

Bay Area WTP

Monthly Operations Report



September, 2022

Water Systems Serial Number: 0465

Ryan Goebel

Water Plant Superintendent

Title

F-1

Classification

Mike Wagar

Operations Supervisor

Title

F-2

Classification

Bay Area Water Treatment Plant

Monthly Operations Report

Supply Name: Bay Area Water System
 WSSN: 0465

Ryan Goebel
 Operator-in-charge

September, 2022
 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	17.4	Millions of Gallons per Day
Treatment Rate, Maximum	9.7	Millions of Gallons per Day
Maximum Approved Transmembrane Pressure	22	PSI
Maximum Operating Transmembrane Pressure	11.59	PSI
Maximum Approved Flux Rate	36.25	gpd/sq.ft.
Maximum Operating Flux Rate	23.31	gpd/sq.ft.

Chemical Data

Sodium Hypochlorite on hand:	3,586	Gallons	Estimated Supply:	32.5	days
Caustic Soda on hand:	2,984	Gallons	Estimated Supply:	204.4	days
Corrosion Inhibitor on hand:	1,533	Gallons	Estimated Supply:	62.4	days
Hydrofluosilicic Acid on hand:	939	Gallons	Estimated Supply:	44.3	days
Aluminum Chlorohydrate on hand:	1,154	Gallons	Estimated Supply:	145.2	days
Sulfuric Acid on hand:	822	Gallons	Estimated Supply:	411.0	days
Sodium Bisulfite on hand:	643	Gallons	Estimated Supply:	221.6	days
Citric Acid on hand:	1,528	Gallons	Estimated Supply:	122.2	days
Cost of All Chemicals per Million Gallons:	116.95	Dollars			
Estimated Electrical Cost per Million Gallons:	91.04	Dollars			
Estimated Natural Gas Cost per Million Gallons:	3.76	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

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
9/1/2022	2.45	7.26	9.71	0.39	0.26	8.53	4.06	3.89	7.95
9/2/2022	2.57	6.58	9.15	0.39	0.26	9.55	4.52	4.35	8.87
9/3/2022	2.91	5.98	8.89	0.32	0.25	7.93	3.51	3.64	7.15
9/4/2022	2.78	3.83	6.61	0.25	0.26	6.71	3.21	3.04	6.25
9/5/2022	2.54	4.19	6.73	0.29	0.26	7.87	4.03	3.72	7.75
9/6/2022	2.43	6.17	8.61	0.36	0.26	8.11	3.95	3.78	7.73
9/7/2022	2.44	6.97	9.41	0.37	0.25	8.46	4.01	3.88	7.89
9/8/2022	2.51	5.60	8.11	0.35	0.26	7.97	3.96	3.79	7.75
9/9/2022	2.62	5.40	8.02	0.36	0.26	8.31	4.12	3.94	8.06
9/10/2022	3.03	5.35	8.39	0.36	0.26	8.06	3.99	3.82	7.81
9/11/2022	2.78	4.50	7.28	0.31	0.26	7.39	3.65	3.48	7.13
9/12/2022	2.45	5.30	7.75	0.32	0.26	7.38	3.61	3.44	7.05
9/13/2022	2.42	5.83	8.26	0.32	0.19	7.88	3.90	3.73	7.63
9/14/2022	2.42	5.83	8.25	0.25	0.26	8.00	3.99	3.82	7.81
9/15/2022	2.40	5.42	7.83	0.24	0.21	8.12	3.92	3.75	7.67
9/16/2022	2.47	5.45	7.93	0.22	0.26	7.57	3.66	3.49	7.15
9/17/2022	2.78	5.18	7.97	0.28	0.26	7.57	3.73	3.56	7.29
9/18/2022	2.80	4.77	7.57	0.24	0.26	7.73	3.80	3.63	7.43
9/19/2022	2.59	5.49	8.08	0.24	0.26	8.38	4.11	3.94	8.05
9/20/2022	2.43	7.00	9.43	0.29	0.26	9.71	4.65	4.48	9.13
9/21/2022	2.43	7.03	9.46	0.37	0.12	7.52	3.70	3.53	7.23
9/22/2022	2.44	4.78	7.21	0.34	0.24	7.40	3.63	3.46	7.09
9/23/2022	2.50	5.07	7.57	0.22	0.25	7.43	3.65	3.48	7.13
9/24/2022	2.73	4.20	6.93	0.24	0.20	7.10	3.44	3.27	6.71
9/25/2022	2.62	4.15	6.77	0.20	0.25	7.19	3.59	3.42	7.01
9/26/2022	2.47	5.30	7.76	0.25	0.25	7.31	3.59	3.42	7.01
9/27/2022	2.36	5.52	7.89	0.28	0.23	7.24	3.58	3.41	6.99
9/28/2022	2.31	5.66	7.97	0.27	0.24	7.57	3.64	3.47	7.11
9/29/2022	2.02	4.17	6.19	0.20	0.25	6.89	3.37	3.20	6.57
9/30/2022	1.87	5.30	7.16	0.25	0.25	7.34	3.55	3.38	6.93
Total	75.61	163.29	238.90	8.76	7.31	234.21	114.12	109.18	223.30
Avg	2.52	5.44	7.96	0.29	0.24	7.81	3.80	3.64	7.44
Min	1.87	3.83	6.19	0.20	0.12	6.71	3.21	3.04	6.25
Max	3.03	7.26	9.71	0.39	0.26	9.71	4.65	4.48	9.13



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	
9/1/2022	21.4	7.98	0.78	1.51	0.08	0.13	Negative	Negative
9/2/2022	21.2	7.87	0.63	0.77	0.08	0.25	Negative	Negative
9/3/2022	20.3	7.75	0.78	2.93	0.08	0.44	Negative	Negative
9/4/2022	19.1	7.79	0.65	1.01	0.08	0.59	Negative	Negative
9/5/2022	19.3	8.00	2.98	6.11	0.09	0.25	Negative	Negative
9/6/2022	19.8	7.97	3.71	20.98	0.08	0.19	Negative	Negative
9/7/2022	19.7	7.96	1.61	2.85	0.08	0.30	Negative	Negative
9/8/2022	19.7	7.97	0.85	1.75	0.09	0.32	Negative	Negative
9/9/2022	19.8	8.01	0.78	2.99	0.08	0.25	Negative	Negative
9/10/2022	19.9	7.99	1.29	11.30	0.09	0.24	Negative	Negative
9/11/2022	19.9	7.97	0.51	0.73	0.08	0.32	Negative	Negative
9/12/2022	19.9	7.97	0.46	0.61	0.08	0.28	Negative	Negative
9/13/2022	19.6	8.01	0.55	2.56	0.08	0.21	Negative	Negative
9/14/2022	19.8	7.95	0.70	1.73	0.07	0.12	Negative	Negative
9/15/2022	19.6	7.93	0.61	4.18	0.09	0.13	Negative	Negative
9/16/2022	19.7	7.92	0.65	0.91	0.08	0.17	Negative	Negative
9/17/2022	19.8	7.96	0.90	1.13	0.08	0.14	Negative	Negative
9/18/2022	19.9	7.90	0.74	1.29	0.09	0.15	Negative	Negative
9/19/2022	19.6	7.68	0.81	1.70	0.08	0.19	Negative	Negative
9/20/2022	18.6	7.52	0.79	2.26	0.08	0.56	Negative	Negative
9/21/2022	17.8	7.58	0.65	2.15	0.09	0.57	Negative	Negative
9/22/2022	17.3	7.65	0.58	1.11	0.09	0.73	Negative	Negative
9/23/2022	16.9	7.72	0.53	1.38	0.08	0.79	Negative	Negative
9/24/2022	16.9	8.00	0.79	3.16	0.09	0.50	Negative	Negative
9/25/2022	17.1	8.12	1.28	1.89	0.09	0.24	Negative	Negative
9/26/2022	17.3	8.07	1.00	1.93	0.08	0.29	Negative	Negative
9/27/2022	17.2	8.03	0.54	1.02	0.08	0.44	Negative	Negative
9/28/2022	17.0	8.05	0.61	0.79	0.08	0.36	Negative	Negative
9/29/2022	16.9	8.01	0.44	0.75	0.08	0.48	Negative	Negative
9/30/2022	16.8	7.99	0.61	0.92	0.08	0.43	Negative	Negative
Avg	18.9	7.91	0.93	2.81	0.08	0.34	NA	NA
Min	16.8	7.52	0.44	0.61	0.07	0.12	NA	NA
Max	21.4	8.12	3.71	20.98	0.09	0.79	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	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				Calculated	Lab	
9/1/2022	21.3	7.65	3.41	0.81		1.34	0	80	10	11	72	8.3	253	-0.52	0.91	0.39	Negative	Negative	
9/2/2022	20.9	7.61	3.41	0.80		1.34	0	78	11	8	72	8.5	247	-0.58	1.38	0.38	Negative	Negative	
9/3/2022	20.2	7.60	3.41	0.76		1.31	0	76	11	8	74	8.5	245	-0.61	1.38	0.39	Negative	Negative	
9/4/2022	18.7	7.65	3.40	0.76		1.34	0	76	11	8	74	9.2	243	-0.59	1.38	0.39	Negative	Negative	
9/5/2022	17.9	7.66	3.39	0.78		1.32	0	76	11	8	72	9.3	244	-0.61	1.38	0.39	Negative	Negative	
9/6/2022	18.5	7.64	3.38	0.85	0.76	1.33	0	76	11	9	72	8.8	243	-0.62	1.22	0.40	Negative	Negative	
9/7/2022	19.0	7.63	3.36	0.88		1.31	0	78	10	12	80	9.0	242	-0.56	0.83	0.42	Negative	Negative	
9/8/2022	19.0	7.64	3.35	0.78		1.30	0	74	11	11	72	8.5	254	-0.62	1.00	0.45	Negative	Negative	
9/9/2022	18.9	7.63	3.37	0.75		1.31	0	75	11	10	86	9.0	244	-0.54	1.10	0.43	Negative	Negative	
9/10/2022	19.1	7.63	3.36	0.76		1.30	0	75	12	11	82	8.7	245	-0.56	1.09	0.47	Negative	Negative	
9/11/2022	19.1	7.64	3.36	0.77		1.30	0	75	11	9	76	8.8	242	-0.59	1.22	0.41	Negative	Negative	
9/12/2022	18.9	7.65	3.36	0.76	0.74	1.30	0	78	10	11	74	8.6	242	-0.58	0.91	0.40	Negative	Negative	
9/13/2022	18.8	7.66	3.38	0.77		1.31	0	78	10	12	74	8.7	242	-0.57	0.83	0.42	Negative	Negative	
9/14/2022	18.9	7.64	3.38	0.75		1.30	0	83	13	11	72	8.8	244	-0.57	1.18	0.44	Negative	Negative	
9/15/2022	18.9	7.65	3.38	0.76		1.30	0	79	11	11	74	8.7	247	-0.58	1.00	0.42	Negative	Negative	
9/16/2022	18.8	7.62	3.38	0.78		1.31	0	78	11	11	74	8.7	247	-0.61	1.00	0.43	Negative	Negative	
9/17/2022	18.8	7.61	3.38	0.74		1.30	0	77	11	11	76	8.6	247	-0.61	1.00	0.43	Negative	Negative	
9/18/2022	18.9	7.62	3.38	0.79		1.29	0	77	12	10	72	8.6	248	-0.63	1.20	0.44	Negative	Negative	
9/19/2022	18.6	7.62	3.37	0.77		1.31	0	77	11	10	74	8.7	247	-0.62	1.10	0.41	Negative	Negative	
9/20/2022	17.1	7.61	3.38	0.78	0.76	1.33	0	78	11	11	74	8.5	244	-0.66	1.00	0.43	Negative	Negative	
9/21/2022	15.3	7.62	3.37	0.82		1.34	0	78	10	11	80	10.0	241	-0.66	0.91	0.40	Negative	Negative	
9/22/2022	14.3	7.66	3.35	0.81		1.34	0	76	11	11	76	9.8	238	-0.67	1.00	0.44	Negative	Negative	
9/23/2022	13.4	7.71	3.35	0.81		1.35	0	76	11	12	80	9.8	239	-0.62	0.92	0.45	Negative	Negative	
9/24/2022	13.2	7.73	3.37	0.79		1.32	0	77	10	11	74	10.1	240	-0.64	0.91	0.41	Negative	Negative	
9/25/2022	14.2	7.55	3.37	0.79		1.30	0	80	10	11	74	9.6	244	-0.78	0.91	0.39	Negative	Negative	
9/26/2022	15.2	7.57	3.39	0.76	0.74	1.29	0	80	10	12	72	9.0	247	-0.74	0.83	0.41	Negative	Negative	
9/27/2022	15.5	7.59	3.37	0.76		1.30	0	81	11	12	70	8.8	246	-0.73	0.92	0.42	Negative	Negative	
9/28/2022	15.7	7.59	3.38	0.77		1.31	0	75	11	10	74	9.3	244	-0.73	1.10	0.43	Negative	Negative	
9/29/2022	15.7	7.58	3.37	0.77		1.29	0	78	12	13	74	9.2	243	-0.72	0.92	0.48	Negative	Negative	
9/30/2022	15.8	7.56	3.36	0.78		1.32	0	74	11	12	72	9.9	242	-0.77	0.92	0.47	Negative	Negative	
Avg	17.6	7.63	3.38	0.78	0.75	1.31	0	77	11	11	75	9.0	244	-0.63	1.05	0.42	NA	NA	
Min	13.2	7.55	3.35	0.74	0.74	1.29	0	74	10	8	70	8.3	238	-0.78	0.83	0.38	NA	NA	
Max	21.3	7.73	3.41	0.88	0.76	1.35	0	83	13	13	86	10.1	254	-0.52	1.38	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
9/1/2022	0.78	1.51	30.49	1.35	0.022	0.023	96	0	0.0	0.019
9/2/2022	0.63	0.77	29.11	0.97	0.023	0.023	96	0	0.0	0.019
9/3/2022	0.78	2.93	14.05	1.03	0.023	0.023	96	0	0.0	0.019
9/4/2022	0.65	1.01	9.26	0.94	0.023	0.023	96	0	0.0	0.019
9/5/2022	2.98	6.11	22.23	1.58	0.023	0.023	96	0	0.0	0.019
9/6/2022	3.71	20.98	35.25	3.10	0.022	0.023	96	0	0.0	0.019
9/7/2022	1.61	2.85	62.80	2.68	0.021	0.023	96	0	0.0	0.019
9/8/2022	0.85	1.75	44.59	2.34	0.021	0.021	96	0	0.0	0.019
9/9/2022	0.78	2.99	36.98	1.32	0.021	0.021	96	0	0.0	0.019
9/10/2022	1.29	11.30	30.73	1.47	0.021	0.022	96	0	0.0	0.019
9/11/2022	0.51	0.73	27.60	1.48	0.021	0.022	96	0	0.0	0.019
9/12/2022	0.46	0.61	17.86	0.92	0.021	0.022	96	0	0.0	0.019
9/13/2022	0.55	2.56	25.57	0.98	0.022	0.022	96	0	0.0	0.019
9/14/2022	0.70	1.73	22.17	0.77	0.022	0.024	96	0	0.0	0.019
9/15/2022	0.61	4.18	11.58	0.70	0.023	0.023	96	0	0.0	0.019
9/16/2022	0.65	0.91	16.07	0.67	0.023	0.023	96	0	0.0	0.019
9/17/2022	0.90	1.13	18.70	0.88	0.023	0.023	96	0	0.0	0.019
9/18/2022	0.74	1.29	22.08	0.97	0.023	0.023	96	0	0.0	0.019
9/19/2022	0.81	1.70	25.01	0.87	0.023	0.023	96	0	0.0	0.019
9/20/2022	0.79	2.26	28.56	0.90	0.022	0.023	96	0	0.0	0.019
9/21/2022	0.65	2.15	28.08	1.21	0.022	0.022	96	0	0.0	0.019
9/22/2022	0.58	1.11	29.09	1.59	0.022	0.023	96	0	0.0	0.019
9/23/2022	0.53	1.38	3.07	0.71	0.022	0.022	96	0	0.0	0.019
9/24/2022	0.79	3.16	4.61	0.77	0.022	0.022	96	0	0.0	0.019
9/25/2022	1.28	1.89	7.27	1.02	0.022	0.022	96	0	0.0	0.019
9/26/2022	1.00	1.93	9.21	1.08	0.022	0.022	96	0	0.0	0.019
9/27/2022	0.54	1.02	2.89	0.83	0.022	0.022	96	0	0.0	0.019
9/28/2022	0.61	0.79	3.71	0.69	0.022	0.022	96	0	0.0	0.019
9/29/2022	0.44	0.75	4.14	0.63	0.022	0.022	96	0	0.0	0.020
9/30/2022	0.61	0.92	3.09	0.62	0.022	0.022	96	0	0.0	0.019
Avg	0.93	2.81	20.86	1.17	0.022	0.022	96	0	0.0	0.019
Min	0.44	0.61	2.89	0.62	0.021	0.021	96	0	0.0	0.019
Max	3.71	20.98	62.80	3.10	0.023	0.024	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		
	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
9/1/2022	4.20	PASS	0.019	4.28	PASS	0.027	4.24	PASS	0.021	4.34	PASS	0.017	4.10	PASS	0.020	4.31	PASS	0.019	4.34	PASS	0.028	4.15	PASS	0.019		
9/2/2022	4.17	PASS	0.019	4.20	PASS	0.026	4.22	PASS	0.020	4.31	PASS	0.016	4.09	PASS	0.019	4.33	PASS	0.019	4.31	PASS	0.028	4.09	PASS	0.019		
9/3/2022	4.23	PASS	0.019	4.24	PASS	0.027	4.31	PASS	0.021	4.35	PASS	0.016	4.17	PASS	0.019	4.39	PASS	0.018	4.39	PASS	0.028	4.11	PASS	0.018		
9/4/2022	4.28	PASS	0.019	4.27	PASS	0.026	4.34	PASS	0.020	4.44	PASS	0.016	4.19	PASS	0.020	4.41	PASS	0.018	4.40	PASS	0.028	4.20	PASS	0.018		
9/5/2022	4.29	PASS	0.019	4.27	PASS	0.026	4.33	PASS	0.020	4.44	PASS	0.016	4.17	PASS	0.026	4.37	PASS	0.018	4.39	PASS	0.028	4.17	PASS	0.018		
9/6/2022	4.27	PASS	0.020	4.28	PASS	0.027	4.30	PASS	0.021	4.44	PASS	0.019	4.16	PASS	0.021	4.43	PASS	0.019	4.38	PASS	0.028	4.17	PASS	0.019		
9/7/2022	4.23	PASS	0.019	4.27	PASS	0.027	4.28	PASS	0.023	4.44	PASS	0.016	4.16	PASS	0.019	4.40	PASS	0.019	4.39	PASS	0.027	4.14	PASS	0.020		
9/8/2022	4.24	PASS	0.019	4.21	PASS	0.027	4.33	PASS	0.020	4.46	PASS	0.018	4.18	PASS	0.019	4.38	PASS	0.018	4.42	PASS	0.028	4.15	PASS	0.020		
9/9/2022	4.20	PASS	0.019	4.21	PASS	0.028	4.29	PASS	0.022	4.44	PASS	0.016	4.16	PASS	0.020	4.40	PASS	0.018	4.42	PASS	0.028	4.15	PASS	0.020		
9/10/2022	4.20	PASS	0.019	4.23	PASS	0.027	4.27	PASS	0.021	4.45	PASS	0.017	4.16	PASS	0.019	4.41	PASS	0.019	4.40	PASS	0.028	4.14	PASS	0.020		
9/11/2022	4.22	PASS	0.019	4.21	PASS	0.027	4.33	PASS	0.020	4.48	PASS	0.016	4.17	PASS	0.019	4.39	PASS	0.019	4.43	PASS	0.028	4.14	PASS	0.024		
9/12/2022	4.21	PASS	0.019	4.20	PASS	0.028	4.39	PASS	0.020	4.49	PASS	0.016	4.16	PASS	0.019	4.39	PASS	0.019	4.44	PASS	0.028	4.18	PASS	0.021		
9/13/2022	4.21	PASS	0.019	4.19	PASS	0.027	4.31	PASS	0.021	4.45	PASS	0.016	4.19	PASS	0.020	4.40	PASS	0.018	4.47	PASS	0.028	4.12	PASS	0.021		
9/14/2022	4.18	PASS	0.020	4.22	PASS	0.028	4.25	PASS	0.021	4.48	PASS	0.016	4.13	PASS	0.019	4.39	PASS	0.018	4.40	PASS	0.029	4.10	PASS	0.020		
9/15/2022	4.18	PASS	0.019	4.19	PASS	0.027	4.28	PASS	0.021	4.47	PASS	0.016	4.10	PASS	0.019	4.39	PASS	0.018	4.37	PASS	0.028	4.14	PASS	0.020		
9/16/2022	4.19	PASS	0.019	4.21	PASS	0.027	4.29	PASS	0.021	4.48	PASS	0.016	4.15	PASS	0.020	4.36	PASS	0.018	4.39	PASS	0.028	4.19	PASS	0.019		
9/17/2022	4.16	PASS	0.019	4.23	PASS	0.028	4.23	PASS	0.021	4.46	PASS	0.016	4.14	PASS	0.020	4.43	PASS	0.018	4.50	PASS	0.028	4.16	PASS	0.019		
9/18/2022	4.14	PASS	0.019	4.24	PASS	0.028	4.23	PASS	0.021	4.48	PASS	0.016	4.12	PASS	0.020	4.43	PASS	0.018	4.39	PASS	0.028	4.14	PASS	0.019		
9/19/2022	4.14	PASS	0.019	4.19	PASS	0.031	4.23	PASS	0.020	4.44	PASS	0.016	4.09	PASS	0.019	4.41	PASS	0.018	4.42	PASS	0.028	4.14	PASS	0.019		
9/20/2022	4.17	PASS	0.020	4.15	PASS	0.027	4.23	PASS	0.021	4.38	PASS	0.016	4.11	PASS	0.020	4.37	PASS	0.018	4.37	PASS	0.028	4.09	PASS	0.020		
9/21/2022	4.17	PASS	0.019	4.20	PASS	0.027	4.18	PASS	0.021	4.40	PASS	0.016	4.12	PASS	0.021	4.39	PASS	0.018	4.36	PASS	0.028	4.09	PASS	0.019		
9/22/2022	4.10	PASS	0.020	4.20	PASS	0.027	4.12	PASS	0.021	4.47	PASS	0.016	4.32	PASS	0.020	4.40	PASS	0.018	4.25	PASS	0.028	4.10	PASS	0.022		
9/23/2022	4.21	PASS	0.019	4.22	PASS	0.028	4.25	PASS	0.022	4.46	PASS	0.015	4.34	PASS	0.021	4.39	PASS	0.018	4.35	PASS	0.027	4.17	PASS	0.020		
9/24/2022	4.21	PASS	0.018	4.22	PASS	0.027	4.23	PASS	0.020	4.43	PASS	0.016	4.30	PASS	0.022	4.42	PASS	0.018	4.38	PASS	0.027	4.16	PASS	0.018		
9/25/2022	4.17	PASS	0.018	4.20	PASS	0.027	4.23	PASS	0.020	4.45	PASS	0.016	4.27	PASS	0.019	4.37	PASS	0.018	4.39	PASS	0.027	4.14	PASS	0.021		
9/26/2022	4.21	PASS	0.019	4.18	PASS	0.027	4.22	PASS	0.020	4.25	PASS	0.016	4.28	PASS	0.022	4.40	PASS	0.018	4.36	PASS	0.027	4.10	PASS	0.018		
9/27/2022	4.34	PASS	0.018	4.17	PASS	0.027	4.25	PASS	0.020	4.47	PASS	0.015	4.22	PASS	0.019	4.38	PASS	0.018	4.39	PASS	0.027	4.13	PASS	0.021		
9/28/2022	4.27	PASS	0.018	4.19	PASS	0.026	4.25	PASS	0.020	4.45	PASS	0.015	4.22	PASS	0.019	4.42	PASS	0.018	4.41	PASS	0.027	4.14	PASS	0.018		
9/29/2022	4.26	PASS	0.018	4.18	PASS	0.026	4.28	PASS	0.020	4.47	PASS	0.016	4.22	PASS	0.019	4.42	PASS	0.018	4.41	PASS	0.027	4.13	PASS	0.019		
9/30/2022	4.25	PASS	0.018	4.20	PASS	0.026	4.28	PASS	0.020	4.53	PASS	0.016	4.23	PASS	0.019	4.46	PASS	0.018	4.41	PASS	0.028	4.18	PASS	0.019		
Avg	4.21		0.019	4.21		0.027	4.27		0.021	4.44		0.016	4.18		0.020	4.39		0.018	4.39		0.028	4.14		0.020		
Min	4.10		0.018	4.15		0.026	4.12		0.020	4.25		0.015	4.09		0.019	4.31		0.018	4.25		0.027	4.09		0.018		
Max	4.34		0.020	4.28		0.031	4.39		0.023	4.53		0.019	4.34		0.026	4.46		0.019	4.50		0.029	4.20		0.024		

*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
9/1/2022	8.5	0.13	0.04	1.55	1.57	1.34	3.20	3.41	0.08	0.62	0.81
9/2/2022	9.5	0.25	0.08	1.80	1.47	1.34	3.20	3.41	0.08	0.62	0.80
9/3/2022	7.9	0.44	0.13	1.66	1.51	1.31	3.20	3.41	0.08	0.62	0.76
9/4/2022	6.7	0.59	0.21	1.67	1.51	1.34	3.20	3.40	0.08	0.62	0.76
9/5/2022	7.9	0.25	0.17	1.58	1.42	1.32	3.20	3.39	0.09	0.62	0.78
9/6/2022	8.1	0.19	0.09	1.13	1.51	1.33	3.20	3.38	0.08	0.60	0.85
9/7/2022	8.5	0.30	0.13	1.11	1.47	1.31	3.20	3.36	0.08	0.41	0.88
9/8/2022	8.0	0.32	0.14	1.13	1.47	1.30	3.21	3.35	0.09	0.40	0.78
9/9/2022	8.3	0.25	0.13	1.13	1.46	1.31	3.22	3.37	0.08	0.40	0.75
9/10/2022	8.1	0.24	0.11	1.17	1.46	1.30	3.22	3.36	0.09	0.40	0.76
9/11/2022	7.4	0.32	0.13	1.12	1.46	1.30	3.22	3.36	0.08	0.40	0.77
9/12/2022	7.4	0.28	0.14	1.14	1.47	1.30	3.22	3.36	0.08	0.40	0.76
9/13/2022	7.9	0.21	0.13	1.16	1.45	1.31	3.24	3.38	0.08	0.40	0.77
9/14/2022	8.0	0.12	0.08	1.20	1.45	1.30	3.24	3.38	0.07	0.40	0.75
9/15/2022	8.1	0.13	0.06	1.25	1.48	1.30	3.24	3.38	0.09	0.41	0.76
9/16/2022	7.6	0.17	0.08	1.25	1.49	1.31	3.24	3.38	0.08	0.42	0.78
9/17/2022	7.6	0.14	0.08	1.24	1.46	1.30	3.24	3.38	0.08	0.42	0.74
9/18/2022	7.7	0.15	0.08	1.28	1.49	1.29	3.24	3.38	0.09	0.42	0.79
9/19/2022	8.4	0.19	0.09	1.22	1.47	1.31	3.24	3.37	0.08	0.42	0.77
9/20/2022	9.7	0.56	0.27	1.06	1.47	1.33	3.24	3.38	0.08	0.42	0.78
9/21/2022	7.5	0.57	0.37	1.00	1.44	1.34	3.24	3.37	0.09	0.42	0.82
9/22/2022	7.4	0.73	0.42	0.92	1.46	1.34	3.24	3.35	0.09	0.42	0.81
9/23/2022	7.4	0.79	0.53	0.82	1.45	1.35	3.27	3.35	0.08	0.42	0.81
9/24/2022	7.1	0.50	0.48	0.93	1.42	1.32	3.28	3.37	0.09	0.42	0.79
9/25/2022	7.2	0.24	0.29	1.14	1.45	1.30	3.28	3.37	0.09	0.40	0.79
9/26/2022	7.3	0.29	0.18	1.20	1.46	1.29	3.28	3.39	0.08	0.40	0.76
9/27/2022	7.2	0.44	0.22	1.16	1.47	1.30	3.28	3.37	0.08	0.40	0.76
9/28/2022	7.6	0.36	0.23	1.14	1.47	1.31	3.28	3.38	0.08	0.40	0.77
9/29/2022	6.9	0.48	0.24	1.14	1.46	1.29	3.28	3.37	0.08	0.40	0.77
9/30/2022	7.3	0.43	0.27	1.12	1.47	1.32	3.28	3.36	0.08	0.40	0.78
Avg	7.8	0.34	0.19	1.21	1.47	1.31	3.24	3.38	0.08	0.45	0.78
Min	6.7	0.12	0.04	0.82	1.42	1.29	3.20	3.35	0.07	0.40	0.74
Max	9.7	0.79	0.53	1.80	1.57	1.35	3.28	3.41	0.09	0.62	0.88



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	Calculated	TIT-1000	Calculated	Calculated
9/1/2022	51.4	2,435	0.13	313	28.8	24.6	7.9	460	1.28	590	902	21.4	2.00	Y
9/2/2022	56.1	2,229	0.25	550	28.9	23.3	8.9	403	1.18	475	1024	21.2	2.00	Y
9/3/2022	69.7	1,794	0.44	785	28.8	24.6	7.1	512	1.24	636	1421	20.3	2.00	Y
9/4/2022	70.4	1,778	0.59	1041	28.7	24.6	6.2	584	1.30	761	1803	19.1	4.00	Y
9/5/2022	60.2	2,077	0.25	528	28.8	25.4	7.8	479	1.23	591	1119	19.3	4.00	Y
9/6/2022	49.8	2,509	0.19	489	28.8	23.3	7.7	462	1.23	570	1059	19.8	4.00	Y
9/7/2022	52.4	2,386	0.30	726	28.7	24.1	7.9	459	1.28	588	1315	19.7	4.00	Y
9/8/2022	52.9	2,366	0.32	758	28.8	25.3	7.7	479	1.25	601	1359	19.7	4.00	Y
9/9/2022	55.1	2,268	0.25	577	28.8	25.0	8.1	458	1.30	593	1170	19.8	4.00	Y
9/10/2022	68.1	1,838	0.24	448	28.8	25.2	7.8	474	1.20	568	1017	19.9	4.00	Y
9/11/2022	68.7	1,822	0.32	579	28.7	24.8	7.1	514	1.28	656	1235	19.9	4.00	Y
9/12/2022	58.6	2,136	0.28	595	28.7	25.0	7.0	522	1.27	663	1257	19.9	4.00	Y
9/13/2022	46.5	2,691	0.21	565	28.8	24.7	7.6	481	1.25	603	1169	19.6	4.00	Y
9/14/2022	46.6	2,686	0.12	321	28.8	23.4	7.8	458	1.25	571	892	19.8	4.00	Y
9/15/2022	47.0	2,661	0.13	334	28.7	23.2	7.7	464	1.25	579	912	19.6	4.00	Y
9/16/2022	47.4	2,638	0.17	438	28.7	23.6	7.2	501	1.20	600	1039	19.7	4.00	Y
9/17/2022	60.0	2,085	0.14	301	28.7	24.2	7.3	497	1.25	624	925	19.8	4.00	Y
9/18/2022	60.5	2,068	0.15	312	28.7	24.9	7.4	495	1.18	583	896	19.9	4.00	Y
9/19/2022	59.9	2,087	0.19	395	28.8	23.3	8.0	444	1.28	566	961	19.6	4.00	Y
9/20/2022	53.3	2,346	0.56	1311	28.8	23.2	9.1	391	1.28	498	1809	18.6	4.00	Y
9/21/2022	48.6	2,576	0.57	1464	28.6	24.6	7.2	505	1.28	644	2108	17.8	4.00	Y
9/22/2022	48.9	2,556	0.73	1871	28.7	24.9	7.1	518	1.31	678	2548	17.3	4.00	Y
9/23/2022	49.9	2,507	0.79	1983	28.7	23.7	7.1	504	1.30	653	2636	16.9	4.00	Y
9/24/2022	56.0	2,233	0.50	1108	28.7	24.9	6.7	547	1.28	701	1809	16.9	4.00	Y
9/25/2022	56.5	2,215	0.24	539	28.7	25.5	7.0	529	1.25	660	1199	17.1	4.00	Y
9/26/2022	52.0	2,404	0.29	695	28.6	22.8	7.0	502	1.23	616	1311	17.3	4.00	Y
9/27/2022	48.0	2,604	0.44	1159	28.7	25.1	7.0	527	1.28	676	1834	17.2	4.00	Y
9/28/2022	43.5	2,877	0.36	1048	28.8	23.0	7.1	499	1.24	619	1667	17.0	4.00	Y
9/29/2022	41.5	3,011	0.48	1433	28.7	23.1	6.6	540	1.26	681	2114	16.9	4.00	Y
9/30/2022	42.1	2,973	0.43	1272	28.7	23.8	6.9	519	1.28	666	1937	16.8	4.00	Y
Avg	54.1	2,362	0.34	798	28.7	24.2	7.4	491	1.26	617	1415	18.9	3.80	NA
Min	41.5	1,778	0.12	301	28.6	22.8	6.2	391	1.18	475	892	16.8	2.00	NA
Max	70.4	3,011	0.79	1983	28.9	25.5	9.1	584	1.31	761	2636	21.4	4.00	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 Cl2)																								
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
9/1/2022		0.28	0.58			0.84	0.97																	
9/2/2022																								
9/3/2022																								
9/4/2022																								
9/5/2022																								
9/6/2022	0.03							1.23	0.93	0.44	0.61	0.96	0.32	1.08	0.74	0.84	0.88	0.74	0.80	0.45				
9/7/2022											0.82													1.01
9/8/2022		0.32	0.21	0.24	1.10				0.81	0.38	0.54	0.82	0.33	1.12	0.64							0.14		
9/9/2022																								
9/10/2022																								
9/11/2022																								
9/12/2022																					0.86			0.93
9/13/2022																								
9/14/2022									0.73	0.35	0.44	0.61	0.23	1.06	0.61									
9/15/2022																0.76	0.81	0.86	0.80	0.79				
9/16/2022																								
9/17/2022																								
9/18/2022																								
9/19/2022																								
9/20/2022		0.89	0.15	0.30	1.16				0.90	0.53	0.51	0.84	0.36	1.19	0.61								0.07	1.02
9/21/2022												0.90												
9/22/2022									0.79	0.61	0.54	0.86	0.17	1.10	0.70									
9/23/2022																								
9/24/2022																								
9/25/2022																								
9/26/2022																								
9/27/2022																								1.01
9/28/2022									0.83	0.49	0.58	0.79	0.30	1.12	0.66									
9/29/2022																								
9/30/2022																								
Average	0.03		0.52				1.01					0.68						0.77			0.86			0.99
Min	0.03		0.15				0.84					0.17						0.45			0.86			0.93
Max	0.03		1.16				1.23					1.19						0.88			0.86			1.02

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. Skizak's Sport Shop, 807 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 Cl2)																								
WSSN:	2465		2960			3565			3570		4280		4440			5330		5335		5540	7125			7134
	Fraser Twp.		Hampton Twp.			Kawkawlin Twp.			Kawkawlin Met.		Merritt Twp.		Monitor Twp.			City Pinconning		Pinconning Twp.		Portsmouth	Williams Twp.			Wisner
Date	34	35	37	38	39	40	41	42	43	45	46	48	49	52	55	58	59	61	63	65	68	69	70	72
9/1/2022	0.27	0.82	0.40	0.51	0.44	xx	0.42		xx				0.94	0.52	0.64	0.33		0.24	0.42					
9/2/2022																								
9/3/2022																								
9/4/2022																								
9/5/2022																								
9/6/2022											0.17		1.01	0.62	0.71					0.25				0.13
9/7/2022			0.31	0.72	0.37																			
9/8/2022																					0.41	0.68	0.15	
9/9/2022																								
9/10/2022																								
9/11/2022																								
9/12/2022			0.36	0.54	0.34																			
9/13/2022								0.96	0.82							0.36								
9/14/2022																								
9/15/2022											0.36													
9/16/2022																								
9/17/2022																								
9/18/2022																								
9/19/2022			0.37																					
9/20/2022																					0.45	0.70	0.64	
9/21/2022																								
9/22/2022						1.01			0.82															
9/23/2022																								
9/24/2022																								
9/25/2022																								
9/26/2022																								
9/27/2022																								
9/28/2022																								
9/29/2022																								
9/30/2022																								
Average	0.55		0.44			0.80			0.82		0.27		0.74			0.35		0.33		0.25				0.13
Min	0.27		0.31			0.42			0.82		0.17		0.52			0.33		0.24		0.25				0.13
Max	0.82		0.72			1.01			0.82		0.36		1.01			0.36		0.42		0.25				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 Commisison, 2600 E Beaver Rd
- 41. Parish Rd. Elevated Tank, 1770 E. Parish Rd
- 42. Linwood Tile, 205 S Huron Rd

- 43. Kawkawlin Party Store, 105 Grove St
- 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			
				September, 2022			
COUNTY	COMMUNITY	WSSN NUMBER	DISTRIBUTION SYSTEM SAMPLES				
			avg free cl2 mg/L	NUMBER REQUIRED	NUMBER COLLECTED	NUMBER POSITIVE	NUMBER REPEAT SAMPLES
Tuscola	Akron	0072	0.03	1	1	0	0
BAY	Bangor Township	0390	0.52	10	10	0	0
BAY	Bangor-Monitor Dist.	0400	1.01	3	3	0	0
BAY	Bay City	0470	0.68	30	44	2	6
BAY	Bay County (Frankl./Monitor/Portsm.)	0485	0.77	9	10	0	0
BAY	Beaver Road Area	0517	0.86	1	1	0	0
BAY	Beaver Township	0518	0.11	2	2	0	0
BAY	Essexville	2180	0.99	4	4	0	0
BAY	Fraser Township	2465	0.55	2	2	0	0
BAY	Hampton Township	2960	0.44	10	10	0	0
BAY	Kawkawlin Township	3565	0.80	3	3	0	0
BAY	Kawkawlin Metro Dist.	3570	0.82	2	2	0	0
BAY	Merritt Township	4280	0.27	2	2	0	0
BAY	Monitor Township	4440	0.74	6	6	0	0
BAY	City of Pinconning	5330	0.35	2	2	0	0
BAY	Pinconning Township	5335	0.33	2	2	0	0
BAY	Portsmouth Township	5540	0.25	1	1	0	0
BAY	Williams Township	7125	0.51	6	6	0	0
Tuscola	Wisner	7134	0.13	1	1	0	0
Average Free Cl2 Residual of All Distribution Sites			0.53	mg/L			
1. Total distribution samples			112				
2. Total distribution samples with detectable free cl2 residual			112				
3. Total distribution samples with no detectable free cl2 residual			1				
4. Total distribution samples with no detectable free cl2 residual and HPC was <500			1				
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%				
							
-09/06/2022 sample #13 (807 Salzburg Ave.) was Total Coliform pos, E.coli neg.							
-09/07/2022 repeat samples #13, #13U (900 Salzburg Ave.) & #13D (805 Salzburg Ave.) were all Total Coliform neg, E.coli neg.							
-09/07/2022 free chlorine residual at #13U was 0.59 mg/L. Free chlorine at #13D was 0.61 mg/L.							
-09/20/2022 sample #14 (212 S. Dean St.) was Total Coliform pos, E.coli neg.							
-09/21/2022 repeat samples #14, #14U (206 S. Dean St.) & #14D (211 S. Dean St.) were all Total Coliform neg, E.coli neg.							
-09/21/2022 free chlorine residual at #14U was 0.87 mg/L. Free chlorine at #14D was 0.91 mg/L.							