

Bay Area WTP

Monthly Operations Report



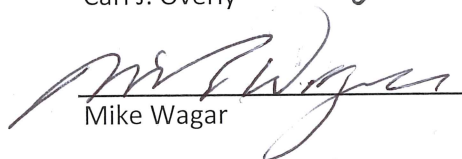
October, 2023

Water Systems Serial Number: 0465


Carl J. Overly

Water Plant Superintendent
Title

F-1
Classification


Mike Wagar

Operations Supervisor
Title

F-1
Classification

Bay Area Water Treatment Plant

Monthly Operations Report

Supply Name: Bay Area Water System
 WSSN: 0465

October, 2023
 Month, Year

F-1
 Water Plant Classification

Bay
 County

Carl J. Overly
 Operator-in-charge

F-1
 Certification of Operator-in-charge

Treatment Rate and Membrane Data

Treatment Rate, Approved Rated Plant Capacity	17.4	Millions of Gallons per Day
Treatment Rate, Maximum	7.7	Millions of Gallons per Day
Maximum Approved Transmembrane Pressure	22	PSI
Maximum Operating Transmembrane Pressure	15.29	PSI
Maximum Approved Flux Rate	36.25	gpd/sq.ft.
Maximum Operating Flux Rate	26.30	gpd/sq.ft.

Chemical Data

Sodium Hypochlorite on hand:	3,820	Gallons	Estimated Supply:	58.3	days
Caustic Soda on hand:	3,356	Gallons	Estimated Supply:	229.9	days
Corrosion Inhibitor on hand:	781	Gallons	Estimated Supply:	37.9	days
Hydrofluosilicic Acid on hand:	1,009	Gallons	Estimated Supply:	54.4	days
Aluminum Chlorohydrate on hand:	733	Gallons	Estimated Supply:	80.0	days
Sulfuric Acid on hand:	170	Gallons	Estimated Supply:	84.8	days
Sodium Bisulfite on hand:	458	Gallons	Estimated Supply:	157.8	days
Citric Acid on hand:	2,368	Gallons	Estimated Supply:	189.4	days
Cost of All Chemicals per Million Gallons:	99.07	Dollars			
Estimated Electrical Cost per Million Gallons:		Dollars			
Estimated Natural Gas Cost per Million Gallons:		Dollars			

Remarks

Number of periods of filter confluence turbidity samples > 0.3 NTU	0
Percent of membrane period confluence samples > 0.3 NTU:	0.00%
Was continuous (every 15 minutes) filter monitoring equipment off-line during the month? If yes, indicate date(s), duration, and individual filter grab sampling frequency on a separate sheet.	No
Did POE disinfectant residual fall below 0.2 ppm during the month? If yes, indicate date(s) and duration on a separate sheet.	No
Was minimum C*T credit achieved for the entire month? If no, indicate on a separate sheet the date(s) not achieved.	Yes
Was continuous POE chlorine residual monitoring equipment off-line during the month? If yes, date(s) and duration will be indicated on the rule page.	No



Notes

Even # filters off line for Maint. From 7:50am on 10-23 to 1:15pm on 10-25
 #3 filter off line from 7:26pm on 10-2 to 1:25am on 10-4

Bay Area WTP Monthly Operating Report

Flows									
Date	Raw Water (MG)			Clarified (MG)	Sludge (MG)	Treated (MG)	Finished Water Pumped (MG)		
	North	South	Total	Total	Total	Total	N. Euclid	Lauria Road	Total
	FIT-1000-1	FIT-1000-2	Calculated	FIT-5520-1	FIT-5180	FIT-4000-1	FIT-4040-1	FIT-4040-2	Calculated
10/1/2023	2.64	3.99	6.62	0.14	0.26	7.03	3.57	3.05	6.62
10/2/2023	3.18	4.61	7.79	0.17	0.24	7.72	3.77	3.34	7.11
10/3/2023	3.73	5.39	9.12	0.21	0.26	7.71	3.89	3.27	7.16
10/4/2023	3.87	4.87	8.73	0.12	0.26	7.41	3.66	3.11	6.77
10/5/2023	1.41	5.13	6.54	0.01	0.25	6.48	3.15	2.78	5.93
10/6/2023	0.00	6.56	6.56	0.01	0.25	6.96	3.37	2.97	6.34
10/7/2023	0.00	7.62	7.62	0.00	0.25	6.58	3.22	2.83	6.05
10/8/2023	0.00	6.76	6.76	0.09	0.25	6.76	3.25	2.87	6.12
10/9/2023	0.00	6.79	6.79	0.29	0.14	6.71	3.27	2.91	6.18
10/10/2023	0.00	7.30	7.30	0.31	0.08	6.48	3.13	2.77	5.90
10/11/2023	0.00	7.06	7.06	0.35	0.08	6.81	3.23	2.91	6.14
10/12/2023	0.00	6.36	6.36	0.30	0.08	6.32	3.13	2.74	5.87
10/13/2023	0.00	5.77	5.77	0.30	0.08	6.26	3.04	2.65	5.69
10/14/2023	0.00	5.78	5.78	0.30	0.08	6.35	3.03	2.68	5.70
10/15/2023	0.00	5.92	5.92	0.28	0.08	6.15	3.00	2.72	5.72
10/16/2023	0.00	7.09	7.09	0.28	0.08	6.61	3.15	2.77	5.91
10/17/2023	0.00	7.01	7.01	0.28	0.10	6.15	3.08	2.68	5.76
10/18/2023	0.00	6.24	6.24	0.29	0.08	6.59	3.14	2.77	5.91
10/19/2023	0.00	5.87	5.87	0.28	0.08	6.25	3.07	2.66	5.73
10/20/2023	0.00	6.26	6.26	0.28	0.08	6.83	3.31	2.94	6.25
10/21/2023	0.00	6.99	6.99	0.29	0.08	6.55	3.10	2.77	5.87
10/22/2023	0.00	6.70	6.70	0.28	0.08	6.18	2.96	2.68	5.64
10/23/2023	0.00	6.42	6.42	0.12	0.22	6.46	3.10	2.72	5.82
10/24/2023	0.00	6.39	6.39	0.15	0.13	6.03	2.92	2.58	5.50
10/25/2023	0.00	5.81	5.81	0.24	0.08	6.06	2.92	2.61	5.54
10/26/2023	0.00	5.55	5.55	0.31	0.08	6.05	2.99	2.62	5.61
10/27/2023	0.00	5.77	5.77	0.27	0.08	6.02	2.90	2.56	5.46
10/28/2023	0.00	6.11	6.11	0.30	0.08	6.38	3.10	2.71	5.81
10/29/2023	0.00	6.78	6.78	0.28	0.08	6.40	3.03	2.69	5.72
10/30/2023	0.00	6.80	6.80	0.27	0.08	6.12	3.01	2.62	5.63
10/31/2023	0.00	6.18	6.18	0.27	0.08	6.03	2.95	2.58	5.53
Total	14.83	191.85	206.68	7.06	4.12	202.45	98.44	86.55	185.00
Avg	0.48	6.19	6.67	0.23	0.13	6.53	3.18	2.79	5.97
Min	0.00	3.99	5.55	0.00	0.08	6.02	2.90	2.56	5.46
Max	3.87	7.62	9.12	0.35	0.26	7.72	3.89	3.34	7.16



