

# Bay Area WTP

## Monthly Operations Report



April, 2019

Water Systems Serial Number: 0465

Ryan Goebel  
Ryan Goebel

Interim Water Plant Superintendent  
Title

F1  
Classification

# Bay Area Water Treatment Plant

## Monthly Operations Report

Supply Name: Bay Area Water System  
 WSSN: 0465

April, 2019  
 Month, Year

F1  
 Water Plant Classification

Bay  
 County

Ryan Goebel  
 Operator-in-charge

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

### Chemical Data

Sodium Hypochlorite on hand:	4,213	Gallons	Estimated Supply:	87.1	days
Caustic Soda on hand:	4,378	Gallons	Estimated Supply:	266.1	days
Corrosion Inhibitor on hand:	749	Gallons	Estimated Supply:	38.0	days
Hydrofluosilicic Acid on hand:	422	Gallons	Estimated Supply:	21.4	days
Aluminum Chlorohydrate on hand:	177	Gallons	Estimated Supply:	30.3	days
Sulfuric Acid on hand:	453	Gallons	Estimated Supply:	104.7	days
Sodium Bisulfite on hand:	745	Gallons	Estimated Supply:	200.0	days
Citric Acid on hand:	3,683	Gallons	Estimated Supply:	299.1	days
Cost of All Chemicals per Million Gallons:	73.69	Dollars			
Estimated Electrical Cost per Million Gallons:	110.65	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	N. Euclid	Lauria Road	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	
4/1/2019	0.00	6.20	6.20	0.28	0.00	0.04	6.48	3.21	3.10	6.32
4/2/2019	0.00	6.53	6.53	0.28	0.00	0.04	6.50	3.22	3.11	6.34
4/3/2019	0.00	6.55	6.55	0.27	0.00	0.04	6.30	3.07	2.93	6.00
4/4/2019	0.00	6.57	6.57	0.27	0.00	0.04	6.33	3.08	2.94	6.02
4/5/2019	0.00	6.28	6.28	0.26	0.00	0.04	6.20	3.02	2.97	5.99
4/6/2019	0.00	6.08	6.08	0.28	0.00	0.04	6.50	3.15	3.14	6.29
4/7/2019	0.00	6.08	6.08	0.28	0.00	0.04	6.65	3.19	3.16	6.35
4/8/2019	0.00	6.71	6.71	0.25	0.00	0.06	6.67	3.20	3.17	6.37
4/9/2019	0.00	7.29	7.29	0.25	0.00	0.06	6.69	3.19	3.16	6.35
4/10/2019	0.00	7.31	7.31	0.30	0.00	0.04	6.57	3.14	3.11	6.25
4/11/2019	0.00	7.28	7.28	0.31	0.00	0.02	6.58	3.15	3.12	6.27
4/12/2019	0.00	6.50	6.50	0.31	0.00	0.01	6.41	3.10	3.06	6.16
4/13/2019	0.00	5.85	5.85	0.28	0.00	0.03	7.19	3.55	3.32	6.87
4/14/2019	0.00	7.20	7.20	0.28	0.00	0.11	7.22	3.56	3.33	6.89
4/15/2019	0.00	7.23	7.23	0.22	0.00	0.11	6.48	3.26	3.06	6.32
4/16/2019	0.00	6.78	6.78	0.24	0.00	0.07	6.60	3.20	3.16	6.36
4/17/2019	0.00	6.68	6.68	0.24	0.00	0.07	6.66	3.21	3.17	6.38
4/18/2019	0.00	6.54	6.54	0.28	0.00	0.07	6.68	3.20	3.15	6.35
4/19/2019	0.00	6.57	6.57	0.28	0.00	0.02	6.54	3.21	3.12	6.33
4/20/2019	0.00	6.59	6.59	0.26	0.00	0.05	7.09	3.41	3.41	6.82
4/21/2019	0.00	6.98	6.98	0.26	0.00	0.05	7.12	3.42	3.42	6.84
4/22/2019	0.00	7.01	7.01	0.27	0.00	0.05	6.78	3.37	3.22	6.59
4/23/2019	0.00	6.94	6.94	0.27	0.00	0.04	6.81	3.39	3.23	6.61
4/24/2019	0.00	6.65	6.65	0.28	0.00	0.04	6.84	3.30	3.25	6.55
4/25/2019	0.00	6.66	6.66	0.28	0.00	0.03	6.86	3.31	3.26	6.57
4/26/2019	0.00	6.68	6.68	0.28	0.00	0.04	6.63	3.24	3.10	6.33
4/27/2019	0.00	6.65	6.65	0.28	0.00	0.04	6.51	3.20	3.13	6.33
4/28/2019	0.00	6.26	6.26	0.28	0.00	0.02	7.02	3.42	3.28	6.70
4/29/2019	0.00	6.46	6.46	0.28	0.00	0.02	7.04	3.43	3.29	6.72
4/30/2019	0.00	6.80	6.80	0.27	0.00	0.05	6.64	3.24	3.14	6.38
Total	0.00	199.93	199.93	8.16	0.00	1.37	200.62	97.66	95.00	192.66
Avg	0.00	6.66	6.66	0.27	0.00	0.05	6.69	3.26	3.17	6.42
Min	0.00	5.85	5.85	0.22	0.00	0.01	6.20	3.02	2.93	5.99
Max	0.00	7.31	7.31	0.31	0.00	0.11	7.22	3.56	3.42	6.89



