

Bay Area WTP

Monthly Operations Report



June, 2023

Water Systems Serial Number:

0465

A handwritten signature in blue ink that reads "Ryan Goebel".

Ryan Goebel

Water Plant Superintendent

Title

F-1

Classification

A handwritten signature in blue ink that reads "Mike Wagar".

Mike Wagar

Operations Supervisor

Title

F-1

Classification

Bay Area Water Treatment Plant

Monthly Operations Report

Supply Name: Bay Area Water System
 WSSN: 0465

Ryan Goebel
 Operator-in-charge

June, 2023
 Month, Year

F-1
 Certification of Operator-in-charge

F-1
 Water Plant Classification

Bay
 County

Treatment Rate and Membrane Data

Treatment Rate, Approved Rated Plant Capacity	<u>17.4</u>	Millions of Gallons per Day
Treatment Rate, Maximum	<u>12.6</u>	Millions of Gallons per Day
Maximum Approved Transmembrane Pressure	<u>22</u>	PSI
Maximum Operating Transmembrane Pressure	<u>14.87</u>	PSI
Maximum Approved Flux Rate	<u>36.25</u>	gpd/sq.ft.
Maximum Operating Flux Rate	<u>27.95</u>	gpd/sq.ft.

Chemical Data

Sodium Hypochlorite on hand:	<u>3,997</u>	Gallons	Estimated Supply:	<u>45.2</u>	days
Caustic Soda on hand:	<u>864</u>	Gallons	Estimated Supply:	<u>59.2</u>	days
Corrosion Inhibitor on hand:	<u>661</u>	Gallons	Estimated Supply:	<u>20.5</u>	days
Hydrofluosilicic Acid on hand:	<u>1,654</u>	Gallons	Estimated Supply:	<u>58.3</u>	days
Aluminum Chlorohydrate on hand:	<u>634</u>	Gallons	Estimated Supply:	<u>76.6</u>	days
Sulfuric Acid on hand:	<u>459</u>	Gallons	Estimated Supply:	<u>229.4</u>	days
Sodium Bisulfite on hand:	<u>735</u>	Gallons	Estimated Supply:	<u>253.5</u>	days
Citric Acid on hand:	<u>3,205</u>	Gallons	Estimated Supply:	<u>256.4</u>	days
Cost of All Chemicals per Million Gallons:	<u>96.86</u>	Dollars			
Estimated Electrical Cost per Million Gallons:	<u>73.04</u>	Dollars			
Estimated Natural Gas Cost per Million Gallons:	<u>3.93</u>	Dollars			

Remarks

Number of periods of filter confluence turbidity samples > 0.3 NTU	<u>0</u>
Percent of membrane period confluence samples > 0.3 NTU:	<u>0.00%</u>
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.	<u>No</u>
Did POE disinfectant residual fall below 0.2 ppm during the month? If yes, indicate date(s) and duration on a separate sheet.	<u>No</u>
Was minimum C*T credit achieved for the entire month? If no, indicate on a separate sheet the date(s) not achieved.	<u>Yes</u>
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.	<u>No</u>



Notes

Filter 2 out from 8:02am on 5-31-23 to 5:40am on 6-2-23 for Maint.

Bay Area WTP Monthly Operating Report

Date	Flows								
	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
6/1/2023	3.26	8.41	11.67	0.27	0.16	11.06	5.59	5.01	10.60
6/2/2023	3.43	8.14	11.57	0.31	0.20	12.28	6.14	5.52	11.66
6/3/2023	4.37	7.59	11.96	0.40	0.08	11.62	5.92	5.31	11.23
6/4/2023	4.47	6.56	11.03	0.35	0.08	11.29	5.63	5.22	10.85
6/5/2023	4.32	6.45	10.77	0.24	0.22	11.09	5.55	5.16	10.72
6/6/2023	4.56	7.27	11.84	0.21	0.25	10.95	5.49	5.09	10.58
6/7/2023	4.67	7.01	11.68	0.33	0.11	11.10	5.43	4.96	10.39
6/8/2023	4.16	6.39	10.55	0.33	0.08	10.74	5.40	4.91	10.31
6/9/2023	4.67	6.38	11.05	0.38	0.08	11.21	5.62	5.11	10.73
6/10/2023	5.06	5.84	10.89	0.33	0.08	10.23	5.10	4.62	9.72
6/11/2023	3.44	4.48	7.91	0.29	0.08	7.64	3.90	3.46	7.37
6/12/2023	3.53	4.20	7.74	0.27	0.08	8.48	4.24	3.76	8.00
6/13/2023	4.73	5.14	9.87	0.30	0.08	9.63	4.83	4.39	9.22
6/14/2023	5.33	4.13	9.47	0.31	0.08	9.44	4.75	4.23	8.97
6/15/2023	5.37	3.47	8.84	0.31	0.08	8.63	4.36	3.82	8.18
6/16/2023	5.16	3.86	9.02	0.27	0.10	8.56	4.23	3.72	7.95
6/17/2023	3.32	4.98	8.30	0.27	0.08	9.51	4.81	4.24	9.06
6/18/2023	3.19	6.05	9.24	0.30	0.08	9.41	4.88	4.37	9.26
6/19/2023	2.95	8.29	11.24	0.34	0.08	11.19	5.53	4.91	10.44
6/20/2023	2.99	8.73	11.72	0.35	0.08	10.66	5.32	4.70	10.02
6/21/2023	2.96	8.09	11.04	0.35	0.09	11.18	5.65	5.05	10.70
6/22/2023	3.12	8.05	11.17	0.28	0.19	12.56	6.23	5.75	11.97
6/23/2023	4.59	7.34	11.93	0.28	0.15	10.21	5.19	4.73	9.92
6/24/2023	4.18	4.86	9.05	0.31	0.08	9.71	4.88	4.31	9.19
6/25/2023	3.73	4.73	8.47	0.26	0.13	9.42	4.70	4.15	8.85
6/26/2023	4.01	4.70	8.71	0.26	0.08	8.12	4.14	3.63	7.77
6/27/2023	4.85	4.86	9.71	0.28	0.08	8.60	4.30	3.77	8.08
6/28/2023	5.28	3.61	8.89	0.29	0.08	8.92	4.42	4.01	8.43
6/29/2023	5.39	3.33	8.72	0.30	0.08	8.84	4.42	3.96	8.38
6/30/2023	5.15	4.18	9.33	0.29	0.08	8.99	4.53	3.97	8.50
Total	126.23	177.13	303.36	9.05	3.20	301.25	151.18	135.85	287.04
Avg	4.21	5.90	10.11	0.30	0.11	10.04	5.04	4.53	9.57
Min	2.95	3.33	7.74	0.21	0.08	7.64	3.90	3.46	7.37
Max	5.39	8.73	11.96	0.40	0.25	12.56	6.23	5.75	11.97



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	
6/1/2023	14.4	7.74	1.12	1.91	0.09	0.24	Negative	Negative
6/2/2023	14.4	7.74	1.09	1.90	0.09	0.25	Negative	Negative
6/3/2023	14.6	7.69	1.69	6.56	0.09	0.34	Negative	Negative
6/4/2023	14.9	7.75	1.14	1.68	0.08	0.25	Negative	Negative
6/5/2023	15.9	7.67	0.79	1.44	0.08	0.29	Negative	Negative
6/6/2023	16.1	7.51	0.98	1.90	0.08	0.24	Negative	Negative
6/7/2023	15.9	7.49	1.03	1.60	0.09	0.28	Negative	Negative
6/8/2023	16.2	7.71	0.82	1.52	0.09	0.26	Negative	Negative
6/9/2023	16.4	7.88	0.66	1.02	0.09	0.32	Negative	Negative
6/10/2023	16.7	7.84	1.18	2.04	0.08	0.19	Negative	Negative
6/11/2023	16.6	7.82	0.69	1.30	0.08	0.37	Negative	Negative
6/12/2023	16.2	7.84	0.55	1.07	0.08	0.33	Negative	Negative
6/13/2023	16.3	7.84	0.85	1.74	0.09	0.15	Negative	Negative
6/14/2023	16.2	7.82	0.44	2.26	0.08	0.56	Negative	Negative
6/15/2023	15.7	7.87	0.42	0.71	0.09	0.53	Negative	Negative
6/16/2023	15.8	7.90	0.45	0.69	0.09	0.43	Negative	Negative
6/17/2023	15.9	7.91	0.67	1.87	0.09	0.25	Positive	Negative
6/18/2023	16.0	7.87	0.52	0.58	0.08	0.57	Negative	Negative
6/19/2023	15.9	7.86	0.55	2.79	0.09	0.58	Negative	Negative
6/20/2023	16.2	7.85	0.56	0.83	0.08	0.50	Negative	Negative
6/21/2023	17.0	7.88	0.79	1.06	0.09	0.12	Negative	Negative
6/22/2023	17.5	7.78	0.63	1.02	0.09	0.37	Negative	Negative
6/23/2023	17.8	7.75	0.56	0.89	0.08	0.41	Negative	Negative
6/24/2023	18.1	7.74	0.64	1.09	0.08	0.38	Negative	Negative
6/25/2023	18.3	7.86	0.54	0.91	0.08	0.39	Negative	Negative
6/26/2023	18.1	7.95	0.47	0.82	0.08	0.44	Negative	Negative
6/27/2023	17.7	8.01	0.45	0.91	0.08	0.47	Negative	Negative
6/28/2023	17.5	8.04	0.46	1.25	0.08	0.36	Negative	Negative
6/29/2023	17.8	8.08	0.56	1.69	0.09	0.19	Negative	Negative
6/30/2023	18.3	8.02	0.53	0.72	0.09	0.29	Negative	Negative
Avg	16.5	7.82	0.73	1.53	0.08	0.35	NA	NA
Min	14.4	7.49	0.42	0.58	0.08	0.12	NA	NA
Max	18.3	8.08	1.69	6.56	0.09	0.58	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	
	°C		mg/L	mg/L		mg/L	mg/L		mg/L	mg/L	mg/L	mg/L	uS/cm				Total Coliform	E. coli
	AIT-4040-1	AIT-4050-2	AIT-4040-5	Lab		AIT-4050-1	Lab		Lab	Lab	Lab	Lab	Lab					
6/1/2023	13.9	7.46	3.40	0.79		1.02	0	79	10	9	74	11.1	238	-0.88	1.11	0.37	Negative	Negative
6/2/2023	14.1	7.48	3.41	0.78		1.09	0	84	13	13	74	10.2	248	-0.83	1.00	0.47	Negative	Negative
6/3/2023	14.1	7.50	3.41	0.77		1.13	0	79	12	11	68	10.1	241	-0.87	1.09	0.44	Negative	Negative
6/4/2023	14.1	7.49	3.40	0.78		1.10	0	86	13	12	80	9.7	245	-0.77	1.08	0.44	Negative	Negative
6/5/2023	15.5	7.45	3.40	0.78		1.09	0	81	11	11	78	10.5	243	-0.81	1.00	0.41	Negative	Negative
6/6/2023	16.5	7.41	3.39	0.79	0.80	1.10	0	81	12	12	78	9.1	255	-0.84	1.00	0.45	Negative	Negative
6/7/2023	16.0	7.40	3.37	0.79		1.10	0	86	13	14	80	9.1	255	-0.82	0.93	0.47	Negative	Negative
6/8/2023	16.0	7.38	3.39	0.80		1.10	0	83	13	13	80	9.2	252	-0.86	1.00	0.47	Negative	Negative
6/9/2023	16.4	7.38	3.38	0.79		1.11	0	81	13	13	80	8.9	232	-0.85	1.00	0.48	Negative	Negative
6/10/2023	16.7	7.37	3.37	0.80		1.11	0	86	13	12	84	9.5	234	-0.81	1.08	0.44	Negative	Negative
6/11/2023	16.8	7.49	3.38	0.77		1.10	0	85	13	11	82	9.3	222	-0.69	1.18	0.43	Negative	Negative
6/12/2023	16.5	7.56	3.37	0.77	0.78	1.11	0	82	12	11	86	9.5	221	-0.63	1.09	0.43	Negative	Negative
6/13/2023	16.5	7.55	3.36	0.77		1.10	0	86	13	12	80	9.0	230	-0.65	1.08	0.44	Negative	Negative
6/14/2023	16.7	7.52	3.38	0.76		1.12	0	86	12	12	78	9.2	222	-0.69	1.00	0.42	Negative	Negative
6/15/2023	16.1	7.53	3.39	0.77		1.17	0	80	10	10	70	9.2	208	-0.76	1.00	0.38	Negative	Negative
