

## OPERATIONS' DEPARTMENT MONTHLY REPORT

		HIGH LIFT		LOW LIFT		2022 VS 2021
<b>PUMPAGE</b>		<b>2021</b>	<b>2022</b>	<b>2021</b>	<b>2022</b>	HL
Total in MG		345.043	340.745	351.585	355.420	-1.25%
Daily Average (MG)		11.501	11.376	11.720	11.847	
Max. Day (MG)		13.408	12.913	13.862	14.122	2022 VS 2020
						HL
Gal/KwH		1,207	1,206	4,950	4,951	-1.20%
<b>ELECTRICAL COSTS</b>						
A. Pumping:		<b>2021</b>		<b>2022</b>		
		<b>KwH</b>	<b>\$</b>	<b>KwH</b>	<b>\$</b>	
High Lift		285,951	\$19,661.78	279,759	\$21,140.83	
Low Lift		71,031	\$4,884.04	71,305	\$5,388.38	
Wash Pump 1		2,800	\$192.53	2,800	\$211.59	
Georgia St. Bstr.		46,500	\$4,297.29	55,800	\$5,209.04	
Wilgus Ave. Bstr.		3,100	\$379.76	3,200	\$431.30	
EE Pit / Bstr.		3,473	\$413.28	5,418	\$697.38	
Erie Ave. Bstr.		0	\$2,144.10	16,000	\$2,259.52	\$/KwH
	Sub Total	412,855	<b>\$31,972.78</b>	434,282	<b>\$35,338.04</b>	5.1%
B. Treat./Fiscal/Misc.		<b>KwH</b>	<b>\$</b>	<b>KwH</b>	<b>\$</b>	
Office & Maint. Bldg.		5,671	\$630.74	4,764	\$621.89	
Filter Plant / Pump Station / 2nd Service		49,818	\$5,249.50	55,736	\$6,530.20	
	Sub Total	55,489	<b>\$5,880.24</b>	60,500	<b>\$7,152.09</b>	\$/KwH 11.6%
C. Distribution:		<b>KwH</b>	<b>\$</b>	<b>KwH</b>	<b>\$</b>	
Taylor Hill Tank		1,431	\$182.92	2,019	\$275.91	
Kohler Meter Pit		0	\$0.00	0	\$0.00	
EE Tower		1,746	\$219.12	1,232	\$175.77	
Washington (PRV) Pit		587	\$89.89	301	\$59.90	
	Sub Total	3,764	<b>\$491.93</b>	3,552	<b>\$511.58</b>	\$/KwH
<b>Total Electrical Costs</b>		<b>472,108</b>	<b>\$38,344.95</b>	<b>498,334</b>	<b>\$43,001.71</b>	6.2%
Electrical Cost / MG		\$111.13		\$126.00		
<b>NATURAL GAS COSTS</b>		<b>2021</b>		<b>2022</b>		
		<b>CCF Used</b>	<b>Cost</b>	<b>CCF Used</b>	<b>Cost</b>	
Production Facility		1,324	\$1,038.88	2,099	\$2,033.58	
South Basin		2,224	\$1,911.20	2,226	\$2,163.29	
Georgia St. Bstr.		26	\$38.76	23	\$34.97	
Erie Ave. Bstr.		188	\$188.99			
Wilgus Ave. Bstr.		4	\$19.91	5	\$20.21	
Office & Maint. Bldg.		791	\$702.39	821	\$791.60	\$/CCF
<b>Total Natural Gas Costs</b>		<b>335</b>	<b>\$3,900.13</b>	<b>5,174</b>	<b>\$5,043.65</b>	-91.6%
Natural Gas Cost / MG		\$11.30		\$14.78		
<b>CHEMICAL COSTS</b>		<b>2021</b>		<b>2022</b>		
		<b>Lbs. Used</b>	<b>Cost</b>	<b>Lbs. Used</b>	<b>Cost</b>	
Alum		59,811	\$8,463.26	52,492	\$9,527.30	28.3%
Carbon		0	\$0.00	0	\$0.00	#DIV/0!
Chlorine		6,095	\$4,205.55	5,996	\$8,874.08	114.5%
Fluoride		1,669	\$1,814.20	1,652	\$2,296.28	27.9%
KMnO4		16	\$56.98	0	\$0.00	#DIV/0!
Cationic Polymer		0	\$0.00	0	\$0.00	#DIV/0!
Liquid Phosphate		2,945	\$3,893.29	3,973	\$6,269.39	19.4%
<b>Total Chemical Costs</b>		<b>\$18,433.28</b>		<b>\$26,967.05</b>		46.3%
Chemical Cost / MG		\$53.42		\$79.01		
		<b>Grand Total</b>	<b>\$60,678.36</b>	<b>\$75,012.41</b>		23.62%
		<b>Total Cost / MG</b>	<b>\$175.86</b>	<b>\$219.79</b>		24.98%

YTD HL 2022 vs 2021	-0.34%	YTD HL HIGH DAY PUMPAGE	17.388	July 19, 2022	
YTD HL 2022 vs 2020	5.03%	YTD HL LOW DAY PUMPAGE	7.138	November 25, 2022	
				YTD HL Ave Day	
<b>NOTE:</b> Electrical costs include an Alliant Energy 8.3% rate increase approved by PSC. all WPS bills available.				2022	12.426
				2021	12.537
				2020	11.724

**COMPARATIVE SUMMARY OF PLANT OPERATIONS**

**November 2021**

**vs**

**November 2022**

**Pumping Record**

**High Lift**

**Low Lift**

	2021	2022	Diff.		2021	2022	Diff.
Tot. Water in MG	345.043	340.745	-1.25%	Tot. Water in MG	351.585	355.420	1.09%
Daily Average	11.501	11.376	-1.09%	Daily Average	11.720	11.847	1.08%
Maximum Day	13.408	12.913	-3.69%	Maximum Day	13.862	14.122	1.88%
Minimum Day	7.990	7.138	-10.66%	Minimum Day	7.975	7.230	-9.34%
By Natural Gas	0.000	3.932	#DIV/0!	By Natural Gas	0.000	2.418	#DIV/0!
Power in KWH	285,951	279,759	-2.17%	Power in KWH	71,031	71,305	0.39%
Gals. per KWH	1,207	1,206	-0.09%	Gals. per KWH	4,950	4,951	0.02%
Power \$ / KWH	\$0.06876	\$0.07557	9.90%	Power \$ / KWH	----	----	----
Power \$ / MG	\$56.98	\$61.94	\$4.96	Power \$ / MG	\$13.89	\$15.16	\$1.27
Tot. Power \$/MG	\$105.40	\$126.79	\$21.39	Tot. Power \$/MG	----	----	----

**Treatment Chem.**

**Lbs. Used**

**Cost**

Total Lbs.	2021	2022	Diff.	Total Cost	2021	2022	Diff.
Alum	59,811	52,492	-12.24%	Alum	\$8,463.26	\$9,527.30	\$1,064.04
Carbon			#DIV/0!	Carbon	\$0.00	\$0.00	\$0.00
Chlorine	6,095	5,996	-1.62%	Chlorine	\$4,205.55	\$8,874.08	\$4,668.53
KMnO4	16	0	-100.00%	KMnO4	\$56.98	\$0.00	(\$56.98)
Polymer	0	0	#DIV/0!	Polymer	\$0.00	\$0.00	\$0.00
Liquid Phosphate	2,945	3,973	34.91%	Liquid Phosphate	\$3,893.29	\$6,269.39	\$2,376.10
Lb/ MG:				Cost / MG:			
Alum	170.1	147.7	-13.18%	Alum	\$24.07	\$26.81	\$2.73
Carbon	0.0	0.0	#DIV/0!	Carbon	#DIV/0!	#DIV/0!	#DIV/0!
Chlorine	17.3	16.9	-2.69%	Chlorine	\$11.96	\$24.97	\$13.01
KMnO4	0.0	0.0	-100.00%	KMnO4	\$0.16	#DIV/0!	#DIV/0!
Liquid Phosphate	8.4	11.2	33.45%	Liquid Phosphate	\$11.07	\$17.64	\$6.57

Fluoride:	2021	2022		Fluoride:	2021	2022	
Total Lbs.	1,669	1,652	-1.02%	Cost	\$1,814.20	\$2,296.28	\$482.08
mg/l applied as F	0.69	0.71		Cost/MG	\$5.27	\$6.74	\$1.47
Av. Res. Plt. Tap	0.70	0.75					

**Water Quality:**

**Raw**

**TAP**

	2021	2022			2021	2022
Turbidity	7.60	4.40		Turbidity	0.059	0.035
pH	8.23	8.26		pH	7.56	7.63
Alkalinity	111.6	112.5		Alkalinity	101.0	102.5
MF (E-Coli)	0.5	6.9		Plate Count	0.00	0.00
Temperature	44.0	41.2		Colilert	0	0
Wash-H2O % /LL	2.44	2.66		Temp.	46.4	43.5
Av. Flt. Run/hrs	116.7	94.5		Cl Res.	0.91	0.88
Av. ROF / MG	1.34	1.40				

**Natural Gas:**

	2021	2022		2021	2022	Diff.
Nat. Gas Heating	2,160	3,826	Plant & South Basin	\$959.01	\$3,713.23	\$2,754.22
Nat. Gas Pumping	64	499		\$943.83	\$483.64	(\$460.19)

	CCF	Cost	Natural Gas Cost	Natural Gas CCF
#3 Gas Pump	130.2	\$126.14	\$4,196.87	4,325
#4 Gas Pump	193.5	\$187.47		
#7 Gas Pump	107.5	\$104.15		
Electric Generator	68.0	\$65.88		
<b>Pumping totals</b>	<b>499.2</b>	<b>\$483.64</b>		

# November 2022

		12/1/2022	11/1/2022	
% Run	<b>Elapsed Time:</b>			
50.1%	No. 6 Pump	70,127.8	69,755.3	372.5
2.65%	Wash Pump Meter	5,585.98	5,566.28	19.70
0.6%	No. 7 Pump	786.3	782.0	4.3
0.0%	No. 8 Pump	59,540.3	59,540.3	0.0
95.7%	No. 9 Pump	24,014.0	23,302.0	712.0
1.6%	Wash Pump 2	67	55	12
	No. 1 Prime Pump	1,046.2	1,045.7	0.5
	No. 2 Prime Pump	1,121.2	1,120.1	1.1

Kw/Hr run	<b>Watthour Meters:</b>			
142.1	Wash Pump 1	1275.1	1271.1	2,800
62.4	No. 9 Pump	5767.83	5723.40	44,425
#DIV/0!	No. 8 Pump	6837.1	6837.1	0
72.2	No. 6 Pump	1289.2	1193.2	26,880
123.7	Wash Pump 2	6.94	5.703	1,484
#DIV/0!	No. 1 Pump	9309.184	9309.184	0
239.5	No. 2 Pump	4798.854	4788.268	10,586
298.5	No. 3 Pump	272.831	177.888	94,943
#DIV/0!	No. 4 Pump			0
479.2	No. 5 Pump	10,921.228	10,746.998	174,230

Garage (MWatt/Hrs.)	1,076.13	1,071.69	4,440
---------------------	----------	----------	-------

Power Co. (Step #3)	38,546	38,198	417,600
---------------------	--------	--------	---------

Left Meter - OUTSIDE

<b>Volume Used:</b>			
Nat. Gas (Correct)	45,085,211	44,964,842	151,304

% Run	<b>Elapsed Time:</b>			
0.0%	Emer. Generator	1,056.7	1,053.3	3.4
5.9%	<b>Elapsed Time:</b>			
42.8%	No. 1 Pump	17,263.2	17,263.2	0.0
0.6%	No. 2 Pump	20,482.50	20,438.30	44.20
0.0%	No. 3 Elec. Pump	949.4	631.3	318.1
0.6%	No. 3 Nat. Gas Pump	556.2	552.0	4.2
0.0%	No. 4 Elec. Pump	0.00	0.00	0.0
0.6%	No. 4 Nat. Gas Pump	59.0	54.7	4.3
48.9%	No. 5. Pump	22,839.140	22,475.570	363.570
0.4%	UV Building Generator	134.3	131	3.3

	12/1/2022	11/1/2022	
SLUDGE No. 1 Hour Meter	0.0	0.0	0
SYSTEM No. 2 Mag Meter	6,720,960	6,302,450	418,510
Recycle Meter (Reset to zero each month)			418,510

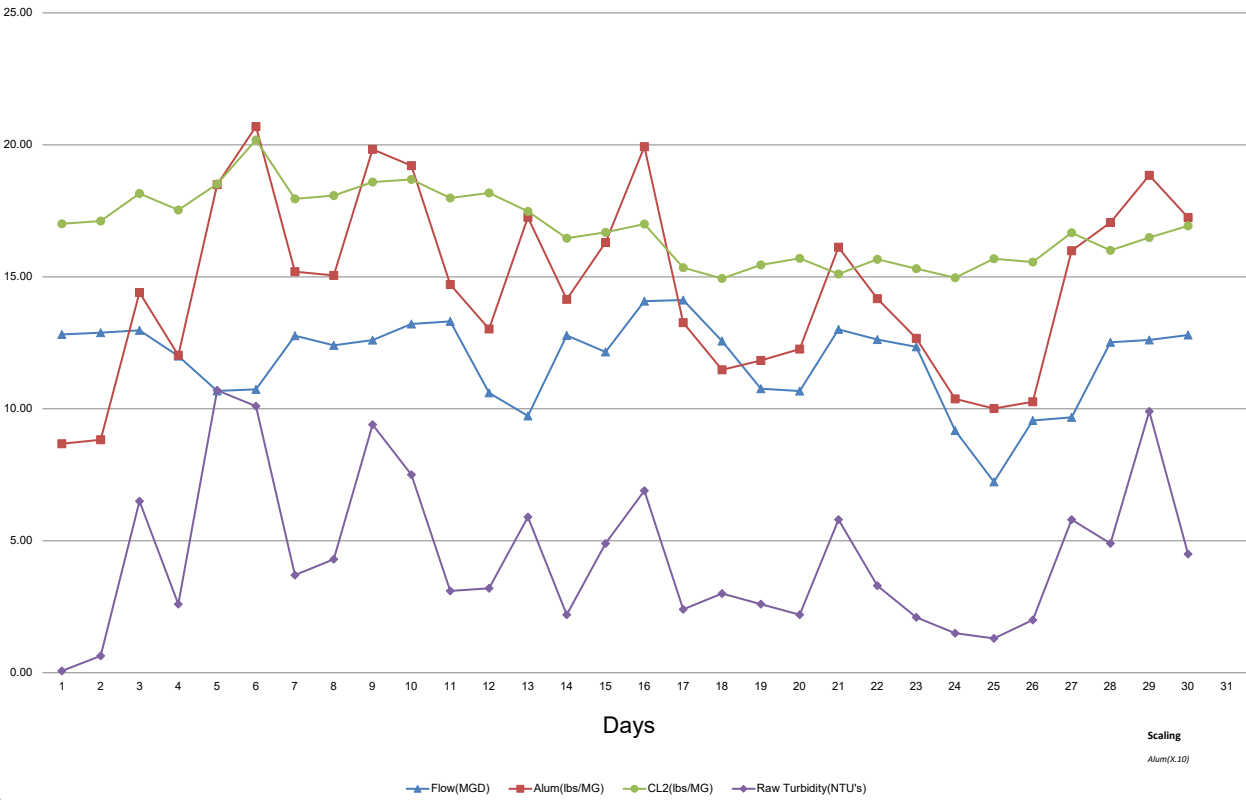
Power Cost	\$0.0755680	Bill >>>>	\$33,189.47
	0.214225	KWH >>>	439,200
Init. Chg.	\$31,557.20		
	\$	KWH	
Kohler Pit			
Horizon	\$269.91	1,862	
Taylor	\$275.91	2,019	
ALT. 72 Park	\$1,713.80	8,000	
Geo. Ave.	\$5,209.04	55,800	
Wilgus Ave.	\$431.30	3,200	
EE Pit	\$697.38	5,418	
EE Tower	\$175.77	1,232	
Washington	\$59.90	301	
Office	\$621.89	4,764	
Erie Ave.	\$2,259.52	16,000	
Total	\$43,271.62	516,196	

Low L. KWH	71,305
L.L. Cost \$	\$5,388.38
High L. KWH	279,759
H.L. Cost \$	\$21,140.83
Total Cost	\$26,529.21
Plant Costs	\$6,530.20

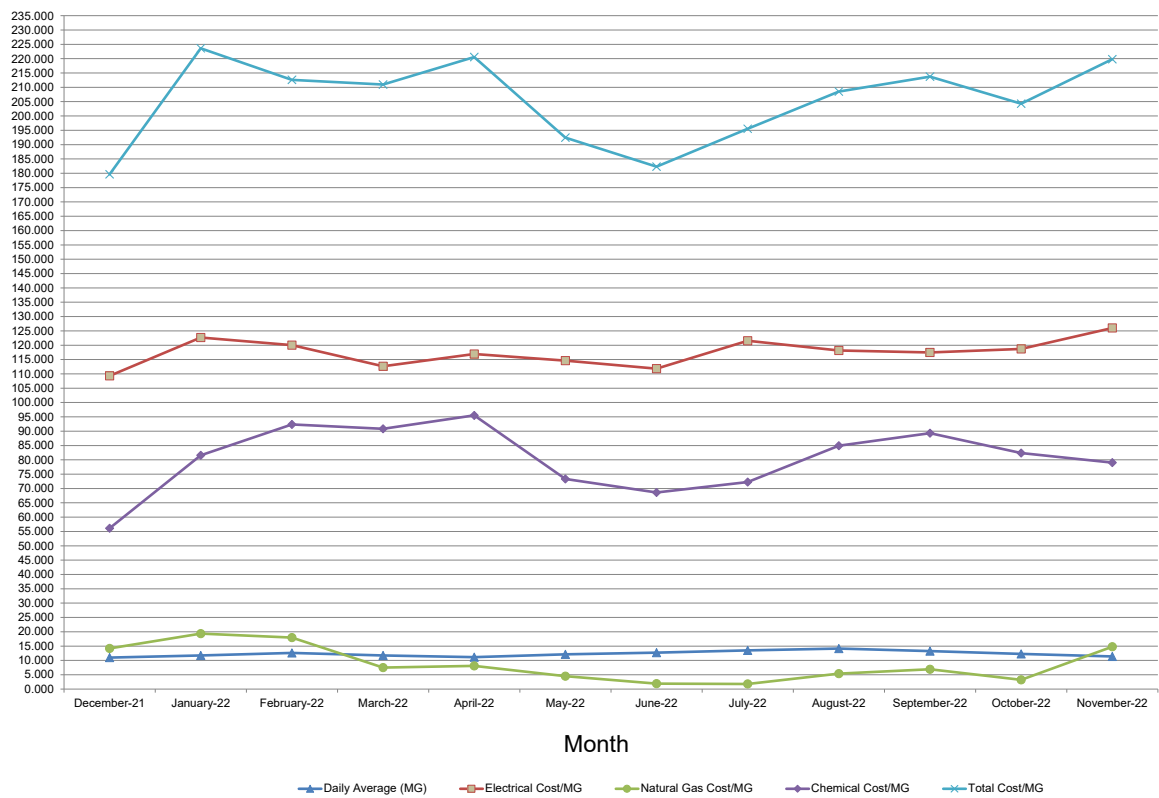
## SUMMARY

	HIGH LIFT		LOW LIFT	
	2021	2022	2021	2022
Tot. Pump	345.043	341.292	351.585	355.420
Daily Ave.	11.501	11.376	11.720	11.847
Max. Day	13.408	12.913	13.862	14.122
Min. Day	7.990	7.138	7.975	7.230
By Nat. Gas	0.000	3.932	0.000	2.418
Power KWH	285,951	279,759	71,031	71,305
Gals/KWH	1207	1206	4950	4951
Cost/KWH	\$0.06876	\$0.07557	*****	*****
Cost/MG	\$56.98	\$61.94	\$13.89	\$15.16
Tot. Cost/MG	\$105.40	\$126.79	*****	*****

November 2022: Sheboygan Water Utility Plant Operations Summary



Plant Operations: Expense Report



### Filter Plant Maintenance Completed For November 2022

Subject	StartDate	EndDate	Description	
Water Heater (Final)	1-Nov-22		Check for leaks, insulate pipes, label, and clean up area.	
Closet and Maintenance Shop	1-Nov-22		Cleanup water heater closet, place items back on shelving, and put maintenance tools away.	
Menards	1-Nov-22		Purchase L.E.D. lights, band aids, and 3/8 concrete anchors.	
Filter plant trash	1-Nov-22		Removed filter plant trash	
Filter 5	1-Nov-22		<b>Drill and tap ¾. hole for sample point.</b>	
Filter 3	1-Nov-22		<b>Prepare filter 3 pipe-t for ¾. threaded hole.</b>	
Natural Gas Oil Drum	2-Nov-22		Place N/G oil drum into high lift.	
Filter 3 Wash	2-Nov-22		Wash filter 3 and collect back wash data.	
Filter 3	2-Nov-22		Install new sample point plumbing, clean filter to waste line, and leak check install.	
Filter 3	2-Nov-22		<b>Drill and Tap ¾. hole for NTU sample pump.</b>	
Home Depot	3-Nov-22		Purchase grout for filter 5.	
Erie Ave.	3-Nov-22		Check reagents, inspect engine, turn on heat in electrical room, turn off water heater, etc.	
Taylor Hill	3-Nov-22		Replace reagents, walk grounds, adjust NTU meter flow, etc.	
Georgia Ave.	3-Nov-22		Check reagents, adjust hypo meter flow, walk grounds, check doghouse.	
Horizon Ave.	3-Nov-22		Check reagents, walk grounds, sweep floor; Josh McDonald Mowed.	
Dan sick time	3-Nov-22	4-Nov-22	Dan out sick	
Menards	4-Nov-22		<b>Purchase LED bulbs, 5/8. hose, small torch, and paint.</b>	
Pipe Gallery Light	4-Nov-22		Replace pipe gallery light by south steps.	
East Alum Feed	4-Nov-22		Clean pump, re-install fittings, flush lines, etc.	
FSO	4-Nov-22		Assist FSO turning valves, acquiring electrical socket, RPZ, insulation blankets, etc.	
East Basin	4-Nov-22		Begin draining East basin for Monday service.	
East Basin (FSO)	7-Nov-22		Open decant valves, shut outfall, open drain valves, pump water to city, and swap to sludge pump 1 once sludge appeared.	
Plant Engines	7-Nov-22		Check oil and coolant in plant NG engines; generator was 1.5 quarts low.	
East Basin Valve Repair	7-Nov-22		Remove east basin, south east valve stem for repair.	
East SWAN Hypo Meter	7-Nov-22		CLR and clean east SWAN hypo meter.	
South Basin	7-Nov-22		Inspect and grease floc idlers, inspect chains, and lube auger motor.	
East Basin	8-Nov-22		Setup FSO and collect lab sample.	
Menards	8-Nov-22		<b>Purchase ¾. stainless valves and nipples; looked for 24x25x4 filters to no avail.</b>	
Auer Steel	8-Nov-22		Purchase 4 new filter 24x25x4 for laboratory furnace.	
Dakota Supply Group	8-Nov-22		Purchase new filters for upstairs furnace and inquire about annular bits for Milwaukee drill.	
Laboratory Furnace	8-Nov-22		Install new filter, add bleach to evap pump, and check operation.	
H.L. Cleaning	8-Nov-22		<b>Move plywood and 2x4's into Jonson shed from H.L.</b>	
East Basin Brackets	9-Nov-22		Weld, fabricate, and drill new brackets for East Basin wall repair.	
East basin stem removal	9-Nov-22		Removed bottom part of East basin decant valve stem, east side	
East Basin Inspection	9-Nov-22		Perform East basin inspection. Found and replaced to door hinges, need to install new 2x6 and brackets for South West wall.	
East Basin Sludge Sample	9-Nov-22		Collect East basin sludge sample	
East basin wall brace	10-Nov-22		East basin west side, new mid wall brace and mounting brackets installed	
East basin bottom wall brackets	10-Nov-22		East basin west side, new floor mounted bracing brackets installed to secure wall	
East basin decant stem	10-Nov-22		Installed new east basin (east side) decant stem, both upper and lower level	
Cleaned maintenance tools	10-Nov-22		Cleaned and organized maintenance tools from east basin repairs	
East basin back in service	11-Nov-22		East basin valves and sluice gates closed and basin back in service	
West basin shut down	11-Nov-22		Opening decant valves and sluice gates and taking west basin out of service for cleaning	
Menards	11-Nov-22		Menards for filter plant maintenance items	

Removed plant trash	11-Nov-22		Removed plant trash and cardboard
UV Reference Check	11-Nov-22		Perform UV reference check and install new dehumidifier pack in UVT% meter.
Josh covering 3rd shift	14-Nov-22		Josh covering 3rd shift for Jeff.
West basin Cleaning Prep	14-Nov-22		Prepared west basin and valves for cleaning operations
Inspected North west basin	14-Nov-22		Inspected north west basin, closed walls and decant boxes, ready for filling
Inspected central west basin	14-Nov-22		Inspected central west basin, closed doors and decant boxes, ready to fill
Menards	15-Nov-22		Menards for filter plant maintenance items
Dakota supply group	15-Nov-22		Dakota supply group for schedule 40 PVC pipe
Prepared south west basin	15-Nov-22		Prepped south west basin for cleaning operations
Inspected south west basin	15-Nov-22		Inspected the south portion of the west basin, 2 sections of floc welds broken and 1 pillow block needs replacement
West basin broken flanges	16-Nov-22		Inspected west basin shaft/flange welds that broke and came up with initial plan to repair in spring
West basin babbitt bearing	16-Nov-22		West basin (west) babbitt bearing will need replacement in spring
West basin filling	16-Nov-22		Closed all valves, hatches and started filling west basin
Cleanup from basin cleaning	16-Nov-22		Putting away and cleaning east/west basin cleaning equipment
West basin samples	16-Nov-22		West basin samples taken for lab
Flushed sludge pit valves	16-Nov-22		Flushed 8 and 12 in lines going into sludge pit from backwash basin
filter media test pipe	16-Nov-22		Starting making filter media test tubes out of PVC pipe
West basin back in service	17-Nov-22		Opened effluent valves, closed sluice gates and checked drain valves for leaks, basin back in service
EE pit cold temp	17-Nov-22		Getting cold temp alarm at plant, went to EE pit and turned heat up
Collected backwash basin sample	17-Nov-22		Collected back wash basin sample for lab
Cut core sample tubes	17-Nov-22		Cut 2 inch PVC for core sample tubes
Dan on vacation	18-Nov-22		Dan on vacation
Joshua off for Coverage	21-Nov-22		Joshua off for covering 3rd shift.
finished core sample tubes	21-Nov-22		Finished making media core sample tubes
Heater Georgia dog house	21-Nov-22		Put new heater in dog house pit, 240V heater and outlet burnt out
Erie reagents	21-Nov-22		Put new reagents in HACH analyzer at Erie pump station
Taylor hill heaters	21-Nov-22		Checked Taylor hill pit heaters and dog house heaters and reagents
Dakota supply group	21-Nov-22		New space heater from Dakota supply group
Removed trash	21-Nov-22		Removed trash and recyclables from filter plant
Dan Lab operations and samples	22-Nov-22	22-Nov-22	Covered lab operations and sampling
South basin cleaning setup	23-Nov-22		Prepped south basin for cleaning on monday
cleaned old rapid mix area	23-Nov-22		Vacuumed and cleaned up old rapid mix area
POs and orders	23-Nov-22		Pos and order tracking with Mulcahy Shaw
Checked plant heaters	23-Nov-22		Checked and set plant heaters in filter area
Thanks giving Holiday	24-Nov-22	25-Nov-22	Thanks giving holiday
Utility observed holiday	24-Nov-22	25-Nov-22	Utility observed holiday
Filter 5	28-Nov-22		Begin scraping calk from individual bottoms in prep for cap install.
South Basin Sludge	28-Nov-22		Remove sludge and deposits from basin.
South Basin Inspection	28-Nov-22		Inspect caps, snug bolts, grease bearings, and check operations.
South Basin Bearings	28-Nov-22		Install new bearings on floc train 2 east bearing and floc train 1 west bearing.
South Basin	28-Nov-22		Finish draining basin and setting up for entry.
Filter Hall	29-Nov-22		Rearrange filter hall in preparation for filter repair.
Filter 5	29-Nov-22		Vacuum, scrap landings, remove access grout, torque caps, etc.