Raw Water Analysis								
Date	Temp	pH	Turbidity		F <sup>-</sup>	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	
4/1/2019	4.21	7.89	0.74	2.24	0.10	0.39	Negative	Negative
4/2/2019	4.07	7.88	0.38	2.41	0.10	0.57	Negative	Negative
4/3/2019	4.00	7.90	0.31	0.99	0.09	0.50	Negative	Negative
4/4/2019	4.10	7.90	0.32	0.85	0.10	0.49	Negative	Negative
4/5/2019	4.25	7.90	0.24	0.49	0.10	0.51	Negative	Negative
4/6/2019	4.37	7.90	0.29	0.85	0.10	0.53	Negative	Negative
4/7/2019	4.57	7.92	0.61	1.31	0.10	0.28	Negative	Negative
4/8/2019	4.78	7.92	0.44	1.26	0.10	0.32	Negative	Negative
4/9/2019	5.20	7.92	0.42	1.42	0.09	0.33	Negative	Negative
4/10/2019	5.29	7.90	0.34	1.48	0.10	0.47	Negative	Negative
4/11/2019	5.39	7.88	0.22	0.67	0.10	0.63	Negative	Negative
4/12/2019	5.50	7.89	0.25	1.23	0.10	0.58	Negative	Negative
4/13/2019	5.71	7.87	8.57	75.98	0.09	0.34	Negative	Negative
4/14/2019	5.71	7.89	4.20	29.76	0.09	0.41	Negative	Negative
4/15/2019	5.78	7.86	1.83	12.09	0.09	0.71	Negative	Negative
4/16/2019	5.97	7.87	12.89	100.06	0.09	0.33	Negative	Negative
4/17/2019	6.33	7.86	6.74	100.06	0.10	0.52	Negative	Negative
4/18/2019	5.84	7.87	2.38	49.66	0.08	0.64	Negative	Negative
4/19/2019	5.82	7.89	2.06	10.87	0.08	0.58	Negative	Negative
4/20/2019	5.99	7.89	1.72	8.17	0.08	0.59	Negative	Negative
4/21/2019	6.40	7.91	7.66	29.83	0.09	0.30	Negative	Negative
4/22/2019	6.67	7.93	9.92	77.53	0.09	0.11	Negative	Negative
4/23/2019	6.60	7.88	1.98	15.59	0.09	0.61	Negative	Negative
4/24/2019	6.65	7.86	1.61	6.96	0.07	0.70	Negative	Negative
4/25/2019	6.73	7.84	1.22	3.84	0.07	0.81	Negative	Negative
4/26/2019	6.87	7.82	0.96	1.96	0.09	0.91	Negative	Negative
4/27/2019	7.07	7.84	1.18	4.66	0.10	0.81	Negative	Negative
4/28/2019	7.17	7.86	1.30	5.12	0.10	0.72	Negative	Negative
4/29/2019	7.27	7.87	0.83	2.43	0.11	0.70	Negative	Negative
4/30/2019	7.26	7.89	1.09	4.87	0.10	0.56	Negative	Negative
Avg	5.7	7.88	2.42	18.49	0.09	0.53	NA	NA
Min	4.0	7.82	0.22	0.49	0.07	0.11	NA	NA
Max	7.3	7.93	12.89	100.06	0.11	0.91	NA	NA



