

**MONTHLY OPERATION REPORT OF
WATER TREATMENT PLANT**

SUPPLY NAME: CITY OF ADRIAN
WSSN: 0040

Tim Ritchie
Operator-in-Charge

August-20
Month/Year

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

F-1
Water Plant Classification

Electronically Submitted 9/3/20
Signature of Operator-in-Charge
EGLE-DWEH-JACKSON@MICHIGAN.GOV

LENAWEE
County

Treatment Rate and Filter Data

Maximum Treatment Rate:	<u>3.647</u>	Million Gallons per Day
Rated Plant Capacity:	<u>8.0</u>	Million Gallons per Day
Average Filter Run:	<u>150.2</u>	Hours
Average Head Loss:	<u>1.7</u>	Feet
Average Filtration Rate:	<u>1.08</u>	Gallons Per Square Feet per Minute
Maximum Filtration Rate:	<u>1.18</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>46,716</u>	lb.	Est. supply:	<u>63.3</u>	days
Ferric Sulfate on hand	<u>53,714</u>	lb.	Est. supply:	<u>129.9</u>	days
Lime (CaO) on hand	<u>40.00</u>	Tons	Est. supply:	<u>11.3</u>	days
Cost of All Chemicals per Million Gallons:	<u>\$262.22</u>	dollars			
Total Power Cost per Million Gallons:	<u>\$153.97</u>	dollars			

Remarks

Number of filter confluence samples > 0.3 NTU:	<u>0</u>
Number of filter confluence compliance samples collected:	<u>186</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.

Aug-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	0.427	2.619	3.046	2.801	9.3	8.7	1.5	2.5	1.5	24	0.04	0.05	6	0	0	0.04	0.05
2	0.529	2.174	2.703	2.655	9.6	7.6	2.2	3.2	1.4	24	0.04	0.04	6	0	0	0.05	0.06
3	0.540	2.561	3.101	2.982	9.1	7.1	2.9	4.1	1.6	24	0.04	0.04	6	0	0	0.04	0.05
4	0.624	2.497	3.121	2.828	8.4	8.0	2.7	3.7	1.8	21	0.03	0.04	6	0	0	0.04	0.05
5	0.406	2.679	3.085	3.054	8.9	8.0	3.0	3.8	1.7	24	0.03	0.04	6	0	0	0.04	0.06
6	0.499	2.653	3.152	2.960	9.3	7.9	4.0	4.6	1.6	24	0.03	0.04	6	0	0	0.04	0.04
7	0.425	2.578	3.003	2.962	8.9	7.6	2.7	3.2	1.2	24	0.04	0.06	6	0	0	0.04	0.05
8	0.622	2.828	3.450	3.015	8.4	7.1	3.6	4.8	1.4	24	0.04	0.05	6	0	0	0.04	0.05
9	0.545	2.600	3.145	2.932	8.1	8.0	6.1	10.4	1.3	24	0.03	0.04	6	0	0	0.04	0.05
10	0.547	2.652	3.199	3.044	9.3	7.9	3.4	6.7	1.4	24	0.03	0.04	6	0	0	0.04	0.05
11	0.682	2.699	3.381	3.135	8.2	6.3	2.8	3.8	3.3	23	0.04	0.05	6	0	0	0.04	0.05
12	0.597	2.671	3.268	3.164	8.8	8.1	2.4	2.8	2.2	24	0.04	0.05	6	0	0	0.04	0.06
13	0.454	2.872	3.326	3.057	9.1	7.4	2.0	2.1	2.3	24	0.04	0.05	6	0	0	0.04	0.05
14	0.660	2.680	3.340	3.002	8.8	7.7	2.7	3.2	2.3	24	0.04	0.07	6	0	0	0.04	0.05
15	0.562	2.361	2.923	2.739	8.5	8.4	4.2	5.8	2.2	24	0.04	0.04	6	0	0	0.03	0.04
16	0.456	2.546	3.002	2.856	9.1	9.1	1.6	2.0	1.9	24	0.03	0.04	6	0	0	0.03	0.04
17	0.485	2.673	3.158	3.167	9.2	7.7	1.7	2.0	2.0	24	0.03	0.05	6	0	0	0.03	0.04
18	0.645	2.697	3.342	3.034	8.8	8.2	1.9	2.7	2.3	24	0.03	0.05	6	0	0	0.03	0.04
19	0.525	2.581	3.106	2.899	9.0	8.0	2.8	4.1	2.2	24	0.03	0.04	6	0	0	0.04	0.04
20	0.514	2.697	3.211	3.091	8.5	7.8	4.0	5.3	2.1	26	0.04	0.04	6	0	0	0.04	0.04
21	1.029	2.336	3.365	3.103	8.8	8.2	3.4	6.1	2.3	24	0.04	0.07	6	0	0	0.04	0.05
22	0.486	2.759	3.245	3.023	9.0	7.4	2.0	2.2	2.2	24	0.03	0.04	6	0	0	0.03	0.04
23	0.700	2.610	3.310	2.990	9.0	8.2	2.3	3.1	2.6	24	0.03	0.04	6	0	0	0.04	0.05
24	0.839	2.495	3.334	3.120	9.0	7.5	4.1	6.8	2.2	23	0.03	0.04	6	0	0	0.04	0.05
25	0.780	2.759	3.539	3.257	8.6	7.8	2.7	3.1	2.0	24	0.03	0.04	6	0	0	0.03	0.04
26	0.688	2.790	3.478	3.251	9.1	7.3	2.4	3.2	1.4	24	0.03	0.04	6	0	0	0.04	0.04
27	0.684	2.807	3.491	3.347	8.5	7.1	3.1	4.3	1.4	24	0.04	0.04	6	0	0	0.04	0.06
28	0.722	2.830	3.552	3.214	8.8	7.4	5.5	7.5	2.0	24	0.04	0.04	6	0	0	0.05	0.06
29	0.605	2.306	2.911	2.734	8.7	7.9	9.7	12.0	1.5	24	0.03	0.04	6	0	0	0.04	0.05
30	0.681	2.323	3.004	2.872	8.6	7.3	9.7	12.4	1.3	24	0.03	0.04	6	0	0	0.04	0.04
31	1.069	2.578	3.647	3.269	8.5	6.9	3.8	11.9	1.5	24	0.03	0.04	6	0	0	0.04	0.05
AVG	0.614	2.610	3.224	3.018	8.8	7.7	3.4		1.9	24	0.03	0.04	6	0	0	0.04	0.05
MAX	1.069	2.872	3.647	3.347	9.6	9.1	9.7	12.4	3.3	26	0.04	0.07	6	0	0	0.05	0.06
MIN	0.406	2.174	2.703	2.655	8.1	6.3	1.5		1.2	21		0.04	6	0	0	0.03	0.04
Total	19.027	80.911	99.938	93.557									186	0	0		

MICHIGAN EGLE

FLUORIDATION AND CHLORINATION

WSSN 0040

MONTH/YR. Aug-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. 15	WELL 16	TAP 17	DIST. 18	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		0.67	0.70			4.7					2.2	2.4	2.0	2.0	1.90	22.93
2	0.30		0.56	0.62			4.6					2.1	2.2	1.9	2.0	1.80	28.04
3	0.30		0.67	0.71	0.70		4.5					1.9	2.1	2.0	2.1	1.80	24.98
4	0.30		0.66	0.73	0.63		4.6					2.0	2.1	1.9	2.0	1.80	22.83
5	0.30		0.67	0.71	0.63		4.6					2.1	2.1	2.0	2.0	1.80	24.03
6	0.40	0.62	0.63	0.76	0.68		4.5					2.0	2.1	2.1	2.1	2.00	27.56
7	0.40		0.67	0.80			4.0					2.1	2.1	1.9	2.0	1.80	22.85
8	0.40			0.76			4.2					1.8	1.6	1.7	1.7	1.40	17.92
9	0.30			0.68			4.5					2.4	2.4	1.9	1.9	1.60	22.59
10	0.30		0.60	0.67	0.62		3.7					2.1	2.1	1.8	1.9	1.30	17.81
11	0.40		0.68	0.82	0.63		3.3					2.0	2.2	1.5	1.5	1.30	18.18
12	0.40		0.71	0.80	0.79		3.8					1.9	1.7	1.7	1.7	1.40	21.83
13	0.40	0.62	0.61	0.79	0.73		4.0					1.9	1.9	2.0	2.1	1.80	23.31
14	0.30		0.68	0.64			3.8					1.9	1.8	1.9	2.0	1.70	27.51
15	0.20		0.54	0.66			4.0					2.0	2.1	2.0	2.1	1.80	29.39
16	0.40		0.56	0.69			4.0					2.0	1.9	1.9	1.9	1.70	25.07
17	0.30		0.65	0.79	0.72		3.9					1.8	1.9	1.8	1.9	1.70	28.10
18	0.30		0.62	0.65	0.64		4.0					2.1	2.2	1.8	1.9	1.70	25.46
19	0.30		0.62	0.66	0.65		4.1					1.8	2.0	1.9	2.0	1.60	21.07
20	0.30	0.64	0.66	0.68			4.3					1.7	1.8	2.1	2.1	1.90	21.82
21	0.30		0.66	0.67			4.3					1.7	1.9	2.0	2.1	1.80	21.81
22	0.20		0.57	0.64			4.0					2.1	2.2	1.9	1.9	1.80	24.00
23	0.40		0.65	0.78			4.0					2.3	2.2	1.9	2.0	1.80	22.03
24	0.40		0.61	0.75	0.70		4.2					2.2	2.2	1.9	1.9	1.70	23.39
25	0.30		0.64	0.76			4.1					2.1	1.9	2.0	2.0	1.80	28.04
26	0.30		0.66	0.70	0.65		4.1					1.8	1.7	2.0	2.0	1.80	22.24
27	0.20		0.71	0.65	0.62		4.1					1.8	1.9	1.9	2.0	1.70	22.28
28	0.40		0.73	0.80			4.2					1.9	2.1	2.0	2.0	1.80	23.59
29	0.30		0.57	0.58			4.2					1.9	2.1	2.0	2.1	1.80	30.62
30	0.30		0.58	0.59			4.3					1.8	2.0	2.0	2.0	1.90	21.66
31	0.30		0.66	0.64			4.5					1.7	1.8	2.1	2.1	1.90	23.93
AVG	0.32	0.63	0.64	0.71	0.67	0.0	4.1	0.0	0.0	0.0	0.0	2.0	2.0	1.9	2.0	1.72	23.65
MAX	0.40	0.64	0.73	0.82	0.79	0.0	4.7	0.0	0.0	0.0	0.0	2.4	2.4	2.1	2.1	2.00	30.62
MIN	0.20	0.62	0.54	0.58	0.62	0.0	3.3	0.0	0.0	0.0	0.0	1.7	1.6	1.5	1.5	1.30	17.81

MICHIGAN EGLE

CHEMICAL ANALYSES

WSSN 0040

MONTH /YR.

Aug-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	396	148	290	74	106	74	308	100	88	48							
2	7.3	9.1	382	162	294	74	88	88	312	124	70	38							
3	7.3	9.1	384	154	292	70	92	84	310	120	74	34	15.0	35.0		70.0	0.50		
4	7.4	9.2	374	168	294	80	80	88	292	140	82	28							
5	7.4	9.2	376	166	295	77	81	89	312	122	64	44							
6	7.3	9.1	400	158	310	100	90	58	260	92	140	66							
7	7.4	9.4	376	154	290	74	86	80	324	148	52	6							
8	7.3	9.4	358	174	301	80	57	94	244	130	114	44							
9	7.4	9.2	358	160	320	70	38	90	270	92	88	68							
10	7.3	9.2	390	154	305	75	85	79	248	100	142	54							
11	7.5	9.2	352	188	296	76	56	112	216	92	136	96							
12	7.4	9.4	392	164	308	92	84	72	244	70	148	94							
13	7.4	9.1	364	158	293	78	71	80	242	84	122	74							
14	7.3	9.1	388	168	298	82	90	86	236	84	152	84							
15	7.4	9.1	392	160	303	85	89	75	344	94	48	66							
16	7.7	9.1	382	164	304	77	78	87	292	88	90	76							
17	7.4	9.1	374	164	303	77	71	87	274	80	100	84	21.0	35.0		70.0	0.50		
18	7.7	9.1	388	158	296	77	92	81	268	80	120	78							
19	7.4	9.1	394	164	300	84	94	80	278	70	116	94							
20	7.7	9.1	370	152	295	74	75	78	270	94	100	58							
21	7.4	9.0	358	156	279	79	79	77	234	84	124	72							
22	7.4	9.1	380	166	295	77	85	89	250	78	130	88							
23	7.4	9.1	378	162	298	81	80	81	262	80	116	82							
24	7.4	9.1	360	166	297	79	63	87	262	76	98	88							
25	7.3	9.1	362	160	290	78	72	82	242	78	120	82							
26	7.3	9.2	366	158	298	75	68	83	278	92	88	66							
27	7.3	9.2	372	154	299	77	73	77	258	90	114	64							
28	7.3	9.1	388	150	320	86	68	64	254	100	134	50							
29	7.4	9.1	382	150	298	69	84	81	304	104	78	46							
30	7.4	9.1	386	154	296	68	90	86	368	136	18	18							
31	7.4	9.1	398	168	285	74	113	94	368	142	30	26							
AVG	7.4	9.1	378	161	298	78	80	83	278	99	100	62	18.0	35.0	0.0	70.0	0.50	0.00	0.00
MAX	7.7	9.4	400	188	320	100	113	112	368	148	152	96	21.0	35.0	0.0	70.0	0.50	0.00	0.00
MIN	7.3	9.0	352	148	279	68	38	58	216	70	18	6	15.0	35.0	0.0	70.0	0.50	0.00	0.00

MICHIGAN EGLE

SOFTENING PARAMETERS

WSSN 0040

MONTH/YR. Aug-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
58	59														
1	237	27.8	0.27		0	56	20				53	22	0		0.9
2	242	28.4	0.29		0	55	17				49	25	0		1.0
3	236	29.4	0.26		0	59	19				46	26	0		1.0
4	236	29.3	0.27		0	64	18				45	32	0		1.2
5	249	28.6	0.29		0	61	17				50	26	0		1.1
6	287	33.2	0.28		0	60	20				52	29	0		1.0
7	346	44.0	0.27		0	42	65				33	54	0		1.4
8	273	35.3	0.26		0	46	22				42	42	0		1.3
9	305	29.5	0.29		0	43	23				48	25	0		0.9
10	291	31.5	0.26		0	58	15				46	28	0		1.0
11	269	20.0	0.28		0	75	8				47	33	0		0.9
12	298	22.2	0.28		1	72	10				50	39	0		1.1
13	314	27.5	0.28		0	64	17				55	26	0		0.9
14	312	27.8	0.27		0	66	18				61	24	0		0.9
15	322	28.4	0.28		0	58	18				55	26	0		0.9
16	321	26.5	0.26		0	63	16				54	21	0		0.9
17	310	25.2	0.26		0	68	17				56	25	0		0.8
18	314	26.2	0.29		0	65	12				52	26	0		0.8
19	258	27.2	0.27		0	55	18				57	26	0		0.8
20	217	28.4	0.29		0	55	18				51	22	0		0.9
21	219	28.4	0.26		0	64	16				49	26	0		0.7
22	223	25.1	0.27		0	67	10				47	27	0		0.8
23	245	25.1	0.27		0	61	14				49	26	0		0.8
24	249	25.4	0.28		0	66	14				50	27	0		0.8
25	248	28.0	0.26		0	61	18				49	28	0		0.8
26	250	31.3	0.28		0	62	19				49	29	0		1.0
27	237	33.0	0.26		0	50	24				49	30	0		1.0
28	230	29.4	0.28		0	60	17				50	26	0		1.0
29	262	28.5	0.27		0	52	15				49	21	0		0.9
30	335	34.3	0.26		0	47	39				49	24	0		1.0
31	280	33.9	0.25		0	55	17				48	26	0		1.0
AVG	271	29.0	0.27	0.00	0	59	19	0	0	0	50	28	0		1.0
MAX	346	44.0	0.29	0.00	1	75	65	0	0	0	61	54	0		1.4
MIN	217	20.0	0.25	0.00	0	42	8	0	0	0	33	21	0		0.7

MICHIGAN EGLE

BACTERIOLOGICAL AND PHYSICAL PARAMETERS

WSSN 0040

MO/YR

Aug-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	0	93	6	105.0	0	0	0.0	0	0	0	0	0.0	0.0	0		
2	0	40	6	88.2	3	0	3.1									
3	0	45	13	148.3	0	0	0.0									
4	0	24	3	35.9	4	0	4.1									
5	0	46	8	137.6	0	0	0.0									
6	0	34	3	59.4	1	0	1.0									
7	0	37	10	84.2	2	0	2.0									
8	0	40	11	101.2	2	1	3.0	0	0	0	0	0.0	0.0	0		
9	0	46	8	137.6	0	0	0.0									
10	0	41	9	101.4	1	0	1.0									
11	0	49	22	387.3	0	0	0.0									
12	0	43	3	96.0	2	0	2.0									
13	0	19	2	25.9	1	0	1.0									
14	0	27	1	38.9	1	0	1.0									
15	0	48	13	201.4	0	0	0.0	0	0	0	0	0.0	0.0	0		
16	0	45	10	135.4	0	0	0.0									
17	0	44	11	129.6	2	0	2.0									
18	0	44	13	137.4	1	0	1.0									
19	0	45	6	119.8	1	0	1.0									
20	0	48	15	218.7	1	0	1.0									
21	0	49	16	275.5	1	0	1.0									
22	0	42	6	98.8	1	0	1.0	0	0	0	0	0.0	0.0	0		
23	0	45	6	119.8	0	0	0.0									
24	0	48	15	218.7	0	1	1.0									
25	0	46	9	142.1	1	0	1.0									
26	0	49	31	648.8	4	0	4.1									
27	0	44	3	102.2	2	0	2.0									
28	0	48	18	248.9	0	0	0.0									
29	0	49	33	727.0	12	0	13.5	0	0	0	0	0.0	0.0	0		
30	0	48	18	248.9	1	1	2.0									
31	0	43	8	111.2	2	0	2.0									
AVG		44	11	175.2	1	0	1.6	0		0	0.0	0	0	0		
MAX		93	33	727.0	12	1	13.5	0	0	0	0.0	0	0	0		
MIN		19	1	25.9	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

Aug-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	TAP
			75	76	77	78	79	80								81	82
1	1	A	0	0	16.3	16.1											
2	1	A	0	0	16.6	16.0											
3	1	A	0	0	16.6	16.2	46	0									
4	1	A	0	0	16.5	16.6											
5	1	A	0	0	16.4	16.2											
6	1	A	0	2	16.3	16.0											
7	1	A	0	0	16.0	15.9											
8	1	A	0	2	16.1	15.9											
9	1	A	0	0	16.0	15.7											
10	1	A	0	0	16.3	15.6	82	0									
11	1	A	0	0	16.9	16.4											
12	1	A	2	0	17.3	16.6											
13	1	A	10	0	16.9	16.5											
14	1	A	0	0	17.2	16.8											
15	1	A	0	0	17.1	16.5											
16	1	A	0	0	17.3	16.9											
17	1	A	0	0	17.5	16.9	13	0									
18	1	A	0	0	16.3	16.1											
19	1	A	0	0	16.2	15.8											
20	1	A	0	0	16.1	15.7											
21	1	A	0	0	16.2	15.8											
22	1	A	0	0	16.3	15.9											
23	1	A	0	0	16.5	15.9											
24	1	A	0	0	16.7	16.0											
25	1	A	0	0	16.8	16.5											
26	1	A	0	1	16.9	16.8	22	0									
27	1	A	0	0	16.8	16.5											
28	1	A	0	0	16.9	16.5											
29	1	A	0	0	17.2	16.4											
30	1	A	0	0	17.3	16.6											
31	1	A	0	0	17.3	16.4	27	0									
AVG	1		0	0	16.7	16.2	38.0	0.0									
MAX	1	0	10	2	17.5	16.9	82.0	0.0									
MIN	1	0	0	0	16.0	15.6	13.0	0.0									

DISTRIBUTION SYSTEM MONITORING

WSSN 0040

MONTH/YR. Aug-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					1.8																													
2			1.5									1.3												1.5										
3				0.8						1.1								1.0						1.1										
4				1.9						1.1								1.7										2.0						
5					0.7					1.3									1.7															
6						2.2							1.9																					
7																																		
8						1.8						1.3																						
9			1.2								0.8							1.1							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 1.4

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

Aug-20

DATE	pH				TEMPERATURE				CONDUCTIVITY				CHLOROPHYLL-a				PHYCOCYANIN			
	MAX				MAX				MAX				MAX				MAX			
1	7.9				78.3				542.0				52.7				31.9			
2	7.8				77.8				540.0				34.3				29.5			
3	7.6				75.0				565.0				22.5				24.9			
4	8.3				75.8				542.7				48.1				35.0			
5	9.0				75.8				556.0				79.0				35.5			
6	7.6				74.7				556.0				98.2				56.7			
7	7.9				73.9				553.0				86.3				40.2			
8	7.6				73.5				549.6				42.4				30.8			
9	7.6				74.0				546.7				37.9				31.2			
10	7.7				75.1				552.0				82.6				32.1			
11	7.7				75.7				794.0				60.2				35.4			
12	7.6				75.9				775.0				62.0				36.1			
13	7.8				76.4				543.0				79.9				45.1			
14	8.2				77.1				546.0				50.9				42.5			
15	7.9				76.3				545.0				52.1				46.8			
16	8.1				77.6				547.0				55.3				42.8			
17	7.9				77.8				556.0				132.0				54.6			
18	7.9				77.4				555.0				173.0				46.6			
19	7.8				76.5				559.0				179.0				51.9			
20	7.8				76.0				565.0				99.8				49.2			
21	8.0				75.8				566.0				99.2				61.3			
22	7.8				76.0				567.0				35.7				48.3			
23	7.7				76.6				567.0				34.6				49.4			
24	7.8				77.5				801.0				52.9				52.5			
25	7.7				78.5				566.0				40.6				57.7			
26	7.9				79.2				570.0				43.6				63.4			
27	8.1				80.7				576.0				39.9				62.4			
28	7.8				80.1				578.0				39.4				59.6			
29	8.0				80.1				582.0				33.9				42.2			
30	7.9				78.9				582.0				25.5				34.4			
31	8.0				77.2				588.0				23.7				33.4			
AVG	7.9	0.0	0.0	0.0	76.8	0.0	0.0	0.0	581.6	0.0	0.0	0.0	64.4	0.0	0.0	0.0	44.0	0.0	0.0	0.0
MAX	9.0	0.0	0.0	0.0	80.7	0.0	0.0	0.0	801.0	0.0	0.0	0.0	179.0	0.0	0.0	0.0	63.4	0.0	0.0	0.0
MIN	7.6	0.0	0.0	0.0	73.5	0.0	0.0	0.0	540.0	0.0	0.0	0.0	22.5	0.0	0.0	0.0	24.9	0.0	0.0	0.0

ALGAL TOXIN & COMPOUNDS

WSSN 0040

MO/YR Aug-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														
2														
3	0.285	0.011	0.0	0.0	0.0	0.0	0.000	0.000	5.6	0.0	0.0	24.5	1.5	1.3
4														
5														
6														
7														
8														
9														
10			0.0	0.0	0.0	0.0	0.000	0.000						
11														
12														
13														
14														
15														
16														
17	0.198	0.000							1.6	0.0	0.0	10.0	0.0	0.0
18														
19														
20														
21														
22														
23														
24	0.285	0.011												
25														
26														
27														
28														
29														
30														
31														
AVG	0.256	0.007	0.0	0.0	0.0	0.0	0.000	0.000	3.6	0.0	0.0	17.3	0.8	0.7
MAX	0.285	0.011	0.0	0.0	0.0	0.0	0.000	0.000	5.6	0.0	0.0	24.5	1.5	1.3
MIN	0.198	0.000	0.0	0.0	0.0	0.0	0.000	0.000	1.6	0.0	0.0	10.0	0.0	0.0

<0.3 = non-detect*

qPCR MONITORING

WSSN 0040

MO/YR Aug-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	952.0	0.000	0.000	0.000	165.0	0.000	0.000	0.000		
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	952.0	0.000	0.000	0.000	165.0	0.000	0.000	0.000		
MAX	952.0	0.000	0.000	0.000	165.0	0.000	0.000	0.000		
MIN	952.0	0.000	0.000	0.000	165.0	0.000	0.000	0.000		