6/16/2023	15.8	7.55	3.38	0.78		1.21	0	79	10	11	78	9.1	206	-0.71	0.91	0.40	Negative	Negative
6/17/2023	15.9	7.55	3.38	0.78		1.22	0	82	11	10	70	9.3	214	-0.74	1.10	0.39	Negative	Negative
6/18/2023	16.2	7.54	3.39	0.78		1.23	0	80	10	11	70	9.4	210	-0.75	0.91	0.39	Negative	Negative
6/19/2023	16.2	7.51	3.39	0.80	0.79	1.25	0	80	11	10	72	9.6	205	-0.76	1.10	0.40	Negative	Negative
6/20/2023	16.1	7.50	3.39	0.78		1.24	0	79	10	11	72	9.5	204	-0.79	0.91	0.40	Negative	Negative
6/21/2023	16.5	7.49	3.39	0.76		1.21	0	80	11	12	76	9.4	218	-0.76	0.92	0.43	Negative	Negative
6/22/2023	17.4	7.47	3.38	0.76		1.20	0	83	13	11	80	9.0	228	-0.72	1.18	0.44	Negative	Negative
6/23/2023	17.8	7.44	3.40	0.77		1.21	0	80	11	10	80	9.3	213	-0.76	1.10	0.40	Negative	Negative
6/24/2023	18.1	7.41	3.41	0.77		1.20	0	80	12	12	76	9.2	214	-0.81	1.00	0.45	Negative	Negative
6/25/2023	18.4	7.50	3.41	0.77		1.22	0	80	11	11	80	9.0	214	-0.69	1.00	0.41	Negative	Negative
6/26/2023	18.6	7.56	3.44	0.76	0.76	1.21	0	79	11	10	80	9.1	210	-0.63	1.10	0.40	Negative	Negative
6/27/2023	18.3	7.57	3.41	0.76		1.21	0	79	10	10	78	9.1	207	-0.63	1.00	0.38	Negative	Negative
6/28/2023	17.9	7.55	3.40	0.77		1.20	0	78	12	11	74	9.7	206	-0.69	1.09	0.45	Negative	Negative
6/29/2023	17.9	7.55	3.39	0.77		1.21	0	78	10	12	70	9.2	213	-0.72	0.83	0.42	Negative	Negative
6/30/2023	18.4	7.54	3.40	0.77		1.24	0	79	10	11	72	8.7	215	-0.69	0.91	0.40	Negative	Negative
Avg	16.5	7.49	3.39	0.78	0.79	1.16	0	81	12	11	77	9.4	224	-0.75	1.02	0.42	NA	NA
Min	13.9	7.37	3.36	0.76	0.76	1.02	0	78	10	9	68	8.7	204	-0.88	0.83	0.37	NA	NA
Max	18.6	7.57	3.44	0.80	0.80	1.25	0	86	13	14	86	11.1	255	-0.63	1.18	0.48	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
6/1/2023	1.12	1.91	3.67	1.03	0.022	0.023	96	0	0.0	0.019
6/2/2023	1.09	1.90	4.28	1.02	0.023	0.023	96	0	0.0	0.019
6/3/2023	1.69	6.56	4.88	1.32	0.023	0.023	96	0	0.0	0.019
6/4/2023	1.14	1.68	4.12	1.30	0.022	0.023	96	0	0.0	0.020
6/5/2023	0.79	1.44	4.51	1.02	0.022	0.023	96	0	0.0	0.019
6/6/2023	0.98	1.90	3.89	0.87	0.022	0.022	96	0	0.0	0.019
6/7/2023	1.03	1.60	4.50	0.94	0.022	0.022	96	0	0.0	0.019
6/8/2023	0.82	1.52	3.66	0.87	0.022	0.022	96	0	0.0	0.019
6/9/2023	0.66	1.02	3.37	0.73	0.022	0.022	96	0	0.0	0.019
6/10/2023	1.18	2.04	3.51	0.98	0.022	0.022	96	0	0.0	0.019
6/11/2023	0.69	1.30	2.44	0.95	0.022	0.022	96	0	0.0	0.019
6/12/2023	0.55	1.07	2.77	0.72	0.022	0.022	96	0	0.0	0.019
6/13/2023	0.85	1.74	3.47	0.75	0.022	0.023	96	0	0.0	0.019
6/14/2023	0.44	2.26	3.36	0.63	0.022	0.023	96	0	0.0	0.019
6/15/2023	0.42	0.71	2.31	0.45	0.022	0.022	96	0	0.0	0.019
6/16/2023	0.45	0.69	1.75	0.39	0.022	0.022	96	0	0.0	0.019
6/17/2023	0.67	1.87	3.06	0.47	0.022	0.022	96	0	0.0	0.019
6/18/2023	0.52	0.58	4.12	0.51	0.022	0.022	96	0	0.0	0.019
6/19/2023	0.55	2.79	3.72	0.49	0.022	0.022	96	0	0.0	0.019
6/20/2023	0.56	0.83	3.41	0.48	0.022	0.022	96	0	0.0	0.019
6/21/2023	0.79	1.06	4.24	0.58	0.022	0.022	96	0	0.0	0.019
6/22/2023	0.63	1.02	4.55	0.66	0.022	0.022	96	0	0.0	0.019
6/23/2023	0.56	0.89	2.99	0.56	0.022	0.022	96	0	0.0	0.019
6/24/2023	0.64	1.09	3.71	0.56	0.022	0.022	96	0	0.0	0.019
6/25/2023	0.54	0.91	3.89	0.53	0.022	0.022	96	0	0.0	0.019
6/26/2023	0.47	0.82	3.11	0.46	0.022	0.022	96	0	0.0	0.019
6/27/2023	0.45	0.91	3.16	0.42	0.022	0.022	96	0	0.0	0.019
6/28/2023	0.46	1.25	2.80	0.41	0.022	0.022	96	0	0.0	0.019
6/29/2023	0.56	1.69	3.94	0.46	0.023	0.024	96	0	0.0	0.017
6/30/2023	0.53	0.72	3.47	0.47	0.024	0.025	96	0	0.0	0.016
Avg	0.73	1.53	3.55	0.70	0.022	0.023	96	0	0.0	0.019
Min	0.42	0.58	1.75	0.39	0.022	0.022	96	0	0.0	0.016
Max	1.69	6.56	4.88	1.32	0.024	0.025	96	0	0.0	0.020

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	LRV	Integrity	Turbidity		
	Average	Pass/Fail	Max	Average	Pass/Fail	Max	Average	Pass/Fail	Max	Average	Pass/Fail	Max	Average	Pass/Fail	Max	Average	Pass/Fail	Max	Average	Pass/Fail	Max	Average	Pass/Fail	Max	Average	Pass/Fail	Max		
psi/min		NTU	psi/min		NTU	psi/min		NTU	psi/min		NTU	psi/min		NTU	psi/min		NTU	psi/min		NTU	psi/min		NTU	psi/min		NTU	psi/min		NTU
6/1/2023	4.03	PASS	0.020		Pinning				4.05	PASS	0.024	4.38	PASS	0.015	5.39	PASS	0.022	4.37	PASS	0.024	4.21	PASS	0.029	4.70	PASS	0.021			
6/2/2023	3.97	PASS	0.021	4.12	PASS	0.026	4.08	PASS	0.021	4.46	PASS	0.014	5.41	PASS	0.020	4.33	PASS	0.024	4.27	PASS	0.030	4.73	PASS	0.021					
6/3/2023	3.97	PASS	0.020	4.03	PASS	0.027	4.06	PASS	0.021	4.48	PASS	0.015	5.05	PASS	0.020	4.29	PASS	0.025	4.21	PASS	0.029	4.72	PASS	0.021					
6/4/2023	4.00	PASS	0.019	4.01	PASS	0.026	4.10	PASS	0.020	4.49	PASS	0.015	5.04	PASS	0.021	4.32	PASS	0.026	4.22	PASS	0.029	4.73	PASS	0.020					
6/5/2023	4.03	PASS	0.020	4.02	PASS	0.026	4.10	PASS	0.022	4.45	PASS	0.015	5.00	PASS	0.020	4.31	PASS	0.026	4.20	PASS	0.029	4.72	PASS	0.020					
6/6/2023	4.29	PASS	0.020	4.09	PASS	0.025	4.08	PASS	0.022	4.39	PASS	0.015	4.97	PASS	0.020	4.34	PASS	0.024	4.23	PASS	0.029	4.71	PASS	0.020					
6/7/2023	4.14	PASS	0.020	4.15	PASS	0.026	4.07	PASS	0.020	4.40	PASS	0.015	5.02	PASS	0.022	4.30	PASS	0.024	4.25	PASS	0.029	4.71	PASS	0.020					
6/8/2023	4.15	PASS	0.019	4.08	PASS	0.025	4.15	PASS	0.021	4.50	PASS	0.015	5.26	PASS	0.020	4.33	PASS	0.025	4.25	PASS	0.029	4.72	PASS	0.020					
6/9/2023	4.21	PASS	0.019	4.08	PASS	0.025	4.10	PASS	0.020	4.52	PASS	0.015	4.76	PASS	0.020	4.33	PASS	0.024	4.26	PASS	0.029	4.72	PASS	0.020					
6/10/2023	4.21	PASS	0.018	4.11	PASS	0.026	4.09	PASS	0.020	4.49	PASS	0.015	4.83	PASS	0.020	4.38	PASS	0.024	4.29	PASS	0.030	4.73	PASS	0.020					
6/11/2023	4.17	PASS	0.019	4.11	PASS	0.026	4.10	PASS	0.021	4.53	PASS	0.015	5.21	PASS	0.021	4.34	PASS	0.026	4.33	PASS	0.030	4.75	PASS	0.020					
6/12/2023	4.18	PASS	0.019	4.10	PASS	0.026	4.13	PASS	0.020	4.54	PASS	0.015	4.77	PASS	0.020	4.32	PASS	0.026	4.44	PASS	0.030	4.74	PASS	0.020					
6/13/2023	4.17	PASS	0.018	4.09	PASS	0.025	4.13	PASS	0.021	4.55	PASS	0.015	4.74	PASS	0.020	4.38	PASS	0.026	4.44	PASS	0.030	4.72	PASS	0.020					
6/14/2023	4.33	PASS	0.018	4.09	PASS	0.027	4.11	PASS	0.021	4.54	PASS	0.015	4.75	PASS	0.020	4.38	PASS	0.025	4.45	PASS	0.030	4.73	PASS	0.020					
6/15/2023	4.31	PASS	0.018	4.10	PASS	0.025	4.36	PASS	0.020	4.54	PASS	0.015	5.01	PASS	0.020	4.40	PASS	0.025	4.51	PASS	0.029	4.75	PASS	0.020					
6/16/2023	4.39	PASS	0.018	4.11	PASS	0.026	4.27	PASS	0.020	4.57	PASS	0.014	4.76	PASS	0.019	4.39	PASS	0.024	4.46	PASS	0.029	4.77	PASS	0.020					
6/17/2023	4.27	PASS	0.018	4.11	PASS	0.025	4.39	PASS	0.020	4.58	PASS	0.014	4.74	PASS	0.019	4.41	PASS	0.024	4.42	PASS	0.030	4.74	PASS	0.020					
6/18/2023	4.26	PASS	0.019	4.12	PASS	0.025	4.20	PASS	0.020	4.55	PASS	0.014	5.16	PASS	0.020	4.35	PASS	0.025	4.40	PASS	0.029	4.75	PASS	0.020					
6/19/2023	4.24	PASS	0.019	4.11	PASS	0.025	4.22	PASS	0.020	4.53	PASS	0.015	4.71	PASS	0.020	4.39	PASS	0.024	4.40	PASS	0.029	4.74	PASS	0.020					
6/20/2023	4.22	PASS	0.018	4.08	PASS	0.025	4.28	PASS	0.020	4.54	PASS	0.015	4.76	PASS	0.020	4.39	PASS	0.024	4.41	PASS	0.029	4.75	PASS	0.021					
6/21/2023	4.24	PASS	0.019	4.10	PASS	0.025	4.17	PASS	0.020	4.54	PASS	0.015	4.73	PASS	0.020	4.38	PASS	0.024	4.39	PASS	0.030	4.74	PASS	0.021					
6/22/2023	4.20	PASS	0.019	4.11	PASS	0.025	4.14	PASS	0.021	4.51	PASS	0.016	4.68	PASS	0.022	4.35	PASS	0.024	4.35	PASS	0.030	4.73	PASS	0.021					
6/23/2023	4.19	PASS	0.019	4.09	PASS	0.025	4.16	PASS	0.021	4.54	PASS	0.016	4.74	PASS	0.020	4.33	PASS	0.024	4.35	PASS	0.030	4.73	PASS	0.021					
6/24/2023	4.21	PASS	0.019	4.06	PASS	0.025	4.22	PASS	0.020	4.56	PASS	0.016	5.10	PASS	0.020	4.37	PASS	0.024	4.39	PASS	0.030	4.74	PASS	0.021					
6/25/2023	4.21	PASS	0.019	4.06	PASS	0.025	4.15	PASS	0.020	4.53	PASS	0.016	4.72	PASS	0.020	4.38	PASS	0.024	4.38	PASS	0.030	4.73	PASS	0.021					
6/26/2023	4.22	PASS	0.019	4.06	PASS	0.025	4.17	PASS	0.020	4.56	PASS	0.016	4.75	PASS	0.020	4.36	PASS	0.024	4.39	PASS	0.030	4.74	PASS	0.022					
6/27/2023	4.22	PASS	0.019	4.06	PASS	0.025	4.20	PASS	0.020	4.56	PASS	0.016	5.15	PASS	0.019	4.36	PASS	0.024	4.41	PASS	0.030	4.73	PASS	0.021					
6/28/2023	4.22	PASS	0.019	4.06	PASS	0.025	4.18	PASS	0.020	4.56	PASS	0.016	5.15	PASS	0.019	4.36	PASS	0.024	4.43	PASS	0.029	4.73	PASS	0.021					
6/29/2023	4.23	PASS	0.022	4.06	PASS	0.026	4.15	PASS	0.022	4.56	PASS	0.020	4.76	PASS	0.027	4.38	PASS	0.024	4.38	PASS	0.031	4.73	PASS	0.022					
6/30/2023	4.21	PASS	0.022	4.05	PASS	0.027	4.18	PASS	0.023	4.53	PASS	0.019	4.72	PASS	0.022	4.39	PASS	0.025	4.38	PASS	0.030	4.72	PASS	0.022					
Avg	4.19		0.019	4.08		0.026	4.16		0.021	4.52		0.015	4.93		0.020	4.36		0.024	4.35		0.030	4.73		0.021					
Min	3.97		0.018	4.01		0.025	4.05		0.020	4.38		0.014	4.68		0.019	4.29		0.024	4.20		0.029	4.70		0.020					
Max	4.39		0.022	4.15		0.027	4.39		0.024	4.58		0.020	5.41		0.027	4.41		0.026	4.51		0.031	4.77		0.022					

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



Treatment Chemical Dosages												
Date	Treated Water	Sodium Hypochlorite					Phosphoric Acid		Hydrofluorosilicic 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	
6/1/2023	11.1	0.24	0.18	0.98	1.13	1.02	3.30	3.40	0.09	0.64	0.79	
6/2/2023	12.3	0.25	0.13	1.02	1.22	1.09	3.30	3.41	0.09	0.64	0.78	
6/3/2023	11.6	0.34	0.17	0.88	1.22	1.13	3.30	3.41	0.09	0.64	0.77	
6/4/2023	11.3	0.25	0.17	0.92	1.20	1.10	3.30	3.40	0.08	0.64	0.78	
6/5/2023	11.1	0.29	0.13	0.92	1.22	1.09	3.30	3.40	0.08	0.64	0.78	
6/6/2023	10.9	0.24	0.15	0.94	1.22	1.10	3.27	3.39	0.08	0.64	0.79	
6/7/2023	11.1	0.28	0.14	0.94	1.23	1.10	3.29	3.37	0.09	0.64	0.79	
6/8/2023	10.7	0.26	0.14	0.96	1.22	1.10	3.30	3.39	0.09	0.64	0.80	
6/9/2023	11.2	0.32	0.15	0.92	1.23	1.11	3.30	3.38	0.09	0.64	0.79	
6/10/2023	10.2	0.19	0.12	1.03	1.23	1.11	3.30	3.37	0.08	0.64	0.80	
6/11/2023	7.6	0.37	0.12	1.04	1.27	1.10	3.30	3.38	0.08	0.64	0.77	
6/12/2023	8.5	0.33	0.17	0.96	1.23	1.11	3.30	3.37	0.08	0.64	0.77	
6/13/2023	9.6	0.15	0.10	1.07	1.22	1.10	3.31	3.36	0.09	0.64	0.77	
6/14/2023	9.4	0.56	0.20	0.88	1.24	1.12	3.32	3.38	0.08	0.64	0.76	
6/15/2023	8.6	0.53	0.32	0.86	1.28	1.17	3.32	3.39	0.09	0.64	0.77	
6/16/2023	8.6	0.43	0.32	0.90	1.31	1.21	3.32	3.38	0.09	0.64	0.78	
6/17/2023	9.5	0.25	0.24	1.04	1.32	1.22	3.32	3.38	0.09	0.64	0.78	
6/18/2023	9.4	0.57	0.28	0.90	1.34	1.23	3.34	3.39	0.08	0.64	0.78	
6/19/2023	11.2	0.58	0.40	0.82	1.34	1.25	3.34	3.39	0.09	0.64	0.80	
6/20/2023	10.7	0.50	0.40	0.80	1.31	1.24	3.34	3.39	0.08	0.64	0.78	
6/21/2023	11.2	0.12	0.23	1.12	1.31	1.21	3.34	3.39	0.09	0.64	0.76	
6/22/2023	12.6	0.37	0.15	1.03	1.33	1.20	3.34	3.38	0.09	0.64	0.76	
6/23/2023	10.2	0.41	0.27	0.94	1.31	1.21	3.35	3.40	0.08	0.64	0.77	
6/24/2023	9.7	0.38	0.25	1.02	1.32	1.20	3.36	3.41	0.08	0.64	0.77	
6/25/2023	9.4	0.39	0.24	1.04	1.34	1.22	3.36	3.41	0.08	0.64	0.77	
6/26/2023	8.1	0.44	0.26	1.00	1.33	1.21	3.35	3.44	0.08	0.64	0.76	
6/27/2023	8.6	0.47	0.29	0.93	1.30	1.21	3.33	3.41	0.08	0.64	0.76	
6/28/2023	8.9	0.36	0.28	1.00	1.30	1.20	3.33	3.40	0.08	0.64	0.77	
6/29/2023	8.8	0.19	0.18	1.05	1.32	1.21	3.33	3.39	0.09	0.64	0.77	
6/30/2023	9.0	0.29	0.15	1.14	1.39	1.24	3.33	3.40	0.09	0.64	0.77	
Avg	10.0	0.35	0.21	0.97	1.27	1.16	3.32	3.39	0.08	0.64	0.78	
Min	7.6	0.12	0.10	0.80	1.13	1.02	3.27	3.36	0.08	0.64	0.76	
Max	12.6	0.58	0.40	1.14	1.39	1.25	3.36	3.44	0.09	0.64	0.80	