Finished Water Analysis																		
Date	Temp	pH	Phosphate	Fluoride		Free Cl <sub>2</sub>	Alkalinity (as CaCO <sub>3</sub> )		Chloride	Sulfate	Calcium (as CaCO <sub>3</sub> )	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	Index	Ratio	Index	Positive/Negative	
	°C		mg/L	mg/L		mg/L	mg/L		mg/L	mg/L	mg/L	mg/L	uS/cm				Calculated	Lab
	AIT-4040-1	AIT-4050-2	AIT-4040-5	Lab		AIT-4050-1	Lab		Lab	Lab	Lab	Lab	Lab					Total Coliform
4/1/2019	4.9	7.54	3.42	0.86	0.81	1.00	0	78	10	9	70	12.8	237	-1.05	1.11	0.37	Negative	Negative
4/2/2019	5.0	7.55	3.42	0.84		1.01	0	78	9	11	68	12.6	235	-1.05	0.82	0.38	Negative	Negative
4/3/2019	5.2	7.56	3.33	0.79		1.01	0	77	8	11	66	12.2	228	-1.05	0.73	0.36	Negative	Negative
4/4/2019	5.2	7.55	3.40	0.75		1.03	0	77	9	11	70	12.6	231	-1.04	0.77	0.37	Negative	Negative
4/5/2019	5.0	7.55	3.40	0.74		1.03	0	77	8	12	74	12.3	228	-1.02	0.67	0.38	Negative	Negative
4/6/2019	5.1	7.53	3.40	0.77		1.01	0	75	9	11	74	12.1	227	-1.05	0.82	0.40	Negative	Negative
4/7/2019	5.1	7.54	3.39	0.76		1.02	0	77	10	10	66	12.4	236	-1.08	0.96	0.38	Negative	Negative
4/8/2019	5.3	7.56	3.37	0.77		1.01	0	78	11	15	72	12.5	244	-1.02	0.73	0.49	Negative	Negative
4/9/2019	5.8	7.58	3.36	0.77	0.73	0.98	0	81	9	14	72	13.1	252	-0.96	0.64	0.41	Negative	Negative
4/10/2019	5.7	7.62	3.36	0.76		1.00	0	81	10	14	68	13.2	240	-0.95	0.71	0.43	Negative	Negative
4/11/2019	5.8	7.64	3.36	0.78		1.01	0	76	9	10	64	12.7	234	-0.98	0.90	0.37	Negative	Negative
4/12/2019	5.8	7.63	3.35	0.79		1.02	0	76	9	14	66	13.3	225	-0.98	0.64	0.44	Negative	Negative
4/13/2019	6.0	7.61	3.37	0.75		1.01	0	76	11	11	70	13.1	231	-0.96	1.00	0.44	Negative	Negative
4/14/2019	6.1	7.64	3.38	0.77		0.99	0	81	11	11	74	12.4	260	-0.89	1.00	0.41	Negative	Negative
4/15/2019	6.1	7.64	3.38	0.77	0.75	1.02	0	79	11	13	66	12.8	251	-0.95	0.81	0.44	Negative	Negative
4/16/2019	6.1	7.57	3.37	0.76		1.01	0	82	10	12	70	12.9	249	-0.97	0.83	0.40	Negative	Negative
4/17/2019	6.1	7.58	3.37	0.77		1.00	0	83	10	12	71	11.9	243	-0.95	0.83	0.39	Negative	Negative
4/18/2019	6.1	7.56	3.36	0.76		1.02	0	80	10	12	64	11.4	239	-1.03	0.83	0.41	Negative	Negative
4/19/2019	6.2	7.57	3.37	0.74		1.03	0	80	10	15	72	10.5	240	-0.97	0.67	0.46	Negative	Negative
4/20/2019	6.3	7.58	3.37	0.74		1.04	0	80	9	14	68	11.8	236	-0.98	0.64	0.42	Negative	Negative
4/21/2019	6.4	7.56	3.36	0.76		1.02	0	83	9	16	79	11.8	246	-0.92	0.56	0.43	Negative	Negative
4/22/2019	6.7	7.57	3.36	0.78	0.74	1.00	0	84	10	15	80	12.6	267	-0.89	0.67	0.43	Negative	Negative
4/23/2019	6.9	7.62	3.37	0.78		0.99	0	98	18	12	88	12.6	298	-0.74	1.46	0.47	Negative	Negative
4/24/2019	6.9	7.59	3.37	0.77		1.03	0	93	14	12	88	12.2	274	-0.78	1.19	0.43	Negative	Negative
4/25/2019	6.9	7.55	3.36	0.78		1.03	0	88	12	11	86	12.3	259	-0.85	1.12	0.40	Negative	Negative
