Pennsylvania Department of Environmental Protection

Northeast Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0026000**
Facility Type	**Municipal**	APS ID	**1149805**
Major / Minor	**Major**	Authorization ID	**1548056**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE Addendum

Applicant and Facility Information

Applicant Name	**LCA Allentown Joint Client (LCA & Allentown City co-permittees)**	Facility Name	**Kline Island POTW a.k.a. Kline Island WWTP (KIWWTP) a.k.a. Allentown City WWTP a.k.a. LCA Allentown Division WWTP**
Applicant Address	Department Of Public Works 641 South 10th Street (Allentown); 1053 Spruce Street Allentown PA 18106 (LCA)	Facility Address	112 W Union Street
	Allentown, PA 18103-3173		Allentown, PA 18102-4912
Applicant Contact	Mark Shahda	Facility Contact	Andrew Moore
Applicant Phone	(610) 437-7581	Facility Phone	(610) 295-2674
Client ID	387808 (Joint): 76667 (Allentown) & 67774 (LCA)	Site ID	269399
Ch 94 Load Status	Not Overloaded	Municipality	Allentown City
Connection Status	Connections management program due to I&I issues	County	Lehigh
Date Application Received	March 27, 2007	EPA Waived?	No
Date Application Accepted	March 28, 2007	If No, Reason	Major Facility, Pretreatment
Purpose of Application	Kline Island POTW NPDES permit renewal and transfer		

Summary of Review

This is the **Fourth Draft (Redraft) NPDES Permit Renewal & Transfer Fact Sheet Addendum** for the 40.0 MGD Kline Island POTW (a.k.a. KIWWTP) with Outfall No. 001 and stormwater Outfall 004 discharging to the Lehigh River (WWF, MF; Stream# 3335: impairments including siltation/TSS and organic enrichment); and stormwater Outfall 005 discharging stormwater to the Little Lehigh River (HQ-CWF; Stream# 3420; impairments including siltation/TSS).

Redraft NPDES Permit & FS Addendum: The Redraft NPDES permit & FS Addendum were required due to obsoleteness of previous Drafts due to age, obsolete information, regulatory changes, responses to public comments, new 2025 application update information, and updated DEP Technical review using currently available best information, scientifically-supported water quality models, scientifically-supported technical guidance, updated NPDES Permit template requirements, etc. to protect the waters of the Commonwealth and public health, safety, welfare and the environment in accordance with the PA Constitution, PA Clean Streams Law, and regulatory requirements.

- The Third Draft NPDES Permit was issued on 10/2/2016 for public comment. Permitting had been on-hold due to compliance issues (SSOs) while the POTW worked to reduce I&I issues in the POTW & tributary municipal sewer systems. See Compliance Section and Communications Log for permitting history.
- This Fact Sheet Addendum has been expanded to include additional sections & information for permitting purposes, up-to-date information, and alleviate the need to reference older documents. FS Addendum Sections include:
  - Summary of Review Section (including Background Information, Changes from Previous Draft NPDES Permit/permit conditions)
  - Stream/Discharge Section

Approve	Deny	Signatures	Date
X		James D. Berger (signed) James D. Berger, P.E. / Environmental Engineer	November 10, 2025
X		Edward Dudick, P.E. / Environmental Engineer Manager	December 2, 2025

Summary of Review

- Treatment Plant Section (including Chapter 94 Report-related information)
- Compliance History Section
- Effluent Limitations Sections
- Public Comment & Responses Section
- Communications Log

- Change in APS/Auth#: New Joint Client created for the co-permittees per DEP SOP. Due to 2013 permit transfer (to co-permittees) merged into the renewal application, the previous old APS# 610253/Auth# 674709 numbers (for City of Allentown as original sole NPDES permit renewal applicant) are superseded. **EDMR registration requirements were previously satisfied with current EDMR users being LCA (the operator co-permittee).**
- Updated NPDES Permit Application: The 10/30/2025 NPDES Permit Application Update was received via Public Upload# 357902 (including Allentown City General Information Form and NPDES Permit Application form with 2025 sampling results). The original 2007 Public notice documentation and 2013 NPDES Permit Transfer Application documents are incorporated by reference into the updated NPDES Permit Renewal & Transfer Application when not superseded.
- Merged NPDES Permit Transfer to Co-permittees: Lehigh County Authority (LCA) submitted an 8/13/2013 NPDES Permit Transfer Application (merged with renewal per SOP) to become the facility operator (with Allentown remaining as the owner). The transfer of operations occurred in August 2013.
  - Lehigh County Authority (LCA) has been operating the KIWWTP since 2013 in accordance with the Allentown Water and Sewer Utility System Concession and Lease Agreement, which is for a term of 50 years. (2023 Chapter 94 Report). LCA also does O&M for the Allentown City sewer system.
  - As per the Department's July 8, 2013 Correspondence: City of Allentown & Lehigh County Authority will both be responsible as co-permittees of NPDES Permit PA0026000. WQM Permit 3973402 will remain with the City of Allentown as the sole permittee. The City of Allentown will continue to own the wastewater infrastructure & Lehigh County Authority will be the operator.
  - The City has a General Permit for Beneficial Use of Biosolids by Land Application No. PAG082202 (renewed 9/5/2017) for beneficial use of site-generated biosolids. The 7/8/2013 DEP letter indicated LCA should become a co-permittee for this permit in addition to the NPDES permit, but that is outside the scope of this NPDES Permit action.
  - LCA also operates a "LCA Pretreatment Plant" that pre-treats wastewaters prior to direction to the Kline Island WWTP. The LCA Pretreatment Plant is being treated as an Industrial User/customer by the POTW Industrial Pretreatment Program and NPDES Permit Renewal/Transfer Application. See below for details.

Background Information:

- Present Facilities Operations:
  - Admin-extended NPDES Permit: Allentown City submitted the NPDES Permit Renewal Application in 2007. The POTW has been operating under the Admin-extended 3/20/2003 NPDES Permit except as modified by regulatory changes and issued Part II Water Quality Management (WQM) permits. The 2003 NPDES Permit authorized discharge from Outfall No. 001 only (with daily monitoring and 85% minimum monthly average reduction requirements for CBOD5 and TSS) and included special conditions such as: Stormwater prohibition; Necessary property rights; Change in effluent/stream quality; Residuals management; Pretreatment Program operation & implementation; and WET testing (with some language regarding filamentous bacteria protocol to be submitted). Allentown also has a separate Air Emission Plant permit for the WWTP and a PAG-08 Biosolids Land Application Permit for the facility.
  - DRBC Docket: The 8/6/1997 DRBC Docket D-97-14 CP is the most recent DRBC Docket for this facility. The DRBC Docket included:
    - A design goal of 90% BOD5 reduction, but not DRBC Docket limit.
    - Year-round Fecal Coliform Limit (200/100 ml GEO).
    - 85% minimum monthly average TSS reduction limit.
- General POTW Description:
  - POTWs include both the treatment plant and sewer system by Chapter 92a.2 definition. Allentown City is the owner of these facilities. LCA is the operator of these facilities. The POTW has assorted tributary municipalities that own their own sewer systems.
  - The POTW is a separated sewer system with historic I&I issues being addressed. See Compliance Section and Communications Log for general history.

Summary of Review

- LCA operates a separate LCA Pretreatment Plant that pretreats wastes being directed to the KIWWTP that is subject to the Federal Pretreatment regulations and is being treated as a customer by the co-permittees. It was not incorporated into this NPDES Permit renewal application, except as a POTW customer.
- The WWTP facility is located between the Little Lehigh River & Lehigh River, just above the Little Lehigh River confluence with the Lehigh River, with surrounding flood dikes. The old 1973 DRBC Docket D-73-177 CP (upgrade to 40 MGD) noted that flood protection is provided by a dike around the treatment plant (Dike Elevation 262.66 Feet, above the estimated 25-year storm event stream elevation of 246 Feet and maximum flood of record (at that time) of 258 feet).

- General WWTP Treatment Process description: The 40 MGD WWTP is a two-stage trickling filter plant, providing secondary treatment and nitrification prior to discharge to the adjacent Lehigh River. The WWTP accepts 9 MG/year hauled-in municipal septage (at location prior to headworks) & Allentown Water Filtration Plant residual wastewater sludge (directly into gravity thickeners). The POTW also receives assorted pre-treated domestic/IW wastewater flows from the separate LCA Pretreatment Plant via the sewer system. The WWTP generates biogas for capture and recovery onsite.
  - Flows: The POTW has been making progress in resolving excessive peak wet weather flows due to I&I in the Allentown & tributary sewer systems. The facility discharged 34.04 MGD AADF (2024), 32.23 MGD AADF (2023), 32.61 MGD AADF (2022) with highest monthly discharge of 44.77 MGD (January 2024) and 89.34 MGD Peak Instantaneous Flow (2024).
  - WWTP Design: See Treatment Plant Section for further details. The general process includes:
    - Hauled-in Wastewater reception facilities prior to Headworks.
    - Headworks Bar Screening to remove debris at the Auxiliary Pumping Station
    - Grit collected in Aerated Grit Chambers (AGCs) is removed
    - Primary Settling Tanks (PSTs) remove solids that is routed to the Anaerobic Digesters. The application figures indicate the influent sampling location is by the PSTs.
    - Plastic Media Trickling Filters (PMTF) with solids directed to Intermediate Settling Tanks (ISTs) and settled sludge sent to Thickening Tanks. With a wet weather flow of 100 MGD, approximately 80 MGD will flow through the intermediate clarifiers and 20 MGD will bypass the intermediate clarifiers and rock media trickling filters and will be conveyed through the 48-inch line directly to the final clarifiers per the 2025 WQM permit fact sheet.
    - Rock Media Trickling Filters (RMTF) for nitrification, with solids sent to Final Settling Tanks (FST) and settled sludge sent to Thickening Tanks
    - Disinfection by hypochlorite and dichlorination by sodium bisulfite in the Chlorine Contact Tank prior to discharge via Outfall No. 001. Outfall No. 001 sampling point is at the Chlorine Contact Tank discharge.
    - Solids management includes Anaerobic digestion, gravity thickening and belt presses. City of Allentown has Biosolids General Permit No. PAG082203 coverage for beneficial use of WWTP-generated biosolids for land application, with a third party hauling biosolids offsite for land application. The facility's anaerobic digestion system generates biogas for fuel. Allentown WTP RSW sludges are sent directly to a WWTP Gravity Thickener for processing.
    - There is currently no treatment process to reduce total phosphorus or nitrogen, besides the natural biological uptake.
  - Organic Design Capacity: The 70,000 lbs BOD5/day Organic Design Capacity facility is limited to **~47,000 lb/day as-built organic capacity** per 8/22/2024 LCA Conference Call discussion and **56,000 lbs/day** while complying with warm weather Ammonia-N limits per separate Act 537 Plan submittal. The facility is considering WWTP upgrades to regain permitted capacity (including Chemically Enhanced Primary Treatment (CEPT) and modification of the solids management facilities).
  - Hydraulic Design Capacity: The facility has a 44.6 MGD Hydraulic Design Capacity, with 2025 WQM permitting to make site changes to handle 100 MGD peak wet weather influent flows. **NOTE**: Elimination of SSOs/hydraulic restrictions in the POTW/trib municipality sewer systems can have the negative impact of increasing peak wet weather influent/hydraulic loadings on the WWTP, which will require evaluation under the separate 10/2025 Regional Act 537 Plan submittal.
  - WWTP-related Internal Monitoring Points, Outfalls, and historic bypass/SSO locations:
    - Outfall/Internal Monitoring Point No. 101: This is a new administratively-created reporting IMP/Outfall for the existing raw sewage influent sampling point downstream of the hauled-in septage addition point. Influent sampling location not shown in 2007 Process Flow Diagram (but several return flows must be subtracted from Venturi flow meter flows to calculate influent flow per application). The 2014 LCA/Allentown Public Comments indicated the influent "sampling location" is

Summary of Review

located downstream of the point of entry for the wastes. The 2025 NPDES Application update showed the sampling location by the Primary Settling Tanks but downstream of recycle flows (Filtrate, Thickening Supernatant (including supernatant from RSW WTP sludge), RMTF Recycle).

