PPM	Speed	Stroke	Gallons on Hand		
0:00	85	14.1	2.71	45	60	190	654	MW
1:00	85	14.7	2.60	45	60			MW
2:00	85	14.6	2.61	45	60			MW
3:00	85	14.3	2.67	45	60			MW
4:00	85	13.6	2.81	45	60			MW
5:00	85	13.9	2.74	45	60			MW
6:00	75	13.4	2.51	42	60			MW
7:00	75	12.4	2.72	42	60	180	654	MW
8:00	75	12.7	2.65	42	60	179	654	TB
9:00	75	12.5	2.69	42	60			TB
10:00	75	12.7	2.65	42	60			TB
11:00	75	12.6	2.67	42	60			TB
12:00	75	12.8	2.63	42	60			TB
13:00	75	12.5	2.65 2.69	42	60			TB
14:00	75	12.6	2.67	42	60			TB
15:00	75	12.9	2.61	42	60	174	654	TB
16:00	70	12.1	2.60	39	60	173	654	TB
17:00	70	12.0	2.62	39	60			TB
18:00	70	11.5	2.73	39	60			TB
19:00	70	11.4	2.75	39	60			TB
20:00	70	11.5	2.73	39	60			TB
21:00	70	11.2	2.80	39	60			TB
22:00	70	11.4	2.75	39	60			TB
23:00	85	14.0	2.72	45	60	164	654	TB
ml/min average : 76.45						Total gallons PO ₄ Used: 26 gal		
MGD average : 12.80								
PPM average : 2.68						Days of PO ₄ on Hand: 31 days		
(Train Shed + CS2)								

24hr Record of Ortho-Phosphate Used

Date: 6-8-16						Location of PO ₄		
	PO ₄	CS 2	PO ₄	Pump Setting		CS 2	Train Shed	Operator
	ml/min	MGD	PPM	Speed	Stroke	Gallons on Hand		
0:00	85	14.0	2.73	45	60	163	654	MW
1:00	85	14.2	2.69	45	60			MW
2:00	85	14.2	2.69	45	60			MW
3:00	85	14.7	2.60	45	60			MW
4:00	85	14.0	2.73	45	60			MW
5:00	85	14.1	2.71	45	60			MW
6:00	85	14.0	2.73	45	60			MW
7:00	85	14.2	2.69	45	60	152	654	MW
8:00	85	13.8	2.74	45	60	155	654	TB
9:00	75	12.8	2.67	41	60			TC
10:00	75	13.0	2.59	41	60			TB
11:00	75	13.1	2.57	41	60			TB
12:00	80	13.6	2.64	Auto	45 ^{TB 4/8/16} 95			TB
13:00	75	12.9	2.61	8.3 27	95	147	654	TB
14:00	75	13.0	2.59	8.4 27	95			TB
15:00	75	12.8	2.63	8.3 26	95	145	654	TB
16:00	70	12.1	2.60	8.0 25	95	144	654	ET
17:00	60	10.2	2.64	7.5 22	95			ET
18:00	60	10.3	2.61	7.4 22	95			ET
19:00	60	10.5	2.56	7.5 22	95			ET
20:00	60	10.3	2.61	7.5 21	95			ET
21:00	60	10.3	2.61	7.4 22	95	139	532	ET
22:00	75	13.5	2.49	8.5 28	95	241		ET
23:00	80	14.2	2.84	8.8 30	95	240	532	ET
ml/min average : 75.83						Total gallons PO ₄ Used: 28 gal		
MGD average : 12.90								
PPM average : 2.64						Days of PO ₄ on Hand: 27 days		
(Train Shed + CS2)								

We started a new sheet at 1pm due to automation of phosphate pumps. Writing down milliamps & pulse instead of speed.