

April 2022

OPERATIONS' DEPARTMENT MONTHLY REPORT

PUMPAGE	HIGH LIFT		LOW LIFT		2022 VS 2021
	2021	2022	2021	2022	HL
Total in MG	345.389	345.046	348.902	350.527	-0.10%
Daily Average (MG)	11.513	11.149	11.630	11.684	2022 VS 2020
Max. Day (MG)	13.803	13.846	14.249	14.079	
					HL
Gal/Kwh	1,194	1,189	4,896	5,016	41.44%
ELECTRICAL COSTS					
A. Pumping:	2021		2022		
	Kwh	\$	Kwh	\$	
High Lift	287,780	\$19,276.26	287,338	\$22,507.56	
Low Lift	71,268	\$4,773.72	69,413	\$5,437.21	
Wash Pump 1	2,100	\$140.66	2,100	\$164.50	
Georgia St. Bstr.	51,300	\$4,349.35	54,300	\$5,203.03	
Wilgus Ave. Bstr.	2,800	\$332.49	2,900	\$391.70	
EE Pit / Bstr.	5,451	\$608.63	5,706	\$731.54	
Erie Ave. Bstr.	12,400	\$1,901.08	0	\$0.00	\$/Kwh
Sub Total	433,099	\$31,382.17	421,757	\$34,435.53	12.7%
B. Treat./Fiscal/Misc.	2021		2022		
	Kwh	\$	Kwh	\$	
Office & Maint. Bldg.	6,060	\$501.65	3,562	\$402.28	
Filter Plant / Pump Station / 2nd Service	49,852	\$4,840.58	56,549	\$4,916.61	
Sub Total	55,912	\$5,342.23	60,111	\$5,318.89	\$/Kwh -7.4%
C. Distribution:	2021		2022		
	Kwh	\$	Kwh	\$	
Taylor Hill Tank	1,638	\$192.82	1,951	\$265.87	
Kohler Meter Pit	0	\$0.00	0	\$0.00	
EE Tower	719	\$93.03	1,615	\$222.96	
Washington (PRV) Pit	806	\$109.00	1,118	\$168.00	
Sub Total	3,163	\$394.85	4,684	\$656.83	\$/Kwh 10.1%
Total Electrical Costs	492,174	\$37,119.25	486,552	\$40,411.25	
Electrical Cost / MG		\$107.47		\$116.92	
NATURAL GAS COSTS					
	2021		2022		
	CCF Used	Cost	CCF Used	Cost	
Production Facility	1,969	\$938.11			
South Basin	2,477	\$1,361.11	2,360	\$1,940.50	
Georgia St. Bstr.	110	\$107.85	110	\$91.00	
Erie Ave. Bstr.	270	\$179.44	206	\$193.89	
Wilgus Ave. Bstr.			41	\$44.86	
Office & Maint. Bldg.	950	\$519.37	646	\$537.64	
Total Natural Gas Costs	5,776	\$3,105.88	3,363	\$2,807.89	\$/CCF 55.3%
Natural Gas Cost / MG		\$8.99		\$8.12	
CHEMICAL COSTS					
	2021		2022		
	Lbs. Used	Cost	Lbs. Used	Cost	
Alum	55,540	\$7,858.91	61,233	\$11,113.79	28.3%
Carbon	0	\$0.00	0	\$0.00	#DIV/0!
Chlorine	6,054	\$4,177.26	7,012	\$10,377.76	114.5%
Fluoride	1,572	\$1,708.76	1,836	\$2,552.04	27.9%
KMnO4	0	\$0.00	0	\$0.00	#DIV/0!
Cationic Polymer	1,431	\$2,218.36	1,497	\$2,320.35	0.0%
Liquid Phosphate	1,572	\$2,078.18	4,214	\$6,649.69	19.4%
Total Chemical Costs		\$18,041.47		\$33,013.63	83.0%
Chemical Cost / MG		\$52.24		\$95.52	
Grand Total		\$58,266.60		\$76,232.77	30.83%
Total Cost / MG		\$168.70		\$220.57	30.75%

YTD HL 2022 vs 2021	1.75%	YTD HL HIGH DAY PUMPAGE	13.987	February 17, 2022	
YTD HL 2022 vs 2020	9.13%	YTD HL LOW DAY PUMPAGE	7.587	January 1, 2022	
					YTD HL Ave Day
					2022
					11.815
					2021
					11.692
					2020
					10.795

NOTE:
Electrical costs include an Alliant Energy 8.3% rate increase approved by PSC.
Chemical costs include increases from suppliers
Not all WPS bills available.

COMPARATIVE SUMMARY OF PLANT OPERATIONS

April 2021

vs

April 2022

Pumping Record

High Lift

	2021	2022	Diff.
Tot. Water in MG	345.389	345.046	-0.10%
Daily Average	11.513	11.149	-3.16%
Maximum Day	13.803	13.846	0.31%
Minimum Day	8.342	9.042	8.39%
By Natural Gas	1.728	4.000	131.48%
Power in KWH	287,780	287,338	-0.15%
Gals. per KWH	1,194	1,189	-0.43%
Power \$ / KWH	\$0.06698	\$0.07833	16.95%
Power \$ / MG	\$55.81	\$65.12	\$9.31
Tot. Power \$/MG	\$102.33	\$117.92	\$15.59

Low Lift

	2021	2022	Diff.
Tot. Water in MG	348.902	350.527	0.47%
Daily Average	11.630	11.684	0.46%
Maximum Day	14.249	14.079	-1.19%
Minimum Day	8.332	9.046	8.57%
By Natural Gas	0.000	2.378	#DIV/0!
Power in KWH	71,268	69,413	-2.60%
Gals. per KWH	4,896	5,016	2.45%
Power \$ / KWH	---	---	---
Power \$ / MG	\$13.68	\$15.51	\$1.83
Tot. Power \$/MG	---	---	---

Treatment Chem.

Lbs. Used

	2021	2022	Diff.
Total Lbs.	55,540	61,233	10.25%
Alum			#DIV/0!
Carbon			
Chlorine	6,054	7,012	15.82%
KMnO4	0	0	#DIV/0!
Polymer	1,431	1,497	4.61%
Liquid Phosphate	1,572	4,214	168.07%
Lb / MG:			
Alum	159.2	174.7	9.74%
Carbon	0.0	0.0	#DIV/0!
Chlorine	17.4	20.0	15.29%
KMnO4	0.0	0.0	#DIV/0!
Liquid Phosphate	4.5	12.0	166.82%

Cost

	2021	2022	Diff.
Total Cost			
Alum	\$7,858.91	\$11,113.79	\$3,254.88
Carbon	\$0.00	\$0.00	\$0.00
Chlorine	\$4,177.26	\$10,377.76	\$6,200.50
KMnO4	\$0.00	\$0.00	\$0.00
Polymer	\$2,218.36	\$2,320.35	\$101.99
Liquid Phosphate	\$2,078.18	\$6,649.69	\$4,571.51
Cost / MG:			
Alum	\$22.52	\$31.71	\$9.18
Carbon	#DIV/0!	#DIV/0!	#DIV/0!
Chlorine	\$11.97	\$29.61	\$17.63
KMnO4	#DIV/0!	#DIV/0!	#DIV/0!
Liquid Phosphate	\$5.96	\$18.97	\$13.01

Fluoride:	2021	2022	
Total Lbs.	1,572	1,836	16.79%
mg/l applied as F	0.71	0.72	
Av. Res. Plt. Tap	0.70	0.70	

Fluoride:	2021	2022	
Cost	\$1,708.76	\$2,552.04	\$843.28
Cost/MG	\$4.96	\$7.40	\$2.44

Water Quality:

Raw

	2021	2022
Turbidity	6.40	4.70
pH	8.32	8.25
Alkalinity	114.2	117.0
MF (E-Coli)	0.0	2.1
Temperature	42.3	39.0
Wash-H2O % /LL	2.30	1.73
Av. Flt. Run/hrs	124.0	146.1
Av. ROF / MG	1.33	1.33

TAP

	2021	2022
Turbidity	0.028	0.067
pH	7.64	7.59
Alkalinity	103.4	107.0
Plate Count	0.00	0.00
Colilert	0	0
Temp.	43.8	40.3
Cl Res.	0.83	0.83

Natural Gas:

	2021	2022	
Nat. Gas Heating	1,893	1,770	Plant & South Basin
Nat. Gas Pumping	585	590	

	2021	2022	Diff.
	\$2,425.48	#DIV/0!	#DIV/0!
	\$29.54	#DIV/0!	#DIV/0!

	CCF	Cost	Natural Gas Cost	Natural Gas CCF
#3 Gas Pump	148.8	#DIV/0!	\$1,940.50	2,360
#4 Gas Pump	193.5	#DIV/0!		
#7 Gas Pump	110.0	#DIV/0!		
Electric Generator	138.0	#DIV/0!		
Pumping totals	590.3	#DIV/0!		

April 2022

% Run
131.3%
2.40%
0.6%
0.0%
99.3%
0.8%

Elapsed Time:

	5/1/2022	4/1/2022	
No. 6 Pump	66,987.0	66,041.4	945.6
Wash Pump Meter	5,414.29	5,396.99	17.30
No. 7 Pump	751.0	746.6	4.4
No. 8 Pump	59,535.6	59,535.6	0.0
No. 9 Pump	18,919.0	18,204.0	715.0
Wash Pump 2	6	0	6
No. 1 Prime Pump	1,040.3	1,039.7	0.6
No. 2 Prime Pump	1,110.5	1,109.3	1.2

Kw/Hr run
121.4
61.9
#DIV/0!
26.6
138.6
538.0
239.2
291.8
#DIV/0!
479.7

Wattour Meters:

Wash Pump 1	1250.1	1247.1	2,100
No. 9 Pump	5471.18	5426.94	44,241
No. 8 Pump	6834.4	6834.4	0
No. 6 Pump	10326.2	10236.3	25,172
Wash Pump 2	0.693	0	832
No. 1 Pump	8724.815	8716.245	8,570
No. 2 Pump	4751.552	4732.581	18,971
No. 3 Pump	9789.494	9688.486	101,008
No. 4 Pump			0
No. 5 Pump	9,661.592	9,502.803	158,789

Garage (MWatt/Hrs.)	1,055.26	1,053.09	2,170
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Power Co. (Step #3)	35,810	35,463	416,400
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Left Meter - OUTSIDE

Volume Used:

Nat. Gas (Correct)	44,622,920	44,488,237	169,297
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Elapsed Time:

Emer. Generator	1,014.2	1,007.3	6.9
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% Run
2.2%
11.0%
48.1%
0.7%
0.0%
0.6%
46.0%
0.1%

Elapsed Time:

No. 1 Pump	16,179.5	16,163.5	15.9
No. 2 Pump	20,278.59	20,199.27	79.32
No. 3 Elec. Pump	34,019.4	33,673.3	346.1
No. 3 Nat. Gas Pump	526.5	521.7	4.8
No. 4 Elec. Pump	0.00	0.00	0.0
No. 4 Nat. Gas Pump	4.3	0.0	4.3
No. 5. Pump	20,206.330	19,875.310	331.020
UV Building Generator	119.9	118.9	1

SLUDGE No. 1 Hour Meter

SYSTEM No. 2 Mag Meter

Recycle Meter (Reset to zero each month)

	5/1/2022	4/1/2022	
SLUDGE No. 1 Hour Meter	0.0	0.0	0
SYSTEM No. 2 Mag Meter	4,099,440	3,818,690	280,750
Recycle Meter (Reset to zero each month)			280,750

Power Cost \$0.0783313

0.40872

Init. Chg. \$32,617.15

\$

Bill >>>>

KWH >>>>

KWH

Kohler Pit		
Horizon	\$343.70	2,437
Taylor	\$265.87	1,951
ALT. 72 Park	\$408.72	1,000
Geo. Ave.	\$5,203.03	54,300
Wilgus Ave.	\$391.70	2,900
EE Pit	\$731.54	5,706
EE Tower	\$222.96	1,615
Washington	\$168.00	1,118
Office	\$402.28	3,562
Erie Ave.		
Total	\$40,754.95	490,989

Low L. KWH	69,413
L.L. Cost \$	\$5,437.21
High L. KWH	287,338
H.L. Cost \$	\$22,507.56

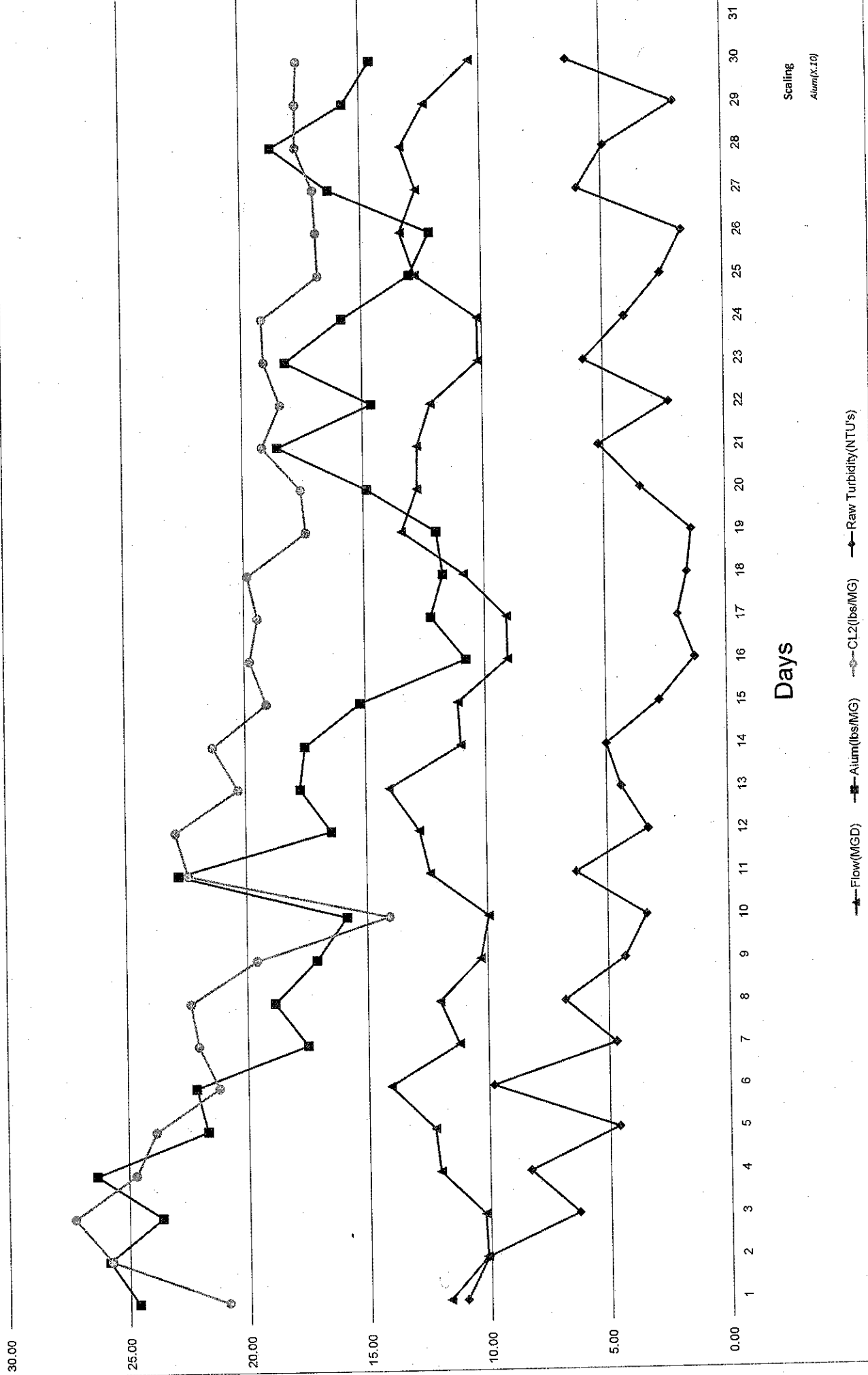
Total Cost \$27,944.76

Plant Costs \$4,916.61

SUMMARY

	HIGH LIFT		LOW LIFT	
	2021	2022	2021	2022
Tot. Pump	345,389	345,623	348,902	350,527
Daily Ave.	11.513	11.149	11.630	11.684
Max. Day	13.803	13.846	14.249	14.079
Min. Day	8.342	9.042	8.332	9.046
By Nat. Gas	1.728	4.000	0.000	2.378
Power KWH	287,780	287,338	71,268	69,413
Gals/KWH	1194	1189	4896	5016
Cost/KWH	\$0.06698	\$0.07833	*****	*****
Cost/MG	\$55.81	\$65.12	\$13.68	\$15.51
Tot. Cost/MG	\$102.33	\$117.92	*****	*****

April 2022: Sheboygan Water Utility Plant Operations Summary



Plant Operations: Expense Report



Filter Plant Maintenance Completed For April 2022

Subject	Start Date	End Date	Description	gree indicates days operating or running labs
Horizon Ave.	1-Apr-22		Walk grounds, replace reagents, and check inside.	
Dan covering 2nd shift	30-Mar-22	6-Apr-22	Dan covering 2nd shift operations for Tyler	
Filter Plant Floor	1-Apr-22		Clean filter plant floor and throw away garbage.	
Ortho Room Lights	1-Apr-22		Install new bulbs in ortho room lights.	
Wilgus Ave.	1-Apr-22		Collected sample, inspect grounds, and try cranking over NG engine; needs battery.	
Georgia Ave.	4-Apr-22		Repair tank air hose, check reagents, check sub-level, walk grounds, etc.	
Wilgus Ave.	4-Apr-22		Size battery for engine, walk grounds, etc.	
Taylor Hill	4-Apr-22		Replace reagents, place new di and reagents in doghouse, walk grounds, and run pit sump pump.	
Menards	4-Apr-22		Purchase battery for Wilgus, battery tender, and dielectric grease; brochure on steel doors.	
Clean Hypo Room/Pumps	5-Apr-22		Clean up hypo room, pumps, shelves, etc.	
East, West, South Hypo Feed Hoses	5-Apr-22		Replaced East, West, and South hypo feed hoses.	
UV Reference Check x2	5-Apr-22		Perform UV reference check, refill CLR, and recheck UV reference sensors because we failed the first set.	
Joshua Cover 1st Shift	6-Apr-22		Joshua cover 1st shift and 3 hours on seconds.	
Operator Office, Lunch Room, and Lab	6-Apr-22		Cleaned ops office, lunch room, and laboratory.	
Joshua Confined Space	7-Apr-22		Joshua confined space training.	
Dan covering 1st shift	8-Apr-22	13-Apr-22	Dan covering 1st shift operations for Tyler	
Joshua on Vacation	8-Apr-22	18-Apr-22	Joshua on vacation	
Good Friday	15-Apr-22		Good Friday	
Utility observed holiday	15-Apr-22		Utility observed holiday	
Dan maintenance/operating	15-Apr-22	22-Apr-22	Dan maintenance/week/operating, covering for Tyler	
Kwik Trip Card	18-Apr-22		Labeled Kwik Trip card and placed in truck glove box, labeled truck number	
Monday meeting	18-Apr-22		Attended Monday morning Ops meeting	
Link up with Aidag	18-Apr-22		Linked up with aidag for heater installation, opened gates and doors and passed on instructions	
Installed light pipe gallery	18-Apr-22		Installed new light in pipe gallery by filter # 3	
Wash tank vacuum pump	18-Apr-22		Checked on wash tank vacuum pump and ran motors, motors sounded good, rust in fan blades	
Cleaned Tap turbidity	18-Apr-22		Cleaned tap turbidity unit, NTUs stayed the same	
Fluoride swan unit	18-Apr-22		Added new bottle of electrolyte solution to fluoride meter	
Menards	18-Apr-22		Menards for light bulbs	
Dakota supply group	18-Apr-22		Dakota supply group for LED 4 FT light fixtures	
Filled Truck 6 gas	18-Apr-22		Filled truck 6 with gas	
Removed filter plant trash	18-Apr-22		Removed trash from filter plant.	
Garbage	19-Apr-22		Throw maintenance shop and south basin bathroom garbage away.	
Fluoride Feed Tube	19-Apr-22		Install new fluoride feed tube, clean roller, check for leaks, etc.	
Alum Feed System	19-Apr-22		Replumb for threaded connections, prime system, leak check, and clean area.	
Alum Feed Tubes	19-Apr-22		Install new threaded feed tubes on East, West, Swing, and South alum pump's old ones only lasted 2 months.	
Alum Feed Pump Rollers	19-Apr-22		Clean and grease rollers, replace blown out roller on East pump.	
Pipe Gallery Maintenance Check	19-Apr-22		Inspected pumps, check on heater install, run sumps, etc.	
Battery Backups	20-Apr-22		Catalog all battery backups and prepare order sheet.	
Hypo Feed Pumps	20-Apr-22		Repair flush tubes, replace fitting on post feed line, and clean area.	
Joshua Sick Time	20-Apr-22		Joshua chiropractor appointment 1hr.	
Heater Alum Bulk Storage Area	20-Apr-22		Install conduit, wire, and switch for new heater assembly.	
Menard's	20-Apr-22		Purchase 1/2" outlet box, light switches, and covers.	
Wilgus Ave.	21-Apr-22		Install battery, crank over motor, and measure for battery tender shelf.	
UV Heater	21-Apr-22		Run conduit and wire for heater.	
Trilling	21-Apr-22		Purchase flint for lab striker.	
Light by Filter 11	21-Apr-22		Install new L.E.D. light by filter 11; old one was inop.	
Menards	22-Apr-22		Menards for conduit and parts for UV room heater installation	
UV room conduit	22-Apr-22		Installed new conduit for new heater in UV room.	
Filter plant garbage	22-Apr-22		Removed filter plant garbage	
Wilgus, Erie, Taylor, Georgia, and Horizol	22-Apr-22		Check/fill reagents, drop off parts, check hypointu meters, etc.	
Dan operating 3rd shift	25-Apr-22	30-Apr-22	Dan covering 3rd shift for Tyler	

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Jar Tester	25-Apr-22	Clean filter hall jars.
Gas in Truck 24	25-Apr-22	Fill gas tank on truck 24; put card in glove box.
UV and Alum Bulk Heaters	25-Apr-22	Meet with Nicholas and continue heater install.
Filter 1 and 2 NTU Meter	25-Apr-22	Clean filters 1 and 2 NTU meters.
Horizon x2	25-Apr-22	Continue working on Rubatex job.
Dakota Supply Group	25-Apr-22	Purchase Rubatex glue
Monday Meeting	25-Apr-22	Coverage, raw water improvement project, heater upgrades, horizon Rubatex, NTU meter cleaning, etc.
20" Backwash Actuator	25-Apr-22	Replace fuses in 20" backwash actuator.
Horizon Ave.	26-Apr-22	Complete Rubatex install.
Heaters	26-Apr-22	Check new heater install(s).
Wilgus	26-Apr-22	Check overheat condition on gas engine; found plugged coolant port under thermostat. Recommend new upper hose, rinse engine, and replace coolant.
Wilgus	26-Apr-22	Mount battery tender, crank over engine w/out plugs, check coolant, turn off 2 electric, and run 2 gas engine.
Wentzer	27-Apr-22	Purchase upper radiator hoses, overflow tube, coolant, and clamps.
Wilgus	27-Apr-22	Install new upper radiator hose, fabricate new overflow system; clean tank, refill system, repair heat exchanger feed solenoid, and run.
Wilgus	27-Apr-22	Drain coolant and remove upper coolant hose.
School, Pump, and Contacts	28-Apr-22	Contact school concerning apprenticeship, email L&S, and contact Jamie about force flow.
Maintenance Shop	28-Apr-22	Clean maintenance shop and computer area.
Filter Hall Floor	28-Apr-22	Clean filter hall floor.
Large Sump Pump	28-Apr-22	Receive large sump pump impeller.
Erte Ave.	29-Apr-22	Check grounds, inspect fluid levels, run generator, and refill reagents.
High Lift Exhaust Fan	29-Apr-22	Check belts and grease North and middle fans.
High Lift Exhaust Fan	29-Apr-22	Check inop and lube; found switch gear tripped.