- Outfall No. 001: This is the permitted Treated Effluent discharge point to Lehigh River. The sampling point is at the Chlorine Contact Tank discharge. WWTP site stormwater has been directed into the treatment process and therefore Outfall No. 001:
  - The WWTP stormwater drainage area 2 includes balance of the northern part of the site drains into the Final Settling Tanks (FSTs).
  - The WWTP stormwater drainage area 3 includes the southern part of the site (PMTFs, PSTs and Sludge Storage Pad) drains into the PMTF Basins and is then routed by the Intermediate Pump Station (IPS) to the ISTs.
  - The WWTP stormwater drainage area 5 includes the roadways around the Chlorination Building and Chlorine Contact Tank, which drains into the Chlorine Contact Tank.
- Outfall No. 002: This is a historic in-plant bypass location that has not been in use per the 2025 NPDES Application update in recent years (that would discharge to the Lehigh River upstream of Outfall No. 001 discharge point). It was not a permitted outfall in the last 2003 NPDES Permit. No Outfall No. 002 was identified on the Treatment Process description/flow charts nor Outfall No. 002 flow meter/sampling point/disinfection system. It was not identified as a stormwater outfall. Any bypass here would be subject to the NPDES Permit Part A.I Additional Requirements Item 4,Part A.II (bypass definition; severe property damage definition) and Part B.I.G (Bypassing) conditions. No anticipated Outfall No. 002 bypass is being authorized by this NPDES Permit. Please note the Department has enforcement discretion in extreme weather conditions (hurricanes). Available information includes:
  - "The plant is not constructed in a configuration that will allow for treated effluent to be pumped through Outfall No. 002 to the Lehigh River" and "allows for gravity discharge of secondary effluent from the Intermediate Settling Tanks should failure of the Effluent Pumping Station occur during high river stages. Under these emergency conditions the Rock Media Trickling Filters, Final Settling Tanks, and the Chlorine Contact Tank would be bypassed". (2014 Public Comments)
  - "In addition, Outfall 002 is configured so that wastewater that has received tertiary nitrification and final settling can be discharged by gravity to the Lehigh River directly from the Final Settling Tanks without flowing through the Chlorine Contact Tanks. This provides for maintenance of the Chlorine Contact Tanks should total isolation be required". "Please be advised that chlorine solution piping was provided during the 1998 upgrade to allow for chlorination of the Intermediate Settling Tanks or Final Settling Tanks depending on the required discharge point utilized with Outfall 002". (2014 Public Comments)
  - The 2025 Act 537 Plan submittal Appendix 15 Kleinschmidt memo (page 5) indicated this outfall is an emergency bypass around the RMTFs, final settling tanks, and CCTP. There are several valves the isolate the individual treatment process from the outfall line. This outfall has not been used since 1990.
- Outfall No. 003: This is a historic SSO discharge point located prior to the WWTP headworks that would overflow toward the Little Lehigh River (HQ-CWF). SSOs are strictly prohibited. The POTW has made substantial progress in removing I&I flows and reducing SSO events at this location. The 2025 Act 537 Plan submittal included a technical memo indicating a technical consultant's modeling showed that an approved WQM permit upgrade (to handle 100 MGD peak wet weather flows) would likely eliminate any Outfall 003 SSOs. Any overflow would be subject to Part A.III.C.4 (Noncompliance notification), Part B.I.H (SSO prohibition), etc.
- Outfall No. 004: This is a stormwater outfall discharging to Lehigh River (WWF). The WWTP drainage area 4 roadways between the PSTs, PMTFs, RMSTs and Odor Control Unit #13 drains to the Drainage Lift Station. This normally flows to storm water Outfall 004 but it can be shut down to recover spills with a portable pump. The sampling point would be at the Drainage Lift Station. There are normally no potential storm water pollution sources present in Drainage Areas 4 and 5 per the 2025 NPDES Application.
- Outfall No. 005: This is a stormwater outfall discharging to the Little Lehigh River (HQ-CWF). The WWTP stormwater drainage area 1 (northwestern corner of the site including entry road, Main Pump House, Maintenance buildings, etc.) drains to the WWTP influent Grit Chambers. After the first flush

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in a heavy rain, a valve is closed and flow is diverted to storm water Outfall 005. There are normally no potential storm water pollution sources present in Drainage Areas 4 and 5 per the 2025 NPDES Application. **NOTE**: See Part C.I.A (Stormwater Prohibition) requirements. Uncontaminated stormwater should not be directed into the Treatment Process. Uncontaminated stormwater is not expected to degrade the receiving HQ-CWF watershed. Unless the stormwater is known to be contaminated, the valve must be kept closed to direct the noncontaminated stormwater to Outfall No. 005 unless Part C.I.A requirements are met.

- Sludge use and disposal description and location(s): In 2024, the facility produced 2,715 dry tons (including ~320 dry tons of hauled-in Allentown WTP sludge that was dewatered onsite) that was beneficially used at 42 sites under the Biosolids General Permit No. PAG082203 in assorted counties (Berks, Lehigh, Bucks, Carbon, Chester, Lancaster, and Schuylkill Counties). KIWWTP has Synagro Mid-Atlantic on contract for year-round land application and storage services. The facility produced 2,395 dry tons by its own generation. However, the (provided) 2024 Sludge Production Calculations only addressed the 2394.6 dry tons of sludge production (i.e. not addressing RSW sludge after dewatering in the gravity thickener). The application and Chapter 94 Reports are unclear how the RSW sludge is handled (i.e. whether kept separate from biosolids or mixed in). The RSW sludge was also not mentioned in the 2025 Application's copy of the EPA Biosolids Annual Report Sludge Report.
- LCA Pretreatment Plant (a.k.a. LPP a.k.a. PTP) located at 7878 Industrial Drive, Upper Macungie Twp. Lehigh County (Individual IW Stormwater PAS902202 permit; Site# 533857): The LCA owns/operates a (separate) pretreatment plant that accepts and treats wastewater from residential and industrial users (including hauled-in wastewater) prior to wastewater being directed to this WWTP. The LCA pretreatment plant is acting as an indirect discharger/IU customer to the POTW and is subject to the Federal ELG pretreatment regulations (40 CFR 400 – 472) to the extent that it pretreats IU customers prior to discharge to the POTW. The LCA Pretreatment Plant holds an Industrial Waste Permit from the City of Allentown Pretreatment Program. The plant is covered under the current Act 537 Planning. The LCA Industrial Wastewater Pretreatment Plant (PTP) also receives and processes waste as part of a waste hauler program. Over 1716.94 million gallons of waste per year are discharged into the LCA PTP; this includes 58.95 million gallons of trucked waste (based on 2023 data). Prior to accepting a new trucked-in waste, an analysis is performed to determine the waste characteristics (strength) and to determine if the waste will pose any problem to either the LCA PTP or the downstream City KIWWTP. Each load of waste that is accepted at the LCA PTP is sampled and laboratory analyzed.
    - History:
        - The 5.75 MGD facility was built by Lehigh County in 1990 to provide pre-treatment of high-strength waste from Upper Macungie Township industries upstream of the wastewater treatment plant.
        - In May of 2006, LCA took over the operation of the Lehigh County Pretreatment Plant.
        - The LCA Pretreatment Plant was not a 2007 NPDES Permit Application-identified Industrial User.
        - In 2009, the LCA purchased the Lehigh County Pretreatment Plant from the Lehigh County.
        - The 2014 NPDES application update included no Industrial User information was found in the 2014 NPDES Application update. The 2014 Public Comments indicated the LCA Pretreatment Plant treats a significant amount of received residential wastewater as well as received trucked-in industrial wastewater.
        - The 8/19/2024 Lehigh Valley News article included the following information: The existing LCA Pretreatment Plant (7676 Industrial Road) is nearing the end of its useful life. It uses specialized technology to treat types of high-strength wastes. The facility supports 22 businesses across 11 industries. Options being considered include some businesses building their own pretreatment systems, going with a small pretreatment plant for those who will not, etc. The article cited a November 8, 2023 Lehigh Valley New Article that also indicated it was reaching capacity limitations which will limit growth in communities in the region. The article also cited other regional sewage issues requiring upgrading water and wastewater infrastructure (including treatment facilities). **NOTE**: The 10/2025 Act 537 Plan Submittal noted the LCA was exploring options but did not address Act 537 Planning for this pretreatment facility, except incidentally.
        - The 2025 NPDES Permit Application update only included a 2024 EPA IPP Annual Report (without completing the NPDES Permit Application Form IU information section), i.e. application section not completed. The report indicated: facility under a control mechanism "CPA000"; an average daily flow rate at 4.5 MGD; no applicable CIU Categorical Pretreatment Standards; Local limits applied (not identified); SIC Code# 4952, NAICS# 221320. Issues:
            - The 2023 Chapter 94 Report indicated the LPP treated an average daily flow of 4.78 MGD in 2023. This figure is greater than the reported IU permit flow.

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- The LCA Pretreatment Plant might be classified as a "Centralized Waste Treatment (CWT)" facility subject to 40 CFR 437 Federal Effluent Limitations Guidelines (ELG). 40 CFR 437.2 indicates: Centralized waste treatment (CWT) facility means any facility that treats (for disposal, recycling or recovery of material) any hazardous or non-hazardous industrial wastes, hazardous or non-hazardous industrial wastewater, and/or used material received from off-site. "CWT facility" includes both a facility that treats waste received exclusively from off-site and a facility that treats wastes generated on-site as well as waste received from off-site. The AERC recycling facility might also fall under this classification.
- In practical terms, the NPDES Permit reporting requirements partly depend on whether the POTW is addressing each LCA Pretreatment Plant customer (subject to Pretreatment ELGs) individually under its IPP Program and/or under the LCA Pretreatment Plant IU permit coverage. Clarification is required.

  - Applicable NPDES Permit Requirements:
    - 40 CFR 400-472 pretreatment ELG requirements pertaining to the industrial categories waste streams subject to Pretreatment ELG requirements treated at this LCA Pretreatment Plan.
    - NPDES Permit Part A.III.C.2 (Planned Changes in Waste Streams), Part B.I.C.4 (Annual Reporting requirements), Part B.I.D (General Pretreatment Requirements), Part C.I.I (Additional Reporting requirements), and Part C.III (Pretreatment Program Implementation) requirements apply since LCA Pretreatment flows/loading is ultimately going to the Kline Island WWTP.

- Separate Act 537 Plan Submittal Information: There is an April 16, 2025 Kline Island Sewer System (KISS) Regional Act 537 Plan Update application (submitted 10/7/2025) under separate review. The Plan submittal indicated it was a culmination of a multiyear effort to identify sources of I&I flows in the POTW system, to develop I&I Source Reduction Plans (SRPs), and reduce KIWWTP bypasses (Outfall 002) and SSO discharges (Outfall 003). It contained some useful information that has implications for the NPDES Permit, but its proposed future KIWWTP proposals might require separate NPDES Permit amendment/WQM permitting (but normal I&I corrective actions/rehab generally does not require permitting). The Plan noted that it did not include items for the separate LCP Pretreatment Plant "Master Plan" (Plan Summary Section B footnote). The useful information (for the Redraft NPDES Permit) included:
  - The 2025 WQM Permit (to handle 100 MGD peak wet weather flows) construction completion was tentatively estimated for 2029. (Executive Summary Item 7, Page 3)
  - If al pumps were in operation during a peak flow event resulting in ~90 MGD being pumped into the KIWWTP, 90 MGD would initially flow through the aerated grit chambers and primary settling tanks, but due to capacity limitation of the primary effluent pump system, which pumps effluent to the plastic media trickling filters, only 85 – 87 MGD of primary effluent would be pumped to the plastic media trickling filters and approximately 3 – 5 MGD would overflow the walls of the aerated grit chamber and primary settling tanks. (Section III.A.3, pages 5-6)
  - Any peak flows over ~87 MGD are diverted to the Little Lehigh River through Outfall 003. (Section III.A.3, page 6)
  - Based on the current configuration of the KIWWTP's upstream conveyance system, the peak flow that can be currently conveyed to the KIWWTP is ~105 MGD.
  - Besides Outfall 003, other major SSOs occur upstream of the Park Pump Station in the Allentown Parkway System and near the bottleneck approximately 1000 feet upstream of the KIWWTP. This bottleneck is where the Little Lehigh Interceptor merges with the Park Pump Station Force main, the City's Trout Creek Interceptor, and the Salisbury Relief Interceptor. (Section III.A.3, page 6)
  - A technical consultant's modeling indicated there will be no activations of Outfall 003 after the 2025 WQM permit upgrade project (100 MGD peak wet weather flow capacity) under their assumed design conditions. (Section III.A.4, page 14)
  - Appendix 6 (KIWWTP Wet Weather Treatment Approach AECOM Memo page 1) noted that there is an effluent pumping system which is used during flooding conditions in the Lehigh River. The Appendix 15 Kleinfelder Memo Section 4.14 (page 12) indicated five (5) 20 MGD @ 26 Feet TDH pumps installed in the Chlorine Contact Tank (CCT) to allow for discharge when high Lehigh River levels prevent gravity flow.
  - Appendix 6 (KIWWTP Wet Weather Treatment Approach AECOM Memo page 3) indicated a design assumption of 65% BOD5 removal and CBOD5 effluent concentration of 40 mg/l for wet weather flows. **NOTE**: 2003 NPDES Permit required 85% minimum monthly average reduction (CBOD5 and TSS) unless otherwise specified in the permit, with no alternate specification found in the permit. The DRBC Docket

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requires 85% minimum monthly average reduction of TSS. No Chapter 92a.47(i) submittal was found in the NPDES Permit Application to allow for relief.