Date	Disinfection CT													
	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	
6/1/2023	63.1	1,981	0.24	478	28.9	19.9	10.6	316	0.97	307	784	14.4	6.00	Y
6/2/2023	68.5	1,827	0.25	452	29.2	24.1	11.7	313	1.04	326	778	14.4	6.00	Y
6/3/2023	81.0	1,544	0.34	529	29.0	24.9	11.2	329	1.07	352	880	14.6	6.00	Y
6/4/2023	75.4	1,659	0.25	418	28.7	24.8	10.9	338	1.04	352	770	14.9	6.00	Y
6/5/2023	67.7	1,849	0.29	532	28.6	23.2	10.7	331	1.03	342	875	15.9	4.00	Y
6/6/2023	62.9	1,987	0.24	482	28.9	18.9	10.6	310	1.07	333	814	16.1	4.00	Y
6/7/2023	63.7	1,965	0.28	556	29.0	21.6	10.4	334	1.07	357	913	15.9	4.00	Y
6/8/2023	59.1	2,116	0.26	541	28.9	24.9	10.3	358	1.07	384	926	16.2	4.00	Y
6/9/2023	64.7	1,933	0.32	609	28.9	25.0	10.7	344	1.08	373	982	16.4	4.00	Y
6/10/2023	64.7	1,933	0.19	374	28.9	24.6	9.7	377	1.07	403	777	16.7	4.00	Y
6/11/2023	51.7	2,421	0.37	905	28.8	24.6	7.4	496	1.08	537	1442	16.6	4.00	Y
6/12/2023	40.9	3,057	0.33	1017	28.7	23.8	8.0	449	1.07	480	1497	16.2	4.00	Y
6/13/2023	39.3	3,182	0.15	487	28.7	20.2	9.2	363	1.05	383	870	16.3	4.00	Y
6/14/2023	57.4	2,180	0.56	1222	28.9	23.7	9.0	402	1.08	432	1655	16.2	4.00	Y
6/15/2023	58.1	2,153	0.53	1148	28.8	23.6	8.2	439	1.10	481	1629	15.7	4.00	Y
6/16/2023	56.8	2,204	0.43	945	28.8	23.5	8.0	451	1.19	534	1479	15.8	4.00	Y
6/17/2023	66.9	1,869	0.25	465	28.6	25.5	9.1	409	1.18	482	948	15.9	4.00	Y
6/18/2023	68.4	1,828	0.57	1036	28.7	18.6	9.3	350	1.16	407	1443	16.0	4.00	Y
6/19/2023	69.4	1,802	0.58	1051	29.0	18.7	10.4	313	1.21	380	1431	15.9	4.00	Y
6/20/2023	68.0	1,840	0.50	912	28.9	23.5	10.0	358	1.20	430	1341	16.2	4.00	Y
6/21/2023	68.2	1,833	0.12	220	28.9	24.4	10.7	342	1.16	396	615	17.0	4.00	Y
6/22/2023	69.2	1,809	0.37	673	29.2	24.6	12.0	308	1.06	327	999	17.5	4.00	Y
6/23/2023	72.2	1,733	0.41	712	28.9	24.9	9.9	372	1.14	426	1138	17.8	4.00	Y
6/24/2023	73.6	1,699	0.38	646	28.9	24.7	9.2	399	1.10	437	1084	18.1	4.00	Y
6/25/2023	73.6	1,699	0.39	670	28.9	24.8	8.9	416	1.14	476	1146	18.3	4.00	Y
6/26/2023	69.8	1,791	0.44	782	28.8	23.1	7.8	457	1.19	545	1327	18.1	4.00	Y
6/27/2023	54.5	2,294	0.47	1068	28.8	23.9	8.1	447	1.17	524	1592	17.7	4.00	Y
6/28/2023	52.0	2,408	0.36	869	28.8	25.4	8.4	440	1.14	501	1370	17.5	4.00	Y
6/29/2023	54.0	2,318	0.19	450	28.7	23.3	8.4	425	1.08	460	910	17.8	4.00	Y
6/30/2023	57.2	2,188	0.29	629	28.7	24.8	8.5	431	1.17	505	1135	18.3	4.00	Y
Avg	63.1	2,037	0.35	696	28.9	23.4	9.6	381	1.11	422	1118	16.5	4.27	NA
Min	39.3	1,544	0.12	220	28.6	18.6	7.4	308	0.97	307	615	14.4	4.00	NA
Max	81.0	3,182	0.58	1222	29.2	25.5	12.0	496	1.21	545	1655	18.3	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
	Akron	Bangor Twp.				Bangor Monitor Dist.			Bay City							Bay County					Beaver Rd	Beaver Twp		Essexville
Date	1	3	4	5	6	7	9	10	11	12	13	14	15	16	17	18	19	20	23	24	26	29	30	32
6/1/2023	0.38															0.74	0.71	0.66	0.66	0.69				
6/2/2023																								
6/3/2023																								
6/4/2023																								
6/5/2023																								
6/6/2023		0.61	0.40	0.59	0.98	0.80	0.90															0.50		0.93
6/7/2023									0.84	0.52	0.71	0.81	0.37	0.95	0.67									
6/8/2023																0.74	0.74	0.78	0.72					
6/9/2023																								
6/10/2023																								
6/11/2023																								
6/12/2023																								0.94
6/13/2023		0.72	0.45					0.96	0.76	0.63	0.50	0.74	0.25	0.95	0.69							0.40		
6/14/2023																								
6/15/2023									0.81	0.52	0.68	0.83	0.41	0.96	0.78						0.85			
6/16/2023																								
6/17/2023																								
6/18/2023																								
6/19/2023																								0.92
6/20/2023		0.43	0.40	0.49	0.80																			
6/21/2023									0.86	0.53	0.74	0.84	0.37	0.94	0.67									
6/22/2023																								
6/23/2023																								
6/24/2023																								
6/25/2023																								
6/26/2023																								0.94
6/27/2023									0.81	0.56	0.76	0.88	0.43	0.98	0.75									
6/28/2023																								
6/29/2023									0.92	0.64	0.76	0.91	0.48	0.99	0.73									
6/30/2023																								
Average	0.38			0.59				0.89					0.71					0.72			0.85		0.45	0.93
Min	0.38			0.40				0.80					0.25					0.66			0.85		0.40	0.92
Max	0.38			0.98				0.96					0.99					0.78			0.85		0.50	0.94



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.		
	34	35	37	38	39	40	41	42	43	45	46	48	49	52	55	58	59	61	63	65	68	69	70	72
6/1/2023											0.50									0.53				0.43
6/2/2023																								
6/3/2023																								
6/4/2023																								
6/5/2023																								
6/6/2023			0.55										0.92	0.66	0.72						0.51	0.58	0.42	
6/7/2023																								
6/8/2023		0.76				0.96	0.86		0.69		0.55					0.54		0.50						
6/9/2023																								
6/10/2023																								
6/11/2023																								
6/12/2023																								
6/13/2023				0.35	0.57	0.53							0.90	0.55	0.59						0.43	0.40	0.35	
6/14/2023																								
6/15/2023	0.42							0.72	0.71							0.43		0.54						
6/16/2023																								
6/17/2023																								
6/18/2023																								
6/19/2023																								
6/20/2023																								
6/21/2023																								
6/22/2023																								
6/23/2023			0.60	0.44	0.48																			
6/24/2023																								
6/25/2023																								
6/26/2023			0.44	0.73	0.45																			
6/27/2023																								
6/28/2023																								
6/29/2023																								
6/30/2023																								
Average	0.59		0.51			0.85			0.70		0.53		0.72			0.49		0.52		0.53	0.45			0.43
Min	0.42		0.35			0.72			0.69		0.50		0.55			0.43		0.50		0.53	0.35			0.43
Max	0.76		0.73			0.96			0.71		0.55		0.92			0.54		0.54		0.53	0.58			0.43



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 Commisison, 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							
MICHIGAN DEPARTMENT OF PUBLIC HEALTH Bureau of Environmental Health Water Supplier Bacteriological Analysis Report				Name of Water Supply Bay Area Water Treatment Plant			
				June, 2023			
			DISTRIBUTION SYSTEM SAMPLES				
COUNTY	COMMUNITY	WSSN NUMBER	avg free cl2 mg/L	NUMBER REQUIRED	NUMBER COLLECTED	NUMBER POSITIVE	NUMBER REPEAT SAMPLES
Tuscola	Akron	0072	0.38	1	1	0	0
BAY	Bangor Township	0390	0.59	10	10	0	0
BAY	Bangor-Monitor Dist.	0400	0.89	3	3	0	0
BAY	Bay City	0470	0.71	30	42	0	0
BAY	Bay County (Frankl./Monitor/Portsm.)	0485	0.72	9	9	0	0
BAY	Beaver Road Area	0517	0.85	1	1	0	0
BAY	Beaver Township	0518	0.45	2	2	0	0
BAY	Essexville	2180	0.93	4	4	0	0
BAY	Fraser Township	2465	0.59	2	2	0	0
BAY	Hampton Township	2960	0.51	10	10	0	0
BAY	Kawkawlin Township	3565	0.85	3	3	0	0
BAY	Kawkawlin Metro Dist.	3570	0.70	2	2	0	0
BAY	Merritt Township	4280	0.53	2	2	0	0
BAY	Monitor Township	4440	0.72	6	6	0	0
BAY	City of Pinconning	5330	0.49	2	2	0	0
BAY	Pinconning Township	5335	0.52	2	2	0	0
BAY	Portsmouth Township	5540	0.53	1	1	0	0
BAY	Williams Township	7125	0.45	6	6	0	0
Tuscola	Wisner	7134	0.43	1	1	0	0
Average Free Cl2 Residual of All Distribution Sites			0.62	mg/L			
1. Total distribution samples			109				
2. Total distribution samples with detectable free cl2 residual			109				
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%				