Raw Water Analysis								
Date	Temp	pH	Turbidity		F	Free Cl	Bacti	
	Average	Average	Average	Maximum	Grab	Average	Positive/Negative	
	°C		NTU		mg/L	mg/L	Total Coliform	E. coli
	TIT-1000	AIT-1000-2	AIT-1000-1		Lab	AIT-1035-2	Lab	
10/1/2023	19.7	7.87	1.90	2.94	0.08	0.07	Negative	Negative
10/2/2023	19.7	7.81	1.74	3.16	0.08	0.04	Negative	Negative
10/3/2023	19.9	7.75	1.35	2.27	0.08	0.04	Negative	Negative
10/4/2023	19.9	7.77	0.84	1.72	0.08	0.09	Negative	Negative
10/5/2023	19.7	7.91	0.78	1.07	0.08	0.10	Negative	Negative
10/6/2023	19.4	7.99	0.97	11.95	0.08	0.09	Negative	Negative
10/7/2023	18.4	7.69	1.17	14.02	0.08	0.32	Negative	Negative
10/8/2023	16.7	7.71	0.54	0.99	0.08	0.55	Negative	Negative
10/9/2023	15.6	7.73	0.40	0.53	0.08	0.50	Negative	Negative
10/10/2023	15.8	7.92	0.49	0.60	0.08	0.33	Negative	Negative
10/11/2023	15.6	7.75	0.50	0.86	0.08	0.38	Negative	Negative
10/12/2023	14.9	7.74	0.48	5.78	0.08	0.39	Negative	Negative
10/13/2023	14.4	7.79	0.42	0.62	0.08	0.49	Negative	Negative
10/14/2023	14.4	7.85	0.57	0.78	0.08	0.53	Negative	Negative
10/15/2023	14.4	7.90	1.93	5.68	0.08	0.50	Negative	Negative
10/16/2023	14.9	7.89	4.34	23.50	0.08	0.46	Negative	Negative
10/17/2023	14.9	7.91	3.78	20.10	0.08	0.42	Negative	Negative
10/18/2023	14.8	7.90	2.76	33.98	0.08	0.45	Negative	Negative
10/19/2023	14.8	7.90	1.14	1.77	0.08	0.50	Negative	Negative
10/20/2023	14.7	7.91	1.36	2.41	0.08	0.40	Negative	Negative
10/21/2023	14.5	7.91	1.29	1.43	0.08	0.50	Negative	Negative
10/22/2023	14.5	7.93	1.28	2.10	0.08	0.50	Negative	Negative
10/23/2023	14.4	7.92	1.64	2.89	0.08	0.43	Negative	Negative
10/24/2023	14.6	7.86	1.44	2.32	0.08	0.41	Negative	Negative
10/25/2023	14.7	7.82	0.84	1.16	0.08	0.45	Negative	Negative
10/26/2023	14.5	7.86	0.88	1.27	0.08	0.42	Negative	Negative
10/27/2023	14.5	7.83	0.96	1.34	0.09	0.41	Negative	Negative
10/28/2023	14.4	7.87	0.99	1.53	0.08	0.48	Negative	Negative
10/29/2023	14.4	7.90	0.90	2.24	0.08	0.58	Negative	Negative
10/30/2023	14.4	7.89	0.76	31.13	0.08	0.59	Negative	Negative
10/31/2023	14.2	7.94	0.65	0.77	0.08	0.47	Negative	Negative
Avg	15.9	7.85	1.26	5.90	0.08	0.38	NA	NA
Min	14.2	7.69	0.40	0.53	0.08	0.04	NA	NA
Max	19.9	7.99	4.34	33.98	0.09	0.59	NA	NA



Finished Water Analysis																		
Date	Temp	pH	Phosphate	Fluoride		Free Cl ₂	Alkalinity (as CaCO ₃)		Chloride	Sulfate	Calcium (as CaCO ₃)	Dissolved Oxygen	Conductivity	Langelier Saturation Index	Chloride: Sulfate Mass Ratio	Larson-Skold Index	Bacti	
	Average	Average	Average	Tap	Dist	Average	Carbonate	Bicarbonate	Grab	Grab	Grab	Grab	Grab				Positive/Negative	Total Coliform
	°C		mg/L	mg/L		mg/L	mg/L		mg/L	mg/L	mg/L	mg/L	uS/cm					
	AIT-4040-1	AIT-4050-2	AIT-4040-5	Lab		AIT-4050-1	Lab		Lab	Lab	Lab	Lab	Lab	Calculated			Lab	
10/1/2023	19.2	7.57	3.37	0.79		1.30	0	77	14	12	78	8.5	243	-0.63	1.17	0.51	Negative	Negative
10/2/2023	19.2	7.53	3.37	0.80	0.80	1.32	0	82	13	12	78	8.7	247	-0.64	1.08	0.46	Negative	Negative
10/3/2023	19.3	7.48	3.39	0.79		1.29	0	82	13	12	74	8.3	249	-0.72	1.08	0.46	Negative	Negative
10/4/2023	19.4	7.54	3.46	0.80		1.30	0	81	12	11	78	8.3	242	-0.63	1.09	0.43	Negative	Negative
10/5/2023	19.1	7.68	3.46	0.79		1.28	0	82	13	9	68	8.5	233	-0.55	1.44	0.42	Negative	Negative
10/6/2023	18.8	7.73	3.45	0.79		1.33	0	79	13	12	66	8.0	229	-0.54	1.08	0.48	Negative	Negative
10/7/2023	18.3	7.80	3.45	0.79		1.34	0	79	12	11	68	8.8	226	-0.46	1.09	0.44	Negative	Negative
10/8/2023	16.3	7.93	3.44	0.80		1.37	0	80	13	11	70	8.1	233	-0.36	1.18	0.46	Negative	Negative
10/9/2023	14.3	7.75	3.35	0.78	0.81	1.33	0	80	11	10	66	9.9	219	-0.62	1.10	0.40	Negative	Negative
10/10/2023	13.4	7.54	3.40	0.76		1.30	0	80	12	11	66	9.5	220	-0.85	1.09	0.44	Negative	Negative
10/11/2023	13.7	7.53	3.41	0.77		1.33	0	79	11	13	70	10.3	220	-0.83	0.85	0.45	Negative	Negative
10/12/2023	13.5	7.55	3.41	0.77		1.32	0	74	11	11	72	10.4	219	-0.83	1.00	0.45	Negative	Negative
10/13/2023	12.9	7.61	3.41	0.76		1.31	0	72	10	10	72	10.2	219	-0.80	1.00	0.42	Negative	Negative
10/14/2023	12.5	7.68	3.45	0.78		1.33	0	77	10	8	78	10.6	218	-0.68	1.25	0.36	Negative	Negative
10/15/2023	12.3	7.70	3.47	0.77		1.32	0	76	10	10	80	10.7	218	-0.65	1.00	0.40	Negative	Negative
10/16/2023	12.4	7.69	3.41	0.77	0.76	1.31	0	76	11	10	78	10.5	216	-0.67	1.10	0.42	Negative	Negative
10/17/2023	12.6	7.67	3.40	0.76		1.32	0	72	11	11	74	14.9	216	-0.73	1.00	0.46	Negative	Negative
10/18/2023	12.8	7.66	3.40	0.77		1.30	0	73	11	13	74	14.5	218	-0.73	0.85	0.49	Negative	Negative
10/19/2023	13.0	7.64	3.40	0.77		1.31	0	78	11	10	68	9.5	219	-0.75	1.10	0.41	Negative	Negative
10/20/2023	13.0	7.65	3.40	0.76		1.31	0	81	11	10	70	9.4	219	-0.71	1.10	0.39	Negative	Negative
10/21/2023	13.0	7.68	3.41	0.78		1.30	0	77	11	11	72	10.8	216	-0.70	1.00	0.43	Negative	Negative
10/22/2023	12.9	7.69	3.40	0.77		1.30	0	82	13	13	66	9.2	224	-0.70	1.00	0.48	Negative	Negative
10/23/2023	12.9	7.65	3.40	0.77	0.77	1.31	0	81	14	12	68	9.8	220	-0.73	1.17	0.49	Negative	Negative
10/24/2023	13.2	7.49	3.39	0.77		1.30	0	81	13	11	68	10.2	228	-0.88	1.18	0.45	Negative	Negative
10/25/2023	13.3	7.42	3.38	0.78		1.31	0	81	10	11	76	10.2	226	-0.90	0.91	0.39	Negative	Negative
10/26/2023	12.9	7.56	3.39	0.78		1.31	0	71	13	11	76	10.1	253	-0.83	1.18	0.52	Negative	Negative
10/27/2023	13.0	7.57	3.42	0.80		1.31	0	75	13	11	74	10.3	250	-0.81	1.18	0.49	Negative	Negative
10/28/2023	12.9	7.61	3.42	0.79		1.32	0	76	11	10	78	10.5	251	-0.75	1.10	0.42	Negative	Negative
10/29/2023	12.7	7.62	3.41	0.79		1.33	0	75	10	10	76	9.9	248	-0.76	1.00	0.40	Negative	Negative
10/30/2023	12.7	7.60	3.41	0.79	0.77	1.32	0	76	10	11	72	10.0	244	-0.79	0.91	0.41	Negative	Negative
10/31/2023	12.6	7.63	3.40	0.78		1.31	0	74	11	10	74	9.9	243	-0.77	1.10	0.43	Negative	Negative
Avg	14.5	7.63	3.41	0.78	0.78	1.31	0	78	12	11	73	10.0	230	-0.71	1.08	0.44	NA	NA
Min	12.3	7.42	3.35	0.76	0.76	1.28	0	71	10	8	66	8.0	216	-0.90	0.85	0.36	NA	NA
Max	19.4	7.93	3.47	0.80	0.81	1.37	0	82	14	13	80	14.9	253	-0.36	1.44	0.52	NA	NA



Turbidity										
Date	Raw Water		Clarified Water	Membrane Feed Water	Combined Membrane Filtrate					Finished Water
	Avg	Max	Avg	Avg	Avg	Max	# Samples	# > 0.3	% Exceeded	Avg
	NTU									
	AIT-1000-1		AIT-5030-1	AIT-1035-3	AIT-4000-1					Calculated
10/1/2023	1.90	2.94	12.36	2.02	0.026	0.026	96	0	0.0	0.015
10/2/2023	1.74	3.16	14.23	1.75	0.026	0.026	96	0	0.0	0.015
10/3/2023	1.35	2.27	26.51	1.52	0.026	0.026	96	0	0.0	0.015
10/4/2023	0.84	1.72	40.48	1.17	0.026	0.026	96	0	0.0	0.015
10/5/2023	0.78	1.07	12.74	0.88	0.026	0.026	96	0	0.0	0.015
10/6/2023	0.97	11.95	9.02	0.87	0.026	0.026	96	0	0.0	0.015
10/7/2023	1.17	14.02	10.18	0.87	0.026	0.026	96	0	0.0	0.015
10/8/2023	0.54	0.99	6.02	0.60	0.025	0.026	96	0	0.0	0.015
10/9/2023	0.40	0.53	1.52	0.44	0.025	0.026	96	0	0.0	0.015
10/10/2023	0.49	0.60	2.62	0.42	0.025	0.026	96	0	0.0	0.015
10/11/2023	0.50	0.86	3.38	0.40	0.025	0.026	96	0	0.0	0.015
10/12/2023	0.48	5.78	3.39	0.45	0.025	0.026	96	0	0.0	0.015
10/13/2023	0.42	0.62	2.89	0.41	0.025	0.026	96	0	0.0	0.015
10/14/2023	0.57	0.78	2.51	0.41	0.025	0.026	96	0	0.0	0.015
10/15/2023	1.93	5.68	3.19	0.59	0.025	0.026	96	0	0.0	0.015
10/16/2023	4.34	23.50	4.65	2.08	0.025	0.026	96	0	0.0	0.015
10/17/2023	3.78	20.10	3.23	2.32	0.025	0.026	96	0	0.0	0.015
10/18/2023	2.76	33.98	4.73	2.74	0.024	0.026	96	0	0.0	0.014
10/19/2023	1.14	1.77	4.53	1.85	0.023	0.023	96	0	0.0	0.014
10/20/2023	1.36	2.41	4.99	1.44	0.023	0.023	96	0	0.0	0.014
10/21/2023	1.29	1.43	5.10	1.30	0.023	0.023	96	0	0.0	0.014
10/22/2023	1.28	2.10	9.13	1.23	0.023	0.023	96	0	0.0	0.014
10/23/2023	1.64	2.89	5.69	1.24	0.023	0.023	96	0	0.0	0.014
10/24/2023	1.44	2.32	10.79	1.35	0.023	0.023	96	0	0.0	0.014
10/25/2023	0.84	1.16	10.33	1.12	0.023	0.023	96	0	0.0	0.014
10/26/2023	0.88	1.27	7.10	1.04	0.023	0.023	96	0	0.0	0.014
10/27/2023	0.96	1.34	5.45	1.03	0.023	0.023	96	0	0.0	0.014
10/28/2023	0.99	1.53	7.18	1.01	0.023	0.023	96	0	0.0	0.014
10/29/2023	0.90	2.24	6.18	0.95	0.023	0.023	96	0	0.0	0.014
10/30/2023	0.76	31.13	5.10	0.77	0.023	0.023	96	0	0.0	0.014
10/31/2023	0.65	0.77	3.84	0.67	0.023	0.023	96	0	0.0	0.014
Avg	1.26	5.90	8.03	1.13	0.024	0.025	96	0	0.0	0.015
Min	0.40	0.53	1.52	0.40	0.023	0.023	96	0	0.0	0.014
Max	4.34	33.98	40.48	2.74	0.026	0.026	96	0	0.0	0.015



Note: % Exceeded are 4 hr compliance periods where the average of samples are greater than 0.3 NTU

Date	Membrane LRV/Integrity/Max Turbidity																									
	Membrane 1			Membrane 2			Membrane 3			Membrane 4			Membrane 5			Membrane 6			Membrane 7			Membrane 8				
	LRV	Integrity	Turbidity	LRV	Integrity	Turbidity	LRV	Integrity	Turbidity	LRV	Integrity	Turbidity	LRV	Integrity	Turbidity	LRV	Integrity	Turbidity	LRV	Integrity	Turbidity	LRV	Integrity	Turbidity		
	Average	Max	Max	Average	Max	Max	Average	Max	Max	Average	Max	Max	Average	Max	Max	Average	Max	Max	Average	Max	Max	Average	Max	Max		
psi/min	Pass/Fail	NTU	psi/min	Pass/Fail	NTU	psi/min	Pass/Fail	NTU	psi/min	Pass/Fail	NTU	psi/min	Pass/Fail	NTU	psi/min	Pass/Fail	NTU	psi/min	Pass/Fail	NTU	psi/min	Pass/Fail	NTU	psi/min	Pass/Fail	NTU
10/1/2023	4.07	PASS	0.021	4.00	PASS	0.027	4.08	PASS	0.021	4.28	PASS	0.019	5.56	PASS	0.049	4.10	PASS	0.026	4.10	PASS	0.028	4.52	PASS	0.028		
10/2/2023	4.07	PASS	0.021	4.04	PASS	0.027	4.08	PASS	0.021	4.21	PASS	0.018	5.48	PASS	0.023	4.07	PASS	0.026	4.08	PASS	0.026	4.53	PASS	0.028		
10/3/2023	4.10	PASS	0.022	3.97	PASS	0.027		Maint.		4.23	PASS	0.018	5.47	PASS	0.052	4.10	PASS	0.026	4.07	PASS	0.025	4.46	PASS	0.028		
10/4/2023	4.09	PASS	0.021	4.26	PASS	0.028	4.25	PASS	0.022	4.09	PASS	0.019	5.50	PASS	0.024	4.10	PASS	0.026	4.08	PASS	0.026	4.48	PASS	0.029		
10/5/2023	4.12	PASS	0.021	4.24	PASS	0.026	4.25	PASS	0.021	4.29	PASS	0.018	5.61	PASS	0.029	4.14	PASS	0.025	4.15	PASS	0.026	4.58	PASS	0.027		
10/6/2023	4.10	PASS	0.021	4.23	PASS	0.026	4.24	PASS	0.020	4.32	PASS	0.017	5.60	PASS	0.023	4.14	PASS	0.025	4.17	PASS	0.027	4.63	PASS	0.026		
10/7/2023	4.16	PASS	0.021	4.24	PASS	0.026	4.23	PASS	0.020	4.35	PASS	0.018	5.60	PASS	0.023	4.19	PASS	0.025	4.19	PASS	0.028	4.62	PASS	0.026		
10/8/2023	4.20	PASS	0.021	4.20	PASS	0.025	4.30	PASS	0.021	4.38	PASS	0.017	5.62	PASS	0.031	4.23	PASS	0.024	4.19	PASS	0.028	4.66	PASS	0.025		
10/9/2023	4.18	PASS	0.020	4.24	PASS	0.025	4.32	PASS	0.020	4.42	PASS	0.023	5.64	PASS	0.023	4.26	PASS	0.024	4.21	PASS	0.028	4.70	PASS	0.024		
10/10/2023	4.19	PASS	0.021	4.25	PASS	0.025	4.31	PASS	0.020	4.44	PASS	0.017	5.61	PASS	0.023	4.26	PASS	0.024	4.21	PASS	0.028	4.71	PASS	0.023		
10/11/2023	4.18	PASS	0.020	4.23	PASS	0.025	4.27	PASS	0.020	4.47	PASS	0.017	5.62	PASS	0.022	4.27	PASS	0.024	4.44	PASS	0.028	4.70	PASS	0.024		
10/12/2023	4.38	PASS	0.023	4.23	PASS	0.025	4.27	PASS	0.020	4.38	PASS	0.017	5.64	PASS	0.032	4.28	PASS	0.024	4.43	PASS	0.029	4.70	PASS	0.024		
10/13/2023	4.32	PASS	0.020	4.24	PASS	0.025	4.29	PASS	0.020	4.48	PASS	0.019	5.65	PASS	0.023	4.27	PASS	0.024	4.42	PASS	0.028	4.72	PASS	0.022		
10/14/2023	4.33	PASS	0.021	4.25	PASS	0.025	4.29	PASS	0.020	4.45	PASS	0.017	5.65	PASS	0.022	4.28	PASS	0.024	4.46	PASS	0.028	4.71	PASS	0.023		
10/15/2023	4.40	PASS	0.020	4.25	PASS	0.025	4.33	PASS	0.020	4.40	PASS	0.017	5.61	PASS	0.023	4.30	PASS	0.024	4.43	PASS	0.028	4.72	PASS	0.023		
10/16/2023	4.43	PASS	0.021	4.23	PASS	0.025	4.33	PASS	0.020	4.43	PASS	0.017	5.65	PASS	0.023	4.29	PASS	0.024	4.49	PASS	0.027	4.73	PASS	0.022		
10/17/2023	4.41	PASS	0.020	4.25	PASS	0.025	4.30	PASS	0.020	4.48	PASS	0.017	5.68	PASS	0.028	4.28	PASS	0.024	4.42	PASS	0.027	4.74	PASS	0.022		
10/18/2023	4.36	PASS	0.021	4.22	PASS	0.025	4.26	PASS	0.020	4.45	PASS	0.017	5.63	PASS	0.023	4.26	PASS	0.024	4.32	PASS	0.027	4.70	PASS	0.022		
10/19/2023	4.31	PASS	0.020	4.21	PASS	0.025	4.25	PASS	0.020	4.47	PASS	0.017	5.60	PASS	0.022	4.28	PASS	0.024	4.45	PASS	0.027	4.72	PASS	0.022		
10/20/2023	4.33	PASS	0.020	4.19	PASS	0.025	4.23	PASS	0.020	4.35	PASS	0.017	5.61	PASS	0.022	4.26	PASS	0.024	4.48	PASS	0.027	4.71	PASS	0.021		
10/21/2023	4.30	PASS	0.020	4.19	PASS	0.025	4.25	PASS	0.020	4.41	PASS	0.017	5.67	PASS	0.026	4.24	PASS	0.024	4.39	PASS	0.027	4.72	PASS	0.021		
10/22/2023	4.31	PASS	0.020	4.20	PASS	0.025	4.22	PASS	0.020	4.46	PASS	0.017	5.58	PASS	0.023	4.25	PASS	0.024	4.31	PASS	0.028	4.70	PASS	0.021		
10/23/2023	4.35	PASS	0.021	4.20	PASS	0.024	4.17	PASS	0.020	4.40	PASS	0.017	5.55	PASS	0.023	4.24	PASS	0.025	4.26	PASS	0.027	4.70	PASS	0.021		
10/24/2023	4.30	PASS	0.021		Maint.		4.12	PASS	0.020		Maint.		5.48	PASS	0.023		Maint.		4.22	PASS	0.028		Maint.			
10/25/2023	4.27	PASS	0.021	4.20	PASS	0.030	4.12	PASS	0.021	4.50	PASS	0.018	5.54	PASS	0.037	4.40	PASS	0.028	4.20	PASS	0.028	4.71	PASS	0.020		
10/26/2023	4.24	PASS	0.020	4.20	PASS	0.024	4.18	PASS	0.021	4.49	PASS	0.017	5.62	PASS	0.022	4.36	PASS	0.024	4.25	PASS	0.028	4.71	PASS	0.020		
10/27/2023	4.21	PASS	0.022	4.19	PASS	0.025	4.22	PASS	0.020	4.46	PASS	0.017	5.63	PASS	0.027	4.27	PASS	0.024	4.23	PASS	0.027	4.72	PASS	0.019		
10/28/2023	4.21	PASS	0.020	4.18	PASS	0.024	4.21	PASS	0.021	4.43	PASS	0.017	5.59	PASS	0.026	4.25	PASS	0.024	4.31	PASS	0.028	4.72	PASS	0.020		
10/29/2023	4.26	PASS	0.020	4.19	PASS	0.025	4.21	PASS	0.021	4.40	PASS	0.017	5.65	PASS	0.024	4.27	PASS	0.024	4.40	PASS	0.028	4.70	PASS	0.020		
10/30/2023	4.30	PASS	0.020	4.20	PASS	0.024	4.20	PASS	0.020	4.41	PASS	0.017	5.63	PASS	0.023	4.28	PASS	0.024	4.34	PASS	0.028	4.70	PASS	0.020		
10/31/2023	4.26	PASS	0.020	4.20	PASS	0.024	4.20	PASS	0.019	4.46	PASS	0.017	5.61	PASS	0.022	4.30	PASS	0.025	4.31	PASS	0.028	4.73	PASS	0.020		
Avg	4.25		0.021	4.20		0.025	4.23		0.020	4.39		0.017	5.60		0.026	4.24		0.025	4.29		0.027	4.67		0.023		
Min	4.07		0.020	3.97		0.024	4.08		0.019	4.09		0.017	5.47		0.022	4.07		0.024	4.07		0.025	4.46		0.019		
Max	4.43		0.023	4.26		0.030	4.33		0.022	4.50		0.023	5.68		0.052	4.40		0.028	4.49		0.029	4.74		0.029		

*LRV must remain above Upper Control Limit of 3.32 psi/min



Treatment Chemical Dosages											
Date	Treated Water	Sodium Hypochlorite					Phosphoric Acid		Hydroflourosilicic Acid		
		Raw Water	Membrane Feed Water	Dose pre-FW Tanks	Treated Water	Post FW Tanks	Dose pre-FW Tanks	Post FW Tanks	Raw Water	Dose pre-FW Tanks	Post FW Tanks
	Volume	Free Cl ₂					PO4		F		
	MG	mg/L					mg/L		mg/L		
	FIT-4000-1	AIT-1035-2	AIT-1035-4	Added	AIT-4030-1	AIT-4050-1	Added	AIT-4040-5	Lab	Added	Lab
10/1/2023	7.0	0.07	0.03	1.86	1.54	1.30	3.36	3.37	0.08	0.68	0.79
10/2/2023	7.7	0.04	0.03	1.54	1.54	1.32	3.36	3.37	0.08	0.68	0.80
10/3/2023	7.7	0.04	0.03	1.64	1.50	1.29	3.36	3.39	0.08	0.68	0.79
10/4/2023	7.4	0.09	0.03	1.44	1.50	1.30	3.35	3.46	0.08	0.68	0.80
10/5/2023	6.5	0.10	0.03	1.70	1.47	1.28	3.34	3.46	0.08	0.68	0.79
10/6/2023	7.0	0.09	0.04	1.62	1.51	1.33	3.34	3.45	0.08	0.68	0.79
10/7/2023	6.6	0.32	0.07	1.46	1.52	1.34	3.34	3.45	0.08	0.68	0.79
10/8/2023	6.8	0.55	0.21	1.24	1.48	1.37	3.34	3.44	0.08	0.67	0.80
10/9/2023	6.7	0.50	0.28	1.08	1.40	1.33	3.34	3.35	0.08	0.65	0.78
10/10/2023	6.5	0.33	0.27	1.20	1.40	1.30	3.34	3.40	0.08	0.64	0.76
10/11/2023	6.8	0.38	0.25	1.15	1.42	1.33	3.34	3.41	0.08	0.64	0.77
10/12/2023	6.3	0.39	0.27	1.13	1.40	1.32	3.34	3.41	0.08	0.64	0.77
10/13/2023	6.3	0.49	0.29	1.12	1.41	1.31	3.34	3.41	0.08	0.64	0.76
10/14/2023	6.4	0.53	0.35	1.06	1.42	1.33	3.34	3.45	0.08	0.64	0.78
10/15/2023	6.2	0.50	0.38	1.02	1.40	1.32	3.32	3.47	0.08	0.64	0.77
10/16/2023	6.6	0.46	0.34	1.10	1.40	1.31	3.28	3.41	0.08	0.64	0.77
10/17/2023	6.2	0.42	0.36	1.12	1.41	1.32	3.28	3.40	0.08	0.64	0.76
10/18/2023	6.6	0.45	0.29	1.16	1.40	1.30	3.28	3.40	0.08	0.64	0.77
10/19/2023	6.2	0.50	0.33	1.12	1.43	1.31	3.28	3.40	0.08	0.64	0.77
10/20/2023	6.8	0.40	0.32	1.12	1.40	1.31	3.28	3.40	0.08	0.64	0.76
10/21/2023	6.5	0.50	0.34	1.10	1.41	1.30	3.28	3.41	0.08	0.64	0.78
10/22/2023	6.2	0.50	0.35	1.10	1.41	1.30	3.28	3.40	0.08	0.64	0.77
10/23/2023	6.5	0.43	0.34	1.14	1.42	1.31	3.28	3.40	0.08	0.64	0.77
10/24/2023	6.0	0.41	0.30	1.16	1.40	1.30	3.28	3.39	0.08	0.64	0.77
10/25/2023	6.1	0.45	0.31	1.16	1.42	1.31	3.28	3.38	0.08	0.64	0.78
10/26/2023	6.0	0.42	0.31	1.17	1.39	1.31	3.29	3.39	0.08	0.64	0.78
10/27/2023	6.0	0.41	0.31	1.17	1.40	1.31	3.31	3.42	0.09	0.64	0.80
10/28/2023	6.4	0.48	0.34	1.15	1.42	1.32	3.31	3.42	0.08	0.64	0.79
10/29/2023	6.4	0.58	0.40	1.03	1.43	1.33	3.31	3.41	0.08	0.64	0.79
10/30/2023	6.1	0.59	0.47	1.00	1.41	1.32	3.31	3.41	0.08	0.64	0.79
10/31/2023	6.0	0.47	0.45	1.00	1.41	1.31	3.31	3.40	0.08	0.64	0.78
Avg	6.5	0.38	0.26	1.23	1.43	1.31	3.32	3.41	0.08	0.65	0.78
Min	6.0	0.04	0.03	1.00	1.39	1.28	3.28	3.35	0.08	0.64	0.76
Max	7.7	0.59	0.47	1.86	1.54	1.37	3.36	3.47	0.09	0.68	0.80



Disinfection CT														
Date	Pipeline CT				FW Tank CT						Compliance			
	Whitestone	Travel Time	Residual	CT	FW Tank 1	FW Tank 2	Plant	Contact Time	Free Cl ₂	CT	Total CT	Temp	CT	CT
	Flow	Min	RW	Achieved	Min Level	Min Level	Flow	Min	Min	Achieved	Achieved	Avg	Required	Met
	MGD	Minutes	mg/L	mg-min/L	ft	ft	MGD	Minutes	mg/L	mg-min/L	mg-min/L	°C	mg-min/L	Y/N
	Entry	Calculated	AIT-1035-2	Calculated	LIT-4005-1	LIT-4005-2	Calculated	Calculated	Calculated	Calculated	Calculated	TIT-1000	Calculated	Calculated
10/1/2023	56.8	2,203	0.07	144	28.7	23.0	6.6	535	1.24	663	807	19.7	4.00	Y
10/2/2023	57.3	2,185	0.04	96	28.8	23.0	7.1	499	1.25	623	719	19.7	4.00	Y
10/3/2023	43.2	2,897	0.04	113	28.3	22.6	7.2	487	1.20	585	697	19.9	4.00	Y
10/4/2023	37.7	3,320	0.09	302	28.6	21.1	6.8	503	1.26	634	937	19.9	4.00	Y
10/5/2023	38.1	3,281	0.10	327	28.6	24.9	5.9	619	1.20	743	1070	19.7	4.00	Y
10/6/2023	37.2	3,365	0.09	314	28.7	24.8	6.3	579	1.29	746	1060	19.4	4.00	Y
10/7/2023	44.0	2,844	0.32	899	28.7	25.3	6.1	611	1.32	809	1708	18.4	4.00	Y
10/8/2023	44.4	2,816	0.55	1537	28.7	25.1	6.1	602	1.32	797	2334	16.7	4.00	Y
10/9/2023	36.7	3,411	0.50	1714	28.6	22.5	6.2	567	1.27	723	2437	15.6	4.00	Y
10/10/2023	33.9	3,687	0.33	1216	28.7	25.2	5.9	625	1.27	793	2009	15.8	4.00	Y
10/11/2023	31.1	4,025	0.38	1541	28.7	24.7	6.1	596	1.25	743	2285	15.6	4.00	Y
10/12/2023	30.2	4,145	0.39	1620	28.7	24.5	5.9	620	1.29	799	2419	14.9	6.00	Y
10/13/2023	33.1	3,784	0.49	1866	28.7	24.3	5.7	638	1.28	817	2683	14.4	6.00	Y
10/14/2023	43.5	2,877	0.53	1528	28.7	24.0	5.7	633	1.28	812	2339	14.4	6.00	Y
10/15/2023	44.0	2,845	0.50	1432	28.7	23.7	5.7	628	1.24	778	2211	14.4	6.00	Y
10/16/2023	43.6	2,871	0.46	1310	28.7	23.8	5.9	608	1.27	775	2085	14.9	6.00	Y
10/17/2023	41.6	3,009	0.42	1271	28.7	22.7	5.8	611	1.25	766	2037	14.9	6.00	Y
10/18/2023	39.4	3,179	0.45	1415	28.6	22.2	5.9	589	1.23	723	2138	14.8	6.00	Y
10/19/2023	39.2	3,189	0.50	1605	28.6	23.4	5.7	622	1.23	767	2372	14.8	6.00	Y
10/20/2023	40.4	3,095	0.40	1251	28.7	23.7	6.3	574	1.23	708	1960	14.7	6.00	Y
10/21/2023	43.6	2,872	0.50	1423	28.7	23.5	5.9	609	1.25	759	2183	14.5	6.00	Y
10/22/2023	44.0	2,841	0.50	1418	28.7	25.0	5.6	653	1.20	782	2201	14.5	6.00	Y
10/23/2023	44.3	2,825	0.43	1207	28.7	25.0	5.8	632	1.26	797	2004	14.4	6.00	Y
10/24/2023	36.9	3,386	0.41	1385	28.5	24.4	5.5	659	1.20	790	2175	14.6	6.00	Y
10/25/2023	31.8	3,931	0.45	1755	28.5	24.8	5.5	661	1.25	824	2579	14.7	6.00	Y
10/26/2023	31.6	3,964	0.42	1661	28.6	23.3	5.6	634	1.27	808	2469	14.5	6.00	Y
10/27/2023	35.2	3,556	0.41	1462	28.2	22.2	5.5	633	1.21	764	2225	14.5	6.00	Y
10/28/2023	44.3	2,826	0.48	1370	28.6	20.5	5.8	579	1.30	750	2119	14.4	6.00	Y
10/29/2023	44.7	2,795	0.58	1620	28.7	23.6	5.7	627	1.23	769	2388	14.4	6.00	Y
10/30/2023	43.5	2,877	0.59	1696	28.6	23.5	5.6	634	1.29	817	2513	14.4	6.00	Y
10/31/2023	34.4	3,631	0.47	1722	28.6	21.7	5.5	623	1.21	751	2474	14.2	6.00	Y
Avg	40.3	3,179	0.38	1233	28.6	23.6	6.0	603	1.25	755	1988	15.9	5.29	NA
Min	30.2	2,185	0.04	96	28.2	20.5	5.5	487	1.20	585	697	14.2	4.00	NA
Max	57.3	4,145	0.59	1866	28.8	25.3	7.2	661	1.32	824	2683	19.9	6.00	NA



Notes:

Pipeline volume factor in SMMWSC to RW tank: 125,090 MG-min/day

Distribution System Monitoring																								
Chlorine Residual at Bacteriological Monitoring Stations (mg/L Free Cl ₂)																								
WSSN:	0072	0390				0400			0470							0485				0517	0518		2180	
Date	Akron	Bangor Twp.				Bangor Monitor Dist.			Bay City							Bay County				Beaver Rd	Beaver Twp		Essexville	
	1	3	4	5	6	7	9	10	11	12	13	14	15	16	17	18	19	20	23	24	26	29	30	32
10/1/2023																								
10/2/2023																								
10/3/2023	0.05	0.43	0.23	0.35	1.02				0.81	0.58	0.55	0.78	0.54	1.05	0.71	0.70	0.71	0.78	0.59	0.27		0.21		1.05
10/4/2023																								
10/5/2023						1.02	0.98																	
10/6/2023																								
10/7/2023																								
10/8/2023																								
10/9/2023																								
10/10/2023				0.52	1.22				0.84	0.41	0.51	0.92	0.55	1.10	0.59	0.56	0.35	1.12	0.41	0.48		0.16		0.97
10/11/2023																								
10/12/2023								1.27	0.88	0.58	0.80	1.02	0.35	1.21	0.88						1.11			
10/13/2023																								
10/14/2023																								
10/15/2023																								
10/16/2023																								1.20
10/17/2023		0.47	0.40	0.53	1.01																			
10/18/2023																								
10/19/2023									0.85	0.54	0.67	0.89	0.37	1.03	0.81									
10/20/2023																								
10/21/2023																								
10/22/2023																								
10/23/2023																								1.05
10/24/2023									0.77	0.52	0.68	0.81	0.33	1.04	0.71									
10/25/2023																								
10/26/2023																								
10/27/2023																								
10/28/2023																								
10/29/2023																								
10/30/2023																								
10/31/2023																								
Average	0.05			0.62				1.09					0.73								0.60		1.11	1.07
Min	0.05			0.23				0.98					0.33								0.27		1.11	0.97
Max	0.05			1.22				1.27					1.21								1.12		1.11	1.20



MONITORING STATION ADDRESSES

- | | | |
|--|---|---|
| 1. Sample station at corner of 5758 M-25 & R | 11. Number 1 Fire Station, 1401 Center Ave | 19. Dore's M-84 Party Store, 6183 WS Saginaw Rd |
| 3. Bangor Fire Station, 3921 Wheeler | 12. Number 2 Fire Station, 1000 Fremont Ave | 20. Pump Station #13, 6000 WS Saginaw Rd |
| 4. BCDWS Admin. Bldg. 3933 Patterson Rd. | 13. Jack's Fruit Market, 1000 Salzburg Ave | 23. Rail Trail Pump Station, 366 N. Tuscola Rd. |
| 5. 7-11, 3543 S. Old Kawkawlin Rd. | 14. Number 4 Fire Station, 212 S. Dean St | 24. Little Learners Daycare, 1694 Cass Ave. |
| 6. Admiral Petroleum, 314 S Euclid Ave. | 15. Number 5 Fire Station, 1209 Smith St | 26. Wieland Contracting, 2443 S Mackinaw Rd |
| 7. Sequin Lumber, 3881 Euclid Ave | 16. Bay City Hall, 301 Washington Ave | 29. Sample Station, 2515 S. 11 Mile Rd |
| 9. B's Boutique, 2981 Midland Rd | 17. Skipper Buds Marina, 1809 S Water St | 30. Sample Station, 340 W. Beaver Rd |
| 10. Little Caesars, 3475 E North Union Rd | 18. Bay Valley Animal Hospital 6015 WS Saginaw Rd | 32. Essexville City Hall, 1107 Woodside Ave |

Distribution System Monitoring																								
Chlorine Residual at Bacteriological Monitoring Stations (mg/L Free Cl ₂)																								
WSSN:	2465		2960			3565			3570		4280		4440			5330		5335		5540	7125			7134
Date	Fraser Twp.		Hampton Twp.			Kawkawlin Twp.			Kawkawlin Met.		Merritt Twp.		Monitor Twp.			City Pinconning		Pinconning Twp.		Portsmouth	Williams Twp.			Wisner
	34	35	37	38	39	40	41	42	43	45	46	48	49	52	55	58	59	61	63	65	68	69	70	72
10/1/2023																								
10/2/2023																								
10/3/2023											0.16									0.34	0.61	0.49	0.24	0.13
10/4/2023																								
10/5/2023		0.76	0.20	0.37	0.26	0.92	0.44		0.50				1.00	0.51		0.37		0.36						
10/6/2023																								
10/7/2023																								
10/8/2023																								
10/9/2023																								
10/10/2023											0.32		1.19	0.57							0.45	0.55	0.40	
10/11/2023																								
10/12/2023	0.80							1.10	0.83							0.51		0.47						
10/13/2023			0.38	0.82	0.41																			
10/14/2023																								
10/15/2023																								
10/16/2023																								
10/17/2023																								
10/18/2023																								
10/19/2023													1.00	0.56										
10/20/2023			0.35																					
10/21/2023																								
10/22/2023																								
10/23/2023																								
10/24/2023																								
10/25/2023																								
10/26/2023																								
10/27/2023			0.23	0.82	0.54																			
10/28/2023																								
10/29/2023																								
10/30/2023																								
10/31/2023																								
Average		0.78		0.44			0.82		0.67		0.24			0.81		0.44		0.42		0.34		0.46		0.13
Min		0.76		0.20			0.44		0.50		0.16			0.51		0.37		0.36		0.34		0.24		0.13
Max		0.80		0.82			1.10		0.83		0.32			1.19		0.51		0.47		0.34		0.61		0.13



MONITORING STATION ADDRESSES

- 34. Fraser Elevated Tank, 2949 1/2 N. Huron Rd
- 35. Lloyd's Cabinet, 1947 N Huron Rd
- 37. Hampton DPW, 950 Wagner Rd.
- 38. Bay County Golf Course, 584 W Hampton Rd.
- 39. Sewer Lift Station, 902 Nebobish Rd.
- 40. Bay Co. Road Commission, 2600 E Beaver Rd
- 41. Parish Rd. Elevated Tank, 1770 E. Parish Rd
- 42. Linwood Tile, 205 S Huron Rd

- 43. Speedway, 106 S. Huron Rd.
- 45. Kawkawlin Restaurant, 103 S Huron Rd
- 46. John's Bar, 1476 S Tuscola Rd
- 48. Tool Shed Bar, 12 W Munger Rd
- 49. Wilder Rd Party Store, 2951 E Wilder Rd
- 52. Monitor Twp. Elevated Tank, 1611 E. Midland Rd
- 55. Auburn Fertilizer, 4640 S 7 Mile Rd
- 58. Pinconning City Hall, 208 S Manitou St

- 59. Marathon Gas Station, 511 S Mabel St
- 61. Pinconning Meter Pit, 3005 N Huron Rd
- 63. Master Meter Pit, 2865 Pinconning Rd
- 65. Ike's Welding, 50 N Finn Rd
- 68. Williams Township Hall, 1080 W Midland Rd
- 69. Pump Station, 490 W. Salzburg & 9 Mile Rd
- 70. 11 Mile Elevated Tank, 5003 S. 11 Mile Rd
- 72. Lindy's Sales, 9051 M-25

Distribution System Bacteriological

Water Supplier Bacteriological Analysis Report

Name of Water Supply

Bay Area Water Treatment Plant

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

Bureau of Environmental Health

Water Supplier Bacteriological Analysis Report

October, 2023

COUNTY	COMMUNITY	WSSN NUMBER	DISTRIBUTION SYSTEM SAMPLES				
			avg free cl2 mg/L	NUMBER REQUIRED	NUMBER COLLECTED	NUMBER POSITIVE	NUMBER REPEAT SAMPLES
Tuscola	Akron	0072	0.05	1	1	0	0
BAY	Bangor Township	0390	0.62	10	10	0	0
BAY	Bangor-Monitor Dist.	0400	1.09	3	3	0	0
BAY	Bay City	0470	0.73	30	35	0	0
BAY	Bay County (Frankl./Monitor/Portsm.)	0485	0.60	9	10	0	0
BAY	Beaver Road Area	0517	1.11	1	1	0	0
BAY	Beaver Township	0518	0.19	2	2	0	0
BAY	Essexville	2180	1.07	4	4	0	0
BAY	Fraser Township	2465	0.78	2	2	0	0
BAY	Hampton Township	2960	0.44	10	10	0	0
BAY	Kawkawlin Township	3565	0.82	3	3	0	0
BAY	Kawkawlin Metro Dist.	3570	0.67	2	2	0	0
BAY	Merritt Township	4280	0.24	2	2	0	0
BAY	Monitor Township	4440	0.81	6	6	0	0
BAY	City of Pinconning	5330	0.44	2	2	0	0
BAY	Pinconning Township	5335	0.42	2	2	0	0
BAY	Portsmouth Township	5540	0.34	1	1	0	0
BAY	Williams Township	7125	0.46	6	6	0	0
Tuscola	Wisner	7134	0.13	1	1	0	0

Average Free Cl2 Residual of All Distribution Sites 0.58 mg/L

- 1. Total distribution samples 103
- 2. Total distribution samples with detectable free cl2 residual 103
- 3. Total distribution samples with no detectable free cl2 residual 0
- 4. Total distribution samples with no detectable free cl2 residual and HPC was <500 0
- 5. Total distribution samples with no detectable free cl2 residual and HPC was >500 0
- 6. Percent of distribution samples with no detectable free cl2 residual 0.00%
- 7. Percent shown line #6 in previous monthly report 0.00%