- Appendix 6 (KIWWTP Performance and Capacity Review AECOM Memo) evaluated option including direction of LCA Pretreatment Plant loadings (now being treated at the Pretreatment Plant) to the KIWWTP.
  - It indicated as-built organic load capacity limits for the "KIWWTP Main Liquid Stream Process" of **56,000 lbs BOD5/day** (below permitted 70,000 lbs BOD5/day organic design capacity) when meeting Ammonia-N limits during warm springtime conditions.
  - It looked at Chemically Enhanced Primary Treatment (CEPT) options to restore organic design capacity. It noted additional solids handling facilities upgrades might also be needed.

Changes form Third Draft NPDES Permit:

- **General**:
  - The permit has been regenerated with current NPDES Permit Template condition language (Parts A, B, and updated standard Part C condition language) that addresses current regulatory requirements. The administratively-extended 2003 NPDES Permit language was substantially outdated due to numerous regulatory and standard NPDES Permit template changes. There have also been additional template changes since the Third Draft NPDES permit was issued.
  - Please note that Outfall No. 002 was determined to be an inactive plant "bypass" that is subject to bypass requirements and deleted from the Part A section.
  - Old 2003 NPDES Part C conditions (Part C.I Four; Part C.I Five; Part C.I Seven) were superseded by current standard Part A and B Template language.
  - Old 2016 Draft NPDES Permit Part C.I.D was superseded by current standard Part A language.
  - Old 2016 Draft NPDES permit Part C.VI Wet weather schedule of compliance was deleted. The facility has obtained a 2025 WQM permit for upgrading WWTP capacity to handle 100 MGD peak wet weather flows to eliminate SSO events prior to WWTP headworks. Other potential wet weather WWTP upgrades and POTW & Trib Municipal sewer system I&I projects are proposed as part of a 2025 Act 537 Plan submittal as part of a longer-term I&I reduction effort.
- **Revised Part A.I.A and B (Outfall No. 001 Interim and Final WQBELs)**: Updated per updated Reasonable Potential Analysis (see Effluent limits section) and need to address organic enrichment issues in receiving stream per Part C.II (3-year CBOD5 schedule of compliance) and Part C.IV (WQBELs for Toxic Pollutants with 3-year schedule of compliance). The facility EDMR data shows the facility can meet the more stringent CBOD5 monthly average limit, but the schedule allows for any site changes needed to meet the more stringent limits due to wet weather impacts.
- **Revised Part A.I.C (Outfall No. 001)**: See Effluent Limits Section. Updated per current requirements including, but not limited to:
  - 85% CBOD5 and TSS Minimum Monthly Average Reduction Limits: The 2003 NPDES Permit required minimum 85% minimum monthly average reductions for CBOD5 and TSS (unless otherwise specified in the permit). No alternate specification was found in the 2003 NPDES Permit. The TSS requirement is also an existing DRBC Docket requirement. Part A.I Additional Requirements Item 2 cross-referenced due to Chapter 92a.47 option for relief due to peak wet weather influent flows, but an Antibacksliding Exception requirements and the receiving stream's organic enrichment impairment issues (municipal point source) might preclude relief.
  - E Coli Monitoring: This is now a standard requirement due to Chapter 93 Water Quality Standard.
  - Copper and Zinc: Monthly monitoring is required due to Reasonable Potential Analysis.
  - Aluminum and Total Iron: Annual monitoring is required due to unknown impact of Allentown WTP RSW sludge on effluent quality (dewatering from liquid RSW sludges). Monitoring to be done concurrent with processing WTP sludges via the gravity thickener that sends supernatant to the headworks.
  - PFAS: New PFAS monitoring requirements apply per DEP PFAS Strategy, with the footnote: "The permittee may discontinue monitoring for PFOA, PFOS, HFPO-DA, and PFBS if the results in 4 consecutive monitoring periods indicate non-detect results at or below Quantitation Limits of 4.0 ng/L for PFOA, 3.7 ng/L for PFOS, 3.5 ng/L for PFBS and 6.4 ng/L for HFPO-DA. When monitoring is discontinued, permittees must enter a No Discharge Indicator (NODI) Code of "GG" on DMRs". If PFAS is absent, the permittee can discontinue monitoring after 4 (consecutive) non-detects". See also separate NPDES Permit Part B.I.D (General Pretreatment Requirements) and Part C.III (POTW Pretreatment Program Implementation) PFAS-related requirements.

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  - Daily max limits/reporting: Based on existing or required IMAX limits (for any exceedance duration of the IMAX limit is an exceedance of the IMAX limit).
  - Fecal Coliform: DRBC year-round Fecal Coliform Limit supersedes winter limits per Chapter 92a.12 & 92a.36.
- **Updated Part A.I.D (Stormwater Outfall No. 004) and Part A.I.E (Stormwater Outfall No. 005)**: Updated monitoring & permit limits. See Effluent Limits Section. Updated stormwater semi-annual monitoring requirements and Part C.VIII (Stormwater) conditions now apply.
- **New Part A.I.F (New Internal Monitoring Point/Outfall No. 101)**: See Effluent Limits Section. This Influent internal monitoring point has been administratively created for the CBOD5/BOD5 and TSS Raw Sewage Influent sampling point, based on Outfall No. 001 coordinates (in absence of other locational information besides assurance it is downstream of the Hauled-in Wastewater acceptance point). BOD5 monitoring is required for Chapter 94 Reporting. CBOD5 and TSS monitoring is required for calculation of minimum monthly average reductions. Influent flow monitoring is required due to long-term site I&I issues.
- **Updated Part A.I Additional Requirements**: Facility hydraulic design capacity has been increased to 44.6 MGD per previous WQM permitting. The facility has indicated as-built organic design capacity limitation addressed in Part C.I.I reporting requirements.
- **Modified Part C.I.A (Stormwater Prohibition)**:
  - Admin-Extended 2003 NPDES Permit Part C.I One stated: “No storm water from pavements, area ways, roofs, foundation drains or other sources shall be directly admitted to the sanitary sewers associated with the herein approved discharge”.
  - Added language: “(other than WWTP facility stormwater explicitly authorized by a Part II WQM Permit)” to allow for site conditions (including surrounding flood control dike that might make it difficult to discharge stormwater to the receiving streams). Any uncontaminated stormwater directed into the Treatment Process reduces the available treatment capacity for peak wet weather influent flows and increases the likelihood of offsite SSO discharges (003). The Department would require any such WQM permit application to show that any stormwater (directed into the treatment process) is not causing increases in SSO frequency (by using up available treatment capacity) and/or contributing to noncompliance with NPDES Permit limits (plus any proposed site changes involved with redirecting stormwater away from Treatment process).
- **New Part C.I.D**: New Chlorine Minimization condition: Chlorine is toxic to aquatic life. If the facility can meet its permit limits while discharging lesser concentrations of Total Residual Chlorine, it should do so.
- **New Part C.I.E**: New operator-in-responsible charge notification requirement due to issues noted in preparation of this Redraft NPDES Permit such as HFMP requirements that will require oversight, etc.
- **New Part C.I.F**: New O&M Plan requirement due to potential facility influent peak wet weather flow potential impacts on operation in event of out-of-service units/equipment. The facility will need to maximize operation units/equipment availability/efficiency to manage peak wet weather influent flows and eliminate SSOs.
- **New Part C.I.G**: New High Flow Management Plan (HFMP) requirement due to need to maximize facility peak wet weather influent flows to reduce/eliminate SSOs and other negative impacts. The most recent WQM Permit required a Wet Weather Operational Plan (Plan), due circa December 2025, but that plan would not address all Redraft NPDES permit requirements (i.e. substantial updating likely required).
- **Existing Part C.I.H**: This condition was in the previous Draft NPDES Permit to clarify sampling requirements: Effluent samples should be collected where the effluent is well mixed near the center of the discharge conveyance and at the appropriate mid-depth point, where the turbulence is at a maximum and the settlement of solids is minimized.
- **New Part C.I.I (Additional Chapter 94 Reporting Requirements)**: There are site-specific issues that need to be addressed with the Annual Chapter 94 Municipal Wasteload Report:
  - **Organic Design Capacity**: The permittees have indicated the as-built facility has a more limited as-built organic design capacity (40,000 – 56,000 lb BOD5/day) than permitted (70,000 lb BOD5/day). The Department will require notification if the identified limited organic design capacity has been or is projected to be exceeded.
  - **Biosolids and/RSW Sludge Beneficial Use**: The Department will require existing Biosolids (PAG-08) and any existing RSW Sludge beneficial use General Permit reporting documents be submitted with the Annual Report.
  - **Additional LCA Pretreatment Plant-related Requirements**: The LCA Pretreatment Plant triggered additional informational requirements that are addressed here to clarify compliance with regulatory requirements and existing permits.

Summary of Review

- **Restored Part C.I.J**: Restored existing 2003 NPDES Permit condition: "If in the opinion of the Department, these works are not so operated or if by reason of change in the character of wastes or increased load upon the works, or changed use or condition or the receiving body of water, or otherwise, the said effluent ceases to be satisfactory or the sewage facilities or the sewerage facilities shall have created public nuisance, then upon notice by the Department, the permittee shall adopt such remedial measures as will produce an effluent which, in the opinion of the Department, will be satisfactory for discharge into said body of water". Existing condition appears to have been accidentally omitted in the previous Draft NPDES Permit.
- **New Part C.I.K**: The 2003 NPDES Permit had special language pertaining to the use of filtration to address filamentous bacteria in the effluent. The Department could not approve a requested 2007 modified WET Test "microfiltration" methodology (to address potential bacteria-related issues) as it did not appear to conform permit condition requirements (referenced EPA technical Guidance) and lacked supporting data required by the WET Test Condition-referenced EPA Technical Guidance for "ultrafiltration". This condition allows the permittees to pursue this option with the new Part C.IV (Whole Effluent Toxicity) testing if the current EPA technical guidance requirements can be shown to be addressed. If not, no variation from the current Part C.IV WET Test procedures will be allowed.
- **New Part C.I.L**: There are questions about how representative influent sampling and analysis is possible, given recycle/return flows (including RSW WTP sludge supernatant) prior to the Raw Sewage Influent sampling point. The application indicates daily influent testing (24-hour composite sampling) which would necessarily be impacted by recycle flows. An SOP is required showing that representative sampling & analysis, plus reporting will be achieved.
- **New Part C.I.M**: Within one hundred-eighty (180) days of PED, the permittees shall submit an up-to-date site-specific Preparedness, Prevention & Contingency (PPC) Plan addressing all Part C.I.A and Part C.VIII (Stormwater) requirements including the PPC Plan Guidelines NPDES Stormwater Addendum requirements. The submittal is required due to site-specific wet weather issues, new stormwater permit conditions, and stormwater discharges to a HQ-CWF stream. The POTW has been aware of IW stormwater regulations and permitting requirements since at least 2014, and already has existing site-specific contingency plans (as an operating industrial facility) and wet weather operating plan that can be consolidated into an integrated PPC Plan. Requirements include the PPC Plan Guidelines Section A (and NPDES Addendum Section A) figure/drawing requirements.
- **New Part C.II (Schedule of Compliance: CBOD5)**: This 3-year schedule of compliance is to address the new CBOD5 daily max limits as EDMR indicates the CBOD5 limits are being met (given unknown impacts of peak wet weather influent flows on the WWTP). No relief is possible from existing CBOD5 permit requirements under a schedule of compliance.
- **Updated Part C.III**: Up-to-date POTW Pretreatment Program Implementation template conditions.
- **Up-to-date Part C.IV**: Up-to-date Solids Management template conditions. Additional language requiring reporting of RSW sludges in addition to biosolids.
- **New Part C.V**: New WQBELs for Toxic Pollutant conditions with 3-year Schedule of Compliance per Reasonable Potential Analysis. Condition has language in event the co-permittees want to eliminate metal monitoring requirements.
- **Updated Part C.VI**: Up-to-date Whole Effluent Toxicity (WET) template conditions. The language references the EPA Technical Guidance that allows the Department to approve a modified WET Test methodology (under certain conditions) to address bacteria-related issues, which is the subject of the Part C.I.K special condition.
- **New Part C.VII**: New WQBELs below TQL conditions for Final WQBELs (3-year schedule of compliance) whose limits are below the DEP Target Quantitation Limits.
- **Updated Part C.VIII**: **Up-to-date** Stormwater conditions with benchmark condition and annual stormwater inspection report requirements.

