FY 2022

Annual Operations Report

July 1, 2021 – June 30, 2022

Overview

During the fiscal year of July 1, 2021 - June 30, 2022, the company Suez was bought out by Veolia making the name change to Veolia in March of 2022. There was no change with the new company and Veolia is still responsible for the Operations and Maintenance of the Rockland Wastewater Treatment Facility and its 13 lift stations.

On June 30, 2022, Veolia completed their 3rd year of a 15-year partnership with the Rockland Sewer Commission. The current term of this contract is for five years expiring on 6/30/24 where both parties may enter an additional two five-year extensions based on mutually acceptable terms and conditions.

1.0 Staffing

Veolia remains staffed at the project level for its O&M contract. The Veolia technical support and operational staff for the Rockland project this year includes:

- Director Operations North East Region: Michael Burke
- Project Manager: Richard Kotouch
- Assistant Project Manager: Megan Lynch
- Laboratory Technician: Steven Butts
- Maintenance Foreman: Charles Amaral
- O & M II Technicians:
    - Garry Murrill
    - Shaun Chaponis (part-time)
    - Teresa O'Callaghan
- O & M Tech I:
    - Maxwell Jackson

In FY 2021-2022, we lost 3 employees, gaining 1 new employee, and promoting another from within the facility. At the end of 2021 Kevin Fennell left us to join the military. In March of 2022, Edwin McAuliffe relocated to another project and was promoted as Project Manager of that facility. Daniel Sullivan-Xenos left at the end of June 2022 to become Assistant Project Manager and to work alongside Edwin McAuliffe. Megan Lynch was promoted in May 2022 as the Assistant Project Manager filling Edwin McAuliffe's vacant position. A new employee, Maxwell Jackson, was hired as a O&M Tech I in March 2022.

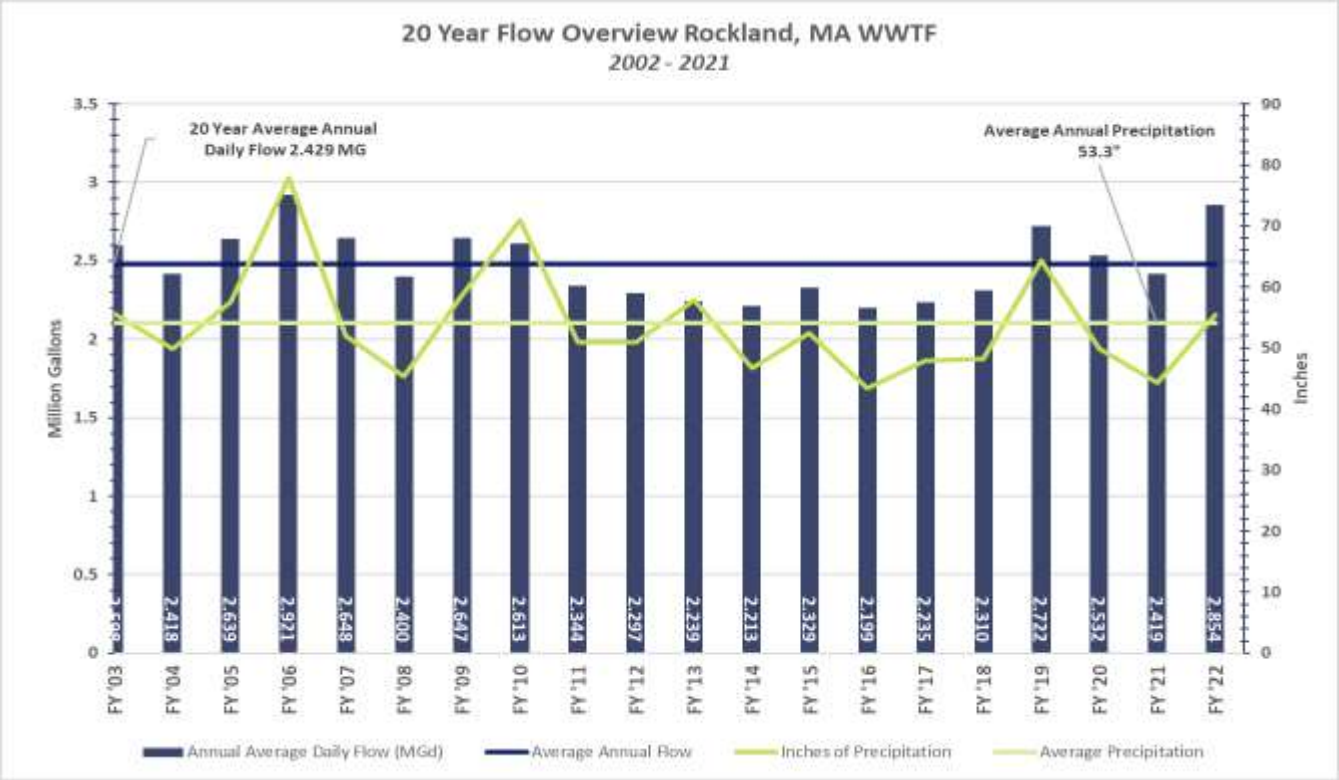
Current Employee Licenses as of 06/30/2022										
		Hoisting		Wastewater			NEWEA Collections			NEWEA Laboratory
Employee	Title	1C Forklift	1B Boom Truck & Forklift	3M	5C	7C	I	II	IV	I
Richard Kotouch	Project Manager					X			X	
Megan Kelly-Lynch	Asst. Project Manager	X				X				
Steven Butts	Lab Technician					X				X
Charles Amaral	Maintenance Foreman				X			X		
Garry Murrill	Operator				X			X		
Maxwell Jackson	Operator			X						
Shaun Chaponis (Part Time Weekends)	Operator				X		X			

1.1 Employee Training and Continuing Education

Having highly trained and certified operators is very important to delivering a high level of operational performance. Beyond having competent operators, Veolia also encourages all staff to take relevant training to attain their current certifications and to advance their knowledge in their fields.

To celebrate and encourage employee educational accomplishment, the Veolia Tuition and Education Assistance program reimburses employees attending any accredited college/university.

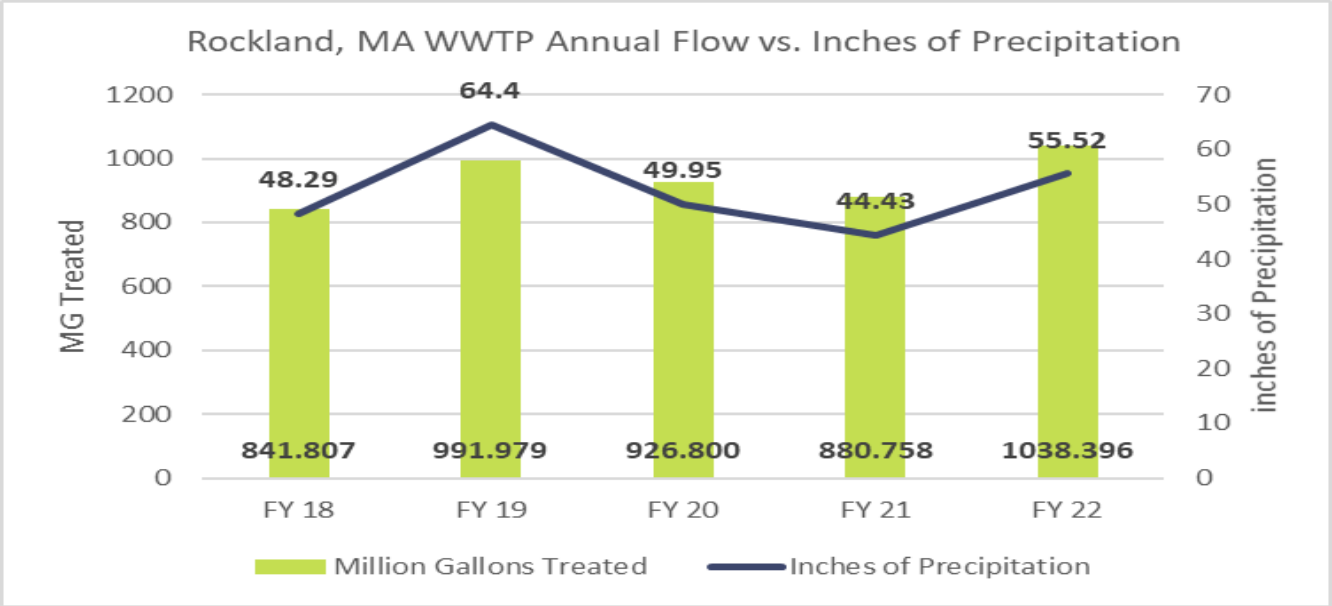
Veolia participated in the Continuous Energy Improvement Program funded by National Grid and directed by Cascade Energy. This year completed the three-year program based on reducing energy usage at the facility with savings-based incentives. The facility met the goal of 5% reduction of energy over the 3 year period.



2.0 Facility Overview

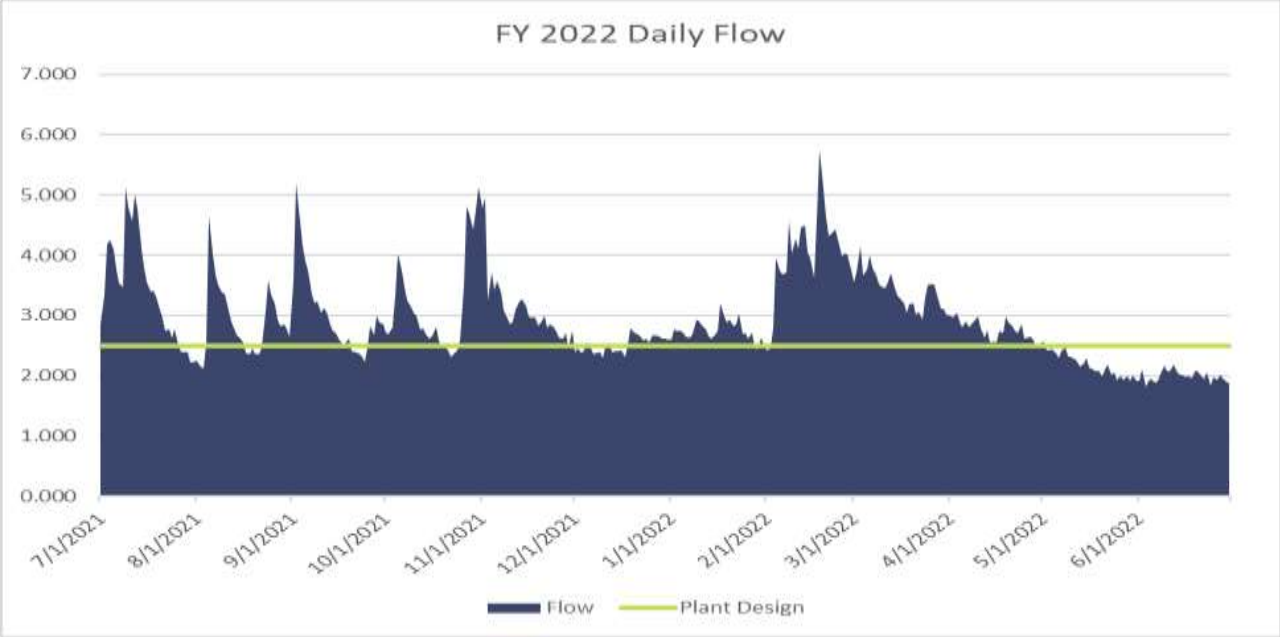
2.1 Weather

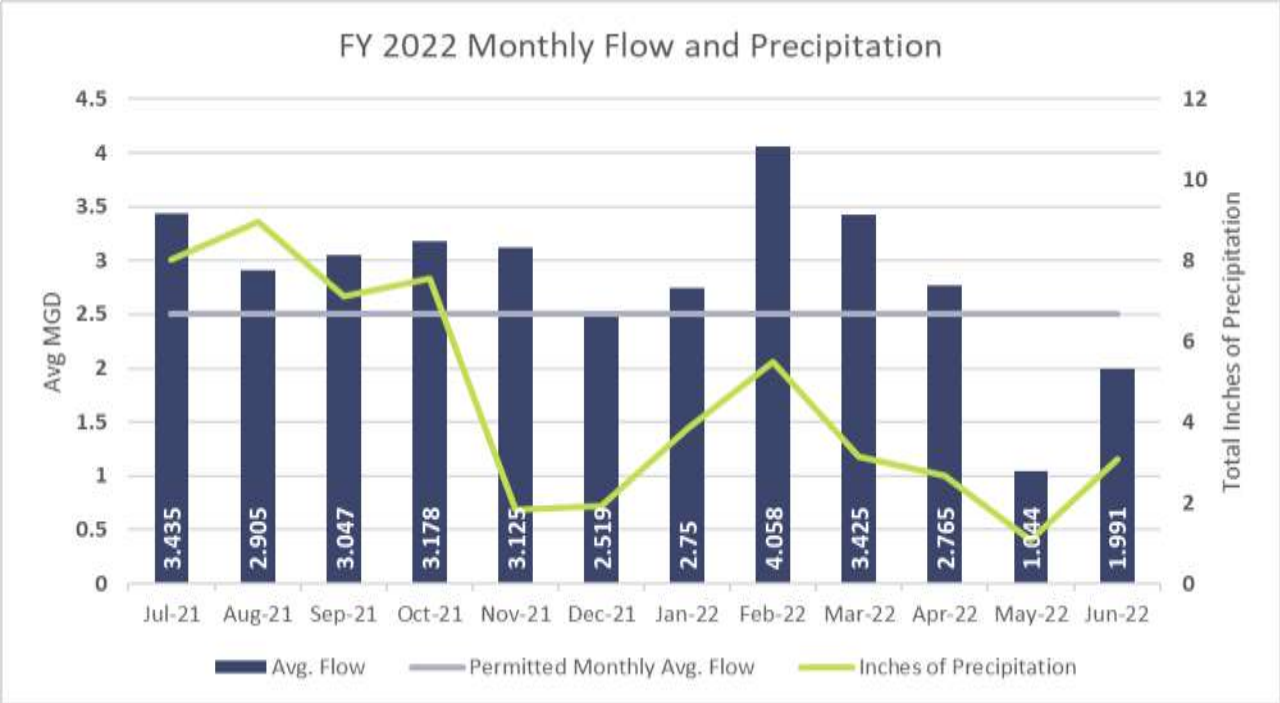
The facility received a total of **55.5**" of precipitation during FY 2021-2022. This amount was **3**" more than the previous five-year average of **52.5**". The highest single day total of precipitation occurred on September 1st, 2021 with a total of **3.66**". The coldest temperature of the year of **-4**°F occurred on January 31st, 2022, while the warmest day occurred on August 26th, 2021 with a temperature of **95°**F.



2.2 Flows

The facility treated a total of 1,038,369,000 gallons throughout the year with a daily average flow of **2.854** MGD. The highest total daily flow recorded was February 18th, 2022 at **5.750** MGD while the lowest total daily flow recorded was on June 3rd, 2022 at **1.820** MGD.





3.0 Operational Overview

3.1 Process Control

The Veolia staff has continued to deliver exceptional high-quality effluent throughout 2021-2022. This was achieved through the combined effort, experience, and expertise of the highly qualified staff. Process control continues to be a true passion of the staff who take pride in operating the facility for the Town of Rockland.

The Veolia- Rockland management team continues to work with the Veolia Technical Services group to evaluate opportunities for process optimization and energy savings at the facility as part of the Rockland RIPE (Research, Investigate, Process, Evaluation) program. Key points that have been identified during this program were ways to improve plant capacity during wet weather events, energy consumption, solids handling and reducing chemical usage. The Rockland team will continue to work with the Technical Services group through 2022-2023 to look for other key areas of opportunity.

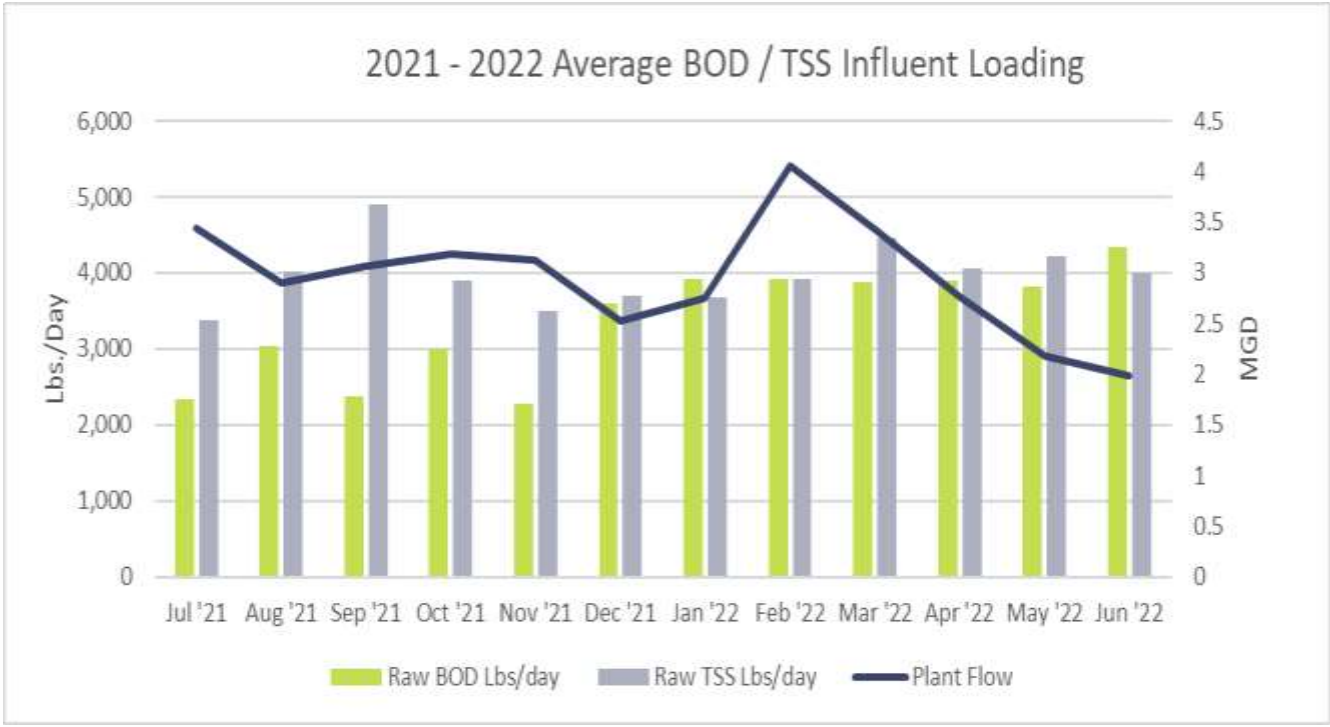
Back in July of 2018, the Rockland Veolia staff joined a National Grid funded Continuous Energy Improvement (CEI) program. This program consists of eight other organizations where everyone meets for quarterly meetings over a 3-year period. During this time, Cascade Energy and J.K. Muir Engineering worked with the participants to teach, identify, and implement operational energy savings. The program ended at the end of June 2022 and Veolia reached its goal of 5% KWH reduction.

