ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF PUBLIC WATER SUPPLIES

MONTHLY IRON REMOVAL AND ION EXCHANGE SOFTENING REPORT

South Sangamon Water Commission - IL 1670080
November 2021

		Pumping Totals						Chemicals Applied														UF Filters					Softeners									
								Sodium Permanganate		Sodium Bisulfite BW		Sodium Hypochlorite		Ammonium Sulfate		Fluorosilicic Acid		Phosphate		Sodium Bisulfite Pond		Hours since previous backwash												Regeneration	
Date	Time Meter Read	Hours Filter Ran	Raw Well Prod. (M gal)	UF Filtered (M gal)	Plant Water (M gal)	HS Pumpage (M gal)	Lagoon Effluent Pumpage (M gal)	Am't Used lbs.	Calc mg/l as NaMnO4	Am't Used lbs.	Calc mg/l	Am't Used lbs.	Calc mg/l as Cl	Am't Used lbs.	Calc mg/l as NH3	Am't Used lbs.	Calc mg/l as F	Am't Used lbs.	Calc mg/l as PO4	Am't Used lbs.	Calc mg/l	Bank # 1	Bank # 2	Bank # 3		Wash Water Gal. (M gal)	Water Softened Gal. (M gal)	Water Bypassed Gal (M gal)	Each day indicate total number of hours since previous regeneration. If regeneration at mid-day, indicate hours previous/hours following. 1	2	3	4	Salt Used lbs.	Washed Water Gal.
1	7:00	17.0	1.548	1.138	0.017	1.237	0.069	32	0.49		0.00	362	4.77	123	2.59	39	0.72	65	2.08	16	11.06	0.66	0.66	0.66		0.055	0.744	0.394	10.0		57.0	62.0	6843	32550
2	7:00	16.2	1.495	1.364	0.017	1.197	0.097	31	0.49		0.00	334	3.67	116	2.04	36	0.69	5	0.17	15	7.40	0.66	0.66	0.66		0.078	0.892	0.472	28.0	31.0	24.0	30.0	9124	43400
3	7:00	13.9	1.311	1.268	0.009	1.039	0.083	27	0.49		0.00	348	4.11	116	2.19	38	0.83	8	0.30	17	9.87	0.66	0.66	0.66		0.073	0.829	0.439	19.0	40.0			4562	21700
4	7:00	17.2	1.548	1.235	0.016	1.233	0.085	32	0.49		0.00	318	3.86	110	2.14	35	0.65	16	0.51	11	6.18	0.66	0.66	0.66		0.071	0.807	0.428	28.0		55.0	37.0	6843	32550
5	7:00	15.9	1.417	1.233	0.018	1.123	0.080	29	0.49		0.00	340	4.13	115	2.24	38	0.77	0	0.00	17	10.17	0.66	0.66	0.66		0.061	0.806	0.427	30.0	43.0	16.0	35.0	9124	43400
6	7:00	14.5	1.284	1.277	0.009	1.018	0.080	26	0.49		0.00	440	5.16	143	2.69	47	1.05	10	0.39	19	11.42	0.66	0.66	0.66		0.075	0.835	0.442			25.0		2281	10850
7	7:00	13.4	1.369	1.226	0.011	1.108	0.084	28	0.49		0.00	256	3.13	90	1.76	28	0.58	8	0.29	14	8.03	0.66	0.66	0.66		0.074	0.801	0.425	35.0			38.0	4562	21700
8	7:00	16.8	1.588	1.124	0.021	1.241	0.076	32	0.49		0.00	296	3.95	106	2.26	31	0.57	9	0.29	11	6.91	0.66	0.66	0.66		0.062	0.735	0.389	33.0	67.0		33.0	6843	32550
9	7:00	14.3	1.303	1.289	0.010	1.055	0.076	27	0.49		0.00	306	3.56	99	1.84	33	0.71	11	0.41	18	11.42	0.66	0.66	0.66		0.066	0.842	0.447	33.0		64.0		4562	21700
10	7:00	15.9	1.490	1.213	0.013	1.194	0.085	30	0.49		0.00	272	3.36	130	2.57	38	0.73	15	0.50	13	7.30	0.66	0.66	0.66		0.071	0.793	0.420	10.0	43.0		37.0	6843	32550
11	7:00	14.4	1.315	1.244	0.018	1.041	0.091	27	0.49		0.00	392	4.72	138	2.66	42	0.92	27	1.03	14	7.37	0.66	0.66	0.66		0.072	0.813	0.431	31.0	32.0	49.0	28.0	9124	43400
12	7:00	14.4	1.351	1.230	0.012	1.082	0.081	28	0.49		0.00	266	3.24	92	1.79	28	0.59	41	1.50	16	9.43	0.66	0.66	0.66		0.067	0.804	0.426	19.0		17.0	14.0	6843	32550
13	7:00	14.5	1.309	1.036	0.014	1.033	0.073	27	0.49		0.00	340	4.92	114	2.64	37	0.82	60	2.30	9	5.95	0.66	0.66	0.66		0.063	0.677	0.359	31.0	52.0			4562	21700
14	7:00	13.3	1.250	1.210	0.023	0.981	0.082	26	0.49		0.00	288	3.57	111	2.20	30	0.70	49	1.98	15	8.73	0.66	0.66	0.66		0.068	0.791	0.419	13.0		58.0	59.0	6843	32550
15	7:00	16.2	1.510	1.045	0.005	1.196	0.058	31	0.49		0.00	314	4.50	142	3.26	33	0.63	57	1.89	10	8.30	0.66	0.66	0.66		0.053	0.683	0.362		41.0			2281	10850
16	7:00	14.3	1.310	1.245	0.014	1.020	0.090	27	0.49		0.00	310	3.73	128	2.47	33	0.74	50	1.94	16	8.49	0.66	0.66	0.66		0.076	0.814	0.431	49.0		56.0	33.0	6843	32550
17	7:00	14.2	1.284	1.113	0.017	1.017	0.066	26	0.49		0.00	300	4.04	129	2.78	33	0.74	53	2.06	15	10.84	0.66	0.66	0.66		0.052	0.727	0.386	14.0	42.0		37.0	6843	32550
18	7:00	14.9	1.302	1.200	0.010	1.032	0.077	27	0.49		0.00	320	4.00	135	2.70	35	0.77	9	0.35	21	13.15	0.66	0.66	0.66		0.067	0.784	0.416		37.0	41.0		4562	21700
19	7:00	17.5	1.530	1.177	0.012	1.294	0.081	31	0.49		0.00	376	4.79	149	3.04	42	0.74	9	0.28	11	6.55	0.66	0.66	0.66		0.071	0.769	0.408	59.0			50.0	4562	21700
20	7:00	17.0	1.521	1.369	0.021	1.102	0.100	31	0.49		0.00	390	4.27	129	2.26	41	0.85	9	0.32	21	10.03	0.66	0.66	0.66		0.086	0.895	0.474	31.0	42.0	48.0		6843	32550
21	7:00	15.0	1.369	1.275	0.000	1.107	0.074	28	0.49		0.00	320	3.76	124	2.33	35	0.72	8	0.29	11	7.15	0.66	0.66	0.66		0.069	0.833	0.442				36.0	2281	10850
22	7:00	16.0	1.502	1.199	0.015	1.199	0.082	31	0.49		0.00	296	3.70	109	2.18	31	0.59	8	0.26	13	7.57	0.66	0.66	0.66		0.068	0.784	0.415	38.0	41.0		32.0	6843	32550
23	7:00	16.8	1.509	1.309	0.022	1.184	0.092	31	0.49		0.00	356	4.08	137	2.51	39	0.75	8	0.27	18	9.37	0.66	0.66	0.66		0.073	0.856	0.453	30.0	34.0	71.0	30.0	9124	43400
24	7:00	15.6	1.411	1.334	0.017	1.022	0.091	27	0.45		0.00	312	3.51	116	2.09	34	0.76	10	0.39	14	7.37	0.66	0.66	0.66		0.072	0.872	0.462	16.0	24.0	26.0	14.0	9124	43400
25	7:00	16.0	1.402	1.131	0.021	1.128	0.076	29	0.49		0.00	386	5.12	140	2.97	41	0.83	15	0.53	16	10.15	0.66	0.66	0.66		0.066	0.739	0.392	30.0			32.0	4562	21700
26	7:00	14.6	1.387	1.285	0.012	1.042	0.082	28	0.49		0.00	270	3.15	101	1.88	30	0.66	19	0.72	14	8.23	0.66	0.66	0.66		0.072	0.840	0.445		42.0	45.0		4562	21700
27	7:00	14.1	1.269	1.165	0.010	1.010	0.077	26	0.49		0.00	318	4.09	109	2.24	34	0.77	50	1.96	15	9.39	0.66	0.66	0.66		0.067	0.761	0.404	38.0			41.0	4562	21700
28	7:00	15.9	1.431	1.126	0.012	1.137	0.081	29	0.49		0.00	326	4.34	114	2.43	36	0.72	60	2.09	13	7.68	0.66	0.66	0.66		0.062	0.736	0.390	32.0	46.0	47.0	31.0	9124	43400
29	7:00	15.9	1.450	1.245	0.022	1.197	0.075	30	0.49		0.00	386	4.65	109	2.10	37	0.70	59	1.95	17	10.87	0.66	0.66	0.66		0.075	0.814	0.431					0	0
30	7:00	14.7	1.254	1.246	0.005	0.974	0.081	26	0.49		0.00	294	3.54	96	1.85	32	0.75	3	0.12	16	9.46	0.66	0.66	0.66		0.062	0.814	0.432	32.0	42.0	49.0	42.0	9124	43400
31									#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!	0.66	0.66	0.66				0.000						
Total		460.4	42.019	36.551	0.423	33.243	2.425	856.4901	#DIV/0!	0	#DIV/0!	9832	#DIV/0!	3570	#DIV/0!	1066	#DIV/0!	751	#DIV/0!	446	#DIV/0!					2.047	23.890	12.661	689	699	748	751	180199	857150
Ave.		15.3	1.401	1.218	0.014	1.108	0.081	28.5	#DIV/0!	#DIV/0!	#DIV/0!	328	#DIV/0!	119	#DIV/0!	35.5	#DIV/0!	25.0	#DIV/0!	14.9	#DIV/0!	0.66	0.66	0.66	#DIV/0!	0.068	0.796	0.408	28.7	41.1	44.0	35.8	6006.6	28572
Max		17.5	1.588	1.369	0.023	1.294	0.100	32.4	#DIV/0!	0	#DIV/0!	440	#DIV/0!	149	#DIV/0!	47	#DIV/0!	65	#DIV/0!	21	#DIV/0!	0.66	0.66	0.66	0	0.086	0.895	0.474	59.0	67.0	71.0	62.0	9,124	43,400
Min		13.3	1.250	1.036	0.000	0.974	0.058	25.5	#DIV/0!	0	#DIV/0!	256	#DIV/0!	90	#DIV/0!	28	#DIV/0!	0	#DIV/0!	9	#DIV/0!	0.66	0.66	0.66	0	0.052	0.677	0.000	10.0	24.0	16.0	14.0	0	0