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 (treated sewage effluent) 004 (stormwater-only)	Design Flow (MGD)	40 (001) 0 (004)
Latitude	40º 36' 6.54" (001 40º 36' 6.40" (004)	Longitude	75º 27' 7.25" (001) -75º 27' 7.25" (004)
Quad Name	Allentown East	Quad Code	1442 (6.22.3)
Wastewater Description:	Sewage Effluent (001) Stormwater (004)		
Receiving Waters	Lehigh River (WWF, MF)	Stream Code	3335
NHD Com ID	26296349	RMI	16.7
Drainage Area	1030 square miles	Yield (cfs/mi^2)	0.2439 for entire river 0.2097 for 86% flow
Q_{7-10} Flow (cfs)	251.2 (Lehigh River as whole) 211 (reduced flow at Outfall No. 001 location due to river berm dividing river flow)	Q_{7-10} Basis	See below
Elevation (ft)	230	Slope (ft/ft)	-
Watershed No.	2-C	Chapter 93 Class.	WWF, MF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Impaired		
Cause(s) of Impairment	ORGANIC ENRICHMENT, SILTATION		
Source(s) of Impairment	MUNICIPAL POINT SOURCE DISCHARGES, URBAN RUNOFF/STORM SEWERS		
TMDL Status	-	Name	-

Background/Ambient Data		Data Source
pH (SU)	8	Standard WWF default assumption for critical conditions
Temperature (°C)	25	Standard WWF default assumption for critical conditions
Hardness (mg/L)	54	2025 NPDES permit application update. See below for further info.
Aluminum (ug/l)	394	Lehigh River UPS Pine Street Bridge (~ 4 miles upstream of Outfall No. 001) – July sampling result during low flow period of July – November.
Total Iron (ug/l)	700	See above
Manganese (ug/l)	69	See above
Lead (ug/l)	1.59	See above
Nickel (ug/l)	4.18	See above
Zinc (ug/l)	30.7	See above

Nearest Downstream Public Water Supply Intake	NORTH PENN & NORTH WALES WATER AUTH DBA FOREST PARK WATER		
PWS Waters	Delaware River	Flow at Intake (cfs)	-
PWS RMI	-	Distance from Outfall (mi)	~45 miles

Changes Since Last Permit Issuance:

- The previous Fact Sheets had included low DO as a cause for impairment. It is no longer listed as cause of stream impairment.

- DEP Biologist indicated the organic enrichment appears to be from multiple sources in the Lehigh River, impacting aquatic life both upstream and downstream of the facility. The major 40 MGD sewage facility discharges are contributing to organic enrichment, along with any SSO discharges.

Other Comments:

- **Upstream**: The LCA Allentown WTP (101757-001) surface water uptakes are upstream of the WWTP outfalls. The unpermitted bypass outfall 002 discharge point would be upstream of Outfall 001.
- **Lehigh River Stream Impairments at WWTP**:
  - Organic Enrichment due to Municipal Point Sources: More stringent CBOD5 limits (ABACT limits being met by the facility per EDMR) will be implemented to prevent the facility from contributing to ongoing watershed organic enrichment issues.
  - Siltation: Existing TSS limits and elimination of POTW sewer system SSOs will prevent the facility from contributing to siltation issues. The Lehigh County MS4 Permit (PA1113959) and other MS4 permits will address urban stormwater contributions separately.
  - Additional Downstream Impairments:
    - Lehigh River: TSS from CSO discharges (affected reach starts at Little Lehigh Creek confluence per E-maps) and PCBs from unknown sources (but not at the KIWWTP area).
    - Delaware River: Mercury from unknown sources.
- **Breached Rock Berm dam in Lehigh River at Outfall No. 001 location. The Department has updated its water quality modeling to address this structure per permittees' request in public comment letters to account for breached rock dam on stream flow at Outfall No. 001:**
  - The permittees indicate that the Lehigh River width is greatly restricted and the bulk of the flow passes through a channel that is about 60 feet wide. 2016 Public Comments Attachment 2 included a Google Earth image (4/17/2016) that showed the rock berm structure (diagonal to Lehigh River flow with River flow on both ends, but slanted toward the Treatment Plant) at a time when the downstream USGS Gage 01453000 measured 1,730 CFS river flow. The distance between the rock berm and the Outfall was estimated at 60 feet. The channel on the other side of the rock berm was estimated at 40 feet. Under low flow conditions, a significant portion of the total river flow will be directed toward the outfall, with rapid mixing expected at the outfall. Riffles in the stream bed (600 feet below the outfall) would also contribute to rapid mixing. The POTW believed this documentation meets the Department requirement for scientific site-specific information.
  - Without historical research, the Chapter 105 program indicated the structure appeared to be a historic breached (on both ends) low level dam that has been in that condition since 1992 per available aerial photos. The structure might have been related to the old canal. The "Canal Park" is directly across the Lehigh River, with the rock berm structure possibly associated with the canal when it was operating. It is unclear how much Lehigh River flow is presently diverted into the old canal channel prior to Outfall No. 001 location. E-maps also shows the old canal (across the River and "Canal Park") as water filled & ~66 feet across, but since the canal extends past the downstream gage location, its impact is assumed not to impact the river gage information used by PA Streamstats.
  - The Lehigh River is approximately 260 feet wide) with the open gap of ~60 feet across at Outfall No. 001 per the DEP E-maps aerial photo, with the berm (diagonal to Lehigh River banks) directing approximately **84**% of river flow (by stream width) to the portion flowing by Outfall No. 001. The other breach was about 40 feet across. In practical terms, this structure reduces the effective stream width to 60 Feet and the Q7-10 low flow/ reduced by ~16%, which is assumed in the absence of a site-specific mixing study information/analysis and river profiles/flow analysis.
  - E-maps aerial photo: See breached rock berm dam channeling majority of Lehigh River flow to Outfall No. 001 location, with flow restriction creating turbulent mixing conditions there. Once the stream flow returns to normal, sediment would drop out, creating a visible sand bar/silt build-up area seen in the aerial photography.

- **Low Flow Yield (LFY) and Q7-10 Low Flow**: The Q7-10 Low Flow has been recalculated.
  - Downstream Gage Information: The downstream USGS Stream Gage 01453000 (Lehigh River at Bethlehem, PA) has a 1279 square mile drainage area and 210.94 Feet Elevation. The USGS PA Streamstats webpage identified a (gage location) 312 CFS Q7-10 low flow value for the 1279 square mile drainage area, which equated to a **0.2439 CFS/square mile watershed Low Flow Yield (LFY)**. However, there is a complicating factor in a Lehigh River berm (likely a breached dam) that would divert Lehigh River flow around both breaches as noted above.
  - Recalculated Q7-10 Low Flow with adjustment for Rock berm impact at Outfall 001 (1030 square mile drainage area):
    - Before adjustment: 251.2 CFS Q7-10
    - After adjustment: 211 CFS for portion of river directed through the ~60-foot-wide breach.
- Discharge Total Hardness:
  - 2025 NPDES Application Update: 291 mg/l average (3 samples, lowest at 280 mg/l). Single influent sample at 300 mg/l Total Hardness. This value is consistent with impacts from local carbonate geology on local I&I and possibly non-potable water sources in the service area.
  - 2023 IPP Annual Report effluent sampling indicated: 250 mg/l Total Hardness in 3/5/2023 sample (24 hour composite). 272 mg/l in 3/7/2023 sample. 282 mg/l in 3/9/2023 sample (consistent with influent sample at 284 mg/l), 276 mg/l in 6/14/2023 sample, 272 mg/l in 8/21/2023 sample, 254 mg/l in 8/23/2023 sample, 264 mg/l in 8/25/2023 sample.

- **Lehigh River Sampling Data**: 2018-2019 Lehigh River sampling data:
  - The Lehigh River UPS Pine Street Bridge (~ 4 miles upstream of Outfall No. 001):
    - 7/2/2018 Sample: 394 ug/l Total Aluminum, 2.33 ug/l Total Copper, 67 mg/l Total Hardness, 700 ug/l Total Iron, 69 ug/l Total Manganese, 4.18 ug/l Total Nickel, and 30.7 ug/l Total Zinc.
    - 7/9/2018 Sample: 394 ug/l Total Aluminum, 2.33 ug/l Total Copper, 67 mg/l Total Hardness, 700 ug/l Total Iron, 1.59 ug/l Total Lead, 69 ug/l Total Manganese, and 30.7 ug/l Total Zinc.
    - 7/20/2018 Sample: 121 ug/l Total Aluminum, 69 mg/l Total Hardness, 226 ug/l Total Iron, 46.1 ug/l Total Manganese, and 21.4 ug/l Total Zinc.
    - 4/5/2019 Sample: 105 ug/l Total Aluminum, 34 mg/l Total Hardness, 39.3 ug/l Total Manganese, 36.3 ug/l Total Zinc. Other metals were ND.
    - 4/16/2019 Sample: 93.6 ug/l Total Aluminum, 61 mg/l Total Hardness, <100 ug/l Total Iron, 38.4 ug/l Total Manganese, 23.3 ug/l Total Zinc.
    - 4/19/2019 Sample: 166 ug/l Total Aluminum, 49 mg/l Total Hardness, 212 ug/l Total Iron, 51.5 ug/l Total Manganese, 26.2 ug/l Total Zinc. Other metals were ND.
    - 4/21/2019 Sample: 212 ug/l Total Aluminum, 54 ug/l Total Hardness, 275 ug/l Total Iron, 43.7 ug/l Total Manganese, and 31.6 ug/l Total Zinc.
    - 6/19/2019 Sample: 74.1 ug/l Total Aluminum, 63 mg/l Total Hardness, 104 ug/l Total Iron, 19.5 ug/l Total Manganese, and 23.8 ug/l Total Zinc.
  - LehighLCAUPS Sampling point (~0.22 miles upstream from 001 discharge): Organics found in river upstream of KIWWTP discharges.
    - 10/9/2018 Sample:
      - 0.053J UG/POCIS Atrazine
      - 0.34 UG/POCIS B Bis(2-Ethylhexyl)Phthalate
      - 0.38 UG/POCIS B Diethylphthalate
      - 0.059J UG/POCIS Metolachlor
      - 0.11 UG/POCIS Simazine
      - Etc.
    - 12/20/2018 Sample: Assorted organics including:
      - 0.0172 ug/SPMD 1-Methylnapthalene
      - 0.0209 ug/SPMD 2-Methylnapthalene
      - 0.0484 ug/SPMD Acenaphthene
      - 0.0154 ug/SPMD Anthracene
      - 0.0402 UG/SPMD Benz(a)anthracene
      - 0.0108 ug/SPMD Benzo(a)pyrene
      - Etc.
  - LehighLCADWIS Monitoring Point: ~0.29 miles downstream of Outfall No. 001:
    - 10/9/2018 Sample: Assorted organics.
    - 1/14/2019 Sample:
      - 0.081J ug/POCIS Atrazine
      - 3.8 ug/POCIS Diethylphthalate
      - 0.049 ug/POCIS Metolchlor

Discharge, Receiving Waters and Water Supply Information

Outfall No.	005	Design Flow (MGD)	0 (stormwater only)
Latitude	40º 36' 1.99"	Longitude	-75º 27' 25.78"
Quad Name	Allentown East	Quad Code	1442 (6.22.3)
Wastewater Description:	Stormwater		
Receiving Waters	Little Lehigh Creek (HQ-CWF, MF)	Stream Code	3420
NHD Com ID	26296351	RMI	~1 per E-maps measurement
Drainage Area	~189	Yield (cfs/mi^2)	~0.24
Q_{7-10} Flow (cfs)	46.1	Q_{7-10} Basis	PA Streamstats
Elevation (ft)	-	Slope (ft/ft)	-
Watershed No.	2-C	Chapter 93 Class.	HQ-CWF, MF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Impaired		
Cause(s) of Impairment	SILTATION		
Source(s) of Impairment	URBAN RUNOFF/STORM SEWERS		
TMDL Status	-	Name	-

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

Nearest Downstream Public Water Supply Intake	NORTH PENN & NORTH WALES WATER AUTH DBA FOREST PARK WATER		
PWS Waters	Delaware River	Flow at Intake (cfs)	-
PWS RMI	-	Distance from Outfall (mi)	~45 miles

Changes Since Last Permit Issuance: Reclassified as a Natural Trout Reproduction Stream

Other Comments:

- Different GIS info sources indicate this stretch as being either the Little Lehigh River or Jordan Creek. This FS relied on the E-maps determination (Chapter 93.9d).
- Recurrent SSO Outfall 003 (40°, 36', 4.62"; -75°, 27', 24.98") discharges to the Little Lehigh River near the Outfall No. 005 outfall. The POTW and its trib municipalities have been taking action to reduce I&I in the system, and will be increasing WWTP peak influent wet weather capacity to 100 MGD per WQM permitting to eliminate SSO events.
- Little Lehigh Creek flows into the Lehigh River (WWF; Stream# 3335; impaired by siltation (urban runoff/storm sewers), TSS (siltation, other sources), and organic enrichment (Municipal Point Sources)).
- PA Streamstats indicated ~46.59% of Little Lehigh Creek watershed area underlain by carbonate rock.
- Lehigh County MS4 Permit No. PAI132239, etc. now acts to reduce urban stormwater impacts.
- Trout Creek (HQ-CWF; Stream# 3421; impaired by siltation from urban stormwater & pathogens of unknown source) has a confluent directly upstream of where Outfall No. 005 would discharge. There is a MS4 discharge shown at the confluence with Little Lehigh Creek (206).

- Jordan Creek (TSF; Stream# 3424; impaired by siltation, flow regime modification) has a confluence with the Little Lehigh River upstream of the Trout Creek (HQ-CWF; Stream# 3421; Natural Trout Reproduction stream; impaired by pathogens & siltation) confluence.

Treatment Facility Summary

Treatment Facility Name: Kline Island POTW a.k.a. Kline Island WWTP (KIWWTP), Allentown WWTP, LCA Allentown Division WWTP.

WQM Permit No.	Issuance Date	Scope
665S22	10/18/1965	STP Enlargement. Original construction circa 1928.
3973402	11/9/1973	Rerating to 40 MGD and upgraded treatment plant. Concurrent DRBC Docket No. D-73-177 CP description included: Existing: Two (2) screening devices; six (6) primary settling tanks; four (4) trickling filters; six (6) final settling tanks; one (1) chlorine contact tank; two (2) sludge digesters; 32 sludge drying beds; and two (2) sludge holding tanks. New: New 54-inch influent line; new venturi and aerated grit chambers; four new comminutors; four new primary settling tanks; four new plastic media trickling filters; new intermediate pump station; conversion of six primary settling tanks into intermediate settling tanks; two new final settling tanks; Two new chlorinators, and chlorine contact tank will be extended. New primary anaerobic tank. The existing sludge drying beds abandoned.
3974411	7/12/1974	Limited rerate from 28.4 MGD to 31.0 MGD. Presumably before previous approved plant upgrades were constructed and/or Planning update (service area changes).
3997404	8/14/1997	Settling tanks and disinfection system upgrades. The 6 existing Imhoff tanks will be demolished and replaced by three (3) 138-foot final settling tanks with new distribution box to integrated the new units into the existing eight Final Settling Tanks; new sludge pumping stations; expansion of existing chlorine contact tank and new Parshall Flume effluent flow meter, and new chlorine building. An effluent pump station to discharge under high river conditions.
3915403	2/4/2016	Second “scumbuster” in Primary Digester No. 1. Second “scumbuster” in Secondary Digester No. 2. No changes to digester unit capacities or operations are approved.
3915403-A1	6/19/2018	Applicant will add a second scumbuster to digester #2 as a standby opposite the existing scumbuster system. • The additional redundant Scumbuster includes a pump/impeller/cutter bar to break up the scum layer that can form on the surface of an anaerobic digester. • Replace the existing gas draw off piping inside the Primary Digester #2 tank • Replace existing Pearth gas discharge piping on the cover of Primary Digester #2 • Add a new stairway for access to digester building roof • Add a new stairway from the digester building roof to the Second Digester parapet wall Upon Completion there will be two scumbuster systems installed in each of their three digester tanks.
3919408	12/9/2019	installation of a sodium hypochlorite disinfection system at the Kline’s Island wastewater treatment plant (WWTP). LCA uses both chlorine gas and liquid sodium hypochlorite for a variety of uses at the WWTP. Gas chlorine will no longer be used at the WWTP after the project is completed.

3915403-A2	1/1/2021	Rerating of Hydraulic Design Capacity (but not NPDES permit basis flow). **The design hydraulic capacity of the Kline's Island wastewater treatment plant was rerated to 44.6 MGD. The 40.0 MGD design annual average flow (NPDES Permit Basis flow) and design organic capacity remain unchanged**. No information on TSS design loading provided. The Module 1 identified an 86 MGD peak instantaneous/hourly & daily max design flow plus 54 MGD maximum monthly average design flow.
3919408-A1	5/16/2022	A sodium bisulfite de-chlorination system will be installed at the WWTP including: Installation of three 2,550-gallon sodium bisulfate storage tanks, metering pumps, diffusers, manholes, conveyance lines to the chlorine contact tank, and other associated appurtenances. Updates to the WWTP SCADA system. Installation of concrete containment curb around storage tank area Organic Design Capacity: 70,058 Hydraulic Design Capacity: 40 MGD
3915403-A2	8/13/2025	The purpose of the project is to increase the wet weather capacity of the Kline's Island WWTP from approximately 87 MGD to 100 MGD to reduce sanitary sewer overflows. The facility operates under NPDES permit PA0026000. WQM permit amendment 3915403 A-1 approves a WWTP annual average flow of 40 MGD and a design hydraulic capacity of 44.6 MGD, which will remain unchanged. DE Report included capacity calculations for other WWTP processes to ensure they can handle the 100 MGD peak wet weather flows. Included: Replacement of four main influent pumps and two auxiliary pumps Replacement of five primary clarifier pumps in the intermediate pump station Installation of 48-inch pipe to divert a portion of the plastic media trickling filter effluent directly to the final clarifiers during wet weather Replacement of isolation and check valves, pump crane, monorail, and other associated appurtenances Special Conditions: A: As-built drawings required B: The permittee shall develop a Wet Weather Operational Plan (Plan) to be used to address the impact of high flows to the treatment plant during wet weather. The Plan shall contain a process for treating the maximum amount of flow through the plant while protecting the components of the treatment plant and minimizing the potential impact to the receiving stream. The Plan shall include measures to be taken when wet weather is predicted to prepare the plant for the high flow conditions as well as operational activities to be undertaken when high flows actually occur. The Plan shall be submitted to DEP within 120 days of the effective date of this permit for DEP review. Thereafter, the Plan shall be reviewed and updated annually. **NOTE**: This WWOP is due circa 12/13/2025.

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary with ammonia reduction	Trickling Filter With Settling	Sodium Hypochlorite (liquid) with de-chlorination	40.0

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal

44.6	70000*	Not Overloaded	Anaerobic Digestion	Land Application

*~47,000 lbs/day as-built organic capacity per 8/22/2024 LCA Conference Call discussion. 56,000 lb/day per 10/2025 Act 537 Plan submittal memo.

Changes Since Last Permit Issuance (2003): See above for details, but including:

- Installation of effluent sodium hypochlorite disinfection system & sodium bisulfite de-chlorination in 2023.
- A 2008 Allentown City power point presentation (in the DEP File) indicated they removed site comminutors in 2001 to eliminate a key hydraulic bottleneck.
- 2024 Chapter 94 Report indicated construction of new septage hauler receiving station, installation of truck scale with concrete foundation, and other miscellaneous O&M work completed. Other O&M work was anticipated to be completed in 2025.
- 2024 Chapter 94 Report indicated 100 MGD wet weather upgrades design work expected to be finished in 2025.

Other Comments:

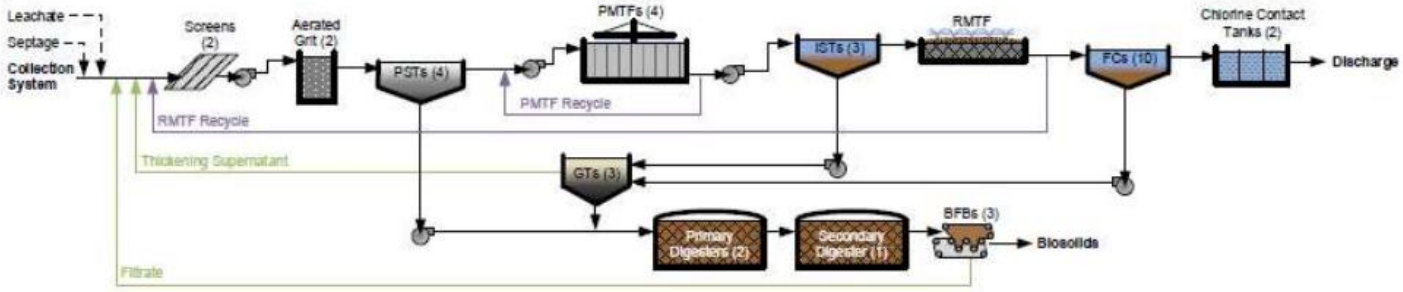
Minimum Monthly Average Reductions (Chapter 92a.47): Existing 85% minimum monthly average reduction (CBOD5 and TSS) but no current monitoring/reporting requirement. No Chapter 92a.47(i) request for relief from the 85% minimum monthly average BOD5/CBOD/TSS requirement was found in the renewal application.

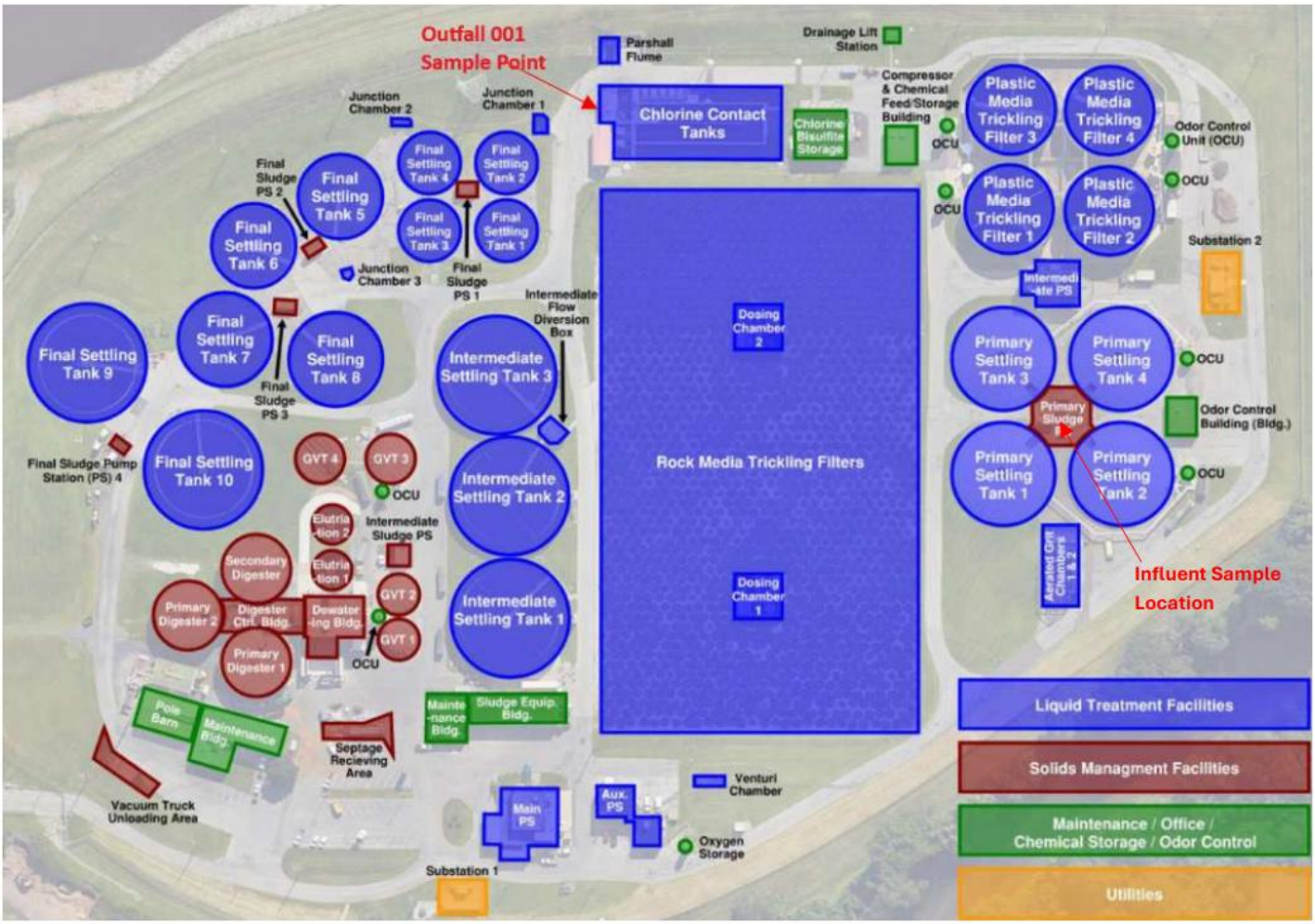
Constituent	2025 Application Influent Data	2025 Application Effluent Data	Minimum Monthly Average Reduction
BOD5	140 mg/l LTA (365 samples) 224 mg/l max avg monthly 41 mg/l minimum	7 mg/l LTA (366 samples) CBOD5 (Assuming 1.2 BOD5/1 CBOD5 treated sewage ratio) 14 mg/l max avg monthly 3 mg/l minimum	94% LTA reduction, but unclear if some months might have been below 85% minimum reduction.
TSS	149 mg/l LTA (365 samples) 355 mg/l max avg monthly 28 mg/l minimum	6 mg/l LTA (266 samples) 13 mg/l max avg monthly 1 mg/l minimum	~96% LTA reduction, but unclear if some months might have been below 85% minimum reduction.