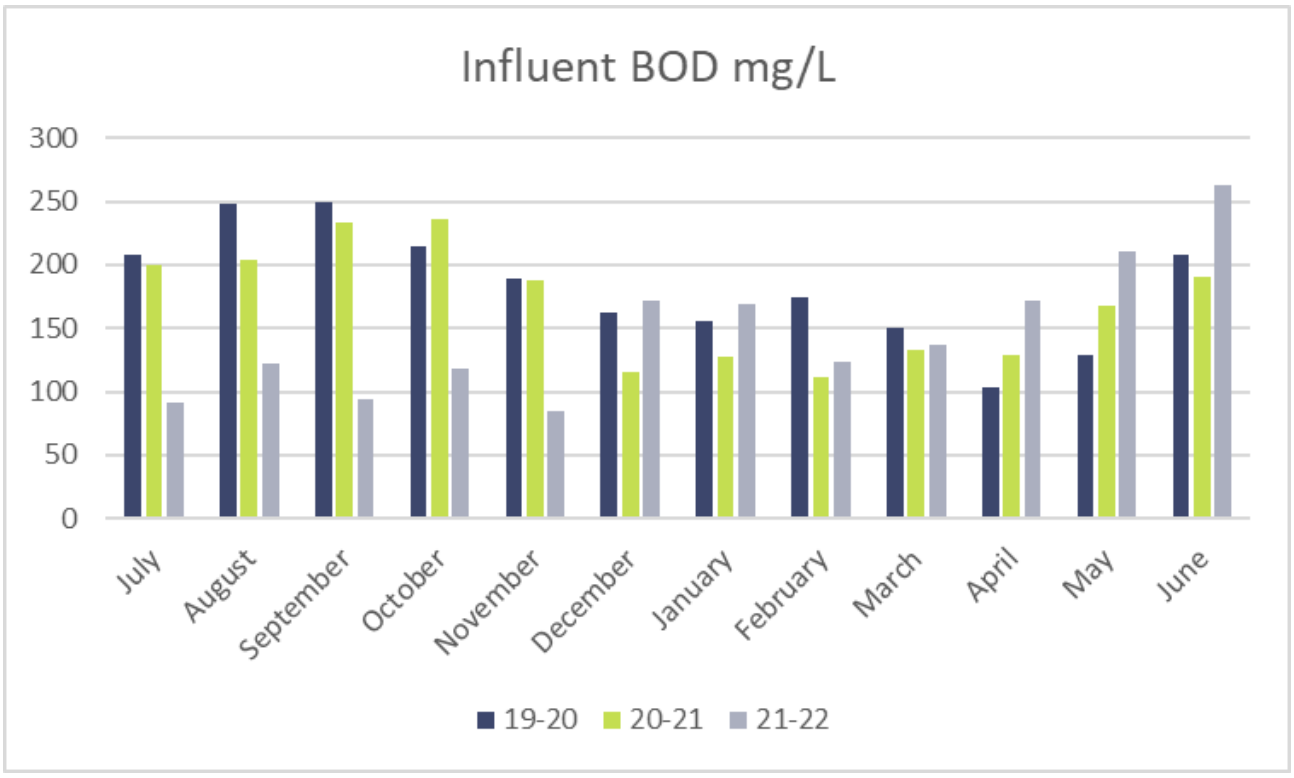
A Phosphorus Optimization Study was conducted beginning on April 1st, 2022, using chemical addition with a completion date of October 31, 2022. This study was required as part of the new NPDES permit that was issued February 2022. At the time of this report the facility was meeting the 0.1 mg/L for Total Phosphorus. A full report will submitted to the EPA, MADEP and Sewer Commissioners by 01/31/2023.

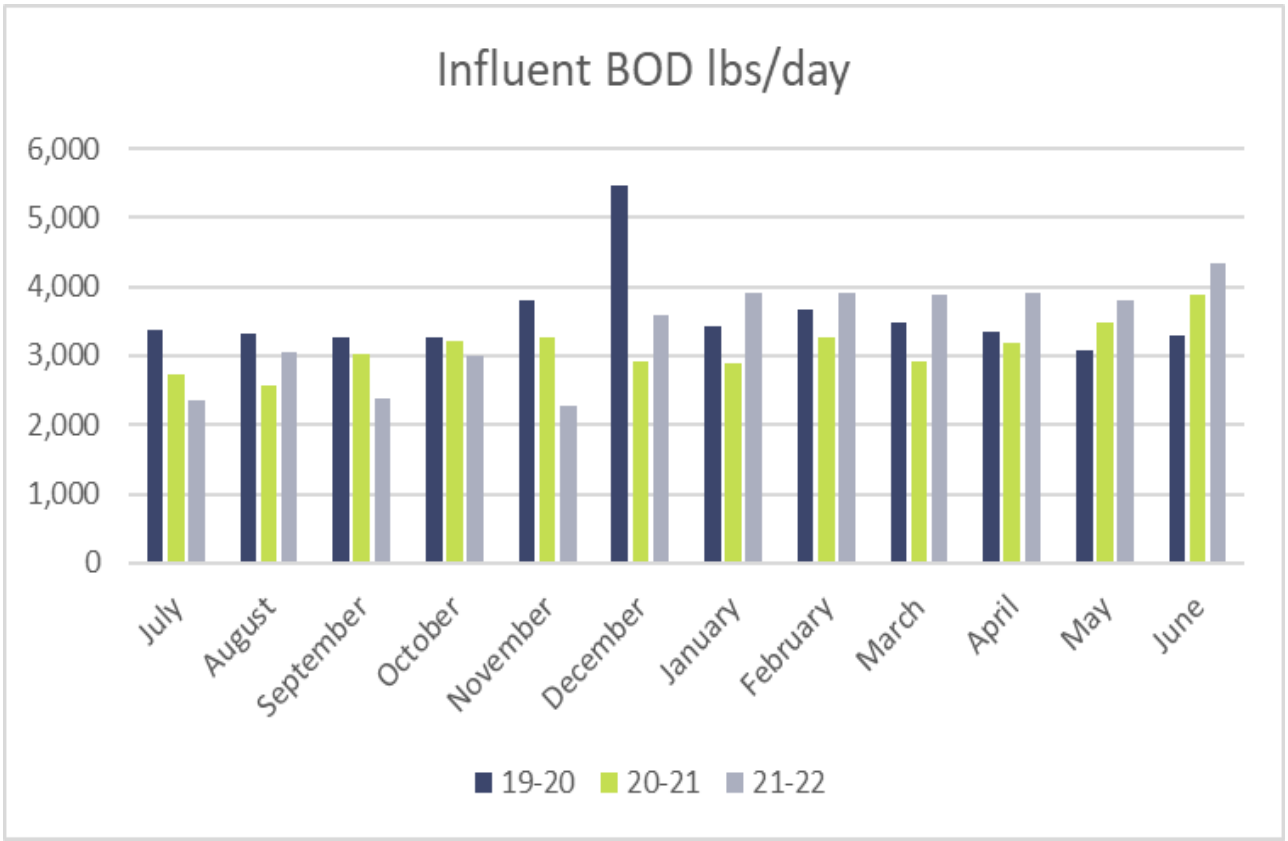
3.2 Influent Loadings

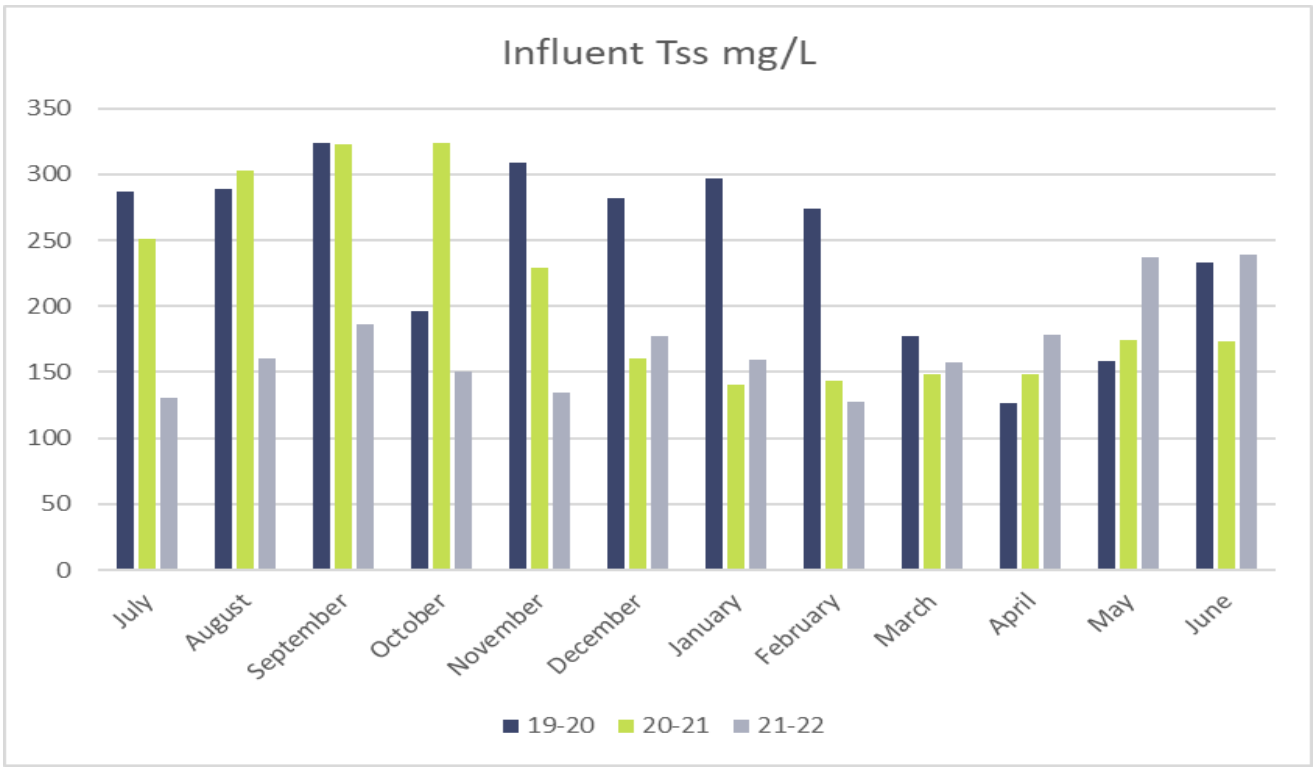
The influent BOD lbs. /day average increased by **7.5%** from FY '21 to FY '22 with an average of **3112** lbs. /day in FY '21 to **3366** lbs. /day FY '22. The influent TSS lbs. /day average increased by **4.7%** with an average of **3790** lbs. /day in FY '21 to a total of **3975** lbs./day in FY '22.

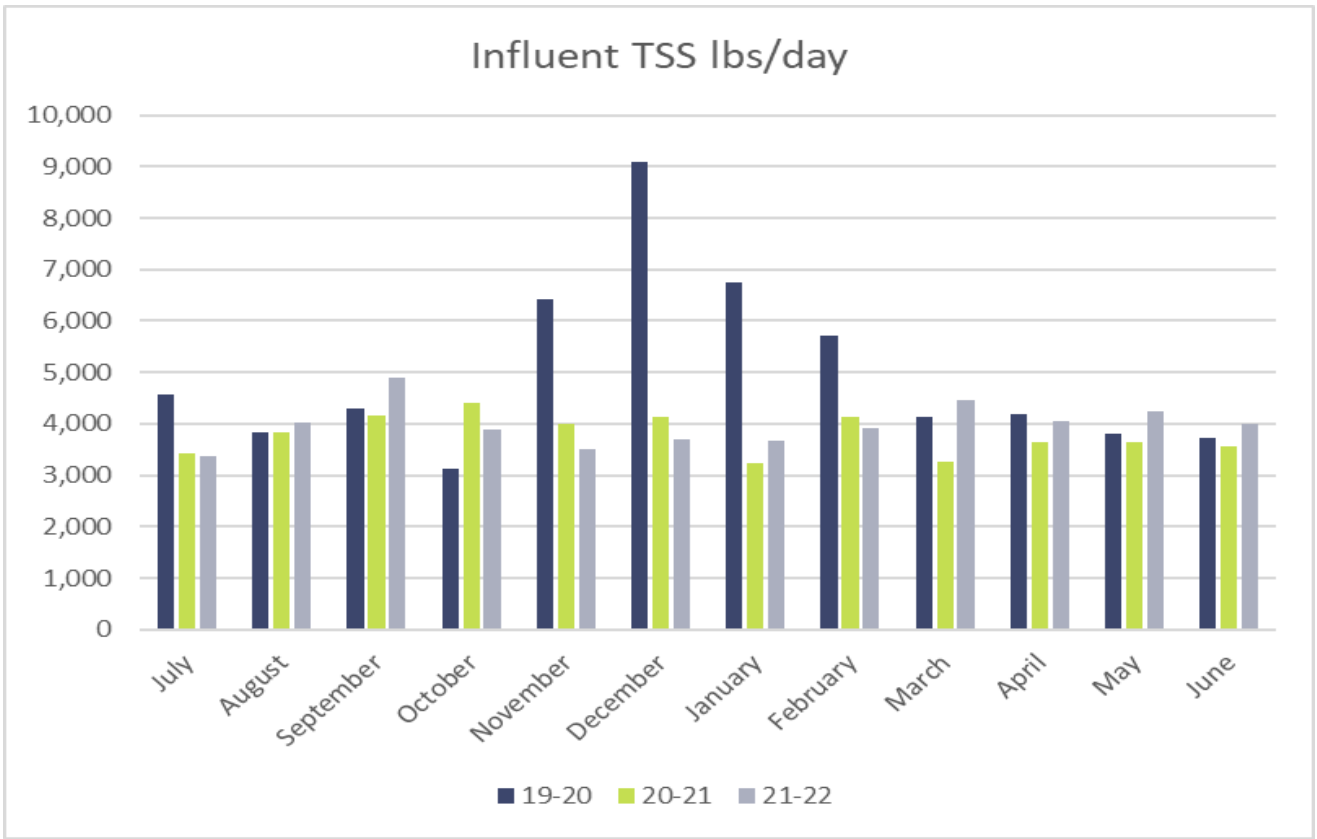
2021 - 2022 Influent Flow and Loadings							
Month	Plant Flow	Raw BOD	Raw BOD	Raw TSS	Raw TSS	Raw NH3	Raw Total P
		Mg/l	Lbs/day	Mg/L	Lbs/day	mg/l	Mg/L
Jul '21	3.445	92	2,344	131	3371	20	3.6
Aug '21	2.905	122	3,044	160	4011	24	4.5
Sep '21	3.064	94	2,376	186	4904	21	4.1
Oct '21	3.19	119	2,990	150	3889	12	2.2
Nov '21	3.125	85	2,270	135	3500	18	2.1
Dec '21	2.519	172	3,597	177	3699	37	3.8
Jan '22	2.75	169	3,909	159	3676	22	3.8
Feb '22	4.058	123	3,910	128	3913	28	3.8
Mar '22	3.425	137	3,887	157	4456	15	2.7
Apr '22	2.765	171	3,907	178	4051	21	2.2
May '22	2.185	211	3,809	237	4229	22	4.4
Jun '22	1.991	262	4,343	239	4006	28	5.7
Average	2.952	146	3366	170	3975	22	3.58



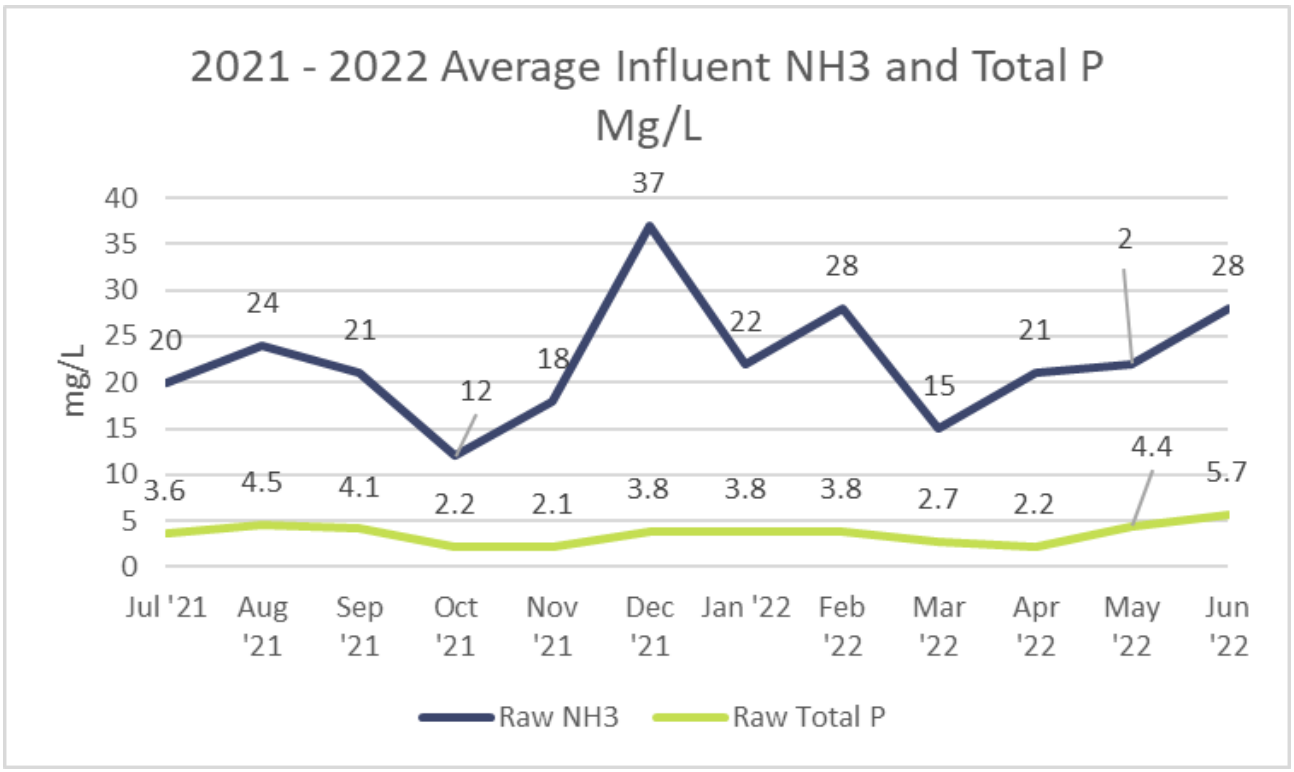

Influent BOD mg/L
300
250
200
150
100
50
0
July
August
September
October
November
December
January
February
March
April
May
June
19-20
20-21
21-22


Influent BOD lbs/day
6,000
5,000
4,000
3,000
2,000
1,000
0
July
August
September
October
November
December
January
February
March
April
May
June
19-20
20-21
21-22





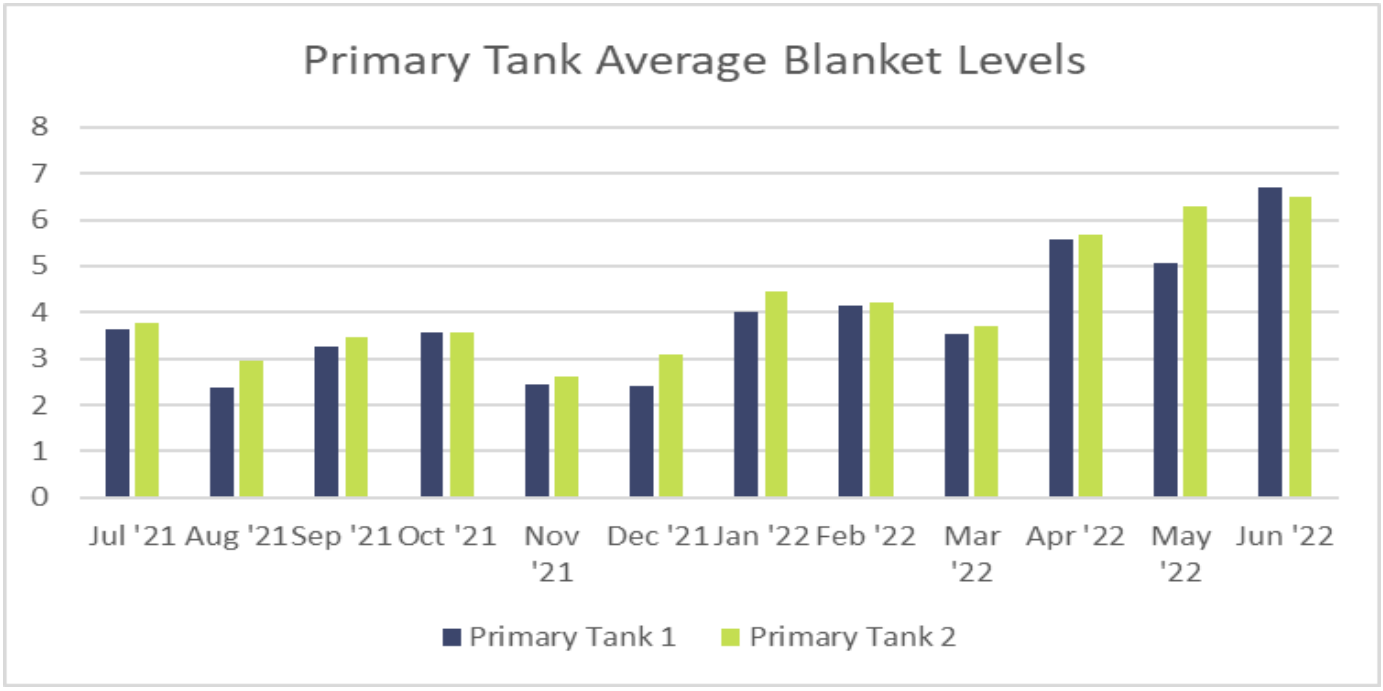
The FY 2022 average influent NH3 was **22** mg/L. The average influent Total P was **3.58** mg/L.


2021 - 2022 Average Influent NH3 and Total P
Mg/L
mg/L
40
35
30
25
20
15
10
5
0
20
24
21
12
18
37
22
28
15
21
2
28
3.6
4.5
4.1
2.2
2.1
3.8
3.8
3.8
2.7
2.2
4.4
5.7
Jul '21
Aug '21
Sep '21
Oct '21
Nov '21
Dec '21
Jan '22
Feb '22
Mar '22
Apr '22
May '22
Jun '22
Raw NH3
Raw Total P

3.3 Primary Treatment

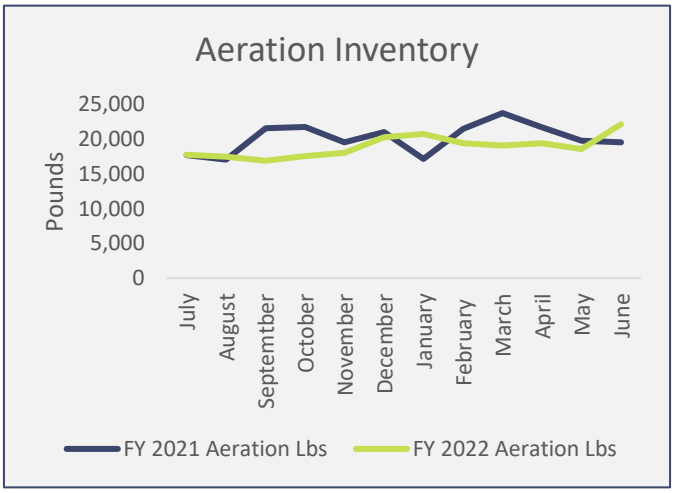
The primary treatment TSS removal increased slightly in FY ’21 to FY ’22 with the percent being 59% and raising to 60% in 2022. The primary treatment BOD removal decreased from 52% in 2021 and dropped to 49% in 2022. The annual average primary blanket decrease from 4.11’ in FY ‘21 to 3.97’ in FY ‘22.

Date	Primary Tank 1 Blanket	Primary Tank 2 Blanket	Raw Influent BOD	Raw Influent TSS	Raw Influent NH3	Raw Influent Total P	Tank 1 %TS	Tank 1 %VS	Tank 2 %TS	Tank 2 % VS	Primary Eff. TSS	Primary Eff. Bod	Primary Eff. NH3	Primary Eff. Total P	Primary TSS Removal	Primary BOD Removal
	Feet	Feet	mg/L	mg/L	mg/L	mg/L	%	%	%	%	mg/L	mg/L	mg/L	mg/L	%	%
Jul '21	3.65	3.78	92	131	20	3.6	2.51	76.16	2.58	77.66	65	46	27	1.70	50	50
Aug '21	2.38	2.97	122	160	24	4.5	2.40	75.61	2.45	75.38	58	44	28	2.00	64	64
Sep '21	3.27	3.47	94	186	21	4.1	2.56	77.56	2.61	75.93	42	50	22	1.90	77	47
Oct '21	3.56	3.58	119	150	12	2.2	2.43	77.35	2.72	74.78	50	56	14	1.10	67	53
Nov '21	2.43	2.63	85	135	18	2.1	2.39	78.33	2.56	78.93	47	48	22	0.69	65	44
Dec '21	2.4	3.10	172	177	37	3.8	2.53	82.68	2.64	82.59	70	91	39	3.20	60	47
Jan '22	4	4.44	169	159	22	3.8	2.64	82.33	2.76	82.67	64	77	28	3.50	60	54
Feb '22	4.14	4.22	123	128	28	3.8	2.57	80.34	2.55	80.49	93	120	31	3.60	27	2
Mar '22	3.55	3.71	137	157	15	2.7	2.81	81.61	2.96	81.38	51	59	16	2.00	68	57
Apr '22	5.58	5.67	171	178	21	2.2	2.18	77.85	2.78	77.01	73	50	25	2.20	59	71
May '22	5.06	6.29	211	237	22	4.4	2.50	76.54	2.51	76.25	94	99	31	2.20	60	53
Jun '22	6.7	6.50	262	239	28	5.7	2.28	80.77	2.44	76.78	99	129	40	2.50	59	51
Average	3.89	4.20	146	170	22	3.58	2.48	78.93	2.63	78.32	67	72	27	2.22	60	49

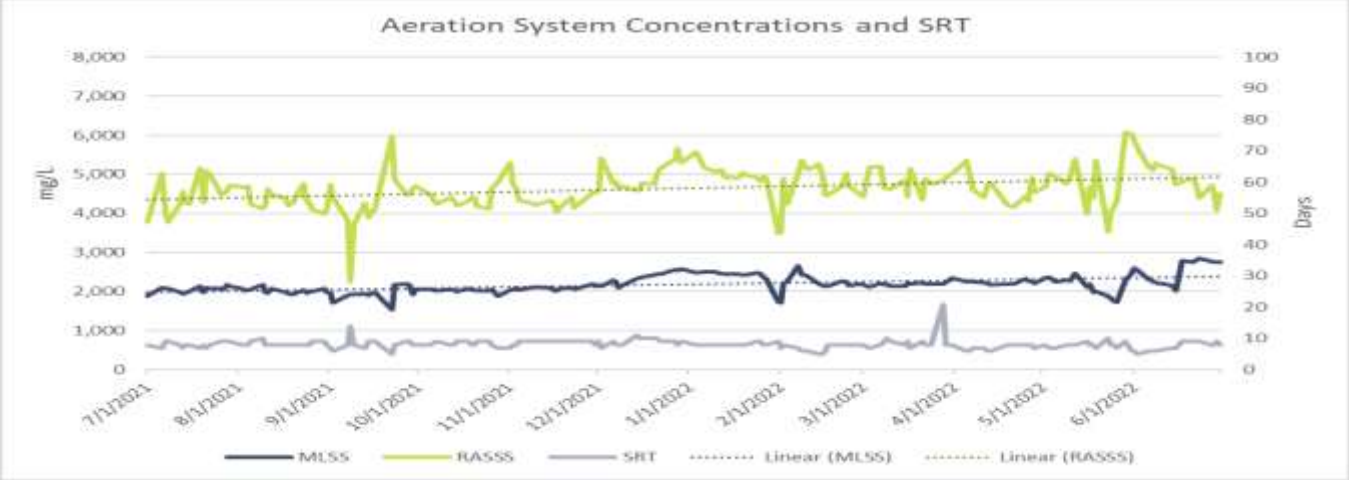


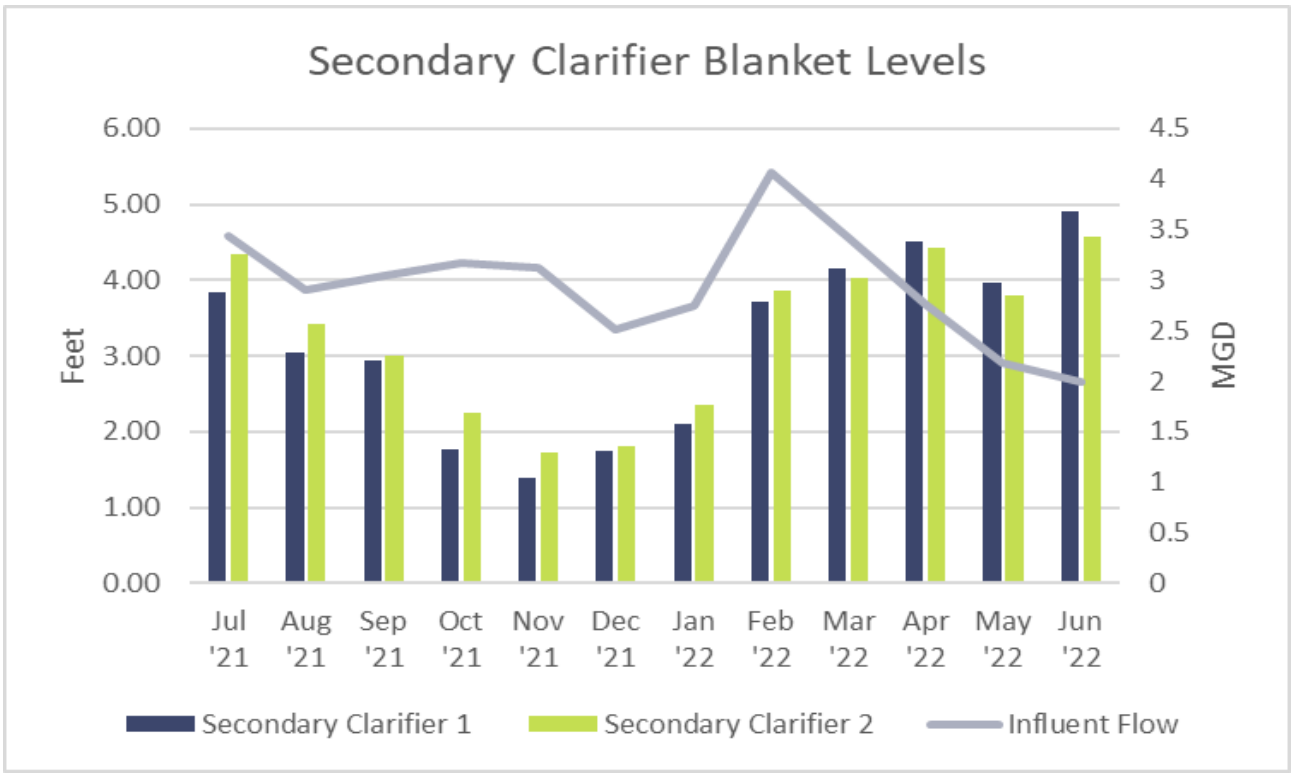
3.4 Secondary Treatment

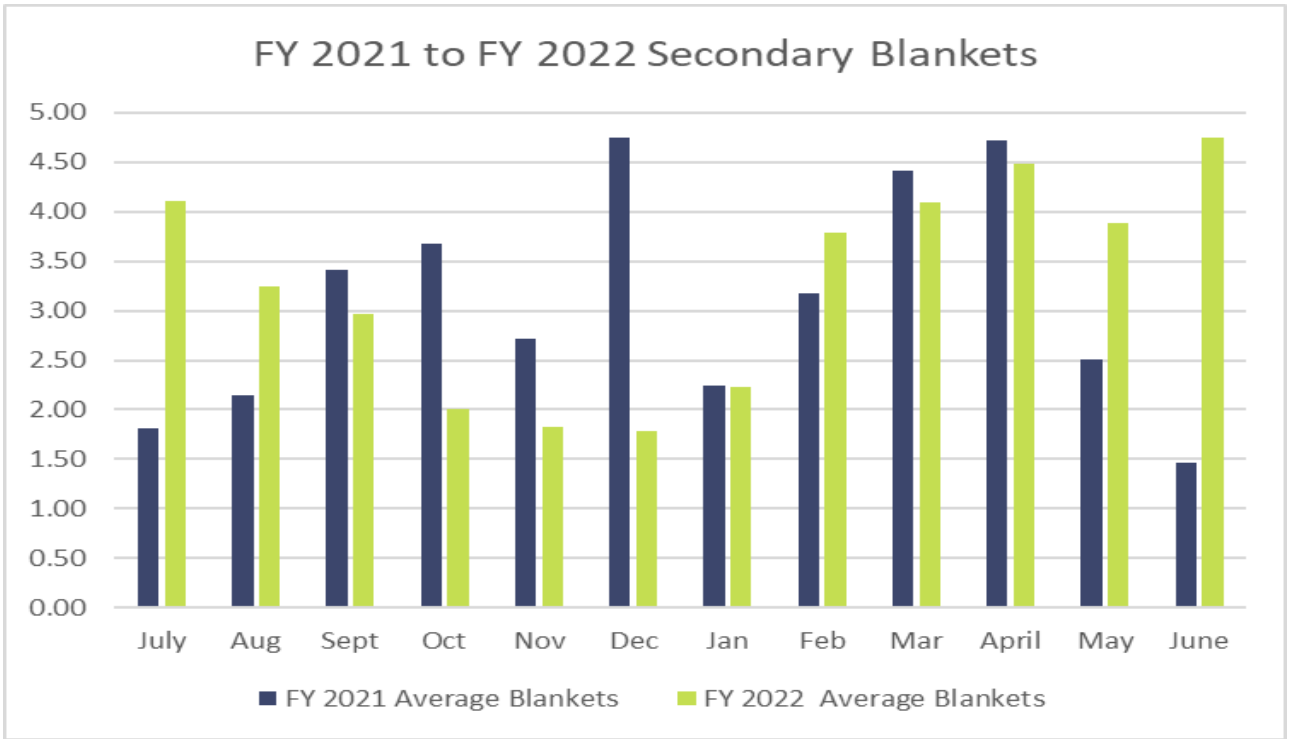
Throughout FY 2021 - 2022, the Rockland staff continued to implement procedures to increase plant solids removal volume and this continues to help reduce excess loadings to the aeration system coming from the primary treatment system due to digester overflow. In fact, this fiscal year, the digester overflow back into primary treatment was eliminated with a differential of nearly 480k gallons to gallons pressed vs pumped to digestion. The annual average total aeration inventory increased from **20,188** lbs. in FY '21 to **23,021** lbs. in FY '22. The average clarifier loading throughout the year was **17** lbs./day/ft2.



Date	RAS Flow	Clarifier Loading	Tank 1 Blanket	Tank 2 Blanket	Avg. Aeration	Avg. MLSS	Average RASSS	Avg. MLVSS	RASVSS	Lbs. in Aeration	Total Inventory	WAS Avg. GPD	Aeration SRT	Total Inventory SRT	F/M Ratio	Avg. Clarifier
	MGD	lbs/day/ft2	Ft	Ft	Ph	Mg/l	Mg/L	Mg/l	Mg/l	Lbs.	Lbs.	Gal.	Days	Days	Ratio	SVI
Jul '21	2.66	17.88	3.85	4.35	6.97	2,046	4,483	1,552	3,263	17,746	22,769	44,558	8	14	0.09	163
Aug '21	2.35	15.67	3.05	3.43	6.96	2,017	4,356	1,527	3,223	17,496	21,122	44,042	8	13	0.09	192
Sep '21	2.55	15.87	2.93	3.01	6.86	1,949	4,287	1,498	3,307	16,907	20,121	45,222	8	13	0.10	157
Oct '21	2.5	16.25	1.77	2.25	6.7	2,026	4,377	1,496	3,202	17,569	19,441	43,039	8	12	0.11	105
Nov '21	2.51	18.21	1.39	1.73	6.82	2,080	4,417	1,660	3,416	18,040	20,091	43,460	9	13	0.07	121
Dec '21	1.93	15.33	1.74	1.81	6.83	2,339	4,937	1,830	4,092	20,288	22,833	41,368	9	13	0.13	138
Jan '22	2.15	17.43	2.11	2.35	6.75	2,395	4,923	1,997	4,097	20,771	24,081	46,033	8	13	0.1	146
Feb '22	3.4	23.4	3.71	3.86	6.74	2,237	4,763	1,861	3,857	19,403	24,128	52,271	7	12	0.25	126
Mar '22	3.02	20.41	4.15	4.02	6.9	2,202	4,805	1,796	3,971	19,103	24,458	43,429	9	15	0.11	174
Apr '22	2.3	16.58	4.52	4.43	6.98	2,237	4,624	1,666	3,291	19,404	25,372	53,230	7	12	0.08	179
May '22	1.72	12.19	3.96	3.8	7.06	2,141	4,768	1,557	3,614	18,573	23,372	45,068	8	13	0.13	182
Jun '22	1.98	15.13	4.9	4.57	7.06	2,555	4,905	1,961	3,530	22,163	28,461	54,932	7	13	0.15	203
Annual Avg	2.42	17.03	3.17	3.30	6.89	2,185	4,637	1,700	3,572	18,955	23,021	46,388	8	13	0.12	157



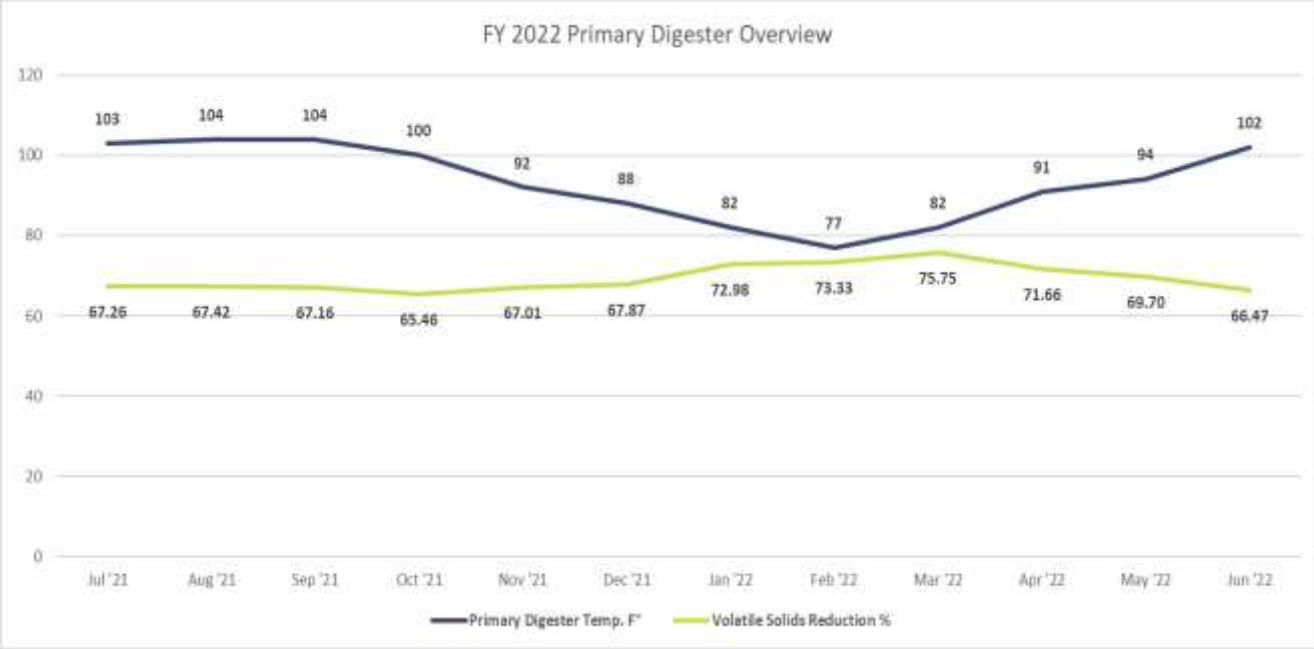

Secondary Clarifier Blanket Levels
6.00
5.00
4.00
3.00
2.00
1.00
0.00
Feet
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
MGD
Jul '21
Aug '21
Sep '21
Oct '21
Nov '21
Dec '21
Jan '22
Feb '22
Mar '22
Apr '22
May '22
Jun '22
Secondary Clarifier 1
Secondary Clarifier 2
Influent Flow


FY 2021 to FY 2022 Secondary Blankets
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
July
Aug
Sept
Oct
Nov
Dec
Jan
Feb
Mar
April
May
June
FY 2021 Average Blankets
FY 2022 Average Blankets

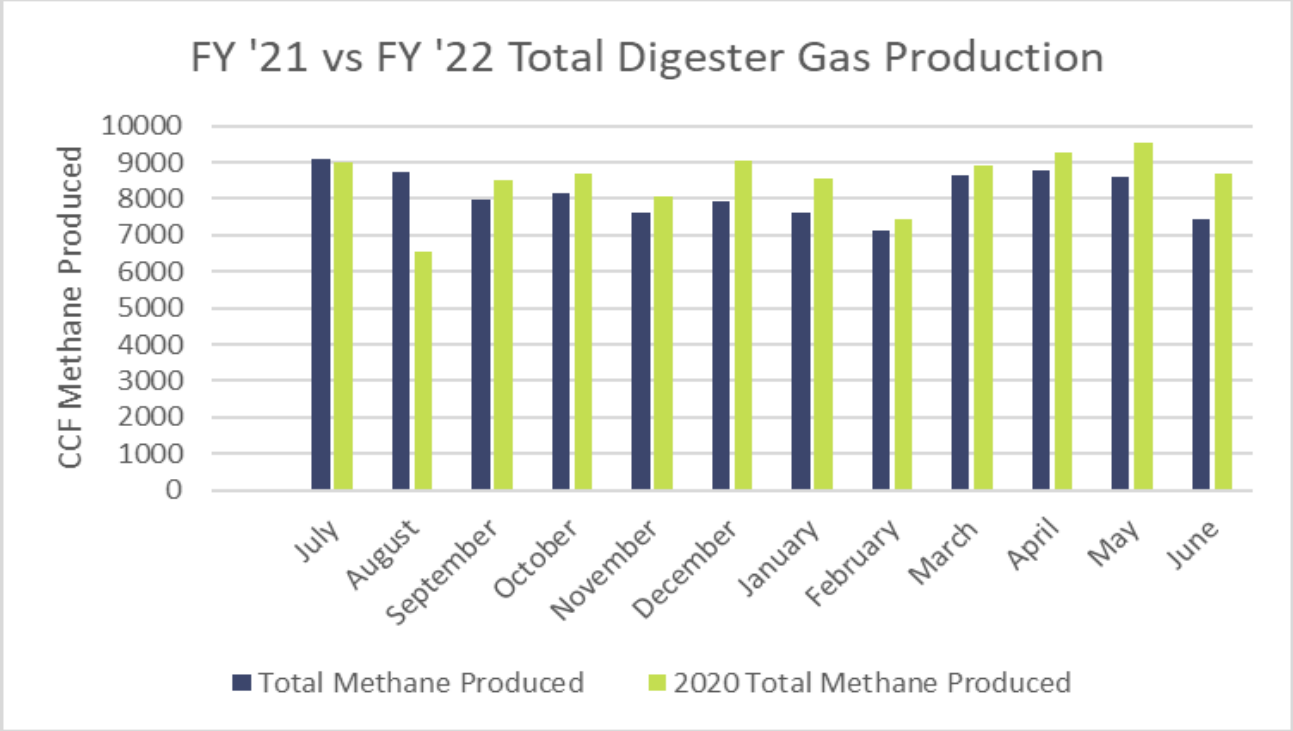
3.5 Digester Performance

The annual average Primary Digester temperature in FY 2022 was **93°F**. The average Volatile Solids Reduction was **69%**.

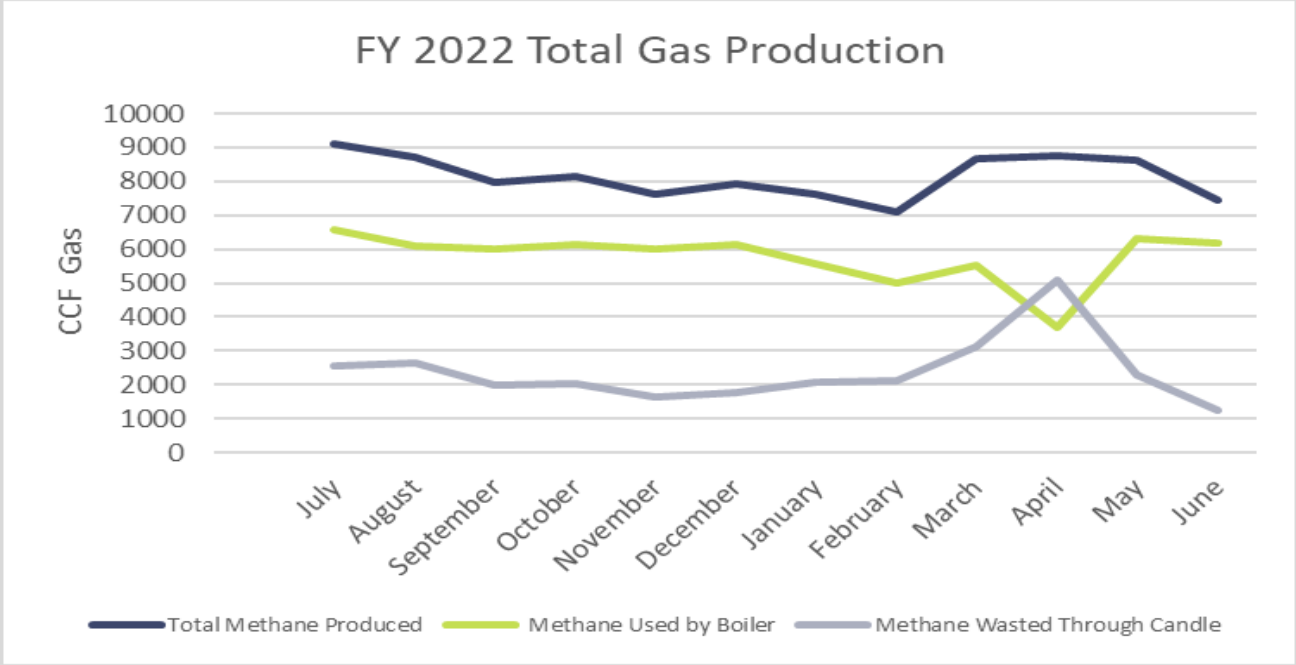
Date	Primary Digester Temp.	Primary Digester Ph	Digester Feed	Avg. Primary Sludge TS	Avg. Primary Sludge VS	Secondary Digester VS	Primary Digester Vol. Acids	Primary Digester Alkalinity	Primary Digester VA/ALK	Gas Production	Volatile Solids Reduction
	F°	Ph	GPD	%	%	%	mg/L	mg/L	mg/L	CCF/Day	%
Jul '21	103	7.00	17,293	2.55	76.91	60.13	65	2,540	0.0256	293	67.26
Aug '21	104	6.97	17,379	2.43	75.49	61.98	200	2,150	0.0930	281	67.42
Sep '21	104		15,324	2.58	76.74	59.74				266	67.16
Oct '21	100		16,615	2.57	76.07	60.59				263	65.46
Nov '21	92		14,659	2.48	78.63	60.45				255	67.01
Dec '21	88		13,156	2.58	82.63	67.10				255	67.87
Jan '22	82	7.08	13,989	2.70	82.50	66.20	60	2,210	0.0270	246	72.98
Feb '22	77		16,194	2.56	80.42	68.24				254	73.33
Mar '22	82	6.93	13,308	2.88	81.49	70.26	105	2,260	0.0465	279	75.75
Apr '22	91	7.04	14,077	2.78	77.43	59.24	130	2,850	0.0456	292	71.66
May '22	94		15,099	2.50	76.39	63.08				278	69.70
Jun '22	102		14,646	2.36	76.33	60.09				248	66.47
Average	93	7.00	15,145	2.58	78.42	63.09	112	2402	0.0475	268	69.34



During FY 2022, the digester process produced a total of **9,770,800** Cubic Feet of Methane Gas. Of this amount, **6,917,400** Cubic Feet used by the boiler system to maintain digester temperature, the remaining **2,853,400** Cubic Feet of gas was burnt off through the candle ignition system.



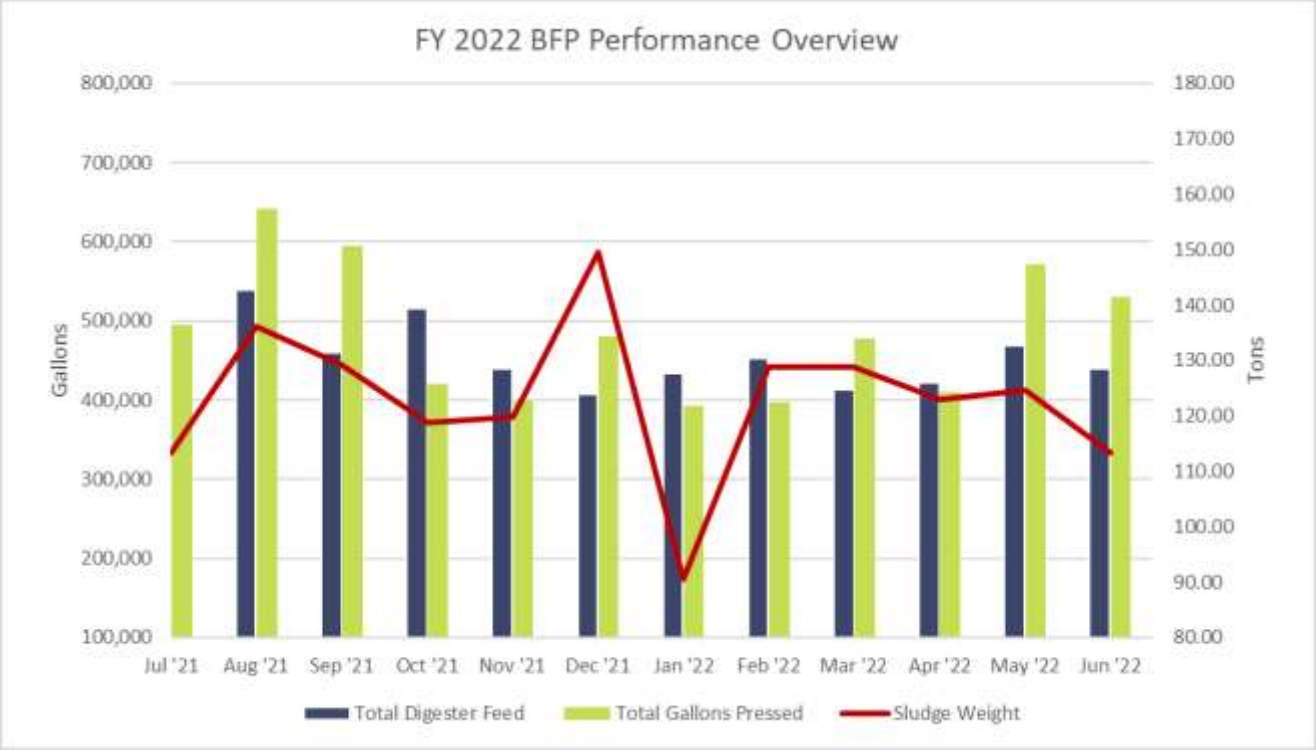
The total gas production decreased by **4.5%** in FY '22 with a total production of **9,770,800** CCF compared to **102,260** CCF in FY '21.

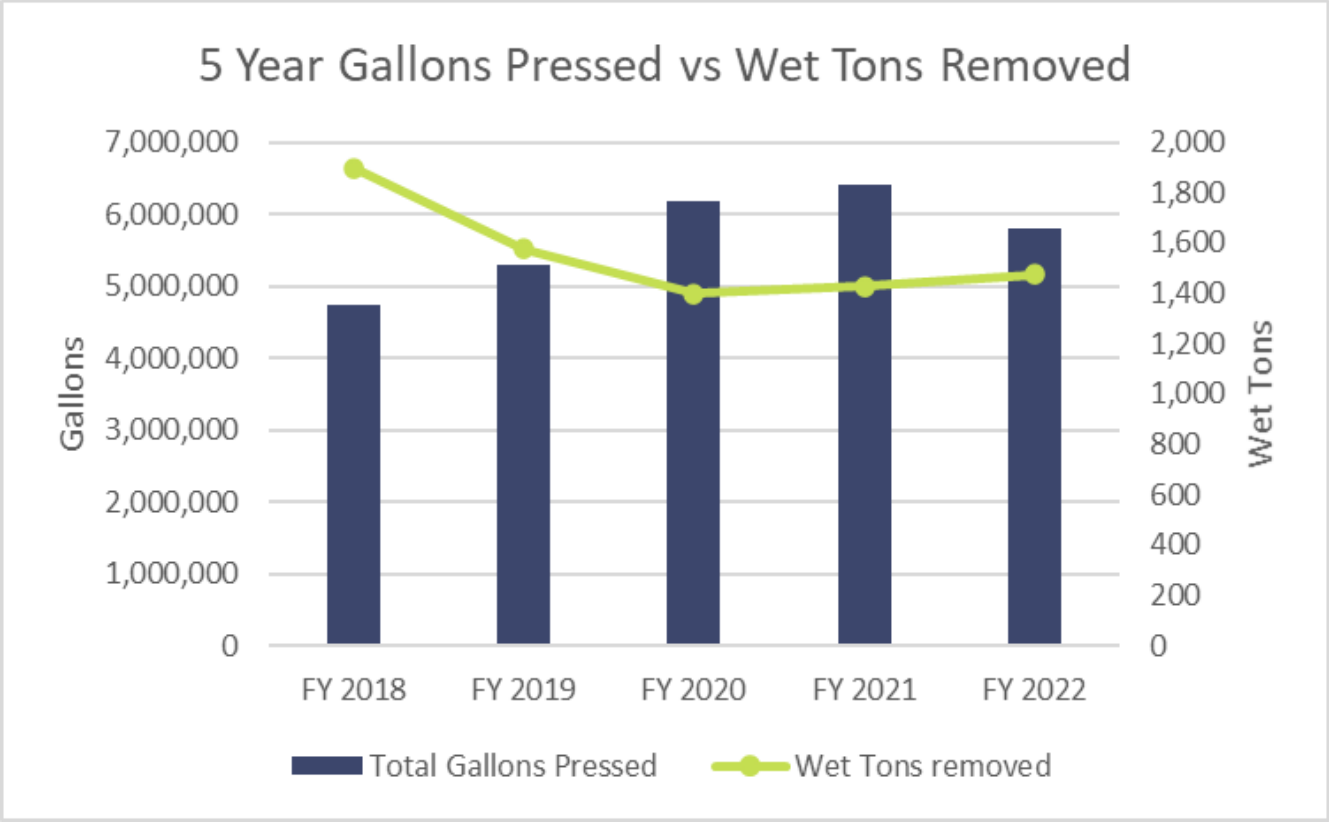


3.6 Solids Removal

Veolia staff operated the Belt Filter Press for a total of **1,724** hours during FY '22, down **11%** from the FY '21 total of **1,937** hours. The average percent solids fed to the BFP from the digestion system was 2.59%, and the BFP produced cake with average percent solids of **20.17%**. A total of **5,810,955** gallons pumped to the BFP throughout the year. Solids removed was up **5%** from FY '21 with **1,476** wet tons of sludge hauled to the Synagro Thermal Conversion Facility in Woonsocket, RI via South Shore Disposal Corp. **78** sludge dumpsters were hauled from the facility throughout the year.

Date	BFP Run Hours	Total Digester Feed	Total BFP Feed	Digester Overflow	Sludge Weight	Press Feed Solids	Cake Solids	Sludge Pick-ups	Grit Removed
	Hrs	Gals	Gals	Gals	Wet Tons	Avg. %	Avg. %	Dumpsters	Tons
Jul '21	129.25	536,074	495,343	40,731	113.33	2.55	20.63	7	
Aug '21	154.6	538,761	641,667	-102,906	136.12	2.43	21.29	7	
Sep '21	154.25	459,723	594,127	-134,404	129.2	2.59	21.24	6	4
Oct '21	108.5	515,074	420,101	94,973	118.88	2.58	21.08	5	
Nov '21	120.03	439,762	398,853	40,909	119.76	2.48	21.17	7	
Dec '21	152.75	407,825	481,140	-73,315	149.53	2.59	20.4	7	
Jan '22	141.25	433,648	392,237	41,411	90.49	2.7	20.29	6	
Feb '22	140.75	453,426	396,361	57,065	128.86	2.56	18.19	6	
Mar '22	163.25	412,533	477,919	-65,386	128.85	2.89	18.64	7	
Apr '22	133.75	422,314	410,793	11,521	122.98	2.78	18.32	6	
May '22	174.25	468,083	571,658	-103,575	124.67	2.51	19.69	8	
Jun '22	151.25	439,371	530,756	-91,385	113.34	2.36	21.14	6	
Annual Total	1,724	5,526,594	5,810,955	-284,361	1,476	*****	*****	78	4
Avg.	144	460,550	484,246	-23,697	123	2.59	20.17	7	*****





3.7 Grit and Screenings Removal

Grit removal performed once during the year in September 2021. Suez staff isolated and pumped down the grit chamber, and Soares Pumping was contracted for vactor and removal services. **2,992** gallons were disposed of as liquid septic waste and **4** tons of solids were disposed of.

Veolia staff removed **365** screening bags from the influent headwork's equaling an estimated **1095** ft^3 of screenings removed. The screenings were disposed of in the South Shore Disposal Corp. on-site dumpster and disposed of at the Covanta SEMASS site in Wareham, MA.

3.8 Compliance Overview

A new EPA NPDES permit was issued and took affect starting February 1st, 2022. Part of Veolia Management's 2022 facility goals were to have zero unavoidable compliance issues through the reporting period. Unfortunately, we had failed the 3rd quarter Bio Toxicity which was in July 2021. High flows and short detention times were believed to have caused the toxicity exceedances. The facility also reported **9** NPDES Permit violations throughout FY 2021-2022, all of which were facility monthly average flow exceedances that were beyond the control of the facility staff. High Infiltration & Inflow (I&I) is an ongoing issue at the facility and is the primary cause of these violations throughout the year. Veolia looks forward to continuing to work with the Town of Rockland Board of Sewer Commissioners to help mitigate the I & I issue throughout the collection system.

In September 2022 we will be submitting a MADEP application that replaces the recent EPA NPDES permit. The facility would then follow the new MADEP Wastewater General Permit upon approval. This permit should be issued in early 2023.

FY 2022 Rockland WWTF Cumulative NPDES Violation Report

MONTH	FLOW MGD MO. AVG.	BOD % REM. MO. AVG.	BOD # / DAY MO. AVG. Wint/Sum	BOD # / DAY WK. AVG. Wint/Sum	BOD # / DAY DAY MAX. Wint/Sum	BOD MG/L MO. AVG. Wint/Sum	BOD MG/L WK. AVG. Wint/Sum	BOD MG/L DAY MAX Wint/Sum	TSS % REM. MO. AVG.	TSS # / DAY MO. AVG. Wint/Sum	TSS # / DAY WK. AVG. Wint/Sum	TSS # / DAY DAY MAX. Wint/Sum	TSS MG/L MO. AVG. Wint/Sum	TSS MG/L WK. AVG. Wint/Sum	TSS MG/L DAY MAX Wint/Sum	TN # / DAY MO. AVG. Wint/Sum	TN MG/L MO. AVG. Wint/Sum	TN MG/L DAY MAX. Wint/Sum	DO MG/L DAY MIN May-Sept	SS ML/L WK. AVG	SS ML/L DAY MAX
PERMIT LIMITS	2.5 MGD	85 %	417 / 125 # / DAY	417 / 125 # / DAY	626 / 209 # / DAY	20 / 6 MG/L	20 / 6 MG/L	30 / 10 MG/L	85 %	417 / 209 # / DAY	417 / 209 # / DAY	626 / 313 # / DAY	20 / 10 MG/L	20 / 10 MG/L	30 / 15 MG/L	Report # / Day	Report MG/L	Report MG/L	≥ 7.4 MG/L	Report ML/L	Report ML/L
Jul-21	3.4	98	55	53	87	2	2	2	98	65	65	119	2	3	3				8.4	0.1	0.1
Aug-21	2.9	98	51	51	77	2	2	2	98	68	67	97	3	3	4				8.0	0.1	0.1
Sep-21	3.1	98	59	56	95	2	3	3	99	70	75	107	3	4	5				8.3	0.1	0.1
Oct-21	3.2	98	68	67	99	3	3	5	98	91	83	124	3	5	6					0.1	0.1
Nov-21	3.1	96	79	98	103	3	3	4	98	59	72	83	2	2	3					0.1	0.1
Dec-21	2.5	98	70	91	93	3	5	5	99	54	55	82	3	3	4					0.1	0.1
Jan-22	2.8	98	76	84	100	3	4	4	98	61	74	91	3	3	4	*****	*****	*****		0.1	0.1
Feb-22	4.1	96	155	217	242	5	6	7	97	139	205	267	4	6	7	343.0	17.0	17.0			
Mar-22	3.4	97	104	104	165	4	5	6	97	140	181	183	5	6	6	352.0	11.8	11.8			
Apr-22	2.8	99	42	42	50	2	2	2	98	77	111	94	3	4	4	290.0	12.6	13.6			
May-22	2.2	99	55	55	76	3	4	5	99	47	48	77	3	3	4	264.0	13.0	13.0	8.7		
Jun-22	2.0	99	41	41	66	2	4	4	99	45	43	68	3	3	4	235.0	15.0	15.0	7.8		
Total # of Violations	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Required for testing in new permit starting Feb 2022

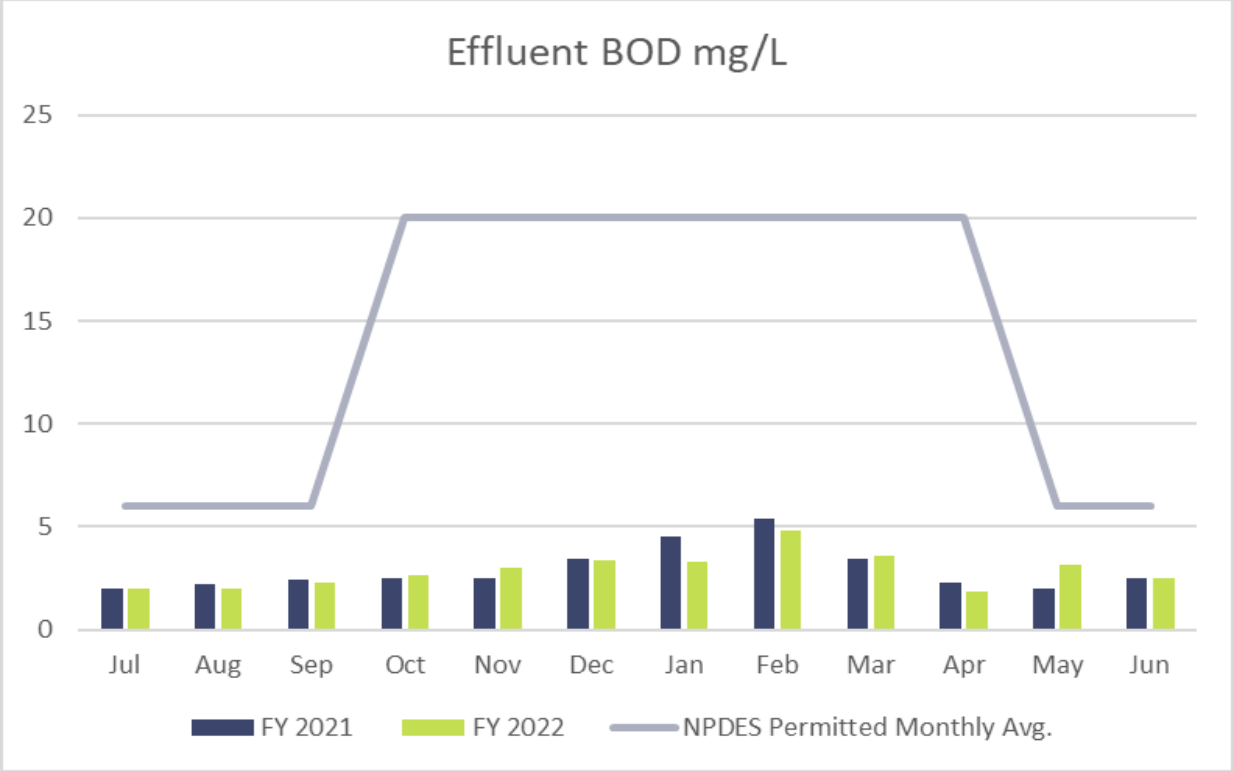
Not required to test in the new permit starting Feb 2022

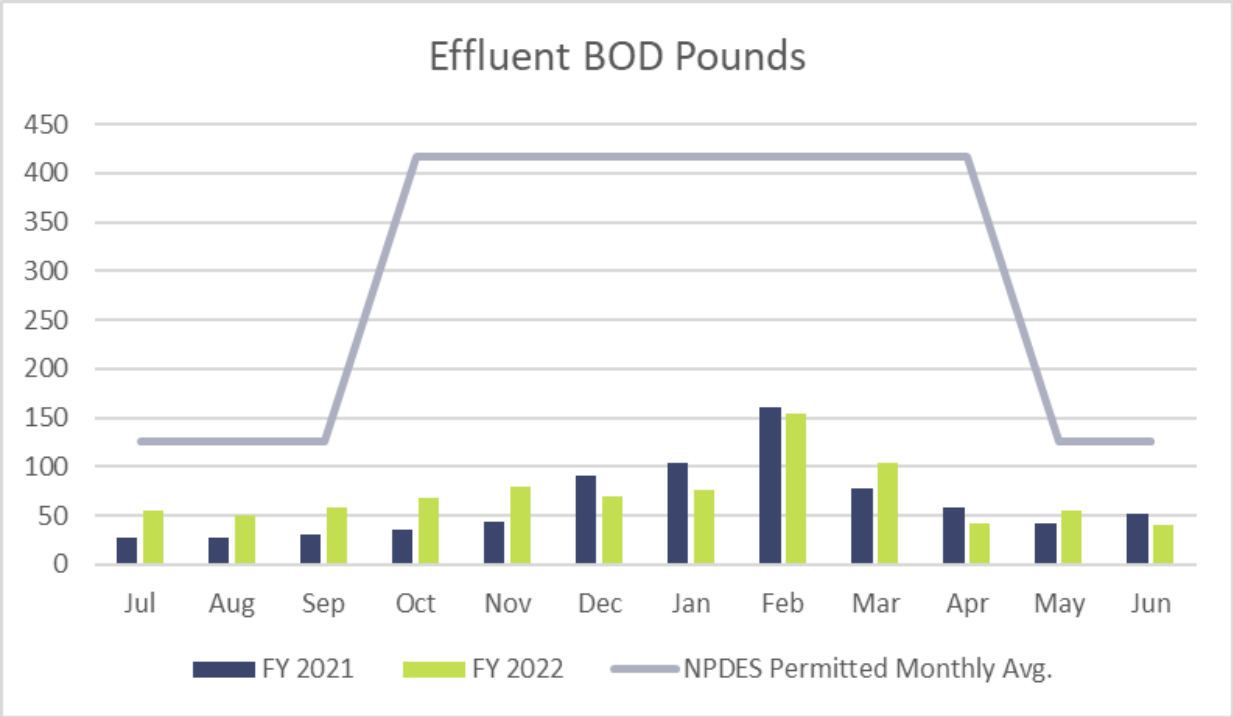
MONTH	pH SU DAY MIN	pH SU DAY MAX	CL2 Res MG/L MO. AVG.	CL2 Res MG/L DAY MAX	FECAL Cl/100ml MO. GEO	FECAL Cl/100ml DAY MAX.	NH 3 MG/L MO. AVG.	NH 3 MG/L WK.AVG	NH 3 MG/L DAY MAX	TKN MG/L MO. AVG.	TKN MG/L DAY MAX.	Nitrite Nitrate MO. AVG.	Nitrite Nitrate DAY MAX.	PHOS MG/L MO. AVG.	PHOS MG/L DAY MAX	Al UG/L MO. AVG	CU UG/L MO. AVG.	CU UG/L DAY MAX	WET LC50 % Daphnid	WET NOEC % Daphnid
PERMIT LIMITS	6.5 SU	8.3 SU	0.011 MG/L	0.019 MG/L	200 # / 100	400 # / 100	3.3/2.5/1 MG/L	3.3/2.5/1 MG/L	5.7/5.7/1.5 MG/L	Report MG/L	Report MG/L	Report MG/L	Report MG/L	0.2/1.0 MG/L	Report MG/L	88 UG/L	12 UG/L	19 UG/L	>= 100 %	>= 99 %
Jul-21	7.1	7.7	0.000	0.000	111	386	0.2	0.3	0.4					0.14	0.17	6	8	8	70.4	25
Aug-21	7.3	7.6	0.000	0.000	71	198	0.3	0.5	0.7					0.13	0.16	9	5	5		
Sep-21	7.3	7.5	0.000	0.000	48	122	0.4	0.6	1.0					0.16	0.28	10	5	5		
Oct-21	7.0	7.7	0.000	0.000	96	282	0.3	0.6	0.9					0.18	0.26	7	7	7	>100	>100
Nov-21	7.2	7.5	0.000	0.000	99	212	0.8	0.6	4.3					0.40	0.52	14	6	6		
Dec-21	6.7	7.5	0.000	0.000	37	82	0.7	0.7	1.5					0.52	0.58	8	6	6		
Jan-22	7.0	7.4	0.000	0.000	45	206	0.7	1.8	2.9	*****		*****		0.71	0.80	9	6		>100	>100
Feb-22	7.0	7.4	0.000	0.000	39	76	0.8	1.8	3.0	2.70	2.70	14.3	14.3	0.61	0.80	14	7			
Mar-22	7.0	7.5	0.000	0.000	25	69	0.4	0.7	1.1	1.00	1.00	10.8	10.8	0.41	0.80	24	7		>100	>100
Apr-22	6.9	7.6	0.000	0.000	8	23	0.1	0.1	0.2	0.4	0.50	12.2	13.1	0.12	0.15	13	6			
May-22	7.0	7.6	0.000	0.000	8	16	1.4	2.4	2.8	1.40	3.80	12	14.1	0.13	0.17	6	5			
Jun-22	7.2	7.6	0.000	0.000	36	200	0.4	1.0	1.1	0.80	1.70	11.4	15.1	0.08	0.12	6	6		>100	>100
Total # of Violations	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

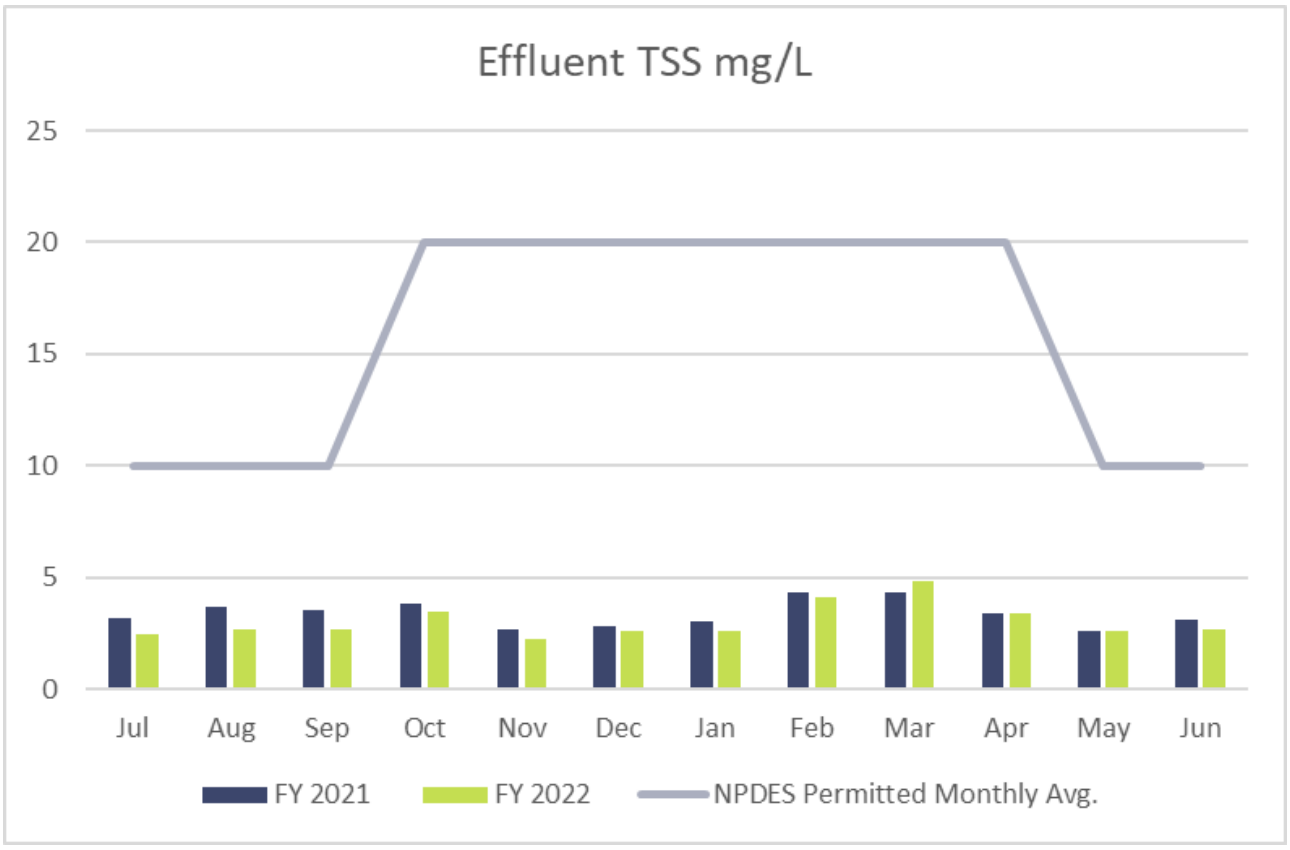
Required for testing in new permit starting Feb 2022

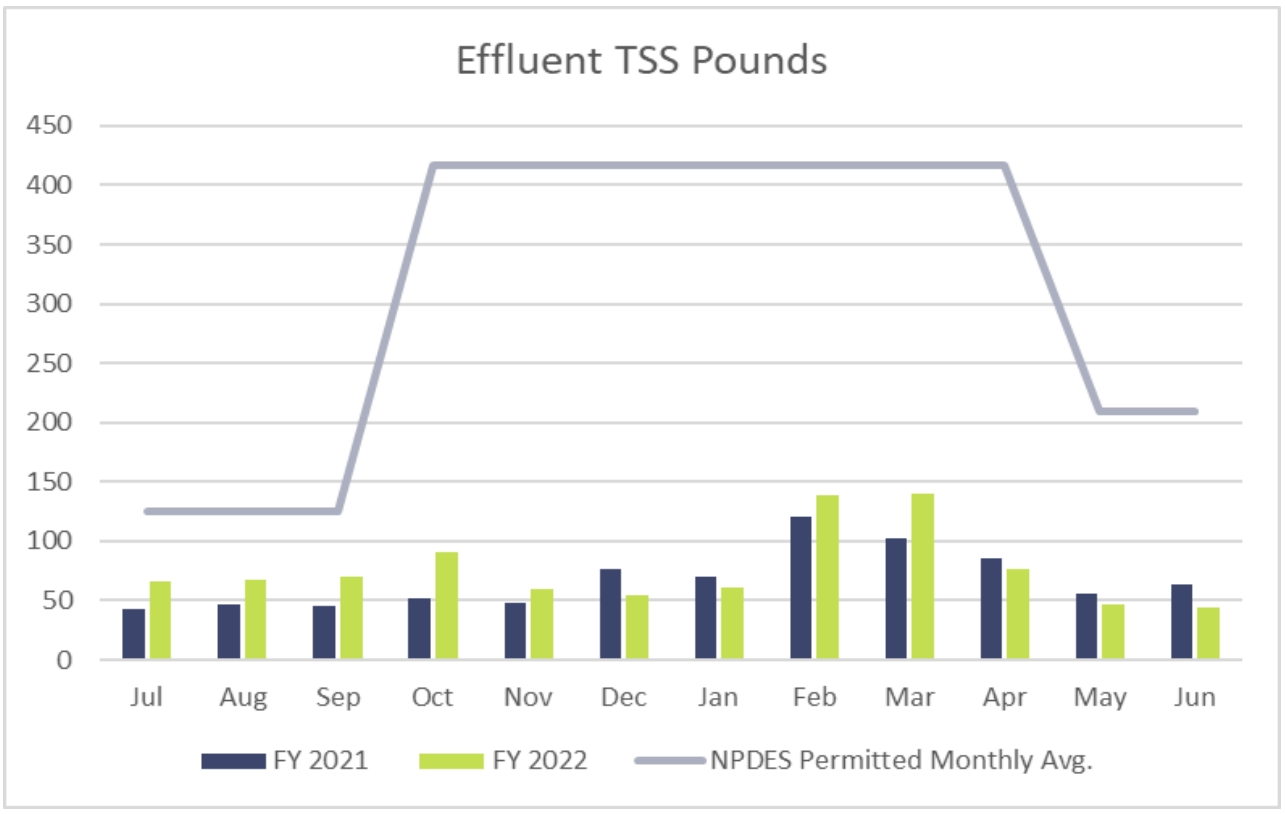
No Max. # with the new permit

The annual average plant efficiency was **96**% removal for Biochemical Oxygen Demand (BOD) and **96**% removal for Total Suspended Solids (TSS). The NPDES permit requirement is a minimum of **85**% removal for both BOD and TSS.



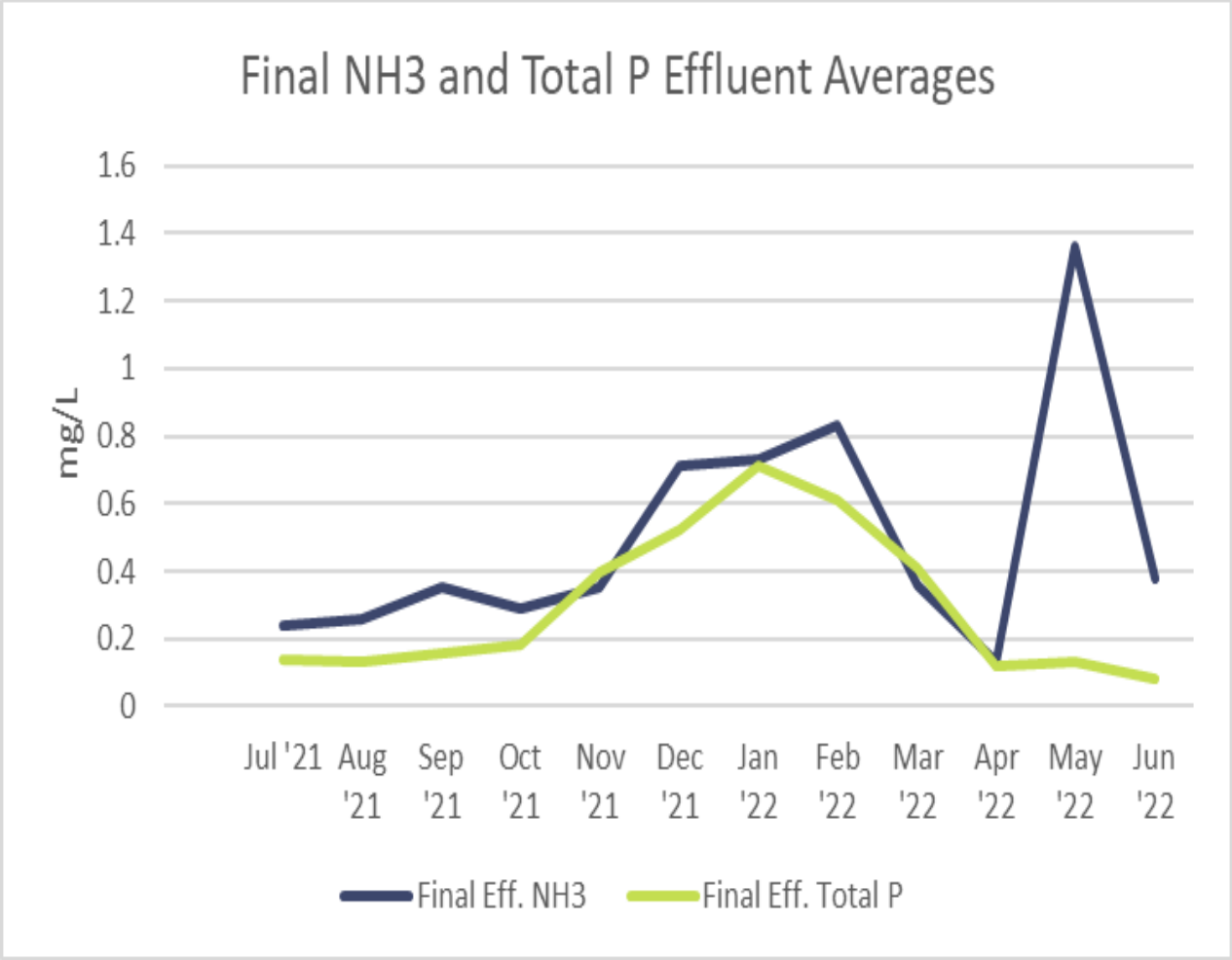



Effluent TSS mg/L
25
20
15
10
5
0
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
FY 2021
FY 2022
NPDES Permitted Monthly Avg.


Effluent TSS Pounds
450
400
350
300
250
200
150
100
50
0
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
FY 2021
FY 2022
NPDES Permitted Monthly Avg.

The plant achieved a monthly average of **0.157** mg/L of Final Effluent Total Phosphorous during the summer permit months when the NPDES limit is 0.20 mg/L and a monthly average of **0.472** mg/L during the winter permit months when the NPDES limit is 1.0 mg/L.

The Final Effluent Ammonia during the winter reporting period was **0.633** mg/L while the NPDES permit limit was 3.3 mg/L. During the Spring reporting period with a NPDES limit of 2.5 mg/L, the plant had an average Final Effluent Ammonia of **1.250** mg/L and during the summer months, the plant had an average Final Effluent Ammonia of **0.625** mg/L when the NPDES reporting limit was 1.0 mg/L.



3.9 Wet Weather Management

The Rockland sewer system continues to experience significant infiltration and inflow during rain events. The Rockland High Flow Management Plan was developed many years ago to alleviate peak flows from creating any adverse impacts at the treatment facility. The plan includes setting up the facility's portable diesel-powered Godwin pumps during high flows to remove flow from the influent line if necessary, to protect the treatment process downstream. Staff will utilize these pumps to shave off any excessive flow during wet weather events and fill all offline tanks before implementing the MA DEP approved blending of treated wet weather flow with facility effluent. Veolia staff implemented the facility High Flow Management Plan on **0** occasions throughout FY 2022 but was required to shave influent flow on **3** occasions. A total amount of **1.229** million gallons was shaved from the facility. The entirety of the **1.229** million gallons pumped back through the facility once the events had ended. Effluent blending was avoided throughout the reporting period via the extensive knowledge and operational procedures performed by Veolia staff including enhanced solids monitoring at the facility.

All High Flows are reported to the MADEP and EPA via the Sanitary Sewer Overflow (SSO)/Bypass notification form as well as reported internally through the Veolia's Intelex event reporting system.

Date Fiscal Year	Total HFMP Reported	Total MGD (Includes HFMP)	Average Daily Flow MGD	Godwin Flow Shaved MGD (Influent)	Godwin Flow Blended MGD (Effluent)	Total Precipitation Inches
Jul '21		106.80	3.445	0.333		8.03
Aug '21		90.06	2.905			8.96
Sep '21		91.93	3.064	0.521		7.13
Oct '21		98.89	3.190	0.375		7.56
Nov '21		93.74	3.125			1.84
Dec '21		78.08	2.519			1.94
Jan '22		85.26	2.750			3.85
Feb '22		113.62	4.058			5.49
Mar '22		106.19	3.425			3.15
Apr '22		82.96	2.765			2.68
May '22		67.74	2.185			1.08
Jun '22		59.74	1.991			3.081
TOTAL		1075	41.737	1.229		54.791

Date Fiscal year	Total HFMP Reported	Total MGD (Includes HFMP)	Average Daily Flow MGD	Godwin Flow Shaved MGD (Influent)	Godwin Flow Blended MGD (Effluent)	Total Precipitation Inches
2019	2	991.98	2.722	12.730	7.052	64.400
2020	1	926.80	2.532	2.740	0.333	49.950
2021	0	879.32	2.722	2.440	0	44.330
2022	0	1075.00	3.478	1.229	0	54.791

ENVIRONMENT, HEALTH, SECURITY AND SAFETY

Veolia continues to manage the COVID-19 (Coronavirus) pandemic to serve the Town of Rockland with reliable operations and protect the Rockland staff and its visitors. Veolia has implemented numerous procedures to ensure continuity of the operations. As the COVID-19 continues, Veolia at the Rockland facility have officially entered the Threat Level 0 guidelines as follows:

- Staff back to normal operating schedules
- Morning meetings and lunches are being held back in the lunchroom. No social distancing required.
- Front door to the facility is still locked for all visitors to buzz in at the door and sign in upon entering.
- Staff is to remain home if they are sick
- All employees have received COVID-19 awareness training

Safety Training

Veolia is committed to providing its employees with a comprehensive, job-specific environment, health, security, and safety (EHSS) training program. This training program based on individual training needs of each employee with input from the EHSS Manager. Applicable training courses assigned to the individual employees based on job responsibilities. Additionally, based on latest industrial research, Veolia continues to offer other critical high value training programs. For example, research has indicated that there is no direct correlation in improving recordable injury rates and preventing fatal accidents, and specific and targeted interventions are required for preventing fatal industrial accidents. The 10 Life Saving Rules implemented at all projects in 2013 continue to be a core element of the safety culture in Rockland.

• Proficiency training completed at the facility for LOTO procedures ensuring that all staff are capable of properly de-energizing equipment safely.

• Safe Work Plan: All routine work procedures performed by the operational staff have a Safe Work Plan. The plan identifies the Hazards and Controls to safely perform the work.

• Unsafe Conditions/Near Miss Program: All Unsafe Conditions or Near Miss incidents are recorded and corrected. A corrective action plan is created for each incident and completed by a set completion date.

Environmental Compliance

Veolia has an excellent environmental compliance record that reflects a high level of compliance at all projects including Rockland, MA. One of the highest priorities is complete transparency in all environmental matters at all projects. To accomplish this, the state-of-the-art Water Information Management System (Hach WIMS™) is used to monitor and track all compliance data. This data is reviewed daily, weekly, and monthly, any issues are immediately reported, investigated for root-causes, and appropriate corrective and preventive measures are implemented. This data is automatically transferred into a monthly report format for the State, thus eliminating the potential for any data transcription/calculation errors. Due to these and other compliance initiatives, the Rockland Project did not experience any missed samples or reporting deadlines during the period ending June 30, 2022. Veolia also participates in its parent company's (Paris based Veolia) annual reporting campaign. Pertinent data from all projects is reported to Paris and is benchmarked against water and wastewater treatment facilities across the world. Any deviations are noted and shared with the management team and are used to optimize plant operations for the clients we serve. This is a high-value service, which Veolia provides to all its clients at no cost to them.

The following regulatory reports and plans completed during the 2021-2022 operating period:

- Monthly DMR reports – due the 15th of the following month
- Monthly UST inspections completed by Dependable Petroleum of Plymouth, MA
- Annual EPA 503 Sludge Report
- Annual Tier II Report
- Annual DMR QA Study
- Annual IPP Report

LABORATORY

In FY 2022, the Veolia laboratory maintained its certification to perform in-house Fecal Coliforms (MF), Settable Solids, Low Level Total Residual Chlorine, and pH examinations of the wastewater constituents. The Veolia Rockland laboratory has a professional staff with 26 years of combined experience. Steve Butts, laboratory technician holds a MA Grade 7 wastewater license with 22 years of laboratory experience.

The laboratory reported more than 950 National Pollutant Discharge Elimination System (NPDES) required tests and had zero missed samples. The lab also performed hundreds of other required process control analyses.

5.0 Electrical and Natural Gas usage

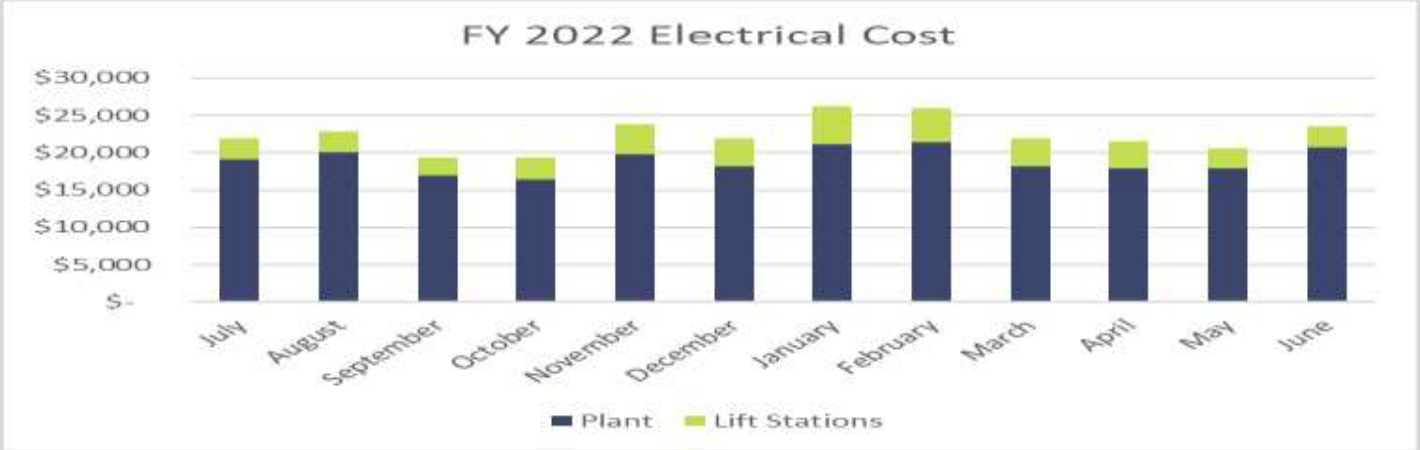
5.1 Electric Overview

The total electrical cost for FY 2021 - 2022 was **$268,667.11**. The lift stations accounted for **18%** of the total cost at **$41,275.03**. The electric cost for the main plant was **$227,392.08**.

Throughout FY '22, Veolia staff continued its participation in the 3-year Continuous Energy Improvement Program hosted by National Grid and monitored by Cascade Energy. The program focuses on reducing electrical consumption at participating projects mainly through operation changes and implementations. The third year of this three-year program ended on April 30, 2022. Veolia – Rockland met the goal to reduce the facility's electric consumption by 5% (KWH/MG Treated).

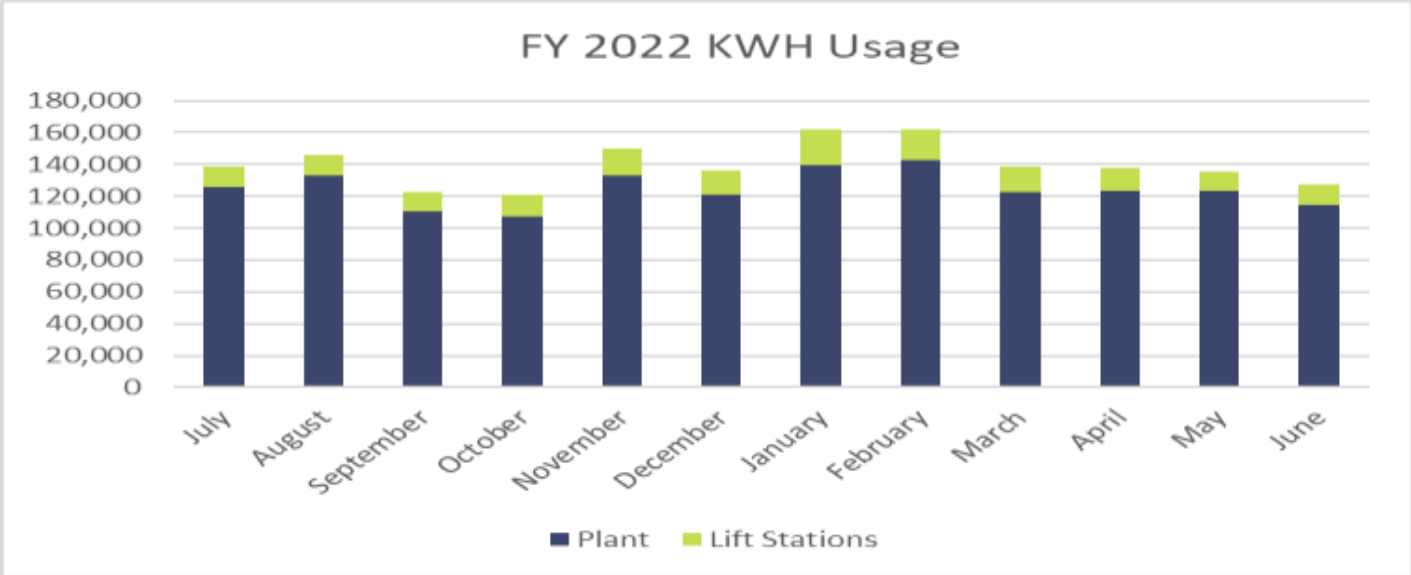
FY 2022 Total Electrical Cost

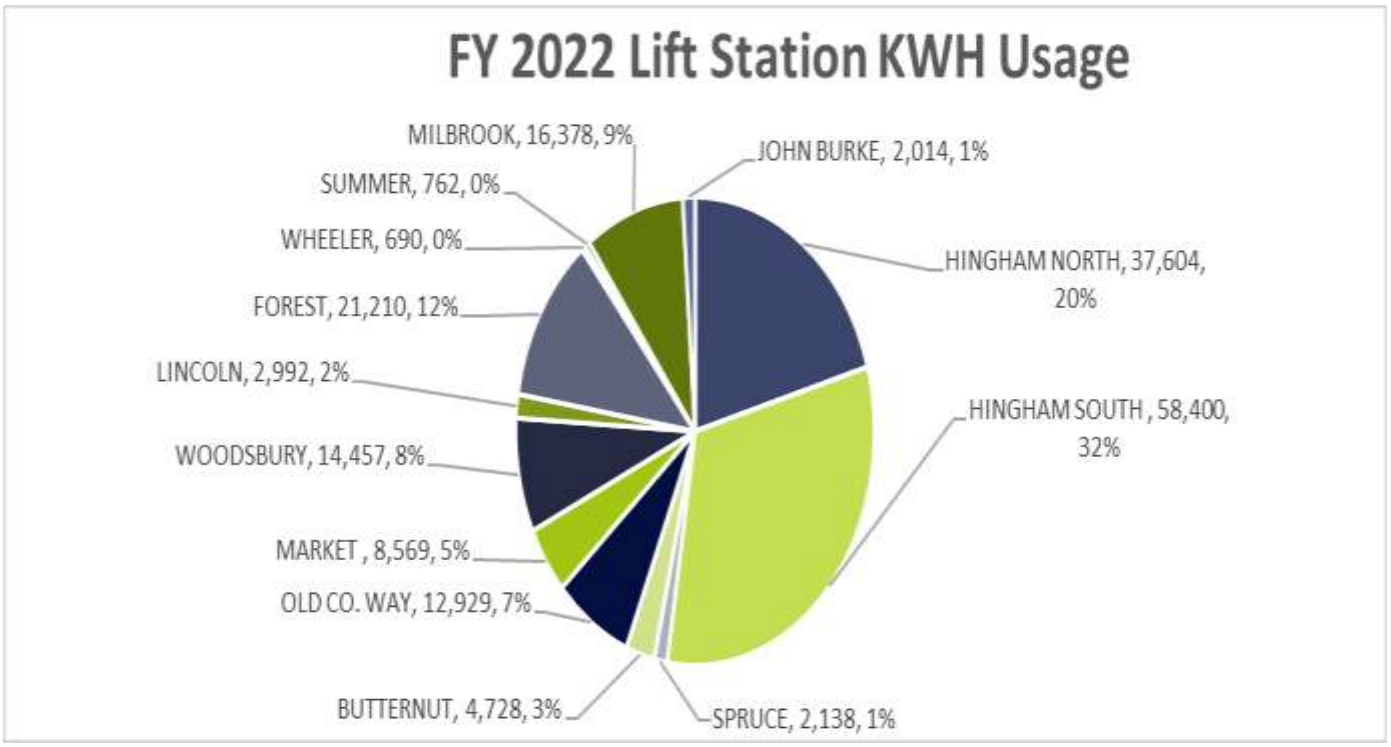
	July	August	September	October	November	December	January	February	March	April	May	June	Total
Plant	19,072.89	20,095.04	16,903.20	16,457.55	19,730.65	18,092.63	21,077.45	21,329.00	18,161.88	17,858.57	17,847.79	20,765.43	$ 227,392.08
Stations													
HINGHAM NORTH	$ 591.62	$ 546.74	$ 528.89	$ 572.45	$ 807.06	$ 799.69	$ 1,247.51	$ 929.40	$ 730.58	$ 737.68	$ 523.06	$ 564.43	$ 8,579.11
HINGHAM SOUTH	$ 950.16	$ 930.59	$ 774.06	$ 794.50	$ 971.92	$ 913.36	$ 1,350.94	$ 1,226.88	$ 998.55	$ 971.92	$ 796.84	$ 948.89	$ 11,628.61
SPRUCE	$ 44.47	$ 46.87	$ 42.49	$ 48.90	$ 50.87	$ 51.54	$ 61.31	$ 53.03	$ 64.06	$ 56.88	$ 34.00	$ 34.30	$ 588.72
BUTTERNUT	$ 90.98	$ 104.87	$ 92.19	$ 117.74	$ 168.69	$ 144.49	$ 116.52	$ 134.85	$ 114.09	$ 46.85	$ 21.89	$ 23.41	$ 1,176.57
OLD CO. WAY	$ 203.13	$ 214.26	$ 183.20	$ 195.21	$ 312.14	$ 318.78	$ 393.55	$ 410.09	$ 312.93	$ 257.04	$ 221.22	$ 195.96	$ 3,217.51
MARKET	$ 77.66	$ 77.05	$ 87.48	$ 152.08	$ 245.52	$ 217.53	$ 298.88	$ 239.68	$ 214.48	$ 232.51	$ 150.63	$ 85.42	$ 2,078.92
WOODSBURY	$ 227.60	$ 184.49	$ 173.57	$ 243.01	$ 353.97	$ 317.30	$ 401.33	$ 418.84	$ 335.29	$ 317.61	$ 206.22	$ 204.48	$ 3,383.71
LINCOLN	$ 42.92	$ 44.47	$ 50.18	$ 58.98	$ 89.30	$ 78.85	$ 93.41	$ 81.00	$ 72.23	$ 71.17	$ 48.23	$ 47.66	$ 778.40
FOREST	$ 294.67	$ 329.18	$ 283.20	$ 349.85	$ 524.23	$ 433.60	$ 603.68	$ 558.89	$ 470.60	$ 427.86	$ 309.34	$ 309.10	$ 4,894.20
WHEELER	$ 20.24	$ 21.00	$ 19.84	$ 19.66	$ 24.48	$ 23.28	$ 24.03	$ 23.04	$ 23.60	$ 26.30	$ 21.70	$ 22.53	$ 269.70
SUMMER	$ 21.81	$ 21.81	$ 20.02	$ 21.28	$ 26.65	$ 23.75	$ 26.22	$ 24.46	$ 25.76	$ 25.58	$ 22.51	$ 25.84	$ 285.69
MILBROOK	$ 188.82	$ 187.64	$ 184.55	$ 257.93	$ 414.80	$ 374.97	$ 495.04	$ 427.12	$ 376.50	$ 370.78	$ 274.80	$ 279.17	$ 3,832.12
JOHN BURKE	$ 38.10	$ 36.59	$ 33.53	$ 35.08	$ 61.66	$ 56.44	$ 64.19	$ 53.72	$ 61.86	$ 50.31	$ 35.06	$ 35.23	$ 561.77
												Total Plant	$ 227,392.08
												Total Lift Station	$ 41,275.03
												Total Electrical Cost:	$ 268,667.11

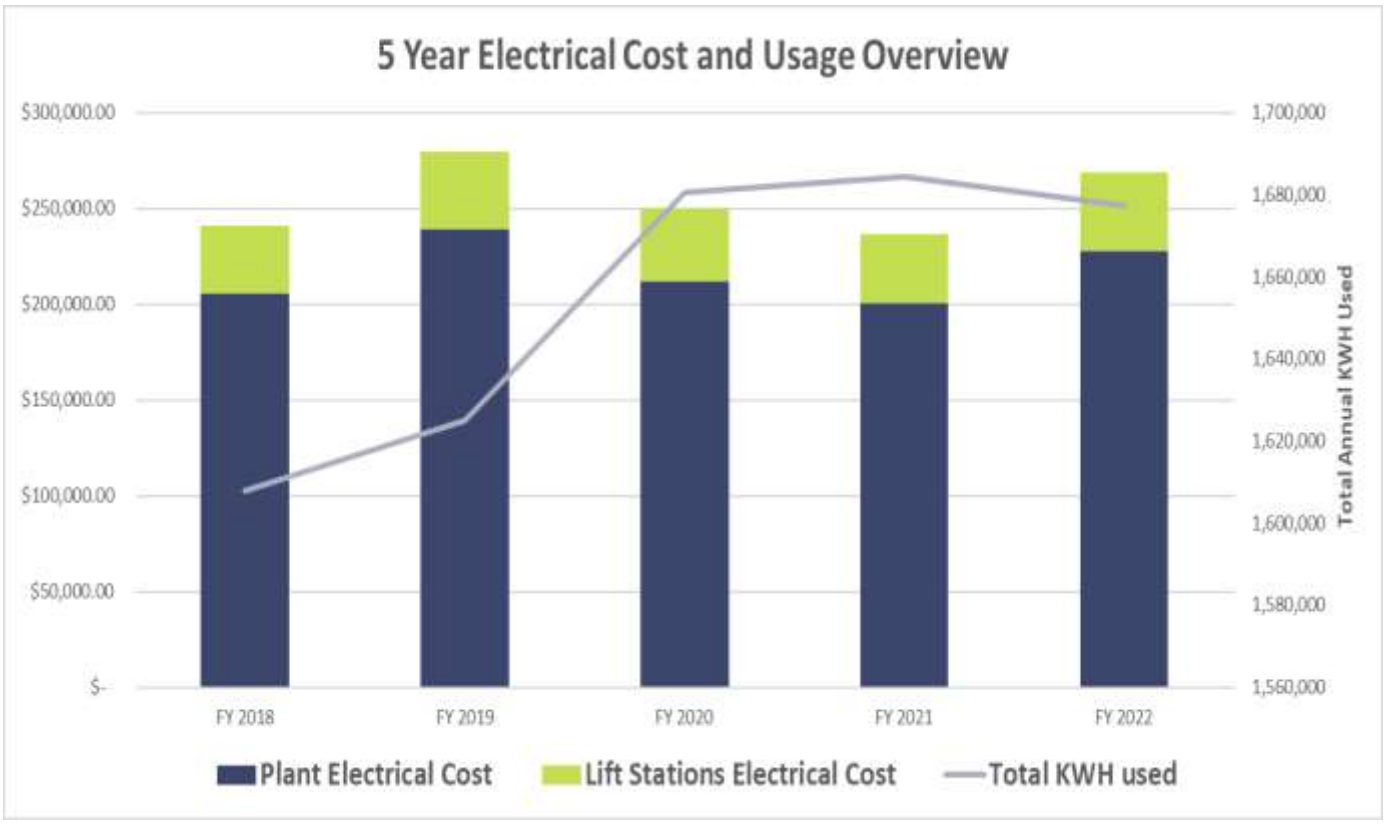


The total KWH usage throughout FY 2021 - 2022 was **1,677,171** KWH. The lift stations accounted for **12%** of total KWH using **182,871** KWH. The main plant used **1,494,300** KWH.

FY 2022 KWH Usage													
	July	August	September	October	November	December	January	February	March	April	May	June	Total
Plant	125,400	132,600	110,400	107,100	132,900	120,600	139,500	142,500	122,400	123,000	123,000	114,900	1,494,300
Stations													
HINGHAM NORTH	2,969	2,740	2,648	2,754	3,279	3,246	5,072	3,783	2,995	3,149	2,429	2,540	37,604
HINGHAM SOUTH	4,800	4,700	3,900	4,000	4,900	4,600	6,800	6,200	5,100	5,000	4,100	4,300	58,400
SPRUCE	159	170	150	179	188	187	230	194	246	215	111	109	2,138
BUTTERNUT	415	486	421	529	654	554	438	515	434	161	58	63	4,728
OLD CO. WAY	987	1,044	885	908	1,244	1,270	1,573	1,647	1,260	257	1,001	853	12,929
MARKET	347	344	397	697	970	854	1,185	946	851	964	667	347	8,569
WOODSBURY	1,112	892	836	1,142	1,416	1,264	1,605	1,683	1,353	1,332	930	892	14,457
LINCOLN	152	159	185	225	363	309	373	319	283	280	176	168	2,992
FOREST	1,454	1,630	1,395	1,667	2,116	1,742	2,434	2,259	1,915	1,809	1,418	1,371	21,210
WHEELER	54	58	52	49	61	56	59	55	58	72	57	59	690
SUMMER	62	62	53	57	70	58	68	61	67	69	61	74	762
MILBROOK	914	908	892	1,215	1,666	1,501	1,989	1,717	1,524	1,562	1,256	1,234	16,378
JOHN BURKE	130	123	109	116	237	209	243	197	236	185	116	113	2,014
												Total Plant	1,494,300
												Total Lift Station	182,871
												Total KWH Usage:	1,677,171




FY 2022 Lift Station KWH Usage
MILBROOK, 16,378, 9%
JOHN BURKE, 2,014, 1%
SUMMER, 762, 0%
WHEELER, 690, 0%
HINGHAM NORTH, 37,604, 20%
FOREST, 21,210, 12%
LINCOLN, 2,992, 2%
HINGHAM SOUTH , 58,400, 32%
WOODSBURY, 14,457, 8%
MARKET , 8,569, 5%
OLD CO. WAY, 12,929, 7%
BUTTERNUT, 4,728, 3%
SPRUCE, 2,138, 1%


5 Year Electrical Cost and Usage Overview
$300,000.00
$250,000.00
$200,000.00
$150,000.00
$100,000.00
$50,000.00
$-
1,700,000
1,680,000
1,660,000
1,640,000
1,620,000
1,600,000
1,580,000
1,560,000
Total Annual KWH Used
FY 2018
FY 2019
FY 2020
FY 2021
FY 2022
Plant Electrical Cost
Lift Stations Electrical Cost
Total KWH used

5.2 Natural Gas Overview

The total Natural gas cost for FY 2021-2022 year was **$10,885.93**. The lift stations accounted for **31%** of the total cost at **$3,420.32**. The total cost for gas usage at the main plant was **$7,465.61**.

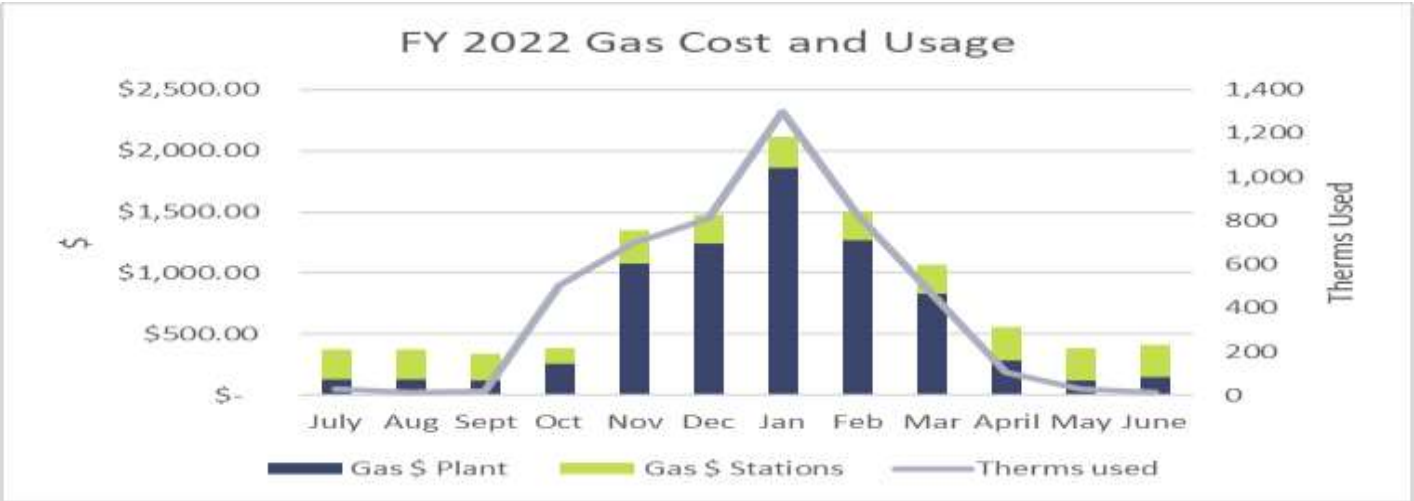
Total therms used in the FY 2021-2022 year was **4,803**. The lift stations accounted for **12%** of the usage with **577** therms used. The main plant used **4,226** therms throughout the year.

FY 2022 Natural Gas Cost

	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April	May	June	Total
Plant	$ 128.75	$ 130.52	$ 120.09	$ 261.07	$ 1,080.49	$ 1,241.08	$ 1,857.32	$ 1,268.35	$ 826.60	$ 284.94	$ 121.87	$ 144.53	$ 7,465.61
Stations													
Hingham South	$ 133.06	$ 133.18	$ 119.14	$ 261.07	$ 146.76	$ 126.07	$ 138.23	$ 124.67	$ 126.67	$ 145.78	$ 128.90	$ 141.96	$ 1,725.49
Old Country Way	$ 32.95	$ 30.93	$ 27.42	$ 127.30	$ 34.71	$ 28.93	$ 30.65	$ 28.91	$ 30.71	$ 33.76	$ 30.00	$ 33.15	$ 469.42
Forest	$ 48.93	$ 53.29	$ 49.17	$ 148.95	$ 58.64	$ 51.09	$ 56.47	$ 54.09	$ 53.27	$ 60.22	$ 51.97	$ 58.82	$ 744.91
Milbrook	$ 32.84	$ 31.80	$ 25.80	$ 118.82	$ 31.79	$ 29.68	$ 29.70	$ 29.67	$ 30.27	$ 33.10	$ 52.00	$ 35.03	$ 480.50
Total Stations:	$ 247.78	$ 249.20	$ 221.53	$ 656.14	$ 271.90	$ 235.77	$ 255.05	$ 237.34	$ 240.92	$ 272.86	$ 262.87	$ 268.96	
												Total Lift Station	$ 3,420.32
												Total Cost:	$ 10,885.93

FY 2022 Natural Gas Therms Used

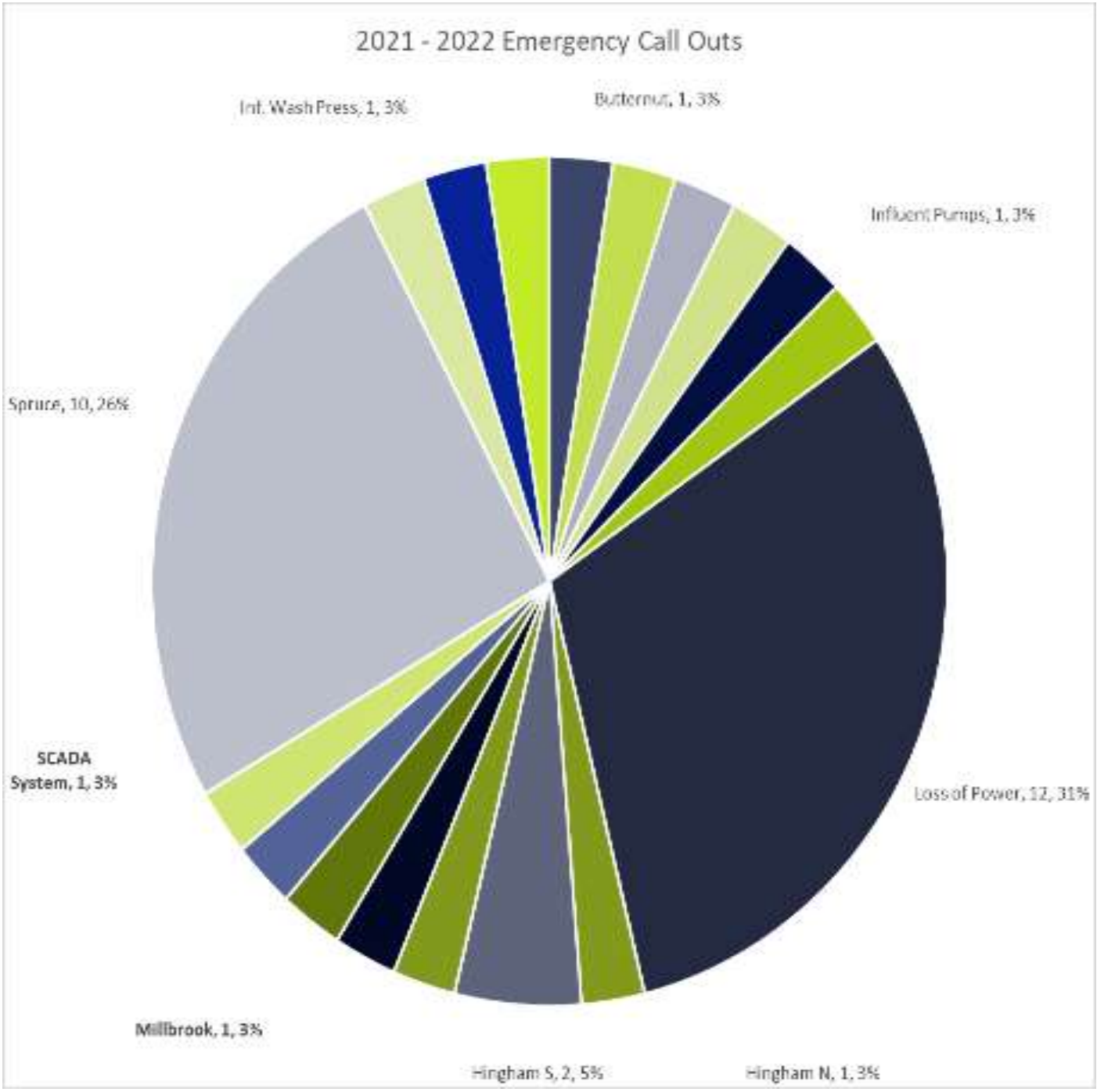
	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April	May	June	Total
Plant	0	2	4	79	688	798	1,284	818	454	96	1	2	4226
Stations													
Hingham South	5	5	3	138	4	4	7	3	4	3	3	3	182
Old Country Way	5	3	2	96	3	2	2	2	3	2	2	2	124
Forest	2	3	2	96	1	3	2	4	3	2	1	2	121
Milbrook	2	6	2	95	3	4	2	4	4	3	21	4	150
Total Stations:	14	17	9	425	11	13	13	13	14	10	27	11	
												Total Lift Station	577
												Total Therms:	4,803



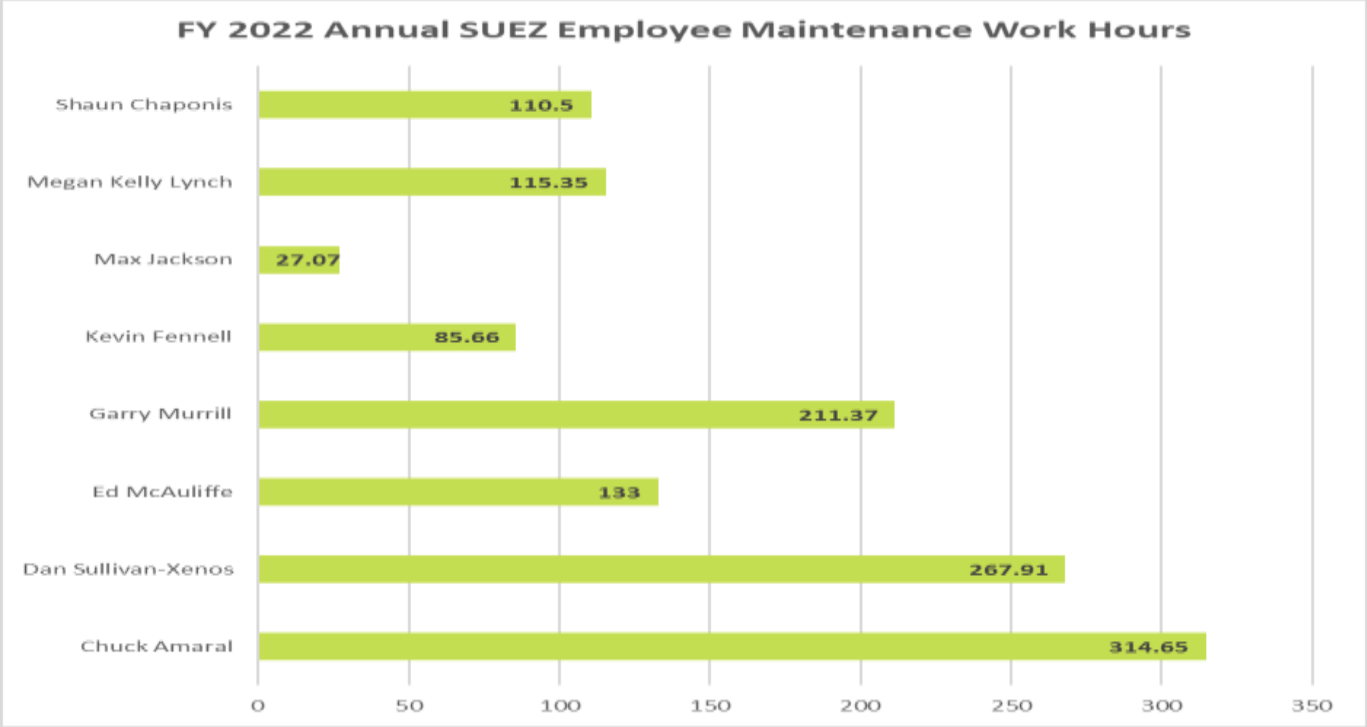
6.0 Maintenance

6.1 Work Order Overview

Veolia staff completed **2370** maintenance work orders this year; of this amount, **245** were corrective maintenance work orders, the remaining amount of **2,109** were preventative maintenance work orders. **16** work orders were skipped during the reporting period. Of the **245** corrective work orders, **39** were due to emergency call outs.



1,429 maintenance related work hours were recorded this year. Veolia staff accounted for 1,266 hours, while sub-contractors accounted for **13%** with **163** hours.



6.2 Significant Repairs, Replacements, and Installations

- Converted the Butternut Lane dry pit ejector station to a wet well
- Rebuilt Influent Pump #1
- Replaced Nitrification Clarifier hydrant
- Replaced Nitrification Clarifier #1 motor
- Installed new level transducer at Old Country Way Station
- Installed new Effluent Pump #3 VFD
- Replaced #2 pump at Hingham South Station
- Installed new Digester Transfer Pump
- Replaced (2) wet well brackets at Old Country Way Station

6.3 Inspections & Calibrations

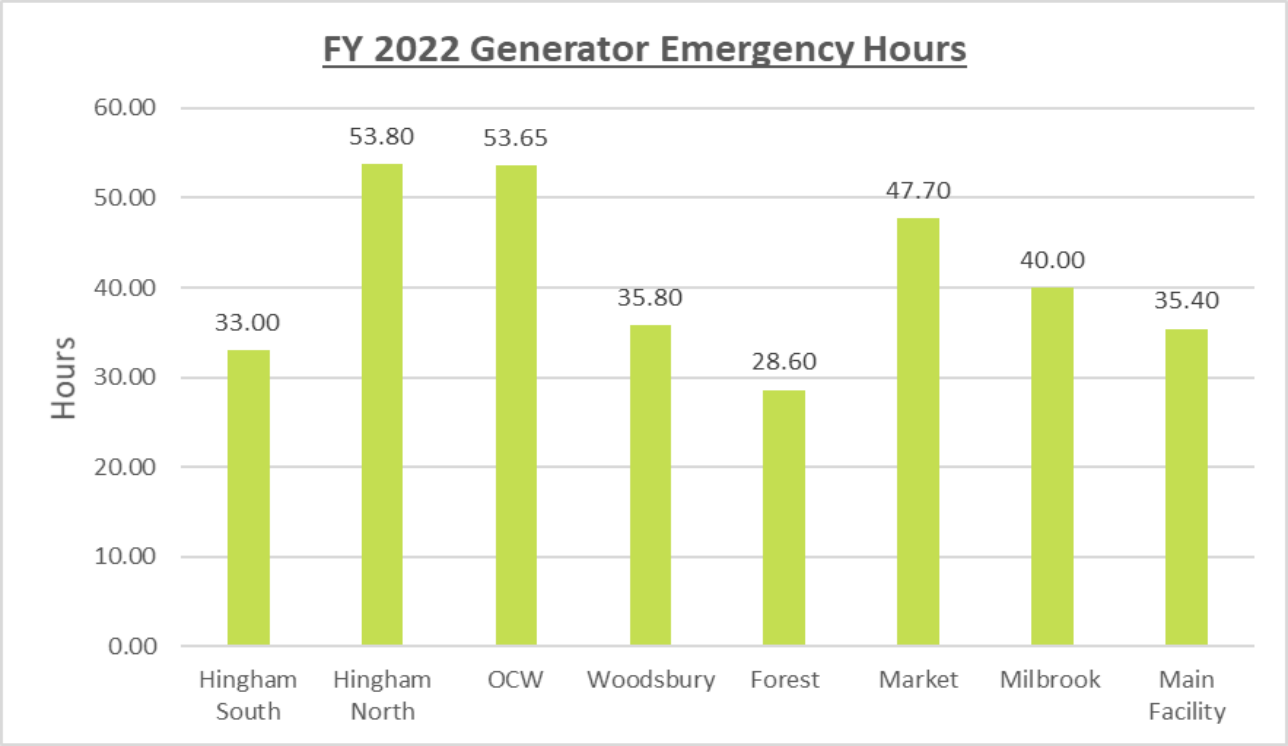
- Monthly UST inspections completed
- Annual laboratory equipment calibrations completed 02/14/2022
- Annual Process Meter calibrations completed 3/15/2021
- Quarterly gas detector calibrations completed
- Quarterly back flow inspections completed
- Annual flow meters completed 3/15/2022
- Annual OSHA hoist inspections completed in July 2021
- Annual fire extinguisher inspections completed 12/14/2021
- Annual Main Facility fire alarm inspection completed on 10/18/2021
- Annual Generator Preventative Maintenance and inspections completed by M&S Electric in 7/13/2021
- Annual Transfer Switch Preventative Maintenance and inspections were completed by National Electric Testing on 9/20/21

6.4 Emergency Generators

Veolia's staff tracked generator test and emergency run hours for all generators throughout FY 2022. The staff also continued to monitor and maintain the eight emergency backup generators throughout FY 2022. Daily visual inspections were completed on all generators as well as weekly no load test runs. Per EPA and MADEP all generators were operated monthly under load. M&S Electric Services completed the annual Preventative Maintenance and Inspections on 7/13/2021.

National Electrical Testing and Service completed the annual Transfer switch inspections on 9/20/2021.

The Hingham North generator had the most emergency run hours in FY '22 with a total of **53.80** hours while the Forest Street Generator had the least amount of emergency hours with 28.60 hour.



6.5 Upcoming Projects in 2022-2023

- Replace the Digester Boiler
- Replace the 500Kw Plant Generator
- Seek funding to Convert the Spruce Street dry pit ejector station to a wet well
- Engineering Study on implementing a Total Phosphorus Tertiary system
- Replace the existing Primary Effluent Sampler with a new ISCO 5800 automated sampler

Manager's 2022-2023 Goals

1. Continue to promote the safe work culture at the facility through leadership, communication, and training to have zero injuries in 2022-2023
2. Continue to excel at producing high quality effluent while striving for zero unavoidable NPDES violations
3. Continue to work with the Town of Rockland Sewer Department and its selected engineering firms on developing and executing an upgrade of significant processes at the facility through the CWMP
4. Continue to work on operating the project as efficiently as possible and to maintain or reduce the usage of electricity based on a KWH per Million Gallons treated baseline