ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF PUBLIC WATER SUPPLIES

MONTHLY IRON REMOVAL AND ION EXCHANGE SOFTENING REPORT

South Sangamon Water Commission - IL 1670080
October 2021

Date	Time Meter Read	Pumping Totals: 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)	Chemicals Applied: Sodium Permanganate Am't Used lbs.	Sodium Permanganate Calc mg/l as NaMnO4	Sodium Bisulfite BW Am't Used lbs.	Sodium Bisulfite BW Calc mg/l	Sodium Hypochlorite Am't Used lbs.	Sodium Hypochlorite Calc mg/l as Cl	Ammonium Sulfate Am't Used lbs.	Ammonium Sulfate Calc mg/l as NH3	Fluorosilicic Acid Am't Used lbs.	Fluorosilicic Acid Calc mg/l as F	Phosphate Am't Used lbs.	Phosphate Calc mg/l as PO4	Sodium Bisulfite Pond Am't Used lbs.	Sodium Bisulfite Pond Calc mg/l
1	7:00	18.6	1.755	1.542	0.022	1.395	0.098	36	0.49		0.00	378	3.67	123	1.91	43	0.70	17	0.48	40	19.66
2	7:00	18.1	1.645	1.452	0.012	1.302	0.100	34	0.49		0.00	374	3.86	109	1.80	43	0.75	20	0.61	33	15.77
3	7:00	16.1	1.549	1.527	0.016	1.199	0.098	32	0.49		0.00	356	3.49	111	1.74	40	0.76	22	0.73	37	18.04
4	7:00	17.9	1.665	1.365	0.017	1.308	0.092	34	0.49		0.00	340	3.73	107	1.88	37	0.64	30	0.91	27	14.02
5	7:00	15.6	1.480	1.365	0.020	1.157	0.093	30	0.49		0.00	336	3.69	105	1.84	37	0.73	8	0.27	35	18.13
6	7:00	17.2	1.511	1.218	0.007	1.203	0.084	31	0.49		0.00	324	3.99	103	2.03	37	0.70	8	0.26	28	15.96
7	7:00	15.2	1.406	1.401	0.024	1.087	0.095	29	0.49		0.00	320	3.42	96	1.64	37	0.78	10	0.36	51	25.86
8	7:00	17.5	1.636	1.258	0.010	1.215	0.093	33	0.49		0.00	308	3.67	91	1.73	35	0.66	9	0.29	51	26.26
9	7:00	19.2	1.779	1.723	0.020	1.086	0.109	36	0.49		0.00	378	3.29	126	1.75	42	0.88	12	0.44	47	20.65
10	7:00	17.0	1.555	1.239	0.023	1.212	0.084	32	0.49		0.00	350	4.23	128	2.48	39	0.73	12	0.39	36	20.66
11	7:00	16.4	1.526	1.317	0.009	1.258	0.086	31	0.49		0.00	283	3.22	109	1.98	32	0.58	11	0.35	28	15.69
12	7:00	16.2	1.452	1.365	0.014	1.174	0.092	30	0.49		0.00	320	3.51	119	2.09	38	0.74	16	0.54	38	19.78
13	7:00	17.5	1.599	1.301	0.019	1.280	0.085	33	0.49		0.00	336	3.87	117	2.16	41	0.73	17	0.53	30	17.01
14	7:00	16.6	1.549	1.381	0.013	1.268	0.085	32	0.49		0.00	326	3.54	108	1.88	39	0.70	19	0.59	34	19.10
15	7:00	15.4	1.422	1.345	0.010	1.094	0.095	29	0.49		0.00	334	3.72	116	2.07	39	0.81	25	0.90	31	15.59
16	7:00	15.0	1.368	1.203	0.017	1.083	0.072	28	0.49		0.00	244	3.04	82	1.63	30	0.63	32	1.17	24	16.03
17	7:00	13.2	1.292	1.228	0.010	1.071	0.081	26	0.49		0.00	294	3.59	102	1.99	35	0.74	55	2.03	30	17.68
18	7:00	15.5	1.440	1.041	0.015	1.244	0.071	29	0.49		0.00	348	5.01	67	1.54	41	0.75	69	2.19	31	20.83
19	7:00	18.3	1.684	1.481	0.015	1.309	0.083	34	0.49		0.00	342	3.46	105	1.70	41	0.71	18	0.54	33	19.12
20	7:00	17.8	1.692	1.484	0.011	1.307	0.106	35	0.49		0.00	354	3.58	111	1.79	42	0.73	9	0.27	29	13.10
21	7:00	18.6	1.740	1.530	0.016	1.393	0.098	36	0.49		0.00	378	3.70	127	1.99	45	0.74	10	0.28	4	1.97
22	7:00	18.2	1.731	1.542	0.011	1.387	0.107	35	0.49		0.00	332	3.23	108	1.68	41	0.67	11	0.31	24	10.74
23	7:00	14.5	1.352	1.334	0.021	1.078	0.088	28	0.49		0.00	388	4.36	128	2.30	47	0.99	12	0.44	35	19.17
24	7:00	17.2	1.573	1.212	0.016	1.280	0.079	32	0.49		0.00	258	3.19	90	1.78	31	0.55	10	0.31	39	23.80
25	7:00	16.1	1.501	1.332	0.006	1.205	0.076	31	0.49		0.00	348	3.92	98	1.76	35	0.66	12	0.39	35	22.09
26	7:00	18.3	0.895	1.119	0.000	0.559	0.086	18	0.49		0.00	368	4.93	99	2.12	32	1.30	15	1.06	9	5.01
27	7:00	17.7	1.588	1.550	0.017	1.220	0.103	32	0.49		0.00	352	3.40	100	1.55	35	0.65	13	0.42	21	9.82
28	7:00	15.4	1.379	1.313	0.013	1.118	0.080	28	0.49		0.00	340	3.88	122	2.23	39	0.79	17	0.60	15	9.04
29	7:00	15.6	1.433	1.177	0.010	1.119	0.083	29	0.49		0.00	294	3.74	101	2.06	32	0.65	27	0.95	12	6.97
30	7:00	14.7	1.318	1.247	0.009	1.054	0.078	27	0.49		0.00	306	3.68	98	1.88	33	0.71	50	1.88	11	6.73
31	7:00	14.4	1.329	1.182	0.015	1.062	0.079	27	0.49		0.00	308	3.91	101	2.05	35	0.75	57	2.12	23	14.04
Total		515	46.844	41.774	0.438	36.727	2.757	957	15.19	0	0	10317	115.53	3307	59.06	1173	22.95	653	22.65	921	498.32
Ave.		16.6	1.511	1.348	0.014	1.185	0.089	30.9	0.49	#DIV/0!	0	333	3.73	107	1.91	37.8	0.74	21.1	0.73	29.7	16.07
Max		19.2	1.779	1.723	0.024	1.395	0.109	36.4	0.49	0	0	388	5.01	128	2.4774	47	1.30	69	2.19	51	26.26
Min		13.2	0.895	1.041	0.000	0.559	0.071	18.3	0.49	0	0	244	3.04	67	1.54	30	0.55	8	0.26	4	1.97

Date	UF Filters: Hours since previous backwash, Bank # 1	Bank # 2	Bank # 3	Bank #	Wash Water Gal. (M gal)	Softeners: 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	Regeneration: Salt Used lbs.	Washed Water Gal.
1	0.66	0.66	0.66		0.088	1.008	0.534	31.0		23.0		4562	21700
2	0.66	0.66	0.66		0.086	0.949	0.503	29.0	33.0		31.0	6843	32550
3	0.66	0.66	0.66		0.084	0.998	0.529		32.0	41.0	32.0	6843	32550
4	0.66	0.66	0.66		0.078	0.892	0.473	36.0	33.0	28.0		6843	32550
5	0.66	0.66	0.66		0.083	0.892	0.473	29.0			36.0	4562	21700
6	0.66	0.66	0.66		0.065	0.796	0.422	30.0	42.0	48.0	29.0	9124	43400
7	0.66	0.66	0.66		0.085	0.916	0.485			23.0	25.0	4562	21700
8	0.66	0.66	0.66		0.074	0.822	0.436	29.0	35.0	22.0	26.0	9124	43400
9	0.66	0.66	0.66		0.090	1.126	0.597	35.0	35.0	31.0	31.0	9124	43400
10	0.66	0.66	0.66		0.074	0.810	0.429	30.0	32.0			4562	21700
11	0.66	0.66	0.66		0.076	0.861	0.456			35.0	38.0	4562	21700
12	0.66	0.66	0.66		0.073	0.892	0.473	31.0	36.0	33.0	30.0	9124	43400
13	0.66	0.66	0.66		0.075	0.850	0.451	36.0	32.0			4562	21700
14	0.66	0.66	0.66		0.071	0.903	0.478	30.0		31.0	40.0	6843	32550
15	0.66	0.66	0.66		0.081	0.879	0.466		33.0	38.0	34.0	6843	32550
16	0.66	0.66	0.66		0.067	0.786	0.417	35.0				2281	10850
17	0.66	0.66	0.66		0.067	0.803	0.425		40.0	41.0	44.0	6843	32550
18	0.66	0.66	0.66		0.057	0.680	0.361	29.0		28.0	29.0	6843	32550
19	0.66	0.66	0.66		0.078	0.968	0.513		61.0			2281	10850
20	0.66	0.66	0.66		0.087	0.970	0.514	28.0	29.0	46.0	32.0	9124	43400
21	0.66	0.66	0.66		0.088	1.000	0.530	31.0			27.0	4562	21700
22	0.66	0.66	0.66		0.088	1.008	0.534	30.0	35.0	49.0	31.0	9124	43400
23	0.66	0.66	0.66		0.078	0.872	0.462	31.0	34.0			4562	21700
24	0.66	0.66	0.66		0.069	0.792	0.420			35.0	38.0	4562	21700
25	0.66	0.66	0.66		0.076	0.871	0.461					0	0
26	0.66	0.66	0.66		0.076	0.731	0.388	65.0	71.0	58.0	57.0	9124	43400
27	0.66	0.66	0.66		0.067	1.013	0.537	10.0		31.0		4562	21700
28	0.66	0.66	0.66		0.095	0.858	0.455		40.0		35.0	4562	21700
29	0.66	0.66	0.66		0.070	0.769	0.408			40.0	36.0	4562	21700
30	0.66	0.66	0.66		0.073	0.815	0.432	80.0	45.0	14.0		6843	32550
31	0.66	0.66	0.66		0.064	0.773	0.409	30.0	35.0			4562	21700
Total					0.069	27.303	14.471	715	733	695	681	182480	868000
Ave.	0.66	0.66	0.66	#DIV/0!	0.077	0.881	0.467	34.0	38.6	34.8	34.1	5886.5	28000
Max	0.66	0.66	0.66	0	0.095	1.126	0.597	80.0	71.0	58.0	57.0	9,124	43,400
Min	0.66	0.66	0.66	0	0.057	0.680	0.361	10.0	29.0	14.0	25.0	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 II 253419999

Date: 11/10/2021

Date Bacterials Se 10/21/2021, 10/27/2021

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF PUBLIC WATER SUPPLIES

South Sangamon Water Commission - IL1670080
October 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	Post Filter Bank 1 psi	Post Filter Bank 2 psi	Post Filter Bank 3 psi
1	7.40	15.9	280	364	0.76	0.207			0.309	0.127	0.61	0.101	0.19					7.70	0.25	280	120	0.01	0.015	0.80	1.88	0.58	4.81	0.18	3.20				pass	
2	7.40	15.0	312	352	0.68	0.209			0.277	0.110	0.01	0.126	0.32					7.70	0.28	300	98	0.01	0.038	0.90	1.83	0.51	5.31	0.11	2.87					
3	7.40	14.9	310	356	0.63	0.203			0.267	0.120	0.01	0.113	0.13					7.80	0.24	294	100	0.01	0.025	0.97	1.74			0.13	2.69					
4	7.40	15.3	290	390	0.70	0.220			0.294	0.136	0.70	0.092	0.20					7.80	0.22	270	115	0.02	0.024	0.83	1.81	0.40	4.87	0.09	2.86					pass
5	7.40	15.6	280	385	0.81	0.225			0.304	0.151	0.83	0.113	0.28					7.80	0.24	280	115	0.03	0.032	0.85	1.95	0.65	5.09	0.13	3.00					
6	7.30	15.6	280	380	0.96	0.216			0.222	0.125	0.87	0.016	0.27					7.80	0.23	270	100	0.01	0.030	0.91	1.94	0.54	5.57	0.08	2.84					
7	7.30	15.5	300	380	1.41	0.242			0.340	0.141	0.87	0.120	0.30					7.80	0.28	280	110	0.01	0.024	1.00	1.85	0.41	3.65	0.09	2.60				pass	
8	7.40	15.3	300	364	0.98	0.227			0.365	0.143	0.78	0.116	0.24					7.80	0.28	290	100	0.02	0.029	0.87	1.83	0.53	4.10	0.10	2.44					
9	7.40	15.4	300	360	0.89	0.232			0.346	0.134	0.68	0.120	0.25					7.80	0.27	280	100	0.01	0.032	0.80	1.76	0.57	4.12	0.09	2.86					
10	7.40	15.4	300	340	0.72	0.215			0.333	0.138	0.70	0.118	0.23					7.80	0.25	285	110	0.01	0.028	0.92	1.80	0.43	3.89	0.10	2.80					
11	7.30	15.8	300	350	0.88	0.239			0.316	0.136	0.73	0.086	0.30					7.80	0.28	290	100	0.01	0.030	0.62	1.79	0.69	5.39	0.09	3.20				pass	
12	7.40	15.7	280	342	1.48	0.244			0.301	0.139	1.13	0.091	0.25					7.80	0.29	280	105	0.01	0.028	0.72	1.78	0.56	5.10	0.11	3.00					
13	7.40	15.4	280	340	0.87	0.237			0.309	0.161	0.71	0.101	0.31					7.80	0.30	275	100	0.01	0.026	0.93	1.96	0.51	5.52	0.11	2.86					pass
14	7.40	16.2	280	360	0.85	0.230			0.328	0.142	0.68	0.081	0.40					7.80	0.30	285	115	0.01	0.033	0.75	1.80	0.53	4.56	0.12	2.66					
15	7.30	15.8	310	280	0.73	0.177			0.330	0.021	0.71	0.040	0.32					7.80	0.29	270	90	0.01	0.027	1.06	1.68	0.51	4.64	0.08	3.04					pass
16	7.10	15.1	310	362	1.06	0.210			0.288	0.078	0.02	0.062	0.19					7.50	0.24	306	100	0.01	0.014	0.77	1.83	0.55	4.41	0.11	2.76					
17	7.40	15.0	310	360	0.97	0.239			0.277	0.085	0.01	0.051	0.21					7.80	0.21	308	110	0.01	0.024	0.83	1.92	0.39	7.49	0.10	2.82					
