Monthly Operating Report

April 2017

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So. Sangamon

May 16, 2017

woodardcurran.com

COMMITMENT & INTEGRITY DRIVE RESULTS

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EXECUTIVE SUMMARY

Safety. Safety is the number one priority at Woodard and Curran. We continue to provide monthly training for employees at the plant, provide weekly safety updates and safety videos are assigned to all employees. The safety topic for this month was "industrial ergonomics". There were no lost time accidents in the month of April 2017. Approximately 86 percent of the items identified in the combined list of safety items have been completed.

Compliance. The finished water quality was within regulatory limits and all reporting and sampling requirements were met for the month. A copy of the Operations Report submitted to the Illinois Environmental Protection Agency is included in this report as Attachment A.

Plant Numbers: For the month of April 2017, 36.7 million gallons of water was pumped from the well field. The plant filtered 33.9 million gallons. The lagoon effluent was within regulatory limits and the Sangamon County Water Reclamation District Chloride sample for the month tested at 18,800 mg/L.

Operations. There were 0 emergency call-outs for the month. There were three (3) customer inquiries for the month.

Well Pump Test Results: On April 5 and 6, 2017, Brotcke Well and Pump was on-site to perform annual pump testing on ten of SSWC's wells. This testing is one component of the Well Maintenance Program put in place by the SSWC and was continued when Woodard and Curran assumed operational responsibility of the treatment process in May 2015. Wells Six, Seven and Eight are scheduled for rehabilitation this year. Wells Two and Nine are potential for next year. A copy of the full report from Brotcke is included in this report as Attachment B.

Maintenance and Repair. For the month of April 2017, there were 7 inspections, 7 preventative and 6 corrective maintenance activities completed.

Budget. Through April 28, 2017, we are $34,413 over budget for the fiscal year.

Capital Planning. Woodard and Curran is working with Meco Engineering to update and prioritize the Capital Improvement Plan. The CIP is a planning document that includes all projects anticipated to exceed $5,000 in cost over the next five years. The CIP is an ongoing process and will be refined from time to time as projects are completed and new issues are identified. The most recent update of the CIP is included in this document at Attachment C.

1. SAFETY

1.1 SAFETY TRAINING

Woodard and Curran continues to provide safety training for personnel at the plant. This is accomplished by requiring daily safety meetings, weekly safety updates are available to the plant, and safety videos are assigned to all employees and are required to be completed. The April, 2017 safety training topic was "industrial ergonomics".

1.2 LOST TIME ACCIDENTS

There were no lost time accidents in the month of April, 2017.

1.3 SAFETY AUDIT

Since Woodard and Curran assumed operational responsibility for the SSWC plant, two safety audits have been completed. The first audit was conducted in May 2015 and identified 89 items needing to be addressed. Approximately 86 percent of those items identified had been addressed when a second audit occurred in November 2016.

The finding for these two audits were combined to produce a list of 42 items needing to be addressed. A safety audit conference call with Shannon Eyler was held on April 12, 2017. To date, 78 percent of the items have been addressed. Remaining items are being addressed at time permits and as funding becomes available.

1.4 MISCELLANEOUS SAFETY

Celina Bland was on-site April 10 and 11, 2017 to work on the Lock Out/Tag Out plan.

2. COMPLIANCE, FLOWS AND LOADINGS

2.1 COMPLIANCE

The finished water quality was within regulatory limits and all reporting and sampling requirements were met for April 2017. A copy of the Operations Report to the Illinois Environmental Protection Agency (IEPA) is included in Attachment A of this report

2.2 INFLUENT FLOWS AND LOADINGS

The total gallons pumped from the well field was 36.7 MG. The influent parameters were all within the normal range.

The influent flow and loadings are summarized below in Table 2.2

Table 2.2 Influent Concentrations and Flow

	pH	Temp	Iron	Manganese	Fluoride	Hardness	Alkalinity	Well Flow Gals (k)
Max.	7.60	14.9	1.08	0.214	-	390	296	1.583
Min.	7.30	13.3	0.80	0.184	-	356	290	0.933
Avg.	7.41	14.1	0.94	0.202	-	375	292	1.224
Total	-	-	-	-	-	-	-	36.712

2.3 EFFLUENT CONCENTRATIONS

The facility filtered 33.9 MG during the month with a daily average of 1.13 MG and a min/max of 0.8/1.49 MG.

Table 2.3 Finished Water Quality

	Free CL2	Total CL2	pH	Temp	Iron	Manganese	Fluoride	Hardness	Alkalinity	Phosphate
Max.	1.3	1.5	7.98	14.8	0.02	0.017	1.07	150	292	1.73
Min.	0.7	0.9	7.70	13.4	0.00	0.003	0.48	98	270	1.14
Avg.	1.2	1.4	7.84	14.1	0.01	0.011	0.79	116	279	1.37
MCL	-	-	-	-	1.00	-	4.00	-	-	-
SMCL	-	-	-	-	0.30	0.050	2.00	-	-	-

2.4 LAGOON DISCHARGE CONCENTRATIONS

The results for the NPDES lagoon discharge permit are summarized below.

Table 2.4 Weekly Grab Sample Analysis Results

Lagoon Effluent Results						
Date	**Fe (mg/l)**	**Mn (mg/l)**	**Chloride (mg/l)**	**Cl^2 (mg/l)**	**pH (S.U.)**	**TSS (mg/l)**
04/08/2017	0.660	0.601	312	0.040	8.08	13.50
n/a	-	-	-	-	-	-
Minimum	-	-	-	-	-	-
Maximum	-	-	-	-	-	-
Average	-	-	-	-	-	-
Monthly Avg Limit	***2.000***	***1.00***	***-***	***-***	***-***	***15***
Daily Limit	***4.000***	***2.000***	***500***	***0.050***	***6.0-9.0***	***30***

The Chloride sample for the month of April 2017, performed by the Springfield Metropolitan Sanitary District, was 18,800 mg/L. The limit for chloride discharge to the sanitary district is 30,000 mg/L

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3. OPERATIONS

3.1 EVENTS IMPACTING OPERATIONS

Pump Testing on the Wells. On April 5 and 6, 2017, Brotcke Well and Pump was on-site to perform annual pump testing on ten of SSWC's wells. This testing is one component of the Well Maintenance Program put in place by the SSWC and was continued when Woodard and Curran assumed operational responsibility of the treatment process in May 2015. Wells Six, Seven and Eight are scheduled for rehabilitation this year. Wells Two and Nine are potential for next year. A copy of the full report from Brotcke is included in this report as Attachment B.

3.2 EMERGENCY & SERVICE CALLS

Service Calls:

- There were no service calls for the month of April.

3.2.1 Emergency Call-outs

- There were no emergency call-outs for the month.

3.3 CUSTOMER INQUIRIES

There were three customer inquiries for the month:

- On April 4, 2017, Laura VanProyen sent me an email regarding a dead meter at 10499 Old Route 54.
- On April 10, 2017, operational staff restored service to the New City Greenhouse at the customer's request.
- On April 21, 2017, Pat McCarthy called me to inquire about the Manganese levels leaving the plant in the finished. Water.

4. MAINTENANCE AND REPAIR

4.1 PREVENTATIVE AND PREDICTIVE MAINTENANCE

For the month of April 2017, there were 7 inspections, 7 preventative and 6 corrective maintenance activities completed.

4.2 CORRECTIVE REPAIRS

- On April 7, 2017, the WesTech Pre-Filter on Bank #3 was experiencing high pressure differential. Operational staff removed the internal parts, cleaned and reassembled the unit that day. Bank #3 was off-line for approximately two hours and there was no disruption of service.

  The Pre-Filter is supposed to clean itself after each backwash. It is the operational staff's belief, after repeating the cleaning process again on April 26, 2017, this is not occurring on Bank #3. Replacement parts for the internal mechanism are estimated to cost nearly $7,000. Once they arrive, the parts will be installed as soon as possible. Pictured below are three pictures of the screen prior to cleaning and the bottom right picture is after cleaning took place.

- While Bank #3 was off-line on April 7, 2017, operational staff took the opportunity replace and clean some of the fittings associated with pressure gauges on the manifold. Below is a picture of the fittings on Bank #3.

- Valve #211 on the WesTech System was leaking and need of repair. Below is a picture of the valve after it was replaced.

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5. PROJECT MANAGEMENT & SUPPORT

5.1 STAFFING & TRAINING

- Woodard and Curran continues to train and provide staffing to the plant as needed.
- Woodard and Curran IT staff are working with plant personnel on Hach Wims. Hach Wims is the programmed utilized by Woodard and Curran for developing IEPA Monthly Operating Reports and storage of test data. We are working through the issues discovered with the reporting earlier in the year as time allows.

5.2 CORPORATE SUPPORT

The following individuals, either on-site or remotely, provided assistance in operation and/or maintenance of the plant in April 2017.

- Marc Thomas
- Joe Hurley
- Ray Giguere
- Celina Bland
- Shannon Eyler

5.3 BUDGET

Table 5.3 below is a breakdown of the current budget as of April 30, 2017.

Table 5.3 Budget Table

Budget Category	Month Budget	Month Actual	YTD Budget	YTD Actual	Annual Budget	Over (under)	% of budget
Labor (D.L. + OH)	$22,926	$20,937	$275,115	$291,531	$275,115	$16,416	106%
Utilities	$8,113	$2,604	$97,350	$92,789	$97,350	($4,561)	95%
Chemicals	$14,875	$18,703	$178,500	$174,778	$178,500	($3,722)	98%
Maintenance & Repair	$7,925	$1,381	$95,100	$109,594	$95,100	$14,494	115%
Chloride	$11,688	$11,751	$140,260	$150,102	$140,260	$9,842	107%
Lab Supplies and Equipment	$1,946	$800	$23,355	$18,228	$23,355	($5,127)	78%
Office Supplies	$267	$250	$3,200	$3,120	$3,200	($80)	98%
Miscellaneous Expenses	$1,243	$2,243	$14,914	$17,221	$14,914	$2,307	115%
Other Operating Costs	$339	$1,447	$4,072	$5,788	$4,072	$1,716	142%
Subtotal of Costs for Contract Year 2	**$69,322**	**$60,116**	**$831,866**	**$863,151**	**$831,866**	**$31,285**	104%
Fixed Fee for Contract Year 2	$6,932	$6,012	$83,187	$86,315	$83,187	$3,128	104%
Year One Transition	$1,366	$1,366	$16,389	$16,389	$16,389	$0	100%
Total	**$77,620**	**$67,494**	**$931,442**	**$965,855**	**$931,442**	**$34,413**	104%

6. CAPITAL PLANNING

6.1 APPROVED CIP PROJECTS STATUS

No new information is available.

6.2 DRAFT CAPITAL IMPROVEMENT PLAN

The CIP is a planning document that includes all projects anticipated to exceed $5,000 in cost over the next five years. The CIP is an ongoing process and will be refined from time to time as projects are completed and new issues are identified.

At the end of this report in Attachment C is a summary table of the projects and a summary of the costs by fiscal year and a table by project phase.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

DIVISION OF PUBLIC WATER SUPPLIES

MONTHLY IRON REMOVAL AND ION EXCHANGE SOFTENING REPORT

ON South Sangamon Water Commission

FOR MONTH OF April 2017

		Pumping Totals				Chemicals Applied										UF Filters					Softeners								Chloride			
						Chlorine		Fluoride		Phosphate		NaMnO4		Bi-Sulfite		Each day indicate total number of hours since previous backwash. If backwashed at mid-day indicate "hours previous" / "hours following"				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.				Soft. Regen		In mg/L			
Date	Time Meter Read	Hours Filter Ran	UF Gal. Filtered (M gal)	Water Treated (M gal)	Plant Water (M gal)	Am't Used lbs.	Calc mg/l	Am't Used lbs.	Calc mg/l	Am't Used lbs.	Calc mg/l	Am't Used lbs.	Calc mg/l	Am't Used lbs.	Calc mg/l	1	2	3	4				1	2	3	4	Salt Used lbs.	Washed Water Gal.	IEX 1	IEX 2	IEX 3	IEX 4
1	7:00	13.4	0.927	0.814	0.008	221.0	3.57	24.0	1.17	52.0	2.53	30.00	3.54			0.75	0.75	0.75	0.75	0.085	0.612	0.315			44	40	4,562	20,700				
2	7:00	20.1	1.376	1.268	0.008	127.0	1.38	23.0	0.72	13.0	0.41	18.00	1.42			0.75	0.75	0.75	0.75	0.114	0.908	0.468	36	46	32	32	9,124	41,400				
3	7:00	18.6	1.282	1.188	0.018	143.0	1.66	28.0	0.93	12.0	0.40	16.00	1.35			0.75	0.75	0.75	0.75	0.141	0.853	0.439					0	0				
4	7:00	14.3	0.950	0.889	0.000	118.0	1.86	8.0	0.36	10.0	0.45	13.00	1.44			0.75	0.75	0.75	0.75	0.094	0.627	0.323	43		40	43	6,843	31,050				
5	7:00	13.5	0.934	0.846	0.013	140.0	2.25	15.0	0.70	13.0	0.61	20.00	2.35			0.75	0.75	0.75	0.75	0.082	0.616	0.318		59			2,281	10,350				
6	7:00	13.1	0.929	0.838	0.004	126.0	2.03	21.0	0.99	12.0	0.57	17.00	2.02			0.75	0.75	0.75	0.75	0.086	0.613	0.316	51		48	46	6,843	31,050				
7	7:00	13.7	0.906	0.868	0.013	183.0	2.75	37.0	1.69	30.0	1.37	27.00	3.05			0.75	0.75	0.75	0.75	0.094	0.657	0.339					0	0				
8	7:00	15.5	0.993	0.928	0.002	218.0	3.29	19.0	0.81	50.0	2.13	31.00	3.38			0.75	0.75	0.75	0.75	0.076	0.655	0.338	48	69	46	42	9,124	41,400				
9	7:00	20.6	1.490	1.320	0.015	155.0	1.56	25.0	0.75	37.0	1.11	22.00	1.69			0.75	0.75	0.75	0.75	0.131	0.983	0.507	34	36	32	31	9,124	41,400				
10	7:00	20.8	1.464	1.294	0.017	66.0	0.88	13.0	0.40	15.0	0.46	12.00	0.93			0.75	0.75	0.75	0.75	0.149	0.966	0.498					0	0				
11	7:00	12.0	0.899	0.737	0.000	185.0	3.08	37.0	1.99	45.0	2.42	26.00	3.40			0.75	0.75	0.75	0.75	0.081	0.593	0.306	54	53	48	48	9,124	41,400				
12	7:00	12.5	0.862	0.884	0.018	155.0	2.70	1.0	0.04	36.0	1.61	23.00	2.77			0.75	0.75	0.75	0.75	0.084	0.569	0.293		26			4,562	20,700				
13	7:00	17.0	1.285	1.133	0.012	140.0	1.63	7.0	0.24	34.0	1.19	21.00	1.88			0.75	0.75	0.75	0.75	0.117	0.848	0.437	38		36	35	6,843	31,050				
14	7:00	15.9	1.212	1.075	0.009	182.0	2.25	9.0	0.33	43.0	1.58	26.00	2.44			0.75	0.75	0.75	0.75	0.106	0.800	0.412		48	43	44	6,843	31,050				
15	7:00	14.7	1.146	1.026	0.013	134.0	1.75	9.0	0.35	34.0	1.31	20.00	2.02			0.75	0.75	0.75	0.75	0.099	0.758	0.390	47				2,281	10,350				
16	7:00	14.1	1.089	0.971	0.004	143.0	2.00	9.0	0.37	25.0	1.02	20.00	2.14			0.75	0.75	0.75	0.75	0.101	0.706	0.363		48	49	39	6,843	31,050				
17	7:00	16.5	1.198	1.071	0.013	163.0	2.04	15.0	0.55	23.0	0.85	24.00	2.22			0.75	0.75	0.75	0.75	0.112	0.791	0.407	37				2,281	10,350				
18	7:00	16.4	1.144	0.973	0.005	142.0	1.86	23.0	0.94	29.0	1.18	19.00	1.95			0.75	0.75	0.75	0.75	0.126	0.755	0.389	44		38	39	6,843	31,050				
19	7:00	16.0	1.118	0.991	0.013	160.0	2.14	30.0	1.20	36.0	1.44	23.00	2.28			0.75	0.75	0.75	0.75	0.100	0.738	0.380		65	40	38	9,124	41,400				
20	7:00	16.3	1.162	1.024	0.017	154.0	1.99	11.0	0.43	35.0	1.35	23.00	2.26			0.75	0.75	0.75	0.75	0.111	0.767	0.395	43				2,281	10,350				
21	7:00	16.3	1.155	1.004	0.004	186.0	2.41	23.0	0.91	42.0	1.66	25.00	2.48			0.75	0.75	0.75	0.75	0.115	0.762	0.393		49	43	45	6,843	31,050				
22	7:00	16.9	1.200	1.031	0.013	130.0	1.62	25.0	0.96	39.0	1.50	18.00	1.68			0.75	0.75	0.75	0.75	0.141	0.792	0.408	44				2,281	10,350				
23	7:00	13.8	1.044	0.953	0.005	190.0	2.73	7.0	0.29	43.0	1.79	26.00	2.79			0.75	0.75	0.75	0.75	0.094	0.689	0.355		44	41	40	6,843	31,050				
24	7:00	17.2	1.286	1.131	0.013	164.0	1.91	10.0	0.35	35.0	1.22	22.00	1.93			0.75	0.75	0.75	0.75	0.135	0.849	0.437	37		35	33	6,843	31,050				
25	7:00	17.0	1.303	1.146	0.017	159.0	1.83	22.0	0.76	35.0	1.21	23.00	2.00			0.75	0.75	0.75	0.75	0.120	0.860	0.443	40	35			4,562	20,700				
26	7:00	17.6	1.311	1.129	0.004	147.0	1.68	27.0	0.95	34.0	1.19	19.00	1.68			0.75	0.75	0.75	0.75	0.128	0.865	0.446		42	39	38	6,843	31,050				
27	7:00	15.1	1.031	0.925	0.013	153.0	2.22	5.0	0.21	37.0	1.58	21.00	2.23			0.75	0.75	0.75	0.75	0.109	0.680	0.351	48				2,281	10,350				
28	7:00	15.0	1.098	0.948	0.004	164.0	2.24	11.0	0.46	32.0	1.34	23.00	2.41			0.75	0.75	0.75	0.75	0.104	0.725	0.373		48	48	40	6,843	31,050				
29	7:00	14.4	1.071	0.924	0.013	134.0	1.88	12.0	0.51	25.0	1.07	18.00	1.94			0.75	0.75	0.75	0.75	0.104	0.707	0.364	49				2,281	10,350				
30	7:00	13.4	0.998	0.903	0.008	115.0	1.73	13.0	0.57	25.0	1.10	16.00	1.79			0.75	0.75	0.75	0.75	0.091	0.659	0.339		48	45	47	6,843	31,050				
31	7:00															0.75	0.75	0.75	0.75													
Total				30.23																												
Max				1.32																												
Min				0.74																												
Ave.				1.01																												

RTW Sample: Temp 14.4 °C; TDS 416.0 mg/L; pH 7.76 SU; Alkalinity 283.0 mg/L; Calcium Hardness 68.8 mg/L; Chloride 41.0 mg/L; Sulfate 73.8 mg/L

*Enter Final Reading Last Month

POINT OF APPLICATION

METER LOCATION:

1. 12.5 % Chlorine Solution Fed
2. 23 % Fluoride Solution Fed
3. 40 % BisulfiteSolution Fed
4. 33 % Phosphate Solution Fed
5. 20 % Sodium Permanganate Fed

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

Reported by: _____ Cert or Reg: _____

Bacterials Sent: _____

Date:

CHLORINATION

Type of Chlorine Used

Chlorine Gas

Calcium Hypochlorite ____%

Sodium Hypochlorite _12.5 %

Chlorine Test Kit Used: _____

FLUORIDATION

Type of Fluoride Used

Hydrofluosilicic Acid _23___%F

Sodium Fluoride ____%F

Other _____

Type of Test Instrument Used:

Attachment A

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

DIVISION OF PUBLIC WATER SUPPLIES

MONTHLY IRON REMOVAL AND ION EXCHANGE SOFTENING REPC

ON South Sangamon Water Commission

FOR MONTH OF April 2017

Page 2 of 2

			Pumping Totals				Chemical Test																						Membrane Integrity Test Post Filter		
							Raw						Pre Filter			Post Filter			Post IEX		Finished										
Date	Time Meter Read	Hours Filter Ran	Total Well (M gal)	UF Gallons Filtered (M gal)	Water Treated (M gal)	Plant Water (M gal)	pH	Temp deg. C	Total Alk. mg/L	Total Hard. mg/L	Total Fe mg/L	Total Mn mg/L	Tot Fe mg/L	Tot Mn mg/L	Sol Mn mg/L	Total Fe mg/L	Total Mn mg/L	Mem Turb. NTU	Total Fe mg/L	Total Mn mg/L	pH	Total Alk. mg/L	Total Hard. mg/L	Total Fe mg/L	Total Mn mg/L	F mg/L	Dist. Cl res F = Free T = Total F mg/L	Dist. Cl res F = Free T = Total T mg/L	PO4 3-	Bank 1	Bank 2	Bank 3
1	7:00	13.4	1.027	0.927	0.814	0.008	7.39	13.7	292	370	0.99	0.214		0.374	0.038		0.040	0.14			7.79	278	120	0.01	0.016	0.78	1.3	1.5	1.47			
2	7:00	20.1	1.531	1.376	1.268	0.008	7.41	13.7	290	376	0.81	0.210		0.371	0.029		0.029	0.13			7.81	270	150	0.01	0.015	0.85	1.0	1.2	1.55			
3	7:00	18.6	1.438	1.292	1.188	0.018	7.51	14.0	290	370	1.06	0.213		0.382	0.034		0.035	0.16			7.88	276	120	0.01	0.013	0.72	1.2	1.4	1.36	PASS	PASS	PASS
4	7:00	14.3	1.093	0.950	0.889	0.000	7.30	13.8	292	374	1.08	0.204		0.276	0.122		0.073	0.08			7.72	272	110	0.01	0.010	0.79	1.3	1.4	1.30			
5	7:00	13.5	1.034	0.934	0.846	0.013	7.36	13.3	292	372	0.99	0.207		0.379	0.027		0.030	0.08			7.90	280	140	0.01	0.011	0.76	1.2	1.3	1.26			
6	7:00	13.1	1.004	0.929	0.838	0.004	7.39	13.7	292	376	0.89	0.200		0.376	0.029		0.026	0.11			7.91	270	120	0.01	0.014	0.76	1.3	1.5	1.22			
7	7:00	13.7	1.043	0.996	0.868	0.013	7.51	13.7	294	360	1.00	0.210		0.385	0.031		0.022	0.17			7.98	284	128	0.00	0.017	0.83	0.7	0.9	1.37			
8	7:00	15.5	1.118	0.993	0.928	0.002	7.33	14.1	296	380	1.05	0.213		0.394	0.029		0.027	0.10			7.89	282	120	0.01	0.010	0.77	1.2	1.5	1.44			
9	7:00	20.6	1.583	1.490	1.320	0.015	7.38	14.3	294	382	0.95	0.204		0.381	0.030		0.027	0.11			7.83	280	120	0.01	0.011	0.76	1.3	1.4	1.45			
10	7:00	20.8	1.566	1.464	1.204	0.017	7.46	13.9	292	374	0.96	0.209		0.389	0.033		0.027	0.15			7.76	286	110	0.01	0.010	0.74	1.2	1.4	1.18	PASS	PASS	PASS
11	7:00	12.0	0.933	0.899	0.737	0.000	7.39	13.5	290	374	1.02	0.205		0.366	0.042		0.040	0.09			7.89	282	110	0.01	0.011	0.74	1.2	1.4	1.36			
12	7:00	12.5	1.007	0.862	0.884	0.018	7.55	14.3	292	380	0.81	0.192		0.382	0.019		0.023	0.12			7.91	276	98	0.00	0.007	0.81	1.2	1.3	1.41			
13	7:00	17.0	1.362	1.285	1.133	0.012	7.36	14.3	292	388	0.87	0.206		0.377	0.033		0.028	0.14			7.84	290	108	0.01	0.015	0.48	1.2	1.3	1.36			
