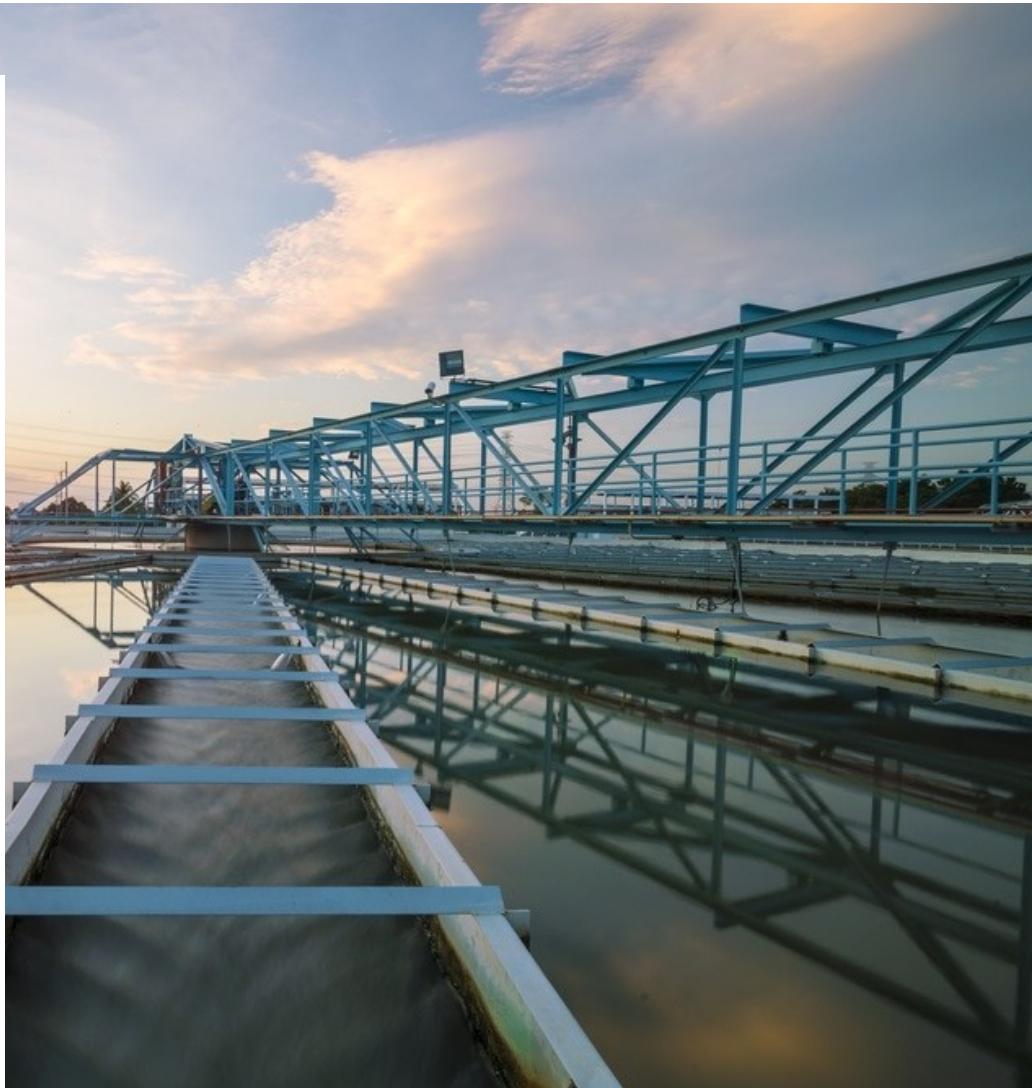


UTILITY REPORT



JUNE 2023

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

Overview:

IES continues to adjust water treatment processes through the systems to improve operations. Major milestones accomplished in the month of June include the following:

- New sand media installed and conditioned at Fairview Beach WTP
- Completed first round of water quality parameter (WQP) testing for the 2022 lead exceedance of the Dahlgren water system. Second round of WQP testing will occur this month (July). This second sampling round will also include the KG School Board Office water system.
- Notifications concerning the lead exceedance were sent out.

Regulatory Note:

the US EPA's 2021 Lead and Copper Rule Revisions (LCRR) require all Community Water Systems (CWSs) and Non-Transient Non-Community Water Systems (NTNCWSs) to take several actions, including conducting an inventory of all service lines in their water distribution network; often referred to as a Lead Service Line Inventory (LSLI). As the KGCSA has nine systems classified by the Virginia Department of Health (VDH) Office of Drinking Water (ODW) as CWSs and one NTNCWS, the US EPA mandated deadline to file your ten LSLIs with the Commonwealth of Virginia is October 16, 2024. IES has submitted a proposal to assist the KGCSA in developing the inventory and replacement plan.

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:

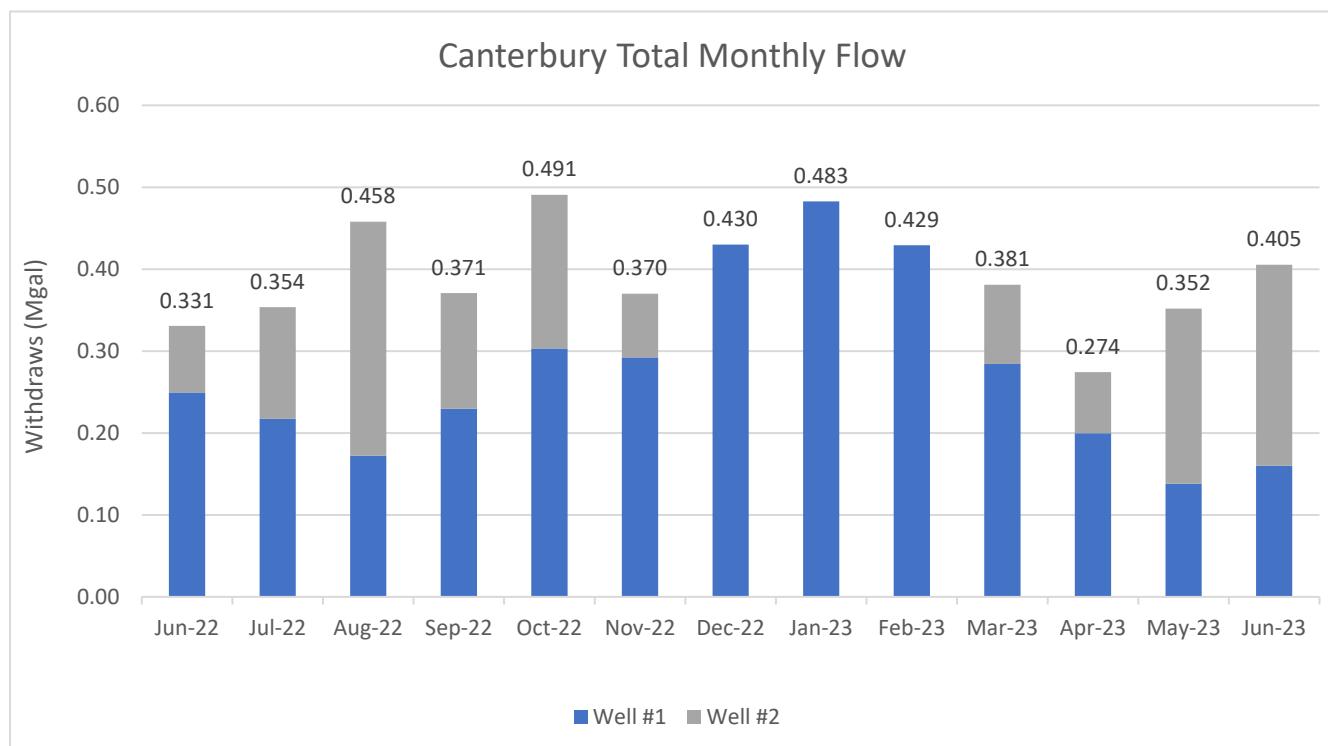
Bacteriological Analysis

Location Code	Location Address	Date	Result
010	12466 Kent Road	6/29/2023	Absent

Operational Notes:

- No comments

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:

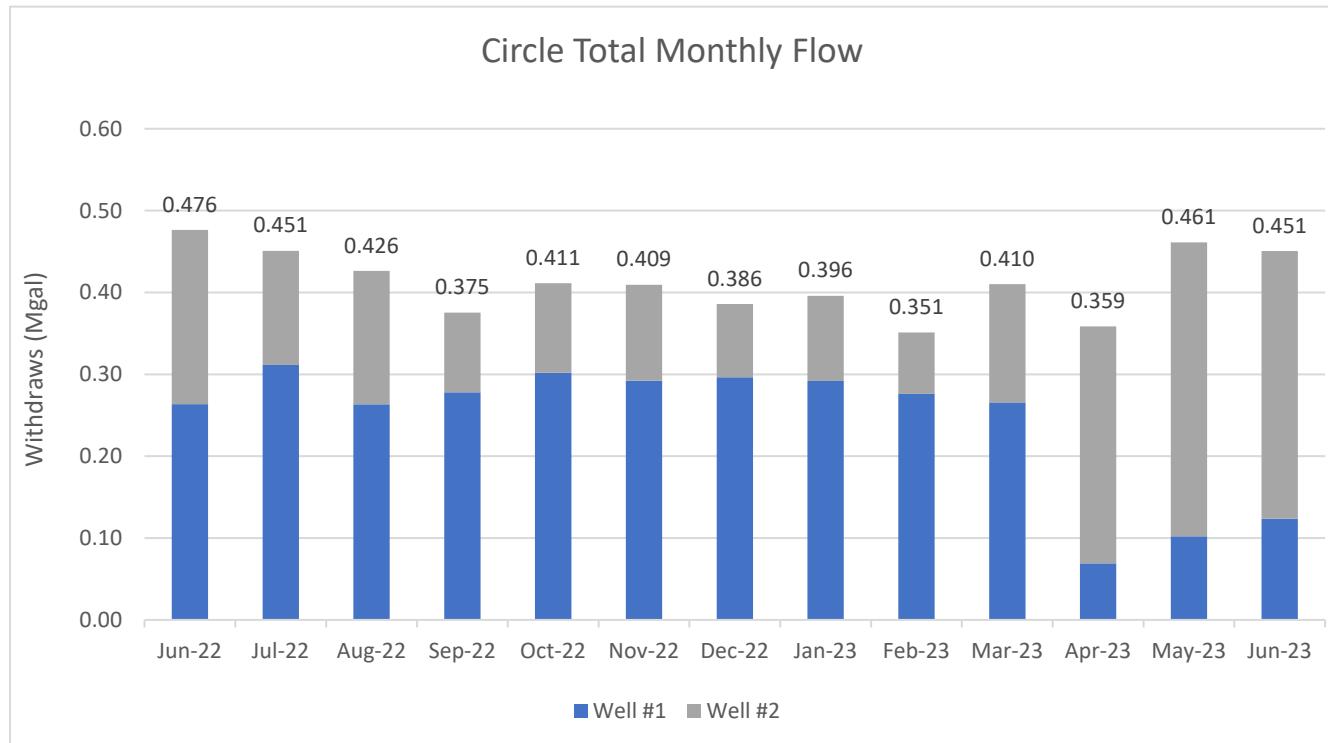
Bacteriological Analysis

Location Code	Location Address	Date	Result
030	11070 Vernon Woods Dr.	6/29/2023	Absent

Operational Notes:

- Circle 1 – 6/14 Turned chemical feed pump speed down to 40%
- Circle 2 – 6/19 Turned chemical feed pump down to 60% from 65%

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:

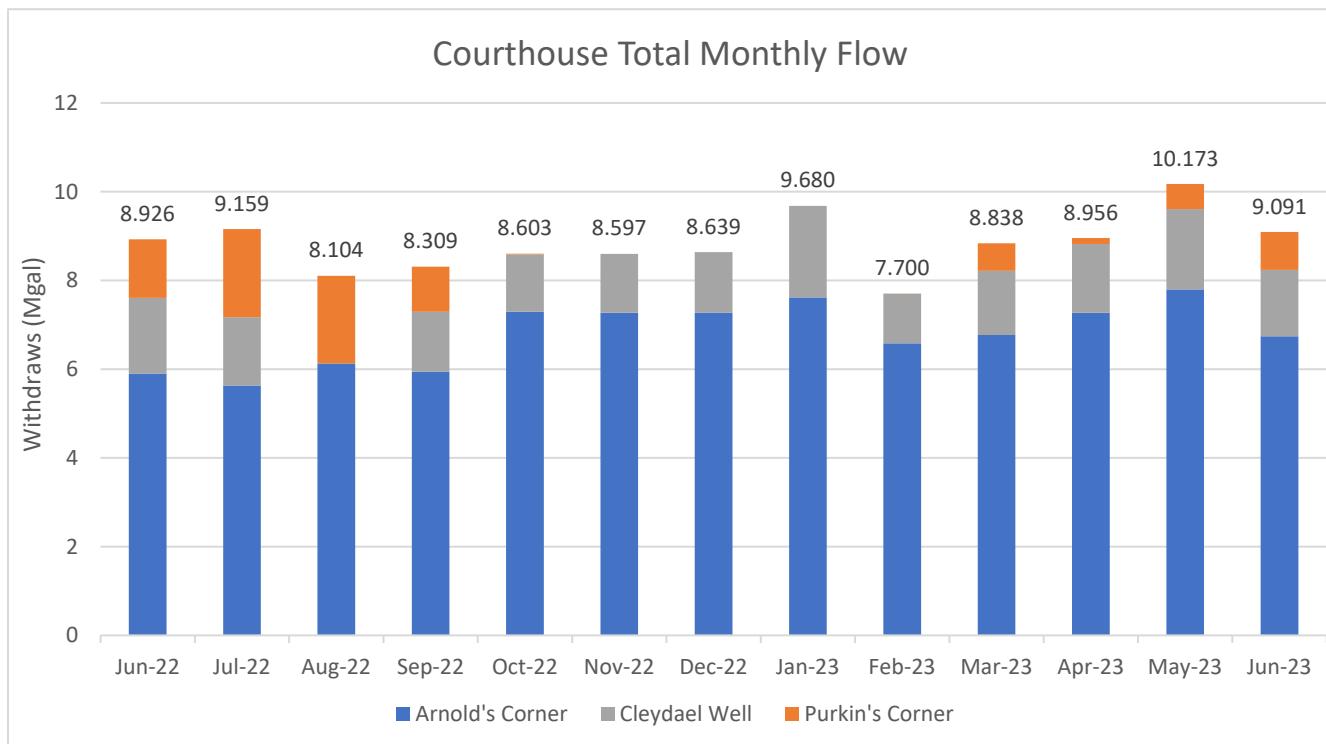
Bacteriological Analysis

Location Code	Location Address	Date	Result
06	12156 Ward Road	6/29/2023	Absent
011	8352 Kennedy Drive	6/28/2023	Absent
012	7364 Columbia Drive	6/28/2023	Absent
014	9290 Dahlgren Road	6/28/2023	Absent
015	9167 King's Highway	6/28/2023	Absent

Operational Notes:

- Arnold – 6/9: Construction crew using water heavily; 6/30: Water leak repaired by KG maintenance.
- Clydael – No comments
- Purkin's Corner – No comments

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:

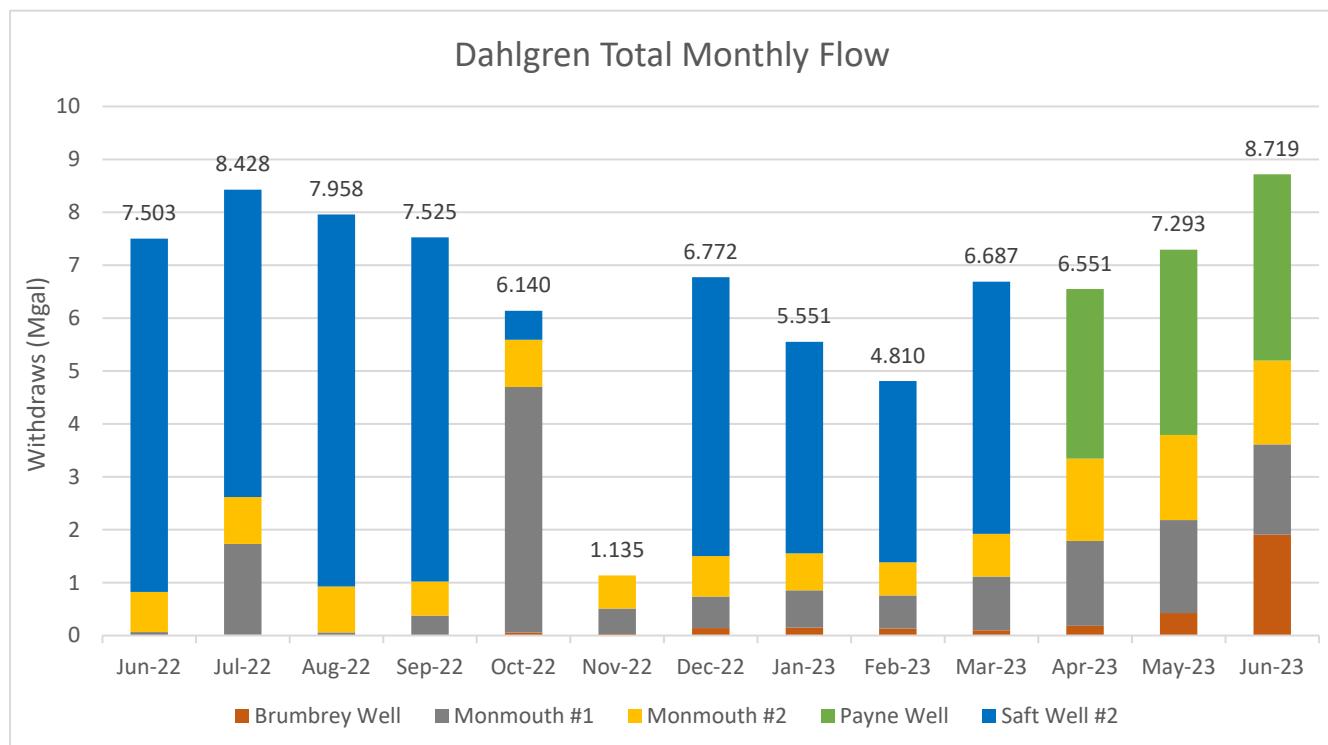
Bacteriological Analysis

Location Code	Location Address	Date	Result
02	5134 Mallard's Landing Dr.	6/29/2023	Absent
08	4483 James Madison Pkwy.	6/29/2023	Absent
09	17014 Village Lane	6/29/2023	Absent

Operational Notes:

- Saft well offline for month of June.

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:

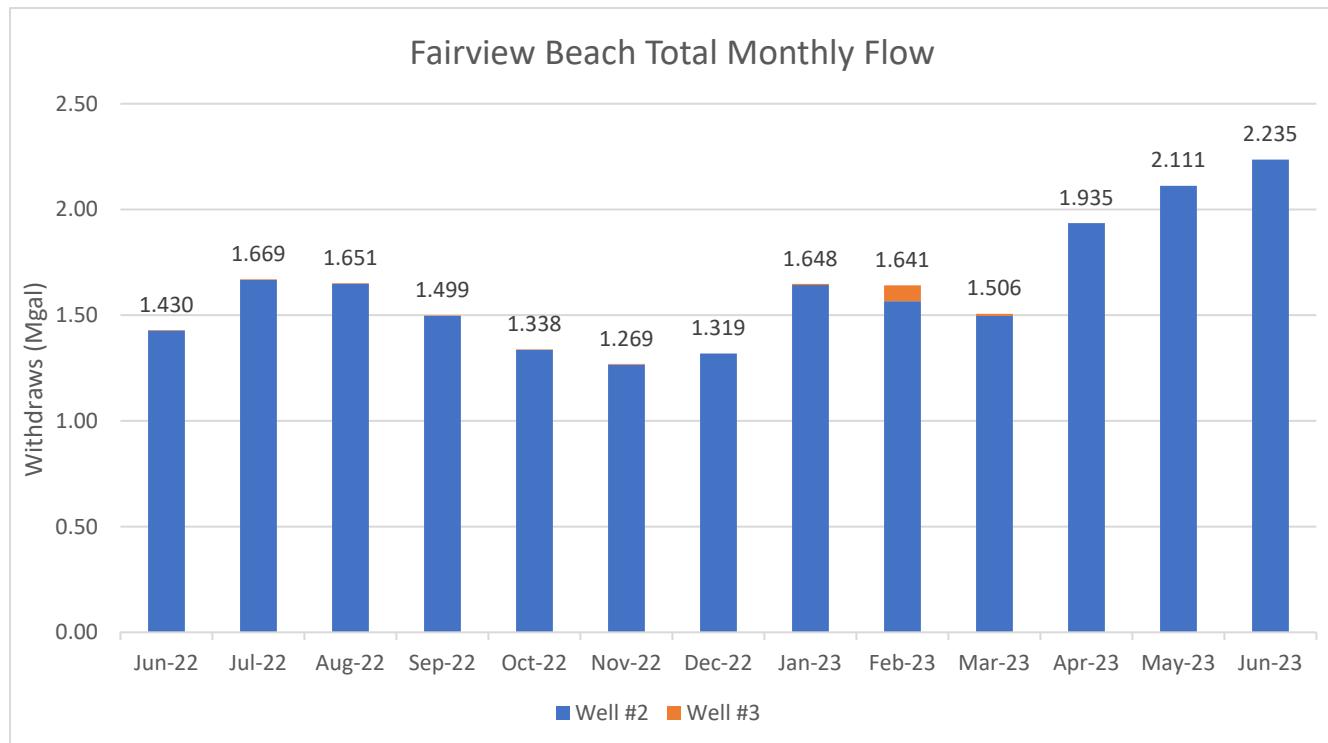
Bacteriological Analysis

Location Code	Location Address	Date	Result
020	6092 Sixth Street	6/26/2023	TC+ / FC-
02R	6092 Sixth Street	6/28/2023	Absent
02U	6090 Sixth Street	6/28/2023	Absent
02D	6101 Sixth Street	6/28/2023	Absent
RW	Well 2	6/28/2023	Absent

Operational Notes:

- 6/8, 12, 15, 19, 28: Backwash 1&2
- 6/20: Backwash 1&2; Replaced media in #1

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:

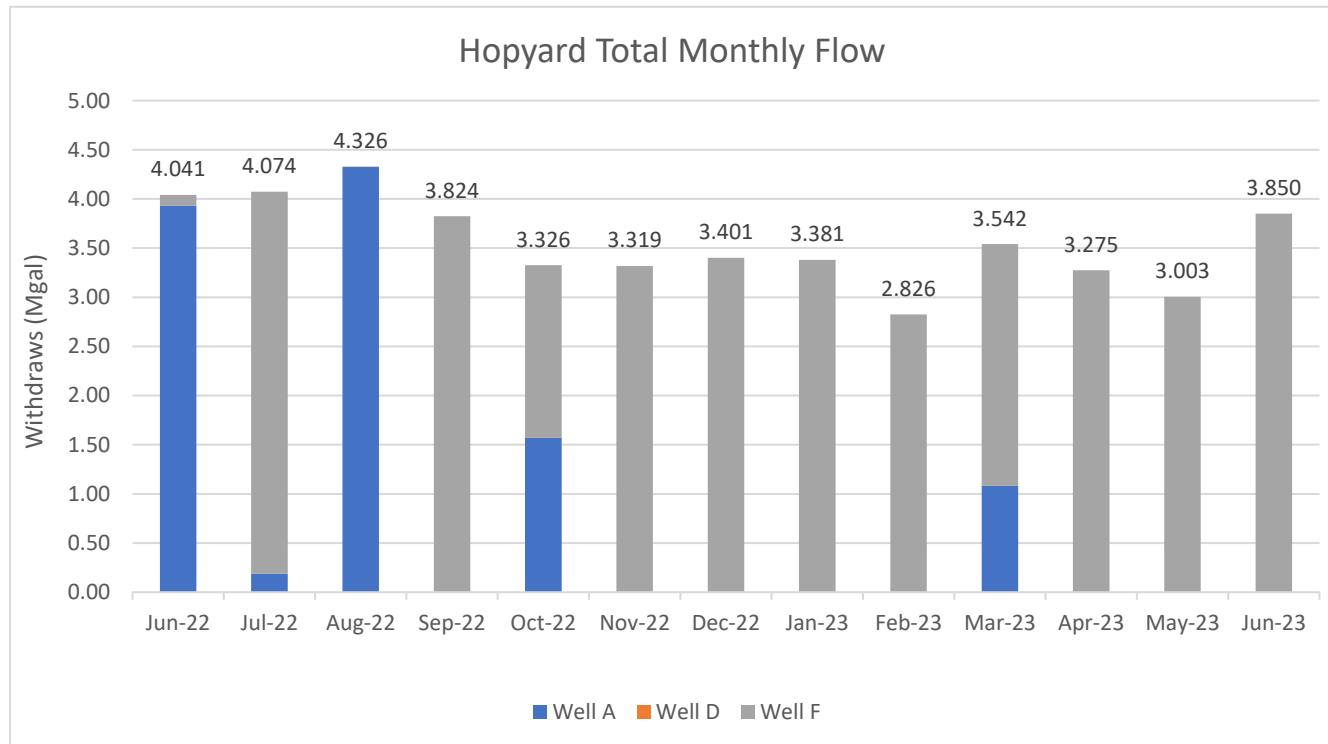
Bacteriological Analysis

Location Code	Location Address	Date	Result
020	6116 Hawser Drive	6/26/2023	Absent
050	5217 Spinnaker Lane	6/26/2023	Absent

Operational Notes:

- 6/1: Well D & A are offline

System Production:



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
010	9100 St. Anthony's Road – Teachers' Lounge	6/29/2023	Absent

Operational Notes: N/A

System Production: No system data to display. June Meter Reading - 29468100

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:

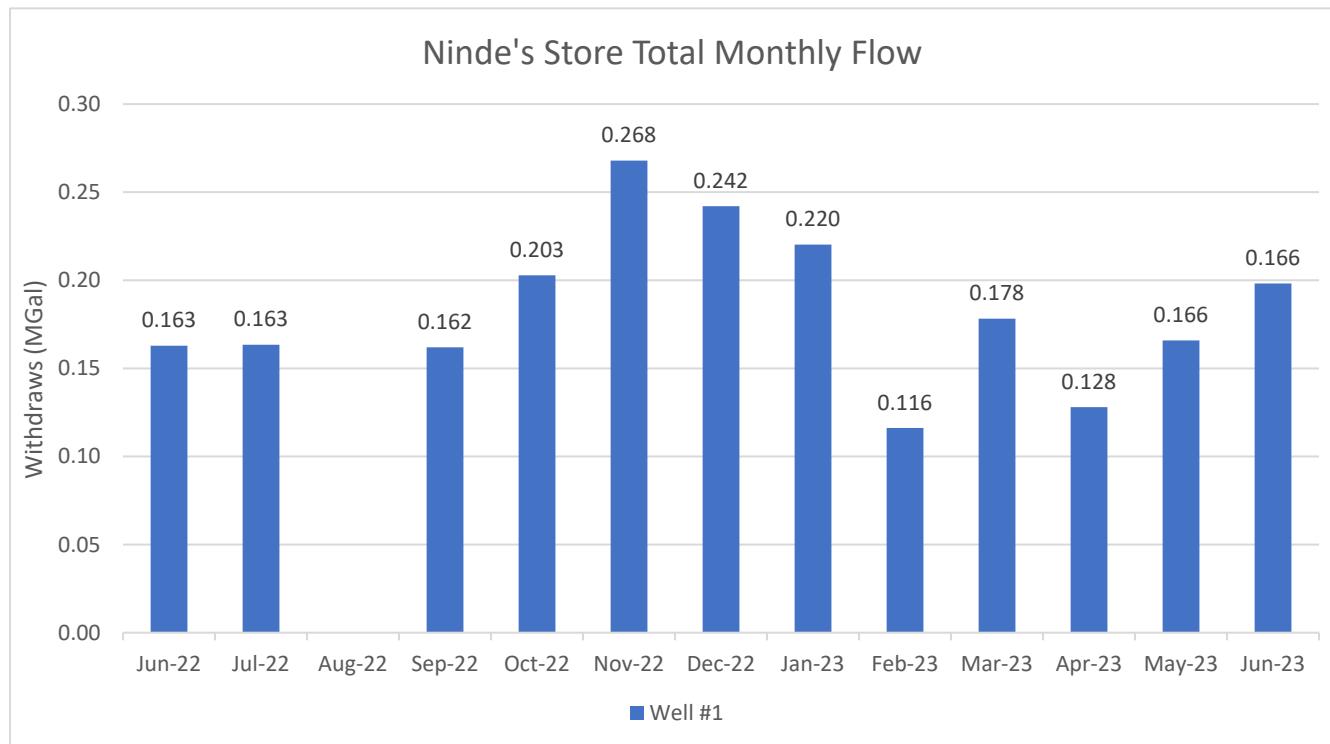
Bacteriological Analysis

Location Code	Location Address	Date	Result
010	16195 Ridge Road	6/29/2023	Absent

Operational Notes:

- 6/28: Chemical feed pump was replaced

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:

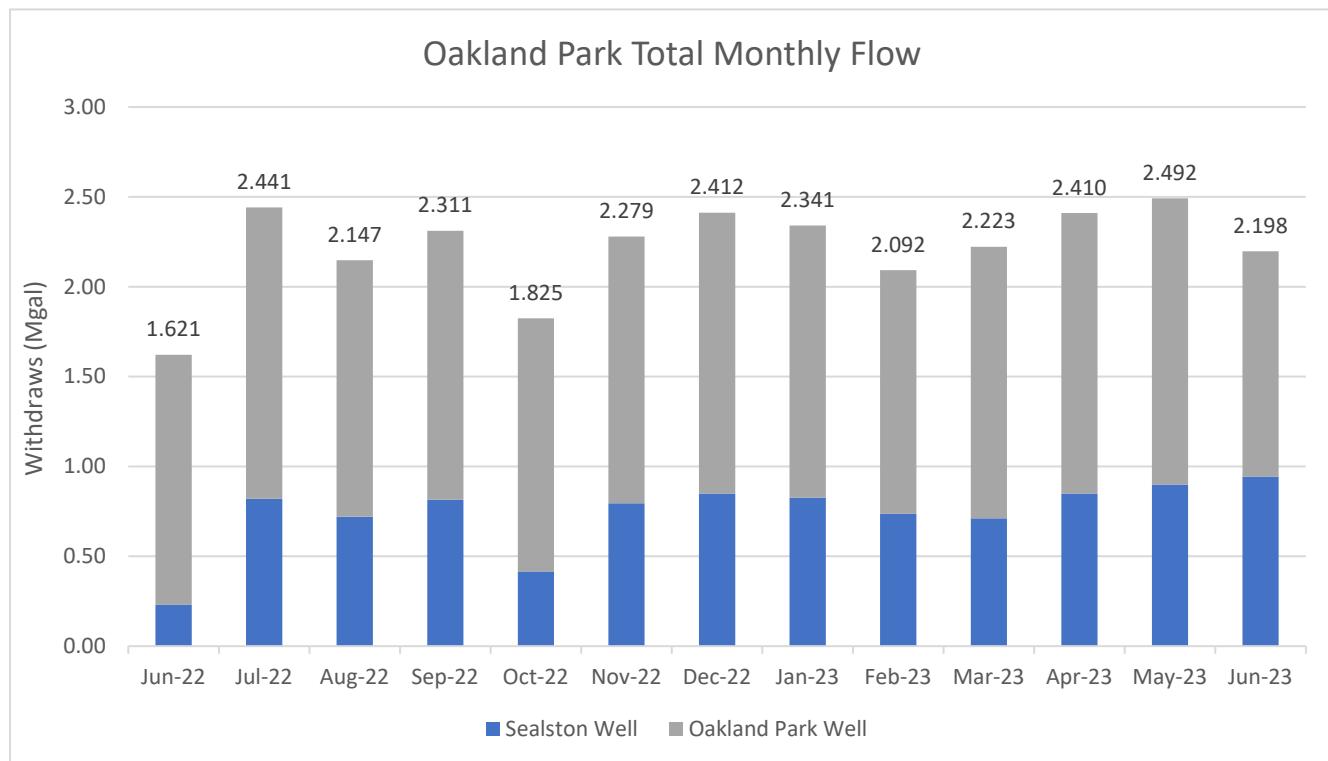
Bacteriological Analysis

Location Code	Location Address	Date	Result
04	1139 French Court	6/27/2023	Absent
06	8895 Mullen Road	6/27/2023	Absent

Operational Notes:

- Sealston: Backwashed on the following days (6/7, 6/14, 6/22, 6/28)
- Oakland Park: Backwashed on the following days (6/12, 6/28); 6/28: Replaced chemical feed pump

System Production:



St. Paul's/Owens – PWSID 6099550

Water Quality

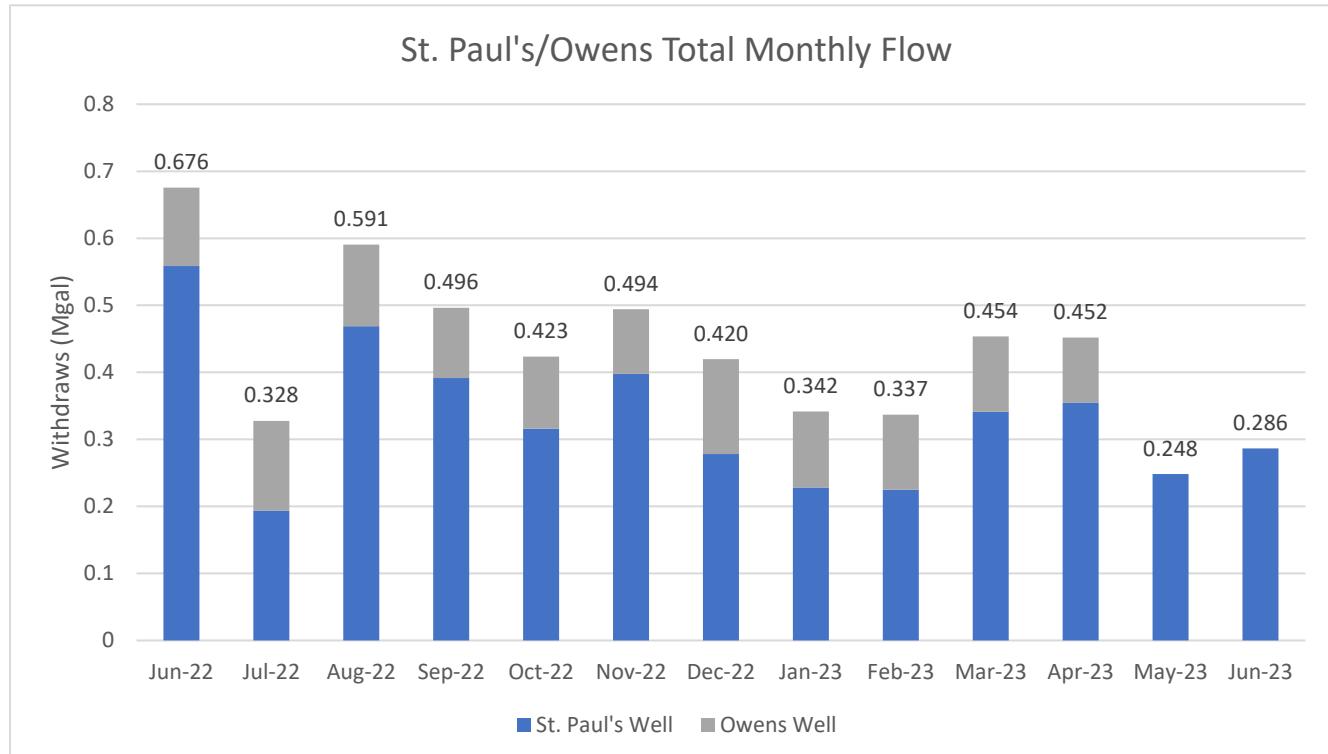
The Water Treatment facility and distribution system maintained compliance with all required sampling. Routine bacteriological sample results are shown in the table below:

Bacteriological Analysis

Location Code	Location Address	Date	Result
020	5268 Thompson Hill Road	6/29/2023	Absent

Operational Notes: N/A

System Production:



WASTEWATER

Overview:

VPDES discharge permit updates:

Purkins Corner VPDES permit reissuance will be finalized soon as DEQ has finalized the public comment period.

DEQ has requested pH and temperature data in excel format of the Hopyard Farms WWTP. This data will be used to establish a basis for ammonia limitations. Currently DEQ is still in the draft period for this permit reissuance.

Dahlgren – WWTP

Effluent Quality:

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

Wastewater Treatment:

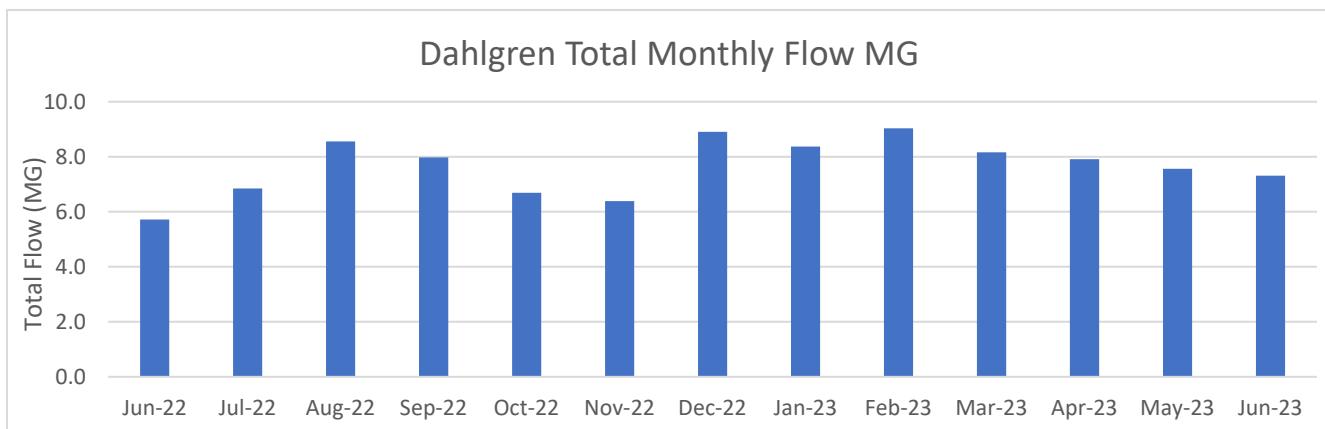
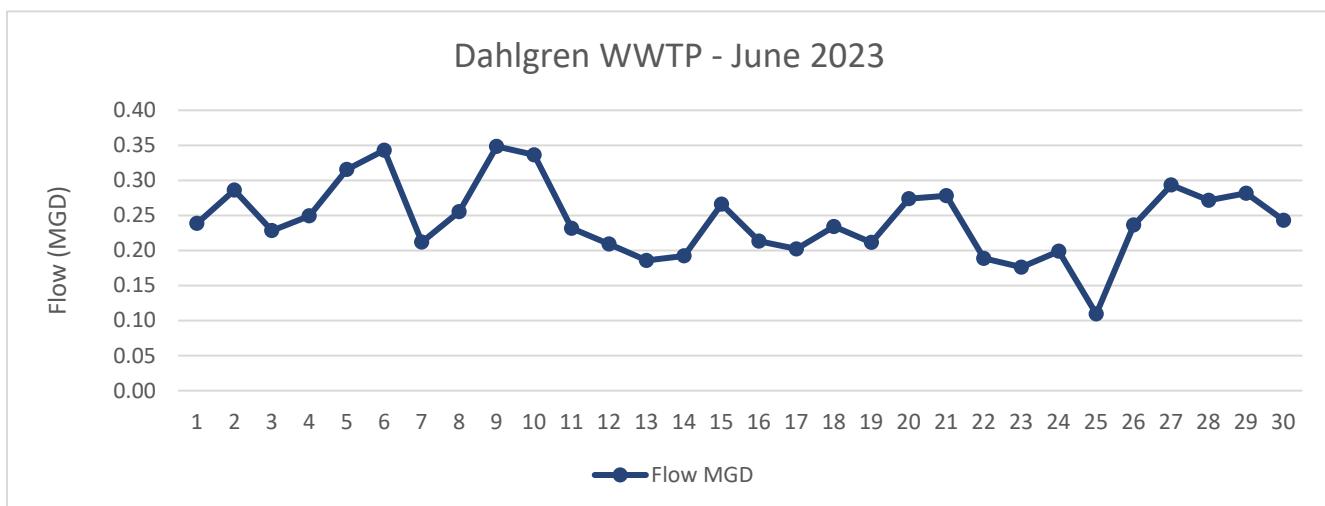
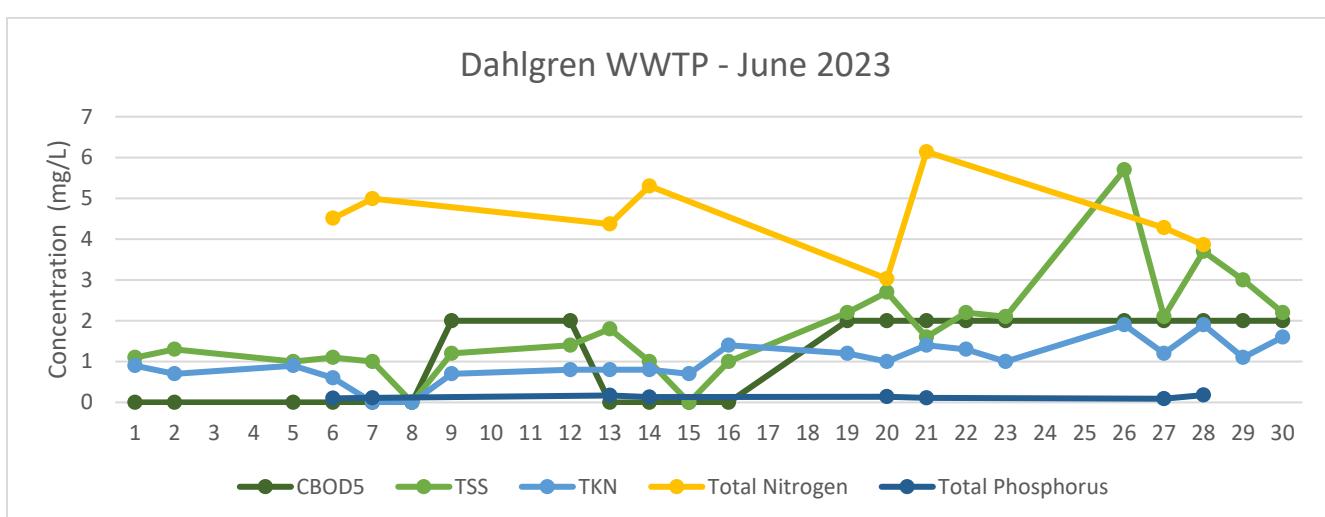
The Dahlgren WWTP met the sewer service area's sanitation demand with an average daily discharge of 0.244 MGD and a total monthly discharge of 7.309 MG.

Operational Notes:

- Flushed and optimized BioCarb feed system to help create an environment for the biomass
- KGCSA maintenance moved mixers around treatment plant from low priority positions to critical locations due to the IFAS mixer failing. We are anticipating this will allow the system to maintain proper nutrient removal.
- Increased 1850 feed rate in response to higher concentrations of phosphorus being received from the collection system. Aluminum Sulfate proved to be inferior in contrast to 1850 especially amongst increased phosphorous concentrations in the incoming flow.

Data Trending:

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



Hopyard – WWTP

Effluent Quality:

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

Wastewater Treatment:

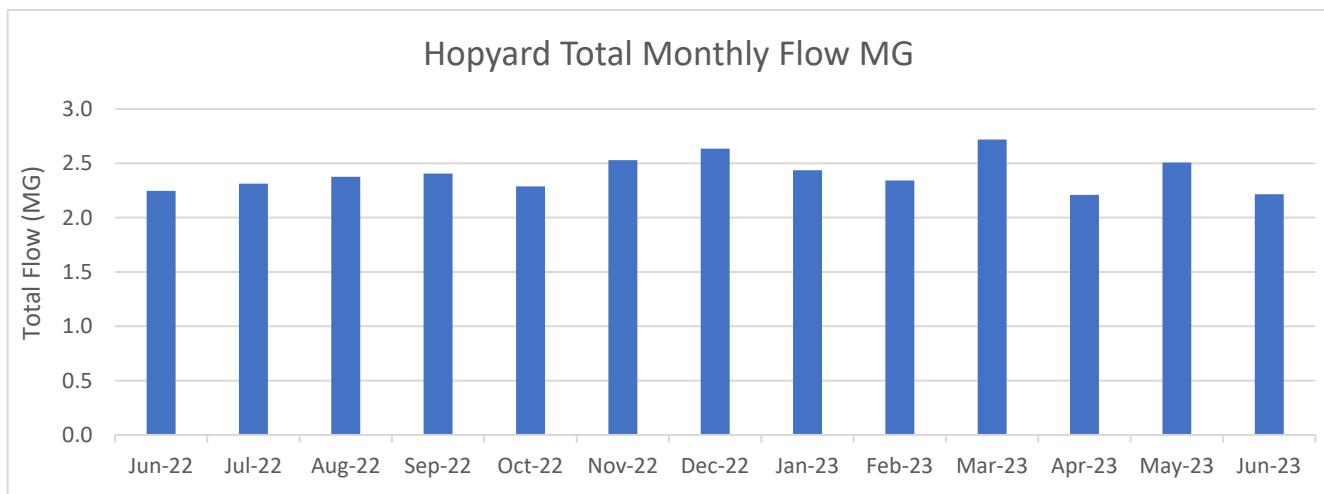
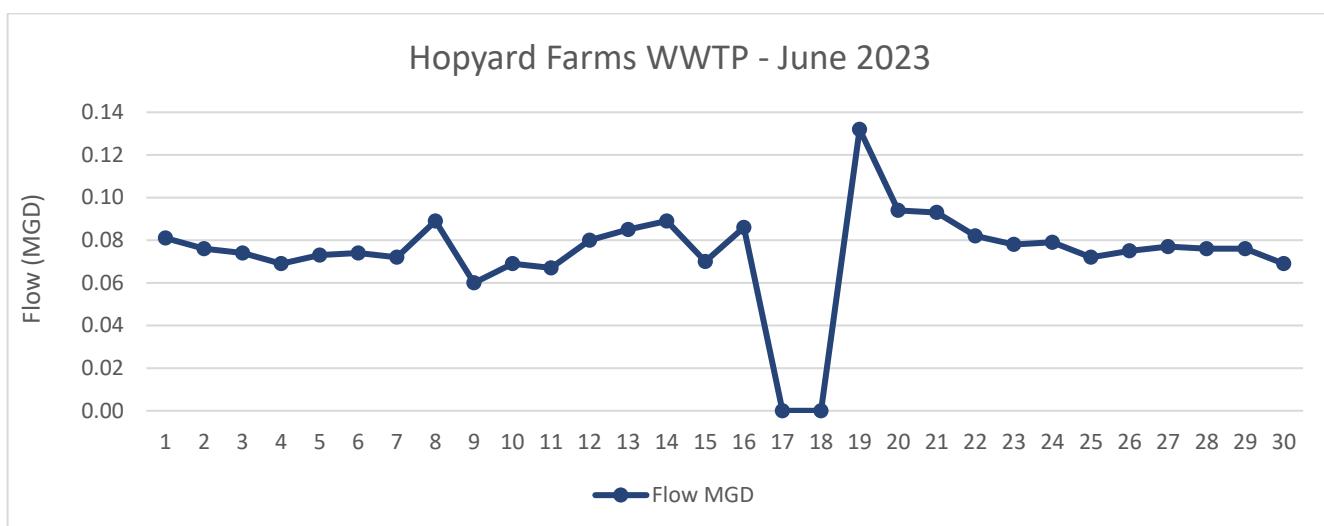
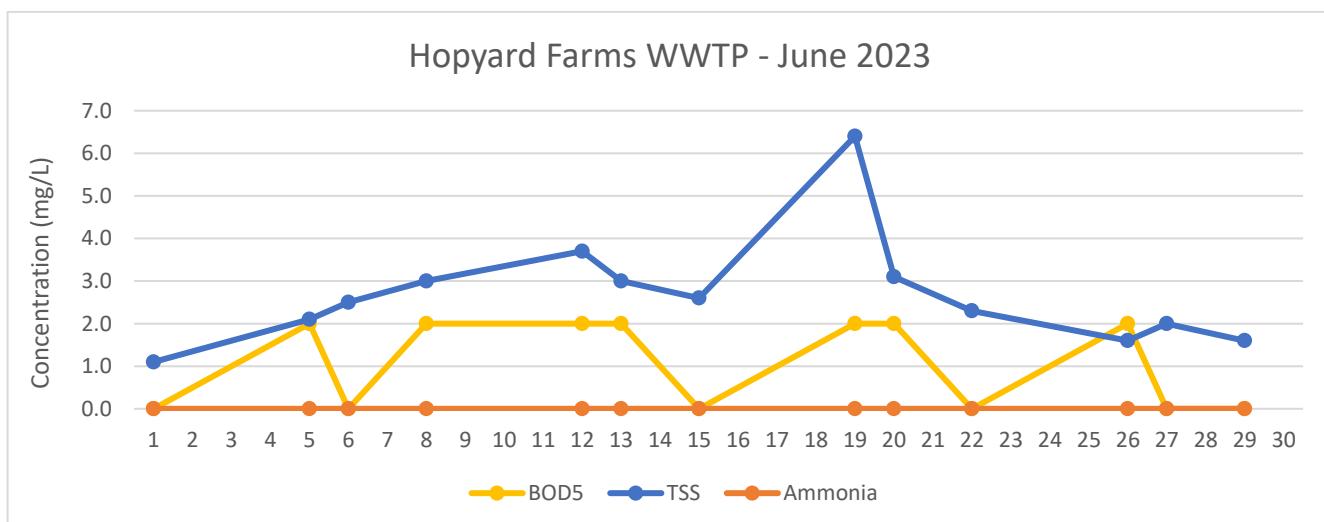
The Hopyard WWTP met the sewer service area's sanitation demand with an average daily discharge of 0.074 MGD and a total monthly discharge of 2.216 MG.

Operational Notes:

- SBR#1 mixer has failed. Inboden staff made necessary changes to aeration to allow for mixing of SBR#1. KG maintenance is looking into a replacement mixer.
- Influent valve on SBR#2 stopped working. KG maintenance disassembled and repaired valve.
- Continuing to dose 1850 to maximize treatment and cost effectiveness.

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 operated well and maintained compliance with all permit-required sampling.

Wastewater Treatment:

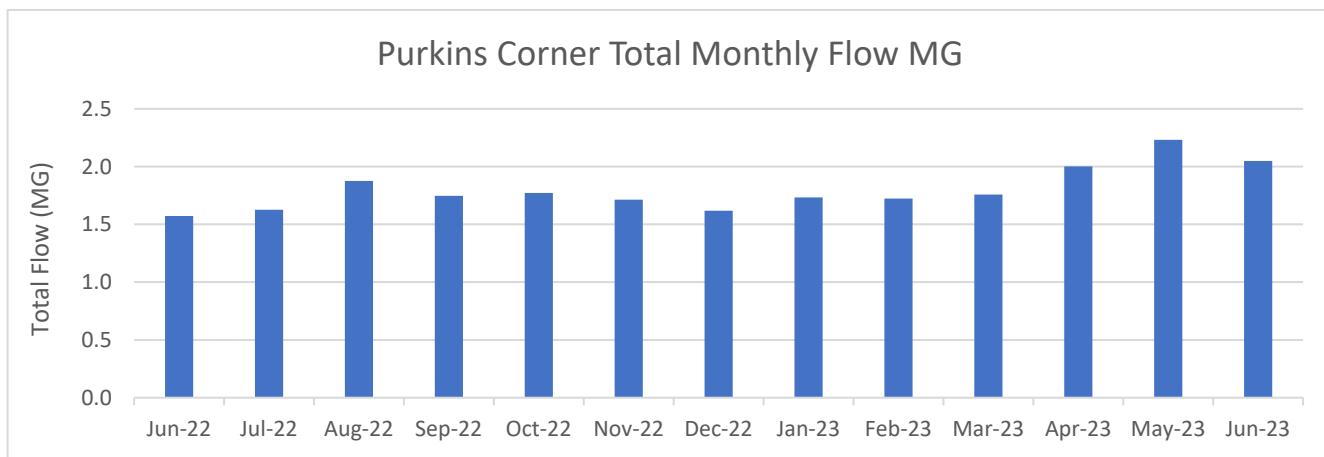
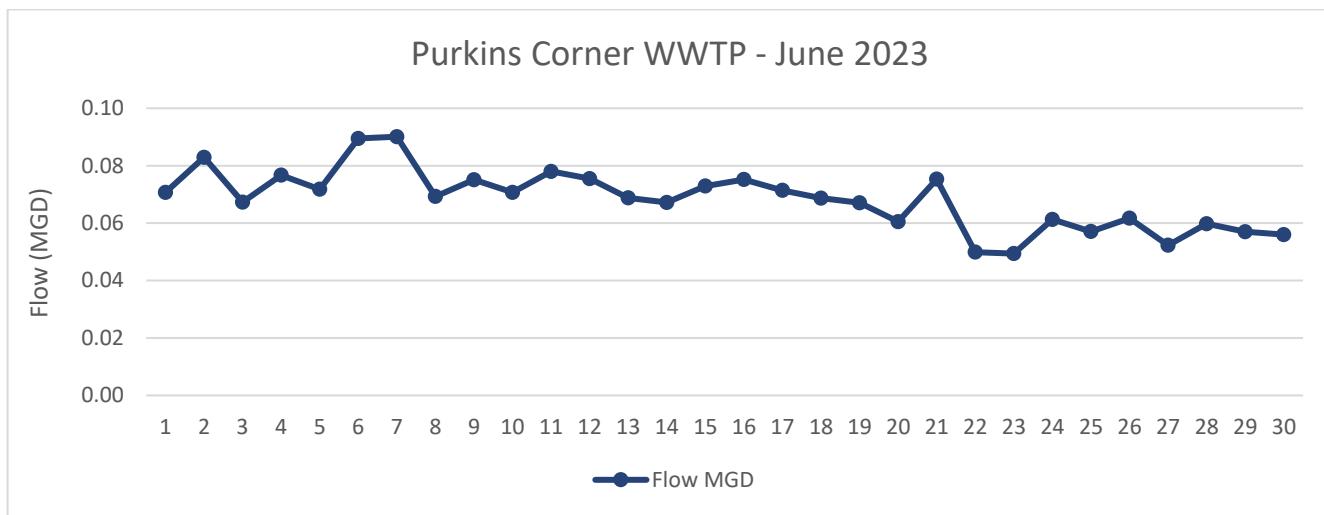
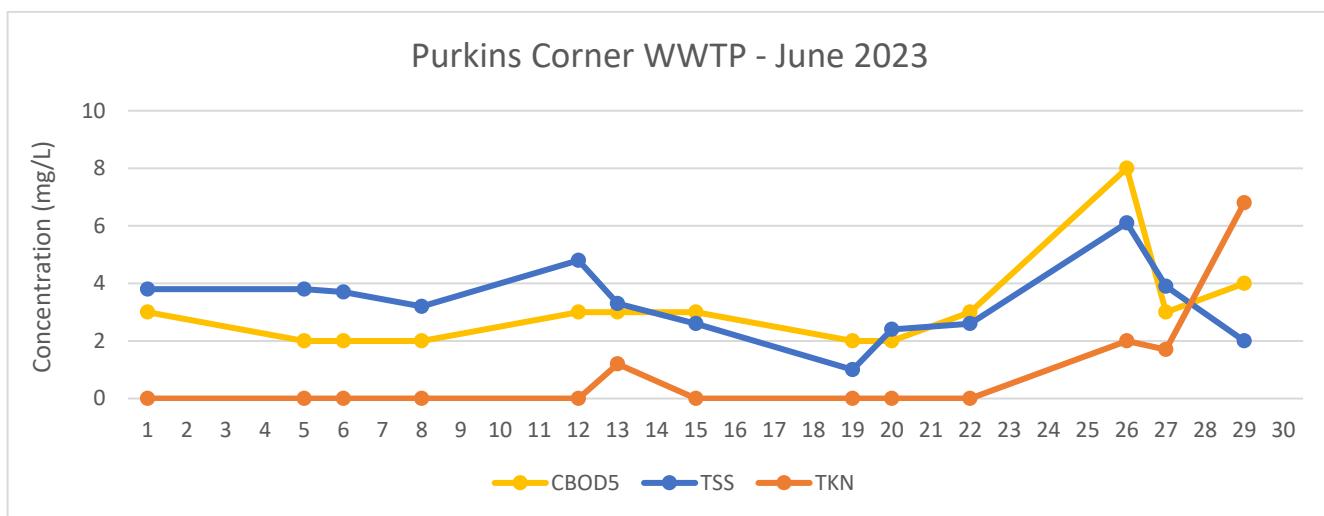
The Purkins Corner WWTP met the sewer service area's sanitation demand with an average daily discharge of 0.068 MGD and a total monthly discharge of 2.049 MG.

Operational Notes:

- A new mixer was received and installed, and normal operations have resumed. IES will continue to monitor the equipment and treatment effectiveness.
- EQ pump in Train B failed. Inboden staff contacted KG maintenance and a replacement/rebuilt pump was installed.
- Discontinued using blower in anoxic zone on Train A.

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 operated well and maintained compliance with all permit-required sampling.

Wastewater Treatment:

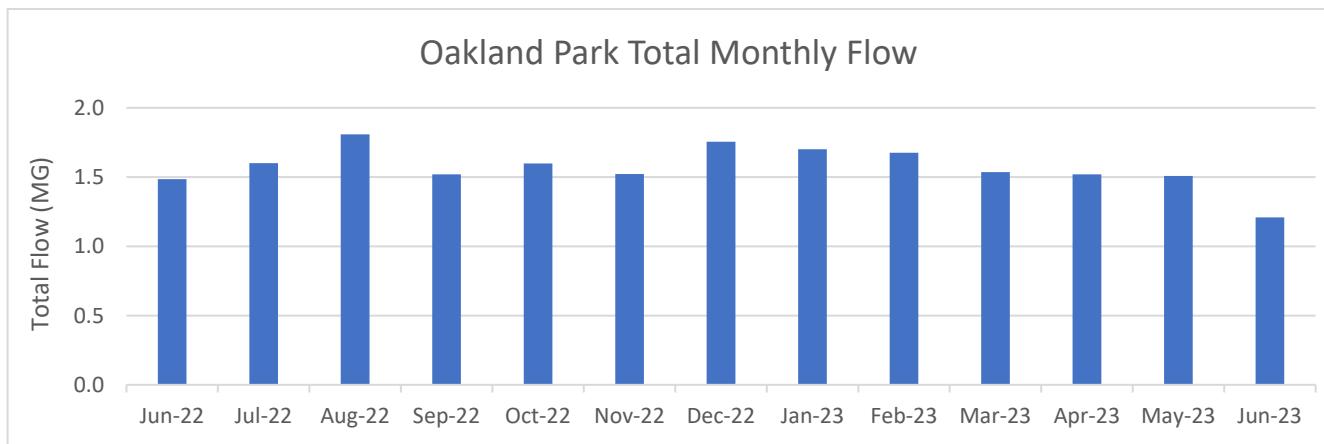
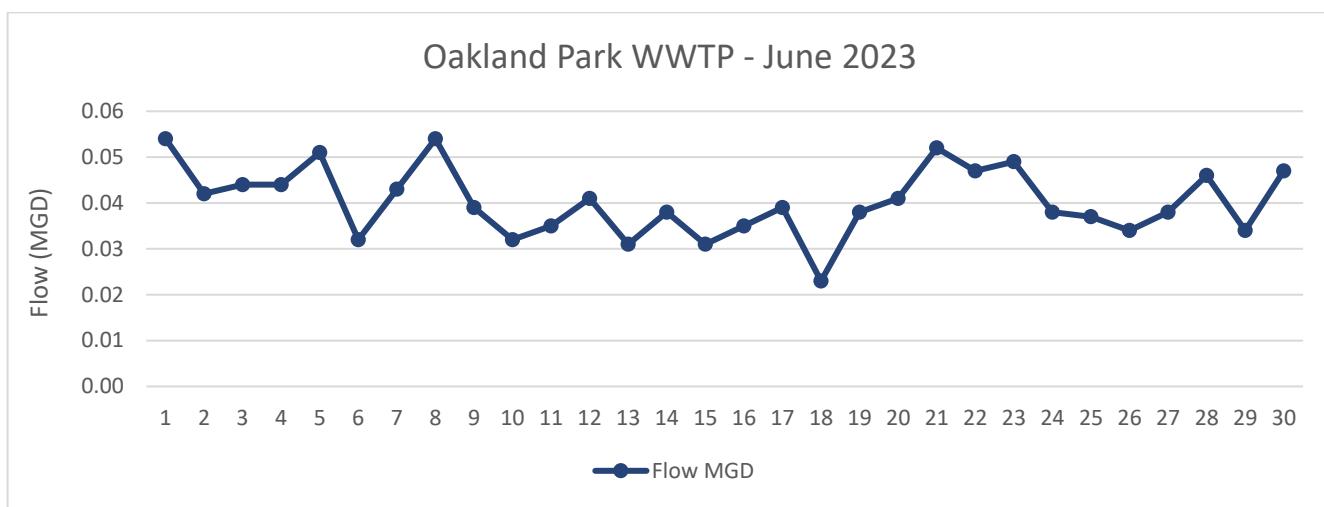
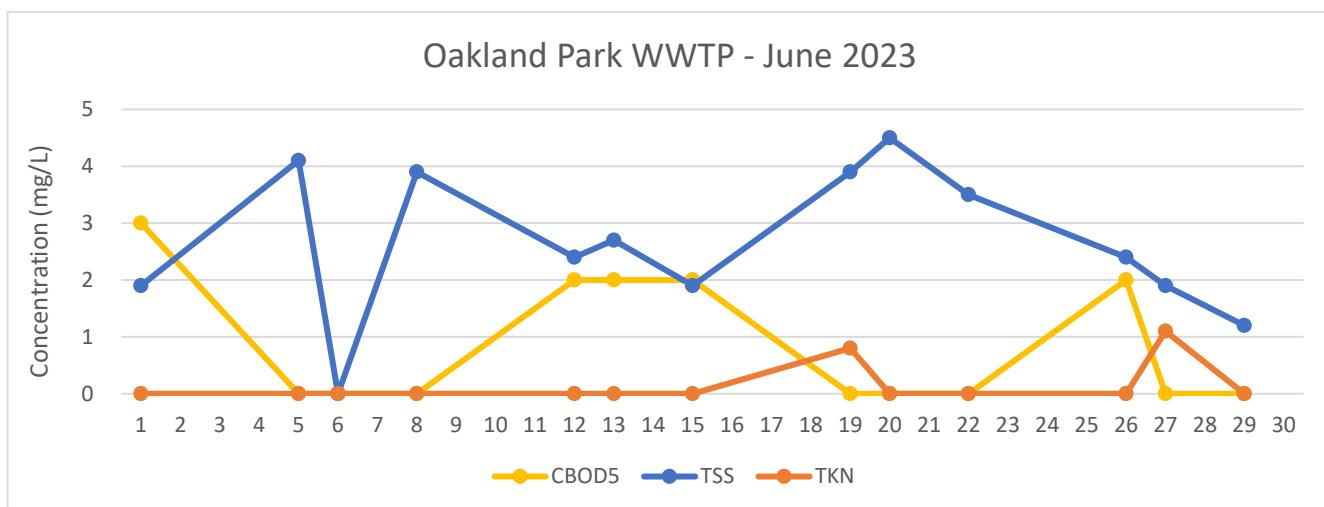
The Oakland Park WWTP met the sewer service area's sanitation demand with an average daily discharge of 0.040 MGD and a total monthly discharge of 1.209 MG.

Operational Notes:

- New mixer was received and installed. Normal operations have returned.
- Replaced chemical feed lines
- Continue to adjust chemical feed rates to optimize nutrient removal efficiency
- Balanced influent flow between Trains A and B to achieve an even flow pattern between both aeration basins.

Data Trending:

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



Fairview Beach – WWTP

Effluent Quality:

The wastewater treatment facility operated well and 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 0.058 MGD and a total monthly discharge of 1.740 MG.

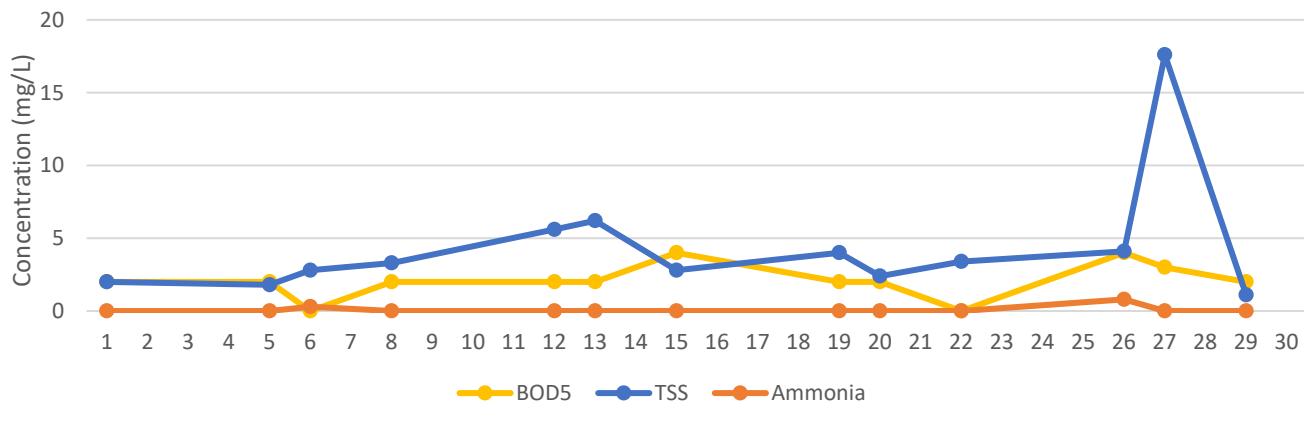
Operational Notes:

- Inboden and KG maintenance personnel oversaw and communicated the upgrades of the HMI panel.

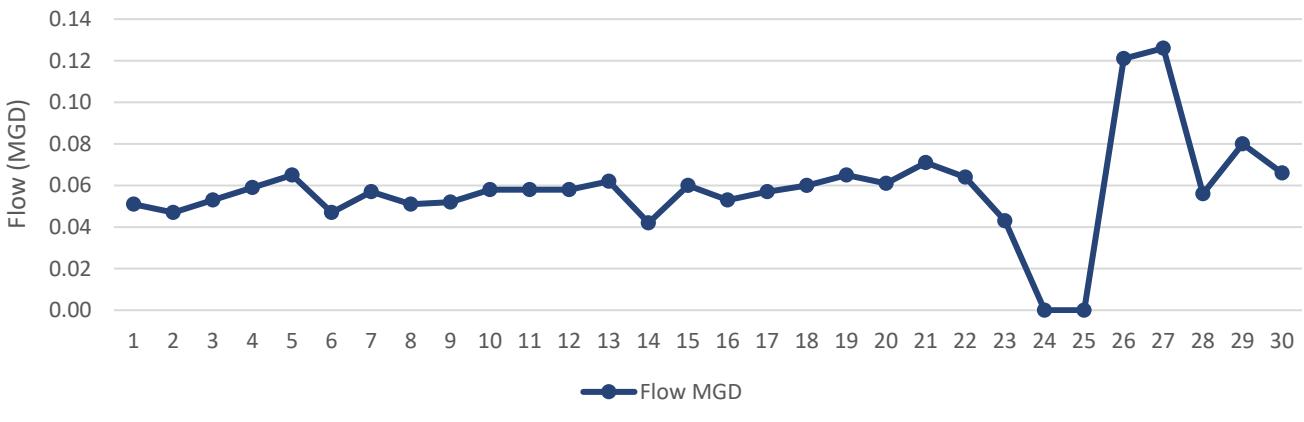
Data Trending:

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

Fairview Beach WWTP - June 2023



Fairview Beach WWTP - June 2023



Fairview Beach Total Monthly Flow MG

