

Monthly Operating REPORT

August 2015

0217327.00

So. Sangamon

September 15, 2015

woodardcurran.com

COMMITMENT & INTEGRITY DRIVE RESULTS

TABLE OF CONTENTS



SECTION	PAGE NO.
Executive Summary.....	ES-1
1. SAFETY	1-1
1.1 Safety Training	1-1
1.2 Lost time Accidents	1-1
1.3 Safety Audit	1-1
1.4 Miscellaneous Safety.....	1-1
2. COMPLIANCE, FLOWS, AND LOADINGS	2-1
2.1 Compliance	2-1
2.2 Influent flows and loadings	2-2
2.3 Effluent Concentrations	2-3
2.4 Lagoon Discharge Concentrations	2-4
3. OPERATIONS.....	3-1
3.1 Events impacting operations	3-1
3.2 Emergency & Service calls	3-1
3.2.1 Emergency Call-outs	3-1
3.3 Customer Complaints	3-1
3.4 Maintenance & Repair	3-1
3.5 Other issues with Operations	3-2
4. PROJECT MANAGEMENT & SUPPORT	4-1
4.1 Staffing & Training	4-1
4.2 Corporate Support	4-1
4.3 Budget	4-2
5. CAPITAL PLANNING	5-1
5.1 Approved CIP Projects Current status.....	5-1
5.2 Draft Capital Improvement Plan	5-1

DRAFT



LIST OF TABLES

TABLE	PAGE NO.
Table 2.2 Influent Concentrations and Flow.....	2-2
Table 2.3 Finished Water Quality.....	2-3
Table 2.4 Weekly Grab Sample Analysis Results.....	2-4
Table 4.1 Budget Table.....	4-2

DRAFT



EXECUTIVE SUMMARY

Woodard and Curran assumed responsibility for the operations of the South Sangamon Water Commission (SSWC) Plant on May 1, 2015. We continue to work through the transition plan in order to address project needs or action plans identified before assuming operation and maintenance oversight. Members from Woodard & Curran's safety, IT, and SCADA transition support teams have been and continue to be onsite in addition to other members supporting the operation, accounting, insurance, compliance, and administrative needs.

Safety is the #1 priority as part of the transition and daily operations. A safety audit was conducted the week of May 18th and we continue to address the items identified in the safety audit. There were no Lost Time accidents during the month of August 2015 and the required monthly safety training was completed.

All regulatory reporting and sampling requirements were performed for the month, and the finished water quality met all IEPA limits. The plant produced a total of 37.9 MG for the month. There was one disruption in the operation on August 4, 2015 due to the Master PLC crash. The interruption in programming prevented the high service pump from operating for approximately 15 minutes which allowed the pressure to drop below 20 psi in the transmission main from the plant to Chatham ground water reservoir. Woodard and Curran technical support staff were on-site the day this event took place. A project is currently under way that will allow the high service pumps to be operated manually to prevent this from happening in the future. Once completed, the SCADA hardware and software that allowed the crash to take place can be addressed.

Daily test results for both plant influent and effluent Water Quality and Flow is included in this document as well as weekly test result for the plant discharge from the lagoons.

Woodard and Curran is working with the SSWC and Mecco Engineering to prioritize and implement the Capital Improvement Plan. The plan is a 1-5 year plan summarizing potential projects required to address regulatory, safety, reliability, maintenance, or water quality issues. The current capital plan is a working document and will be continually updated as projects are completed and new projects are identified. The current projects being addressed are the well modifications and sampling stations.

The first quarter financial summary is provided showing the costs are \$82,236 under budget for the year to date. As we move forward in the fiscal year, we expect this over/under amount to decrease significantly as maintenance work in the well field is completed, cleaning of the brine tank #2, work on the manual control of the high service pumps, programming related to the Master PLC, projects associated with the safety audit and work to be performed by WesTech Engineering scheduled in the near future takes place.

Mr. Keith Sommers took his Class A water license exam on August 11, 2015 and passed. He is now a licensed state of Illinois Class A Water Operator in Training. Once he has accrued enough time at a Class A water plant, the Operator in Training will be removed and he'll be a Class A operator.



1. SAFETY

1.1 SAFETY TRAINING

Woodard and Curran continues to provide safety training for personnel at the plant. In addition, weekly safety updates are emailed to the plant and safety videos are assigned to all employees and are a required to be completed.

1.2 LOST TIME ACCIDENTS

There were no lost time accidents for the month of August 2015

1.3 SAFETY AUDIT

During Joanna's visit to the site in May 2015, a safety audit was performed. We continue to have monthly meetings with her and other Woodard and Curran support staff to address the findings of the audit. As of this date, 41 of the 88 items identified (47 percent) have been addressed.

1.4 MISCELLANEOUS SAFETY

There are no miscellaneous safety items to report for August 2015

DRAFT



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 August.

We continue to experience Chlorine exceedance allowed by the NPDES discharge permit. As anticipated, the chloride levels that exceeded the permit level due to the cleaning of Brine Tank #1 being discharged have returned to normal levels. We also exceeded the daily limit and the Monthly Average Limit for Iron and Manganese.

A Boil Order was declared for all customers from the South Sangamon Water Commission Plant to the Chatham Ground Reservoir on August 4, 2015 due to the Master PLC crash. The interruption in programming prevented the high service pump from operating for approximately 15 minutes which allowed the pressure to drop below 20 psi in the transmission main from the plant to Chatham ground water reservoir. Once programming had been restored, samples were drawn from the distribution system between the plant and the Chatham Reservoir. These samples came back clean and the plant went back on line the next day.

DRAFT



2.2 INFLUENT FLOWS AND LOADINGS

The total water produced for the month of August was 44.44 MG and the influent parameters were all within the normal range. The influent flow and loadings are summarized below in Table 2.2

Day	pH	Temp	FE	Mn	Fluoride	Hardness	Alkalinity	Well Flow Gals (k)
1	7.00	15.5	0.81	0.203	0.36	360	284	1.675
2	6.85	15.7	0.86	0.198	0.35	360	274	1.738
3	7.85	16.2	0.69	0.197	0.25	368	276	1.790
4	7.87	15.4	1.04	0.193	0.22	360	280	0.063
5	7.95	17.1	0.78	0.213	0.20	360	280	0.947
6	7.79	16.3	0.60	0.209	0.17	364	280	1.890
7	7.84	15.8	1.51	0.222	0.29	366	278	1.687
8	7.78	15.1	1.02	0.213	0.30	368	268	1.483
9	7.73	16.1	0.68	0.203	0.28	372	288	1.247
10	7.75	15.8	0.52	0.205	0.21	364	280	1.161
11	7.69	16.1	0.91	0.201	0.12	362	288	1.329
12	7.84	15.8	0.78	0.210	0.19	366	280	1.494
13	7.80	15.8	0.81	0.215	0.20	360	284	1.450
14	7.83	15.8	0.81	0.209	0.17	360	280	1.536
15	7.77	15.7	0.83	0.215	0.23	356	280	1.504
16	7.80	15.5	0.66	0.213	0.18	364	280	1.764
17	7.80	15.5	0.76	0.214	0.13	364	290	1.647
18	7.81	15.9	0.80	0.216	0.15	360	280	1.473
19	7.76	18.4	0.48	0.187	0.07	360	290	1.199
20	7.76	16.2	0.73	0.207	0.27	360	280	1.349
21	7.82	16.6	0.64	0.206	0.22	366	282	1.333
22	7.79	15.0	0.80	0.213	0.18	368	290	1.305
23	7.75	15.8	0.66	0.215	0.25	358	284	1.350
24	7.82	15.6	0.82	0.212	0.24	366	278	1.513
25	7.78	15.3	0.90	0.215	0.22	362	284	1.575
26	7.79	15.9	0.68	0.203	0.18	362	280	1.466
27	7.83	14.7	0.68	0.222	0.21	364	280	1.538
28	7.77	14.9	0.88	0.212	0.20	364	282	1.539
29	7.78	15.5	0.77	0.220	0.30	362	280	1.262
30	7.78	15.1	0.69	0.215	0.20	366	286	1.516
31	7.78	14.9	0.78	0.215	0.18	360	290	1.617
Min.	6.85	14.7	0.48	0.187	0.07	356	268	0.063
Max.	7.95	18.4	1.51	0.222	0.36	372	290	1.890
Avg.	7.74	15.7	0.79	0.209	0.22	363	282	1.434
Total	-	-	-	-	-	-	-	44.440



2.3 EFFLUENT CONCENTRATIONS

The effluent water quality parameters were all within the normal range for average and peak concentrations. The effluent water quality concentrations are summarized below in Table 2.3.

The facility produced 37.896 MG during the month with a daily average of 1.22 MG and a min/max of 1.6/.063 MG.

Date	Free Cl2	Total Cl2	pH	Temp	Iron	Manganese	Fluoride	Hardness	Alkalinity	Phosphate
1	1.4	1.4	6.90	15.7	0.00	0.036	0.42	110	270	1.76
2	1.4	1.4	6.87	16.0	0.01	0.032	0.96	120	266	1.73
3	1.4	1.5	7.48	15.8	0.01	0.036	0.94	116	250	1.63
4	1.4	1.4	7.86	15.2	0.02	0.034	1.05	120	280	1.65
5	1.2	1.2	7.89	16.9	0.00	0.039	0.58	120	250	1.42
6	1.4	1.4	7.76	15.1	0.00	0.037	1.24	120	284	1.54
7	1.2	1.3	7.83	17.1	0.00	0.041	1.14	118	258	1.46
8	1.2	1.2	7.84	15.8	0.00	0.039	0.84	118	226	1.46
9	1.3	1.3	7.80	17.1	0.00	0.056	1.13	120	266	1.58
10	1.3	1.3	7.81	15.6	0.00	0.040	0.52	120	270	1.58
11	1.1	1.2	7.93	17.0	0.00	0.054	0.45	122	264	1.15
12	1.2	1.3	7.86	15.6	0.00	0.040	1.03	120	270	1.63
13	1.3	1.3	8.00	15.5	0.00	0.040	0.93	116	256	1.60
14	1.3	1.3	7.89	15.8	0.00	0.040	0.91	114	276	1.46
15	1.2	1.3	7.78	15.6	0.00	0.042	0.92	106	272	1.39
16	1.2	1.2	7.82	16.6	0.00	0.041	1.03	120	276	1.44
17	1.2	1.3	7.87	15.5	0.00	0.040	0.99	126	276	1.48
18	1.2	1.3	7.99	15.5	0.00	0.039	0.90	116	276	1.34
19	1.2	1.3	7.84	15.8	0.00	0.037	0.49	116	270	1.35
20	1.2	1.3	7.84	16.1	0.00	0.039	1.03	120	274	1.36
21	1.3	1.4	7.76	16.1	0.00	0.040	1.01	120	270	1.44
22	1.3	1.3	7.78	16.6	0.00	0.037	1.19	116	280	1.54
23	1.3	1.3	7.76	15.7	0.00	0.043	1.07	116	274	1.49
24	1.2	1.3	7.99	15.2	0.00	0.047	1.04	122	264	1.19
25	1.2	1.3	7.85	14.9	0.00	0.036	1.04	112	276	1.12
26	1.2	1.2	7.84	14.7	0.00	0.039	1.15	116	272	1.13
27	1.3	1.3	7.87	14.9	0.00	0.043	1.11	116	272	1.08
28	1.3	1.3	7.82	14.9	0.01	0.038	1.05	114	276	1.11
29	1.3	1.3	7.82	15.1	0.00	0.049	1.00	112	270	1.04
30	1.3	1.3	7.95	15.5	0.00	0.040	0.84	118	280	1.14
31	1.2	1.2	7.87	15.0	0.01	0.041	1.21	116	280	1.20
Min	1.1	1.2	6.87	14.7	0.00	0.032	0.42	106	226	1.04
Max	1.4	1.5	8.00	17.1	0.02	0.056	1.24	126	284	1.76
Avg	1.3	1.3	7.78	15.7	0.00	0.040	0.94	117	269	1.40



2.4 LAGOON DISCHARGE CONCENTRATIONS

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

For the first time, we have exceeded the daily and monthly limit for iron and manganese allowed by the NPDES Permit. This may be due to the cleaning of Brine Tank #1 which took place near the end of July 2015. As predicted, the chloride levels being discharged have returned to normal levels following the cleaning of Brine Tank #1. We continue to exceed the limit for residual chlorine in the discharge.

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)
08/03/2015	5.01	3.39	370	2.39	7.69	26.0
08/10/2015	1.45	2.32	285	1.49	7.48	9.5
08/17/2015	1.46	1.21	305	0.82	7.63	0.0
08/24/2015	1.81	1.04	306	0.87	7.54	13.0
08/31/2015	0.68	0.32	273	0.37	7.71	0.0
Minimum	0.68	0.32	273	0.37	7.48	0.0
Maximum	5.01	3.39	370	2.39	7.71	26.0
Average	2.08	1.66	308	1.19	7.61	9.7
Monthly Avg Limit	2.0	1.0	-	-	-	15
Daily Limit	4.0	2.0	500	0.05	6.0-9.0	30

The Chloride sample for the month of August 2015, performed by the Springfield Metropolitan Sanitary District, was 23,000 mg/L. The limit for chloride discharge to the sanitary district is 30,000 mg/L.

3. OPERATIONS

3.1 EVENTS IMPACTING OPERATIONS

A Boil Order was declared for all customers from the South Sangamon Water Commission Plant to the Chatham Ground Reservoir on August 4, 2015 due to the Master PLC crash. The interruption in programming prevented the high service pump from operating for approximately 15 minutes which allowed the pressure to drop below 20 psi in the transmission main from the plant to Chatham ground water reservoir. Once programming had been restored, samples were drawn from the distribution system between the plant and the Chatham Reservoir. These samples came back clean and the plant went back on line the next day.

Tonka Water, the manufacturers of the ion exchange units currently in the plant, were on-site August 25, 2015 to do a Pilot Study for Greensand Filters. The results of the three study concluded that Greensand Filters could remove iron and manganese to below detectable levels utilizing chlorine. We have requested Tonka return to the plant to perform additional testing. The dates for this work have not be determined to date.

3.2 EMERGENCY & SERVICE CALLS

Service Calls:

- Henson Robinson here to install taps on the bottom of the WesTech Filter influent lines. While they were here, a flange that was leaking on the WesTech System. It was discovered the flange was broken. The leak was fixed that afternoon and Bank #1 was off line for approximately three (3) hours.

3.2.1 Emergency Call-outs

On August 9, 2015, chlorine was not being pumped to the detention tank. Henson Robinson came to the plant and made repairs. There was no disruption in service.

3.3 CUSTOMER COMPLAINTS

We received one (1) complaint for the month of August 2015. That complaint was forwarded to us from Dustin Patterson with the village of Chatham. No action was required

3.4 MAINTENANCE & REPAIR

General Pump and Machinery was here on August 18, 2015 to look at the High, Low and Backwash pumps. They provided the high service pumps at the plant and it's been approximately three (3) years since these pumps have been checked for alignment and vibration. I also asked them to investigate why there is air in the plant effluent. I have yet to hear from General Pump and Machinery since they're visit.



Vandevanter Engineering was here on August 21, 2015 to look at the High, Low and Backwash pumps. We requested they also investigate why there is air in the plant effluent. Vandevanter Engineering representative, Mr. Mike Rynd, is preparing a proposal to check the vibration and alignment of the pumps. They believe this work will also provide information as to why there is air in the plant's finished water.

Mike Summerfield arrived on August 27, 2015 to start mowing the well fields.

3.5 OTHER ISSUES WITH OPERATIONS

There are no other Issues with plant operations.

DRAFT



4. PROJECT MANAGEMENT & SUPPORT

4.1 STAFFING & TRAINING

- As part of an ongoing effort, Woodard and Curran is in the process of assigning Dan Held and Keith Sommers to a number of classes for safety. These include Forklift Training, Respirator Fit Test, First Aid/CPR, Electrical, and Confined Space.

4.2 CORPORATE SUPPORT

- David Kraus was on-site August 3, 2015 through August 6, 2015 to work on High Service Pump programming.
- Joe Hurley was on-site August 5, 2015 and August 7, 2015 to work on the High Service Pump controls and programming. Bobby Nichols was on-site August 7, 2015 to assist Joe Hurley and David Kraus.
- Marc Thomas was on-site August 12, 2015 along with Dan Held to meet with village of Chatham employees regarding water quality in Chatham.
- Joanna Wallace, Bobby Nichols, Dan Held and Keith Sommers participated in a conference call on August 28, 2015 regarding open items on the Safety Audit performed in May 2015.
- Marc Thomas and Dan Held participated in Midwest Projects conference call on August 27, 2015.
- Woodard and Curran have been working closely with WesTech Engineering regarding a number of problems with the ultra-filtration system. WesTech is currently working on scheduling a visit in October, and it sounds like both Jason Nay and Libby Linton will be onsite as well. They are going to look at the system for the potential of switching the membranes out to the newer membrane technology. Since these are more advanced and cheaper (\$3000 vs. \$8100), there is potential for considerable cost savings when/if we need to replace the filters in the future.



4.3 BUDGET

The first four month's financial summary is provided below in Table 3.1 showing the costs are \$82,236 under budget for the year to date. As we move forward in the fiscal year, we expect this over/under amount to decrease significantly as maintenance work in the well field is completed, cleaning of the brine tank #2, work on the manual control of the high service pumps, programming related to the Master PLC, projects associated with the safety audit and work to be performed by WesTech Engineering scheduled in the near future takes place.

Table 4.1 Budget Table

Budget Category	Month Budget	Month Actual	YTD Budget	YTD Actual	Annual Budget	Over (under)	% of budget
Labor (D.L. + OH)	\$19,187	\$18,365	\$76,748	\$62,250	\$230,244	(\$14,498)	27%
Utilities	\$8,320	\$11,192	\$33,280	\$24,176	\$99,840	(\$9,104)	24%
Chemicals	\$16,388	\$13,468	\$65,552	\$52,290	\$196,655	(\$13,262)	27%
Maintenance & Repair	\$8,299	\$3,282	\$33,195	\$6,430	\$99,585	(\$26,765)	6%
Sludge	\$13,813	\$12,472	\$55,253	\$35,362	\$165,760	(\$19,891)	21%
Lab Supplies and Equipment	\$1,530	\$1,746	\$6,118	\$5,206	\$18,355	(\$912)	28%
Office Supplies	\$188	\$6	\$750	\$2,656	\$2,250	\$1,906	118%
Miscellaneous Expenses	\$1,213	\$958	\$4,850	\$5,256	\$14,550	\$406	36%
Other Operating Costs	\$278	\$498	\$1,113	\$997	\$3,339	(\$116)	30%
Subtotal of Costs for Contract Year 2	\$69,215	\$61,987	\$276,859	\$194,623	\$830,578	(\$82,236)	23%
Fixed Fee for Contract Year 2	\$6,922	\$6,922	\$27,686	\$27,686	\$83,059	\$0	33%
Total	\$76,136	\$68,908	\$304,546	\$222,310	\$913,637	(\$82,236)	24%



September 10, 2015

MECO Engineering Company, Inc.
116 South Madison Street
Pittsfield, Illinois 62363

Subject: South Sangamon Water Commission Pilot Results

Dear Max Middendorf, P. E.,

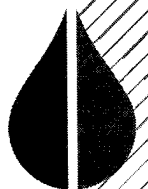
During the week of 8/24/15, Tonka Water conducted a pilot at South Sangamon, IL that demonstrated effective treatment of both iron and manganese; producing 94.5% and 96.4% removals of iron and manganese respectively, based on laboratory results. The iron and manganese concentrations in the water following the existing aeration and detention process were lowered from a pilot influent average of 0.858 mg/L to below the detection limit (< 0.05 mg/L) for iron and from an average influent of 0.176 mg/L to 0.00638 mg/L for manganese. The Manganese GreensandPlus™ filter effluent concentration averages for iron and manganese were well below the USEPA secondary maximum contaminant levels of 0.3 mg/L for iron and 0.05 mg/L for manganese.

Tonka Water performed this pilot for the South Sangamon Water Commission to demonstrate that iron and manganese could be effectively and consistently removed following the existing aeration and detention process. An eight inch diameter aluminum filter that was bedded with 18 inches of Manganese GreensandPlus™ (0.3 mm < Eff. Size < 0.35 mm) and capped with 12 inches of anthracite (0.60 mm < Eff. Size < 0.80 mm) provided excellent removal of both iron and manganese during the pilot. A loading rate of 3-4gpm/sf was provided throughout this pilot, the fluctuations in rate was a function of the service pumps cycling. This pilot used sodium hypochlorite as the oxidant to maintain a charge on the Manganese GreensandPlus™. The dosage of chlorine was adjusted to provide a free chlorine concentration in the filter effluent of at least 0.5 mg/L. The chlorine dosage based on pump settings and the bleach bottle concentration of 8.25% was estimated to have been approximately 1.4 mg/L of available chlorine.

Tonka Water™
13305 Watertower Circle
Plymouth, MN 55441
USA

Main 763.559.2837
Fax 763.559.1979

WWW.TONKAWATER.COM



Since the pilot required considerable operator attention when the plant service pumps cycled, the pilot equipment was not able to be run when Tonka Water personnel were not on site. As a consequence, the runtime duration was limited to approximately twelve hours.

The pilot influent water and filter effluent results are summarized in the table below for both field and laboratory results. The laboratory results confirm that excellent removal of both iron and manganese were provided by the Manganese GreensandPlus™ filter. These results are also summarized graphically in Figures 1 & 2 for iron and manganese respectively. This pilot demonstrates that successful and consistent removal of iron and manganese can be achieved with the use of the Manganese GreensandPlus™ filter.

Table 1: Manganese GreensandPlus™ Filter Effluent Results

	Iron (mg/L)		Manganese (mg/L)	
	Field Data	Lab Data	Field Data	Lab Data
Pilot Influent Average	0.915	0.858	0.213	0.176
Pilot Influent Maximum	0.963	0.879	0.230	0.177
Pilot Influent Minimum	0.887	0.818	0.200	0.175
Filter Effluent Average	0.011	< 0.05	0.026	0.00638
Filter Effluent Maximum	0.03	< 0.05	0.072 ^{a/}	0.00806
Filter Effluent Minimum	0.00	< 0.05	0.016	< 0.005

a/ Value from the start of run before performance was established.

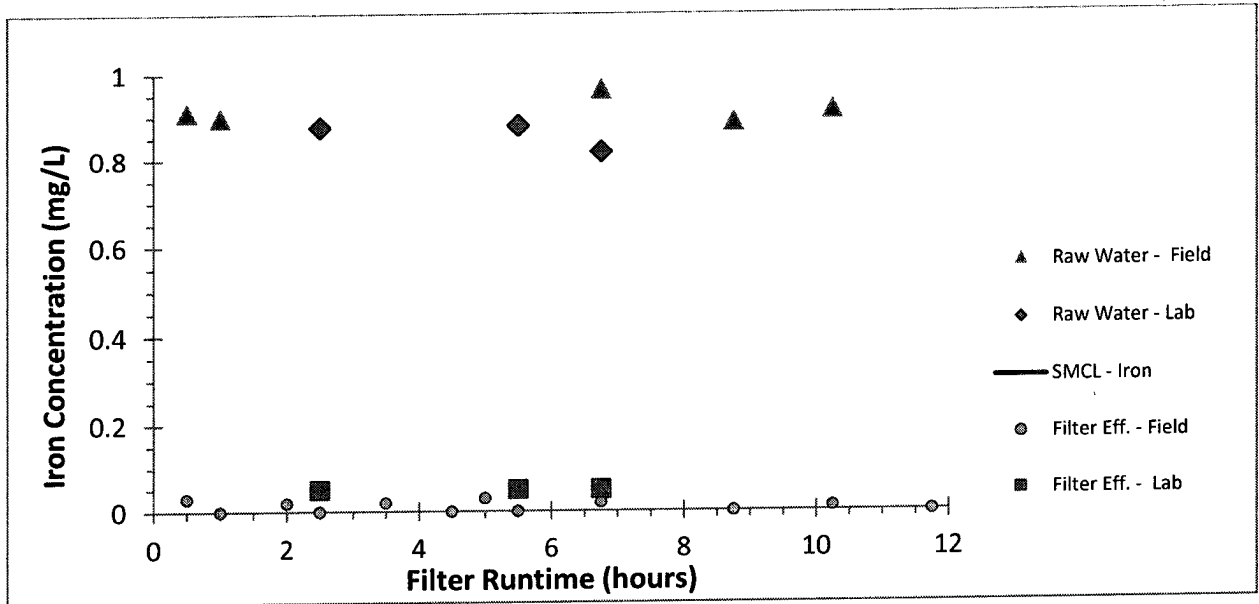


Figure 1: South Sangamon, IL Pilot – Iron Filtration Results

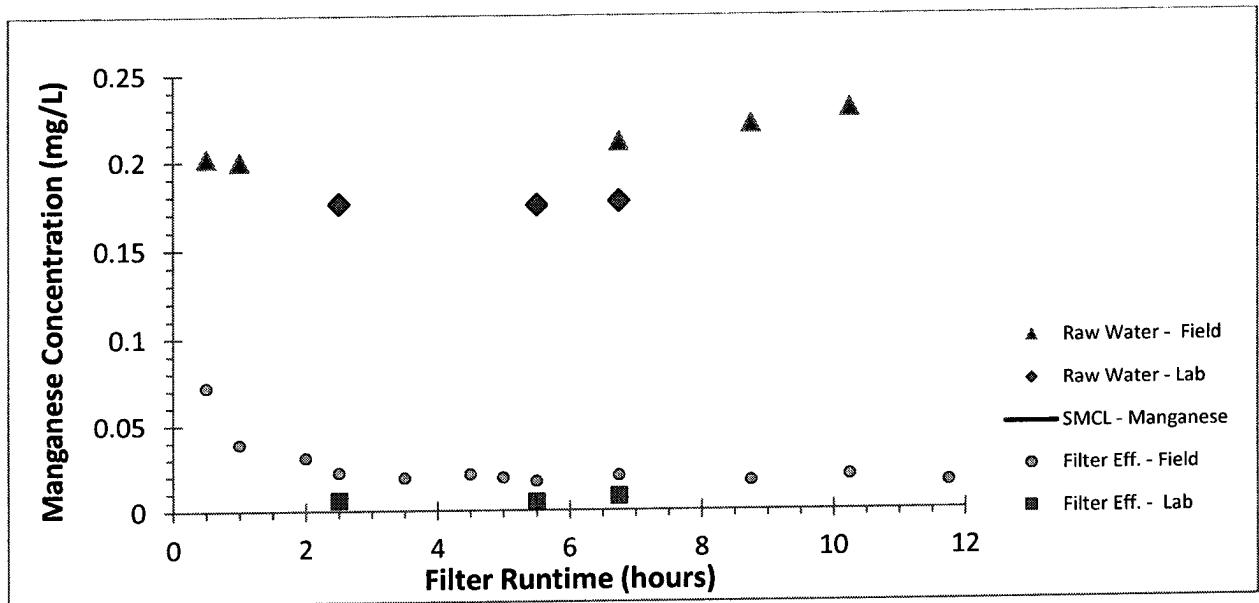


Figure 2: South Sangamon, IL Pilot – Manganese Filtration Results

MECO Engineering Company, Inc.
September 9, 2015
4

Tonka Water will be back on site the week of September 21, 2015 to pilot the water prior to aeration and detention. This is to ensure high quality effluent water should the client wish / need to remove the aerator and or detention tank from service. Oxidant will be chlorine only for a portion of the run, followed by chlorine and permanganate. Loading rate of 4 gpm/sf will be the basis of this run.

Please contact me, if you have any questions regarding these results.

Sincerely,

Don Whitehurst

Don Whitehurst

Senior Applications Engineer - Process