

Bay Area WTP


Monthly Operations Report



September, 2018

Water Systems Serial Number:

0465


Ryan Goebel

Operations Supervisor
Title

F1
Classification


Mark Moers

Water Superintendent
Title

F1
Classification

Bay Area Water Treatment Plant

Monthly Operations Report

Supply Name: Bay Area Water System
 WSSN: 0465

Mark Moers
 Operator-in-charge

September, 2018
 Month, Year

F1
 Certification of Operator-in-charge

F1
 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	9.1	Millions of Gallons per Day
Maximum Approved Transmembrane Pressure	22	PSI
Maximum Operating Transmembrane Pressure	22	PSI

Chemical Data

Sodium Hypochlorite on hand:	6,266	Gallons	Estimated Supply:	74.6	days
Caustic Soda on hand:	3,431	Gallons	Estimated Supply:	278.4	days
Corrosion Inhibitor on hand:	1,636	Gallons	Estimated Supply:	68.3	days
Hydrofluosilicic Acid on hand:	385	Gallons	Estimated Supply:	16.3	days
Aluminum Chlorohydrate on hand:	558	Gallons	Estimated Supply:	25.7	days
Sulfuric Acid on hand:	339	Gallons	Estimated Supply:	97.9	days
Sodium Bisulfite on hand:	305	Gallons	Estimated Supply:	63.2	days
Citric Acid on hand:	2,324	Gallons	Estimated Supply:	262.6	days
Cost of All Chemicals per Million Gallons:	77.07	Dollars			
Estimated Electrical Cost per Million Gallons:	109.31	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%

Did any individual membrane skid exceed:

1.0 NTU in two consecutive measurements taken 15 minutes apart?
 If yes, attach specific filter(s) information and indicate required follow-up status. No

0.5 NTU in two consecutive measurements taken 15 minutes apart after 4 hours of operation?
 If yes, attach specific filter(s) information and indicate required follow-up status. No

1.0 NTU in two consecutive measurements taken 15 minutes apart for 3 consecutive months?
 If yes, attach specific filter(s) information and indicate required follow-up status. No

2.0 NTU in two consecutive measurements taken 15 minutes apart for 2 consecutive months?
 If yes, attach specific filter(s) information and indicate required follow-up status. No

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)			Wasted (MG)			Sludge (MG)		Treated (MG)		Finished Water Pumped (MG)			
	North	South	Total	Total	Total	Total	Total	Total	Total	Total	Total	N. Euclid	Lauria Road	Total	Total			
	FIT-1000-1	FIT-1000-2	Calculated	FIT-5520-1	FIT-5520-2	FIT-5180	FIT-4000-1	FIT-4040-1	FIT-4040-2	Calculated	Calculated							
9/1/2018	3.34	4.25	7.59	0.27	0.00	0.08	7.22	3.65	3.41	7.06								
9/2/2018	3.03	4.06	7.09	0.24	0.00	0.10	7.37	3.69	3.48	7.16								
9/3/2018	2.82	3.77	6.59	0.25	0.00	0.09	7.85	3.92	3.74	7.66								
9/4/2018	3.82	3.97	7.79	0.28	0.00	0.11	8.63	4.33	4.16	8.49								
9/5/2018	4.76	4.63	9.39	0.29	0.00	0.10	8.45	4.17	4.02	8.19								
9/6/2018	4.00	5.31	9.31	0.25	0.00	0.07	7.74	3.87	3.70	7.57								
9/7/2018	3.36	4.68	8.04	0.26	0.00	0.07	7.75	3.82	3.69	7.52								
9/8/2018	2.99	3.93	6.92	0.26	0.00	0.08	7.78	3.91	3.69	7.60								
9/9/2018	2.99	3.93	6.93	0.21	0.00	0.11	7.76	3.92	3.67	7.59								
9/10/2018	3.12	3.60	6.72	0.18	0.00	0.17	7.82	3.98	3.71	7.69								
9/11/2018	4.55	3.73	8.28	0.25	0.00	0.14	8.25	4.15	3.89	8.04								
9/12/2018	4.71	4.53	9.25	0.26	0.00	0.15	8.43	4.23	3.96	8.19								
9/13/2018	4.78	4.76	9.54	0.31	0.00	0.10	8.30	4.17	3.87	8.04								
9/14/2018	4.15	5.22	9.37	0.32	0.00	0.10	8.51	4.31	4.02	8.33								
9/15/2018	3.51	4.78	8.30	0.22	0.00	0.08	7.88	3.98	3.70	7.68								
9/16/2018	3.29	4.30	7.59	0.21	0.00	0.10	7.99	4.11	3.85	7.96								
9/17/2018	3.96	3.91	7.87	0.30	0.00	0.09	9.06	4.46	4.22	8.68								
9/18/2018	5.06	3.77	8.83	0.28	0.00	0.09	8.41	4.29	4.01	8.30								
9/19/2018	4.75	4.07	8.82	0.24	0.00	0.09	8.05	4.13	3.87	8.00								
9/20/2018	3.82	4.72	8.54	0.25	0.00	0.12	8.19	4.11	3.86	7.96								
9/21/2018	3.65	4.82	8.47	0.24	0.00	0.13	8.04	4.06	3.80	7.85								
9/22/2018	3.14	4.88	8.02	0.19	0.00	0.16	7.89	3.86	3.66	7.52								
9/23/2018	2.63	4.41	7.05	0.19	0.00	0.11	7.96	4.02	3.86	7.88								
9/24/2018	3.62	4.49	8.11	0.27	0.00	0.09	8.11	4.07	3.86	7.93								
9/25/2018	4.17	4.60	8.77	0.26	0.00	0.08	7.63	3.85	3.63	7.48								
9/26/2018	4.08	4.21	8.29	0.27	0.00	0.10	8.30	4.14	3.87	8.01								
9/27/2018	4.07	4.02	8.08	0.27	0.00	0.12	8.20	4.14	3.89	8.03								
9/28/2018	4.01	4.13	8.15	0.26	0.00	0.10	7.75	3.86	3.60	7.46								
9/29/2018	3.05	4.11	7.16	0.21	0.00	0.10	6.98	3.57	3.35	6.92								
9/30/2018	2.90	3.42	6.32	0.23	0.00	0.09	7.06	3.46	3.32	6.79								
Total	112.16	129.01	241.16	7.52	0.00	3.13	239.35	120.22	113.36	233.58								
Avg	3.74	4.30	8.04	0.25	0.00	0.10	7.98	4.01	3.78	7.79								
Min	2.63	3.42	6.32	0.18	0.00	0.07	6.98	3.46	3.32	6.79								
Max	5.06	5.31	9.54	0.32	0.00	0.17	9.06	4.46	4.22	8.68								



Raw Water Analysis

Date	Temp		pH		Turbidity		F		Free Cl (Mem. Feed)		Bacti		
	Average		Average		Average	Maximum	Grab	Average	Positive/Negative		E. coli		
	°C		AIT-1000-2		NTU		mg/L		mg/L		Lab		
	TIT-1000	AIT-1000-2		AIT-1000-1		AIT-1035-2		AIT-1035-2		AIT-1035-2		AIT-1035-2	
9/1/2018	19.27	8.14	1.58	3.83	0.08	0.22	Negative	Negative	Negative	Negative	Negative	Negative	
9/2/2018	19.42	8.15	1.43	2.21	0.07	0.15	Negative	Negative	Negative	Negative	Negative	Negative	
9/3/2018	19.21	8.11	1.35	3.68	0.07	0.14	Negative	Negative	Negative	Negative	Negative	Negative	
9/4/2018	18.99	8.06	1.42	19.77	0.07	0.13	Negative	Negative	Negative	Negative	Negative	Negative	
9/5/2018	18.16	7.84	0.95	8.07	0.07	0.34	Negative	Negative	Negative	Negative	Negative	Negative	
9/6/2018	17.10	7.80	0.68	1.31	0.07	0.53	Negative	Negative	Negative	Negative	Negative	Negative	
9/7/2018	16.47	7.79	0.67	1.21	0.07	0.64	Negative	Negative	Negative	Negative	Negative	Negative	
9/8/2018	17.28	8.13	1.72	2.18	0.07	0.47	Negative	Negative	Negative	Negative	Negative	Negative	
9/9/2018	18.30	8.27	5.20	13.88	0.09	0.19	Positive	Positive	Positive	Positive	Positive	Positive	
9/10/2018	18.57	8.23	7.46	34.79	0.07	0.04	Positive	Positive	Positive	Positive	Positive	Positive	
9/11/2018	18.62	8.13	7.10	13.43	0.07	0.05	Positive	Positive	Positive	Positive	Positive	Positive	
9/12/2018	18.65	7.99	4.81	19.84	0.08	0.21	Negative	Negative	Negative	Negative	Negative	Negative	
9/13/2018	18.55	7.96	2.58	4.86	0.07	0.39	Negative	Negative	Negative	Negative	Negative	Negative	
9/14/2018	18.55	7.95	2.75	7.25	0.07	0.44	Negative	Negative	Negative	Negative	Negative	Negative	
9/15/2018	18.58	7.95	3.02	13.41	0.07	0.44	Negative	Negative	Negative	Negative	Negative	Negative	
9/16/2018	18.61	7.99	2.62	6.22	0.08	0.36	Negative	Negative	Negative	Negative	Negative	Negative	
9/17/2018	18.69	7.95	1.98	4.61	0.07	0.34	Negative	Negative	Negative	Negative	Negative	Negative	
9/18/2018	18.69	7.93	1.75	35.68	0.07	0.36	Negative	Negative	Negative	Negative	Negative	Negative	
9/19/2018	18.69	7.92	1.74	3.52	0.08	0.33	Negative	Negative	Negative	Negative	Negative	Negative	
9/20/2018	18.89	8.16	2.04	3.08	0.11	0.23	Positive	Positive	Positive	Positive	Positive	Positive	
9/21/2018	19.20	8.30	1.92	3.03	0.11	0.13	Negative	Negative	Negative	Negative	Negative	Negative	
9/22/2018	19.17	8.11	2.04	4.71	0.10	0.12	Negative	Negative	Negative	Negative	Negative	Negative	
9/23/2018	19.00	7.97	1.08	2.83	0.10	0.25	Negative	Negative	Negative	Negative	Negative	Negative	
9/24/2018	18.88	7.98	1.26	2.07	0.10	0.32	Negative	Negative	Negative	Negative	Negative	Negative	
9/25/2018	18.72	8.05	3.46	18.12	0.10	0.29	Negative	Negative	Negative	Negative	Negative	Negative	
9/26/2018	18.63	8.06	3.24	8.97	0.10	0.12	Negative	Negative	Negative	Negative	Negative	Negative	
9/27/2018	18.40	8.01	2.13	7.55	0.08	0.12	Negative	Negative	Negative	Negative	Negative	Negative	
9/28/2018	18.14	7.93	1.02	2.28	0.07	0.29	Negative	Negative	Negative	Negative	Negative	Negative	
9/29/2018	17.43	7.91	1.52	4.23	0.08	0.35	Negative	Negative	Negative	Negative	Negative	Negative	
9/30/2018	16.68	7.83	0.97	2.70	0.08	0.39	Negative	Negative	Negative	Negative	Negative	Negative	
AVG	18.5	8.02	2.38	8.64	0.08	0.28	NA	NA	NA	NA	NA	NA	
Min	16.5	7.79	0.67	1.21	0.07	0.04	NA	NA	NA	NA	NA	NA	
Max	19.4	8.30	7.46	35.68	0.11	0.64	NA	NA	NA	NA	NA	NA	



Finished Water Analysis																				
Date	Temp Average °C	pH Average	Phosphate Average mg/L	Fluoride		Free Cl ₂ Average mg/L	Alkalinity (as CaCO ₃)		Chloride Grab mg/L	Sulfate Grab mg/L	Calcium (as CaCO ₃) Grab mg/L	Dissolved Oxygen		Conductivity		Langelier Saturation Index	Chloride: Sulfate Mass Ratio	Larson- Skold Index	Bacti	
				Tap	Dist		Carbonate	Bicarbonate				Grab	Lab	Grab	Lab				Grab	Lab
9/1/2018	17.6	7.47	3.18	0.79		1.01	0	80	10	15	66	8.9	241	-0.82	0.67	0.46	Negative	Negative		
9/2/2018	18.5	7.51	3.18	0.78		1.02	0	83	12	15	66	7.7	248	-0.75	0.80	0.48	Negative	Negative		
9/3/2018	19.0	7.53	3.18	0.74		1.02	0	80	10	15	68	7.8	247	-0.72	0.67	0.46	Negative	Negative		
9/4/2018	19.0	7.51	3.20	0.80		1.01	0	80	11	16	64	7.9	248	-0.77	0.69	0.49	Negative	Negative		
9/5/2018	17.7	7.46	3.17	0.80	0.80	1.05	0	80	10	13	68	8.5	231	-0.82	0.77	0.42	Negative	Negative		
9/6/2018	16.1	7.42	3.19	0.76		1.06	0	79	10	13	66	8.1	224	-0.91	0.77	0.43	Negative	Negative		
9/7/2018	14.5	7.49	3.17	0.75		1.07	0	77	10	13	68	10.1	220	-0.88	0.77	0.44	Negative	Negative		
9/8/2018	13.7	7.53	3.17	0.78		1.04	0	78	10	13	68	9.9	223	-0.85	0.77	0.44	Negative	Negative		
9/9/2018	15.1	7.61	3.17	0.82		1.02	0	81	13	14	70	8.3	242	-0.71	0.93	0.50	Negative	Negative		
9/10/2018	16.7	7.68	3.19	0.79	0.72	0.99	0	86	15	15	82	7.7	256	-0.52	1.00	0.53	Negative	Negative		
9/11/2018	17.7	7.68	3.18	0.77		1.01	0	80	16	14	72	7.4	259	-0.58	1.14	0.57	Negative	Negative		
9/12/2018	18.2	7.63	3.17	0.76		1.04	0	79	14	14	70	7.8	243	-0.63	1.00	0.53	Negative	Negative		
9/13/2018	18.2	7.57	3.17	0.77		1.04	0	78	13	13	70	7.6	233	-0.69	1.00	0.50	Negative	Negative		
9/14/2018	18.1	7.55	3.17	0.75		1.05	0	77	12	13	70	7.5	230	-0.72	0.92	0.49	Negative	Negative		
9/15/2018	18.1	7.55	3.17	0.76		1.04	0	77	13	13	70	7.4	231	-0.72	1.00	0.51	Negative	Negative		
9/16/2018	18.3	7.57	3.17	0.77	0.75	1.03	0	77	13	13	68	7.3	236	-0.70	1.00	0.51	Negative	Negative		
9/17/2018	18.4	7.57	3.17	0.77		1.02	0	84	11	16	80	7.6	235	-0.59	0.69	0.47	Negative	Negative		
9/18/2018	18.4	7.58	3.17	0.77		1.02	0	82	10	16	78	7.4	234	-0.60	0.63	0.46	Negative	Negative		
9/19/2018	18.4	7.59	3.16	0.77		0.99	0	82	13	15	78	7.4	240	-0.59	0.87	0.51	Negative	Negative		
9/20/2018	18.3	7.60	3.16	0.77		0.98	0	84	13	15	82	7.1	250	-0.47	0.87	0.50	Negative	Negative		
9/21/2018	18.7	7.68	3.16	0.77		1.00	0	85	15	13	82	7.5	253	-0.40	1.15	0.50	Negative	Negative		
9/22/2018	19.0	7.74	3.16	0.77		1.04	0	86	13	13	78	7.7	244	-0.46	1.00	0.46	Negative	Negative		
9/23/2018	18.9	7.70	3.16	0.78		1.04	0	84	11	16	78	8.0	239	-0.51	0.69	0.47	Negative	Negative		
9/24/2018	18.7	7.67	3.18	0.76	0.77	1.04	0	79	11	14	68	7.8	238	-0.61	0.79	0.47	Negative	Negative		
9/25/2018	18.5	7.65	3.19	0.76		1.04	0	83	10	15	68	7.4	243	-0.58	0.67	0.44	Negative	Negative		
9/26/2018	18.5	7.67	3.18	0.78		1.01	0	83	12	16	66	8.6	250	-0.67	0.75	0.50	Negative	Negative		
9/27/2018	18.3	7.60	3.17	0.75		1.02	0	83	10	14	70	8.6	238	-0.68	0.71	0.44	Negative	Negative		
9/28/2018	17.9	7.58	3.16	0.76		1.07	0	80	10	14	62	9.2	231	-0.79	0.79	0.49	Negative	Negative		
9/29/2018	17.2	7.56	3.16	0.76		1.06	0	76	11	14	62	9.2	231	-0.79	0.79	0.49	Negative	Negative		
9/30/2018	16.2	7.56	3.16	0.78		1.06	0	78	10	14	68	8.6	230	-0.77	0.71	0.45	Negative	Negative		
Avg	17.7	7.58	3.17	0.77	0.76	1.03	0	81	12	14	71	8.0	239	-0.67	0.84	0.48	NA	NA		
Min	13.7	7.42	3.16	0.74	0.72	0.98	0	76	10	13	62	7.1	220	-0.91	0.63	0.42	NA	NA		
Max	19.0	7.74	3.20	0.82	0.80	1.07	0	86	16	16	82	10.1	259	-0.40	1.15	0.57	NA	NA		