1	20	% Sodium Permanganate	Pre-aerator
2	40	% BisulfiteSolution	Membrane Backwash
3	12.5	% Sodium Hypochlorite Solution	Post Softener
4	20	% Ammonium Sulfate Solution	Post Softener
5	19	% Fluorosilicic Acid Solution	Post Clearwell
6	33	% Phosphate Solution	Post Clearwell
7	40	% BisulfiteSolution	Lagoon Effluent

CHLORINATION

Type of Chlorine Used: Sodium Hypochlorite 12.5 %

Chlorine Analyzers Used: Hach CL17 (2) & 5500sc

FLUORIDATION

Type of Fluoride Used: Hydrofluosilicic Acid 19% F

Fluoride Analyzer Used: Hach 2200, SPADNS method

I certify that the information in this report is complete and accurate to the best of my knowledge.

Reported by: _____ Illinois Operator Certification I[253419999

Date: _____

Date Bacterials Se[_____

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF PUBLIC WATER SUPPLIES

South Sangamon Water Commission - IL1670080
November 2021

Physical and Chemical Tests | **Membrane Integrity**

Raw | **Pre UF Membrane** | **Post UF Membrane** | **Post IEX** | **Finished** | **Post Filter**

Date	pH	Temp deg. C	Raw Total Alk. mg/L as CaCO3	Raw Total Hard. mg/L as CaCO3	Raw Total Fe mg/L	Raw Total Mn mg/L	Pre UF Membrane Turbidity NTU	Pre UF Membrane Total Fe mg/L	Pre UF Membrane Total Mn mg/L	Pre UF Membrane Soluble Mn mg/L	Post UF Membrane Total Fe mg/L	Post UF Membrane Total Mn mg/L	Post UF Membrane Turbidity NTU	Post IEX 1 Chloride mg/L	Post IEX 2 Chloride mg/L	Post IEX 3 Chloride mg/L	Post IEX 4 Chloride mg/L	Finished pH	Finished Turbidity NTU	Finished Total Alk. mg/L as CaCO3	Finished Total Hard. mg/L as CaCO3	Finished Total Fe mg/L	Finished Total Mn mg/L	Finished Fluoride F mg/L	Finished Ortho Phosphate mg/L	Finished Free Ammonia mg/l	Finished Mono-Chloramine mg/l	Chlorine F mg/l	Chlorine T mg/L	Distrbution F mg/l	Distrbution T mg/L	Membrane Integrity Post Filter Bank 1 psi	Bank 2 psi	Bank 3 psi
1	7.40	15.2	290	364	0.74	0.222			0.294	0.087	0.66	0.077	0.25					7.70	0.28	280	110	0.01	0.024	0.80	1.83	0.69	9.19	0.08	3.20					
2	7.50	15.8	300	360	0.61	0.220			0.281	0.097	0.47	0.069	0.23					8.10	0.25	280	100	0.01	0.029	0.86	1.97	0.41	7.42	0.10	3.38					
3	7.40	15.0	300	370	0.56	0.218			0.317	0.081	0.01	0.052	0.14					7.90	0.22	320	96	0.01	0.023	0.79	2.11	0.42	8.13	0.11	3.16					
4	7.30	15.8	320	400	1.37	0.232			0.654	0.099	0.67	0.080	0.15					7.70	0.19	270	110	0.01	0.040	0.84	1.83	0.55	5.86	0.09	3.20					
5	7.20	15.5	300	360	0.68	0.236			0.346	0.100	0.65	0.055	0.24					7.70	0.19	280	110	0.01	0.022	0.93	1.76	0.58	6.30	0.16	3.26					
6	7.20	15.6	300	340	0.80	0.234			0.336	0.890	0.62	0.060	0.22					7.70	0.20	280	100	0.01	0.023	0.89	1.87	0.56	6.12	0.11	3.22					
7	7.40	15.8	300	365	0.70	0.212			0.318	0.800	0.61	0.530	0.21					7.80	0.23	280	110	0.01	0.030	0.81	1.83	0.60	6.13	0.10	3.22					
8	7.40	15.8	300	360	0.78	0.233			0.428	0.098	0.51	0.082	0.25					7.70	0.23	280	120	0.01	0.032	1.08	2.02	0.46	5.84	0.08	3.30					
9	7.40	15.6	310	340	0.45	0.217			0.288	0.092	0.52	0.092	0.25					7.70	0.25	290	130	0.01	0.027	0.73	1.89	0.67	6.27	0.11	2.02					
10	7.30	15.5	300	365	0.89	0.220			0.297	0.099	0.57	0.089	0.26					7.70	0.25	280	140	0.01	0.024	0.80	1.74	0.39	7.37	0.10	3.48					pass		pass
11	7.40	15.4	300	330	0.68	0.223			0.312	0.087	0.42	0.061	0.23					7.70	0.28	290	135	0.01	0.026	0.75	1.74	0.41	6.34	0.08	3.22					
12	7.30	15.4	300	360	0.70	0.226			0.326	0.075	0.58	0.070	0.20					7.70	0.28	290	160	0.01	0.032	0.86	1.75	0.38	6.27	0.09	3.20					
13	7.40	14.0	300	350	0.38	0.194			0.273	0.123	0.01	0.102	0.24					7.80	0.19	270	110	0.01	0.026	0.96	1.88			3.07	3.24					
14	7.50	13.8	310	354	0.50	0.208			0.273	0.116	0.01	0.037	0.13					7.90	0.26	310	96	0.01	0.026	0.85	1.72	0.75	1.08	0.13	3.27					
15	7.40	14.8	280	365	0.71	0.224			0.734	0.119	0.48	0.057	0.23					7.80	0.25	280	100	0.01	0.038	0.81	1.79	0.53	5.13	0.11	3.38					
16	7.30	15.8	290	360	0.83	0.204			0.401	0.097	0.64	0.083	0.21					7.80	0.40	290	100	0.01	0.026	0.81	1.79	0.56	7.53	0.11	3.42					
17	7.20	16.2	280	360	0.77	0.214			0.266	0.193	0.55	0.127	0.39					7.70	0.43	280	100	0.01	0.037	1.02	1.82	0.80	6.28	0.12	3.58						pass	
18	7.30	14.2	318	352	0.90	0.221			0.369	0.178	0.01	0.136	0.15					7.70	0.37	300	100	0.01	0.029	0.87	1.88	0.48	4.65	0.13	3.34					
19	7.30	15.7	300	350	0.89	0.226			0.663	0.148	0.72	0.138	0.28					7.70	0.30	280	100	0.01	0.035	0.84	1.71	0.41	4.45	0.10	3.40					
20	7.30	13.6	305	360	0.80	0.220			0.360	0.086	0.64	0.060	0.30					7.70	0.35	280	100	0.01	0.038	0.80	1.78	0.40	4.47	0.11	3.38					
21	7.30	15.8	290	365	0.60	0.216			0.362	0.073	0.33	0.057	0.22					7.70	0.27	280	100	0.01	0.030	0.76	1.72	0.38	4.40	0.10	3.20					
22	7.20	15.2	290	340	0.72	0.213			0.280	0.090	0.70	0.130	0.27					7.70	0.32	280	120	0.01	0.060	0.87	1.88	0.53	6.31	0.12	3.42					
23	7.30	15.1	290	360	1.11	0.234			0.437	0.160	0.86	0.150	0.28					7.80	0.25	290	100	0.02	0.033	0.74	1.87	0.60	5.47	0.11	3.58					
24	7.30	15.4	300	365	1.46	0.241			0.389	0.151	1.38	0.150	0.29					7.80	0.30	280	100	0.02	0.040	0.70	1.53	0.96	2.23	0.11	3.14					
25	7.30	15.2	300	362	1.01	0.212			0.363	0.114	0.60	0.120	0.25					7.70	0.32	280	100	0.01	0.032	0.89	1.78	0.62	4.38	0.10	3.20					
26	7.30	13.8	300	364	0.97	0.206			0.345	0.106	0.01	0.117	0.14					7.60	0.35	290	104	0.01	0.033	0.80	1.44	0.74	4.11	0.14	3.12					
27	7.30	14.0	300	358	0.47	0.217			0.237	0.145	0.01	0.123	0.17					7.80	0.27	306	100	0.01	0.028	0.78	1.47	0.68	4.05	0.09	3.15					
28	7.30	13.8	320	372	1.03	0.219			0.317	0.148	0.01	0.128	0.18					7.80	0.25	296	120	0.01	0.031	0.75	1.67	0.62	5.10	0.10	2.80					
29	7.40	15.3	300	360	0.96	0.231			0.237	0.160	0.77	0.132	0.32					7.80	0.35	280	100	0.02	0.035	0.87	1.75	0.53	5.97	0.08	3.20					
30	7.30	16.1	280	370	1.07	0.230			0.342	0.174	0.88	0.133	0.27					7.80	0.32	280	130	0.01	0.036	0.84	1.83	0.68	4.49	0.02	2.88					
31																																		
Ave.	7.33	15.1	299	359	0.80	0.221	#DIV/0!	#DIV/0!	0.362	0.166	0.50	0.110	0.23	######	######	######	######	7.76	0.28	286	110	0.01	0.032	0.84	1.79	0.57	5.56	0.20	3.22	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Max	7.50	16.2	320	400	1.46	0.241	0.00	0.00	0.734	0.890	1.38	0.530	0.39	0	0	0	0	8.10	0.43	320	160	0.02	0.060	1.08	2.11	0.96	9.19	3.07	3.58	0.00	0.00	0.00	0.00	0.00
Min	7.20	13.6	280	330	0.38	0.194	0.00	0.00	0.237	0.073	0.01	0.037	0.13	0	0	0	0	7.60	0.19	270	96	0.01	0.022	0.70	1.44	0.38	1.08	0.02	2.02	0.00	0.00	0.00	0.00	0.00

Lagoon Effluent Tests Monthly		pH	Temp °C	T Chlor mg/l	Mn mg/l	Fe mg/l	Chloiride mg/L	TSS mg/L
Date	11/8/2021	7.7	15.4	0.01	0.155	0.09	470	<4.0

Distribution Stability Tests Every Two Weeks		pH	Temp °C	TDS mg/L	Alkalinity mg/L as CaCO3	Calcium mg/L as CaCO3	Chloiride mg/L	Sulfate mg/L
Date	11/9/2021	7.81	15.6	490	260		39	56
Date								
Date								

Remarks: