

**MONTHLY OPERATION REPORT OF
WATER TREATMENT PLANT**

SUPPLY NAME: CITY OF ADRIAN
WSSN: 0040

Tim Ritchie
Operator-in-Charge

April-20
Month/Year

F-1, S-3
Certification of Operator-in-Charge

F-1
Water Plant Classification

Electronically Submitted 5/5/20
Signature of Operator-in-Charge
EGLE-DWEH-JACKSON@MICHIGAN.GOV

LENAWEE
County

Treatment Rate and Filter Data

Maximum Treatment Rate:	<u>2.781</u>	Million Gallons per Day
Rated Plant Capacity:	<u>8.0</u>	Million Gallons per Day
Average Filter Run:	<u>150.1</u>	Hours
Average Head Loss:	<u>1.7</u>	Feet
Average Filtration Rate:	<u>0.98</u>	Gallons Per Square Feet per Minute
Maximum Filtration Rate:	<u>1.14</u>	Gallons Per Square Feet per Minute
Average Wash Water Use:	<u>1.9</u>	Percent of Treated Water

Chemical Data

Sodium Hypochlorite on hand	<u>44,194</u>	lb.	Est. supply:	<u>82.5</u>	days
Ferric Sulfate on hand	<u>78,416</u>	lb.	Est. supply:	<u>69.2</u>	days
Lime (CaO) on hand	<u>42.00</u>	Tons	Est. supply:	<u>14.3</u>	days
Cost of All Chemicals per Million Gallons:	<u>\$308.98</u>	dollars			
Total Power Cost per Million Gallons:	<u>\$161.13</u>	dollars			

Remarks

Number of filter confluence samples > 0.3 NTU:	<u>0</u>
Number of filter confluence compliance samples collected:	<u>180</u>
Percent of filter confluence samples > 0.3 NTU:	<u>0</u>

Did any individual filter 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.	<u>NO</u>
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.	<u>NO</u>
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.	<u>NO</u>
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.	<u>NO</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 , indicate date(s) and duration on a separate sheet.	<u>NO</u>

MICHIGAN EGLE

COAGULATION PARAMETERS

WSSN 0040

MONTH/YR.

Apr-20

Date	Surface Water Mil Gals Treated	Well Water Mil Gals Treated	Total Mil Gals Treated Raw	High Service Mil Gals Pumped	Ferric Sulfate mg/L	Powdered Activated Carbon mg/L	Turbidity, Units						No. of 4 Hr. Comp Periods	No. of 4 Hr Comp Periods >0.3 NTU	No. of Samples >0.3 NTU	Plant Tap NTU	MAX Plant Tap NTU
					As Fe ₂ SO ₄	NSF 60 Max: 250	Raw		Applied	Filter Confluence							
							NSF 60 Max: 600	Avg.	Max.	Avg.	No. of Samples	Comp. Period Avg.					
1	1.194	1.327	2.521	2.460	25.7	4.6	35.5	41.8	0.7	24	0.04	0.07	6	0	0	0.03	0.04
2	1.223	1.285	2.508	2.432	27.5	5.4	26.3	31.0	1.0	24	0.04	0.05	6	0	0	0.04	0.06
3	1.239	1.288	2.527	2.462	26.1	5.7	16.2	19.2	0.6	24	0.04	0.06	6	0	0	0.04	0.06
4	1.152	1.370	2.522	2.323	27.0	5.4	12.8	14.4	0.8	24	0.03	0.05	6	0	0	0.03	0.04
5	1.144	1.354	2.498	2.450	25.8	5.5	11.4	11.9	0.7	24	0.03	0.04	6	0	0	0.03	0.04
6	1.355	1.426	2.781	2.475	24.9	4.5	11.1	12.5	0.7	24	0.04	0.06	6	0	0	0.03	0.05
7	1.079	1.317	2.396	2.464	27.0	4.2	10.1	13.0	0.5	23	0.04	0.07	6	0	0	0.04	0.05
8	1.132	1.374	2.506	2.482	25.9	4.6	7.0	7.6	0.7	24	0.04	0.08	6	0	0	0.04	0.05
9	1.236	1.323	2.559	2.505	26.0	4.9	8.4	11.5	0.8	24	0.04	0.07	6	0	0	0.05	0.07
10	1.299	1.214	2.513	2.347	25.2	3.4	9.3	9.9	0.6	24	0.05	0.06	6	0	0	0.05	0.06
11	1.279	1.243	2.522	2.511	26.1	5.3	9.6	9.8	0.5	24	0.04	0.05	6	0	0	0.03	0.05
12	1.280	1.237	2.517	2.463	26.7	4.9	7.9	8.9	0.8	24	0.03	0.04	6	0	0	0.04	0.05
13	1.359	1.198	2.557	2.456	24.2	4.2	7.4	7.9	0.6	24	0.04	0.04	6	0	0	0.04	0.04
14	1.347	1.176	2.523	2.411	25.5	6.6	6.1	7.0	0.5	24	0.04	0.05	6	0	0	0.04	0.05
15	1.315	1.267	2.582	2.469	25.8	4.8	15.1	19.4	0.7	23	0.04	0.05	6	0	0	0.04	0.06
16	1.318	1.191	2.509	2.463	25.6	4.8	6.7	8.3	0.5	24	0.04	0.05	6	0	0	0.04	0.06
17	1.297	1.212	2.509	2.398	25.6	5.2	4.1	4.7	0.6	24	0.04	0.05	6	0	0	0.04	0.05
18	1.306	1.211	2.517	2.372	25.4	5.6	3.4	3.8	0.6	24	0.04	0.05	6	0	0	0.04	0.05
19	1.285	1.230	2.515	2.385	25.7	4.3	4.8	6.8	0.6	24	0.04	0.05	6	0	0	0.04	0.05
20	1.159	1.342	2.501	2.451	26.4	6.5	7.5	9.7	0.7	24	0.04	0.06	6	0	0	0.04	0.05
21	1.143	1.379	2.522	2.429	26.9	5.7	6.0	7.4	0.7	24	0.04	0.05	6	0	0	0.04	0.05
22	1.141	1.379	2.520	2.440	26.0	5.9	4.5	5.2	1.1	24	0.04	0.08	6	0	0	0.04	0.06
23	1.129	1.382	2.511	2.495	26.4	6.1	3.4	4.0	0.7	24	0.04	0.07	6	0	0	0.04	0.06
24	1.210	1.273	2.483	2.411	25.1	5.9	3.0	3.1	0.7	24	0.03	0.06	6	0	0	0.04	0.04
25	1.214	1.255	2.469	2.342	25.2	5.4	3.1	3.5	0.7	24	0.04	0.06	6	0	0	0.04	0.07
26	1.243	1.236	2.506	2.385	25.4	5.4	3.3	3.5	0.8	24	0.03	0.04	6	0	0	0.04	0.04
27	1.402	1.353	2.755	2.544	23.9	5.3	4.3	5.7	0.9	24	0.03	0.04	6	0	0	0.04	0.04
28	1.362	1.328	2.690	2.546	25.6	5.7	6.0	7.3	0.8	24	0.04	0.05	6	0	0	0.04	0.06
29	1.247	1.271	2.518	2.522	25.7	5.3	4.2	4.9	0.5	24	0.03	0.05	6	0	0	0.04	0.06
30	1.410	1.240	2.650	2.441	24.9	5.3	3.6	3.9	0.5	24	0.04	0.06	6	0	0	0.04	0.05
31																	
AVG	1.250	1.289	2.540	2.444	25.8	5.2	8.7		0.7	24	0.04	0.06	6	0	0	0.04	0.05
MAX	1.410	1.426	2.781	2.546	27.5	6.6	35.5	41.8	1.1	24	0.05	0.08	6	0	0	0.05	0.07
MIN	1.079	1.176	2.396	2.323	23.9	3.4	3.0		0.5	23		0.04	6	0	0	0.03	0.04
Total	37.499	38.681	76.207	73.334									180	0	0		

MICHIGAN EGLE

FLUORIDATION AND CHLORINATION

WSSN 0040

MONTH/YR. Apr-20

DATE	Fluoride Applied as F mg/L NSF 60 Max: 6mg/L	FLUORIDE ANALYSES mg/l				APPLIED NAOCL (15.5%)		CHLORINE RESIDUAL mg/L									
		SURF. 14	WELL 15	TAP 16	DIST. 17	FILTER INFLUENT 19	CLEARWELL INFLUENT 20	FILTER INFLUENT		FILTER EFFLUENT		CLEARWELL INFLUENT		PLANT TAP		CT	
								FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL		
								21	22	23	24	25	26	27	28		MIN FREE CL ₂ RES 29
1	0.40		0.55	0.73	0.62		4.0					1.8	2.2	1.5	1.6	1.30	16.63
2	0.40	0.39	0.55	0.65			4.3					1.9	1.9	1.8	1.8	1.60	17.71
3	0.30		0.56	0.70			4.1					1.8	1.8	1.7	1.7	1.60	20.05
4	0.30		0.59	0.64			4.2					2.1	2.3	1.6	1.6	1.50	19.53
5	0.30		0.59	0.70			4.4					2.1	2.2	1.7	1.8	1.60	18.49
6	0.40		0.72	0.76			4.4					2.2	2.3	1.7	1.8	1.50	18.07
7	0.40		0.74	0.71	0.68		4.4					2.0	2.1	1.8	1.9	1.70	23.20
8	0.40		0.74	0.78	0.66		4.2					1.9	1.9	1.9	2.0	1.60	23.17
9	0.30	0.54	0.75	0.59			4.3					2.2	2.6	1.9	1.9	1.80	27.42
10	0.30		0.77	0.68			4.2					1.4	1.6	2.0	2.1	1.90	26.08
11	0.40		0.55	0.77			4.3					1.6	1.8	2.1	2.1	1.90	24.07
12	0.40		0.57	0.68			4.2					1.7	1.9	2.0	2.1	1.90	27.88
13	0.30		0.59	0.65			3.7					2.7	2.7	1.8	1.9	1.60	21.09
14	0.40		0.57	0.70	0.58		3.6					1.5	1.5	1.6	1.7	1.50	19.77
15	0.30		0.57	0.62	0.62		3.7					1.9	2.0	1.7	1.7	1.60	16.23
16	0.20	0.42	0.56	0.51			3.9					1.7	1.7	1.7	1.8	1.50	20.57
17	0.30		0.61	0.56			4.3					1.9	1.9	1.9	2.0	1.70	17.14
18	0.50		0.60	0.79			4.1					2.0	2.0	1.8	1.9	1.70	18.38
19	0.40		0.60	0.72			4.1					2.0	2.1	1.8	1.9	1.70	20.63
20	0.40		0.71	0.66			4.3					1.9	2.0	1.8	1.9	1.60	20.25
21	0.40		0.79	0.75	0.70		4.5					2.1	2.3	2.0	2.1	1.80	22.96
22	0.30		0.79	0.76	0.71		4.3					1.7	1.7	1.9	2.0	1.60	20.76
23	0.30	0.54	0.71	0.69			4.5					1.4	1.6	2.0	2.1	1.70	21.90
24	0.20		0.74	0.68			4.3					1.9	2.3	1.9	2.0	1.80	27.11
25	0.40		0.77	0.84			4.2					2.2	2.4	1.9	2.0	1.80	28.50
26	0.40		0.76	0.81			4.1					1.9	1.9	1.8	1.9	1.70	25.14
27	0.40		0.79	0.84			4.1					1.9	2.3	1.7	1.9	1.60	21.57
28	0.30		0.51	0.65	0.69		4.1					1.9	2.1	1.7	1.8	1.50	21.47
29	0.30		0.56	0.61			4.1					2.2	2.1	1.7	1.8	1.60	20.86
30	0.20	0.44	0.53	0.57			4.4					1.9	1.8	1.8	1.8	1.70	23.23
31																	
AVG	0.34	0.49	0.66	0.69	0.66	0.0	4.2	0.0	0.0	0.0	0.0	1.9	2.0	1.8	1.9	1.67	21.98
MAX	0.50	0.54	0.79	0.84	0.71	0.0	4.5	0.0	0.0	0.0	0.0	2.7	2.7	2.1	2.1	1.90	28.50
MIN	0.20	0.39	0.51	0.51	0.58	0.0	3.6	0.0	0.0	0.0	0.0	1.4	1.5	1.5	1.6	1.30	16.23

MICHIGAN EGLE

CHEMICAL ANALYSES

WSSN 0040

MONTH /YR.

Apr-20

DATE	pH		TOTAL HARDNESS as CaCO3 mg/l		TOTAL ALKALINITY as CaCO3 mg/l		NON-CARBONATE HARDNESS as CaCO3 mg/l		CALCIUM as Ca ⁺⁺ mg/l		MAGNESIUM as Mg ⁺⁺ mg/l		CHLORIDE as Cl ⁻ mg/l		SULFATE as SO ₄ ²⁻ mg/l		SULFATE RATIO	NITRATE as N	
	RAW	TAP	RAW	TAP	RAW	TAP	RAW	TAP	RAW	TAP	RAW	TAP	RAW	TAP	RAW	TAP	Tap	RAW	TAP
	29	30	31	32	33	34	35	36	37	38	39	40	41	42	41	42	43	44	45
1	7.4	9.1	354	144	258	65	96	79	266	118	88	26	24.0	29.0					
2	7.4	9.0	318	140	247	71	71	69	232	118	86	22							
3	7.5	9.4	324	172	256	95	68	77	278	150	46	22							
4	7.5	9.1	344	158	260	68	84	90	252	104	92	54							
5	7.5	9.1	340	150	267	65	73	85	228	92	112	58							
6	7.5	9.1	346	138	278	78	68	60	260	94	86	44							
7	7.5	9.1	356	136	280	76	76	60	246	98	110	38							
8	7.6	9.2	332	152	275	75	57	77	250	102	82	50							
9	7.5	9.1	328	138	263	70	65	68	272	88	56	50							
10	7.5	9.1	310	138	269	70	41	68	234	82	76	56							
11	7.5	9.1	342	148	266	67	76	81	340	106	2	42							
12	7.5	9.1	354	146	275	65	79	81	304	102	50	44							
13	7.5	9.1	368	148	274	64	94	84	258	108	110	40							
14	7.4	9.1	366	148	280	74	86	74	250	104	116	44							
15	7.6	9.2	336	160	268	62	68	98	262	122	74	38							
16	7.5	9.1	334	146	269	67	65	79	228	100	106	46							
17	7.5	9.2	344	150	271	72	73	78	248	112	96	38							
18	7.5	9.1	374	182	290	81	84	101	232	94	142	88							
19	7.5	9.0	350	168	285	66	65	102	218	102	132	66							
20	7.5	9.0	320	154	292	75	28	79	294	106	26	49							
21	7.6	9.1	340	150	270	70	70	80	260	112	80	38	30.0	37.0					
22	7.6	9.1	358	150	278	82	80	68	240	100	118	50							
23	7.6	9.1	314	136	272	78	42	58	230	92	84	44							
24	7.5	9.1	322	140	274	77	48	63	222	88	100	52							
25	7.7	9.1	342	148	285	80	57	68	318	84	24	64							
26	7.8	9.1	342	144	276	76	66	68	308	92	34	52							
27	7.6	9.1	340	154	278	70	62	84	268	114	72	40							
28	7.6	9.1	334	152	273	78	61	74	270	102	64	50							
29	7.5	9.1	354	150	280	70	74	80	354	108	0	42							
30	7.5	9.1	322	148	274	68	48	80	230	102	92	46							
31																			
AVG	7.5	9.1	340	150	273	73	68	77	262	103	79	46	27.0	33.0	0.0	0.0	####	0.00	0.00
MAX	7.8	9.4	374	182	292	95	96	102	354	150	142	88	30.0	37.0	0.0	0.0	0.00	0.00	0.00
MIN	7.4	9.0	310	136	247	62	28	58	218	82	0	22	24.0	29.0	0.0	0.0	0.00	0.00	0.00

MICHIGAN EGLE

SOFTENING PARAMETERS

WSSN 0040

MONTH/YR. Apr-20

DATE	CHEMICAL APPLICATION mg/l				ALKALINITY as CaCO3 mg/l									STABILITY	
	LIME as CaO NSF Max. 500 mg/L	Carbon Dioxide	PHOSPHATE as ORTHO NSF Max. 27 mg/L	POTASSIUM PERMANGANATE NSF Max 176 mg/L	#1 FLOC			#2 FLOC			TAP			FREE CO2 MG/L	LANGELIER INDEX
					BI-CARBONATE	CARBONATE	HYDROXIDE	BI-CARBONATE	CARBONATE	HYDROXIDE	BI-CARBONATE	CARBONATE	HYDROXIDE		
					45	46	47	48	49	50	51	52	53	54	55
1	238	30.9	0.31		0	54	20				47	20	0		0.9
2	332	43.4	0.27		0	53	67				44	35	0		0.8
3	250	38.0	0.28		0	44	17				51	42	0		1.4
4	261	22.8	0.31		0	53	14				49	19	0		0.8
5	261	23.9	0.30		0	57	13				48	20	0		0.7
6	255	24.6	0.33		0	63	12				52	22	0		0.9
7	286	26.0	0.32		0	55	22				43	29	0		0.9
8	285	24.6	0.30		0	57	18				45	26	0		1.0
9	283	24.6	0.28		0	47	16				56	18	0		0.8
10	277	26.5	0.32		0	48	23				53	21	0		0.8
11	285	25.5	0.31		0	48	13				52	19	0		1.0
12	283	22.5	0.29		0	52	13				47	19	0		0.8
13	274	23.5	0.30		0	57	10				49	19	0		0.8
14	282	24.9	0.32		0	51	20				49	21	0		0.9
15	286	25.8	0.32		0	55	17				46	23	0		0.9
16	300	23.8	0.27		0	46	26				49	20	0		0.8
17	186	23.8	0.30		0	56	10				52	21	0		1.0
18	197	25.1	0.32		0	53	16				54	20	0		0.8
19	195	25.0	0.30		0	53	17				48	20	0		0.7
20	199	23.9	0.31		0	57	17				43	28	0		0.8
21	189	27.8	0.31		0	68	12				45	29	0		0.9
22	198	23.2	0.28		0	62	16				54	28	0		0.9
23	200	26.3	0.30		0	65	12				53	24	0		0.9
24	189	25.0	0.33		0	61	19				54	22	0		0.8
25	182	25.1	0.32		0	61	15				49	26	0		0.8
26	190	24.5	0.32		0	65	11				56	22	0		0.8
27	201	24.5	0.30		0	60	13				55	19	0		0.9
28	209	26.2	0.34		0	60	13				53	21	0		0.9
29	212	23.6	0.33		0	50	18				49	20	0		0.9
30	203	26.4	0.31		0	46	18				50	21	0		0.8
31															
AVG	240	26.1	0.31	0.00	0	55	18	0	0	0	50	23	0		0.9
MAX	332	43.4	0.34	0.00	0	68	67	0	0	0	56	42	0		1.4
MIN	182	22.5	0.27	0.00	0	44	10	0	0	0	43	18	0		0.7

MICHIGAN EGLE

BACTERIOLOGICAL AND PHYSICAL PARAMETERS

WSSN 0040

MO/YR

Apr-20

DATE	TOTAL COLIFORM				E.COLI				TOTAL COLIFORM				E.COLI			
	RAW QANTI-TRAY 2000								WELL QUANTI - TRAY 2000							
	DILUTION (ML)	# OF LARGE CELLS POS.	# OF SMALL CELLS POS.	MPN	# OF LARGE CELLS POS.	# OF SMALL CELLS POS.	MPN	DILUTION (ML)	# OF LARGE CELLS POS.	# OF SMALL CELLS POS.	MPN	# OF LARGE CELLS POS.	# OF SMALL CELLS POS.	MPN		
	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	
1	10	49	20	3448.0	0	1	10.0									
2	10	49	25	4611.0	5	0	52.0									
3	10	41	3	855.0	4	0	41.0									
4	0	49	18	307.6	10	1	12.1	0	0	0	0	0.0	0.0	0		
5	0	47	13	178.5	8	0	8.6									
6	0	43	5	101.9	4	1	5.2									
7	0	38	6	79.4	6	1	7.4									
8	0	34	4	61.3	4	0	4.1									
9	0	37	2	67.0	1	0	1.0									
10	0	49	26	488.4	24	0	31.7									
11	0	47	14	185.0	5	3	8.4	0	0	0	0	0.0	0.0	0		
12	0	45	14	152.9	9	0	9.8									
13	0	45	7	123.6	4	1	4.1									
14	0	40	4	83.3	4	0	4.1									
15	0	44	9	122.3	2	0	2.0									
16	0	40	5	85.7	4	0	4.1									
17	0	38	5	77.1	3	1	4.1									
18	0	35	5	66.3	1	0	1.0	0	0	0	0	0.0	0.0	0		
19	0	32	6	59.1	2	0	2.0									
20	0	44	5	108.6	4	1	5.2									
21	0	47	10	160.7	2	0	2.0									
22	0	46	10	146.7	2	0	2.0									
23	0	42	3	90.5	2	0	2.0									
24	0	47	9	155.3	2	0	2.0									
25	0	45	6	119.8	0	0	0.0	0	0	0	0	0.0	0.0	0		
26	0	41	7	95.9	3	0	3.1									
27	0	46	10	146.7	8	0	8.6									
28	0	48	9	172.2	2	0	2.0									
29	0	49	14	248.1	3	1	4.1									
30	0	49	33	727.0	3	1	4.1									
31																
AVG		44	10	444.2	4	0	8.3	0		0	0.0	0	0	0	0	
MAX		49	33	4611.0	24	3	52.0	0	0	0	0.0	0	0	0	0	
MIN		32	2	59.1	0	0	0.0	0	0	0	0.0	0	0	0	0	

Failure to complete this form is a violation of Act 399, P.A. 1976 and is subject to penalties as outlined in the act.

MICHIGAN EGLE

BACTERIOLOGICAL AND PHYSICAL PARAMETERS

WSSN 0040

MO/YR Apr-20

DATE	PLANT TAP		STANDARD PLATE COUNT MPN		TEMPERATURE-(C)		COLOR TRUE <input checked="" type="checkbox"/> APPARENT <input type="checkbox"/>									
	# OF SAMPLES	P/A														TAP
			75	76	77	78	79	80								81
	1	1	A	0	0	12.5	11.6									
2	1	A	0	0	12.4	11.3										
3	1	A	0	0	12.4	11.4										
4	1	A	0	0	12.6	11.6										
5	1	A	0	0	13.2	11.2										
6	1	A	0	0	13.2	12.3										
7	1	A	0	0	13.5	12.7	86	0								
8	1	A	0	0	13.4	13.2										
9	1	A	0	0	13.0	13.1										
10	1	A	0	0	13.2	12.6										
11	1	A	0	0	12.8	12.5										
12	1	A	0	0	13.0	12.7										
13	1	A	0	0	12.7	11.9										
14	1	A	0	2	12.6	11.9	55	0								
15	1	A	0	0	12.3	11.9										
16	1	A	0	0	12.0	11.7										
17	1	A	0	0	11.7	11.3										
18	1	A	0	0	11.4	10.7										
19	1	A	0	0	11.3	10.6										
20	1	A	0	0	11.9	11.0										
21	1	A	0	0	12.7	12.4	43	0								
22	1	A	0	0	13.0	12.5										
23	1	A	0	0	13.1	12.5										
24	1	A	0	0	13.1	12.9										
25	1	A	0	0	13.1	13.0										
26	1	A	0	0	12.9	12.5										
27	1	A	0	0	13.0	12.5										
28	1	A	0	0	13.0	12.7	38	0								
29	1	A	0	0	12.3	11.7										
30	1	A	0	0	12.8	12.1										
31																
AVG	1		0	0	12.7	12.1	55.5	0.0								
MAX	1	0	0	2	13.5	13.2	86.0	0.0								
MIN	1	0	0	0	11.3	10.6	38.0	0.0								

DISTRIBUTION SYSTEM MONITORING

WSSN 0040

MONTH/YR. Apr-20

DATE	CHLORINE RESIDUAL AT BACTERIOLOGICAL MONITORING STATIONS mg/l																															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
1						1.1								1.0							1.0											
2	1.3							1.3							1.1																	
3	1.0							1.3													1.0											
4	2.2							1.4													1.4										1.5	
5								1.5							1.3																1.4	
6						1.6								1.2																		
7																																
8								1.4						1.3								1.4										
9	1.4														1.2								1.2									
10																																

DISTRIBUTION SAMPLE SUMMARY

Total number of routine distribution samples analyzed 25
 Total number of routine distribution samples required 25

DISTRIBUTION BACTERIOLOGICAL SUMMARY

Total number of positive routine distribution samples 0
 Total number of positive repeat distribution samples 0

DISTRIBUTION FREE CHLORINE RESIDUAL SUMMARY

Percent samples with a detectable free chlorine residual 100%
 Average free chlorine residual this month 1.3

Positive Routine Distribution Samples				Check Samples			
DATE	Total Col.	E. Coli	DATE	Total Col.	E. Coli	CL2	

BLUE GREEN ALGAE & PHYSICAL PARAMETERS

LAKE ADRIAN

WSSN 0040

DATE MO/YR

Apr-20

DATE	pH				TEMPERATURE				CONDUCTIVITY				CHLOROPHYLL-a				PHYCOCYANIN			
	MAX				MAX				MAX				MAX				MAX			
1	8.0				46.8				480.0				21.8				85.7			
2	8.1				47.7				499.0				20.2				88.3			
3	8.1				48.8				524.0				23.1				88.5			
4	8.2				50.3				537.0				26.1				88.0			
5	8.2				50.0				546.0				30.5				84.4			
6	8.1				50.1				557.0				29.6				106.0			
7	8.4				51.1				804.0				24.4				82.7			
8	8.2				53.4				569.0				29.8				79.3			
9	8.3				55.7				574.0				34.4				76.5			
10	8.2				53.1				575.0				35.1				70.8			
11	8.2				51.8				592.0				38.0				73.0			
12	8.2				51.0				593.0				30.1				71.0			
13	8.3				50.6				592.0				29.2				68.9			
14	8.3				49.6				596.0				26.2				67.4			
15	8.4				48.1				599.0				24.0				65.5			
16	8.5				47.5				601.0				24.5				66.9			
17	8.5				46.0				600.0				23.0				66.1			
18	8.5				45.2				622.0				24.6				67.5			
19	8.6				48.2				602.0				23.9				73.1			
20	8.6				50.4				612.0				61.4				72.6			
21	8.6				49.8				601.0				32.1				73.9			
22	8.5				49.2				597.0				29.1				66.1			
23	8.6				49.2				601.0				27.0				66.9			
24	8.6				49.2				601.0				27.0				66.9			
25	8.7				49.2				604.0				28.7				68.0			
26	8.6				49.7				602.0				30.8				66.8			
27	8.5				50.7				597.0				45.0				72.9			
28	8.5				51.4				597.0				48.2				66.1			
29																				
30																				
31																				
AVG	8.4	0.0	0.0	0.0	49.8	0.0	0.0	0.0	588.4	0.0	0.0	0.0	30.3	0.0	0.0	0.0	74.6	0.0	0.0	0.0
MAX	8.7	0.0	0.0	0.0	55.7	0.0	0.0	0.0	804.0	0.0	0.0	0.0	61.4	0.0	0.0	0.0	106.0	0.0	0.0	0.0
MIN	8.0	0.0	0.0	0.0	45.2	0.0	0.0	0.0	480.0	0.0	0.0	0.0	20.2	0.0	0.0	0.0	65.5	0.0	0.0	0.0

ALGAL TOXIN & COMPOUNDS

WSSN 0040

MO/YR Apr-20

DATE	ADDA-ELISA MICROCYSTIN ug/L*		LC-MS TOTAL MICROCYSTIN ng/L		LC-MS NODULARIN ng/L		LC-MS ANATOXIN-a ng/L		GEOSMIN ng/L			MIB ng/L		
	RAW	TAP	RAW	TAP	RAW	TAP	RAW	TAP	RAW	BLENDED	TAP	RAW	BLENDED	TAP
1									7.6	3.0	3.0	3.4	1.7	1.4
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														
13														
14														
15														
16														
17														
18														
19														
20														
21														
22														
23														
24														
25														
26														
27														
28														
29														
30														
31														
AVG	0.000	0.000	0.0	0.0	0.0	0.0	0.000	0.000	7.6	3.0	3.0	3.4	1.7	1.4
MAX	0.000	0.000	0.0	0.0	0.0	0.0	0.000	0.000	7.6	3.0	3.0	3.4	1.7	1.4
MIN	0.000	0.000	0.0	0.0	0.0	0.0	0.000	0.000	7.6	3.0	3.0	3.4	1.7	1.4

<0.3 = non-detect*

qPCR MONITORING

WSSN 0040

MO/YR Apr-20

qPCR GENE COPIES/uL RAW					qPCR COPIES/uL BLENDED					
DATE	CYANO-BACTERIA TOTAL	MICROCYSTIN /NODULARIN	CYLINDRO-SPERMOP-SIN	SAXITOXIN	CYANO-BACTERIA TOTAL	MICROCYSTIN /NODULARIN	CYLINDRO-SPERMOP-SIN	SAXITOXIN		
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
31										
AVG	0.0	0.000	0.000	0.000	0.0	0.000	0.000	0.000		
MAX	0.0	0.000	0.000	0.000	0.0	0.000	0.000	0.000		
MIN	0.0	0.000	0.000	0.000	0.0	0.000	0.000	0.000		