

September 2022

OPERATIONS' DEPARTMENT MONTHLY REPORT

PUMPAGE	HIGH LIFT		LOW LIFT		2022 VS 2021
	2021	2022	2021	2022	HL
Total in MG	405.739	397.134	409.005	402.650	-2.12%
Daily Average (MG)	13.525	13.257	13.634	13.422	
Max. Day (MG)	15.314	16.024	15.236	15.985	
					2022 VS 2020
					HL
Gal/KwH	1,221	1,170	4,977	4,898	-0.11%
ELECTRICAL COSTS					
		2021		2022	
		KwH	\$	KwH	\$
A. Pumping:					
High Lift		329,321	\$23,192.41	336,584	\$25,238.08
Low Lift		81,729	\$5,755.76	81,731	\$6,128.44
Wash Pump 1		2,100	\$147.89	9,100	\$682.35
Georgia St. Bstr.		51,900	\$4,595.26	57,300	\$5,670.57
Wilgus Ave. Bstr.		3,000	\$775.56	3,200	\$429.62
EE Pit / Bstr.		4,851	\$565.96	5,450	\$700.24
Erie Ave. Bstr.		16,000	\$2,144.10	14,800	\$2,201.29
Sub Total		488,901	\$37,176.94	508,165	\$41,050.58
					\$/KwH 6.2%
B. Treat./Fiscal/Misc.		KwH	\$	KwH	\$
Office & Maint. Bldg.		11,994	\$1,361.49	11,008	\$1,394.65
Filter Plant / Pump Station / 2nd Service		47,650	\$3,959.37	45,585	\$4,009.63
Sub Total		59,644	\$5,320.86	56,593	\$5,404.28
					\$/KwH 7.0%
C. Distribution:		KwH	\$	KwH	\$
Taylor Hill Tank		357	\$58.31	350	\$61.98
Kohler Meter Pit		0	\$0.00	0	\$0.00
EE Tower		809	\$158.23	1,074	\$154.45
Washington (PRV) Pit		228	\$45.81	204	\$45.64
Sub Total		1,394	\$262.35	1,628	\$262.07
					\$/KwH 6.1%
Total Electrical Costs		549,939	\$42,760.15	566,386	\$46,716.93
Electrical Cost / MG			\$105.39		\$117.47
		2021		2022	
		CCF Used	Cost	CCF Used	Cost
NATURAL GAS COSTS					
Production Facility				148	\$1,853.23
South Basin		47	\$193.45	34	\$205.28
Georgia St. Bstr.				29	\$53.97
Erie Ave. Bstr.		0	\$28.60	0	\$29.59
Wilgus Ave. Bstr.				0	\$16.21
Office & Maint. Bldg.		288	\$264.23	434	\$592.51
Total Natural Gas Costs		335	\$486.28	645	\$2,750.79
					\$/CCF 193.7%
Natural Gas Cost / MG			\$1.20		\$6.92
		2021		2022	
		Lbs. Used	Cost	Lbs. Used	Cost
CHEMICAL COSTS					
Alum		53,077	\$7,510.40	56,162	\$10,193.40
Carbon		0	\$0.00	0	\$0.00
Chlorine		8,971	\$6,189.99	9,177	\$13,581.96
Fluoride		2,130	\$2,315.31	2,249	\$3,126.11
KMnO4		247	\$901.73	251	\$914.33
Cationic Polymer		0	\$0.00	0	\$0.00
Liquid Phosphate		3,523	\$4,657.41	4,883	\$7,705.37
Total Chemical Costs			\$21,574.84		\$35,521.17
					64.6%
Chemical Cost / MG			\$53.17		\$89.32
		Grand Total		\$64,821.27	
				\$84,988.89	
				31.11%	
		Total Cost / MG		\$213.70	
				33.76%	

YTD HL 2022 vs 2021	0.05%	YTD HL HIGH DAY PUMPAGE	17.388	July 19, 2022	
YTD HL 2022 vs 2020	7.78%	YTD HL LOW DAY PUMPAGE	7.587	January 1, 2022	
					YTD HL Ave Day
					2022
					12.561
					2021
					12.640
					2020
					11.685

NOTE:

Electrical costs include an Alliant Energy 8.3% rate increase approved by PSC.
all WPS bills available.

Not

COMPARATIVE SUMMARY OF PLANT OPERATIONS

September 2021

vs

September 2022

Pumping Record

High Lift

Low Lift

	2021	2022	Diff.		2021	2022	Diff.
Tot. Water in MG	405.739	397.134	-2.12%	Tot. Water in MG	409.005	402.650	-1.55%
Daily Average	13.525	13.257	-1.98%	Daily Average	13.634	13.422	-1.55%
Maximum Day	15.314	16.024	4.64%	Maximum Day	15.236	15.985	4.92%
Minimum Day	10.582	9.923	-6.23%	Minimum Day	10.480	10.166	-3.00%
By Natural Gas	3.618	3.784	4.59%	By Natural Gas	2.200	2.367	7.59%
Power in KWH	329,321	336,584	2.21%	Power in KWH	81,729	81,731	0.00%
Gals. per KWH	1,221	1,170	-4.15%	Gals. per KWH	4,977	4,898	-1.61%
Power \$ / KWH	\$0.07042	\$0.07498	6.48%	Power \$ / KWH	----	----	----
Power \$ / MG	\$57.16	\$63.46	\$6.30	Power \$ / MG	\$14.07	\$15.22	\$1.15
Tot. Power \$/MG	\$100.20	\$117.82	\$17.62	Tot. Power \$/MG	----	----	----

Treatment Chem.

Lbs. Used

Cost

Total Lbs.	2021	2022	Diff.	Total Cost	2021	2022	Diff.
Alum	53,077	56,162	5.81%	Alum	\$7,510.40	\$10,193.40	\$2,683.00
Carbon			#DIV/0!	Carbon	\$0.00	\$0.00	\$0.00
Chlorine	8,971	9,177	2.30%	Chlorine	\$6,189.99	\$13,581.96	\$7,391.97
KMnO4	247	251	1.42%	KMnO4	\$901.73	\$914.33	\$12.59
Polymer	0	0	#DIV/0!	Polymer	\$0.00	\$0.00	\$0.00
Liquid Phosphate	3,523	4,883	38.60%	Liquid Phosphate	\$4,657.41	\$7,705.37	\$3,047.96
Lb/ MG:				Cost / MG:			
Alum	129.8	139.5	7.48%	Alum	\$18.36	\$25.32	\$6.95
Carbon	0.0	0.0	#DIV/0!	Carbon	#DIV/0!	#DIV/0!	#DIV/0!
Chlorine	21.9	22.8	3.91%	Chlorine	\$15.13	\$33.73	\$18.60
KMnO4	0.6	0.6	3.02%	KMnO4	\$2.20	\$2.27	\$0.07
Liquid Phosphate	8.6	12.1	40.79%	Liquid Phosphate	\$11.39	\$19.14	\$7.75

Fluoride:	2021	2022		Fluoride:	2021	2022	
Total Lbs.	2,130	2,249	5.59%	Cost	\$2,315.31	\$3,126.11	\$810.80
mg/l applied as F	0.78	0.73		Cost/MG	\$5.71	\$7.87	\$2.16
Av. Res. Plt. Tap	0.77	0.70					

Water Quality:

Raw

TAP

	2021	2022			2021	2022
Turbidity	2.80	3.80		Turbidity	0.055	0.040
pH	8.21	8.31		pH	7.63	7.61
Alkalinity	110.3	109.1		Alkalinity	102.2	100.9
MF (E-Coli)	7.1	4.4		Plate Count	0.00	0.00
Temperature	57.0	59.2		Colilert	0	0
Wash-H2O % /LL	2.07	2.14		Temp.	60.8	62.6
Av. Flt. Run/hrs	113.4	96.8		Cl Res.	0.94	0.91
Av. ROF / MG	1.40	1.49				

Natural Gas:

	2021	2022		2021	2022	Diff.
Nat. Gas Heating	0	-432	Plant & South Basin	\$959.01	(\$5,605.64)	(\$6,564.65)
Nat. Gas Pumping	468	614		\$943.83	\$7,664.15	\$6,720.32

	CCF	Cost	Natural Gas Cost	Natural Gas CCF
#3 Gas Pump	133.3	\$1,664.44	\$2,058.51	182
#4 Gas Pump	198.0	\$2,472.31		
#7 Gas Pump	122.5	\$1,529.58		
Electric Generator	160.0	\$1,997.82		
Pumping totals	613.8	\$7,664.15		

September 2022

% Run

Elapsed Time:

	10/1/2022	9/1/2022	
No. 6 Pump	69,272.9	68,729.2	543.7
Wash Pump Meter	5,539.35	5,509.78	29.57
No. 7 Pump	777.2	772.3	4.9
No. 8 Pump	59,540.3	59,540.3	0.0
No. 9 Pump	22,562.0	21,848.0	714.0
Wash Pump 2	46	39	7
No. 1 Prime Pump	1,044.9	1,044.1	0.8
No. 2 Prime Pump	1,118.6	1,117.1	1.5

Kw/Hr run

Watt-hour Meters:

Wash Pump 1	1277.1	1264.1	9,100
No. 9 Pump	5679.75	5637.57	42,181
No. 8 Pump	6837.4	6836.4	350
No. 6 Pump	1079.2	939.2	39,200
Wash Pump 2	4.934	4.895	47
No. 1 Pump	9274.059	9143.065	130,994
No. 2 Pump	4781.320	4772.130	9,190
No. 3 Pump	102.903	51.037	51,866
No. 4 Pump			0
No. 5 Pump	10,547.865	10,403.331	144,534

Garage (MWatt/Hrs.)	1,068.53	1,066.72	1,810
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Power Co. (Step #3)	37,820	37,425	474,000
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Left Meter - OUTSIDE

Volume Used:

Nat. Gas (Correct)	44,903,902	44,865,272	48,558
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Elapsed Time:

Emer. Generator	1,047.0	1,039.0	8.0
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Elapsed Time:

No. 1 Pump	17,198.1	16,955.3	242.8
No. 2 Pump	20,409.05	20,367.15	41.90
No. 3 Elec. Pump	377.2	194.2	183.1
No. 3 Nat. Gas Pump	548.1	543.8	4.3
No. 4 Elec. Pump	0.00	0.00	0.0
No. 4 Nat. Gas Pump	49.9	45.5	4.4
No. 5 Pump	22,060.470	21,759.270	301.200
UV Building Generator	130.5	129.5	1

% Run

33.7%

5.8%

25.4%

0.6%

0.0%

0.6%

41.8%

0.1%

10/1/2022	9/1/2022
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SLUDGE No. 1 Hour Meter	0.0	0.0	0
SYSTEM No. 2 Mag Meter	5,982,150	5,611,560	370,590
Recycle Meter (Reset to zero each month)			370,590

Power Cost	\$0.0749830	Bill >>>>	\$35,991.84
	0.51655	KWH >>>	480,000
Init. Chg.	\$35,541.94		
	\$	KWH	
Kohler Pit			
Horizon	\$139.82	904	
Taylor	\$61.98	350	
ALT. 72 Park	\$516.55	1,000	
Geo. Ave.	\$5,670.57	57,300	
Wilgus Ave.	\$429.62	3,200	
EE Pit	\$700.24	5,450	
EE Tower	\$154.45	1,074	
Washington	\$45.64	204	
Office	\$1,394.65	11,008	
Erie Ave.	\$2,201.29	14,800	
Total	\$46,856.75	569,290	

Low L. KWH	81,731
L.L. Cost \$	\$6,128.44
High L. KWH	336,584
H.L. Cost \$	\$25,238.08

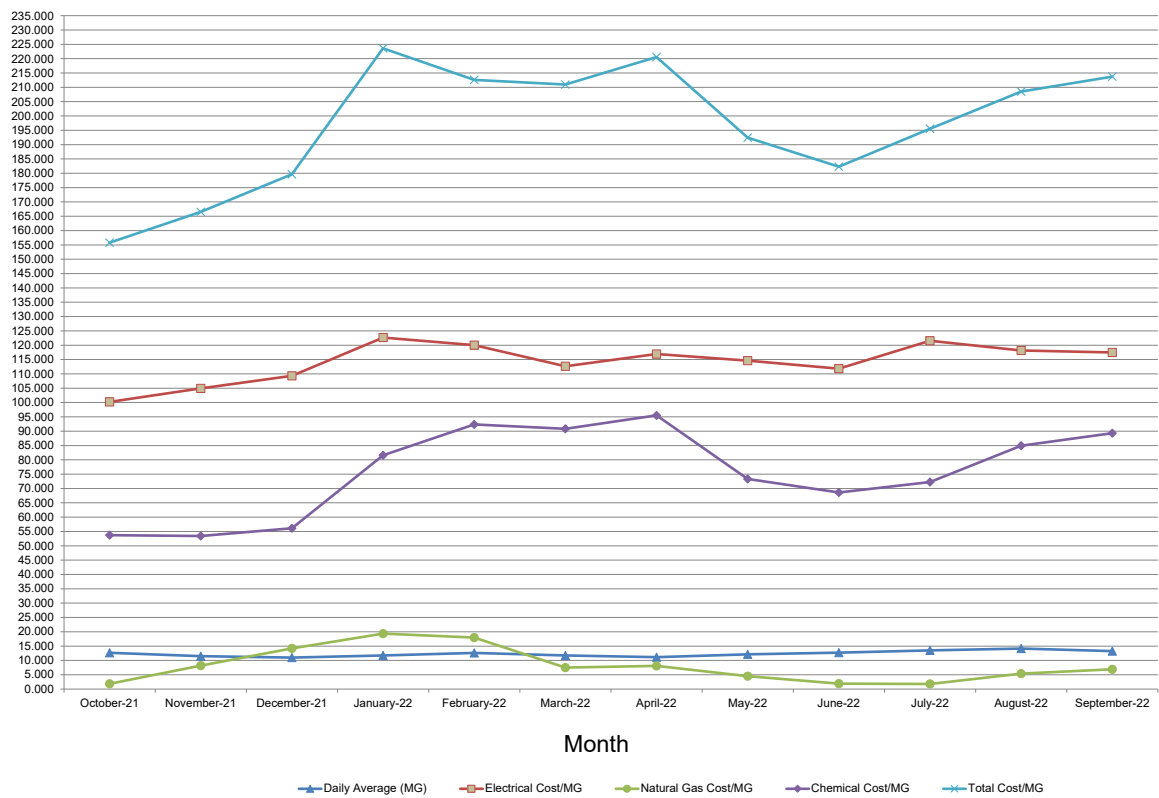
Total Cost	\$31,366.51
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Plant Costs	\$4,009.63
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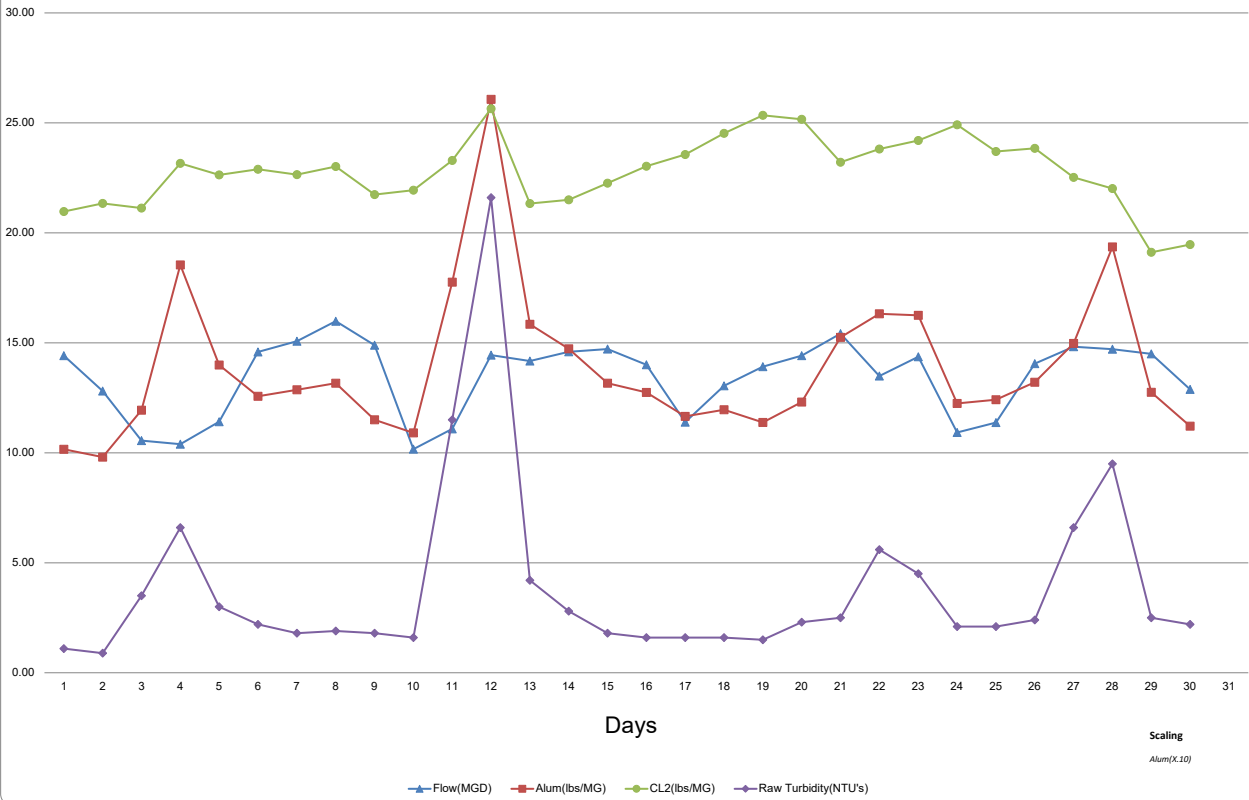
SUMMARY

	HIGH LIFT		LOW LIFT	
	2021	2022	2021	2022
Tot. Pump	405.739	397.702	409.005	402.650
Daily Ave.	13.525	13.257	13.634	13.422
Max. Day	15.314	16.024	15.236	15.985
Min. Day	10.582	9.923	10.480	10.166
By Nat. Gas	3.618	3.784	2.200	2.367
Power KWH	329,321	336,584	81,729	81,731
Gals/KWH	1221	1170	4977	4898
Cost/KWH	\$0.07042	\$0.07498	*****	*****
Cost/MG	\$57.16	\$63.46	\$14.07	\$15.22
Tot. Cost/MG	\$100.20	\$117.82	*****	*****

Plant Operations: Expense Report



September 2022: Sheboygan Water Utility Plant Operations Summary



HIGH LIFT DELIVERY		QUARTERLY REPORT		2022
I. FIRST QUARTER		Jan - Feb - Mar		
		GALLONS	COST \$	\$/MG
	2021	1,055,591,000	\$181,125.65	\$171.59
	2022	1,079,805,000	\$233,346.76	\$216.10
	Percent Difference	2.29%	28.83%	25.94%
II. SECOND QUARTER		Apr - May - Jun		
		GALLONS	COST \$	\$/MG
	2021	1,115,306,000	\$168,613.25	\$151.18
	2022	1,114,560,000	\$220,553.73	\$197.88
	Percent Difference	-0.07%	30.80%	30.89%
III. THIRD QUARTER		Jul - Aug - Sep		
		GALLONS	COST \$	\$/MG
	2021	1,275,383,000	\$191,262.23	\$149.96
	2022	1,253,674,000	\$258,395.90	\$206.11
	Percent Difference	-1.70%	35.10%	37.44%
IV. FOURTH QUARTER		Oct - Nov - Dec		
		GALLONS	COST \$	\$/MG
	2021	1,076,367,000	\$179,773.03	\$167.02
	2022	0	\$0.00	#DIV/0!
	Percent Difference	-100.00%	-100.00%	#DIV/0!
YEAR TO DATE : 2022				
ELECTRICITY CHEMICALS NATURAL GAS		GALLONS	COST \$	\$/MG
	2021	4,522,647,000	\$720,774.16	\$159.37
	2022	3,448,039,000	\$712,296.39	\$206.58
	Percent Difference	-23.76%	-1.18%	29.62%
YEAR TO DATE : 2022				
SLUDGE DISPOSAL to WWTP		GALLONS	COST \$	
	2021	4,225,349	\$45,410.11	
	2022	3,191,190	\$25,471.76	
	Percent Difference	-24.48%	-43.91%	
STORM WATER CHARGES		2022	NA	\$0.00
HIGH LIFT SYSTEM DELIVERY :				
	Maximum Pumpage Day	17,388,000	July 19, 2022	
	Minimum Pumpage Day	7,587,000	January 1, 2022	

	MG	\$	\$/MG
2021	4,522,647,000	\$720,774.16	\$159.37
2022	3,448,039,000	\$712,296.39	\$206.58

NOTE: Monthly sludge disposal costs do not reflect the current actual monthly sludge discharge total to date.
Filtrate discharges from Spring/Fall sludge disposal operations are included in treatment plant sludge disposal costs.
Spring/Fall basin sludge/residual solids volumes and disposal costs are contract work.
Sludge disposal costs are not included in \$/MG.

Filter Plant Maintenance Completed For September 2022

Subject	StartDate	EndDate	Description
Joshua on Vacation	1-Sep-22	4-Sep-22	Joshua on vacation.
Labor Day Holiday	5-Sep-22		Labor day holiday
Utility observed holiday	5-Sep-22		Utility observed holiday
Rapid Mix Light	6-Sep-22		Diagnose and repair old rapid mix light; bad LED casing voltage drop?
Truck 6	6-Sep-22		Wash front end and fill tires w/air; needs LOF.
Filter 5	6-Sep-22		Collect requested tools for filter 5 inspection.
Garbage	6-Sep-22		Throw out plant garbage and recycling.
Front Hall	6-Sep-22		Clean front foyer area.
Filter Hall Bathroom	6-Sep-22		Clean filter hall bathroom.
Erie Ave.	6-Sep-22		Collect samples and walk grounds.
Taylor Hill	6-Sep-22		Collect sample, walk grounds, and empty dehumidifier.
Georgia Ave.	6-Sep-22		Collect sample and repair no-flow issue on SWAN hypo meter.
Horizon Ave.	6-Sep-22		Collect sample and replace hypo meter reagents.
Joshua Covering Laboratory	6-Sep-22	6-Sep-22	Joshua covering distribution samples for Eric.
Dakota Supply Group	6-Sep-22		Purchase 3/8" x 24" drill bit and order magnetic drill/cutters.
Pressure Test Filter 6, 10, and 11	7-Sep-22		Attach gauge to wash line and gather pressure information during wash cycles to check filter condition.
Filter 6, 10, and 11.	7-Sep-22		Bleed rate of flow and loss of head meters.
Dan Covering Laboratory	7-Sep-22	7-Sep-22	Dan covering laboratory for Eric.
EE Tower	7-Sep-22		Collect distribution sample and inspect grounds.
Horizon Tower	7-Sep-22		Collect distribution sample and store new reagent set.
Georgia Ave. and Indiana Ave.	7-Sep-22		Collect distribution samples.
Plant Filter Meeting	8-Sep-22		Continue discussing filter repair/replacement options.
Filter Information	8-Sep-22		Research filter diagnostic strategies, record Wednesdays information, and order new 2 1/2" 0-30psi gauges.
Menards	8-Sep-22		Purchase steel fluoride service door and handle set.
Filter Cap	8-Sep-22		Experimental cleaning of two filter caps; top only @ 9.8 pounds, top and bottom 10.6 pounds.
Filter 5	9-Sep-22		Vacuum around leopard top, pulled cap, weighed, washed both sides, attempted to install IMS top onto manifold; not an easy fit.
Filter 5	9-Sep-22		Removed one leopard top, measured weight, reinstalled and pressure washed in, removed top and measured weight again; so far .8 pound difference.
Alum Bulk Room	12-Sep-22		Install insulated panel at garage access point.
Security and JSM	12-Sep-22		Check door contact switches and assist JSM.
Garbage and Recycling	12-Sep-22		Throw away garbage and recycling.
South Basin Bulk Area	12-Sep-22		Install south basin bulk area insulation wall.
Menards	12-Sep-22		Purchase metal cap, seal tape, and caulk for fluoride door install.
Fluoride Room Service Door	13-Sep-22		Begin installing fluoride room service door.
Fluoride Service Door	13-Sep-22		Trim out door with marine grade lumber and seal tape.
Fluoride Service Door	13-Sep-22		Finish installing fluoride service door.
Maintenance Shop	13-Sep-22		Clean tools, organize inventory, and prep parts for future projects.
WIAWWA Annual Conference 2022	14-Sep-22		Dan and Joshua heading in Madison for conference.
End of Month Report	19-Sep-22		Generate and send end of month report.
Filter 5	19-Sep-22		Begin game planning Leopold bottom flush.
Taylor Hill	19-Sep-22		Replace reagents, clean NTU meter, run doghouse heater, rinse hypo meter, walk upstairs ring, and empty dehumidifier.
Georgia Ave.	19-Sep-22		Check reagents, walk grounds, sweep interior, and apply insect repellent.
Monday Meeting	19-Sep-22		Discuss filter 5 repair, SMART goals, coverage, etc.
Filter 3	20-Sep-22		Install pressure gauge on effluent stack.
trouble shooting DR5000	20-Sep-22		Trouble shooting error on DR5000 in lab
Smart goal pump books	20-Sep-22		Working on chemical feed pumps S.O.P books for chemical feed areas
Conduit by Filter 10	20-Sep-22		Install 3 new 1 1/2" strut clamps.
Erie Ave.	20-Sep-22		Check reagents, inspect gas engine, walk grounds, etc.
Menards	20-Sep-22		Purchase 1/2" stainless valves, 1 1/2" strut clamps, and 7 1/2" circular saw blades.
Filter 6	20-Sep-22		Remove pressure gauge on upstairs sample point, insulate, and adjust flow.
Filter 1	21-Sep-22		Install psi gauge, filter wash, and collect pressure data for filter health check.
Filter 2	21-Sep-22		Install filter psi gauge, wash filter, and collect pressure data for filter health check.
Kwik Trip	21-Sep-22		Fuel up truck 6.
Dakota Supply Group	21-Sep-22		Purchase parts for ortho tank and price check on valve turner.
Ortho Tank	21-Sep-22		Fabricate sensor socket for ortho tanks; Mark SMART goal.
Dan operated 1/2 day	21-Sep-22	21-Sep-22	Dan operated afternoon day shift
Phosphorus reagents	21-Sep-22		Made phosphorus reagents for swan unit in lab
Computer ontech linkup	21-Sep-22		Link up with ontech to fix computer printer issues on maintenance computers
Dans Smart goal	21-Sep-22		Dan working on smart goal
Old Rapid Mix	22-Sep-22		Sweep floors and vacuum.
Garbage	22-Sep-22		Throw out garbage and recycling.
Filter 4	22-Sep-22		Install psi gauge, filter wash, and collect pressure data for filter health check.
Filter 7	22-Sep-22		Install psi gauge, filter wash, and collect pressure data for filter health check.
Fluoride Building	22-Sep-22		Begin priming fluoride building; SMART goal.
UV Reference Check	22-Sep-22		Perform UV reference sensor check; East bulbs are running at 45% (Normal 30%-33%).
Dan SMART Goal	22-Sep-22		Continue working on SMART goal.
East UV Reactor	26-Sep-22		Drain unit, clean sleeves, and run for 15 minutes to check operation; 2 units were broken, we installed two used sleeves.
DR5000	26-Sep-22		Continue diagnosing error 15.
Filter Hall Comparator Jar	26-Sep-22		Shutdown 3" and 6" RPZ lines to rod out tap Jar feed line.
Monday Meeting	26-Sep-22		Topics include raw water improvement, coverage, UV reactor sleeves, filter 5, etc.
Filter Hall Floor	26-Sep-22		Sweep, take out garbage, and wash filter hall floor.
Ops Chair	27-Sep-22		Assemble new office chair.
DR5000	27-Sep-22		Continue diagnosing dr5000 inop; swapped 20w bulb from dr6000 and had everything work. Suspect 20w bulb needs to be 350 lumens not the 280 on shelf.
20" Line Service	27-Sep-22		Bleed 20" line in outside venturi pit for raw water improvement.
Josh covered 2nd shift	27-Sep-22	27-Sep-22	Josh covered 2nd shift for tyler
System Tap NTU Meter	28-Sep-22		Clean NTU meter feed line and meter; desiccant was swapped last night.
Filter Plant Thermostats	28-Sep-22		Check and repair 3 filter plant thermostats.
Filter 3	28-Sep-22		Install psi gauge, filter wash, and collect pressure data for filter health check.
Filter 9	28-Sep-22		Install psi gauge, filter wash, and collect pressure data for filter health check.
Filter 8	28-Sep-22		Install psi gauge, filter wash, and collect pressure data for filter health check.
Filter #5 Cap removal and cleaning	28-Sep-22		Removed all filter caps and vacuumed part of the under drain system
Josh off for coverage	30-Sep-22		Josh off for coverage
Filter 5 underdrain cleaning	30-Sep-22		Filter 5 underdrain vacuumed and cleaning.