

**Summary of City of Flint (City) Actions
In Response to the
EPA Emergency Administrative Order
Updated: June 2, 2016**

Chapters 52, 57, 59a & 59b: Weekly Conference Call Regarding Flint Water Plant Operations June 2, 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 and June operation reports completed to date, and a summary of water quality parameters collected in the distribution system during the week of May 29. 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 2.69 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 3.29 and 3.93 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 7.35 to 7.49 in the water received from Great Lakes Water Authority and from 7.21 to 7.49 at the distribution system sites.
- Automatic flushing devices installed at distribution locations are continuing to serve the purpose of reducing water age and increasing chlorine residuals at most sites, although one or two are still being adjusted.
- Iron levels ranged between 0.01 and 0.08 milligrams per liter at all EWQM sites. Plant tap iron concentrations ranged from 0.01 to 0.04 in the last week.
- All but one of the lead samples collected from the EWQM sites reported no lead detected.
- The city is proceeding with plans for supplemental chlorination and pH adjustment using caustic soda. These treatment systems will allow the city to better control chlorine residuals and maintain corrosion control throughout the distribution system. We are awaiting plans and specifications to be submitted with a construction permit application.

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: 5-26-16						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	80	13.5	2.66	42	60	121	1064	MW
1:00	80	13.7	2.62	42	60			MW
2:00	80	13.9	2.58	42	60			MW
3:00	80	13.6	2.64	42	60			MW
4:00	80	13.7	2.62	42	60			MW
5:00	80	13.8	2.62	42	60			MW
6:00	80	13.5	2.66	42	60			MW
7:00	80	13.6	2.64	42	60	111	1064	MW
8:00	85	14.0	2.72	44	60	264	921	DS
9:00	85	14.0	2.72	44	60			AG
10:00	80	13.3	2.70	42	60			AG
11:00	80	13.2	2.72	42	60			AS
12:00	80	12.8	2.81	42	60			AG
13:00	80	13.2	2.72	42	60			TB
14:00	80	13.4	2.68	42	60			TB
15:00	80	13.7	2.62	42	60	253	921	AG
16:00	65	10.3	2.83	35	60	252	921	AG
17:00	65	10.3	2.83	35	60			AG
18:00	65	10.6	2.75	35	60			AG
19:00	65	10.6	2.75	35	60			AG
20:00	65	10.9	2.68	35	60			AG
21:00	65	10.6	2.75	35	60			AG
22:00	75	12.8	2.43	40	60			AG
23:00	85	14.0	2.72	45	60	248	921	AG
ml/min average : 76.67				Total gallons PO ₄ Used: 29.17				
MGD average : 12.79								
PPM average : 2.69				Days of PO ₄ on Hand: 39				
(Train Shed + CS2)								

24hr Record of Ortho-Phosphate Used

Date: 5-27-16						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	14.8	2.58	45	60	248	921	SD
1:00	90	14.6	2.77	47	60			
2:00	90	14.7	2.75	47	60			
3:00	90	14.6	2.77	47	60			
4:00	75	12.6	2.68	39				
5:00	75	12.9	2.61	39				
6:00	75 ^{SD 75}	13.6	2.64	39 ^{SD 39}	42			
7:00	70	11.6	2.71	39	↓	235	921	↓
8:00	40	14.4	2.81	45		234	921	AS
9:00	90	14.5	2.79	45 ^{AS 45}	60			AS
10:00	80	13.5	2.66	41	60			AS
11:00	AS 90	14.6	2.64	43	60			AS
12:00	90	15.2	2.66	47	60			AS
13:00	90	15.2	2.66	47	60			AS
14:00	85	14.2	2.69	45	60			AS
15:00	85	14.2	2.69	47	60	226	921	AS
16:00	65	10.5	2.78	36	60	225	921	AS
17:00								
18:00								
19:00								
20:00								
21:00								
22:00								
23:00								

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ml/min average : 83.823		Total gallons PO ₄ Used: 23 gal
MGD average : 13.905		
PPM average : 2.69		Days of PO ₄ on Hand: 49 3/4

* FEED SYSTEM SHOT DOWN FROM 5pm TO 11:00pm DUE TO BOOSTER PUMP FAILURE
(Train Shed + CS2)

24hr Record of Ortho-Phosphate Used

Date: <u>5-28-16</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	80	13.4	2.68	43	60	223	921	BE
1:00	80	13.3	2.70	43	60			BE
2:00	75	12.4	2.71	40	60			BE
3:00	75	12.7	2.65	40	60			BE
4:00	75	12.3	2.74	40	60			BE
5:00	70	11.8	2.66	38	60			BE
6:00	70	11.8	2.66	38	60			BE
7:00	60 ^{60 BE 5-28-16} 65	10.2	2.64	33 ^{33 BE}	60	213	921	BE
8:00	60	10.9	2.72 ^{2.77}	33	60	212	921	ET
9:00	60	10.0	2.69	33	60			ET
10:00	60	10.2	2.64	33	60			ET
11:00	60	9.8	2.75	33	60			ET
12:00	60	10.0	2.69	33	60			TC
13:00	60	10.1	2.66	33	60			ET
14:00	60	10.1	2.66	33	60			ET
15:00	55	9.4	2.63	30	60	205	921	ET
16:00	55	9.4	2.63	30	60			SD
17:00	60	10.0	2.70	33	60			ET
18:00	60	9.8	2.75	33	60			ET
19:00	65	10.7	2.72	36	60			ET
20:00	70	11.5	2.73	39	60			ET
21:00	70	11.5	2.73	39	60			ET
22:00	70	11.3	2.78	39	60			ET
23:00	80	13.3	2.70	43	60	198	921	ET
ml/min average : <u>66.25</u>				Total gallons PO ₄ Used: <u>25 gal</u>				
MGD average : <u>11.07</u>								
PPM average : <u>2.68</u>				Days of PO ₄ on Hand: <u>44 days</u>				
(Train Shed + CS2)								

24hr Record of Ortho-Phosphate Used

Date: 5-29-16						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	80	13.4	2.68	43	60	197	921	MW
1:00	80	13.5	2.66	43	60			MW
2:00	80	13.8	2.60	43	60			MW
3:00	80	13.8	2.60	43	60			MW
4:00	80	13.4	2.68	43	60			MW
5:00	80	13.7	2.62	43	60			MW
6:00	80	13.9	2.58	43	60			MW
7:00	80	13.9	2.58	43	60	187	921	MW
8:00	80	13.9	2.59	43	60	186	921	BE
9:00	80	13.4	2.68	43	60			BE
10:00	80	13.4	2.68	43	60			BE
11:00	75	12.8	2.63	41	60			BE
12:00	75	12.5	2.57 ^{2.69}	41	60			BE
13:00	75	12.6	2.67 ^{2.69}	41	60			BE
14:00	70	11.8	2.66	38	60			BE
15:00	70	11.8	2.66	38	60			BE
16:00	65	10.8	2.70	35	60	177	921	⊙
17:00	65	10.8	2.70	35	60			⊙
18:00	65	10.4	2.80	35	60			⊙
19:00	65	10.2	2.86	35	60			⊙
20:00	65	10.5	2.78	35	60			⊙
21:00	65	10.4	2.80	35	60			⊙
22:00	70	11.7	2.69	38	60			⊙
23:00	75	12.5	2.69	41	60	170	921	⊙
ml/min average : 74.16						Total gallons PO ₄ Used: 27 gal		
MGD average : 12.45								
PPM average : 2.67						Days of PO ₄ on Hand: 40 days		
(Train Shed + CS2)								

24hr Record of Ortho-Phosphate Used

Date: 5-30-16						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	80	13.6	2.64	43	60	169	921	MW
1:00	80	13.1	2.74	43	60			MW
2:00	80	13.6	2.64	43	60			MW
3:00	80	13.0	2.76	43	60			MW
4:00	80	13.8	2.60	43	60			MW
5:00	80	13.8	2.60	43	60			MW
6:00	80	13.6	2.64	43	60			MW
7:00	80	13.6	2.64	43	60	159	921	MW
8:00	80	13.6	2.64	43	60	158	921	BE
9:00	80	13.5	2.66	43	60			BE
10:00	80	13.3	2.70	43	60			BE
11:00	80	12.9	2.80	43	60	267		BE
12:00	80	13.2	2.72	43	60		796	BE
13:00	80	13.0	2.76	43	60			BE
14:00	80	13.0	2.76	43	60			BE
15:00	80	13.2	2.72	43	60	264	796	BE
16:00	80	13.1	2.74	43	60	263	796	BE
17:00	60	9.3	2.90	32	60			BE
18:00	55	9.4	2.63	29	60			BE
19:00	55	9.1	2.71	29	60			BE
20:00	55	9.6	2.57	30	60			BE
21:00	65	10.9	2.68	35	60			BE
22:00	80	13.0	2.76	43	60			BE
23:00	85	14.3	2.67	45	60	254	796	BE
ml/min average : 75.62						Total gallons PO ₄ Used: 28 gal		
MGD average : 12.60								
PPM average : 2.69						Days of PO ₄ on Hand: 39 days ^{MW} 37 days		
(Train Shed + CS2)								

24hr Record of Ortho-Phosphate Used

Date: 5-31-16						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	253	796	MW
1:00	85	14.4	2.65	45	60			MW
2:00	85	14.3	2.67	45	60			MW
3:00	85	14.1	2.71	45	60			MW
4:00	85	14.4	2.65	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	13.5	2.66	43	60	243	796	MW
8:00	80	13.2	2.72	43	60	242	796	BS
9:00	80	13.1	2.74	43	60			AB
10:00	80	13.1	2.74	43	60			TB
11:00	80	13.3	2.70	43	60			TB
12:00	80	12.8	2.80	43	60			TB
13:00	70	11.7	2.69	39	60			BS
14:00	70	11.6	2.71	39	60	232	796	DE
15:00	70	11.7	2.69	39	60	232	798	TB
16:00	70	11.5	2.73	39	60	231	796	BE
17:00	70	11.5	2.73	39	60			BE
18:00	85	14.5	2.63	45	60			BE
19:00	85	14.4	2.65	45	60			BE
20:00	85	14.3	2.67	45 ⁵⁻²¹⁻¹⁶	60			BE
21:00	90	15.2	2.66	45 ⁴⁷	60			BE
22:00	90	15.2	2.66	45 ⁴⁷	60			BE
23:00	85	14.3	2.67	45	60	224	796	BE
ml/min average : 81.04						Total gallons PO ₄ Used: 29 gal		
MGD average : 13.53								
PPM average : 2.69						Days of PO ₄ on Hand: 35 days		
(Train Shed + CS2)								

24hr Record of Ortho-Phosphate Used

Date: 6-1-16						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	2.64	45	60	223	796	MW
1:00	85	14.6	2.62	45	60			MW
2:00	85	14.5	2.63	45	60			MW
3:00	85	14.3	2.67	45	60			MW
4:00	85	14.2	2.69	45	60			MW
5:00	85	14.5	2.63	45	60			MW
6:00	85	14.5	2.63	45	60			MW
7:00	80	13.5	2.66	43	60	222	796	MW
8:00	80	13.5	2.66	43	60	211	798	JS
9:00	80	13.5	2.66	43	60			TB
10:00	80	13.3	2.74 2.71	43	60			TB
11:00	80	13.1	2.74	43	60			TB
12:00	80	12.9	2.78	43	60			TB
13:00	80	13.9	2.58	43	60			TB
14:00	85	14.3	2.67	46	60			TB
15:00	85	14.3	2.67	46	60	204	798	TB
16:00	70	11.9	2.64	37	60	203	798	⊙
17:00	75	12.3	2.74	40	60			⊙
18:00	75	12.1	2.78	40	60			⊙
19:00	75	12.15	2.69	40	60			⊙
20:00	75	12.4	2.71	40	60			⊙
21:00	75	12.1	2.78	40	60			⊙
22:00	75	12.5	2.70	40	60			⊙
23:00	80	13.3	2.70	43	60	193	798	⊙
ml/min average :		20.21		Total gallons PO ₄ Used:		3015 gal		
MGD average :		13.4						
PPM average :		2.69		Days of PO ₄ on Hand:		33 days		
(Train Shed + CS2)								