

UTILITY REPORT



APRIL 2025

**King George County
Service Authority**

**Authored by:
Inboden Environmental
Services, Inc.**



INTRODUCTION

This Utility Report provides information on operations, facility performance, equipment issues, and regulatory compliance for the month prior. Information includes items related to water facility productions and wastewater effluent discharge volumes, laboratory analytical data, operations notes, and compliance auditing.

WATER

Operational Notes:

- All permit required documentation was submitted to regulatory agencies.
- All bacteriological samples collected and passed.

Canterbury Subdivision – PWSID 6099085

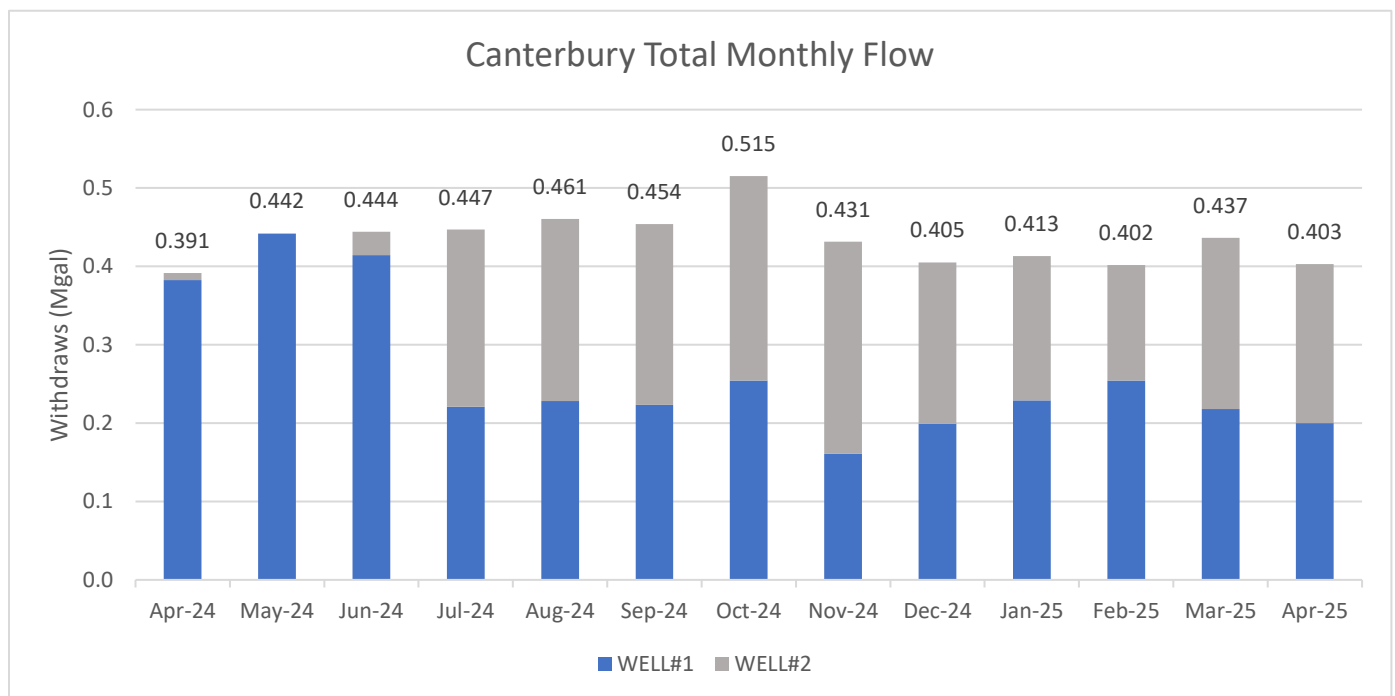
Water Quality:

The Water Treatment facility and distribution system maintained compliance with all required sampling. Routine bacteriological sample results are shown in the table below.

Bacteriological Analysis:

Location Code	Location Address	Date	Result
02D	12392 Kent Rd	4/8/2025	Absent

System Production:



Circle – PWSID 6099100

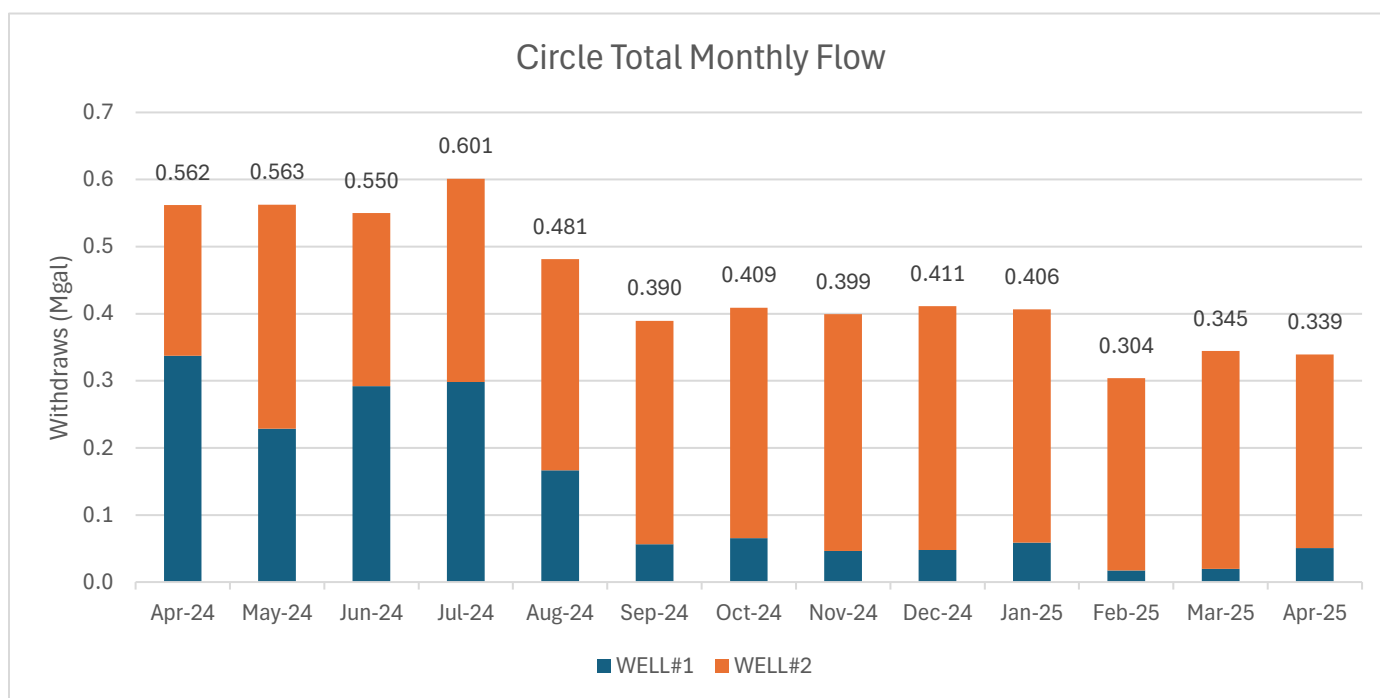
Water Quality:

The Water Treatment facility and distribution system maintained compliance with all required sampling. Routine bacteriological sample results are shown in the table below.

Bacteriological Analysis:

Location Code	Location Address	Date	Result
030	11052 Vernon Woods	4/9/2025	Absent
RW – Annual MPN	Circle 1	4/10/2025	<1 Total Coliform MPN <1 E. coli MPN
RW – Annual MPN	Circle 2	4/10/2025	<1 Total Coliform MPN <1 E. coli MPN

System Production:



KGC Courthouse – PWSID 6099050

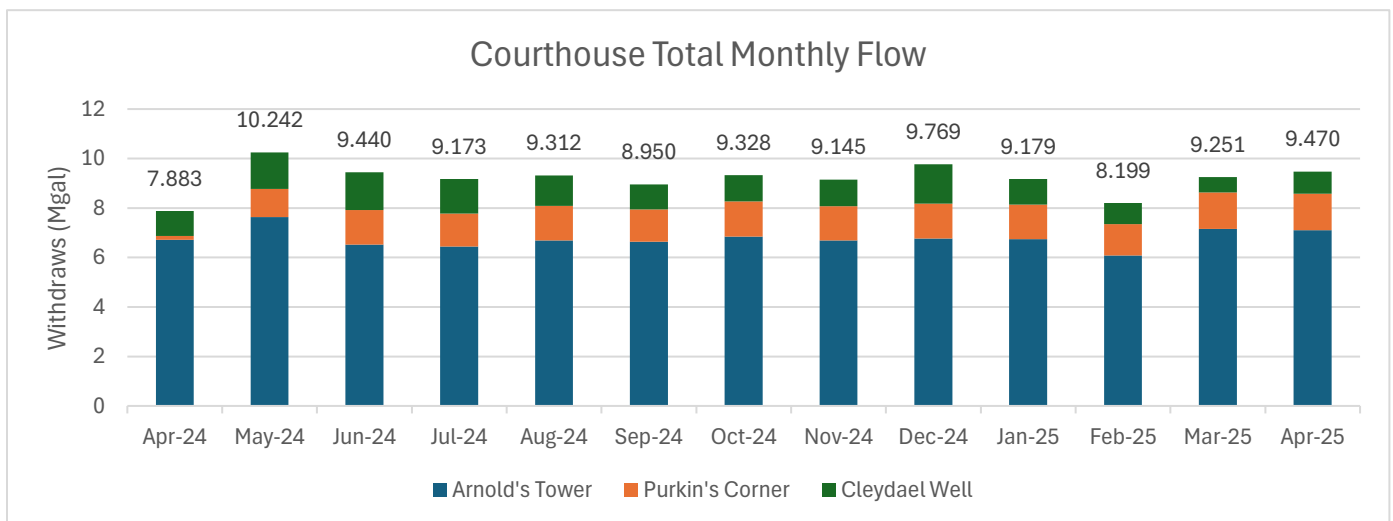
Water Quality:

The Water Treatment facility and distribution system maintained compliance with all required sampling. Routine bacteriological sample results are shown in the table below.

Bacteriological Analysis:

Location Code	Location Address	Date	Result
012	9333 Inaugural	4/3/2025	Absent
03	9237 King's Highway	4/3/2025	Absent
013	8095 Washington Dr.	4/3/2025	Absent
07	12128 Cleydael Blvd.	4/8/2025	Absent
06	12156 Ward Rd.	4/10/2025	Total Coliform – Present E. coli - Absent
RW – Annual MPN	Arnold's Corner Well	4/15/2025	<1 Total Coliform MPN <1 E. coli MPN
06 - RP	12156 Ward Rd.	4/15/2025	Absent
06U	12136 Ward Rd.	4/15/2025	Absent
06D	12186 Ward Rd.	4/15/2025	Absent
RW	Arnold's Corner Well 2	4/21/2025	Absent

System Production:



Dahlgren – PWSID 6099295

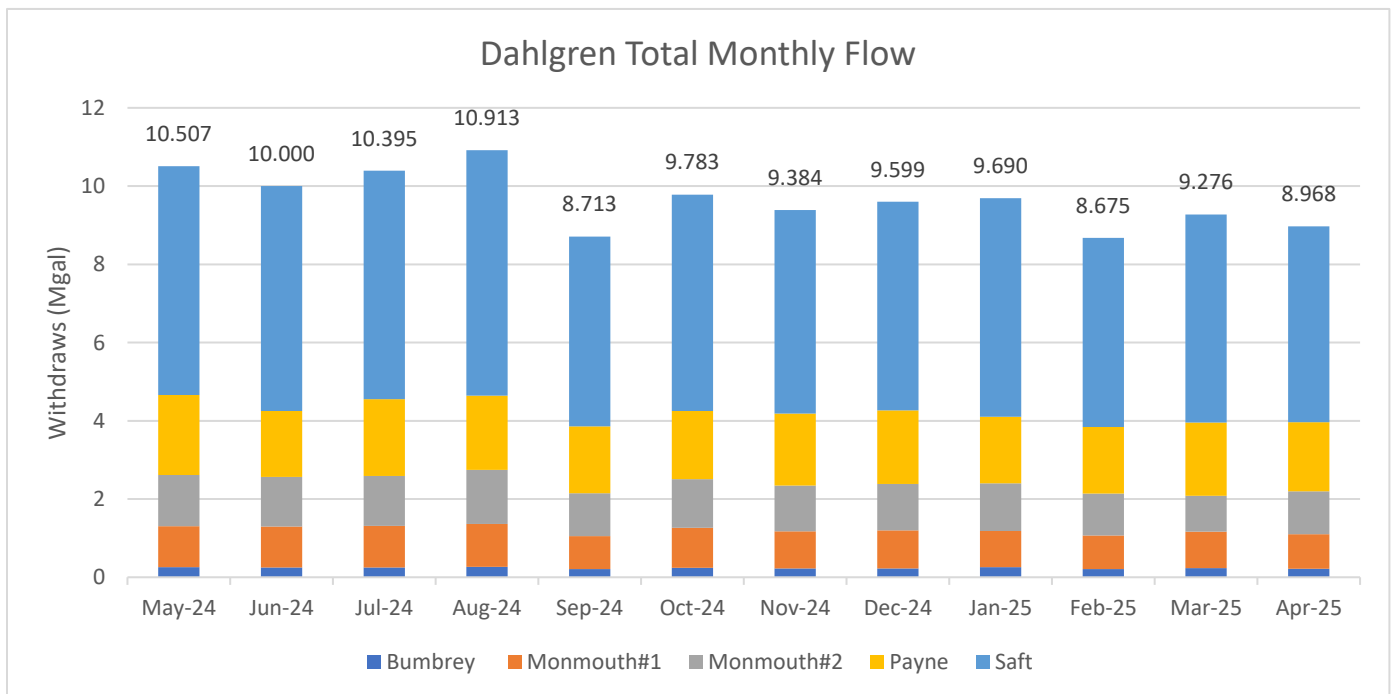
Water Quality:

The Water Treatment facility and distribution system maintained compliance with all required sampling. Routine bacteriological sample results are shown in the table below.

Bacteriological Analysis:

Location Code	Location Address	Date	Result
08	4483 James Madison Pkwy.	4/8/2025	Absent
03	5394 Gordon Drive	4/8/2025	Absent
01	15375 Dahlgren Rd.	4/8/2025	Absent

System Production:



Fairview Beach – PWSID 6099250

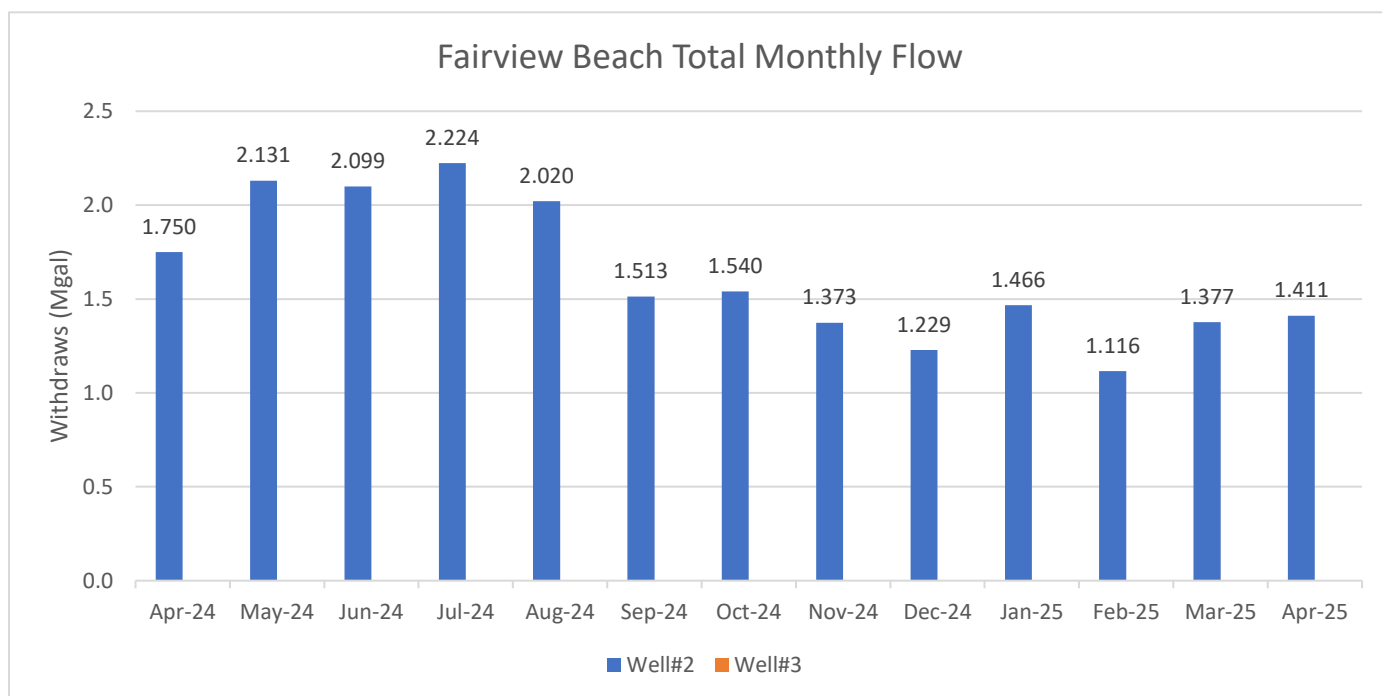
Water Quality:

The Water Treatment facility and distribution system maintained compliance with all required sampling. Routine bacteriological sample results are shown in the table below.

Bacteriological Analysis:

Location Code	Location Address	Date	Result
040	6072 Riverview Drive	4/3/2025	Absent

System Production:



Hopyard Farm – PWSID 6099283

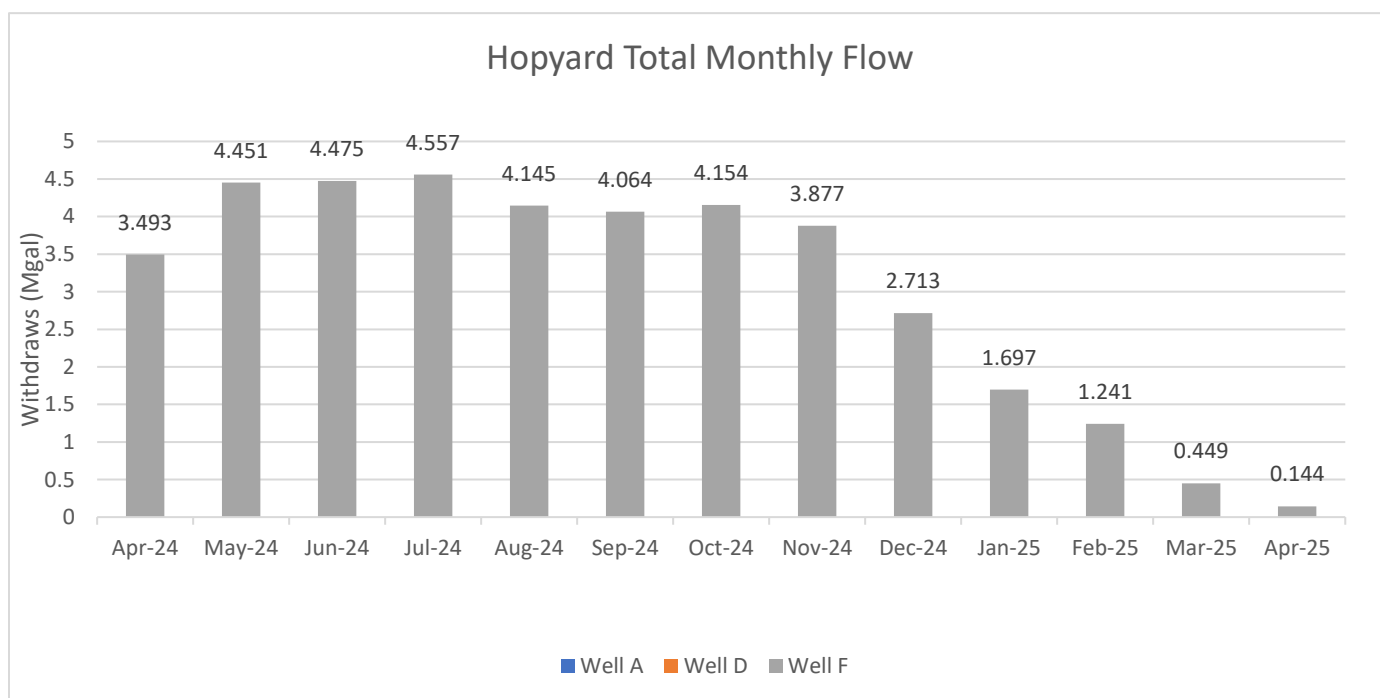
Water Quality:

The Water Treatment facility and distribution system maintained compliance with all required sampling. Routine bacteriological sample results are shown in the table below.

Bacteriological Analysis:

Location Code	Location Address	Date	Result
05	5217 Spinnaker Lane	4/8/2025	Absent
01U	5968 Parsons Lane	4/8/2025	Absent

System Production:



Additional note: Due to the decrease in water withdrawal recorded in 2025 compared to 2024, IES has placed a work order with KGCSA Maintenance to investigate the water meter in place at Hopyard Farms WTP.

KGC School Board Office – PWSID 6099296

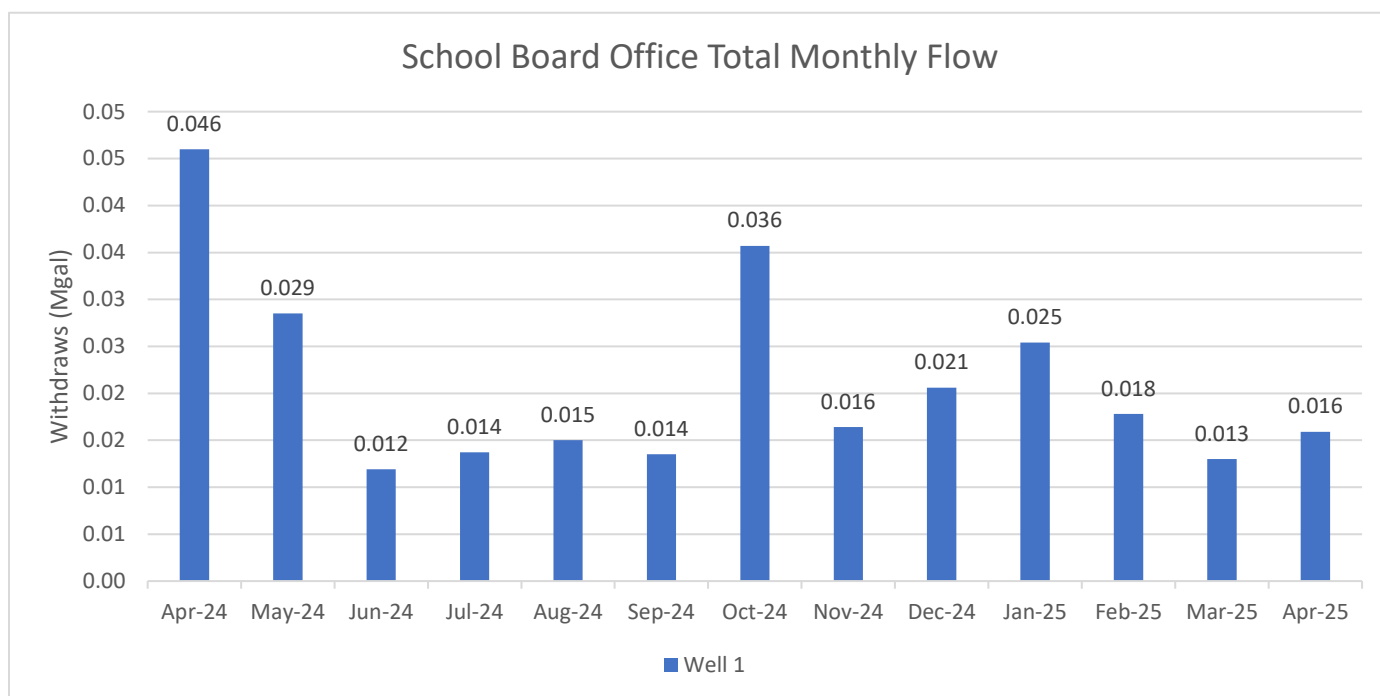
Water Quality:

The Water Treatment facility and distribution system maintained compliance with all required sampling. Routine bacteriological sample results are shown in the table below.

Bacteriological Analysis:

Location Code	Location Address	Date	Result
030	Old Art Room #10	4/8/2025	Absent

System Production:



Ninde's Store – PWSID 6099300

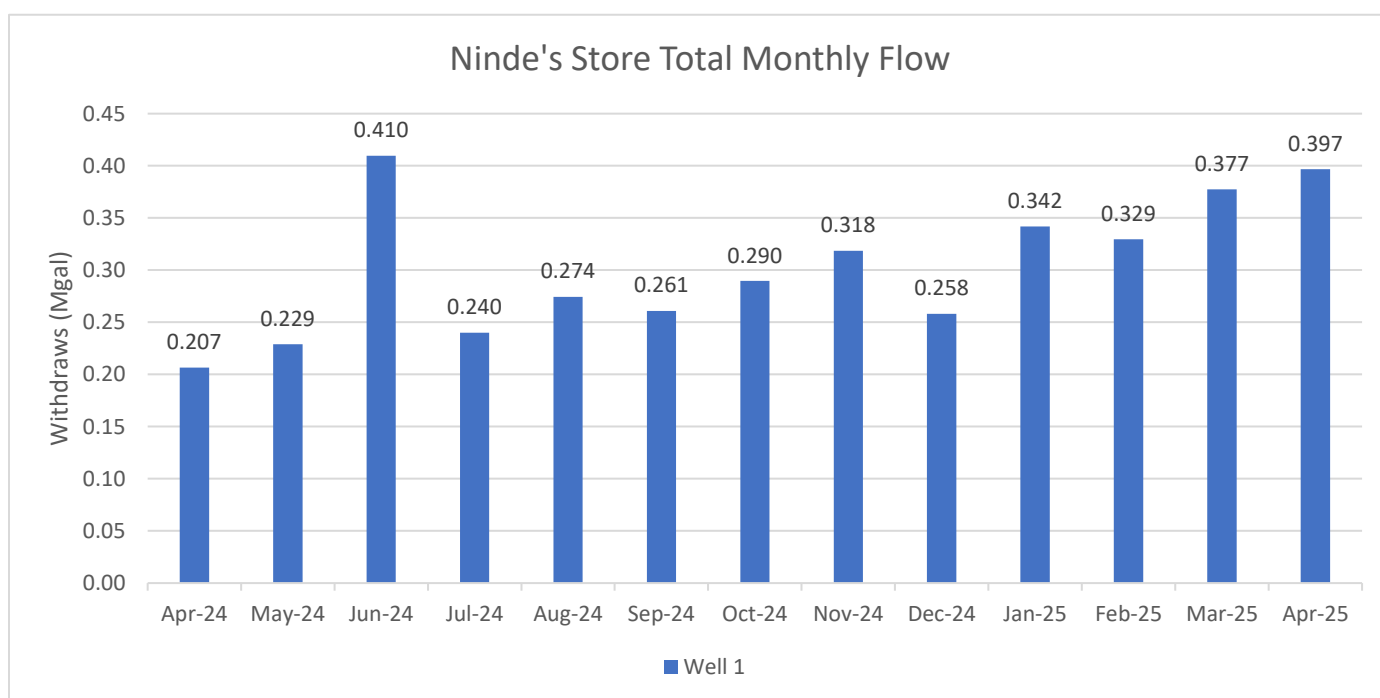
Water Quality:

The Water Treatment facility and distribution system maintained compliance with all required sampling. Routine bacteriological sample results are shown in the table below.

Bacteriological Analysis:

Location Code	Location Address	Date	Result
020	16156 Ridge Rd.	4/8/2025	Absent

System Production:



Oakland Park – PWSID 6099350

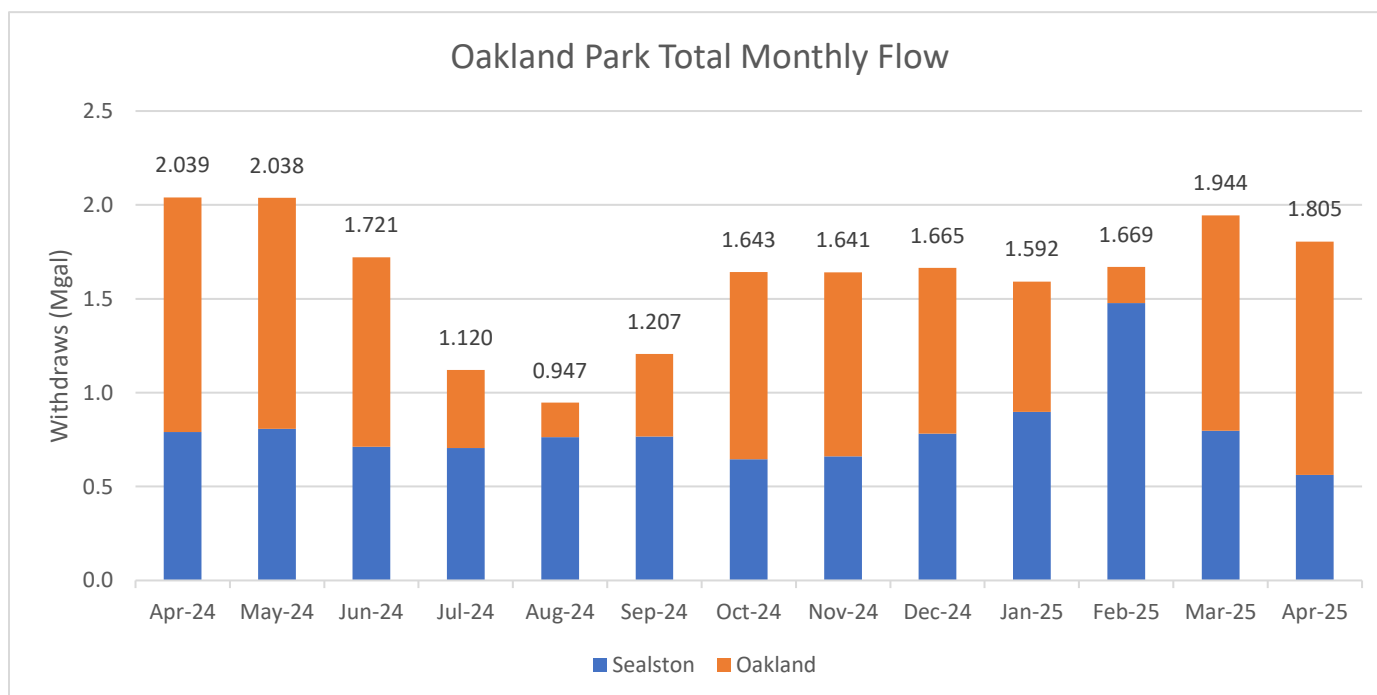
Water Quality:

The Water Treatment facility and distribution system maintained compliance with all required sampling. Routine bacteriological sample results are shown in the table below.

Bacteriological Analysis:

Location Code	Location Address	Date	Result
04	1139 French Ct.	4/3/2025	Absent
03	9121 Covington St.	4/3/2025	Absent

System Production:



St. Paul's/Owens – PWSID 6099550

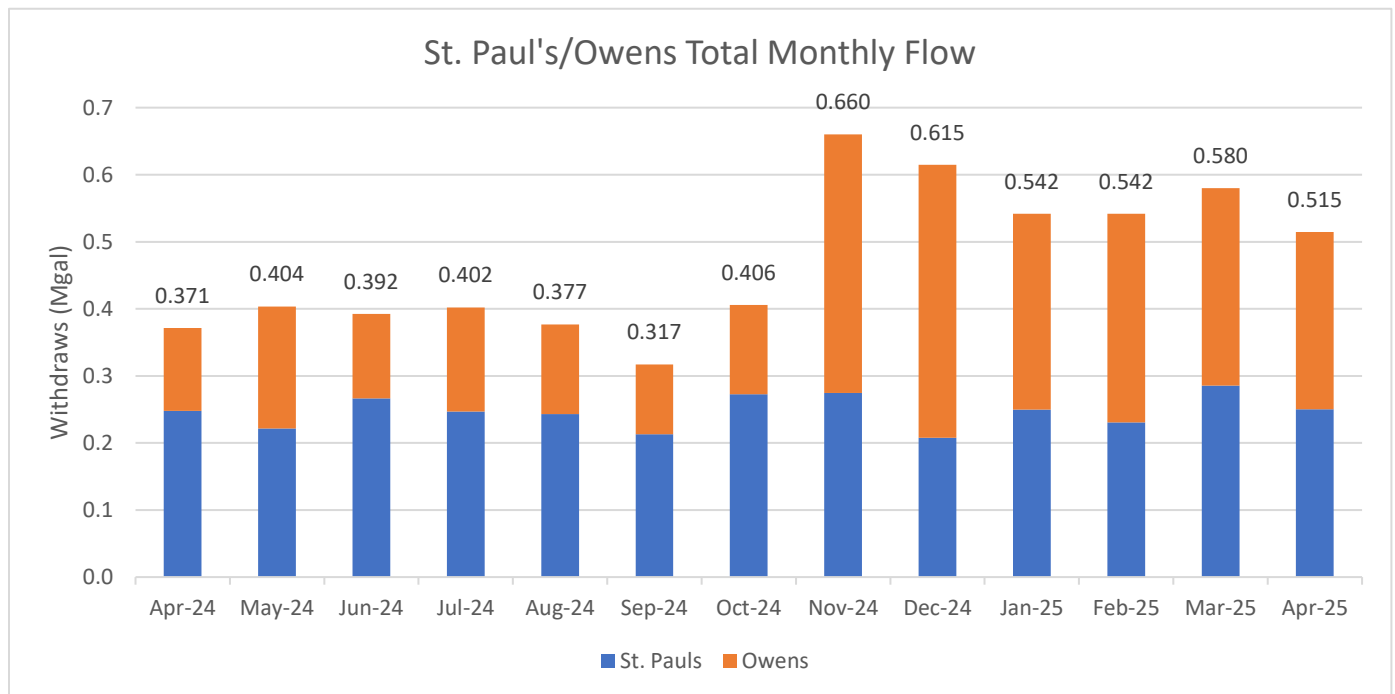
Water Quality:

The Water Treatment facility and distribution system maintained compliance with all required sampling. Routine bacteriological sample results are shown in the table below.

Bacteriological Analysis:

Location Code	Location Address	Date	Result
020	5268 Thompson Hill Rd.	4/8/2025	Absent

System Production:



WASTEWATER

Operational Notes:

- Solids management has become easier as hauling schedule has improved.
- Interpreting data and responding to operational challenges on a continuous basis.

Dahlgren WWTP

Effluent Quality:

The wastewater treatment facility maintained compliance with all permit-required sampling.

Wastewater Treatment:

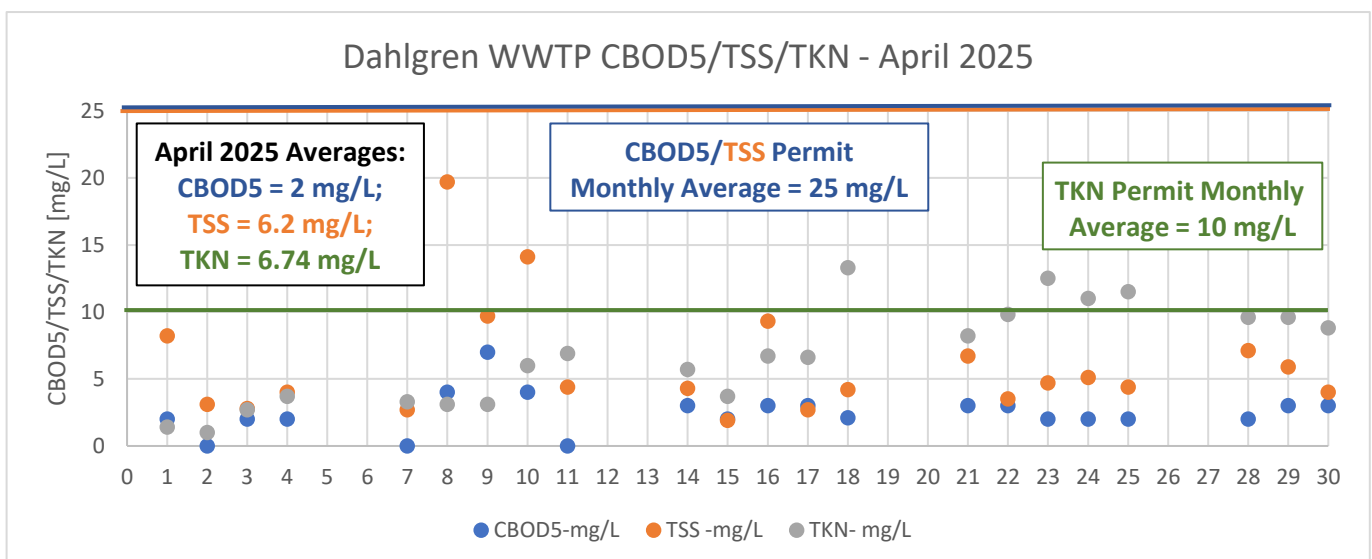
The Dahlgren WWTP met the sewer service area's sanitation demand with an average daily discharge of 0.329 MGD for a total monthly discharge of 9.861 MG.

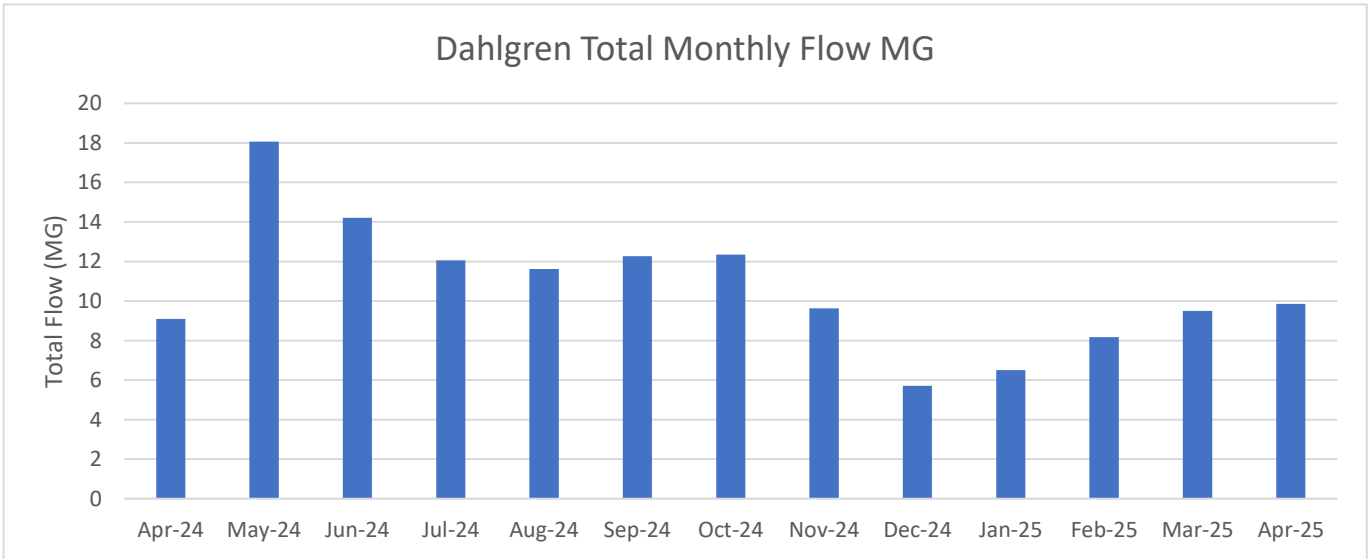
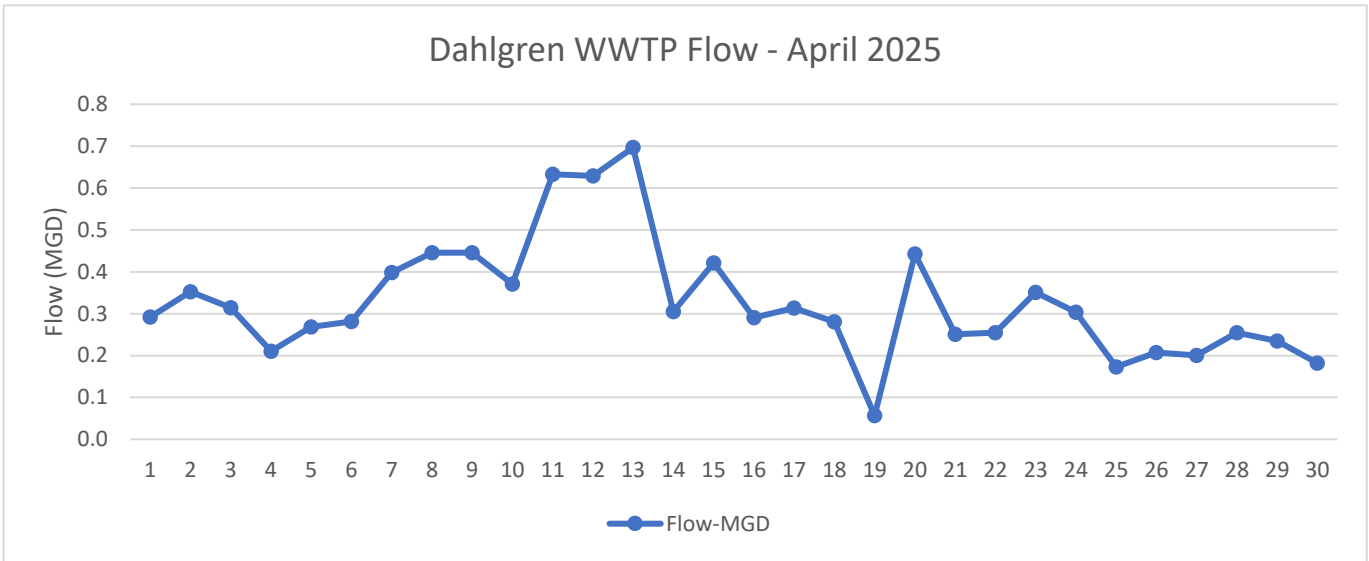
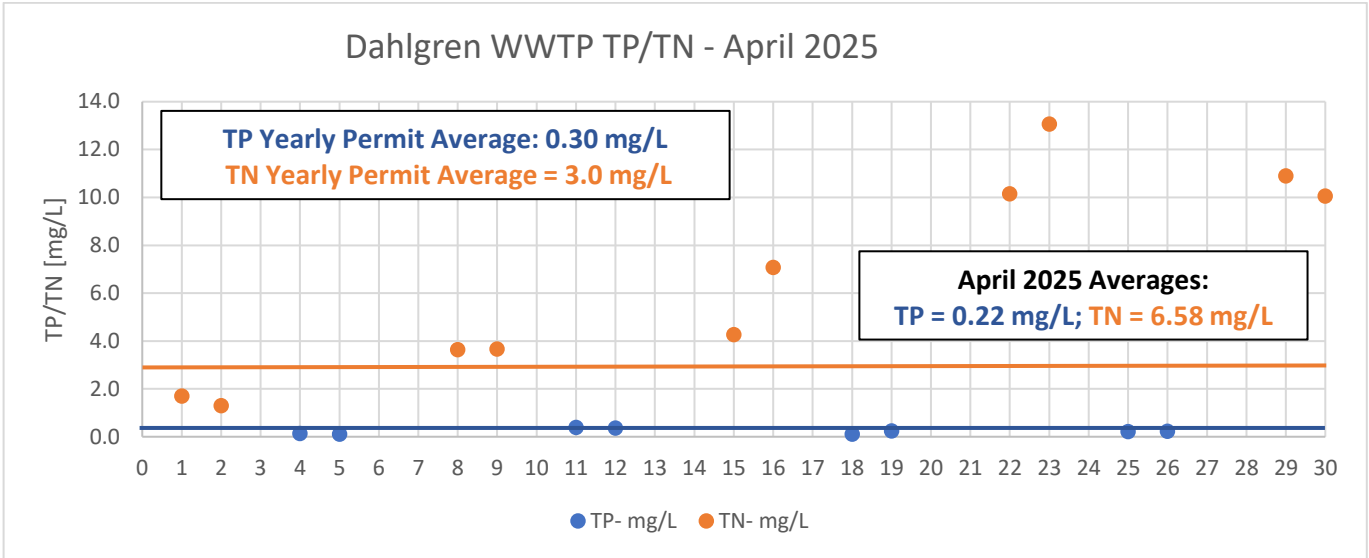
Operational Notes:

- SEI began troubleshooting tasks for SCADA PLC communications.
- Influent pumps ragged up on several different occasions due to no fine screen.
- YSI on-site to assist in diagnosing monitoring components for the SCADA system.
- Collaborated with Bowman on proposed engineered changes within the wastewater process.
- Drained and flushed Clarifier #2.

Data Trending:

The following charts depict a graphical analysis of effluent quality monitoring and treatment plant daily and total monthly flows.





Hopyard Farms WWTP

Effluent Quality:

The wastewater treatment facility maintained compliance with all permit-required sampling.

Wastewater Treatment:

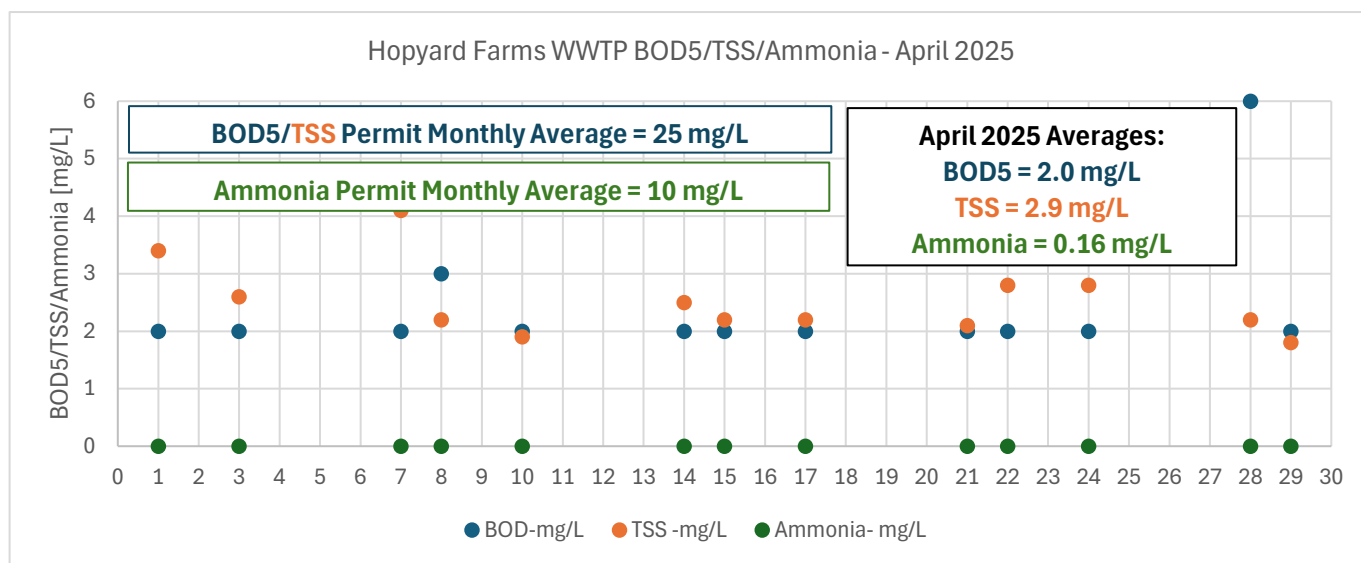
The Hopyard Farms WWTP met the sewer service area's sanitation demand with an average daily discharge of 0.097 MGD for a total monthly discharge of 2.608 MG (27 days with flow).

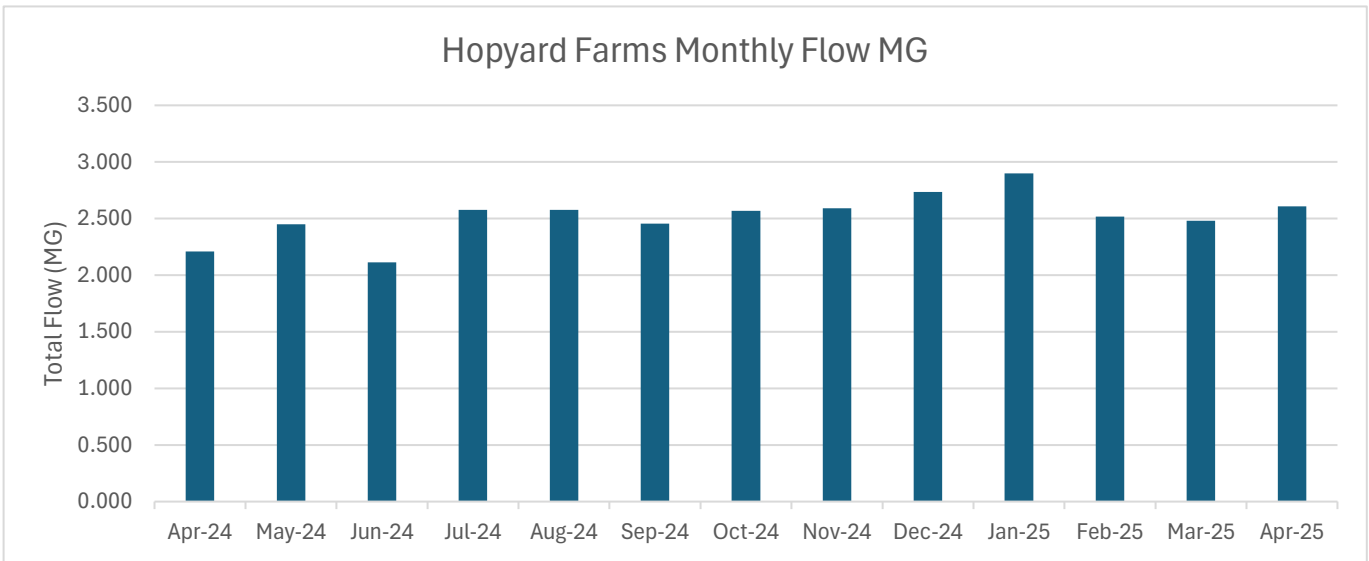
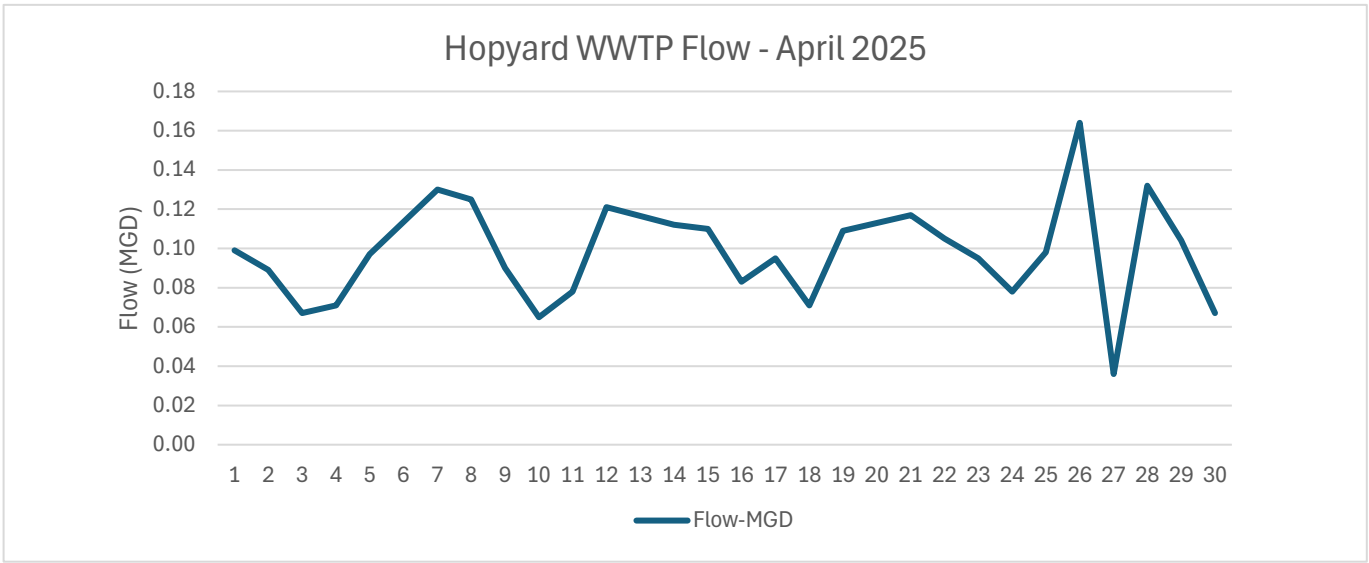
Operational Notes:

- Blower Motor #1 failed. KGCSA Maintenance notified.
- Hopyard providing seed sludge for Purkins and Oakland to enhance treatment.

Data Trending:

The following charts depict a graphical analysis of effluent quality monitoring and treatment plant daily and total monthly flows.





Purkins Corner WWTP

Effluent Quality:

The wastewater treatment facility maintained compliance with all permit-required sampling. TSS exceedances were noted as explained below.

Wastewater Treatment:

The Purkins Corner WWTP met the sewer service area's sanitation demand with an average daily discharge of 0.068 MGD for a total monthly discharge of 2.054 MG.

Operational Notes:

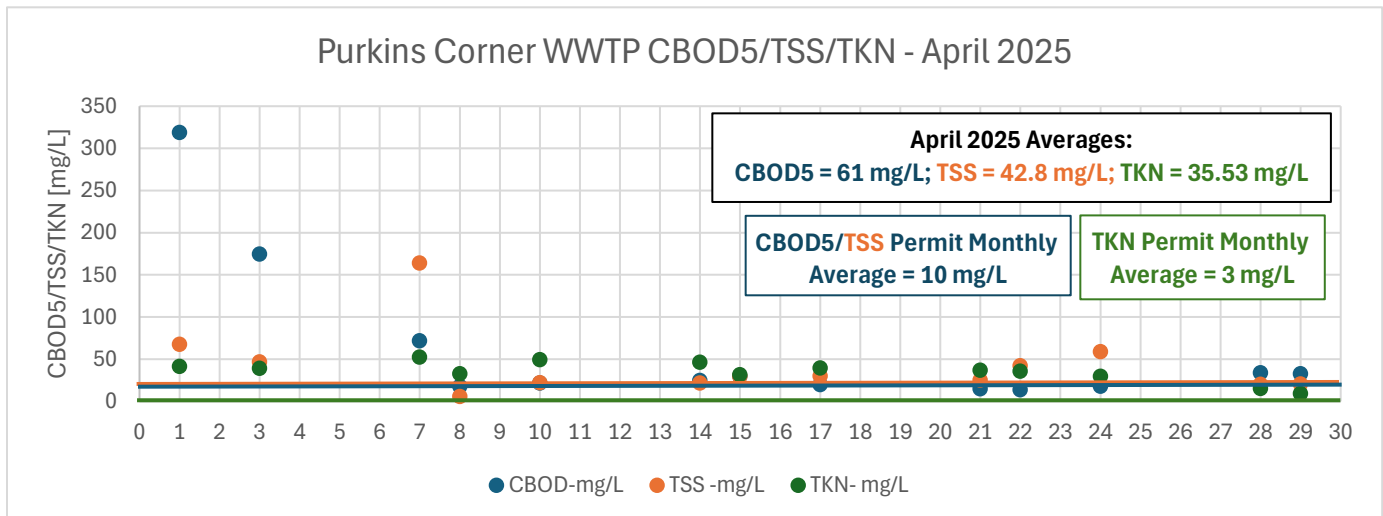
- There are still lingering effects of the excessive grease loading that inundated the WWTP last month from the collection system. Plant has been reseeded multiple times as a result, attempting to maintain biological treatment.
- New chemical feed pumps with monitoring capabilities have been installed and are operational.

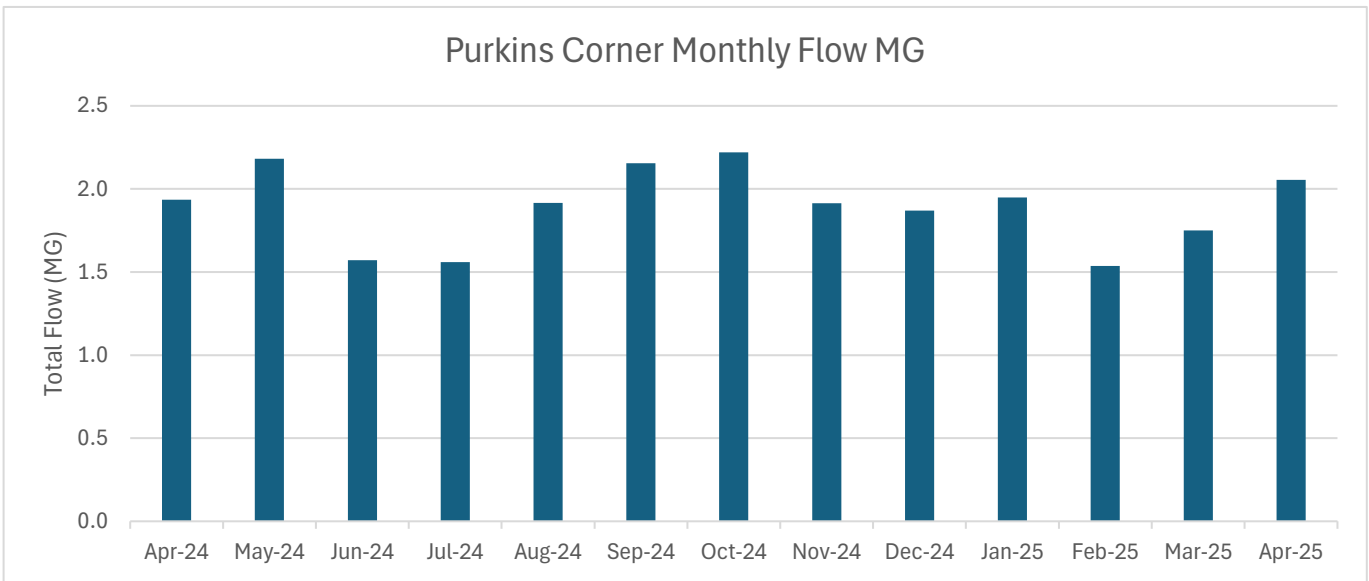
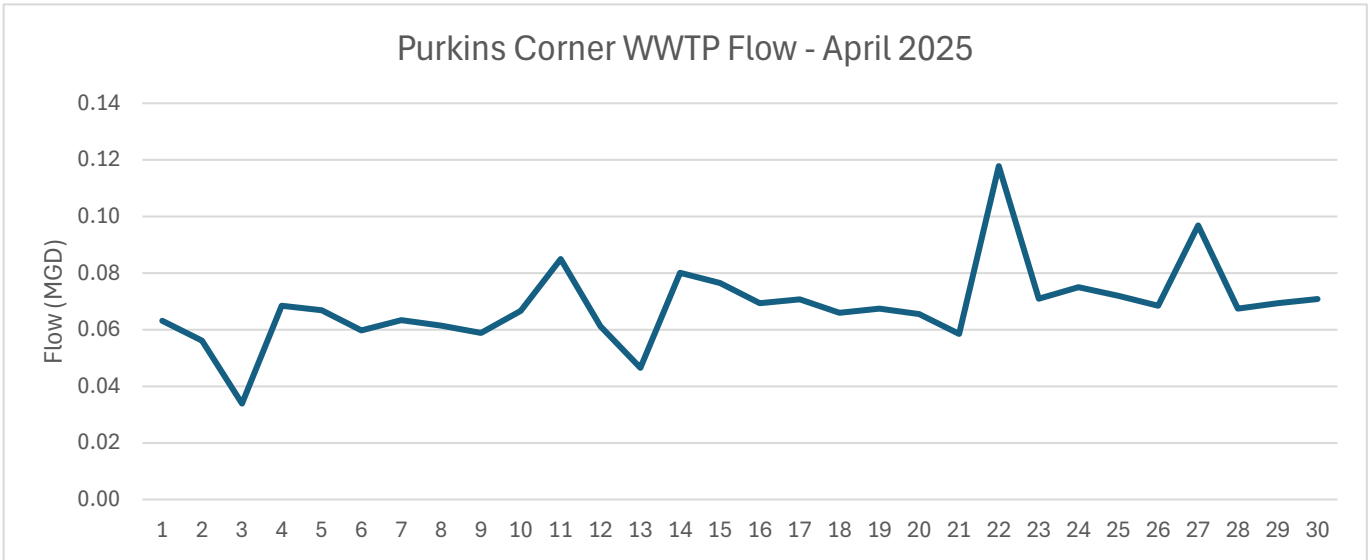
Exceedance Details:

- During the April monitoring period, Purkins Corner WWTP experienced elevated CBOD5, TSS, and TKN concentrations, exceeding both the monthly and weekly permit limits. Additionally, there were six (6) E. Coli samples collected during April that had a result of > 24,196 n/CML along with other elevated results throughout the month, which brought the geometric mean to >4,081 n/CML. After discussion with operations, it was determined that the high concentrations were still linked to the sewer line blockage that was cleared that caused a significant buildup of fats, oils and grease to be released and enter the influent stream. Efforts were made to pump out the excessive grease and the plant has been reseeded multiple times

Data Trending:

The following charts depict a graphical analysis of effluent quality monitoring and treatment plant daily and total monthly flows.





Oakland Park WWTP

Effluent Quality:

The wastewater treatment facility maintained compliance with all permit-required sampling. TKN, E. coli, and CBOD5 exceedances were noted as explained below.

Wastewater Treatment:

The Oakland Park WWTP met the sewer service area's sanitation demand with an average daily discharge of 0.047 MGD for a total monthly discharge of 1.420 MG.

Operational Notes:

- Comminutor was replaced on the headworks, which serves as a protection to the downstream pumps and mixers from rags that can otherwise cause equipment failure.
- IES has investigated the sewer collection system to help find the source(s) of poor-quality influent flow entering the WWTP.
- The amount of septic influent has been reduced after efforts to clean out areas in the collection system. System has improved since.
- Oakland was reseeded multiple times due to septic sludge in the influent, which inhibited biological treatment.

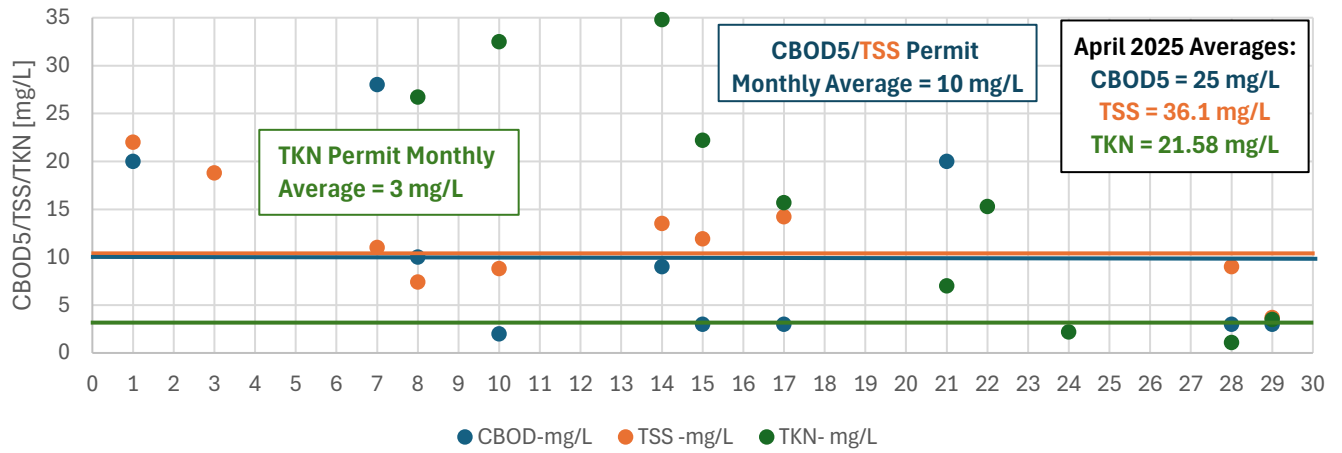
Exceedance Details:

- During the April monitoring period, Oakland Park WWTP experienced elevated CBOD5, TSS, and TKN concentrations, exceeding both the monthly and weekly permit limits. Additionally, E. coli samples collected on April 1st, April 7th, April 14, and April 24th had a result of > 24,196 n/CML, which brought the geometric mean to >995 n/CML. After discussion with operations, it was determined that these elevated sample results are continuing to be linked to multiple issues within the sewer collection system that led to black septic sludge in the influent inhibiting treatment. A blockage in one of the force mains was discovered and KGCSA is working to clear the obstruction. KGCSA is also investigating the possibility of septic haulers illegally dumping within the collection system.

Data Trending:

The following charts depict a graphical analysis of effluent quality monitoring and treatment plant daily and total monthly flows.

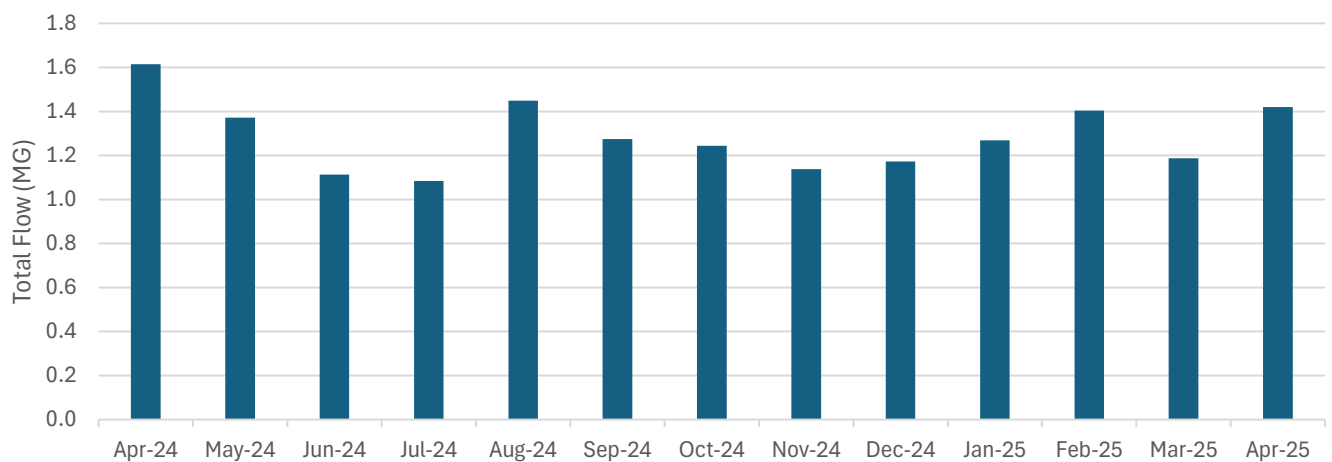
Oakland Park WWTP CBOD5/TSS/TKN - April 2025



Oakland Park WWTP - April 2025



Oakland Park Total Monthly Flow MG



Fairview Beach WWTP

Effluent Quality:

The wastewater treatment facility maintained compliance with all permit-required sampling.

Wastewater Treatment:

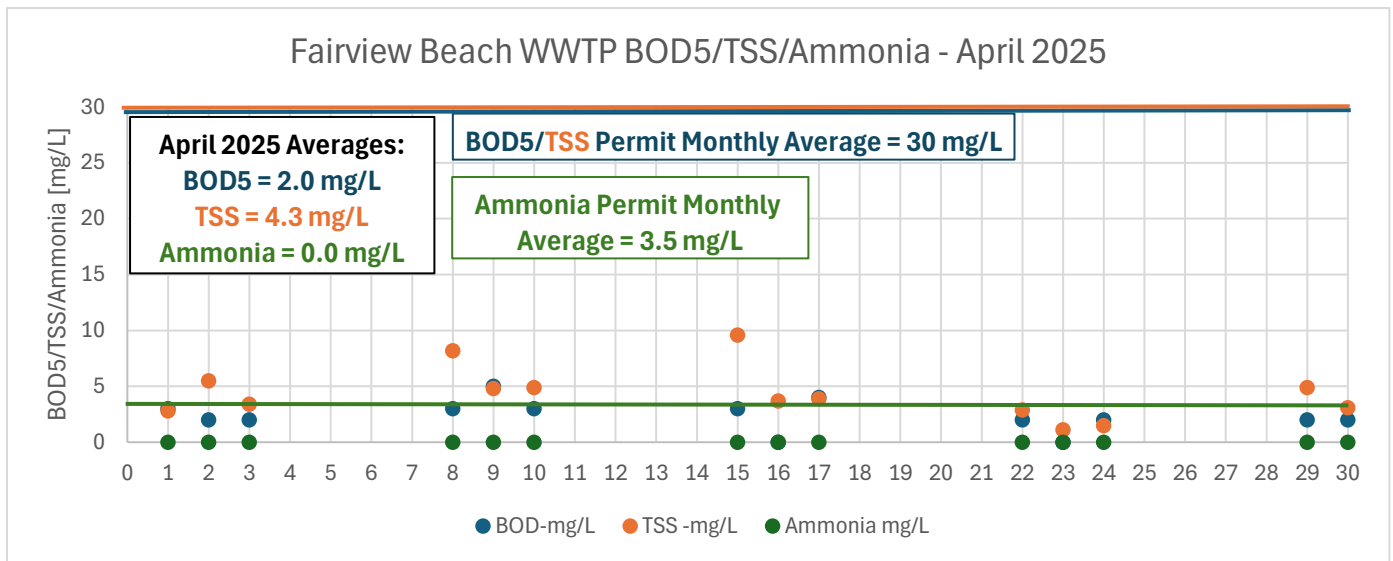
The Fairview Beach WWTP met the sewer service area's sanitation demand with an average daily discharge of 0.074 MGD for a total monthly discharge of 1.917 MG (26 days with flow).

Operational Notes:

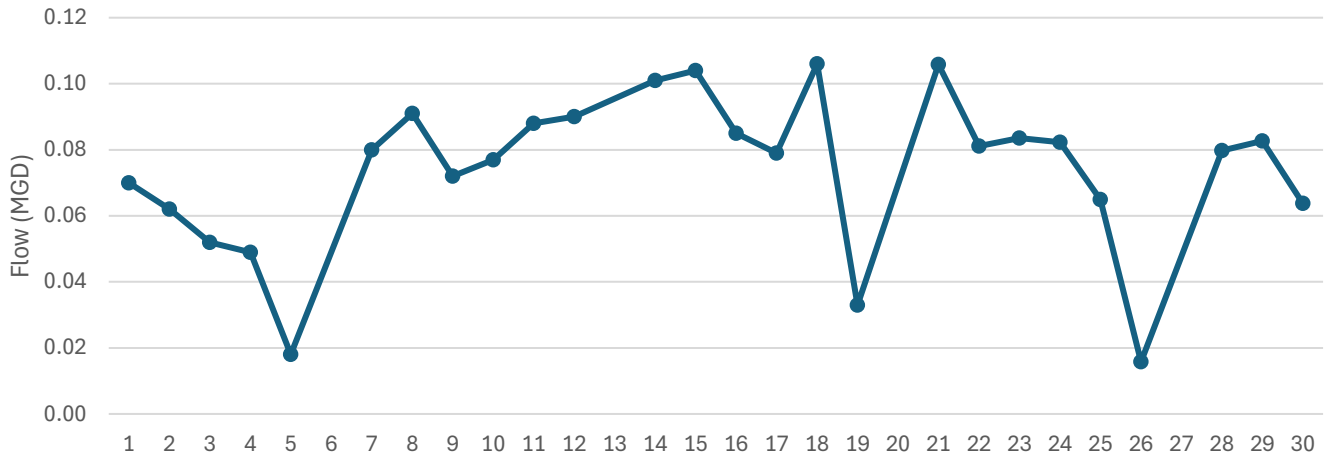
- Generator failed to run on multiple occasions for the weekly test. KGCSA Maintenance was notified.
- One power loss event. Operations were not negatively affected.

Data Trending:

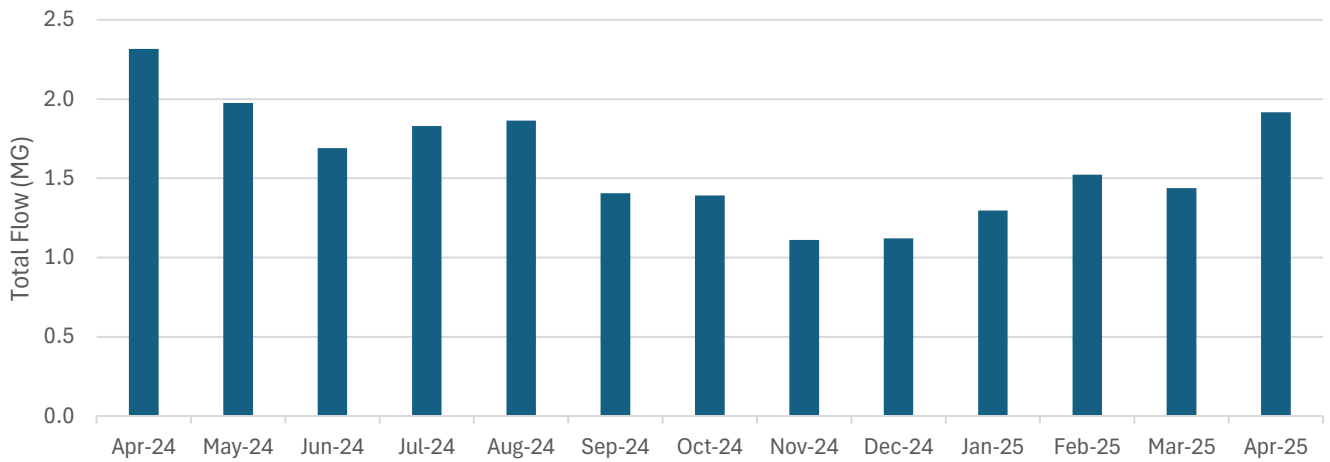
The following charts depict a graphical analysis of effluent quality monitoring and treatment plant daily and total monthly flows.



Fairview Beach WWTP - April 2025



Fairview Beach Total Monthly Flow MG



Glossary

Bacteria	E.coli and/or Total Coliform
BOD5	5-day Biochemical Oxygen Demand
CBOD	Carbonaceous Biochemical Oxygen Demand
cfu	colony forming unit
CIP	Capital Improvement Plan or Cast/cleaned-in-place
Cl	Chloride Ion
Cl2	Chlorine
CMF	Continuous Membrane Filtration?
D.O.	Dissolved Oxygen
F/M ratio	Food to Microorganism ratio
FOG	Fats, Oil and Grease
GST	Ground Storage Tank
HWTP	Harmony Water Treatment Plant
I&I	Infiltration and Inflow
Inorganic Nitrogen	Nitrate + Nitrite
LS	Lift Station
mg/L	Milligrams per Liter
MGD	Million Gallons Per Day
mL	Milliliters
MLSS	Mixed Liquor Suspended Solids
MLVSS	Mixed Liquor Volatile Suspended Solids
MPN	Most Probable Number -bacteriological well sample
MW	Monitoring Well
N/N	Nitrate/Nitrite
Organic Nitrogen	TKN
P/A	Presence/Absence- bacteriological samples for drinking water
PFAS	polyfluoroalkyl substances
PLC	Programmable Logic Controller
POE	Point of Entry
RAS	Return Activated Sludge
SCADA	Supervisory Control and Data Acquisition
STEP	Septic Tank Effluent Pump
TKN	Total Kjeldahl Nitrogen
TN	Total Nitrogen
TP	Total Phosphorous
TR-6	Copper sequestering chemical for wastewater
TSS	Total Suspended Solids
UV	Ultraviolet Light
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant