



Municipal Stormwater Management System
Annual Operating Report
2025

Table of Contents

| | | |
|---------|---|----|
| 1 | Introduction | 1 |
| 1.1 | Quality Management System..... | 1 |
| 1.2 | Stormwater System Description..... | 2 |
| 2 | Asset Management and Financial Performance | 3 |
| 2.1 | Asset Management Plan | 3 |
| 2.2 | Financial Performance..... | 5 |
| 3 | Approach to Optimize Operational Performance | 6 |
| 3.1 | Inspection Programs | 7 |
| 3.2 | Maintenance Programs | 7 |
| 3.3 | Computerized Maintenance Management System (CMMS) | 8 |
| 3.4 | Environmental Monitoring Programs..... | 9 |
| 3.4.1 | Field Activities | 9 |
| 3.4.2 | Quality Control for Environmental Monitoring..... | 9 |
| 3.4.2.1 | Sampling Quality Control | 9 |
| 3.4.2.2 | Monitoring Equipment Calibration and Maintenance | 9 |
| 3.4.3 | Laboratory | 10 |
| 3.4.3.1 | Laboratory Analytical Results..... | 10 |
| 3.4.4 | Environmental Trends | 10 |
| 4 | Stormwater Collection | 11 |
| 4.1 | Catch Basin Inspection and Cleaning | 11 |
| 4.2 | Internal Catch Basin Devices | 11 |
| 5 | Stormwater Conveyance | 12 |
| 6 | Stormwater Treatment..... | 13 |
| 6.1 | Manufactured Treatment Device (MTD)..... | 13 |
| 6.1.1 | MTD Inspection and Cleaning | 13 |
| 6.1.1.1 | Sedimentation MTDs..... | 13 |
| 6.1.1.2 | Filtration MTDs..... | 13 |
| 6.2 | Stormwater Management Facilities (SWMF) | 14 |
| 6.2.1 | Environmental Monitoring | 14 |
| 6.2.2 | SWMF Inspection and Maintenance | 14 |
| 6.2.3 | Repairs..... | 15 |
| 6.3 | Low Impact Development (LID)..... | 15 |
| 6.3.1 | Low Impact Development Inspection and Maintenance | 15 |
| 6.3.2 | Repairs..... | 15 |
| 7 | Natural Receivers | 16 |
| 7.1 | Environmental Monitoring..... | 16 |
| 7.2 | Watercourse Inspection and Maintenance | 16 |
| 7.3 | Watercourse Erosion Repair Program | 17 |

Municipal Stormwater Management System
 Annual Operating Report
 2025

8 Addressing Enquiries and Complaints..... 18

9 Spills and Abnormal Discharge Events 19

10 Summary of Alterations 20

10.1 Alterations..... 20

10.1.1 Notice of Modification to Sewage Works (NMSW) and Environmental Compliance Approval (ECA) Applications..... 21

10.1.2 Form SW1 – Record of Future Alteration Authorized for Storm Sewers/Ditches/Culverts 21

10.1.3 Form SW2 – Record of Future Alteration Authorized for Stormwater Management Facilities 21

10.1.4 Form SW3 – Record of Future Alteration Authorized for Third Pipe Collection Systems..... 21

10.2 Alterations Posing a Significant Drinking Water Threat 21

11 Continual Improvement Initiatives..... 22

11.1 Goals for the Reporting Year 22

11.2 Goals Proposed for the Next Year 22

12 Closure 23

List of Tables

Table 1: Summary of Active Asset Inventory..... 2

Table 2: Summary of Completed Inspection Work Orders..... 7

Table 3: Summary of Linear Length Receiving Inspections 7

Table 4: Summary of Completed Maintenance Work Orders 7

Table 5: Summary of Linear Length Receiving Maintenance 7

Table 6: Concentrations of KPI Analytical Parameters in SWMFs 14

Table 7: Concentrations of KPI Analytical Parameters in Natural Receivers 16

Table 8: Notice of Modification to Sewage Works and Environmental Compliance Approval Applications..... 21

Table 9: Record of Future Alteration Authorized for Storm Sewers, Ditches, and Culverts..... 21

Table 10: Record of Future Alteration Authorized for Stormwater Management Facilities 21

List of Figures

Figure 1: City of Barrie Population 2

Figure 2: Operating Expenses..... 5

Figure 3: Inspection and Maintenance Process 8

Figure 4: SWMF Sample Locations 14

Figure 5: Watercourse Sample Locations 16

Figure 6: Complaints Resolution Efficiency 18

Figure 7: Types of Complaints 18

Figure 8: Summary of Alterations 20

Municipal Stormwater Management System
Annual Operating Report
2025

List of Appendices

- Appendix A – Completed Inspections
- Appendix B – Completed Maintenance
- Appendix C – Field Duplicate Laboratory Analysis
- Appendix D – Calibration Records
- Appendix E – Laboratory Analysis – SWMFs
- Appendix F – Laboratory Analysis – Watercourses
- Appendix G – Spills and Discharge Events

1 Introduction

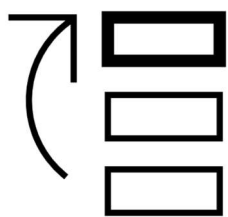
This report was prepared to satisfy the reporting requirements specified in the Consolidated Linear infrastructure Environmental Compliance Approval (ECA) No. 014-S701, Schedule E, Section 5 issued for the Corporation of the City of Barrie (the City of Barrie) Municipal Stormwater Management System (MSWMS), on June 19, 2024, herein after referred to as “the ECA”. This report summarizes activities for the 2025 reporting period, spanning from January 1, 2025, to December 31, 2025, inclusive, herein after referred to as “the current reporting period”. The information herein demonstrates the City of Barrie’s commitment to provide acceptable levels of service, while remaining transparent, financially accountable, and focused on continuous improvement.

1.1 Quality Management System

To satisfy the requirements of the ECA, the City of Barrie developed a quality management system, titled the OpsQMS, in general accordance with Canadian Standards Association (CSA) W211 Management Standard for Stormwater Systems to satisfy the requirements of the ECA. The OpsQMS:

- Documents key policies and procedures needed for effective management of the MSWMS;
- Documents a framework for increasing public safety by identifying and mitigating environmental, social, legal, and economic risks to the MSWMS; and
- Demonstrates service delivery outcomes through the effective application and continual improvement of the MSWMS.

The City of Barrie is committed to ensuring the responsible management of stormwater in a way that protects public safety and the environment through the development, implementation, and maintenance of the OpsQMS. The City of Barrie supports the Operations Department as they maintain and continually improve the effectiveness of the OpsQMS through the following commitments:



1. To comply with applicable legislation and regulations;
2. To maintain and continually improve the stormwater system;
3. To minimize any impacts that the operations of the stormwater system might have on the natural environment and public health; and,
4. To consult with or inform the public when stormwater system elements are to be established or expanded.

The commitments of the OpsQMS align closely with the strategic priorities of the City of Barrie Council, particularly those related to Infrastructure Investments and Responsible Governance. Here is how each commitment supports these strategic priorities:

- **Compliance with Applicable Legislation and Regulations:** By committing to comply with relevant legislation and regulations, the OpsQMS ensures that the MSWMS operates within legal boundaries. This supports **Responsible Governance** by demonstrating a commitment to upholding laws and regulations, which is essential for maintaining public trust and accountability.
- **Maintenance and Continuous Improvement of the MSWMS:** The commitment to maintaining and continually improving the MSWMS supports Infrastructure Investments by ensuring the reliability, functionality, and longevity of critical infrastructure. Regular maintenance and improvement activities help prevent system failures, reduce overall asset lifecycle costs, and enhance the resilience of the MSWMS, aligning with the City of Barrie's priority of **infrastructure investments**.

- **Minimization of Environmental and Public Health Impacts:** The commitment to minimizing impacts on the natural environment and public health demonstrates a proactive approach to environmental stewardship and community well-being. By prioritizing environmental and public safety considerations in stormwater management operations, the OpsQMS contributes to **Responsible Governance** by prioritizing the health and safety of residents and the protection of natural resources.
- **Consultation with or Informing the Public:** Engaging with the public and providing information about the MSWMS aligns with **Responsible Governance** by promoting transparency, accountability, and public participation in decision-making processes. Consulting with or informing the public about system establishment or expansion projects fosters community engagement, builds trust, and ensures that stakeholder perspectives are considered in stormwater management initiatives.

This report provides details of the achievements that support the priorities listed above, along with other reporting requirements.

1.2 Stormwater System Description

The Drainage System serves the urban area of the City of Barrie. When the ECA was issued, it described the MSWMS as consisting of approximately 676 kilometres (km) of storm sewer mains, culverts, ditches, and watercourses (WCs). The system includes 82 Stormwater Management Facilities (SWMFs), commonly known as storm ponds, which consist of 42 dry facilities and 40 wet facilities. Levels of treatments within these facilities range from only quantity control to enhanced 80% Total Suspended Solids (TSS) removal. As of February 2026, a dry SWMF was retrofit to a wet pond, 11 Filtration Manufactured Treatment Devices (MTDs) were assumed, 84 Sedimentation MTDs and 11 functioning Low Impact Development (LID) sites, with additional LID devices and sites planned in the future.

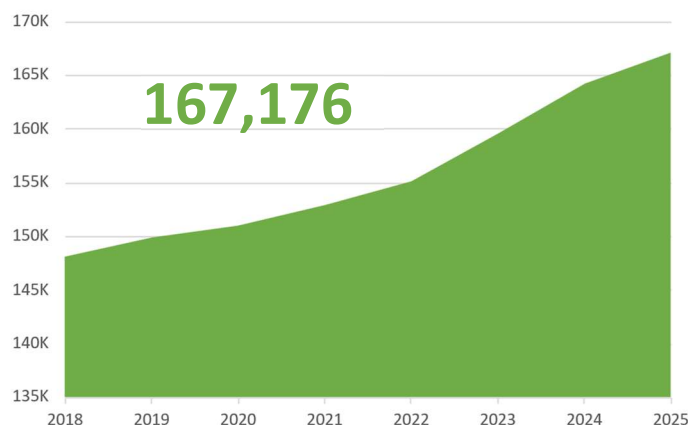
As the MSWM continues to expand, the asset composition changes. In the current reporting period, the description of the MSWMS changed to reflect the information provided in Table 1.

The population of the City of Barrie has steadily increased, as illustrated in Figure 1: City of Barrie Population. As of December 31, 2025, a population of 167,176 resides across a drainage area of approximately 10,100 hectares (ha), with a mix of residential, commercial, and institutional and industrial land uses for the planning horizon 2031. The Drainage System has two distinct areas: the Lake Simcoe Watershed covering 7,100 ha and the Nottawasaga Valley watershed covering 3,000 ha. Future growth for both watersheds will be focused on undeveloped annexation lands to the southwest for the Nottawasaga Valley watershed and to the southeast for Lake Simcoe watershed. This MSWMS drains to the Township of Essa via the Bear Creek sub-watershed and Township of Springwater via Little Lake sub-watershed.

Table 1: Summary of Active Asset Inventory

| Description | ECA Issued Jan 2023 | End of Current Reporting Period |
|-------------------------------|---------------------|---------------------------------|
| Storm Sewer Mains (km) | 442 | 584 |
| Culverts (km) | -- | 27 |
| Ditches (km) | 131 | 108 |
| Watercourses (km) | -- | 103 |
| SWMFs – Dry Facilities | 42 | 41 |
| SWMFs – Wet Facilities | 40 | 41 |
| Filtration MTDs | 0 | 11 |
| Sedimentation MTDs | 65 | 84 |
| LID Catchment Areas | 7 | 11 |

Figure 1: City of Barrie Population



2 Asset Management and Financial Performance

Keeping City of Barrie infrastructure in good working condition is essential to protecting public safety, the environment, and the services residents rely on every day. Asset management helps the City of Barrie plan, maintain, and replace infrastructure before problems occur, which reduces unexpected failures, service disruptions, and costly emergency repairs. By understanding where assets are located, what condition they are in, and what maintenance they require, the City is better prepared to respond to events such as severe weather, equipment failures, or other emergencies. To support this proactive approach, the City of Barrie prepared a Stormwater Asset Management Plan in June 2025, which guides how stormwater infrastructure is operated, maintained, and renewed over time.

The full report is available at www.barrie.ca.

2.1 Asset Management Plan

The updated Stormwater AM Plan provides a comprehensive overview of the current state of stormwater infrastructure, establishes levels of service aligned with Ontario Regulation 588/17, identifies lifecycle investment needs and funding gaps over a 10-year planning horizon (2025-2034). Highlights related to operational needs and risks include:



- Key Findings
 - The total replacement value of the stormwater assets was \$1,600,000,000. That represents an increase of approximately \$355,000,000 over the 2021 AM Plan.
 - The overall condition rating of stormwater assets was good.
 - The SWMFs require an additional \$0.4 million annual investment for sediment removal to help mitigate risks of pollutant discharge into natural waterways.
 - The City of Barrie is upgrading culverts to increase flood resiliency. Critical areas are prioritized as funding is not available to upgrade all culverts.
 - There is an investment gap associated with replacing aging culverts over the next 10 years. Deteriorated culverts present the risk of unplanned disruptions (sinkholes), which in turn force the need for costly reactive repairs.
- Operational Needs
 - Ongoing storm sewer cleaning and flushing is required to maintain hydraulic capacity and prevent blockages that lead to localized surface flooding.
 - Catch basin cleaning remains a high-frequency operational requirement, particularly in fall and during high-debris storm events, to prevent inlet blockage.
 - Continued closed circuit television (CCTV) inspection of storm sewers is required to:
 - Identify structural deterioration and defects early
 - Prioritize operational repairs versus capital renewal
 - Reduce emergency response and reactive maintenance
 - Sediment removal from SWMFs is a critical operational activity:
 - Asset condition for most ponds is driven by time-to-cleanout rather than structural failure
 - Bathymetric survey data indicates cleanout frequencies that exceed current operating budget capacity
 - Increased erosion control and channel maintenance along natural watercourses is required to manage bank instability, sediment migration, and asset exposure.
 - Culvert inspections and debris management, particularly for non-OSIM culverts, are increasingly important as assets age and storm intensity increases.

Municipal Stormwater Management System
Annual Operating Report
2025

- Maintenance of MTDs requires specialized cleaning cycles to maintain water quality performance.
- LID features require regular inspection and maintenance to ensure infiltration and treatment functions remain effective.
- Operations and maintenance resources must scale with asset growth from development, increasing inspection, cleaning, and reporting workloads.
- Operational Risks
 - Insufficient sediment removal from SWMFs increases risk of:
 - Reduced flood storage capacity
 - Higher downstream flood vulnerability
 - Degraded water quality performance
 - Accelerated capital rehabilitation needs
 - Operations and maintenance funding gap for sediment management (~\$0.4M/year) increases reliance on reactive responses rather than preventative maintenance.
 - Blocked or undersized storm sewers pose operational risks during short-duration, high-intensity rainfall events, which are becoming more frequent.
 - Aging culverts in poor condition, particularly non-OSIM culverts, increase the risk of:
 - Road subsidence or sinkholes
 - Unexpected service disruptions
 - Emergency repairs with high cost and traffic impacts
 - Deferred operational maintenance increases long-term lifecycle costs by shifting manageable operations and maintenance work into capital failures.
 - Climate change impacts (more intense rainfall) place additional stress on:
 - Cleaning frequencies
 - Debris management
 - Emergency response capacity
 - Insufficient staffing or contractor availability limits the City of Barrie's ability to deliver expanded preventative maintenance programs even when funding is available.
 - Lack of proactive maintenance on private stormwater infrastructure presents ongoing risk to City of Barrie-owned assets and system performance.

2.2 Financial Performance

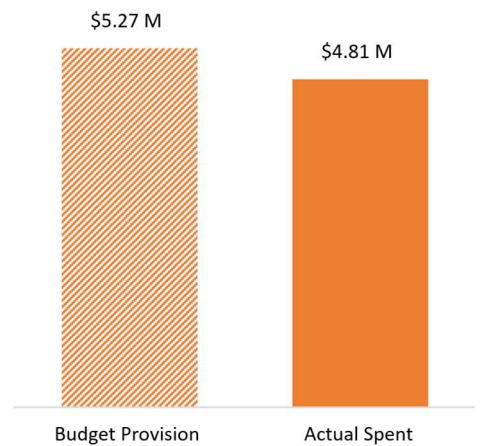
The stormwater financials are broadly categorized into two categories: the first is collection, conveyance, and natural receivers; the second is treatment. Assets associated with stormwater collection, conveyance, and natural receivers include, but are not limited to, catch basins, storm sewers, ditches, culverts, watercourses, lakes, and wetlands. Assets associated with stormwater treatment include, but are not limited to, SWMFs, MTDs and an increasing uptake of LID practices. With the asset management financial considerations in mind, the following is a summary of the financial performance of the operations and maintenance of the MSWMS.



As illustrated in Figure 2: Operating Expenses, in the current reporting period, the operating expenses for the MSWMS was budgeted at \$5.27M dollars, of which \$4.81M was spent, representing approximately 91% of the projected operating budget was expended. The budget was underspent by approximately, \$0.46M, largely due to two (2) large projects that were not executed due to

regulations restricting the window in which work could be performed, and contractor performance challenges. References to financials within this report are based on the current reporting period ledger prior to finalization and excluding debenture costs.

Figure 2: Operating Expenses



3 Approach to Optimize Operational Performance

The City of Barrie recognizes the importance of responsible asset stewardship to ensure that assets receive the periodic maintenance required to meet or exceed their design service life while maintaining their intended function. Optimizing operational performance is at the core of how the management of the MSWMS aligns with Council's Strategic Plan. To reiterate, optimization provides the following benefits directly aligned to priorities within the Strategic Plan:



- Compliance with applicable legislation and regulations supports **responsible governance** by demonstrating a commitment to upholding laws and regulations, which is essential for maintaining public trust and accountability.
- Maintenance and continuous improvement of the MSWMS helps prevent system failures, reduce operational costs, enhance the resilience of the stormwater system, and deferral of capital costs associated with the renewal of assets, aligning with the City of Barrie's priority of **infrastructure investments**.
- Minimization of environmental and public health impacts contributes to **responsible governance** by prioritizing the health and safety of residents and the protection of natural resources.

The City of Barrie has developed data-driven inspection and maintenance programs to operationalize best practices for preventative maintenance. Inspections and preventative maintenance are necessary to support improved overall safety and reliability of the MSWMS, as well as the optimization of asset lifecycle costs. The inspection and maintenance programs minimize the likelihood of unplanned service disruptions and resultant need for costly reactive repairs. The forecasted timing of capital plans, as well as potential flooding risks identified in the City of Barrie's most recent Drainage Master Plan (2019), are considered when prioritizing inspections and maintenance to the MSWMS.

Critical issues and other pertinent asset details are escalated as appropriate to support the development of safe, reliable, and cost-optimized infrastructure repair and renewal plans.

Operations and maintenance activities can typically be categorized as follows:

- **Annual Programming** – Annual Programming is required to continue delivering the minimum baseline levels of service. It is preventative, rather than reactive and therefore entails relatively stable and predictable funding requirements; however, increased funding pressures may potentially result from changes within the regulatory sphere or within the market.
- **Major Maintenance** – Schedule E, Section 1.0 of the Stormwater ECA requires that the City of Barrie always operate and maintain the system properly. This includes performance monitoring, addressing major maintenance concerns, adequate funding and adequate operator staffing and training. Major Maintenance needs are primarily based on findings from asset inspections; therefore, associated budget pressures tend to be relatively variable, but in most cases Major Maintenance needs can, to an extent, be prioritized and scheduled to align with available operational funding or otherwise addressed through the capital budget.
- **Emergency Response** – Emergency Response is required in situations where asset conditions decline to the point of disrupting municipal services. Emergency response typically entails the greatest financial expense. Swift action is required to ensure public safety, minimize disruption to municipal services, and mitigate potential environmental harm. Within the context of municipal stormwater infrastructure, emergency response is mostly related to flooding, sinkholes, and spills.

Emergency Repairs



In the current reporting period, no emergency work was completed on the MSWMS.

Maintenance Management System (CMMS). The process is illustrated in a diagram in Figure 3: Inspection and Maintenance Process.

Inspections are conducted operationally by City Operations staff resources and expertise, except for “structural culverts” (as defined in the Ontario Structure Inspection Manual), CBs, and MTDs, which are completed by contracted professionals. The City of Barrie has adopted a variety of GIS-supported, non-entry inspection methodologies that are rapid, efficient and produces repeatable assessments and ratings. All inspectors are diligently trained to ensure that the data generated is standardized.

A summary of the inspection work orders is included in Table 2: Summary of Completed Inspection Work Orders. A summary of linear assets (sewers) receiving inspections is included in Table 3: Summary of Linear Length Receiving Inspections. Note that conveyance programs for sewer mains and laterals are not well resourced and are typically handled on a complaint driven basis.

3.2 Maintenance Programs

Inspections that identified deficiencies resulted in added maintenance and repair activities (work orders). Each deficiency was actioned into a work order in the CMMS. The process is illustrated in a diagram in Figure 3: Inspection and Maintenance Process. In the current reporting period, maintenance and repair work orders were completed on assets including: CBs, culverts, ditches, laterals, LIDs, MHs, sedimentation MTDs, storm sewers, wet and dry SWMFs, WCs, and all other appurtenant structures. Refer to the sections below for specific details of work completed on each asset type. A detailed summary of maintenance work orders is included in Appendix A, describing the specific work activities completed against each asset type.

The remaining assets detailed in the ECA did not require maintenance or repairs in the current reporting period.

A summary of the maintenance work orders is included Table 4: Summary of Completed Maintenance Work Orders. A summary of linear assets (ditches and sewers) receiving maintenance is included

Table 2: Summary of Completed Inspection Work Orders

| ECA Asset Group | Total |
|------------------------|---------------|
| Inspection – CBs | 12,681 |
| Inspection – Culverts | 224 |
| Inspection – Ditches | -- |
| Inspection – Headwalls | 223 |
| Inspection – Laterals | -- |
| Inspection – LIDs | 58 |
| Inspection – MHs | -- |
| Inspection – MTDs | 43 |
| Inspection – Sewers | -- |
| Inspection – SWMFs | 113 |
| Inspection – WCs | 114 |
| Total | 13,456 |

Table 3: Summary of Linear Length Receiving Inspections

| ECA Asset Group | Length |
|----------------------|--------|
| Inspection – Ditches | -- |
| Inspection – Sewers | 41 km |

Table 4: Summary of Completed Maintenance Work Orders

| ECA Asset Group | Total |
|-------------------------|---------------|
| Maintenance – CBs | 12,772 |
| Maintenance – Culverts | 25 |
| Maintenance – Ditches | 5 |
| Maintenance – Headwalls | 0 |
| Maintenance – Laterals | 1 |
| Maintenance – LIDs | 62 |
| Maintenance – MHs | 11 |
| Maintenance – MTDs | 77 |
| Maintenance – Sewers | 3 |
| Maintenance – SWMFs | 361 |
| Maintenance – WCs | 210 |
| Total | 13,527 |

Table 5: Summary of Linear Length Receiving Maintenance

| ECA Asset Group | Length |
|-----------------------|---------|
| Maintenance – Ditches | 1,000 m |
| Maintenance – Sewers | 41 km |

in Table 5: Summary of Linear Length Receiving Maintenance. Note that conveyance programs for sewer mains and laterals are not well resourced and are typically handled on a complaint driven basis.

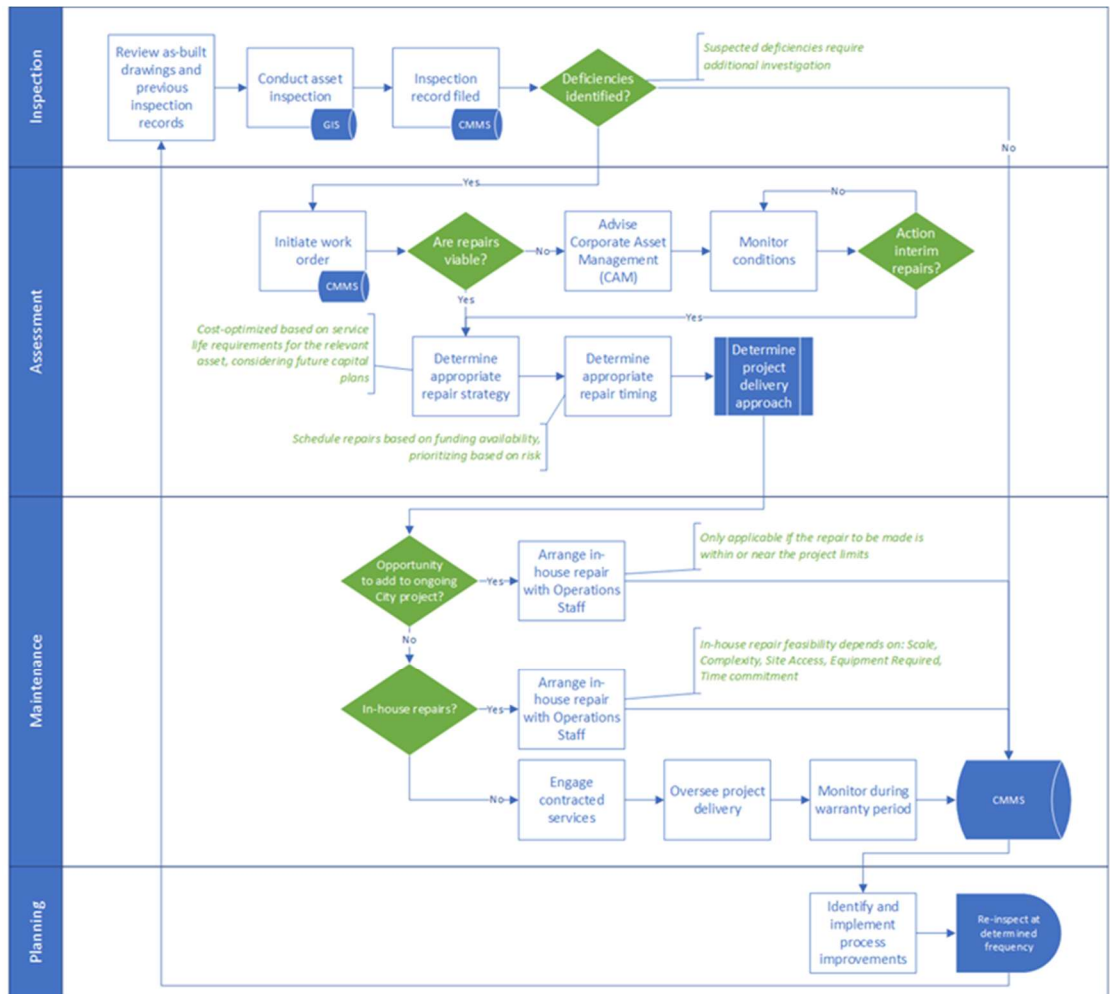
3.3 Computerized Maintenance Management System (CMMS)

The City of Barrie utilizes CityWorks as the CMMS system that supports staff and contractors in tracking inspection and maintenance efforts against City of Barrie assets. This system supports:

- Asset management-based decision-making;
- Data-driven budget planning;
- Tracking and benchmarking of Level of Service metrics;
- Preservation of corporate memory;
- Consistency of processes;
- Customer service excellence; and
- Analysis of data to foster continuous improvement and innovation.

The CMMS is fully customized and requires consistent and deliberate management effort to continually develop new processes and integrations. Data is regularly reviewed and revised to ensure accuracy of the system’s performance reliability to enhance decision making and process improvements.

Figure 3: Inspection and Maintenance Process



3.4 Environmental Monitoring Programs

The City of Barrie has developed Environmental Monitoring Programs to document condition of the environmental aspects of the MSWMS. In accordance with the ECA, Schedule E, Section 4.1, on or before November 15, 2024, or within twenty-four (24) months of the date of the publication of the Ministry of Environment, Conservation, and Parks (MECP) monitoring guidance, whichever is later, the Monitoring Plan shall be implemented; following which, the City of Barrie will include the results of the Monitoring Programs in the Annual Report. In the interim, a high-level summary of the monitoring data has been prepared for the purposes of this annual report.

3.4.1 Field Activities

Field monitoring activities were undertaken in various locations throughout the MSWMS, including SWMFs and watercourses. Along with collecting surface water samples for external laboratory analysis, in-situ measurements were recorded for temperature, pH, and dissolved oxygen, and conductivity.

3.4.2 Quality Control for Environmental Monitoring

Quality control was verified by way of field duplicates and daily calibration of field equipment.

3.4.2.1 Sampling Quality Control



Field duplicate samples are an important quality control measure in analytical testing, especially in environmental monitoring, water quality analysis, and similar fields. The purpose of field duplicates is to assess the precision and reliability of analytical results by comparing the data obtained from two separate samples collected from the same location at the same time.

Quality control samples consisted of one field duplicate for every 10 samples that were submitted to the laboratory.

Analytical results of the field duplicates were comparable to the associated sample analytical results, indicating that the analytical results are valid.

A summary of the field duplicate analytical results is included in Appendix C.

3.4.2.2 Monitoring Equipment Calibration and Maintenance

YSI, multi-parameter water meters, are used to monitor the MSWMS. Each of the devices is calibrated in accordance with the manufacturer's instructions. In addition, the devices are field verified prior to each use, in accordance with the manufacturer's instructions. Maintenance of the equipment is completed on an as needed basis.

In the current reporting period, the pH probe, serial number 17A101263, was repaired in April.

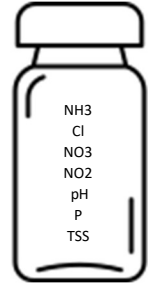
A summary of the calibration records is included in Appendix D.

3.4.3 Laboratory

In 2023, an independent laboratory, ALS Laboratories Canada Ltd, was retained to perform analysis of the sample media associated with the monitoring program. ALS Canada Ltd. is accredited with Canadian Association for Laboratory Accreditation (CALA) to perform analysis of sample media, including water, soil, and sediment, for environmental projects and programs.

3.4.3.1 Laboratory Analytical Results

A selection of water samples was analyzed for suite of organic and inorganic parameters. The concentrations of key performance indicator (KPI) analytical parameters, including Total Ammonia (NH₃), Chloride (Cl⁻), Nitrate (NO₃⁻), Nitrite (NO₂⁻), pH, Total Phosphorous (P), and Total Suspended Solids (TSS) were aggregated and summarized in the report.



3.4.4 Environmental Trends



Environmental trends will be included in future annual reports; however, for the purposes of this report, a high-level summary of the monitoring data has been prepared, refer to Appendix E and Appendix F. In accordance with the ECA, Schedule E, Section 4.1, on or before November 15, 2024, or within twenty-four (24) months of the date of the publication of the MECP monitoring guidance, whichever is later, the Monitoring Plan shall be implemented; following which, the City of Barrie will include the results of the Monitoring Program in the Annual Report.

Long term environmental trends will be used to establish SWMF and sub-watershed baselines. Environmental monitoring data will help guide operational maintenance priorities and capital retrofit opportunities.

4 Stormwater Collection



Stormwater collection plays an integral role in the pre-treatment of stormwater. Collection is achieved primarily via CBs. They are the first piece of infrastructure that urban stormwater enters, and it is at this point in the system that there is an opportunity to reduce maintenance demands and maintain the performance of downstream infrastructure.

4.1 Catch Basin Inspection and Cleaning

The City of Barrie has a robust CB inspection and cleaning program that operates annually and is exploring new ways that pre-treatment can reduce reactive maintenance. CB inspection and cleaning is performed concurrently by the City of Barrie's contractor with the use of numerous hydrovac trucks. The CB inspection and cleaning program begins in early April and runs through to the end of June. Material generated from CB cleaning is stockpiled and temporarily stored at the Operations Centre for laboratory analysis to confirm appropriate disposal sites.

Highlights of the program in the current reporting period are as follows:

- Activities were conducted from March through to June;
- 12,680 CBs were cleaned; and
- ~2,000 metric tons of sediment were removed and disposed (rough estimate due to space limitations in the City of Barrie's temporary storage area).

4.2 Internal Catch Basin Devices

Internal Catch Basin Devices (ICDs) are becoming increasingly popular as a pre-treatment method. ICDs are devices designed to sit inside CBs and provide the ability for the CB to retain more sediment in CB sumps and capture plastics and debris.

5 Stormwater Conveyance



Stormwater conveyance infrastructure consists of storm sewers, ditches, and culverts. Conveyance assets transport stormwater from roadside runoff, CBs, and other inputs to downstream stormwater treatment infrastructure and/or natural receivers. Ongoing inspections and maintenance programs that are administered include: culverts, ditches, laterals, MHs, storm sewers, WCs, and all other appurtenant structures. These programs are all at varying stages of development based upon available resources.

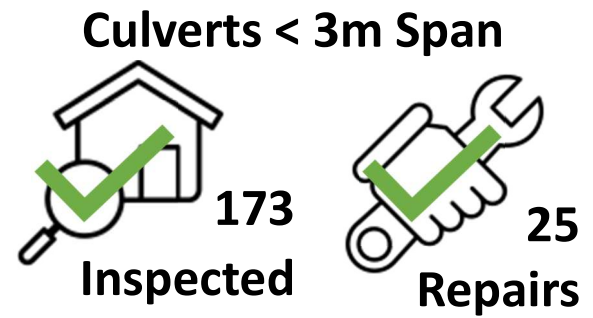
If deficiencies of ditches are observed through routine inspections and patrolling, the City of Barrie initiates a work order. In the current reporting period, 5 maintenance activities were completed on ditches and approximately 1,000 m of ditches were cleaned.



In accordance with O. Reg. 104/97 *Standards for Bridges*, as amended, all structural culverts with spans of 3.0 metres or greater must be inspected under the direction of a Professional Engineer on a biennial basis in accordance with Ontario Structural Inspection Manual (OSIM). Culverts with spans less than 3.0 metres are not subject to inspection under O. Reg. 104/97; nevertheless, they serve a critical role in supporting the safety and reliability of the local infrastructure and surrounding lands. In the absence of a mandated framework for non-regulated culverts, the City of Barrie established a 2-year inspection frequency. Currently, the 2-year inspection frequency is considered sufficient for achieving the positive objectives of the program, while minimizing staff resources. Entrance culverts are not subject to the inspection and maintenance program given that the rehabilitation of culverts is the responsibility of the individual property owner(s), as per Council Policy 91-G-247.

A total of 51 structural culverts were inspected in the current reporting period, identifying 4 maintenance needs that should be completed within the next year, and 29 maintenance needs that should be completed within the next two years. Zero (0) maintenance Work Orders were completed in the current reporting period.

A total of 173 non-OSIM culverts were inspected in the current reporting period, resulting in 32 maintenance Work Orders, 25 were completed in the current reporting period.



6 Stormwater Treatment

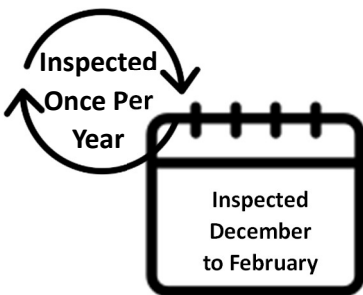
Stormwater conveyance infrastructure typically discharges to stormwater treatment infrastructure for the purposes of reducing flooding and improving the overall quality of stormwater runoff from urban areas before it is released to the natural receivers. Stormwater treatment infrastructure consists of SWMFs, MTDs and an increasing uptake of LID practices.

6.1 Manufactured Treatment Device (MTD)

6.1.1 MTD Inspection and Cleaning

MTDs are used to target the treatment and removal of contaminants, broken out into two categories: Sedimentation MTDs and Filtration MTDs. Sedimentation MTDs (more commonly called oil grit separators) makeup most of the City of Barrie’s inventory of MTDs. Filtration MTDs are equipped with the addition of a filter or filtration media. Filtration MTDs have the capability of providing higher performance for improving stormwater quality discharges from these units. Within the City of Barrie’s drainage areas, MTDs are often installed ahead of SWMFs and/or on their own in smaller catchments as a standalone treatment device prior to discharge to the natural receiver.

MTDs were inspected by contractors, documenting an array of items. In addition, samples of sediment are collected and submitted to a licenced laboratory for analysis to determine appropriate disposal options. The following conditions were identified as concerns in the current reporting period:



- Accumulation of Sediment, Trash or Debris
- Gaskets Missing or Damaged
- Hydrocarbons (Visible Oil Sheen)
- Infiltration or Leaking
- Signs of Clogging
- Standing Water Upstream
- Submerged Condition



6.1.1.1 Sedimentation MTDs

In the current reporting period, 43 sedimentation MTDs were inspected and 77 maintenance activities, consisting mainly of cleaning, were completed on Sedimentation MTDs. The remaining 34 sedimentation MTDs were inspected in December 2024 in preparation for cleaning in the current reporting period.

6.1.1.2 Filtration MTDs

In the current reporting period, 2 filtration MTDs were inspected and 2 maintenance activities, consisting of cleaning, were completed on Filtration MTDs.

6.2 Stormwater Management Facilities (SWMF)

SWMFs receive stormwater runoff from stormwater conveyance infrastructure and are designed to treat and/or hold stormwater prior to discharging it in a controlled manner to the downstream natural receiver. The City of Barrie has several SWMFs that are designed to treat and/or hold stormwater.

6.2.1 Environmental Monitoring

Samples of surface water were collected on various dates from May to August of the current reporting period, inclusive, from the outlet of 41 wet SWMFs, as illustrated in Figure 4: SWMF Sample Locations. In the current reporting period, a total of 81 samples, including 6 duplicates, were submitted for analysis. Concentrations of key indicator parameters are summarized in Table 6: Concentrations of KPI Analytical Parameters in SWMFs.

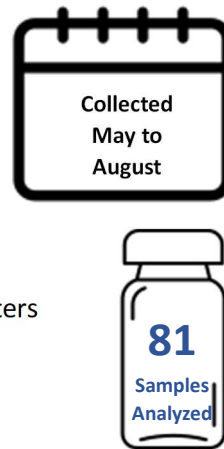


Figure 4: SWMF Sample Locations

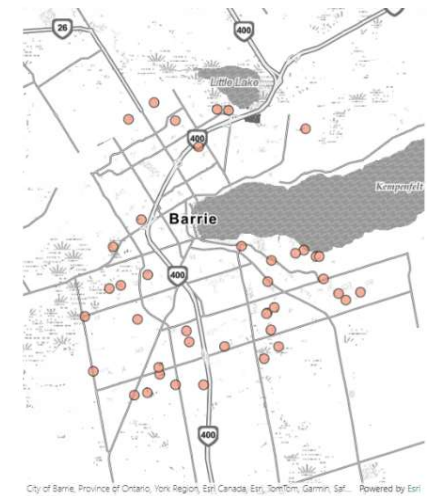


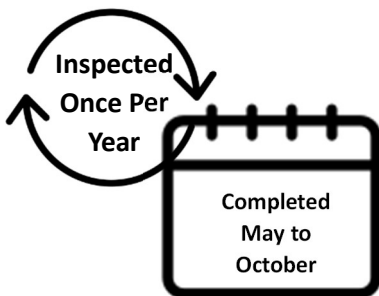
Table 6: Concentrations of KPI Analytical Parameters in SWMFs

| Parameter | Units | Minimum | Maximum |
|-------------------------------|----------|---------|---------|
| Ammonia, total (as N) | mg/L | 0.01 | 0.95 |
| Chloride | mg/L | 7.66 | 1200 |
| Nitrate (as N) | mg/L | 0.02 | 2.18 |
| Nitrite (as N) | mg/L | 0.01 | 0.05 |
| pH | pH units | 7.43 | 8.7 |
| Phosphorus, total | mg/L | 0.01 | 0.31 |
| Solids, total suspended [TSS] | mg/L | 3.00 | 86.50 |

Note: Analytical results less than (<) the Method Detection Limit are reported at the detection limit for data aggregation purposes.

The aggregated analytical result for each SWMF overlain on an aerial photo is included in Appendix E for reference.

6.2.2 SWMF Inspection and Maintenance



SWMFs are inspected once per year. In the current reporting period, 94 inspections were completed in May and October. In addition, 19 inspections of Marta Crescent were completed at various times throughout the year.



In the current reporting period, 361 maintenance activities were completed within the SWMFs. Maintenance activities included but were not limited to installing signs, debris and litter removal, graffiti removal, grate repairs, access road maintenance, outlet repairs, etc. In addition, dewatering at Marta Crescent resulted in 2 maintenance activities.

SWMF valves are exercised once per year. In the current reporting period, 32 valves were exercised. All valves were found to be in good working order.

Valves are exercised to ensure their functionality is maintained. Properly functioning valves result in reduced costs to draw down water within the SWMF, which is required periodically to perform certain maintenance activities.



6.2.3 Repairs

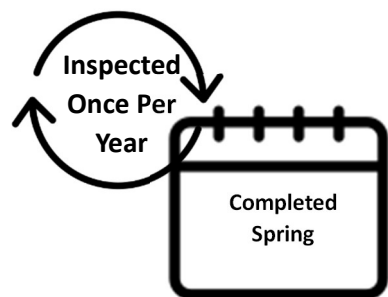
In the current reporting period, the following major SWMF repairs were completed:

- LT04 required maintenance, repair and some minor design changes to construct a new inlet and outlet structure to bring the SWMF in compliance with the ECA.

6.3 Low Impact Development (LID)

LIDs are innovative approaches used in urban and suburban areas to manage stormwater runoff in an environmentally sustainable manner. These methods aim to mimic natural hydrological processes by using techniques such as green roofs, permeable pavements, rain gardens, and bioretention cells. By intercepting and treating stormwater close to its source, LIDs reduce the volume and improve the quality of runoff entering water bodies. This not only helps mitigate flood risks but also enhances water quality by filtering pollutants and replenishing groundwater tables, promoting more resilient and ecologically balanced communities.

6.3.1 Low Impact Development Inspection and Maintenance



LIDs are inspected annually in the spring each year. 58 inspections were conducted between May and August, including 4 pre-assumption inspections.

In the current reporting period, 62 maintenance activities were completed on LIDs. Operations and maintenance activities included, but were not limited to control structure repairs, litter and debris removal, erosion maintenance and repair, spring

sluice gate opening and fall sluice gate closing, subdrain maintenance and repair, and non-invasive vegetation removal.



6.3.2 Repairs

Based on inspections carried out in the current reporting period, repair and retrofit activities were carried out at SWMF KD03. An overflow chamber was added to the infiltration gallery to relieve pressure within the system and prevent damage to the LID. Surface repairs were also completed at the facility by an external contractor.

7 Natural Receivers

Natural receivers, such as WCs, lakes, and wetlands, serve as integral components of the MSWMS for the absorption, filtration, and conveyance of stormwater. The primary purpose of the natural receiver is to convey water from source to end receiver (e.g., lake within a watershed). Influences of groundwater and runoff inputs ever evolve the fluvial system. Current thinking around stormwater discharges to natural receivers should look to mimic pre-development flows as much as possible.



7.1 Environmental Monitoring

Samples of surface water were collected on various dates May to October the current reporting period, inclusive, from various locations along the watercourses, as illustrated in Figure 5: Watercourse Sample Locations. In the current reporting period, a total of 113 samples, include 10 duplicates, were submitted for analysis. Concentrations of key indicator parameters are summarized in Table 7: Concentrations of KPI Analytical Parameters in Natural Receivers.



Figure 5: Watercourse Sample Locations

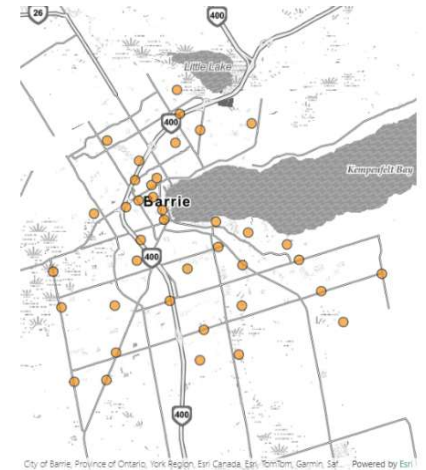


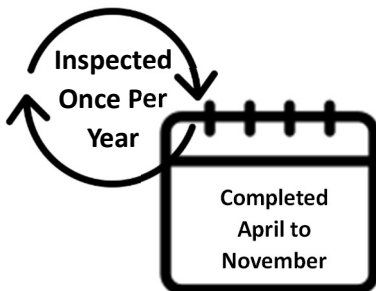
Table 7: Concentrations of KPI Analytical Parameters in Natural Receivers

| Parameter | Unit | Minimum | Maximum |
|-------------------------------|----------|---------|---------|
| Ammonia, total (as N) | mg/L | 0.005 | 1.74 |
| Chloride | mg/L | 21.9 | 2110.0 |
| Nitrate (as N) | mg/L | 0.02 | 5.58 |
| Nitrite (as N) | mg/L | 0.01 | 0.15 |
| pH | pH units | 7.54 | 8.64 |
| Phosphorus, total | mg/L | 0.003 | 0.99 |
| Solids, total suspended [TSS] | mg/L | 3 | 312 |

Note: Analytical results less than (<) the Method Detection Limit are reported at the detection limit for data aggregation purposes.

The aggregated analytical result for samples collected from the watercourses is included in Appendix F for reference.

7.2 Watercourse Inspection and Maintenance



Watercourses are completed on foot or using a drone. A total of 114 watercourse inspections were completed in the current reporting period, which represents inspecting approximately 62 km of watercourses. Approximately 16km of watercourse was not inspected due to health and safety concerns and competing priorities. Discrepancies of the total watercourse length, over time are mainly the result of

improvements to the GIS data and not necessarily changes in the actual length of the total watercourse within the City of Barrie boundary.



In the current reporting period, 210 maintenance activities were completed on watercourses, including but not limited to erosion repairs, grate clearing, and inlet grate repairs.

7.3 Watercourse Erosion Repair Program

Erosion of watercourses presents a risk to the flood protection and conveyance capacity of the MSWMS. Following urban development and hardscaping of the landscape, natural receivers will respond to additional and/or changing inputs of stormwater discharges over the years. Erosion and sediment deposition impacts can be noticed almost immediately or take years to decades to develop into issues that need to be further addressed. The watercourse erosion repair program was developed to address certain immediate needs that which are not be suitable for capital budget planning. Depending on a variety of factors, certain projects can be undertaken by internal City staff requiring as little as a few days to resolve. The watercourse erosion repair program utilizes a contracted fluvial geomorphologist to support the delivery of medium sized projects by preparing site specific designs for the selected projects and providing cost estimates to complete the work. The City of Barrie retains a qualified contractor to complete these repairs. Work in sensitive riparian zones is subject to a variety of regulations that support ecological outcomes by imposing restrictions on when the work can be carried out.

The following erosion repair project(s) were completed in the current reporting period:

- Lover's Creek Tributary at Mapleview Drive East – Watercourse and Outfall Restoration
- Essa Road Ditch Outlet to Redfern Channel – Culvert Replacement and Outfall Restoration

8 Addressing Enquiries and Complaints



The City of Barrie tracks enquiries and complaints via Service Requests in the CMMS. In the current reporting period, 307 service requests were initiated, of which 264 were resolved. This represents a resolution rate of 86%, as illustrated in Figure 6: Complaints Resolution Efficiency. The remaining service requests have been scheduled for resolution. As illustrated in Figure 7:

Types of Complaints, complaints related to blocked catch basins and damaged grates constituted the majority of reported issues, accounting for 53% of the total complaint volume. Issues associated with loose or missing maintenance hole covers represented a further 20%. The remaining complaints—related to flooding (11%), culvert, ditch, and watercourse concerns (9%) and SWMF concerns (8%)—collectively represented approximately 30% of all complaints.

Figure 6: Complaints Resolution Efficiency

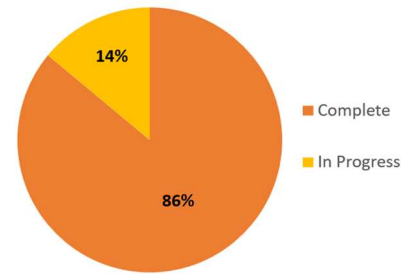
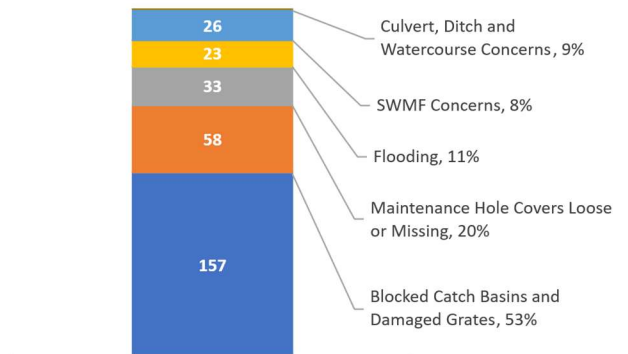
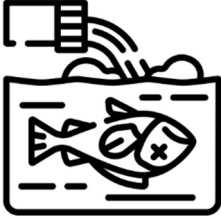


Figure 7: Types of Complaints



9 Spills and Abnormal Discharge Events

62



The City of Barrie responds to, and documents spills and abnormal discharge events impacting the MSWMS. A total of 62 spills and discharges impacting the MSWMS were documented during the reporting period. The location of the discharges in relation to the sub-watershed areas and a summary of applicable records is included in Appendix G.

10 Summary of Alterations

Planning for the MSWMS is achieved through many levels of planning, from the Official Plan to the Infrastructure Master Plans, finally to Annual Budgeting. The watersheds are well documented in the Drainage Master Plan. The planning process includes extensive assessment of factors affecting stormwater management, including but not limited to consultation with upstream and downstream municipalities, and regulating agencies.

10.1 Alterations

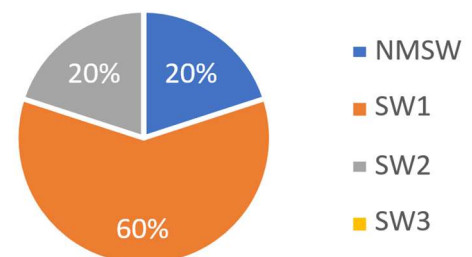
A MSWMS alteration refers to any change made to existing stormwater management infrastructure or design. This could involve various components of the system, such as drainage channels, pipes, SWMFs, infiltration basins, green infrastructure (e.g., rain gardens, permeable pavement), or other structural elements designed to control and mitigate the impacts of stormwater runoff.

Alterations to the MSWMF can encompass a wide range of activities, including but not limited to:

- **Expansion or Modification:** Increasing the capacity of existing infrastructure to accommodate higher volumes of stormwater runoff or modifying the layout or configuration of the system to improve its effectiveness.
- **Repair or Rehabilitation:** Addressing damage or deterioration to components of the system, such as repairing cracks in pipes, stabilizing erosion-prone areas, or restoring the functionality of SWMFs.
- **Enhancements for Water Quality:** Introducing new features or technologies aimed at improving the quality of stormwater runoff, such as adding filtration systems, vegetated swales, or other best management practices (BMPs).
- **Incorporation of Green Infrastructure:** Integrating nature-based solutions into the stormwater management system, such as installing rain gardens, bioswales, or permeable pavement to capture and infiltrate runoff while providing additional environmental benefits.
- **Upgrades for Compliance:** Making changes to the system to ensure compliance with evolving regulatory requirements, such as enhancing pollutant removal capabilities or implementing measures to reduce peak flow rates.
- **Adaptation to Climate Change:** Modifying the stormwater management system to account for changing precipitation patterns, increased frequency of extreme weather events, ensuring resilience and adaptability in the face of climate change impacts.

Alterations to the MSWMS are captured on MECP forms including the; Notice of Modification to Sewage Works (NMSW) and Environmental Compliance Approval (ECA) Applications, Form SW1 – Record of Future Alteration Authorized for Storm Sewers/Ditches/Culverts, Form SW2 – Record of Future Alteration Authorized for Stormwater Management Facilities, and Form SW3 – Record of Future Alteration Authorized for Third Pipe Collection Systems.

Figure 8: Summary of Alterations



10.1.1 Notice of Modification to Sewage Works (NMSW) and Environmental Compliance Approval (ECA) Applications

As illustrated in Figure 8: Summary of Alterations, in the current reporting period, 20% of alterations were NMSW and ECA Applications. NMSW and ECA Applications were submitted for the following locations:

Table 8: Notice of Modification to Sewage Works and Environmental Compliance Approval Applications

| File No. | Description | Date Signed |
|--------------|--|------------------|
| D11-031-2024 | Private Storm sewer 359 Tiffin St – Direct Submission from Developer | February 7, 2025 |

10.1.2 Form SW1 – Record of Future Alteration Authorized for Storm Sewers/Ditches/Culverts

As illustrated in Figure 8: Summary of Alterations, in the current reporting period, 60% of alterations were Form SW1s. Form SW1s were submitted for the following locations:

Table 9: Record of Future Alteration Authorized for Storm Sewers, Ditches, and Culverts

| File No. | Description | Date Signed |
|-----------------------------|--|--------------------|
| D12-437 | D12-437 PH2 Mattamy Salem Subdivision Phase 2 Registration | February 10, 2025 |
| 2025-143T / EN1255 / EN1256 | Huron Rd and McKay Rd Stormwater and Road Improvements | September 26, 2025 |
| D12-443 | D12-443 Subdivision | October 30, 2025 |

10.1.3 Form SW2 – Record of Future Alteration Authorized for Stormwater Management Facilities

As illustrated in Figure 8: Summary of Alterations, in the current reporting period, 20% of alterations were Form SW2s. Form SW2s were submitted for the following locations:

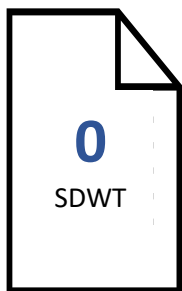
Table 10: Record of Future Alteration Authorized for Stormwater Management Facilities

| File No. | Description | Date Signed |
|----------|---------------------|------------------|
| D12-443 | D12-443 Subdivision | November 3, 2025 |

10.1.4 Form SW3 – Record of Future Alteration Authorized for Third Pipe Collection Systems

As illustrated in Figure 8: Summary of Alterations, in the current reporting period, none of alterations were Form SW3s.

10.2 Alterations Posing a Significant Drinking Water Threat



The report of Significant Drinking Water Threat (SDWT) Assessment (SDWTA) for Proposed Alterations, dated April 15, 2026, was prepared by the City of Barrie Office of the Risk Management Official, and covered the current reporting period.

Proposed sewage works projects within the designated protection areas for Wells 3A, 5, 7, 9, 11, 12, 13, 14, 15, 16, 17, 18, 19 were screened for SDWT. The Risk Management Office was consulted in appropriate circumstances and design considerations in the MECP's Guideline SOP or Design Criteria (2022-2023) were expected to be implemented. No projects were identified as a SDWT for this reporting period.

11 Continual Improvement Initiatives

As stated in Section 1.1, the City of Barrie is to maintain and continually improve the operational management of the stormwater system. The following summarizes goals completed in the current reporting period, and proposed goals in the next reporting period.

11.1 Goals for the Reporting Year

In addition to work completed as a part of the monitoring and maintenance programs detailed throughout this report, the following Action Items were identified for completion in the current reporting period:



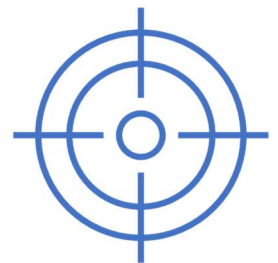
1. Prepare a monitoring report to document work completed in 2024 associated with the Operations and Maintenance Manual;
2. Further develop the QMS to support the MSWMS;
3. Conduct Erosion Repairs along watercourses impacted by stormwater discharges;
4. Clean sediment from collection and conveyance infrastructure as preventative measures;
5. Address invasive phragmites control where appropriate;
6. In-situ repairs of storm sewers and culverts;
7. Conduct bathymetric surveys;
8. SWMF sediment removal;
9. SWMF safety handrail installations;
10. Address drainage impacts on public lands caused by private properties; and
11. Culvert repairs and replacements.

All items were completed.

11.2 Goals Proposed for the Next Year

In addition to work completed as a part of the monitoring and maintenance programs detailed throughout this report, the following items were identified as opportunities for improvement in the next reporting period:

1. Prepare a monitoring report to document work completed in 2025 associated with the Operations and Maintenance Manual;
2. Further develop the QMS to support the MSWMS;
3. Conduct Erosion Repairs along watercourses impacted by stormwater discharges;
4. Clean sediment from collection and conveyance infrastructure as preventative measures;
5. Address invasive phragmites control where appropriate;
6. In-situ repairs of storm sewers and culverts;
7. Conduct bathymetric surveys;
8. SWMF sediment removal;
9. SWMF safety handrail installations;
10. Address drainage impacts on public lands caused by private properties; and
11. Culvert repairs and replacements.



12 Closure

This report serves as a testament to the City of Barrie's commitment to effective stormwater management practices. Through comprehensive data collection, performance analysis, and implementation of best practices, the City of Barrie has made significant strides in improving asset lifecycle management while safeguarding the environment and water resources.

Looking ahead, the City of Barrie remains steadfast in its pursuit of innovation and excellence. The City of Barrie recognizes the ever-evolving nature of stormwater challenges and is committed to adapting and refining strategies and tactics to meet future needs effectively.

Distributed to:

- Top Management
- MECP

Appendix A – Completed Inspections

Completed Inspections

| ECA Asset Group | Total |
|--------------------------------|--------|
| Inspection – CBs | 12,681 |
| Annual Inspection | 12,680 |
| Ad-Hoc Inspection | 1 |
| Inspection – Culverts | 224 |
| Structural Culvert Maintenance | 51 |
| Non-OSIM Culvert Maintenance | 173 |
| Inspection – Ditches | -- |
| Inspection – Headwalls | 223 |
| Bi-Annual Inspection | 223 |
| Inspection – LIDs | 58 |
| Spring Inspection | 54 |
| Pre-Assumption | 4 |
| Inspection – MHs | -- |
| Inspection – MTDs | 43 |
| Annual Inspection | 43 |
| Inspection – Sewers | -- |
| Inspection – SWMFs | 113 |
| Annual Inspection | 94 |
| Marta Crescent Inspection | 19 |
| Inspection – WCs | 114 |
| Annual Inspection | 114 |

Appendix B – Completed Maintenance

Completed Maintenance

| ECA Asset Group | Description | Total |
|-------------------------|--------------------------------------|--------|
| Maintenance – CBs | | 12,772 |
| | Cleaned | 12,680 |
| | Repaired | 85 |
| | Maintenance | 7 |
| Maintenance – Culverts | | 25 |
| | Structural Culvert Maintenance | 0 |
| | Non-OSIM Culvert Maintenance | 25 |
| Maintenance – Ditches | | 5 |
| | Ditch Inlet Maintenance | 5 |
| Maintenance – Headwalls | | 0 |
| Maintenance – Laterals | | 1 |
| | Storm Lateral Maintenance | 1 |
| Maintenance – LIDs | | 62 |
| | Control Structure Maintenance/Repair | 1 |
| | Debris/Litter Removal | 2 |
| | Mulch Maintenance | 18 |
| | Overflow Outlet Maintenance/Repair | 1 |
| | Planting | 2 |
| | Sediment Removal | 17 |
| | Sluice Gate Fall Close | 3 |
| | Sluice Gate Spring Open | 3 |
| | Sub-drain Maintenance/Repair | 14 |
| | Vegetation Removal (Non-Invasive) | 1 |
| Maintenance – MHs | | 11 |
| | Maintenance | 1 |
| | Repaired | 10 |
| Maintenance – MTDs | | 77 |
| | Cleaned | 77 |
| Maintenance – Sewers | | 3 |
| | Maintenance | 3 |
| Maintenance – SWMFs | | 361 |
| | Access Road Maintenance | 7 |
| | Clean Up Illegal Dumping | 5 |
| | Dewater Marta Crescent | 2 |
| | Hickenbottom Repair | 1 |
| | Inlet Repair | 5 |
| | Install/Remove Staff Gauge | 85 |
| | Monitor Staff Gauge | 83 |
| | Outlet Repair | 6 |
| | Pond SW Monitoring | 83 |
| | Remove Litter/Debris from SWMF | 20 |
| | Repair Fence | 2 |
| | Repair Gate | 1 |
| | Repair Grate | 3 |
| | Repair Outlet Grate | 1 |
| | Sediment Removal | 5 |
| | Spillway Maintenance | 1 |
| | Exercise Valve | 32 |
| | Tree Cutting and Trimming | 1 |
| | Turtle Management | 3 |
| | Valve Maintenance | 3 |
| | Varmint Control | 4 |
| | Vegetation Cutting and Removal | 8 |
| Maintenance – WCs | | 210 |
| | Debris Removal | 16 |
| | Erosion Repair | 1 |
| | Grate Clearing | 73 |
| | Maintenance | 4 |
| | Watercourse SW Monitoring | 116 |

Appendix C – Field Duplicate Laboratory Analysis

SWMF Field Duplicates Analytical Results

All units in mg/L, except pH in pH units

| Sample Location ID | Date | Ammonia, total (as N) | Chloride | Nitrate (as N) | Nitrite (as N) | pH | Phosphorus, total | Solids, total suspended [TSS] |
|--------------------|-------------|-----------------------|----------|----------------|----------------|------|-------------------|-------------------------------|
| ☐ BK08-SWMF-SW | 23-May-2025 | 0.121 | 884 | 0.454 | <0.050 | 8.03 | 0.0502 | 17.4 |
| | 21-Aug-2025 | 0.150 | 604 | 0.108 | 0.011 | 7.84 | 0.0551 | 8.9 |
| ☐ BR22-SWMF-SW | 21-Aug-2025 | 0.0214 | 40.5 | <0.100 | <0.050 | 8.15 | 0.0156 | <3.0 |
| ☐ BR25-SWMF-SW | 20-Aug-2025 | 0.105 | 317 | <0.100 | <0.050 | 8.09 | 0.0646 | 7.3 |
| ☐ HW05-SWMF-SW | 20-Aug-2025 | 0.0584 | 102 | 0.188 | <0.010 | 7.84 | 0.0364 | 5.1 |
| ☐ LV11-SWMF-SW | 23-May-2025 | 0.0635 | 318 | 0.154 | <0.050 | 8.00 | 0.0553 | 47.6 |

Watercourse Field Duplicate Analytical Results

All units in mg/L, except pH in pH units

| Sample Location ID | Date | Ammonia, total (as N) | Chloride | Nitrate (as N) | Nitrite (as N) | pH | Phosphorus, total | Solids, total suspended [TSS] |
|--------------------|-------------|-----------------------|----------|----------------|----------------|------|-------------------|-------------------------------|
| ☐ BR1-WC-SW | 22-Jul-2025 | 0.0384 | 108 | <0.020 | <0.010 | 8.53 | 0.0798 | 68.6 |
| ☐ KD2-WC-SW | 12-May-2025 | 0.0558 | 97.6 | 0.211 | <0.010 | 8.33 | 0.0289 | 4.5 |
| | 21-Jul-2025 | 0.0521 | 81.3 | 0.269 | 0.023 | 8.33 | 0.0285 | 4.2 |
| ☐ KD3-WC-SW | 30-Sep-2025 | 0.0071 | 287 | 4.45 | <0.050 | 8.26 | 0.0082 | <3.0 |
| ☐ LV1-WC-SW | 21-Jul-2025 | 0.0311 | 301 | 1.12 | <0.050 | 8.55 | 0.0102 | 3.6 |
| ☐ SC1-WC-SW | 22-Jul-2025 | 0.0335 | 120 | 2.12 | <0.010 | 8.48 | 0.0140 | 3.0 |
| | 01-Oct-2025 | 0.0139 | 130 | 1.94 | <0.020 | 8.33 | 0.0139 | <3.0 |
| ☐ SP3-WC-SW | 12-May-2025 | 0.213 | 387 | 2.28 | <0.050 | 7.96 | 0.0194 | <3.0 |
| ☐ WK1-WC-SW | 01-Oct-2025 | 0.0111 | 412 | 1.29 | <0.050 | 8.22 | 0.0086 | <3.0 |
| ☐ WK3-WC-SW | 12-May-2025 | 0.0062 | 997 | 1.09 | <0.100 | 8.11 | 0.0034 | <3.0 |

Appendix D – Calibration Records

Summary of Equipment Calibrations

| Inspection ID | Calibration Type | Pond or Creek | Date of Calibration | Time (24 hr) | Meter/Probe Serial Number | pH (4.01) | pH (7.01) | pH (10.00) | Conductivity (1413 us/cm) | Requires Recalibration? |
|---------------|---------------------|---------------|---------------------|--------------|---------------------------|-----------|-----------|------------|---------------------------|-------------------------|
| 447400 | Initial calibration | Pond | 07-Mar-2025 | 1330 | 17A101263/17A101207 | 6.65 | 9.76 | 12.11 | 950 | Yes |
| 447407 | Recalibration | Pond | 07-Mar-2025 | 1345 | 17A101263/17A101207 | 3.74 | 6.82 | 9.78 | 950 | Yes |
| 447411 | Initial calibration | Pond | 07-Mar-2025 | 1345 | 17A101264/17A101208 | 4.08 | 6.92 | 10.02 | 1414 | No |
| 447439 | Initial calibration | Pond | 07-Mar-2025 | 1500 | 17C104448/17D106945 | 4.15 | 7.07 | 0 | 0 | Yes |
| 447456 | Recalibration | Pond | 07-Mar-2025 | 1530 | 17C104448/17D106945 | 4.05 | 7.02 | 10.09 | 1445 | No |
| 455670 | Initial calibration | Creek | 08-May-2025 | 823 | 17A101263/17A101207 | 3.81 | 6.92 | 0 | 0 | Yes |
| 455671 | Recalibration | Creek | 08-May-2025 | 830 | 17A101263/17A101207 | 3.93 | 6.97 | 9.93 | 1413 | No |
| 456012 | Initial calibration | Creek | 12-May-2025 | 841 | 17A101263/17A101207 | 4.07 | 7 | 10.06 | 1130 | Yes |
| 456013 | Recalibration | Creek | 12-May-2025 | 747 | 17C104448/17D106945 | 4 | 6.99 | 10 | 607 | Yes |
| 456263 | Recalibration | Creek | 13-May-2025 | 740 | 17A101263/17A101207 | 4.08 | 7.03 | 10.04 | 1399 | No |
| 457718 | Recalibration | Pond | 22-May-2025 | 740 | 17C104448/17D106945 | 3.96 | 6.92 | 10.05 | 1366 | Yes |
| 457724 | Recalibration | Pond | 22-May-2025 | 755 | 17A101263/17A101207 | 4.05 | 6.97 | 10.04 | 1416 | No |
| 457852 | Recalibration | Pond | 23-May-2025 | 740 | 17C104448/17D106945 | 3.94 | 6.99 | 10.04 | 1415 | No |
| 457885 | Recalibration | Pond | 23-May-2025 | 800 | 17A101263/17A101207 | 4.07 | 7.04 | 10.05 | 1413 | No |
| 457886 | Recalibration | Pond | 23-May-2025 | 813 | 17A101264/17A101208 | 4 | 7.01 | 10.06 | 1415 | No |
| 466616 | Initial calibration | Creek | 21-Jul-2025 | 758 | 17A101263/17A101207 | 3.98 | 6.95 | 10.01 | 1410 | Yes |
| 466617 | Initial calibration | Creek | 21-Jul-2025 | 806 | 17C104448/17D106945 | 3.96 | 6.91 | 10 | 1491 | No |
| 466746 | Initial calibration | Creek | 22-Jul-2025 | 753 | 17A101263/17A101207 | 4.02 | 6.99 | 10.06 | 0 | Yes |
| 471319 | Initial calibration | Pond | 20-Aug-2025 | 800 | 17A101264/17A101208 | 3.99 | 7.01 | 10 | 1350 | No |
| 478652 | Initial calibration | Creek | 03-Sep-2025 | 1300 | 17A101264/17A101208 | 5.03 | 7.52 | 10.08 | 1 | Yes |
| 478653 | Recalibration | Creek | 03-Sep-2025 | 1300 | 17A101264/17A101208 | 4.04 | 7.06 | 9.99 | 1 | No |
| 478654 | Initial calibration | Creek | 03-Sep-2025 | 1330 | 17C104448/17D106945 | 3.99 | 6.96 | 10.1 | 1434 | No |
| 478684 | Initial calibration | Creek | 04-Sep-2025 | 630 | 17A101264/17A101208 | 4.02 | 7.06 | 10.05 | 1 | No |
| 478693 | Initial calibration | Creek | 04-Sep-2025 | 630 | 17C104448/17D106945 | 4.05 | 6.96 | 10.08 | 1448 | No |
| 478695 | Initial calibration | Creek | 16-Sep-2025 | 1330 | 17C104448/17D106945 | 4.08 | 7.02 | 9.86 | 1 | Yes |
| 478696 | Initial calibration | Creek | 16-Sep-2025 | 1300 | 17C104448/17D106945 | 4.08 | 7.04 | 9.97 | 1 | No |
| 478770 | Recalibration | Creek | 16-Sep-2025 | 1345 | 17C104448/17D106945 | 4.06 | 7.07 | 10.02 | 1 | No |
| 480701 | Initial calibration | Creek | 30-Sep-2025 | 730 | 17A101264/17A101208 | 4 | 7.03 | 9.95 | 1 | No |
| 480710 | Initial calibration | Creek | 30-Sep-2025 | 745 | 17A101264/17A101208 | 4 | 7.14 | 10.08 | 1445 | Yes |
| 480717 | Recalibration | Creek | 30-Sep-2025 | 750 | 17A101264/17A101208 | 4.01 | 7.01 | 10 | 1430 | No |
| 480853 | Initial calibration | Creek | 01-Oct-2025 | 715 | 17A101264/17A101208 | 4.03 | 7.02 | 9.95 | 1 | No |
| 481553 | Recalibration | Creek | 02-Oct-2025 | 821 | 17A101264/17A101208 | 4.05 | 7.01 | 9.94 | 0 | No |
| 482056 | Initial calibration | Creek | 07-Oct-2025 | 1400 | 17A101264/17A101208 | 4.01 | 7.04 | 9.91 | 1452 | No |
| 482077 | Initial calibration | Creek | 07-Oct-2025 | 1430 | 17C104448/17D106945 | 4.09 | 7.01 | 9.92 | 750 | No |
| 482296 | Initial calibration | Creek | 08-Oct-2025 | 715 | 17A101264/17A101208 | 4.05 | 7 | 9.92 | 1482 | No |
| 482297 | Initial calibration | Creek | 08-Oct-2025 | 715 | 17C104448/17D106945 | 4.08 | 6.95 | 9.91 | 1 | No |
| 482299 | Initial calibration | Creek | 08-Oct-2025 | 715 | 17C104448/17D106945 | 4.01 | 7.01 | 0 | 1413 | No |
| 487304 | Initial calibration | Creek | 17-Nov-2025 | 745 | 17C104448/17D106945 | 4.06 | 7.08 | 9.98 | 1565 | Yes |
| 490935 | Initial calibration | Creek | 01-Dec-2025 | 1530 | 17C104448/17D106945 | 0 | 7.14 | 0 | 0 | Yes |
| 490936 | Recalibration | Creek | 01-Dec-2025 | 1530 | 17C104448/17D106945 | 4.03 | 7.06 | 9.99 | 1413 | No |

Appendix E – Laboratory Analysis – SWMFs

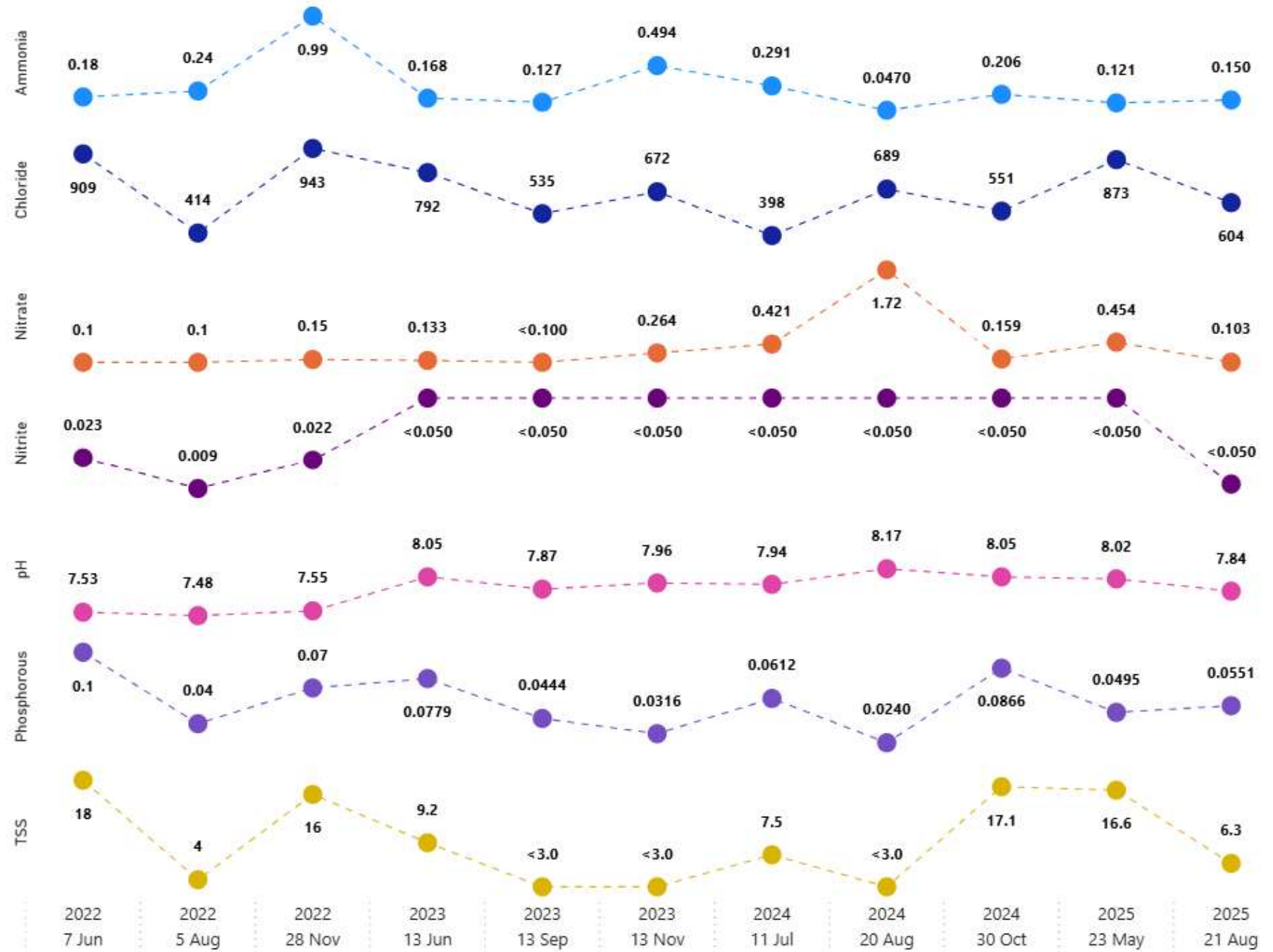
SWMF Water Quality Key Performance Indicator Trends



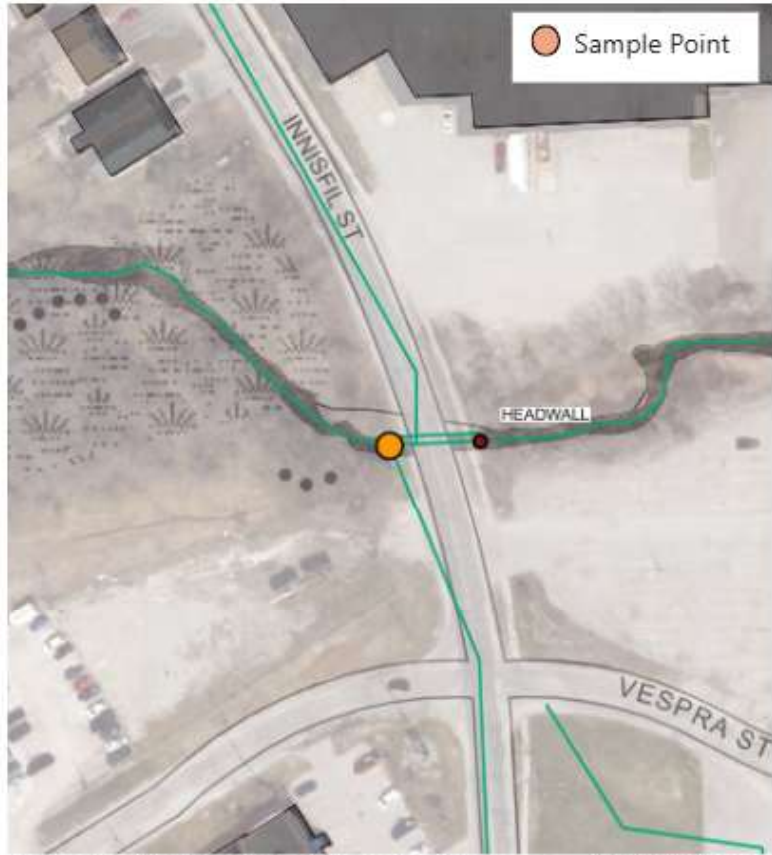
Notes:
 Ammonia = Total Ammonia as N
 Nitrate = Nitrate as N
 Nitrite = Nitrite as N
 Phosphorous = Total Phosphorous
 TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK08-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

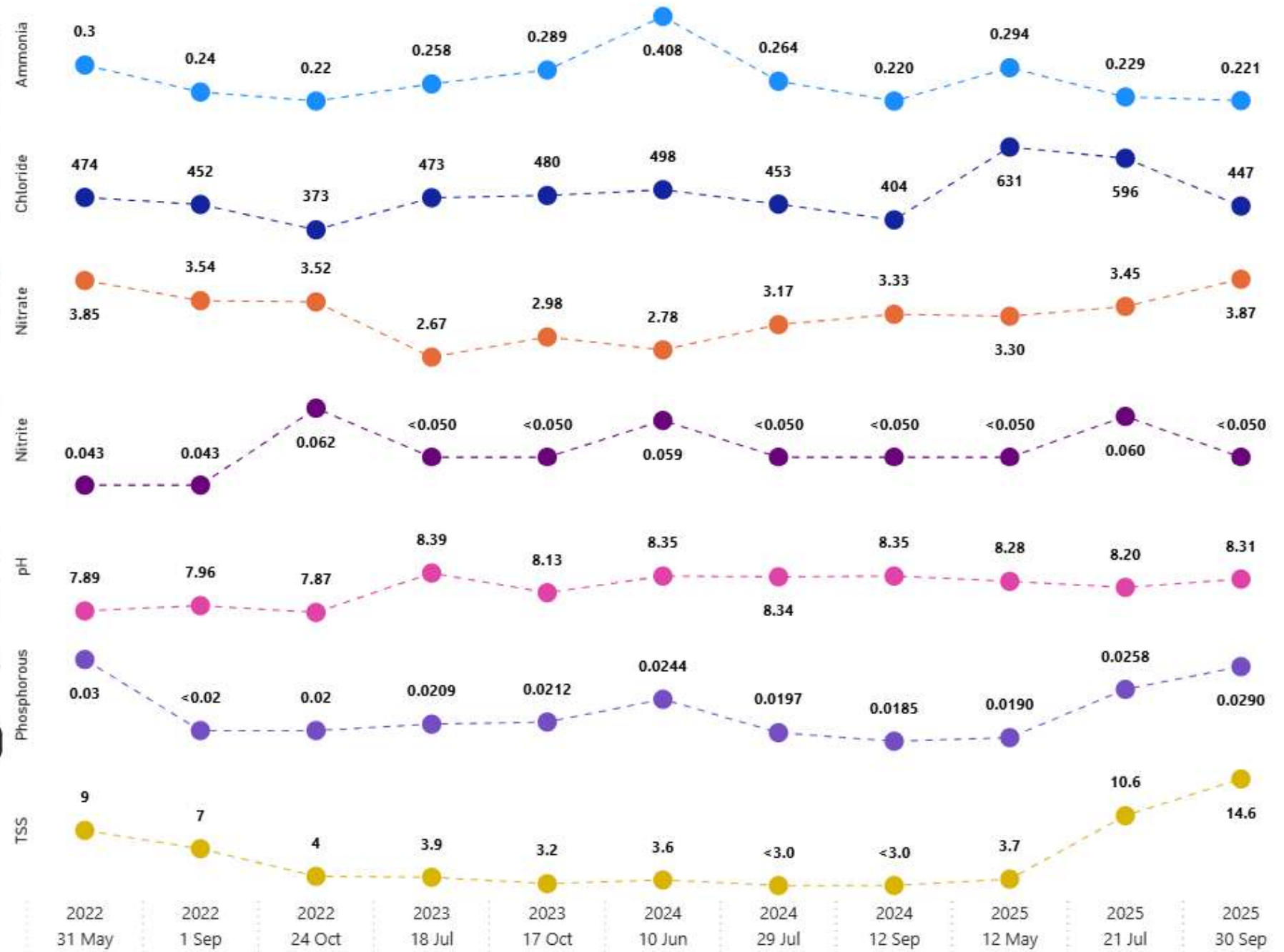
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

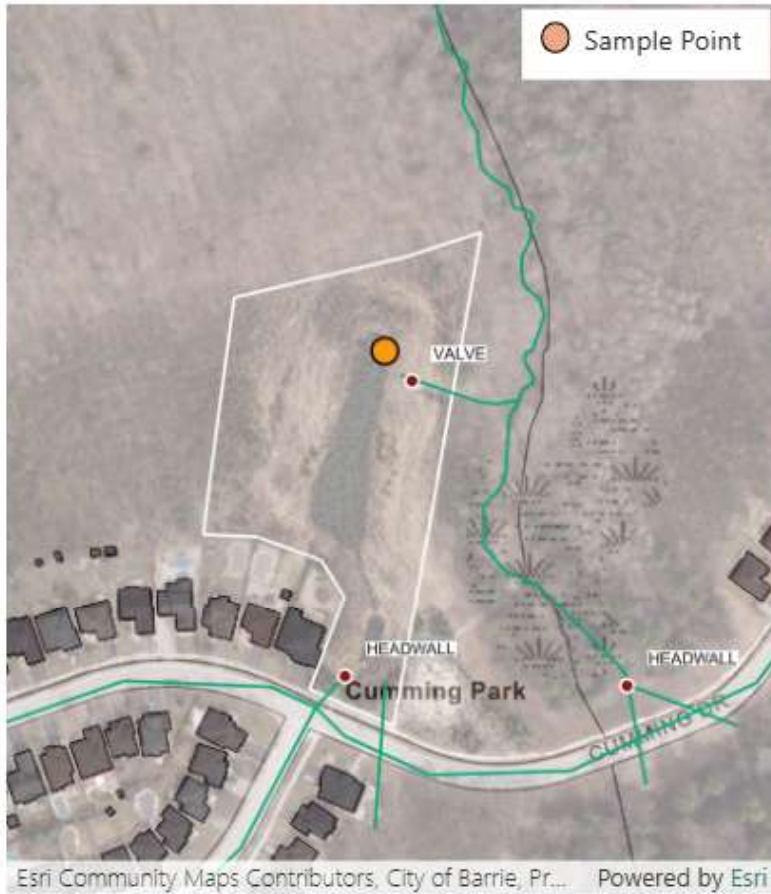
All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



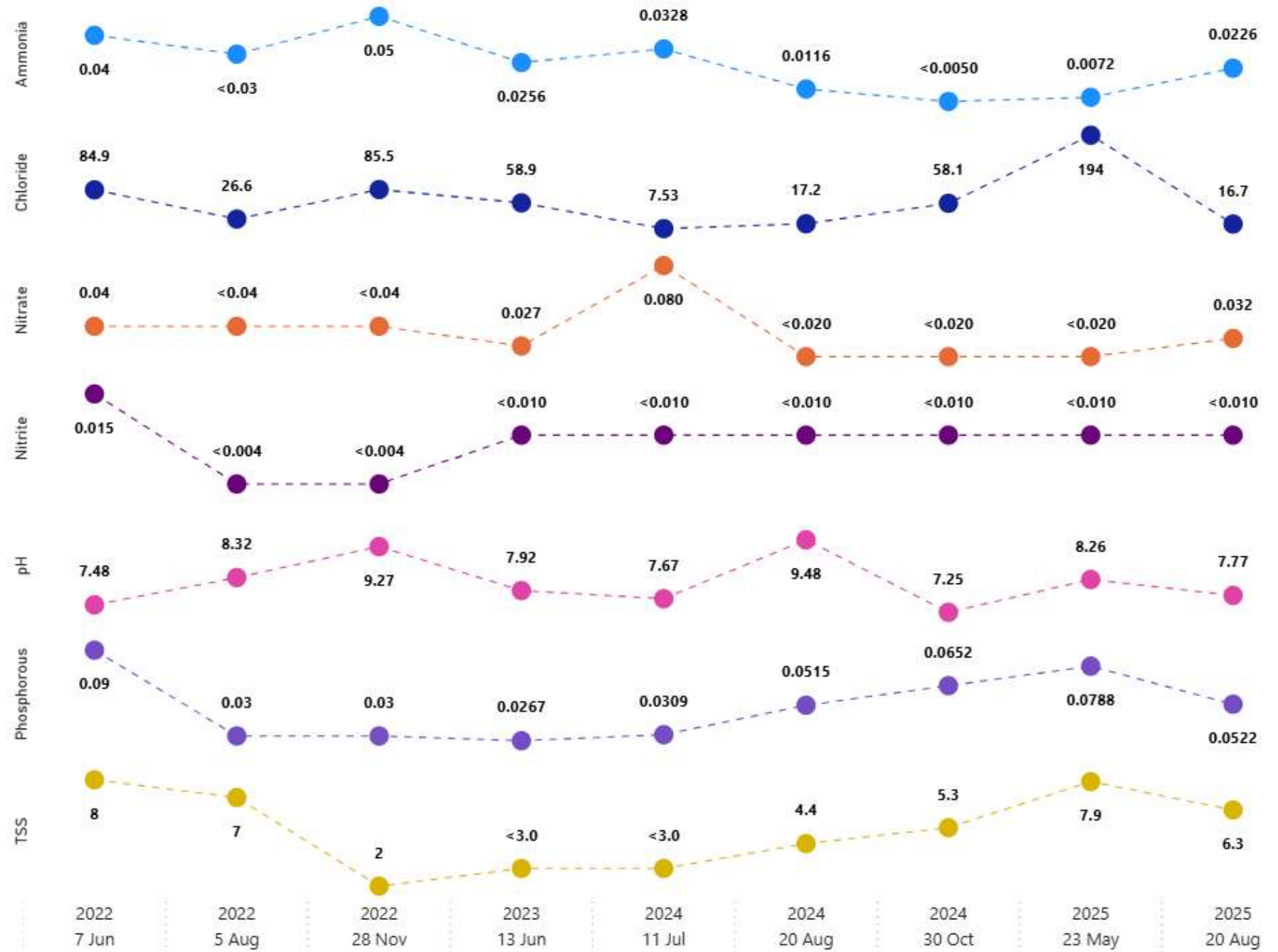
SWMF Water Quality Key Performance Indicator Trends



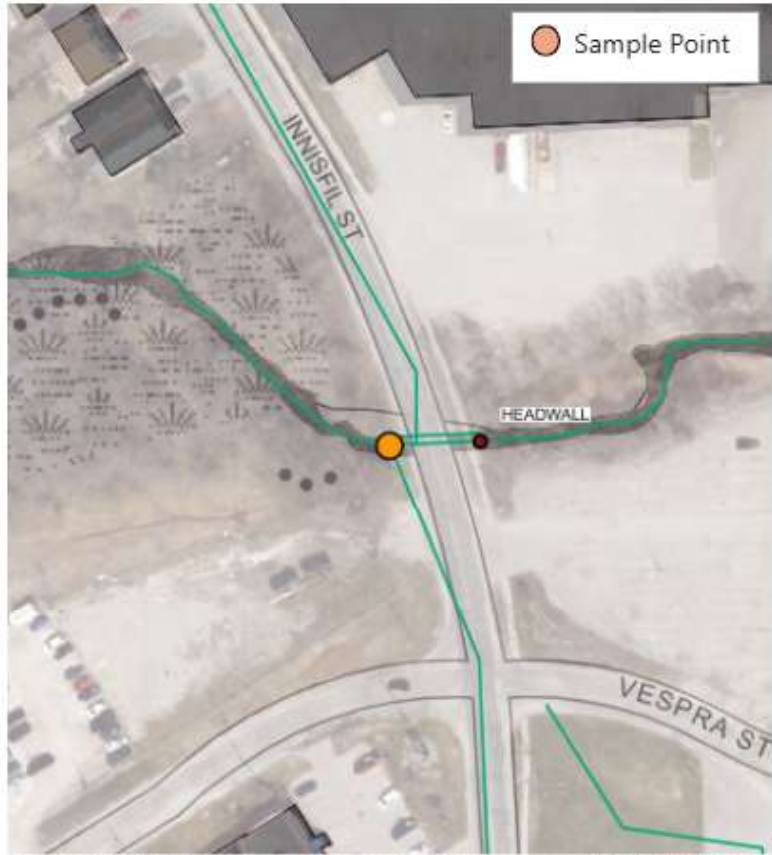
Notes:
 Ammonia = Total Ammonia as N
 Nitrate = Nitrate as N
 Nitrite = Nitrite as N
 Phosphorous = Total Phosphorous
 TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BR06-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

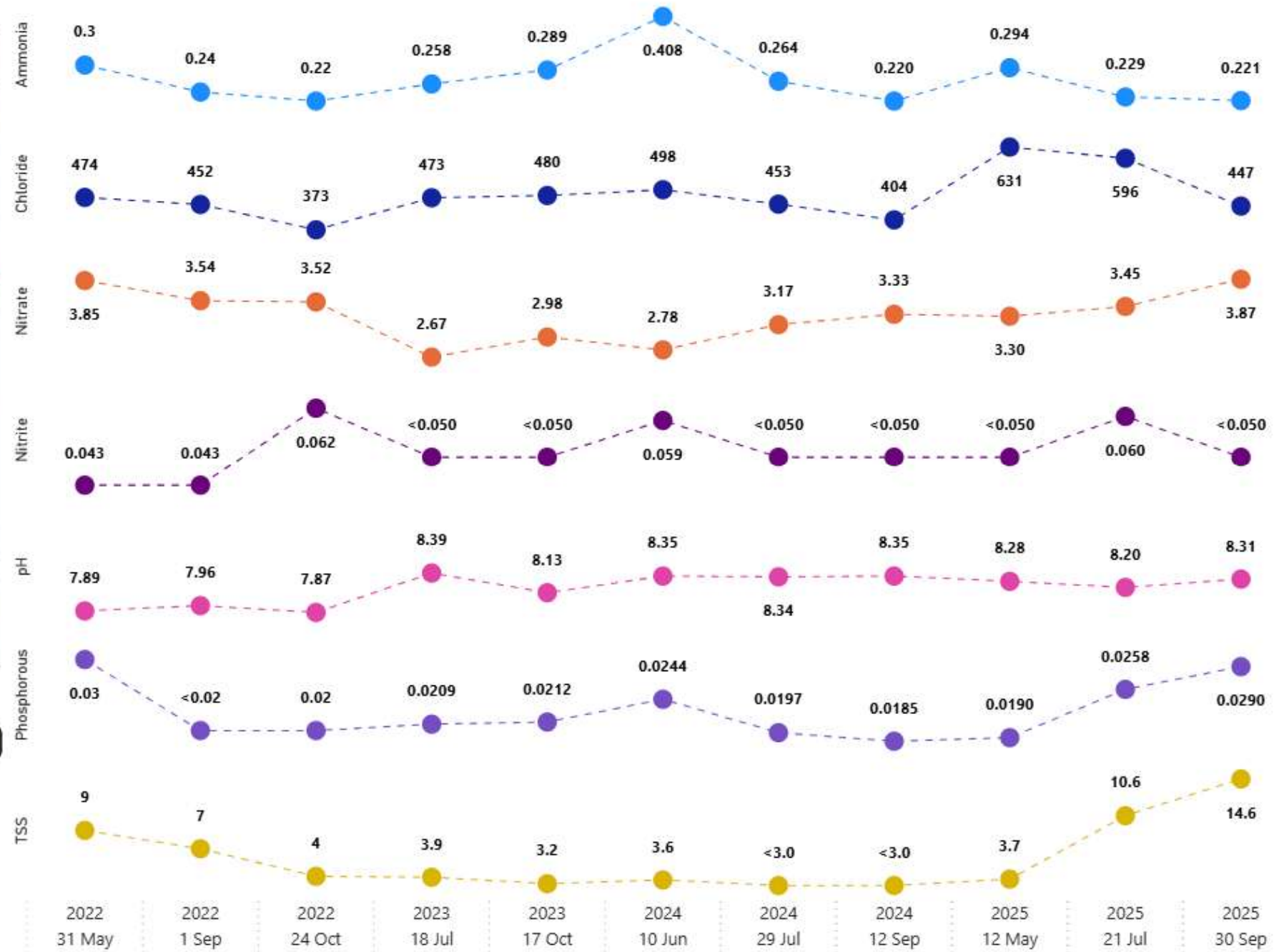
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



SWMF Water Quality Key Performance Indicator Trends

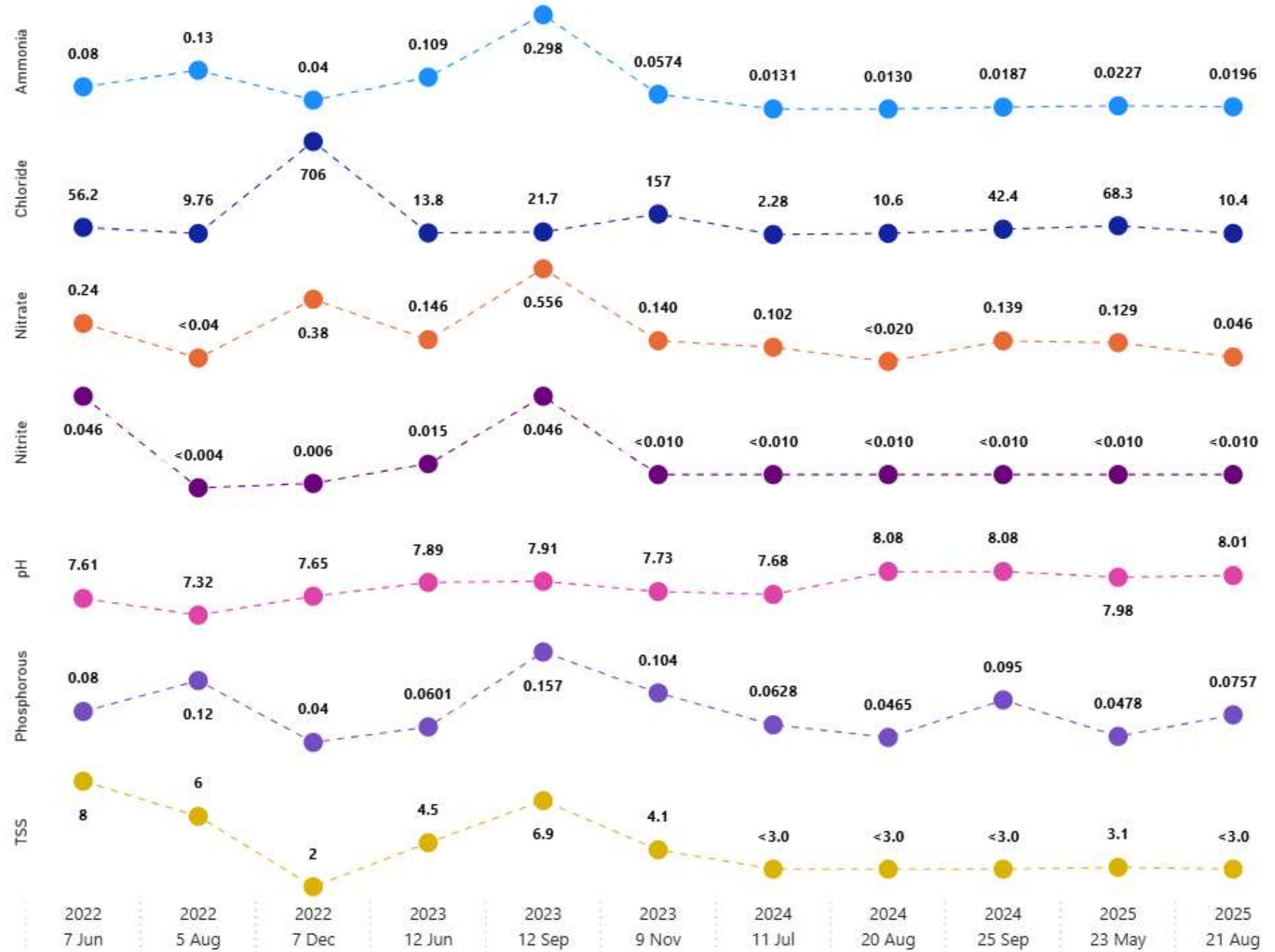


Notes:

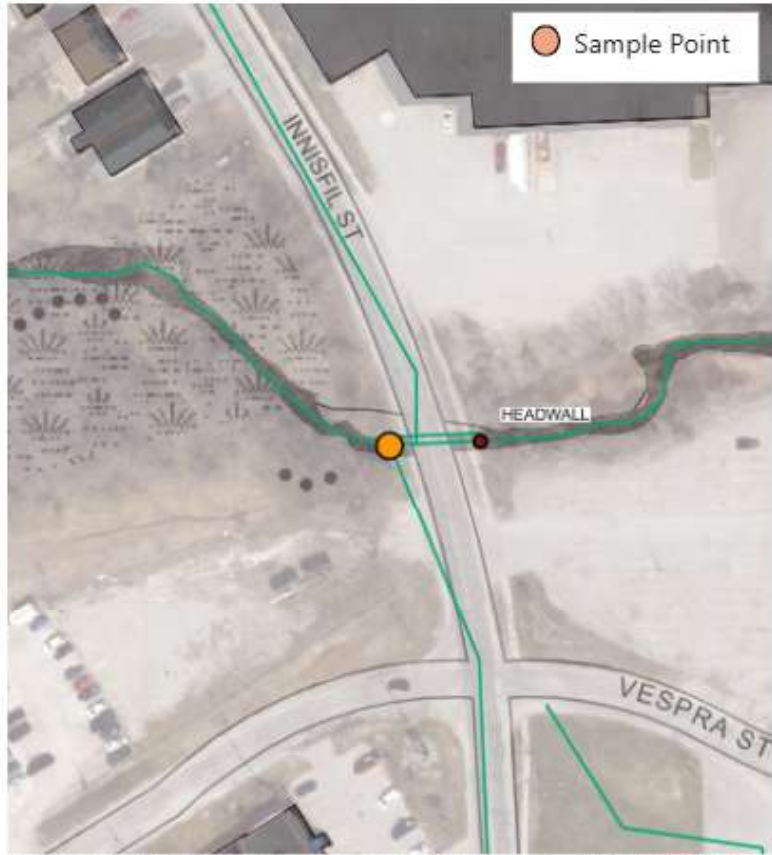
- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BR08b-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

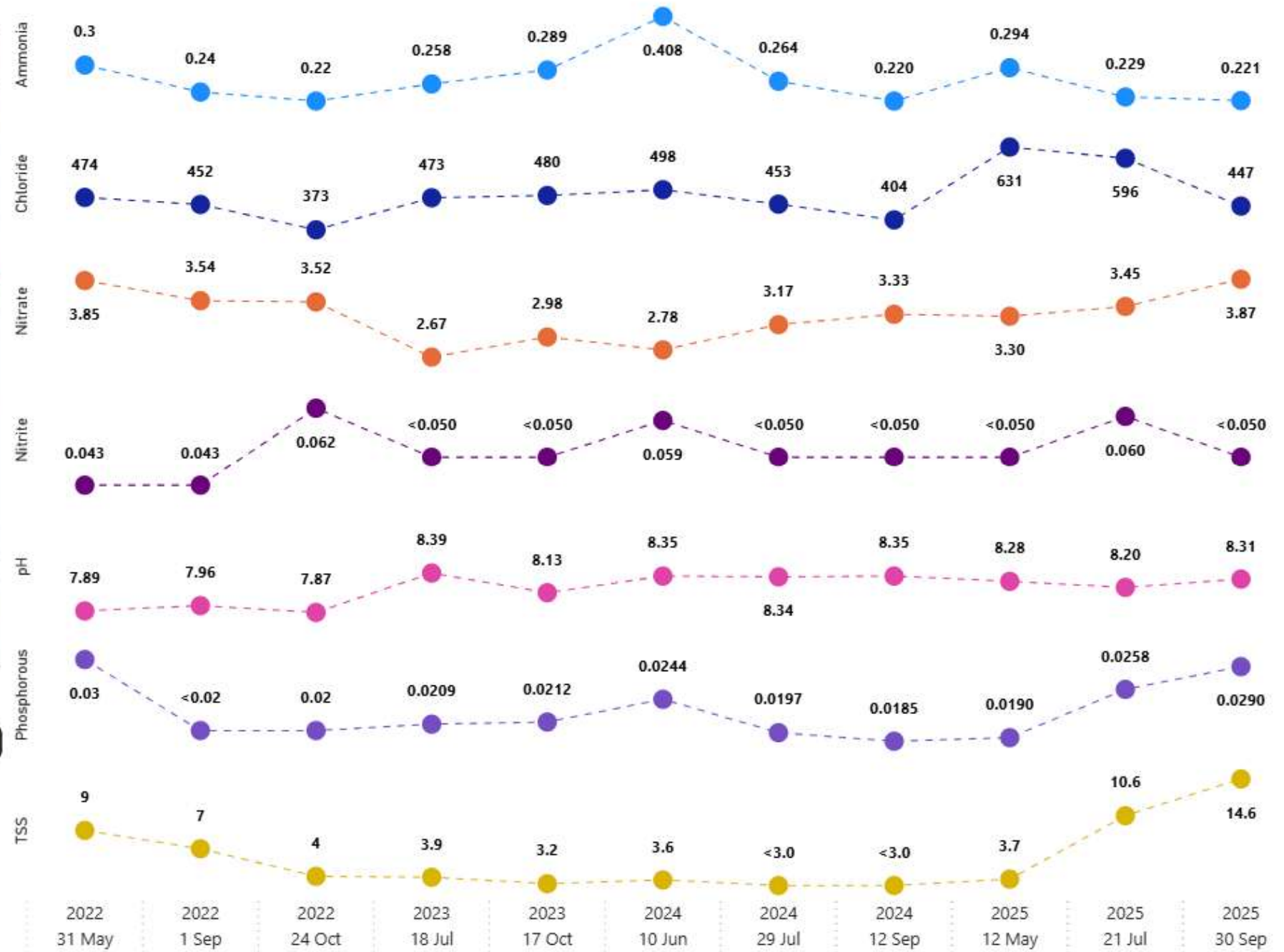
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

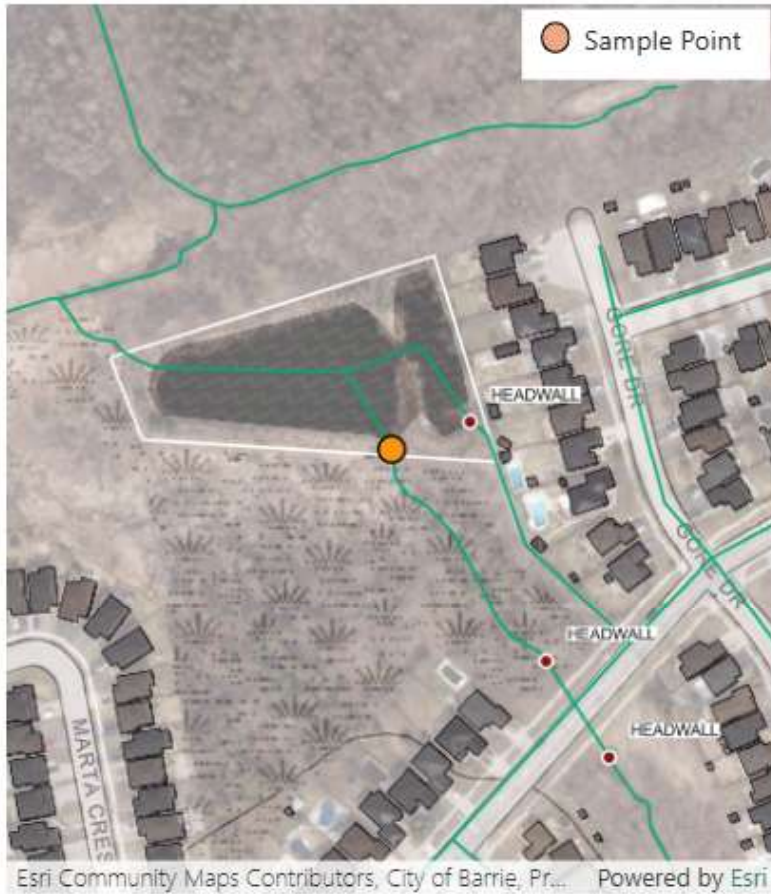
All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



SWMF Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

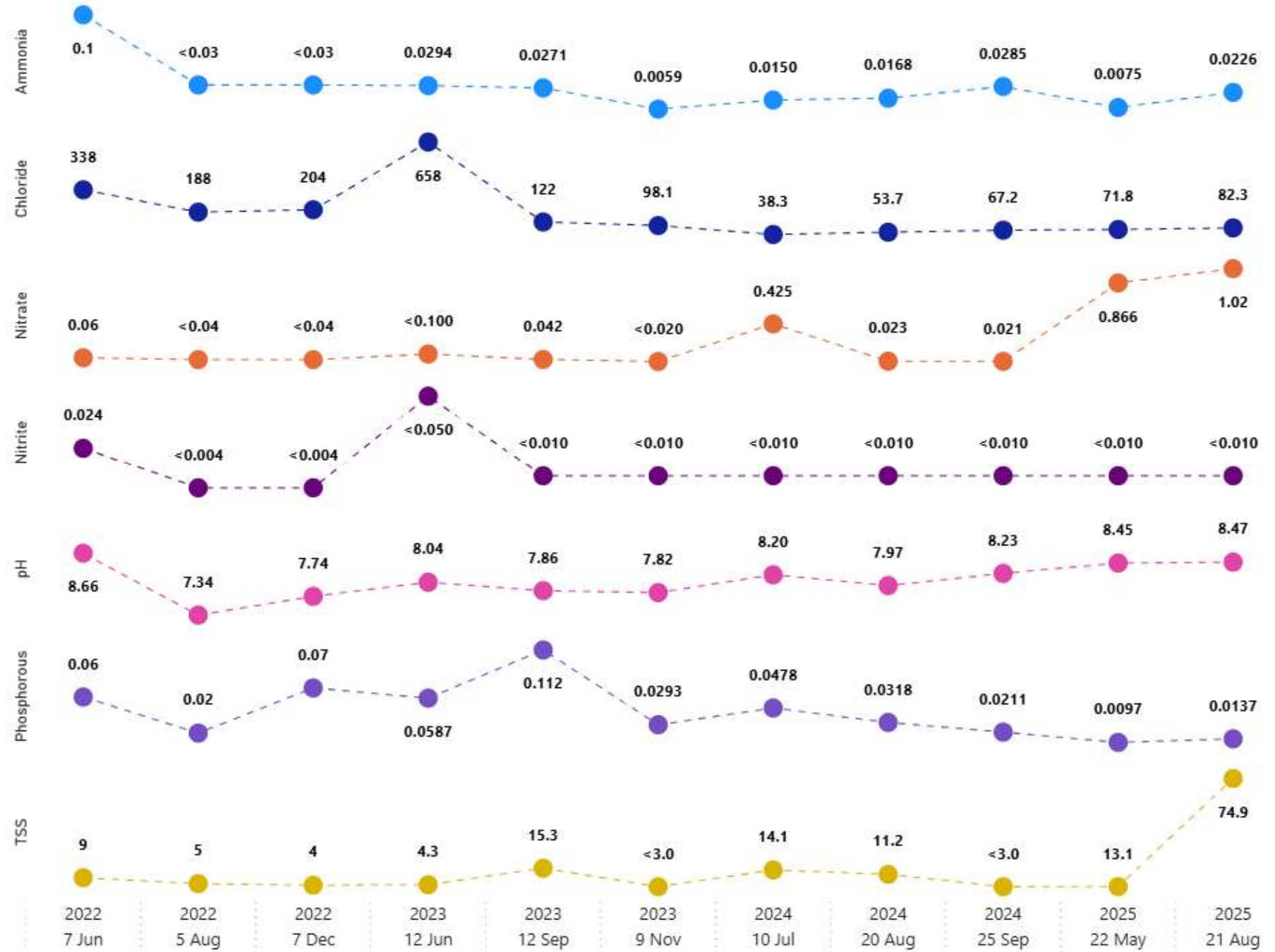
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

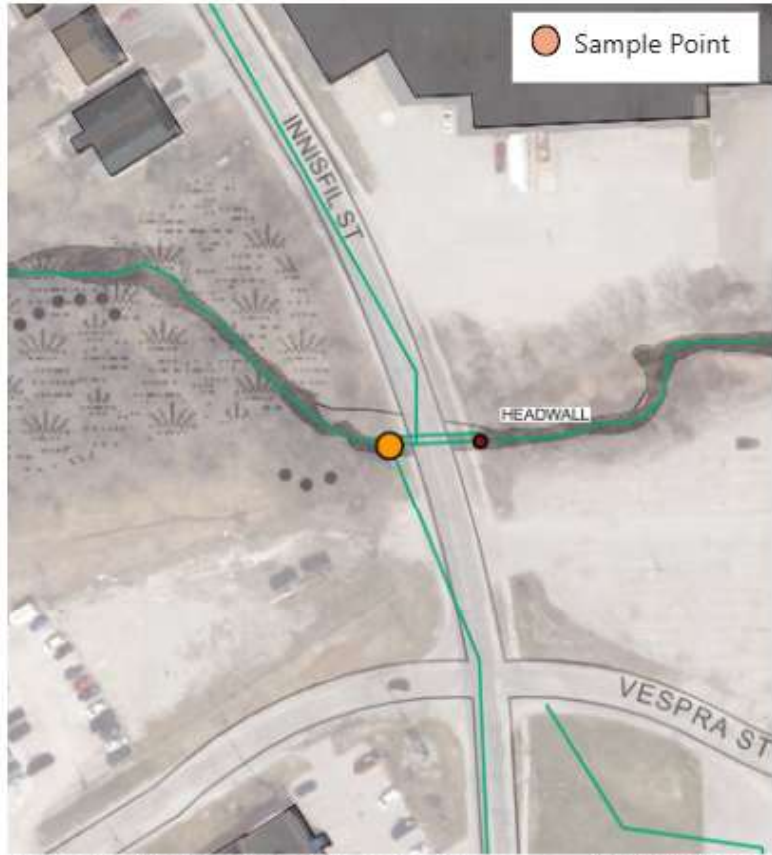
All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BR09-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

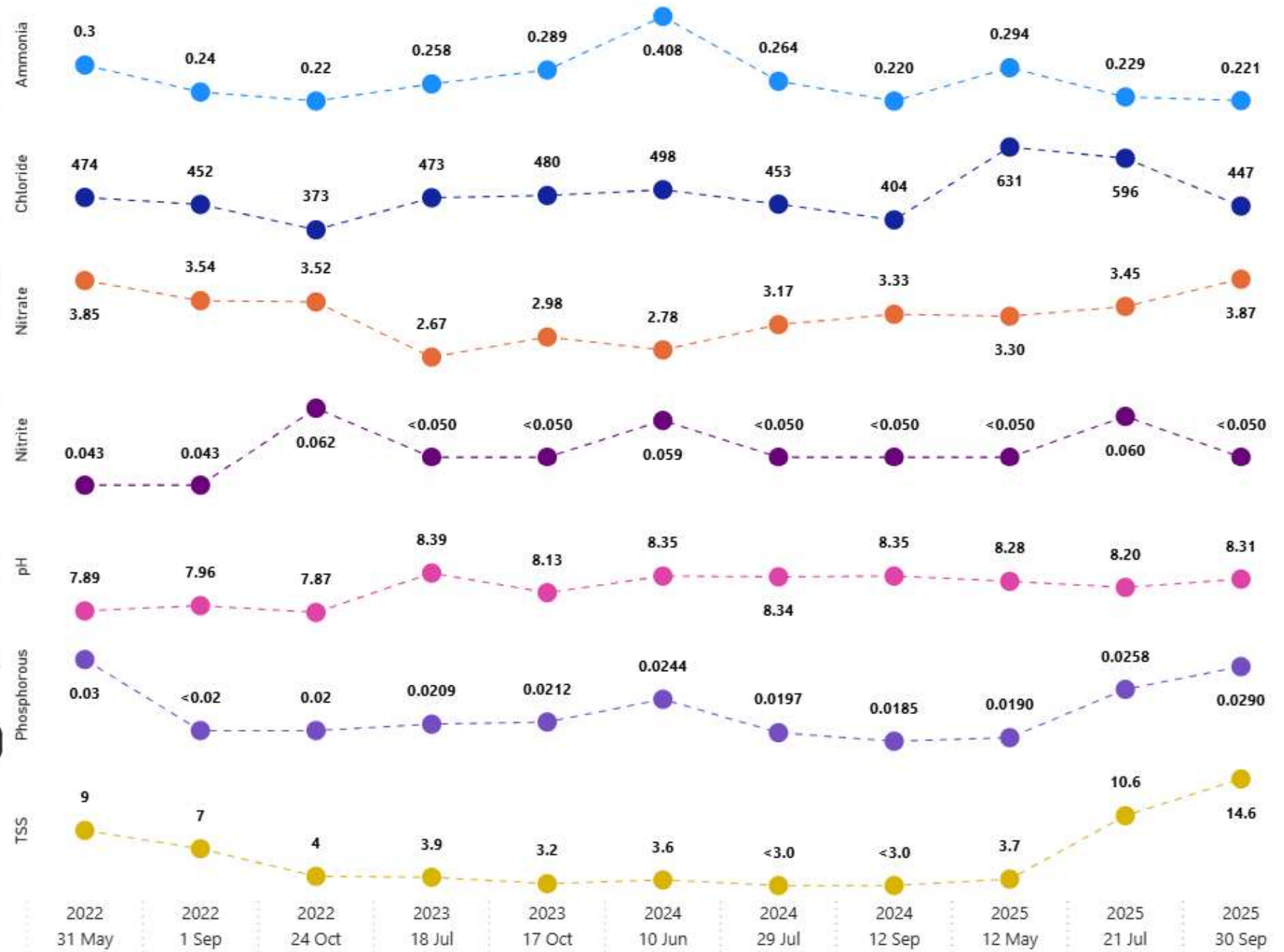
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

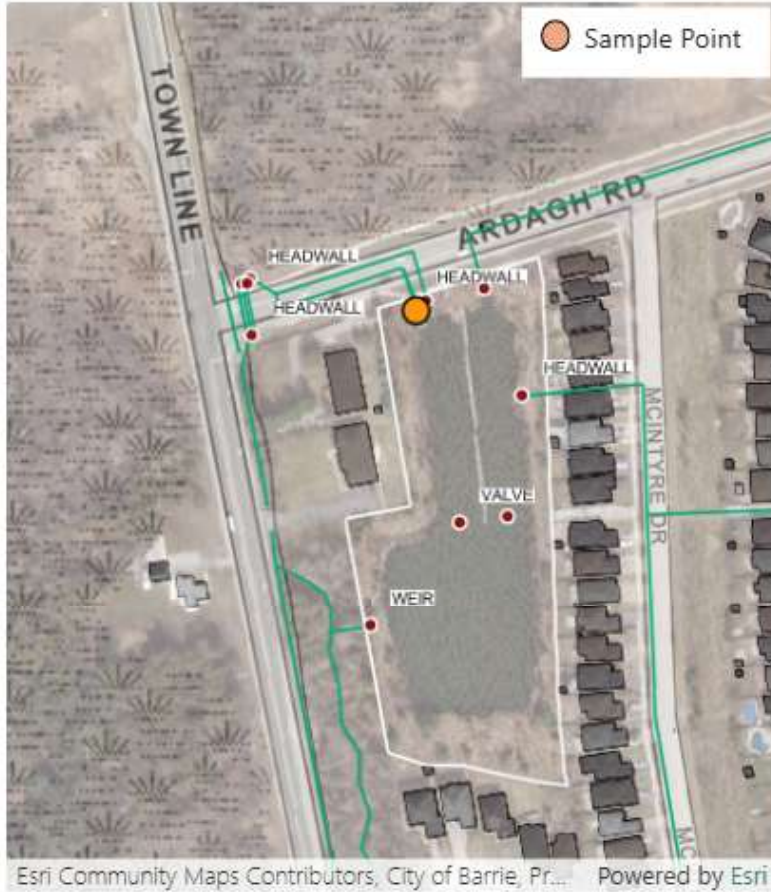
All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



SWMF Water Quality Key Performance Indicator Trends



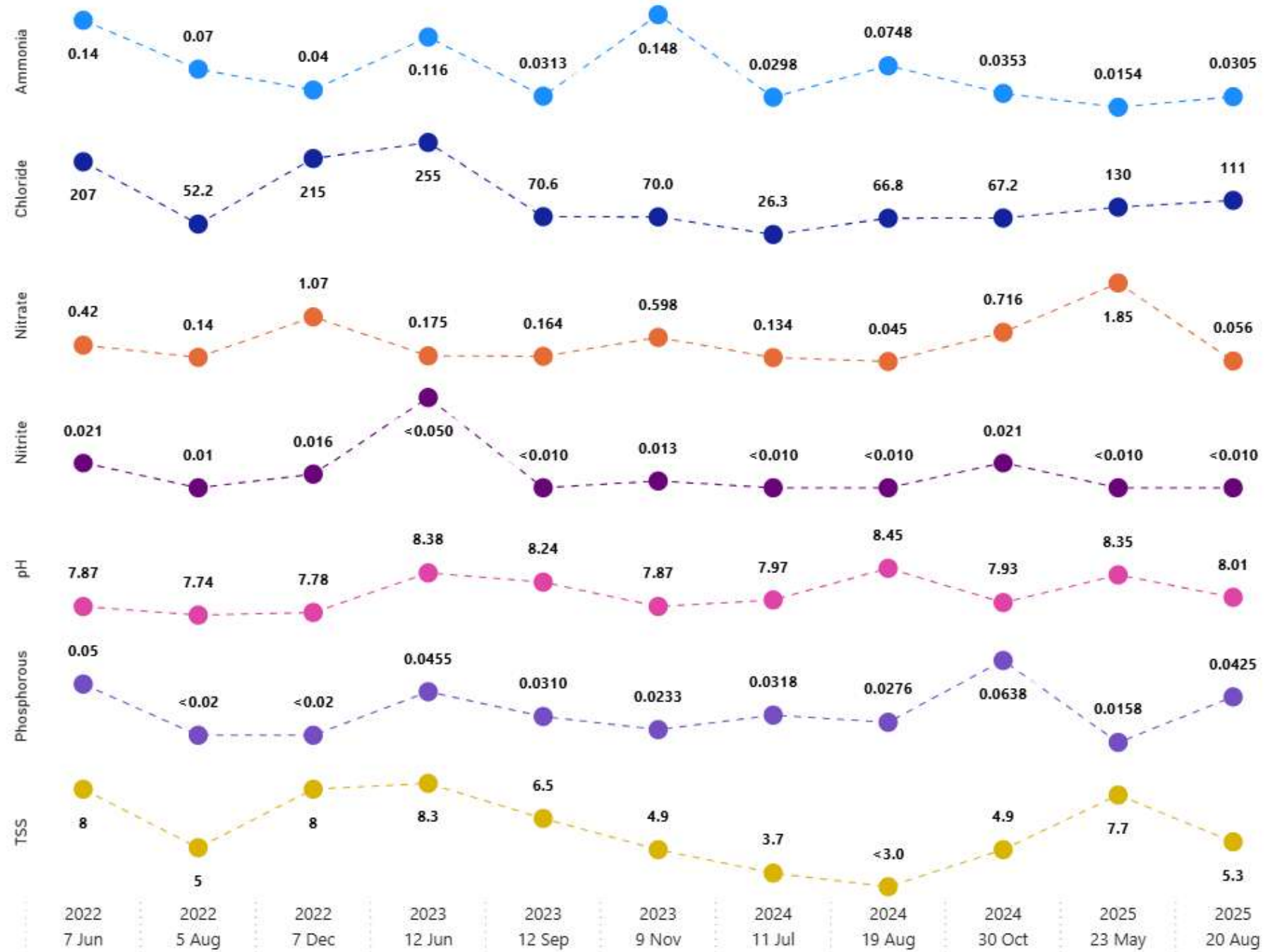
Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

Notes:

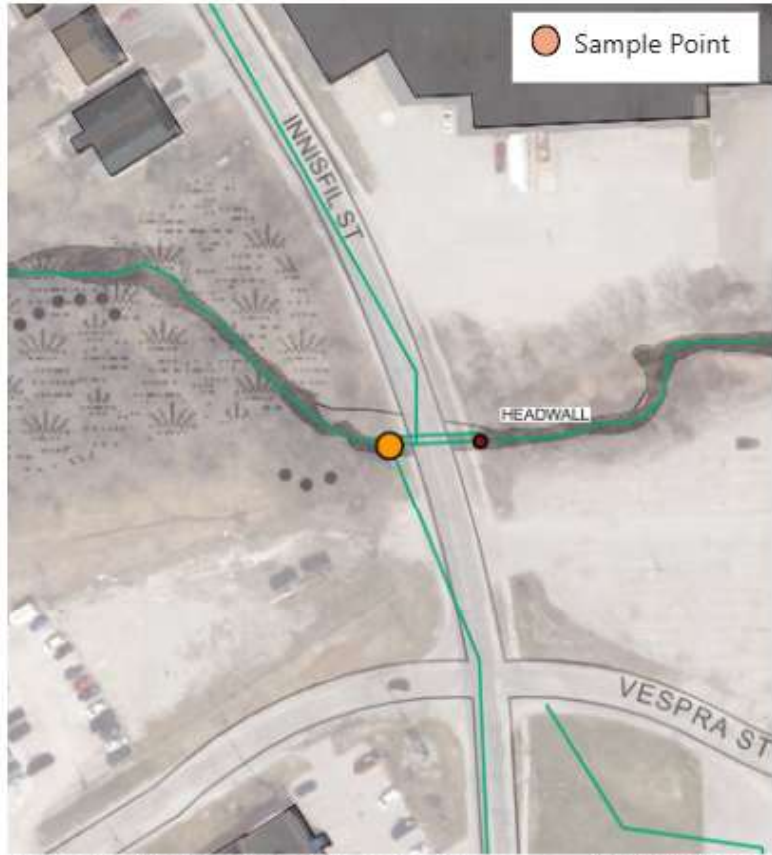
- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BR10-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

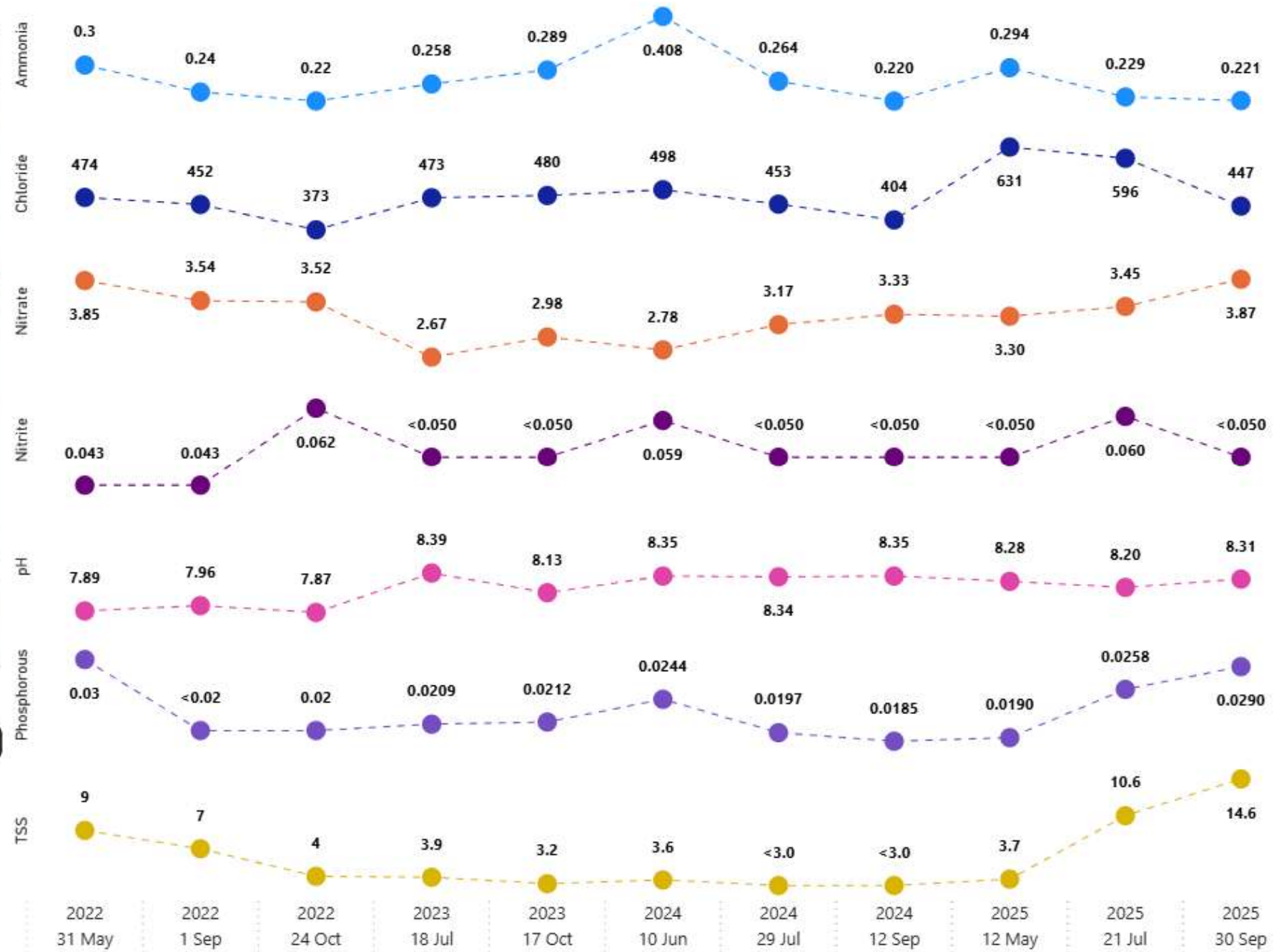
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

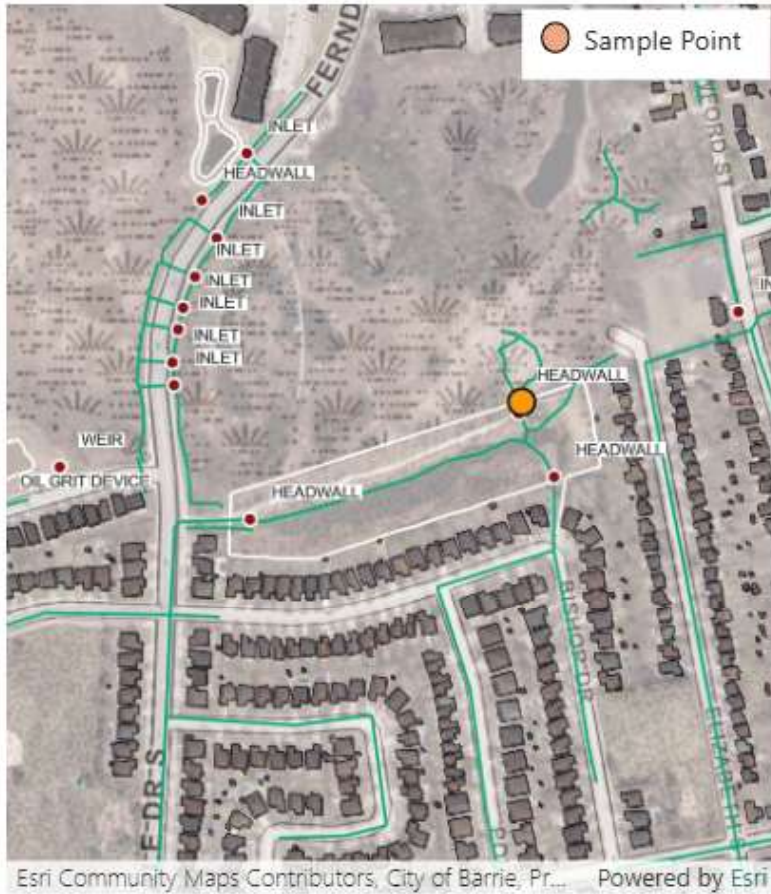
All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



SWMF Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

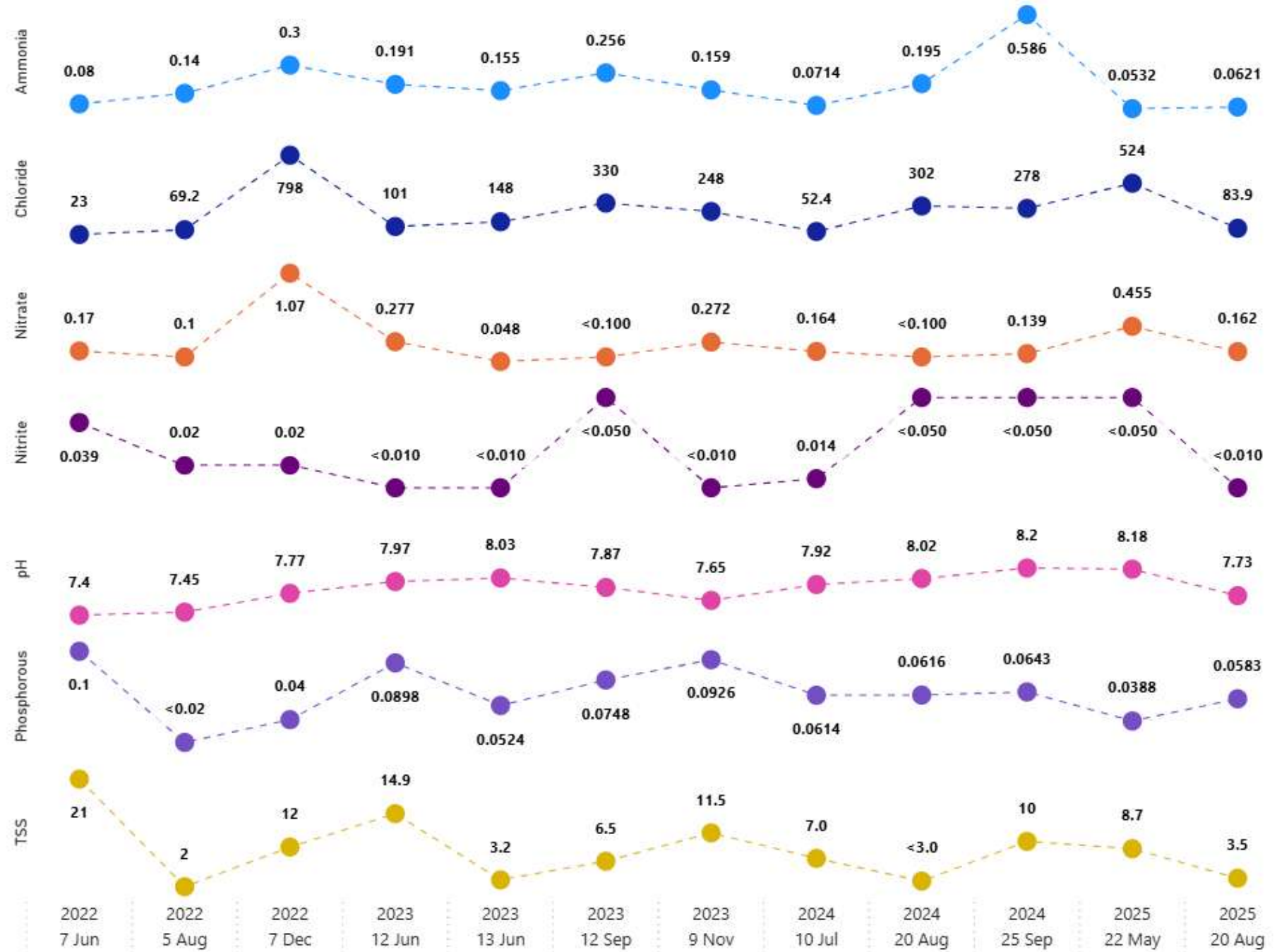
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

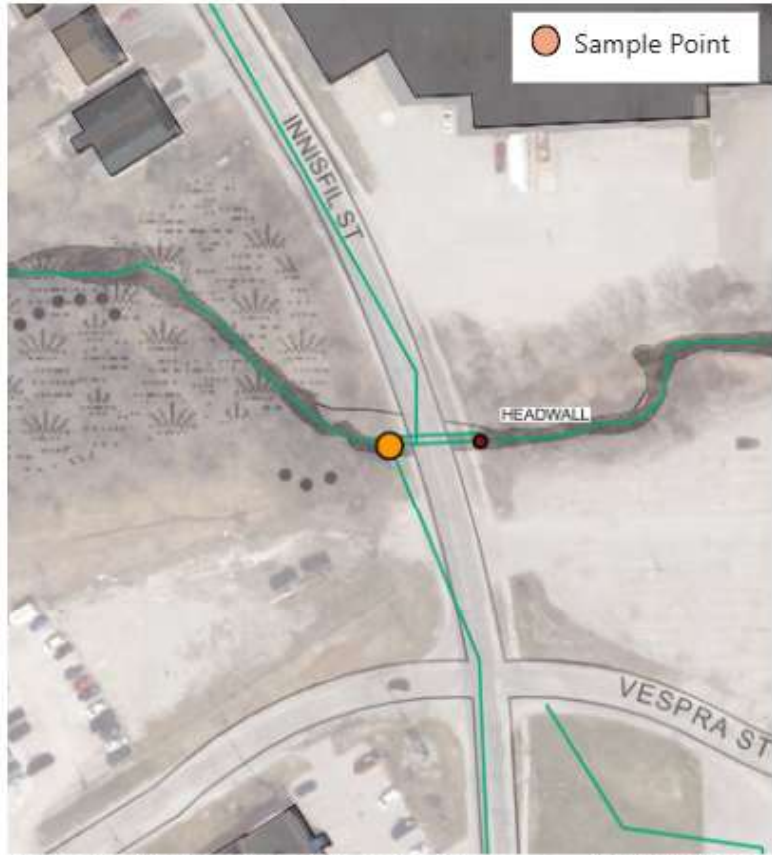
All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BR14-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

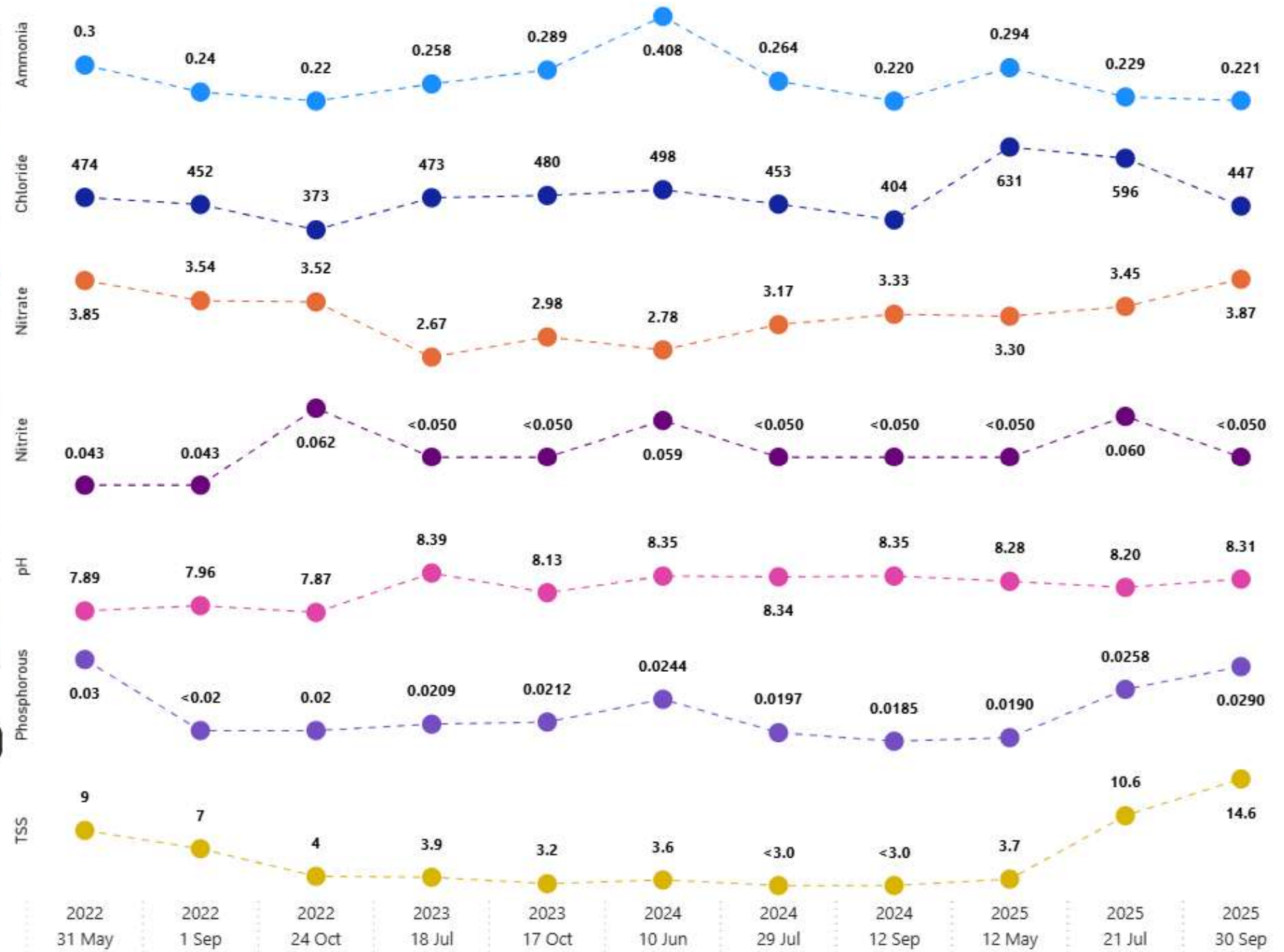
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

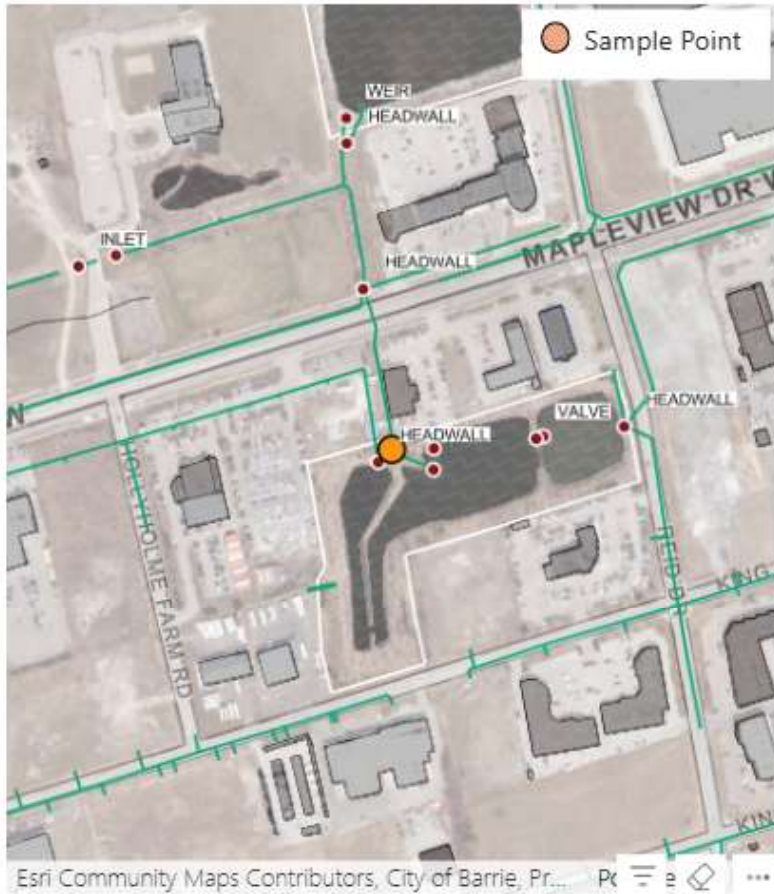
All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



SWMF Water Quality Key Performance Indicator Trends

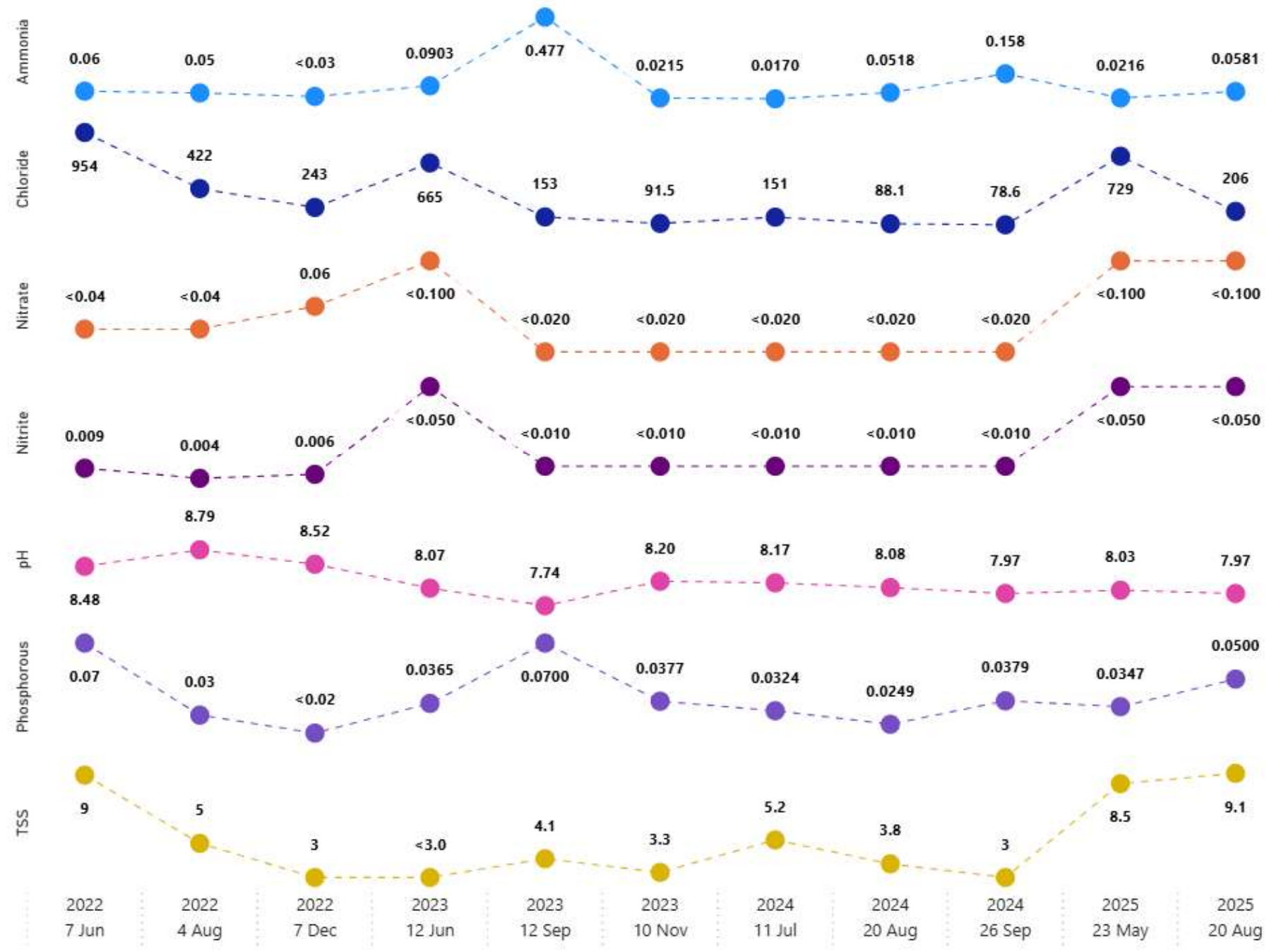


Esri Community Maps Contributors, City of Barrie, Pr... Pt e ...

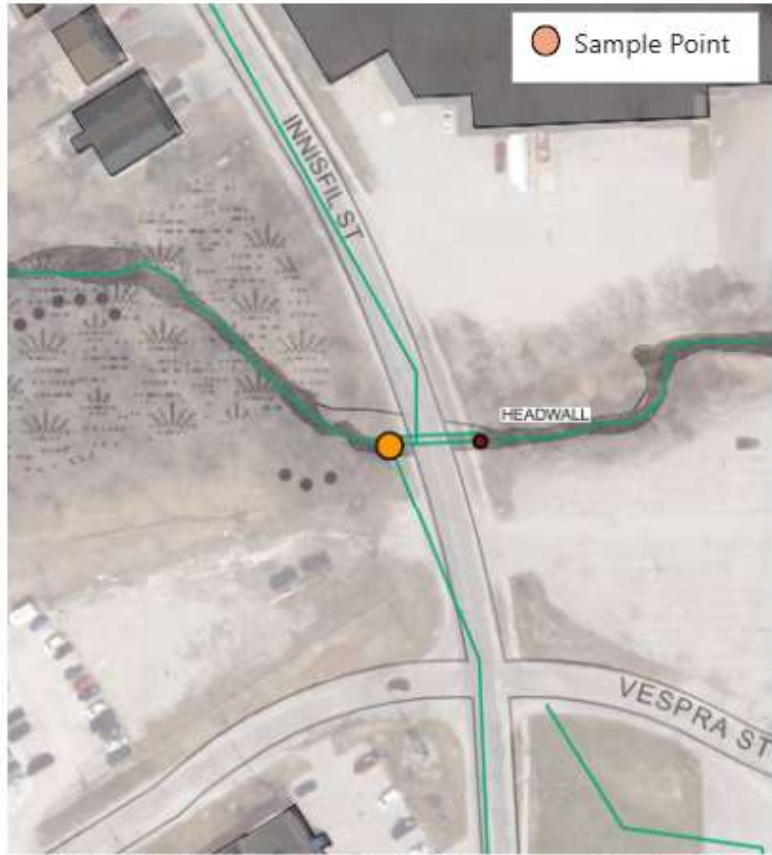
BR16-SWMF-SW

Notes:
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 Nitrate = Nitrate as N
 Nitrite = Nitrite as N
 Phosphorous = Total Phosphorous
 TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



Watercourse Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

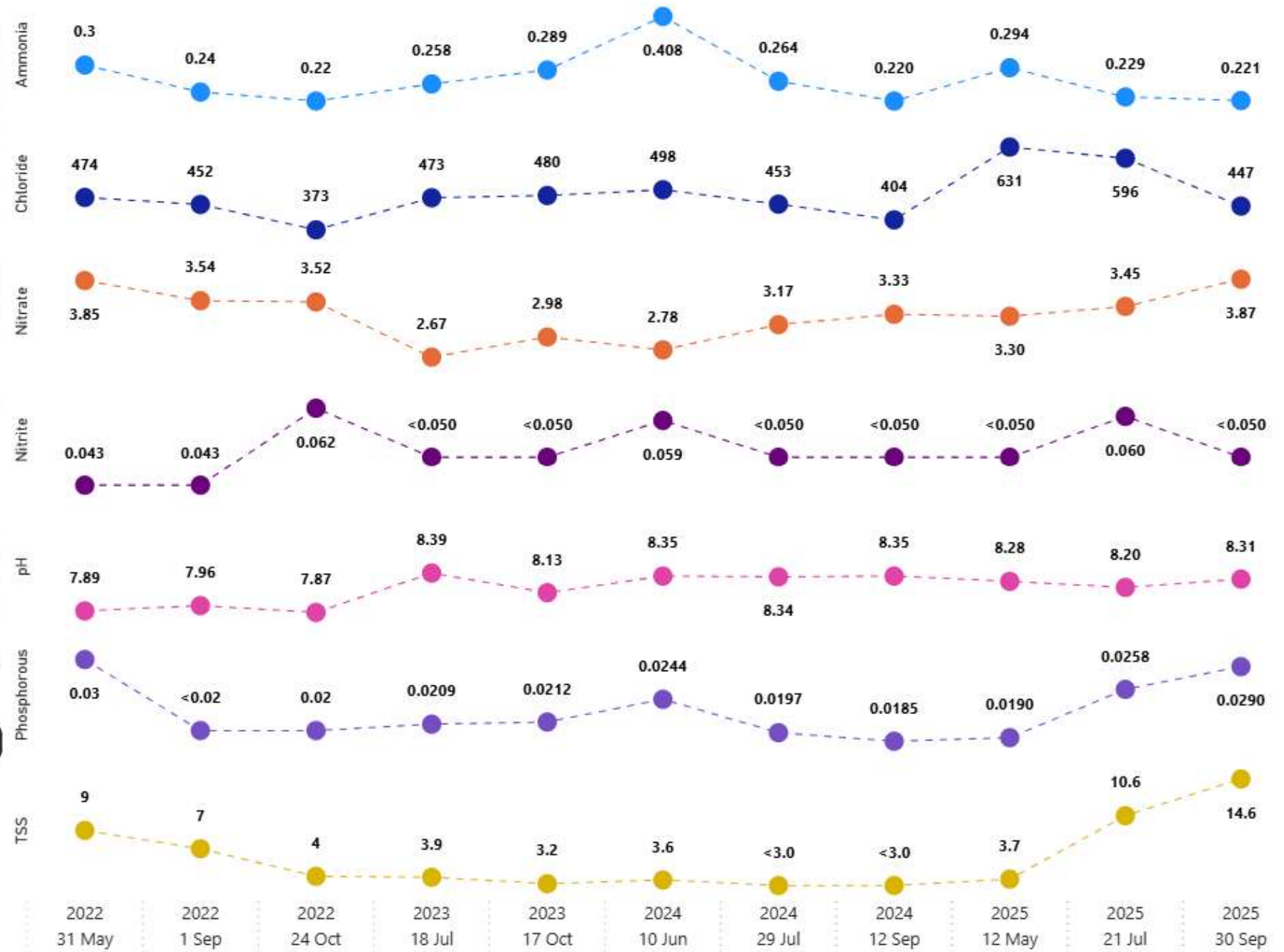
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

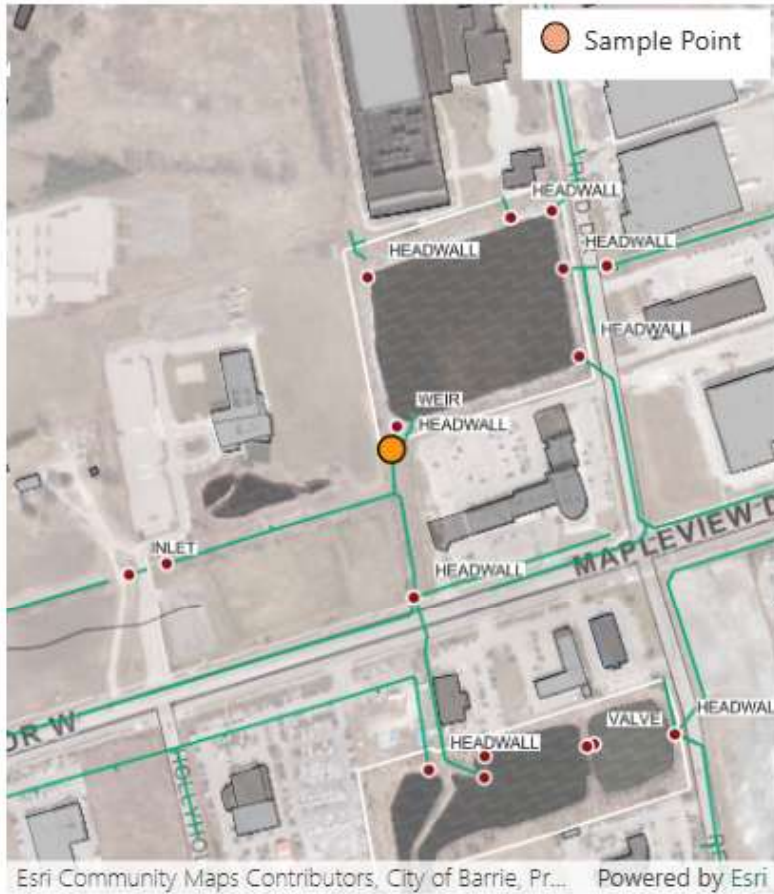
All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



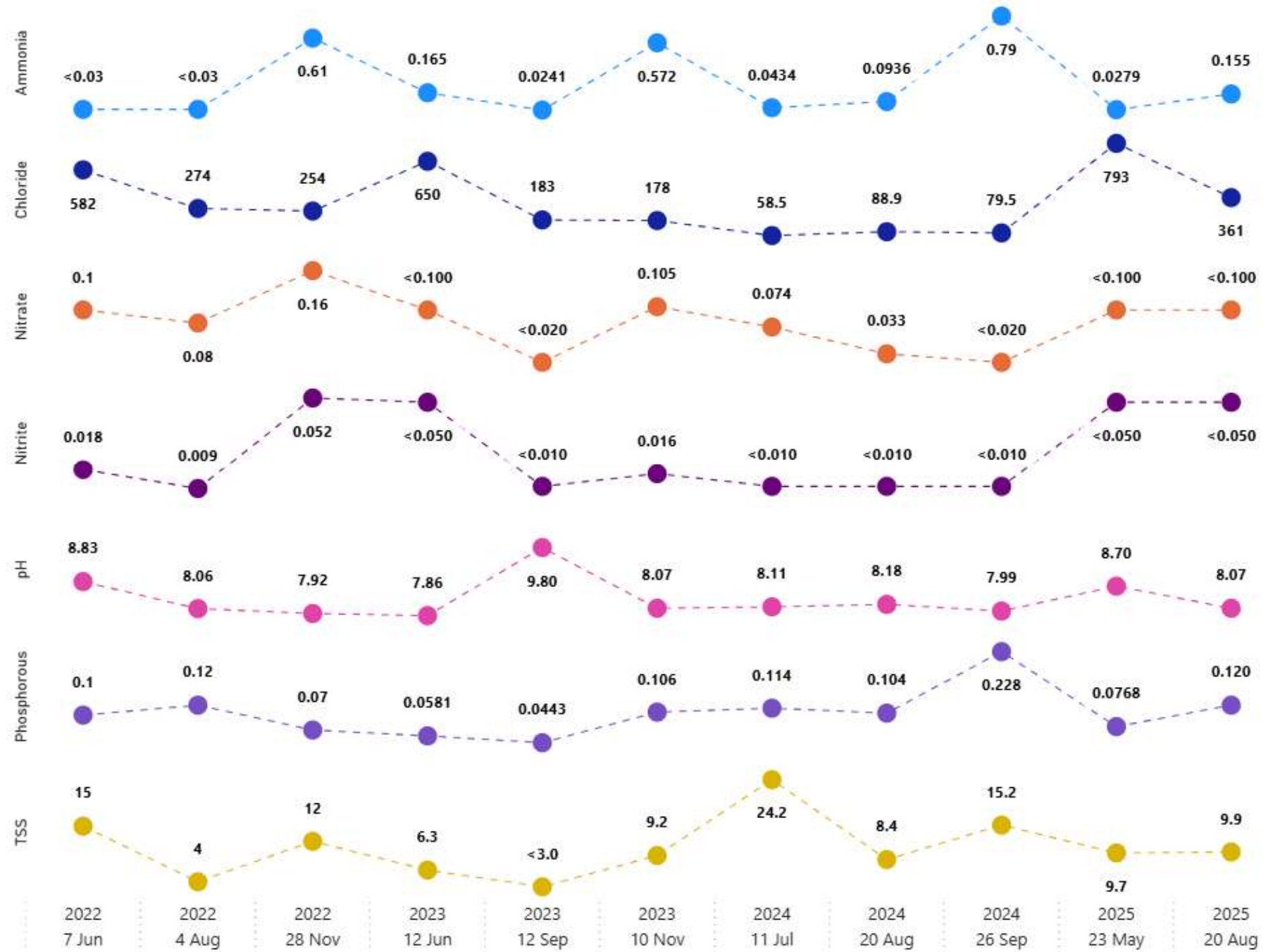
SWMF Water Quality Key Performance Indicator Trends



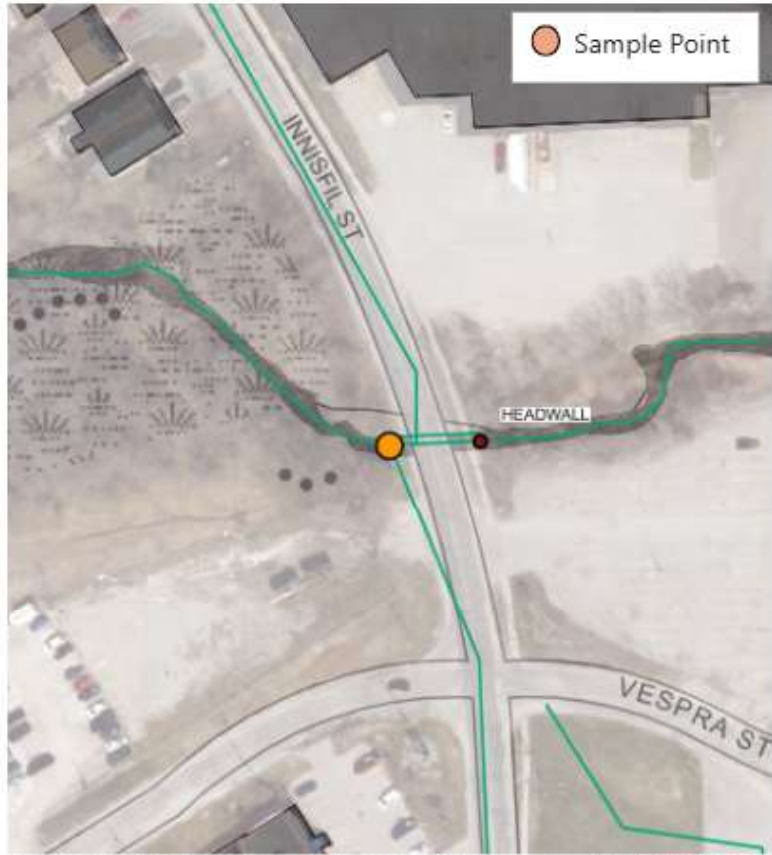
Notes:
 Ammonia = Total Ammonia as N
 Nitrate = Nitrate as N
 Nitrite = Nitrite as N
 Phosphorous = Total Phosphorous
 TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BR20-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

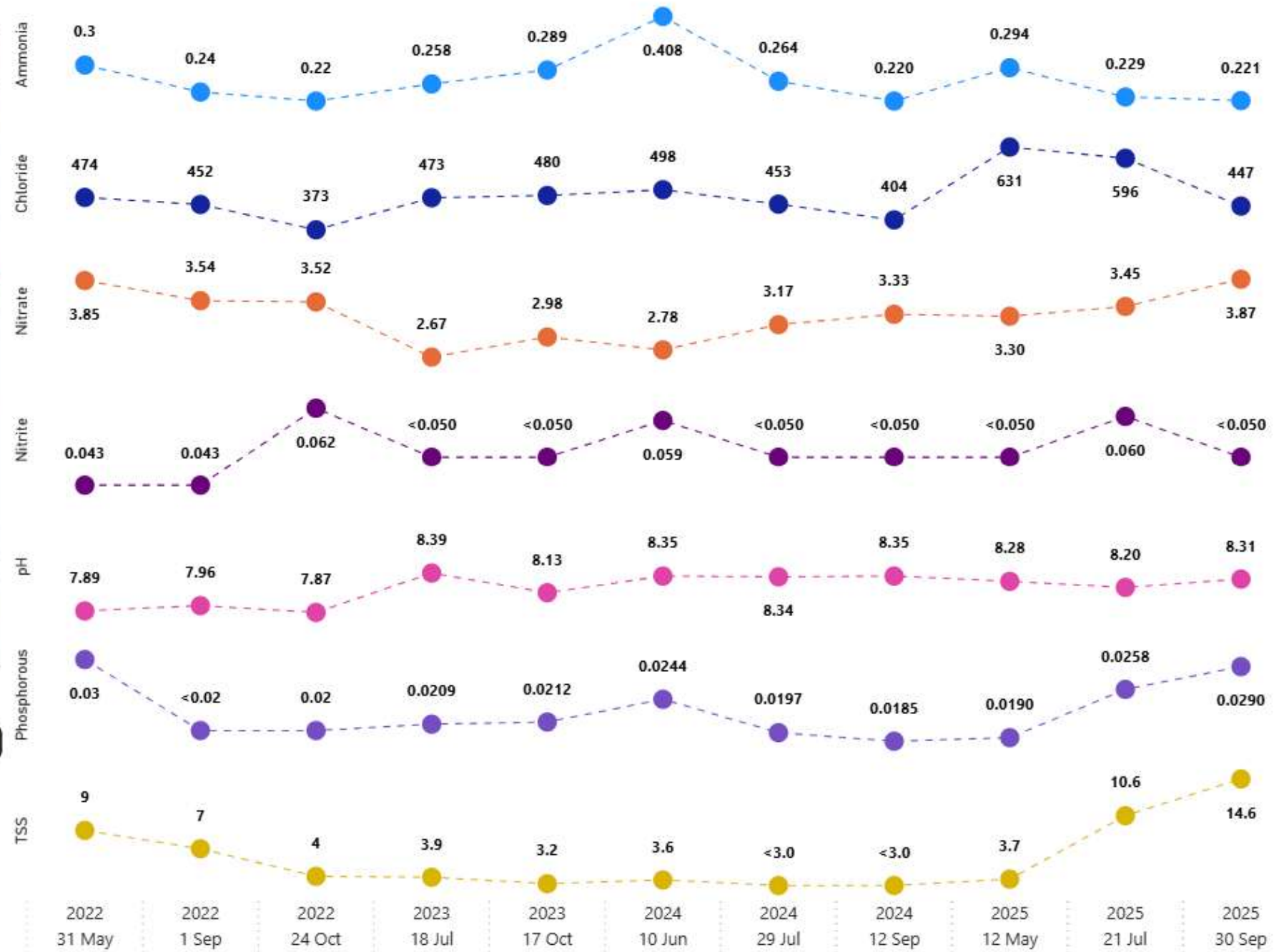
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

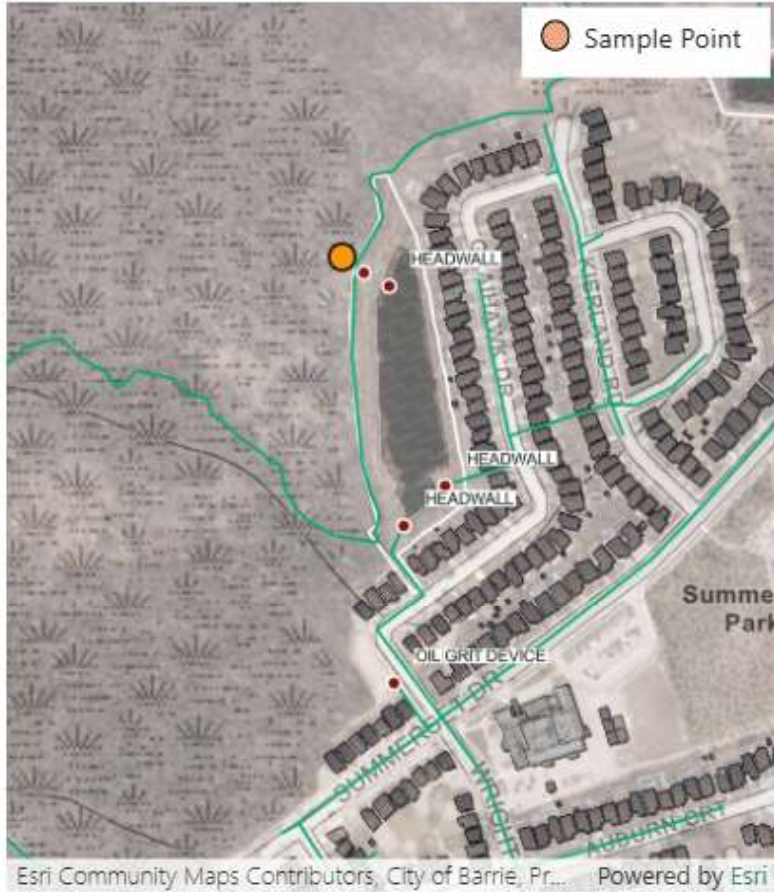
All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



SWMF Water Quality Key Performance Indicator Trends

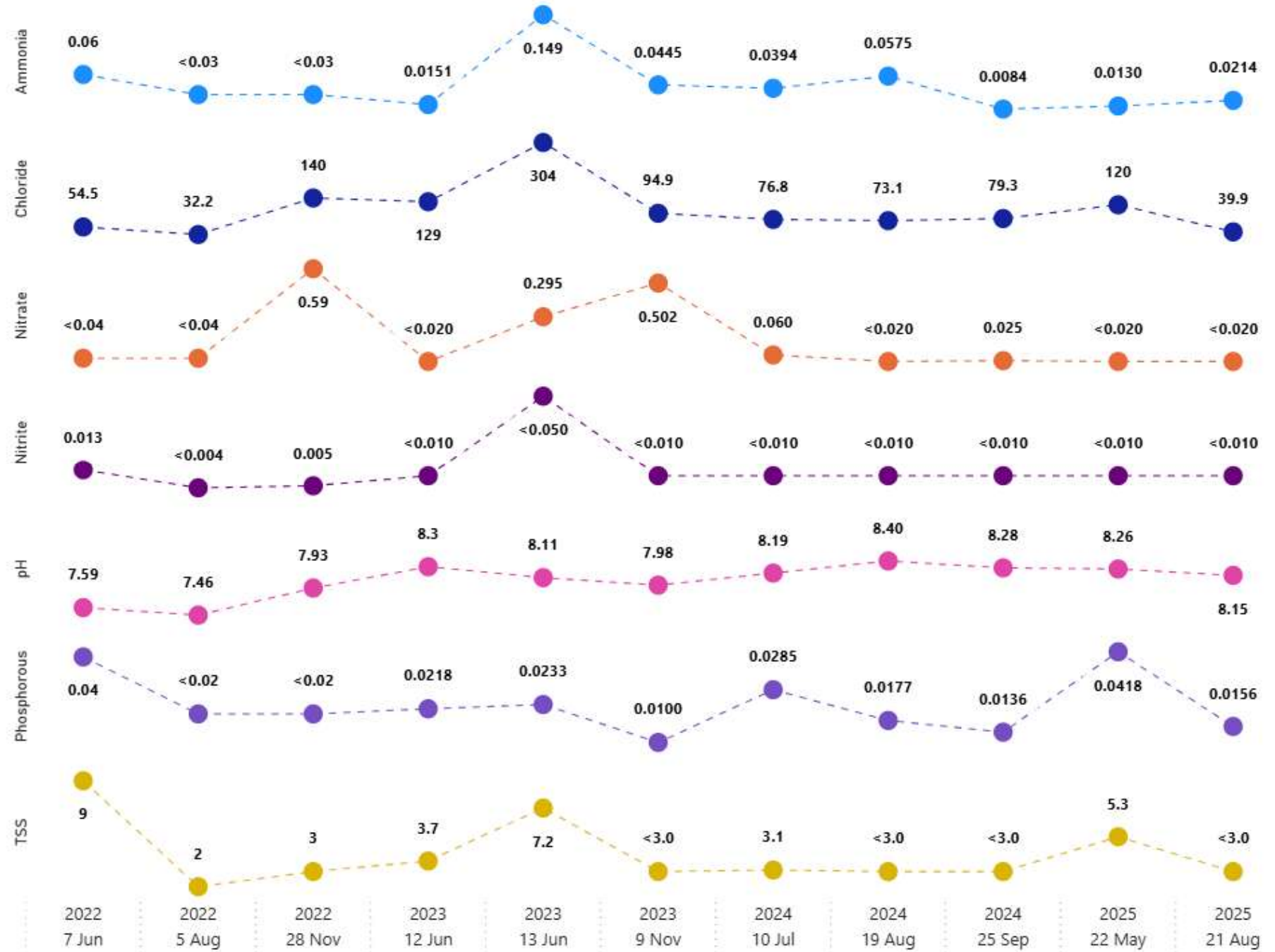


Notes:

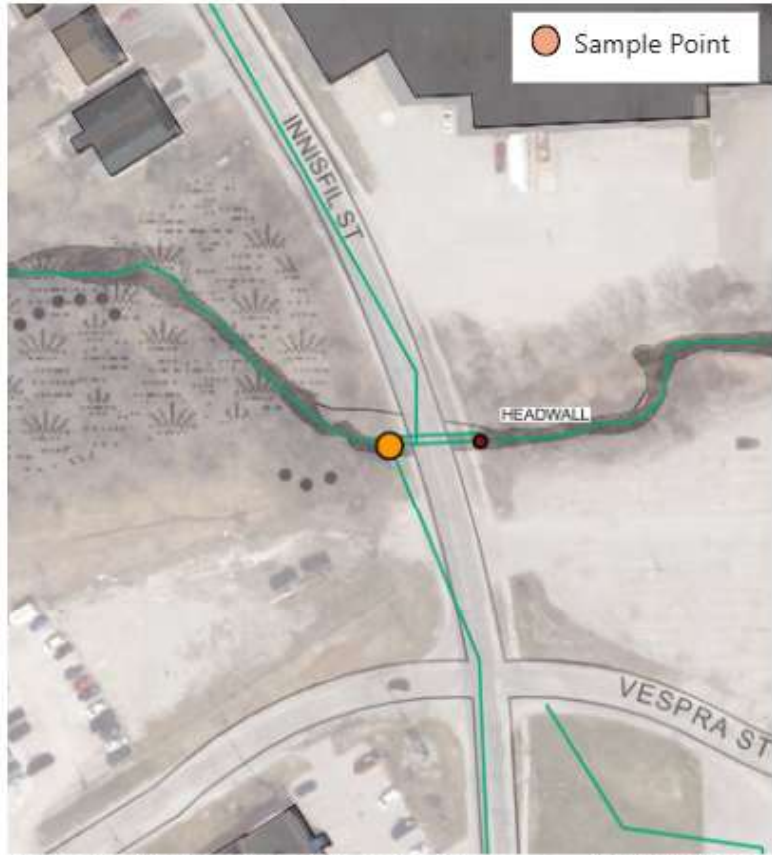
- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BR22-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

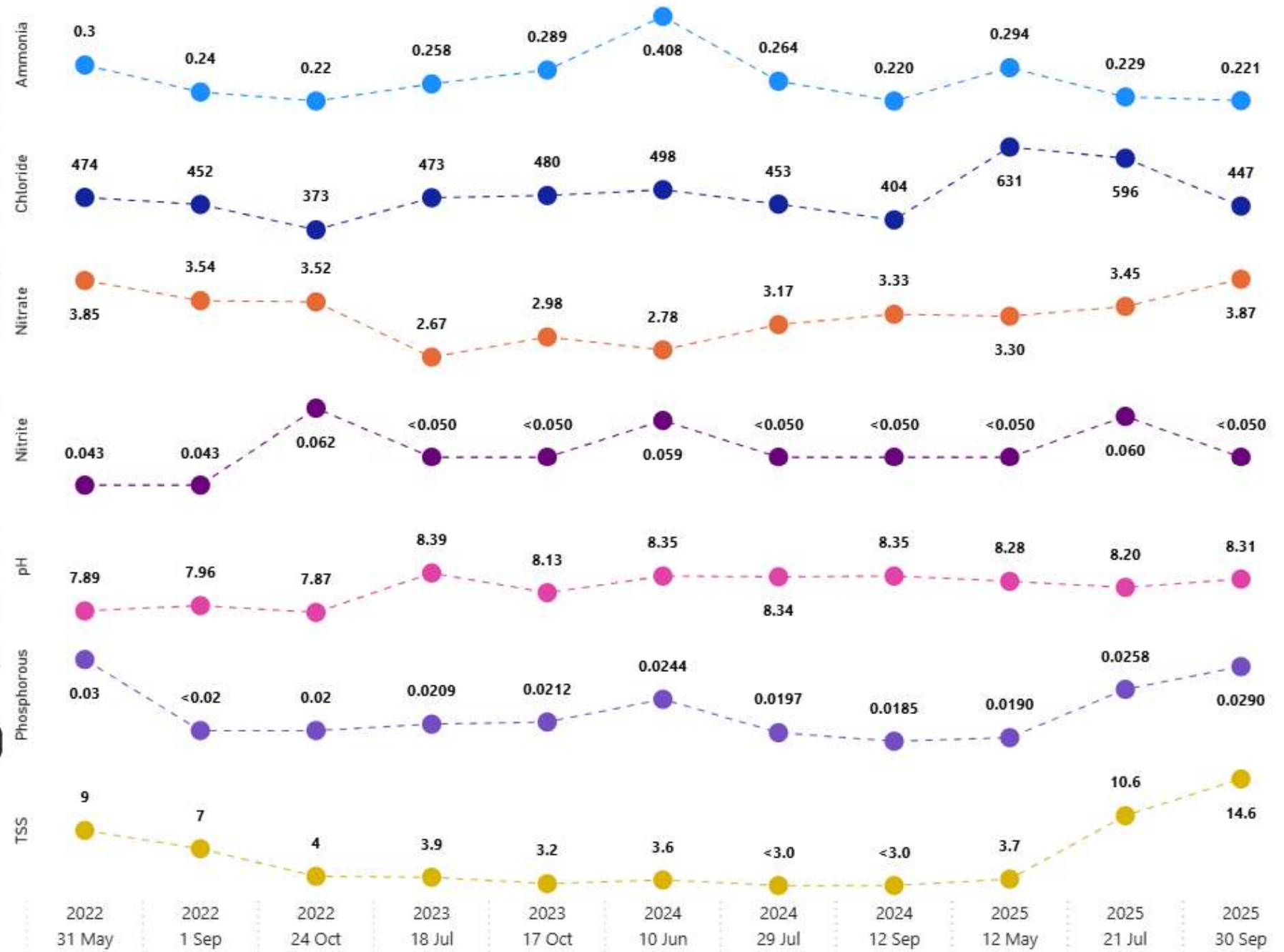
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

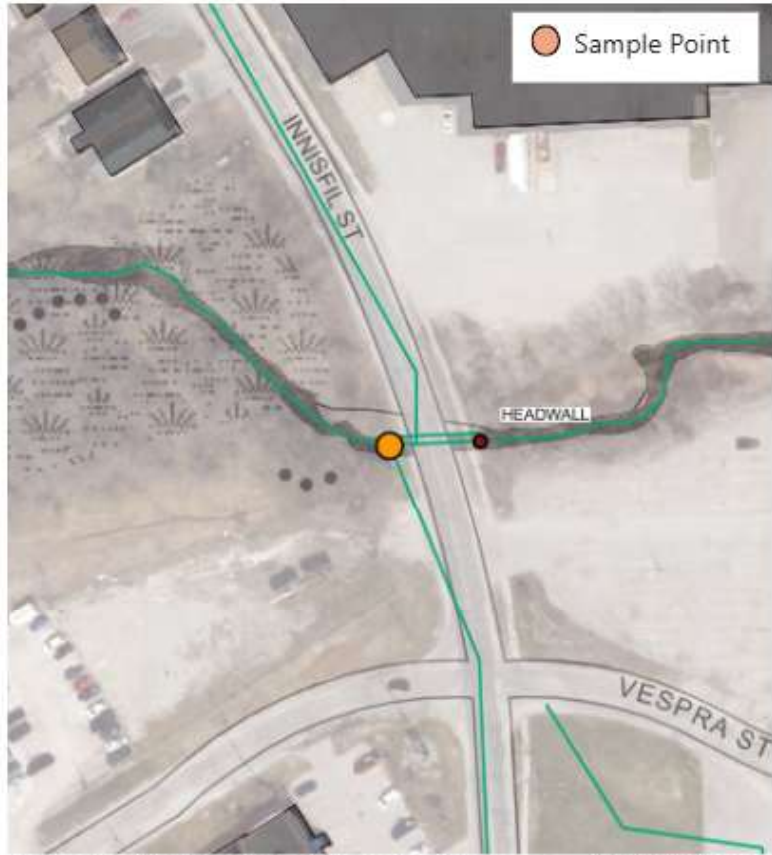
All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



Watercourse Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

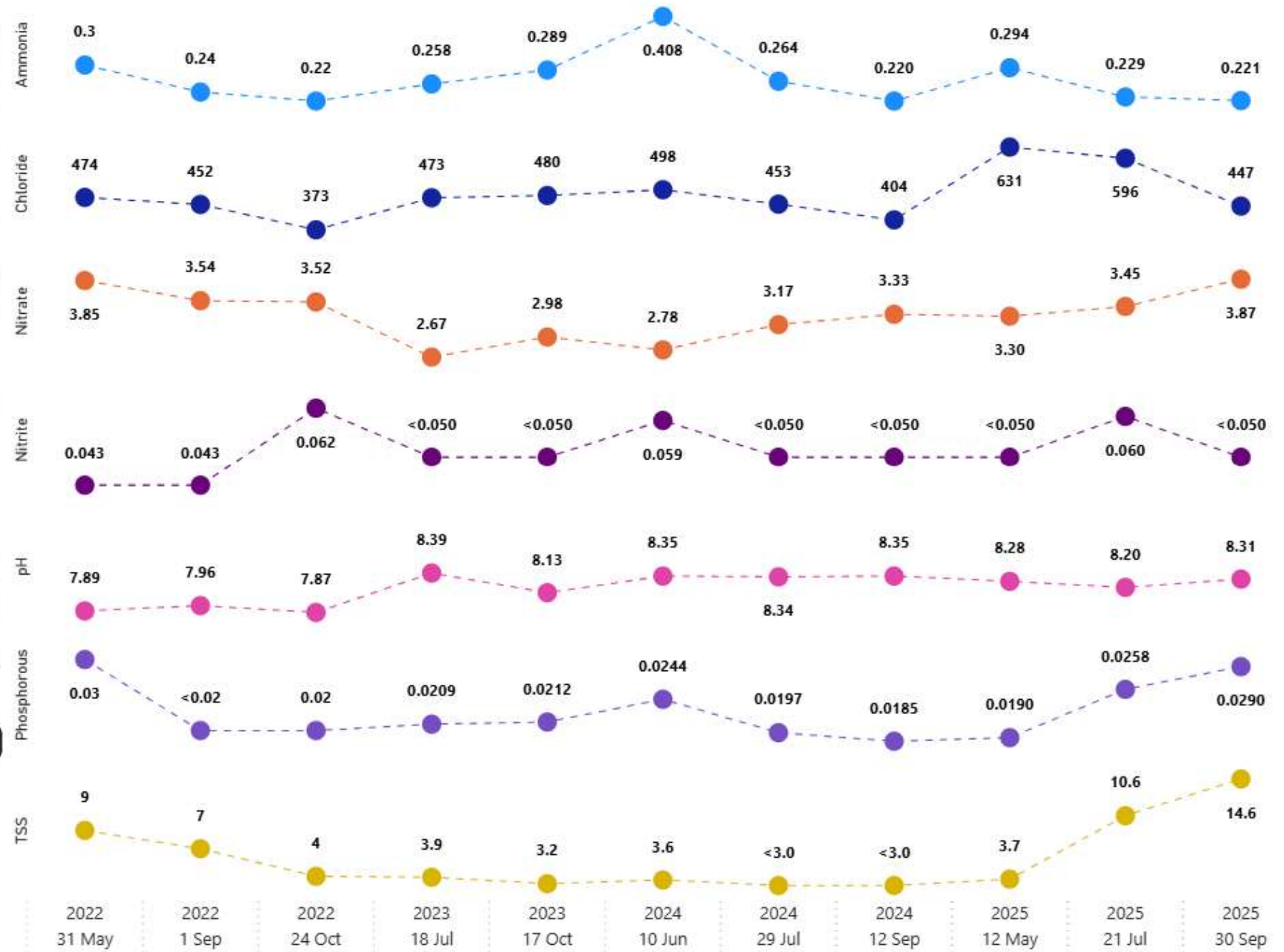
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



SWMF Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

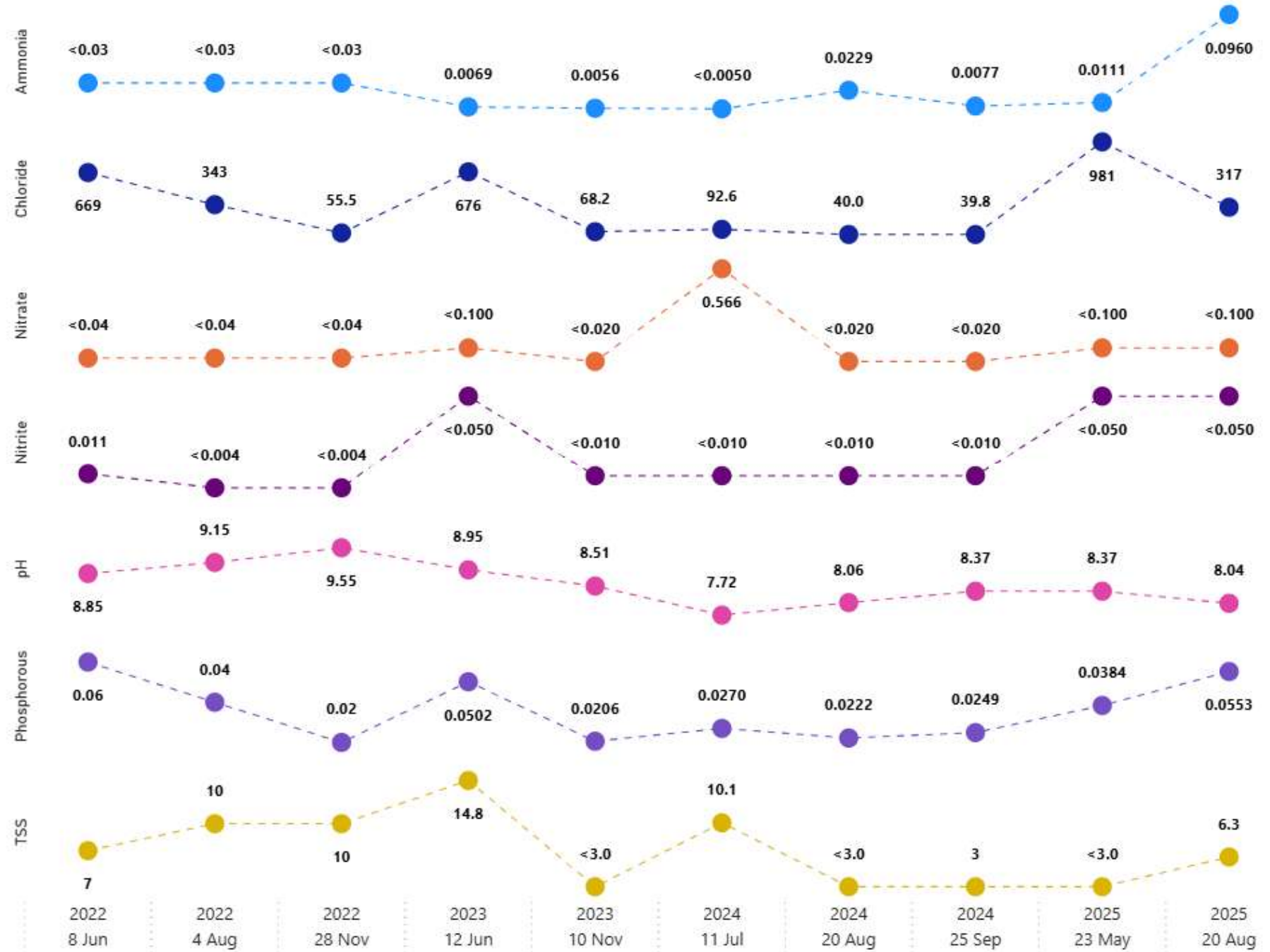
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

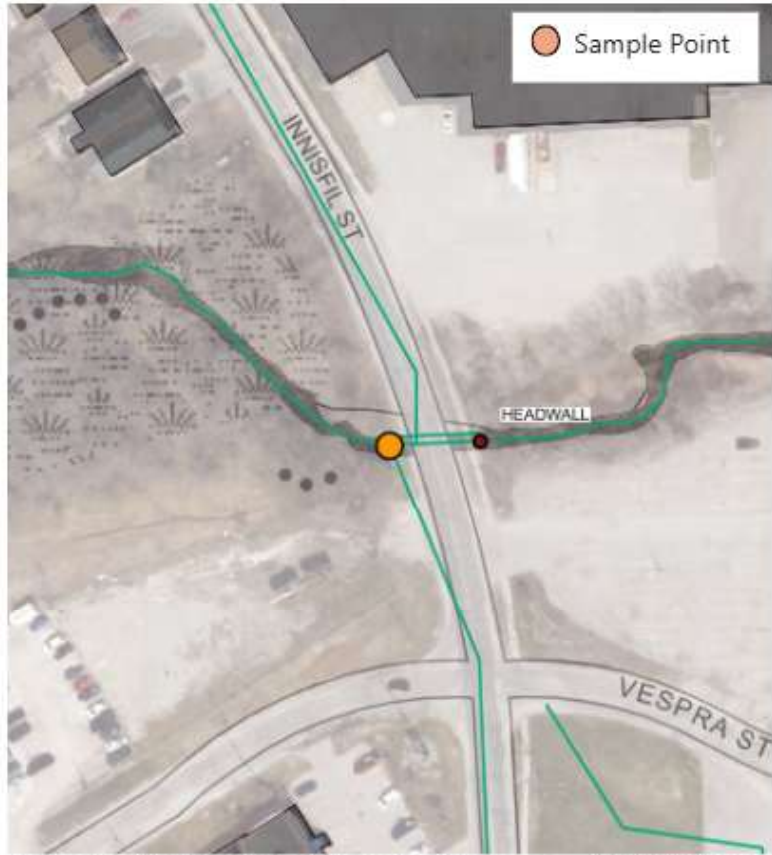
All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BR25-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

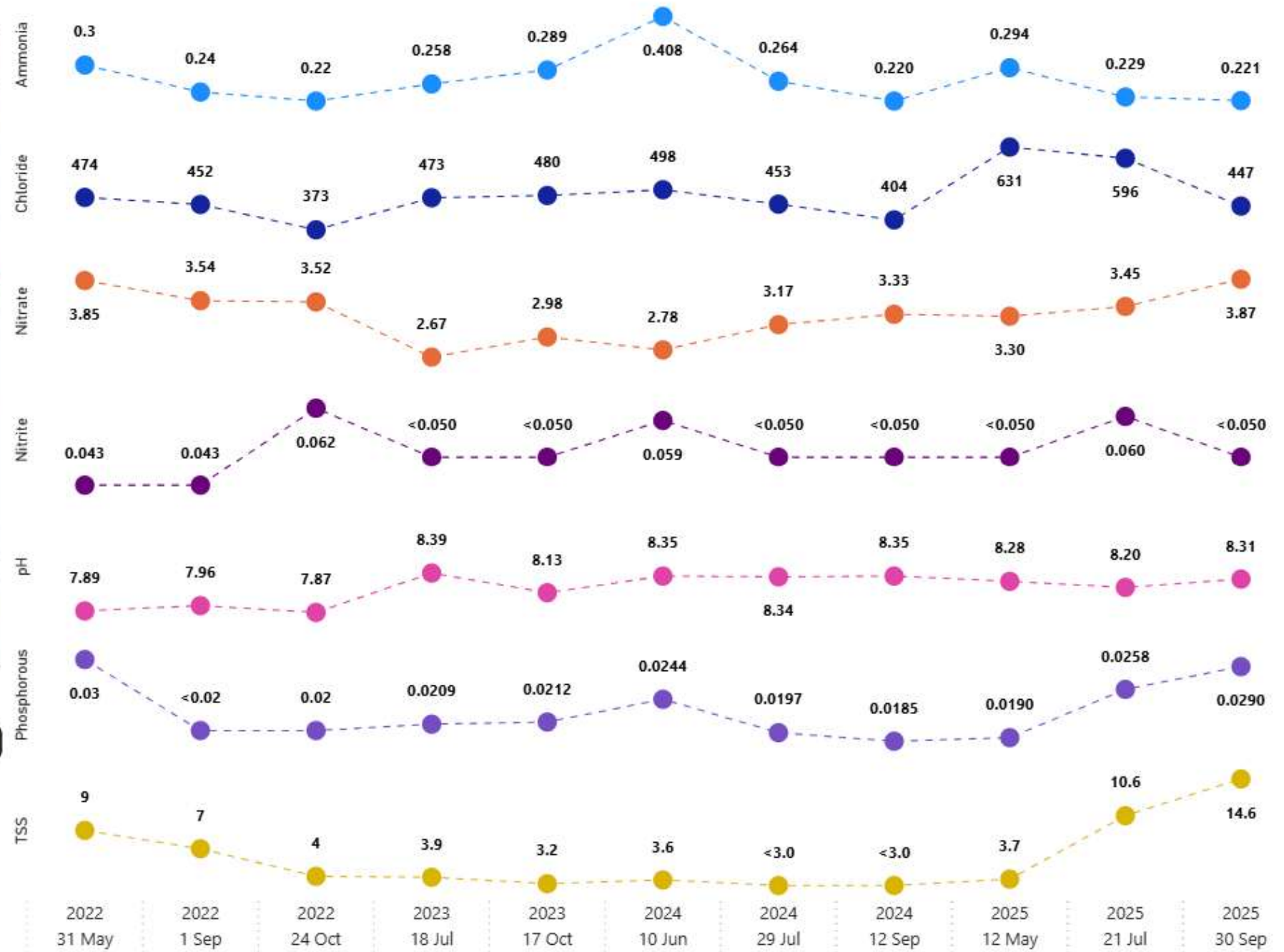
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



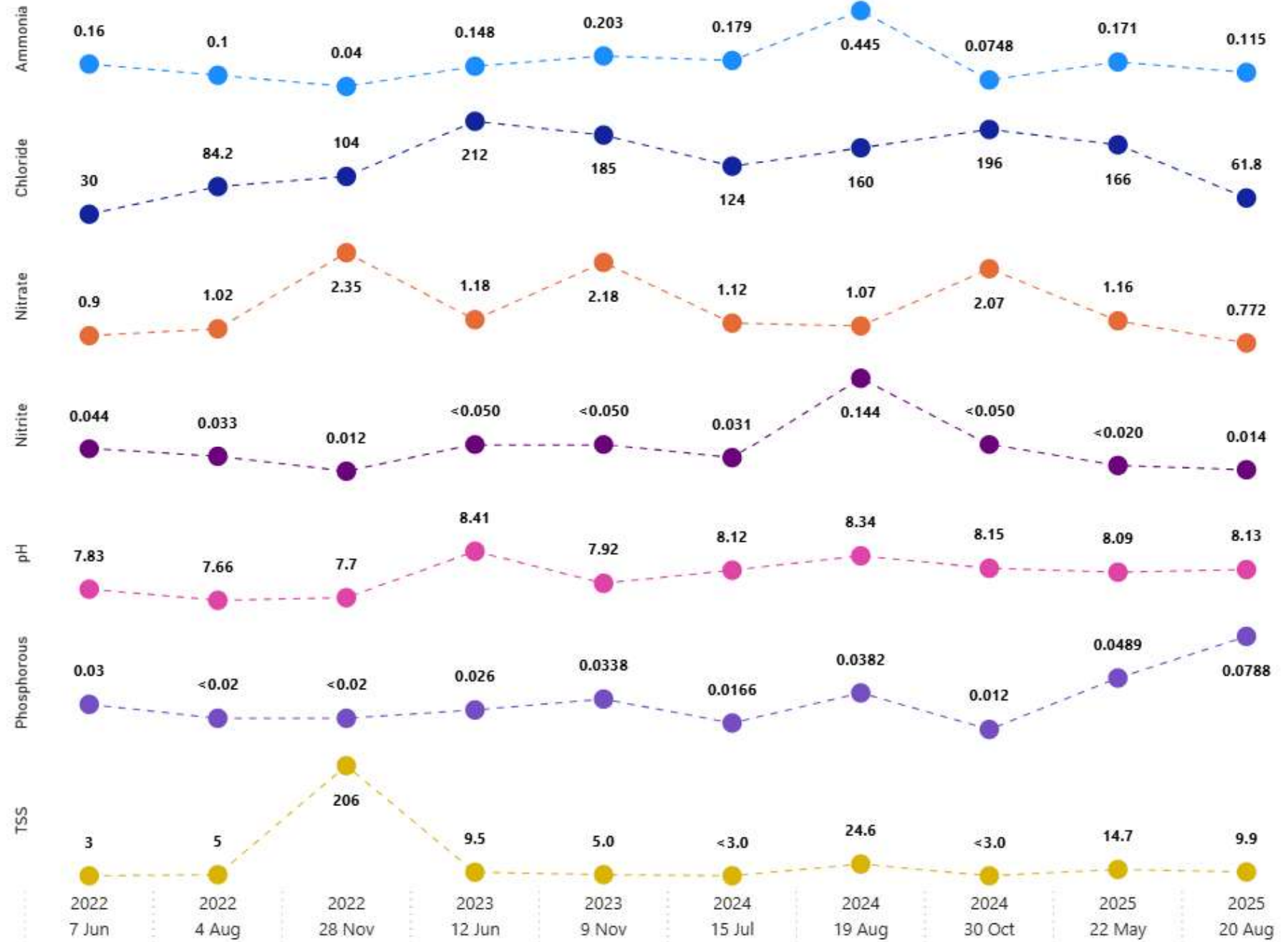
SWMF Water Quality Key Performance Indicator Trends



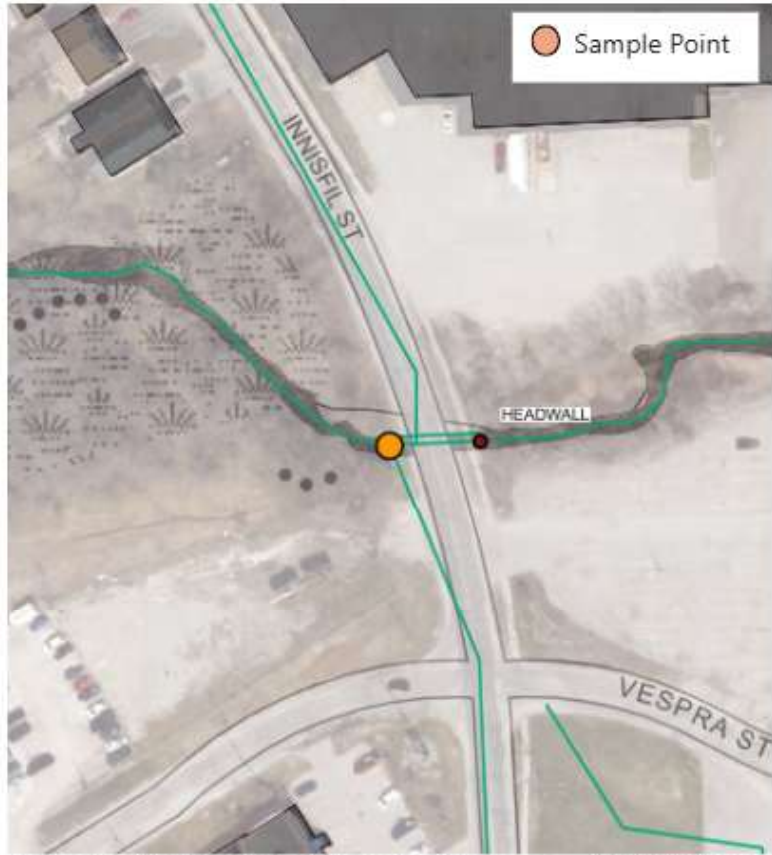
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



Watercourse Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

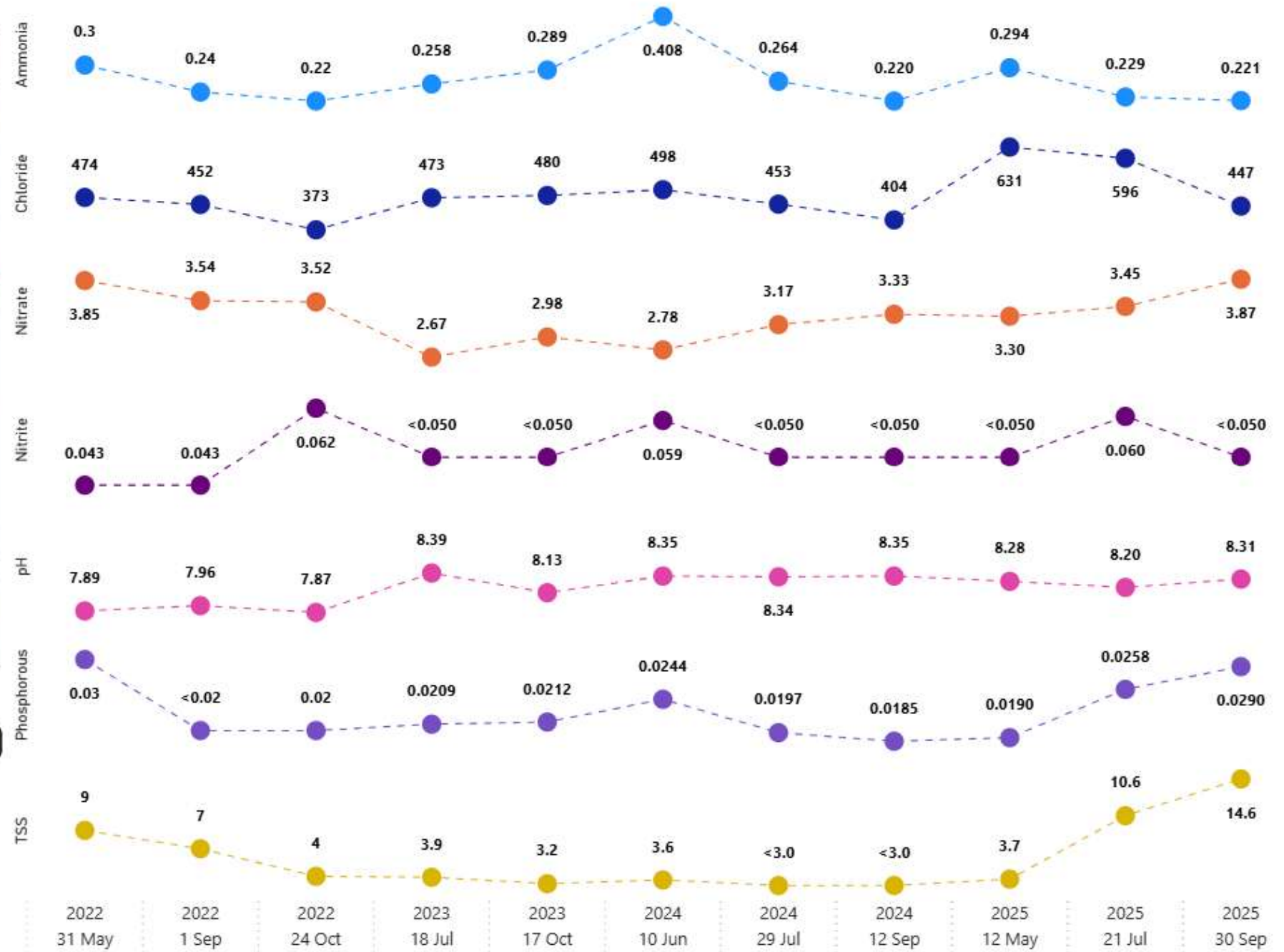
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

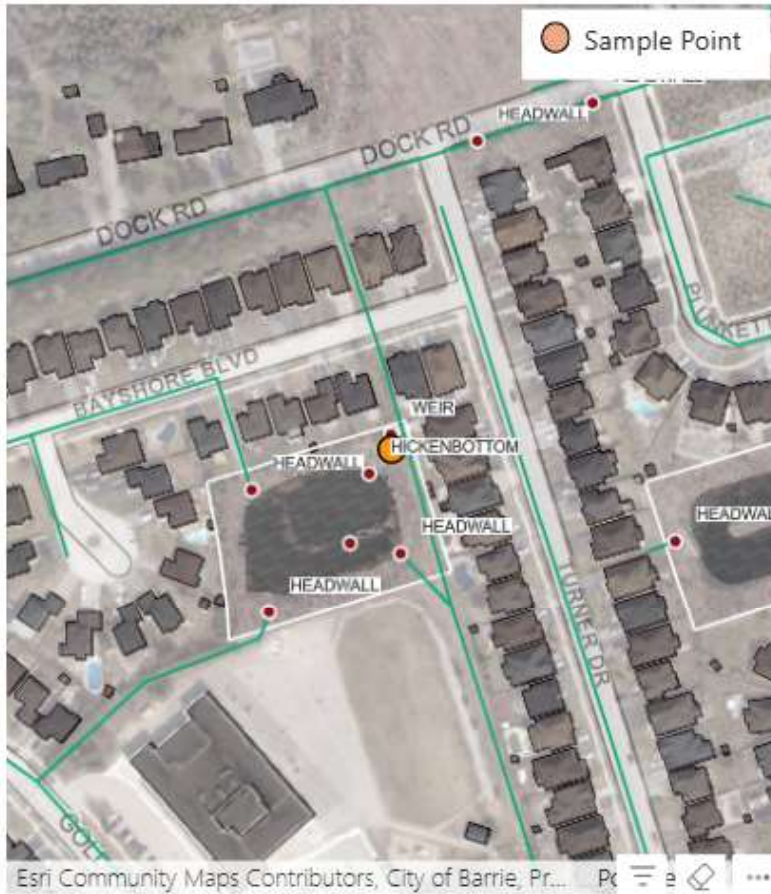
All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



SWMF Water Quality Key Performance Indicator Trends

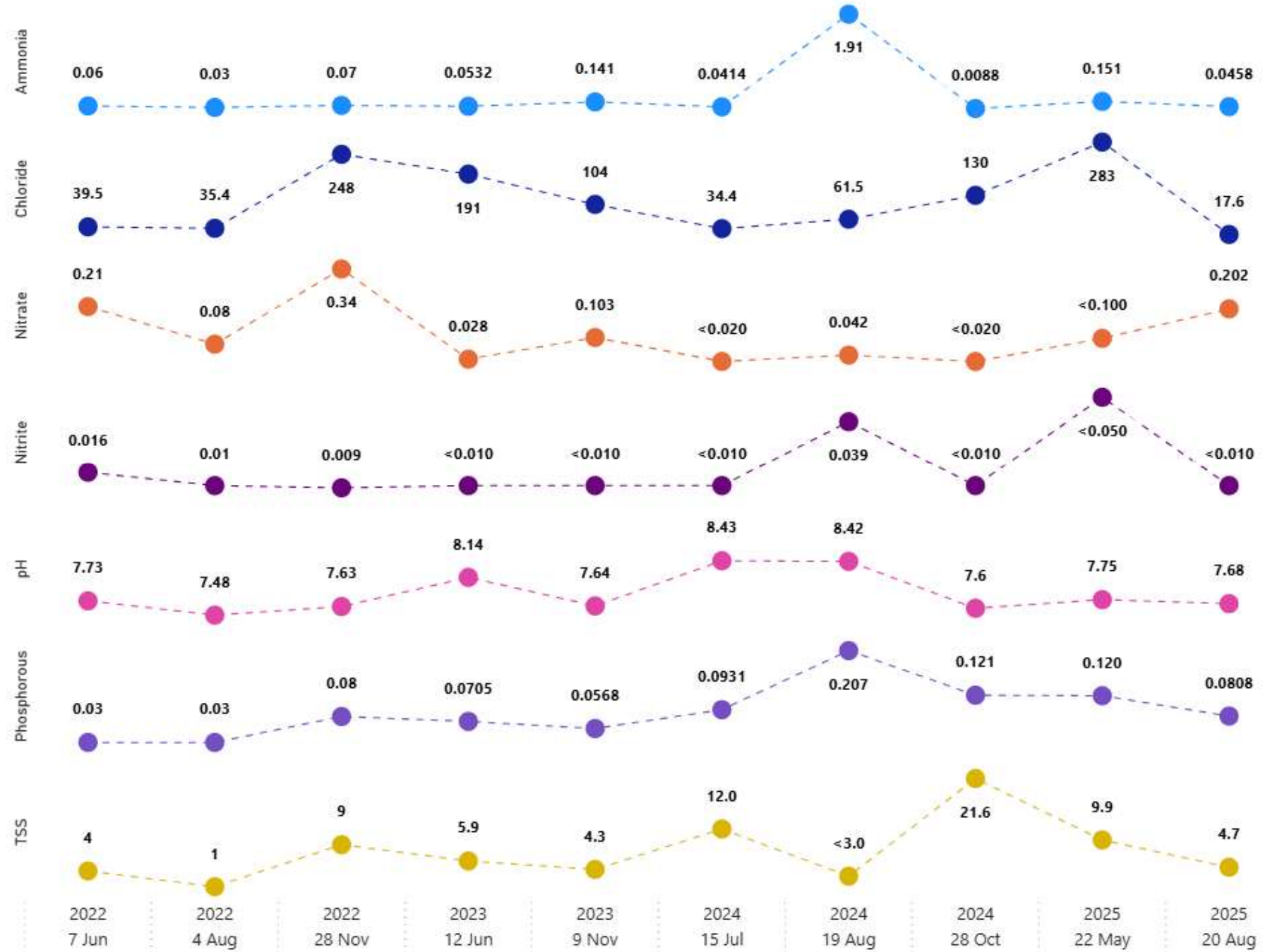


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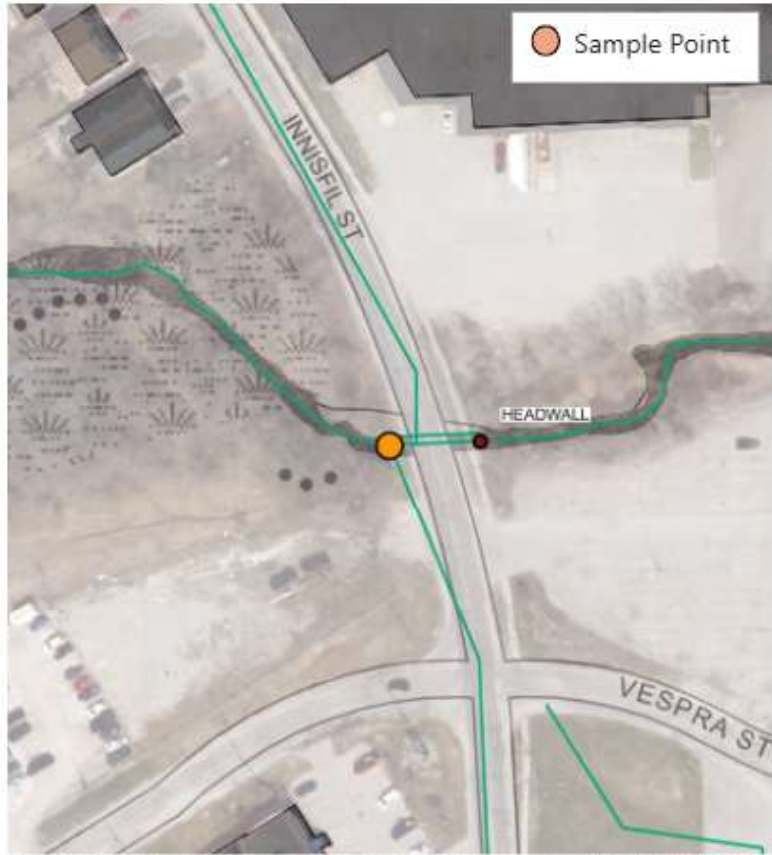
- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
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BY03-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



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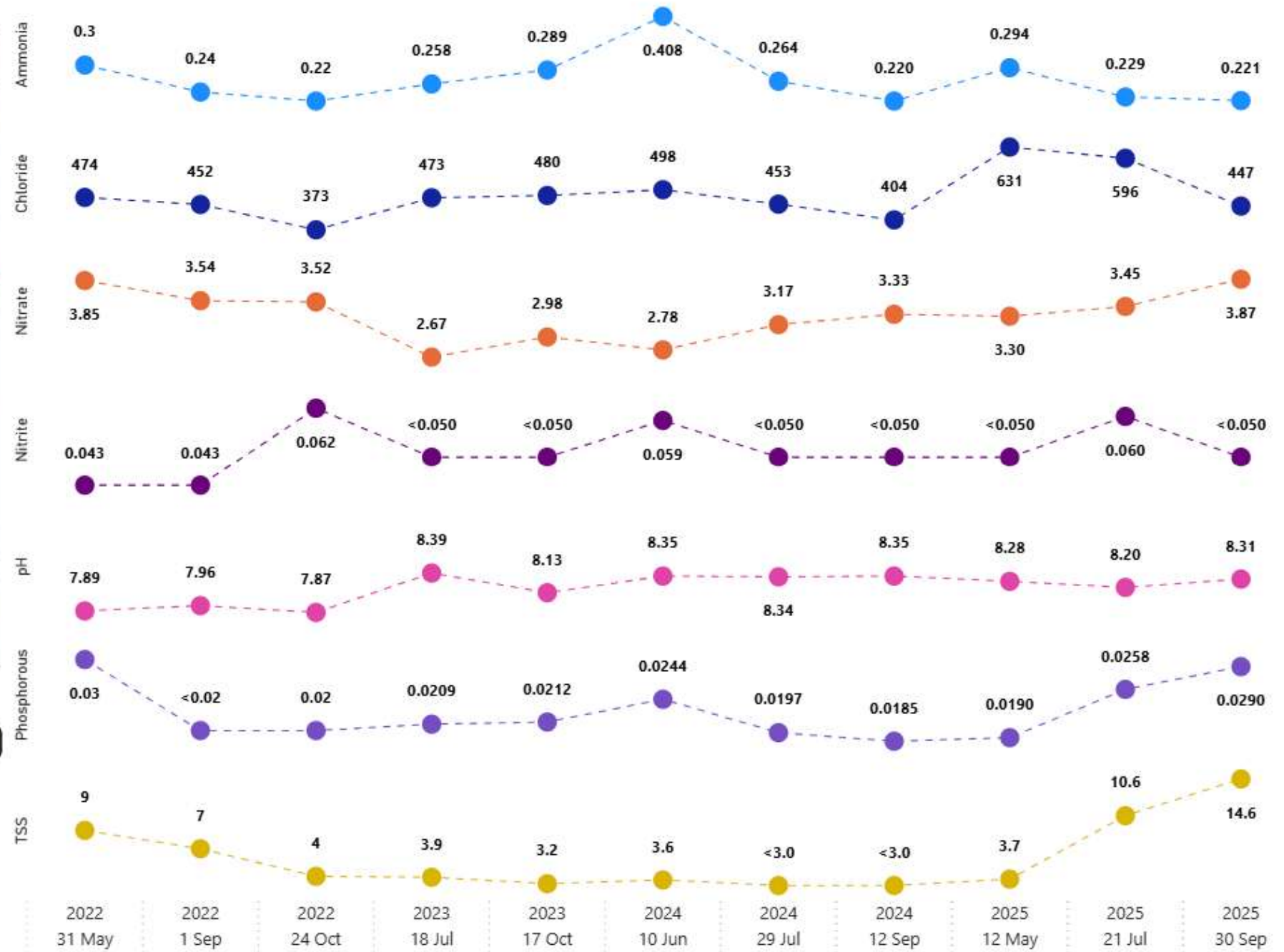
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



SWMF Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

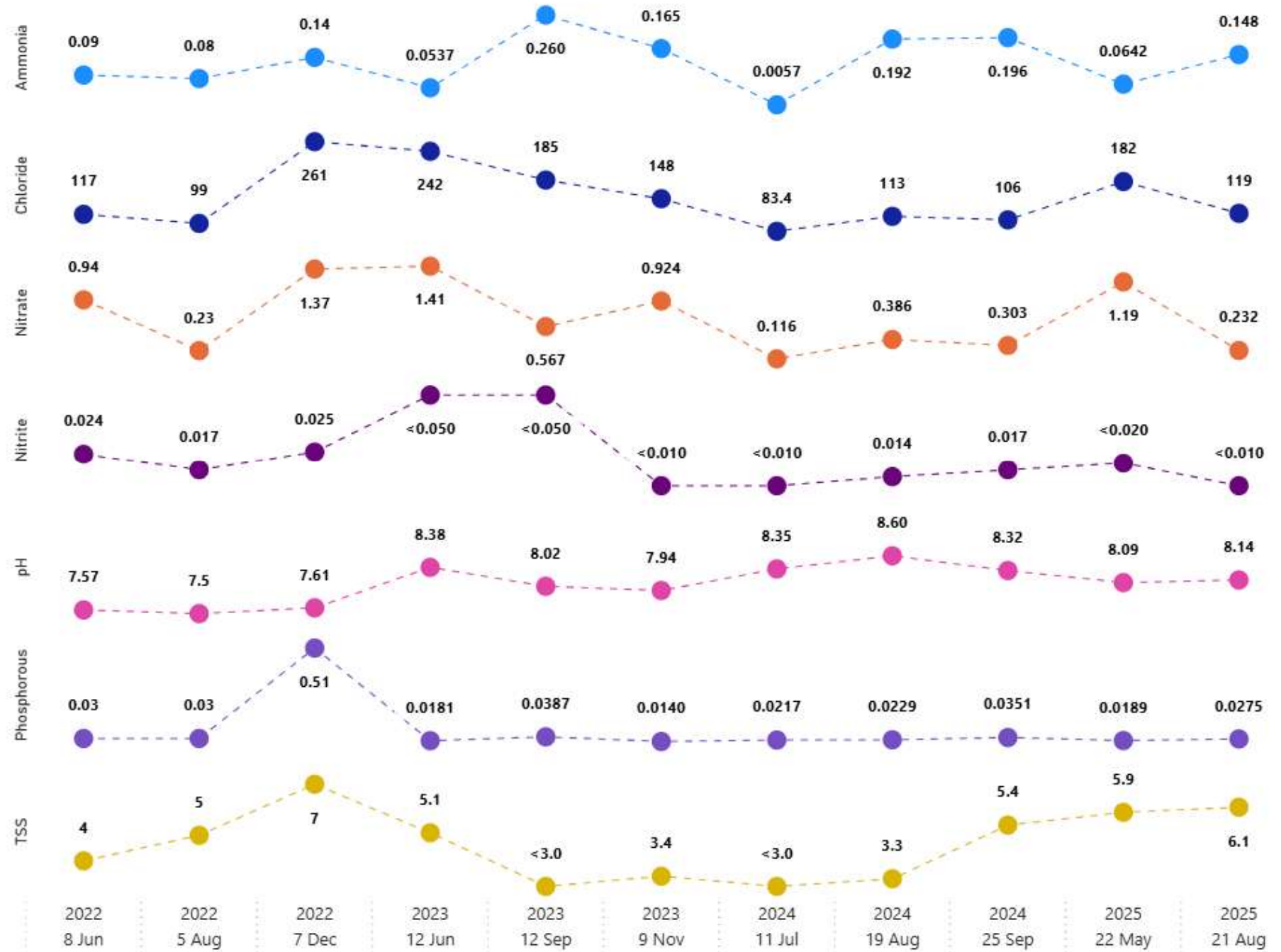
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

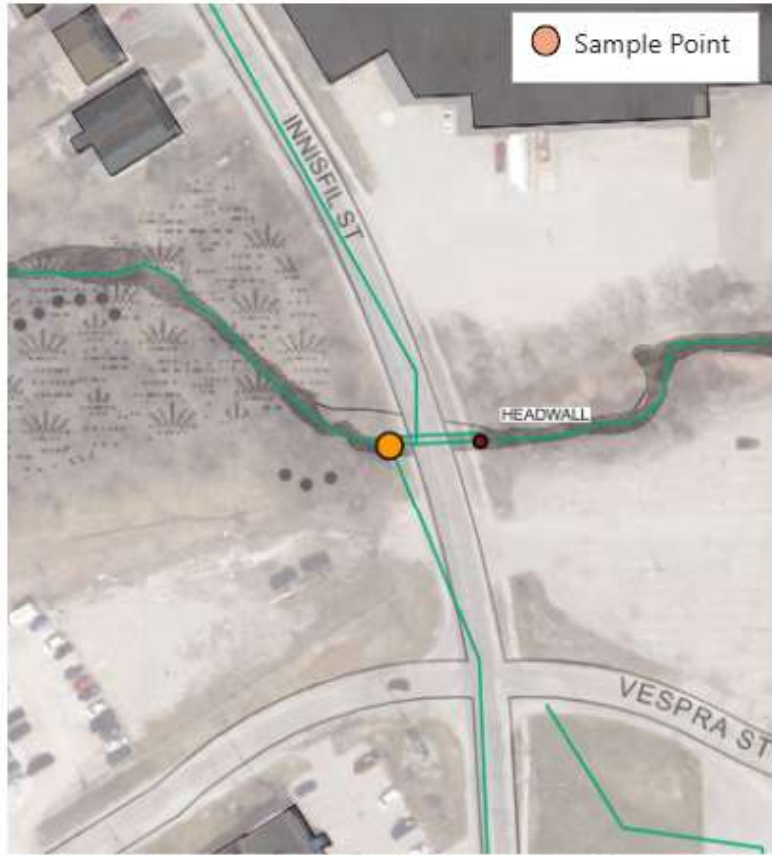
All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

DY04-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



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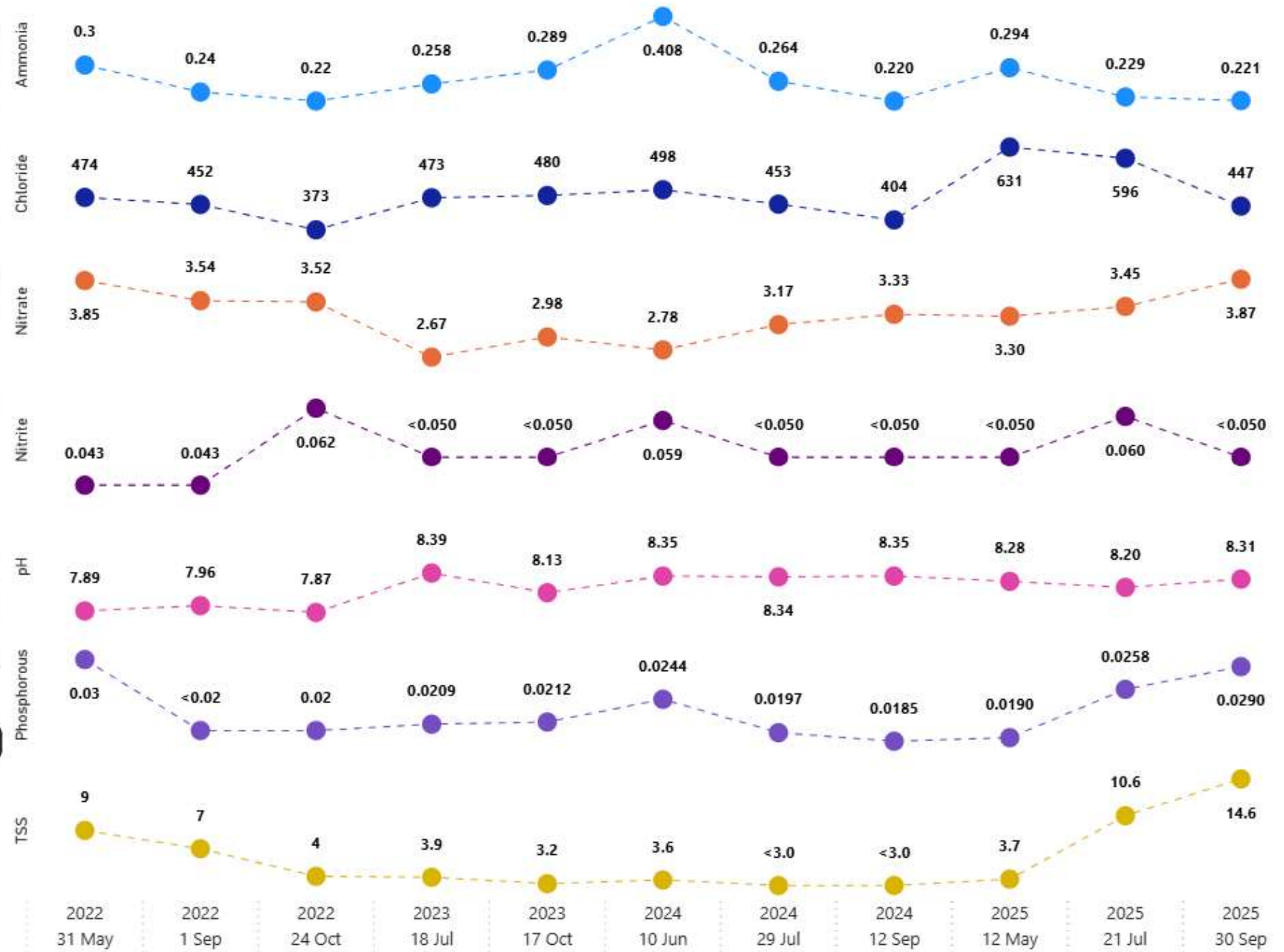
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



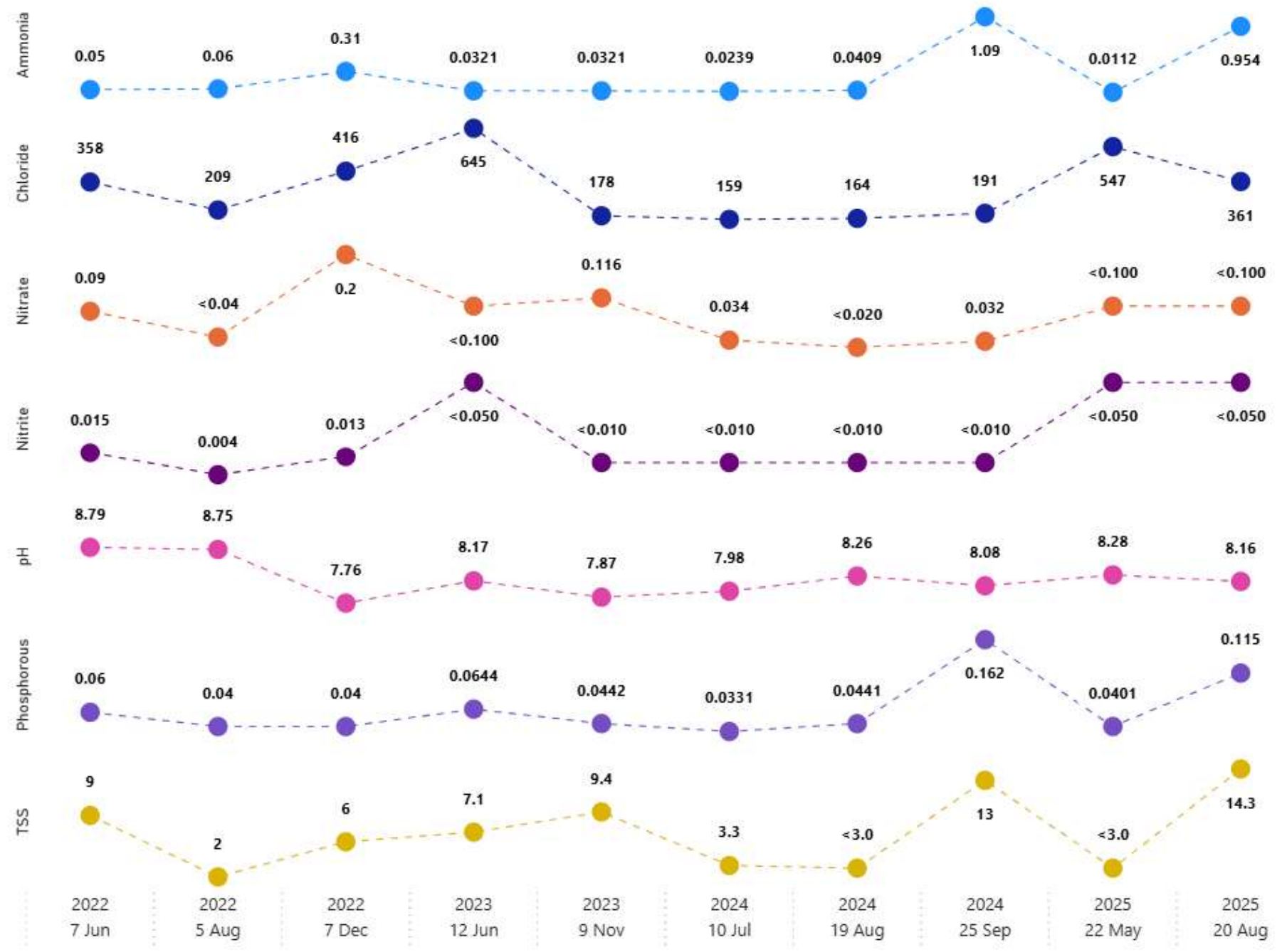
SWMF Water Quality Key Performance Indicator Trends



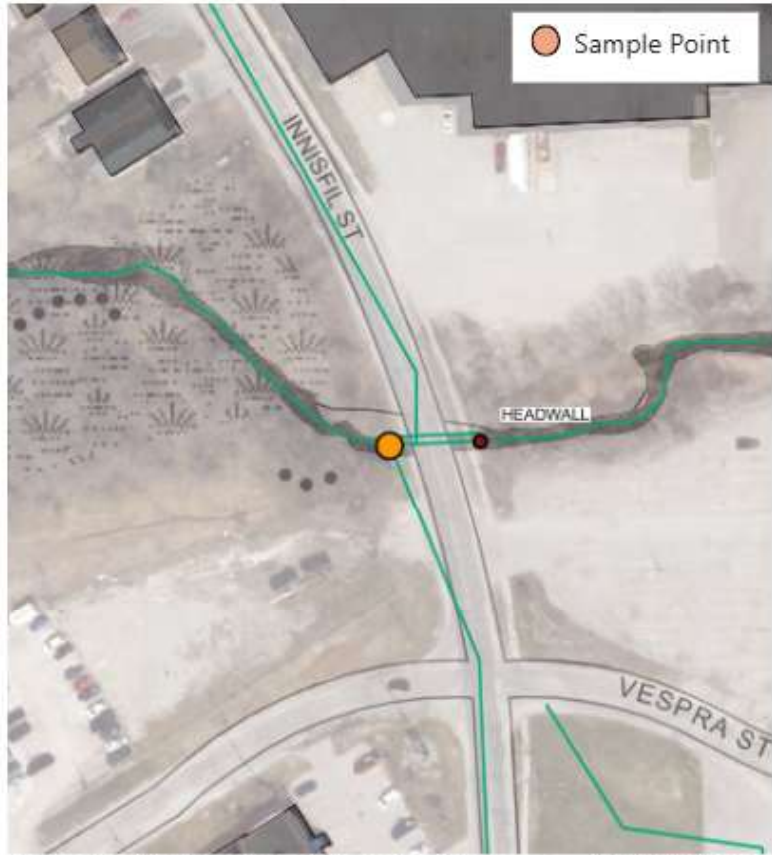
Notes:
 Ammonia = Total Ammonia as N
 Nitrate = Nitrate as N
 Nitrite = Nitrite as N
 Phosphorous = Total Phosphorous
 TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

GR05-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



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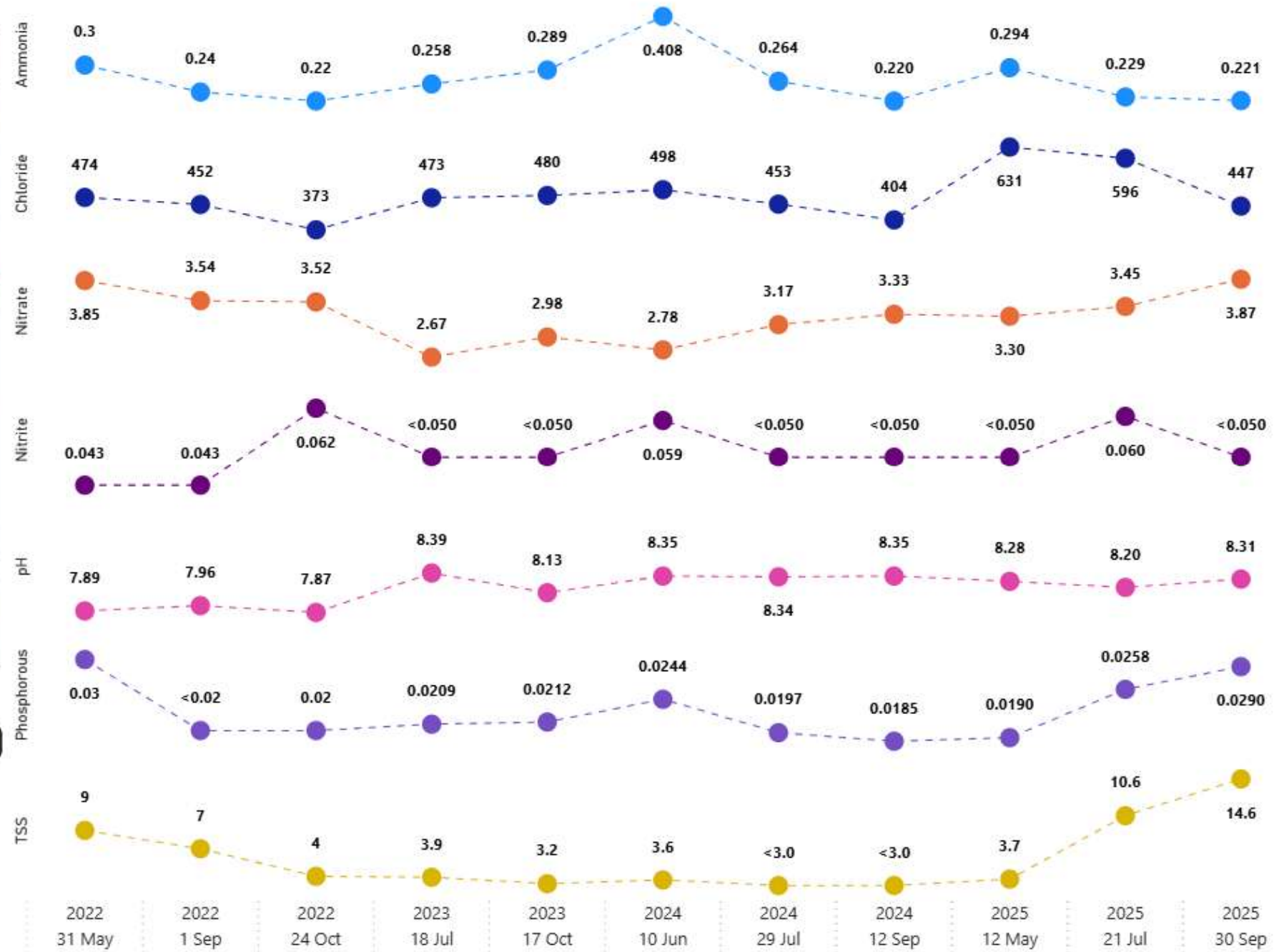
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



SWMF Water Quality Key Performance Indicator Trends



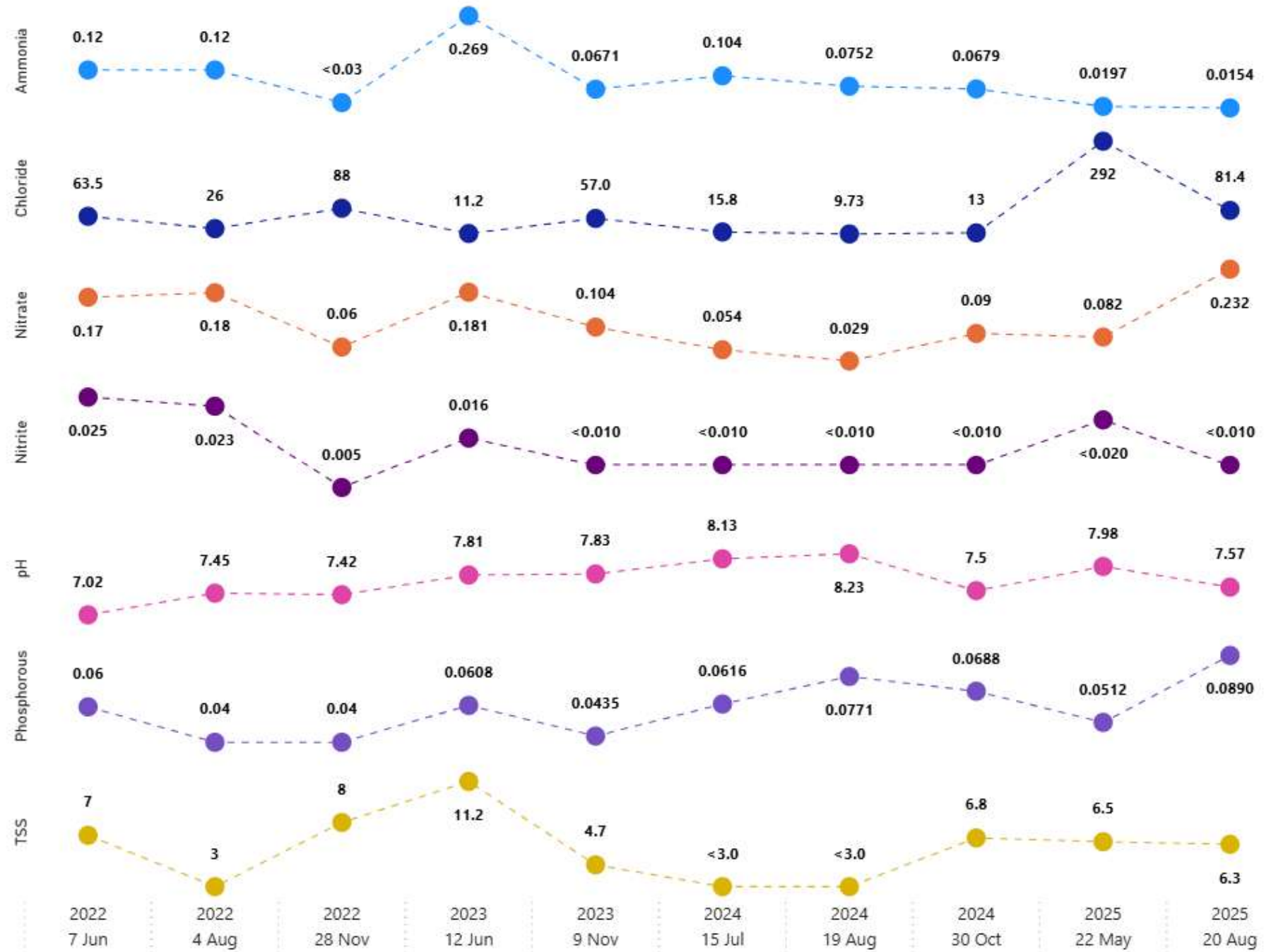
Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

Notes:

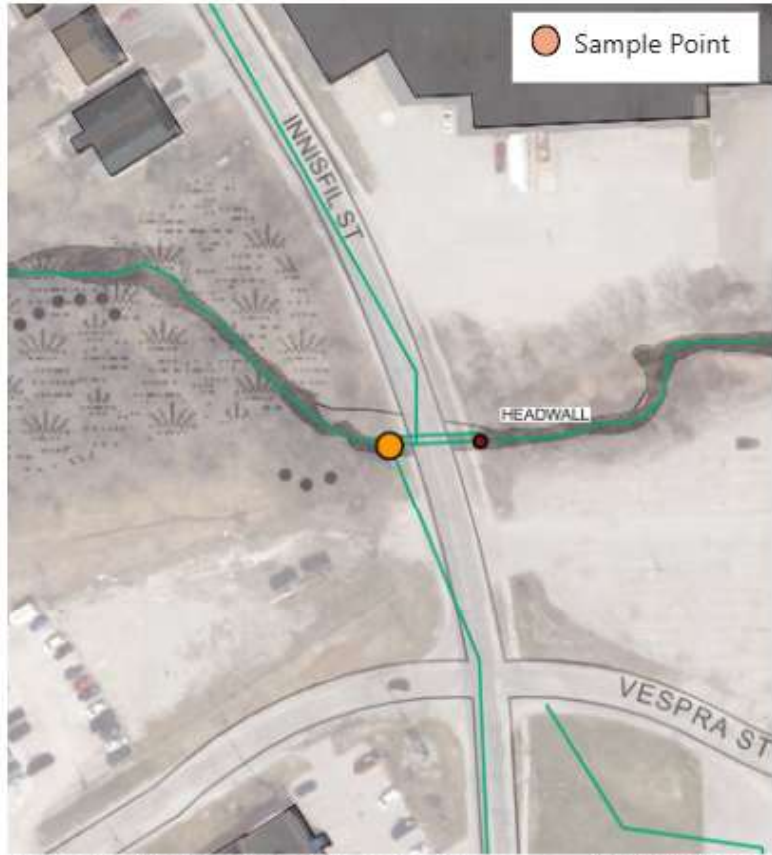
- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
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HW01-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



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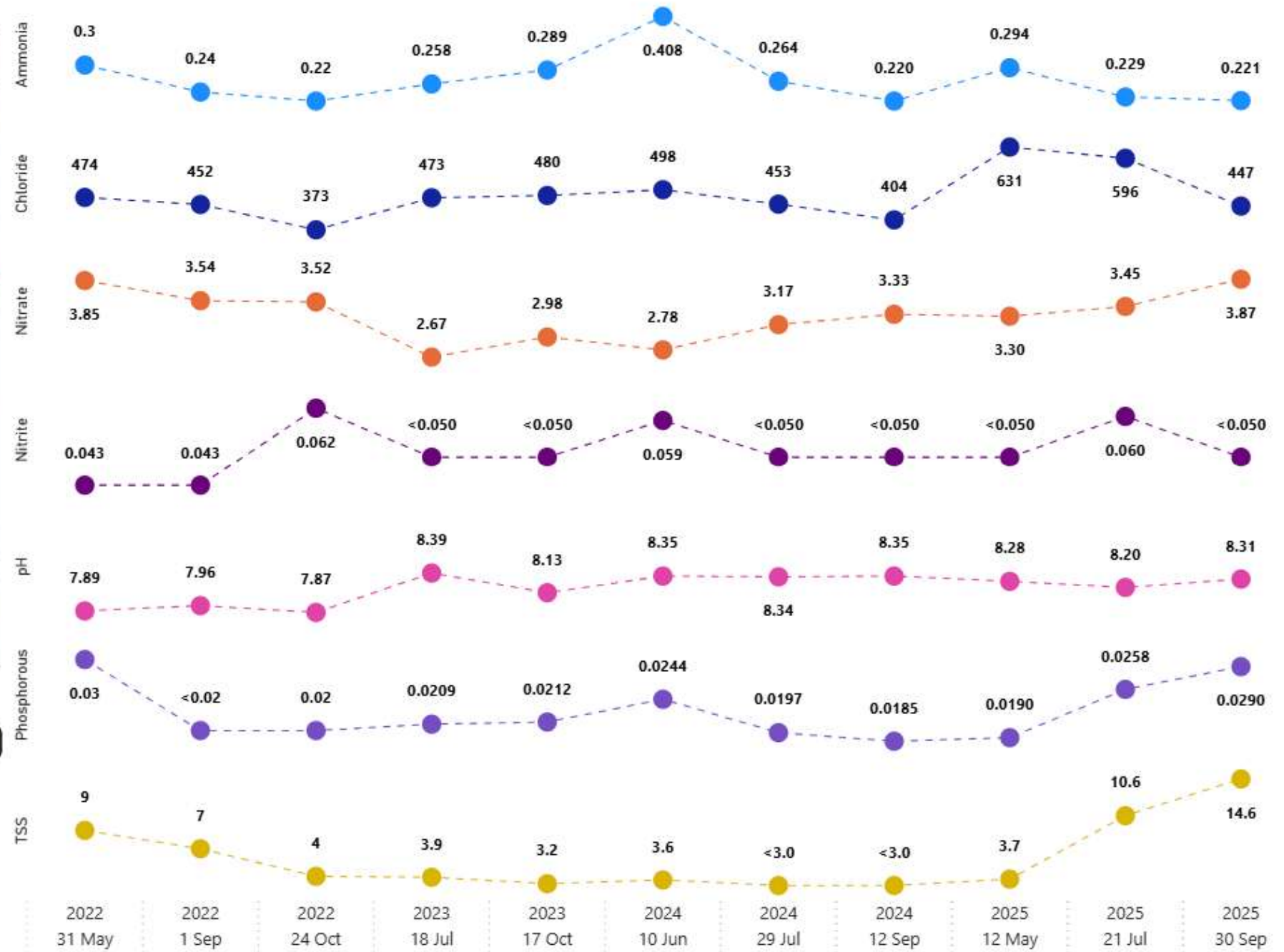
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



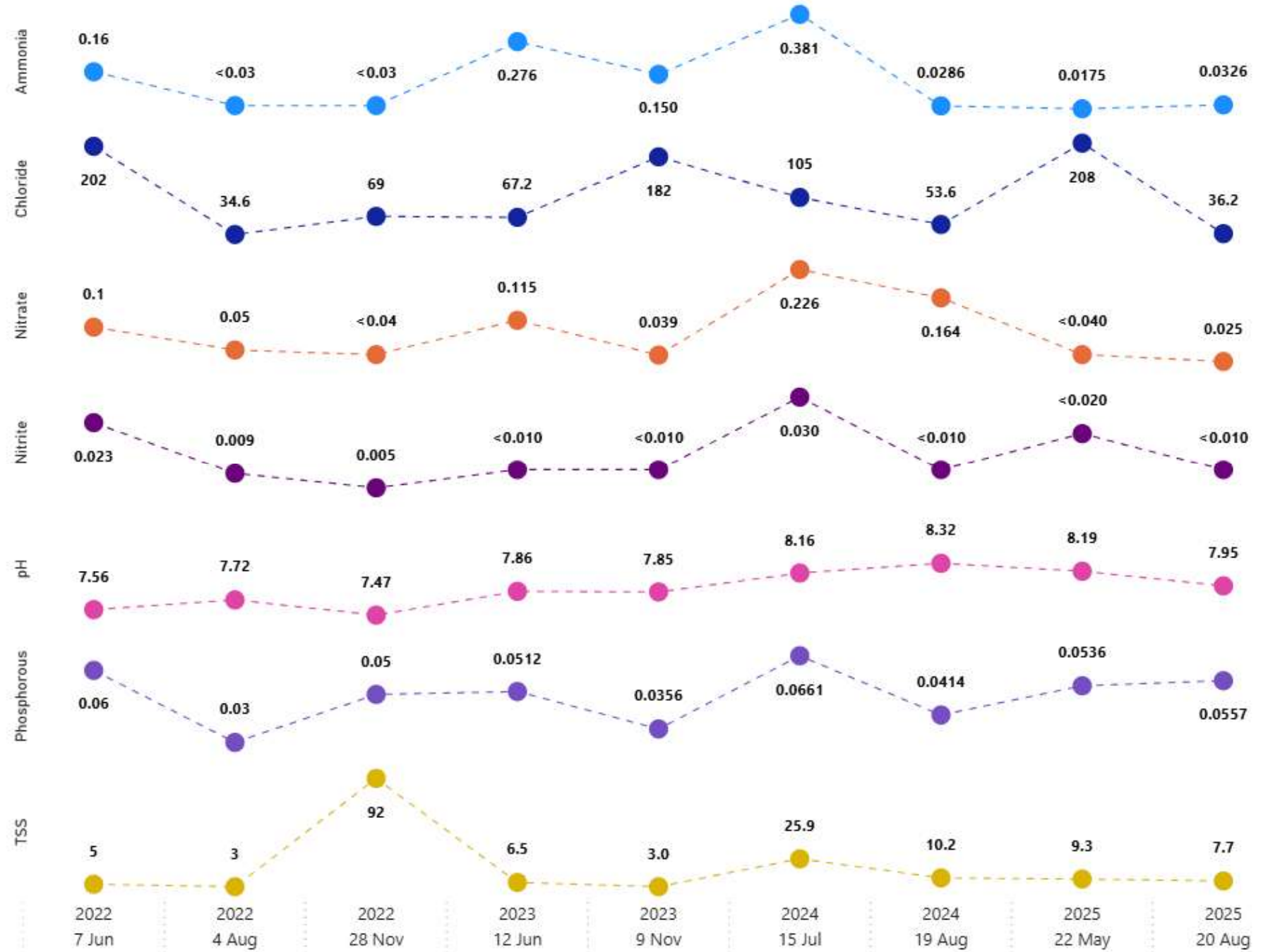
SWMF Water Quality Key Performance Indicator Trends



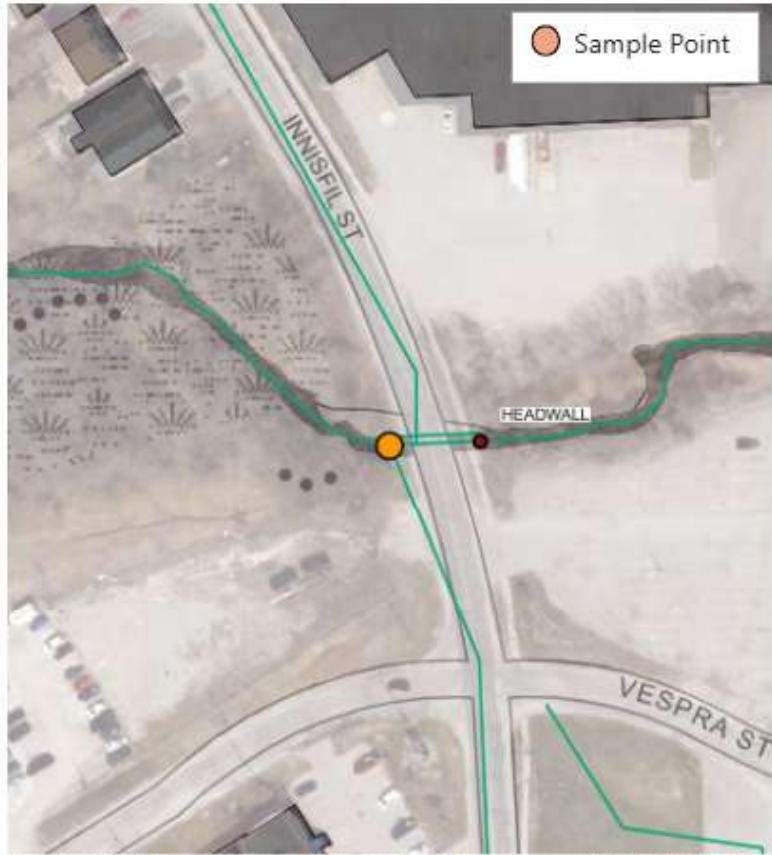
Notes:
 Ammonia = Total Ammonia as N
 Nitrate = Nitrate as N
 Nitrite = Nitrite as N
 Phosphorous = Total Phosphorous
 TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

HW04-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



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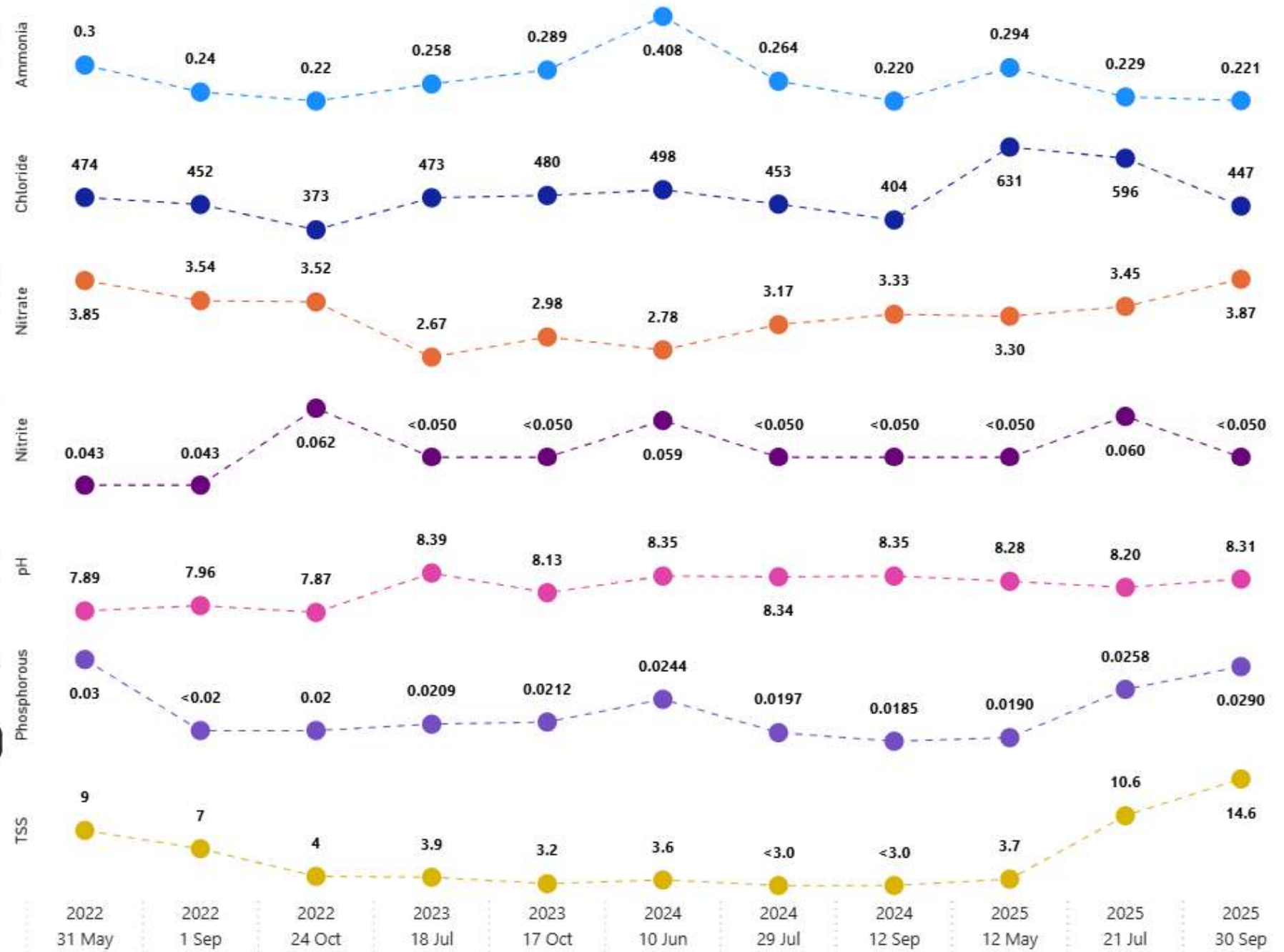
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



SWMF Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

Notes:

Ammonia = Total Ammonia as N

Nitrate = Nitrate as N

Nitrite = Nitrite as N

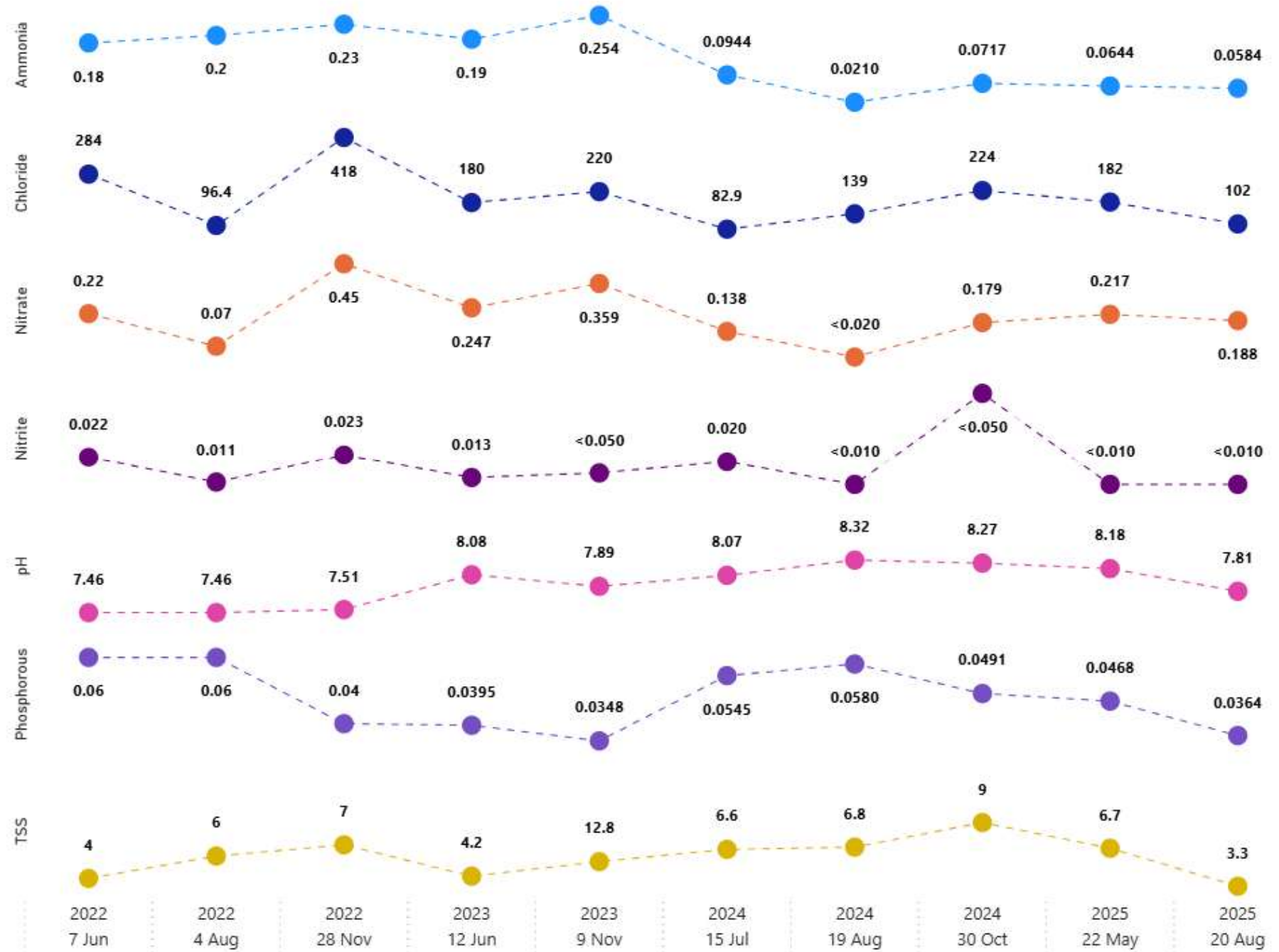
Phosphorous = Total Phosphorous

TSS = Total Suspended Solids

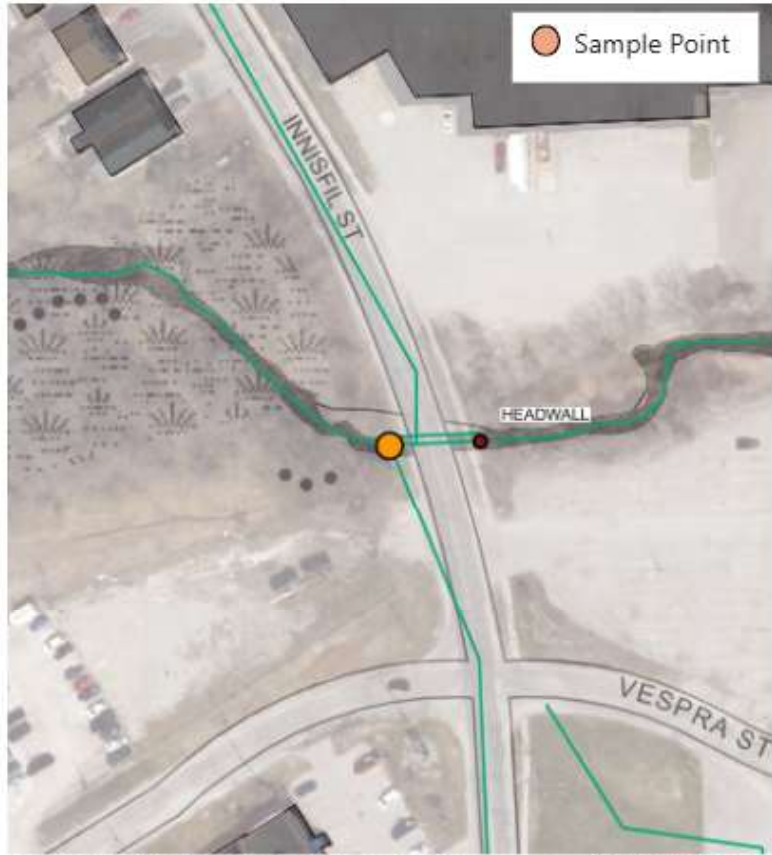
All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

HW05-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

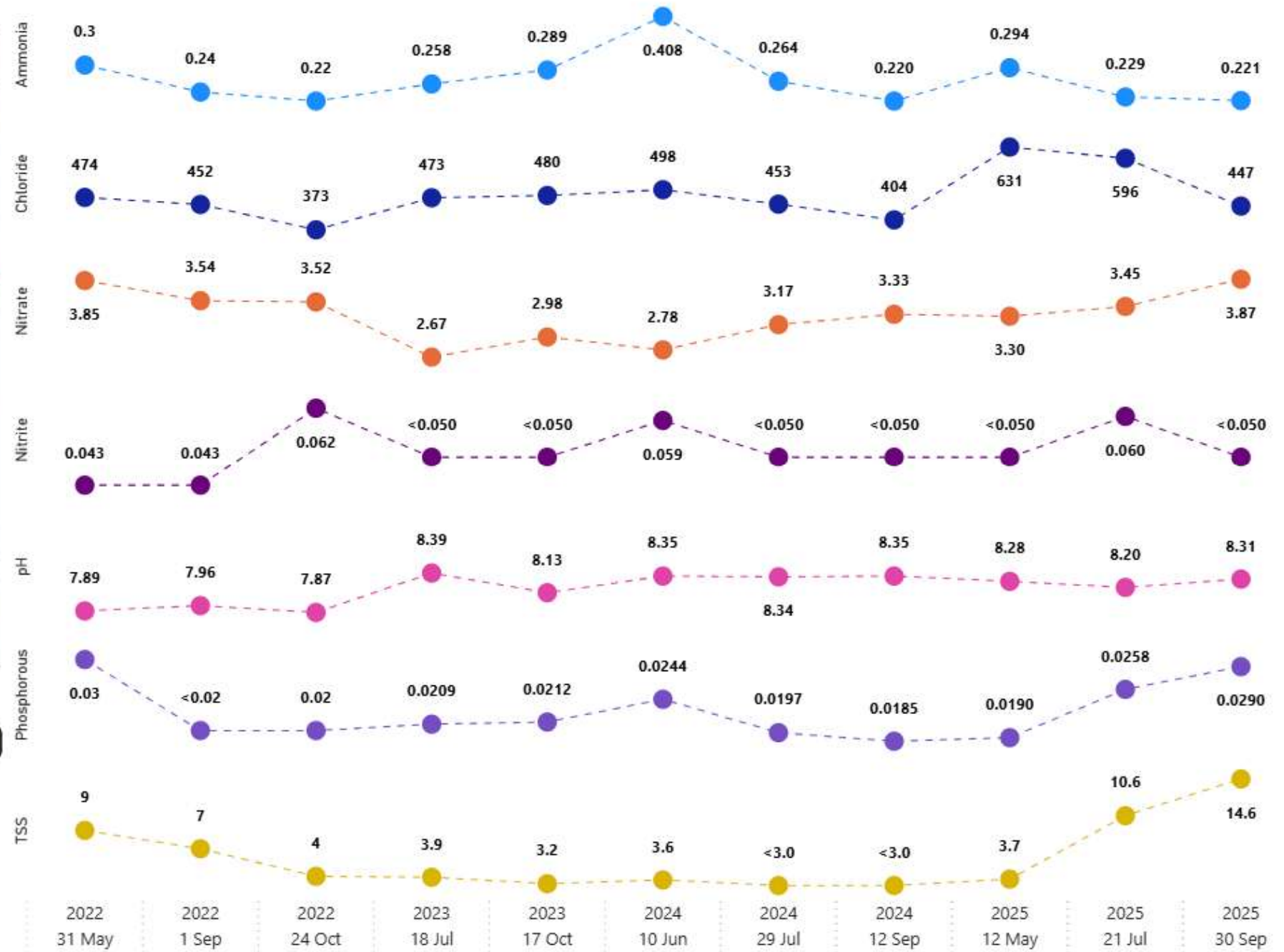
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

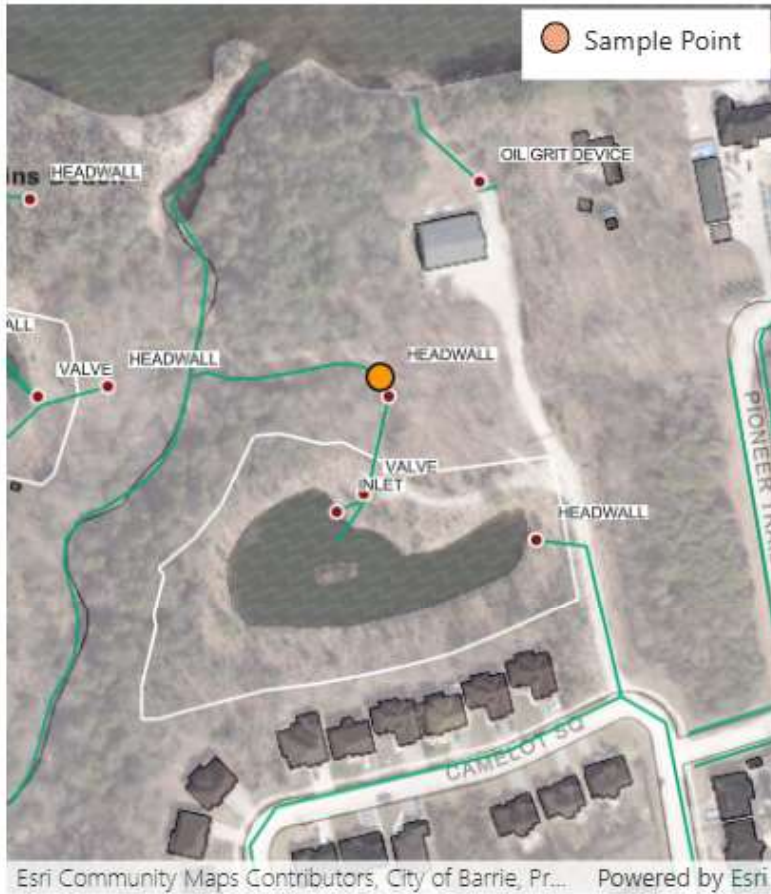
All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



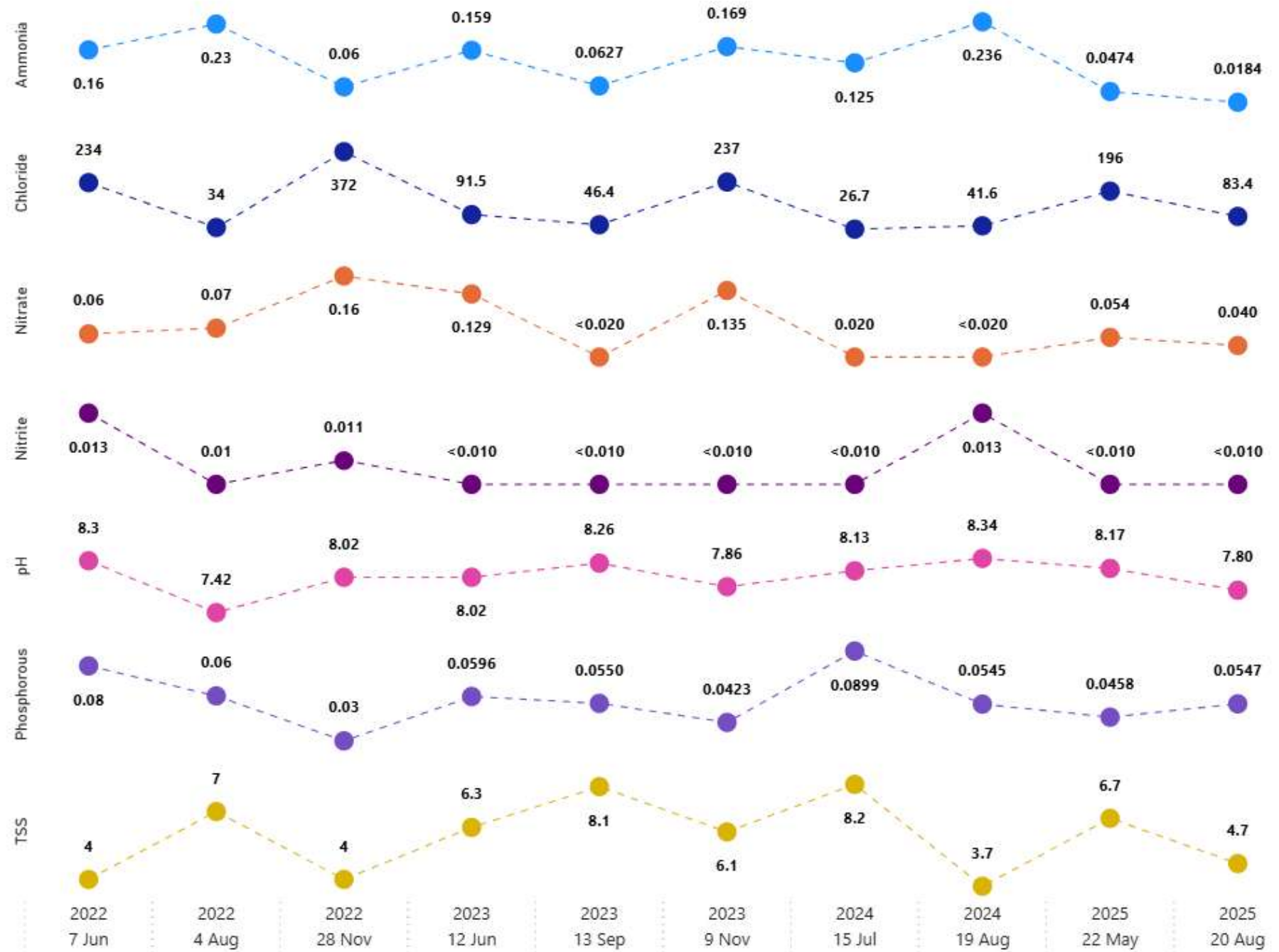
SWMF Water Quality Key Performance Indicator Trends



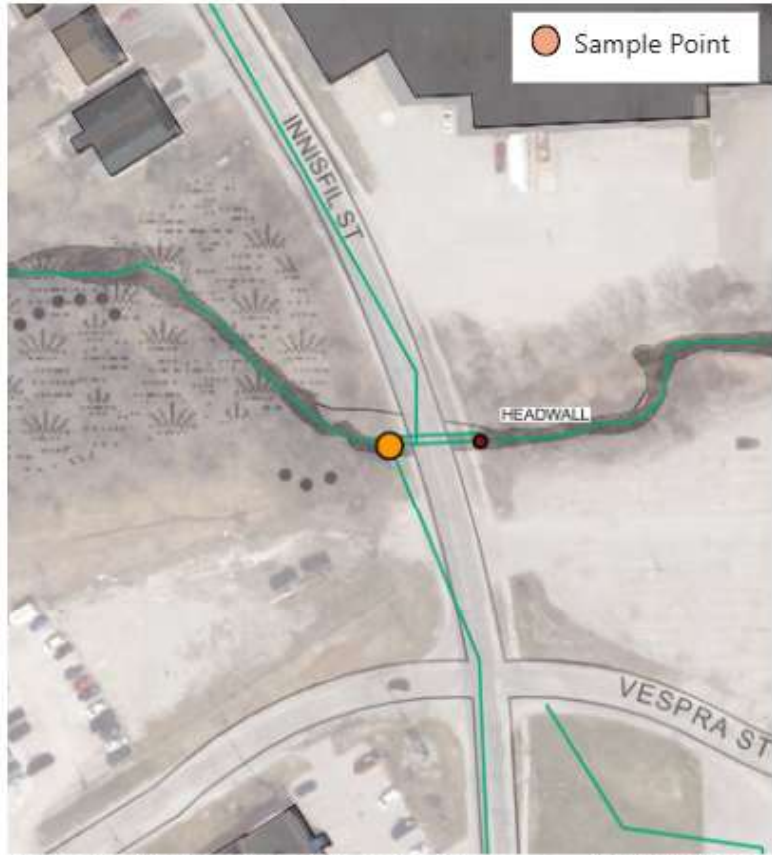
Notes:
 Ammonia = Total Ammonia as N
 Nitrate = Nitrate as N
 Nitrite = Nitrite as N
 Phosphorous = Total Phosphorous
 TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

HW06-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



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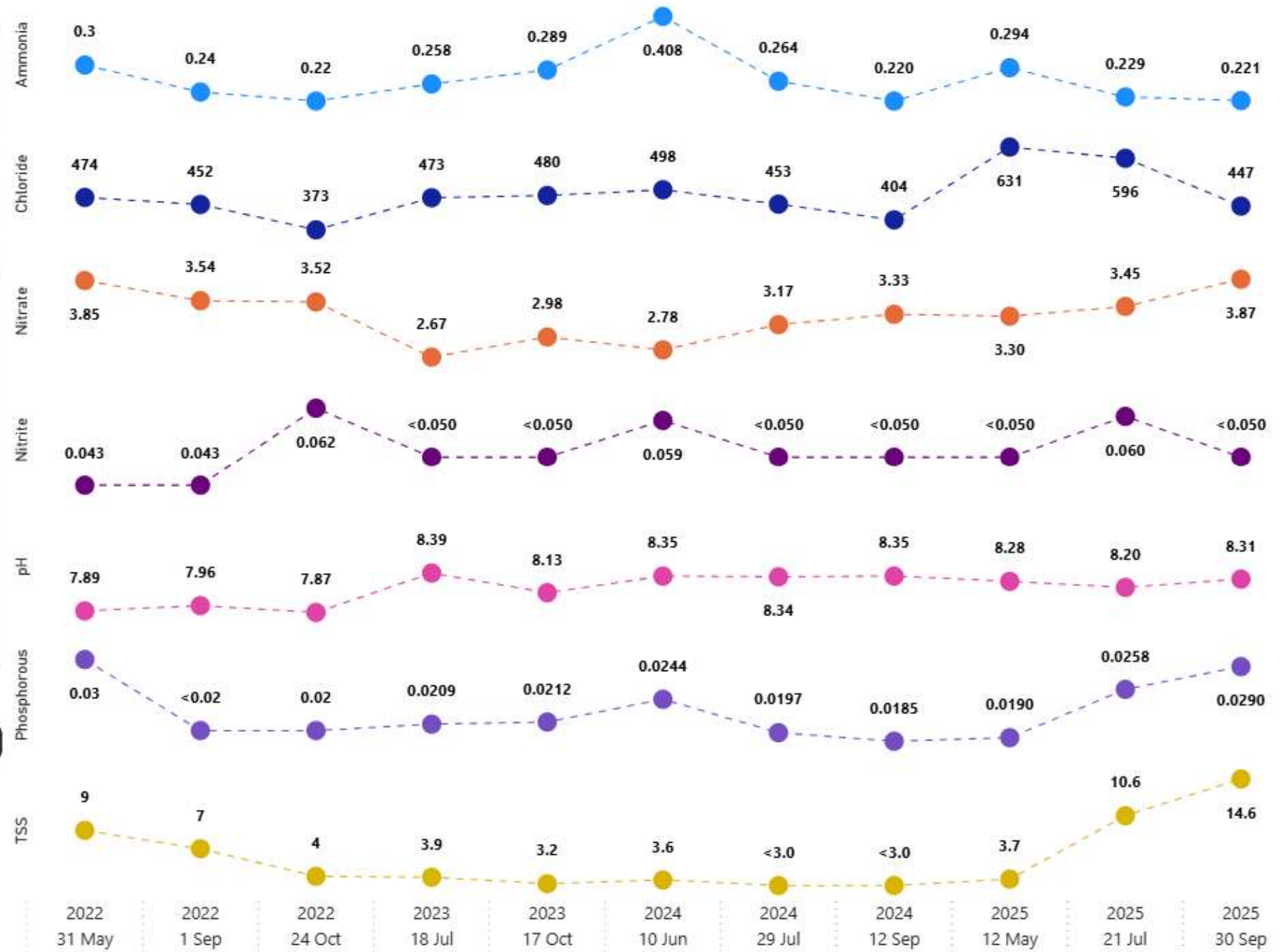
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



SWMF Water Quality Key Performance Indicator Trends

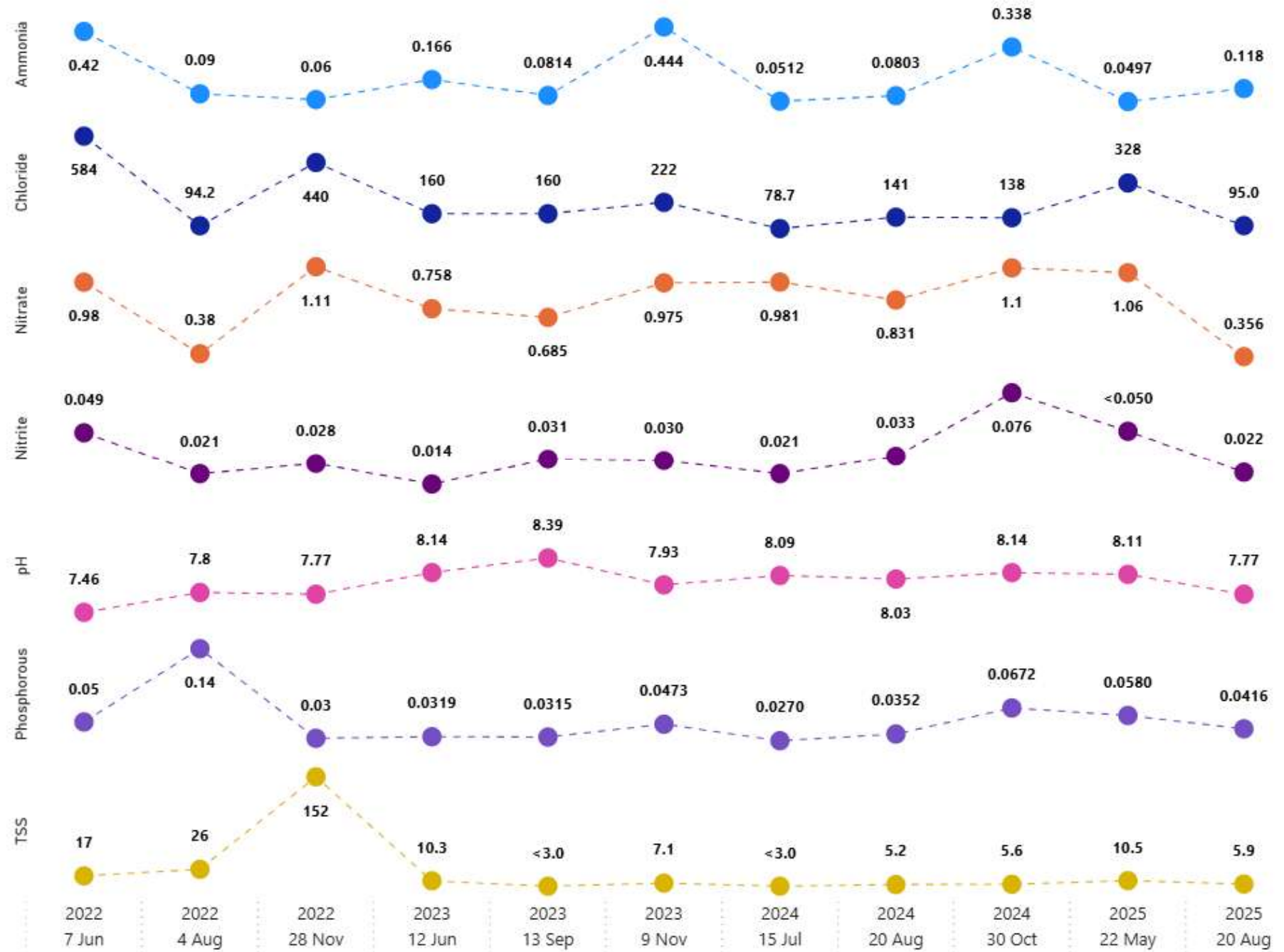


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

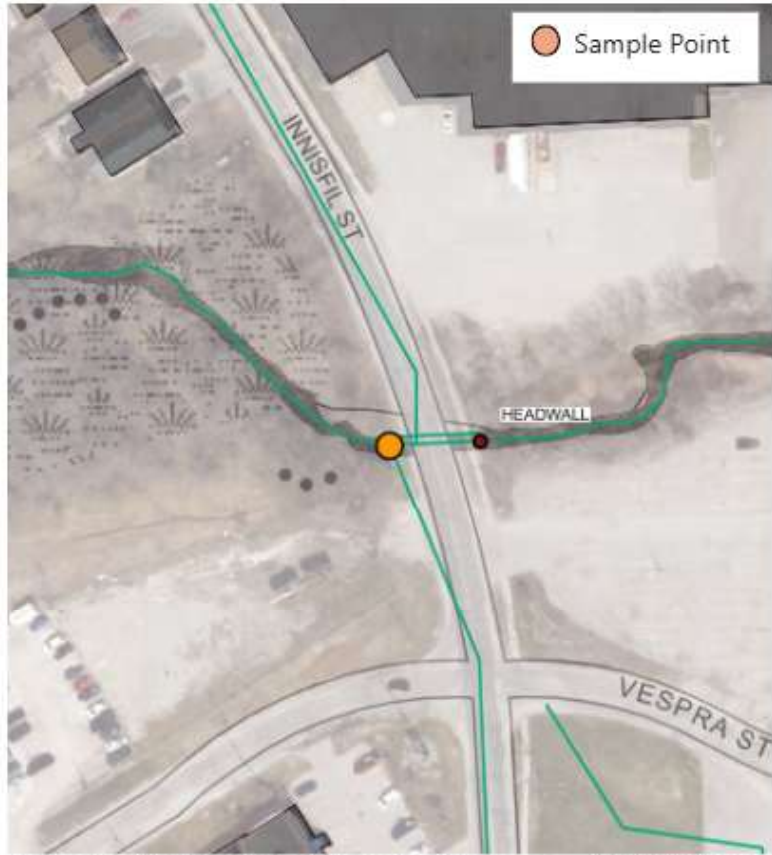
- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

HW08-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



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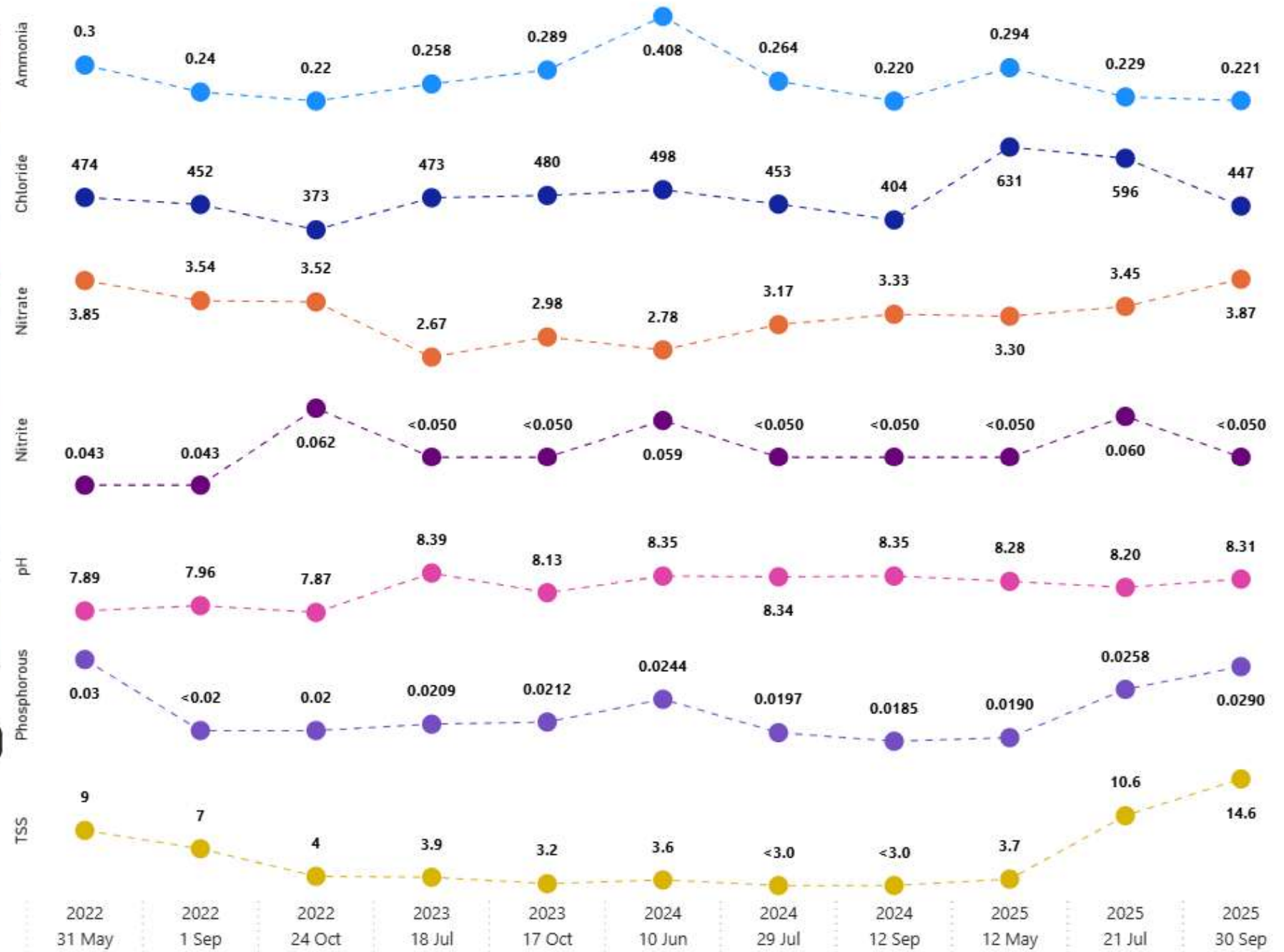
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



SWMF Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

Notes:

Ammonia = Total Ammonia as N

Nitrate = Nitrate as N

Nitrite = Nitrite as N

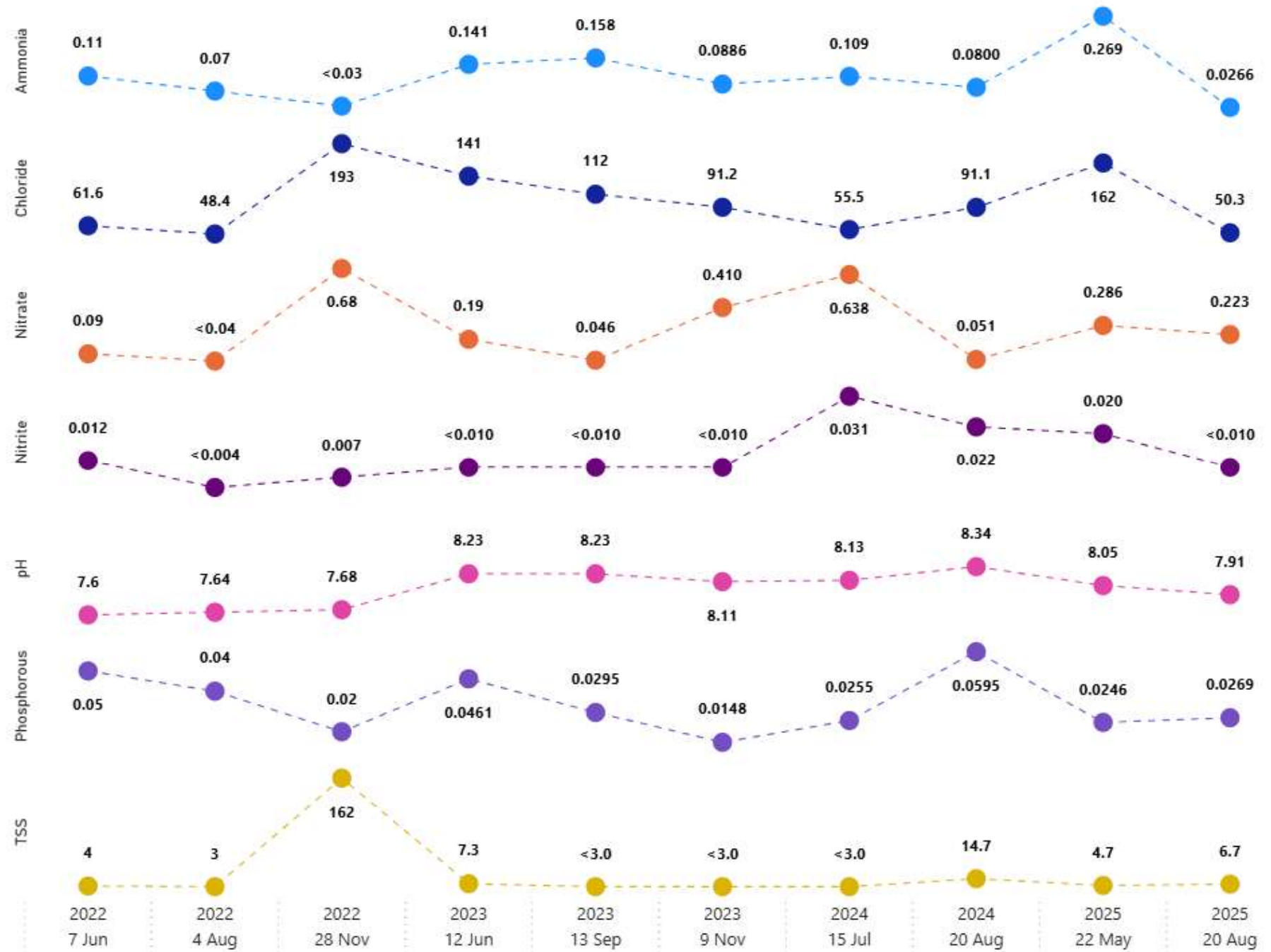
Phosphorous = Total Phosphorous

TSS = Total Suspended Solids

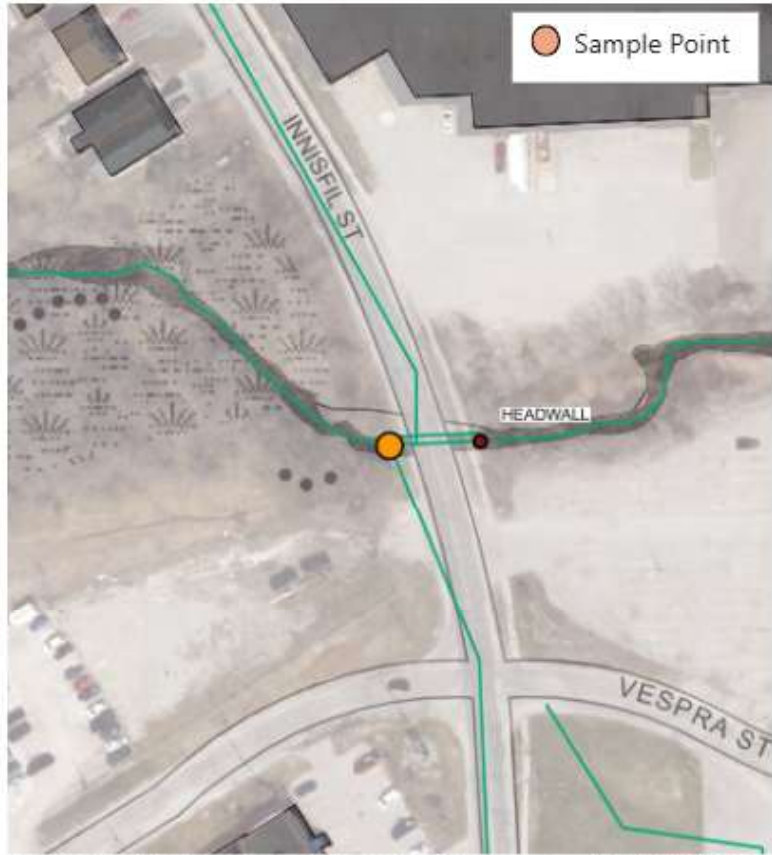
All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

HW09-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



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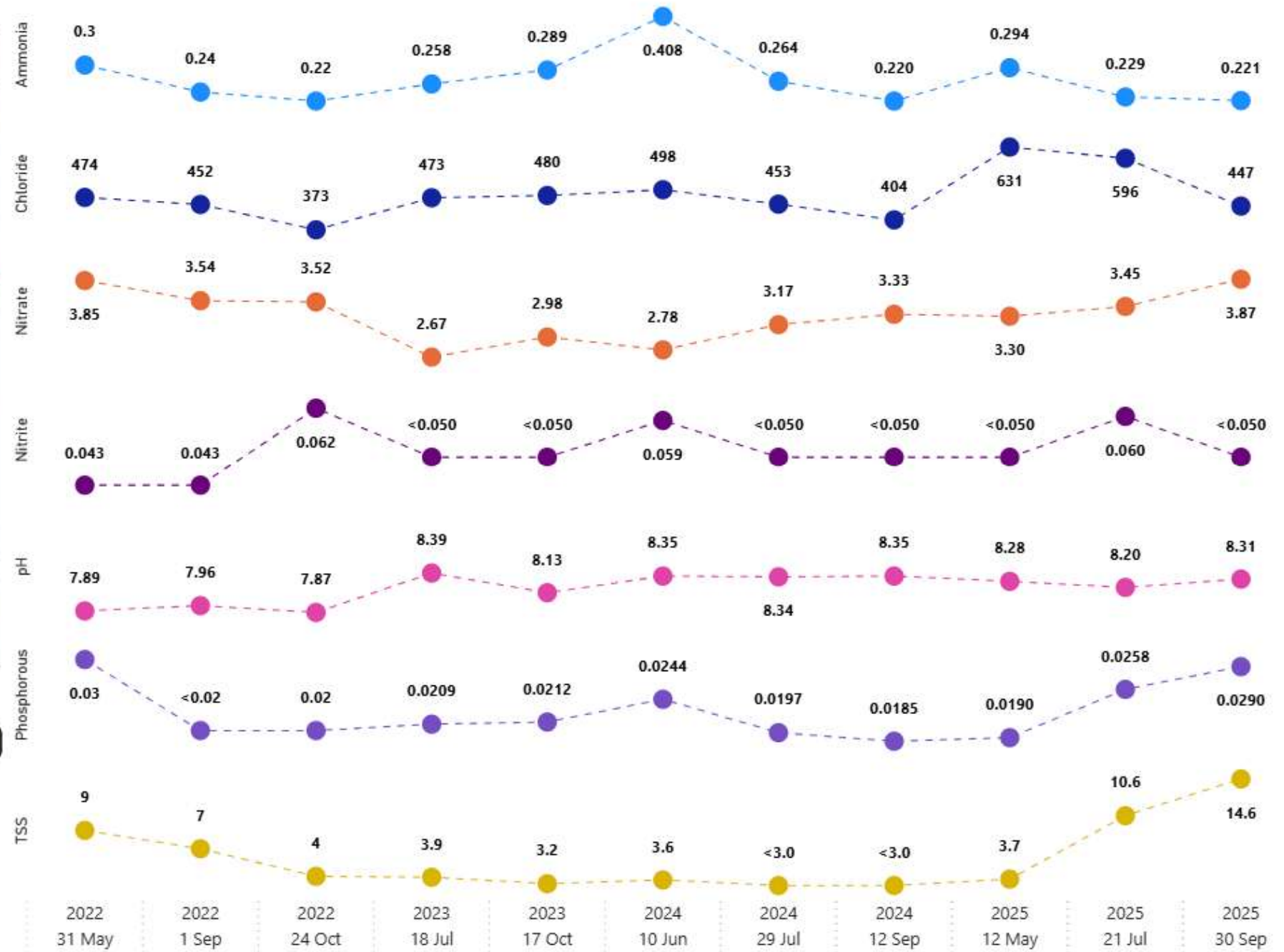
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

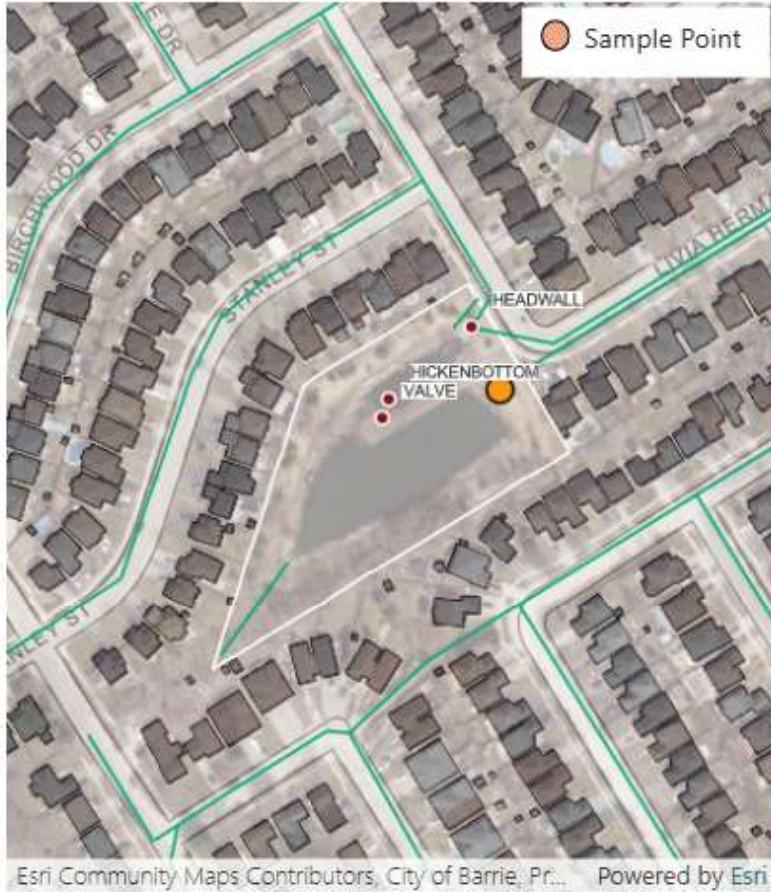
All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW

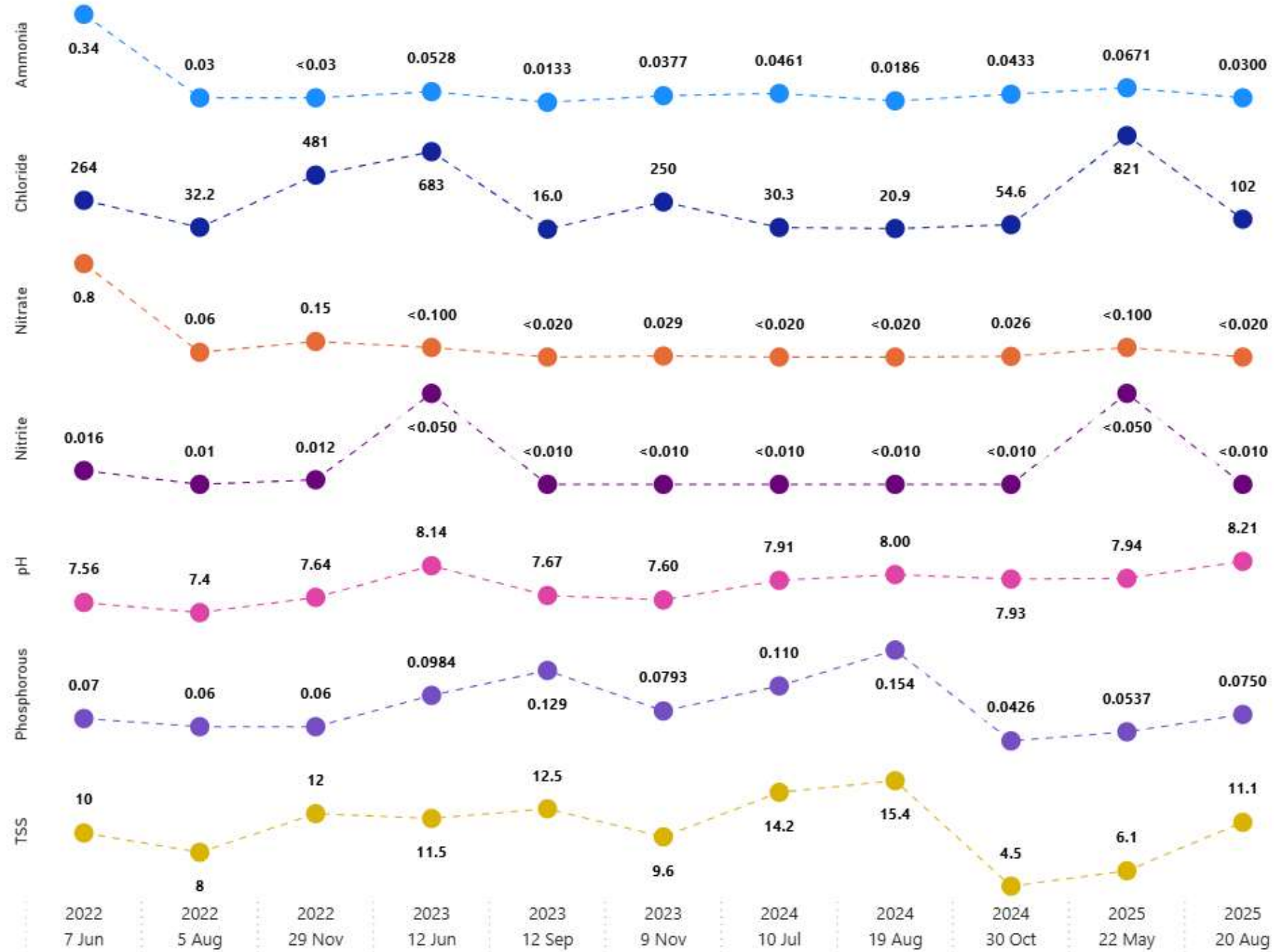


SWMF Water Quality Key Performance Indicator Trends

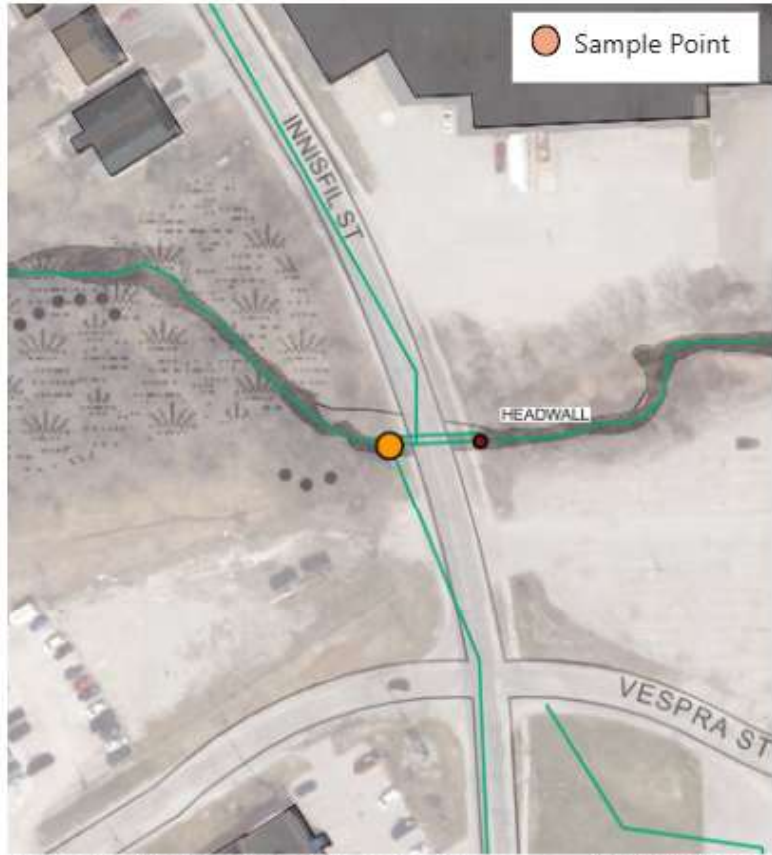


- Notes:
- Ammonia = Total Ammonia as N
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 - Nitrite = Nitrite as N
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All units in mg/L, except pH in pH units
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Watercourse Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

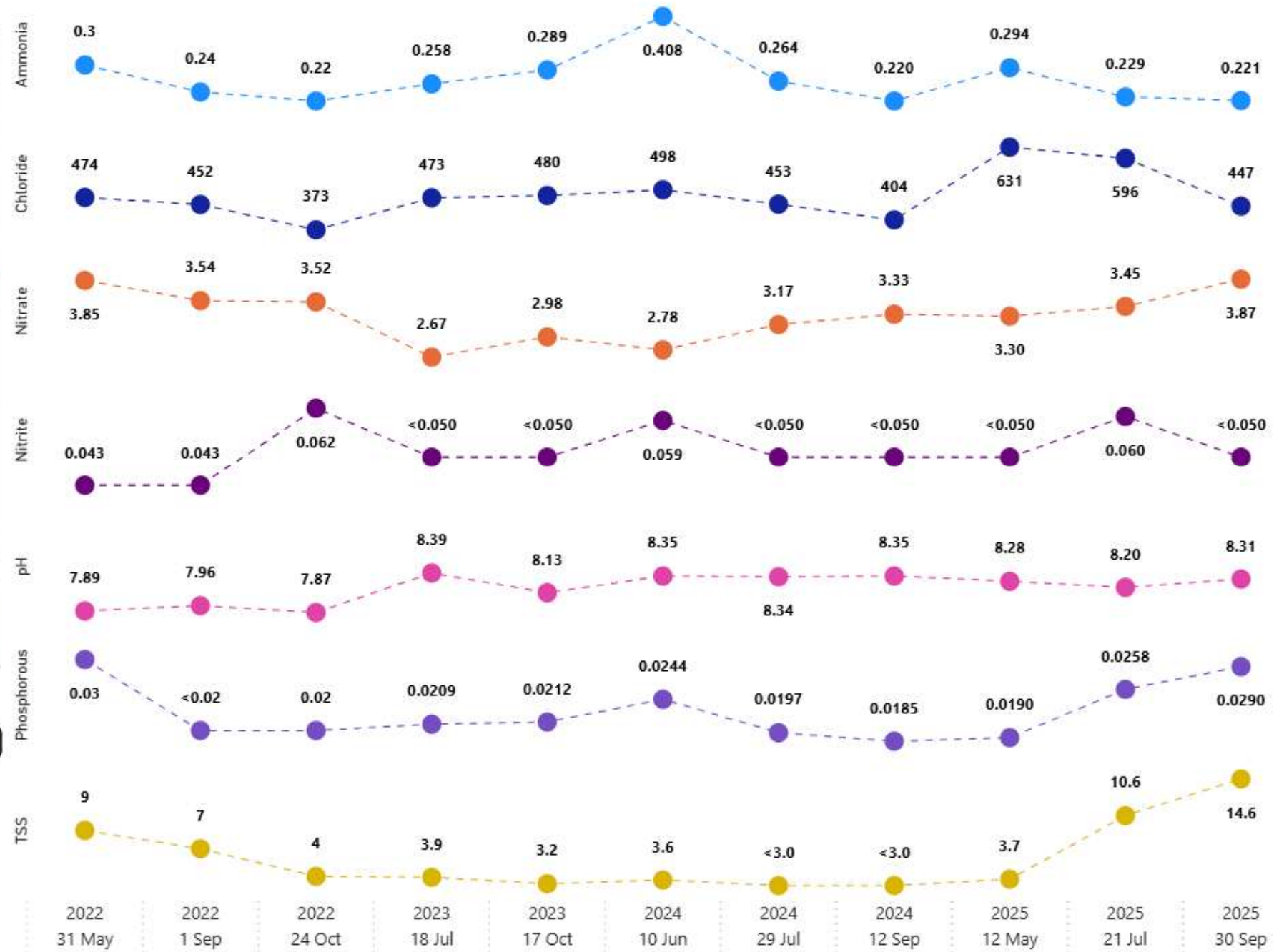
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

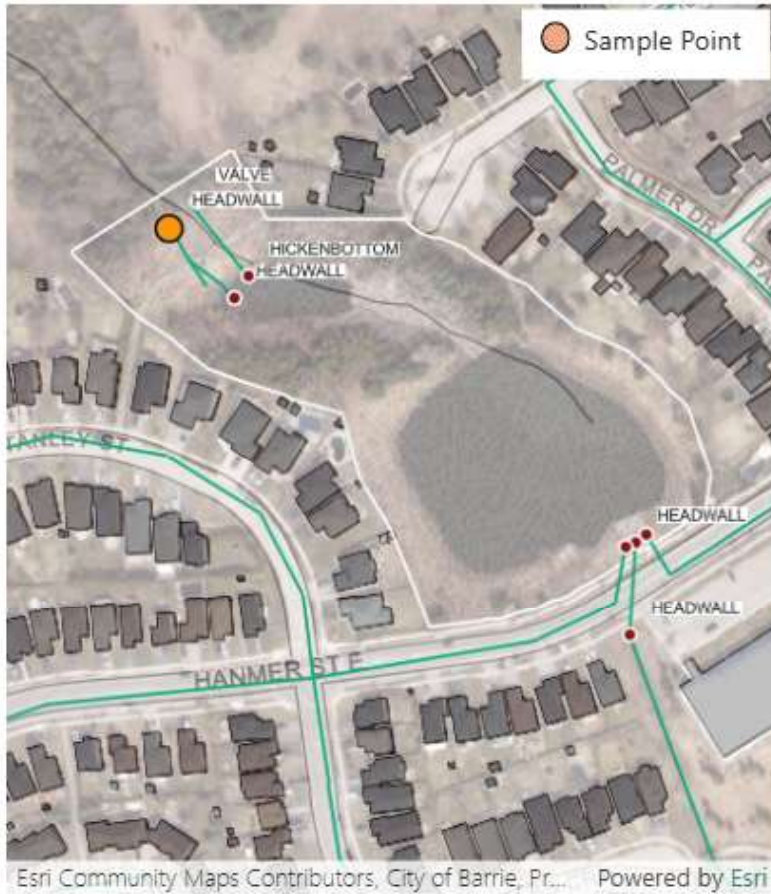
All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



SWMF Water Quality Key Performance Indicator Trends

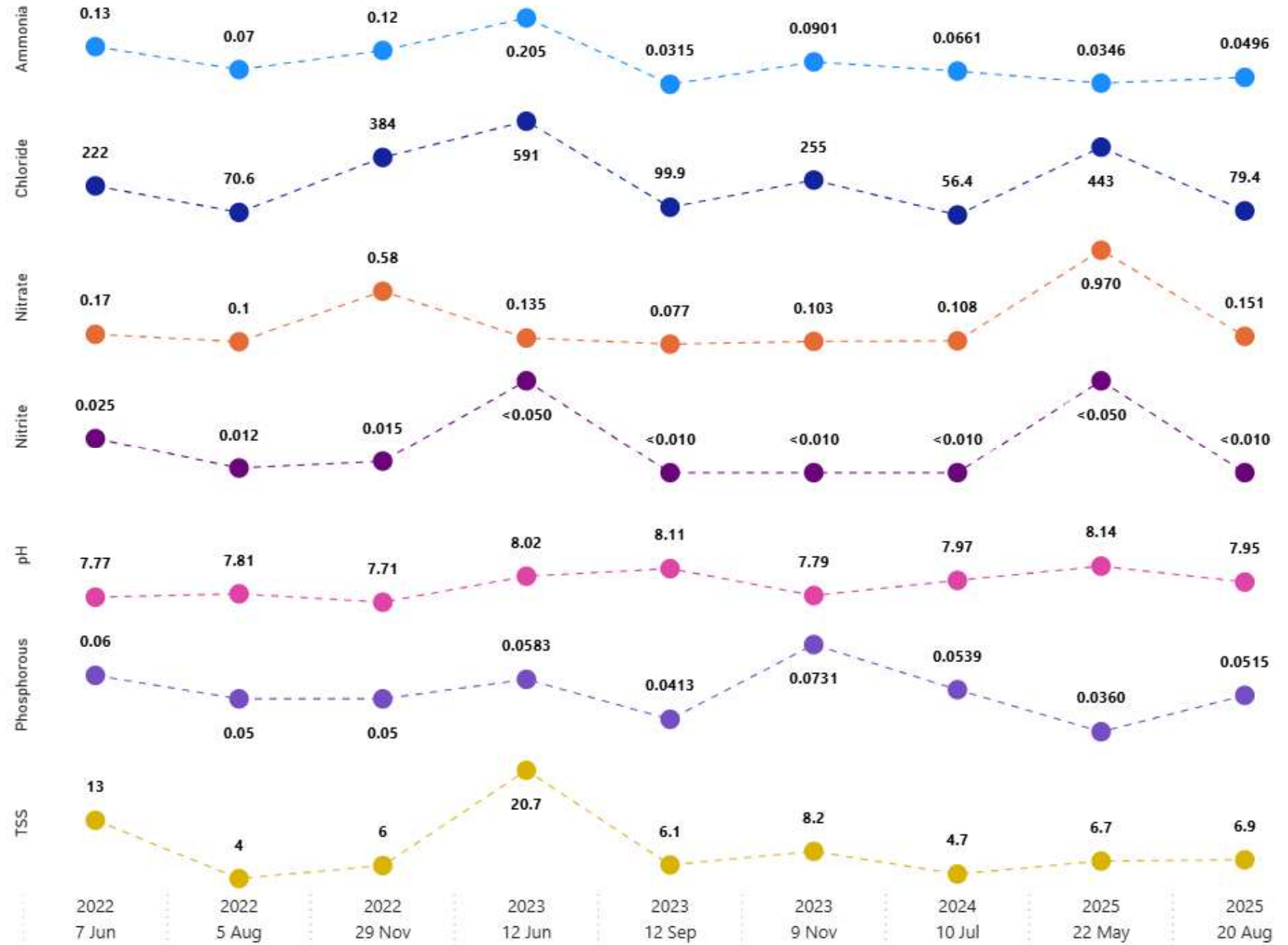


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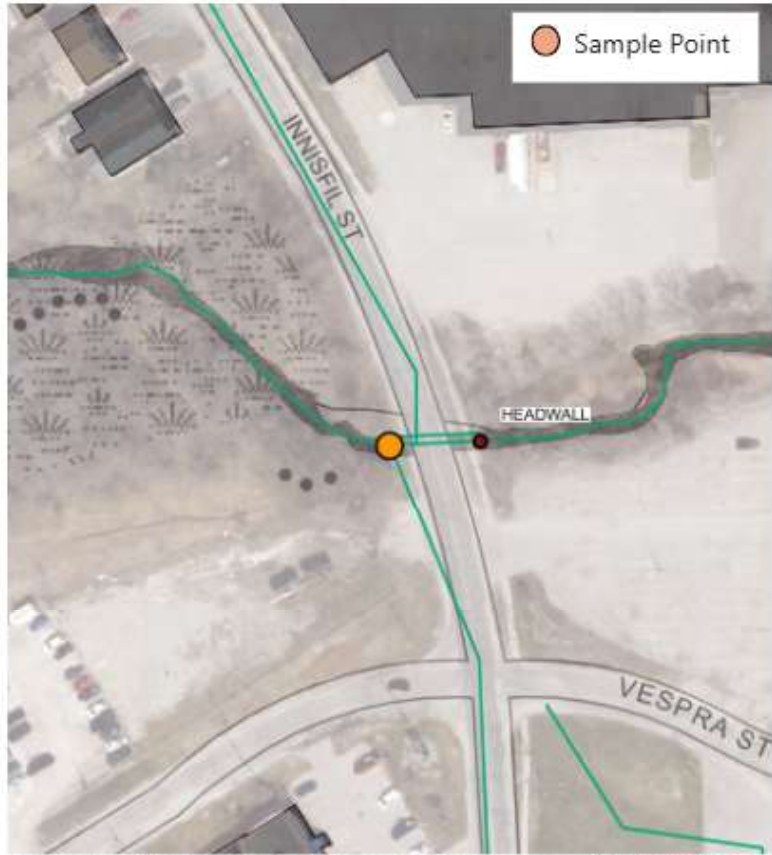
- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

LT04-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



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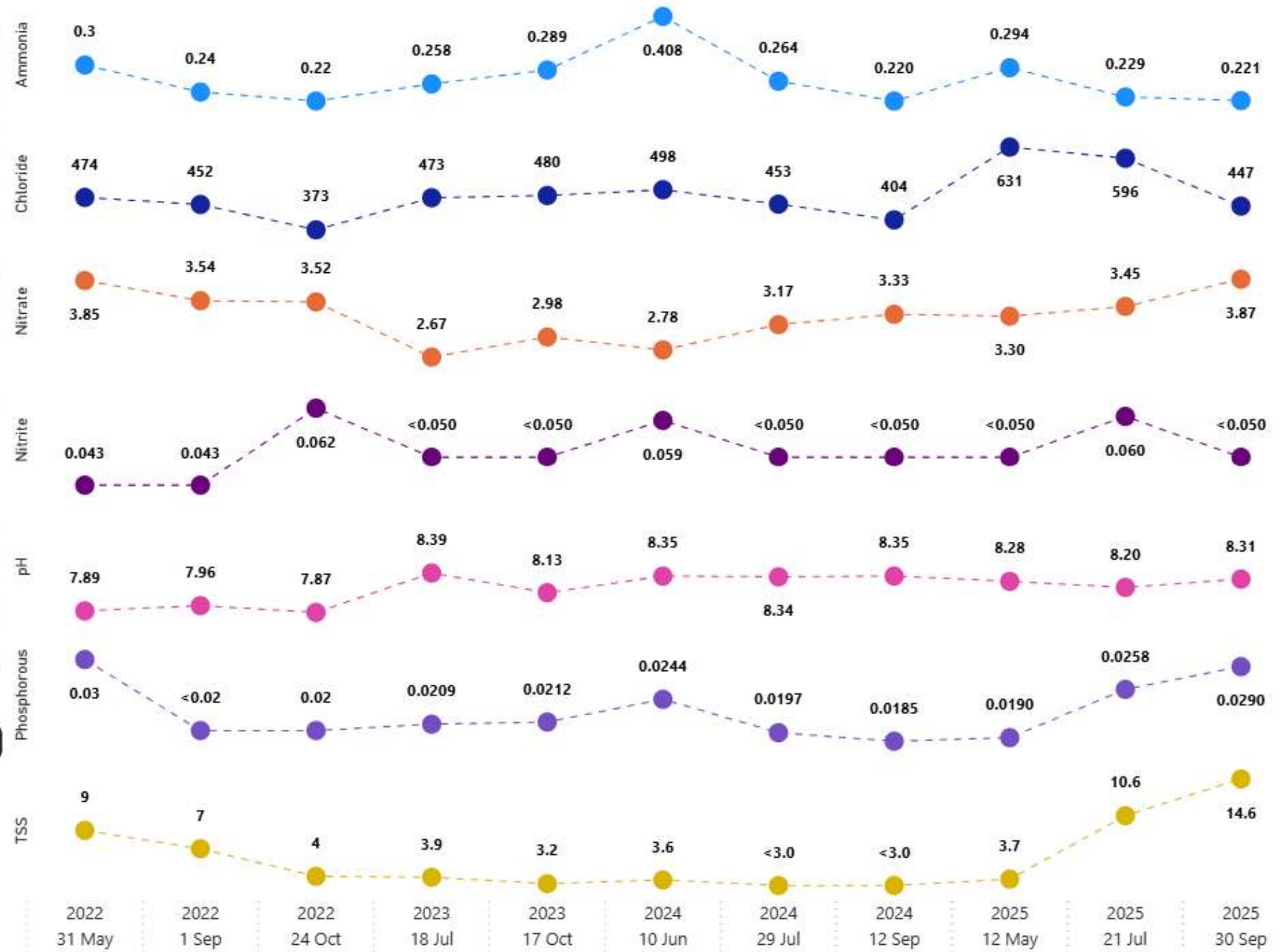
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

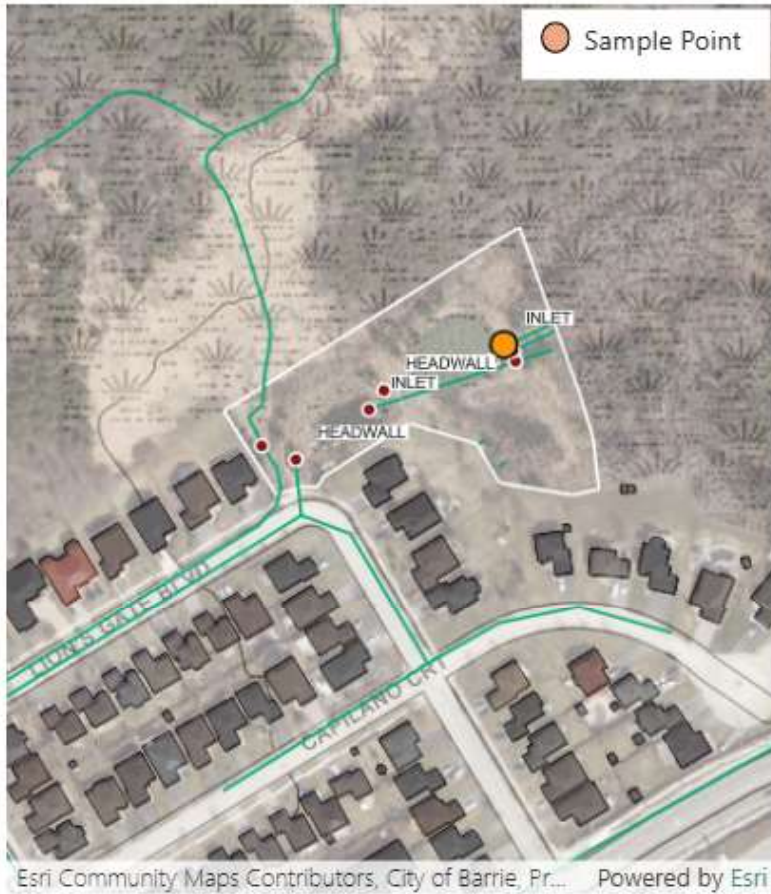
All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



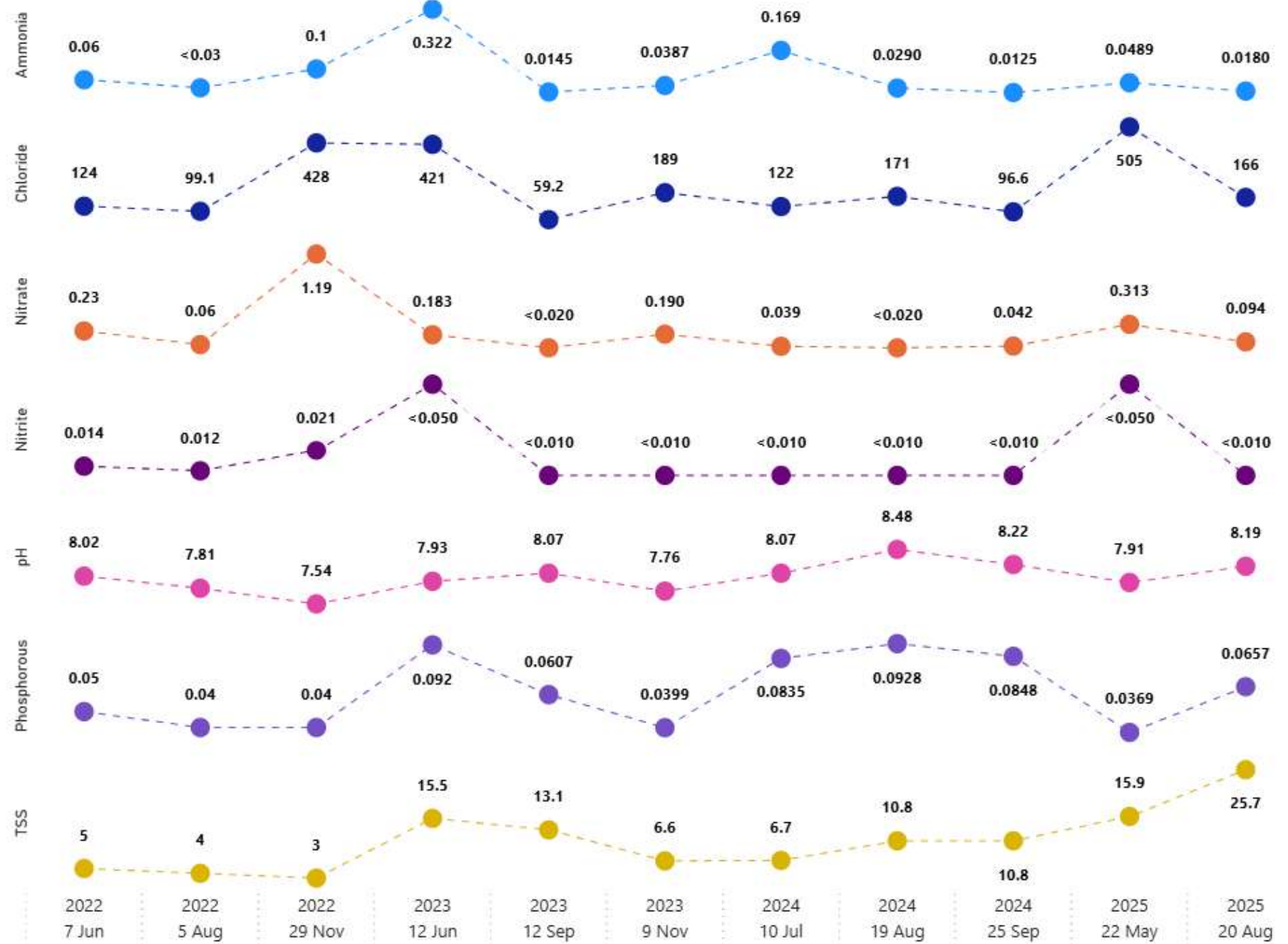
SWMF Water Quality Key Performance Indicator Trends



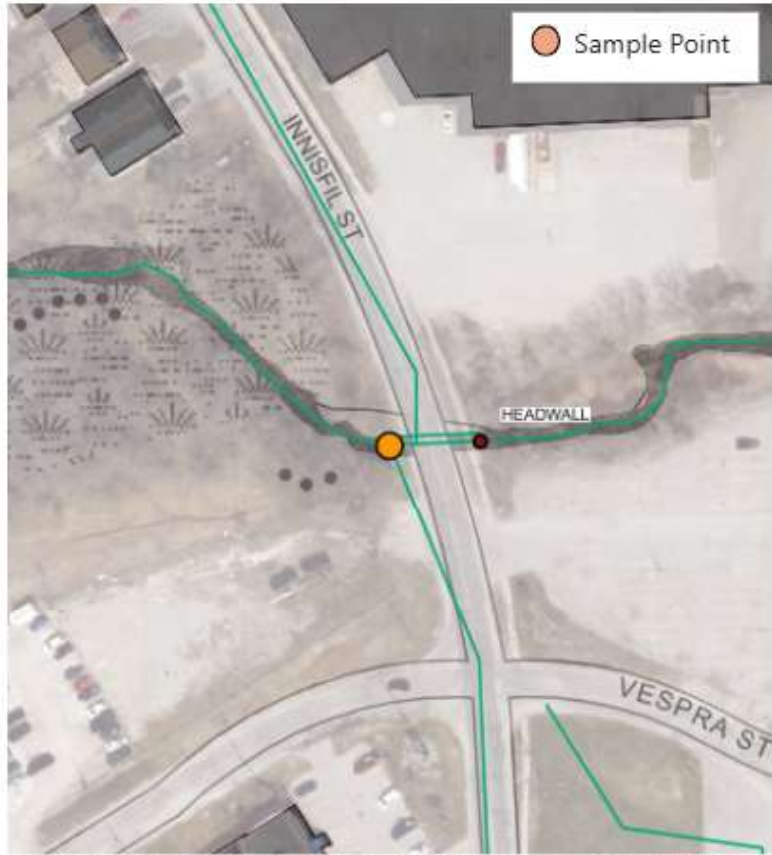
Notes:
 Ammonia = Total Ammonia as N
 Nitrate = Nitrate as N
 Nitrite = Nitrite as N
 Phosphorous = Total Phosphorous
 TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

LT06-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



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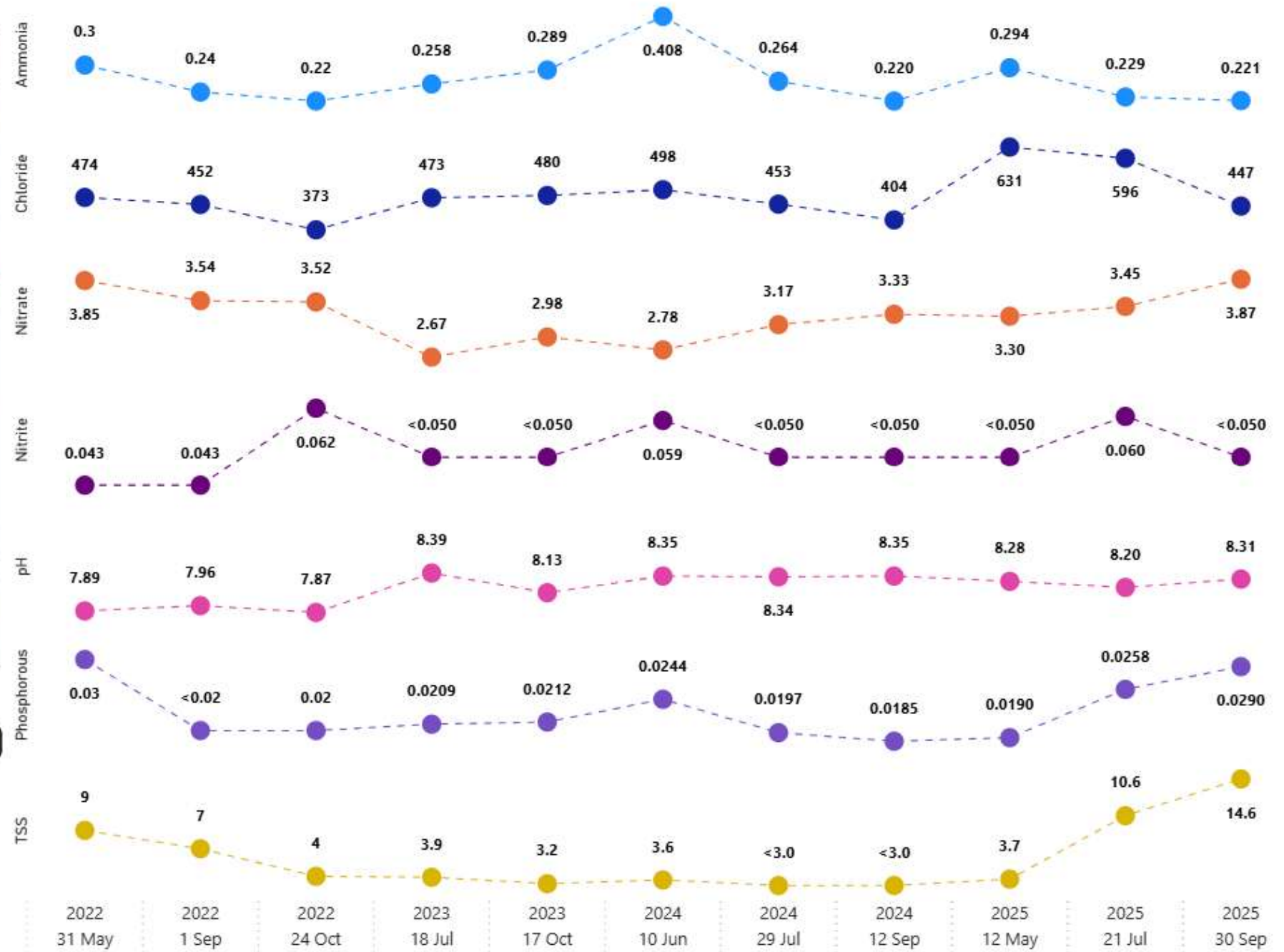
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

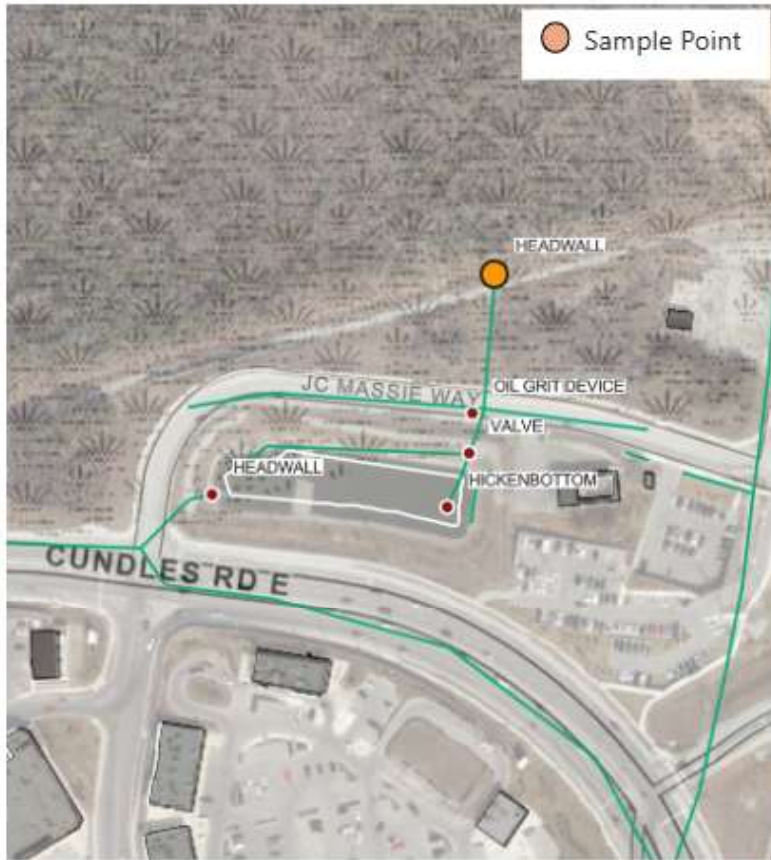
All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



SWMF Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

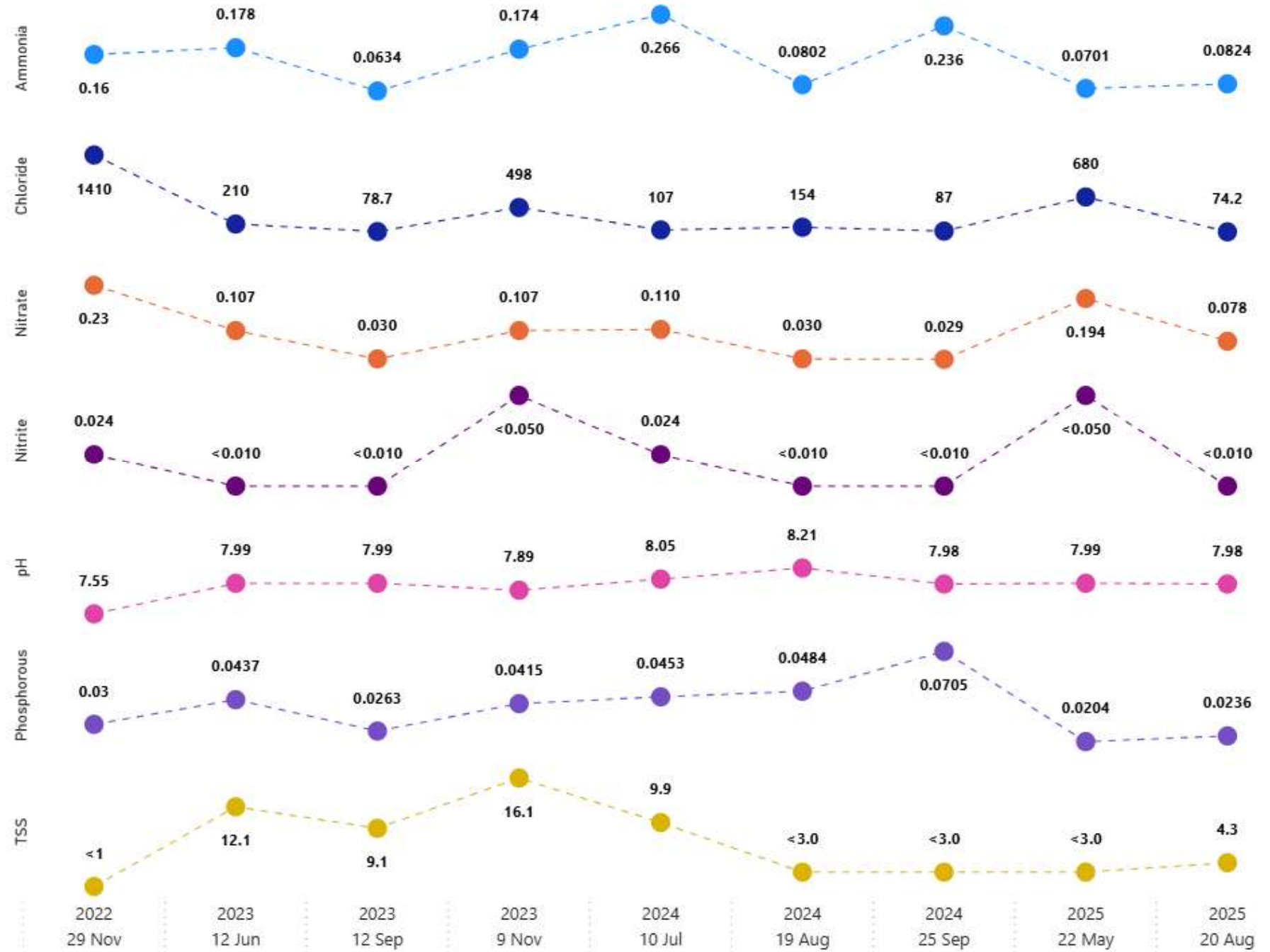
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

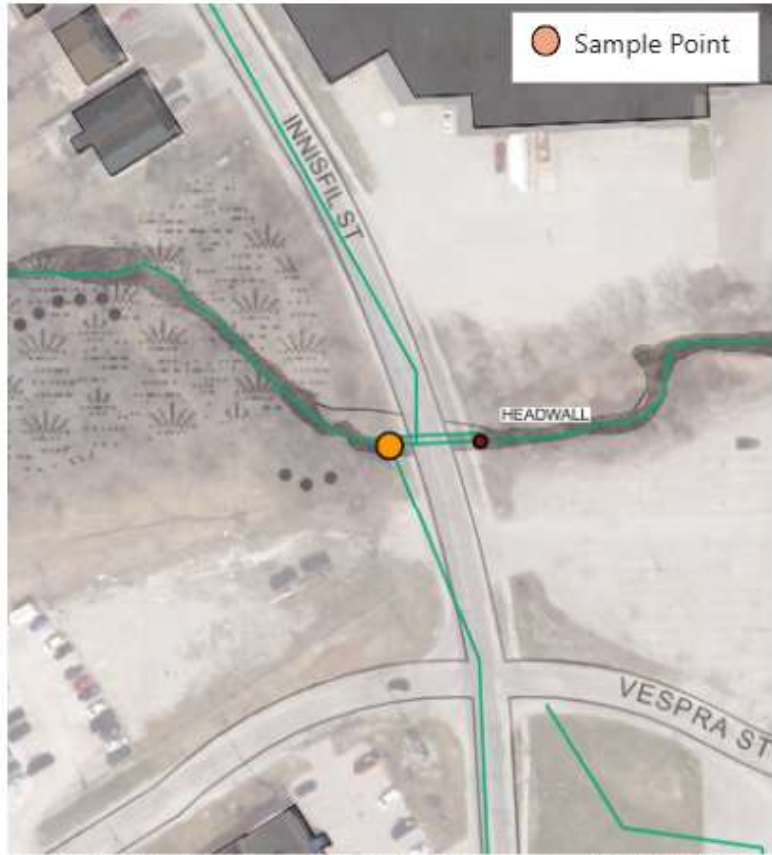
All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

LT14-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



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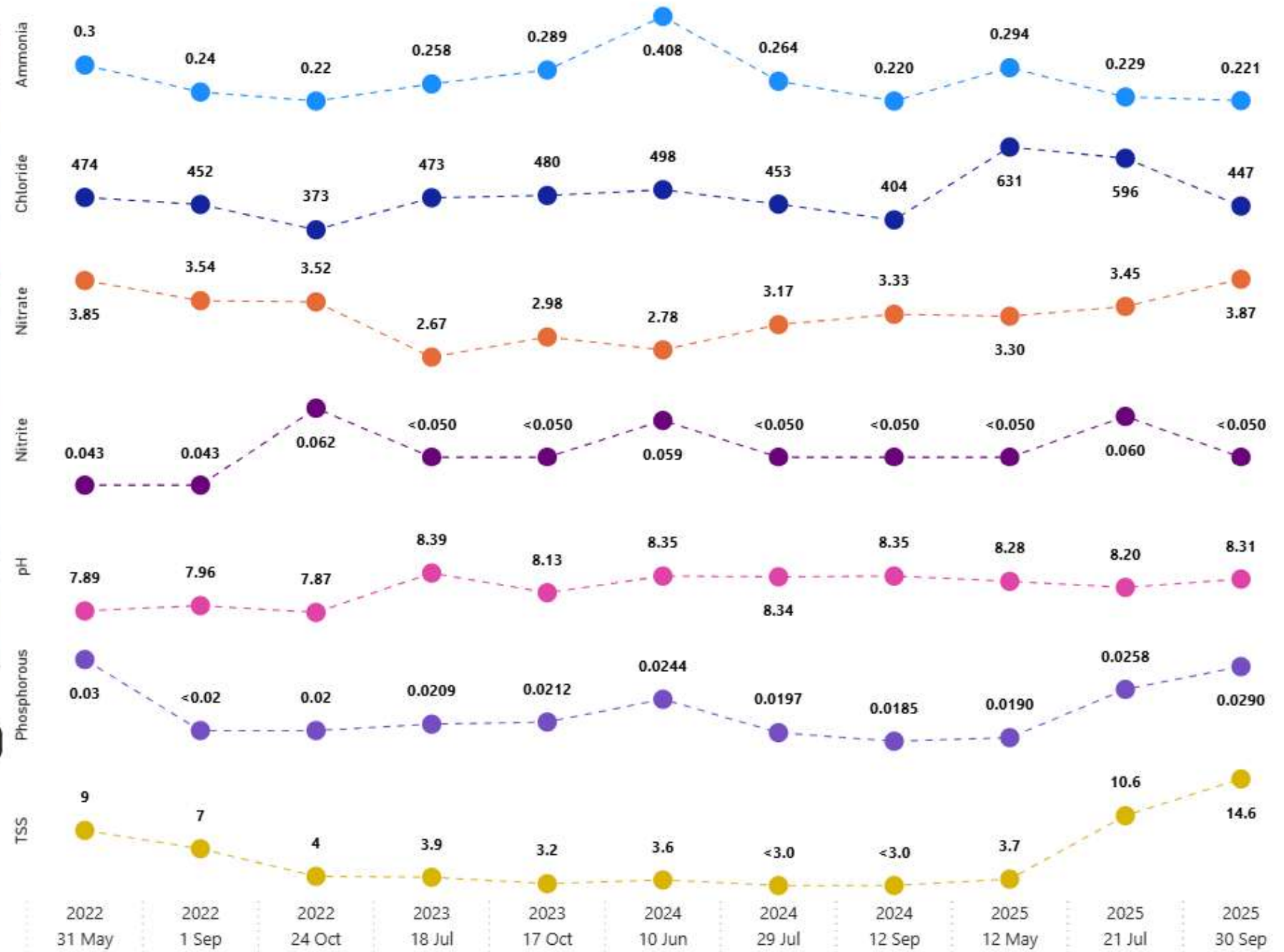
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

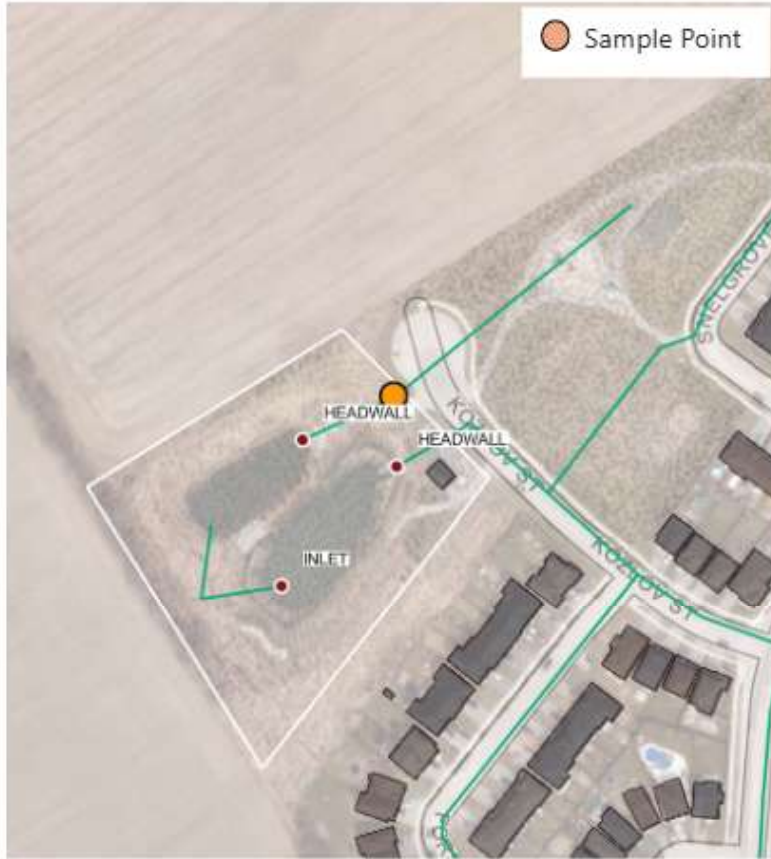
All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



SWMF Water Quality Key Performance Indicator Trends

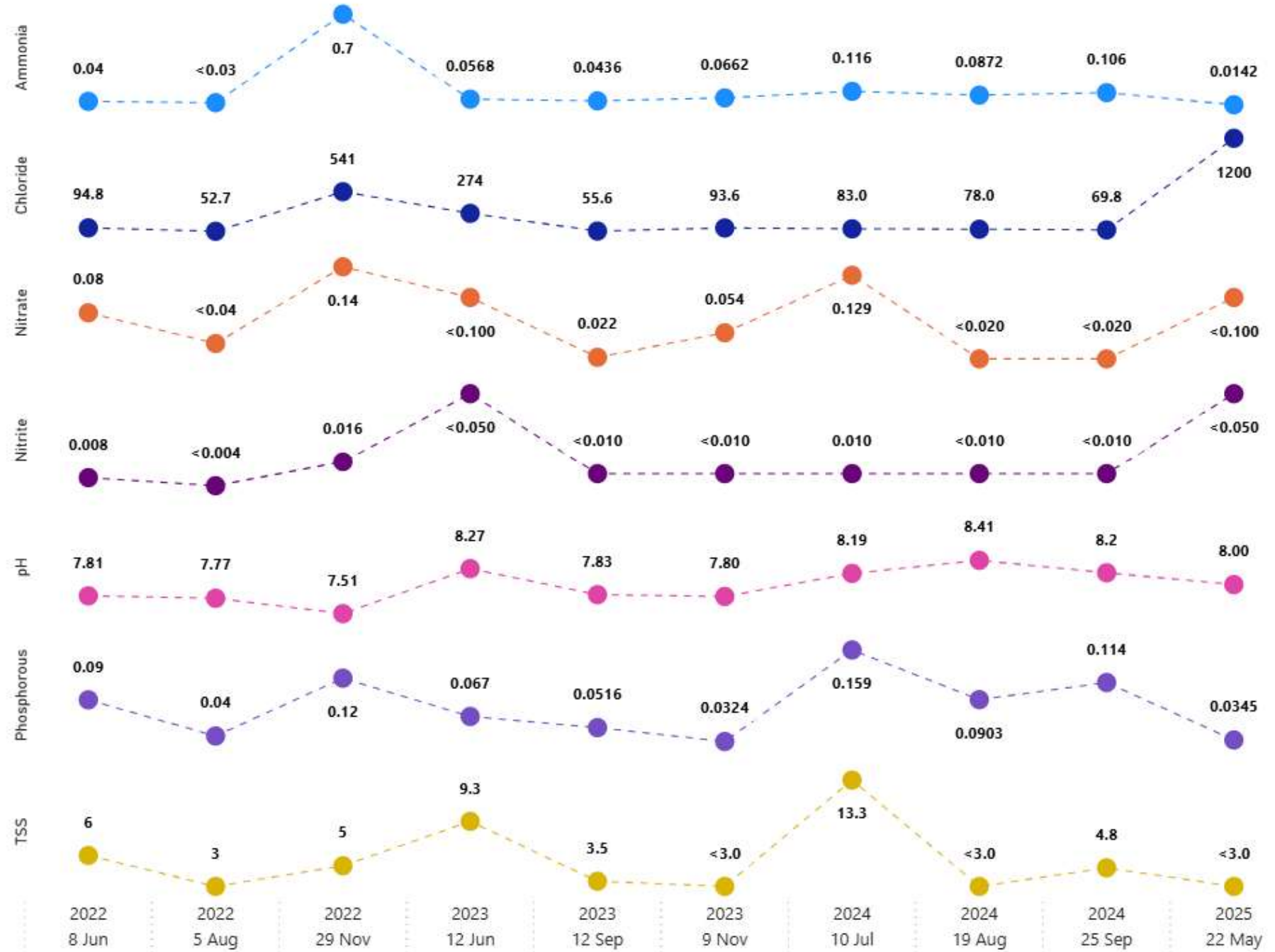


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

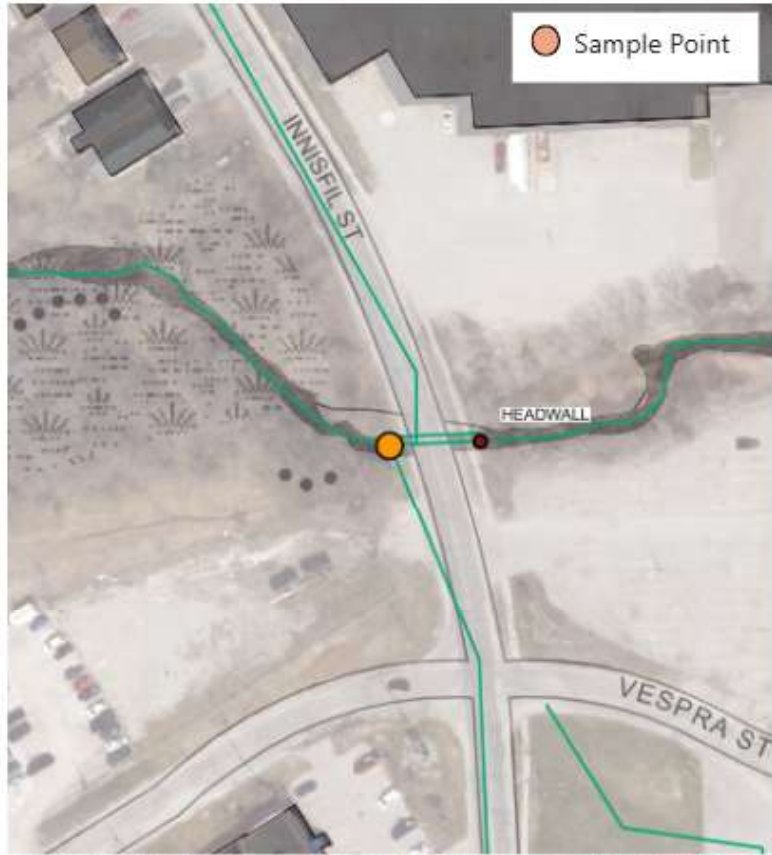
- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

LT17-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



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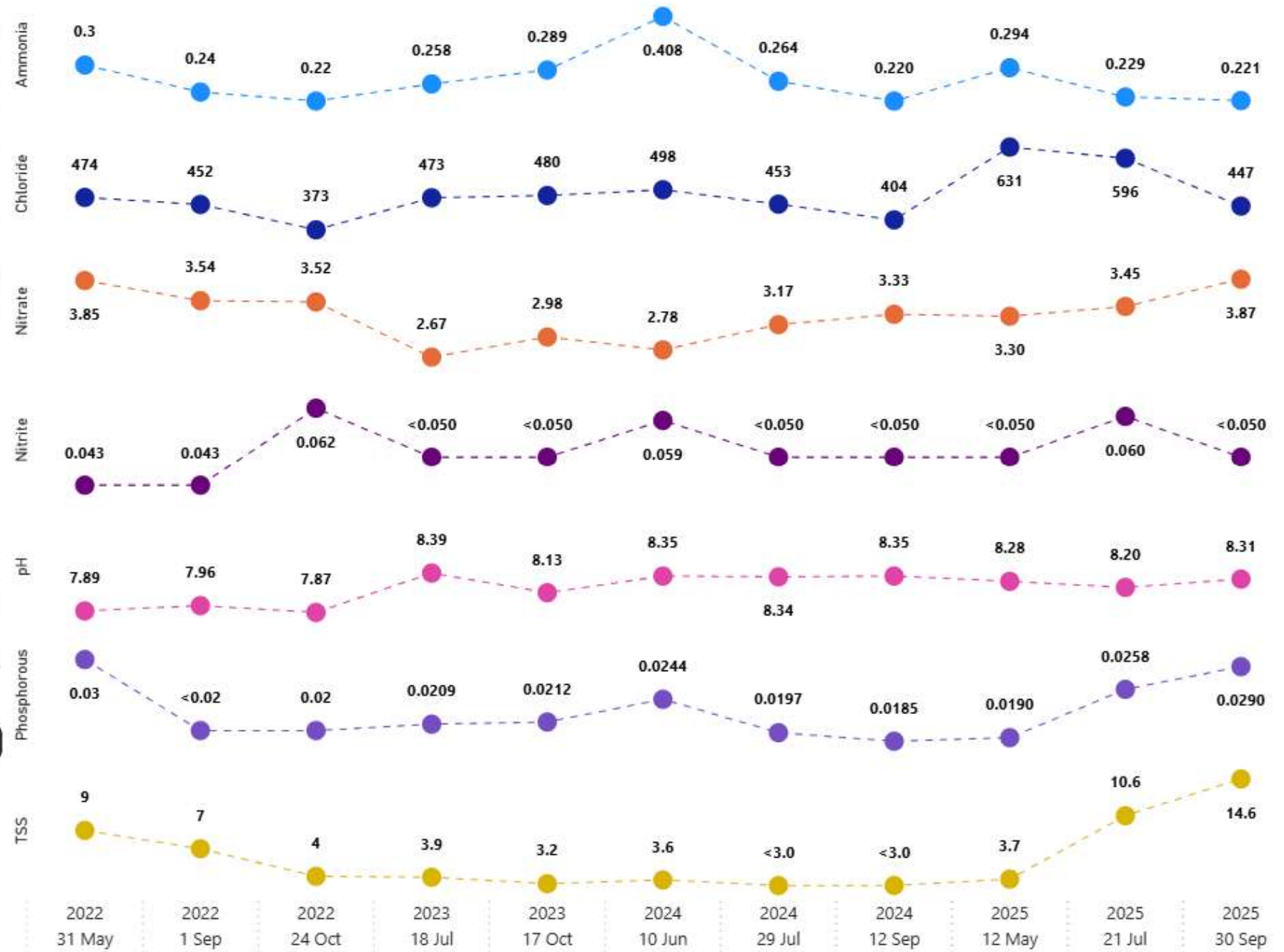
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

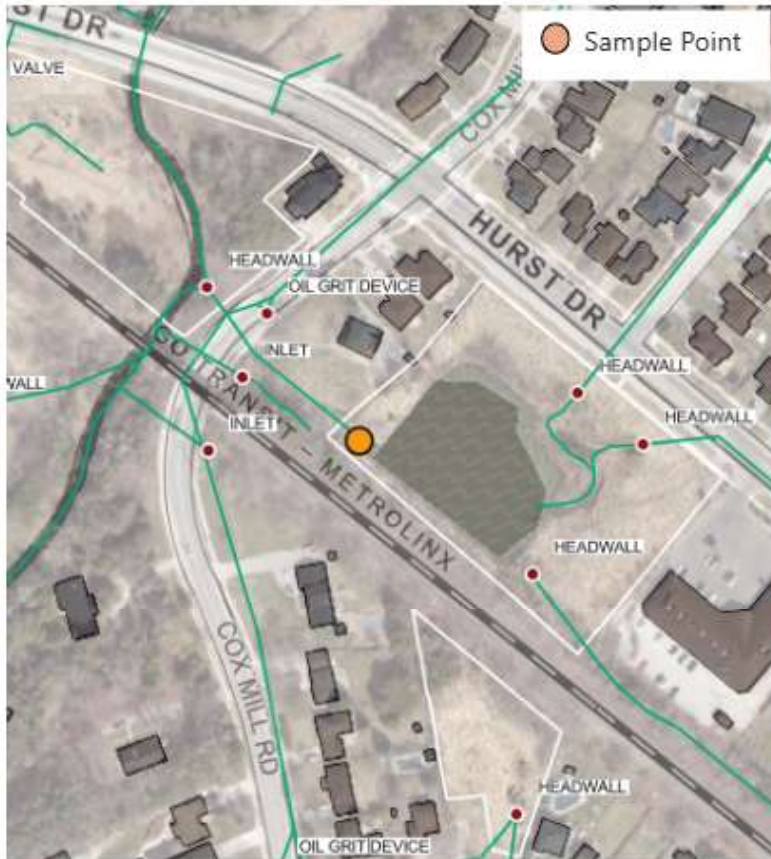
All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



SWMF Water Quality Key Performance Indicator Trends



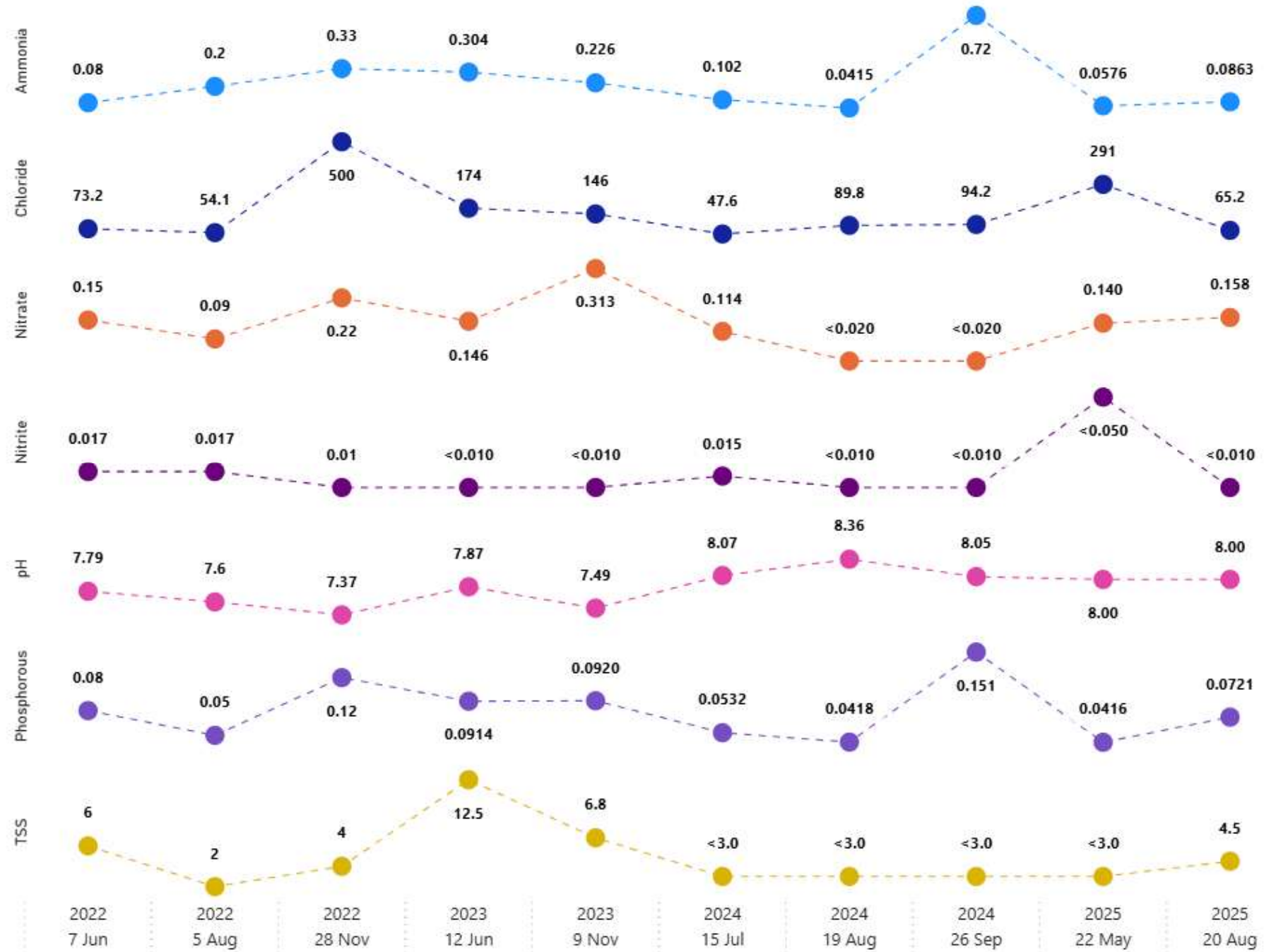
Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

Notes:

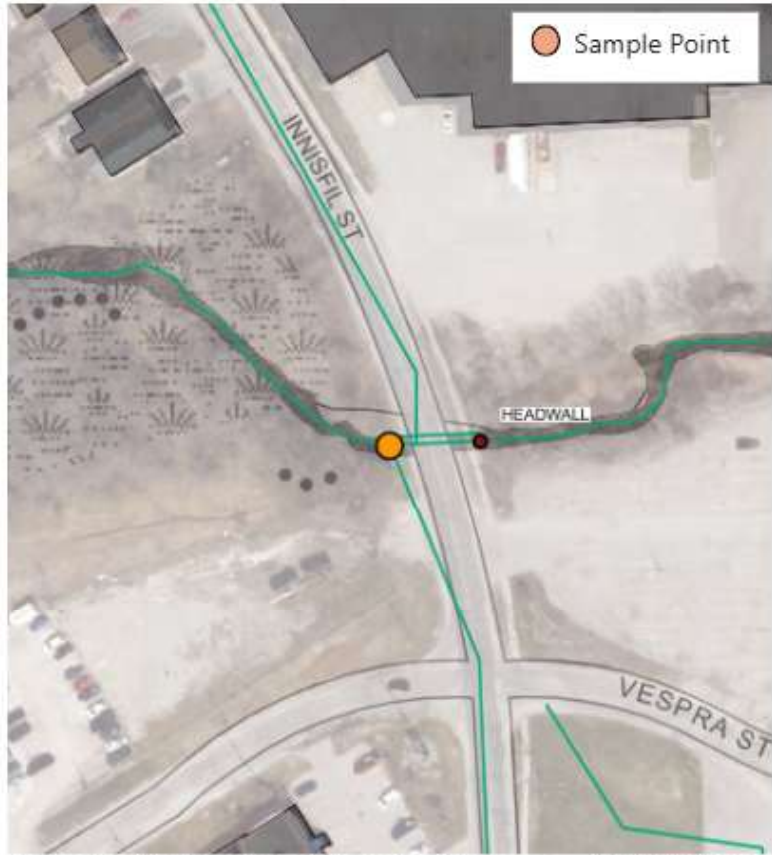
- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



Watercourse Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

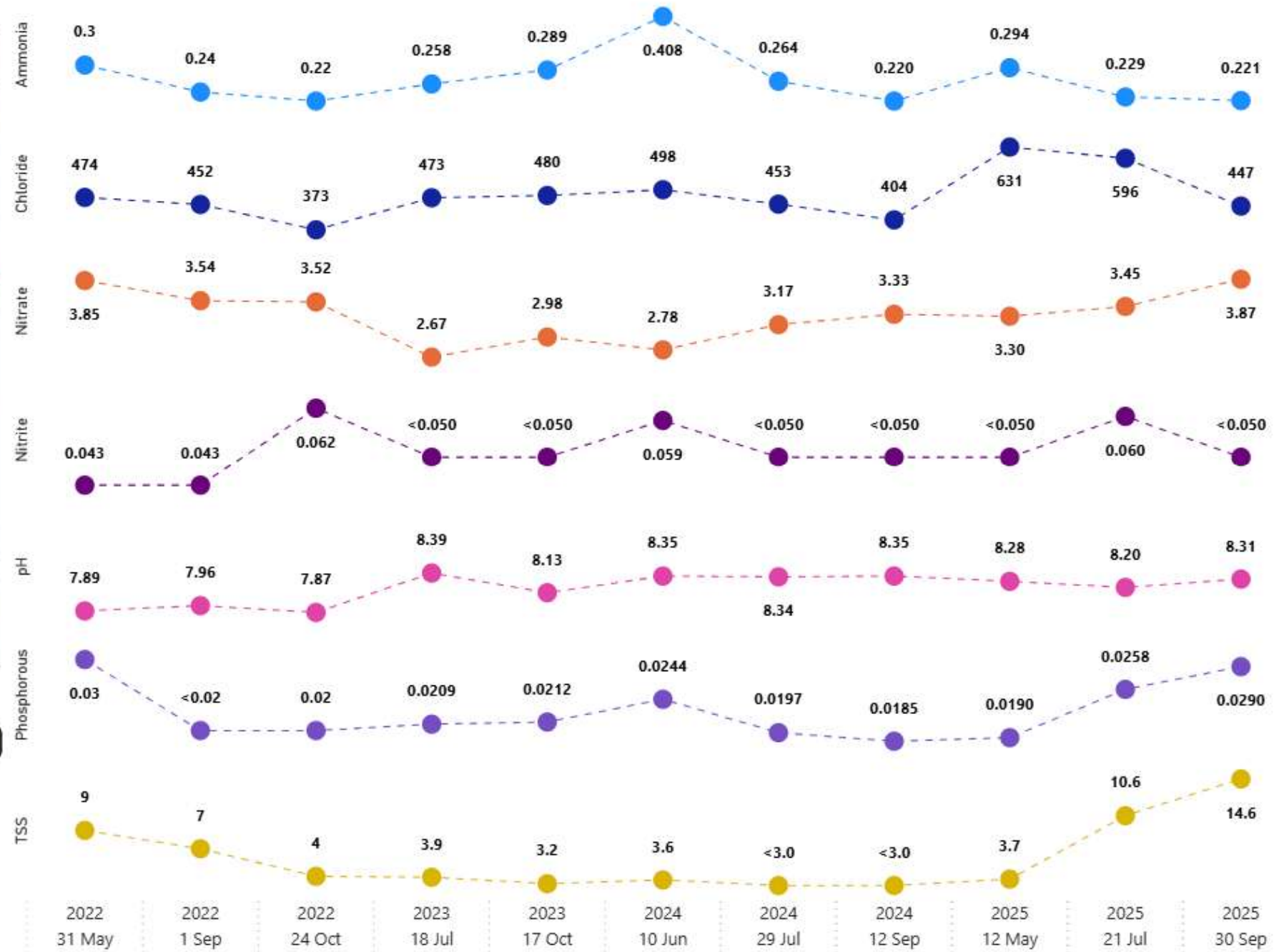
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



SWMF Water Quality Key Performance Indicator Trends

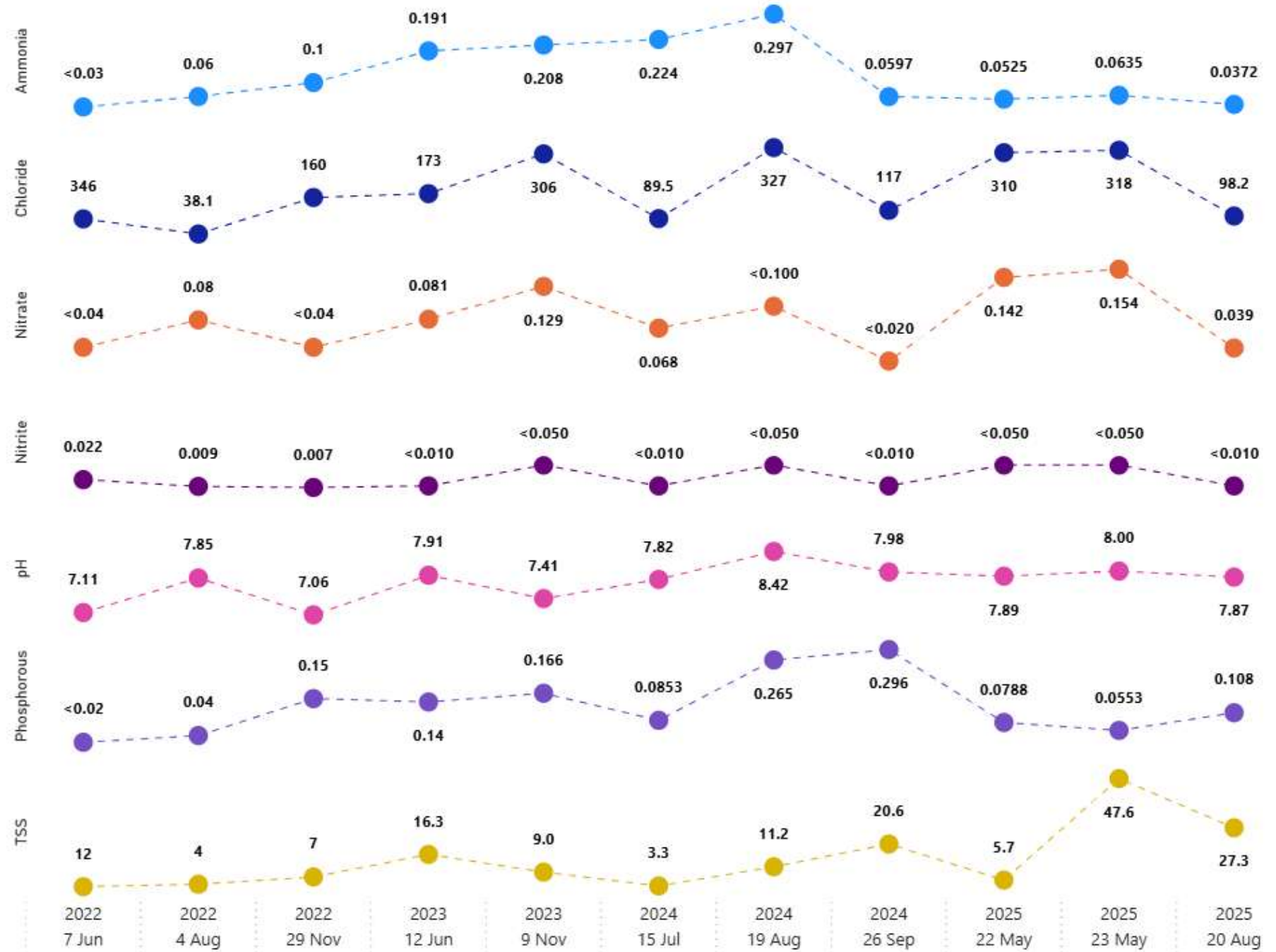


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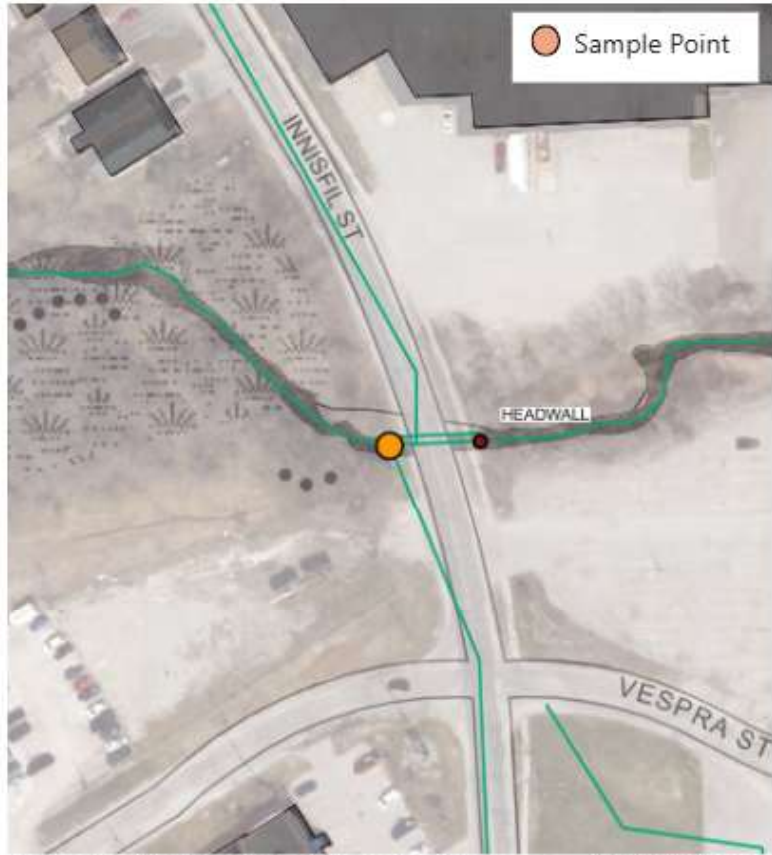
- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

LV11-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



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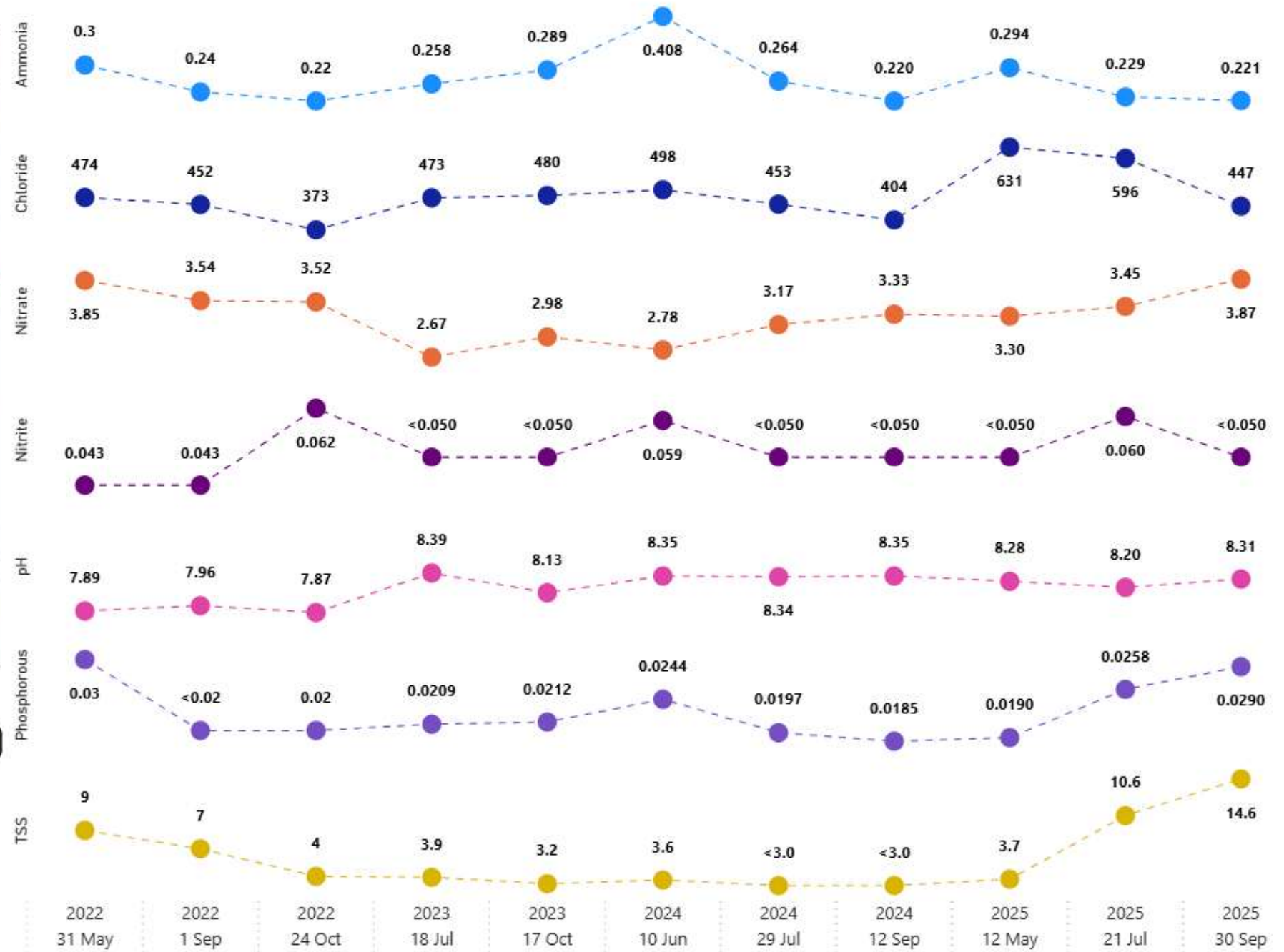
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

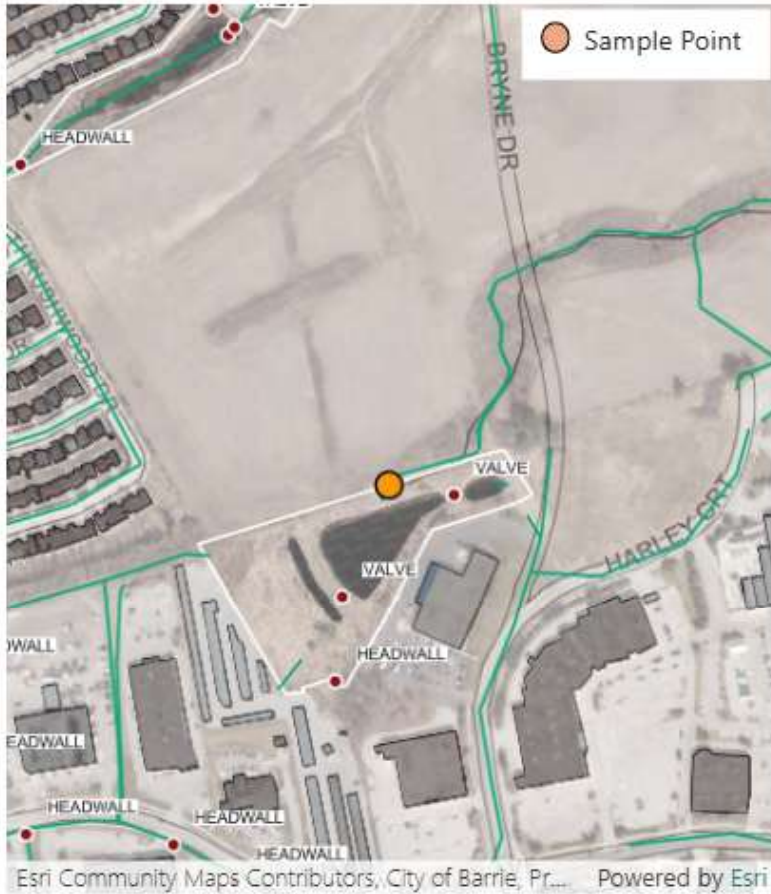
All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



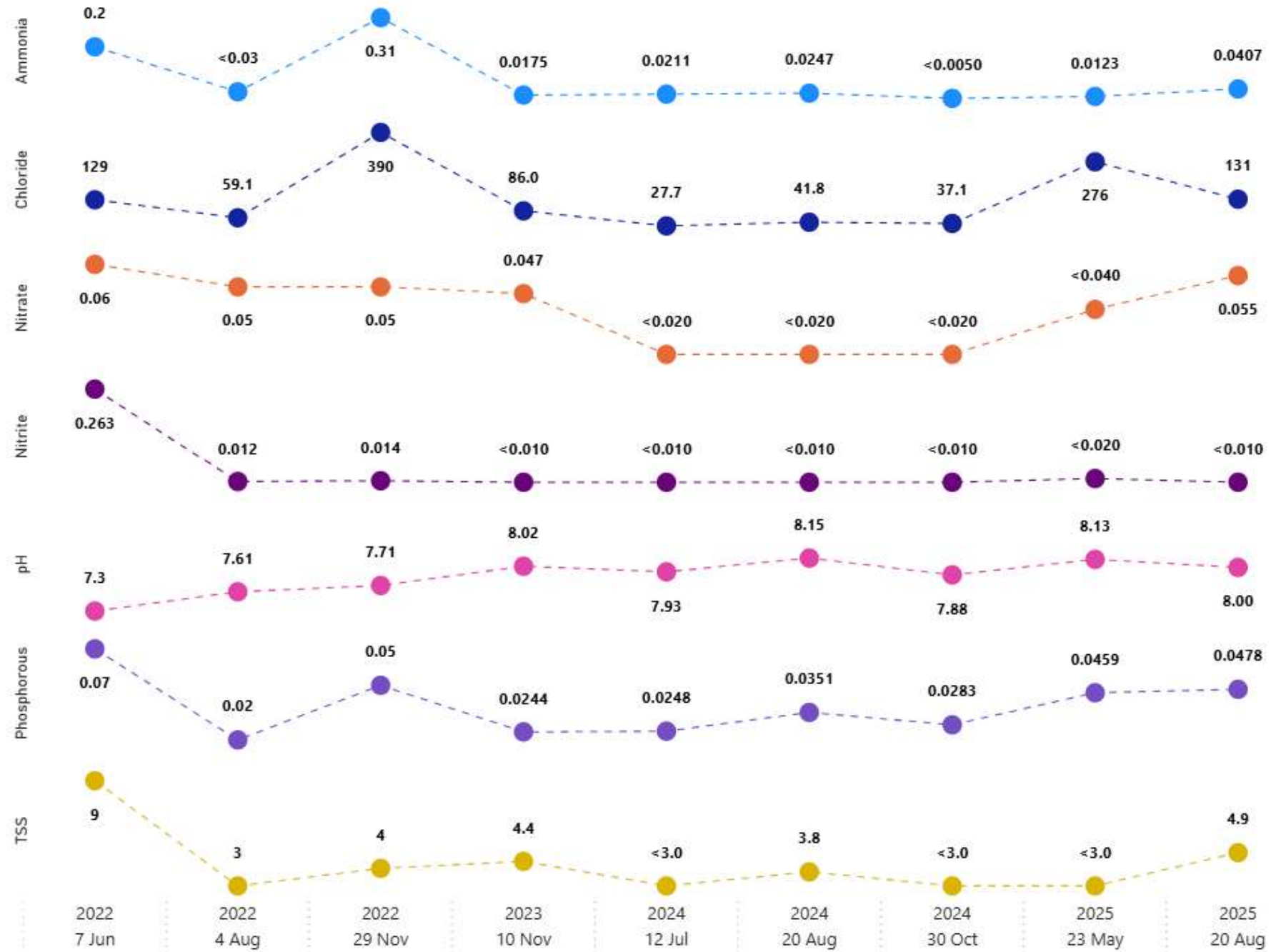
SWMF Water Quality Key Performance Indicator Trends



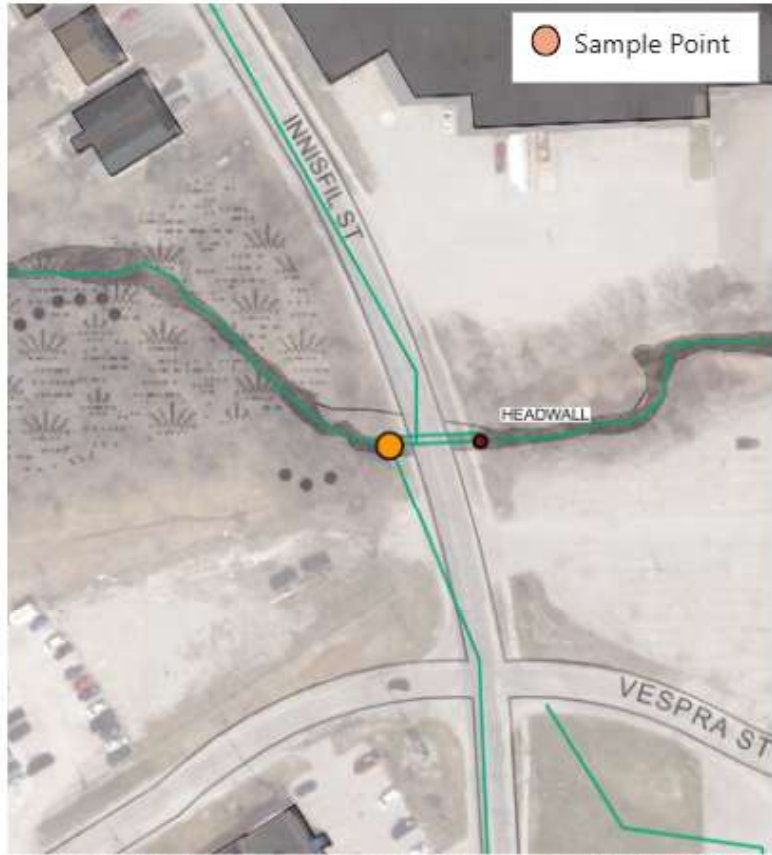
Notes:
 Ammonia = Total Ammonia as N
 Nitrate = Nitrate as N
 Nitrite = Nitrite as N
 Phosphorous = Total Phosphorous
 TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

LV14-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

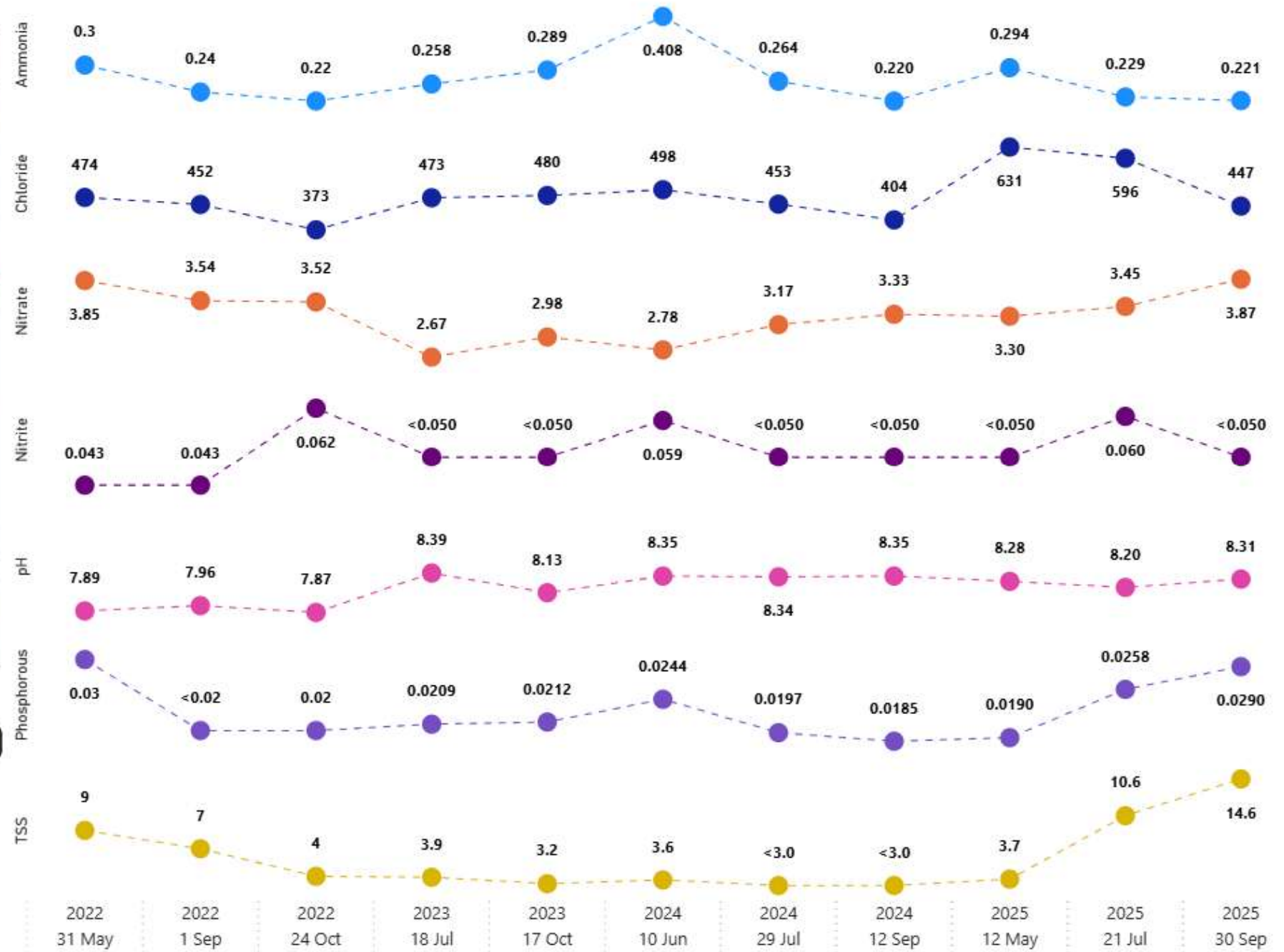
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

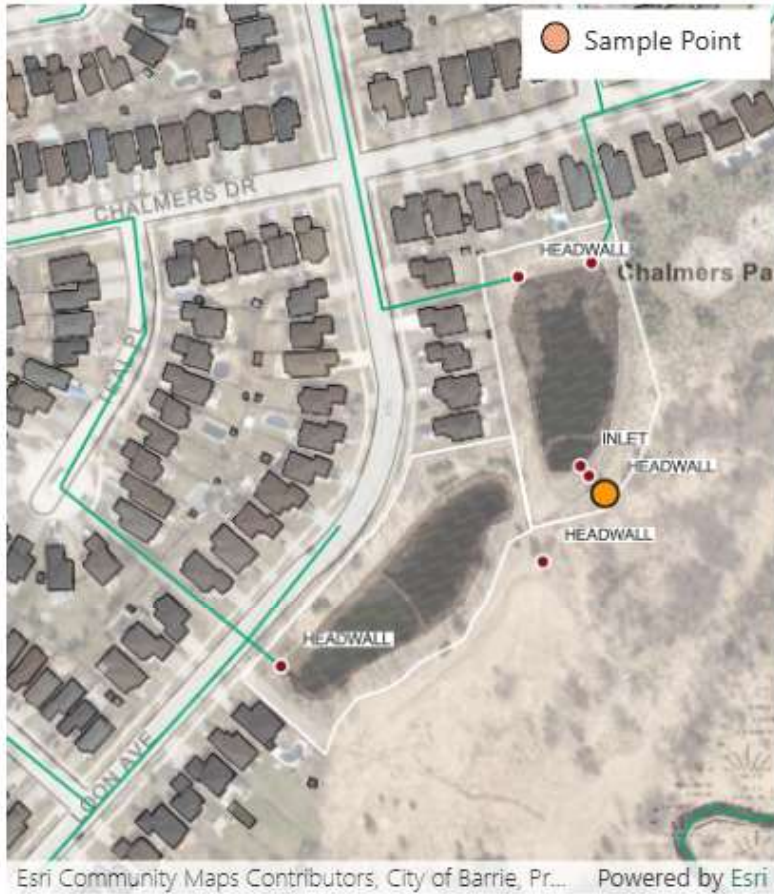
All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



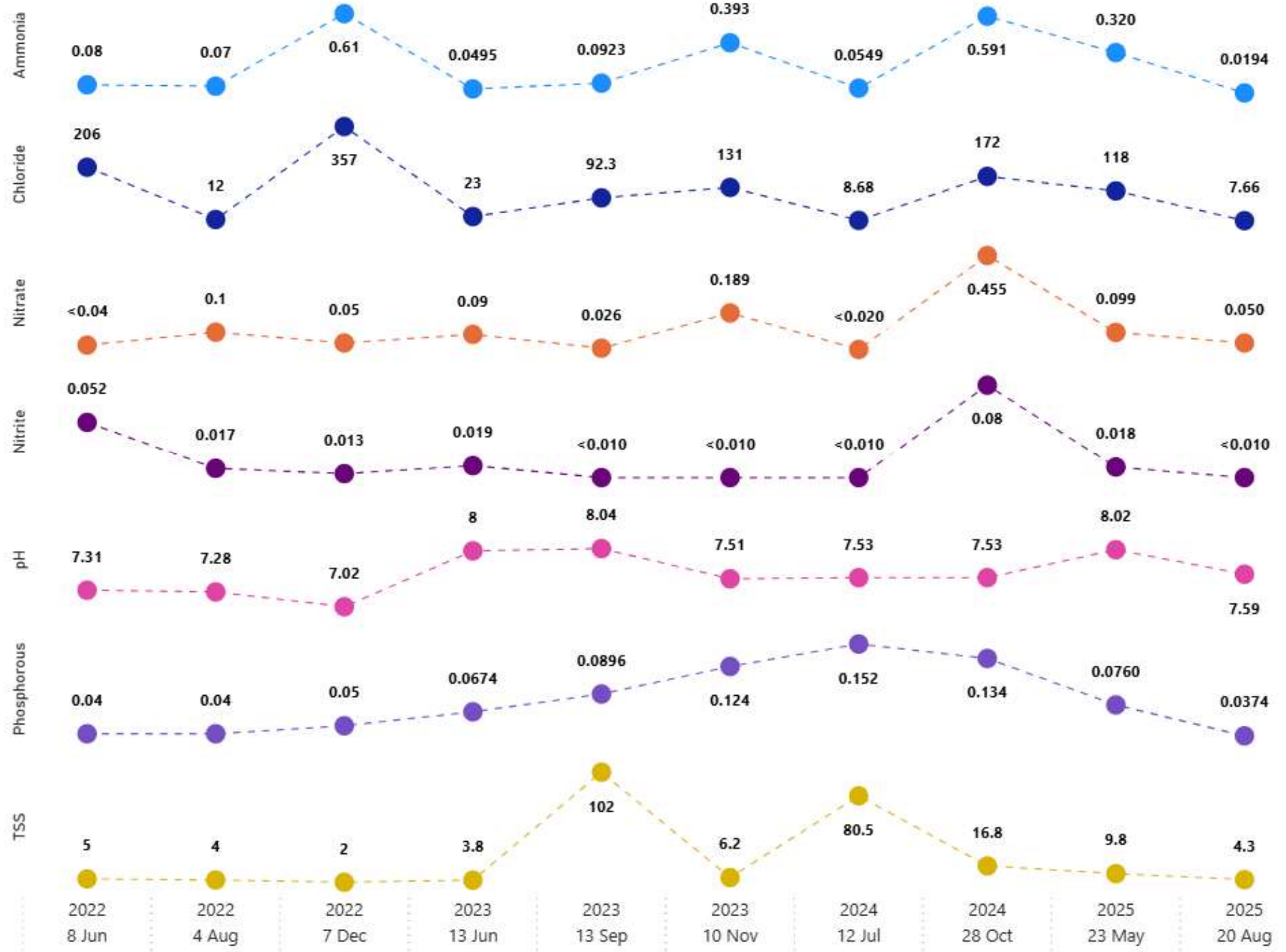
SWMF Water Quality Key Performance Indicator Trends



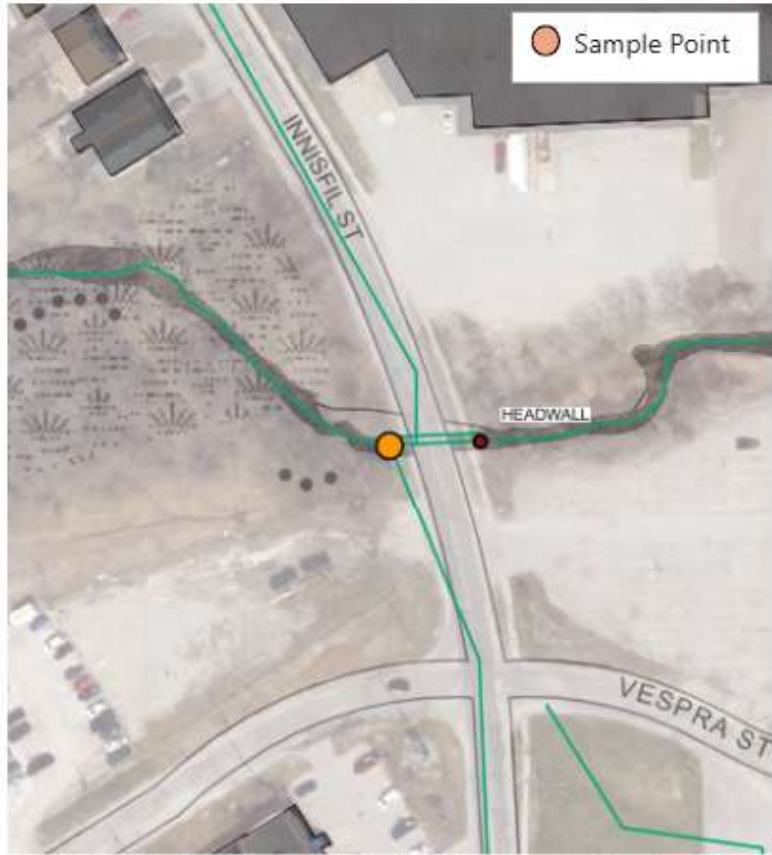
Notes:
 Ammonia = Total Ammonia as N
 Nitrate = Nitrate as N
 Nitrite = Nitrite as N
 Phosphorous = Total Phosphorous
 TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

LV18-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

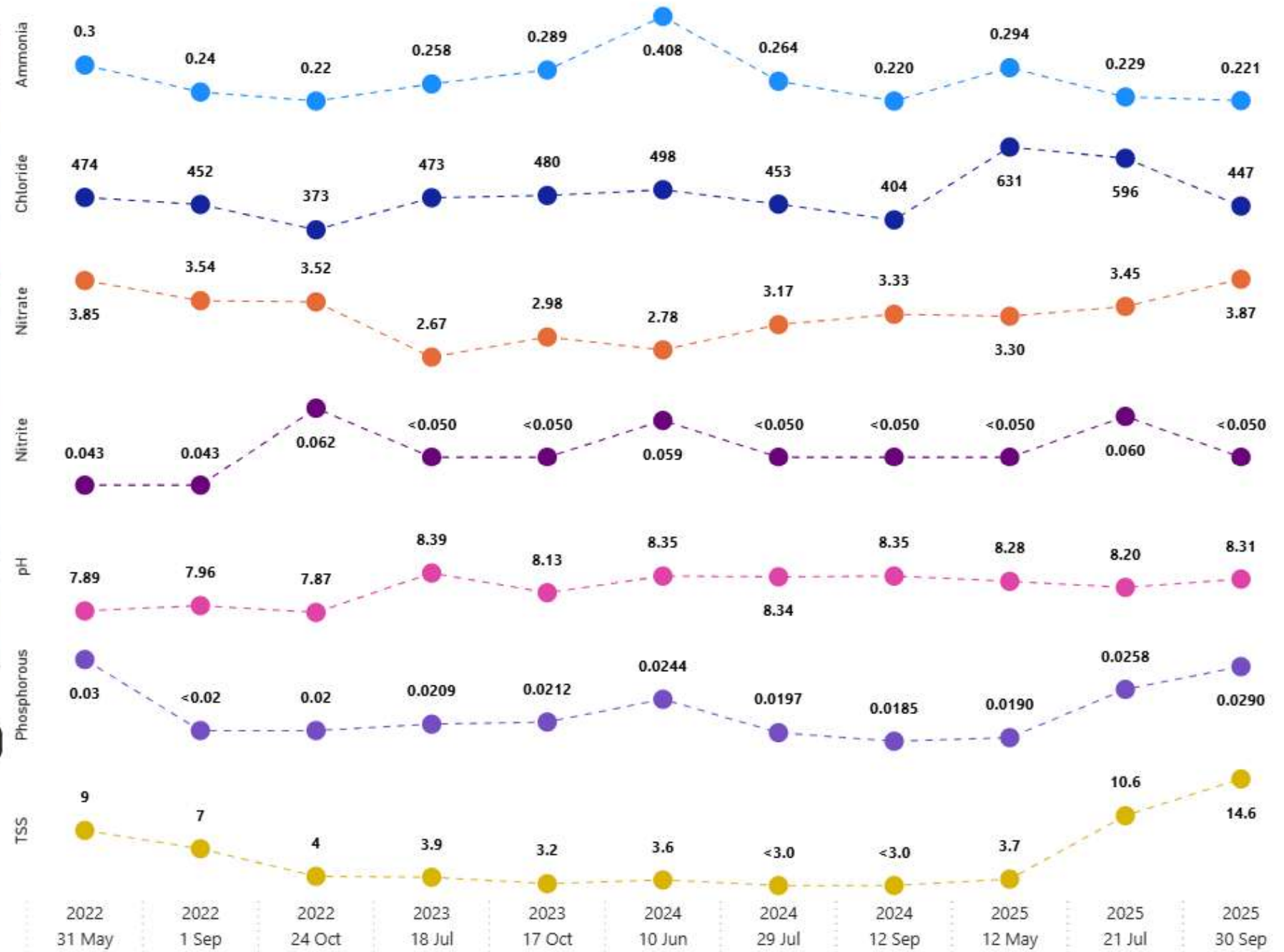
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

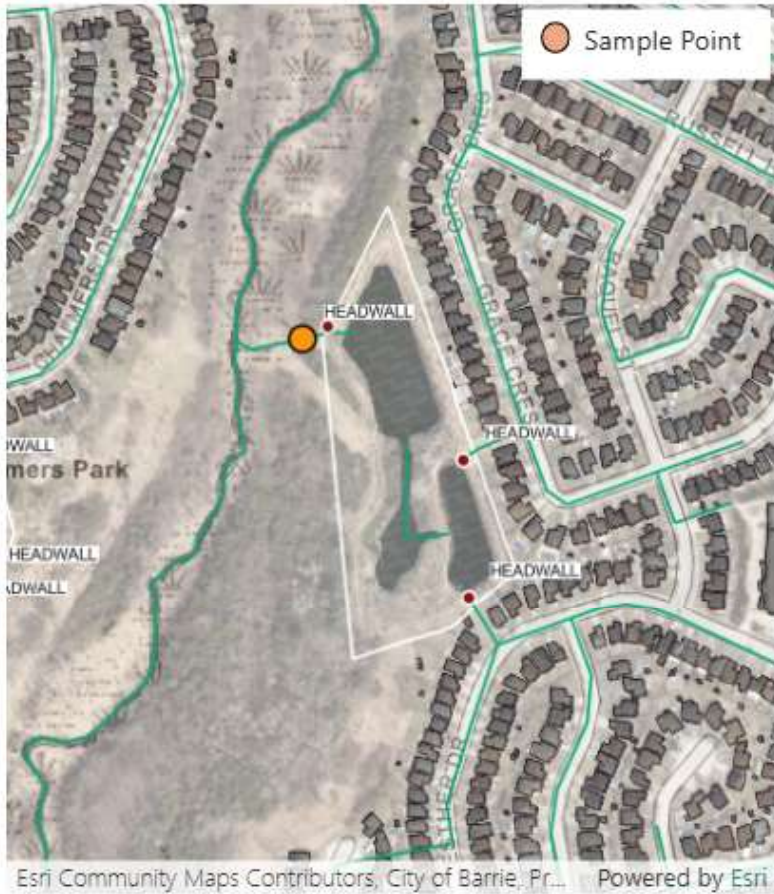
All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



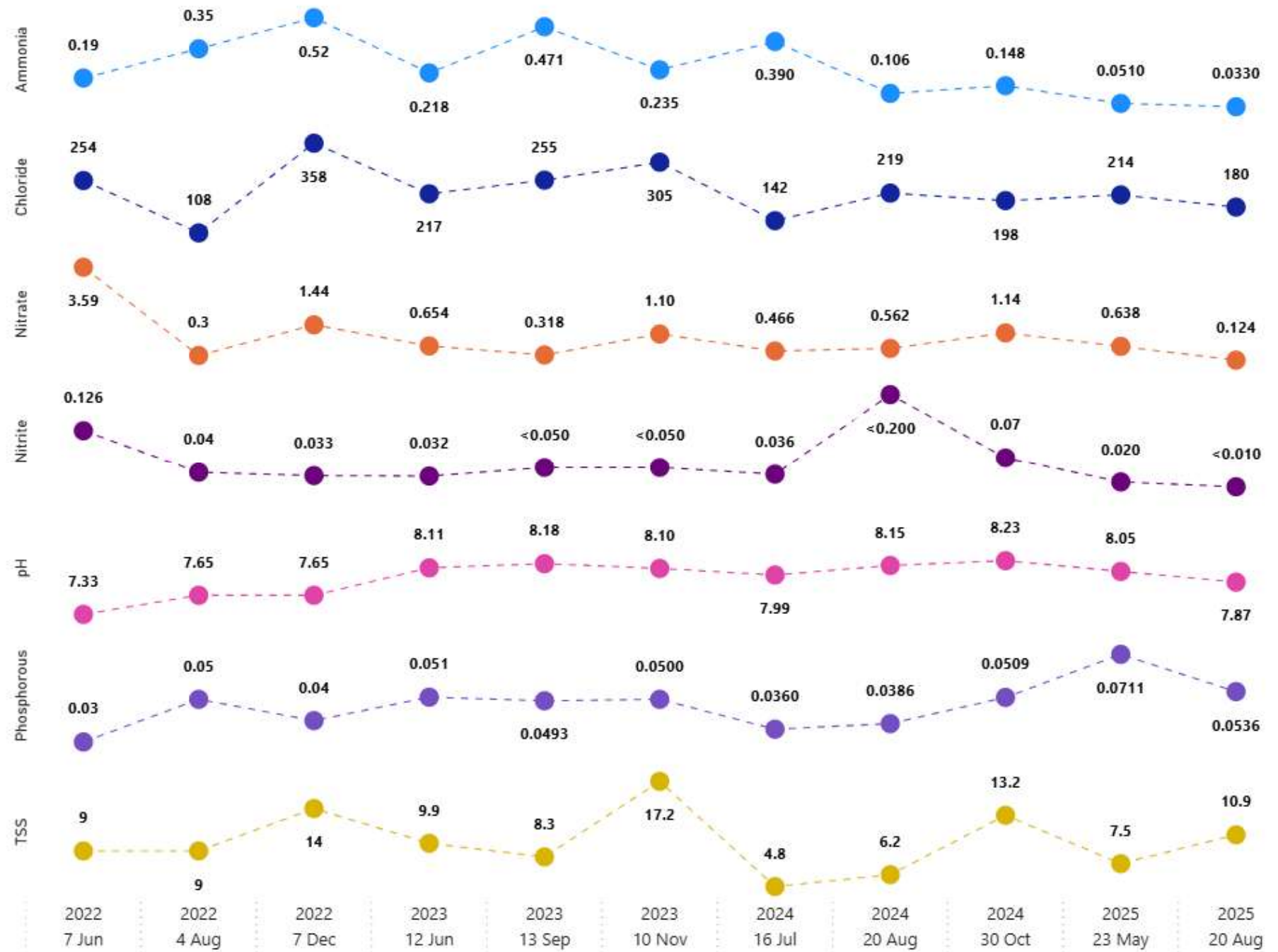
SWMF Water Quality Key Performance Indicator Trends



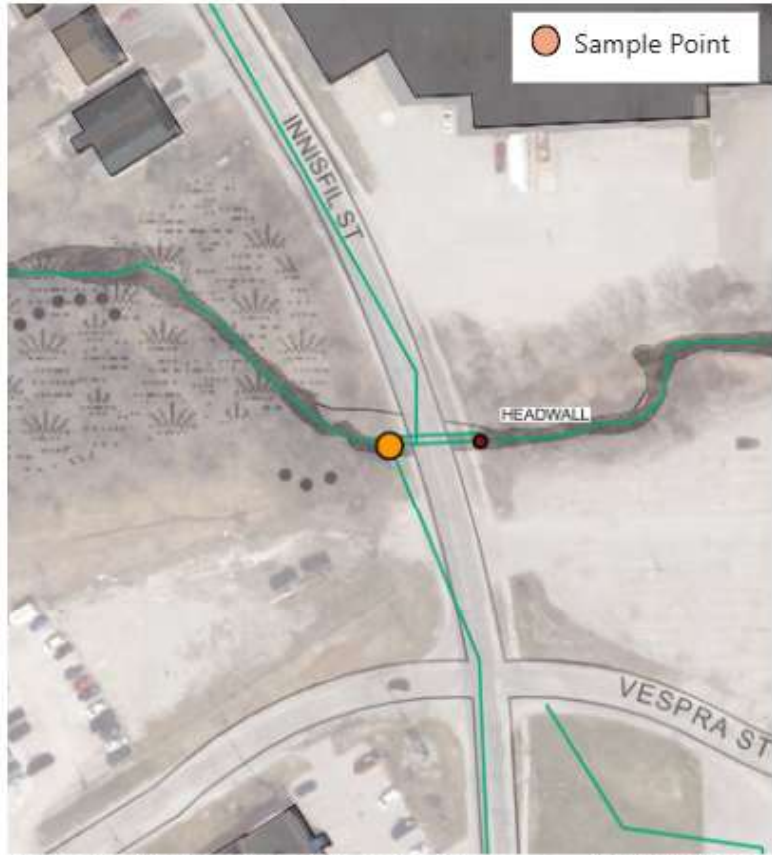
Notes:
 Ammonia = Total Ammonia as N
 Nitrate = Nitrate as N
 Nitrite = Nitrite as N
 Phosphorous = Total Phosphorous
 TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

LV19-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

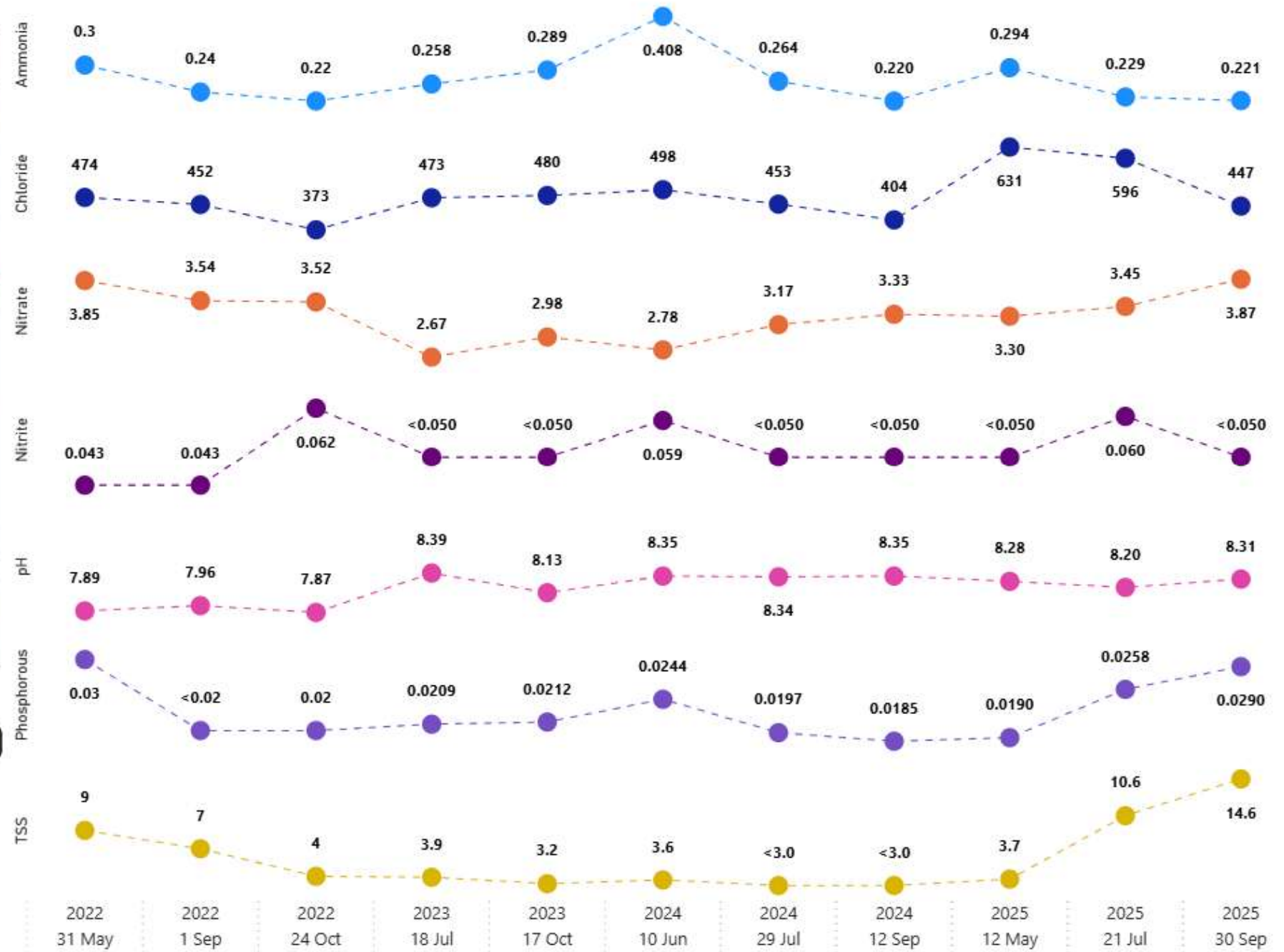
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

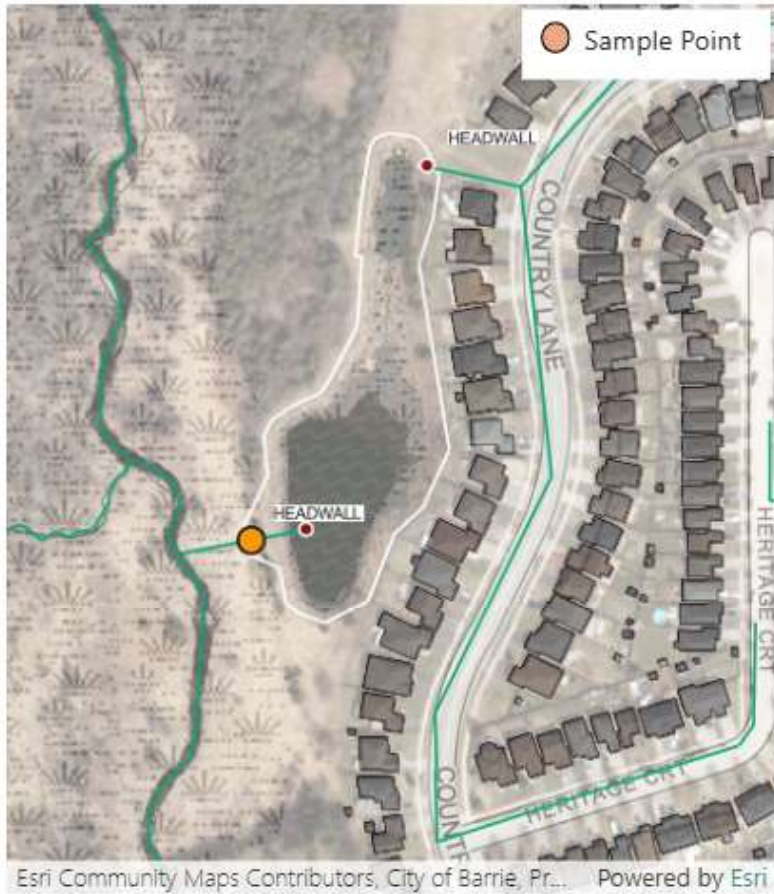
All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



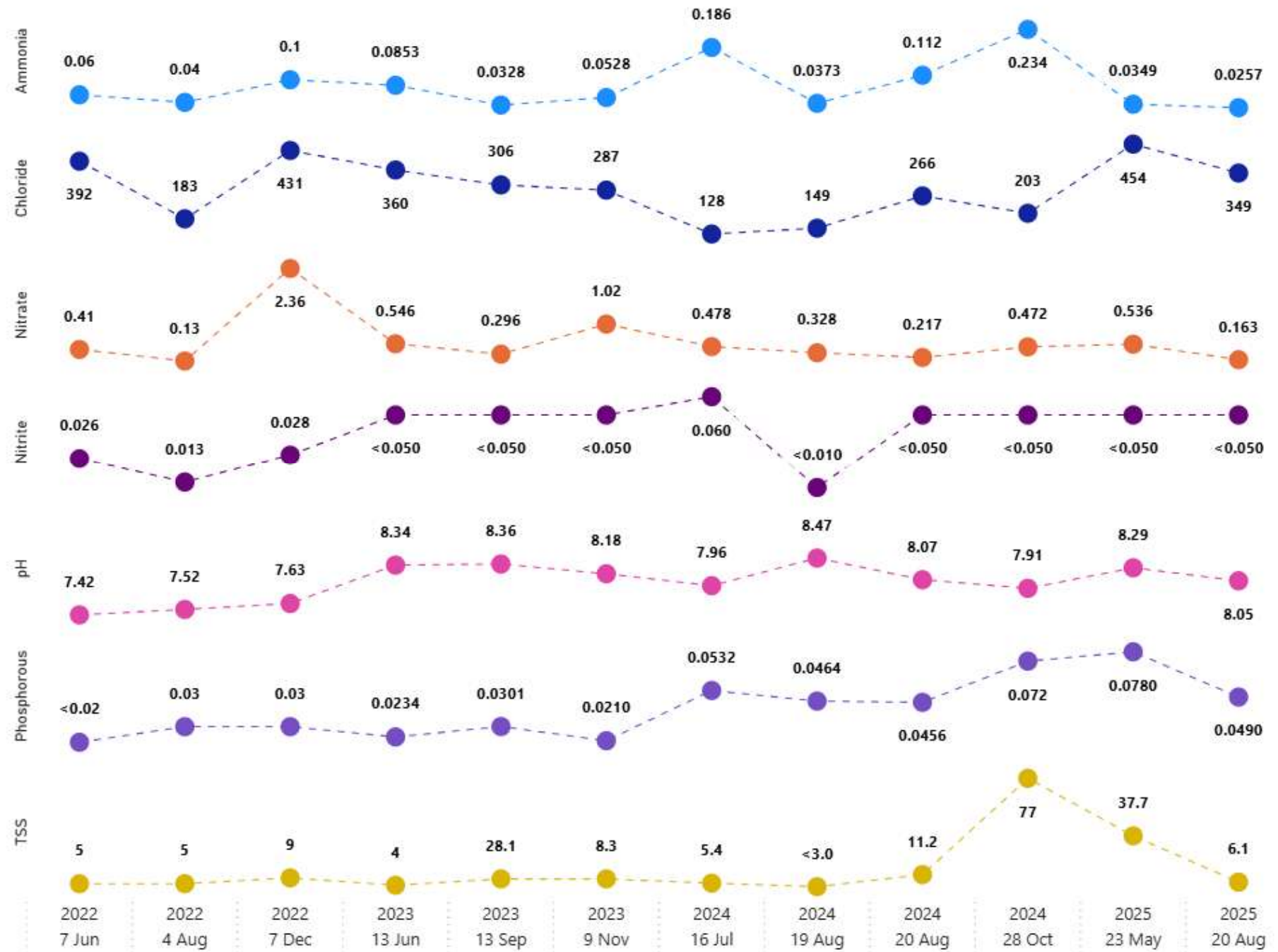
SWMF Water Quality Key Performance Indicator Trends



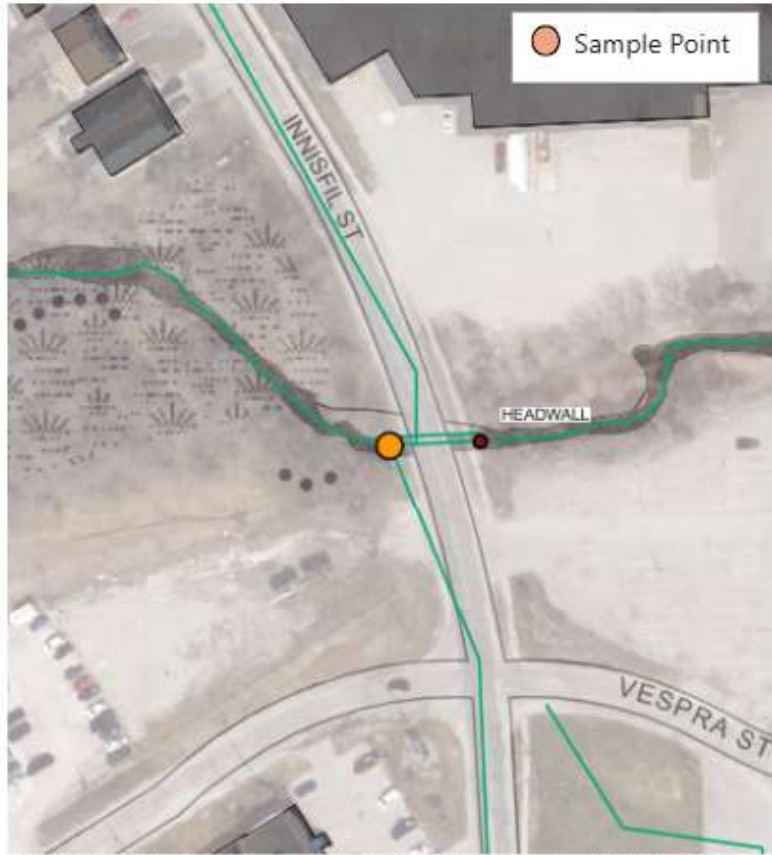
Notes:
 Ammonia = Total Ammonia as N
 Nitrate = Nitrate as N
 Nitrite = Nitrite as N
 Phosphorous = Total Phosphorous
 TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

LV20-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



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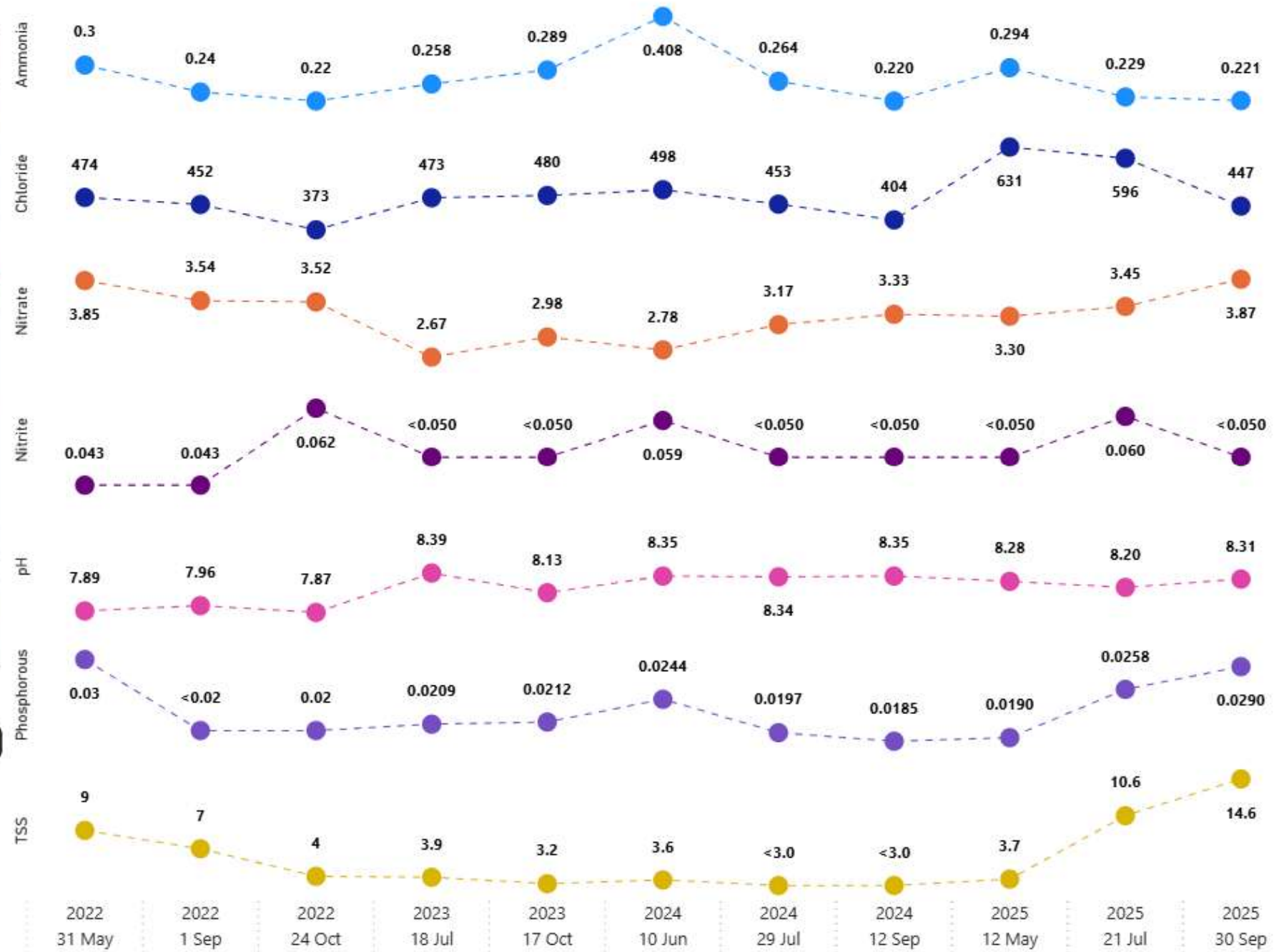
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

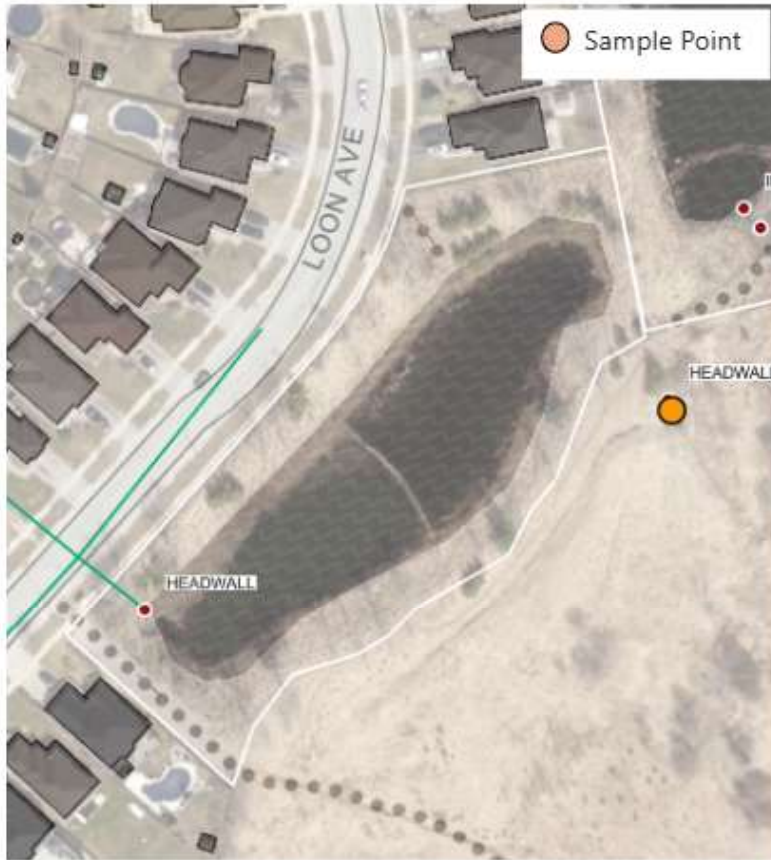
All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



SWMF Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

Notes:

Ammonia = Total Ammonia as N

Nitrate = Nitrate as N

Nitrite = Nitrite as N

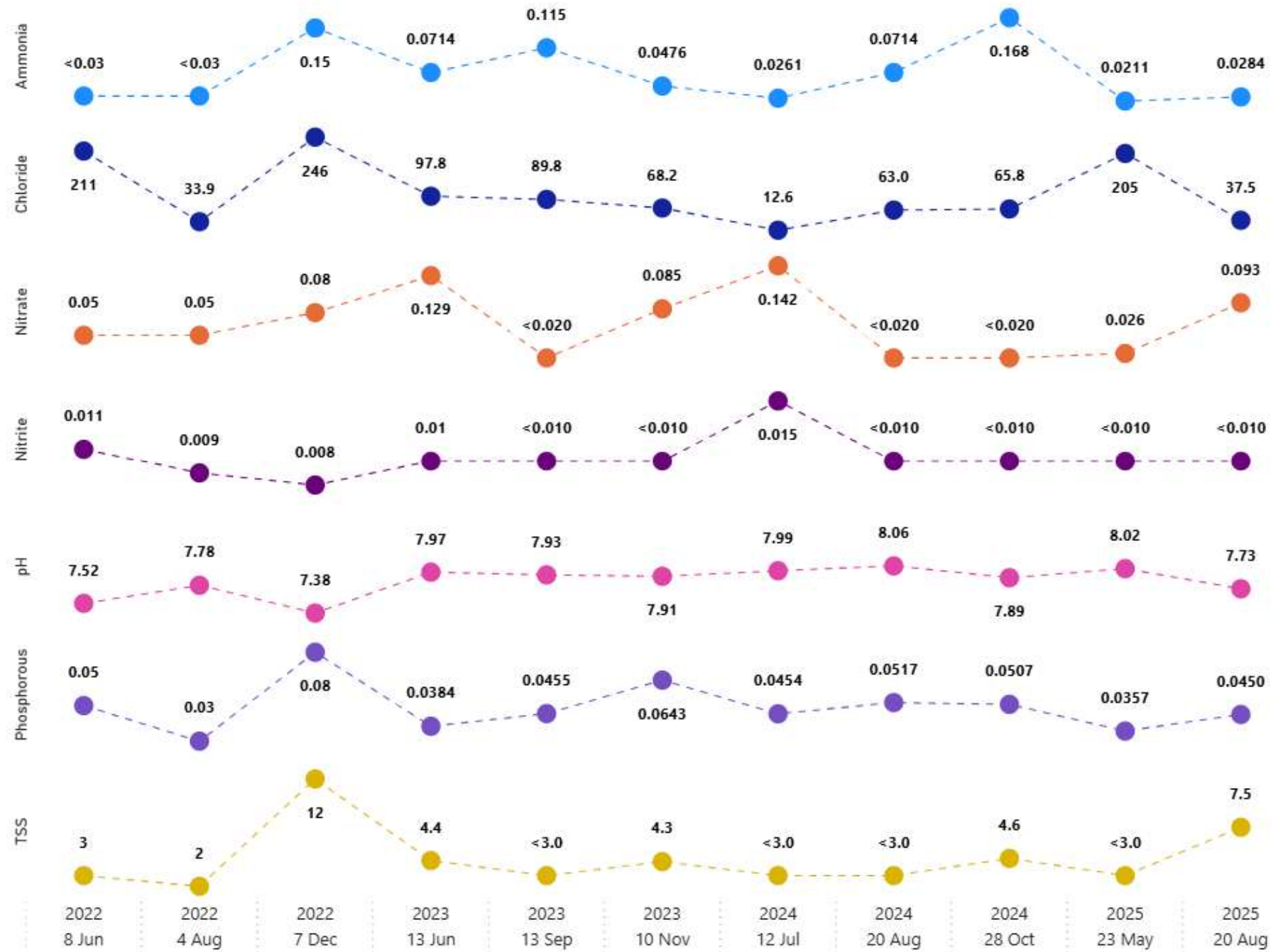
Phosphorous = Total Phosphorous

TSS = Total Suspended Solids

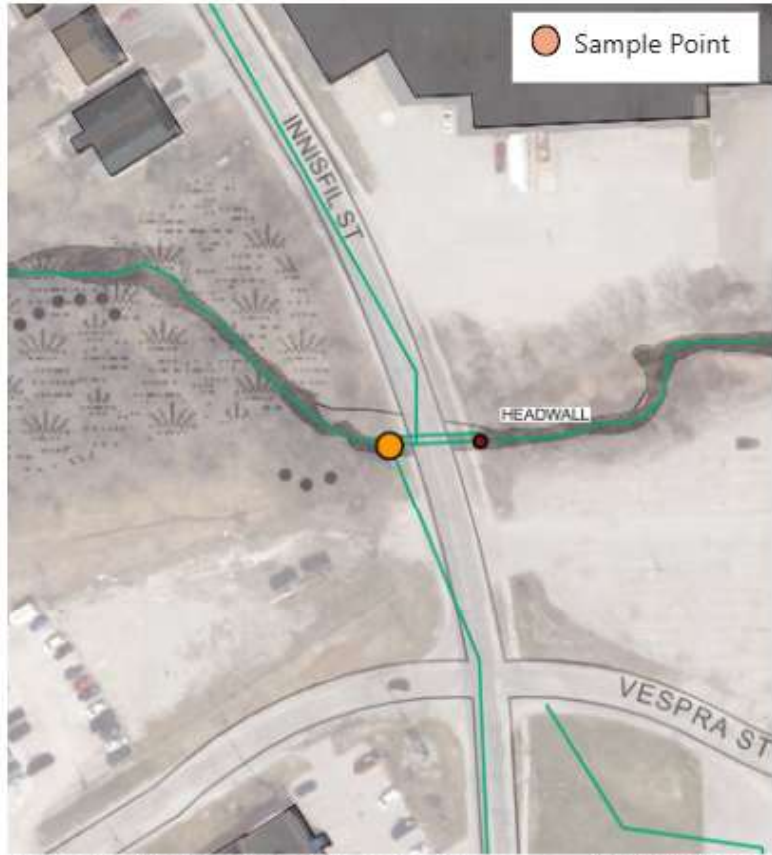
All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

LV21-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



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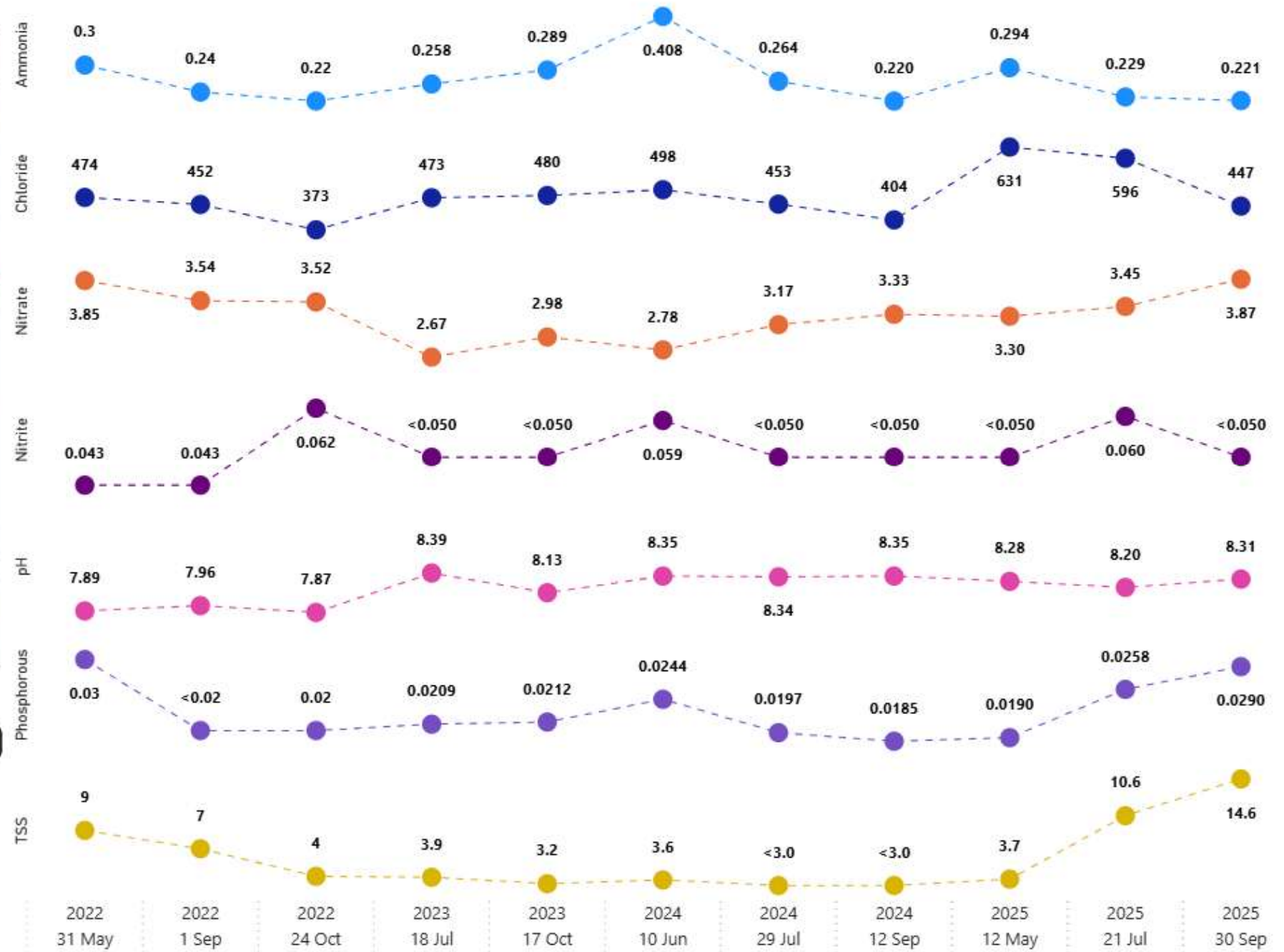
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



SWMF Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

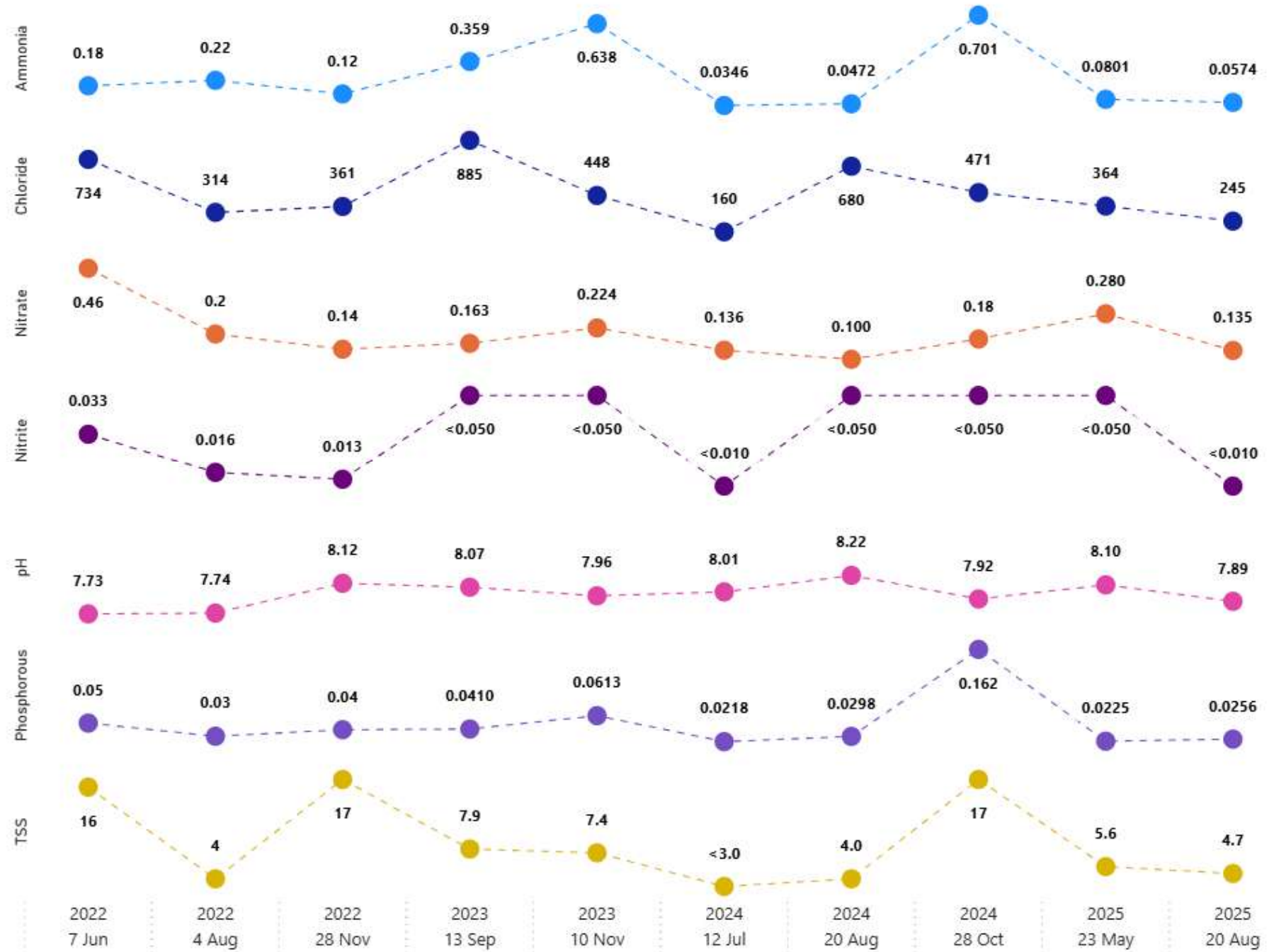
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

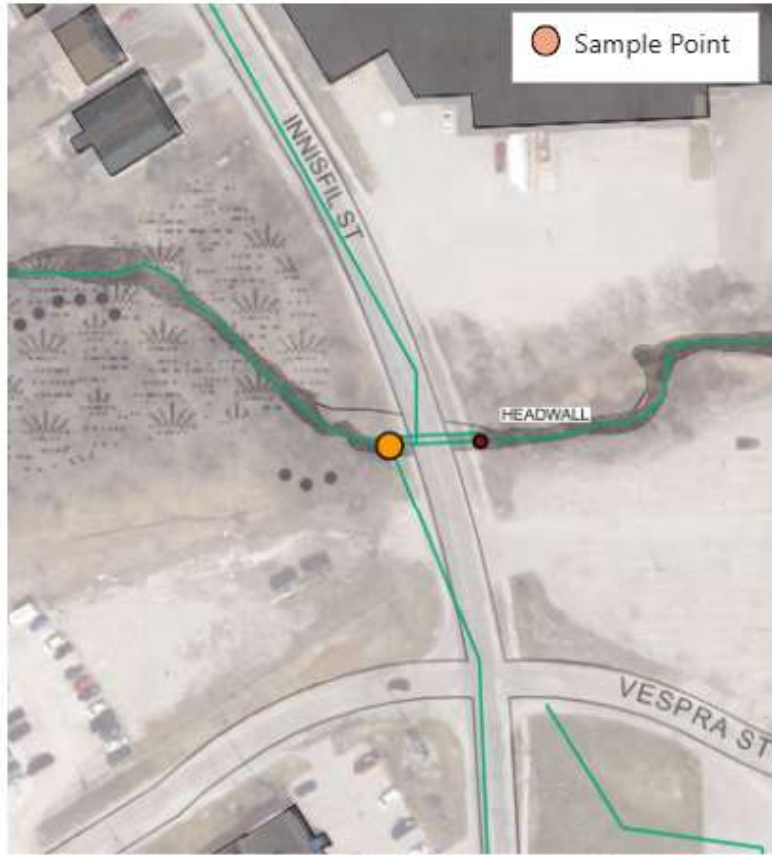
All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

LV22-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

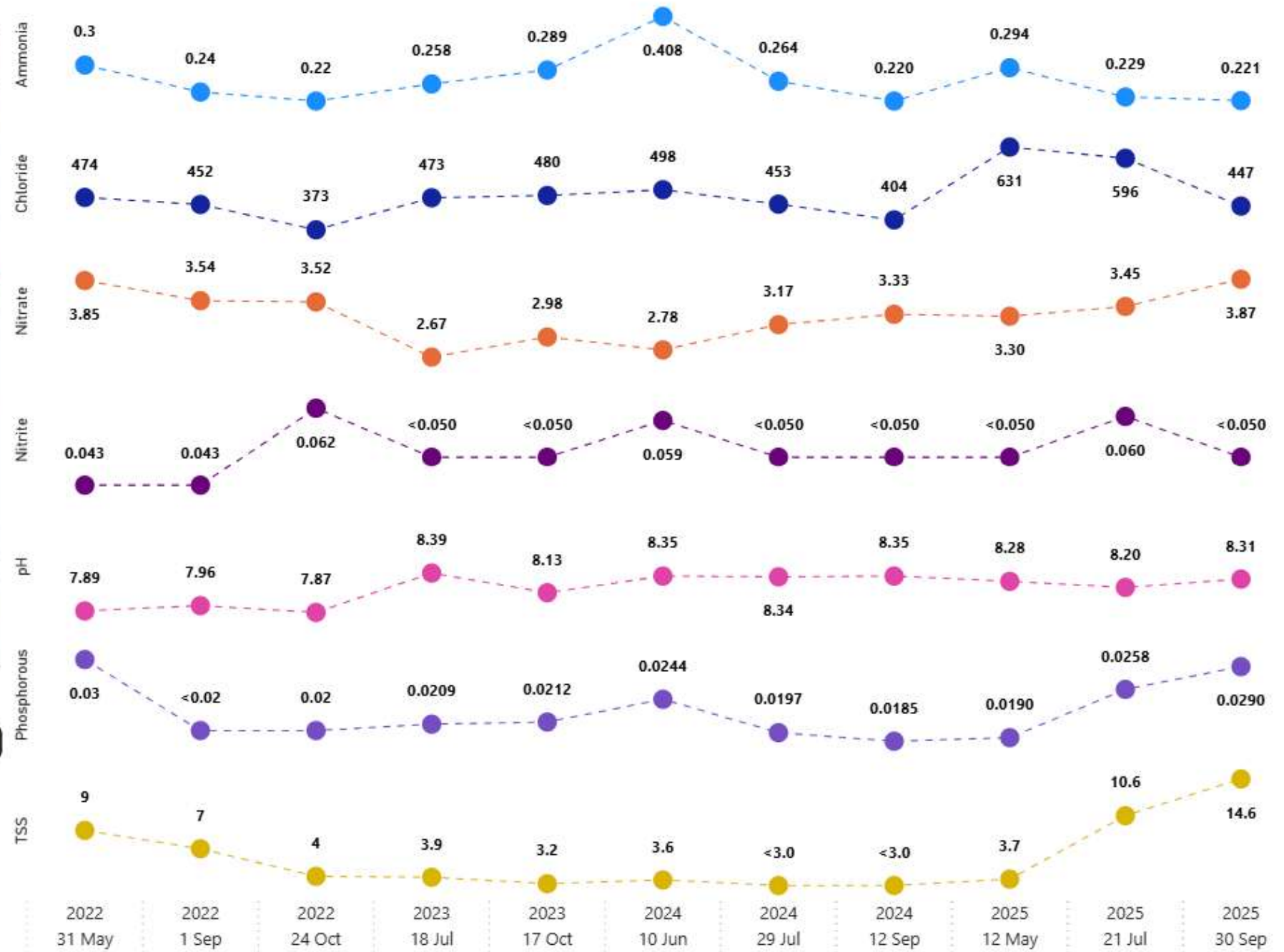
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



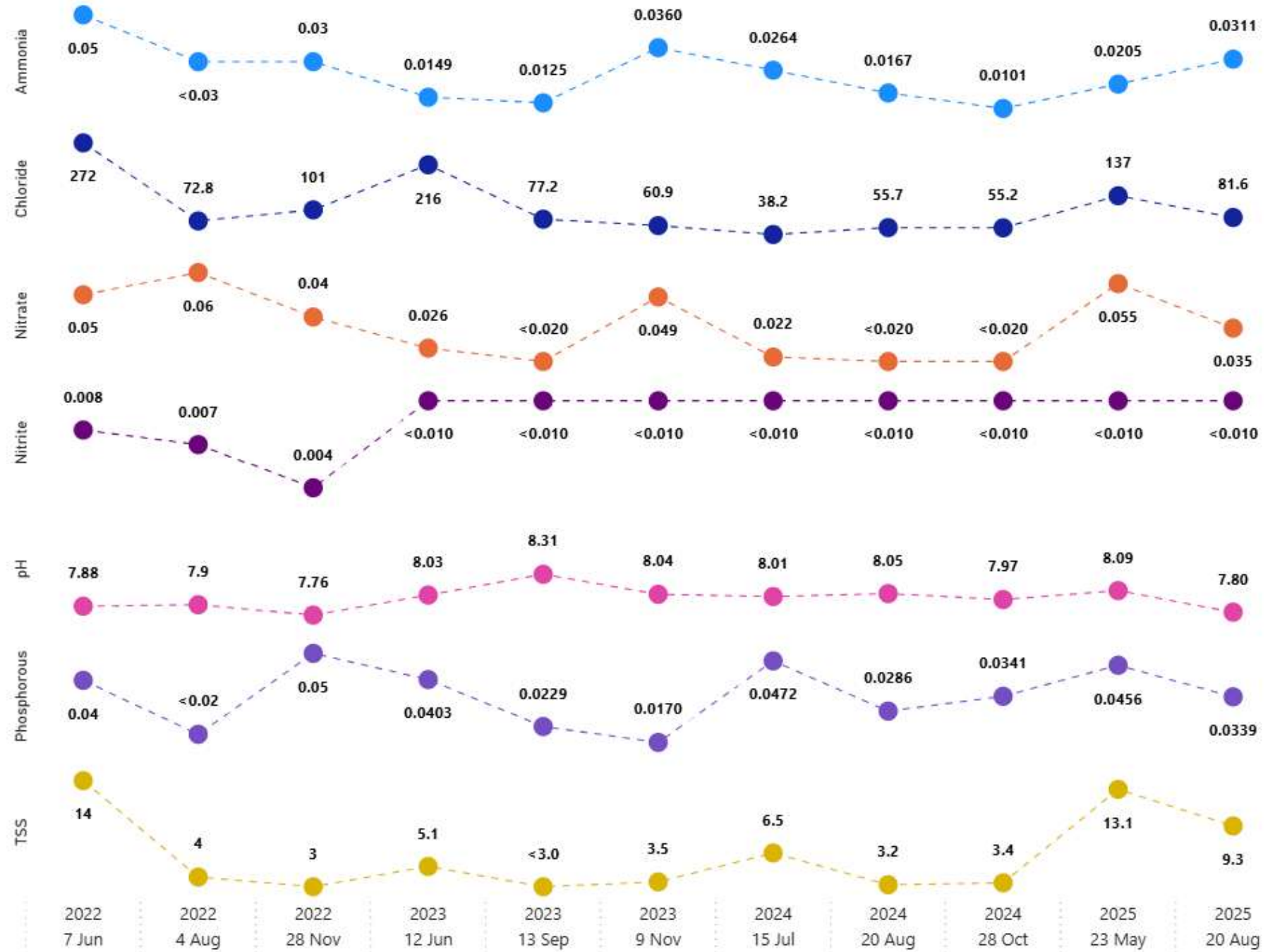
SWMF Water Quality Key Performance Indicator Trends



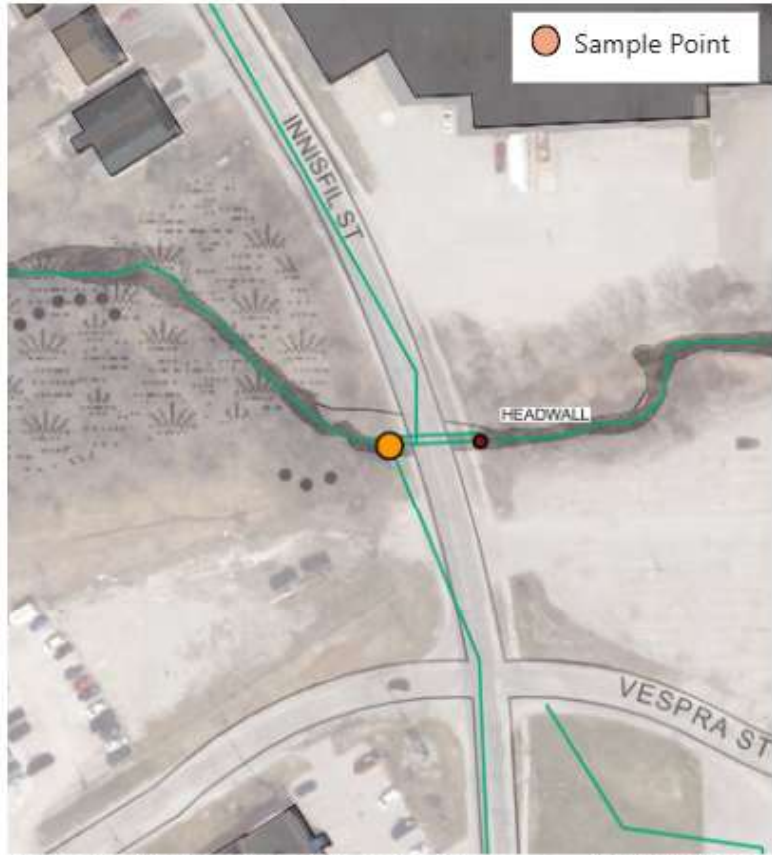
Notes:
 Ammonia = Total Ammonia as N
 Nitrate = Nitrate as N
 Nitrite = Nitrite as N
 Phosphorous = Total Phosphorous
 TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

LV23-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

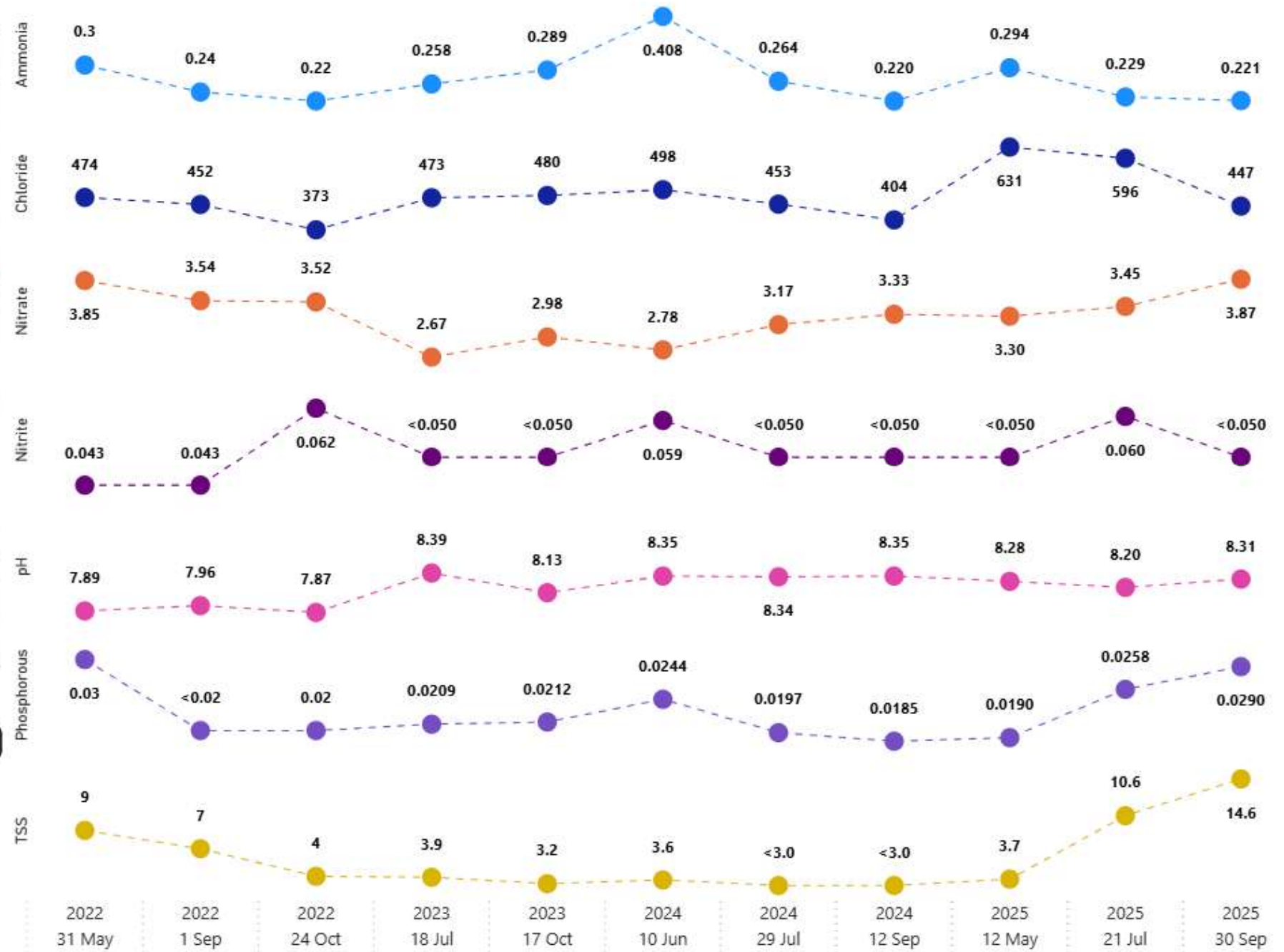
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



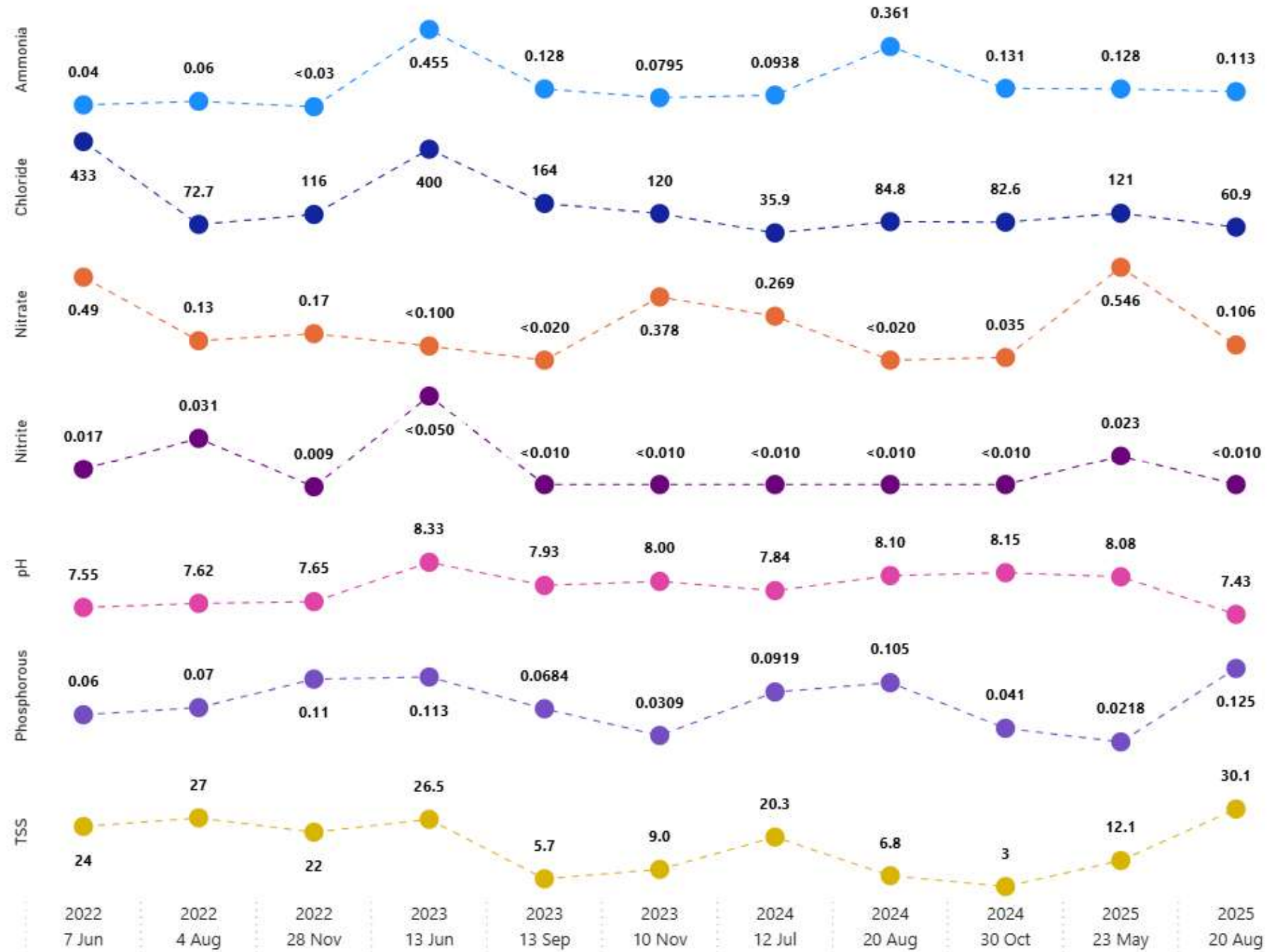
SWMF Water Quality Key Performance Indicator Trends



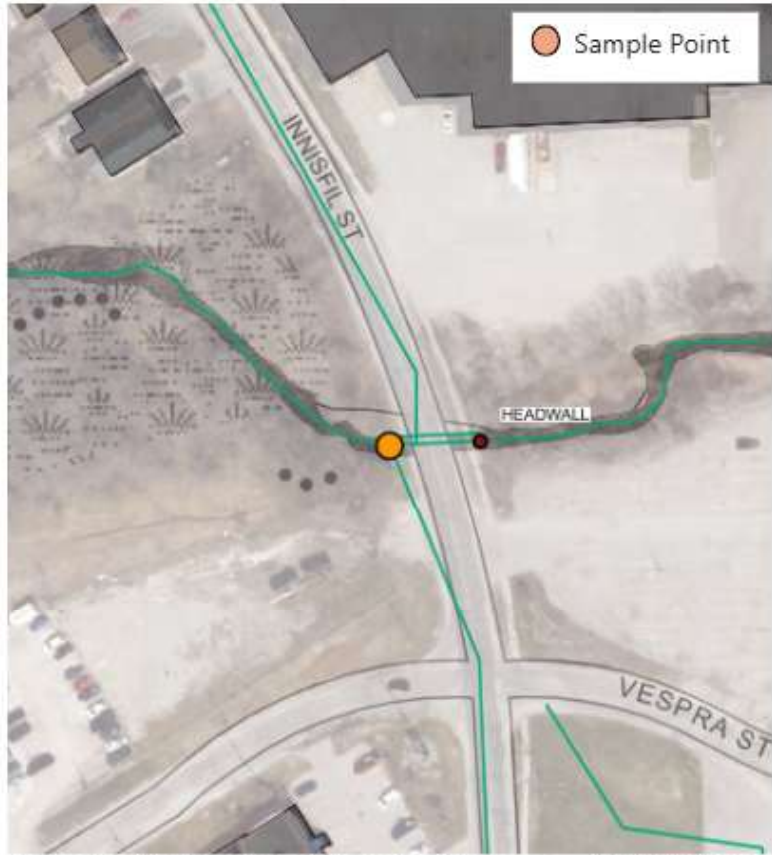
Notes:
 Ammonia = Total Ammonia as N
 Nitrate = Nitrate as N
 Nitrite = Nitrite as N
 Phosphorous = Total Phosphorous
 TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

LV25-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



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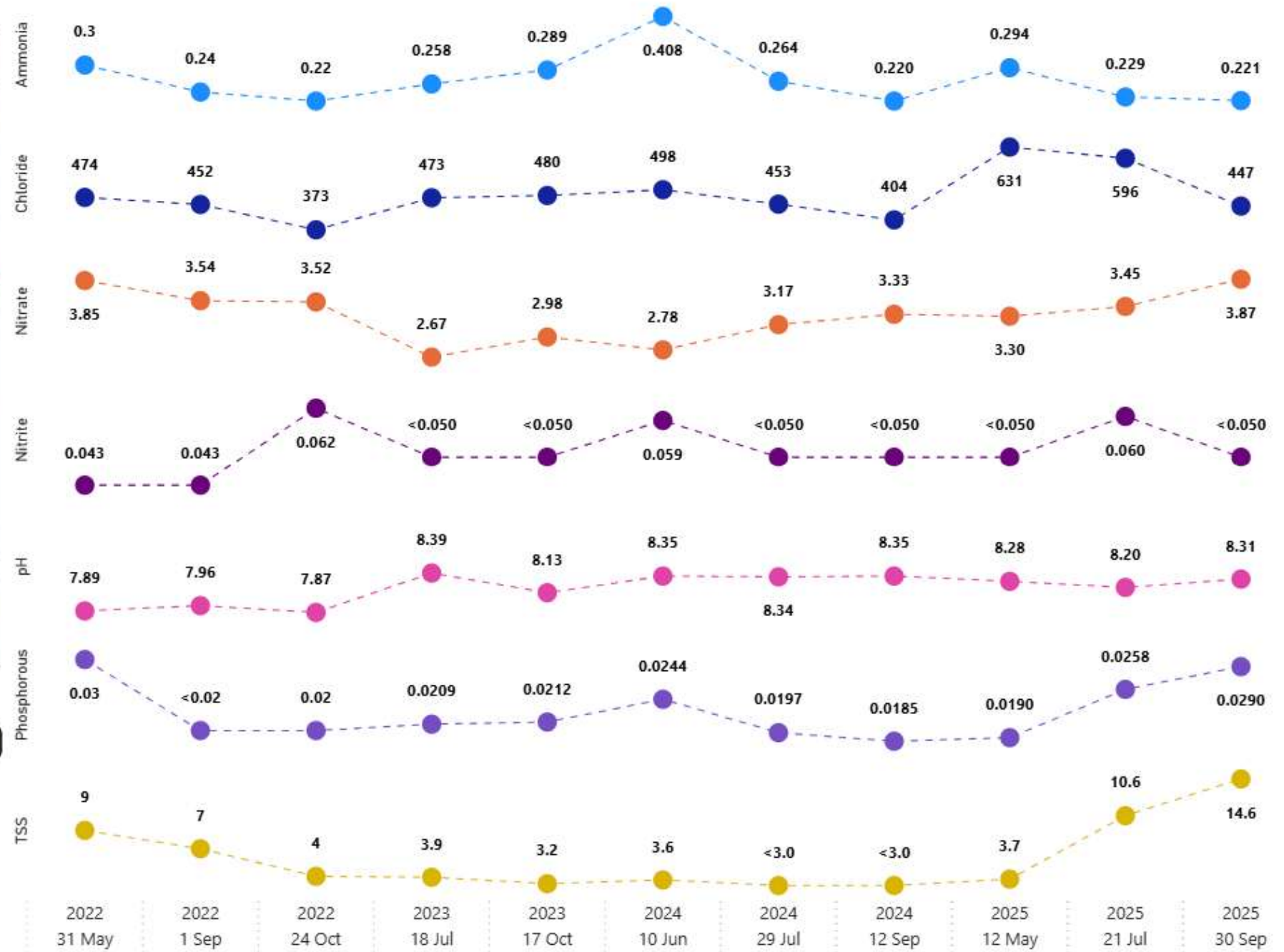
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

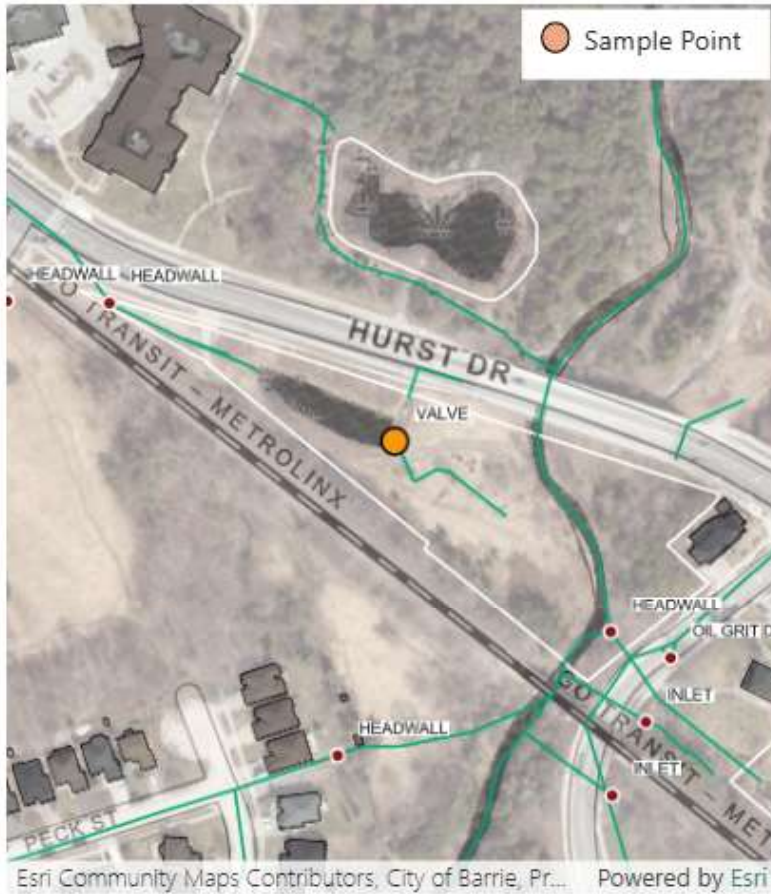
All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



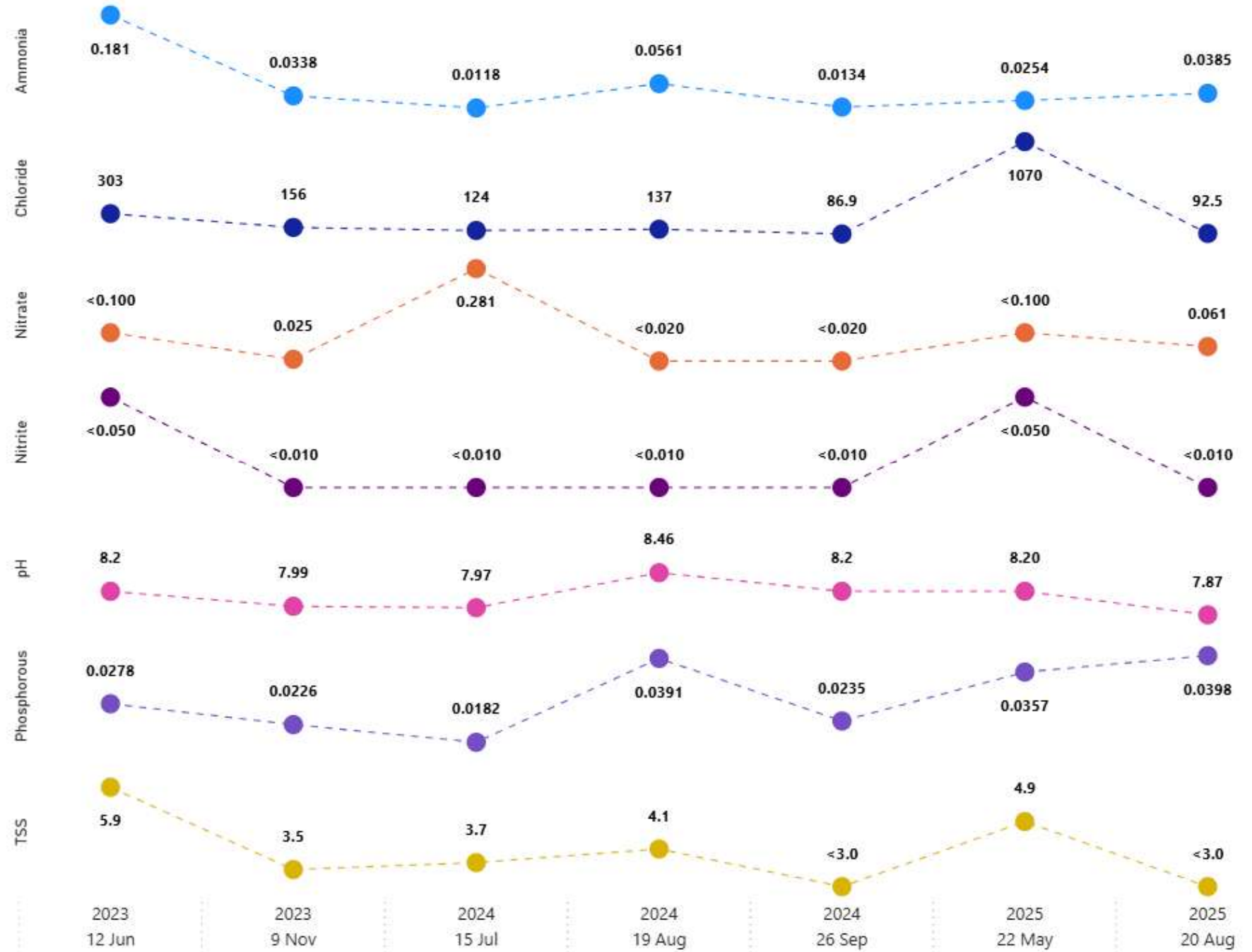
SWMF Water Quality Key Performance Indicator Trends



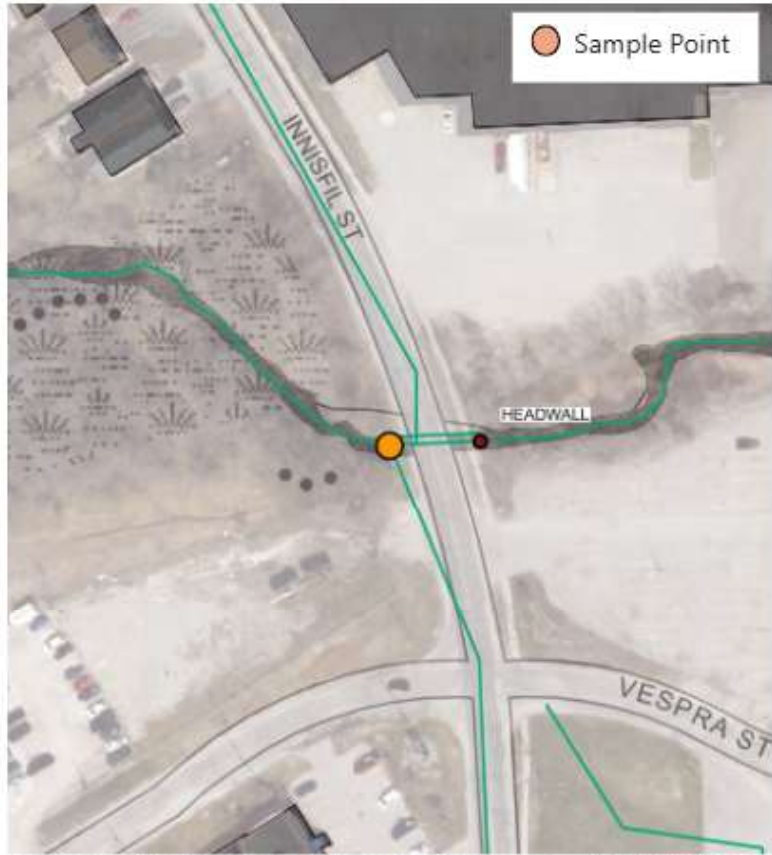
Notes:
 Ammonia = Total Ammonia as N
 Nitrate = Nitrate as N
 Nitrite = Nitrite as N
 Phosphorous = Total Phosphorous
 TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

LV27-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

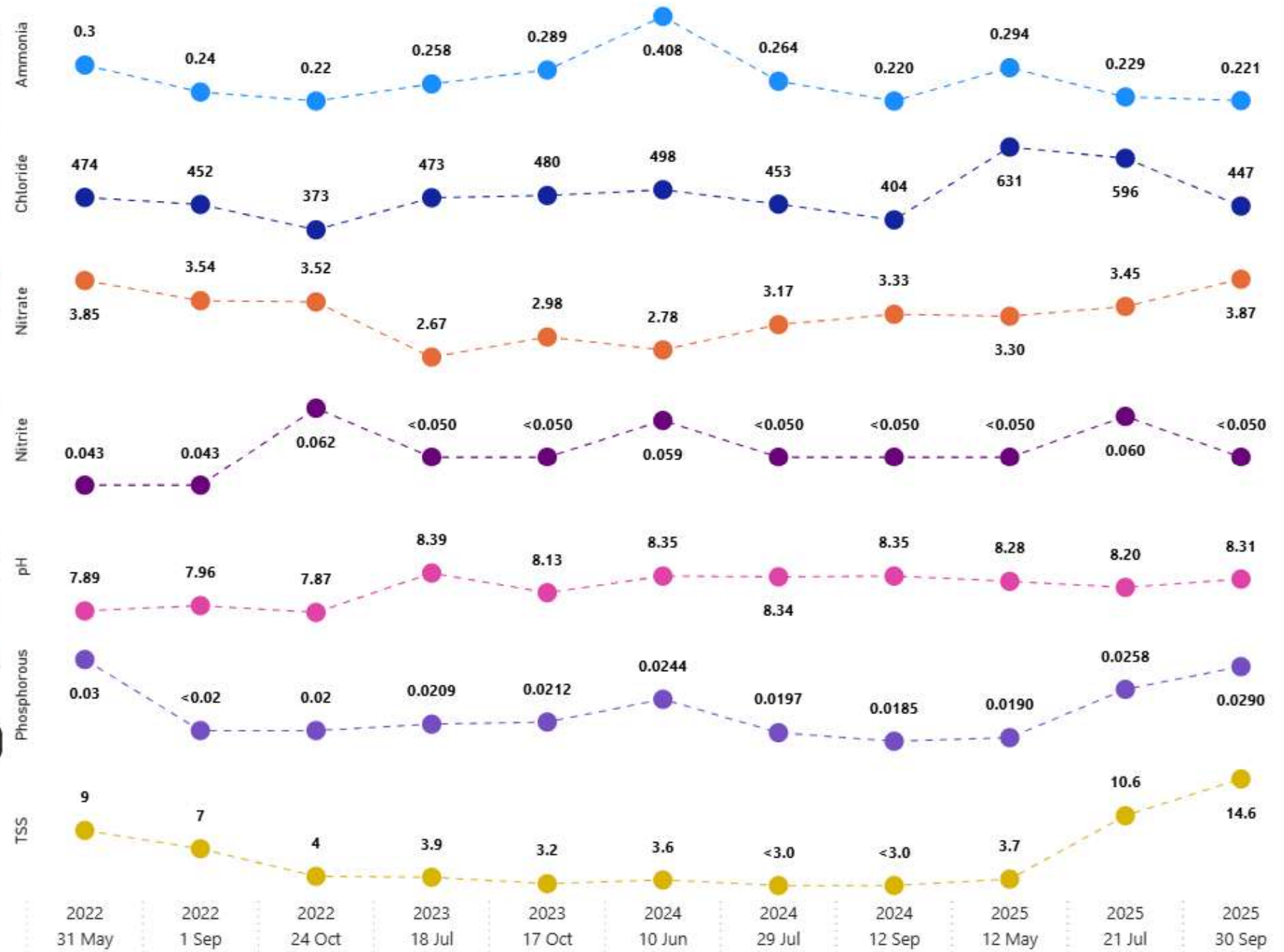
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



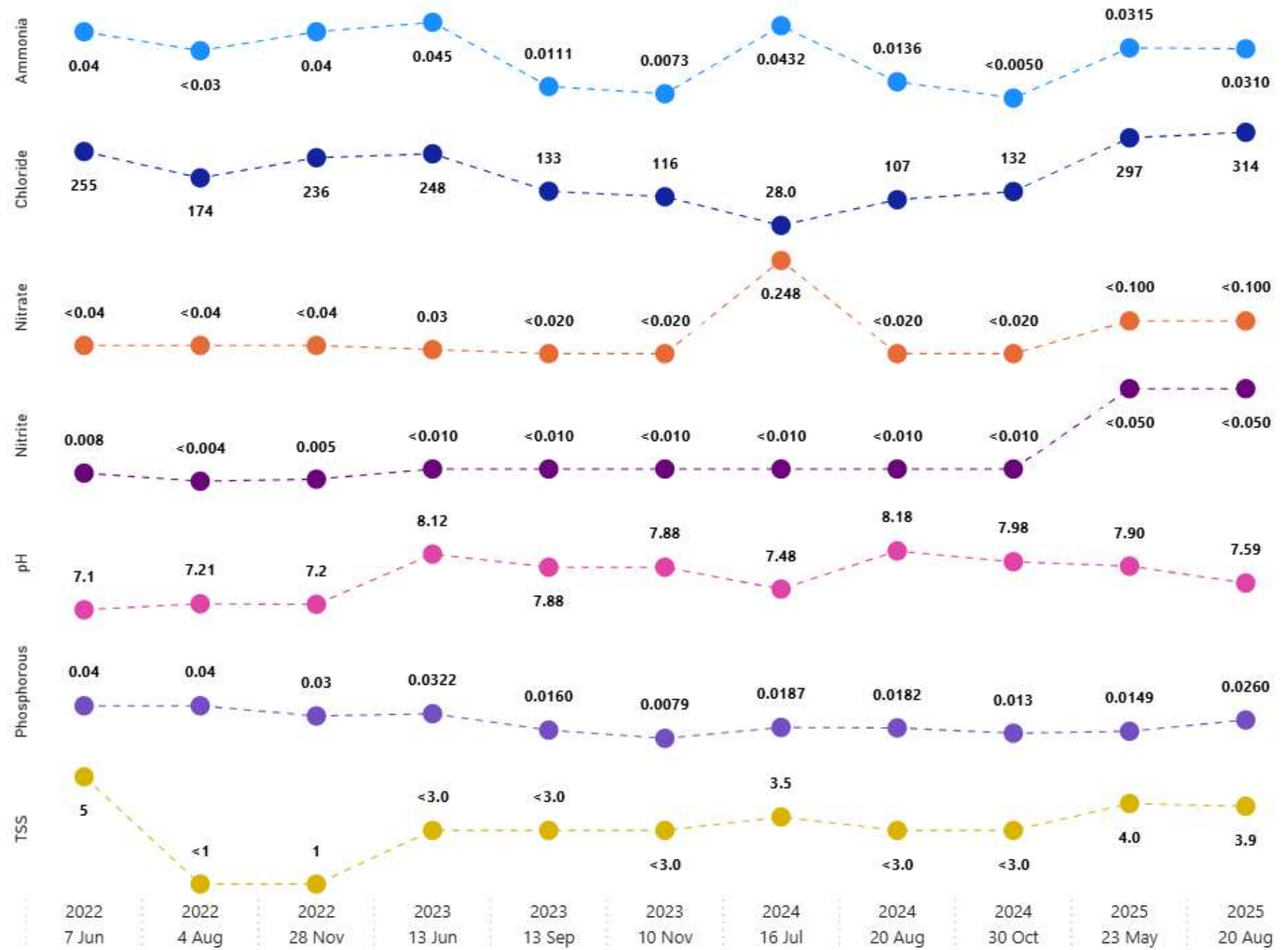
SWMF Water Quality Key Performance Indicator Trends



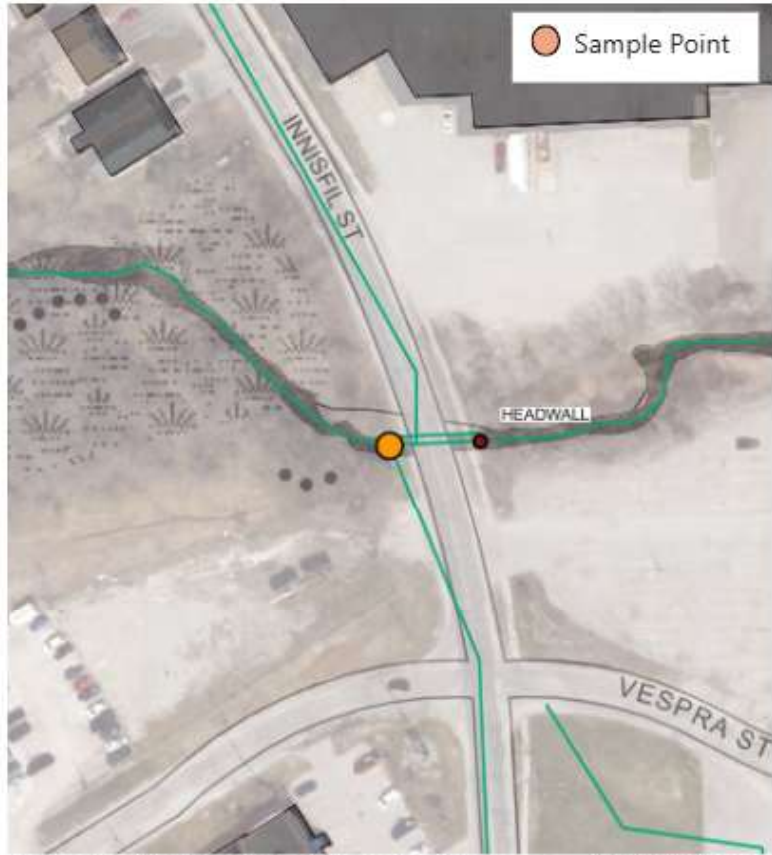
Notes:
 Ammonia = Total Ammonia as N
 Nitrate = Nitrate as N
 Nitrite = Nitrite as N
 Phosphorous = Total Phosphorous
 TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

LV49-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

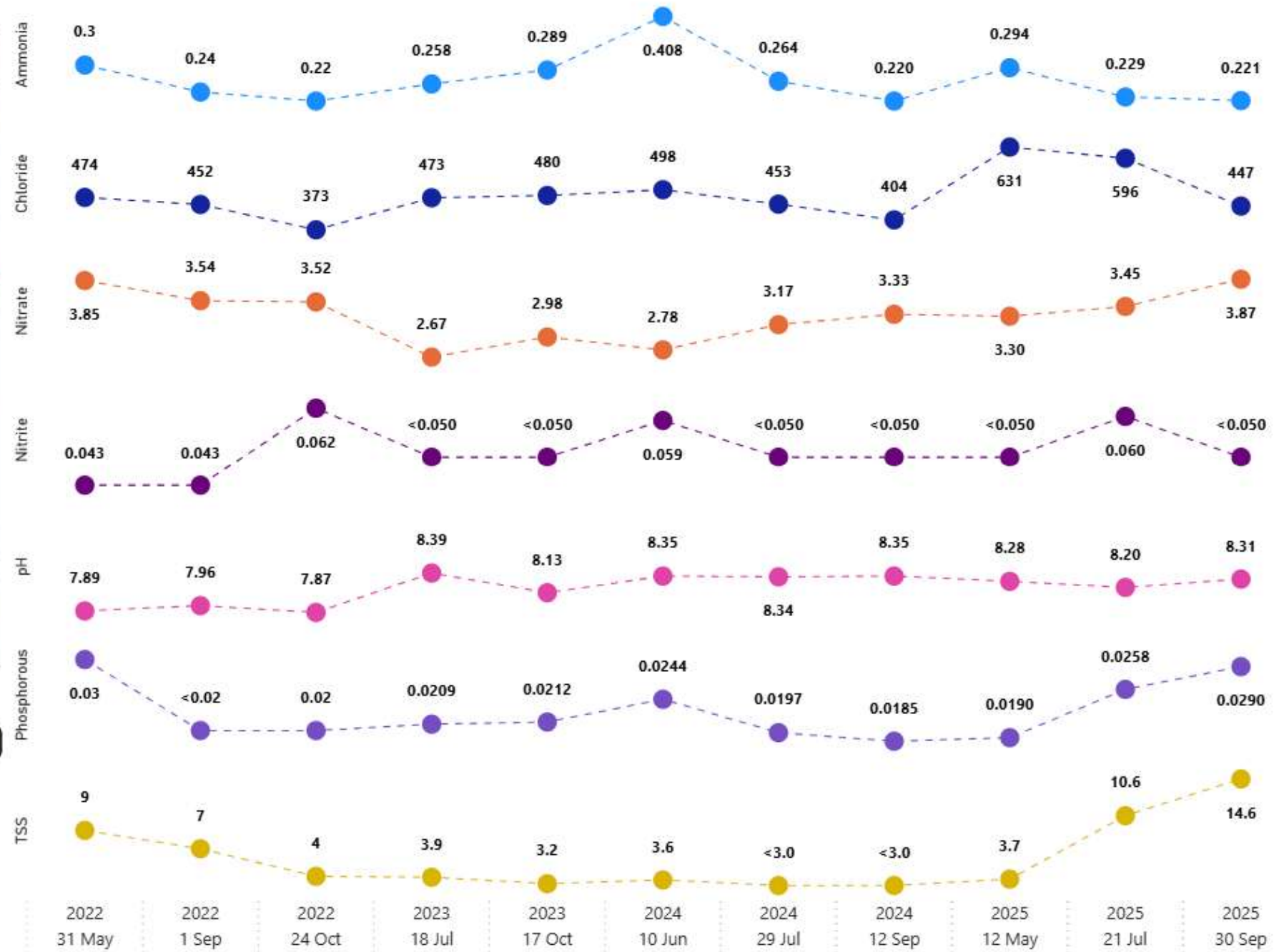
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



SWMF Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

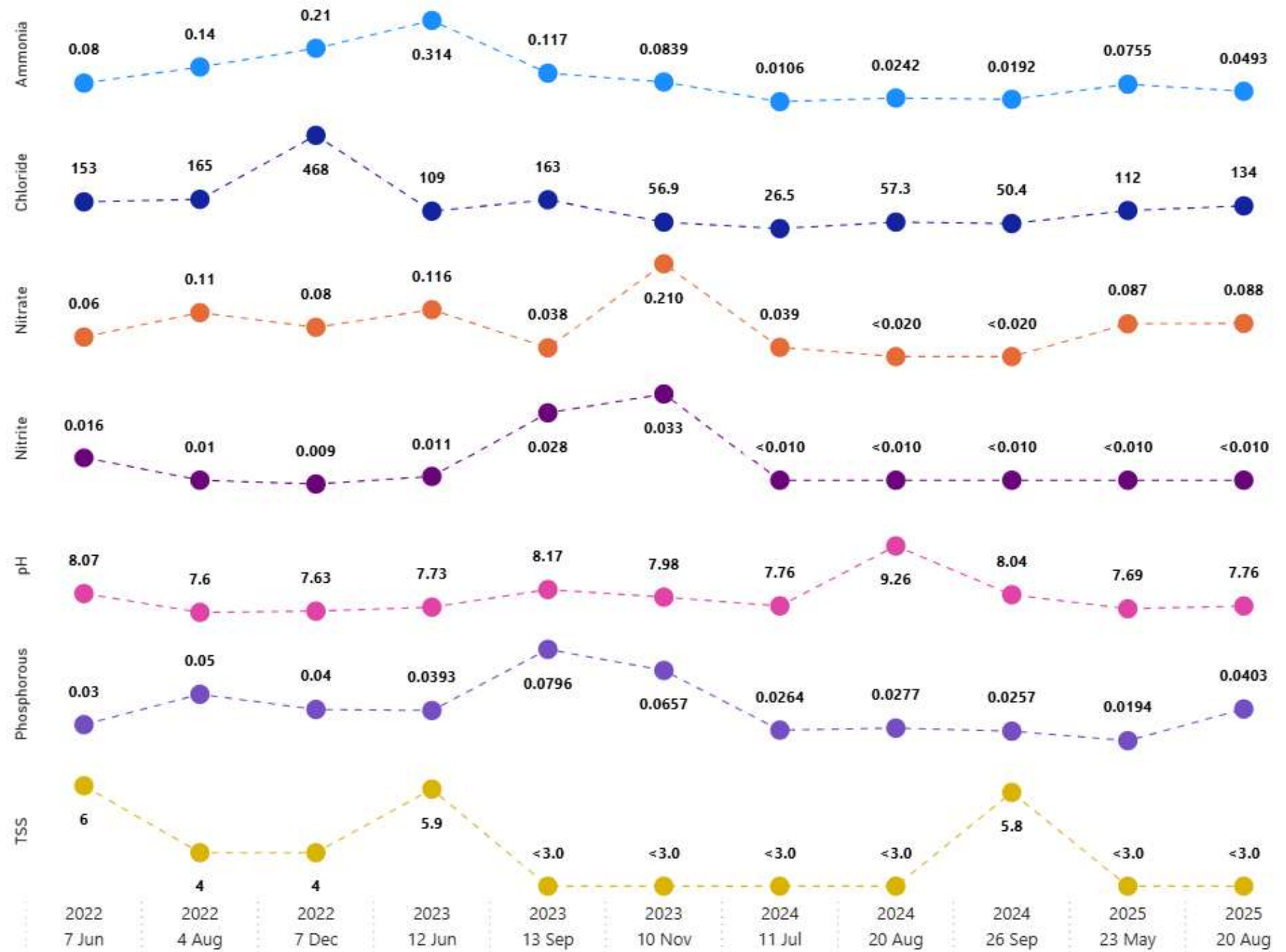
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

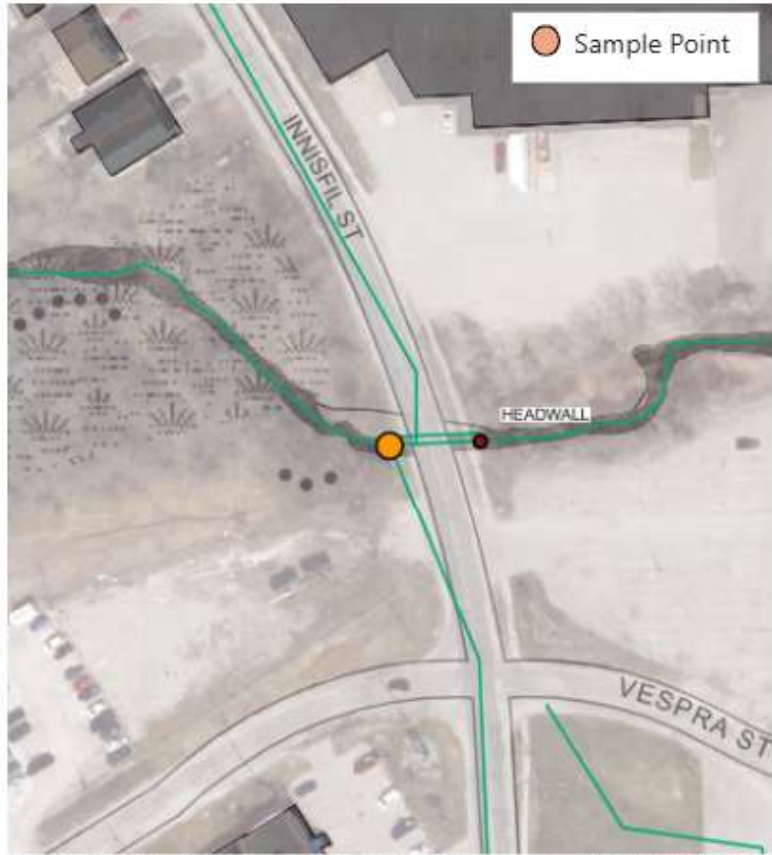
All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

LV50-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

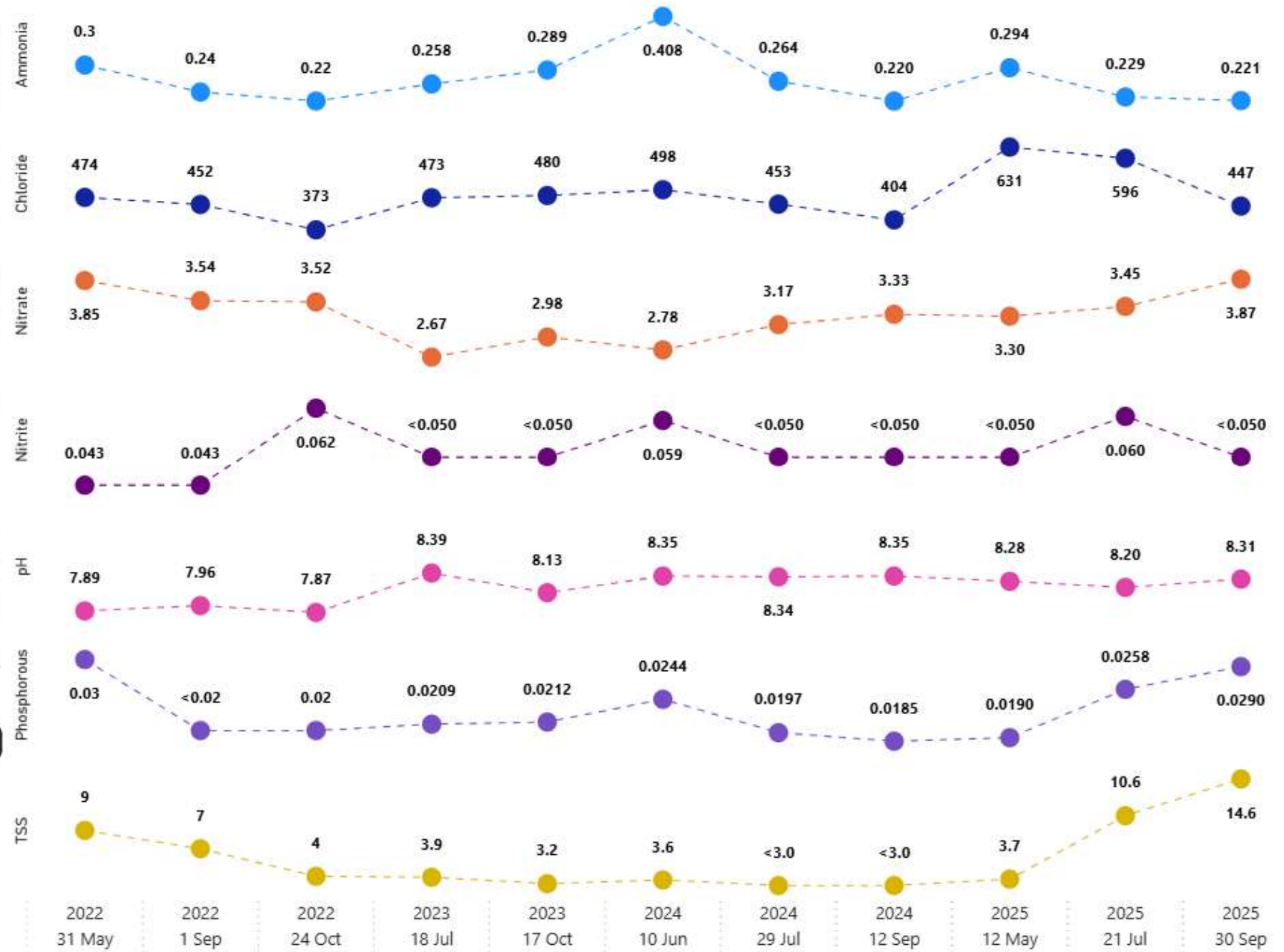
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

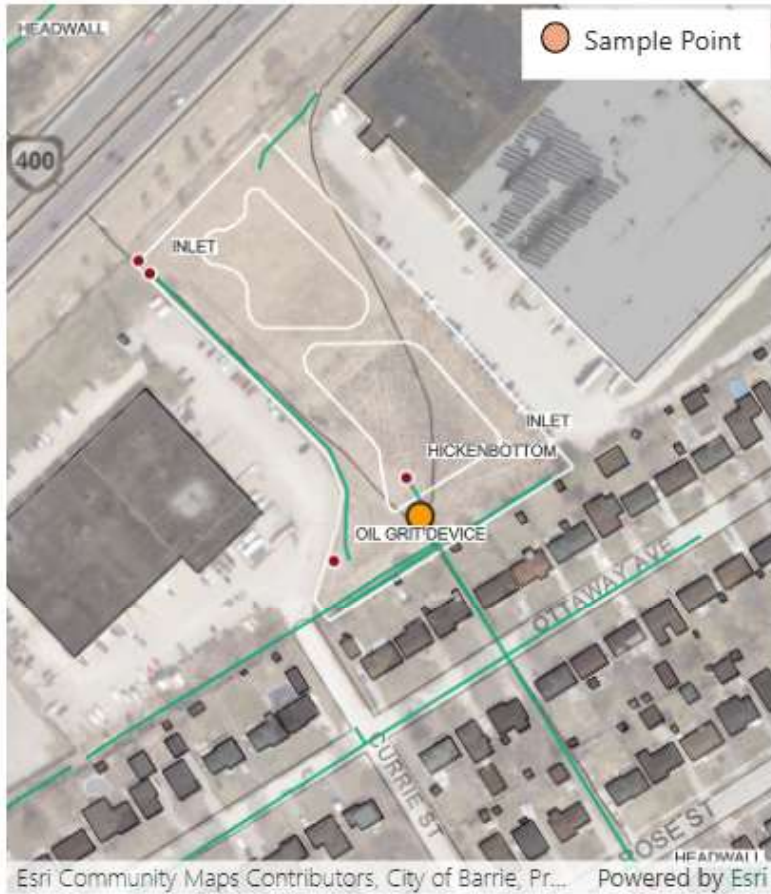
All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



SWMF Water Quality Key Performance Indicator Trends

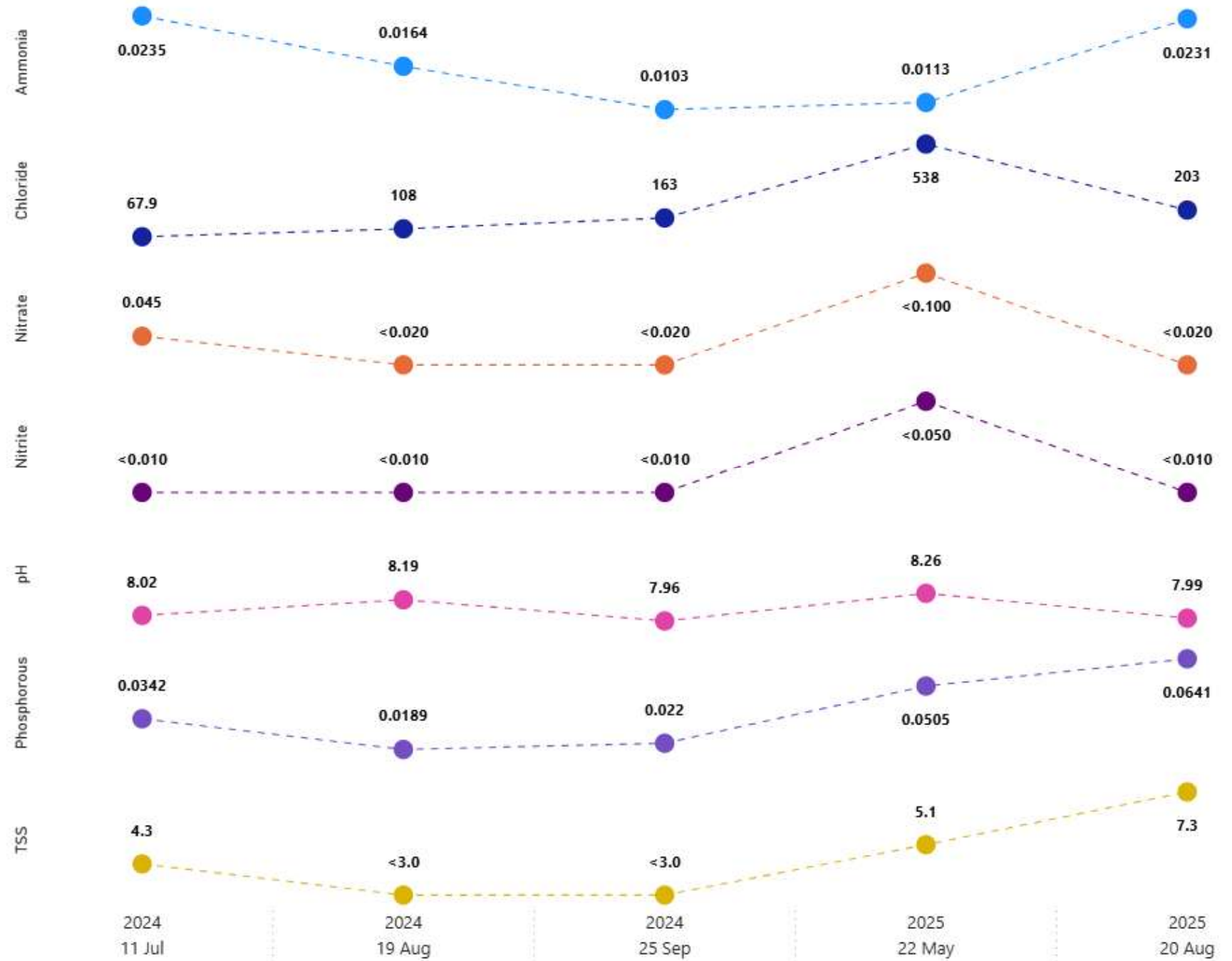


Notes:

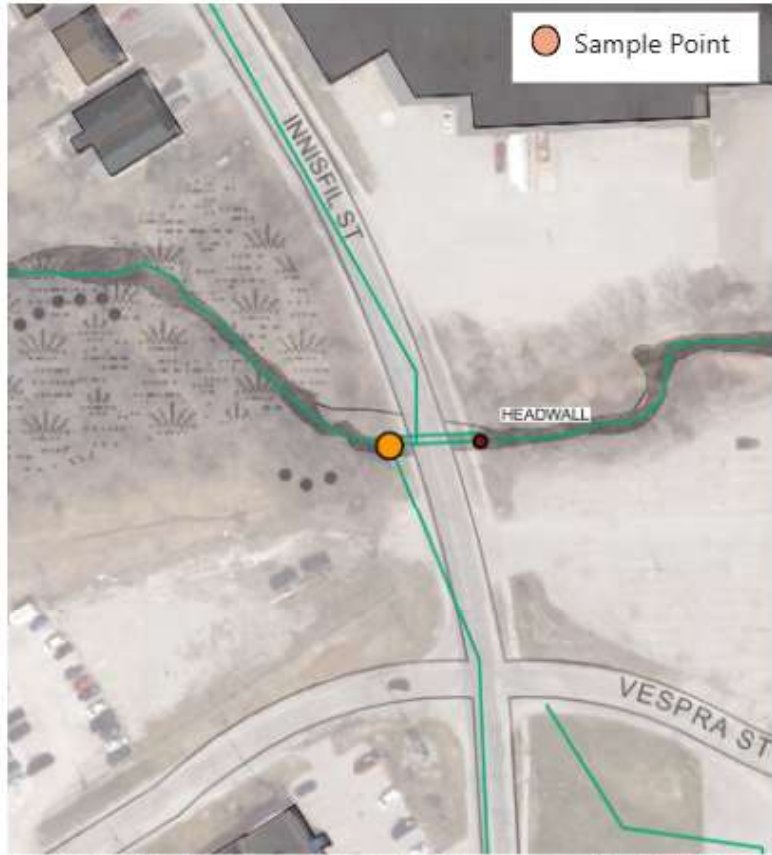
- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

SP03-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



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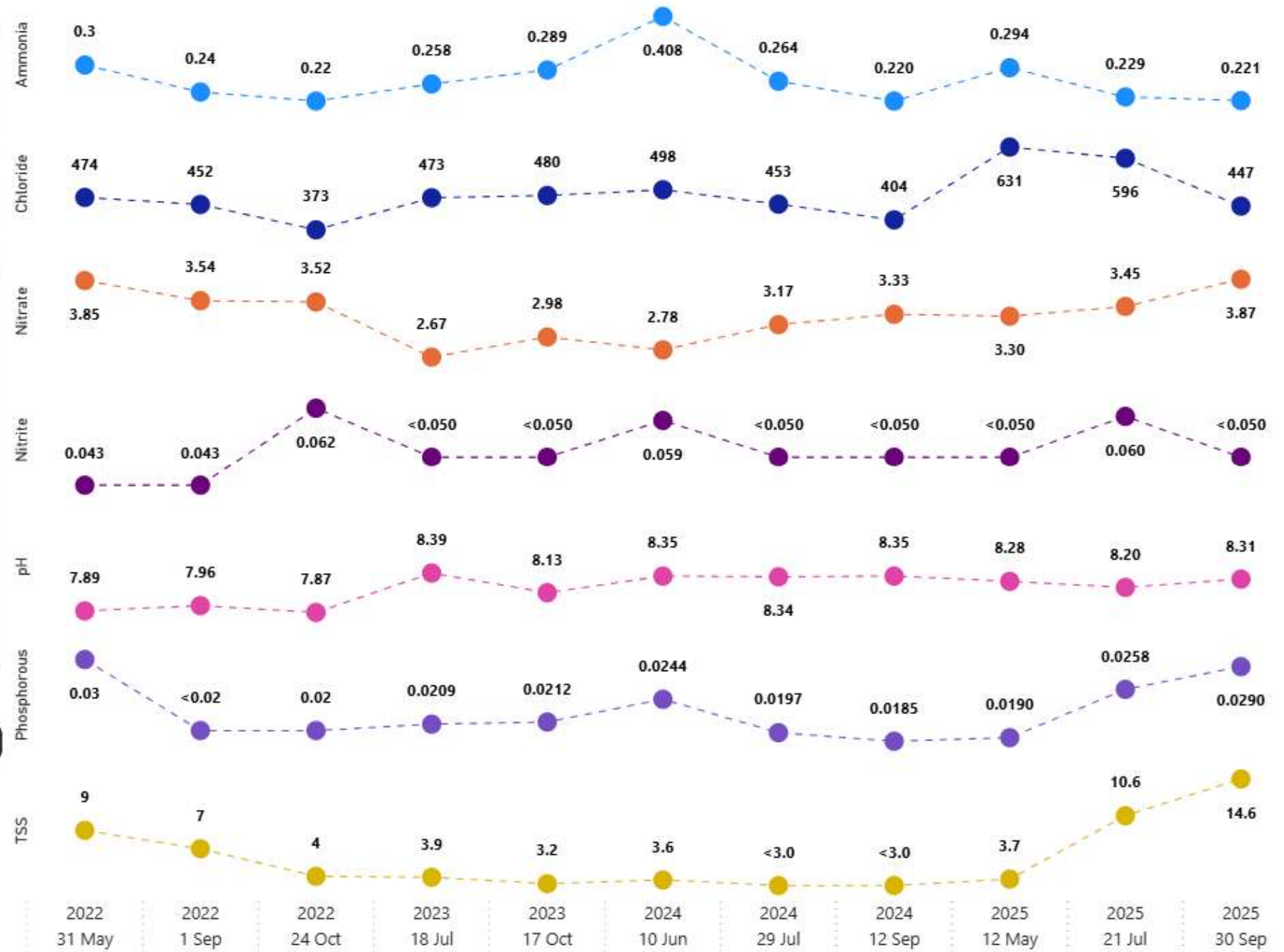
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

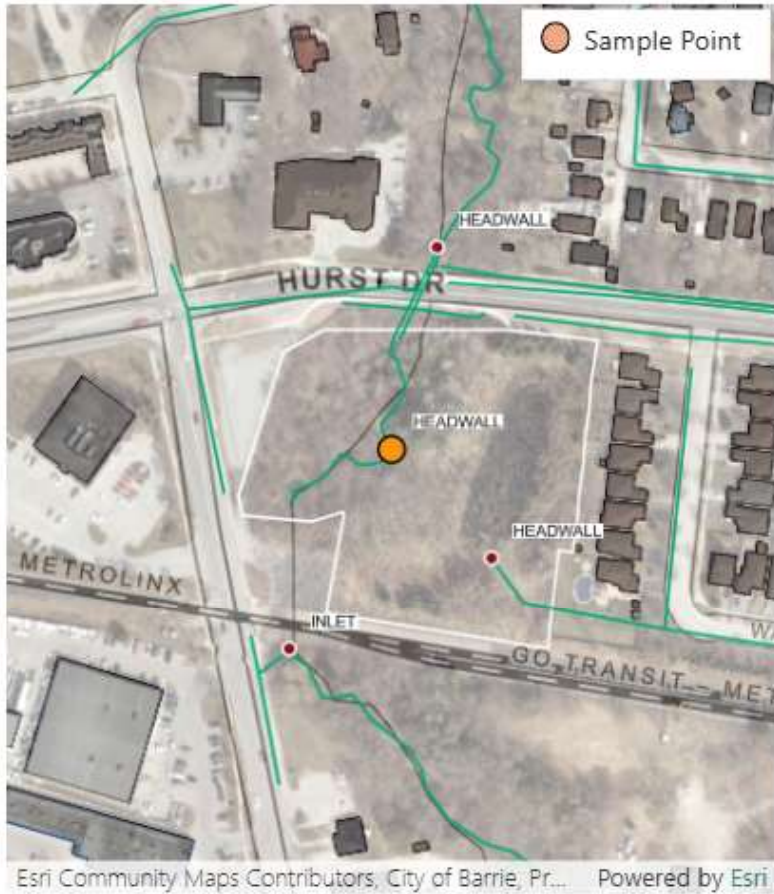
All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



SWMF Water Quality Key Performance Indicator Trends

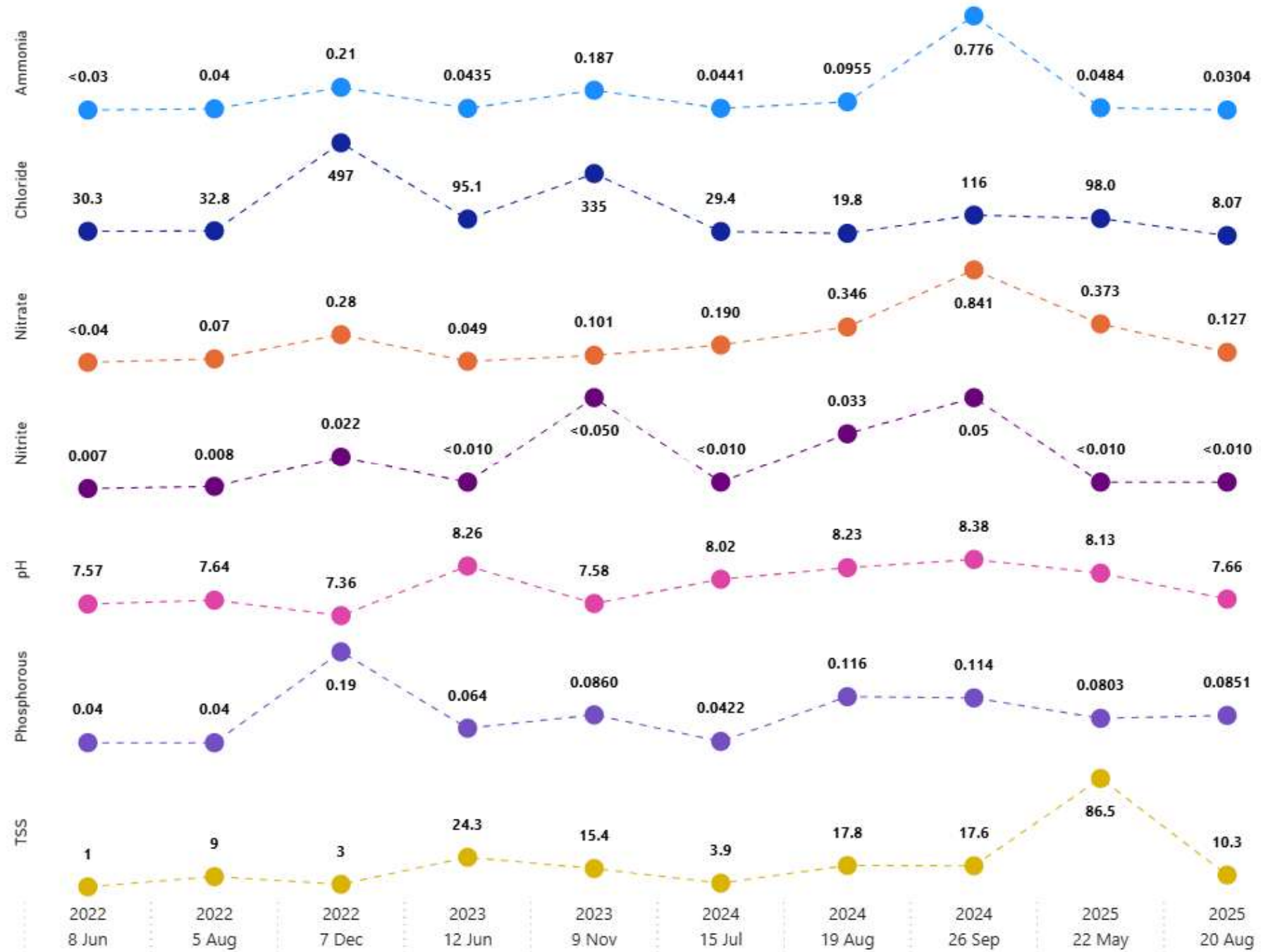


Notes:

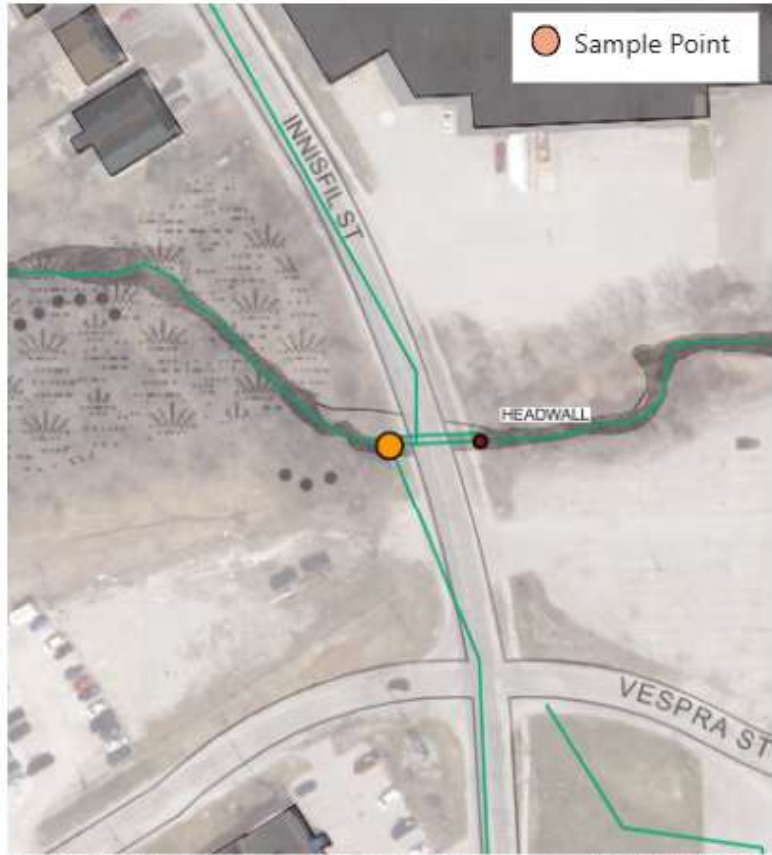
- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

WK04-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

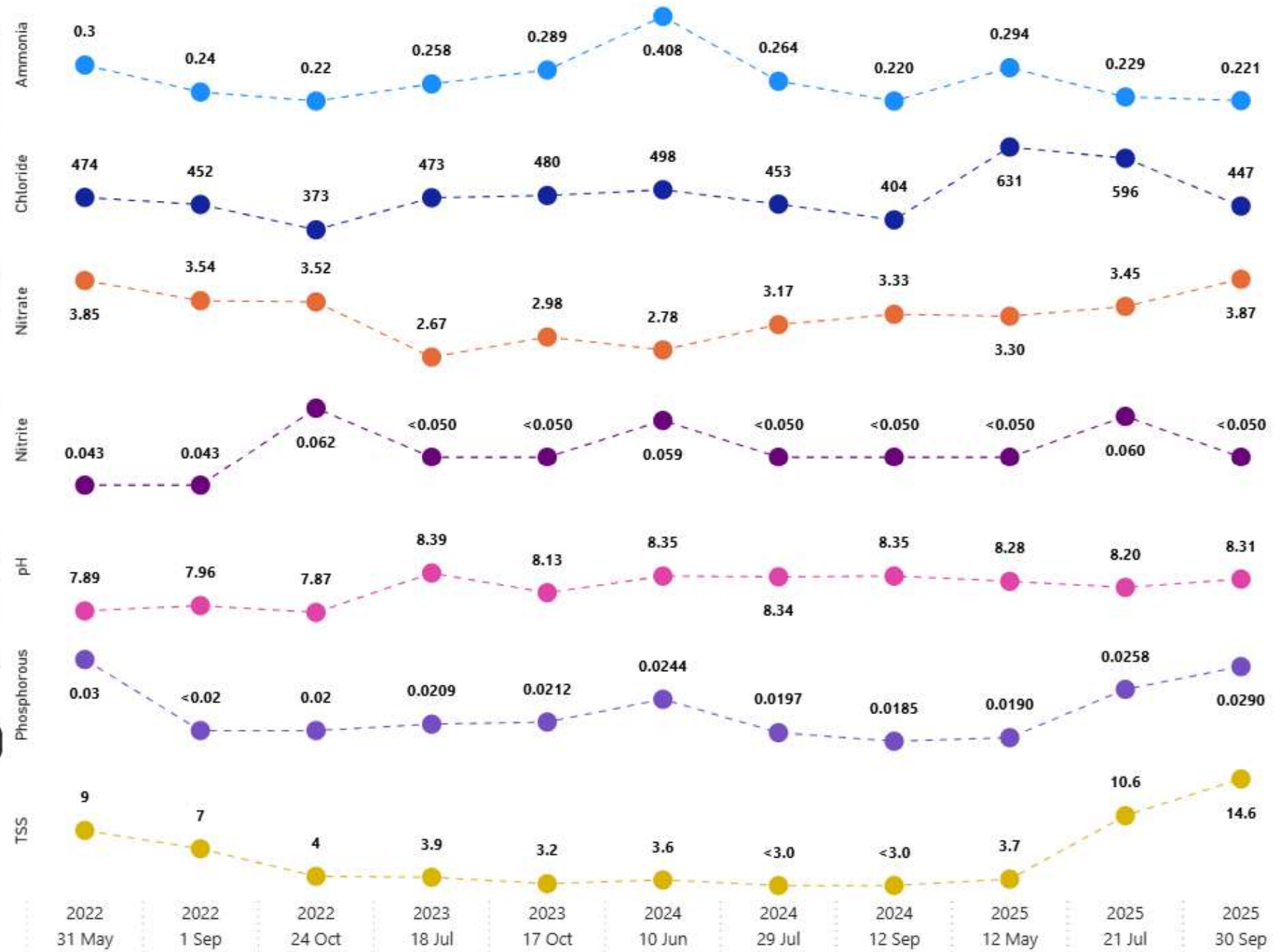
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



SWMF Water Quality Key Performance Indicator Trends



Notes:

Ammonia = Total Ammonia as N

Nitrate = Nitrate as N

Nitrite = Nitrite as N

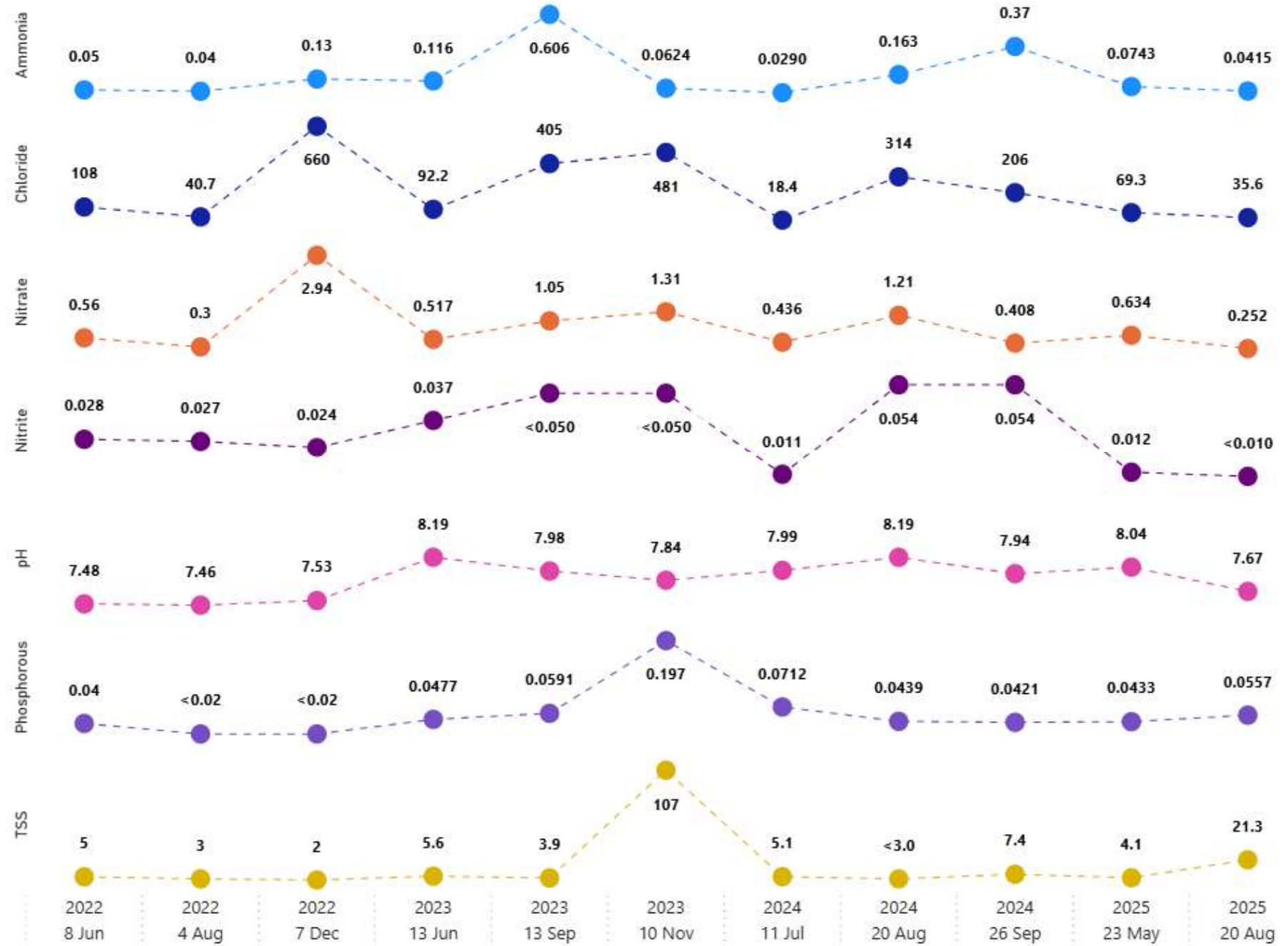
Phosphorous = Total Phosphorous

TSS = Total Suspended Solids

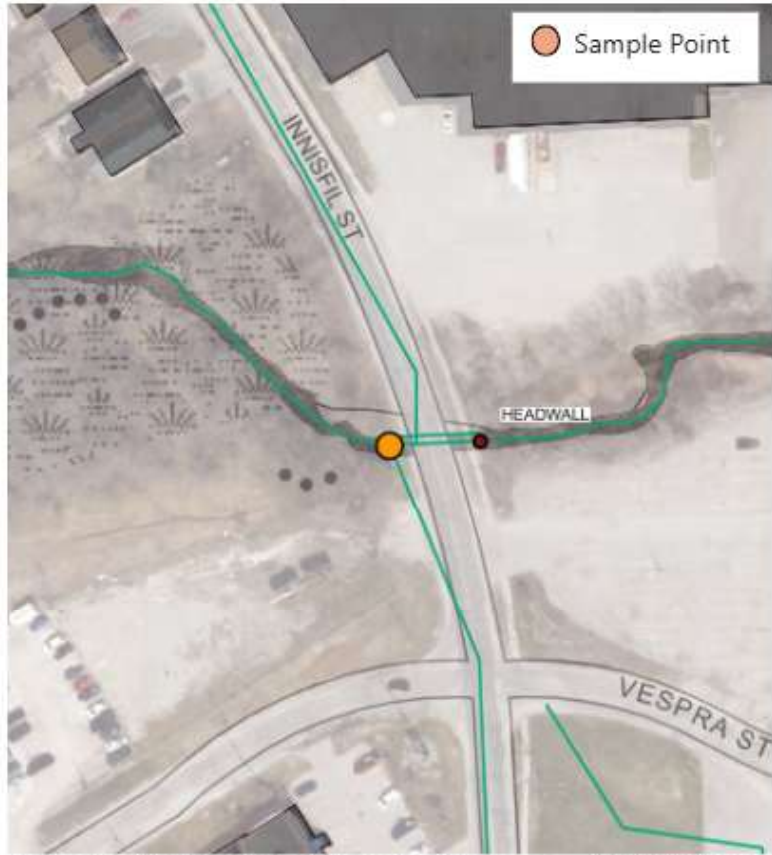
All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

WK05a-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

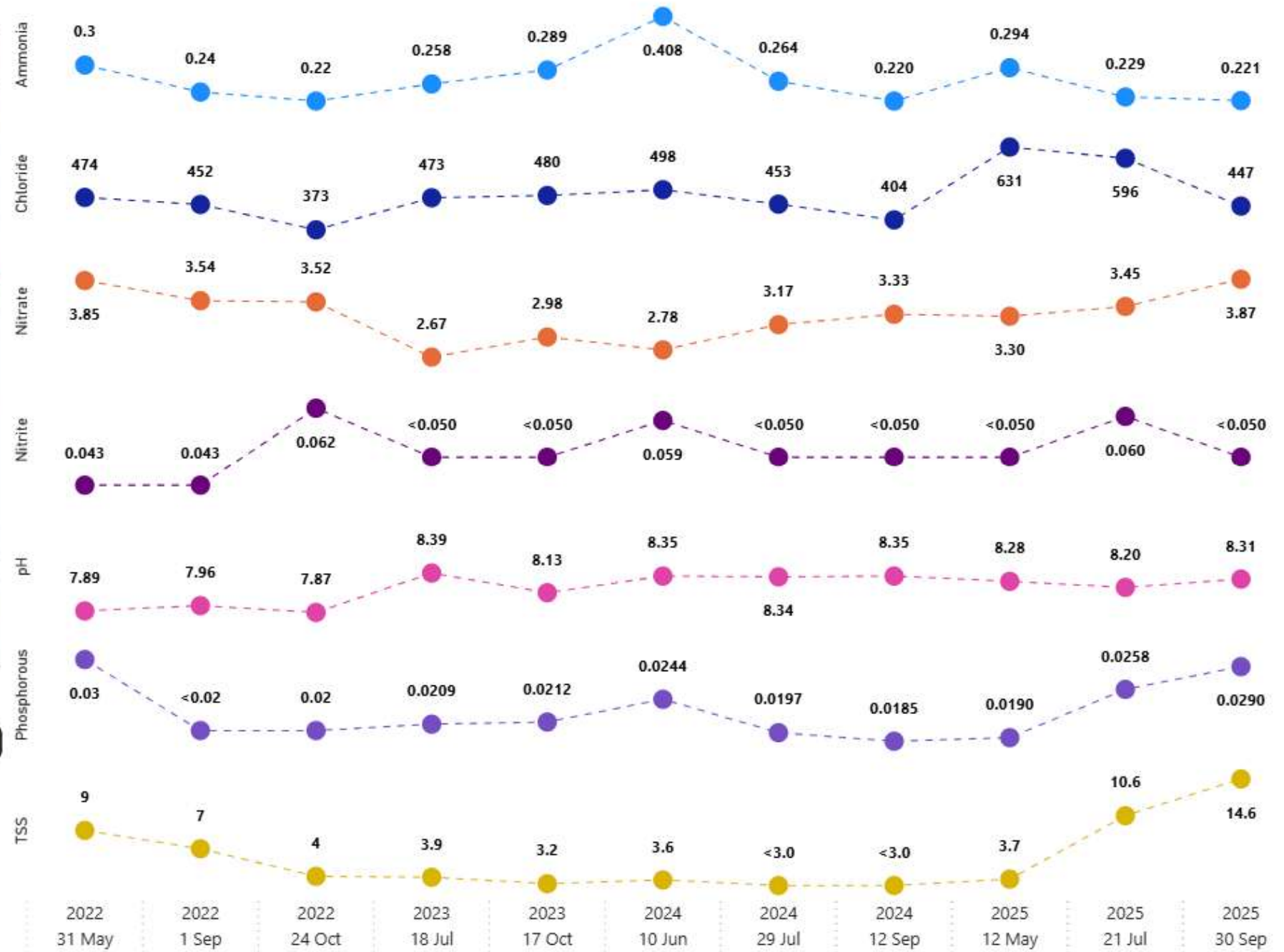
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK1-WC-SW



Appendix F – Laboratory Analysis – Watercourses

SWMF Water Quality Key Performance Indicator Trends



Notes:

Ammonia = Total Ammonia as N

Nitrate = Nitrate as N

Nitrite = Nitrite as N

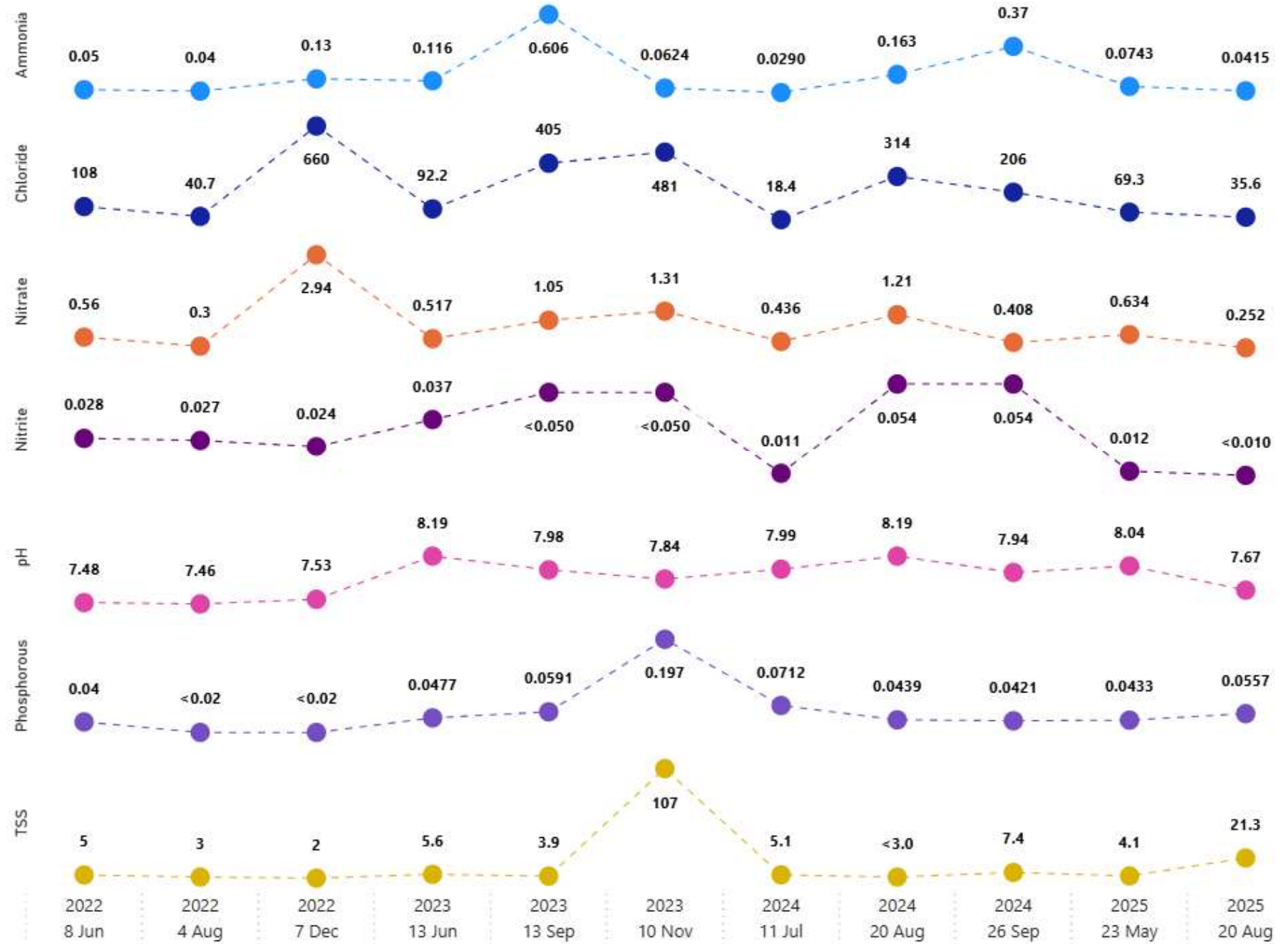
Phosphorous = Total Phosphorous

TSS = Total Suspended Solids

All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

WK05a-SWMF-SW



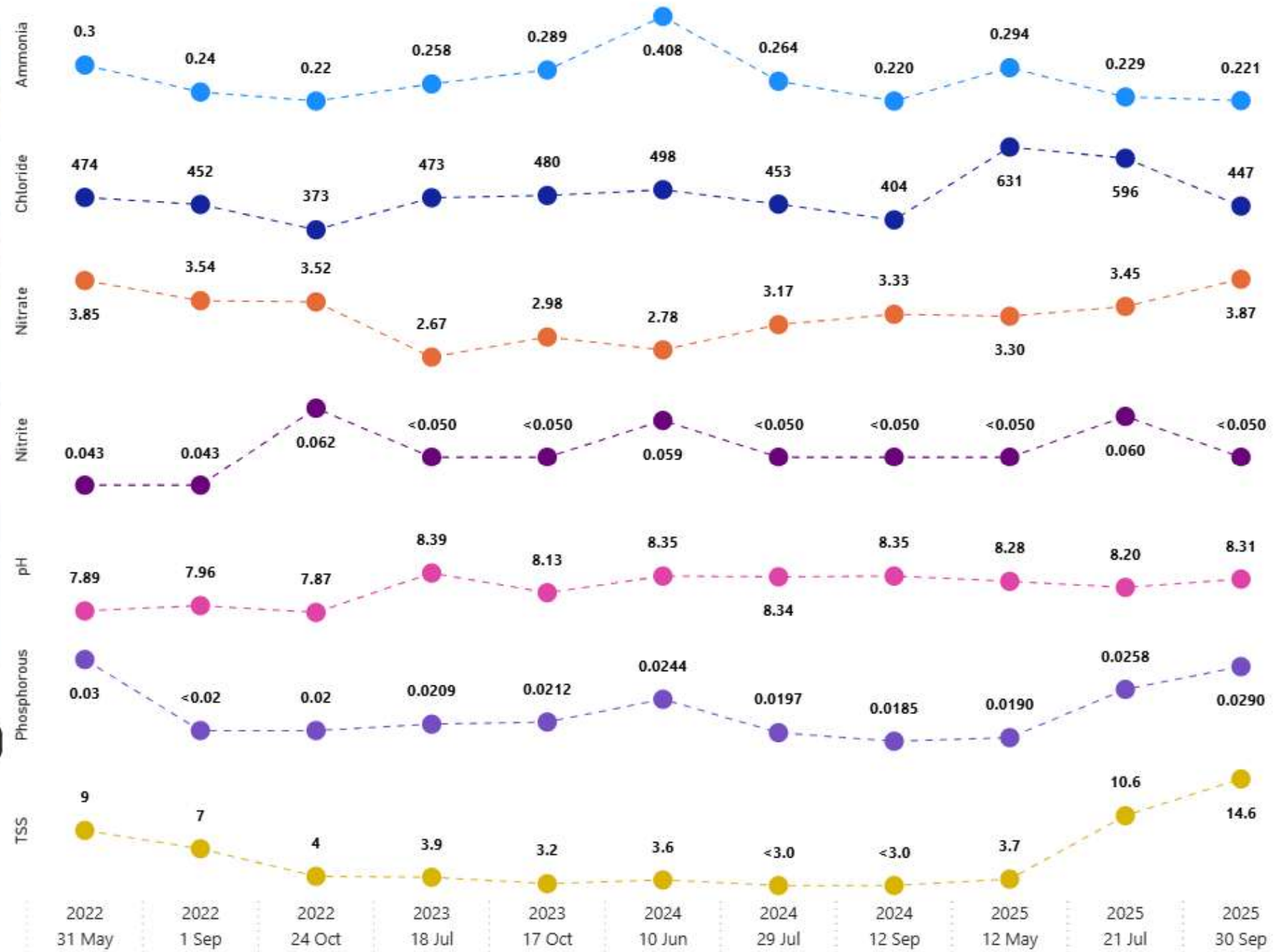
Watercourse Water Quality Key Performance Indicator Trends



Notes:
 Ammonia = Total Ammonia as N
 Nitrate = Nitrate as N
 Nitrite = Nitrite as N
 Phosphorous = Total Phosphorous
 TSS = Total Suspended Solids

BK1-WC-SW

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



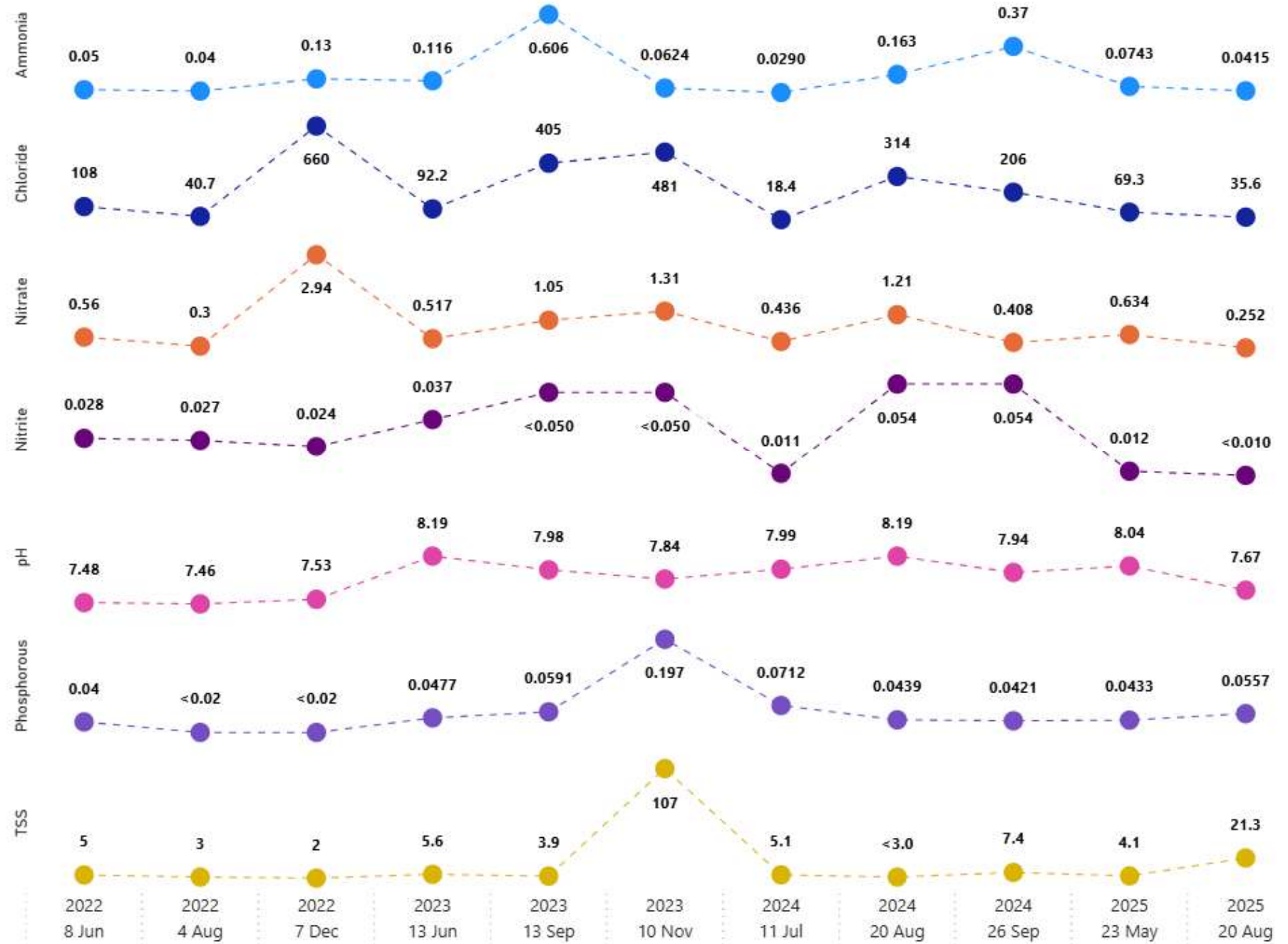
SWMF Water Quality Key Performance Indicator Trends



Notes:
 Ammonia = Total Ammonia as N
 Nitrate = Nitrate as N
 Nitrite = Nitrite as N
 Phosphorous = Total Phosphorous
 TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

WK05a-SWMF-SW



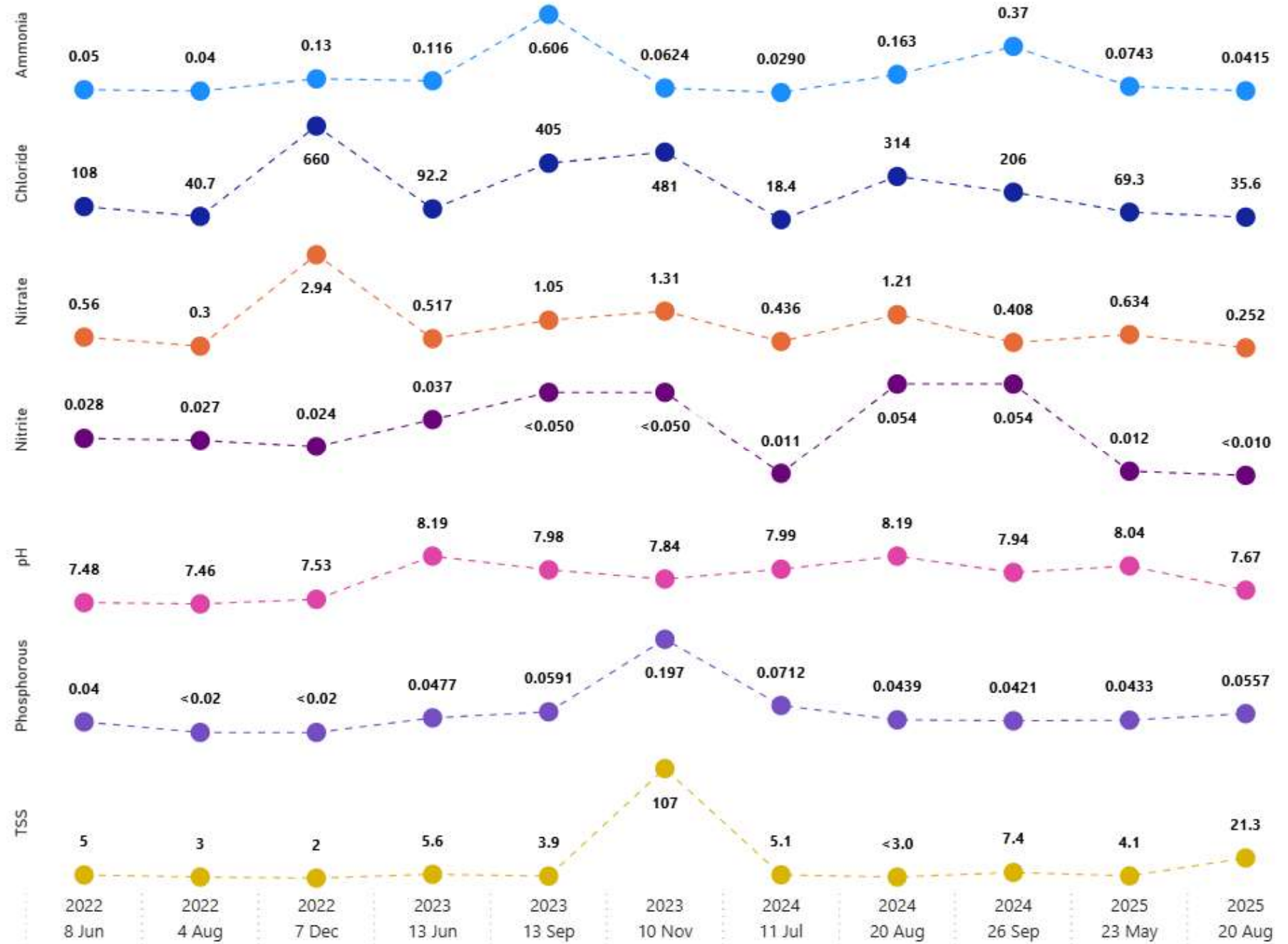
SWMF Water Quality Key Performance Indicator Trends



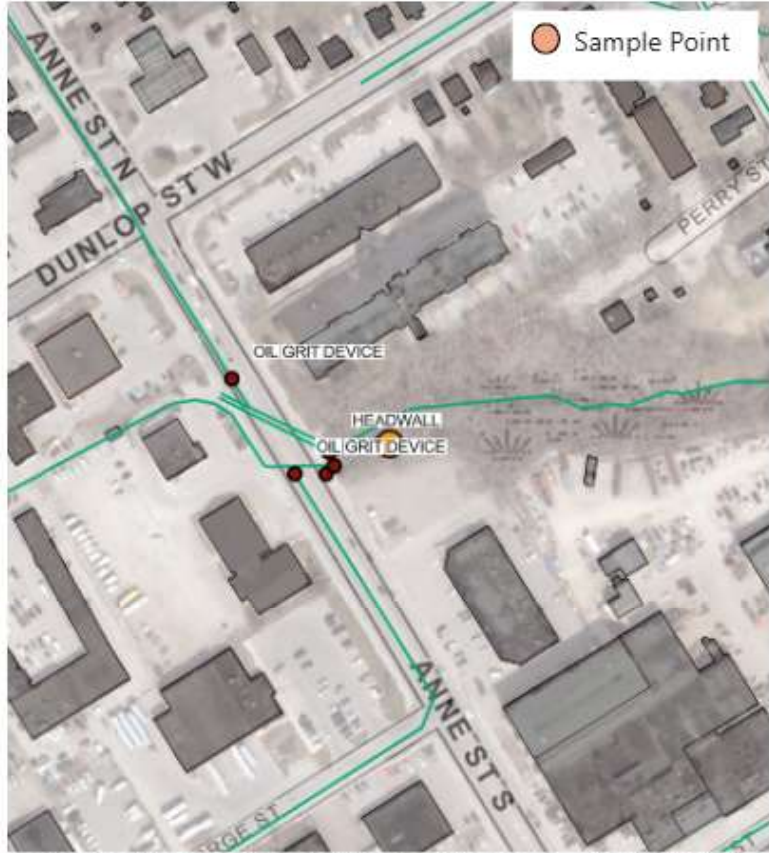
Notes:
 Ammonia = Total Ammonia as N
 Nitrate = Nitrate as N
 Nitrite = Nitrite as N
 Phosphorous = Total Phosphorous
 TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

WK05a-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



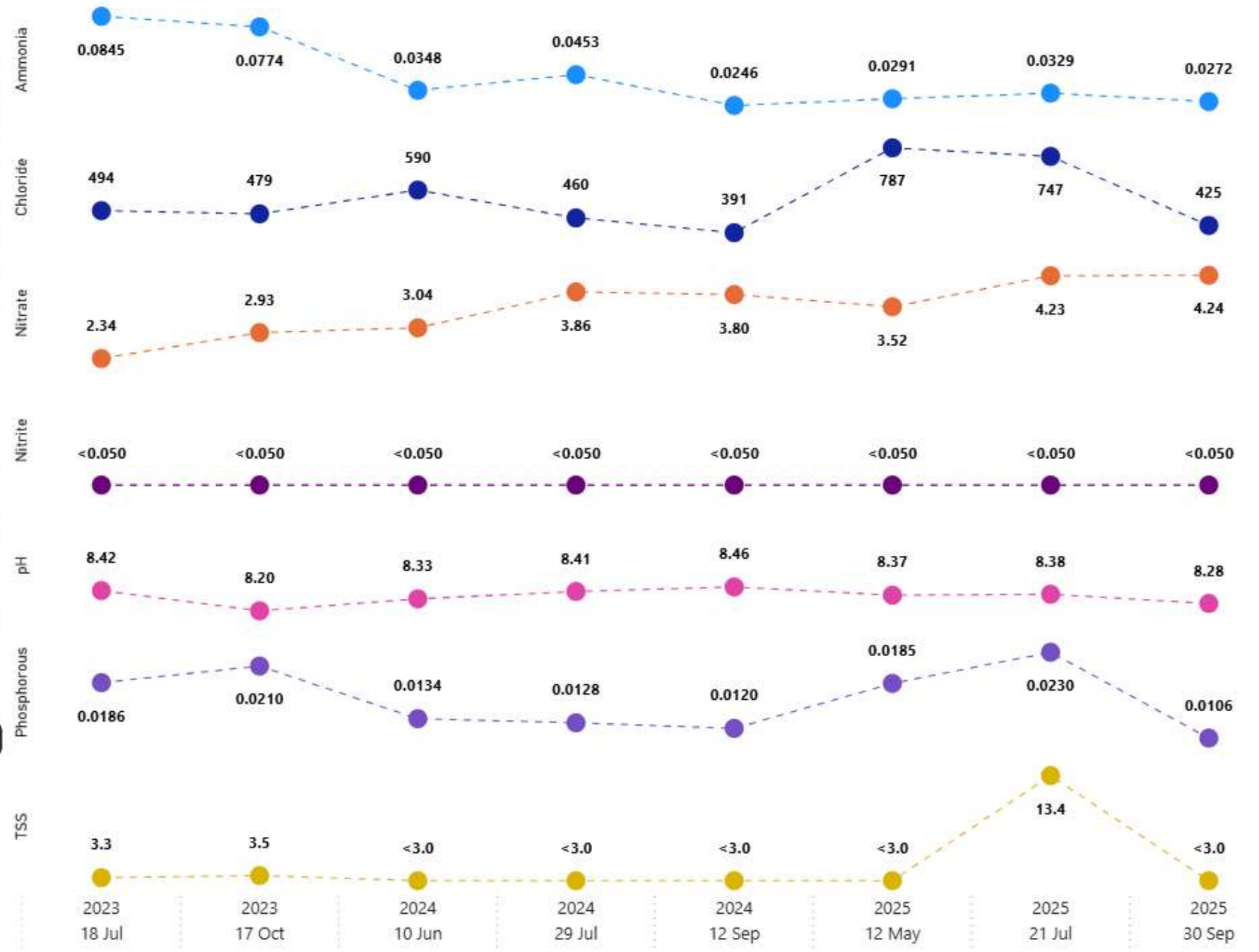
Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BK3-WC-SW



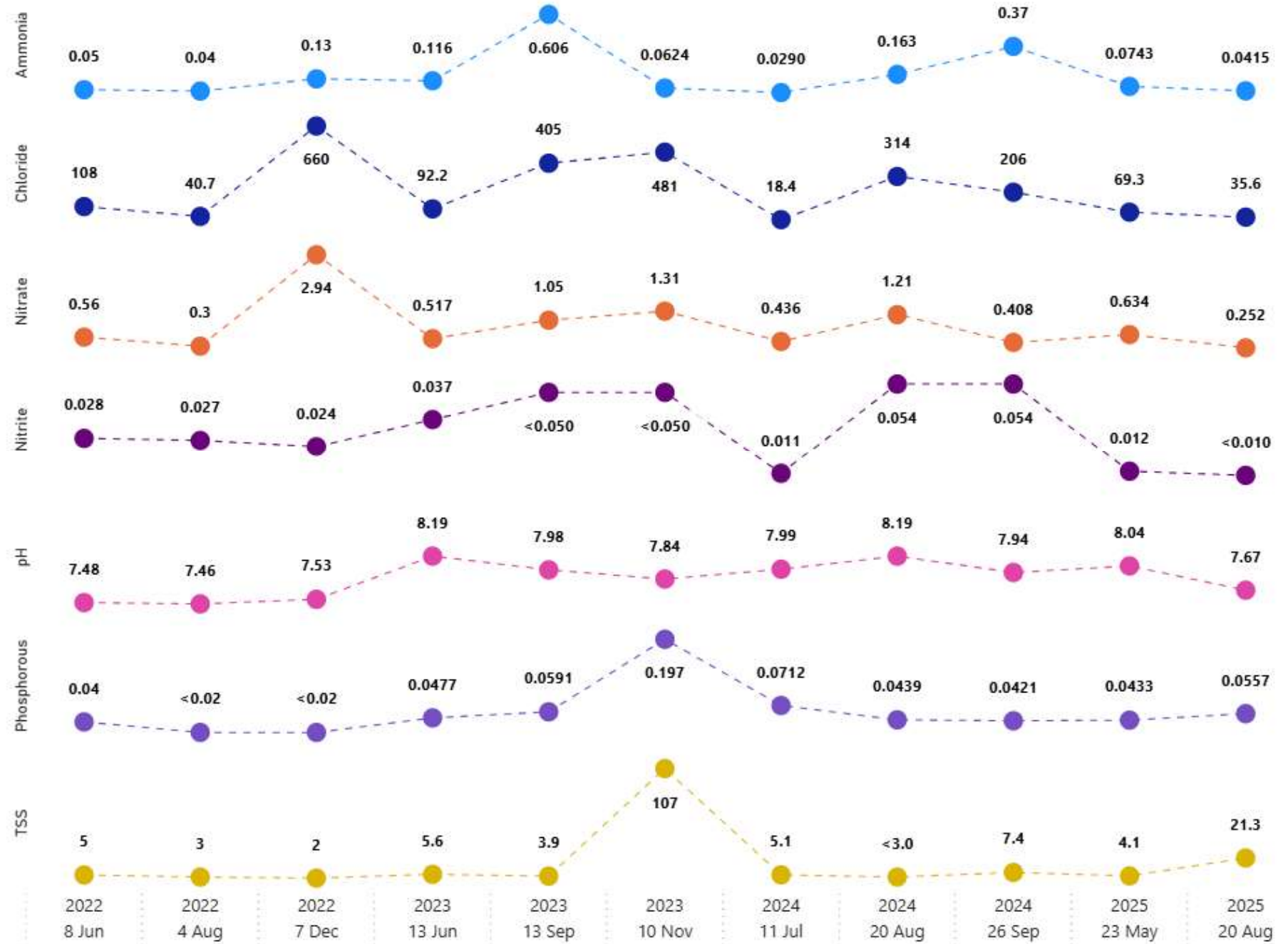
SWMF Water Quality Key Performance Indicator Trends



Notes:
 Ammonia = Total Ammonia as N
 Nitrate = Nitrate as N
 Nitrite = Nitrite as N
 Phosphorous = Total Phosphorous
 TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

WK05a-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



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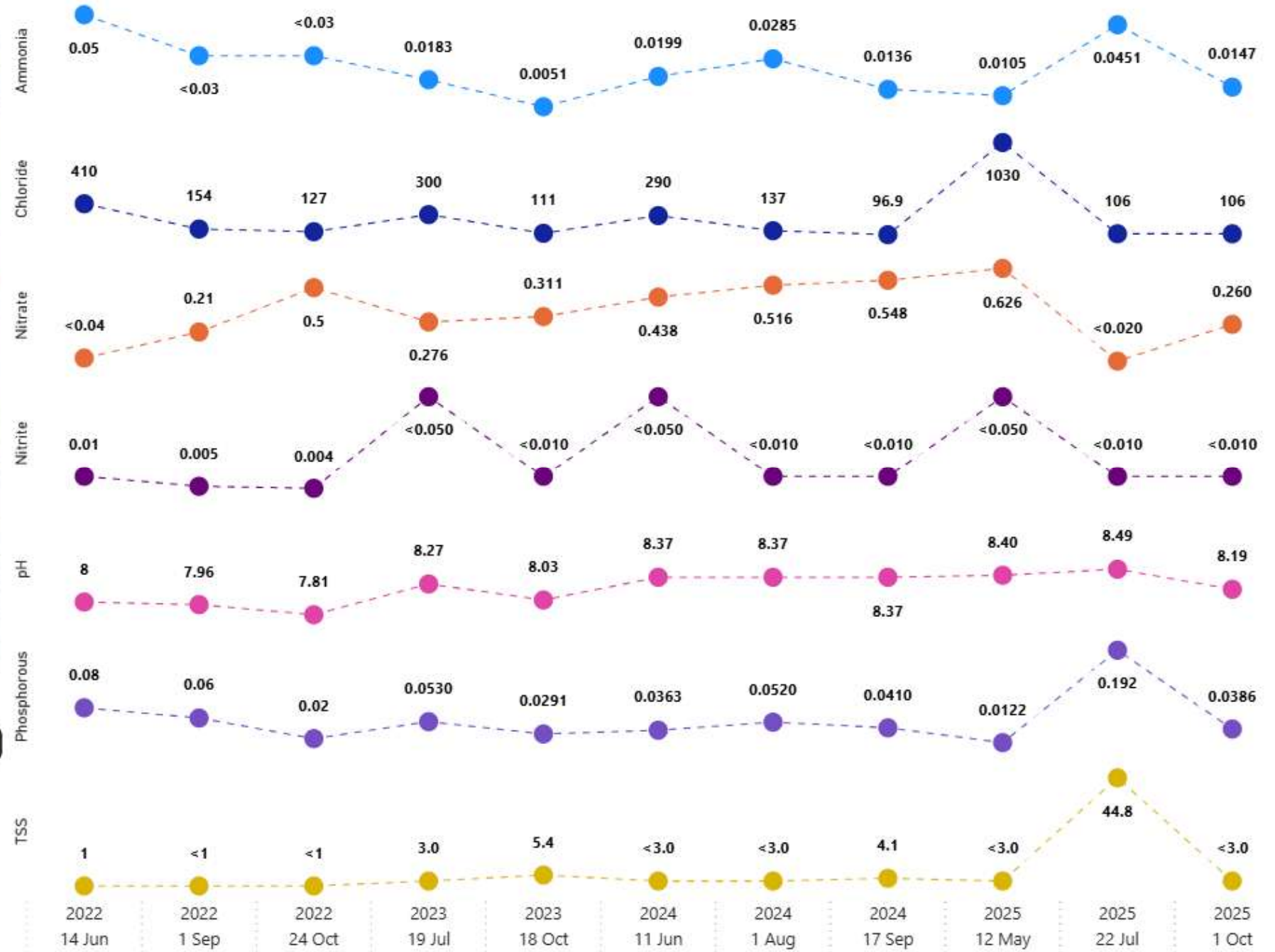
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BR1-WC-SW



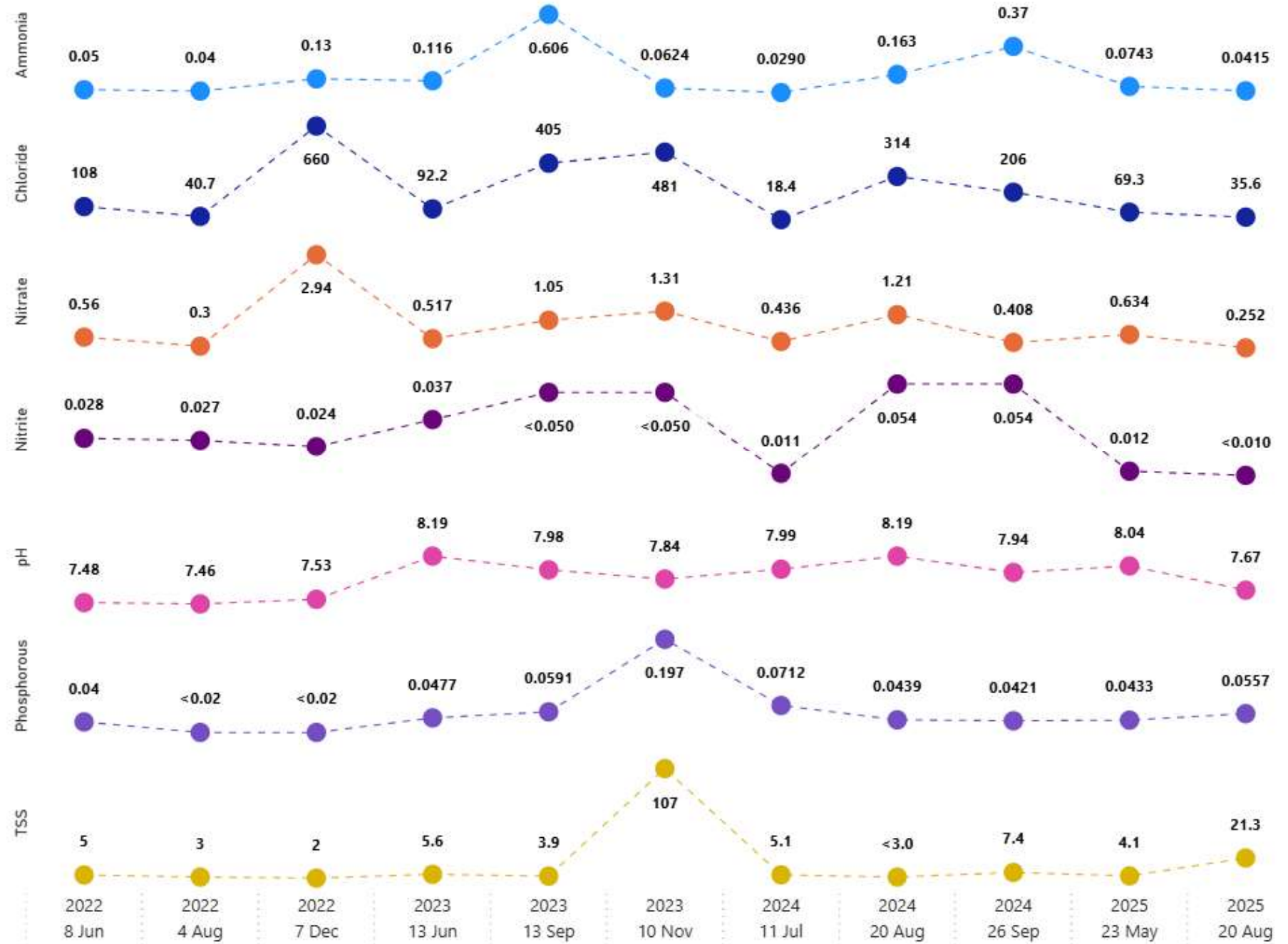
SWMF Water Quality Key Performance Indicator Trends



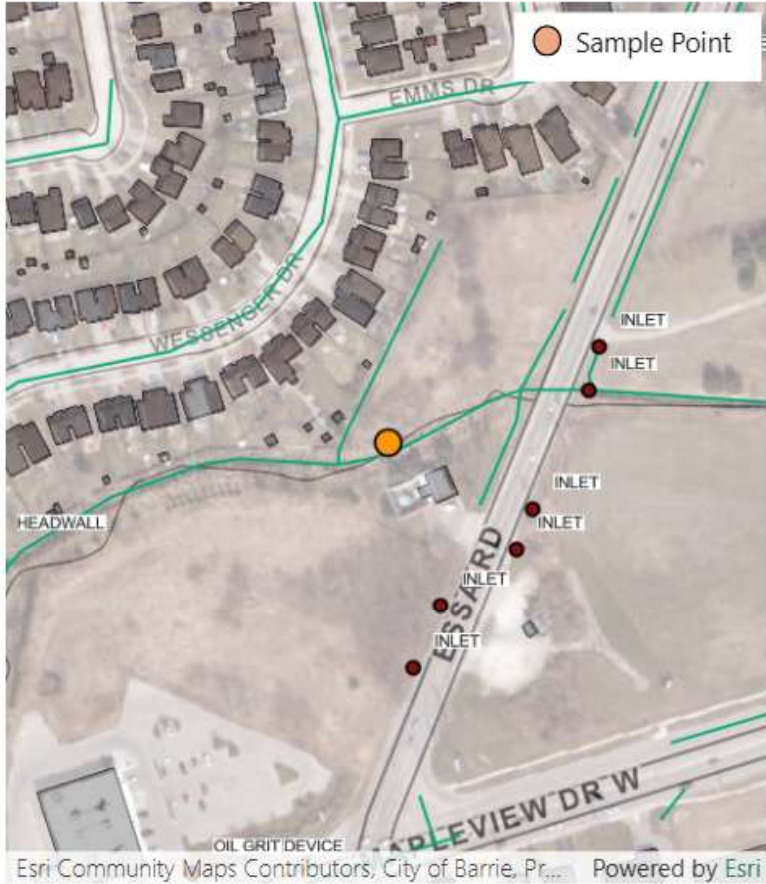
Notes:
 Ammonia = Total Ammonia as N
 Nitrate = Nitrate as N
 Nitrite = Nitrite as N
 Phosphorous = Total Phosphorous
 TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

WK05a-SWMF-SW



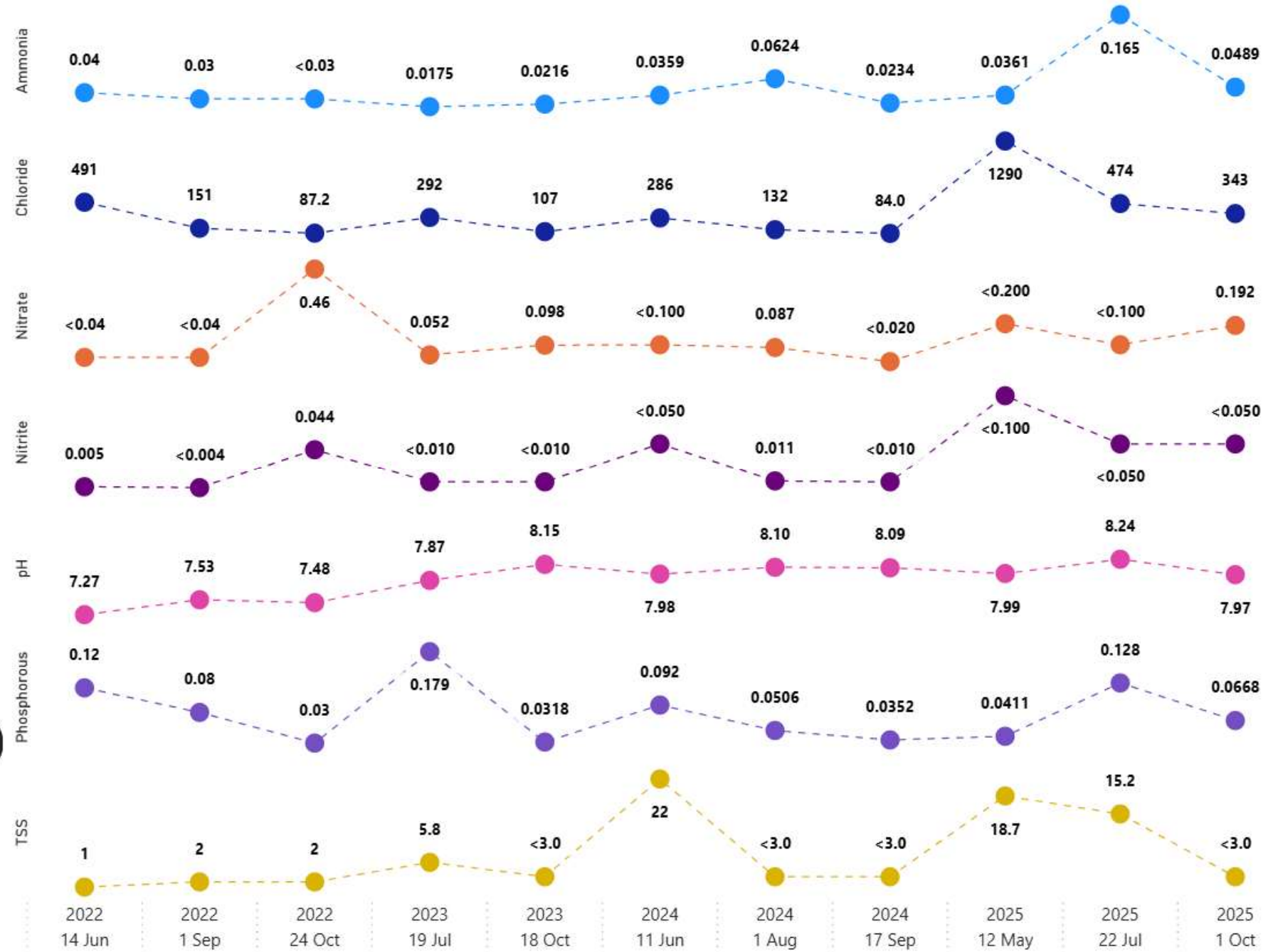
Watercourse Water Quality Key Performance Indicator Trends



- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

BR2-WC-SW



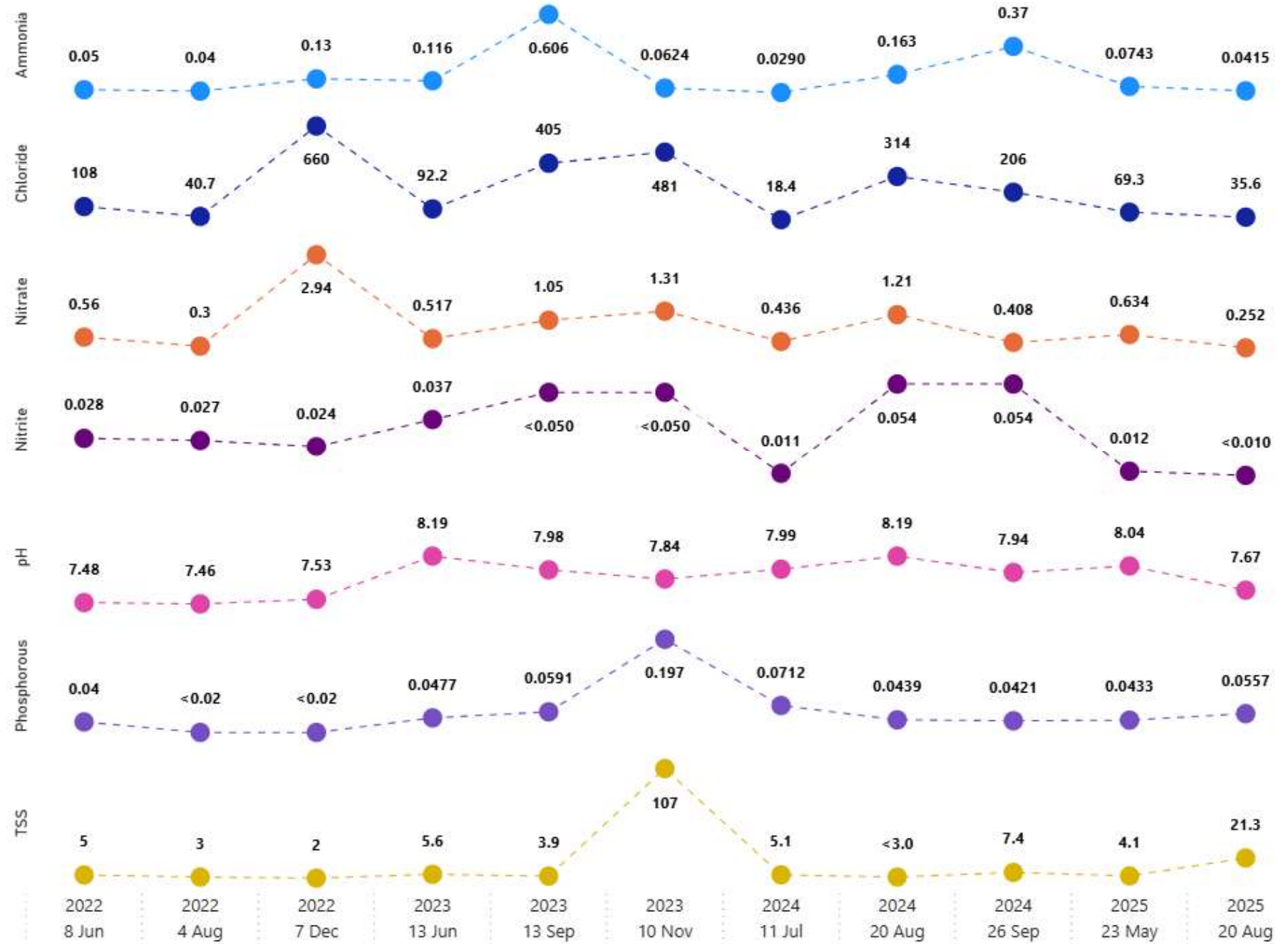
SWMF Water Quality Key Performance Indicator Trends



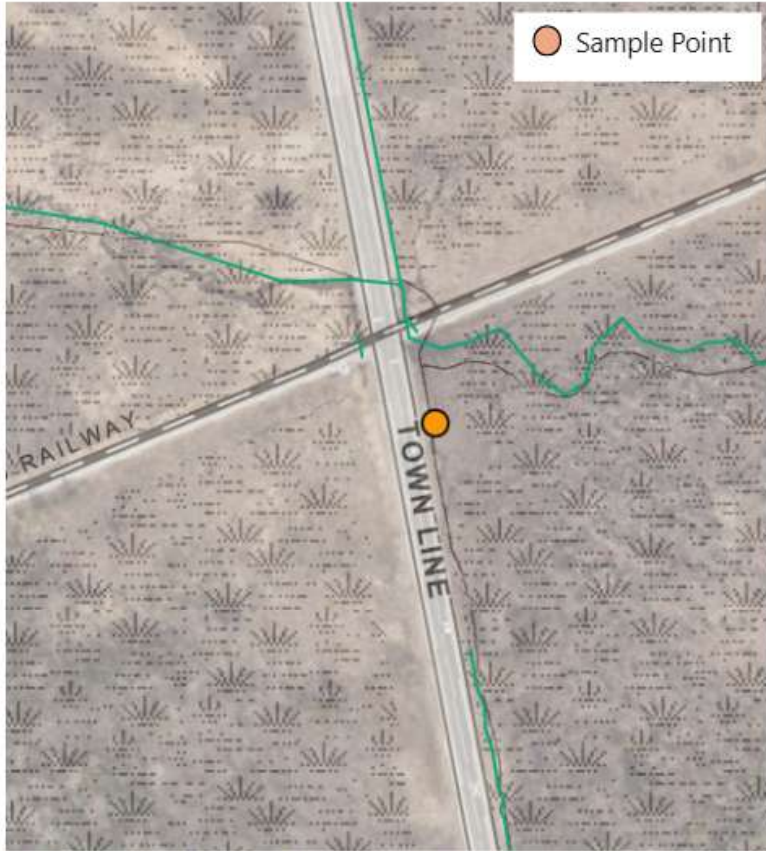
Notes:
 Ammonia = Total Ammonia as N
 Nitrate = Nitrate as N
 Nitrite = Nitrite as N
 Phosphorous = Total Phosphorous
 TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

WK05a-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends



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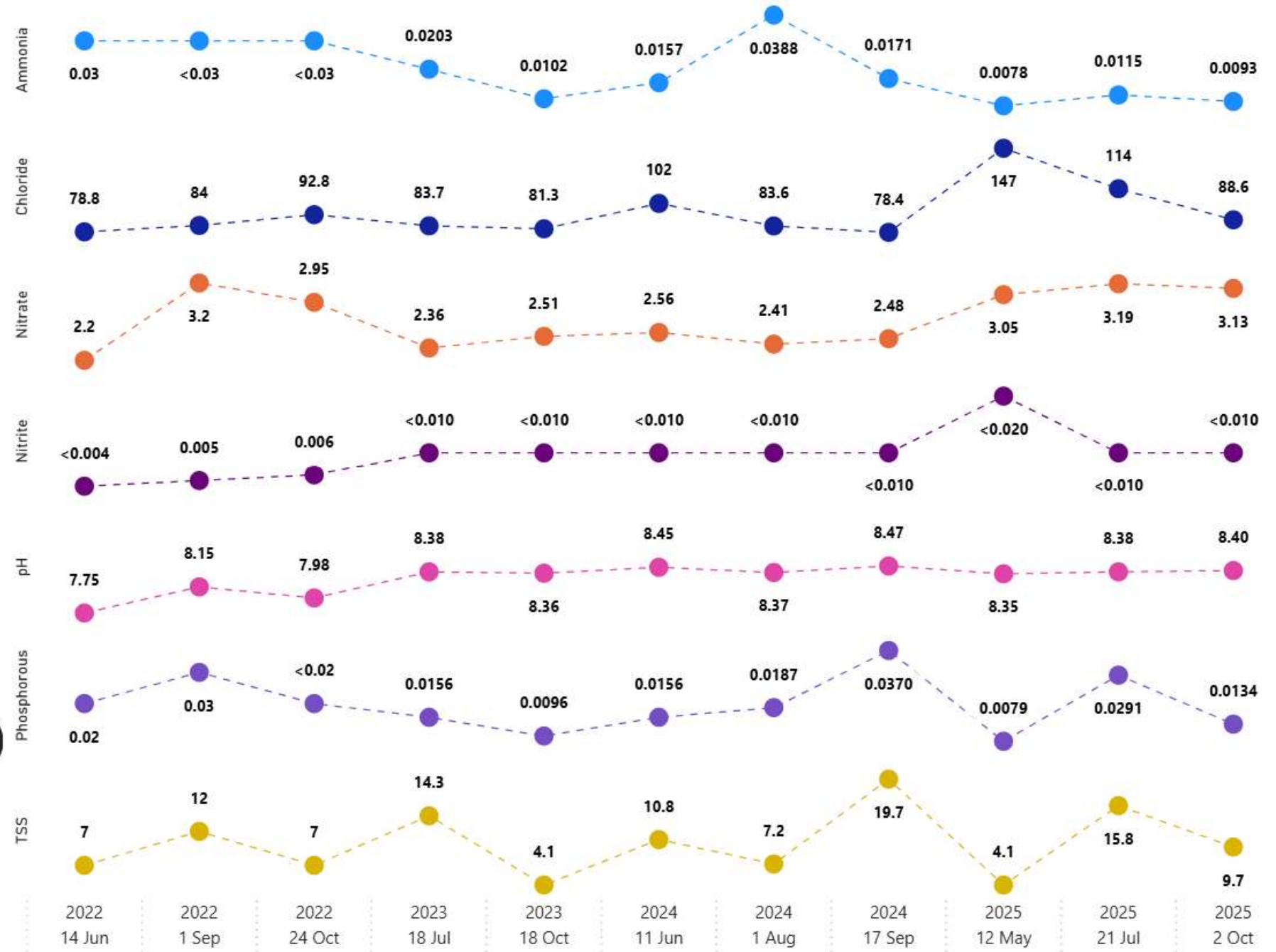
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

All units in mg/L, except pH in pH units

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

^
BR3-WC-SW
 v



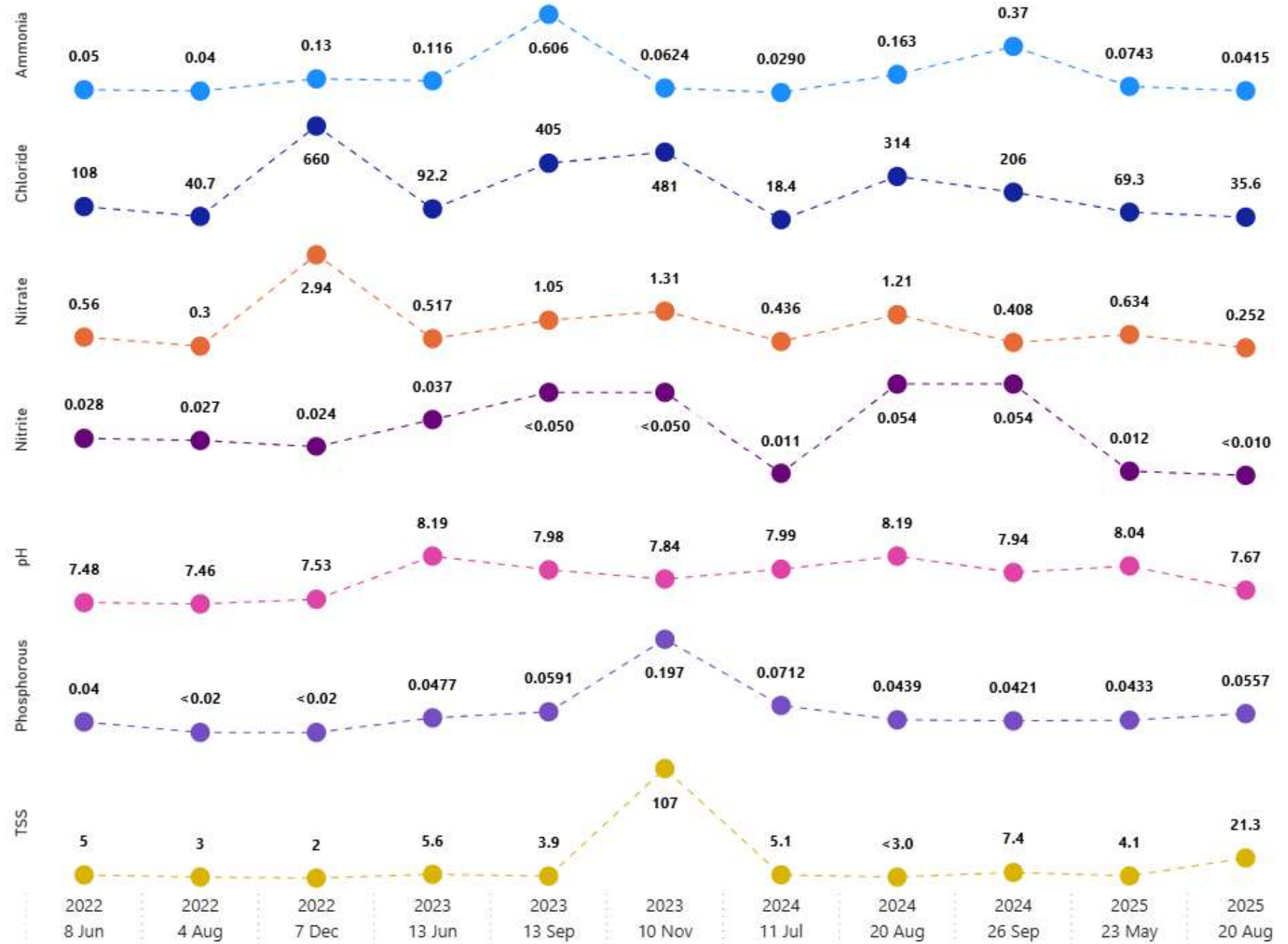
SWMF Water Quality Key Performance Indicator Trends



Notes:
 Ammonia = Total Ammonia as N
 Nitrate = Nitrate as N
 Nitrite = Nitrite as N
 Phosphorous = Total Phosphorous
 TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

WK05a-SWMF-SW



Watercourse Water Quality Key Performance Indicator Trends

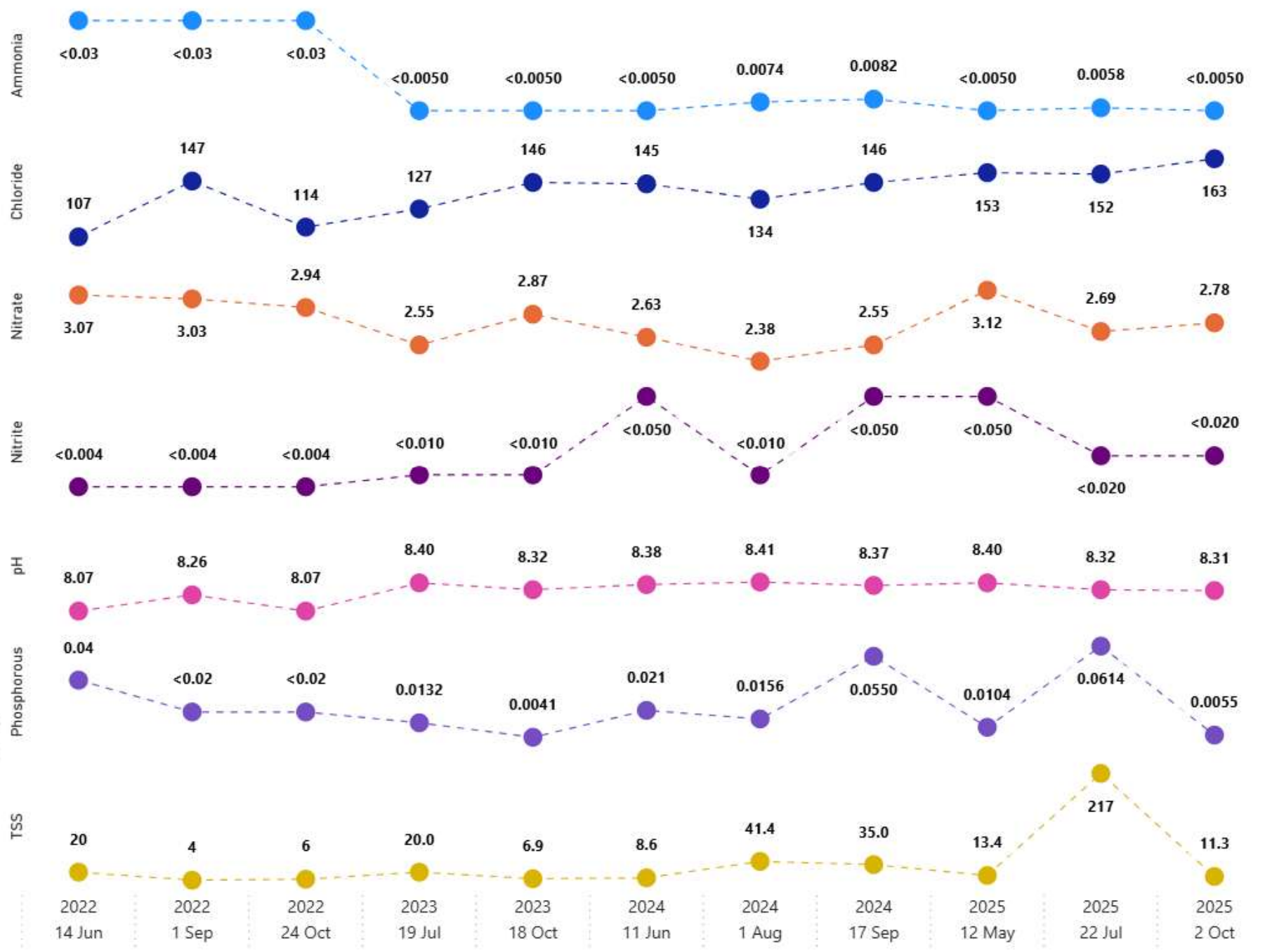


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

BR4-WC-SW

All units in mg/L, except pH in pH units.
Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



SWMF Water Quality Key Performance Indicator Trends

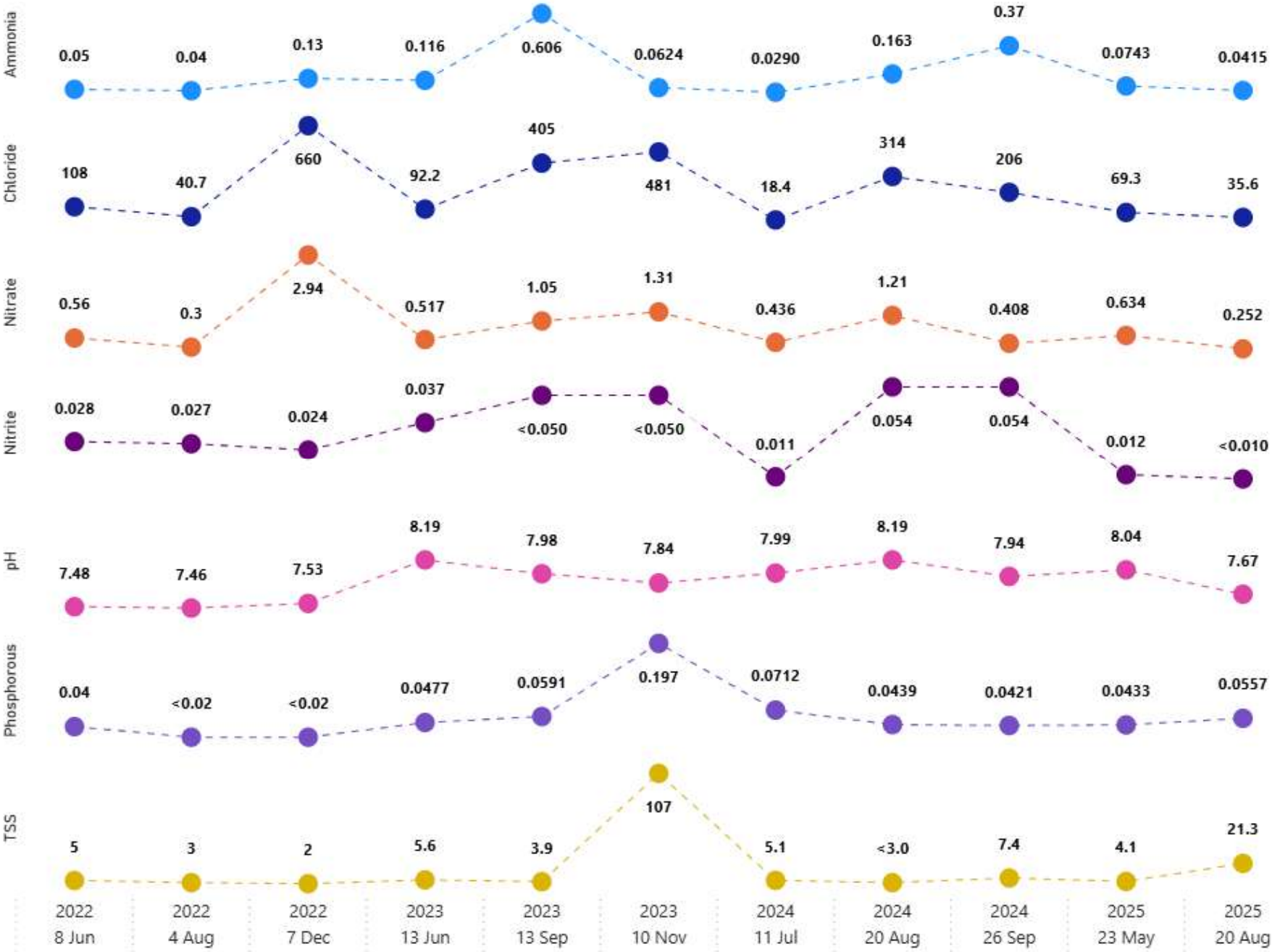


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

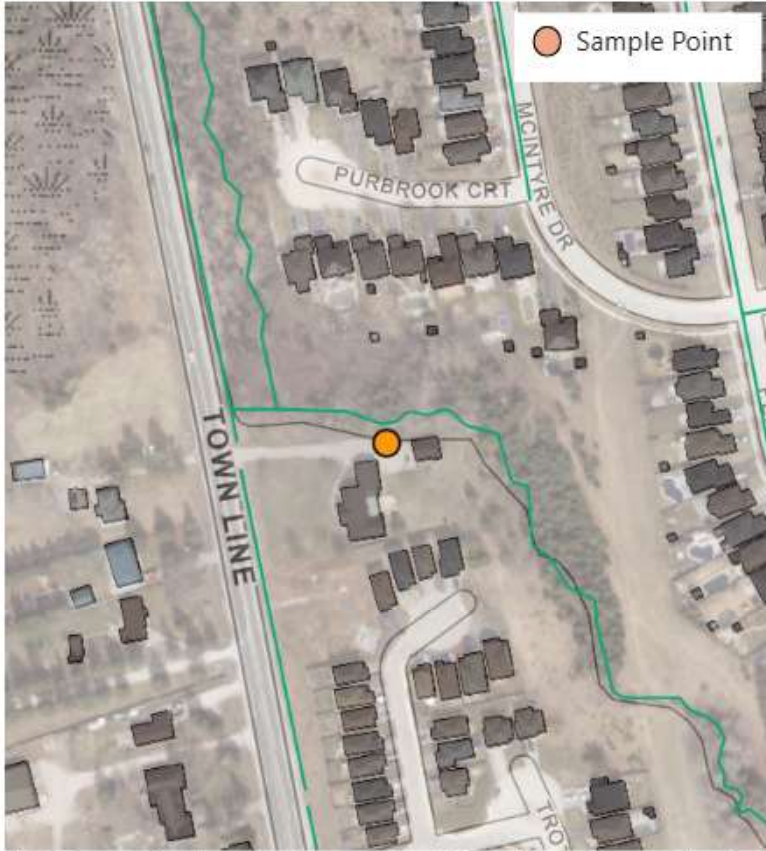
- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

WK05a-SWMF-SW

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



Watercourse Water Quality Key Performance Indicator Trends

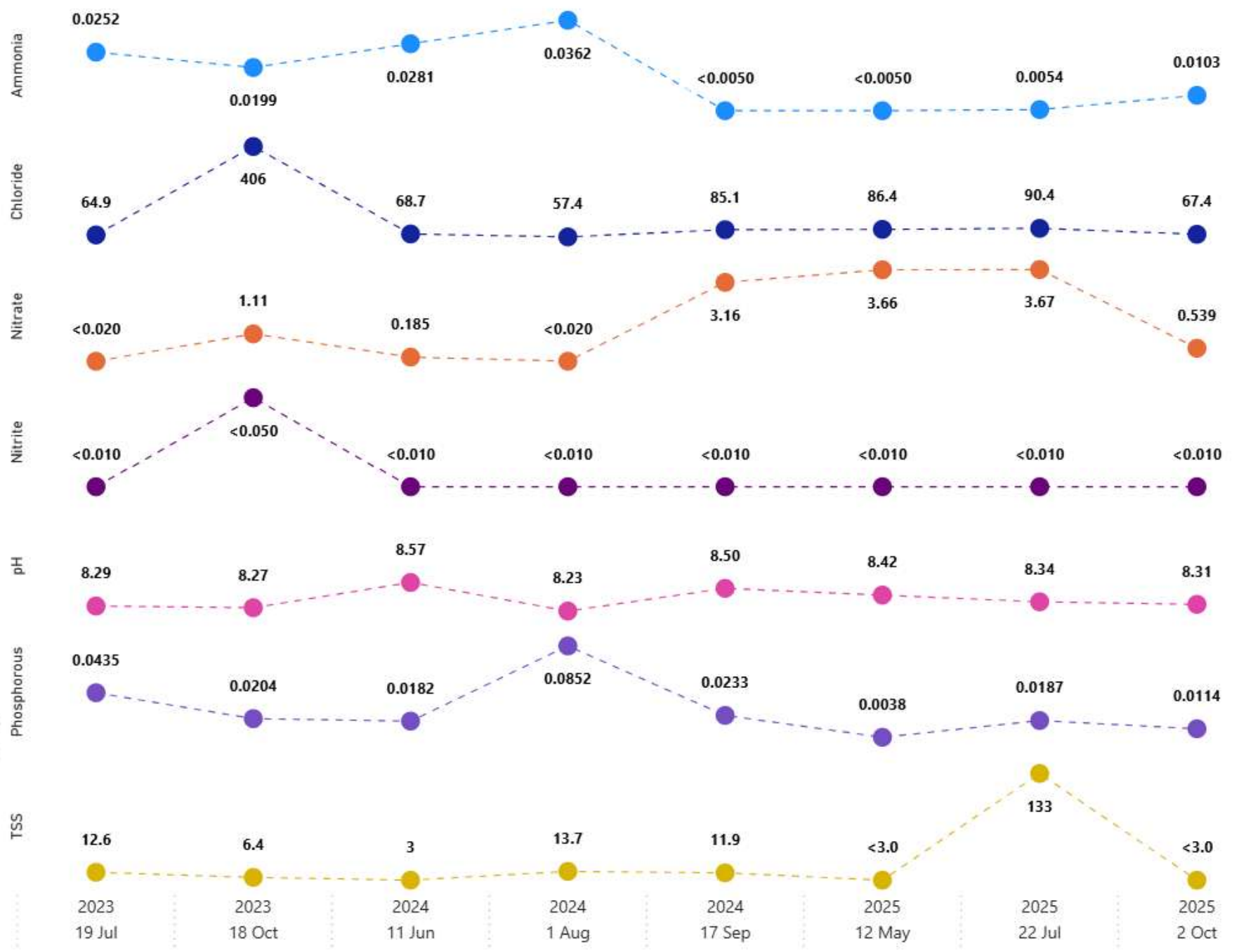


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Notes:
 Ammonia = Total Ammonia as N
 Nitrate = Nitrate as N
 Nitrite = Nitrite as N
 Phosphorous = Total Phosphorous
 TSS = Total Suspended Solids

BR5-WC-SW

All units in mg/L, except pH in pH units.
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



SWMF Water Quality Key Performance Indicator Trends

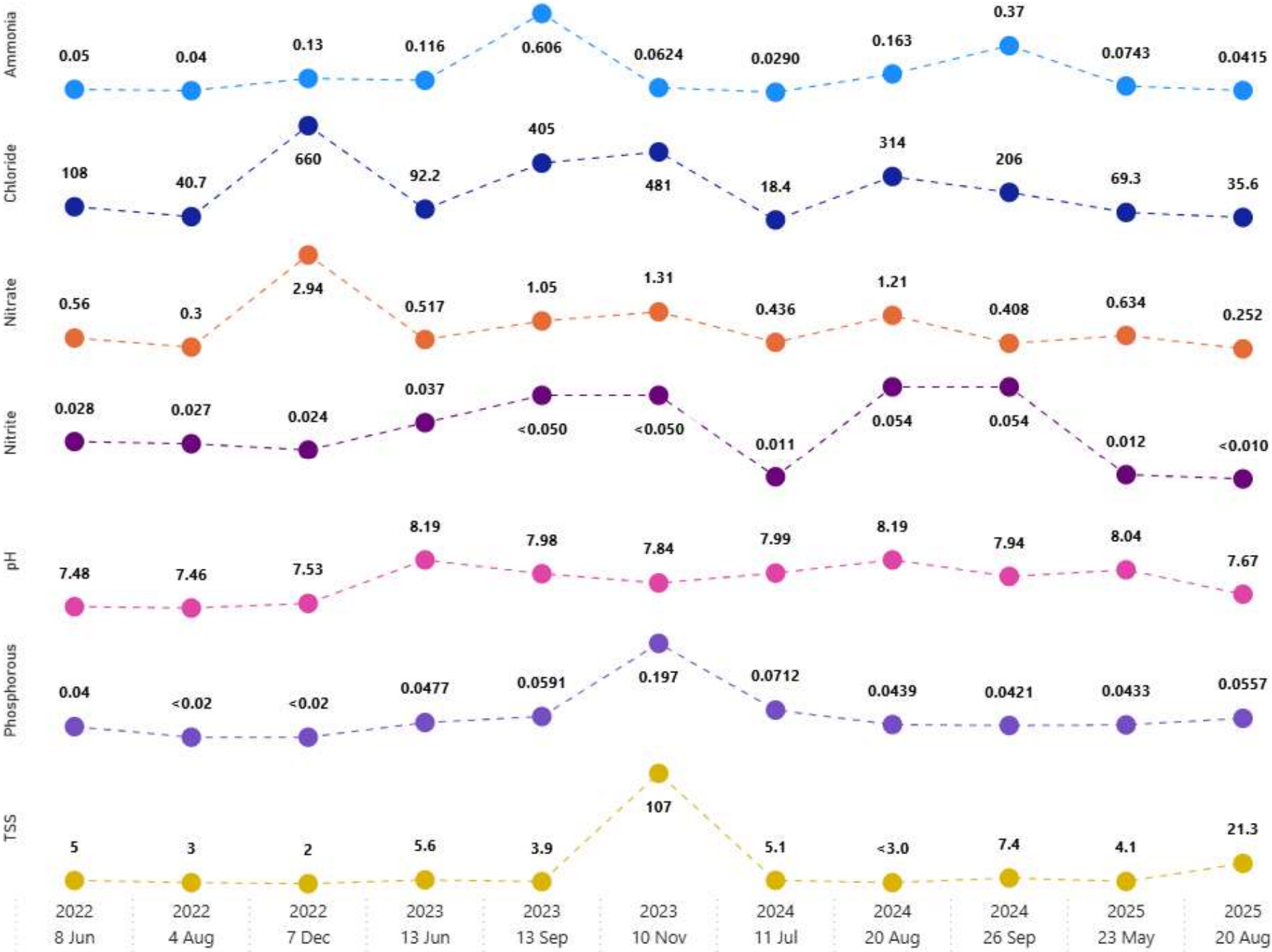


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- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

WK05a-SWMF-SW

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



Watercourse Water Quality Key Performance Indicator Trends

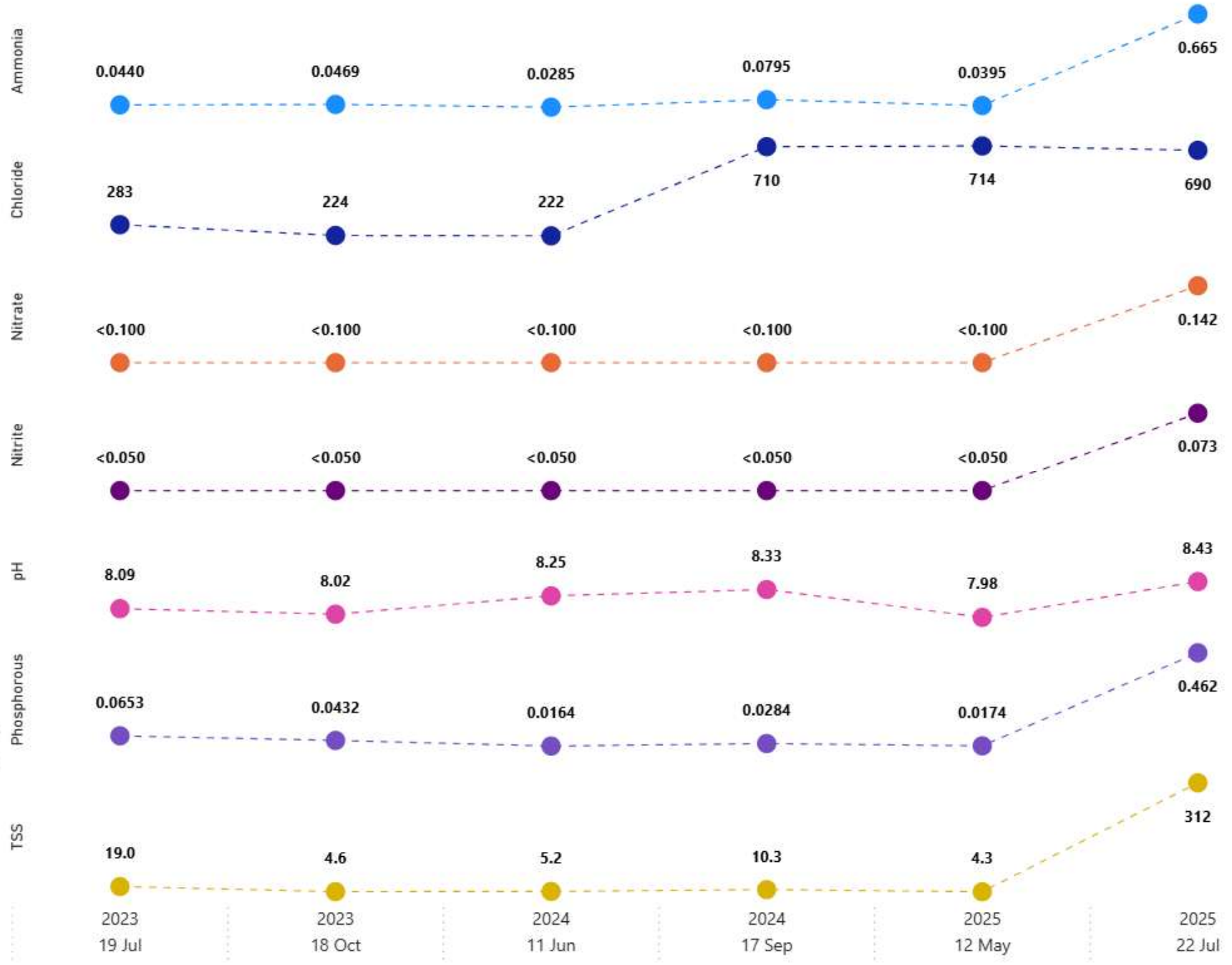


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- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

BR6-WC-SW

All units in mg/L, except pH in pH units.
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



SWMF Water Quality Key Performance Indicator Trends

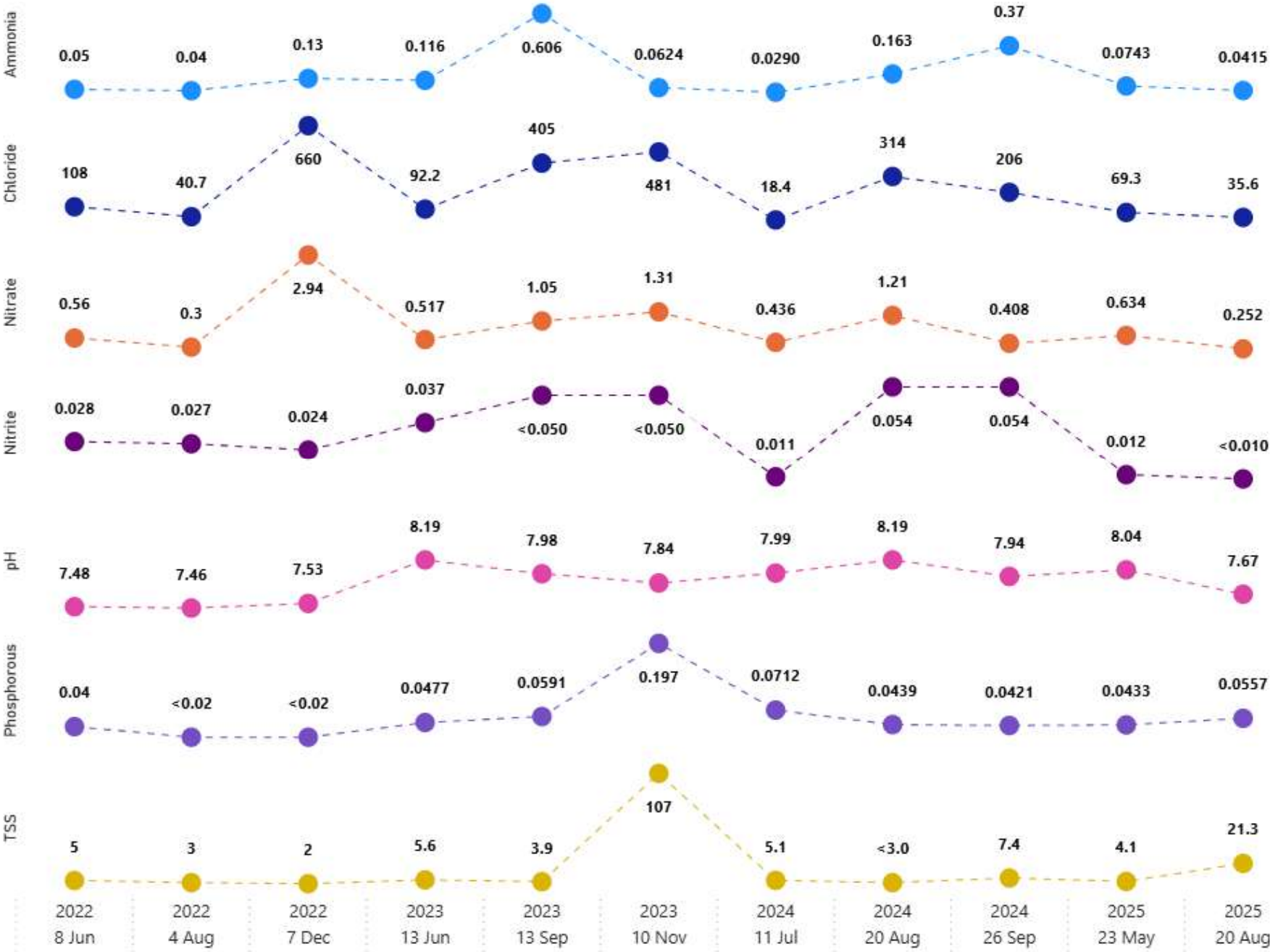


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

WK05a-SWMF-SW

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



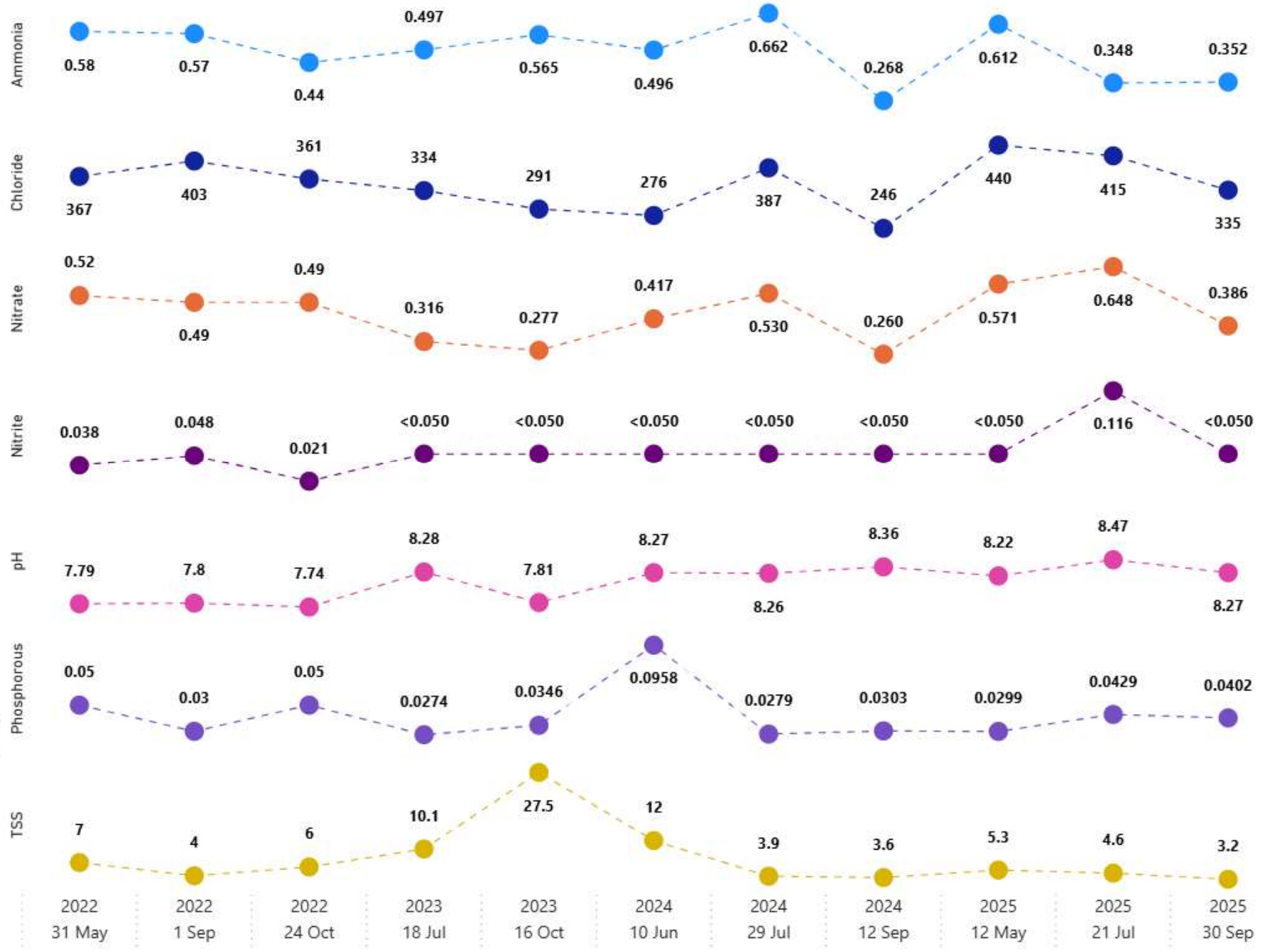
Watercourse Water Quality Key Performance Indicator Trends



Notes:
 Ammonia = Total Ammonia as N
 Nitrate = Nitrate as N
 Nitrite = Nitrite as N
 Phosphorous = Total Phosphorous
 TSS = Total Suspended Solids

DY1-WC-SW

All units in mg/L, except pH in pH units.
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



SWMF Water Quality Key Performance Indicator Trends

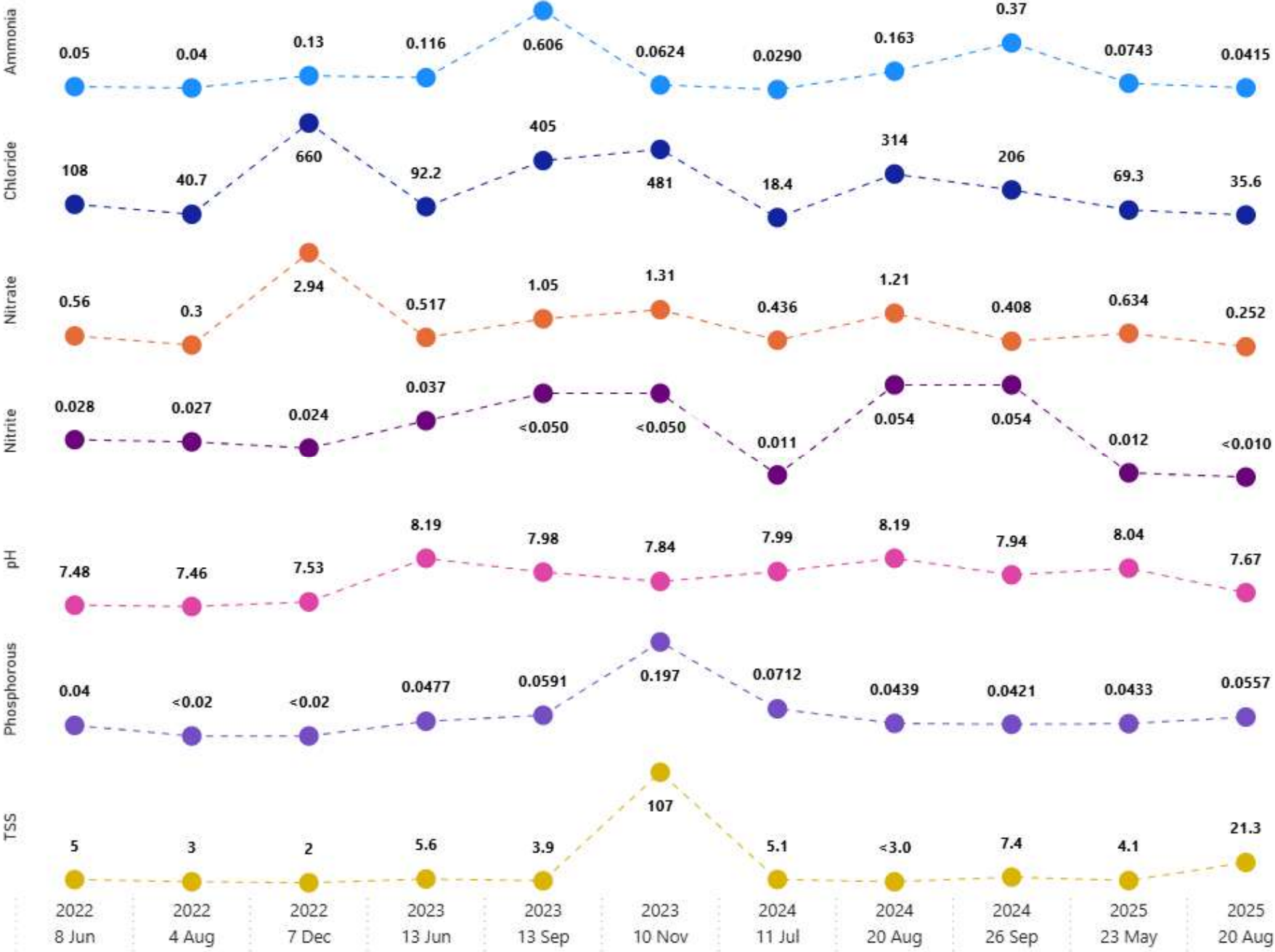


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

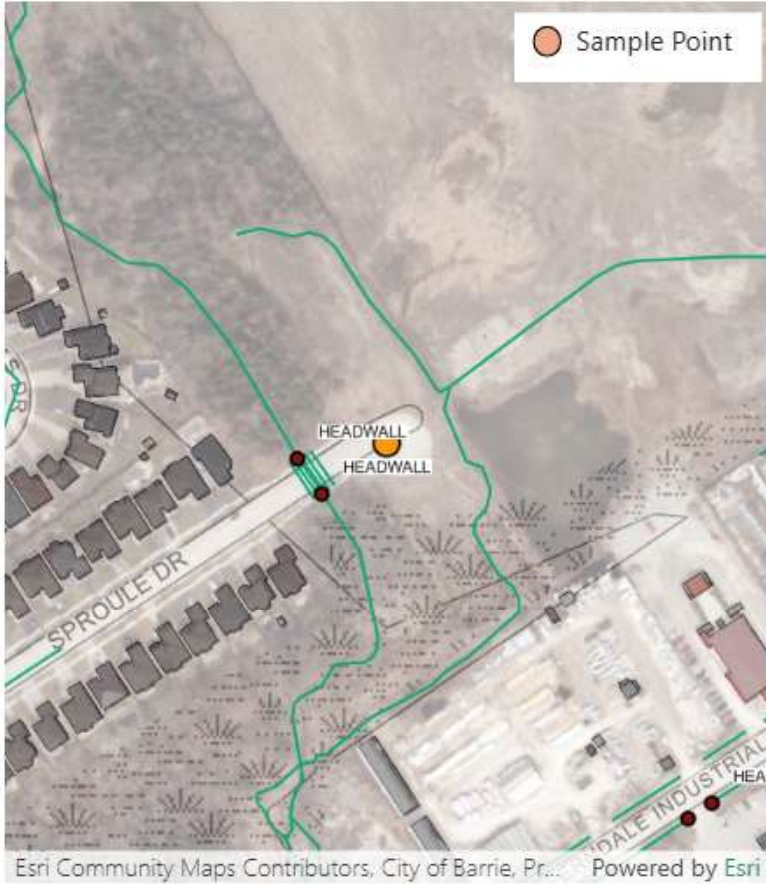
- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

WK05a-SWMF-SW

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



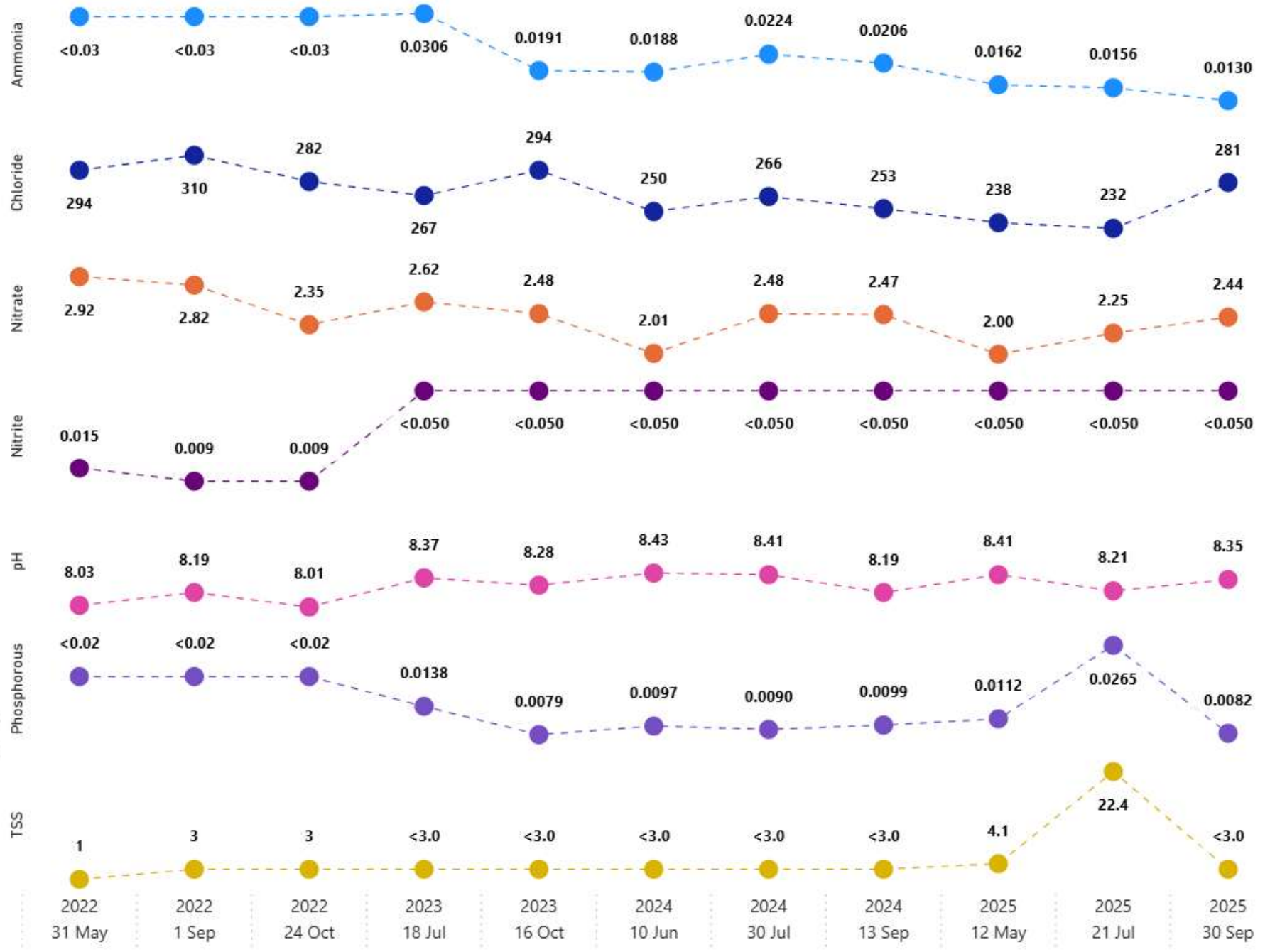
Watercourse Water Quality Key Performance Indicator Trends



Notes:
 Ammonia = Total Ammonia as N
 Nitrate = Nitrate as N
 Nitrite = Nitrite as N
 Phosphorous = Total Phosphorous
 TSS = Total Suspended Solids

DY2-WC-SW

All units in mg/L, except pH in pH units.
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



SWMF Water Quality Key Performance Indicator Trends

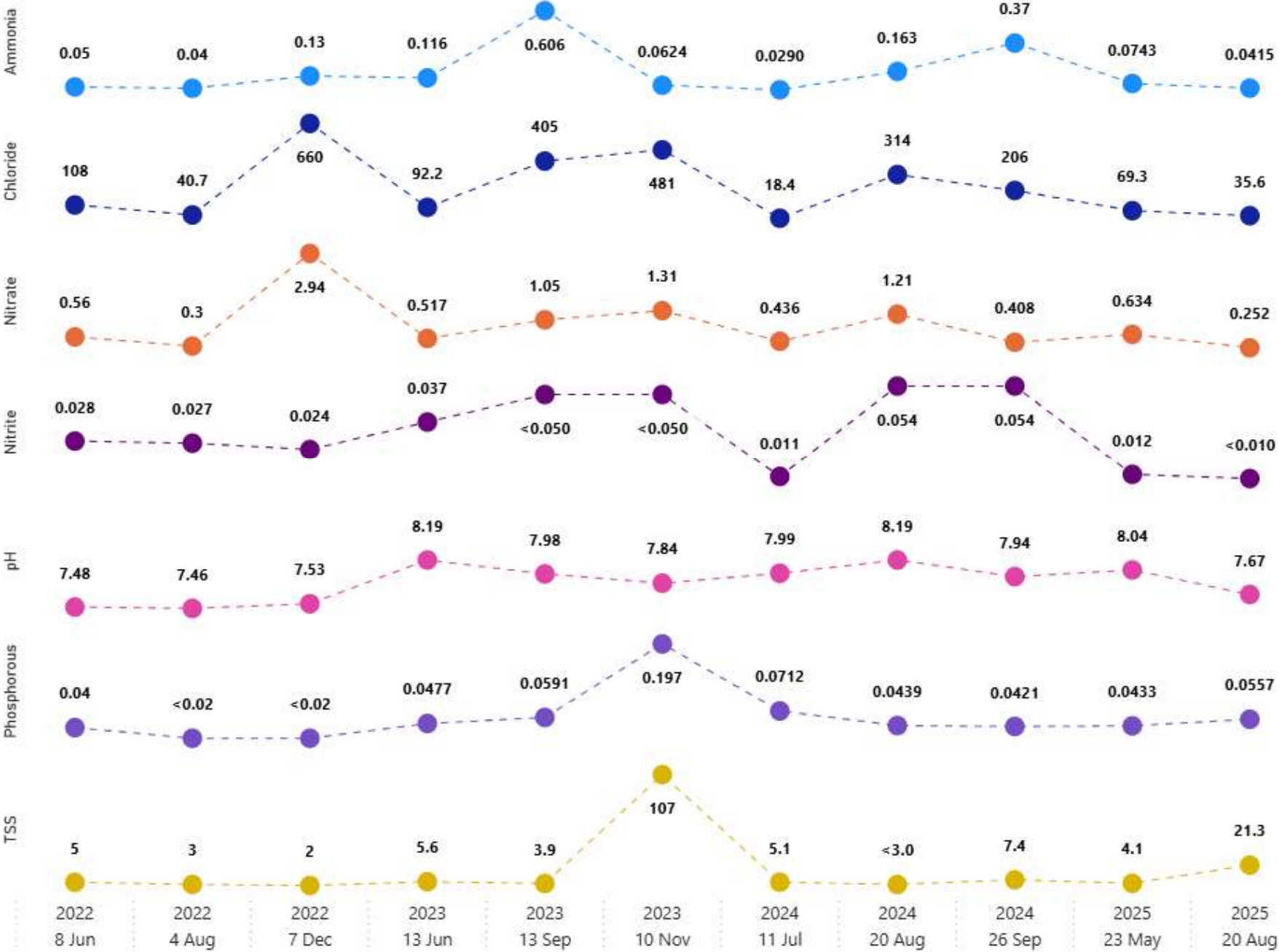


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

WK05a-SWMF-SW

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



Watercourse Water Quality Key Performance Indicator Trends

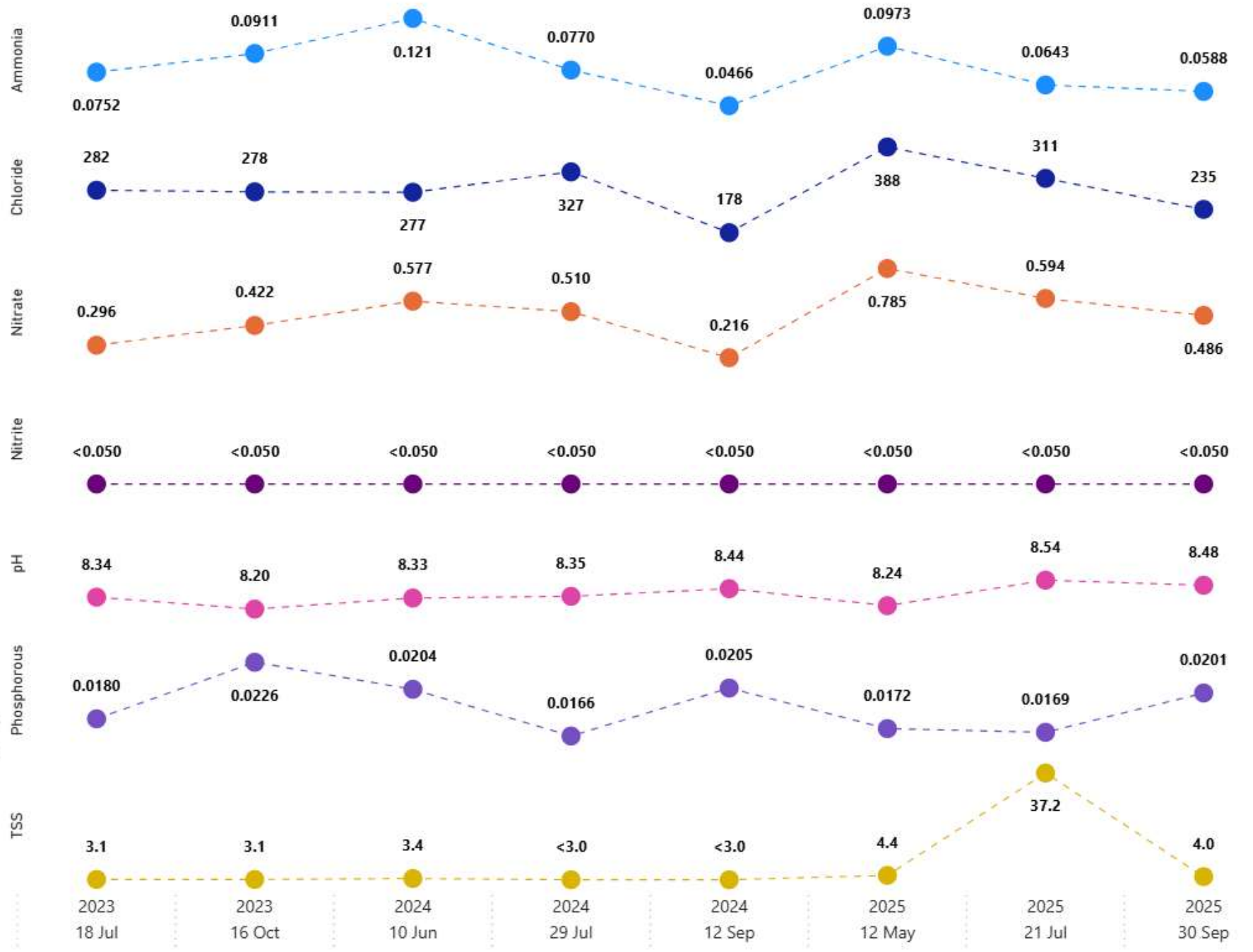


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

DY3-WC-SW

All units in mg/L, except pH in pH units.
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



SWMF Water Quality Key Performance Indicator Trends

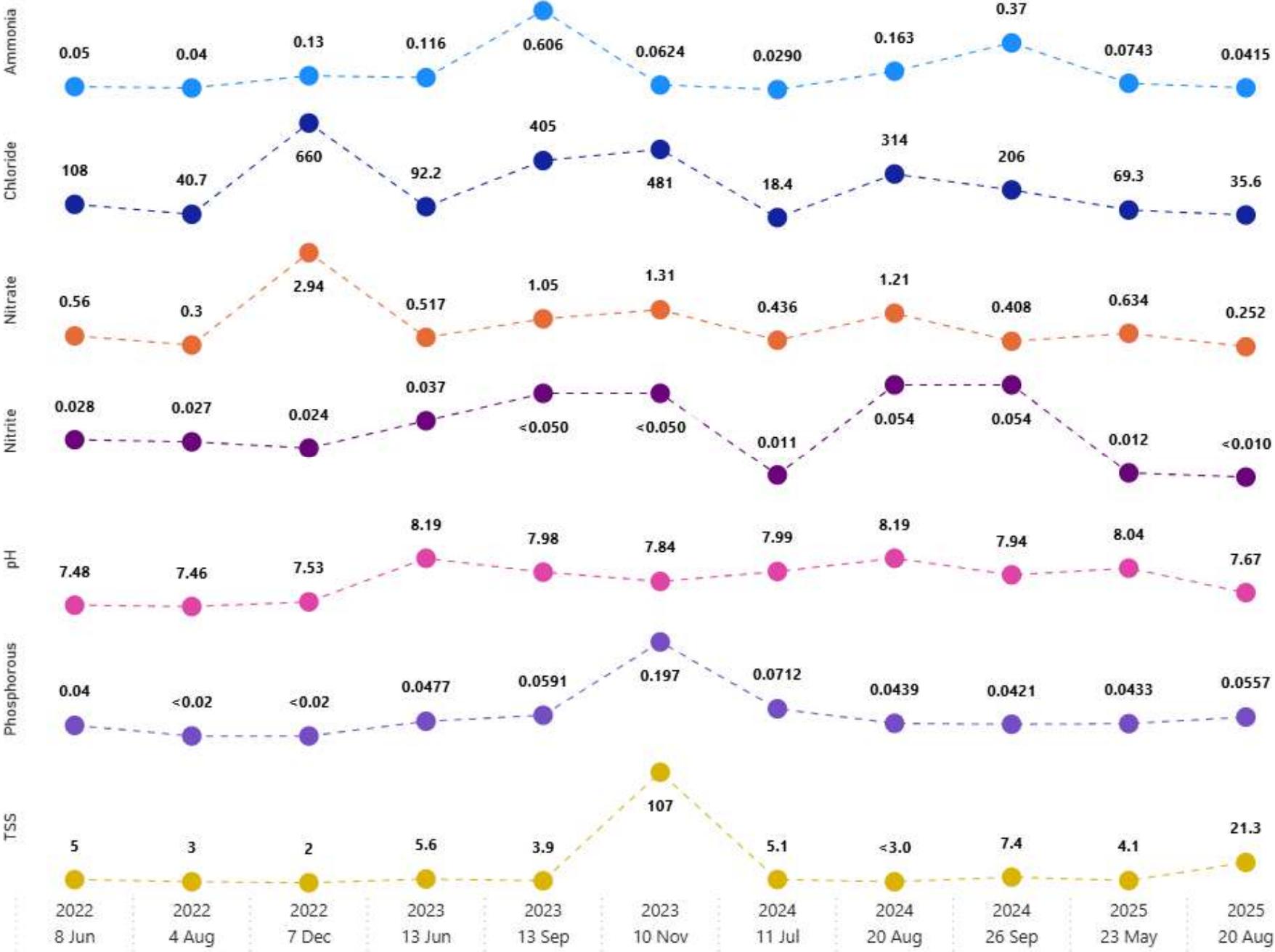


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

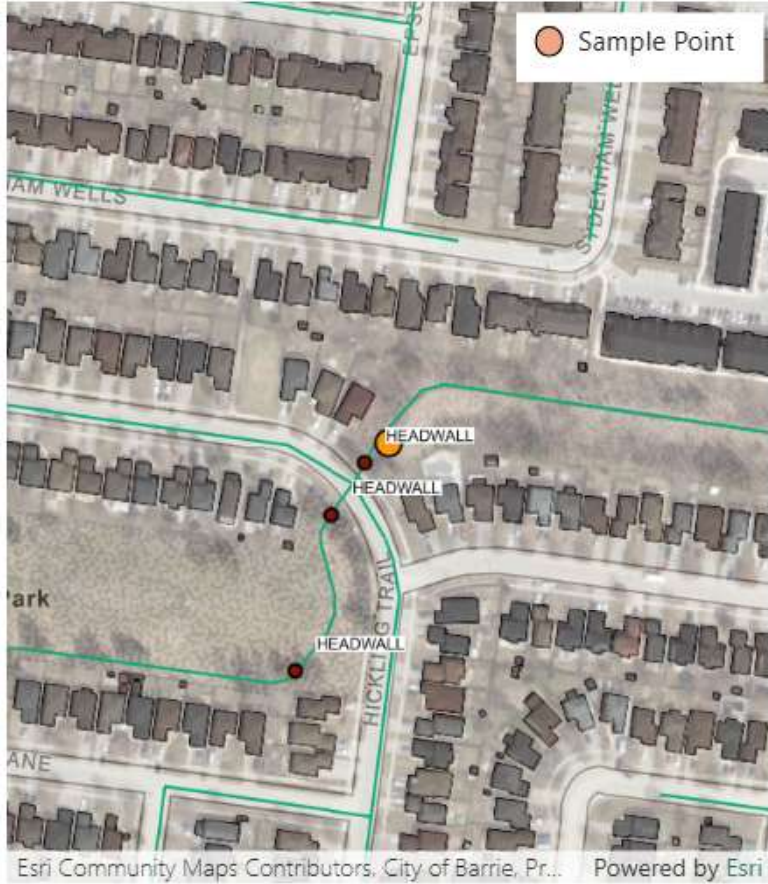
- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

WK05a-SWMF-SW

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



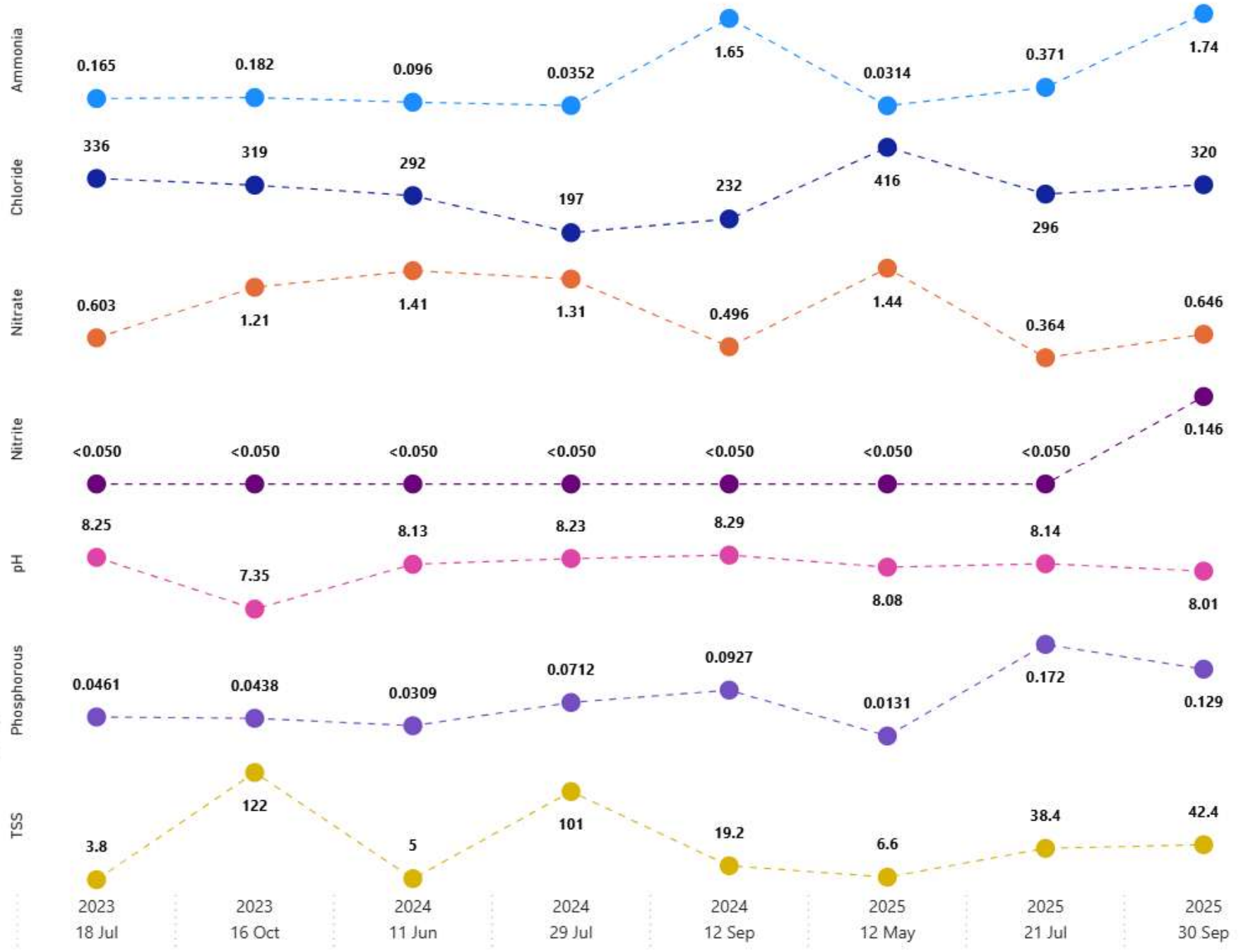
Watercourse Water Quality Key Performance Indicator Trends



Notes:
 Ammonia = Total Ammonia as N
 Nitrate = Nitrate as N
 Nitrite = Nitrite as N
 Phosphorous = Total Phosphorous
 TSS = Total Suspended Solids

GR1-WC-SW

All units in mg/L, except pH in pH units.
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



SWMF Water Quality Key Performance Indicator Trends

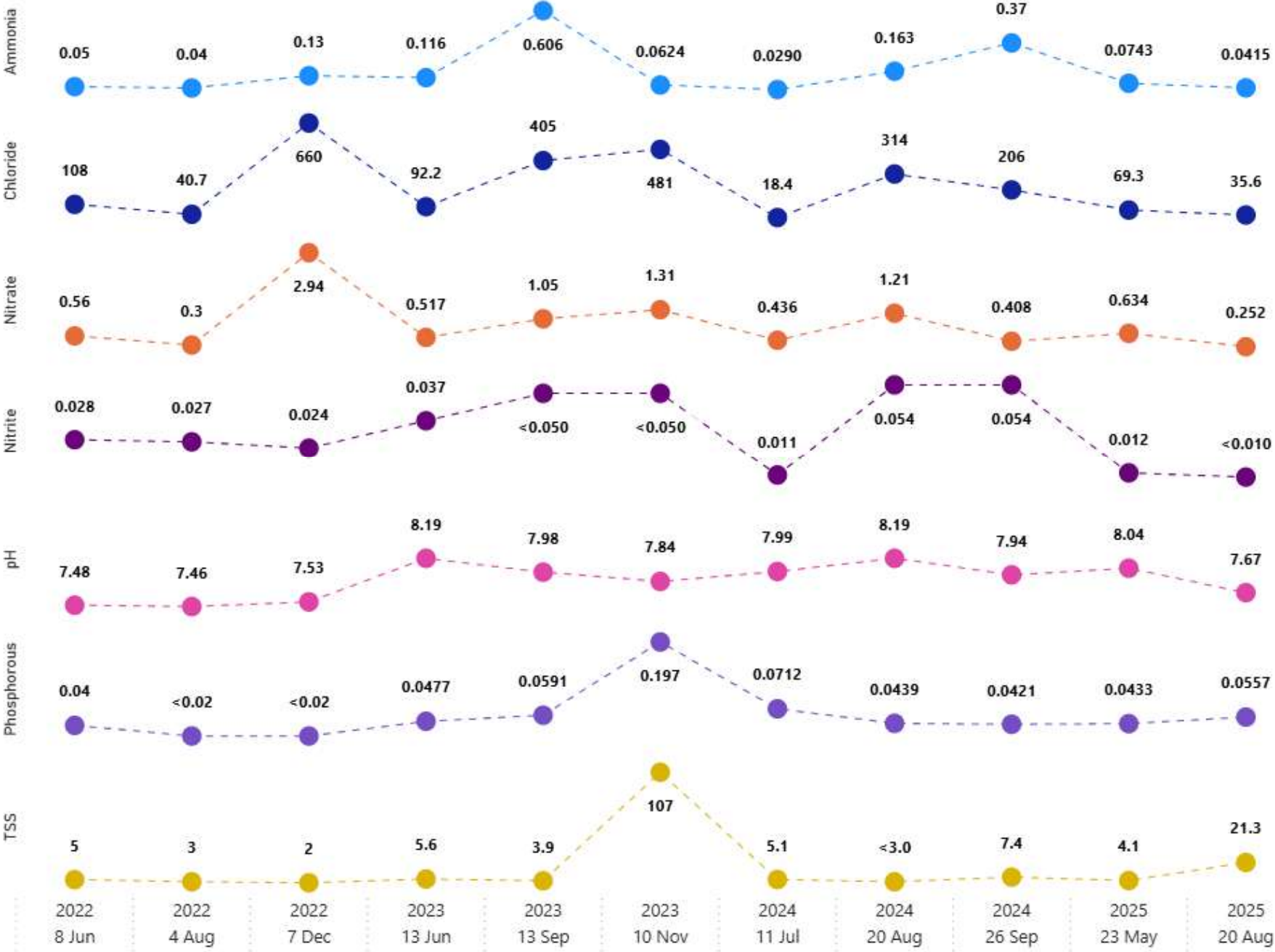


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

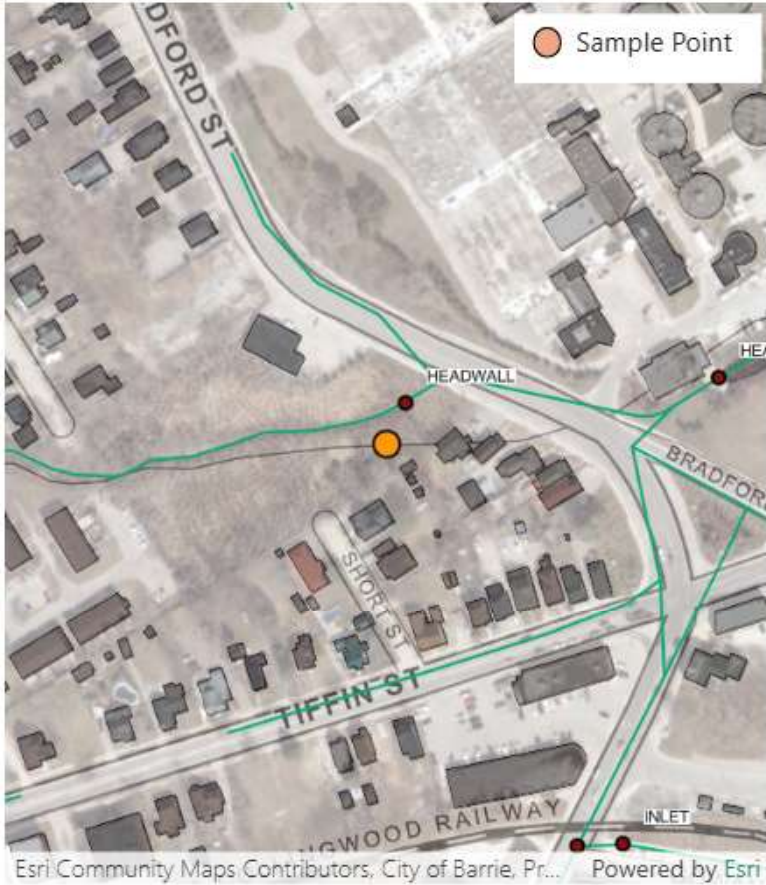
- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

WK05a-SWMF-SW

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



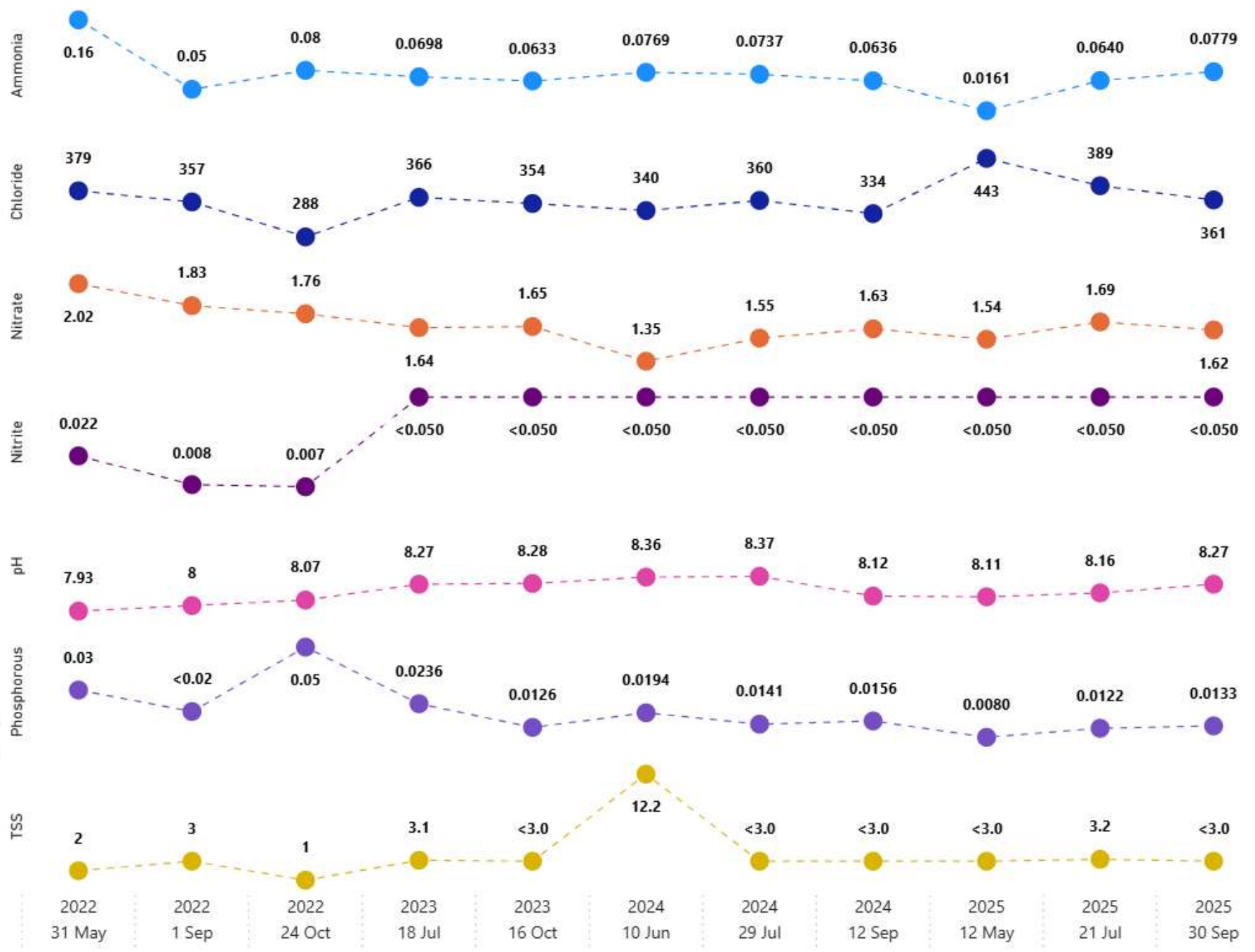
Watercourse Water Quality Key Performance Indicator Trends



Notes:
 Ammonia = Total Ammonia as N
 Nitrate = Nitrate as N
 Nitrite = Nitrite as N
 Phosphorous = Total Phosphorous
 TSS = Total Suspended Solids

HT1-WC-SW

All units in mg/L, except pH in pH units.
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



SWMF Water Quality Key Performance Indicator Trends

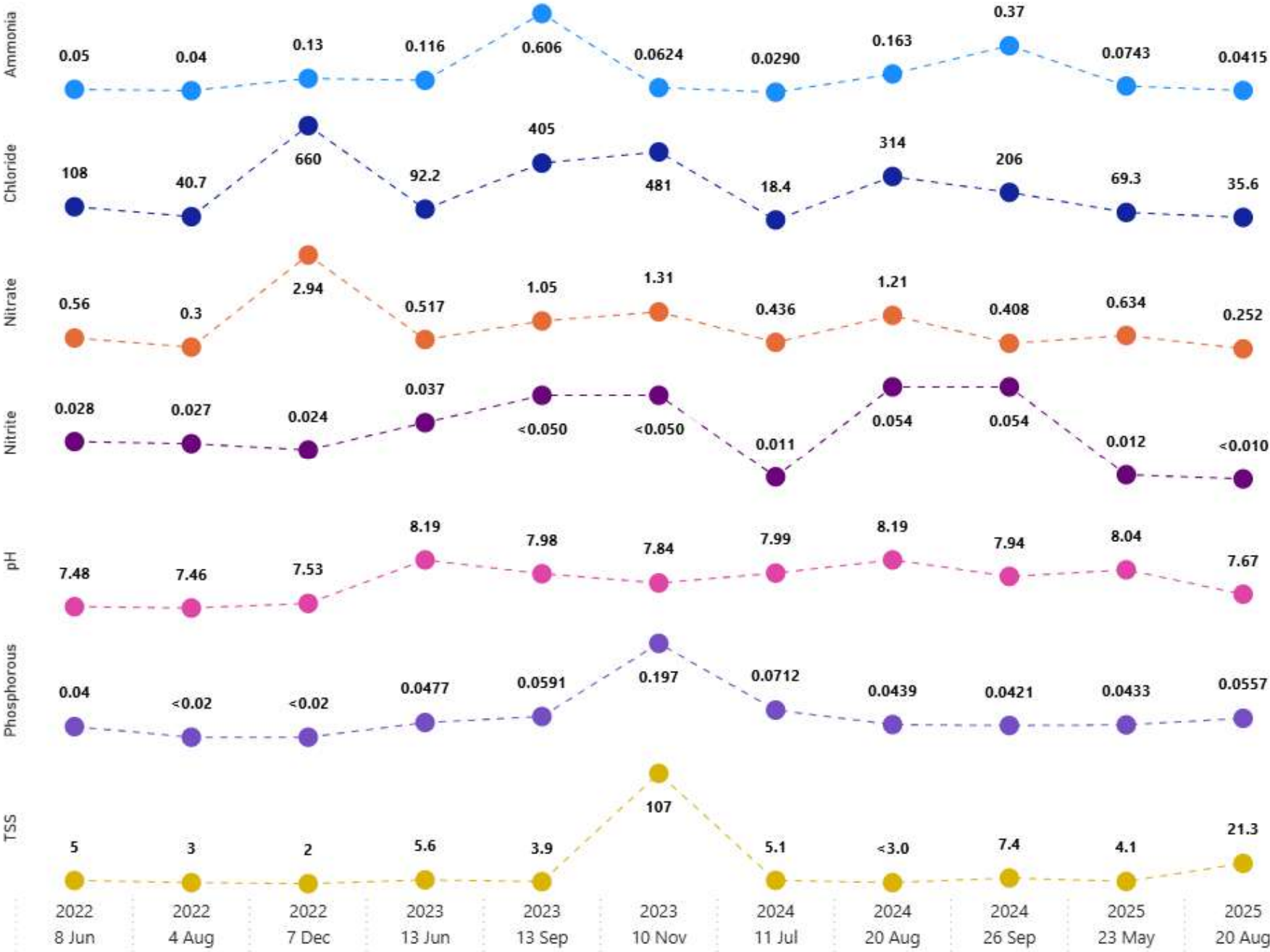


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

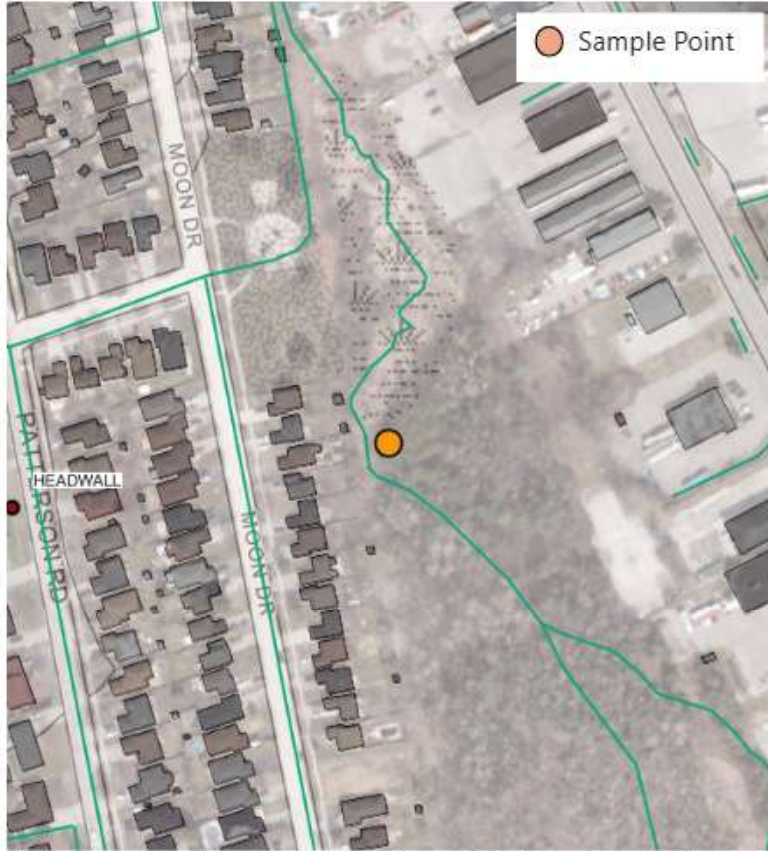
- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

WK05a-SWMF-SW

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



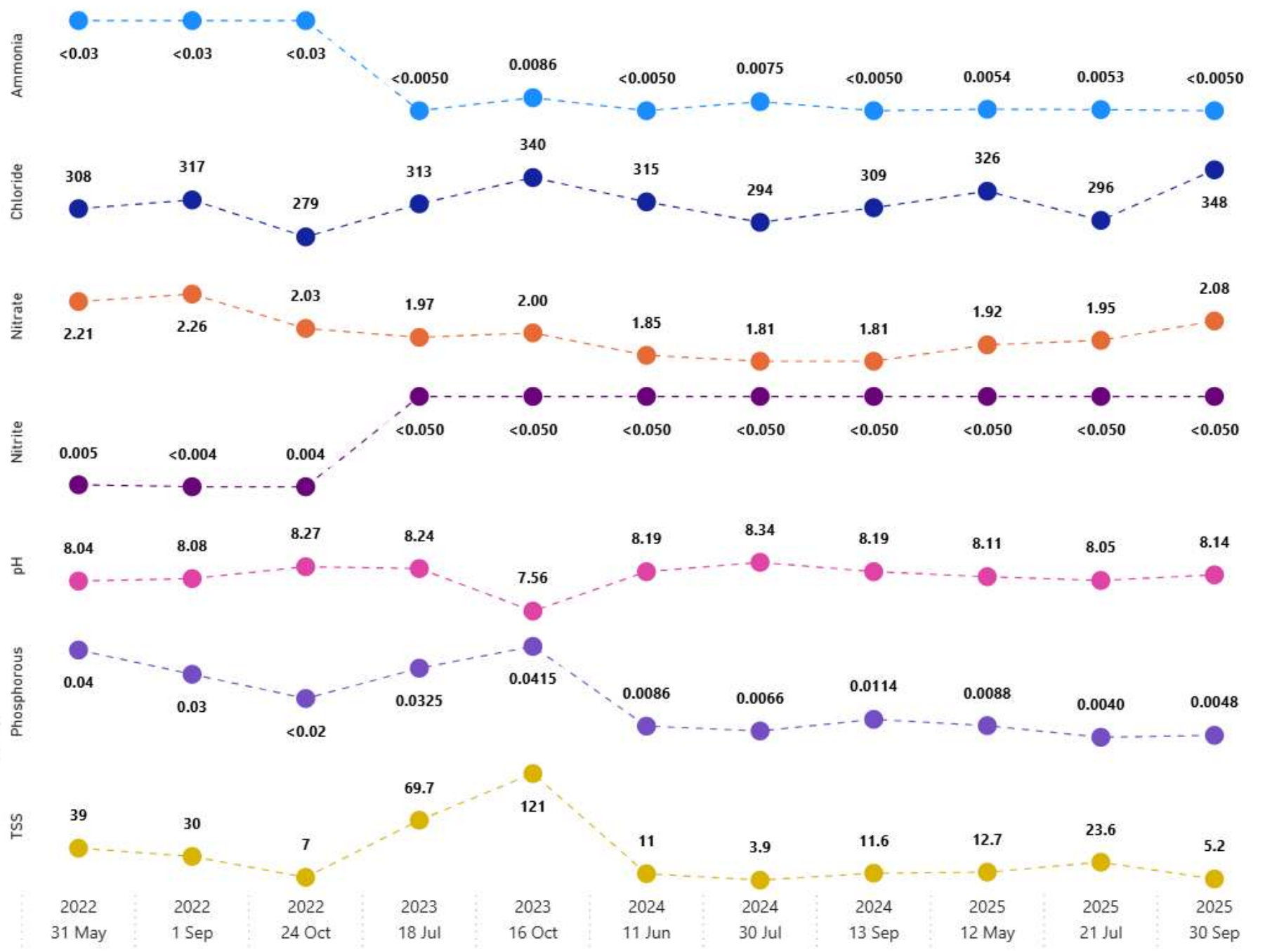
Watercourse Water Quality Key Performance Indicator Trends



- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

HT2-WC-SW

All units in mg/L, except pH in pH units.
Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



SWMF Water Quality Key Performance Indicator Trends

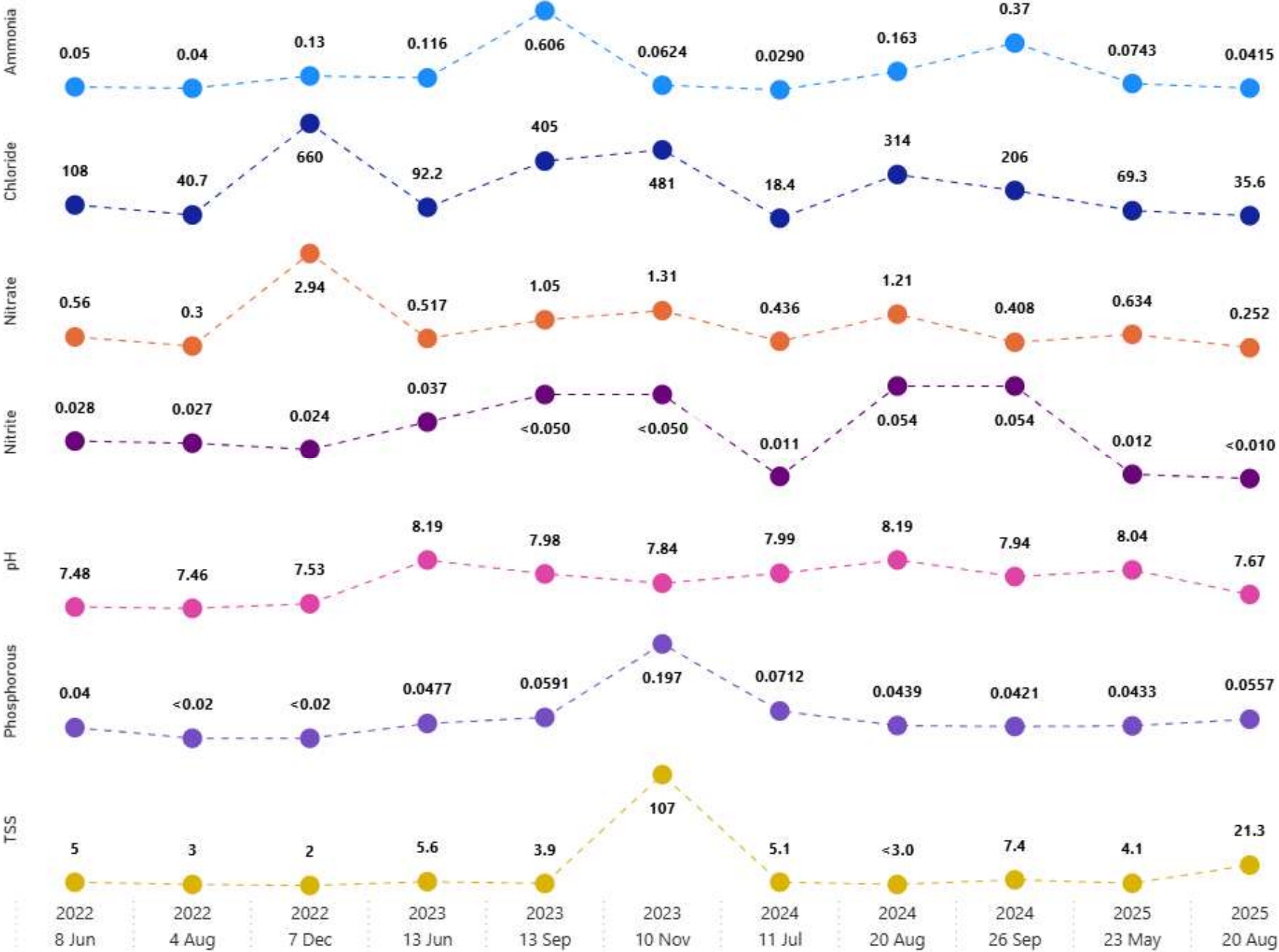


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

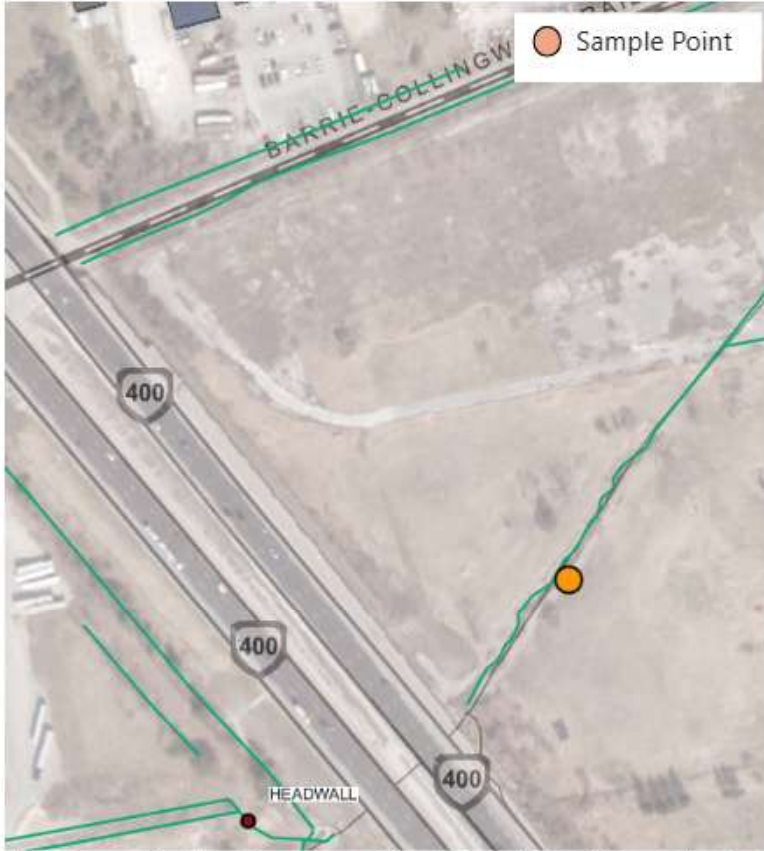
- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

WK05a-SWMF-SW

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



Watercourse Water Quality Key Performance Indicator Trends

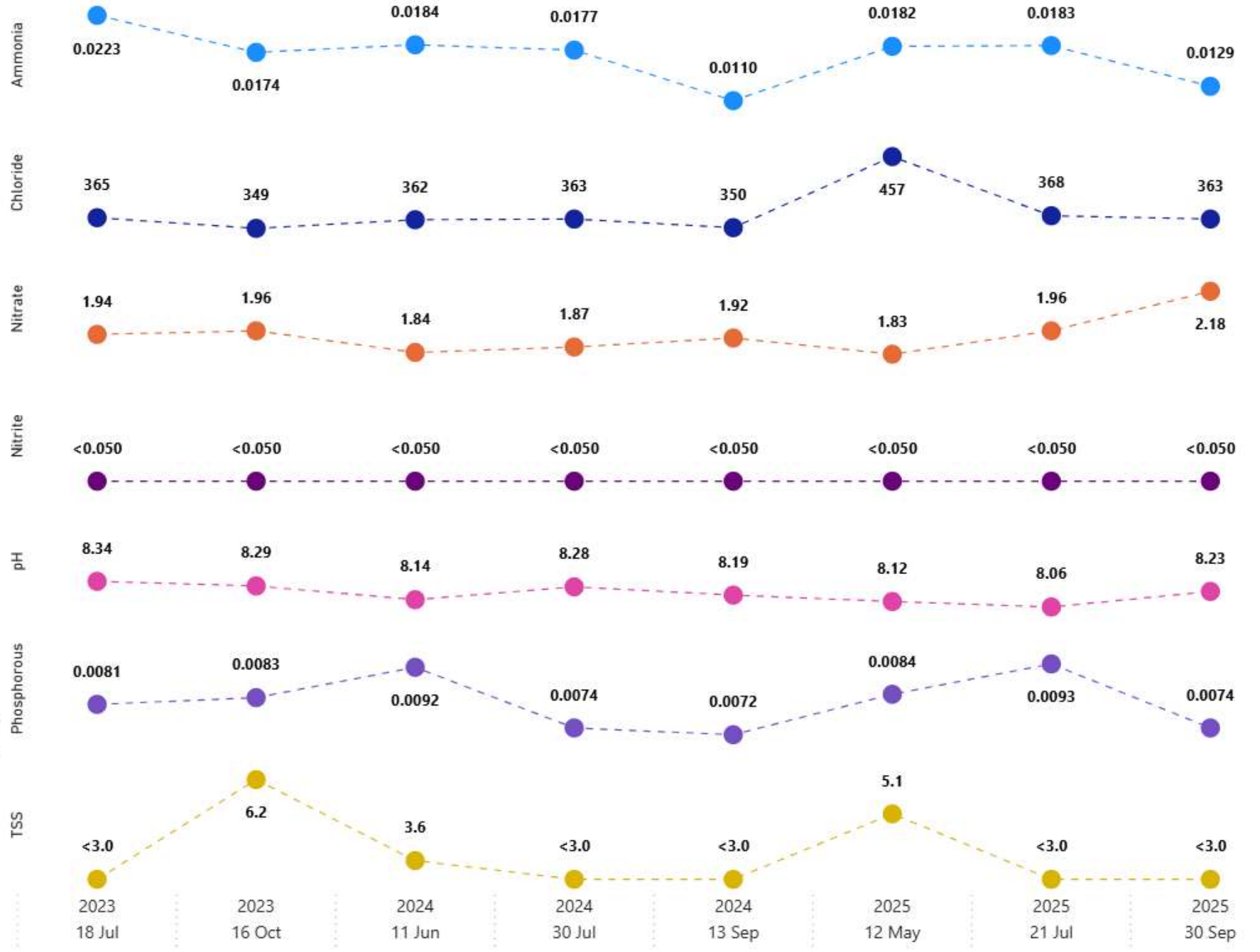


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

HT3-WC-SW

All units in mg/L, except pH in pH units.
Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



SWMF Water Quality Key Performance Indicator Trends

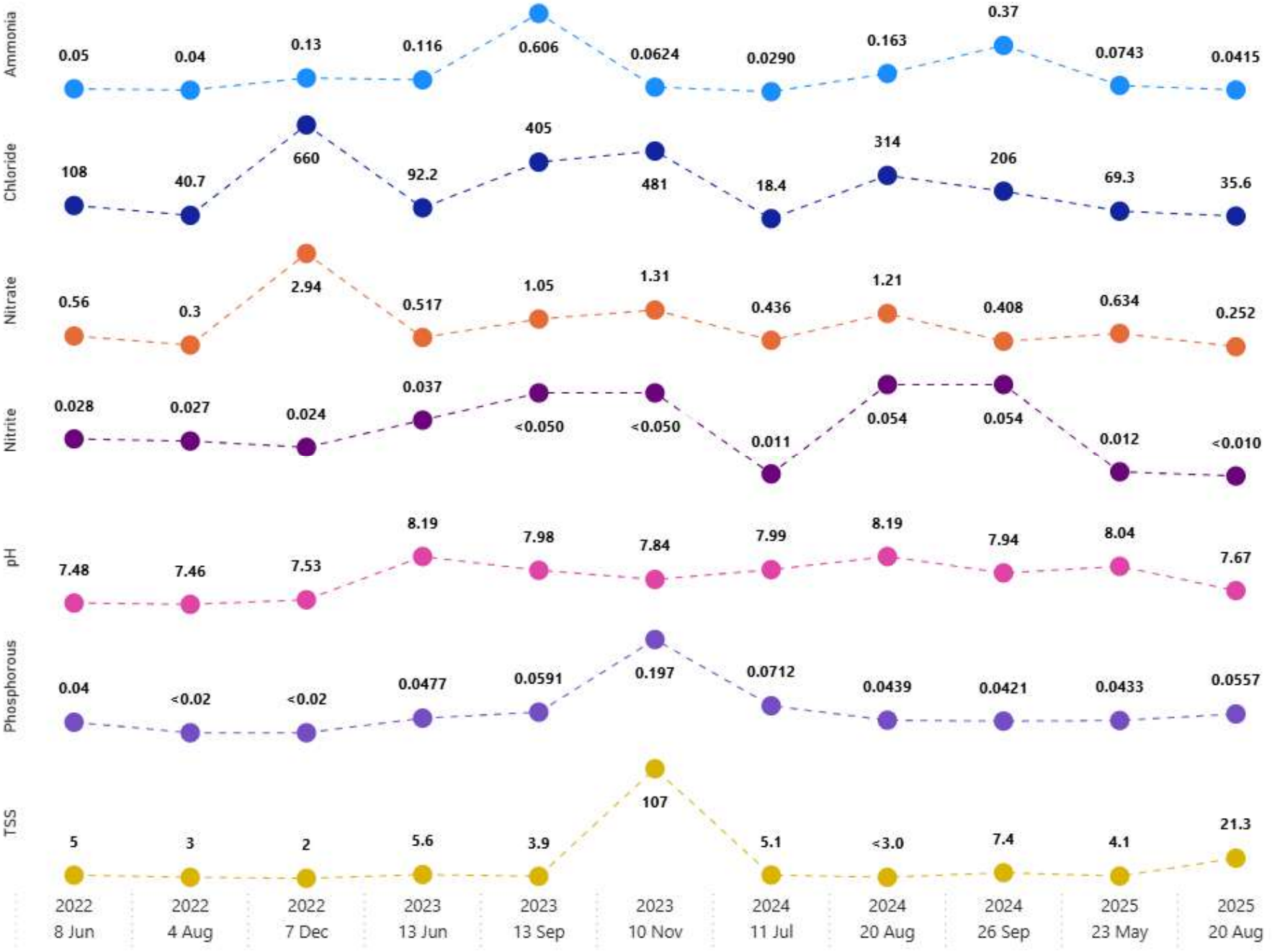


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

WK05a-SWMF-SW

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



SWMF Water Quality Key Performance Indicator Trends

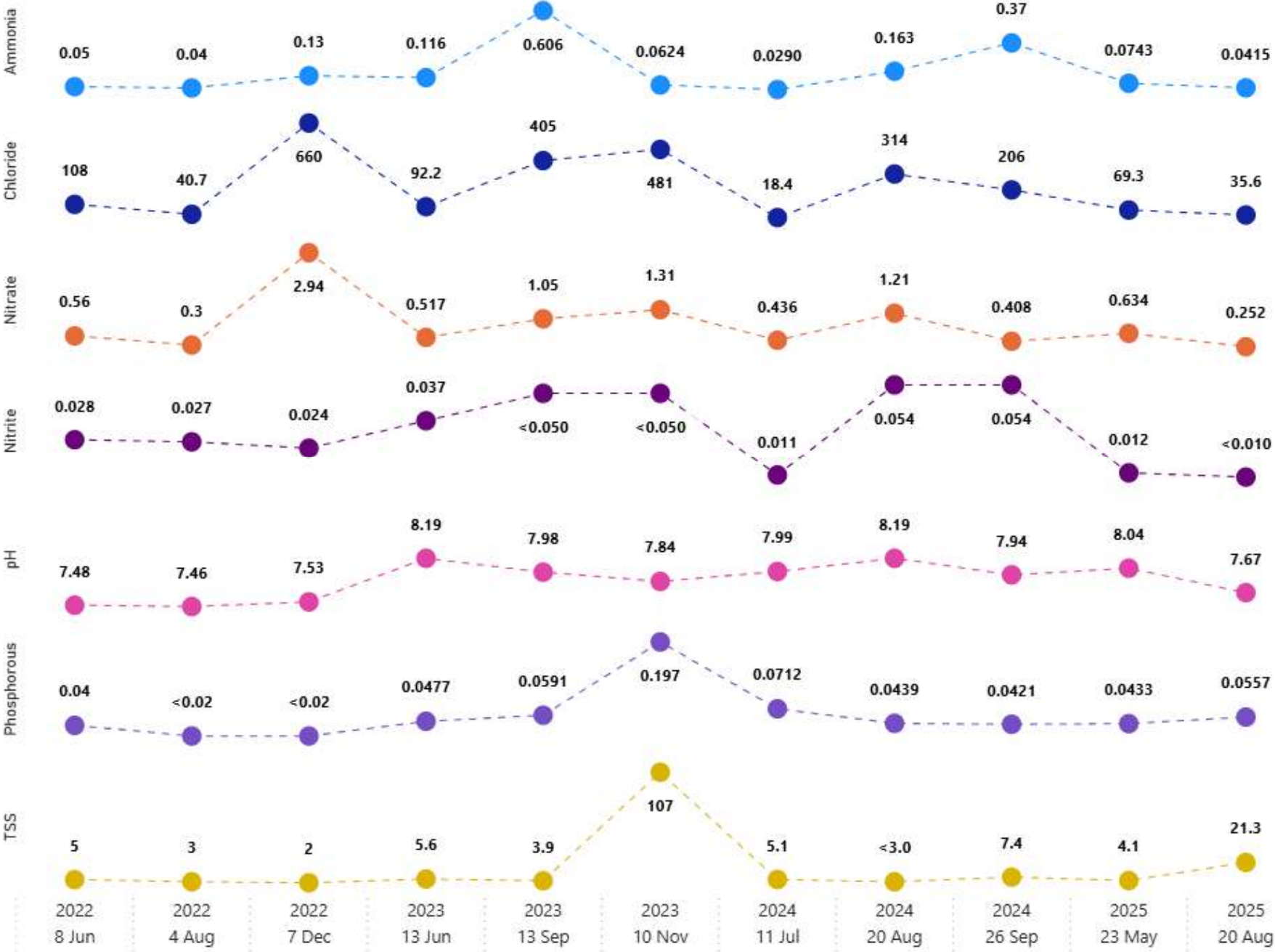


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

WK05a-SWMF-SW

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



Watercourse Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

HW2-WC-SW

All units in mg/L, except pH in pH units.
Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



SWMF Water Quality Key Performance Indicator Trends

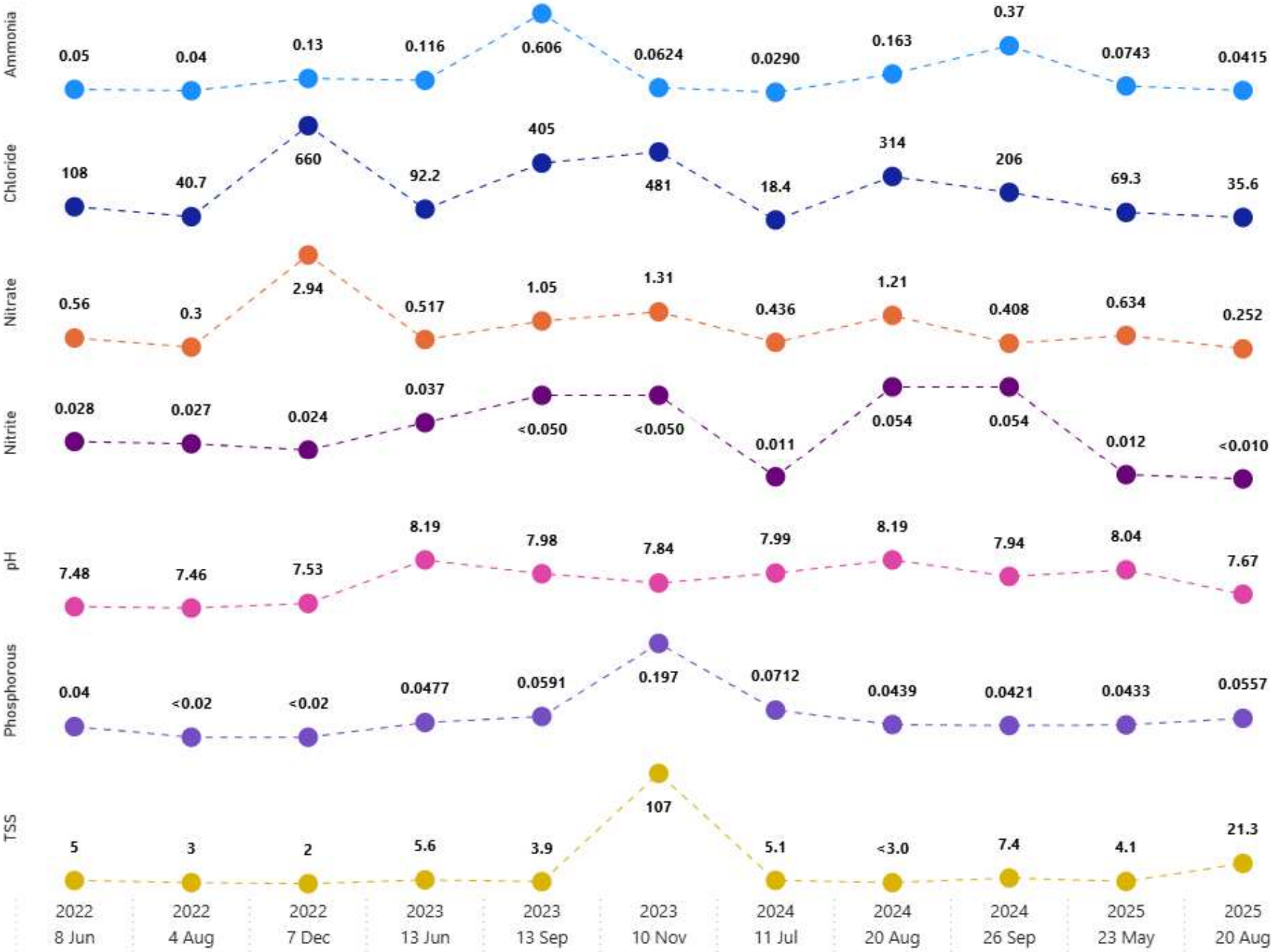


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

WK05a-SWMF-SW

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



Watercourse Water Quality Key Performance Indicator Trends

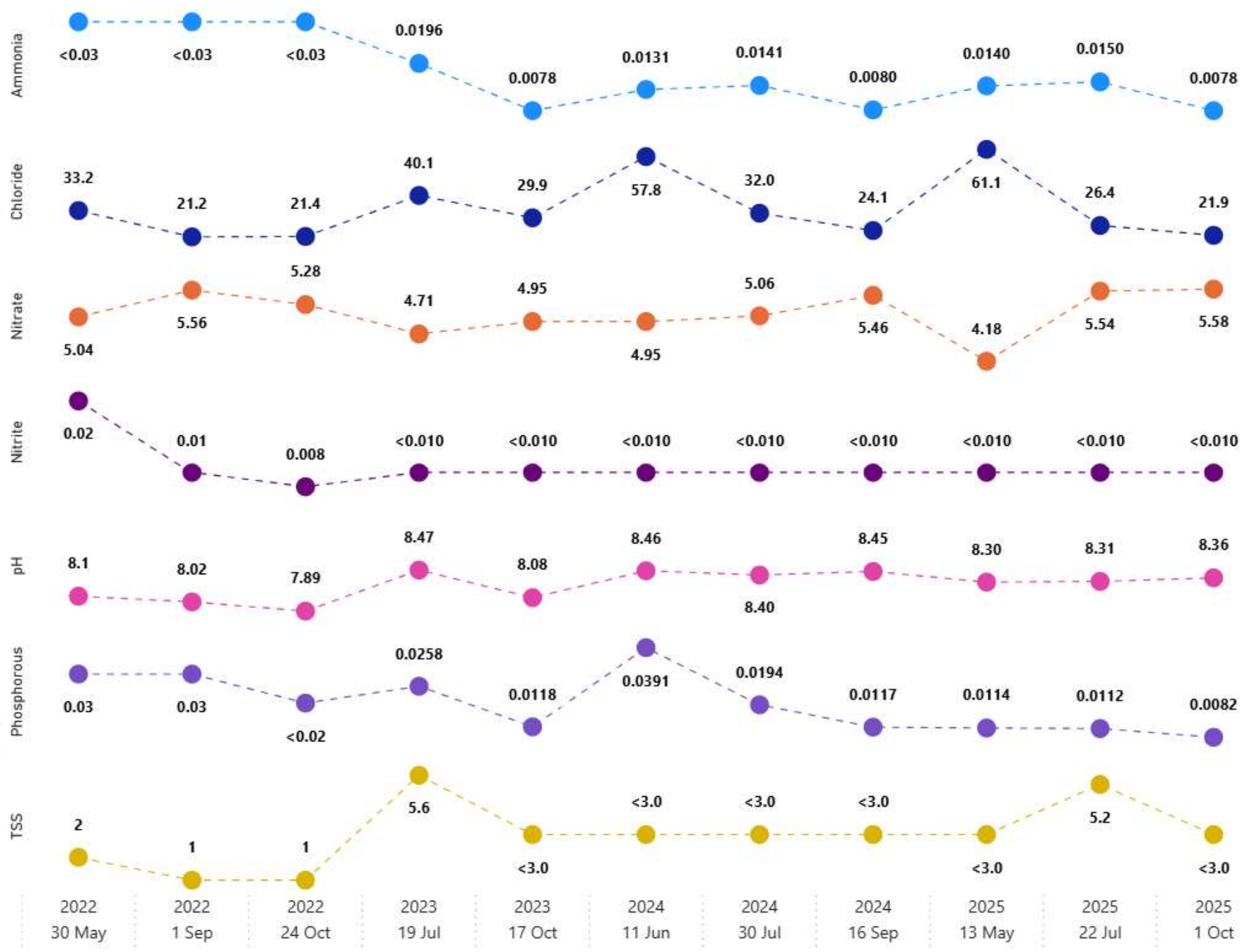


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

HW3-WC-SW

All units in mg/L, except pH in pH units.
Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



SWMF Water Quality Key Performance Indicator Trends

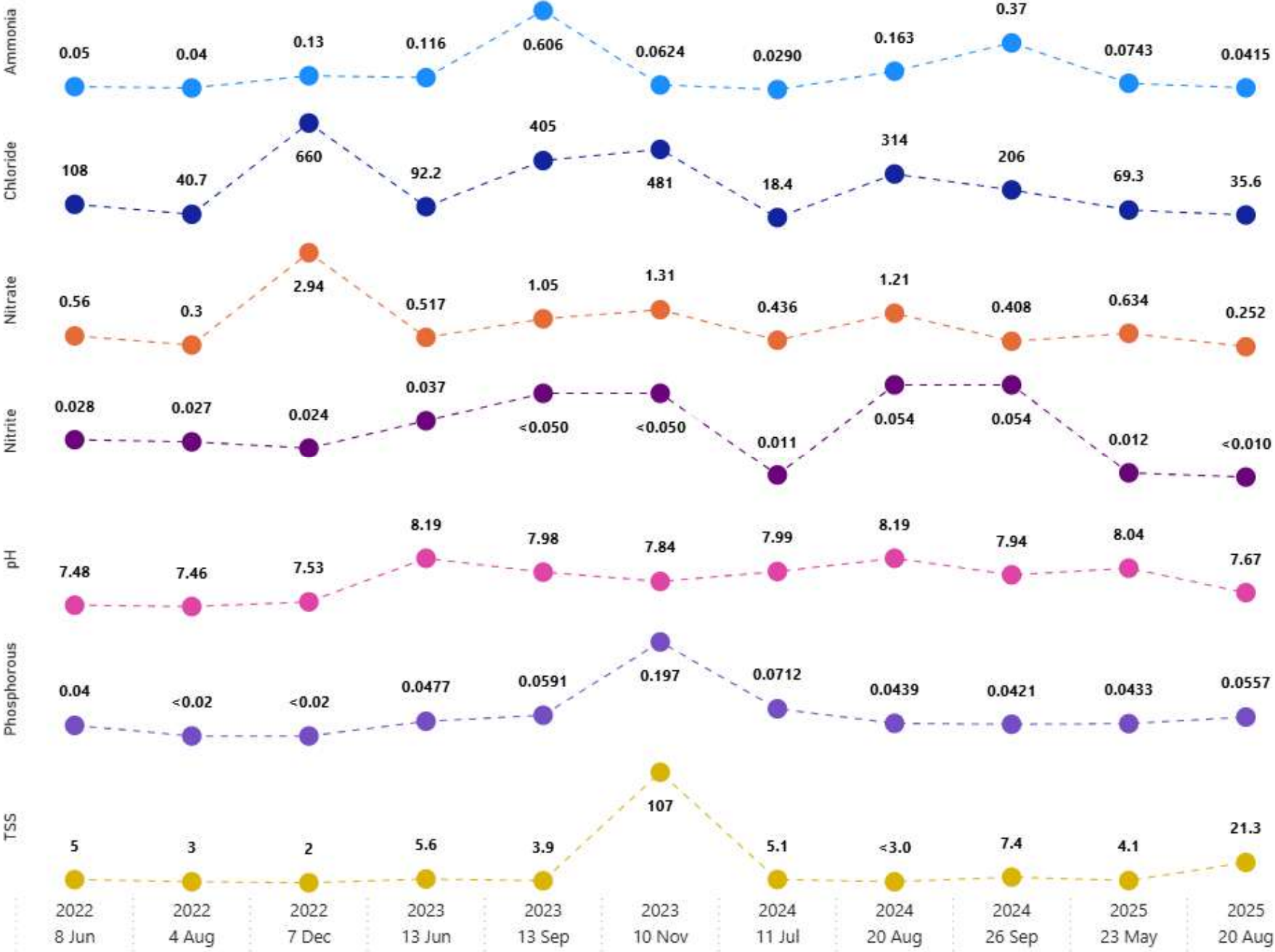


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

WK05a-SWMF-SW

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



Watercourse Water Quality Key Performance Indicator Trends

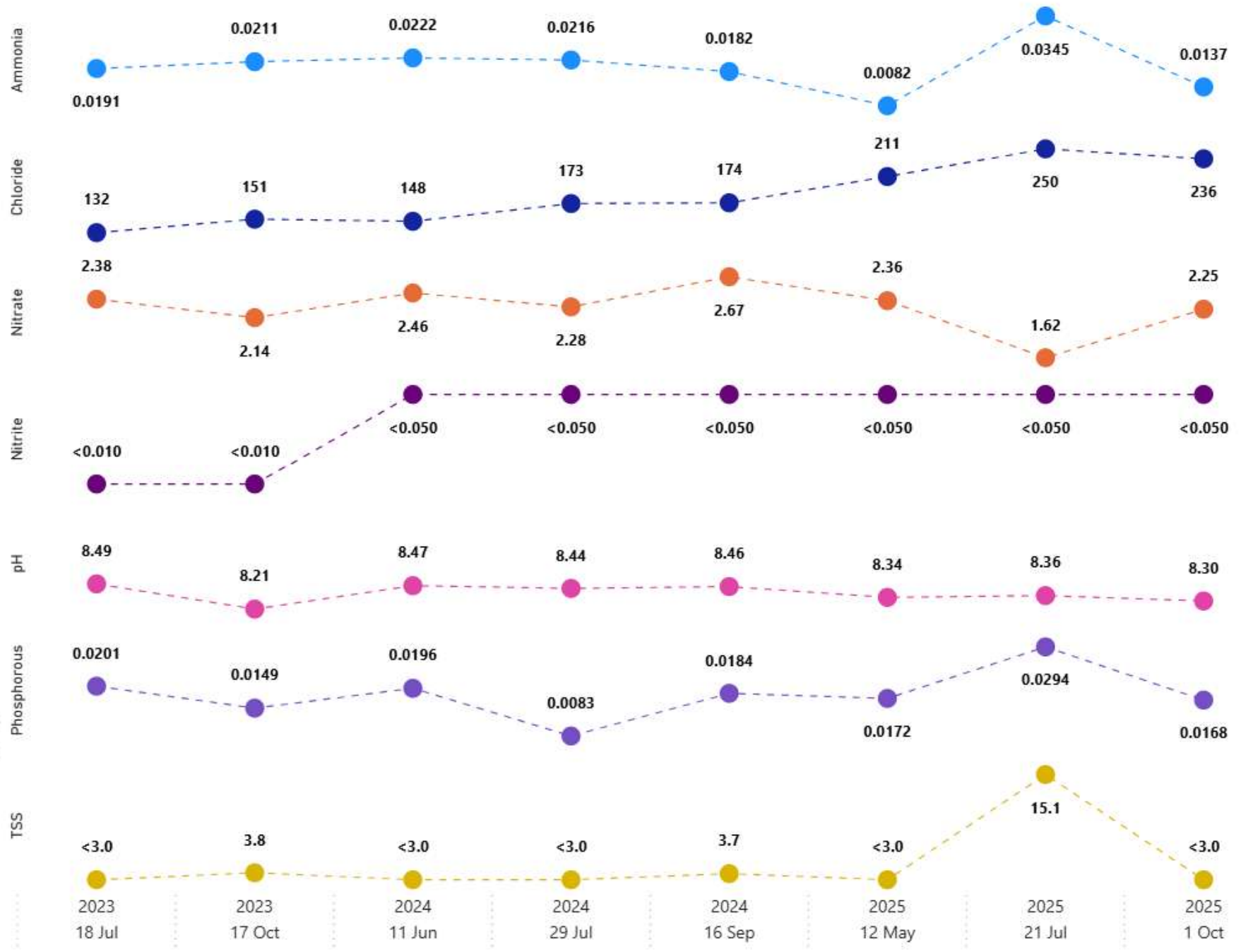


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

All units in mg/L, except pH in pH units.
Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

HW4-WC-SW



SWMF Water Quality Key Performance Indicator Trends

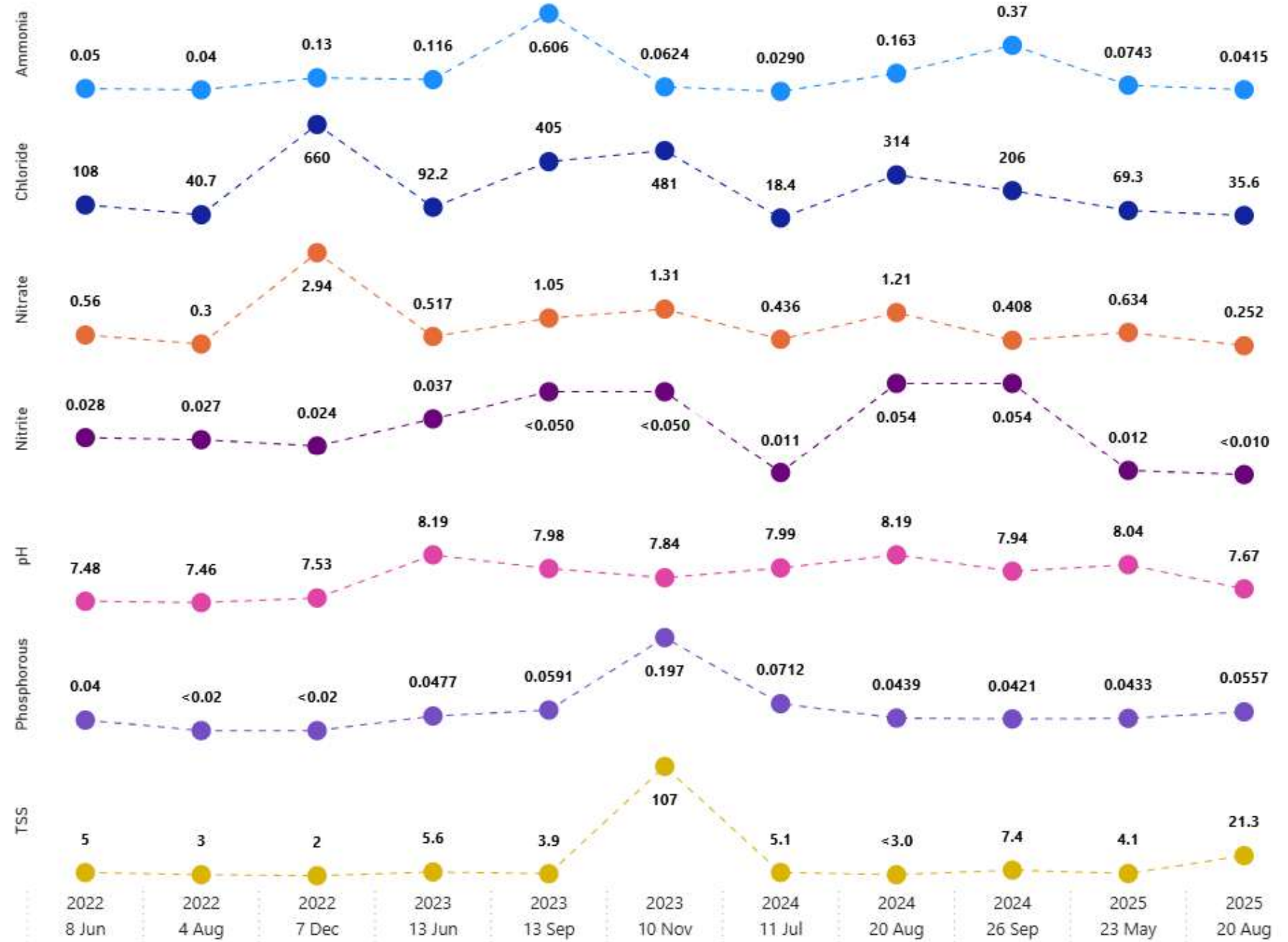


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

WK05a-SWMF-SW

- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



SWMF Water Quality Key Performance Indicator Trends

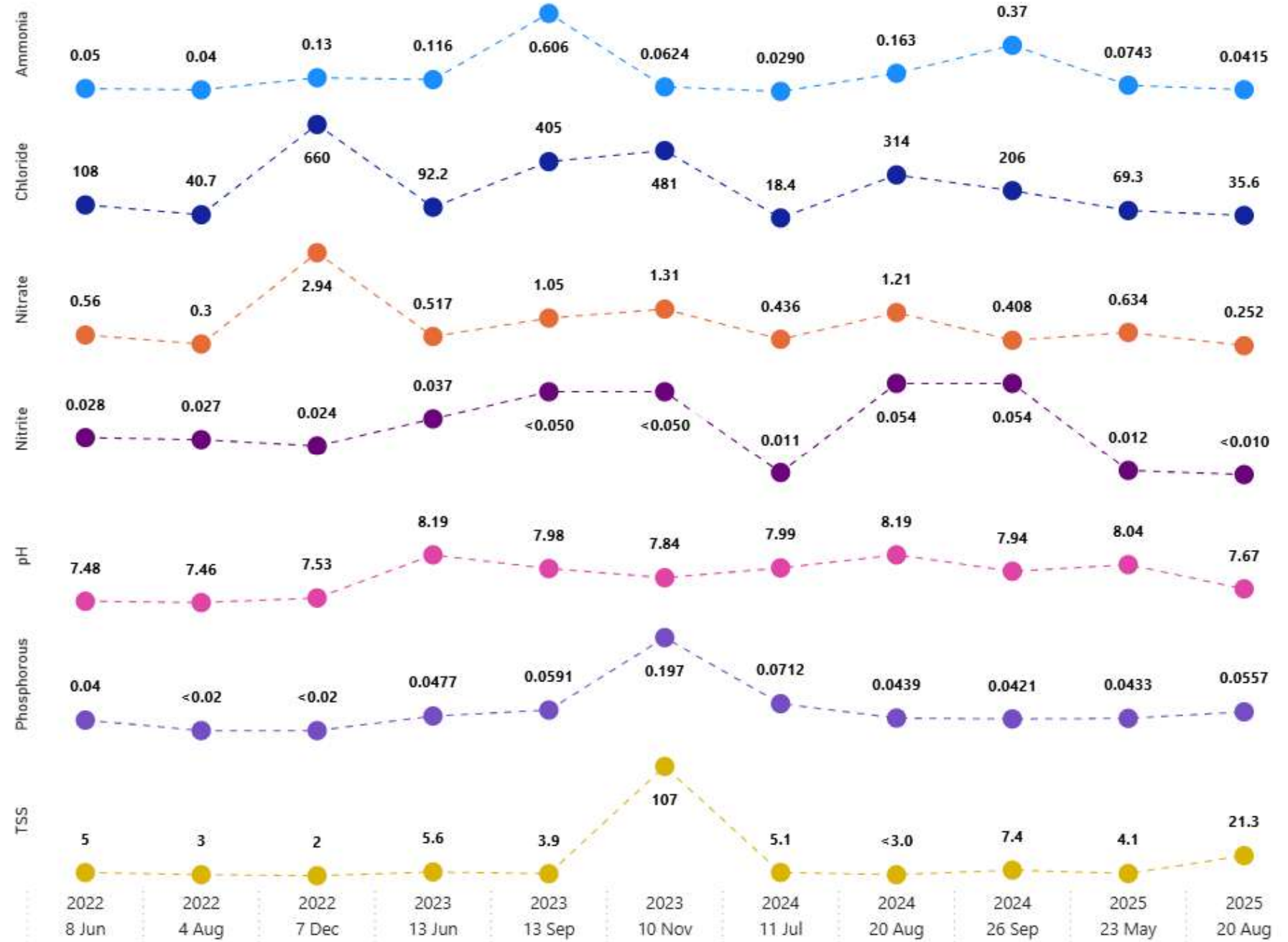


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

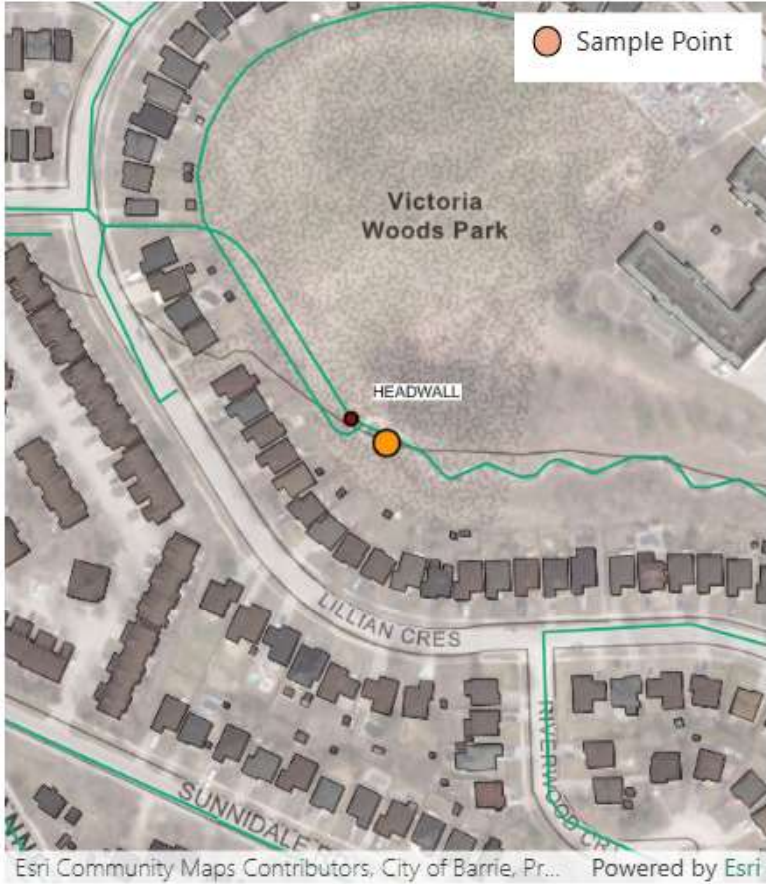
WK05a-SWMF-SW

- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



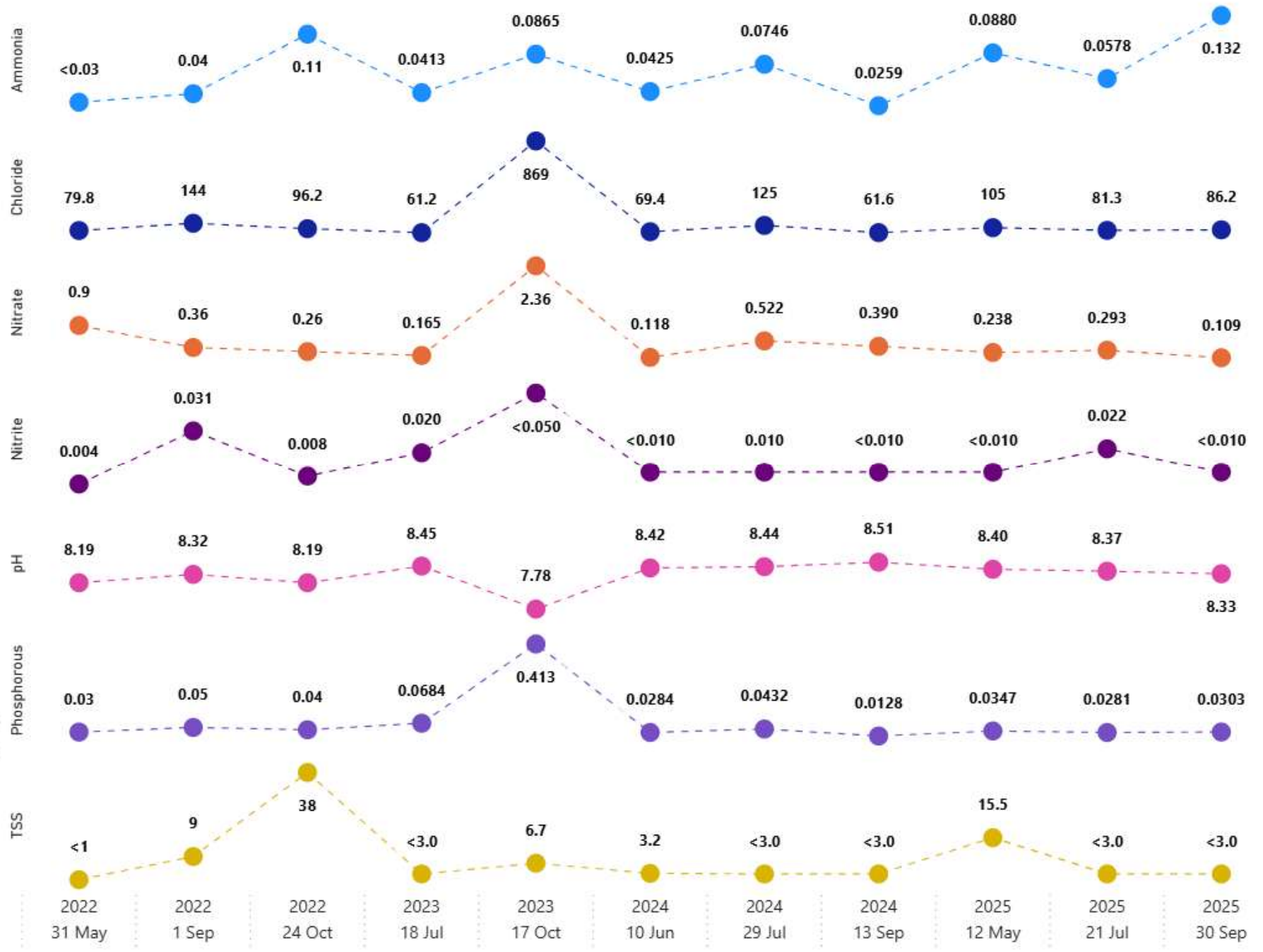
Watercourse Water Quality Key Performance Indicator Trends



Notes:
 Ammonia = Total Ammonia as N
 Nitrate = Nitrate as N
 Nitrite = Nitrite as N
 Phosphorous = Total Phosphorous
 TSS = Total Suspended Solids

All units in mg/L, except pH in pH units.
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

KD2-WC-SW



SWMF Water Quality Key Performance Indicator Trends

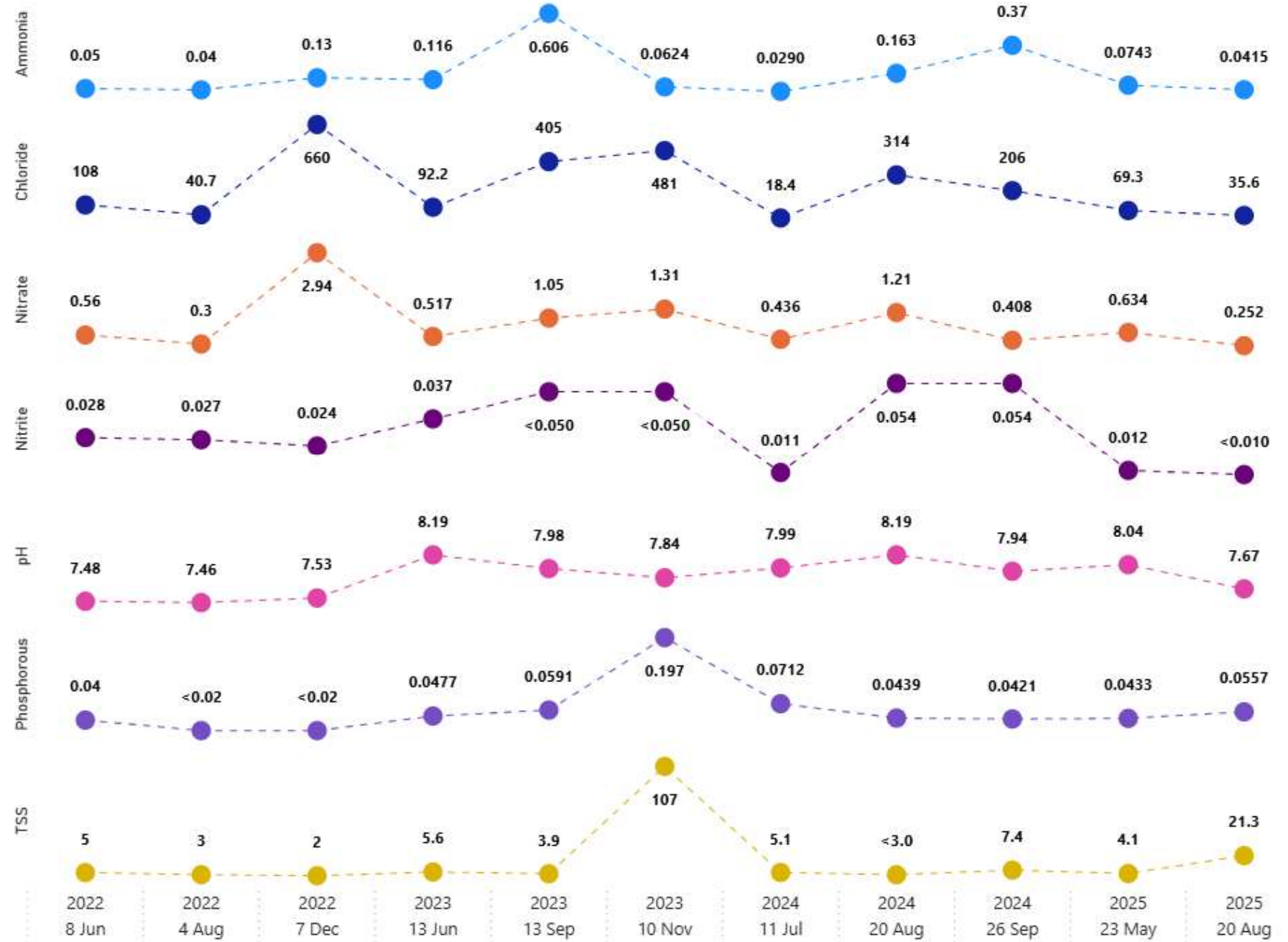


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

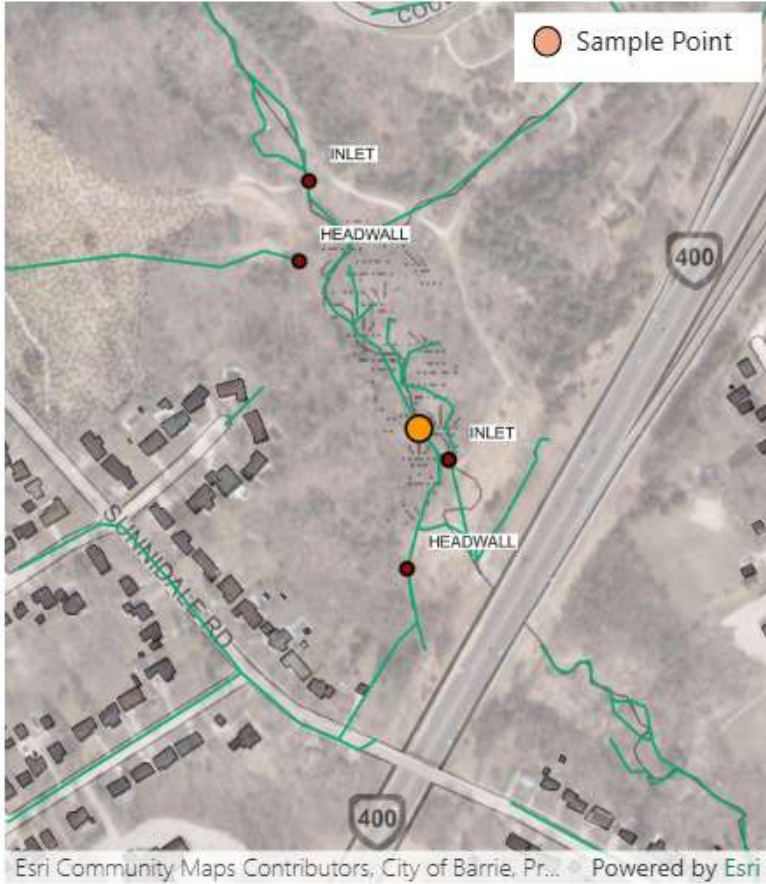
WK05a-SWMF-SW

- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



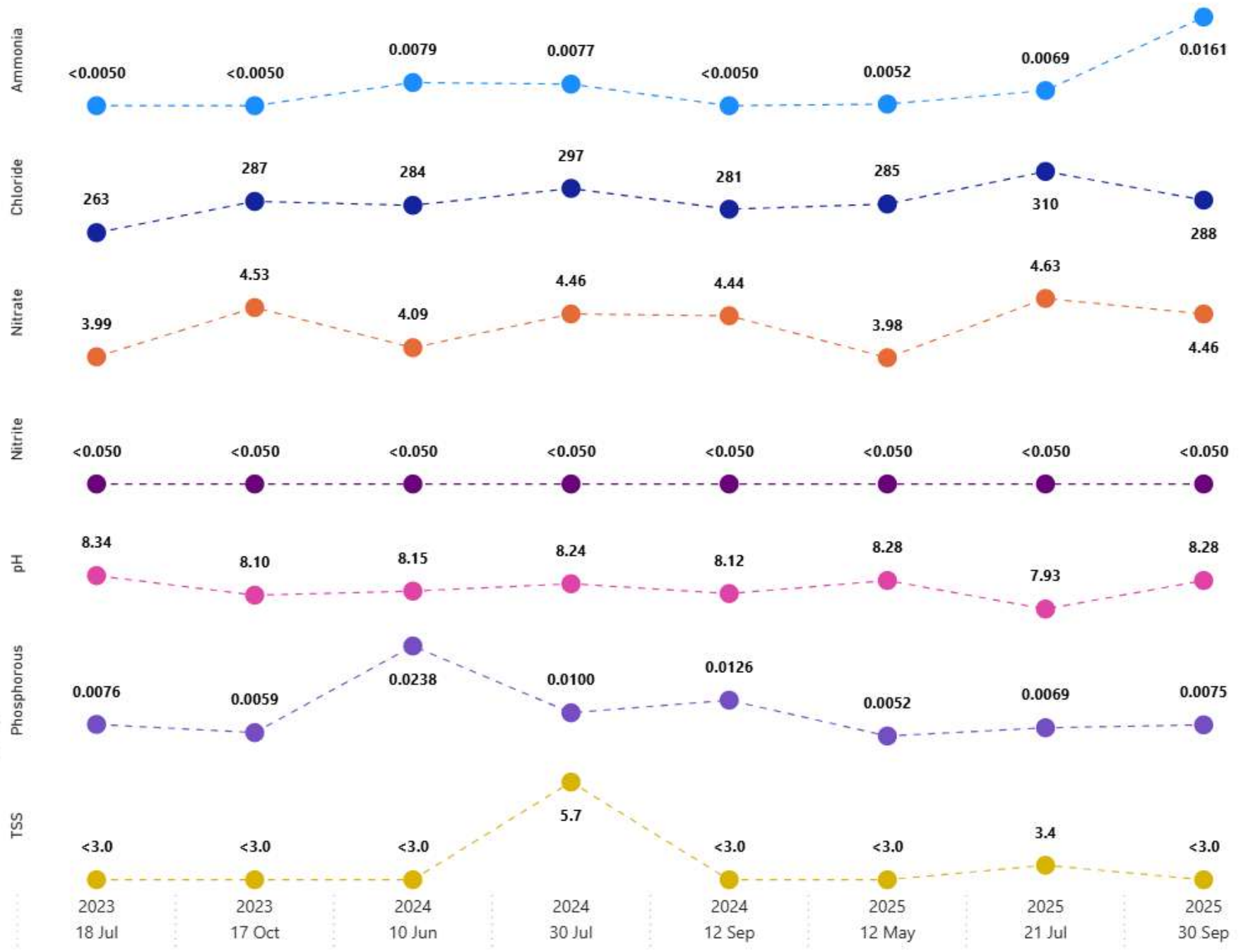
Watercourse Water Quality Key Performance Indicator Trends



Notes:
 Ammonia = Total Ammonia as N
 Nitrate = Nitrate as N
 Nitrite = Nitrite as N
 Phosphorous = Total Phosphorous
 TSS = Total Suspended Solids

KD3-WC-SW

All units in mg/L, except pH in pH units.
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



SWMF Water Quality Key Performance Indicator Trends

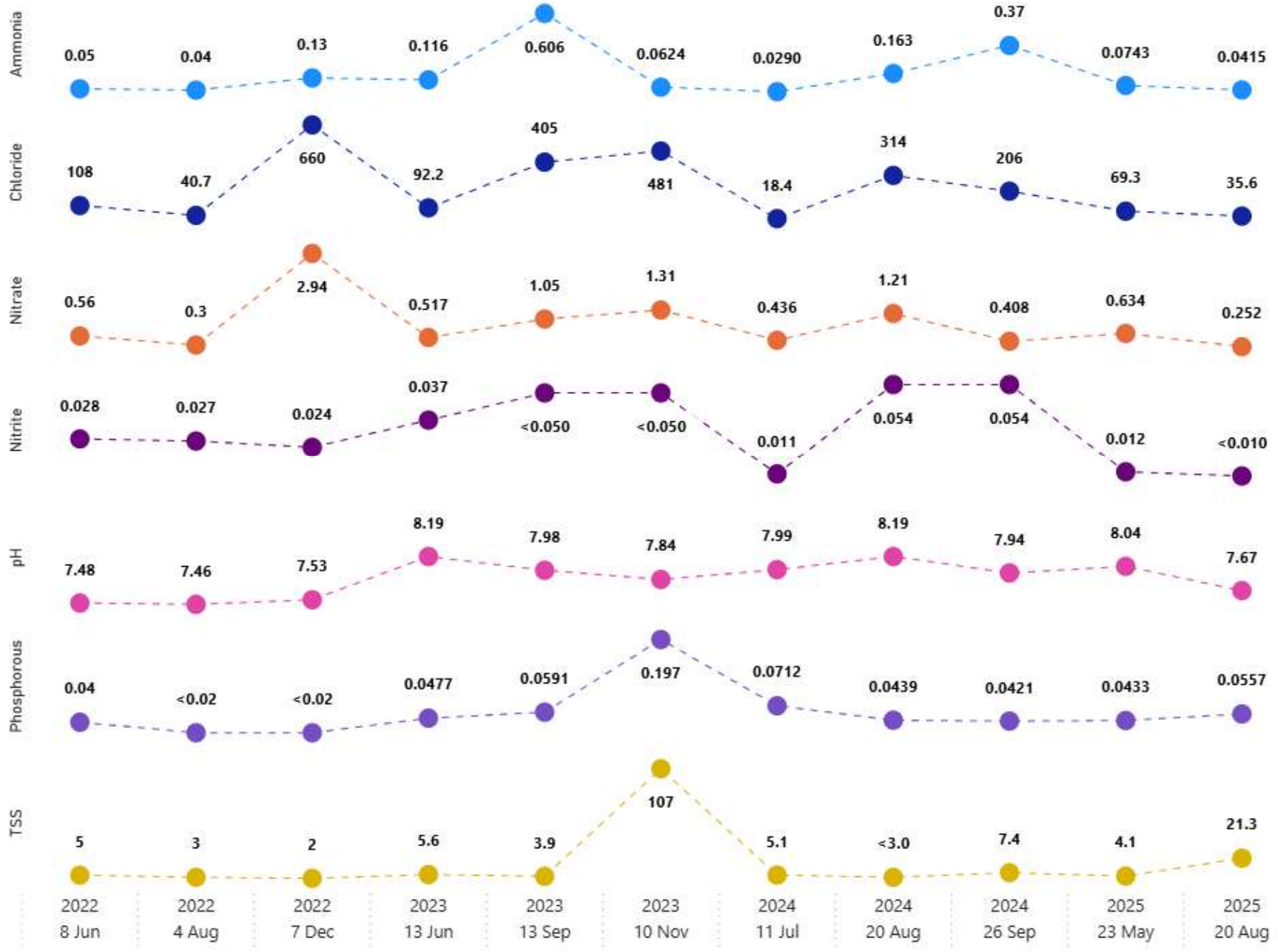


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

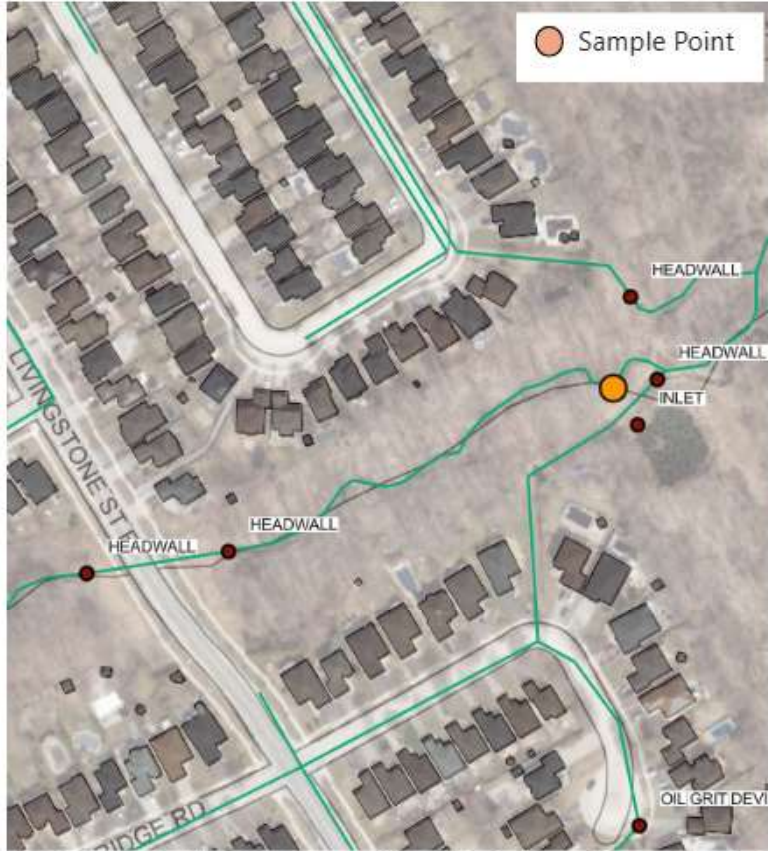
- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

WK05a-SWMF-SW

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



Watercourse Water Quality Key Performance Indicator Trends

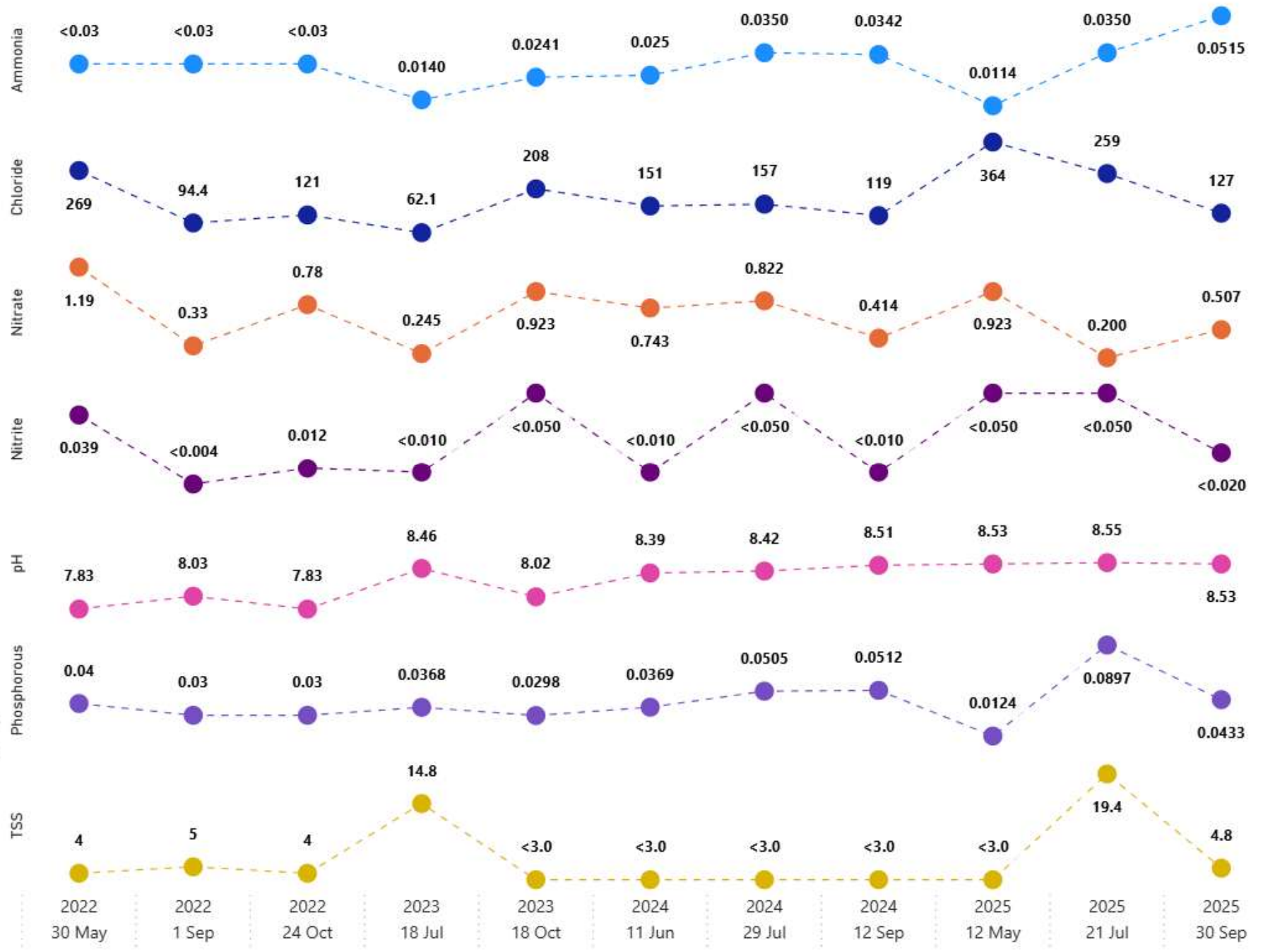


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

LT1-WC-SW

All units in mg/L, except pH in pH units.
Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



SWMF Water Quality Key Performance Indicator Trends

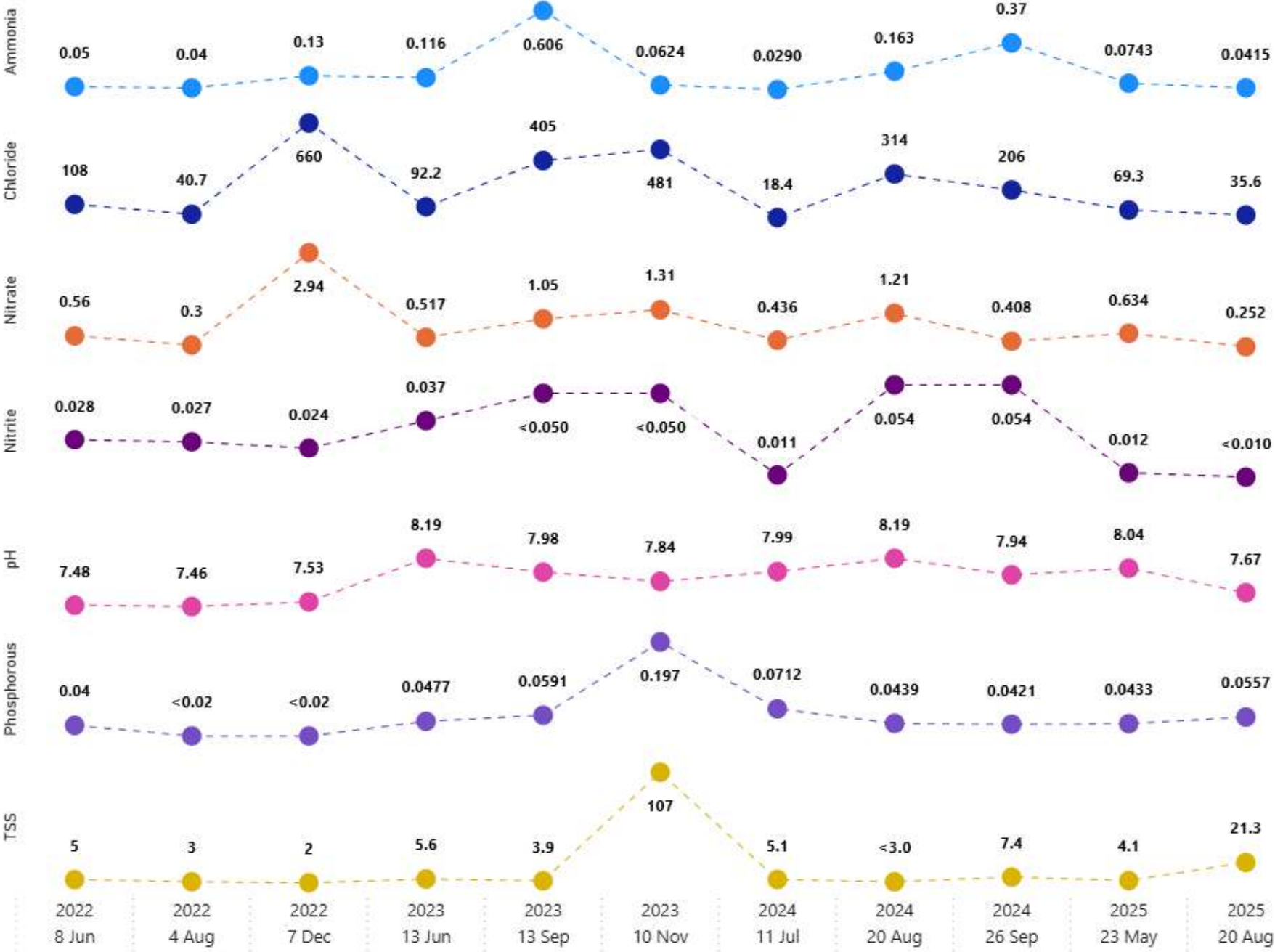


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

WK05a-SWMF-SW

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



Watercourse Water Quality Key Performance Indicator Trends

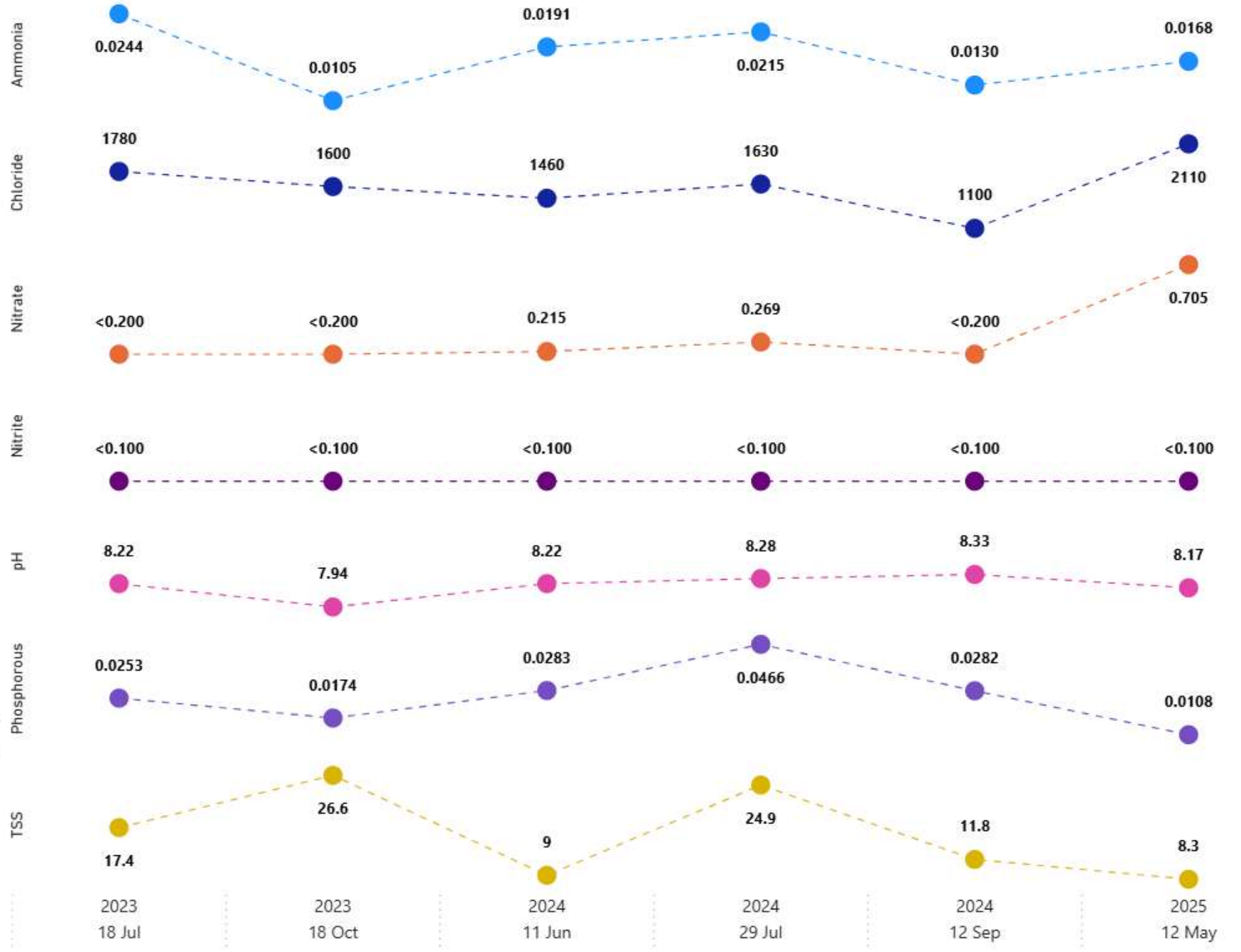


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

LT2-WC-SW

All units in mg/L, except pH in pH units.
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



SWMF Water Quality Key Performance Indicator Trends

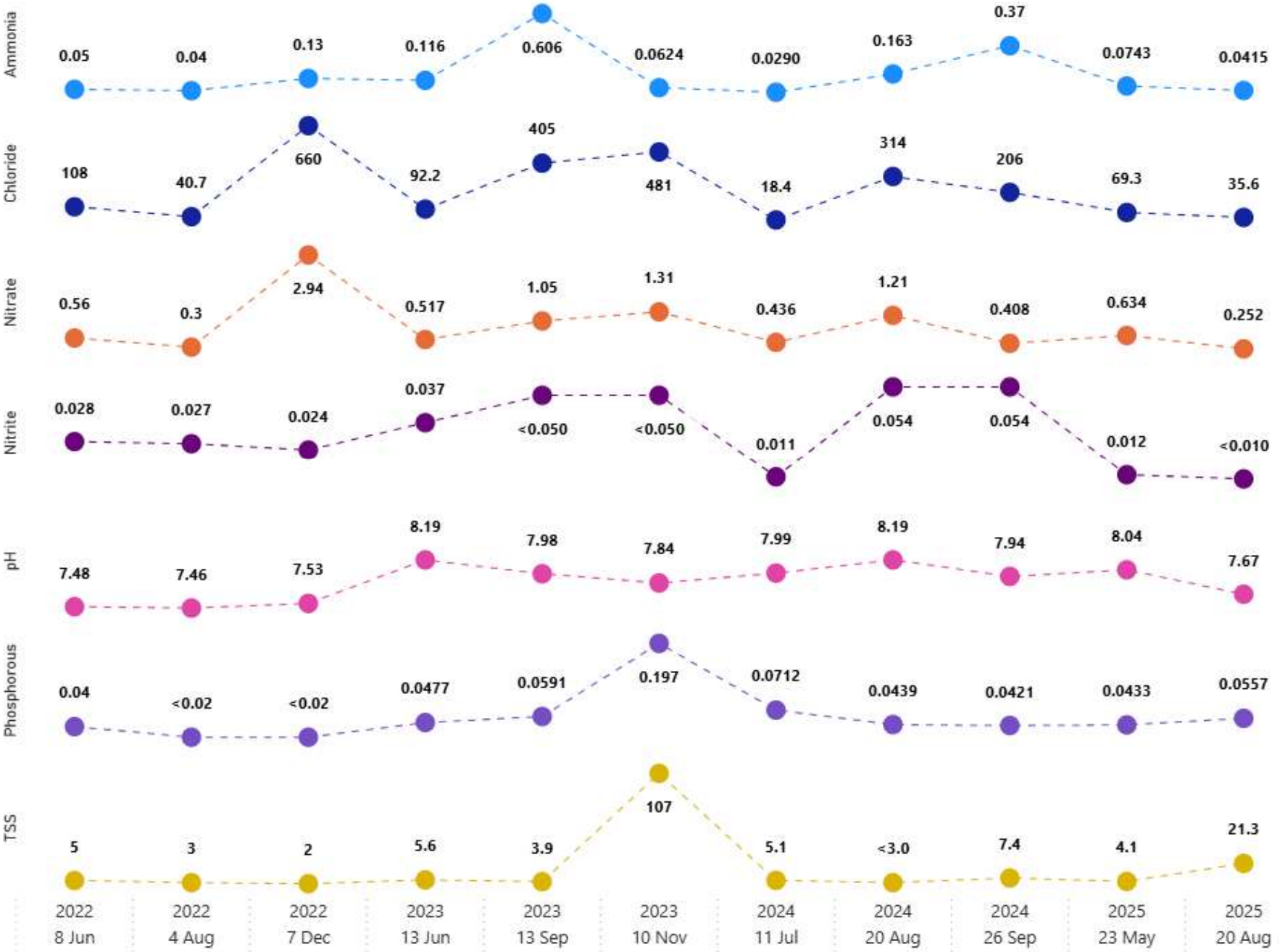


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

WK05a-SWMF-SW

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



SWMF Water Quality Key Performance Indicator Trends

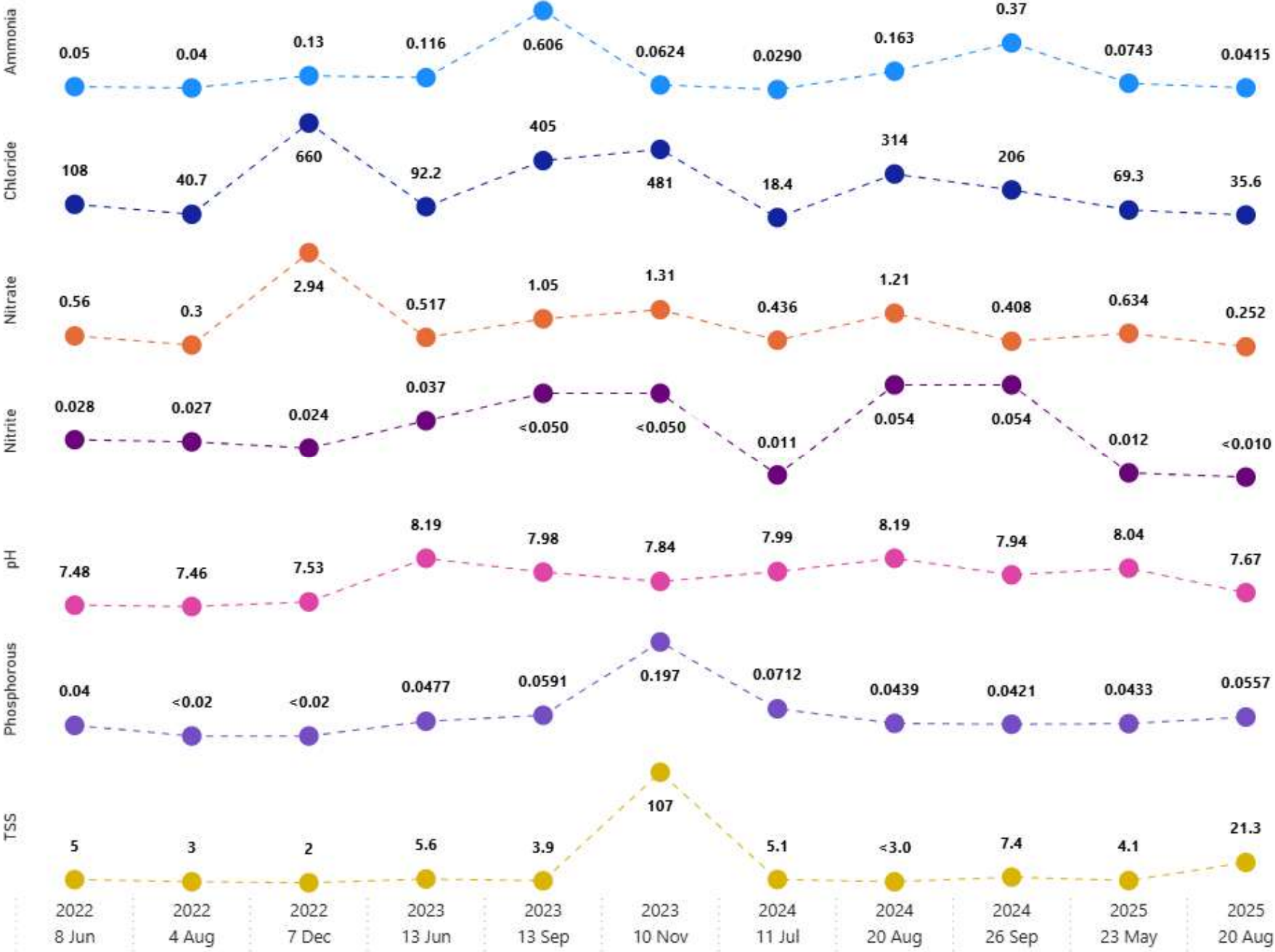


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

WK05a-SWMF-SW

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



Watercourse Water Quality Key Performance Indicator Trends

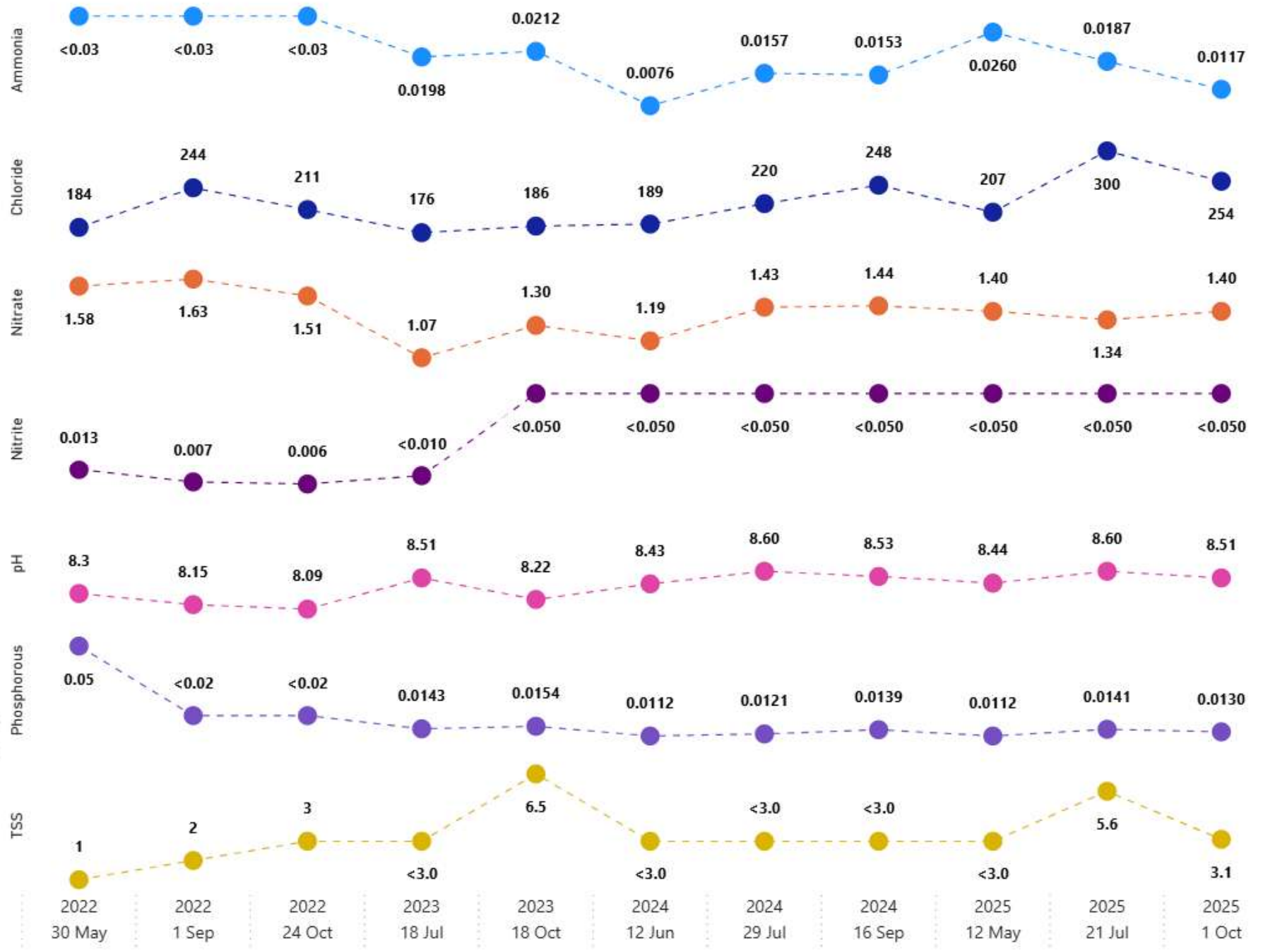


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

LV2-WC-SW

All units in mg/L, except pH in pH units.
Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



SWMF Water Quality Key Performance Indicator Trends

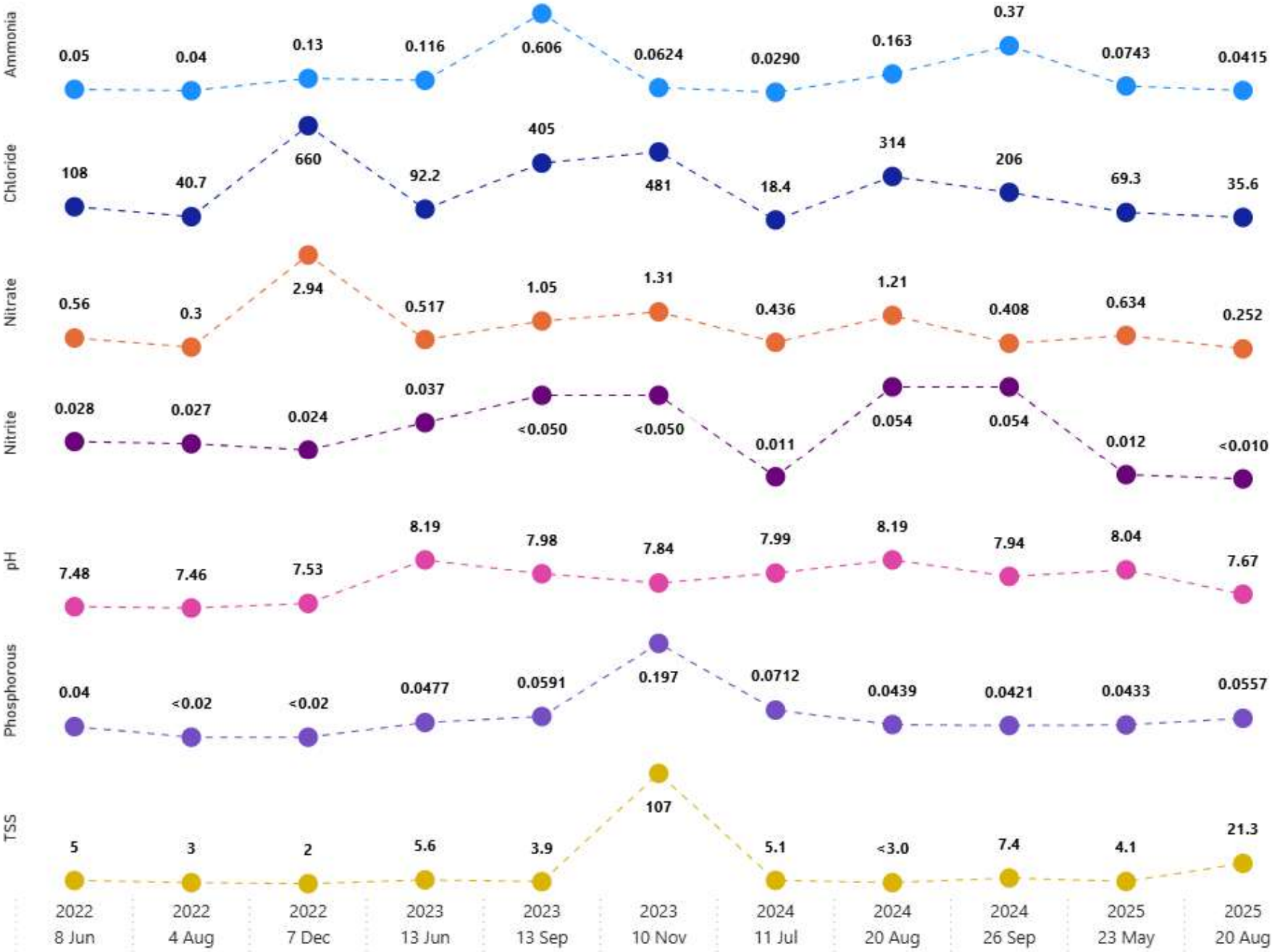


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

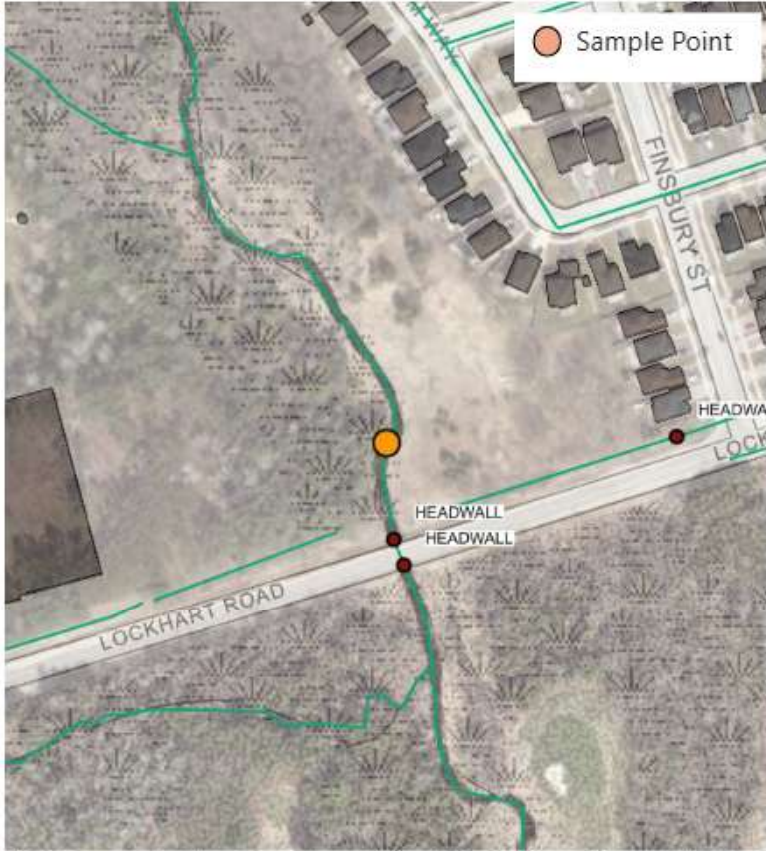
- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

WK05a-SWMF-SW

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



Watercourse Water Quality Key Performance Indicator Trends

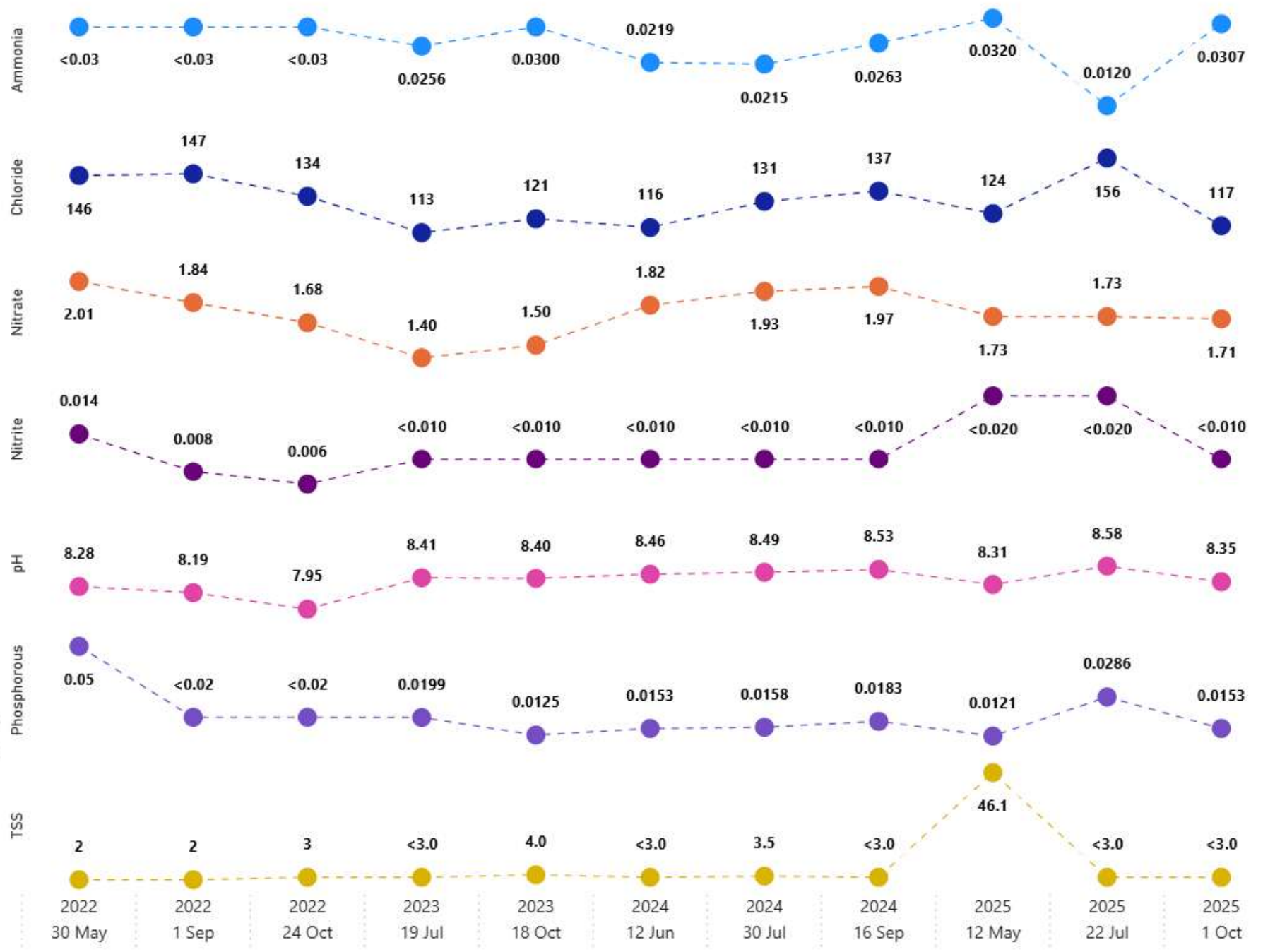


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

LV3-WC-SW

All units in mg/L, except pH in pH units.
Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



SWMF Water Quality Key Performance Indicator Trends

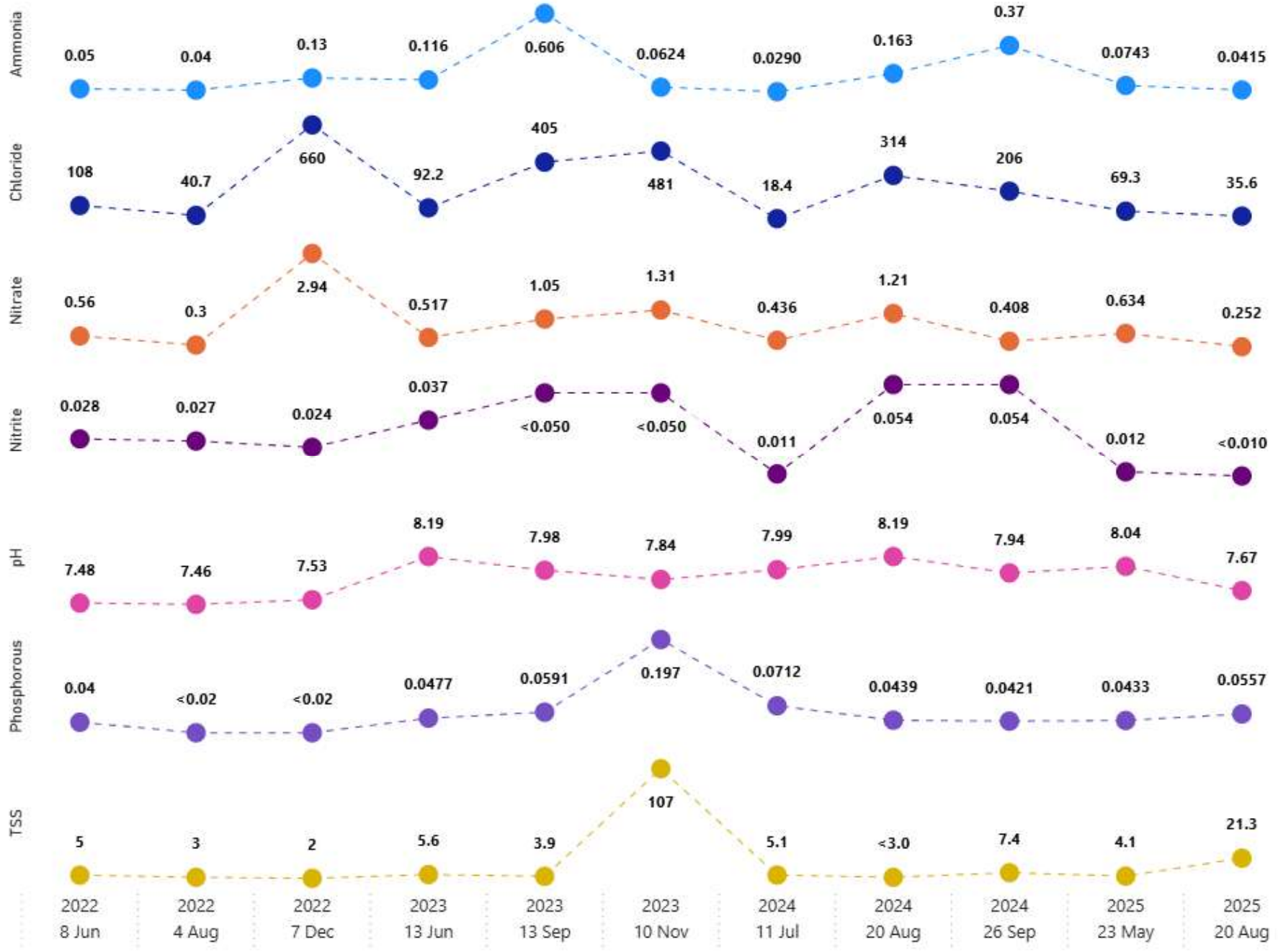


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- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

WK05a-SWMF-SW

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



SWMF Water Quality Key Performance Indicator Trends

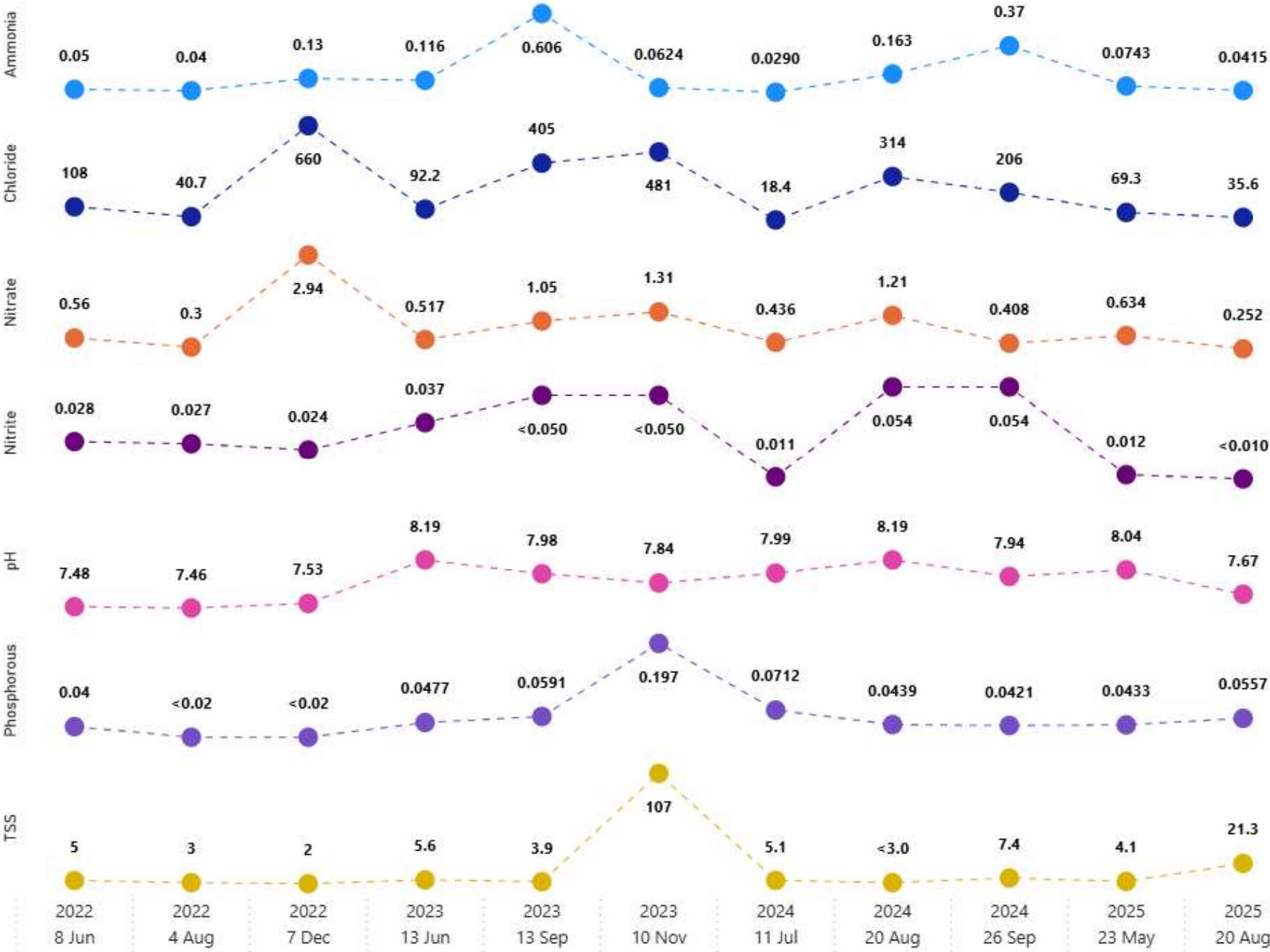


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

WK05a-SWMF-SW

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



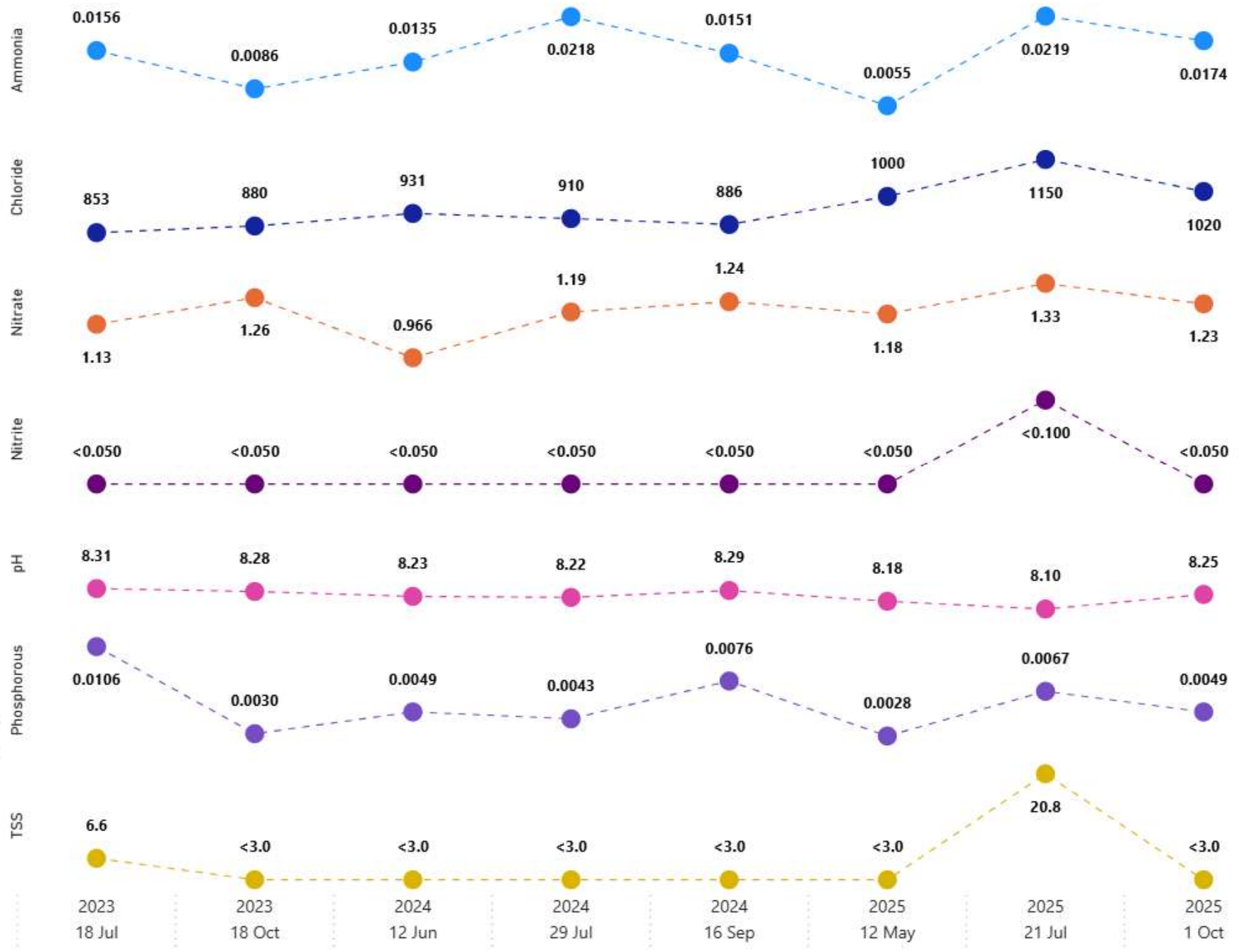
Watercourse Water Quality Key Performance Indicator Trends



Notes:
 Ammonia = Total Ammonia as N
 Nitrate = Nitrate as N
 Nitrite = Nitrite as N
 Phosphorous = Total Phosphorous
 TSS = Total Suspended Solids

LV5-WC-SW

All units in mg/L, except pH in pH units.
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



SWMF Water Quality Key Performance Indicator Trends

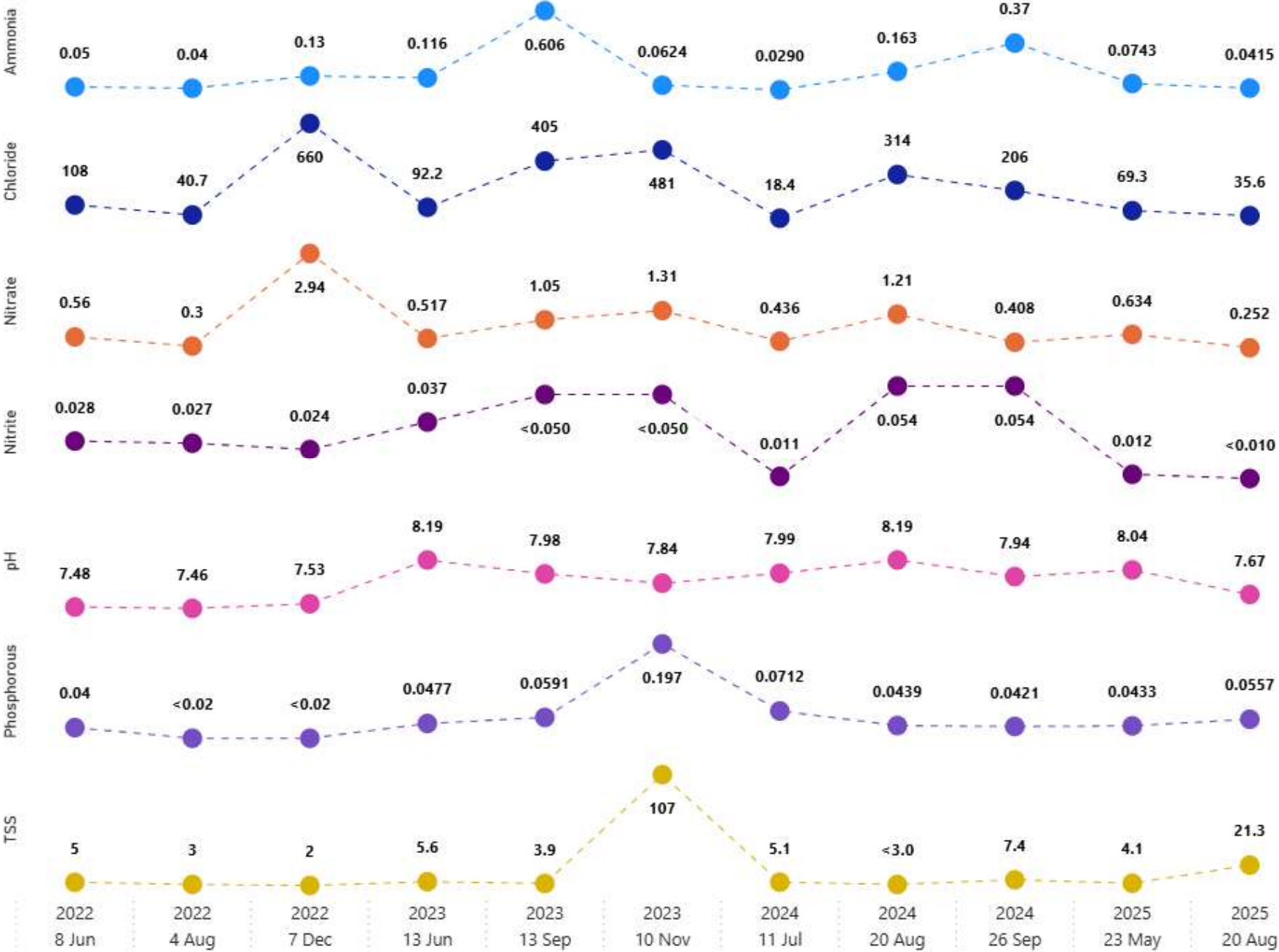


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

WK05a-SWMF-SW

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



Watercourse Water Quality Key Performance Indicator Trends

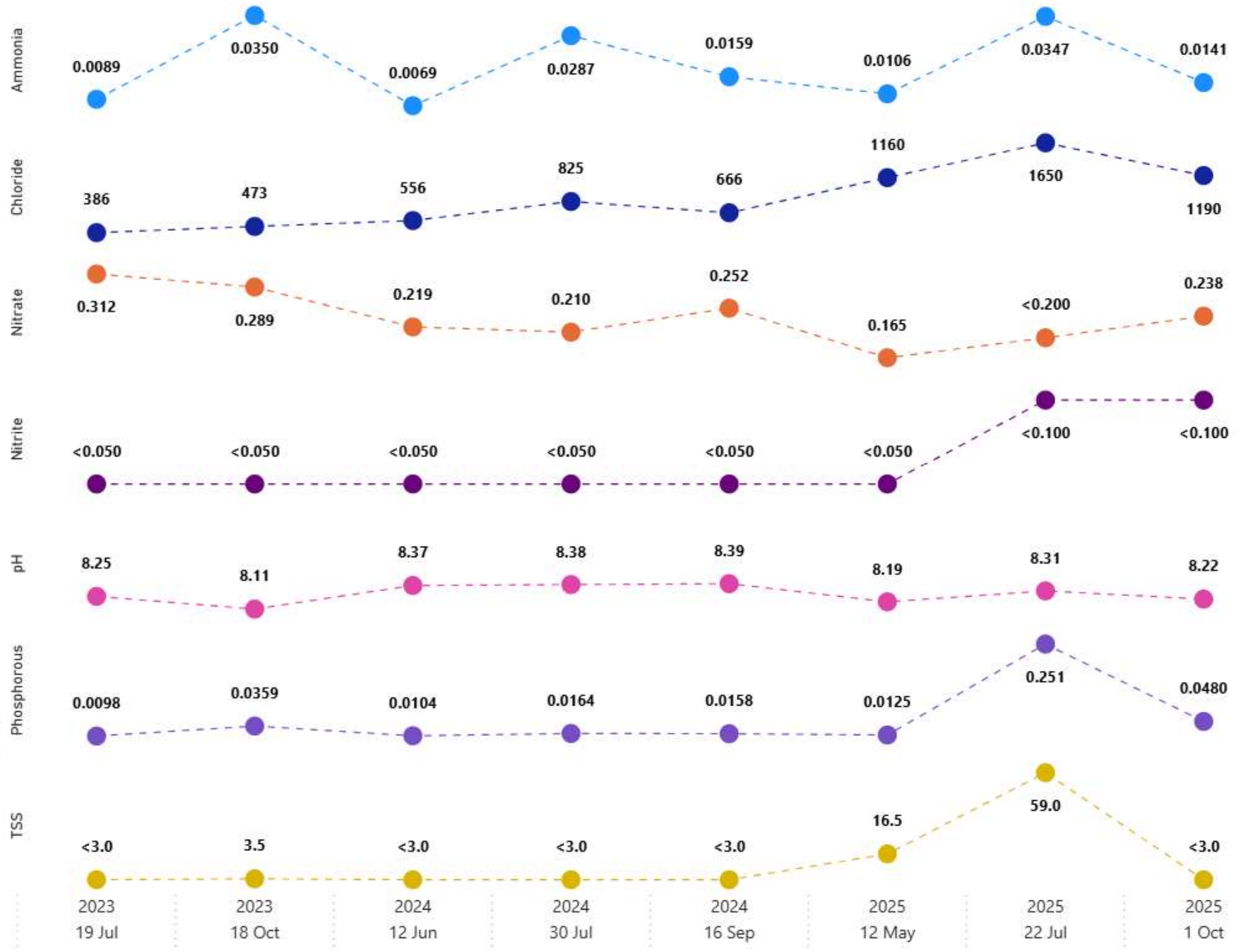


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

LV6-WC-SW

All units in mg/L, except pH in pH units.
Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



SWMF Water Quality Key Performance Indicator Trends

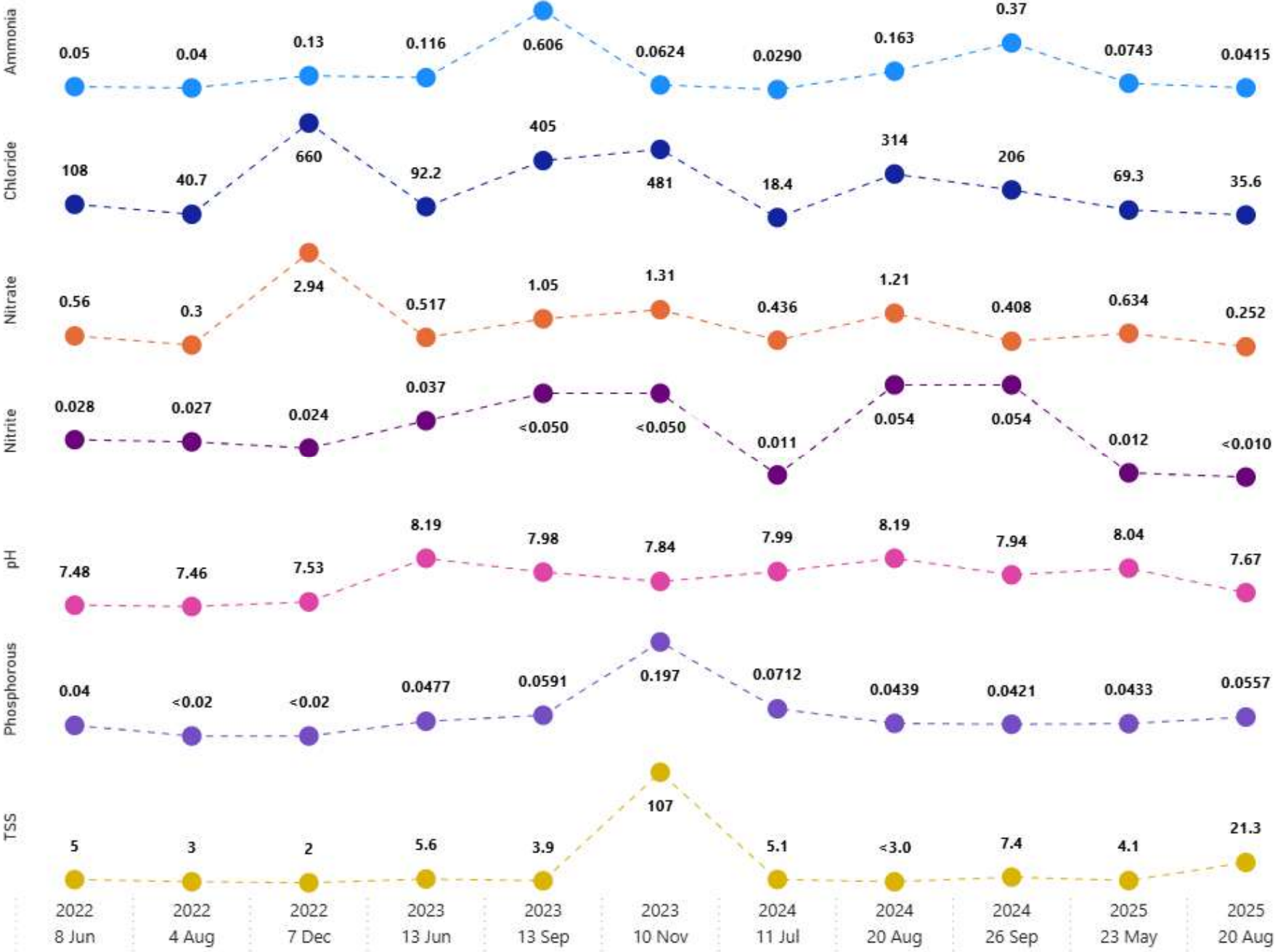


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

WK05a-SWMF-SW

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



Watercourse Water Quality Key Performance Indicator Trends

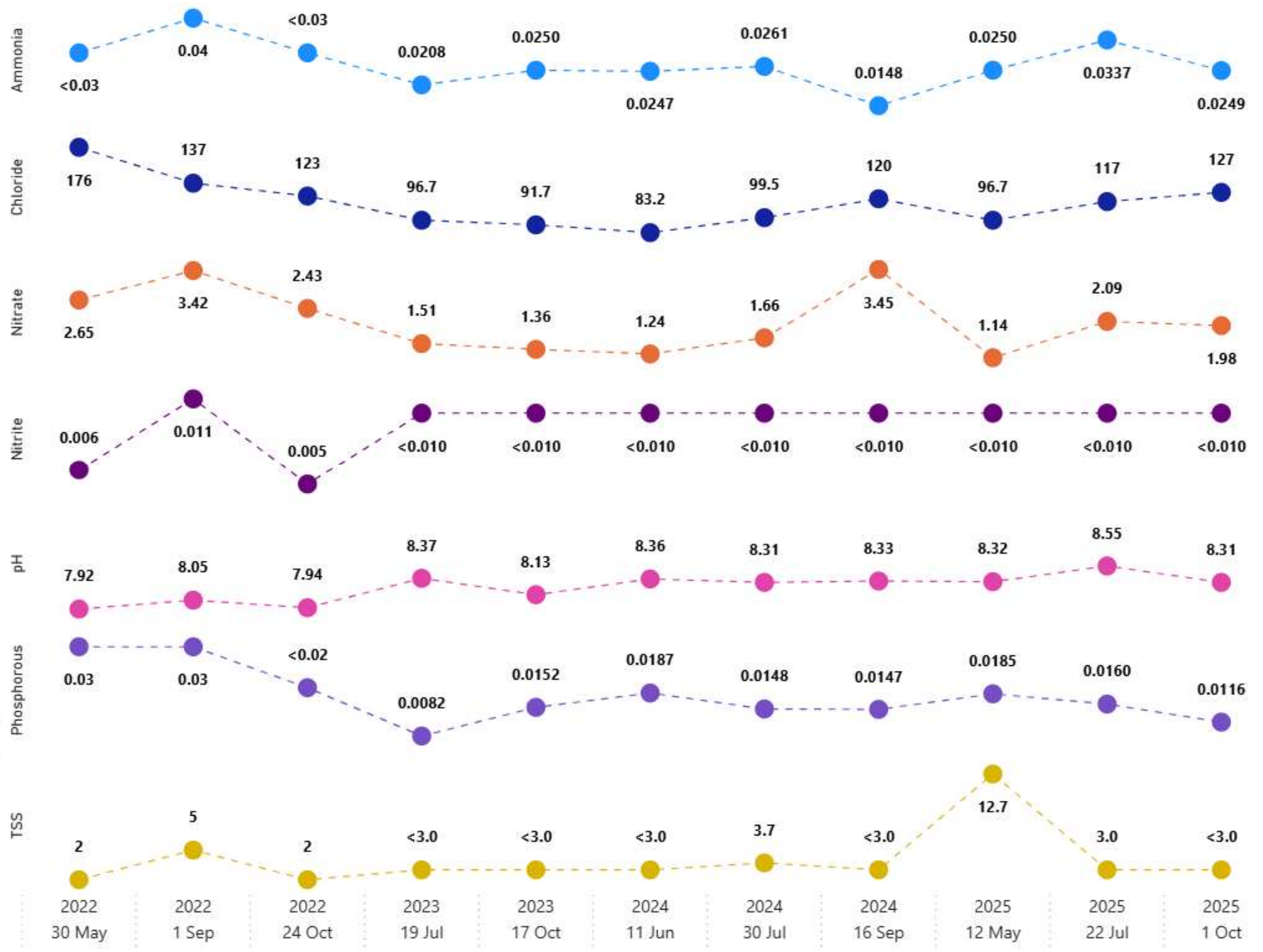


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- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

SC1-WC-SW

All units in mg/L, except pH in pH units.
Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



SWMF Water Quality Key Performance Indicator Trends

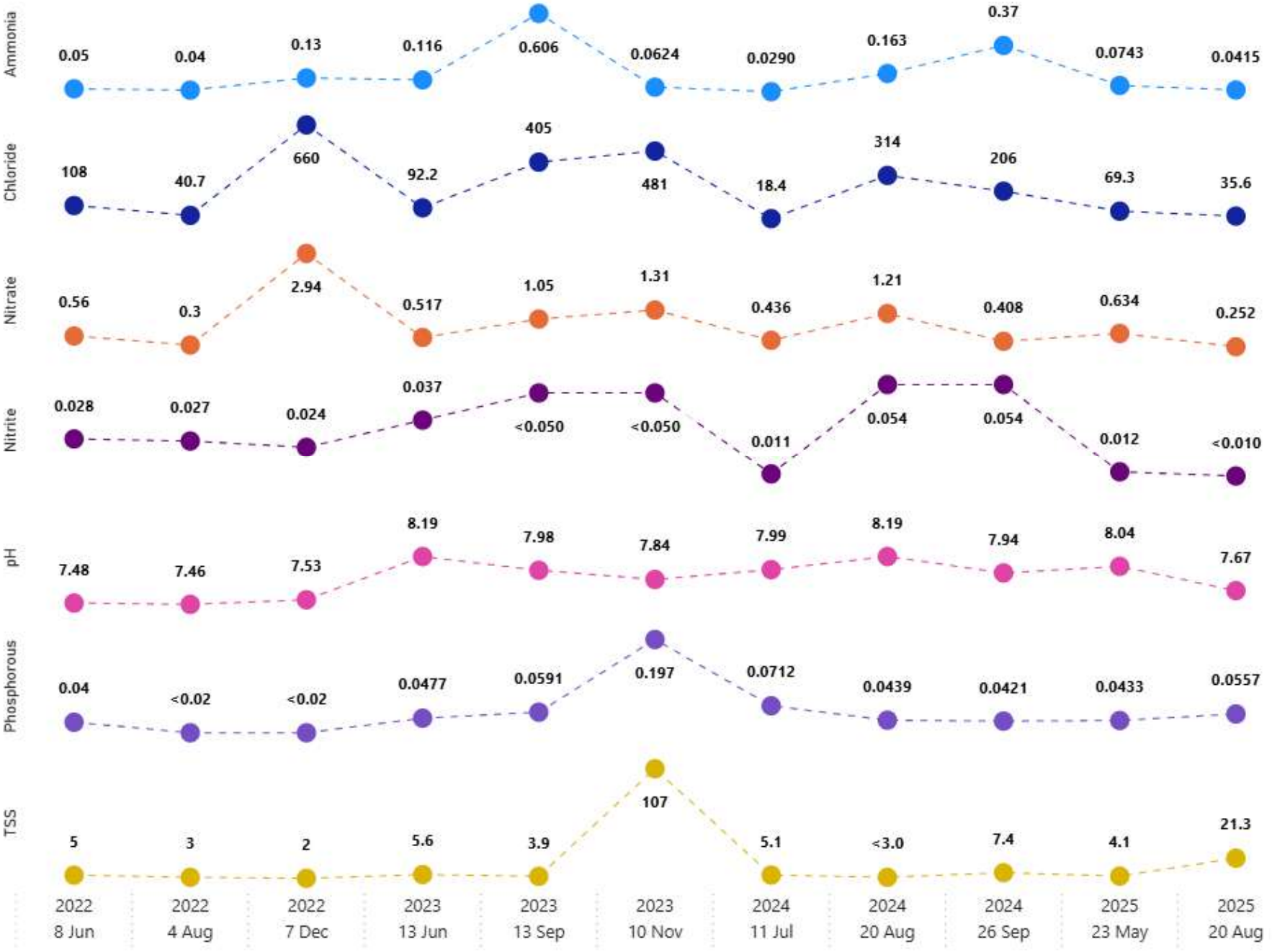


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

WK05a-SWMF-SW

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



Watercourse Water Quality Key Performance Indicator Trends

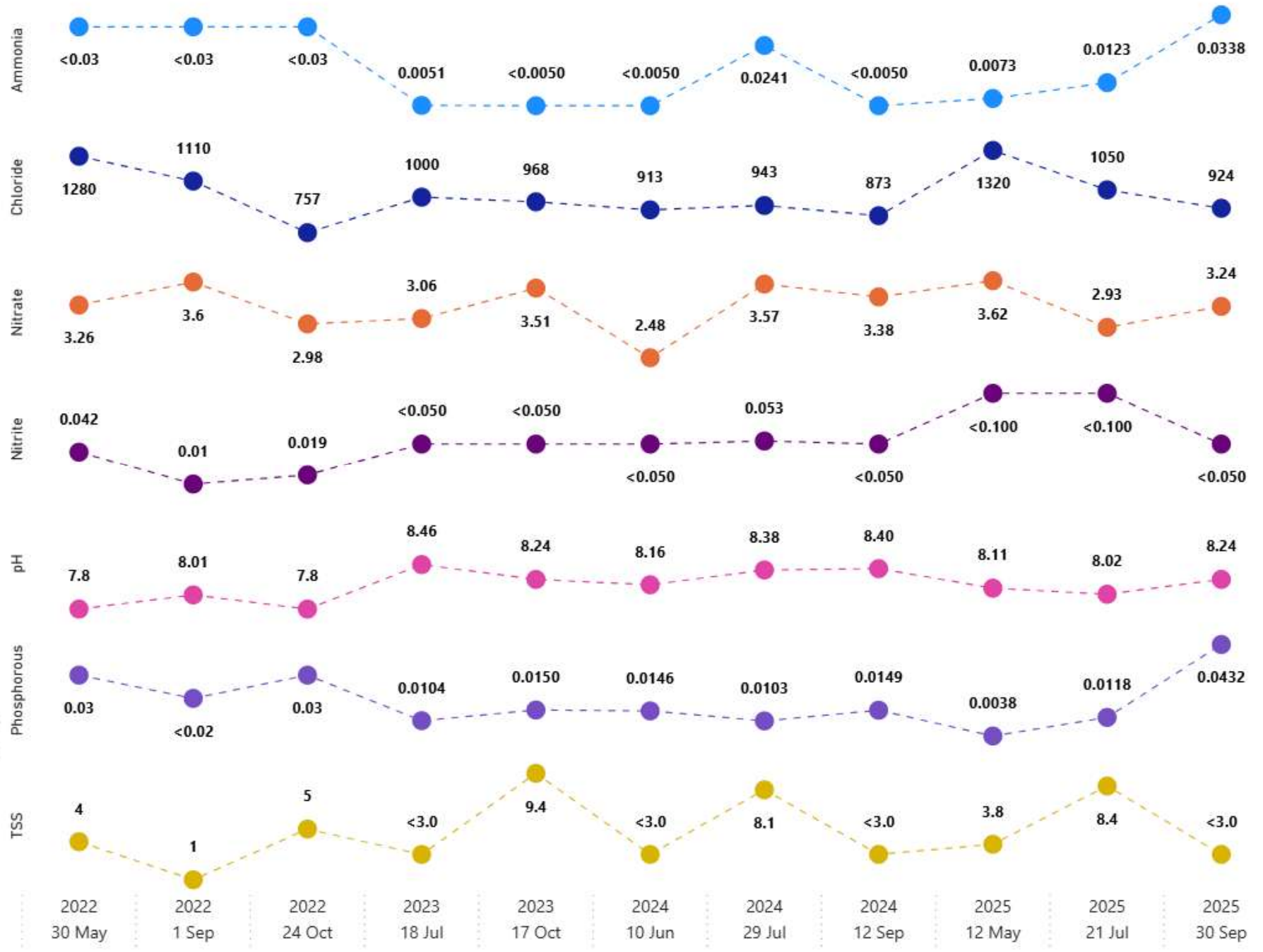


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

SP1-WC-SW

All units in mg/L, except pH in pH units.
Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



SWMF Water Quality Key Performance Indicator Trends

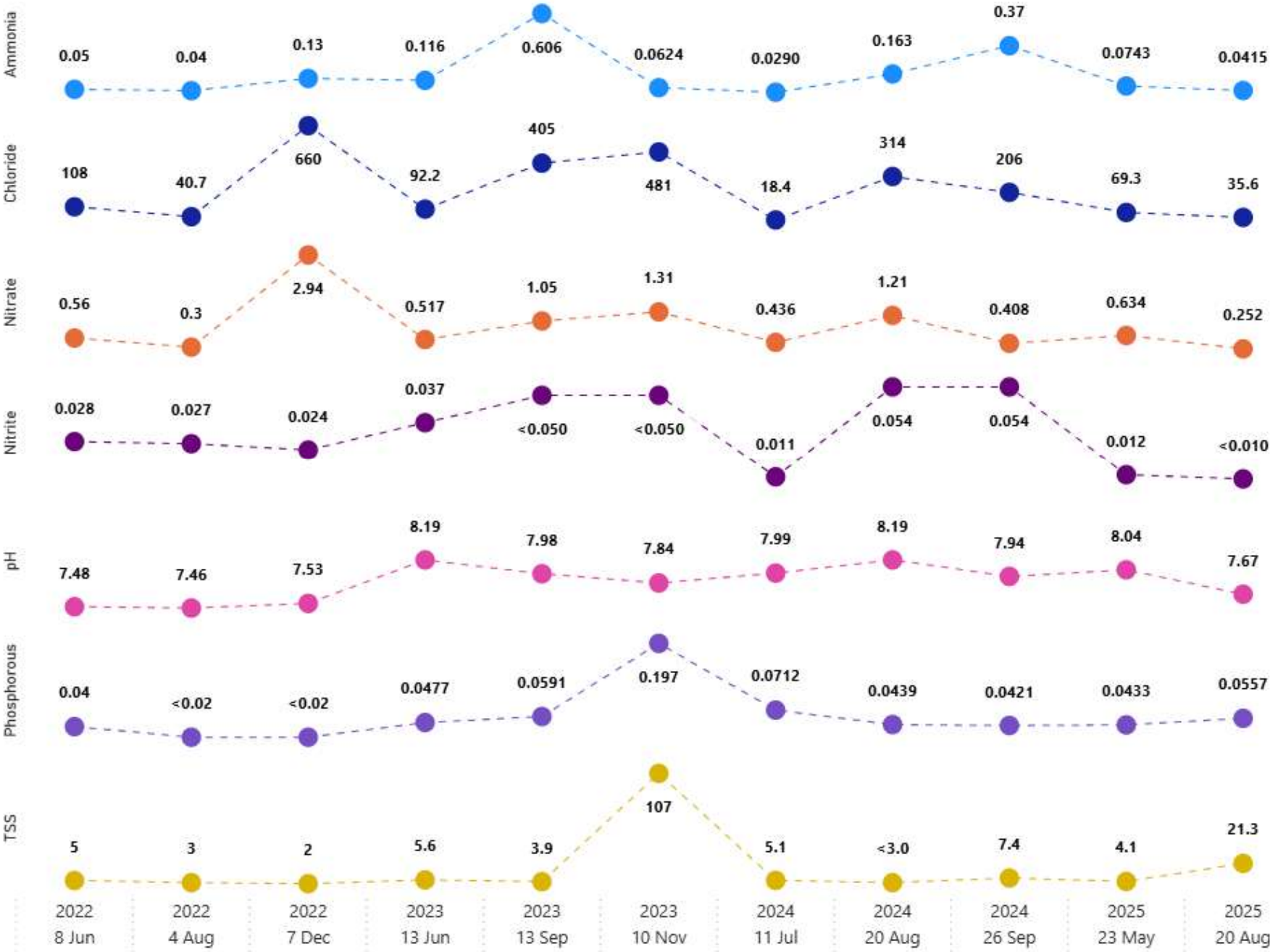


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

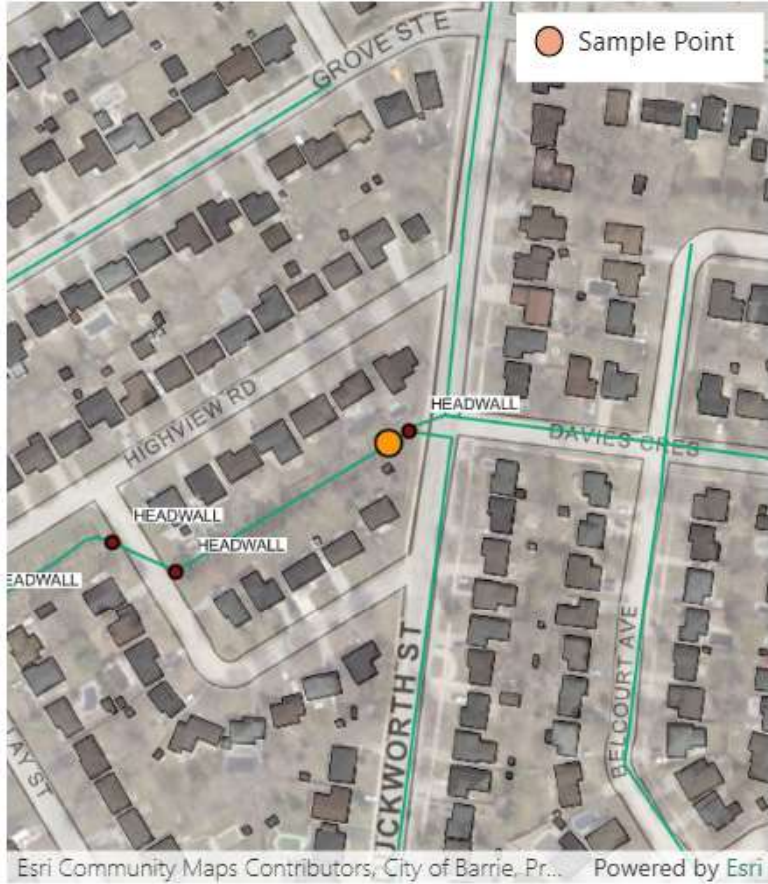
- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

WK05a-SWMF-SW

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



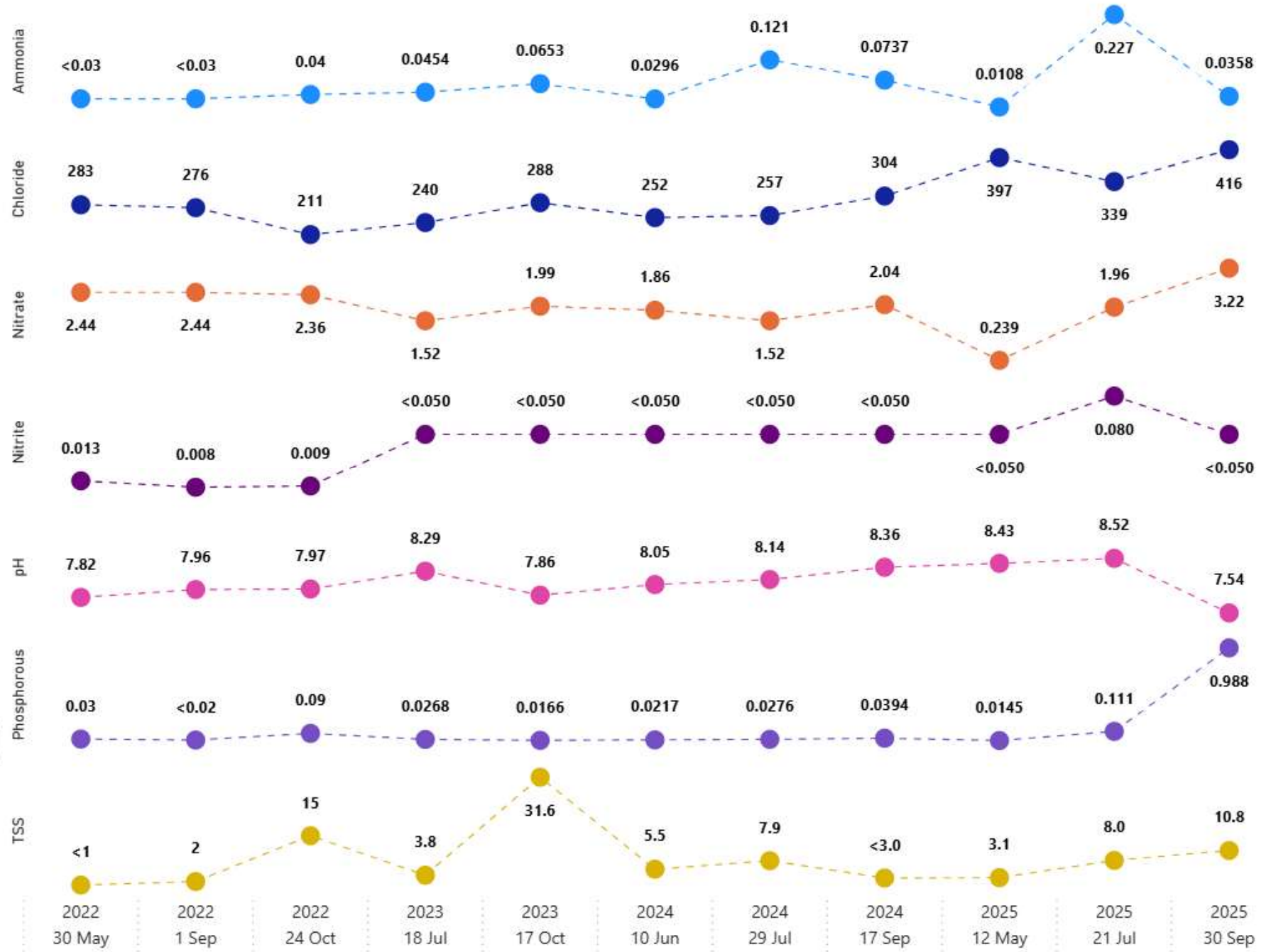
Watercourse Water Quality Key Performance Indicator Trends



Notes:
 Ammonia = Total Ammonia as N
 Nitrate = Nitrate as N
 Nitrite = Nitrite as N
 Phosphorous = Total Phosphorous
 TSS = Total Suspended Solids

SP2-WC-SW

All units in mg/L, except pH in pH units.
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



SWMF Water Quality Key Performance Indicator Trends

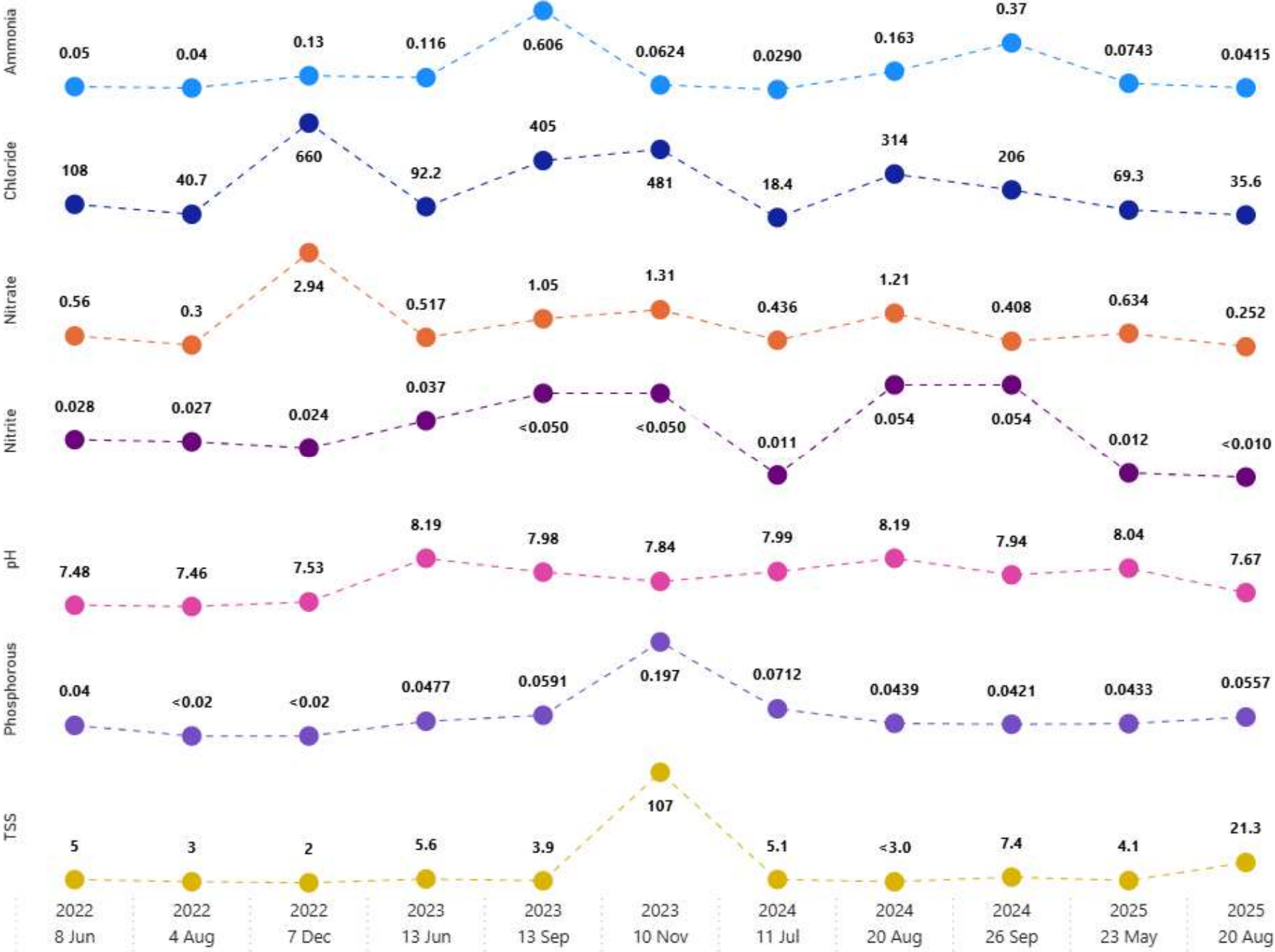


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

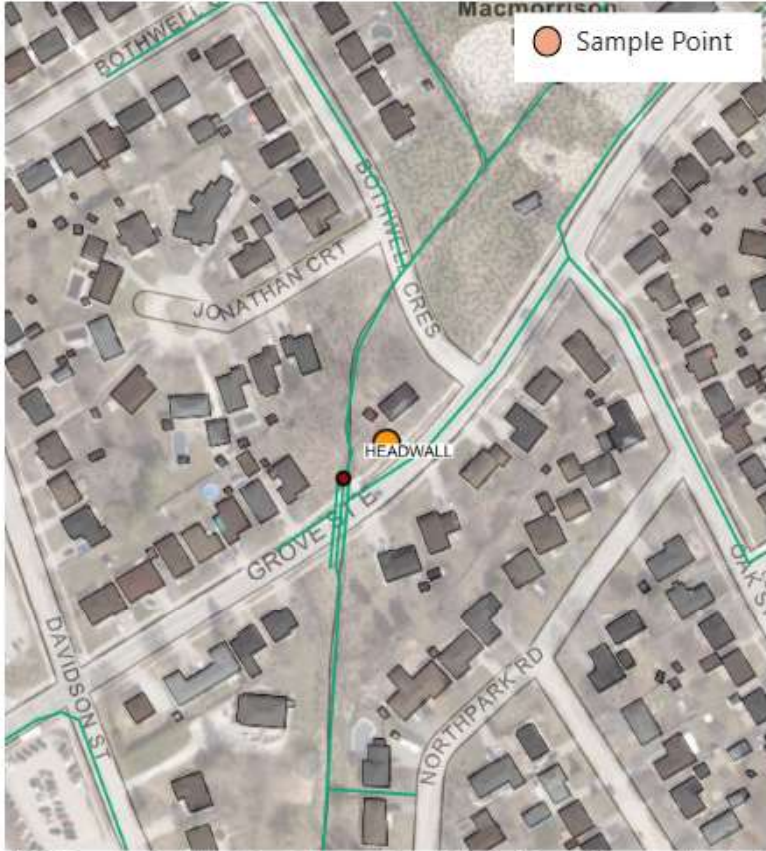
- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

WK05a-SWMF-SW

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



Watercourse Water Quality Key Performance Indicator Trends

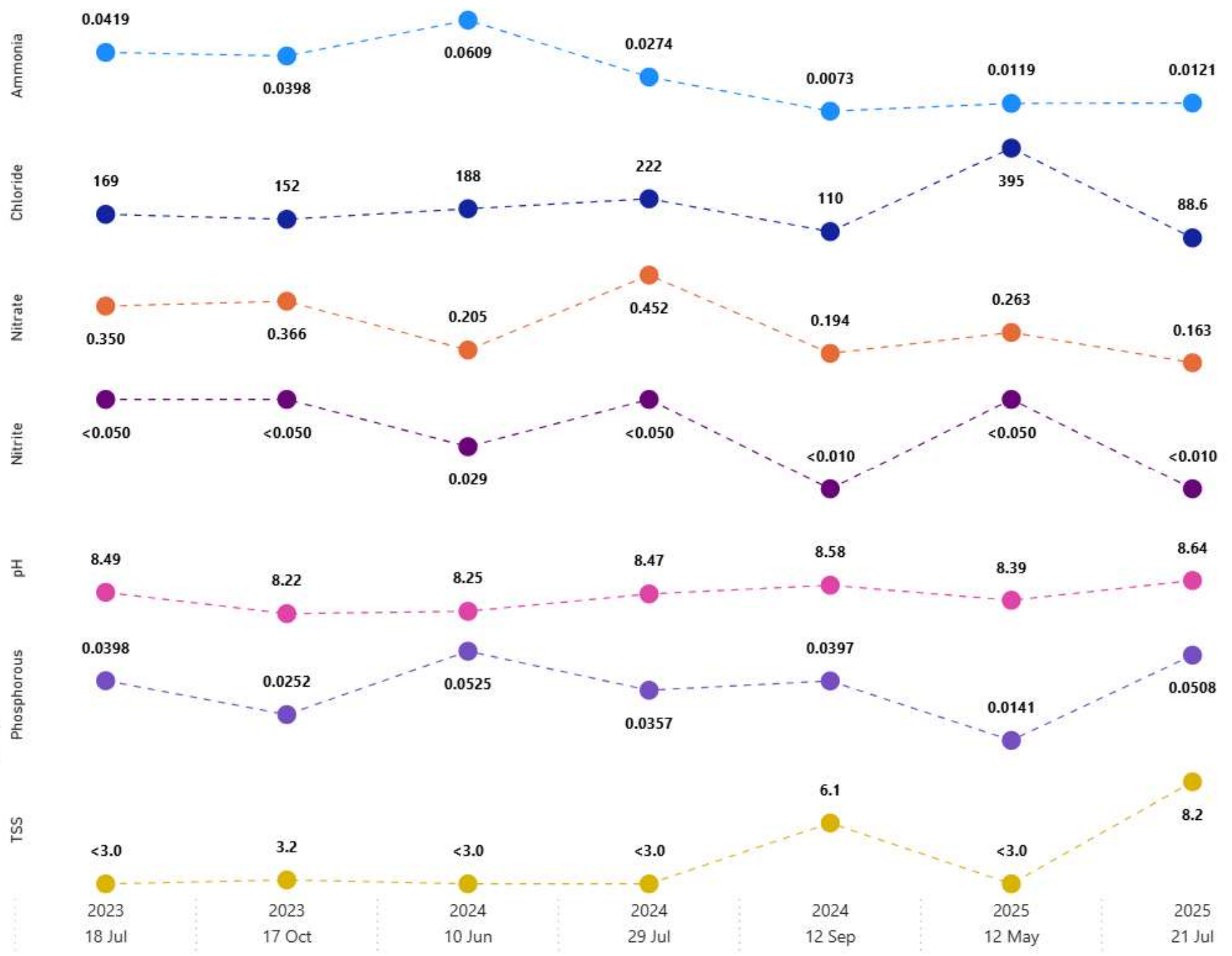


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- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

SP3-WC-SW

All units in mg/L, except pH in pH units.
Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



SWMF Water Quality Key Performance Indicator Trends

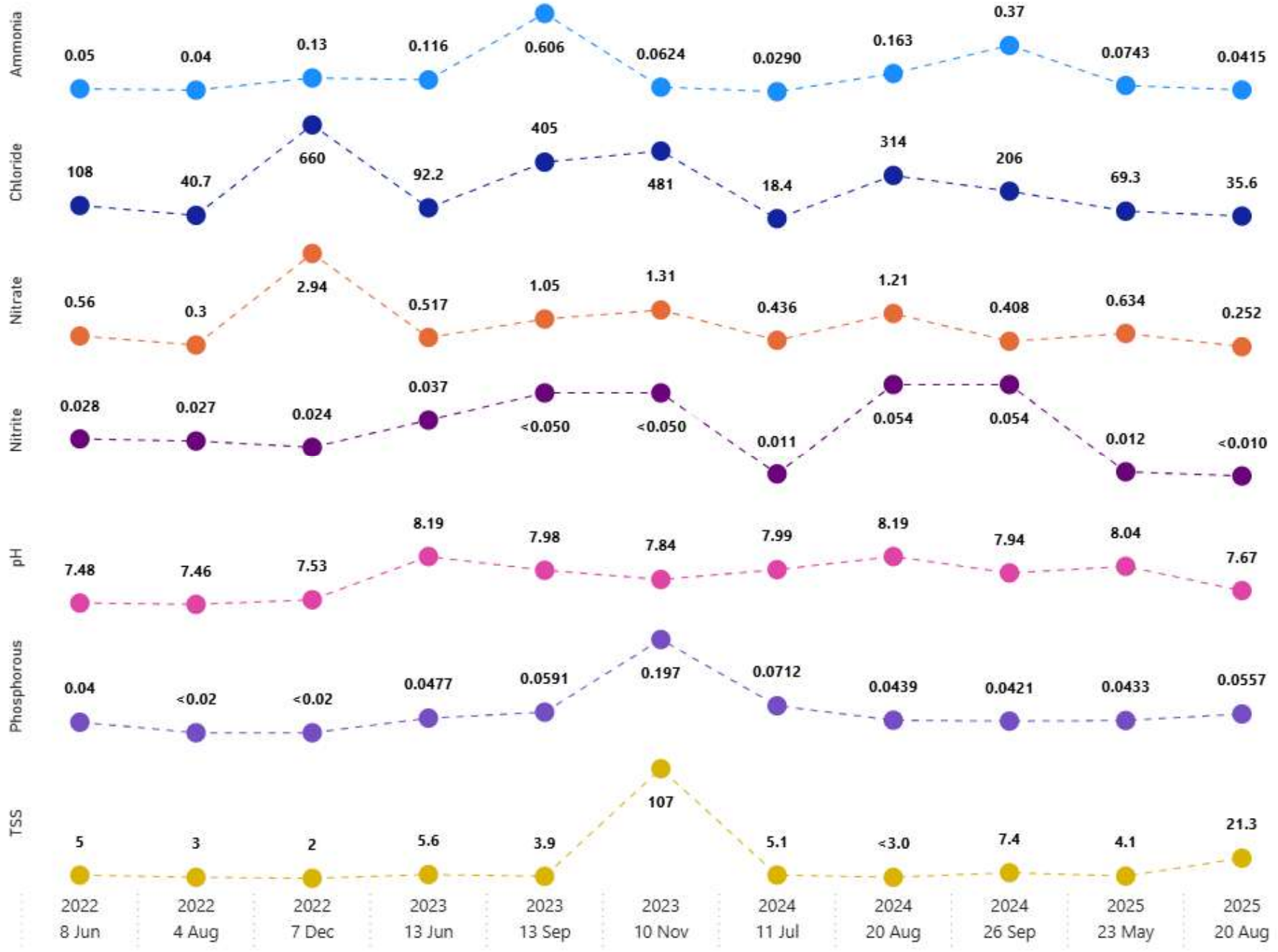


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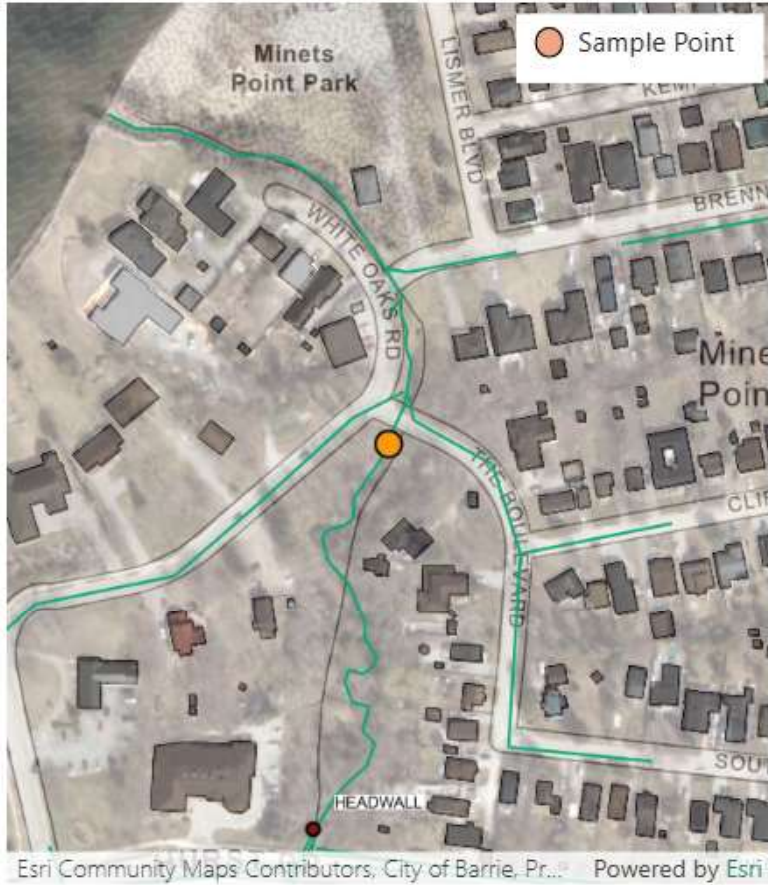
- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

WK05a-SWMF-SW

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



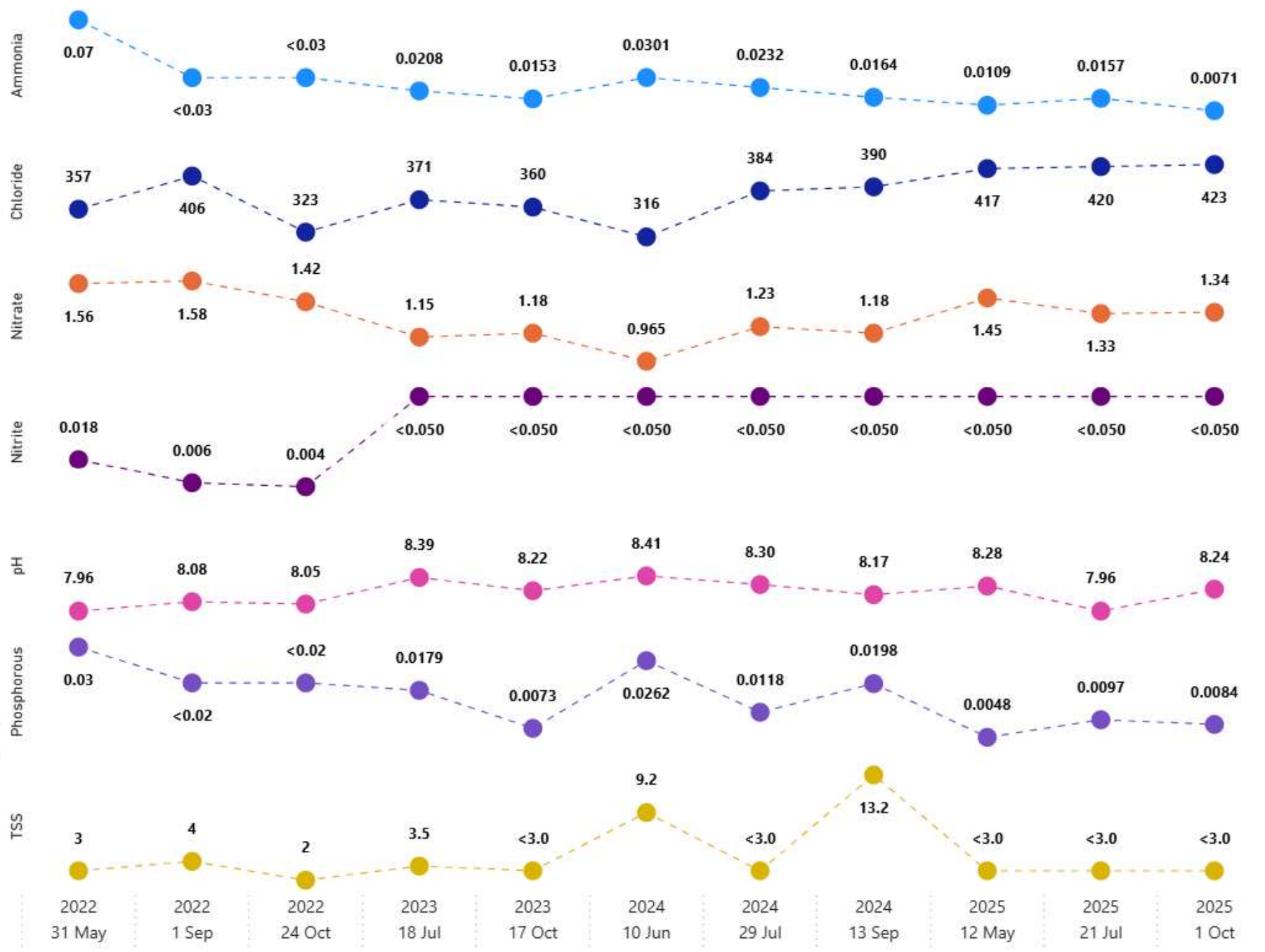
Watercourse Water Quality Key Performance Indicator Trends



Notes:
 Ammonia = Total Ammonia as N
 Nitrate = Nitrate as N
 Nitrite = Nitrite as N
 Phosphorous = Total Phosphorous
 TSS = Total Suspended Solids

WK1-WC-SW

All units in mg/L, except pH in pH units.
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



SWMF Water Quality Key Performance Indicator Trends

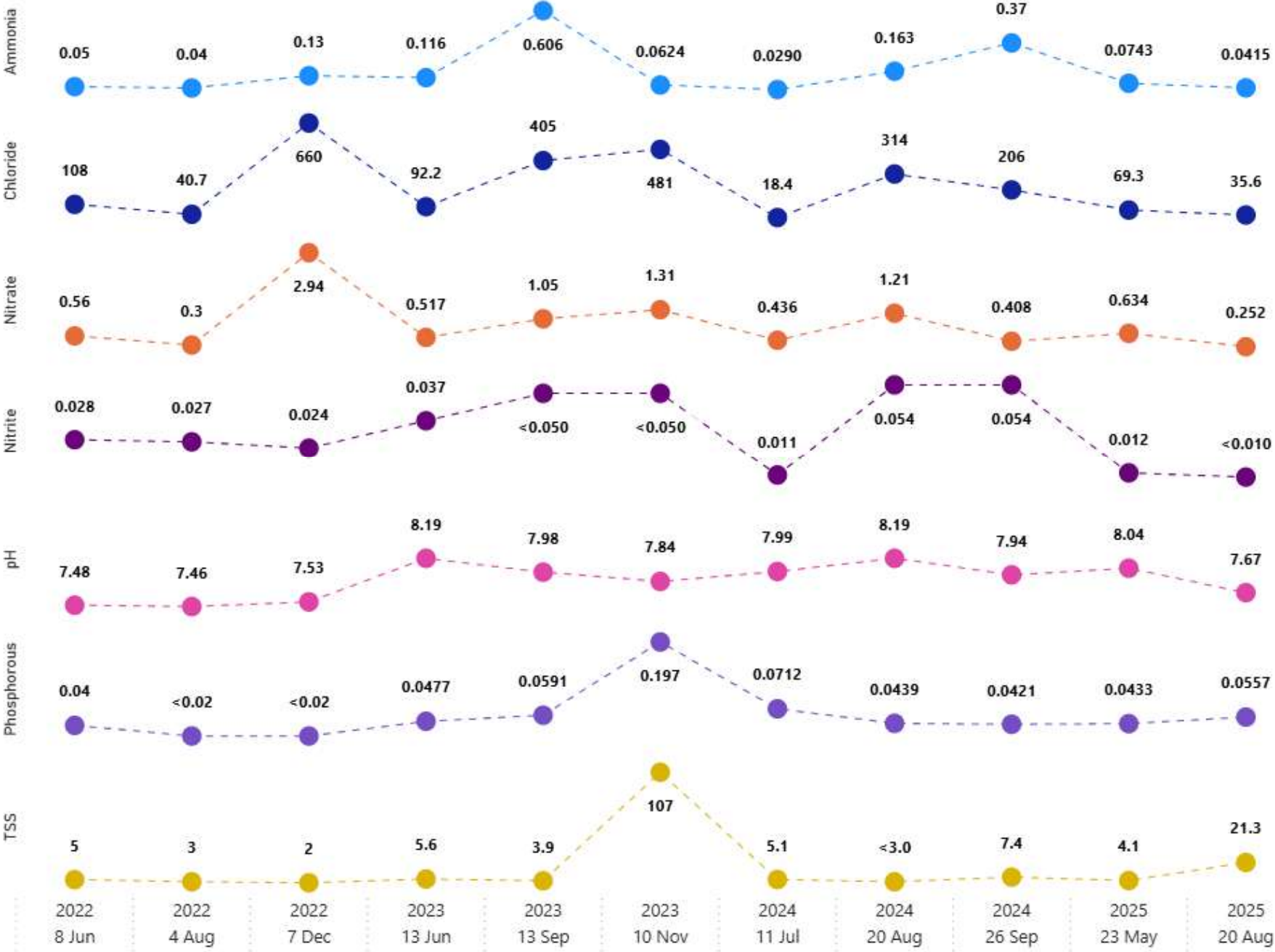


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

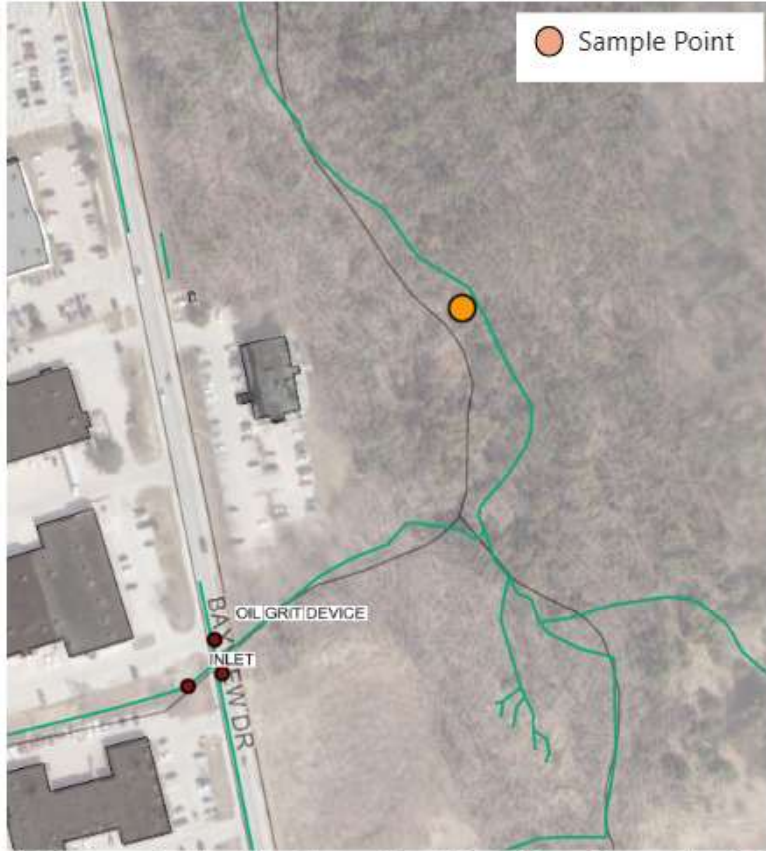
- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

WK05a-SWMF-SW

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



Watercourse Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

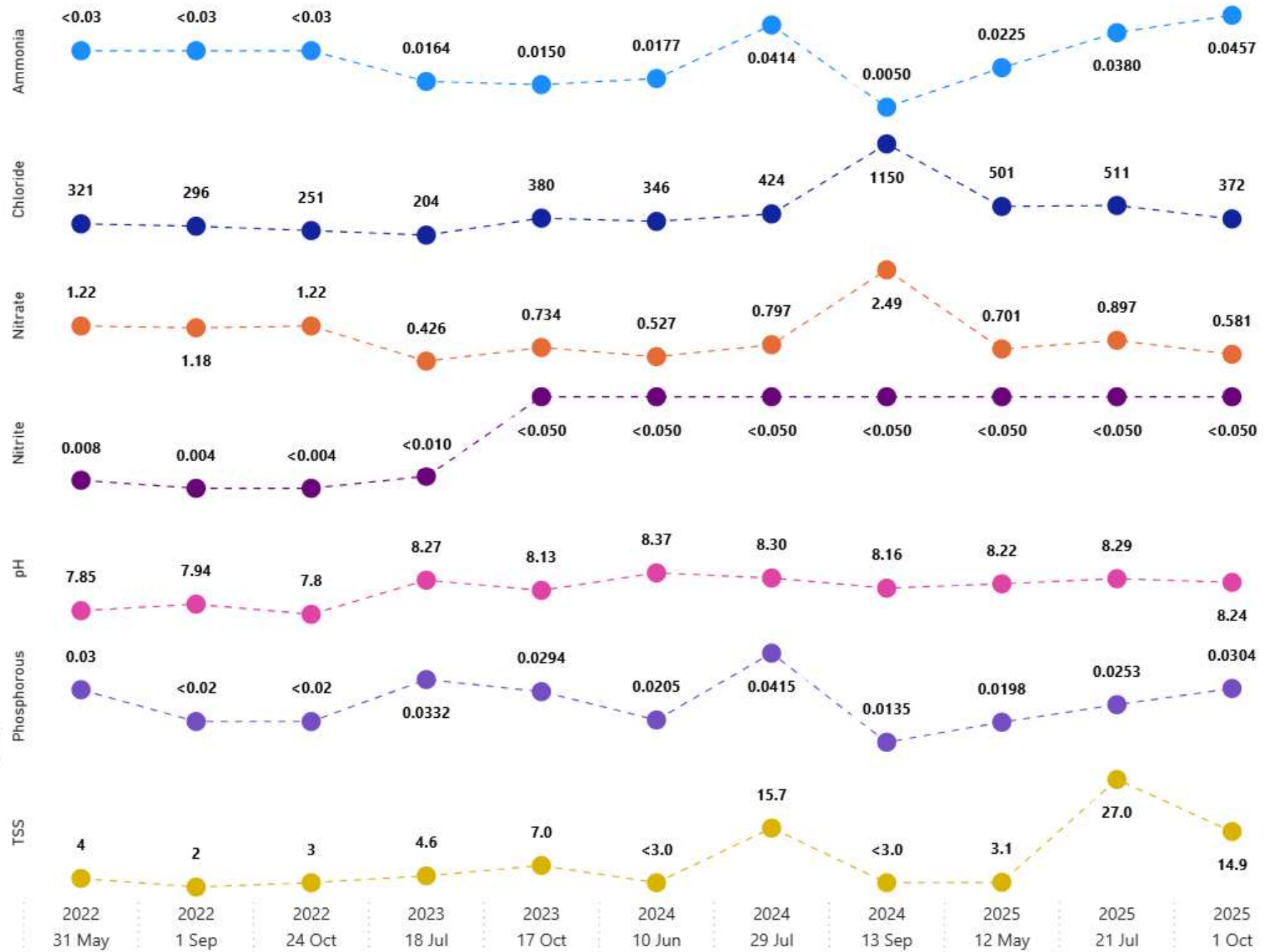
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

All units in mg/L, except pH in pH units.

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

WK2-WC-SW



SWMF Water Quality Key Performance Indicator Trends

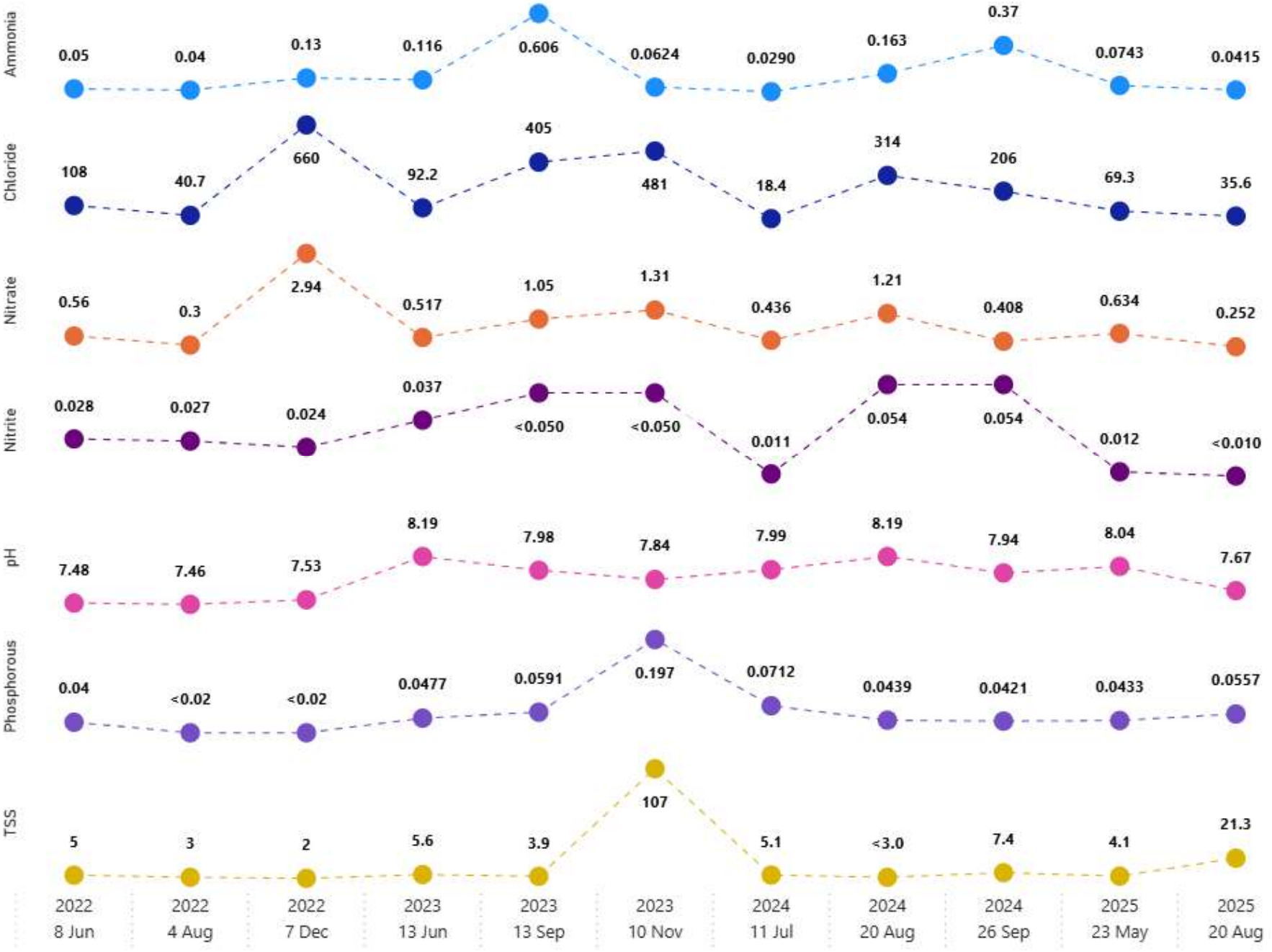


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- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

WK05a-SWMF-SW

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



SWMF Water Quality Key Performance Indicator Trends

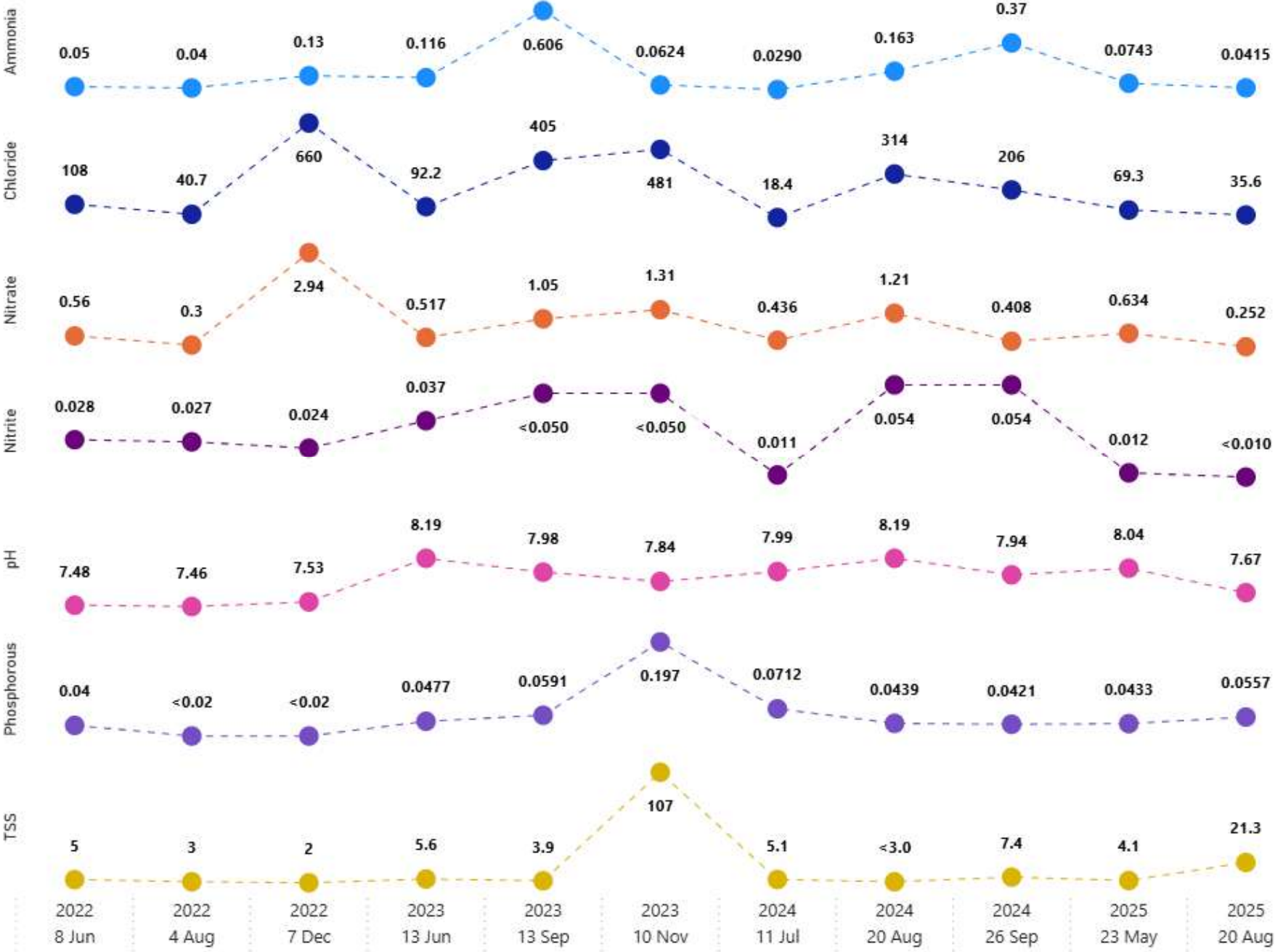


Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

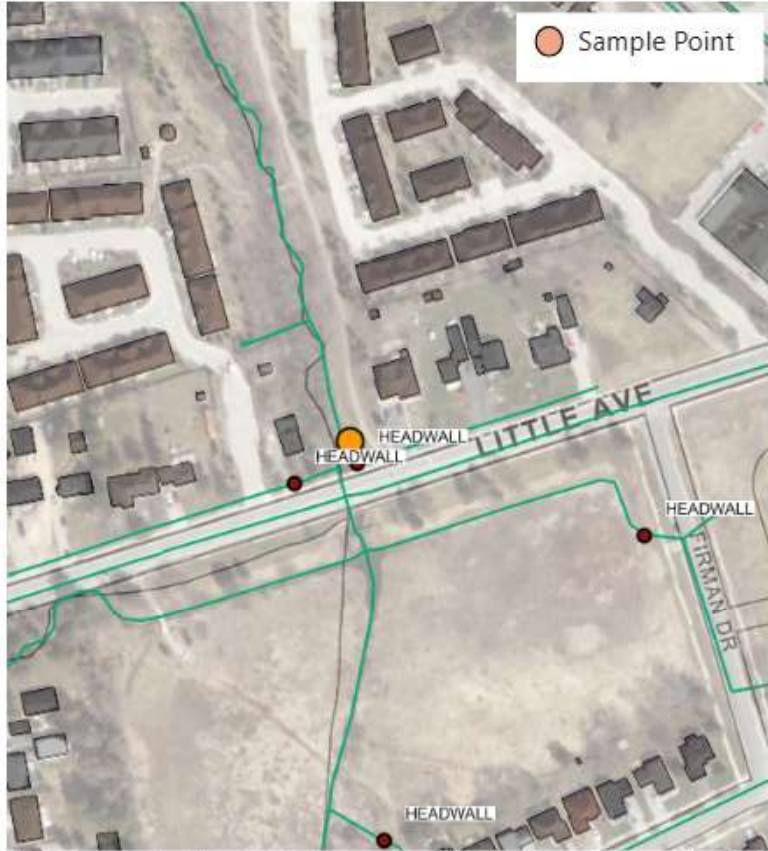
- Notes:
- Ammonia = Total Ammonia as N
 - Nitrate = Nitrate as N
 - Nitrite = Nitrite as N
 - Phosphorous = Total Phosphorous
 - TSS = Total Suspended Solids

WK05a-SWMF-SW

All units in mg/L, except pH in pH units
 Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.



Watercourse Water Quality Key Performance Indicator Trends



Esri Community Maps Contributors, City of Barrie, Pr... Powered by Esri

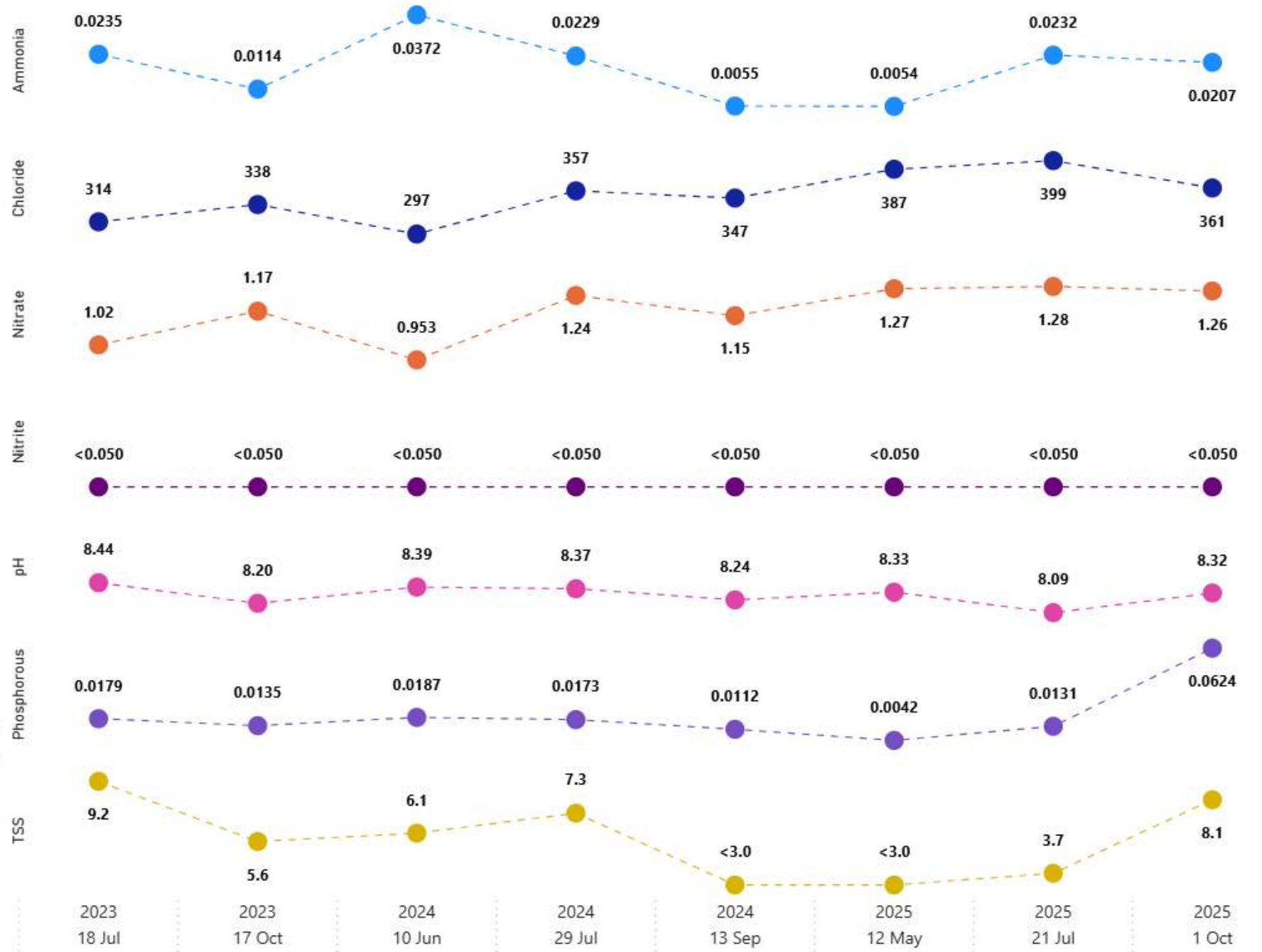
Notes:

- Ammonia = Total Ammonia as N
- Nitrate = Nitrate as N
- Nitrite = Nitrite as N
- Phosphorous = Total Phosphorous
- TSS = Total Suspended Solids

All units in mg/L, except pH in pH units.

Analytical Results less than (<) the Method Detection Limit (DL) are represented on the graphs at the detection limit for illustration purposes.

WK4-WC-SW



Appendix G – Spills and Discharge Events



Spills and Discharge Events 2025

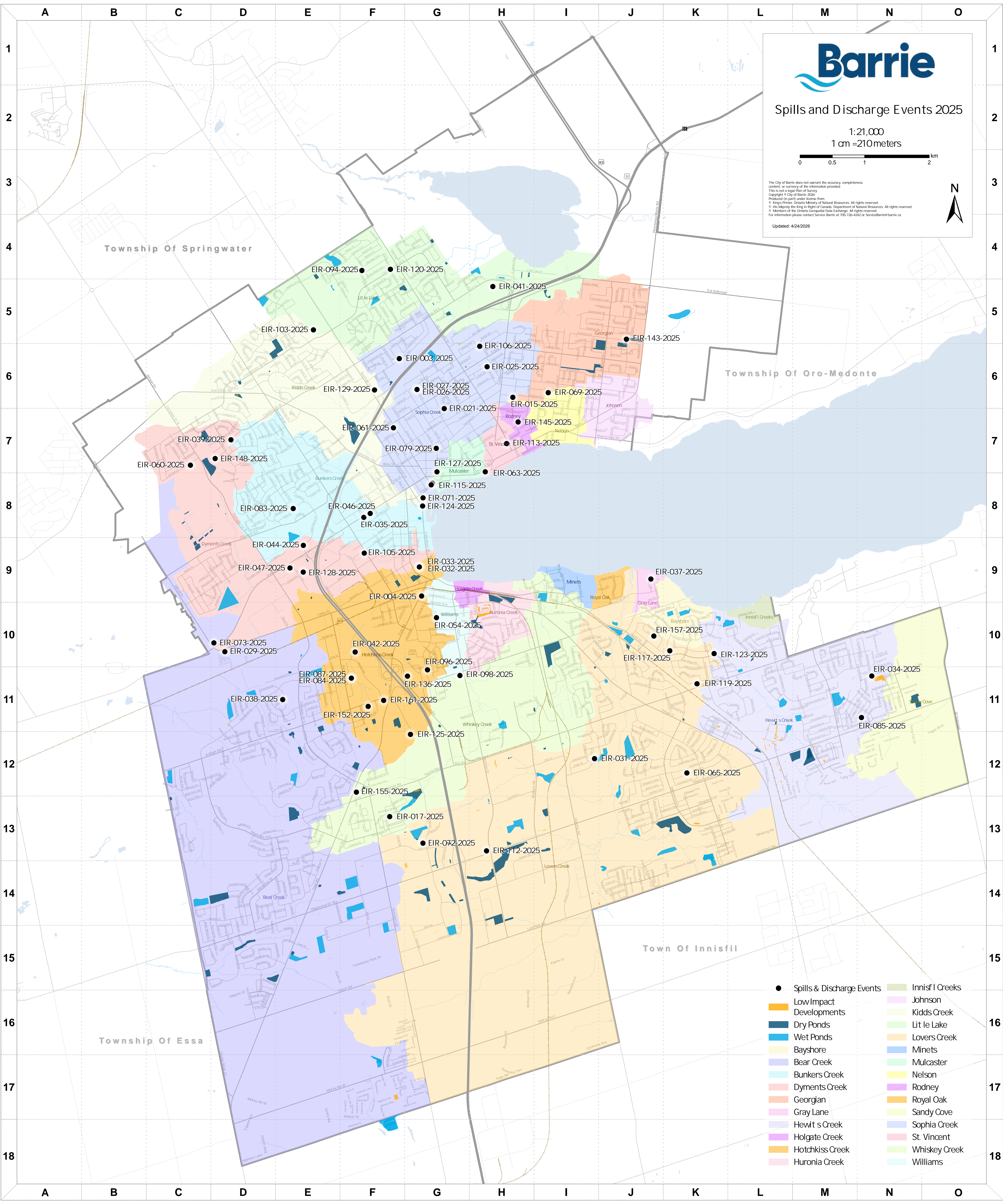
1:21,000
1 cm = 210 meters



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For information please contact Service Barrie at 705-736-4242 or Service@barrie.ca



Updated: 4/24/2025



- Spills & Discharge Events
- Low Impact Developments
- Dry Ponds
- Wet Ponds
- Bayshore
- Bear Creek
- Bunkers Creek
- Dyments Creek
- Georgian
- Gray Lane
- Hewit's Creek
- Holgate Creek
- Hotchkiss Creek
- Hurononia Creek
- Innisfil Creeks
- Johnson
- Kidds Creek
- Lit le Lake
- Lovers Creek
- Minets
- Mulcaster
- Nelson
- Rodney
- Royal Oak
- Sandy Cove
- Sophia Creek
- St. Vincent
- Whiskey Creek
- Williams

Summary of Spills and Abnormal Discharges

| RECORD ID | Occurrence Date | Reported Date | Reported Concern(s) |
|--------------|-----------------|---------------|---|
| EIR-003-2025 | 2025-01-09 | 2025-01-09 | Stormwater And Drainage |
| EIR-004-2025 | 2025-01-11 | 2025-01-11 | Stormwater And Drainage; Chemical Release |
| EIR-015-2025 | 2025-02-18 | 2025-02-18 | Stormwater And Drainage; Chemical Release |
| EIR-017-2025 | 2025-02-25 | 2025-02-25 | Chemical Release |
| EIR-021-2025 | 2025-02-25 | 2025-02-25 | Chemical Release |
| EIR-025-2025 | 2025-03-06 | 2025-03-06 | Stormwater And Drainage |
| EIR-026-2025 | 2025-03-08 | 2025-03-08 | Stormwater And Drainage |
| EIR-027-2025 | 2025-03-08 | 2025-03-08 | Stormwater And Drainage |
| EIR-029-2025 | 2025-03-12 | 2025-03-12 | Chemical Release |
| EIR-031-2025 | 2025-03-14 | 2025-03-14 | Stormwater And Drainage; Chemical Release |
| EIR-032-2025 | 2025-03-15 | 2025-03-15 | Stormwater And Drainage; Marina And Lake Simcoe |
| EIR-033-2025 | 2025-03-16 | 2025-03-16 | Stormwater And Drainage; Marina And Lake Simcoe |
| EIR-034-2025 | 2025-03-16 | 2025-03-16 | Stormwater And Drainage |
| EIR-035-2025 | 2025-03-16 | 2025-03-16 | Chemical Release |
| EIR-037-2025 | 2025-03-21 | 2025-03-21 | Stormwater And Drainage; Site Alteration |
| EIR-038-2025 | 2025-03-26 | 2025-03-26 | Stormwater And Drainage; Chemical Release |
| EIR-039-2025 | 2025-03-27 | 2025-03-27 | Stormwater And Drainage; Chemical Release |
| EIR-041-2025 | 2025-03-28 | 2025-04-02 | Stormwater And Drainage; Sanitary Sewage |
| EIR-042-2025 | 2025-04-07 | 2025-04-07 | Stormwater And Drainage |
| EIR-044-2025 | 2025-04-25 | 2025-04-25 | Stormwater And Drainage |
| EIR-046-2025 | 2025-04-28 | 2025-04-28 | Stormwater And Drainage |
| EIR-047-2025 | 2025-04-29 | 2025-04-29 | Stormwater And Drainage |
| EIR-054-2025 | 2025-05-21 | 2025-05-21 | Stormwater And Drainage |
| EIR-060-2025 | 2025-06-11 | 2025-06-11 | Stormwater And Drainage |
| EIR-061-2025 | 2025-06-06 | 2025-06-06 | Stormwater And Drainage; Chemical Release |
| EIR-063-2025 | 2025-06-20 | 2025-06-20 | Chemical Release |
| EIR-065-2025 | 2025-06-22 | 2025-06-22 | Chemical Release |
| EIR-069-2025 | 2025-06-28 | 2025-06-28 | Stormwater And Drainage |
| EIR-071-2025 | 2025-07-03 | 2025-07-03 | Marina And Lake Simcoe |
| EIR-072-2025 | 2025-07-04 | 2025-07-04 | Chemical Release |
| EIR-073-2025 | 2025-06-11 | 2025-06-11 | Stormwater And Drainage |
| EIR-079-2025 | 2025-07-23 | 2025-07-23 | Stormwater And Drainage |

Summary of Spills and Abnormal Discharges

| RECORD ID | Occurrence Date | Reported Date | Reported Concern(s) |
|--------------|-----------------|---------------|--|
| EIR-083-2025 | 2025-07-25 | 2025-07-25 | Stormwater And Drainage |
| EIR-084-2025 | 2025-07-25 | 2025-07-25 | Stormwater And Drainage |
| EIR-085-2025 | 2025-07-25 | 2025-07-25 | Stormwater And Drainage |
| EIR-087-2025 | 2025-08-06 | 2025-08-06 | Stormwater And Drainage |
| EIR-094-2025 | 2025-08-04 | 2025-08-04 | Stormwater And Drainage; Chemical Release |
| EIR-096-2025 | 2025-08-09 | 2025-08-09 | Stormwater And Drainage; Chemical Release |
| EIR-098-2025 | 2025-08-20 | 2025-08-20 | Stormwater And Drainage |
| EIR-103-2025 | 2025-08-31 | 2025-08-31 | Stormwater And Drainage; Odour |
| EIR-105-2025 | 2025-09-04 | 2025-09-04 | Encampment; Chemical Release |
| EIR-106-2025 | 2025-09-05 | 2025-09-05 | Chemical Release; Stormwater And Drainage |
| EIR-112-2025 | 2025-09-04 | 2025-09-04 | Sanitary Sewage |
| EIR-113-2025 | 2025-09-09 | 2025-09-09 | Sanitary Sewage |
| EIR-115-2025 | 2025-08-20 | 2025-08-20 | Chemical Release |
| EIR-117-2025 | 2025-09-19 | 2025-09-19 | Stormwater And Drainage; Chemical Release |
| EIR-119-2025 | 2025-09-22 | 2025-09-22 | Stormwater And Drainage |
| EIR-120-2025 | 2025-09-22 | 2025-09-22 | Stormwater And Drainage; Chemical Release |
| EIR-123-2025 | 2025-09-25 | 2025-09-25 | Stormwater And Drainage; Chemical Release |
| EIR-124-2025 | 2025-09-26 | 2025-09-27 | Marina And Lake Simcoe; Chemical Release |
| EIR-125-2025 | 2025-10-06 | 2025-09-22 | Stormwater And Drainage |
| EIR-127-2025 | 2025-10-01 | 2025-10-01 | Landfill And Waste Collection |
| EIR-128-2025 | 2025-10-06 | 2025-10-06 | Stormwater And Drainage |
| EIR-129-2025 | 2025-10-07 | 2025-10-07 | Sanitary Sewage |
| EIR-136-2025 | 2025-11-08 | 2025-11-08 | Stormwater And Drainage; Sanitary Sewage |
| EIR-143-2025 | 2025-11-17 | 2025-11-17 | Stormwater And Drainage; Landfill And Waste Collection; Chemical Release |
| EIR-145-2025 | 2025-11-17 | 2025-11-17 | Stormwater And Drainage |
| EIR-148-2025 | 2025-12-13 | 2025-12-13 | Chemical Release |
| EIR-152-2025 | 2025-11-27 | 2025-11-27 | Sanitary Sewage |
| EIR-155-2025 | 2025-12-23 | 2025-12-23 | Stormwater And Drainage |
| EIR-157-2025 | 2025-10-10 | 2025-10-10 | Stormwater And Drainage |
| EIR-161-2025 | 2025-12-24 | 2025-11-24 | Chemical Release |