14	7:00	15.9	1.302	1.212	1.075	0.009	7.36	14.1	292	390	0.82	0.208		0.367	0.022		0.033	0.10			7.85	288	114	0.01	0.014	0.73	1.1	1.3	1.73			
15	7:00	14.7	1.207	1.148	1.026	0.013	7.32	14.6	294	372	0.97	0.197		0.379	0.028		0.021	0.08			7.75	282	110	0.01	0.015	0.84	1.2	1.4	1.38			
16	7:00	14.1	1.142	1.069	0.971	0.004	7.34	14.3	292	380	0.86	0.203		0.354	0.024		0.022	0.09			7.81	272	110	0.01	0.010	0.75	1.2	1.4	1.54			
17	7:00	16.5	1.316	1.198	1.071	0.013	7.57	14.7	292	378	1.05	0.200		0.366	0.029		0.031	0.10			7.90	274	118	0.00	0.009	0.81	1.3	1.4	1.40			
18	7:00	16.4	1.190	1.144	0.973	0.005	7.51	14.5	296	376	0.91	0.202		0.363	0.021		0.016	0.10			7.94	278	110	0.00	0.005	0.77	1.1	1.1	1.18			
19	7:00	16.0	1.230	1.118	0.991	0.013	7.44	14.8	292	382	0.94	0.207		0.384	0.037		0.028	0.07			7.78	292	120	0.01	0.012	0.78	1.1	1.2	1.30	PASS	PASS	PASS
20	7:00	16.3	1.241	1.162	1.024	0.017	7.34	14.7	296	378	0.80	0.200		0.369	0.025		0.023	0.11			7.70	270	110	0.01	0.011	0.81	1.1	1.3	1.14			
21	7:00	16.3	1.228	1.155	1.004	0.004	7.32	13.8	290	372	1.07	0.199		0.373	0.036		0.030	0.08			7.81	280	118	0.01	0.011	0.76	1.3	1.4	1.57			
22	7:00	16.9	1.303	1.200	1.031	0.013	7.39	14.1	290	378	0.91	0.204		0.347	0.032		0.036	0.10			7.76	272	108	0.01	0.014	0.80	1.3	1.5	1.27			
23	7:00	13.8	1.134	1.044	0.953	0.005	7.53	14.9	294	356	0.80	0.195		0.386	0.045		0.041	0.10			7.97	282	112	0.02	0.010	0.79	1.3	1.4	1.23			
24	7:00	17.2	1.389	1.286	1.131	0.013	7.60	14.0	290	358	0.83	0.184		0.369	0.020		0.013	0.10			7.88	280	110	0.00	0.003	0.85	1.3	1.5	1.21			
25	7:00	17.0	1.400	1.303	1.146	0.017	7.34	14.3	294	372	0.93	0.197		0.378	0.034		0.035	0.13			7.73	278	112	0.01	0.013	1.07	1.3	1.4	1.56	PASS	PASS	PASS
26	7:00	17.6	1.376	1.311	1.129	0.004	7.37	14.4	292	380	0.95	0.190		0.373	0.026		0.030	0.11			7.85	274	118	0.01	0.010	0.88	1.3	1.4	1.30			
27	7:00	15.1	1.145	1.031	0.925	0.013	7.42	13.7	296	374	0.95	0.199		0.346	0.026		0.025	0.08			7.84	278	114	0.01	0.012	0.87	1.2	1.4	1.46			
28	7:00	15.0	1.158	1.098	0.948	0.004	7.39	13.9	290	380	0.80	0.189		0.326	0.025		0.022	0.10			7.85	280	122	0.01	0.010	0.95	1.3	1.5	1.48			
29	7:00	14.4	1.127	1.071	0.924	0.013	7.38	13.7	292	382	0.97	0.195		0.354	0.020		0.025	0.11			7.83	272	120	0.01	0.011	0.80	1.2	1.4	1.21			
30	7:00	13.4	1.085	0.998	0.903	0.008	7.41	14.0	292	380	1.07	0.205		0.349	0.026		0.025	0.13			7.87	280	110	0.01	0.010	0.58	1.2	1.4	1.53			
31	7:00																														
Total					30.23																										
Max					1.32																										
Min					0.74																										
Ave.					1.01																										

*Enter Final Reading Last Month

POINT OF APPLICATION

METER LOCATION:

1. 12.5 % Chlorine Solution Fed
2. 23 % Fluoride Solution Fed
3. 40 % Bisulfite Solution Fed
4. 33 % Phosphate Solution Fed
5. 20 % Sodium Permanganate Fed

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

Reported by: Cert or Reg:

Bacterials Sent:

Date:

CHLORINATION

Type of Chlorine Used

Chlorine Gas

Calcium Hypochlorite ____%

Sodium Hypochlorite _12.5_ %

Chlorine Test Kit Used: _____

FLUORIDATION

Type of Fluoride Used

Hydrofluosilicic Acid _23__ %F

Sodium Fluoride ____%F

Other _____

Type of Test Instrument Used:

Attachment B

BROTCKE WELL & PUMP

April 17, 2017

Mr. Dan Held
South Sangamon Water Commission
9199 Buckhart Rd
Rochester, IL 62563

RE:Pump Test Results

Dear Dan:

We have completed the Pump Test on Wells No. 1 - 10.

Presented below are the results.

Specific Capacity (GPM/Foot)

Well No.	Present	New	% Loss	Last Test/Treatment	% Loss
1	17.8	18	1%	20.2	12%
2	36.4	25	--%	28.4	--%
3	18.3	16	--%	22.7	19%
4	10	9	--%	10.2	2%
5	20.6	11	--%	14.3	--%
6	11.5	9	--%	12	4%
7	24	18	--%	32	25%
8	26.4	23	--%	36.9	18%
9	20.8	18.3	--%	23.1	10%
10	35	11.2	--%	33.6	--%

Well No. 1 The SC is slightly down on Well No. 1, but the well is still producing a good amount of water and does not require treatment at this time.

PO Box 1168, 750 Merus Court, Fenton, Missouri 63026
ph 636-343-3029 • ph 800-969-3029 • fx 636-343-3773
Visit us at www.brotcke.com

South Sangamon
April 17, 2017

Well No. 2	The SC of this well is higher than after the last treatment and also better than new. This well responded positively to the treatment we performed last year.
Well No. 3	This SC is down from its last treatment, but is above its SC of 16 when it was new. This well could require treatment in the near future.
Well No. 4	This SC is down slightly from the last treatment, but is still better than new. This well does not require treatment.
Well No. 5	This well was treated in Nov of 2014. The treatment brought the SC up to a 13 which is greater than it was when it was new. The present SC is higher than last year's test. This well does not require treatment.
Well No. 6	This well has never been treated since it was installed in 2012. The SC has only slightly decreased since new, but as the next table will show it is significantly down on production.
Well No. 7	This well was treated in May of 2014. The SC has dropped 25% since then. This Well requires treatment.
Well No. 8	This well was treated since in 2015. The SC increased from 20 to 31 which is above its SC of 23 when it was new. However it is now back down to a 26 which is an 18% decline. This well is also only producing 180 GPM. This Well requires treatment.
Well No. 9	This well was treated in May of 2014. The SC was 16 and was raised to a 24. Since May of 2014 the SC has dropped to a 20.8. We will monitor this well for future treatments.
Well No. 10	This well was treated in May of 2014. The SC was 7 and was raised to a 31. Since May of 2014 the SC is actually higher. This well does not require treatment.

Attachment B

South Sangamon
April 17, 2017

Pump Condition (GPM) at design Head Pressure

Well No.	Present	Design	% Loss
1	230	250	8%
2	195	250	22%
3	166	250	34%
4	205	250	18%
5	240	250	4%
6	78	250	69%
7	58	250	77%
8	142	250	43%
9	160	250	36%
10	220	250	12%

Well No. 1 The pump for well 1 has design points of 250 gpm at 148' tdh. The pump is operating at 230 gpm at its design head which is an 8% drop in pump capacity which is probably related to iron building up in the pump. The pump does not require any maintenance at this time. Maximum pumping rate was 290 gpm.

Well No. 2 The pump for well 2 has design points of 250 gpm at 148' tdh. The pump is operating at 195 gpm at its design head which is a 22% drop in pump capacity which is probably related to iron building up in the pump. The pump should be monitored for performance. Maximum pumping rate was 240 gpm.

Well No. 3 The pump for well 3 has design points of 250 gpm at 148' tdh. The pump is operating at 166 gpm at its design head which is a 34% drop in pump capacity which is probably related to iron building up in the pump. The pump should be monitored for performance. Maximum pumping rate was 220 gpm.

Well No. 4 The pump for well 4 has design points of 250 gpm at 148' tdh. The pump is operating at 205 gpm at its design head which is a 18% drop in pump capacity which is probably related to iron building up in the pump. The pump does not require any maintenance at this time. Maximum pumping rate was 250.

Well No. 5 The pump for well 5 has design points of 250 gpm at 148' tdh. The pump is operating at 240 gpm at its design head which is a 4% drop in pump capacity which is probably related to iron building up in the pump. The pump does not require any maintenance at this time. Maximum pumping rate was 310.

Well No. 6 The pump for well 6 has design points of 250 gpm at 148' tdh. The pump is operating at 78 gpm at its design head which is a 69% drop in pump capacity which is probably related to iron building up in the pump. The pump should be treated for performance. Maximum pumping rate to plant was 120 gpm.

South Sangamon
April 17, 2017

Well No. 7	The pump for well 7 has design points of 250 gpm at 148' tdh. The pump is operating at 58 gpm at its design head which is a 77% drop in pump capacity which is probably related to iron building up in the pump. The pump also dead heads below design. This indicated the pump may be warn. The pump should be treated for performance. Depending on the results of the post treatment pump test pulling the pump may be required. Maximum pumping rate to plant was 120 gpm.
Well No. 8	The pump for well 8 has design points of 250 gpm at 148' tdh. The pump is operating at 142 gpm at its design head which is a 43% drop in pump capacity which is probably related to iron building up in the pump. The pump should be treated for performance. Maximum pumping rate was 180 gpm.
Well No. 9	The pump for well 9 has design points of 250 gpm at 148' tdh. The pump is operating at 160 gpm at its design head which is a 36% drop in pump capacity which is probably related to iron building up in the pump. The pump should be monitored for performance. Maximum pumping rate was 290 gpm.
Well No. 10	The pump for well 10 has design points of 250 gpm at 148' tdh. The pump is operating at 220 gpm at its design head which is a 12% drop in pump capacity which is probably related to iron building up in the pump. The pump does not require any maintenance at this time. Maximum pumping rate was 300 gpm.

In summary, I recommend treating wells 6, 7 and 8. These three wells show a decrease in Specific Capacity and the highest losses in pump performance. We can treat these wells in any order, but starting with well No. 7 will allow us to assess the pumps mechanical integrity early on. The treatments will be performed through the injection ports using High Velocity Injection. We can perform these three treatments for a total of $27,000.00. This price also includes pulling the pump on Well No. 7 if the post treatment pump test indicates it is necessary.

Pump test sheet and pump curves will be sent to you for your files.

If you have any questions please feel free to contact me.
Sincerely,
BROTCKE WELL & PUMP INC.

Dana E. Heck, R.G.
Project Manager

G:\DIR\Dana\Letters 17\South Sanagmon-PTResult-4-17-17 for wells 1 through 10.doc

Attachment C

WOODARD & CURRAN

South Sangamon Water Commission
Capital Plan Summary Tables - by Project Listing, by Project Priority

Projects Listing	Priority	17-18	18-19	19-20	20-21	21-22	22-23	Total
Office Air Handling System	5					4,000	25,000	29,000
Green Sand Filters	2		1,304,000					1,304,000
Elevated Storage Tank	3	5,000	26,000	1,706,500				1,737,500
Pigging Stations	2		260,000					260,000
New Wells Investigation	1							-
Aerator Doors	4				20,000			20,000
Aerator Tubing	4				5,000			5,000
Detention Tank Conduit Repair	1	5,000						5,000
WesTech Filter Replacement	2		231,000					231,000
WesTech Valve Replacement	3			50,000				50,000
WesTech Additional Train	3			500,000				500,000
Citric Acid Port / Ion Exchange	4				1,300	7,500		8,800
Brine Tank Solids removal	5				2,400	10,000		12,400
Chemical Room Air Handling System	1	9,000	60,000					69,000
Removal of Ammonia	1	6,500						6,500
Fluoride Room Floor Repair	1	7,000						7,000
Arch Flash Study update	1	26,000						26,000
Lagoon Solids Cleaning	5					100,000		100,000
Altitude Valve actuator	1	79,000						79,000
Fall Restraints near pits	1	1,600						1,600
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Total		139,100	1,881,000	2,256,500	28,700	121,500	25,000	4,451,800

		17-18	18-19	19-20	20-21	21-22	22-23	Total
Priority One Projects	-	134,100	60,000					194,100
2	-		1,795,000					1,795,000
3	-	5,000	26,000	2,256,500				2,287,500
4	-				28,700	7,500		36,200
5	-					114,000		114,000
6	-						25,000	25,000
Total		139,100	1,881,000	2,256,500	28,700	121,500	25,000	4,451,800

1

Last updated 4/3/2017

Attachment C

Last Updated: 04/03/2017

South Sangamon Water Commission
Capital Improvement Plan

Summary - By Phase and FY

Fiscal Year	17-18	18-19	19-20	20-21	21-22	22-23	Conting	Total
Engineering	40,000	90,000	6,500	3,700	4,000	-	-	144,200
Equipment	17,600	1,791,000	2,250,000	25,000	117,500	25,000	-	4,226,100
Electrical	-	-	-	-	-	-	-	-
SCADA	79,000	-	-	-	-	-	-	79,000
Plumbing	-	-	-	-	-	-	-	-
Permit/Bidding	1,500	-	-	-	-	-	-	1,500
Contingency	1,000	-	-	-	-	-	-	1,000
Total	139,100	1,881,000	2,256,500	28,700	121,500	25,000	-	4,451,800
Inflation	1	1	1	1	1	1	1	1
Total	139,100	1,881,000	2,256,500	28,700	121,500	25,000	-	4,451,800