

CITY OF ST. JOSEPH WATER FILTRATION PLANT

OPERATIONAL REPORT

MAY 2022



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/DISTRIBUTION REPORT- MAY 2022

Water demand in April was down by 43,162,278 gallons representing a 27.1% decrease from 2021. This year 115,924,537 gallons were delivered which compares to 159,086,815 gallons in 2021. The May 2022 pumpage ranks 28th in the thirty-year tabulation dating back to 1993.

GENERAL ACTIVITIES

2021 Consumer Confidence Report

The 2021 Consumer Confidence Report was completed in May and will be mailed during the week of June 13th. This is a water quality report that is a compilation of all water testing done during the year. In addition, public education articles are included again this year on lead in drinking water and residential cross connection control.

SCIP Phase II Design and Construction Engineering

Staff completed an RFP for engineering for the second phase of the SCIP. This includes design engineering budgeted in 2022/2023 and construction engineering for the construction phase of engineering in 2023/2024 and 2024/2025.

Lead Service Line Replacement-Ongoing

Staff continues to meet weekly with the lead service line replacement team to discuss lead service line identification, replacement, water sampling and planning.

SRF ITA

Staff continues to meet and assist in the loan application process under the SRF program. The project plan draft document is complete. The SCIP (Strategic Capital Improvement Project) Phase II projects will be funded through this program.

Clarifier Replacement Project-SCIP Phase II

Staff will give a tour of Clarifier #2 and #3 including a slide presentation to the WSJOB. The phase two project includes architectural improvements in the 1974 addition to the plant.

PFAS

Per- and polyfluoroalkyl substances (PFAS), are a group of chemicals that have been classified by the U.S. Environmental Protection Agency (EPA) as an emerging contaminant on the national level. The chemicals have been used in fire suppressant foam at airports, fire departments and refineries, as well as by industrial chrome platers and apparel manufacturers. They repel water and resist heat. PFAS have been found at low levels both in the environment and in blood samples of the general U.S. population. On April 13, 2022 City of St. Joseph water was tested. Test results received from our contract laboratory indicate that PFOS/PFOA levels in the City's drinking water are well below the MCL of 70 ppt. However, the City of St. Joseph had 2.1 NG/L for PFOS and 2.5 ng/L for PJOA. Due to these detections, the City of St. Joseph was placed on quarterly monitoring by EGLE for at least the next two quarters.

Travel & Training

Josh Bailey from our distribution team passed his D-4.

Monthly Maintenance Notes

MAY 2022

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. Grounds work at Plant, Booster Stations and Water Towers
04/28/22	Cummins - PM inspection of Plant Generator, Low Service Generator, Cleveland and Hilltop BPS Generators per service agreement
05/04/22	Installed new weather station
05/04/22	Peerless Midwest - Pulled Sewage Pump # 1 by Alum storage tanks for Rebuild.
05/05/22	Cummins - Installed new Coolant Hoses on Block heater and changed coolant in Generator for Cleveland BPS
05/12/22	Installed new blower motor on unit heater in clarifier # 2 & 3 room
05/17/22	Cleaned North Low Service Intake Chamber and Wet Wells
05/19/22	Filled Clarifier # 2 and put into service
5/23 to 5/26/22	Cleaned old chlorinator feed room and removed concrete pads.
05/26/22	Boelcke Heating - Installed new economizer control on West HVAC unit
05/26/22	Mead & White / Double K - Completed start up and relocation of the New IT/Data Control Cabinet in the upper foyer.

DISTRIBUTION REPORT

For the Month of May 2022

Activity	Number/Description	
Water Main Breaks	0	
MISS DIGS	727	Including lead service pothole inspections in the City of St. Joseph (320)
Delinquent Shut Off	0	
Hydrants (Repaired/Replaced)	2	2301 Lakehore (City), hit by car. Had to straighten. Replace Highland&Lions Park
Valve Turning		
Valves	1	West Rocky Weed&Ann Court (LCT). Repair
Taps (1")		6237 Comiskey Road (LCT). New house in existing subdivision
		6244 Comiskey Road (LCT). Pre install for future home
		4478 Woodridge Way (RCT). Well conversion
		6303 Comiskey Road (LCT). New house in existing subdivision
		2072 Hidden Pines Trail (LCT). New house in existing subdivision
Cross Connection Control	30	Commercials by Hydro
Residential Cross Connection Control	2	
Service Retirement	1	2704 Highland Court (City) Sprinkler meter in pit.
Service Replacement (Lead)	1	391 Ridgeway (SJ), Replace service, private side damaged by City. Lead
Service Repair	0	
Repair/Replace of Curb box/Shut-Off Valves	4	Various; froze up, bent curb box, rod broken, adjust.
Meter pit/service replacement	0	
Water Quality complaints	6	Water quality/pressure, color
Hydrant flushing to maintain water quality	0	
Service line complaints (customer side)	4	leaks, high water use, misreported stormwater, snowbirds, low pressure
Private Service break	0	
Staff Education/Training	64.8	Residential Cross Connection, union meetings, CDL Training
Overtime-Total	45.5	
Turn Off		Defective meter
Turn On		Sensors bad
Finals		Downsize meter
Meter Repair/Replacement		TRT missing
Meter Repair		Audit Meter
Per detail		Verify Read
Meter leaking		Move Mxu Box
Stopped Meter		New Installation
Faulty Register		
Frozen Meter		Replaced/various reasons (e.g.,downsize, defective)
Move Meter Inside		Rockwell Replacement
Hard to read		Mxu Replaced
Replace/Adding Sprinkler Meter		Sprinkler meter removed/line capped
Damage to Meter/TRT/wire damaged		Removals/demo
New Plumbing		Curb box location
New siding		Broken Remote
Lead services		Noisy Meter
		Upgrade 5/8" to 3/4" (upgrade to 1")

CITY OF ST. JOSEPH WATER MAIN BREAK REPORT - May 2022

Date	Location	Main Size	Gallons Lost	Break Type	Valves Turned	City Twp	Labor	Remarks
	No breaks in May							
TOTALS			-				0	

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

MAY 2022

DISTRIBUTION:	
Total Gallons	115,924,537
Average Day	3,739,501
Maximum Day	5,170,253
Minimum Day	2,679,636

TREATMENT:	
Total Low Service	120,627,804
Wash Water Gals.	582,884
Wash Water %	0.49%
Plant Use Gals.	11,490
Plant Use %	0.01%

FILTRATION:		
Ave. Filter Run	259.1	hours
Ave. Filter Rate	1.84	g/sqft/min
Filter Eff. Index	450.3	
Ave. Loss of Head	1.5	feet
Plant Sewer Usage		
	\$ 12,148.16	Mar-May

LABORATORY REPORT		
Average of	Raw	Tap
Chlorides mg/L	17.4	18.9
Fluoride mg/L	0.15	0.77
Alkalinity mg/L	113	102
Hardness mg/L	144	143
pH	8.1	7.4
Calcium mg/L	41	39
Magnesium mg/L	10	10
Turbidity NTU	1.84	0.04
Temperature °F	52	
Total Coliform		0.0
Chlorine Residual		
		mg/L Free
Mixing Basin		0.87
Applied		1.05
Tap		1.36
Distribution		1.18

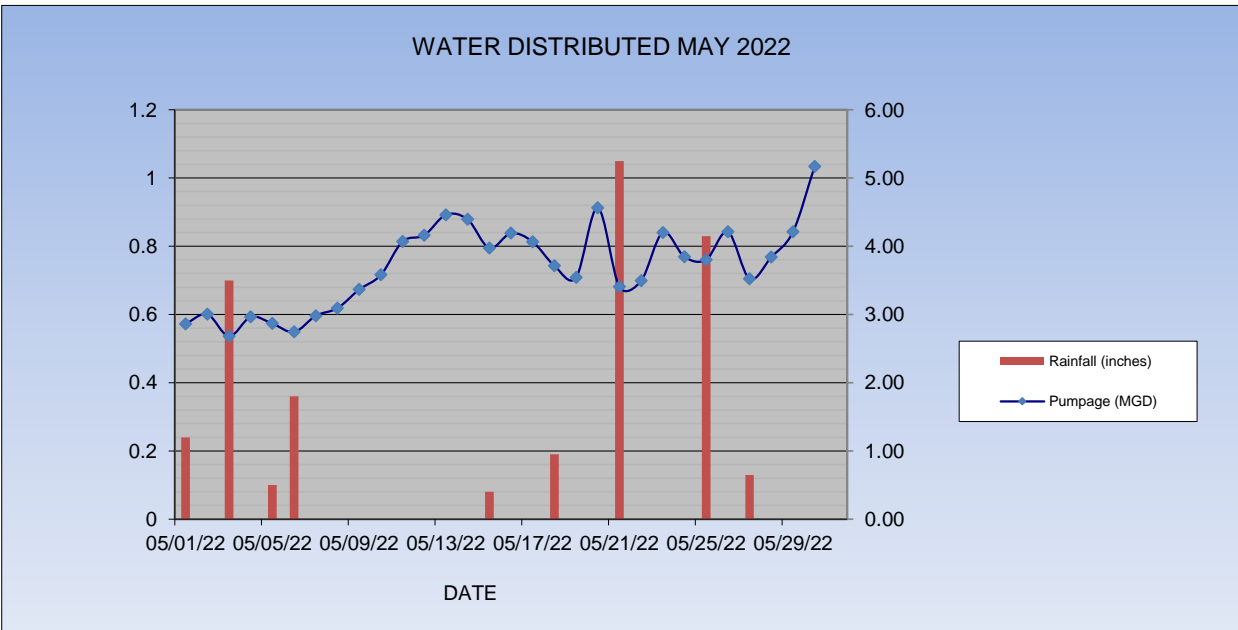
TREATMENT CHEMICAL SUMMARY:					
	Applied mg/L	Total Lbs.	Cost	Inventory lbs.	Days Supply
		CHEMICAL			
Alum (Al ⁺³)	21.78	21,865	\$7,131.47	31,248	22
Chlorine (Cl ₂)	2.49	2,512	\$4,268.60	6,143	76
Fluoride (F ₂)	0.60	607	\$1,063.62	12,133	118

		REMARKS:			
Total Cost all Chemicals	\$12,463.68				
Chemical Cost per Mil. Gallon Treated	\$103.32				
Chemical Cost per Mil. Gallon Delivered	\$103.81				
PLANT UTILITIES SUMMARY					
Electric:					
Total KWH	208,960	***includes measure of melted snow			
Total Power Cost	\$ 14,627.21	visit the City of Saint Joseph's Home page at www.sjcity.com			
Power Cost per Million Gallon Treated	\$ 121.26	e-mail comments to either: operator@sjcity.com or galiment@sjcity.com			
Power Cost per Million Gallon Delivered	\$ 130.00	WEATHER CONDITIONS AT THE PLANT		Air Temp. °F	
Gallons Pumped per KWH	353	SJWW Weather Computer		Avg.	62.1
		Rain Guage, Inches	3.68	Max.	92
		days it rained***	9	Min.	42.2
Natural Gas:		Wind Speed, Avg	5.9	Lake Temp. °F	
Metered Cubic Feet	3448	Wind Speed, Max	37	Avg.	51.7
Natural Gas Cost	\$2,909.25	Prevailing Wind Dir.	North	Max	58.4
Emergency Power Diesel Fuel Inv., Gals.	North 500	Lake Level (USACE)	580.05	Min	46.0
	South 1500				

**ST JOSEPH WATER PLANT PUMPAGE-WATER DELIVERED/RAINFALL
MAY 2022**

DATE	PUMPAGE (gallons)	PUMPAGE (MGD)	Rainfall (in)	Day to Day Comparison 2022/2021	
				2022	2021
05/01/22	2,861,634	2.86	0.24	2,861,634	3,158,045
05/02/22	3,003,150	3.00	0	3,003,150	3,830,335
05/03/22	2,679,636	2.68	0.7	2,679,636	3,539,524
05/04/22	2,964,038	2.96	0	2,964,038	3,210,045
05/05/22	2,867,171	2.87	0.1	2,867,171	3,443,182
05/06/22	2,742,986	2.74	0.36	2,742,986	3,320,533
05/07/22	2,981,584	2.98	0	2,981,584	3,512,455
05/08/22	3,092,299	3.09	0	3,092,299	3,301,830
05/09/22	3,365,065	3.37	0	3,365,065	3,361,240
05/10/22	3,580,100	3.58	0	3,580,100	3,546,967
05/11/22	4,069,073	4.07	0	4,069,073	3,676,388
05/12/22	4,159,881	4.16	0	4,159,881	4,105,123
05/13/22	4,460,714	4.46	0	4,460,714	4,511,106
05/14/22	4,393,377	4.39	0	4,393,377	5,035,621
05/15/22	3,973,567	3.97	0.08	3,973,567	4,685,546
05/16/22	4,190,761	4.19	0	4,190,761	5,236,909
05/17/22	4,065,555	4.07	0	4,065,555	6,186,985
05/18/22	3,713,928	3.71	0.19	3,713,928	6,125,258
05/19/22	3,542,204	3.54	0	3,542,204	5,772,313
05/20/22	4,563,564	4.56	0	4,563,564	6,879,055
05/21/22	3,404,838	3.40	1.05	3,404,838	8,018,991
05/22/22	3,493,143	3.49	0	3,493,143	7,532,225
05/23/22	4,201,174	4.20	0	4,201,174	7,504,833
05/24/22	3,843,487	3.84	0	3,843,487	7,616,853
05/25/22	3,802,806	3.80	0.83	3,802,806	7,387,497
05/26/22	4,211,570	4.21	0	4,211,570	5,634,398
05/27/22	3,522,174	3.52	0.13	3,522,174	5,585,858
05/28/22	3,840,140	3.84	0	3,840,140	5,537,636
05/29/22	4,210,081	4.21	0	4,210,081	5,111,103
05/30/22	5,170,253	5.17	0	5,170,253	6,406,122
05/31/22	4,954,586	4.95	0	4,954,586	6,312,838
TOTAL	115,924,537	110.97	3.68	115,924,537	159,086,815

Average Day	3,739,501
Maximum Day	5,170,253
Minimum Day	2,679,636

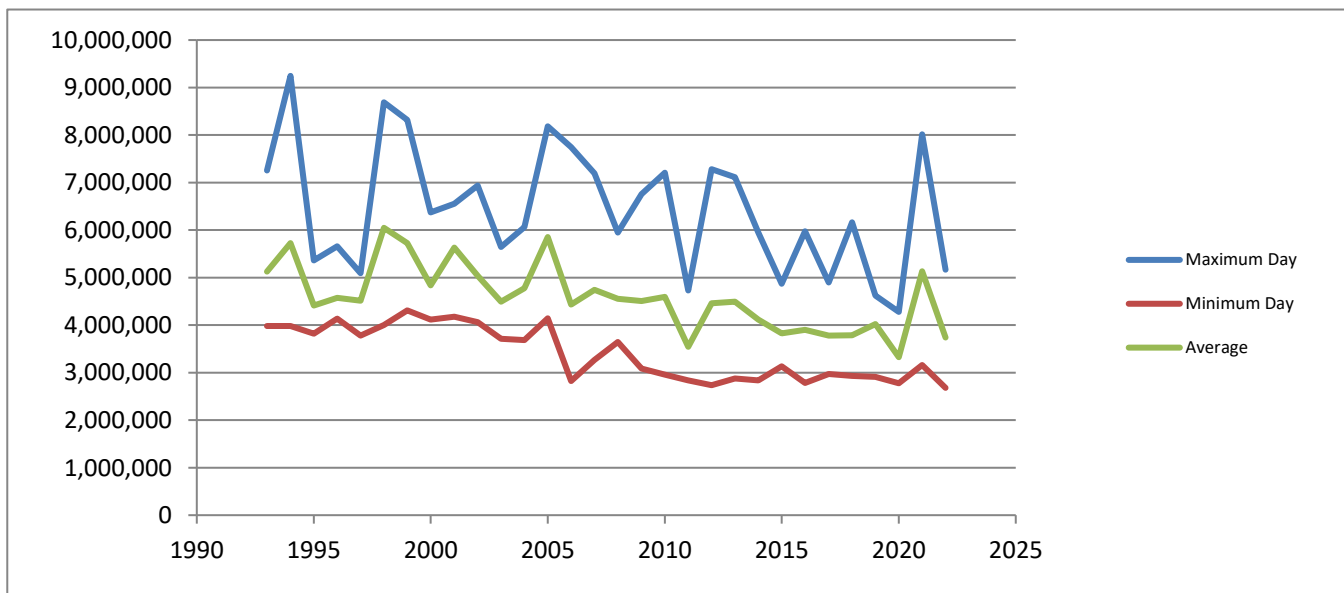


ST JOSEPH WATER PLANT PUMPAGE-WATER DELIVERED

MAY 2022

Year	Average	Maximum Day	Minimum Day	Monthly Total
1993	5,125,539	7,254,700	3,981,000	158,891,700
1994	5,725,045	9,246,500	3,979,600	177,476,400
1995	4,415,565	5,361,200	3,822,400	136,882,500
1996	4,573,452	5,658,000	4,136,000	141,777,000
1997	4,510,768	5,092,100	3,779,700	139,833,800
1998	6,048,352	8,692,600	3,999,500	187,498,900
1999	5,722,849	8,319,100	4,309,900	177,408,307
2000	4,836,010	6,376,100	4,118,250	149,916,300
2001	5,634,882	6,553,750	4,176,030	174,681,340
2002	5,038,950	6,937,050	4,063,900	156,207,450
2003	4,496,300	5,648,500	3,709,610	139,385,290
2004	4,776,464	6,061,080	3,682,780	148,070,370
2005	5,855,014	8,182,500	4,142,130	181,505,420
2006	4,429,722	7,748,000	2,824,250	137,321,390
2007	4,742,185	7,192,750	3,267,390	147,007,740
2008	4,551,589	5,950,750	3,642,770	141,099,260
2009	4,508,448	6,759,230	3,083,300	139,761,901
2010	4,593,824	7,207,765	2,960,557	142,408,530
2011	3,543,478	4,730,395	2,839,172	110,258,444
2012	4,457,338	7,282,740	2,737,559	138,177,494
2013	4,492,914	7,113,301	2,877,192	139,280,351
2014	4,114,542	5,947,118	2,833,465	127,550,790
2015	3,829,909	4,874,146	3,135,060	120,015,842
2016	3,899,822	5,973,686	2,779,609	120,894,489
2017	3,779,109	4,896,464	2,970,319	119,789,109
2018	3,788,338	6,166,347	2,930,467	117,438,470
2019	4,020,200	4,624,128	2,911,875	124,626,206
2020	3,325,223	4,278,854	2,777,624	103,081,905
2021	5,131,833	8,018,991	3,158,045	159,086,815
2022	3,739,501	5,170,253	2,679,636	115,924,537

Rank	Year	Monthly Total
1	1998	187,498,900
2	2005	181,505,420
3	1994	177,476,400
4	1999	177,408,307
5	2001	174,681,340
6	2021	159,086,815
7	1993	158,891,700
8	2002	156,207,450
9	2000	149,916,300
10	2004	148,070,370
11	2007	147,007,740
12	2010	142,408,530
13	1996	141,777,000
14	2008	141,099,260
15	1997	139,833,800
16	2009	139,761,901
17	2003	139,385,290
18	2013	139,280,351
19	2012	138,177,494
20	2006	137,321,390
21	1995	136,882,500
22	2014	127,550,790
23	2019	124,626,206
24	2016	120,894,489
25	2015	120,015,842
26	2017	119,789,109
27	2018	117,438,470
28	2022	115,924,537
29	2011	110,258,444
30	2020	103,081,905



May

2022

SOUTHWEST MICHIGAN REGIONAL SANITARY SEWER & WATER AUTHORITY

WSSN 3726

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-May	0.632	83	11.77	2.23				1.318	70	9.92	0.90				1.950
2-May	0.632	83	11.77	2.23	1.36	1.41	1.11	1.318	70	9.92	0.90	1.97	1.37	1.44	1.950
3-May	1.955	247	35.02	2.15	1.50	1.23	1.21	0.003	0	0.00	0.00	2.20	1.48	1.62	1.957
4-May	0.001	0	0.00	0.00	1.20	1.69	1.11	1.896	97	13.75	0.87	1.50	1.15	1.25	1.897
5-May	1.918	251	35.59	2.22	1.11	1.30	1.21	0.000	0	0.00	0.00	1.39	1.38	1.46	1.918
6-May	0.005	0	0.00	0.00	1.10	1.14	1.08	2.020	133	18.86	1.12	1.28	1.22	1.17	2.024
7-May	1.316	180	25.52	2.33				0.713	44	6.24	1.05				2.029
8-May	1.316	180	25.52	2.33				0.713	44	6.24	1.05				2.029
9-May	1.316	180	25.52	2.33	1.13	1.21	1.16	0.713	44	6.24	1.05	1.48	1.57	1.49	2.029
10-May	0.007	0	0.00	0.00	1.04	1.11	1.04	2.310	126	17.86	0.93	1.22	1.27	1.24	2.317
11-May	2.369	299	42.39	2.15	1.35	1.26	1.18	0.011	0	0.00	0.00	0.92	1.39	1.18	2.380
12-May	1.059	148	20.98	2.38	1.62	1.26	1.19	1.521	100	14.18	1.12	1.57	1.18	1.28	2.580
13-May	2.818	330	46.79	1.99	1.42	1.41	1.32	0.009	0	0.00	0.00	1.02	1.32	1.22	2.827
14-May	1.007	122	17.30	2.06				1.931	104	14.75	0.92				2.938
15-May	1.007	122	17.30	2.06				1.931	104	14.75	0.92				2.938
16-May	1.007	122	17.30	2.06	1.08	1.20	1.05	1.931	104	14.75	0.92	1.15	1.28	1.23	2.938
17-May	2.654	360	51.04	2.31	1.34	1.32	1.20	0.536	32	4.54	1.01	1.21	1.64	1.78	3.190
18-May	0.000	0	0.00	0.00	1.26	1.19	1.14	2.257	121	17.16	0.91	1.51	1.33	1.23	2.257
19-May	3.248	440	62.38	2.30	1.28	2.06	2.04	0.000	0	0.00	0.00	1.43	1.36	1.32	3.248
20-May	0.415	51	7.23	2.09	1.26	1.90	1.72	1.907	96	13.61	0.86	1.41	1.35	1.36	2.322
21-May	1.668	231	32.75	2.35				0.824	48	6.81	0.99				2.493
22-May	1.668	231	32.75	2.35				0.824	48	6.81	0.99				2.493
23-May	1.668	231	32.75	2.35	1.48	1.37	1.25	0.824	48	6.81	0.99	1.50	1.67	1.73	2.493
24-May	0.007	0	0.00	0.00	1.00	1.23	1.12	2.838	155	21.98	0.93	1.51	1.56	1.44	2.845
25-May	2.564	363	51.47	2.41	1.38	1.31	1.24	0.009	0	0.00	0.00	1.31	1.44	1.46	2.573
26-May	0.009	0	0.00	0.00	1.07	1.22	1.11	2.425	142	20.13	1.00	1.34	1.48	1.35	2.433
27-May	1.657	247	35.02	2.53	1.36	1.33	1.24	1.139	66	9.36	0.99	1.60	1.42	1.35	2.796
28-May	1.691	236	33.46	2.37				1.317	61	8.65	0.79				3.008
29-May	1.691	236	33.46	2.37				1.317	61	8.65	0.79				3.008
30-May	1.691	236	33.46	2.37				1.317	61	8.65	0.79				3.008
31-May	1.691	236	33.46	2.37	1.42	1.21	1.28	1.317	61	8.65	0.79	1.25	1.32	1.36	3.008
TOTAL	40.686	5,445	772.0					37.188	2,040	289.23					77.874
AVE DAY	1.312		24.9	1.83	1.3	1.4	1.2	1.1996		9.3	0.76	1.42	1.39	1.38	2.512
MAX	3.248		62.4	2.53	1.6	2.1	2.0	2.8380		22.0	1.12	2.2	1.67	1.78	3.248
MIN	0.000		0.0	0.00	1.0	1.1	1.0	0.0000		0.0	0.00	0.92	1.15	1.17	1.897
MONTHLY TOTALS:		Cleveland Total MG			SJCT EAST			Hilltop Total MG			Cleveland Pump Station:			40.686	
Average Day		2.512	Chl Add 38.966		Average Day		0.170	Chl Add 35.840		Hilltop Pump Station:			37.188		
Max Day (Est)		3.467	No Chl Add 1.720		Max Day (Est)		0.220	No Chl Add 1.348			TOTAL AUTHORITY (Trted.)			77.874	
Total Authority Flow:		77.881			Month Total		5.264								

	TOC Compliance							
	Treated	Source	Formula		Req. TOC	Actual	Alternative	Compl. Perf.
	Tap	Tap	Ratio	Alka- linity	Removal	Ratio/ Remov	Criteria Complied Y/N	
June	1.51	1.86	18.8	111	25	0.75	Yes	1.00
						0.75		
July	1.61	1.98	18.7	111	25	0.75	Yes	1.00
August	1.47	1.92	23.4	112	25	0.94	Yes	1.00
September	1.60	1.90	15.8	112	25	0.63	Yes	1.00
						0.77	Yes	1.00
October	1.75	2.61	33.0	122	15	2.20	N(Removal)	2.20
November	1.49	1.85	19.5	121	15	1.30	N(Removal)	1.30
December	2.72	2.98	8.7	130	15	0.58	Yes	1.00
						1.36		
January	1.60	1.95	17.9	118	25	0.72	Yes	1.00
February	1.49	1.89	21.2	133	15	1.41	N(Removal)	1.41
March	1.75	1.93	9.3	119	25	0.37	Yes	1.00
						0.83	Yes	1.00
April	1.77	2.04	13.2	102	25	0.53	Yes	1.00
May	1.71	2.01	14.9	109	25	0.60	Yes	1.00
Qtr Average						0.56		
Annual Avg.	1.71	2.08				0.86		1.14

6/15/2021

7/12/2021

8/18/2021

9/9/2021

10/24/2021

11/9/2021

12/15/2021

1/12/2022

2/17/2022

3/8/2022

4/13/2022

5/18/2022

ST. JOSEPH WATER PLANT-YEAR TO DATE PUMPAGE

MAY 2022

	Pumpage Month	Pumpage FISCAL YTD	By Quarter
JUNE	207,863,490	207,863,490	207,863,490
JULY	194,516,481	194,516,481	
AUGUST	206,106,524	400,623,005	
SEPTEMBER	165,413,457	566,036,462	566,036,462
OCTOBER	111,150,956	677,187,418	
NOVEMBER	79,512,900	756,700,318	
DECEMBER 2021	80,497,727	837,198,045	271,161,583
JANUARY 2022	85,696,372	922,894,416	
FEBRUARY	76,518,702	999,413,119	
MARCH	82,154,723	1,081,567,842	244,369,797
APRIL	81,200,791	1,162,768,632	
MAY	115,924,537	1,278,693,169	
TOTAL	1,486,556,659		