18	7.40	15.2	290	370	0.90	0.217			0.377	0.091	0.83	0.080	0.25					7.80	0.25	290	100	0.01	0.019	0.92	1.99	0.63	6.58	0.08	3.32					
19	7.40	15.3	280	362	0.78	0.213			0.294	0.093	0.57	0.046	0.21					7.80	0.23	280	100	0.01	0.029	0.81	1.84	0.60	5.32	0.11	2.94					
20	7.30	15.3	300	360	1.08	0.224			0.291	0.095	0.58	0.070	0.34					7.80	0.29	300	120	0.01	0.027	0.73	1.74	0.54	4.40	0.11	2.66					
21	7.40	15.2	300	345	0.81	0.219			0.394	0.090	0.62	0.074	0.27					7.80	0.25	280	100	0.01	0.027	0.83	1.68	0.67	5.61	0.08	3.02					
22	7.40	15.0	300	362	0.87	0.214			0.282	0.089	0.06	0.084	0.21					7.40	0.22	308	120	0.01	0.025	0.77	1.78	0.43	3.17	0.13	2.68					
23	7.40	15.1	300	360	0.80	0.209			0.278	0.077	0.43	0.080	0.25					7.70	0.23	290	110	0.01	0.028	0.72	1.72	0.56	3.89	0.11	3.04					
24	7.40	15.0	300	370	0.92	0.219			0.306	0.060	0.56	0.072	0.27					7.70	0.23	280	110	0.01	0.025	0.82	1.88	0.61	5.20	0.08	2.98					
25	7.20	14.8	312	380	1.75	0.242			0.300	0.086	0.01	0.025	0.20					7.60	0.21	296	100	0.01	0.016	0.65	1.67	0.48	3.40	0.15	2.91					
26	7.40	14.5	306	376	1.46	0.229			0.287	0.086	0.01	0.073	0.30					7.80	0.32	290	120	0.01	0.021	0.73	1.83	0.41	3.36	0.14	2.86					
27	7.40	14.9	290	360	1.20	0.248			0.405	0.093	1.24	0.127	0.32					7.80	0.31	280	110	0.01	0.032	0.65	1.89	0.50	3.07	0.11	3.40				pass	
28	7.40	15.5	280	345	0.84	0.227			0.324	0.113	0.89	0.116	0.30					7.70	0.28	280	110	0.01	0.035	0.77	1.83	0.68	6.11	0.10	3.24					
29	7.50	15.5	300	340	0.96	0.225			0.272	0.115	0.70	0.098	0.32					7.80	0.28	300	110	0.01	0.025	0.87	1.95	0.55	6.06	0.09	3.22					
30	7.50	14.8	312	350	0.99	0.213			0.273	0.083	0.01	0.080	0.26					7.40	0.26	318	116	0.01	0.021	0.99	1.91	0.44	3.20	0.13	2.72					
31	7.30	14.7	310	370	1.06	0.233			0.278	0.088	0.01	0.070	0.21					7.80	0.19	300	110	0.00	0.022	0.84	1.03	0.49	3.57	0.10	2.91					
Ave.	7.37	15.3	297	359	0.96	0.223	#DIV/0!	#DIV/0!	0.309	0.108	0.53	0.085	0.26	######	######	######	######	7.74	0.26	288	107	0.01	0.026	0.83	1.80	0.53	4.72	0.11	2.92	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Max	7.50	16.2	312	390	1.75	0.248	0.00	0.00	0.405	0.161	1.24	0.127	0.40	0	0	0	0	7.80	0.32	318	120	0.03	0.038	1.06	1.99	0.69	7.49	0.18	3.40	0.00	0.00	0.00	0.00	0.00
Min	7.10	14.5	280	280	0.63	0.177	0.00	0.00	0.222	0.021	0.01	0.016	0.13	0	0	0	0	7.40	0.19	270	90	0.00	0.014	0.62	1.03	0.39	3.07	0.08	2.44	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	10/21/2021	7.7	20.6	0.05	0.358	0.18	430	7.2

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	10/21/2021	7.8	18.9	450	250		43	59
Date								
Date								

Remarks: