

February 2024

OPERATIONS' DEPARTMENT MONTHLY REPORT

PUMPAGE		HIGH LIFT		LOW LIFT		2024 VS 2023
		2023	2024	2023	2024	HL
Total in MG		321.356	321.162	330.397	332.720	-0.06%
Daily Average (MG)		11.477	11.091	11.800	11.473	
Max. Day (MG)		12.848	12.464	13.127	13.087	2024 VS 2022
						HL
Gal/KwH		1,157	1,256	4,892	5,033	-9.11%
ELECTRICAL COSTS						
		2023		2024		
A. Pumping:		KwH	\$	KwH	\$	
High Lift		274,500	\$24,057.31	252,977	\$22,654.08	
Low Lift		67,102	\$5,880.85	65,628	\$5,876.98	
Wash Pump 1		3,500	\$306.74	3,500	\$313.42	
Georgia St. Bstr.		52,500	\$5,583.37	45,000	\$5,227.57	
Wilgus Ave. Bstr.		3,100	\$442.09	2,900	\$422.51	
EE Pit / Bstr.		5,973	\$811.95	710	\$5,098.00	
Erie Ave. Bstr.		11,200	\$2,035.13	16,800	\$2,854.07	
Sub Total		417,875	\$39,117.44	387,515	\$42,446.64	\$/KwH 17.0%
B. Treat./Fiscal/Misc.		KwH	\$	KwH	\$	
Office & Maint. Bldg.		4,589	\$636.59	612	\$4,295.00	
Filter Plant / Pump Station / 2nd Service		64,298	\$6,126.82	95,295	\$9,330.67	
Sub Total		68,887	\$6,763.41	95,907	\$13,625.67	\$/KwH 44.7%
C. Distribution:		KwH	\$	KwH	\$	
Taylor Hill Tank		3,612	\$500.89	2,730	\$391.52	
Horizon Tower				1,994	\$308.07	
EE Tower		1,466	\$216.78	1,218	\$185.64	
Washington (PRV) Pit		1,305	\$205.36	794	\$133.61	
Sub Total		6,383	\$923.03	6,736	\$1,018.84	\$/KwH 22.7%
Total Electrical Costs		493,145	\$46,803.88	490,158	\$57,091.15	
Electrical Cost / MG			\$145.64		\$177.50	
NATURAL GAS COSTS						
		2023		2024		
		CCF Used	Cost	CCF Used	Cost	
Production Facility		2,130	\$2,020.37	2,144	\$1,463.91	
South Basin		3,089	\$2,947.64			
Raw Pump Station				491	\$346.05	
Georgia St. Bstr.		353	\$358.02	141	\$104.38	
Erie Ave. Bstr.						
Wilgus Ave. Bstr.		48	\$66.94	41	\$42.35	
Office & Maint. Bldg.		1,425	\$1,372.69	983	\$687.03	
Total Natural Gas Costs		7,045	\$6,765.66	3,800	\$2,643.72	\$/CCF -27.6%
Natural Gas Cost / MG			\$21.05		\$8.22	
CHEMICAL COSTS						
		2023		2024		
		Lbs. Used	Cost	Lbs. Used	Cost	
Alum		71,318	\$14,370.58	50,216	\$10,620.68	5.0%
Carbon		0	\$0.00	0	\$0.00	#DIV/0!
Chlorine		5,194	\$10,543.82	5,523	\$10,383.24	-7.4%
Fluoride		1,474	\$2,979.69	1,497	\$3,801.08	25.6%
KMnO4		0	\$0.00	0	\$0.00	#DIV/0!
Cationic Polymer		0	\$0.00	0	\$0.00	#DIV/0!
Liquid Phosphate		3,621	\$11,076.64	3,637	\$10,703.69	-3.8%
Total Chemical Costs			\$38,970.73		\$35,508.69	-8.9%
Chemical Cost / MG			\$121.27		\$110.40	
Grand Total			\$92,540.27		\$95,243.56	2.92%
Total Cost / MG			\$287.97		\$296.11	2.83%

YTD HL 2024 vs 2023	-1.96%	YTD HL HIGH DAY PUMPAGE	12.648	January 15, 2024
YTD HL 2024 vs 2022	-8.17%	YTD HL LOW DAY PUMPAGE	8.349	January 1, 2024

NOTE:

	YTD HL Ave Day
2024	10.988
2023	11.399
2022	12.187

# COMPARATIVE SUMMARY OF PLANT OPERATIONS

February 2023

vs

February 2024

## Pumping Record

### High Lift

	2023	2024	Diff.
Tot. Water in MG	321.356	321.162	-0.06%
Daily Average	11.477	11.091	-3.36%
Maximum Day	12.848	12.464	-2.99%
Minimum Day	9.477	9.161	-3.33%
By Natural Gas	3.667	3.833	4.53%
Power in KWH	274,500	252,977	-7.84%
Gals. per KWH	1,157	1,256	8.58%
Power \$ / KWH	\$0.08764	\$0.08955	2.18%
Power \$ / MG	\$74.86	\$70.43	(\$4.43)
Tot. Power \$/MG	\$146.91	\$195.77	\$48.86

### Low Lift

	2023	2024	Diff.
Tot. Water in MG	330.397	332.720	0.70%
Daily Average	11.800	11.473	-2.77%
Maximum Day	13.127	13.087	-0.30%
Minimum Day	9.843	9.704	-1.41%
By Natural Gas	2.166	2.406	11.08%
Power in KWH	67,102	65,628	-2.20%
Gals. per KWH	4,892	5,033	2.88%
Power \$ / KWH	----	----	----
Power \$ / MG	\$17.80	\$17.66	(\$0.14)
Tot. Power \$/MG	----	----	----

## Treatment Chem.

### Lbs. Used

Total Lbs.	2023	2024	Diff.
Alum	71,318	50,216	-29.59%
Carbon			#DIV/0!
Chlorine	5,194	5,523	6.33%
KMnO4	0	0	#DIV/0!
Polymer	0	0	#DIV/0!
Liquid Phosphate	3,621	3,637	0.44%
Lb/ MG:			
Alum	215.9	150.9	-30.08%
Carbon	0.0	0.0	#DIV/0!
Chlorine	15.7	16.6	5.59%
KMnO4	0.0	0.0	#DIV/0!
Liquid Phosphate	11.0	10.9	-0.26%

### Cost

Total Cost	2023	2024	Diff.
Alum	\$14,370.58	\$10,620.68	(\$3,749.90)
Carbon	\$0.00	\$0.00	\$0.00
Chlorine	\$10,543.82	\$10,383.24	(\$160.58)
KMnO4	\$0.00	\$0.00	\$0.00
Polymer	\$0.00	\$0.00	\$0.00
Liquid Phosphate	\$11,076.64	\$10,703.69	(\$372.95)
Cost / MG:			
Alum	\$43.49	\$31.92	(\$11.57)
Carbon	#DIV/0!	#DIV/0!	#DIV/0!
Chlorine	\$31.91	\$31.21	(\$0.71)
KMnO4	#DIV/0!	#DIV/0!	#DIV/0!
Liquid Phosphate	\$33.53	\$32.17	(\$1.35)

Fluoride:	2023	2024	
Total Lbs.	1,474	1,497	1.56%
mg/l applied as F	0.74	0.67	
Av. Res. Plt. Tap	0.71	0.70	

Fluoride:	2023	2024	
Cost	\$2,979.69	\$3,801.08	\$821.39
Cost/MG	\$9.29	\$11.84	\$2.55

## Water Quality:

### Raw

	2023	2024
Turbidity	16.70	3.70
pH	8.26	8.25
Alkalinity	114.5	115.0
MF (E-Coli)	1.3	1.2
Temperature	33.8	35.6
Wash-H2O % /LL	2.32	2.10
Av. Flt. Run/hrs	92.0	92.1
Av. ROF / MG	1.35	1.48

### TAP

	2023	2024
Turbidity	0.040	0.040
pH	7.55	7.68
Alkalinity	102.0	106.9
Plate Count	0.00	0.00
Colilert	0	0
Temp.	35.7	40.0
Cl Res.	0.93	0.87

## Natural Gas:

	2023	2024		2023	2024	Diff.
Nat. Gas Heating	4,729	1,588	Plant & South Basin	\$4,503.42	\$1,083.94	(\$3,419.48)
Nat. Gas Pumping	490	556		\$464.59	\$379.97	(\$84.62)

	CCF	Cost	Natural Gas Cost	Natural Gas CCF
#3 Gas Pump	124.0	\$84.67	\$1,463.91	2,144
#4 Gas Pump	202.5	\$138.27		
#7 Gas Pump	110.0	\$75.11		
Electric Generator	120.0	\$81.94		
<b>Pumping totals</b>	<b>556.5</b>	<b>\$379.97</b>		

# February 2024

		3/1/2024	2/1/2024	
<b>Elapsed Time:</b>				
% Run	No. 6 Pump	76,415.1	76,165.2	249.9
35.9%	Wash Pump Meter	5,974.16	5,952.30	21.86
3.14%	No. 7 Pump	882.8	878.4	4.4
0.6%	No. 8 Pump	59,554.4	59,554.4	0.0
0.0%	No. 9 Pump	34,849.0	34,157.0	692.0
99.4%	No. 11 Pump			
0.0%	No. 12 Pump			
0.0%	No. 13 Pump			
0.0%	No. 14 Pump			
1.1%	Wash Pump 2	199	191	8
	No. 1 Prime Pump	1,060.8	1,059.2	1.6
	No. 2 Prime Pump	1,144.5	1,142.5	2.0

<b>Watthour Meters:</b>				
Kw/Hr run	Wash Pump 1	1339.1	1334.1	3,500
160.1	No. 14 Pump			
#DIV/0!	No. 13 Pump			
#DIV/0!	No. 12 Pump			
#DIV/0!	No. 11 Pump			
68.5	No. 9 Pump	6443.87	6396.44	47,428
#DIV/0!	No. 8 Pump	6843.3	6843.3	0
72.8	No. 6 Pump	2916.2	2851.2	18,200
219.2	Wash Pump 2	21.577	20.1157	1,754
#DIV/0!	No. 1 Pump	10076.96	10076.96	0
#DIV/0!	No. 2 Pump	5002.007	5002.007	0
293.1	No. 3 Pump	1491.62	1372.593	119,027
#DIV/0!	No. 4 Pump			0
479.1	No. 5 Pump	13,241.120	13,107.170	133,950
	Garage (MWatt/Hrs.)	1,129.67	1,125.33	4,340

Power Co. (Step #3)	44,122	43,773	418,800
Left Meter - OUTSIDE			
<b>Volume Used:</b>			
Nat. Gas (Correct)	46,933,238	46,766,794	209,220

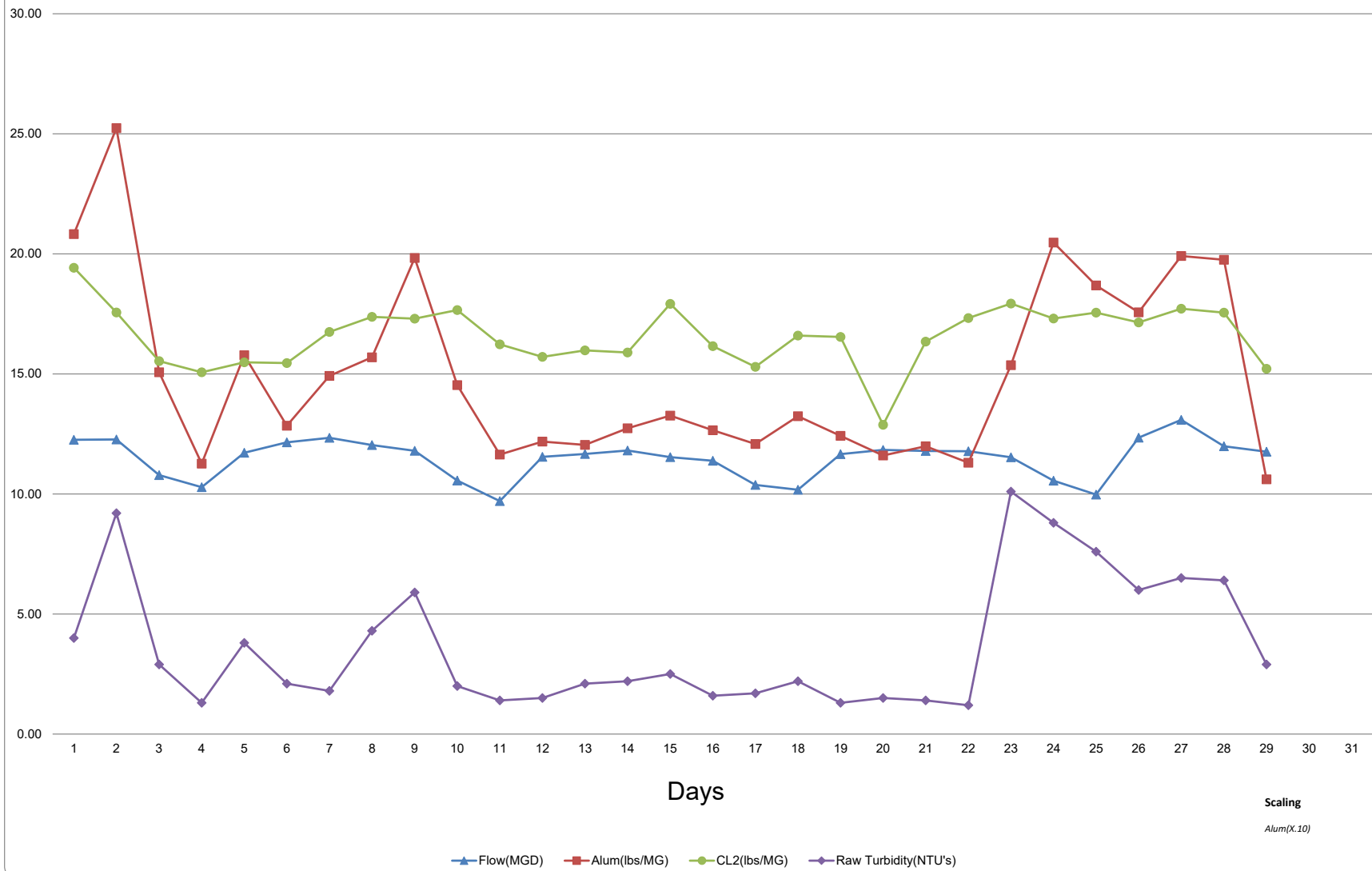
<b>Elapsed Time:</b>				
% Run	Emer. Generator	1,178.0	1,172.0	6.0
0.0%	Raw Pumpstation Gen			
0.0%	<b>Elapsed Time:</b>			
58.3%	No. 1 Pump	18,686.1	18,686.1	0.0
0.6%	No. 2 Pump	21,331.56	21,331.56	0.00
0.0%	No. 3 Elec. Pump	5,091.5	4,685.4	406.1
0.6%	No. 3 Nat. Gas Pump	615.0	611.0	4.0
0.0%	No. 4 Elec. Pump	0.00	0.00	0.0
0.6%	No. 4 Nat. Gas Pump	164.5	160.0	4.5
40.2%	No. 5. Pump	27,684.040	27,404.480	279.560
0.2%	UV Building Generator	187.8	186.6	1.2

	3/1/2024	2/1/2024	
SLUDGE No. 1 Hour Meter	0.0	0.0	0
SYSTEM No. 2 Mag Meter	916,610	720,890	195,720
No. 3 Raw Station			195,720
Recycle Meter (Reset to zero each month)			

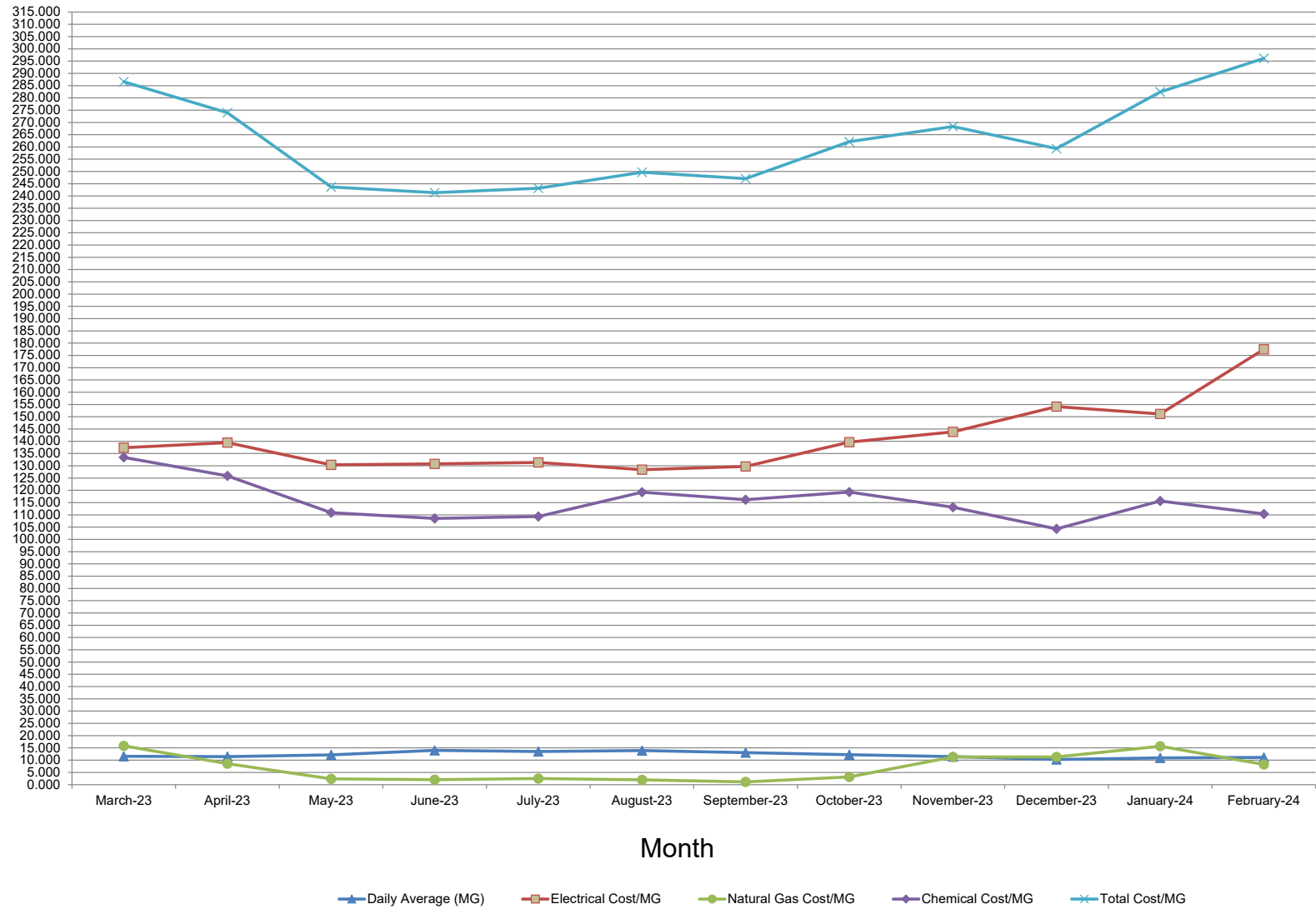
Power Cost	\$0.0895500	Bill >>>	\$37,503.52
	0.479742857	KWH >>>	418,800
Init. Chg.	\$37,503.52		
	\$	KWH	
Low L. (1929)	\$5,876.98	65,628	Low L. KWH 65,628
Low L. (2024)	\$0.00	0	L.L. Cost \$ \$5,876.98
			High L. KWH 252,977
			H.L. Cost \$ \$22,654.08
Horizon	\$308.07	1,994	
Taylor	\$391.52	2,730	
ALT. 72 Park	\$671.64	1,400	Total Cost \$28,531.06
Geo. Ave.	\$5,227.57	45,000	
Wilgus Ave.	\$422.51	2,900	
EE Pit	\$5,098.00	710	Plant Costs \$9,330.67
EE Tower	\$185.64	1,218	
Washington	\$133.61	794	
Office	\$4,295.00	612	
Erie Ave.	\$2,854.07	16,800	
Total	\$62,968.13	558,586	

	HIGH LIFT		LOW LIFT	
	2023	2024	2023	2024
Tot. Pump	321.356	321.644	330.397	332.720
Daily Ave.	11.477	11.091	11.800	11.473
Max. Day	12.848	12.464	13.127	13.087
Min. Day	9.477	9.161	9.843	9.704
By Nat. Gas	3.667	3.833	2.166	2.406
Power KWH	274,500	252,977	67,102	65,628
Gals/KWH	1157	1256	4892	5033
Cost/KWH	\$0.08764	\$0.08955	*****	*****
Cost/MG	\$74.86	\$70.43	\$17.80	\$17.66
Tot. Cost/MG	\$146.91	\$195.77	*****	*****

## February 2024: Sheboygan Water Utility Plant Operations Summary



## Plant Operations: Expense Report



### Filter Plant Maintenance Completed For February 2024

Subject	StartDate	EndDate	Description	Yellow indicates days operating or running labs
Pipe Gallery	1-Feb-24		Bled rate of flow and loss of head transmitters.	
Menzer	1-Feb-24		Purchase Indian head gasket shellac.	
Georgia Ave.	1-Feb-24		Finish cleaning gasket surfaces, flush pump case, and install new pump house gasket on lower portion.	
Maintenance Shop	2-Feb-24		Clean and reorganize tools used during Georgia pump 4 service.	
Georgia Ave.	2-Feb-24		Run pump, check balance, prime bare metal, and begin bringing tools home.	
Georgia Ave.	2-Feb-24		Flush inside of pump with fresh water, double check clearances, final torque bolts, and ensure everything spins freely.	
Georgia Ave.	2-Feb-24		Finish assembling pump 4.	
Filter Repair Tools	5-Feb-24		Scrub, wash, and store.	
Georgia Ave.	5-Feb-24		First coat of blue paint on pump 4.	
Filter 10	5-Feb-24		Clean surface sweeps, light skim, and wash.	
Monday Meeting	5-Feb-24		Topics include vacation coverage, raw water improvement update, South Basin floc issue, Georgia pump 4 completion, etc.	
POs and monthly paperwork	5-Feb-24		Submitted PO for swan reagents and sent monthly maintenance paperwork to supervisor	
Lights old crew quarters	5-Feb-24		Replaced lights in old crew quarters	
Menards	5-Feb-24		Menards light bulbs	
Ortho reagents	5-Feb-24		Refilled Ortho Phosphate reagents in lab	
Filter 1	5-Feb-24		Clean surface sweeps, light skim, and wash.	
Truck 10	5-Feb-24		Wash outside and floor mats.	
Colilert Test	6-Feb-24		Participate in yearly Colilert verification test.	
Garbage	6-Feb-24		Throw out plant garbage and recycling.	
Truck 24	6-Feb-24		Soap and wash.	
Filter 2	6-Feb-24		Clean surface sweeps, skim, and wash.	
Filter 3	6-Feb-24		Vacuum filter bottom.	
Filter 4	6-Feb-24		Vacuum both North and South sides.	
Georgia Ave.	6-Feb-24		Apply second coat of blue paint to pump 4.	
Filter 9	7-Feb-24		Clean surface sweeps, skim, and wash.	
Filter 3	7-Feb-24		Final vacuum and inspection.	
S.B. bathroom light	7-Feb-24		Removed ballast from south basin light fixture, replaced with bypass T-8 LED light bulbs	
Cleaned S.B. bathroom	7-Feb-24		Cleaned south basin bathroom	
Dan Covering Laboratory	7-Feb-24	8-Feb-24	Dan covering laboratory for Eric: spent time walking Tyler and Joshua through plates.	
Filter 9 Surface Sweep	7-Feb-24		Repair broken surface sweep end nozzle.	
Cleaned common areas	8-Feb-24		Mopped and cleaned filter plant common areas and south basin bathroom	
Filter 11	8-Feb-24		Clean surface sweeps, skim, and wash.	
Filter 5	8-Feb-24		Clean surface sweeps and wash; need to skim again.	
Georgia Ave.	8-Feb-24		Install pump 4 covers, wash off pump 5, and clean area.	
Menards	8-Feb-24		Purchase ear plugs, stainless hardware, and hose clamps.	
Filter 8	9-Feb-24		Clean surface sweeps, skim, and wash.	
New Low Lift tour	9-Feb-24		Tour of new low lift and suction well station	
Valve Hog	9-Feb-24		Install new magnet for rpm pickup.	
Trilling's	9-Feb-24		Purchase magnets, bottle brush, and rags.	
Filter 6 Sample Pump	9-Feb-24		Diagnose sample pump inop.	
Filter 6	9-Feb-24		Repair surface sweeps, skim, and wash.	
#10 gas engine oil	9-Feb-24		Added engine oil to #10 filter plant emergency gas engine	
#4 gas engine oil	9-Feb-24		Added engine oil to #4 high lift gas engine	
Filter 7	12-Feb-24		Repair surface sweeps, skim, and wash.	
UV Data	12-Feb-24		Enter UV reference data.	
UV Reference Check	12-Feb-24		Perform UV reference check on West train.	
Monday Meeting	12-Feb-24		Topics include South basin floc service, Energenecs, New PCs, Filter maintenance, coverage, laboratory upgrade, and office update.	
Filter 3	12-Feb-24		Begin setting up tools, fasteners, lighting, walkway, etc.	
Dakota Supply Group	12-Feb-24		<b>Purchase 12v Milwaukee batteries, 5/16I hex driver, and razor/cutter.</b>	
Menards	12-Feb-24		<b>Purchase 1 1/4I and 2I plugs, rubber gloves, and mixing bowls.</b>	
Fluoride pump hose replacement	12-Feb-24		Replaced Fluoride transfer pump hose and repaired pump roller	

Filter 3	12-Feb-24		<b>Plugs 1 ½I and 2I fittings on surface sweep; minor water leak.</b>
Cleaned up Fluoride	12-Feb-24		Cleaned up fluoride spill from pump hose breaking
Filter #3 cap install	13-Feb-24		New cap install on filter #3
Filter #3 cap install	14-Feb-24		New cap install on filter #3
Filter #4 cap install	15-Feb-24		New cap install on filter #4
Filter #4 cap install	16-Feb-24		New cap install in filter #4
Menards	16-Feb-24		Menards for filter plant maintenance items
Viking electric	16-Feb-24		Viking electric to start account for float switches, fiberglass strut and strut clamps
Replaced sodium thio barrel	19-Feb-24		Replaced sodium thio barrel
Filter 4	19-Feb-24		Install epoxy, grout, and angle iron.
Filter 3	19-Feb-24		Install epoxy, grout, and angle iron.
Filter 3	20-Feb-24		Install grout filler on North and South ends.
Filter 4	20-Feb-24		Install grout filler on North and South ends.
Filter replacement cleanup	21-Feb-24		Cleaning up filter plant from filter replacement project
Filter 3	21-Feb-24		Apply epoxy and patch on back walls.
Filter 3 + 4	21-Feb-24		Install surface sweeps.
Filter 4	21-Feb-24		Apply epoxy and patch on back walls.
Tools and Maintenance Shop	21-Feb-24		Continue cleaning tools and maintenance shop.
Filter replacement cleanup	22-Feb-24		Ran Zamboni on filter plant hallway cleaning floors
Hypo Transfer Pump	22-Feb-24		Install new wet end and cleanup area.
Menards	22-Feb-24		Menards supply run for filter plant maintenance items
Viking Electric	22-Feb-24		Parts run to Viking Electric for sludge pump float switches
Maintenance Shop	22-Feb-24		Assemble shop vac, organize broom closet, vacuum shop, etc.
Tool cleaning	23-Feb-24		Cleaned tools from filter project
Friday meeting	23-Feb-24		Discussing future projects and plant maintenance
Taylor hill	23-Feb-24		Maintenance checks t Taylor hill reservoir
Georgia pump station	23-Feb-24		Maintenance checks at Georgia pump station, checked over flow screen
Horizon tower	23-Feb-24		Maintenance checks, filled reagents and checked overflow screen
EE tower	23-Feb-24		Maintenance checks and overflow screen at EE tower, overflow screen needs replacement
Erie pump station	23-Feb-24		Maintenance check and refilled reagents at Erie pump station
Trash and cardboard removal	23-Feb-24		Tool out trash and cardboard from filter plant
Check clear well vent screens	26-Feb-24		Checked clear well vent screens and will replace one screen on clear well extension
South basin cleaning	26-Feb-24		Drained and cleaned floc side of south basin to repair #1 floc drive chain
Monday Meeting	26-Feb-24		Topics include raw water improvement pump startup, South basin service, LL isolation valve operation, ortho storage options, filter media installation.
Menards	26-Feb-24		<b>Purchase 2I fittings for flush hoses.</b>
Trilling's	27-Feb-24		Purchase stainless steel screen for vent/overflow pipe repairs.
Maintenance Shop	27-Feb-24		Put south basin service items away, clean tools, organize south cabinet, etc.
South Basin	27-Feb-24		Begin filling; switch on feed pumps, set flow, etc.
South Basin Floc 1	27-Feb-24		<b>Remove 2I-3I from all East paddles for chain clearance.</b>
South Basin	27-Feb-24		Grease bearings sleeves, inspect paddle assemblies, and torque saddle bolts.
South Basin Floc 1	27-Feb-24		Reinstall chain, move idler inboard, and grease.
Joshua Doctors Appointment	28-Feb-24		Joshua doctors appointment.
Paint Filter 6	28-Feb-24		Apply first coat of yellow paint to filter 6 railing.
Raw Water Improvement Project	28-Feb-24		Flow test
Raw Water Improvement Project	28-Feb-24		Assist startup.
Sodium Hypo Feed Room	28-Feb-24		Apply first coat of paint to hypo line run tubes.
Sludge Pump VFD	29-Feb-24		Begin diagnosing VFD feedback communication issue.
Maintenance Shop	29-Feb-24		Clean computer areas.
Georgia Ave.	29-Feb-24		Finish installing adapter plates on pump 4+5 valves.
PLC Diagnostic	29-Feb-24		Assist Rick diagnosing PLC communication issues with orthophosphate day tank and sludge pump feedback.