4/26/2019	6.8	7.54	3.36	0.77		1.05	0	83	11	10	80	11.9	245	-0.93	1.08	0.38	Negative	Negative
4/27/2019	7.0	7.53	3.36	0.79		1.03	0	74	10	9	74	12.0	235	-1.01	1.14	0.40	Negative	Negative
4/28/2019	6.8	7.52	3.36	0.77		1.02	0	78	10	11	78	12.4	231	-0.97	0.88	0.40	Negative	Negative
4/29/2019	6.8	7.52	3.38	0.78	0.78	1.03	0	77	9	10	74	12.0	229	-1.00	0.95	0.36	Negative	Negative
4/30/2019	6.8	7.52	3.36	0.78		1.01	0	77	9	13	82	11.4	230	-0.96	0.69	0.42	Negative	Negative
Avg	6.0	7.57	3.37	0.77	0.76	1.02	0	80	10	12	73	12.3	243	-0.97	0.86	0.41	NA	NA
Min	4.9	7.52	3.33	0.74	0.73	0.98	0	74	8	9	64	10.5	225	-1.08	0.56	0.36	NA	NA
Max	7.0	7.64	3.42	0.86	0.81	1.05	0	98	18	16	88	13.3	298	-0.74	1.46	0.49	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
	NTU									
	AIT-1000-1		AIT-5030-1	AIT-1035-3	AIT-4000-1					Calculated
4/1/2019	0.74	2.24	1.43	0.61	0.016	0.017	96	0	0.0	0.011
4/2/2019	0.38	2.41	1.28	0.56	0.016	0.017	96	0	0.0	0.012
4/3/2019	0.31	0.99	1.00	0.38	0.016	0.017	96	0	0.0	0.011
4/4/2019	0.32	0.85	0.81	0.34	0.016	0.017	96	0	0.0	0.011
4/5/2019	0.24	0.49	0.75	0.31	0.016	0.017	96	0	0.0	0.011
4/6/2019	0.29	0.85	0.75	0.32	0.016	0.017	96	0	0.0	0.011
4/7/2019	0.61	1.31	1.15	0.48	0.017	0.017	96	0	0.0	0.011
4/8/2019	0.44	1.26	1.54	0.53	0.017	0.017	96	0	0.0	0.011
4/9/2019	0.42	1.42	1.68	0.54	0.017	0.017	96	0	0.0	0.011
4/10/2019	0.34	1.48	1.19	0.47	0.017	0.018	96	0	0.0	0.015
4/11/2019	0.22	0.67	0.88	0.32	0.018	0.019	96	0	0.0	0.011
4/12/2019	0.25	1.23	0.55	0.27	0.018	0.019	96	0	0.0	0.011
4/13/2019	8.57	75.98	0.98	2.07	0.018	0.018	96	0	0.0	0.011
4/14/2019	4.20	29.76	1.80	4.42	0.018	0.019	96	0	0.0	0.013
4/15/2019	1.83	12.09	1.48	2.88	0.018	0.019	96	0	0.0	0.011
4/16/2019	12.89	100.06	0.91	5.11	0.018	0.019	96	0	0.0	0.011
4/17/2019	6.74	100.06	1.27	7.98	0.018	0.018	96	0	0.0	0.011
4/18/2019	2.38	49.66	1.05	4.40	0.018	0.019	96	0	0.0	0.011
4/19/2019	2.06	10.87	0.84	3.09	0.018	0.018	96	0	0.0	0.011
4/20/2019	1.72	8.17	1.18	1.87	0.018	0.018	96	0	0.0	0.011
4/21/2019	7.66	29.83	1.00	2.64	0.018	0.018	96	0	0.0	0.011
4/22/2019	9.92	77.53	1.78	3.97	0.018	0.018	96	0	0.0	0.011
4/23/2019	1.98	15.59	1.66	4.08	0.018	0.018	96	0	0.0	0.011
4/24/2019	1.61	6.96	1.10	2.54	0.018	0.018	96	0	0.0	0.011
4/25/2019	1.22	3.84	0.92	1.86	0.018	0.018	96	0	0.0	0.011
4/26/2019	0.96	1.96	0.81	1.38	0.018	0.018	96	0	0.0	0.011
4/27/2019	1.18	4.66	1.03	1.14	0.018	0.018	96	0	0.0	0.011
4/28/2019	1.30	5.12	1.05	1.19	0.018	0.018	96	0	0.0	0.011
4/29/2019	0.83	2.43	1.04	1.03	0.018	0.018	96	0	0.0	0.011
4/30/2019	1.09	4.87	0.96	0.96	0.018	0.018	96	0	0.0	0.011
Avg	2.42	18.49	1.13	1.92	0.018	0.018	96	0	0.0	0.011
Min	0.22	0.49	0.55	0.27	0.016	0.017	96	0	0.0	0.011
Max	12.89	100.06	1.80	7.98	0.018	0.019	96	0	0.0	0.015

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



Date	Membrane Integrity																							
	Membrane 1			Membrane 2			Membrane 3			Membrane 4			Membrane 5			Membrane 6			Membrane 7			Membrane 8		
	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
4/1/2019	15.0	14.6	PASS	14.5	14.0	PASS	14.7	14.1	PASS	14.3	13.8	PASS	14.6	14.0	PASS	14.4	14.0	PASS	14.7	14.3	PASS	14.3	13.8	PASS
4/2/2019	15.3	15.1	PASS	14.5	14.2	PASS	14.6	14.0	PASS	14.2	13.8	PASS	14.6	14.0	PASS	14.3	13.9	PASS	14.8	14.4	PASS	14.4	13.9	PASS
4/3/2019	14.9	14.4	PASS	14.5	14.1	PASS	14.6	14.0	PASS	14.3	13.9	PASS	14.4	13.8	PASS	14.3	13.9	PASS	14.7	14.3	PASS	14.4	13.9	PASS
4/4/2019	15.0	14.6	PASS	14.5	14.1	PASS	14.7	14.1	PASS	14.2	13.8	PASS	14.5	13.9	PASS	14.3	13.9	PASS	14.7	14.3	PASS	14.4	13.9	PASS
4/5/2019	14.9	14.5	PASS	14.5	14.2	PASS	14.7	14.1	PASS	14.2	13.8	PASS	14.9	14.5	PASS	14.3	14.0	PASS	14.7	14.3	PASS	14.4	13.9	PASS
4/6/2019	14.9	14.6	PASS	14.5	14.1	PASS	14.7	14.2	PASS	14.4	13.8	PASS	14.5	13.9	PASS	14.3	14.0	PASS	14.6	14.2	PASS	14.4	13.9	PASS
4/7/2019	14.9	14.4	PASS	14.5	14.1	PASS	14.6	14.1	PASS	14.4	14.0	PASS	14.5	13.9	PASS	14.4	14.0	PASS	14.5	14.1	PASS	14.4	13.9	PASS
4/8/2019	14.8	14.4	PASS	14.6	14.3	PASS	14.5	13.9	PASS	14.2	13.8	PASS	14.7	14.1	PASS	14.5	14.1	PASS	14.6	14.2	PASS	14.4	13.9	PASS
4/9/2019	14.9	14.5	PASS	14.5	14.0	PASS	14.7	14.2	PASS	14.2	13.8	PASS	14.3	13.7	PASS	14.4	14.0	PASS	14.5	14.0	PASS	14.4	13.8	PASS
4/10/2019	14.8	14.4	PASS	14.5	14.2	PASS	14.7	14.2	PASS	14.3	13.9	PASS	14.3	13.6	PASS	14.3	13.9	PASS	14.5	14.0	PASS	14.4	13.9	PASS
4/11/2019	14.8	14.4	PASS	14.5	14.2	PASS	14.6	14.1	PASS	14.2	13.8	PASS	14.5	14.0	PASS	14.2	13.7	PASS	14.5	14.0	PASS	14.4	13.9	PASS
4/12/2019	14.9	14.5	PASS	14.5	14.2	PASS	14.6	14.1	PASS	14.2	13.8	PASS	14.3	13.6	PASS	14.3	13.9	PASS	14.4	13.8	PASS	14.5	14.0	PASS
4/13/2019	15.0	14.6	PASS	14.5	14.2	PASS	14.7	14.2	PASS	14.2	13.8	PASS	14.5	13.9	PASS	14.3	13.9	PASS	14.5	14.1	PASS	14.3	13.8	PASS
4/14/2019	14.8	14.3	PASS	14.6	14.2	PASS	14.6	14.0	PASS	14.2	13.8	PASS	14.6	14.0	PASS	14.4	14.0	PASS	14.8	14.4	PASS	14.4	14.0	PASS
4/15/2019	14.9	14.4	PASS	14.5	14.1	PASS	14.6	14.0	PASS	14.3	13.9	PASS	14.5	13.9	PASS	14.3	13.9	PASS	14.8	14.5	PASS	14.3	13.8	PASS
4/16/2019	14.7	14.3	PASS	14.5	14.1	PASS	14.5	13.9	PASS	14.3	13.9	PASS	14.5	13.9	PASS	14.3	14.0	PASS	14.7	14.4	PASS	14.3	13.8	PASS
4/17/2019	15.0	14.7	PASS	14.5	14.1	PASS	15.3	15.0	PASS	14.2	13.8	PASS	14.4	13.8	PASS	14.3	13.9	PASS	14.4	14.0	PASS	14.3	13.8	PASS
4/18/2019	14.9	14.4	PASS	14.4	14.0	PASS	14.6	14.1	PASS	14.4	13.9	PASS	14.5	13.9	PASS	14.4	14.0	PASS	14.8	14.5	PASS	14.3	13.8	PASS
4/19/2019	14.9	14.5	PASS	14.4	14.0	PASS	14.7	14.2	PASS	14.2	13.8	PASS	14.5	13.9	PASS	14.3	13.9	PASS	14.5	14.1	PASS	14.3	13.9	PASS
4/20/2019	14.8	14.4	PASS	14.5	14.2	PASS	14.8	14.4	PASS	14.3	13.9	PASS	14.5	13.9	PASS	14.3	14.0	PASS	14.8	14.4	PASS	14.3	13.8	PASS
4/21/2019	14.9	14.5	PASS	14.5	14.2	PASS	14.8	14.4	PASS	14.3	13.9	PASS	14.5	13.9	PASS	14.3	13.9	PASS	15.1	14.8	PASS	14.3	13.8	PASS
4/22/2019	14.8	14.3	PASS	14.5	14.1	PASS	14.7	14.2	PASS	14.2	13.8	PASS	14.3	13.7	PASS	14.3	14.0	PASS	14.6	14.2	PASS	14.3	13.8	PASS
4/23/2019	14.8	14.4	PASS	14.5	14.0	PASS	14.8	14.4	PASS	14.5	14.2	PASS	15.1	14.8	PASS	14.4	14.0	PASS	14.6	14.2	PASS	14.3	13.8	PASS
4/24/2019	14.9	14.4	PASS	14.5	14.0	PASS	14.6	14.1	PASS	14.3	13.9	PASS	14.9	14.5	PASS	14.3	13.9	PASS	14.6	14.2	PASS	14.4	13.9	PASS
4/25/2019	14.7	14.2	PASS	14.5	14.2	PASS	14.7	14.2	PASS	14.3	13.9	PASS	14.9	14.5	PASS	14.3	13.9	PASS	15.1	14.9	PASS	14.3	13.7	PASS
4/26/2019	14.8	14.4	PASS	14.5	14.1	PASS	14.6	14.0	PASS	14.4	14.0	PASS	14.9	14.5	PASS	14.5	14.1	PASS	14.5	14.0	PASS	14.2	13.7	PASS
4/27/2019	14.8	14.4	PASS	14.5	14.1	PASS	14.4	13.9	PASS	14.3	14.0	PASS	15.0	14.6	PASS	14.3	13.9	PASS	14.7	14.3	PASS	14.3	13.8	PASS
4/28/2019	14.8	14.4	PASS	14.5	14.1	PASS	14.6	14.1	PASS	14.3	14.0	PASS	14.9	14.4	PASS	14.3	14.0	PASS	14.6	14.1	PASS	14.3	13.7	PASS
4/29/2019	14.9	14.5	PASS	14.5	14.2	PASS	14.6	14.1	PASS	14.3	14.0	PASS	14.9	14.5	PASS	14.4	14.0	PASS	14.5	14.1	PASS	14.3	13.8	PASS
4/30/2019	14.9	14.5	PASS	14.5	14.1	PASS	14.5	13.9	PASS	14.3	14.0	PASS	14.9	14.4	PASS	14.3	14.0	PASS	14.8	14.5	PASS	14.3	13.8	PASS

Integrity test performed every 24-hours



Treatment Chemical Dosages										
Date	Treated Water	Sodium Hypochlorite				Phosphoric Acid			Hydrofluorosilicic Acid	
		Raw Water	Membrane Feed Water	Added pre-FW Tanks	Treated Water	Post FW Tanks	Dose pre-FW Tanks	Post FW Tanks	Dose pre-FW Tanks	Post FW Tanks
	Volume	Free Cl <sub>2</sub>	Free Cl <sub>2</sub>	OCL	Free Cl <sub>2</sub>	Free Cl <sub>2</sub>	PO <sub>4</sub>	PO <sub>4</sub>	F	
	MG	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	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		
4/1/2019	6.5	0.39	0.34	0.76	1.08	1.00	3.47	3.42	0.69	0.86
4/2/2019	6.5	0.57	0.38	0.70	1.11	1.01	3.45	3.42	0.60	0.84
4/3/2019	6.3	0.50	0.43	0.70	1.07	1.01	3.46	3.33	0.60	0.79
4/4/2019	6.3	0.49	0.41	0.70	1.12	1.03	3.48	3.40	0.60	0.75
4/5/2019	6.2	0.51	0.42	0.66	1.08	1.03	3.48	3.40	0.60	0.74
4/6/2019	6.5	0.53	0.43	0.68	1.11	1.01	3.48	3.40	0.62	0.77
4/7/2019	6.6	0.28	0.35	0.76	1.09	1.02	3.48	3.39	0.62	0.76
4/8/2019	6.7	0.32	0.31	0.80	1.09	1.01	3.48	3.37	0.62	0.77
4/9/2019	6.7	0.33	0.24	0.84	1.09	0.98	3.48	3.36	0.62	0.77
4/10/2019	6.6	0.47	0.30	0.74	1.11	1.00	3.50	3.36	0.62	0.76
4/11/2019	6.6	0.63	0.40	0.66	1.11	1.01	3.50	3.36	0.62	0.78
4/12/2019	6.4	0.58	0.47	0.60	1.12	1.02	3.51	3.35	0.62	0.79
4/13/2019	7.2	0.34	0.41	0.73	1.07	1.01	3.53	3.37	0.62	0.75
4/14/2019	7.2	0.41	0.28	0.82	1.12	0.99	3.54	3.38	0.62	0.77
4/15/2019	6.5	0.71	0.40	0.64	1.13	1.02	3.54	3.38	0.62	0.77
4/16/2019	6.6	0.33	0.42	0.75	1.13	1.01	3.54	3.37	0.62	0.76
4/17/2019	6.7	0.52	0.28	0.88	1.10	1.00	3.54	3.37	0.62	0.77
4/18/2019	6.7	0.64	0.40	0.71	1.15	1.02	3.56	3.36	0.62	0.76
4/19/2019	6.5	0.58	0.44	0.66	1.11	1.03	3.56	3.37	0.62	0.74
4/20/2019	7.1	0.59	0.47	0.62	1.13	1.04	3.56	3.37	0.64	0.74
4/21/2019	7.1	0.30	0.37	0.80	1.10	1.02	3.56	3.36	0.65	0.76
4/22/2019	6.8	0.11	0.19	0.97	1.11	1.00	3.57	3.36	0.65	0.78
4/23/2019	6.8	0.61	0.18	0.89	1.18	0.99	3.58	3.37	0.65	0.78
4/24/2019	6.8	0.70	0.37	0.74	1.15	1.03	3.58	3.37	0.65	0.77
4/25/2019	6.9	0.81	0.48	0.60	1.13	1.03	3.58	3.36	0.65	0.78
4/26/2019	6.6	0.91	0.64	0.47	1.14	1.05	3.58	3.36	0.65	0.77
4/27/2019	6.5	0.81	0.70	0.46	1.09	1.03	3.58	3.36	0.63	0.79
4/28/2019	7.0	0.72	0.65	0.55	1.10	1.02	3.58	3.36	0.63	0.77
4/29/2019	7.0	0.70	0.62	0.50	1.10	1.03	3.59	3.38	0.63	0.78
4/30/2019	6.6	0.56	0.56	0.59	1.09	1.01	3.59	3.36	0.63	0.78
Avg	6.7	0.53	0.41	0.70	1.11	1.02	3.53	3.37	0.63	0.77
Min	6.2	0.11	0.18	0.46	1.07	0.98	3.45	3.33	0.60	0.74
Max	7.2	0.91	0.70	0.97	1.18	1.05	3.59	3.42	0.69	0.86





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 <sub>2</sub>	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	
4/1/2019	48.0	2,606	0.39	1012	28.7	23.7	6.3	568	1.00	565.96	1,577.70	4.2	12.00	Y
4/2/2019	42.3	2,957	0.57	1695	28.3	20.2	6.3	524	0.99	518.54	2,213.26	4.1	12.00	Y
4/3/2019	39.8	3,144	0.50	1562	28.3	20.5	6.0	557	0.97	543.02	2,105.46	4.0	12.00	Y
4/4/2019	40.5	3,088	0.49	1513	28.7	24.7	6.0	607	1.00	608.94	2,122.07	4.1	12.00	Y
4/5/2019	43.0	2,906	0.51	1484	28.1	18.1	6.0	529	1.00	526.45	2,010.81	4.3	12.00	Y
4/6/2019	51.8	2,417	0.53	1278	28.7	23.8	6.3	572	1.00	569.13	1,846.99	4.4	12.00	Y
4/7/2019	52.4	2,386	0.28	680	28.7	22.5	6.3	553	0.98	543.13	1,222.66	4.6	12.00	Y
4/8/2019	52.7	2,375	0.32	759	28.8	22.9	6.4	555	0.98	545.15	1,304.13	4.8	12.00	Y
4/9/2019	45.5	2,749	0.33	898	28.7	23.5	6.4	563	0.97	549.04	1,447.26	5.2	8.00	Y
4/10/2019	42.0	2,982	0.47	1414	28.7	23.5	6.3	573	0.97	554.60	1,968.56	5.3	8.00	Y
4/11/2019	42.1	2,969	0.63	1874	28.8	24.4	6.3	580	1.00	581.84	2,455.94	5.4	8.00	Y
4/12/2019	39.3	3,186	0.58	1839	28.7	22.1	6.2	565	1.00	566.68	2,405.98	5.5	8.00	Y
4/13/2019	50.3	2,487	0.34	855	28.8	24.3	6.9	529	0.98	519.46	1,373.99	5.7	8.00	Y
4/14/2019	51.3	2,438	0.41	994	28.7	24.3	6.9	527	0.96	506.82	1,500.97	5.7	8.00	Y
4/15/2019	51.5	2,427	0.71	1735	28.8	24.8	6.3	581	1.00	582.87	2,318.09	5.8	8.00	Y
4/16/2019	47.7	2,623	0.33	873	28.3	19.3	6.4	513	0.99	506.86	1,379.75	6.0	8.00	Y
4/17/2019	41.7	2,999	0.52	1549	28.8	23.5	6.4	562	0.97	543.85	2,092.74	6.3	8.00	Y
4/18/2019	41.9	2,988	0.64	1902	28.8	25.0	6.4	580	0.98	565.85	2,468.05	5.8	8.00	Y
4/19/2019	40.8	3,068	0.58	1780	28.7	24.2	6.3	572	1.02	581.73	2,361.93	5.8	8.00	Y
4/20/2019	49.8	2,510	0.59	1493	28.4	22.3	6.8	509	1.02	520.72	2,013.27	6.0	8.00	Y
4/21/2019	50.0	2,499	0.30	748	28.7	24.7	6.8	535	0.99	529.06	1,277.48	6.4	8.00	Y
4/22/2019	48.6	2,573	0.11	290	28.7	25.4	6.6	563	0.98	552.69	842.55	6.7	8.00	Y
4/23/2019	42.8	2,920	0.61	1767	28.8	23.6	6.6	543	0.97	525.75	2,292.87	6.6	8.00	Y
4/24/2019	40.8	3,063	0.70	2146	28.8	24.8	6.6	561	1.02	570.05	2,715.56	6.7	8.00	Y
4/25/2019	42.1	2,974	0.81	2396	28.8	25.9	6.6	570	1.02	579.42	2,975.89	6.7	8.00	Y
4/26/2019	45.1	2,775	0.91	2528	28.8	25.7	6.3	590	1.02	603.17	3,131.36	6.9	8.00	Y
4/27/2019	55.6	2,251	0.81	1834	28.8	23.0	6.3	561	1.02	570.42	2,404.17	7.1	8.00	Y
4/28/2019	55.9	2,238	0.72	1605	28.7	22.9	6.7	528	1.00	526.15	2,131.19	7.2	8.00	Y
4/29/2019	55.9	2,237	0.70	1576	28.8	23.7	6.7	535	1.02	544.01	2,120.39	7.3	8.00	Y
4/30/2019	49.2	2,543	0.56	1428	28.8	23.9	6.4	566	1.00	567.69	1,995.42	7.3	8.00	Y
Avg	46.7	2,713	0.53	1,450	28.7	23.4	6.4	556	0.99	552.30	2,002.55	5.7	9.07	NA
Min	39.3	2,237	0.11	290	28.1	18.1	6.0	509	0.96	506.82	842.55	4.0	8.00	NA
Max	55.9	3,186	0.91	2,528	28.8	25.9	6.9	607	1.02	608.94	3,131.36	7.3	12.00	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	22	24	26	29	30	32
4/1/2019																								1.05
4/2/2019	0.38	0.66	0.63	0.64	0.90											0.51	0.65	0.73	0.59	0.82			0.62	
4/3/2019									0.91	0.47	0.72	0.79	0.52	1.00	0.73									
4/4/2019						0.88	0.91																	
4/5/2019																								
4/6/2019																								
4/7/2019																								
4/8/2019									0.67	0.40	0.47	0.85	0.50	0.91	0.84									1.09
4/9/2019		0.53	0.39													0.44	0.71	0.82	0.63	0.81			0.41	
4/10/2019																					0.96			
4/11/2019								0.95	0.69	0.31	0.61	0.77	0.33	0.86	0.62									
4/12/2019																								
4/13/2019																								
4/14/2019																								
4/15/2019																								0.90
4/16/2019		0.59	0.56	0.55	0.90																			
4/17/2019									0.64	0.33	0.80	0.61	0.36	0.90	0.87									
4/18/2019																								
4/19/2019																								
4/20/2019																								
4/21/2019																								
4/22/2019									0.70	0.53	0.72		0.28	0.95	0.87									0.85
4/23/2019																								
4/24/2019																								
4/25/2019									0.51	0.22	0.41	0.58	0.29	0.75	0.57									
4/26/2019																								
4/27/2019																								
4/28/2019																								
4/29/2019																								
4/30/2019																								
Average	0.38			0.64				0.91					0.63					0.67			0.96		0.52	0.97
Min	0.38			0.39				0.88					0.22					0.44			0.96		0.41	0.85
Max	0.38			0.90				0.95					1.00					0.82			0.96		0.62	1.09



**MONITORING STATION ADDRESSES**

- |  |   |   |
|--|---|---|
| 1. Sample station at corner of 5758 M-25 & F | 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         | 22. Duce's Char House, 432 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 <sub>2</sub> )																								
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
4/1/2019			0.69	0.52	0.48																			
4/2/2019											0.36									0.68	0.67	0.75	0.69	0.39
4/3/2019																								
4/4/2019	0.67	0.72				0.69	0.49		0.66				0.90	0.78	0.76	0.52		0.65	0.72					
4/5/2019																								
4/6/2019																								
4/7/2019																								
4/8/2019			0.84	0.55	0.70																			
4/9/2019											0.54										0.68	0.47	0.37	
4/10/2019																								
4/11/2019								0.87	0.67				0.98	0.73	0.75		0.71							
4/12/2019																								
4/13/2019																								
4/14/2019																								
4/15/2019			0.73	0.72	0.65																			
4/16/2019																								
4/17/2019																								
4/18/2019																								
4/19/2019																								
4/20/2019																								
4/21/2019																								
4/22/2019			0.62																					
4/23/2019																								
4/24/2019																								
4/25/2019																								
4/26/2019																								
4/27/2019																								
4/28/2019																								
4/29/2019																								
4/30/2019																								
Average	0.70		0.65			0.68			0.67		0.45		0.82			0.62		0.69		0.68		0.61		0.39
Min	0.67		0.48			0.49			0.66		0.36		0.73			0.52		0.65		0.68		0.37		0.39
Max	0.72		0.84			0.87			0.67		0.54		0.98			0.71		0.72		0.68		0.75		0.39



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			
				April, 2019			
COUNTY	COMMUNITY	WSSN NUMBER	DISTRIBUTION SYSTEM SAMPLES				
			avg free cl2 mg/L	NUMBER REQUIRED	NUMBER COLLECTED	NUMBER POSITIVE	NUMBER REPEAT SAMPLES
Tuscola	Akron	0072	0.38	1	1	0	0
BAY	Bangor Township	0390	0.64	10	10	0	0
BAY	Bangor-Monitor Dist.	0400	0.91	3	3	0	0
BAY	Bay City	0470	0.63	40	41	0	0
BAY	Bay County (Frankl./Monitor/Portsm.)	0485	0.67	10	10	0	0
BAY	Beaver Road Area	0517	0.96	1	1	0	0
BAY	Beaver Township	0518	0.52	2	2	0	0
BAY	Essexville	2180	0.97	4	4	0	0
BAY	Fraser Township	2465	0.70	2	2	0	0
BAY	Hampton Township	2960	0.65	10	10	0	0
BAY	Kawkawlin Township	3565	0.68	3	3	0	0
BAY	Kawkawlin Metro Dist.	3570	0.67	2	2	0	0
BAY	Merritt Township	4280	0.45	2	2	0	0
BAY	Monitor Township	4440	0.82	6	6	0	0
BAY	City of Pinconning	5330	0.62	2	2	0	0
BAY	Pinconning Township	5335	0.69	2	2	0	0
BAY	Portsmouth Township	5540	0.68	1	1	0	0
BAY	Williams Township	7125	0.61	6	6	0	0
Tuscola	Wisner	7134	0.39	1	1	0	0
Average Free Cl2 Residual of All Distribution Sites			0.66	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			NA				
5. Total distribution samples with no detectable free cl2 residual and HPC was >500			NA				
6. Percent of distribution samples with no detectable free cl2 residual			0.00%				
7. Percent shown line #6 in previous monthly report			0.00%				

