

CITY OF ST. JOSEPH WATER FILTRATION PLANT
OPERATIONAL REPORT
AUGUST 2015



Mission Statement

WSJOB- The City and Authority working together to provide safe drinking water of the highest quality to all of our customers at the lowest possible price.

WATER PLANT REPORT-AUGUST 2015

Water demand in August was up by 11,839,284 gallons or 12% from last year. This is a reversal of a trend seen during the last several months. This year 194,430,530 gallons were delivered which compares to 182,591,246 gallons delivered in August of 2014. The August 2015 pumpage ranked 20th in the 30 year tabulation dating back to 1986.

GENERAL ACTIVITIES

Low Service Meter Accuracy Determination

ABCS, the WTP's instrumentation maintenance provider submitted a proposal to check the accuracy of the low service meters. This was accomplished by the use of a factory calibrated portable magnetic meter. Sensors for the meter were placed on the 30" raw water pipe and readings were taken and compared to the plant low service meters on the three clarifiers. The report provided by Joseph Germy of ABCS is excerpted below:

- *Randy set up portable unit for readings on a 30" ductile iron pipe, 1" wall thickness (with light bituminous coating on the inside surface) ~60°F water flow.*
- *The unit called for the Sensors to be set up 19" apart and*
- *Flow readings were observed over a period of about 5 minutes:*
 - *Test readings obtained were slowly fluctuating between 4400 & 4600GPM (6.336 to 6.624MGD)*
 - *At the same time, the Total Raw Water flow reading in the HMI was fluctuating around 6.65MGD*
- *Randy was very satisfied with the strength of the signal he was able to get and confident about the validity of the flow results (which were collected before either of us checked the reading from the existing metering system).*

If one compares the calibrated test magnetic meter that averaged 6.48 MGD with the WTP raw water flow meter which was fluctuating around 6.65 MGD it indicates that the existing water plant low service meter is reading 2.55% high.

Water Quality Alum Model

Water plant staff is being assisted by Optimization Solutions in the utilization of an algorithm to assist in the accurate and optimal determination of the alum dose in the treatment process. Over the course of the last several years finished water turbidity has improved. Average filtered turbidity has dropped to 0.03 N.T.U. Optimization Solutions was recently featured in the AWWA Journal.

Weather Station

The old Davis brand weather station was replaced with the current model. The dedicated weather computer was replaced as well. Functionality is much improved. The software is easier to navigate and the computer replaces the old unit which was equipped with a floppy drive that provided the only means available to transfer data. Monthly weather data is provided at the end of this report.

SWMSS&WA Sanitary Survey

MDEQ District Engineer Gary Wozniak met with plant staff and Mary Nykamp of Wightman & Associates. Site visits were made to both Hilltop and Cleveland Booster stations as well as the Royalton and Lincoln Township Water Towers.

Fairplain Interconnects

The bids were opened at St. Joseph Charter Township Hall on April 30, 2015. Wightman & Associates recommended acceptance of the low bid submitted by John Boettcher Sewer & Excavating in the amount of \$76,124.00 for items 1,4,5, and 7. These items anticipated metering all locations (Woodward/Empire; Napier/Colfax; Nickerson/Colfax) and disconnecting the Elmside/Colfax interconnection. The St. Joseph Township engineer and City staff met with representatives from Benton Charter Township and the City of Benton Harbor and memoranda of understanding will be drafted. Tentative agreements are to meter the interconnect with the City of Benton Harbor and cut and cap the all connections with Benton Charter Township except for the one at Colfax and Nickerson. The MOU and amendment to the Water Service Agreement will be considered by the St. Joseph City Commission on September 28, 2015.

Summer 2015 Water Demand

Over the past couple of months we have been reporting a counter trend in water demand. Demand actually rose by 12% in July and August over last year. A closer look at precipitation data reveals that 6.24 inches of rain was received in June of 2014 which likely led to reduced lawn sprinkling over the following two months. This year near normal and even precipitation has led to more moderate and typical water demand for this time of year. Of note, an extremely dry June in 2012 led to heavy demand in July and August in spite of an upturn in rainfall late in the period.

Monthly Pumpage

May-August for the years 2011-2015

	2011	2012	2013	2014	2015
May	110,258,444	138,177,494	139,280,351	127,550,790	120,015,842
June	151,942,626	234,814,831	158,731,916	161,534,590	140,497,782
July	206,103,485	268,275,220	205,584,737	162,504,136	181,689,860
August	179,267,863	172,562,086	202,618,956	182,591,246	194,430,530

Monthly Rainfall

May-August for the years 2011-2015

	2011	2012	2013	2014	2015
May		3.99	1.64	2.21	3.88
June		0.52	2.45	6.24	2.92
July		2.65	1.11	1.94	2.71
August		4.74	2.91	1.88	2.36

**ST. JOSEPH WATER FILTRATION PLANT
1701 LIONS PARK DRIVE
SAINT JOSEPH, MI. 49085**

**By: Greg Alimenti
St. Joseph Water Plant
700 Broad St.
Saint Joseph, MI. 49085-1276
(269) 983-1240**

August 2015

DISTRIBUTION:	
Total Gallons	194,430,530
Average Day	6,271,953
Maximum Day	7,928,690
Minimum Day	4,530,628

TREATMENT:	
Total Low Service	198,997,257
Wash Water Gals.	2,634,342
Wash Water %	1.33%
Plant Use Gals.	1,823,158
Plant Use %	0.94%

FILTRATION:		
Ave. Filter Run	128.9	hours
Ave. Filter Rate	2.14	g/sqft/min
Filter Eff. Index	165.9	
Ave. Loss of Head	4.5	feet
Plant Sewer Usage	871	\$ 1,925.18

LABORATORY REPORT		
Average of	Raw	Tap
Chlorides mg/L	18.4	18.3
Fluoride mg/L	0.11	0.72
Alkalinity mg/L	117	103
Hardness mg/L	142	140
pH	8.3	7.3
Calcium mg/L	39	38
Magnesium mg/L	10	11
Turbidity NTU	4.19	0.03
Temperature °F	67	
Total Coliform		0.0
Chlorine Residual		mg/L Free
Mixing Basin		0.94
Applied		1.71
Tap		1.57
Distribution		1.09

TREATMENT CHEMICAL SUMMARY:					
	Applied mg/L	Total Lbs.	Cost	Inventory lbs.	Days Supply
		CHEMICAL			
Alum (Al ⁺³)	1.75	2,898	\$9,544.13	106,276	1137
Chlorine (Cl ₂)	3.70	6,052	\$1,626.17	7,006	36
Fluoride (F ₂)	0.75	1,237	\$2,166.51	11,714	294

		REMARKS:			
Total Cost all Chemicals	\$13,336.82				
Chemical Cost per Mil. Gallon Treated	\$67.02				
Chemical Cost per Mil. Gallon Delivered	\$68.59				
PLANT UTILITIES SUMMARY					
Electric:					
Total KWH	297,000	***includes measure of melted snow			
Total Power Cost	\$ 20,790.00	visit the City of Saint Joseph's Home page at www.sjcity.com			
Power Cost per Million Gallon Treated	\$ 104.47	e-mail comments to either: operator@sjcity.com or galiment@sjcity.com			
Power Cost per Million Gallon Delivered	\$ 117.49				
Gallons Pumped per KWH	589				
Natural Gas:					
Metered Cubic Feet	0	SJWW Weather Computer			
Natural Gas Cost	\$36.74	Rain Guage, Inches	2.36	Avg.	71.3
Emergency Power Diesel Fuel Inv., Gals.	North 1800	days it rained***	8	Max.	86.7
	South 300	Wind Speed, Avg	7.5	Min.	56.4
		Wind Speed, Max	56	Avg.	67.1
		Prevailing Wind Dir.	North	Max.	75.3
		Lake Level (USACE)	579.72	Min.	48.8

Monthly Maintenance Notes

August 2015

Normal PM Maint. done Monthly	Check all High Service and Low Service Pumps, BPS pumps, Service BPS Chlorinators, Change out air filters on VFD Drives and Air Handlers. Mow and Grounds work at Plant, Booster Stations and Water Towers
08/03/15	Installed New Sample Pump for Applied Water Sample to the Lab
08/04/15	Installed New Blower motor on vent fan for chlorinator room at Hilltop BPS
08/05/15	Cleaned out man hole # 2 for reclaim overflow, used city vac truck due to the amount of sand build up
08/06/15	Repaired packing glands on check valve for pump # 1 at Cleveland BPS.
08/10/15	Installed new condensate pump for maintenance shop air conditioner
08/18/15	Painted duct work for DH unit in North Boiler Room
08/18/15	Installed new blower motor on unit heater in High Service Pump Room
08/21/15	Painted air relief pots in 5-8 Filter Room
08/24/15	Painted Chemical feed lines at Hilltop and Cleveland BPS
08/27/15	Mead & White - Installed New Transformer for Panels L-7, L-8 & L-9 (1931 Section of Plant)
08/28/15	Prepped and Painted Guard Poles at City Tower

DISTRIBUTION REPORT

For the Month of August 2015

Activity	Number/Description		
Water Main Breaks	3		
MISS DIGS	358		
Delinquent Shut Off	17	City 16, LCT 1	
Delinquent Shut Off (Broken Payment Plans)	1		
Hydrants (Repaired/Replaced)	7	Lincoln Township. Frozen caps, leak, would not open,	
Valves	0		
Taps (1")	7	6275 Red Arrow Highway-LCT-New Construction	
		3043 Teresa Drive-LCT-Bad Well	
		1762 Elm Terrace-SJCTE-Bad Well	
		468 Chippewa-SJCTE-Bad Well	
		2626 Sanctuary Drive-LCT-New Construction	
		4931 Pheasant Way-LCT-New Construction	
		4716 Naomi-RCT-Desired City Water, (Well OK)	
Cross Connection Control (Hydro Designs)			
Service Work (System Valves)			
Repair of Curb box/Shut-Off Valves	0		
Service Replacement			
Hydraulic Model-Flushing	40,000	Est City 39,000, SJCTE thru Napier PRV 1000	
Water Quality Complaint(s)	0		
Hydrant Flushing to maintain water quality	100,000	North dead end on M139 per WTP sample site.	
Hydrant Flushing (Stage 2 Rule)	-		
Staff Education/Training	0		
Overtime-Total	137	(Including Sanitary and Storm)	
Turn Off	2	(Note: For delinquent Shut off see above)	
Turn On	6		
Finals	147		
Meter Repair/Replacement		Audit Meter	
		Verify Read	
Meter Repair		Move Mxu Box	
Per detail		New Installation	14
Meter leaking	3	New Installation-Benton Harbor	
Stopped Meter	5	Replaced/various reasons	6
Faulty Register	1	Rockwell Replacement	
Frozen Meter	3	Mxu Replaced	4
Move Meter Inside	2	Sprinkler meter removed/line capped	
Hard to read	22	Removals/demo	
Replace/Adding Sprinkler Meter		Curb box location	1
Damage to Trt	1	Broken Remote	
New Plumbing		Noisy Meter	1
New siding	1	Upgrade 5/8" to 3/4"	1
Meter sent out for testing		Meter Change/Benton Harbor	

CITY OF ST. JOSEPH WATER MAIN BREAK REPORT

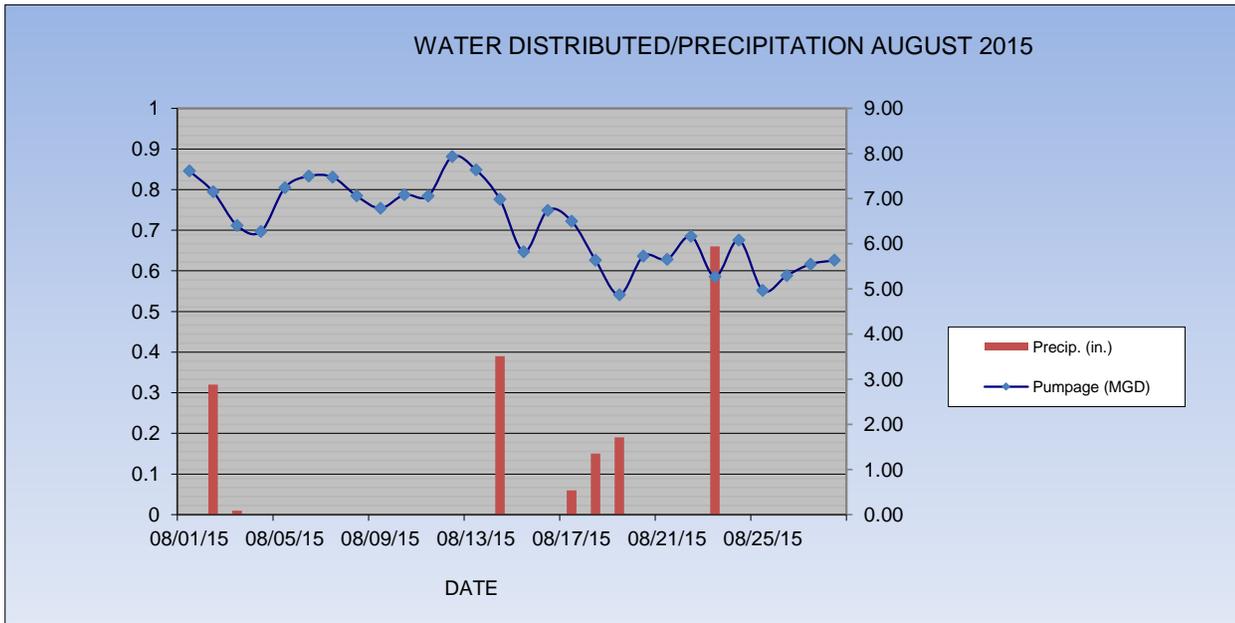
For the Month/Year of: August 2015

#	Date	Location	Main Size	Gallons Lost	Break Type	Valves Turned	City Twp	Labor	Remarks
1	8/1/2015	914 Kingsley Avenue	6	45000	Hole	4	City	15.0	4.5-5 ft soil cover, clay, cast iron
2	8/2/2015	Kingsley E. of Niles	6	60,000	Hole	4	City	16.0	4.5 ft soil cover, clay, cast iron, close to 8/1 break, two holes
3	8/3/2015	Botham, Niles and S. State	6	60,000	Circumferential	2	City	10.0	Clay, 5 ft cover, Circumferential, Cast Iron
	TOTALS			165,000		6		41.0	

**ST JOSEPH WATER PLANT PUMPAGE-WATER DELIVERED/RAINFALL
AUGUST 2015**

DATE	PUMPAGE (gallons)	PUMPAGE (MGD)	RAINFALL (in)	Day to Day Comparison 2015/2014	
				2015	2014
08/01/15	7,615,413	7.62	0	7,615,413	7,013,772
08/02/15	7,152,805	7.15	0.32	7,152,805	6,674,509
08/03/15	6,406,080	6.41	0.01	6,406,080	7,046,286
08/04/15	6,270,413	6.27	0	6,270,413	7,310,516
08/05/15	7,239,608	7.24	0	7,239,608	5,608,318
08/06/15	7,497,504	7.50	0	7,497,504	5,892,861
08/07/15	7,476,647	7.48	0	7,476,647	6,495,866
08/08/15	7,061,625	7.06	0	7,061,625	6,985,141
08/09/15	6,787,787	6.79	0	6,787,787	7,142,649
08/10/15	7,088,267	7.09	0	7,088,267	6,851,803
08/11/15	7,056,498	7.06	0	7,056,498	5,550,005
08/12/15	7,928,690	7.93	0	7,928,690	4,649,473
08/13/15	7,637,431	7.64	0	7,637,431	4,908,089
08/14/15	6,983,571	6.98	0.39	6,983,571	4,934,446
08/15/15	5,822,015	5.82	0	5,822,015	5,555,318
08/16/15	6,741,456	6.74	0	6,741,456	5,423,708
08/17/15	6,501,690	6.50	0.06	6,501,690	5,880,216
08/18/15	5,637,698	5.64	0.15	5,637,698	5,981,934
08/19/15	4,869,292	4.87	0.19	4,869,292	5,556,304
08/20/15	5,724,636	5.72	0	5,724,636	5,771,403
08/21/15	5,656,783	5.66	0	5,656,783	5,356,456
08/22/15	6,164,456	6.16	0	6,164,456	5,187,019
08/23/15	5,270,621	5.27	0.66	5,270,621	5,680,390
08/24/15	6,082,116	6.08	0	6,082,116	5,638,998
08/25/15	4,964,876	4.96	0	4,964,876	6,666,639
08/26/15	5,293,458	5.29	0	5,293,458	5,658,877
08/27/15	5,549,435	5.55	0	5,549,435	5,860,673
08/28/15	5,634,100	5.63	0	5,634,100	5,918,690
08/29/15	5,154,426	5.15	0.58	5,154,426	5,270,089
08/30/15	4,630,505	4.63	0	4,630,505	5,033,499
08/31/15	4,530,628	4.53	0	4,530,628	5,087,298
TOTAL	194,430,530	194.43	2.36	194,430,530	182,591,246

Average Day	6,271,953
Maximum Day	7,928,690
Minimum Day	4,530,628



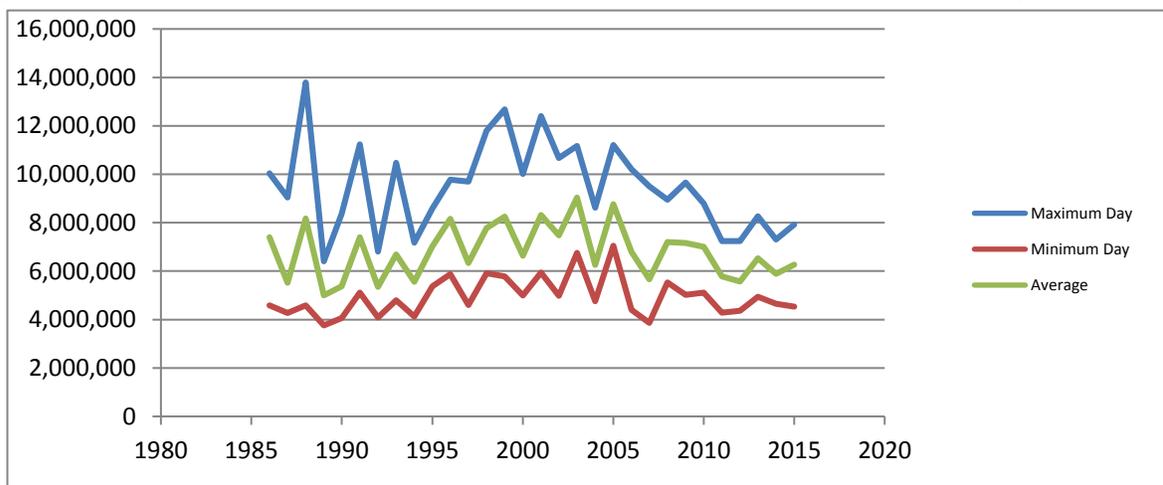
ST. JOSEPH WATER PLANT PUMPAGE-WATER DELIVERED

AUGUST 2015

Year	Average	Maximum Day	Minimum Day	Monthly Total
1986	7,393,723	10,037,900	4,588,500	229,205,400
1987	5,518,048	9,041,700	4,264,300	171,059,500
1988	8,166,742	13,790,300	4,579,700	253,169,000
1989	4,998,858	6,406,100	3,756,600	154,964,600
1990	5,370,532	8,375,600	4,056,300	166,486,500
1991	7,392,468	11,239,000	5,109,200	229,166,500
1992	5,346,310	6,811,600	4,083,000	165,735,600
1993	6,691,755	10,468,500	4,790,400	207,444,400
1994	5,561,642	7,170,500	4,130,300	172,410,900
1995	7,034,273	8,593,600	5,372,900	218,062,470
1996	8,158,177	9,772,200	5,867,700	252,903,500
1997	6,330,674	9,696,100	4,605,450	196,250,900
1998	7,773,318	11,795,100	5,917,750	240,972,850
1999	8,255,698	12,680,200	5,783,800	255,926,650
2000	6,629,348	10,009,700	4,989,500	205,509,800
2001	8,322,605	12,404,900	5,933,100	258,000,750
2002	7,478,446	10,672,950	4,983,000	231,831,820
2003	9,037,933	11,170,890	6,752,480	280,175,910
2004	6,250,413	8,623,040	4,755,000	193,762,800
2005	8,764,049	11,214,800	7,047,450	271,685,510
2006	6,798,473	10,203,500	4,397,500	210,752,660
2007	5,666,680	9,494,940	3,866,010	175,667,080
2008	7,203,586	8,951,090	5,526,180	223,311,180
2009	7,166,000	9,659,870	5,023,750	222,153,750
2010	7,009,806	8,789,707	5,116,885	217,304,014
2011	5,782,834	7,245,993	4,280,792	179,267,863
2012	5,566,518	7,236,370	4,361,455	172,562,086
2013	6,536,095	8,261,486	4,940,058	202,618,956
2014	5,890,040	7,310,516	4,649,473	182,591,246
2015	6,271,953	7,928,690	4,530,628	194,430,530

Monthly Rank-August 1986-2015

Ranking	Year	Monthly Total
1	2003	280,175,910
2	2005	271,685,510
3	2001	258,000,750
4	1999	255,926,650
5	1988	253,169,000
6	1996	252,903,500
7	1998	240,972,850
8	2002	231,831,820
9	1986	229,205,400
10	1991	229,166,500
11	2008	223,311,180
12	2009	222,153,750
13	1995	218,062,470
14	2010	217,304,014
15	2006	210,752,660
16	1993	207,444,400
17	2000	205,509,800
18	2013	202,618,956
19	1997	196,250,900
20	2015	194,430,530
21	2004	193,762,800
22	2014	182,591,246
23	2011	179,267,863
24	2007	175,667,080
25	2012	172,562,086
26	1994	172,410,900
27	1987	171,059,500
28	1990	166,486,500
29	1992	165,735,600
30	1989	154,964,600



SOUTHWEST MICHIGAN REGIONAL SANITARY SEWER & WATER AUTHORITY
CLEVELAND BOOSTER STATION

HILLTOP BOOSTER STATION

DATE	FLOW MGD	FEED GAL	CHL LBS/DAY	CHLORINE APPLIED mg/l	Cl ₂ PRE mg/l	Cl ₂ POST mg/l	Cl ₂ MON mg/l	FLOW MGD	FEED GAL	CHL LBS/DAY	CHLORINE APPLIED mg/l	Cl ₂ PRE mg/l	Cl ₂ POST mg/l	Cl ₂ MON mg/l	BOOSTER MGD
1-Aug	3.080	116	16.45	0.64				2.156	39	5.53	0.31				5.237
2-Aug	3.080	116	16.45	0.64				2.156	39	5.53	0.31				5.237
3-Aug	3.080	116	16.45	0.64	1.16	1.37	1.31	2.156	39	5.53	0.31	1.56	1.71	1.90	5.237
4-Aug	2.889	120	17.01	0.71	1.56	2.06	2.17	0.273	7	0.99	0.44	1.55	2.04	2.27	3.162
5-Aug	3.529	136	19.28	0.66	1.33	1.96	1.95	1.826	68	9.64	0.63	1.61	1.76	1.83	5.354
6-Aug	3.131	103	14.60	0.56	1.33	1.66	1.64	1.926	83	11.77	0.73	1.26	1.74	1.92	5.056
7-Aug	3.169	101	14.32	0.54	1.35	1.67	1.72	1.904	50	7.09	0.45	1.34	1.57	1.78	5.073
8-Aug	2.981	111	15.74	0.63				2.084	41	5.81	0.33				5.065
9-Aug	2.981	111	15.74	0.63				2.084	41	5.81	0.33				5.065
10-Aug	2.981	111	15.74	0.63	1.43	1.47	1.55	2.084	41	5.81	0.33	1.47	1.66	1.81	5.065
11-Aug	2.848	95	13.47	0.57	1.56	1.79	1.90	1.584	63	8.93	0.68	1.48	1.88	2.10	4.433
12-Aug	3.342	112	15.88	0.57	1.50	1.75	1.87	2.124	90	12.76	0.72	1.49	1.66	1.81	5.466
13-Aug	2.720	120	17.01	0.75	1.68	2.01	2.08	2.233	96	13.61	0.73	1.80	1.99	2.25	4.953
14-Aug	3.365	117	16.59	0.59	1.51	2.03	2.16	1.947	97	13.75	0.85	1.45	1.80	1.95	5.312
15-Aug	3.190	103	14.60	0.55				1.159	56	7.94	0.82				4.349
16-Aug	3.190	103	14.60	0.55				1.159	56	7.94	0.82				4.349
17-Aug	3.190	103	14.60	0.55	1.44	2.05	2.01	1.159	56	7.94	0.82	1.55	1.81	1.92	4.349
18-Aug	3.029	106	15.03	0.59	1.95	2.01	2.12	1.234	56	7.94	0.77	2.51	2.06	2.70	4.263
19-Aug	1.572	56	7.94	0.61	1.50	1.90	1.99	1.170	47	6.66	0.68	1.38	1.85	1.96	2.742
20-Aug	1.834	64	9.07	0.59	1.61	1.82	1.89	1.054	25	3.54	0.40	2.08	1.56	1.62	2.888
21-Aug	3.392	109	15.45	0.55	2.02	2.48	2.65	0.083	2	0.28	0.41	2.16	2.41	2.43	3.475
22-Aug	2.602	79	11.20	0.52				1.257	19	2.69	0.26				3.859
23-Aug	2.602	79	11.20	0.52				1.257	19	2.69	0.26				3.859
24-Aug	2.602	79	11.20	0.52	2.20	1.42	1.96	1.257	19	2.69	0.26	2.20	1.78	1.97	3.859
25-Aug	2.245	47	6.66	0.36	1.97	1.81	1.83	0.999	10	1.42	0.17	2.24	2.29	2.36	3.244
26-Aug	2.908	50	7.09	0.29	1.80	2.20	1.91	0.836	22	3.12	0.45	2.19	2.16	2.31	3.745
27-Aug	1.579	38	5.39	0.41	1.13	1.27	1.24	2.067	25	3.54	0.21	1.56	1.68	1.84	3.645
28-Aug	0.327	8	1.13	0.42	1.69	1.83	1.85	3.099	32	4.54	0.18	1.84	1.97	2.16	3.426
29-Aug	1.459	53	7.51	0.62				1.744	20	2.84	0.19				3.204
30-Aug	1.459	53	7.51	0.62				1.744	20	2.84	0.19				3.204
31-Aug	1.459	53	7.51	0.62	2.13	1.84	2.04	1.744	20	2.84	0.19	2.20	1.80	2.00	3.204
TOTAL	81.816	2,768	392.4					49.561	1,298	184.03					131.377
AVE DAY	2.639		12.7	0.57	1.6	1.8	1.9	1.5987		5.9	0.46	1.76	1.87	2.04	4.238
MAX	3.529		19.3	0.75	2.2	2.5	2.7	3.0990		13.8	0.85	2.51	2.41	2.7	5.466
MIN	0.327		1.1	0.29	1.1	1.3	1.2	0.0830		0.3	0.17	1.26	1.56	1.62	2.742
MONTHLY TOTALS:	Cleveland	Total MG Treated	81.816	SJCT EAST				Hilltop	Total MG Treated	49.561	Cleveland Pump Station:			81.816	
		Untreated	0.000	Average Day			0.223		Untreated	0.000	Hilltop Pump Station:			49.561	
Total Authority Flow:	137.366			Month Total			6.934				TOTAL AUTHORITY (Trted.)			131.377	

MONTHLY CLIMATOLOGICAL SUMMARY

AUGUST

2015

NAME: sjwwweather

St. Joseph Water Plant - 1701 Lions Park Drive - St. Joseph, MI

DAY	MEAN TEMP	NORM MEAN TEMP	HIGH TEMP	TIME	NORM HIGH TEMP	REC HIGH TEMP	YEAR	LOW TEMP	TIME	NORM LOW TEMP	REC LOW TEMP	YEAR	HEAT DEG DAYS	COOL DEG DAYS	RAIN	AVG WIND SPEED	HIGH	TIME	DOM DIR
1	76.1	71	84.8	5:30p	82	98	1988	71.6	6:00a	60	41	1990	0	11.1	0	8.5	18	1:30a	WNW
2	77.5	71	84.3	7:30p	82	99	1988	66.7	12:00m	60	38	1948	0	12.5	0.32	15.1	45	11:00p	SSW
3	72.6	71	80.5	7:00p	82	98	1991	65.9	6:00a	60	45	1990	0	7.6	0.01	7.4	19	1:00a	WNW
4	73.5	71	79.7	6:00p	82	97	1956	65.7	6:00a	60	45	1951	0	8.5	0	6.5	20	1:30a	WSW
5	72.4	71	82.1	3:30p	82	97	1988	63.7	6:30a	59	42	1957	0	7.4	0	4.1	14	5:00p	WNW
6	71.6	71	81.4	1:30p	82	91	1965	64.6	5:00a	59	44	1948	0	6.6	0	4.5	17	6:00p	ENE
7	72.2	71	80.7	1:30p	82	91	1984	62.9	7:30a	59	39	1989	0.1	7.3	0	2.3	12	6:30p	SSE
8	71.4	71	77.1	12:00p	82	96	1988	68.2	11:30p	59	40	1990	0	6.4	0	5	16	12:30p	N
9	71.8	71	78.4	7:00p	82	97	1988	66.2	5:00a	59	41	1964	0	6.8	0	2.3	12	12:00p	SW
10	72.8	71	78.6	2:00p	81	92	1984	70.4	12:00m	59	46	1964	0	7.8	0	5.2	16	8:00p	N
11	70.9	71	73.4	11:30a	81	89	1995	68.9	11:00p	59	45	1982	0	5.9	0	12.4	27	7:30p	N
12	67.2	70	72.1	8:30p	81	95	1988	62.4	7:30a	59	43	1992	0.2	2.3	0	7.3	20	1:30a	N
13	71	70	78.9	6:00p	81	95	1988	62.3	1:30a	58	45	1986	0.2	6.2	0	8.2	22	10:30a	SSW
14	74.5	70	80.9	7:00p	81	93	1995	66.6	12:00m	58	39	1990	0	9.5	0.39	9.8	56	10:30p	SSW
15	73.8	70	86.1	6:30p	81	93	1995	65	6:30a	58	38	1964	0	8.8	0	4.5	16	1:00a	SSE
16	77.6	70	85.7	6:00p	81	97	1988	70.1	5:00a	58	43	1979	0	12.6	0	5.6	14	7:00p	SSW
17	76.7	70	86.7	5:00p	81	100	1988	69.9	12:00m	58	40	1992	0	11.7	0.06	5.6	19	6:00p	SSW
18	74	70	83.4	5:30p	81	97	1988	68.1	5:00a	58	42	1958	0	9	0.15	4	30	12:00m	SSE
19	73.6	69	78.4	1:00p	80	95	1983	69.1	12:00m	58	44	1992	0	8.6	0.19	12.4	30	2:30p	SW
20	67.3	69	71.4	7:00p	80	95	1983	62.2	12:00m	57	39	1992	0.1	2.4	0	19.6	40	9:00a	WSW
21	71.6	69	79.7	5:30p	80	98	1983	60.7	8:00a	57	43	1950	0.5	7.1	0	7.2	19	4:30a	SW
22	73.7	69	83.4	2:30p	80	91	1948	63.2	6:30a	57	40	1985	0.1	8.8	0	4.1	20	2:00p	SE
23	70.1	69	75.1	11:00a	80	95	1948	65.7	2:30a	57	46	1949	0	5.1	0.66	8.5	34	4:00p	SE
24	67.7	69	71.3	3:30p	80	95	1948	63.5	12:00m	57	41	1984	0.1	2.8	0	20.9	35	2:30p	W
25	63	69	64.4	12:00m	80	93	1948	61.7	12:30p	57	40	1956	2	0	0	14.6	32	1:00a	WNW
26	63.6	68	65	3:30p	79	96	1948	61.2	9:00a	56	45	1963	1.4	0	0	10.8	21	9:30a	N
27	64.8	68	74.3	5:30p	79	94	1953	56.4	7:30a	56	47	1988	2.3	2.1	0	3.3	13	4:00p	ESE
28	67.6	68	77.9	3:00p	79	94	1953	57.7	7:00a	56	37	1982	2.1	4.7	0	2.2	10	8:30a	SE
29	67	68	69.7	5:00p	79	94	1953	62.9	9:00a	56	38	1982	0.3	2.3	0.58	1.7	12	4:30p	E
30	70.1	68	75.5	5:30p	79	93	1953	65.8	12:00m	56	40	1986	0	5.1	0	4.5	14	2:30p	WNW
31	71.4	67	81.4	5:00p	78	95	1953	63.5	8:00a	55	46	1989	0.2	6.6	0	3	8	3:00a	ESE
AVE	71.3	70											0.3	6.6	0.1	7.5	22.0		N
MAX	77.6	71	86.7			100		71.6		60	47		2.3	12.6	0.66	20.9	56.0		
MIN	63.0	67	64.4					56.4		55	37		0	0	0	1.7	8		
TOTAL															2.36				

Max Rain: 0.66 on 8/23/15

Days of Rain: 7 (> .01 in.) 6 (> .1 in.) 0 (> 1 in.)