Turbidity												
Date	Raw Water		Clarified Water	Membrane Feed Water	Combined Membrane Filtrate					Finished Average		
	Avg	Max	Avg	Avg	Avg	Max	# Samples	# > 0.3	% Exceeded	Avg		
	AIT-1000-1		AIT-5030-1	AIT-1035-3	AIT-4000-1					Calculated		
9/1/2018	1.58	3.83	1.65	1.11	0.013	0.013	96	0	0.0	0.012	0.012	
9/2/2018	1.43	2.21	1.95	1.33	0.013	0.013	96	0	0.0	0.012	0.012	
9/3/2018	1.35	3.68	2.22	1.28	0.013	0.013	96	0	0.0	0.012	0.012	
9/4/2018	1.42	19.77	1.82	1.34	0.013	0.013	96	0	0.0	0.012	0.012	
9/5/2018	0.95	8.07	1.25	1.15	0.013	0.013	96	0	0.0	0.012	0.012	
9/6/2018	0.68	1.31	0.89	0.82	0.013	0.014	96	0	0.0	0.012	0.012	
9/7/2018	0.67	1.21	1.38	0.70	0.013	0.014	96	0	0.0	0.012	0.012	
9/8/2018	1.72	2.18	1.80	0.93	0.013	0.013	96	0	0.0	0.012	0.012	
9/9/2018	5.20	13.88	3.73	2.09	0.013	0.013	96	0	0.0	0.012	0.012	
9/10/2018	7.46	34.79	2.70	5.36	0.013	0.013	96	0	0.0	0.013	0.013	
9/11/2018	7.10	13.43	1.85	5.30	0.013	0.013	96	0	0.0	0.013	0.013	
9/12/2018	4.81	19.84	1.16	5.03	0.013	0.014	96	0	0.0	0.012	0.012	
9/13/2018	2.58	4.86	0.52	3.37	0.014	0.014	96	0	0.0	0.012	0.012	
9/14/2018	2.75	7.25	0.88	2.89	0.013	0.014	96	0	0.0	0.012	0.012	
9/15/2018	3.02	13.41	1.01	3.00	0.013	0.013	96	0	0.0	0.012	0.012	
9/16/2018	2.62	6.22	1.50	2.77	0.013	0.014	96	0	0.0	0.012	0.012	
9/17/2018	1.98	4.61	1.65	2.36	0.014	0.014	96	0	0.0	0.012	0.012	
9/18/2018	1.75	35.68	1.46	1.89	0.014	0.016	96	0	0.0	0.012	0.012	
9/19/2018	1.74	3.52	1.18	1.77	0.014	0.015	96	0	0.0	0.012	0.012	
9/20/2018	2.04	3.08	2.82	1.68	0.014	0.014	96	0	0.0	0.012	0.012	
9/21/2018	1.92	3.03	1.97	1.83	0.014	0.015	96	0	0.0	0.013	0.013	
9/22/2018	2.04	4.71	1.98	1.75	0.015	0.015	96	0	0.0	0.013	0.013	
9/23/2018	1.08	2.83	1.01	1.49	0.015	0.019	96	0	0.0	0.012	0.012	
9/24/2018	1.26	2.07	0.93	1.33	0.014	0.015	96	0	0.0	0.012	0.012	
9/25/2018	3.46	18.12	1.02	1.74	0.015	0.028	96	0	0.0	0.012	0.012	
9/26/2018	3.24	8.97	2.25	2.66	0.015	0.021	96	0	0.0	0.012	0.012	
9/27/2018	2.13	7.55	2.21	2.24	0.015	0.019	96	0	0.0	0.012	0.012	
9/28/2018	1.02	2.28	0.61	1.57	0.017	0.045	96	0	0.0	0.012	0.012	
9/29/2018	1.52	4.23	1.44	1.35	0.016	0.061	96	0	0.0	0.012	0.012	
9/30/2018	0.97	2.70	1.59	1.21	0.013	0.014	96	0	0.0	0.012	0.012	
Avg	2.38	8.64	1.62	2.11	0.014	0.018	96	0	0.0	0.012	0.012	
Min	0.67	1.21	0.52	0.70	0.013	0.013	96	0	0.0	0.012	0.012	
Max	7.46	35.68	3.73	5.36	0.017	0.061	96	0	0.0	0.013	0.013	

Note: % Exceeded are 4 hr compliance periods where 50% of the samples are greater than 0.3 NTU



Membrane Integrity																								
Membrane 1			Membrane 2			Membrane 3			Membrane 4			Membrane 5			Membrane 6			Membrane 7			Membrane 8			
Date	Air Hold Start Pressure (PSI)	Air Hold Stop Pressure (PSI)	Pass / Fail	Air Hold Start Pressure (PSI)	Air Hold Stop Pressure (PSI)	Pass / Fail	Air Hold Start Pressure (PSI)	Air Hold Stop Pressure (PSI)	Pass / Fail	Air Hold Start Pressure (PSI)	Air Hold Stop Pressure (PSI)	Pass / Fail	Air Hold Start Pressure (PSI)	Air Hold Stop Pressure (PSI)	Pass / Fail	Air Hold Start Pressure (PSI)	Air Hold Stop Pressure (PSI)	Pass / Fail	Air Hold Start Pressure (PSI)	Air Hold Stop Pressure (PSI)	Pass / Fail	Air Hold Start Pressure (PSI)	Air Hold Stop Pressure (PSI)	Pass / Fail
9/1/2018	14.9	14.5	PASS	14.5	14.1	PASS	14.6	14.1	PASS	14.7	14.2	PASS	14.3	14.3	PASS	14.5	14.5	PASS	14.5	14.3	PASS	14.6	14.2	PASS
9/2/2018	14.8	14.4	PASS	14.3	13.8	PASS	14.6	14.1	PASS	14.7	14.2	PASS	14.6	14.4	PASS	14.5	14.5	PASS	14.5	14.3	PASS	14.6	14.2	PASS
9/3/2018	14.5	14.2	PASS	14.3	13.8	PASS	14.5	14.0	PASS	14.6	14.3	PASS	14.5	14.3	PASS	14.5	14.3	PASS	14.5	14.3	PASS	14.4	14.2	PASS
9/4/2018	14.7	14.4	PASS	14.2	13.7	PASS	14.6	14.3	PASS	14.6	14.3	PASS	14.5	14.3	PASS	14.5	14.3	PASS	14.5	14.3	PASS	14.4	14.2	PASS
9/5/2018	14.7	14.3	PASS	14.2	13.7	PASS	14.5	14.2	PASS	14.5	14.2	PASS	14.5	14.2	PASS	14.5	14.2	PASS	14.5	14.2	PASS	14.5	14.2	PASS
9/6/2018	15.0	14.6	PASS	14.3	13.7	PASS	14.9	14.4	PASS	14.5	14.2	PASS	14.5	14.2	PASS	14.5	14.2	PASS	14.5	14.2	PASS	14.5	14.2	PASS
9/7/2018	14.7	14.3	PASS	14.5	14.1	PASS	14.6	14.1	PASS	14.5	14.3	PASS	14.5	14.3	PASS	14.4	13.8	PASS	14.5	14.2	PASS	14.8	14.5	PASS
9/8/2018	14.9	14.5	PASS	14.3	13.8	PASS	14.7	14.3	PASS	14.5	14.3	PASS	14.5	14.3	PASS	14.5	14.3	PASS	14.5	14.3	PASS	14.4	14.4	PASS
9/9/2018	14.9	14.5	PASS	14.2	13.7	PASS	14.6	14.1	PASS	14.5	14.2	PASS	14.5	14.2	PASS	14.5	14.2	PASS	14.5	14.2	PASS	14.4	14.0	PASS
9/10/2018	14.8	14.4	PASS	14.3	13.7	PASS	14.3	13.8	PASS	14.5	14.2	PASS	14.5	14.2	PASS	14.5	14.3	PASS	14.5	14.3	PASS	14.4	14.0	PASS
9/11/2018	15.6	15.5	PASS	14.2	13.6	PASS	14.5	15.4	PASS	14.5	14.2	PASS	14.5	14.2	PASS	14.5	14.2	PASS	14.5	14.2	PASS	14.5	14.6	PASS
9/12/2018	15.0	14.6	PASS	14.7	14.4	PASS	14.7	14.2	PASS	14.6	14.3	PASS	14.6	14.2	PASS	14.4	13.9	PASS	14.5	14.2	PASS	14.5	14.6	PASS
9/13/2018	14.8	14.4	PASS	14.2	13.7	PASS	14.5	14.0	PASS	14.6	14.3	PASS	14.6	14.3	PASS	14.5	15.6	PASS	14.4	14.1	PASS	14.6	14.2	PASS
9/14/2018	15.4	15.1	PASS	14.3	13.8	PASS	14.9	14.5	PASS	14.6	14.3	PASS	14.6	14.3	PASS	14.7	14.2	PASS	14.5	14.2	PASS	14.5	14.3	PASS
9/15/2018	14.7	14.4	PASS	14.3	13.8	PASS	14.9	14.4	PASS	14.6	14.3	PASS	14.6	14.3	PASS	15.1	14.8	PASS	14.5	14.3	PASS	14.5	14.2	PASS
9/16/2018	15.4	15.1	PASS	14.3	13.8	PASS	14.8	14.4	PASS	14.6	14.3	PASS	14.6	14.3	PASS	14.6	14.1	PASS	14.4	14.1	PASS	14.4	14.0	PASS
9/17/2018	14.6	14.2	PASS	14.3	13.8	PASS	14.9	14.5	PASS	14.5	14.3	PASS	14.5	14.3	PASS	14.5	14.1	PASS	14.4	14.1	PASS	14.7	14.4	PASS
9/18/2018	14.6	14.3	PASS	14.6	14.3	PASS	14.6	14.2	PASS	14.4	14.2	PASS	14.4	14.2	PASS	14.6	14.2	PASS	14.6	14.3	PASS	14.6	14.6	PASS
9/19/2018	14.9	14.5	PASS	14.3	13.8	PASS	15.5	15.3	PASS	14.6	14.3	PASS	14.6	14.3	PASS	14.3	13.9	PASS	14.6	14.4	PASS	14.7	14.4	PASS
9/20/2018	15.3	15.1	PASS	14.3	13.8	PASS	14.5	14.1	PASS	14.5	14.3	PASS	14.5	14.3	PASS	14.5	14.1	PASS	14.6	14.3	PASS	14.7	14.4	PASS
9/21/2018	14.7	14.3	PASS	14.3	13.7	PASS	14.5	15.3	PASS	14.5	14.2	PASS	14.5	14.2	PASS	14.3	13.8	PASS	14.5	14.2	PASS	14.6	14.3	PASS
9/22/2018	14.6	14.2	PASS	14.3	13.8	PASS	14.5	14.0	PASS	14.6	14.3	PASS	14.6	14.3	PASS	14.3	13.8	PASS	14.5	14.2	PASS	14.5	14.6	PASS
9/23/2018	14.6	14.2	PASS	14.3	13.7	PASS	14.7	14.3	PASS	14.4	14.1	PASS	14.4	14.1	PASS	14.4	13.8	PASS	14.4	14.0	PASS	15.2	14.8	PASS
9/24/2018	14.8	14.4	PASS	14.6	14.2	PASS	14.4	14.0	PASS	14.5	14.2	PASS	14.5	14.2	PASS	14.5	14.1	PASS	14.5	14.1	PASS	14.5	14.1	PASS
9/25/2018	14.8	14.4	PASS	14.6	14.3	PASS	14.5	14.1	PASS	14.6	14.3	PASS	14.6	14.3	PASS	14.4	13.9	PASS	14.4	14.1	PASS	14.5	14.2	PASS
9/26/2018	14.9	14.5	PASS	14.3	13.7	PASS	15.2	14.9	PASS	14.5	14.2	PASS	14.5	14.2	PASS	14.3	13.8	PASS	14.4	14.0	PASS	14.8	14.5	PASS
9/27/2018	14.7	14.4	PASS	14.3	13.7	PASS	14.4	13.9	PASS	14.5	14.2	PASS	14.5	14.2	PASS	14.3	13.8	PASS	14.5	14.2	PASS	14.6	14.3	PASS
9/28/2018	14.9	14.4	PASS	14.2	13.7	PASS	14.6	14.1	PASS	14.5	14.3	PASS	14.5	14.3	PASS	14.5	14.2	PASS	14.5	14.2	PASS	14.5	14.2	PASS
9/29/2018	14.7	14.4	PASS	14.2	13.7	PASS	14.5	14.6	PASS	14.5	14.2	PASS	14.5	14.2	PASS	14.4	14.1	PASS	14.4	14.1	PASS	14.5	14.2	PASS
9/30/2018	15.4	15.2	PASS	14.3	13.7	PASS	15.2	14.7	PASS	14.5	14.2	PASS	14.5	14.2	PASS	14.6	14.1	PASS	14.4	14.1	PASS	14.4	14.0	PASS

Integrity test performed every 24-hours



Chlorination

Date	Treated Water	RW Tank	Membrane Feed Water	Added pre-FW Tanks	Treated Water	Post FW Tanks	Added Post FW Tank
	Volume	OC/L	Free Cl ₂	OC/L	Free Cl ₂	Free Cl ₂	OC/L
	MG	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	Daily	Average	Average	Average	Average	Average	Average
	AIT-4000-1	AIT-1035-2	AIT-1035-2	AIT-4030-1	AIT-4030-1	AIT-4030-1	AIT-4030-1
9/1/2018	7.2	0.00	0.22	0.86	1.16	1.01	0.00
9/2/2018	7.4	0.00	0.15	0.94	1.19	1.02	0.00
9/3/2018	7.9	0.00	0.14	0.86	1.20	1.02	0.00
9/4/2018	8.6	0.00	0.13	0.96	1.18	1.01	0.00
9/5/2018	8.4	0.00	0.34	0.72	1.19	1.05	0.00
9/6/2018	7.7	0.00	0.53	0.62	1.18	1.06	0.00
9/7/2018	7.7	0.00	0.64	0.54	1.17	1.07	0.00
9/8/2018	7.8	0.00	0.47	0.88	1.15	1.04	0.00
9/9/2018	7.8	0.00	0.19	1.10	1.16	1.02	0.00
9/10/2018	7.8	0.00	0.04	1.25	1.21	0.99	0.00
9/11/2018	8.3	0.00	0.05	1.16	1.25	1.01	0.00
9/12/2018	8.4	0.00	0.21	0.90	1.24	1.04	0.00
9/13/2018	8.3	0.00	0.39	0.78	1.20	1.04	0.00
9/14/2018	8.5	0.00	0.44	0.73	1.17	1.05	0.00
9/15/2018	7.9	0.00	0.44	0.80	1.18	1.04	0.00
9/16/2018	8.0	0.00	0.36	0.86	1.16	1.03	0.00
9/17/2018	9.1	0.00	0.34	0.83	1.19	1.02	0.00
9/18/2018	8.4	0.00	0.36	0.83	1.18	1.02	0.00
9/19/2018	8.0	0.00	0.33	0.90	1.16	1.00	0.00
9/20/2018	8.2	0.00	0.23	1.06	1.17	0.99	0.00
9/21/2018	8.0	0.00	0.13	1.15	1.19	0.98	0.00
9/22/2018	7.9	0.00	0.12	1.15	1.24	1.00	0.00
9/23/2018	8.0	0.00	0.25	0.94	1.25	1.04	0.00
9/24/2018	8.1	0.00	0.32	0.94	1.20	1.04	0.00
9/25/2018	7.6	0.00	0.29	1.04	1.18	1.04	0.00
9/26/2018	8.3	0.00	0.12	1.18	1.18	1.01	0.00
9/27/2018	8.2	0.00	0.12	1.12	1.21	1.02	0.00
9/28/2018	7.8	0.00	0.29	0.94	1.22	1.07	0.00
9/29/2018	7.0	0.00	0.35	0.88	1.17	1.06	0.00
9/30/2018	7.1	0.00	0.39	0.80	1.19	1.06	0.00
Avg	8.0	0.00	0.28	0.92	1.19	1.03	0.00
Min	7.0	0.00	0.04	0.54	1.15	0.98	0.00
Max	9.1	0.00	0.64	1.25	1.25	1.07	0.00



Distribution System Monitoring
Chlorine Residual at Bacteriological Monitoring Stations (mg/L Free Cl₂)

WSSN:	0072 Akron			0390 Bangor Twp.			0400 Bangor Monitor Dist.			0470 Bay City							0485 Bay County				0517 Beaver Rd		0518 Beaver Twp		2180 Essexville	
	1	3	4	5	6	7	9	10	11	12	13	14	15	16	17	18	19	20	22	24	26	29	30	32		
9/1/2018																										
9/2/2018																										
9/3/2018																										
9/4/2018		0.42		0.20	0.93		0.90		0.43	0.10	0.11	0.42	0.10	0.72	0.22	0.71	0.72	0.73	0.63	0.60						
9/5/2018																									0.75	
9/6/2018																										
9/7/2018																										
9/8/2018																										
9/9/2018																										
9/10/2018																										
9/11/2018		0.45	0.20						0.52	0.14	0.20	0.55	0.13	0.50	0.25	0.57	0.74	0.66	0.46	0.69					0.77	
9/12/2018						0.93		0.87																		
9/13/2018																										
9/14/2018																										
9/15/2018																										
9/16/2018																										
9/17/2018																										
9/18/2018		0.46	0.28	0.24	0.99				0.31	0.10	0.18	0.56	0.10	0.82	0.25										0.81	
9/19/2018																										
9/20/2018																										
9/21/2018																										
9/22/2018																										
9/23/2018																										
9/24/2018																										
9/25/2018																										
9/26/2018																										
9/27/2018	0.04								0.45	0.12	0.10	0.35	0.10	0.75	0.13											
9/28/2018																										
9/29/2018									0.41	0.12	0.16	0.26	0.12	0.70	0.20											
9/30/2018																										
Average	0.04						0.90				0.31									0.65					0.78	
Min	0.04						0.87				0.10									0.46					0.75	
Max	0.04						0.93				0.82									0.74					0.81	



MONITORING STATION ADDRESSES

- | | | |
|---|---|--|
| <ul style="list-style-type: none"> 1. Sample station at corner of 5758 M-25 & F 3. Bangor Fire Station, 3921 Wheeler 4. BCDWS Admin. Bldg. 3933 Patterson Rd. 5. 7-11, 3543 S. Old Kawkawlin Rd. 6. Admiral Petroleum, 314 S Euclid Ave. 7. Sequin Lumber, 3881 Euclid Ave 9. B's Boutique, 2981 Midland Rd 10. Little Caesars, 3475 E North Union Rd | <ul style="list-style-type: none"> 11. Number 1 Fire Station, 1401 Center Ave 12. Number 2 Fire Station, 1000 Fremont Ave 13. Skizak's Sport Shop, 807 Salzburg Ave 14. Number 4 Fire Station, 212 S. Dean St 15. Number 5 Fire Station, 1209 Smith St 16. Bay City Hall, 301 Washington Ave 17. Skipper Buds Marina, 1809 S Water St 18. Bay Valley Animal Hospital 6015 WS Saginaw Rd | <ul style="list-style-type: none"> 19. Dore's M-84 Party Store, 6183 WS Saginaw Rd 20. Pump Station #13, 6000 WS Saginaw Rd 22. Duce's Char House, 432 N. Tuscola Rd 24. Little Learners Daycare, 1694 Cass Ave. 26. Wieland Contracting, 2443 S Mackinaw Rd 29. Sample Station, 2515 S. 11 Mile Rd 30. Sample Station, 340 W. Beaver Rd 32. Essexville City Hall, 1107 Woodside Ave |
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Distribution System Monitoring
Chlorine Residual at Bacteriological Monitoring Stations (mg/L Free Cl₂)

WSSN:	2465 Fraser Twp.		2960 Hampton Twp.		3565 Kawkawlin Twp.			3570 Kawkawlin Met.		4280 Merritt Twp.			4440 Monitor Twp.			5330 City Pinconning			5335 Pinconning Twp.			5540 Portsmouth			7125 Williams Twp.			7134 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				
9/1/2018																													
9/2/2018																													
9/3/2018																													
9/4/2018				0.44	0.10	0.14																							
9/5/2018																													
9/6/2018		0.53	0.61				1.00	0.44	0.37			0.30								0.36		0.32	0.56				0.24		
9/7/2018																													
9/8/2018																													
9/9/2018																													
9/10/2018																													
9/11/2018				0.53	0.13	0.22																							
9/12/2018											0.13																		
9/13/2018																													
9/14/2018																													
9/15/2018																													
9/16/2018																													
9/17/2018																													
9/18/2018																													
9/19/2018				0.29	0.10	0.15																							
9/20/2018																													
9/21/2018																													
9/22/2018																													
9/23/2018																													
9/24/2018																													
9/25/2018																													
9/26/2018																													
9/27/2018																													
9/28/2018																													
9/29/2018																													
9/30/2018																													
Average		0.57		0.22			0.71		0.28		0.22			0.60		0.34		0.48		0.36		0.34				0.24			
Min		0.53		0.10			0.44		0.19		0.13			0.38		0.30		0.39		0.36		0.10				0.24			
Max		0.61		0.53			1.00		0.37		0.30			0.90		0.37		0.56		0.36		0.56				0.24			



MONITORING STATION ADDRESSES

- | | | |
|--|--|---|
| <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> 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 Mungler 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 | <ul style="list-style-type: none"> 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. Salzborg & 9 Mile Rd 70. 11 Mile Elevated Tank, 5003 S. 11 Mile Rd 72. Lindy's Sales, 9051 M-25 |
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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

September, 2018

COUNTY	COMMUNITY	WSSN NUMBER	DISTRIBUTION SYSTEM SAMPLES					NUMBER REPEAT SAMPLES
			avg free cl2 mg/L	NUMBER REQUIRED	NUMBER COLLECTED	NUMBER POSITIVE	NUMBER REPEAT SAMPLES	
Tuscola	Akron	0072	0.04	1	1	0	0	
BAY	Bangor Township	0390	0.43	10	10	0	0	
BAY	Bangor-Monitor Dist.	0400	0.90	3	3	0	0	
BAY	Bay City	0470	0.31	40	42	0	0	
BAY	Bay County (Frankl./Monitor/Portsm.)	0485	0.65	10	10	0	0	
BAY	Beaver Road Area	0517	0.83	1	1	0	0	
BAY	Beaver Township	0518	0.13	2	2	0	0	
BAY	Essexville	2180	0.78	4	4	0	0	
BAY	Fraser Township	2465	0.57	2	2	0	0	
BAY	Hampton Township	2960	0.22	10	10	0	0	
BAY	Kawkawlin Township	3565	0.71	3	3	0	0	
BAY	Kawkawlin Metro Dist.	3570	0.28	2	2	0	0	
BAY	Merritt Township	4280	0.22	2	2	0	0	
BAY	Monitor Township	4440	0.60	6	6	0	0	
BAY	City of Pinconning	5330	0.34	2	2	0	0	
BAY	Pinconning Township	5335	0.48	2	2	0	0	
BAY	Portsmouth Township	5540	0.36	1	1	0	0	
BAY	Williams Township	7125	0.34	6	6	0	0	
Tuscola	Wisner	7134	0.24	1	1	0	0	

Average Free Cl2 Residual of All Distribution Sites

0.44 mg/L

- Total distribution samples 110
- Total distribution samples with detectable free cl2 residual 109
- Total distribution samples with no detectable free cl2 residual 1
- Total distribution samples with no detectable free cl2 residual and HPC was <500 1
- Total distribution samples with no detectable free cl2 residual and HPC was >500 0
- Percent of distribution samples with no detectable free cl2 residual 0.00%
- Percent shown line #6 in previous monthly report 0.00%

