Pennsylvania Department of Environmental Protection

Northeast Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0026492**
Facility Type	**Non-Municipal**	APS ID	**920634**
Major / Minor	**Major**	Authorization ID	**1364863**

Applicant and Facility Information

Applicant Name	**Pennsylvania American Water Company**	Facility Name	**Scranton WWTP**
Applicant Address	852 Wesley Drive	Facility Address	Cedar Avenue & Breck Street
	Mechanicsburg, PA 17055		Scranton City, PA 18505
Applicant Contact	Andrew Clarkson	Facility Contact	Eugenia Roche
Applicant Phone	(717) 550-1546	Facility Phone	(570) 903-1047
Client ID	87712	Site ID	256598
Ch 94 Load Status	Not Overloaded	Municipality	Scranton City
Connection Status	No Limitations	County	Lackawanna
Date Application Received	June 4, 2021	EPA Waived?	No
Date Application Accepted	June 4, 2021	If No, Reason	Major Facility, Pretreatment, Significant CB Discharge
Purpose of Application	Renewal of NPDES permit.		

Summary of Review

Background

The applicant is requesting renewal of an NPDES permit to discharge an average dry weather flow of 20 MGD of treated sewage to the Lackawanna River, a CWF/MF designated receiving stream in state water plan basin 05-A (Lackawanna River). As per the Department's current existing use list, the receiving stream does not have an existing use classification that is more protective than its designated use. The hydraulic design capacity of the WWTP is 25 MGD.

During the previous renewal of PA0026492, the Scranton Sewer Authority (SSA) was the permittee. The SSA, as seller, and Pennsylvania American Water Company (PAWC), as buyer, had entered into an asset purchase agreement dated March 29, 2016. The NPDES permit was transferred to PAWC on January 17, 2017.

Limitations and Monitoring Requirements

A Total Maximum Daily Load (TMDL) for the Lackawanna River Watershed was approved by the EPA on April 7, 2005. The TMDL addresses metals (Iron, Manganese, and Aluminum) and depressed pH associated with acid mine drainage (AMD). The TMDL load allocations apply to nonpoint sources of pollution; there are no Waste~~l~~Load Allocations (WLAs). Monthly monitoring requirements for Total Iron, Total Manganese, and Total Aluminum are continued in the permit to monitor these pollutants of concern.

The pH, Total Suspended Solids (TSS) and Fecal Coliform limits are technology-based limits carried over from the previous permit.

Approve	Deny	Signatures	Date
X		~~Brian Burden~~ Brian Burden, E.I.T. / Project Manager	January 15~~November 20~~, 2025~~3~~
X		Amy M. Bellanca (signed) Amy M. Bellanca, P.E. / ~~Program~~ Acting Engineer Manager	1-15-25

Summary of Review

The Ammonia-Nitrogen, $CBOD_5$, and Dissolved Oxygen limits are water quality-based and carried over from the previous permit. WQM 7.0 modeling was run again and did not recommend more stringent limitations for $CBOD_5$, NH_3-N or DO. Mass loadings were calculated using the hydraulic design capacity of the WWTP of 25 MGD. The low flow yield (LFY) value of 0.11 cfs/mi^2, RMI values, drainage areas and elevations for water quality modeling are carried over from the previous renewal.

The previous permittee for the WWTP, Scranton Sewer Authority, appealed the Department's issuance of the permit that was effective on October 1, 2009. The appeal challenged the imposition of final Total Residual Chlorine (TRC) effluent limitations in the permit (0.06 mg/L monthly average, 0.20 mg/L IMAX). A permit amendment, effective June 1, 2011, revised the TRC effluent limitations contained in the permit based on a site-specific chlorine demand study. The study was submitted to the Department in a report prepared by Gannett Fleming, Inc., dated November 2010. As detailed in the report, the chlorine demand of the Lackawanna River was determined to be 0.53 mg/L, while the chlorine demand of the WWTP chlorinated final effluent was determined to be 0.68 mg/L. The monthly average TRC limitation from the previous permit is removed from this renewal since the facility now utilizes ultraviolet radiation as the primary method of disinfection (see WQM permit 3504401 A-2). TRC must now be sampled "1/shift when discharging" for times when the facility utilizes chlorine for backup disinfection, cleaning, or other purposes (see Part C.IV.D). Note: WMS doesn't currently contain an option for "1/shift when discharging" so "see permit" was used as the minimum measurement frequency. ~~is carried over in this renewal.~~ The TRC calculation spreadsheet recommended a slightly more stringent IMAX limitation due to the updated acute PMF calculated by the Toxics Management Spreadsheet (TMS). The template Part C special condition for UV system monitoring is included in Part C.IV.E.

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For TMS modeling, discharge hardness was input as the average of the minimum and maximum reported on the application and the pH default value of 7.0 S.U. was used. Default stream hardness and pH values were used. Pollutant Group sampling included with the renewal application utilized QLs (and MDLs) that were higher than the Department's target QLs for two parameters: Hexachlorobutadiene & 1,2,4-Trichlorobenzene. As a result, limitations were recommended for those parameters. The permittee may resample for those non-detect parameters at lower QLs during the draft permit comment period in an effort to remove them from the final permit. Three additional samples are required for each parameter, taken at least 1 week apart. They are also identified in Part A of the draft permit with an asterisk.

Dichlorobromomethane limitations established in the previous permit are carried over in this renewal. A TRE for dichlorobromomethane was conducted during the previous renewal. The TRE concluded that the pollutant is generated as a disinfection byproduct. The NPDES permit amendment, issued November 27, 2019, required the permittee to submit a report detailing corrective actions they've selected to reduce dichlorobromomethane in the WWTP effluent by 12/1/2020. The report was to include a schedule detailing the permittee's plan to achieve compliance with the final limitations and an analysis of the causes of elevated dichlorobromomethane effluent concentrations experienced at the WWTP. The facility has since switched to ultraviolet radiation~~light~~ for disinfection (see WQM permit amendment 3504401 A-2) and dichlorobromomethane concentrations in the effluent are expected to drop.

eDMR results for the parameter during the previous year have been below the monthly average limitation and a TRE is not required at this time. As confirmed with NERO's Monitoring and Compliance manager, dichlorobromomethane only needs to be sampled for in the months when the facility is utilizing chlorine for disinfection or other purposes. The 2023 TMS recommended less stringent limitations for the parameter compared to the 2016 PENTOXSD model. Due to antibacksliding regulations, the more stringent limitations remain in effect.

Monitoring requirements for Total Arsenic and chlorodibromomethane were established in the previous permit and are carried over in this renewal. Chlorodibromomethane only needs to be sampled for in the months when the facility is utilizing chlorin~~eg~~ for disinfection or other purposes.

Results for Total Cadmium had been reported as non-detect during most of the previous permit term using a QL of 1.0 µg/L. Earlier in the permit term, cadmium was detected in the effluent within a range of 0.33 µg/L – 3.5 µg/L. The TMS recommended the following limitations: 0.55 µg/L monthly average, 0.85 µg/L daily maximum, 1.36 µg/L IMAX.

Acrolein was monitored/reported during the previous permit term. The TMS recommended limitations for this permit term as follows: 3.00 µg/L monthly average, 4.02 µg/L daily maximum and IMAX.

Chloroform was monitored/reported during the previous permit term. The TMS recommended limitations for this permit term as follows: 10.6 µg/L monthly average, 16.5 µg/L daily maximum, 26.5 µg/L IMAX.

Summary of Review

The Part C condition regarding Toxics Reduction Evaluations (TREs) is added to the permit and applies to each of the toxic pollutants above where limitations are to be established and sampling results submitted with the renewal application are higher than the limitations. The permittee will also have the option to perform site-specific studies to verify or refine the WQBELs. The following pollutant sampling results were higher than the established monthly average limitation:

- Total Cadmium: 0.33 µg/L – 3.5 µg/L range on eDMR – 0.55 µg/L monthly average limitation
- Acrolein: 3.8 µg/L reported on eDMR (May 2022) – 3.0 µg/L monthly average limitation
- Chloroform: 29.48 µg/L maximum sample result (August 2020 eDMR) – 10.6 µg/L monthly average limitation

Aldrin and beta-BHC were both detected in some effluent sampling results submitted with the permit application. These chemicals were used in the past for pesticides (insecticides) and have not been produced in the United States for decades due to their toxicity. Since the permittee operates a combined sewer system, it's possible the chemicals enter the WWTP via stormwater runoff if people are still using the chemicals from a stockpile. The detected results were below the lab's QL, which was lower than DEP's target QL. The laboratory used a "J" qualifier for the results, which indicates the results were below the lower limit of quantitation but above the detection limit and the numeric results were estimated. For modeling purposes, the results were entered in the TMS as less than the QL utilized by the lab and, therefore, no limits or monitoring requirements were recommended. Quarterly monitoring/reporting is added to the permit for Aldrin and beta-BHC to obtain more data about these rare pollutants of concern.

Limitations were also recommended for several metals that don't require a TRE since it appears the permittee can currently meet them. Monitoring and reporting will be included in the permit for the first year of the permit and limitations will be in effect after for the following metals:

- Total Copper – 8.35 µg/L maximum reported value, 16.2 µg/L monthly average limitation
- Free Cyanide – 4.6 µg/L maximum reported value, 7.43 µg/L monthly average limitation
- Total Zinc – 72.6 µg/L maximum reported value, 136 µg/L monthly average limitation

The TMS recommended monitoring/reporting for the following parameters:

- Total Boron
- Dissolved Iron

Monitoring for TDS, Chloride, Bromide, Sulfate and 1,4-Dioxane was recommended during the previous renewal by the Toxics Screening Analysis spreadsheet since the WWTP is a major facility. TMS outputs don't recommend monitoring/reporting for these parameters. The monitoring frequency for these parameters is reduced from 1/week to 1/month.

Daily maximum limitations and monitoring requirements are included in the permit for all toxic and nutrient parameters. For established limitations, the daily maximum is equal to the IMAX. For new limitations, the daily maximum recommended by the TMS is included in the permit.

Weekly influent monitoring for BOD_5 and TSS continue in this renewal.

To quantify nutrient reduction needs, maximum nutrient loads (cap loads) for each major watershed tributary to the Chesapeake Bay were established. This included allocation of cap loads for Total Nitrogen (TN) and Total Phosphorus (TP) in Pennsylvania for the Potomac and Susquehanna watersheds. Pennsylvania's overall cap loads for TN and TP were further divided into cap loads for point and non-point sources. The method used to allocate the point source portion of the load was developed after DEP conducted an extensive stakeholder process with sewage treatment plants in 2006. The workgroup recommendation made the allocations based on the design annual average daily flow, and concentrations of 6 mg/L TN and 0.8 mg/L TP. Based on this methodology, the allocations for TN and TP for this facility are 365,292 lbs/yr and 48,706 lbs/yr, respectively. Twice per week monitoring requirements for Total Kjeldahl Nitrogen, Nitrate+Nitrite-Nitrogen, and Total Phosphorus are continued in this renewal. Mass limitations for Net Total Nitrogen and Net Total Phosphorus must be reported on an annual basis. Offsets were not requested during this renewal cycle.

Summary of Review

Whole Effluent Toxicity

The permittee was required to conduct Whole Effluent Toxicity (WET) testing on an annual basis during the previous permit term for the following endpoints: chronic *Pimephales promelas* survival, chronic *Pimephales promelas* growth, chronic *Ceriodaphnia dubia* survival, and chronic *Ceriodaphnia dubia* reproduction. All tests used the following dilution series: 14%, 27%, 54%, 77%, and 100%.

Each endpoint passed the test for significant toxicity as per review by NERO's Water Pollution Biologist, therefore, there is no reasonable potential to establish WET limits in the permit. The 2019 WET test was determined to be invalid and a re-test was conducted in February 2020. It was determined that the re-test satisfied the 2019 WET test requirement. The permittee did not conduct another WET test in 2020.

The standard Part C condition, Whole Effluent Toxicity – No Permit Limits, is carried over for this renewal. WET testing shall be conducted annually during the upcoming permit cycle, at a minimum. The WET Analysis Spreadsheet (see attached) was used to determine that the permittee must generate chronic survival and reproduction data for *Ceriodaphnia dubia*, and chronic survival and growth data for *Pimephales promelas*. The permittee shall perform testing using the same dilution series as in the previous permit: 14%, 27%, 54%, 77%, and 100% effluent, with a control, where 54% effluent is the facility-specific Target In-Stream Waste Concentration (TIWC). TMS modeling determined that the acute and chronic partial mix factors (PMFs) are equal to 0.398 and 1.0, respectively.

Industrial Pretreatment Program

The permittee continues operation of an Industrial Pretreatment Program (IPP). 8 significant users (SIUs) are currently connected to the system and permitted under the IPP, of which 3 are considered Categorical Industrial Users (CIUs) by definition. The CIUs are:

1. General Dynamics, 165 Cedar Ave., Scranton, PA. *38,000 gpd* – subject to 40 CFR Parts 420 (Iron and Steel Manufacturing) and 421 (Nonferrous Metals Manufacturing)

2. Noble Biomaterials, 300 Palm St., Scranton, PA. *71,500 gpd* – subject to 40 CFR Part 413 (Electroplating)

3. Steamtown National Historic Site, 150 South Washington Ave., Scranton, PA. *10 gpd* – subject to 40 CFR Part 438 (Metal Products and Machinery)

The previous permit included two additional CIUs that no longer discharge into the sewer system:

- JCM, Inc., 500 Mill St., Dunmore, PA. – subject to 40 CFR Part 433 (Metal Finishing)

- Master Halco, 1000 North South Rd., Scranton, PA. – subject to 40 CFR Part 433 (Metal Finishing)

The previous permittee, Scranton Sewer Authority, was required to submit IPP annual reports and other related IPP correspondence to U.S. EPA for review and approval. Since the WWTP is no longer a POTW, EPA doesn't review/approve the IPP plan and PA DEP has taken over the responsibility as the Approval Authority. The standard Part C template condition for the non-municipal Industrial Pretreatment Program has been included in this renewal. The language in Part C.V.A.2.a. was adjusted to refer to the effective date of the permit instead of the date of permit transfer.

In accordance with 40 CFR § 122.3(g), discharges into a privately owned treatment works are exempt from the requirement to obtain an NPDES permit, except as the Director may otherwise require under § 122.44(m). The Director (in this case the State Director since Pennsylvania has an approved State program) opts not to require NPDES permits for the indirect discharges to the WWTP because the permittee is required to implement a pretreatment program overseen by DEP that is substantially similar to the program that was formerly overseen by EPA when the facility was classified as a POTW.

PFAS monitoring requirements are now included in Part C.V. The permittee shall conduct monitoring at its treatment plant that, at a minimum, includes quarterly influent, effluent, and sludge analysis for the 40 PFAS parameters detectable by EPA Method 1633. Monitoring data for any analytes listed in EPA Method 1633 shall be summarized and submitted as part of the annual pretreatment report.

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Summary of Review

Parameter	Maximum Daily	Monitoring Requirements	
		Frequency	Sample Type
40 PFAS Analytes(1) – Influent (ng/L)	Report	1/Quarter for 12 Quarters	Grab
40 PFAS Analytes(1) – Effluent (ng/L)	Report	1/Quarter for 12 Quarters	Grab
40 PFAS Analytes(1) – Sludge (ng/g)	Report	1/Quarter for 12 Quarters	Grab

(1) Report in nanograms per liter for aqueous samples and nanograms per gram for solid samples. Monitoring shall be conducted using EPA Method 1633. This reporting requirement for the listed PFAS parameters takes effect 6 months after the effective date of this permit. The permittee may discontinue influent, effluent and sludge sampling at the treatment works after 12 consecutive quarterly sampling events have been conducted.

The permittee shall commence or require annual sampling of the following types of IUs that discharge process wastewater or sludge into the WWTP: airports; centralized waste treatment; electroplating; electric and electronic components; fire training; landfills; leather tanning & finishing; metal finishing; organic chemicals, plastics & synthetic fibers (OCPSF); paint formulating; plastics molding & forming; pulp, paper & paperboard; textile mills; sites known or suspected of PFAS contamination; and any other sources expected or suspected of PFAS discharges. Sampling shall occur at the point of discharge to the WWTP, and where local limits are applied. Monitoring data for any analytes listed in EPA Method 1633 shall be summarized and submitted as part of the Annual Report.

Sampling and analysis shall be for the following PFAS parameters:

Industrial User Effluent Parameter	Maximum Daily	Monitoring Requirements	
		Frequency	Sample Type
40 PFAS Analytes(1)(2) (ng/l)	Report	1/Year for 5 Years	Grab

(1) Report in nanograms per liter (ng/L). Monitoring shall be conducted using EPA Method 1633. This reporting requirement for the listed PFAS parameters takes effect 6 months after the effective date of this permit.

(2) The permittee and/or IU may discontinue the IU discharge monitoring requirements for the 40 PFAS parameters detectable by EPA Method 1633 after 5 annual sampling events have been conducted.

Combined Sewer Overflows

The permit application identifies 79 active CSOs in the system. The updated CSO list and coordinates are included in Part A.

The previous permittee, Scranton Sewer Authority (SSA), entered into a Consent Decree (CD) with the United States government to establish a schedule for implementation of SSA's Long Term Control Plan (LTCP) and Nine Minimum Controls Plan (NMCP). The CD was entered by the court on January 31, 2013 in Civil Action No. 3:CV-09-1873 by the United States District Court. The CD requires SSA to complete implementation of the LTCP as soon as practicable, but no later than December 1, 2037.

A non-material modification of the CD was executed by all parties in November 2015. The modifications of the original project are the result of more detailed analyses performed by the former permittee as they proceeded to plan, design, and implement the projects. The amended CD was filed on October 27, 2016.

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Summary of Review

The permittee shall, on at least an annual basis, evaluate the efficacy of the measures implemented under the NMCP, as well as other measures undertaken pursuant to the CD, in reducing the impacts of CSOs on receiving waters. On January 31st and July 31st of every year commencing with the first full 6 month period after entry of the CD and continuing until termination of the CD, the permittee will submit to the US EPA and PA DEP a semi-annual progress report regarding the implementation of the requirements of the CD.

The permit includes a condition that identifies a Combined Sewer Overflow Performance standard based on that set forth in the approved LTCP. A Consent Decree between EPA, the Department, and the permittee that was lodged with the Court on December 13, 2012, establishes a compliance schedule for the LTCP and specifies enforceable milestones during the interim period when the LTCP is being implemented.

EPA's definition of CSO at 40 CFR § 122.2 is "a discharge from a combined sewer system (CSS) at a point prior to the Publicly Owned Treatment Works (POTW) Treatment Plant (defined at § 403.3(r) of this chapter)." Since the Scranton WWTP is not a POTW, discharges from Scranton's combined sewer system under wet weather conditions would not meet the definition of a CSO under EPA's regulations. However, DEP's definition of CSO does not use the term "POTW" but rather "sewage treatment facility" (see 25 Pa. Code § 92a.2). DEP's regulations at 25 Pa. Code § 92a.47(b) require CSO dischargers to implement Nine Minimum Controls (NMCs) and a LTCP, as approved by DEP and as described in DEP's CSO Control Policy. The Scranton WWTP will be required in the renewed permit to continue implementation of the NMCs and LTCP as required by DEP regulation.

Chapter 94 Reporting

The permittee shall comply with the requirements of Chapter 94, Municipal Wasteload Management. The permittee shall submit a complete and accurate Wasteload Management Annual Report to the Department by March 31st of each year. The report shall contain the information under Section 94.12 of the Department's wasteload management regulations, Title 25, Chapter 94.

There are no current or project hydraulic/organic overloads at the WWTP as indicated on the latest~~2022~~ Chapter 94 report.

NOTE: After review of the latest Chapter 94 report, PA DEP requests the permittee include Roaring Brook Township in future reports.

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Permittee Requests

Revisions to the Part C Operating and Monitoring Protocols for Outfall 003 condition were proposed in the cover letter of the renewal application. The proposed revisions and other requests from the letter are below:

Request 1: The current protocols contain some inconsistent references. For example, ¶ A refers to 60 MGD as being a "peak sanitary flow" to the WWTP, while ¶ F and some other provisions refer to flows needing to be at least 46 + 14 MGD prior to use of Outfall 003. It is not practicable to set 60 MGD as a peak (a value not to be exceeded) and at the same time as a not less than value. Adjustments to WWTP operations, involving the opening and closing of gates to divert some volume of flows or cease diverting those flows, cannot occur instantaneously precisely at 60.0 MGD.

Response: Paragraph A in the previous permit states: *"Operating mechanisms shall be set to convey a peak sanitary flow of 60 MGD to the WWTP."* Paragraph F in the permit states: *"Outfall 003 may discharge combined sewer overflow during wet weather conditions to the extent that the primary clarifiers are full, the BNR Reactor is receiving at least 46 MGD of forward flow, and the BNR Bypass Channel is receiving at least 14 MGD of flow."*

In an email dated October 26, 2023 from NERO's Clean Water Monitoring and Compliance Manager (Patrick Musinski), it was confirmed that when Outfall 003 is activated, compliance is achieved when:

- Primary clarifiers are full
- The BNR reactor is receiving at least 46 MGD of forward flow
- The BNR bypass channel is receiving at least 14 MGD

Summary of Review

Compliance is achieved in this scenario even if the instantaneous flow from Outfall 001 is less than 60 MGD when Outfall 003 is activated.

It's understood that the opening and closing of gates cannot occur at precisely 60.0 MGD due to the time it takes for gates to open/close as well as the inherent error in the meter readings. The values included in the wet weather operating protocol from the permit were intended to be set points (as measured by the WWTP meters) where procedures change.

Request 2: Some language in the permit condition still refers to the WWTP as a "POTW."

Response: All instances referring to the WWTP as a POTW will be removed from the permit.

Request 3: The protocol should take some account of the accuracy of the involved flow meters, which generally is ± 2%. Where bypasses are occurring when recorded flows are within 2% of the target (e.g., flows through the WWTP are within 2% of the target of 60 MGD), that should be considered as a compliant condition. Our operating staff estimate that over the past several years as much as 75% of the events where it appeared that Outfall 003 discharges were occurring when flows through the WWTP were recorded as being < 60 MGD where occasions when the flow was very close to (within 2% of) the target.

Response: See response to Request 1 above.

Request 4: Experience has shown that the most challenging circumstances are periods of rapidly rising and rapidly falling influent flows. In the case of rapidly falling influent flows following a storm peak, even with very attentive operations and use of automated gates (which still take time to close and open), it is often difficult to completely shut off the bypass to Outfall 003 before the total flow to the WWTP falls below 60 MGD. In the other direction, the tolerance of the WWTP to flows over 60 MGD is limited (i.e., when flows are greater than 60 MGD, the BNR system and subsequent final clarification and disinfection units' capacity can be overwhelmed, leading to incomplete treatment or excessive TSS). As a result, when flows increase again rapidly toward 60 MGD, actions need to target commencement of bypass sequencing close to the projected point when flows will go above 60 MGD mark so that the bypass can be effective before the flows go over what the BNR and subsequent units can tolerate. Thus, even with the automation of the gate structures, which PAWC is implementing, there needs to be some degree of tolerance at the margin around 60 MGD to account for adjustments to address such rapidly changing conditions. One possible means of addressing this would be to consider a compliance safe harbor as be defined by flows through the WWTP and BNR averaged over a limited time period.

Response: See response to Request 1 above.

Request 5: Even with all of the WWTP improvements that PAWC has made and is continuing to make, experience has shown that some uncontrollable circumstances can and will occur beyond the reasonable control of the WWTP operator which prevent strict adherence to the Wet Weather Operating Protocols. Examples include high storm flows carrying debris that block the influent screens and unexpected equipment failures that may occur despite implementation of a robust preventive and predictive maintenance program. While the operator will make best efforts to restore system capacity as expeditiously as possible, the protocol needs to provide some tolerance for such uncontrollable circumstances.

Response: It's understood uncontrollable circumstances can occur at any WWTP. DEP doesn't take enforcement actions for uncontrollable circumstances that are properly reported.

DEP Requests

Several questions regarding the application and Chapter 94 reports were sent to the permittee in an email dated October 24, 2023. The questions and permittee responses are below:

Question 1: Water Quality Management permit 3522402 was issued in March 2023 for the Boulevard Avenue CSO discharge pipe project. The project description indicates flows to CSO outfalls 056 and 057 were to be directed to CSO outfall 055. Correspondence submitted to DEP, dated June 23, 2023, indicates outfalls 055, 056 & 057 all have the same coordinates. Shouldn't CSO outfalls 056 and 057 be removed from the permit?

Summary of Review

PAWC Response: The consolidation of the CSOs numbered 055, 056 and 057 were discussed at length during the Water Quality Part II permitting process. The decision was made to not consolidate the numbers due to the reporting impacts associated with three separate regulator chambers. If we limited this outfall to one number, it would not show the true impacts of the LTCP for three distinctly different areas contributing to three different regulator chambers, but sharing a single outfall. During significant rain events that cause activations at our CSOs, we have found that it is not common for all three regulator chambers to activate. Therefore it was decided to leave the three separate outfall numbers associated with this three different systems on a single outfall. We will continue to monitor CSO activations at the outfall pipe side of the regulator chamber, showing distinctly different results from 055, 056 and 057.

Question 2: The same June 23, 2023 correspondence indicates stormwater Outfall 072 should be removed from the permit. I was unable to find any documentation in DEP files that discusses the removal of this outfall. Please provide more information regarding how this outfall was eliminated from the system.

PAWC Response: During phase A of the LTCP, the sewer system contributing to CSO #072 was separated into a sanitary and storm system. The storm system was designed to flow through the previously combined system for CSO #072, and then discharge the storm water directly through the 072 outfall without the flow entering the combined or separated sewer system. Prior to directing all flow (stormwater) to Leggett's Creek through outfall 072, fecal coliform tests were performed on the system to ensure that pollutants would not be discharged to the receiving stream and that all sewer connections had been removed from the system. The testing showed higher than expected fecal coliform results, which prevented permanent elimination of the outfall. Through investigation of the higher than expected fecal coliform counts it was discovered that a sewer lateral for a store upstream of the regulator chamber was connected to what was intended to be a storm only system. Once the source of the higher than expected fecal results was identified and corrected, the effluent side of the regulator chamber which directed flow to the main interceptor was blocked off, the weir was removed from the regulator chamber and all flow was then directed (stormwater only) to Leggett's Creek through outfall #072. At this point, the outfall became an MS4 outfall and could no longer be owned by PAWC due to our tariff prohibiting us from owning stormwater only apparatus. Ownership of the outfall and upstream storm sewer system was transferred to the City of Scranton. Due to the longer than expected turnaround time for abandoning outfall 072, the most opportune time for removing the outfall from the system ended up being during the permit renewal.

Question 3: The 2022 Chapter 94 report indicates the system did not experience capacity-related bypassing, SSOs or surcharging during the report year. The 2022 CSO report indicates one dry weather overflow occurred in the collection system on 11/9/2022. SSO dry weather reports were submitted to DEP for events on the following dates: 2/16/2022, 2/18/2022, 3/5/2022, 3/15/2022, 3/31/2022, 4/16/2022, 4/29/2022, 5/23/2022, 6/9/2022 & 11/9/2022. SSO wet weather reports were submitted to DEP for events on 3/1/2022 and 4/7/2022. Additionally, several instances of WWTP bypasses during 2022 were mentioned in correspondence submitted to DEP. Please explain the discrepancies between what's on file and what's stated in the reports.

PAWC Response: We do not have any areas where "conveyance capacity is being exceeded or will be exceeded in the next 5 years". We do have areas where "rehabilitation or cleaning is needed or is underway to maintain the integrity of the system and prevent or eliminate bypassing, CSOs, SSOs, excessive infiltration and other system problems." Which is covered in Appendix 11 of the Chapter 94 report in the 2022 Collection System Maintenance Summary, 2022 Collection System Repair Summary and is also referenced in other areas of Appendix 11. The above work is done to maintain integrity from a preventative maintenance standpoint, and is only done to prevent or eliminate bypassing in emergency situations. We are not aware of any areas where the integrity of the system is causing routine bypassing, CSOs or SSOs. Additionally, all SSOs and DWOs are reported via a phone call, 5-day letter and also covered in the semi-annual report. This is the reason for checking "System did not experience capacity-related bypassing, SSOs or surcharging during the report year." and commenting "See attached report narratives for additional information".

Compliance

There are no current or projected overloads at the treatment plant as per the most recently submitted Chapter 94 report. No antidegradation analysis is required since the watershed is not high quality or exceptional value. None of the existing effluent limitations have been made less stringent; therefore, the antibacksliding requirement has been met.

The previously issued permit expired on November 30, 2021 and the application for permit renewal was submitted on time.

WQM Permits for WWTP and Collection System

Summary of Review

Several WQM permits were issued since the last NPDES permit renewal. The permit numbers and brief project descriptions are as follows:

3523404 – Relocation of CSO 026 outfall (not issued yet).

3523403 – Construction of 211,000-gallon offline CSO storage unit for CSO 027.

3523402 – Improvements to CSO 004, CSO 031, and CSO 032.

3523401 – The project includes construction of a new offline 789,000-gallon CSO storage system for CSO 006 as well as a new inlet and maintenance / diversion structure serving the new storage facility, submersible pumps, grit collection and removal, and a metering chamber.

3504401 A-3 – Influent WWTP pump upgrades and CSO 003 upgrades.

3522402 – Closure of CSOs 056 & 057 with redirection of the discharges to relocated CSO 055.

3521403 – Refurbishment work within the existing vaults of CSOs 047 & 053. Replacement of regulator vaults in CSOs 082 & 086.

3504401 A-2 – Upgrades to the disinfection system (new UV system) and solids handling at the WWTP and replacement of the existing belt filter presses with centrifuges.

3521402 – Construction of a 20,000-gallon storage pipe for CSO 068.

3504401 A-1 – Improvements to the headworks and odor control facilities at the WWTP.

3519401 – Construction of a 710,000-gallon equalization tank for CSO 022.

3518403 – Replacement of the weir at CSO 025 and construction of a 218,000-gallon storage tank central to the location of CSOs 025 & 051.

3518401 – Replacement of approximately 4,200 linear feet of existing 18-inch and 20-inch diameter sewer lines with 30-inch diameter sewer lines in the Leggetts Creek interceptor.

3517408 – Improvements to the secondary treatment system to allow the WWTP to fully treat 46 MGD of flow as required by Part C.III.H of the NPDES permit.

3517407 – Construction of storage facility at CSO 024.

3517406 – Construction of a 1,340,000-gallon storage tank at CSO 030.

3517405 – Construction of a 73,000-gallon storage facility at CSO 021.

3517404 – Replacement of the two existing pumps at the Parrott Avenue pump station.

3517403 – Improvements to CSO 012, CSO 033, CSO 040 & CSO 073, including the raising of existing weirs and installation of flow meters.

3517402 – Replacement of existing sewer pipe, manholes, and weir at CSO 049.

3516404 – Installation of a 120,000-gallon storage facility at CSO 038.

3516403 – Installation of a 169,200-gallon storage facility at CSO 018.

Summary of Review

3516405 – Installation of submersible pumping equipment at the Myrtle Street pump station.

Sludge use and disposal description and location(s): The permit renewal application indicates 3,457.19 dry tons of sludge was hauled to Keystone Sanitary Landfill during the previous year.

TMS PA0026492.pdf TRC Calculation.pdf WQM Modeling.pdf

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	20 (based on average dry weather flow)
Latitude	41º 23' 13"	Longitude	-75º 41' 37"
Quad Name	Scranton	Quad Code	0740
Wastewater Description:	Sewage Effluent		

Receiving Waters	Lackawanna River	Stream Code	28374
NHD Com ID	65630763	RMI	7.9
Drainage Area	241 mi^2	Yield (cfs/mi^2)	0.11
Q_{7-10} Flow (cfs)	26.5	Q_{7-10} Basis	Gages 01536000 & 01534500
Elevation (ft)	648	Slope (ft/ft)	0.0018
Watershed No.	5-A	Chapter 93 Class.	CWF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Impaired		
Cause(s) of Impairment	Flow Alterations, Metals, Pathogens, Siltation, pH		
Source(s) of Impairment	Abandoned Mine Drainage, Combined Sewer Overflow, Urban Runoff/Storm Sewers		
TMDL Status	Final	Name	Lackawanna River Watershed

Background/Ambient Data		Data Source
pH (SU)	-	-
Temperature (°F)	-	-
Hardness (mg/L)	-	-
Other:	-	-

Nearest Downstream Public Water Supply Intake	Danville Municipal Water Authority		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	1123
PWS RMI	122.5	Distance from Outfall (mi)	> 65

Treatment Facility Summary				
Treatment Facility Name: Scranton WWTP				
WQM Permit No.	**Issuance Date**			
3504401 A-3	11/29/2022			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary	BNR	Ultraviolet Radiation	20 (average dry weather flow)
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
25	44,550	Not Overloaded	Centrifuges	Hauled to Landfill

Changes Since Last Permit Issuance: Upgrade to BNR process, replacement of chlorine disinfection with UV, improvements to solids handling, improvements to headworks and odor control facilities, replacement of belt filter presses with centrifuges, upgrades to headworks pumps and WWTP CSO Outfall 003.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 20
Latitude 41º 23' 13" **Longitude** -75º 41' 37"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
Total Suspended Solids	30.0	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45.0	Average Weekly	133.102(b)(2)	92a.47(a)(2)
	60.0	IMAX	-	-
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

Water Quality-Based Limitations

The following limitations were determined through water quality modeling:

Parameter	Limit (mg/l)	SBC	Model / Basis
$CBOD_5$	18.0	Average Monthly	Previous modeling
	27.0	Average Weekly	
	36.0	IMAX	
Ammonia-Nitrogen (May 1 – Oct 31)	3.0	Average Monthly	Previous modeling
	6.0	IMAX	
Ammonia Nitrogen (Nov 1 – Apr 30)	9.0	Average Monthly	Previous modeling
	18.0	IMAX	
Total Residual Chlorine	0.37	Average Monthly	2023 TRC Calculation Spreadsheet
	1.33	IMAX	
Dissolved Oxygen	5.0	Minimum	Previous modeling
Dichlorobromomethane	2.86 µg/L	Average Monthly	2016 PENTOXSD
	5.72 µg/L	Daily Maximum	
	5.72 µg/L	IMAX	
Total Copper	16.2 µg/L	Average Monthly	2023 TMS
	21.7 µg/L	Daily Maximum	
	21.7 µg/L	IMAX	
Free Cyanide	7.43 µg/L	Average Monthly	2023 TMS
	11.6 µg/L	Daily Maximum	
	18.6 µg/L	IMAX	
Total Zinc	0.13 mg/L	Average Monthly	2023 TMS
	0.18 mg/L	Daily Maximum	
	0.18 mg/L	IMAX	
Total Cadmium	0.55 µg/L	Average Monthly	2023 TMS
	0.85 µg/L	Daily Maximum	
	1.36 µg/L	IMAX	
Acrolein	3.00 µg/L	Average Monthly	2023 TMS
	4.02 µg/L	Daily Maximum	
	4.02 µg/L	IMAX	

Chloroform	10.6 µg/L	Average Monthly	2023 TMS
	16.5 µg/L	Daily Maximum	
	26.5 µg/L	IMAX	
Hexachlorobutadiene	0.052 µg/L	Average Monthly	2023 TMS (resampling requested)
	0.081 µg/L	Daily Maximum	
	0.130 µg/L	IMAX	
1,2,4-Trichlorobenzene	0.13 µg/L	Average Monthly	2023 TMS (resampling requested)
	0.20 µg/L	Daily Maximum	
	0.32 µg/L	IMAX	

Whole Effluent Toxicity (WET)

For Outfall 001, ☐ **Acute** ☒ **Chronic** WET Testing was completed:

☐ For the permit renewal application (4 tests).
☐ Quarterly throughout the permit term.
☐ Quarterly throughout the permit term and a TIE/TRE was conducted.
☒ Other: **Annually**

The dilution series used for the tests was: 100%, 77%, 54%, 27%, and 14%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 54%.

Summary of Four Most Recent Test Results

TST Data Analysis

	***Ceriodaphnia* Results (Pass/Fail)**		***Pimephales* Results (Pass/Fail)**	
Test Date	**Survival**	**Reproduction**	**Survival**	**Growth**
10/4/2022	Pass	Pass	Pass	Pass
9/28/2021	Pass	Pass	Pass	Pass
2/25/2020	Pass	Pass	Pass	Pass
10/16/2018	Pass	Pass	Pass	Pass

***** *A "passing" result is that in which the replicate data for the TIWC is not statistically significant from the control condition. This is exhibited when the calculated t value ("T-Test Result") is greater than the critical t value. A "failing" result is exhibited when the calculated t value ("T-Test Result") is less than the critical t value.*

Is there reasonable potential for an excursion above water quality standards based on the results of these tests? (*NOTE – In general, reasonable potential is determined anytime there is at least one test failure in the previous four tests).*

☐ **YES** ☒ **NO**

Evaluation of Test Type, IWC and Dilution Series for Renewed Permit

Acute Partial Mix Factor (PMFa): **0.398** Chronic Partial Mix Factor (PMFc): **1**

1. **Determine IWC – Acute (IWCa)**:

   $(Q_d \times 1.547) / ((Q_{7\text{-}10} \times PMFa) + (Q_d \times 1.547))$

   [(20 MGD x 1.547) / ((26.5 cfs x 0.398) + (20 MGD x 1.547))] x 100 = **74.5%**

   Is IWCa < 1%? ☐ **YES** ☒ **NO**

   Type of Test for Permit Renewal: **Chronic**

2. **Determine Target IWCc**

   $(Q_d \times 1.547) / (Q_{7\text{-}10} \times PMFc) + (Q_d \times 1.547)$

   [(20 MGD x 1.547) / ((26.5 cfs x 1) + (20 MGD x 1.547))] x 100 = **54%**

3. **Determine Dilution Series**

   (NOTE – check Attachment C of WET SOP for dilution series based on TIWCa or TIWCc, whichever applies).

   Dilution Series = 100%, 77%, 54%, 27%, and 14%.

WET Limits

Has reasonable potential been determined? ☐ YES ☒ NO

Will WET limits be established in the permit? ☐ YES ☒ NO

Pennsylvania
Department of
Environmental Protection

Approve	Deny	Signatures	Date
X		~~Brian Burden~~ Brian Burden, E.I.T. / Project Manager	January 15~~November 20~~, 2025~~3~~
X		Amy M. Bellanca (signed) Amy M. Bellanca, P.E. / ~~Program~~ Acting Engineer Manager	1-15-25