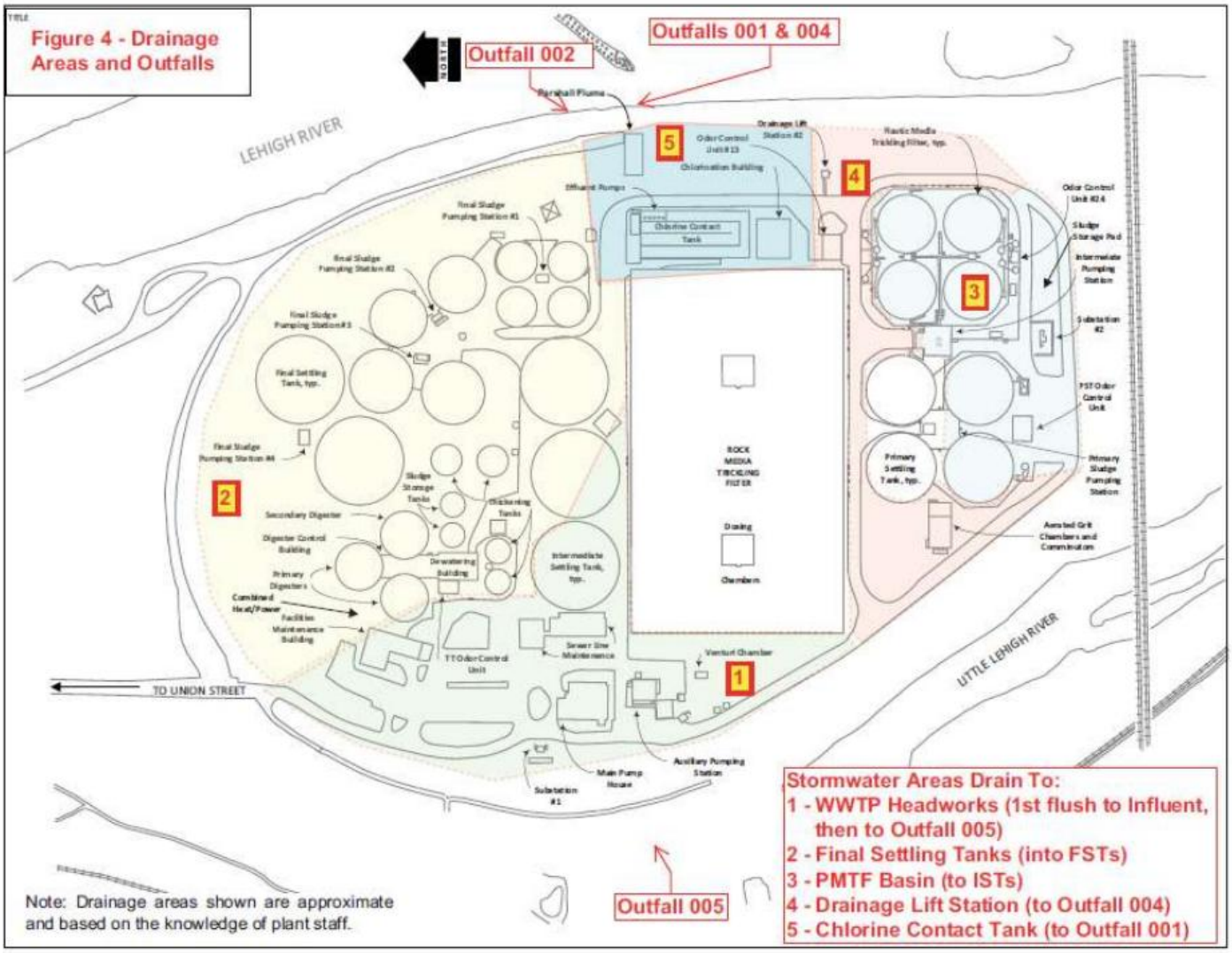
2025 NPDES Application Update General WWTP Treatment Process description: The 40 MGD WWTP is a two-stage trickling filter plant, providing secondary treatment and tertiary nitrification prior to discharge to the adjacent Lehigh River. The WWTP accepts 9 MG/year hauled-in municipal septage & Allentown Water Filtration Plant residual wastewater sludge (directly), and also receives assorted pre-treated domestic/IW wastewater flows from the separate LCA Pretreatment Plant via the sewer system. The WWTP generates biogas for capture and recovery onsite.

- Flows: The POTW has been making progress in resolving excessive peak wet weather flows due to I&I in the Allentown & tributary sewer systems.
- WWTP Design: See figures below.
    - There is a hauled-in wastewater receiving station prior to headworks. The facility receives 9.0 MG/year hauled-in wastes (municipal and residual) including landfill leachate and septic wastes (at hauling discharge stations directing flow through headworks) in addition to what hauled-in wastewaters are separately received and pre-treated at the LCA Pretreatment Plant (prior to direction to the KIWWTP).
    - Headworks Bar Screening to remove debris at the Auxiliary Pumping Station
    - Grit collected in Aerated Grit Chambers (AGCs) is removed
    - Primary Settling Tanks (PSTs) remove solids that is routed to the Anaerobic Digesters. The application figures indicate the influent sampling location is by the PSTs.
    - Plastic Media Trickling Filters (PMTF) with solids directed to Intermediate Settling Tanks (ISTs) and settled sludge sent to Thickening Tanks
    - Rock Media Trickling Filters (RMTF) for nitrification, with solids sent to Final Settling Tanks (FST) and settled sludge sent to Thickening Tanks
    - Disinfection by hypochlorite and dichlorination by sodium bisulfite in the Chlorine Contact Tank prior to discharge via Outfall No. 001. Outfall No. 001 sampling point is at the Chlorine Contact Tank.

- Solids are subject to Anaerobic digestion, gravity thickening and belt presses. Hauled-in Allentown City WTP RSW sludges are added directly to the gravity thickener.
- There is currently no treatment process to reduce total phosphorus or nitrogen, besides the natural biological uptake.







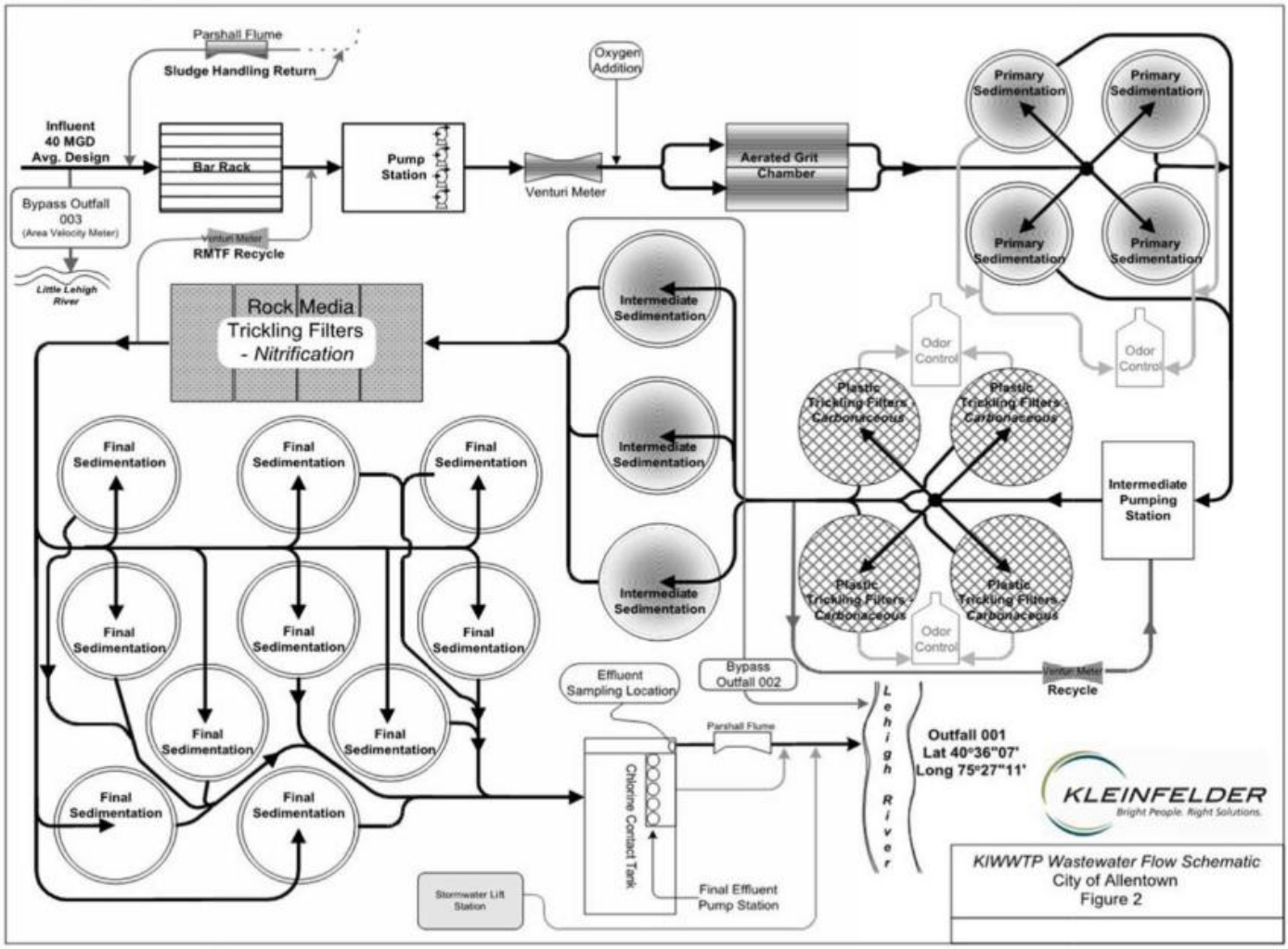
From the 1/1/2021 rerating WQM permit No. 3915403-A1 IRR: The Kline's Island wastewater treatment plant includes the following processes: influent screening, main pump station, grit removal, primary settling, intermediate pump station, plastic trickling filters, intermediate settling, rock trickling filters, final settling, chlorine contact, effluent pump station (if needed), gravity thickeners, anaerobic digestion, and belt filter press. The Module 1 indicated 86 MGD PI, PH, and Daily max flowa, and 54 MGD maximum monthly average flow (MMAF) with 70,000 lb BOD5/day organic design capacity. MMF assumed to mean "max monthly flow" (below).

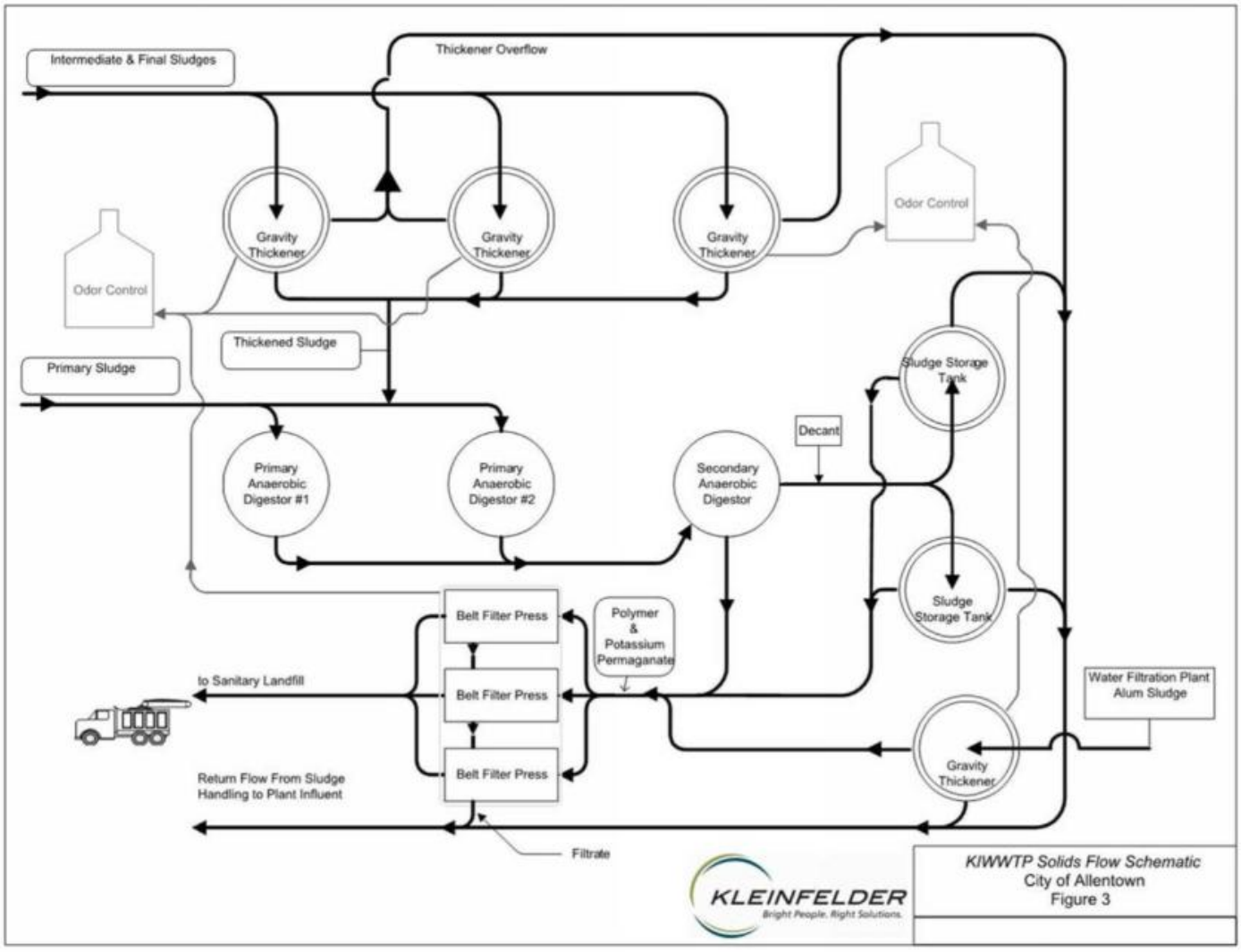
- Influent Screens (100 MGD hydraulic capacity/PH; 2 existing units): Wastewater entering the WWTP undergoes screening by two climber-type mechanically cleaned screens with 3/4-inch spacing between bars and a manufacturer's rated capacity of 100 MGD per screen. With one unit out of service for maintenance, 100 MGD of influent can pass through the screening process.
- Main/Auxiliary Pump Stations (85 MGD hydraulic capacity): After screening, wastewater flows via gravity to the main and auxiliary pump stations.
    - In the main pump station, two (2) pumps are rated for 11,000 gpm @ 40 ft TDH (~15.8 MGD) and two (2) pumps are rated for 15,300 gpm @ 42.5 ft TDH (~22 MGD).
    - The two pumps (2) in the auxiliary pump station are rated for 16,000 gpm @ 30 ft TDH (~23 MGD).
    - The pump stations can convey the requested WWTP design hydraulic capacity with several units out of service for maintenance.
- Grit Chambers (96.8 MGD hydraulic capacity/PH; two existing units): Pumped wastewater then travels via force main to the aerated grit chambers. The Department's Domestic Wastewater Facilities Manual (DWFM, doc. No. 362-0300-001) recommends velocities during normal variations in flow as close as possible to 1 fps and the detention period based on the size of particle to be removed. Module 3 of the permit application indicates a

horizontal velocity of 0.11 fps through the grit chambers with a weir controlling velocity. The 168,000-gallon combined grit chamber volume can provide hydraulic detention times within the 2 to 5-minute standard range recommended by Metcalf & Eddy during peak flows and near the 3 to 5-minute 10 State Standards recommendation. For the peak flow of 86 MGD identified in Module 1 of the application, the detention time is approximately 2.8 minutes.

- Primary Clarifiers (54 MGD hydraulic capacity/MMA; 4 existing units; 4.06-MG capacity): With a combined surface area of 45,239 ft^2 among the four primary clarifiers, the surface overflow rate during the maximum monthly average flow of 47.46 MGD is 1,050 gpd/ft^2. At the peak hourly flow of 86 MGD, the surface overflow rate is approximately 1,900 gpd/ft^2. The DWFM recommends maximum monthly average and peak flow surface overflow rates of no more than 1,000 gpd/ft^2 and peak hourly rates no more than 2,500 gpd/ft^2. The maximum monthly average surface overflow rate is within Metcalf & Eddy's recommended range of 800 gpd/ft^2 and 1,200 gpd/ft^2 and the peak flow is near the 2,000 gpd/ft^2 and 3,000 gpd/ft^2 recommended range.
- Intermediate Pump Station (86 MGD hydraulic capacity): The intermediate pump station consists of two sets of pumps with 5 pumps in each set for a total of 10 pumps. With one unit out of service, the pump station can convey 60,000 gpm @ 44 ft TDH (86.4 MGD).
- (Carbonaceous) Plastic Media Trickling Filters (54 MGD hydraulic capacity/MMF; 4 existing units; 1 million cubic feet total media volume): The DWFM doesn't include specific sizing criteria for plastic media trickling filters. Based on a BOD loading rate of less than or equal to 62 lbs/day/1000 ft^3, Metcalf & Eddy recommends the hydraulic loading rate should fall within the range of 245 – 1,800 gpd/ft^2. During the maximum monthly average flow of 47.46 MGD, the hydraulic loading rate was 1,464 gpd/ft^2.
- Intermediate Settling Tanks (54 MGD hydraulic capacity/MMF; 3 existing units; 4.03-MG capacity): The DWFM recommends a maximum surface overflow rate of 1,500 gpd/ft^2 based on peak hourly flow. For the 86 MGD peak hourly rate and total intermediate settling tank surface area of 44,870 ft^2, the surface overflow rate is approximately 1,916 gpd/ft^2. Using the maximum recommended overflow rate, the peak hourly flow capacity should be approximately 67 MGD.
- (Nitrifying) Rock Media Trickling Filters (56 MGD hydraulic capacity/MMF; 4 existing units; 2.31 Million cubic feet media volume): The total volume of rock media in the 5.3-acre trickling filter is 2,308,680 ft^3. Neither the DWFM, Metcalf & Eddy or 10 States Standards include sizing criteria for rock media trickling filters. If assuming the low end of the Metcalf & Eddy recommended range for plastic trickling filters (245 gpd/ft^2), the filters can handle 56 MGD.
- Final Clarifiers (63.6 MGD hydraulic capacity/MMF; 10 existing units; 6.12 MG capacity): For the 10 final clarifiers at the WWTP, the DWFM and 10 States Standards indicate the surface overflow rate should not exceed 1,200 gpd/ft^2 for peak hourly flows. For the 86 MGD peak hourly flow and total final settling area of 80,020 ft^2, the overflow rate is approximately 1,075 gpd/ft^2.
- Chlorine Contact Tank (63.6 MGD hydraulic capacity/MMF; 1 existing unit with dimensions of 194 feet by 83 feet by 11 feet deep), structure including effluent pump station and sampling point: The DWFM requires a minimum contact period of 15 minutes at peak hourly flow and 30 minutes at the maximum monthly average flow. At the maximum monthly average flow of 47.46 MGD, the contact time in the 1,324,900-gallon chlorine contact tank is approximately 40 minutes. At the peak hourly flow of 86 MGD, the contact time is approximately 22 minutes.
- Effluent Pump Station (86 MGD hydraulic capacity): During times when the Lehigh River reaches flood levels, treated effluent must be pumped to the Lehigh River (via Outfall No. 001). The effluent pumping system consists of a total of 5 pumps each rated for a capacity of 13,890 gpm @ 26 ft TDH. With one pump out of service, the effluent pump station can convey approximately 80 MGD to the Lehigh River.
- Solids Handling (NA Hydraulic capacity): Solids handling at the WWTP consists of gravity thickeners, anaerobic digesters, and a belt filter press. The equipment is sized based on sludge flow and loads generated by the removal of BOD and TSS from the wastewater. There is no request to update the organic capacity of the WWTP.
    - Two Primary Digesters: 324,865 cubic feet capacity
    - One Secondary Digester: 162,433 cubic feet capacity
    - Dewatering Building
    - Four Sludge Thickening Tanks shown on Figure 1.
    - Belt filter presses: Three units per 2025 NOV response

2021 WQM Permit Application Rerating Figures:


Parshall Flume
Sludge Handling Return
Oxygen Addition
Influent
40 MGD
Avg. Design
Bar Rack
Pump Station
Venturi Meter
Aerated Grit Chamber
Primary Sedimentation
Primary Sedimentation
Primary Sedimentation
Primary Sedimentation
Bypass Outfall
003
(Area Velocity Meter)
Venturi Meter
RMTF Recycle
Little Lehigh River
Rock Media
Trickling Filters
- Nitrification
Intermediate Sedimentation
Intermediate Sedimentation
Intermediate Sedimentation
Odor Control
Odor Control
Odor Control
Plastic Trickling Filters - Carbonaceous
Plastic Trickling Filters - Carbonaceous
Plastic Trickling Filters - Carbonaceous
Plastic Trickling Filters - Carbonaceous
Intermediate Pumping Station
Final Sedimentation
Final Sedimentation
Final Sedimentation
Final Sedimentation
Final Sedimentation
Final Sedimentation
Final Sedimentation
Final Sedimentation
Final Sedimentation
Final Sedimentation
Effluent Sampling Location
Bypass Outfall 002
Venturi Meter
Recycle
Parshall Flume
Chlorine Contact Tank
Lehigh River
Outfall 001
Lat 40°36"07'
Long 75°27"11'
Stormwater Lift Station
Final Effluent Pump Station
KLEINFELDER
Bright People. Right Solutions.
KIWWTP Wastewater Flow Schematic
City of Allentown
Figure 2



DEP Inspection Reports noted:

- Influent sampling location is prior to all treatment and all return flows. **NOTE**: Apparent conflict with application.
- Influent flow is measured after all return lines and hauled-in waste
- Just for the chlorination system, there is a backup generator. If power is lost at the treatment plant LCA can use an alternate power source to keep the WWTP operational
- Oxygen is added to “freshen” the waste stream. Struvicide is added after belt filter press to remove struvite.
- Existing Site HFMP is implemented at 50 MGD influent flow. Facility stops accepting hauled-in wastewater at 70 MGD influent flow.
- 3.6-MG sludge storage capacity onsite.
- Two (2) Elutriation tanks receive discharge overflow from the anaerobic digesters. Elutriation is a process of separating particles by using a fluid (liquid or gas) to wash away lighter materials from the heavier ones.

2023 & 2024 Chapter 94 Annual Municipal Wasteload Reports information (Public Upload# 223686 & #306127): Highlights.

- General:
  - Service Area: Service area includes City of Allentown (Allentown) and part or all of 14 other Lehigh County municipalities. There are approximately 950 miles of collector and interceptor sewers including contributing entities ranging in size from 8" to 60", tributary to the KIWWTP. There are no combined sewers in the system. Each municipality owns and operates its collector system. There are no pumping

stations in the Allentown collector system. Tributary Reports were included for Hanover Township, Coplay-Whitehall Authority, North Whitehall Twp., South Whitehall Twp., Emmaus Borough, Salisbury Twp., Macungie Borough, Upper Milford Twp., Lower Macungie Twp., Upper Macungie Twp., Lowhill Twp., Weisenberg Twp., Alburtis Borough, LCA Western Lehigh Interceptor Report **(not listed in the 2007 NPDES Permit application)**. Allentown's 285-mile collection system is maintained by a force of eight.

- Planning: The Regional Act 537 Plan will be submitted to PaDEP by March 2025. The future 2025 Act 537 Plan submittal will include an evaluation of flows that can be removed by I&I programs in addition to construction of new facilities such as upsized parallel interceptors, pump stations, storage tanks, and treatment plant expansion/upgrades (including updated KISS Hydraulic model; potential conversion of LCA Pretreatment Plant to provide full treatment; etc.). **NOTE**: Target date moved to July 2025 per 8/22/2024 Meeting.
- Section 1.a: Facility is operating under an administratively-extended 2003 NPDES permit. Referenced WWTP "schematic hydraulic flow diagram" not found. 40.0 MGD Trickling Filter plant providing secondary treatment plus ammonia-N reduction. Rerated to 44.6 MGD Hydraulic Design Capacity in 2021. Section 1.c noted that two recycle flows must be subtracted from main influent (Venturi flow) to calculate the influent flows. 2024 Report Section 1.c noted: KIWWTP influent meter was recalibrated by a third party on November 20, 2024. Issues with the calibration were discovered when compiling the internal December 2024 flow report. The recalibration issue was corrected on February 3, 2025. The numbers reflected in Appendix B are the original meter values that contain the questionable data from November 20 – December 31, 2024 (higher by roughly 7.5% on annual daily basis).
- Noted Sewer System Issues:
  - As mentioned in the following Section 12 of this Report, the Region is undergoing Final Act 537 Planning. As a result of this planning effort, the existing sewer hydraulic model was re-created in 2021 and 2022 and multiple planning alternatives were screened through the 2050 time period. **The conclusion from the screening of alternatives was that the LLI is undersized (with the existing and future City flows plus the other Signatories existing and future flows). The Final Act 537 will describe the recommended solution for this hydraulic bottleneck**.
  - **The Little Lehigh Interceptor (LLI) and Jordan Creek Interceptor (JCI), the two primary conveyance systems to the KIWWTP, are well past normal capacity now. Originally designed as a concrete gravity sewer, these facilities are now operating daily as low-pressure force mains with high surcharge levels near and above surrounding grade, facilitated by sealed manhole covers**.
  - Additional relief sewers were constructed in the 1980s based on the findings of a comprehensive SSES and sewer system capacity assessment that was completed in 1980. Flows from the Western Lehigh service area (LCA) are pumped via the Park Pump Station on a daily basis, and during rain events, to further remove municipal flows from Allentown interceptors. LCA's Park Pump Station (PPS) and relief line, constructed in the 1980s, were designed to pump flows from the Western Lehigh service area and other non-LCA signatories. **To avoid overflows, the PPS must operate approximately 16 hours per day – and longer during rain events**. LCA completed a rehabilitation of the PPS to ensure this daily pumping operation can continue, which removes 12-22 MGD from Allentown interceptors.
  - **System flow characterization, as described in the Regional Flow Management Strategy (RFMS) was completed in 2021 to determine the volumes of Allentown's and other municipal flows in Allentown interceptors that are currently hydraulically overloaded**. Background information leading to EPA's request for a RFMS, as well as details regarding the RFMS, are presented in the 2018 Chapter 94.
  - As a result of these prior studies, along with operator knowledge and experience, it is understood that **portions of the Allentown collection system and interceptors are at or near capacity in both dry-day and wet-weather conditions due to I&I**. **The Little Lehigh Interceptor (LLI) and Jordan Creek Interceptor (JCI), the two primary conveyance systems to the KIWWTP, are well past normal capacity now. Originally designed as a concrete gravity sewer, these facilities are now operating daily as low-pressure force mains with high surcharge levels near and above surrounding grade, facilitated by sealed manhole covers**.

- **Form Items 1, 2, 3 and 9 (Loadings)**:
  - No existing or projected hydraulic overload: The claimed 44.6 MGD hydraulic design capacity was not in the last Draft NPDES Permit but in an issued WQM permit. They had hydraulic overloading in 2019

(record year of precipitation) per narrative but none was identified on completed DEP Spreadsheet (with unexplained drop from 188,150 EDUs to 161,350 EDUs between 2019 and 2020).
  - Average daily influent flow of 33.27 MGD in 2023 compared to 40 MGD NPDES Permit-basis flow and 44.6 MGD hydraulic capacity.
  - Average daily influent flow of 34.03 MGD in 2024 compared to 40 MGD NPDES Permit-basis flow and 44.6 MGD hydraulic capacity
  - 2024 Report indicated LCA completed a 2019 KIWWTP Hydraulic Design Capacity Evaluation (estimating a ~54 MGD hydraulic capacity) and a December 2024 "KIWWTP Master Plan" that included a process assessment that reviewed process capacity and hydraulic capacity of each of the unit processes at the facility.
  - 10/2025 Act 537 Submittal indicated potential LCA Pretreatment Plant options (not part of that Plan Update) being investigated included redirecting existing LCA Pretreatment Plant organic loading to the KIWWTP for treatment there.
- No existing or projected organic overload (at permitted 70,000 lbs/day capacity): **However, LCA noted an ~47,000 lbs/day as-built organic capacity per 8/22/2024 LCA Conference Call discussion and 56,000 lb BOD5/day per 10/2025 Act 537 Plan submittal documentation (when meeting warm weather NPDES Ammonia-N permit limits)**.
  - 2023: Average daily influent BOD of 41,988 lbs/day compared to 70,000 lbs/day organic design capacity.
  - 2024: Average daily influent BOD of **45,314 lbs/day** compared to 70,000 lbs/day organic design capacity. Max month at **51,418 lbs/day.**
  - LCA Pretreatment Plant (operating since 1990 and located within LCA Western Lehigh Interceptor service area): The LCA Pretreatment Plant is operated by LCA (a co-permittee for the KIWWTP). Unknown how much organic loading is addressed at the LCA Pretreatment Plant (receives hauled-in wastewater and apparently pretreats other IW discharges and domestic wastewater, but without WQM or NPDES Permits, with 2023 IPP Report not addressing its organic loadings or identifying applicable Pretreatment ELGs) which discharges directly to Kline Island Treatment Plant. The 2024 Report indicated the LCA Pretreatment Plant treated **4.98 MGD** average daily flow in 2024. **The NPDES Permit Application IPP Report copy indicated the IU permit was only for 4.5 MGD, and no identified ELG despite apparent 40 CFR 437 (Centralized Waste Treatment Point Source Category) ELG applicability and potential Industrial Indirect dischargers directing flow through the LCA Pretreatment Plant. Higher flows were noted in this technical review.**
- Existing EDUs (2024): 170.200 at estimated 3.5 persons/EDU:
  - At DWFM Default (250 GPD/2.5 persons @100 GPCD per EDU): 16.115 MGD dry weather flow
  - At DWFM Default (0.17 lb/day per person at 2.5/EDU): 68,488.75 lb/day (almost up to the approved 70,000 lb organic design capacity), but with unknown removal rates at the LCA Pretreatment Plant.
- Projected EDUs (5 years from 2024): 11,164 EDUs/year increase per year through 2029
  - Flow/EDU: 200 GPD
  - Flow/Capita: 57.1 GPD (below DWFM default of 100 GPCD)
  - Load/EDU: 0.261 lbs BOD5/day
  - Load/Capita: 0.074 lbs BOD5/day (below DWFM default of 0.17 lbs BOD5/day)
  - Peak influent daily flows > 60 MGD.
    - 2023: Peak daily flow rate was 90.10 MGD with 67.27 MGD total flow for that day. Ten days of peak influent daily flows
    - 2024: Peak daily flow rate was 90.00 MGD with 73.78 MGD total flow for that day. Ten days of peak influent daily flows
- DEP Form Item 4 (Sewer Extensions): Assorted listed constructed, approved, and planned sewer extensions in table in both 2023 and 2024 Reports.
- DEP Form Item 5 (Sewer system condition): WWTP indicated to be "in very good condition". Completed 2023 projects included sodium hypochlorite and de-chlorination system installation. No mention of the proposed parallel piping to the two stage Trickling Filter System (see Communications Log) to increase peak wet weather plant capacity.
  - No mention of 2011 Feasibility Study-identified WWTP upgrades including:
    - Changes to needed to handle 95 MGD storm event. (Source of design flow not identified.)
    - Changes to Influent screening (new fine screen and replacement of coarse bar screen)

- Construction of a third Aerated Grit Chamber (AGC)
- Addition of sixth plant effluent pump
- Extension of Little Lehigh Relief Force Main to the WWTP site (downstream of Outfall No 002, existing screen facility, and Main/Auxiliary Pump Stations)
- Additional Flow Equalization (3 MG)

▪ No mention of 10/2025 Act 537 Plan-mentioned upgrades:

- Chemically Enhanced Primary Treatment (CEPT)
- Potential need for third primary anaerobic digester for redundancy or other changes to operations
- Potential need for fourth dewatering unit.
- Potential need for 0.6 MG sludge holding tank

o DEP Form Item 6 (Capacity issues including Overflows and surcharges): See above comments about the surcharged/capacity-issues interceptors. History included in the 2024 Chapter 94 Report narrative.

▪ 2023: The Allentown system had six (6) public sanitary sewer overflows and sixteen (16) private sanitary sewer overflows. In addition, KIWWTP's Outfall 003 (SSO) was discharged on the following dates in 2023:

- 4/30/23 (mechanical issue)
- 12/3/23 (power failure)
- 12/18/23 (excess rainfall)
- 12/27/23 and 12/28/23 (excess rainfall)

▪ 2024: The Allentown system had five (5) public sanitary sewer overflows and Fifteen (13) private sanitary sewer overflows. In addition, KIWWTP's Outfall 003 (SSO) was discharged on the following dates in 2024:

- 1/9/2024 (snow melt with excess rainfall)
- 3/23/24 (mechanical failure)
- 8/11/24 (power failure)

▪ LCA anticipates submittal of a Regional Act 537 Plan circa October 2025.

o DEP Form Item 7 (Sewer System Monitoring, Maintenance, Repairs and Rehabilitation):

▪ The KIWWTP is attended around the clock with a staff of 39, including operators, laboratory and industrial wastes monitoring personnel. Allentown's 285-mile collection system is maintained by a force of eight.
▪ I&I investigation/mitigation program in progress. Root control program in progress.
▪ See Report for identified O&M actions.

o DEP Form Item 8 (IW Report and 2023 Pretreatment Program Annual Report): The 2024 Report indicated 39 users connected to the system being monitored per EPA requirements, and indicated the Allentown ordinance had been previously submitted. They used an EPA Annual IPP Report in reporting. The 2024 IPP report was indicated to have been submitted separately from the Chapter 94 Report. A 2024 EPA IPP Report Form was included in the 2025 NPDES Permit Application update.Highlights:

▪ Allentown Ordinances: The Report noted that a copy of Allentown's sewer use ordinance (Ordinance #12003) was submitted previously. The ordinance regulates, among other things, industrial discharges to the sanitary sewer system. The ordinance has been amended to conform to the Industrial Waste Pretreatment Program as required by the Environmental Protection Agency (EPA). A copy of the amendment (Ordinance #12599) was submitted previously. An amendment (Ordinance #13248) was adopted in 1993 to meet changed EPA requirements. Ordinance #14686 was adopted in 2010 to meet current EPA requirements (copy was submitted previously). Ordinance #15346 was adopted in 2017 to amend Article 941 (Sewage and Industrial Waste Ordinance – attached) to bring it into compliance with the Concession Lease Agreement by delegating the authority to LCA to administer the Industrial Waste Program (attached as Appendix for Section 6).
▪ IPP Information:

- Permits have been issued to 39 users on the system and are monitored per EPA requirements. Analyses of the wastes are done by the KIWWTP Laboratory or contracted laboratory services. Violations are dealt with through citations and fines. The reports of each signatory municipality discharging to the KIWWTP include discussions of their respective Industrial Wastes Programs
- Twenty-four-hour composite samples are collected at each significant industrial/commercial user site for compliance monitoring and non-permitted commercial

users for billing purposes. Monitoring frequency is dependent on billable flow from the user. Exceptional strength charges for BOD, TSS, TKN, and oils/grease are assessed if limits are exceeded.

- Prior to the Lease, the City of Allentown independently operates an approved industrial pretreatment program for the LCA Signatory systems in addition to the LCA industrial/commercial sampling program. As operator of the City's wastewater system, LCA now facilitates this program. There are 19 industrial sites in the LCA Signatory systems that are part of the Allentown Pretreatment Program (including the LCA Pretreatment Plant).
- 2025 Application update information included EPA Pretreatment Annual Report: Permitted Significant Industrial Users & Categorical Industrial Users ELG-categories included: Universal/HW recycling facility including mercury; 40 CFR 414 (Organic Chemicals, Plastics, and Synthetic fibers); 40 CFR 418 (Fertilizer manufacturer); 40 CFR 433 (Metal Finishing); 40 CFR 439 (Pharmaceutical Manufacturing); MSW landfills (40 CFR Part 445); hospitals (40 CFR Part 460); 40 CFR 465 (Coil Coating); 40 CFR 469 (Electrical and Electronic Components); and dental facilities subject to the EPA Dental Amalgam Rule. There were other non-categorical users such as laundries, beer manufacturers, beverage manufacturers, food manufacturers, etc. The LCA Pretreatment Plant (SIC# 4952; 7878 Industrial Blvd, Allentown PA) is under IU Permit No. PAPIU009G, with 4.5 MGD ADF authorized. It pretreats assorted IW/other customers wastewater prior to direction to the KIWWTP.
- 40 CFR 437.2 "Centralized Waste Treatment (CWT) Facility" definition: It is unclear how the LCA Pretreatment Plant can escape this industrial classification. A CWT facility means any facility that treats (for disposal, recycling or recovery of material) any hazardous or non-hazardous industrial wastes, hazardous or non-hazardous industrial wastewater, and/or used material received from off-site. "CWT facility" includes both a facility that treats waste received exclusively from off-site and a facility that treats wastes generated on-site as well as waste received from off-site. For example, an organic chemical manufacturing plant may, in certain circumstances, be a CWT facility if it treats industrial wastes received from offsite as well as industrial waste generated at the organic chemical manufacturing plant. CWT facilities may also include re-refiners and may be owned by the federal government. 40 CFR 437.3 (General pretreatment standards) references 40 CFR 403 requirements. Additional pre-treatment ELG requirements pertain to different source industrial categories.
    - Subpart A (Metal Treatment & Recovery): 40 CFR 437.15 - 16: Existing/New sources are subject to 437.11(a) for antimony, arsenic, cadmium, chromium, cobalt, copper, lead, mercury, nickel, silver, tin, titanium, vanadium, and zinc. In-plant standards for cyanide apply (40 CFR 437.11(b)).
    - Subpart B (Oils Treatment & Recovery): 40 CFR 437.25-26: Existing sources are subject to 40 CFR 437.25 pretreatment standards for: Chromium, Cobalt, Copper, Lead, Tin, Zinc, Bis(2-ethylhexyl)phthalate, Carbazole, n-Decane, Fluoranthene, n-Octadecane. New sources are subject to the following pretreatment standards: chromium, cobalt, copper, lead, tin, zinc, carbazole, n-decane, bis(2-ethylhexyl) phthalate, fluoranthene, and n-octadecane are the same as the corresponding limitation specified in § 437.21
    - Subpart C (Organics Treatment and Recovery): 40 CFR 437.35-36: Existing sources must meet Standards for o-cresol, p-cresol, 2,4,6-trichlorophenol are the same as the corresponding limitation specified in § 437.31. New source subject to this subpart must achieve the following pretreatment standards: Standards for o-cresol, p-cresol, 2,4,6-trichlorophenol are the same as the corresponding limitation specified in § 437.31.
    - Subpart D (Multiple Wastestreams): 40 CFR 437.46-47: This section addresses multiple types of wastestreams, including mixtures of above Subparts. See 40 CFR 437.46-47 for how to determine pretreatment requirements of such mixtures.
- Categorical IUs (including known or suspected PFAS Industrial Categories): 11 with the following applicable ELGs (subparts not identified, and not identifying 40 CFR 445 landfill which does not have pretreatment limits):

- 40 CFR 433 (Metal Finishing) – Subparts A per 2007 application
- 40 CFR 439 (Pharmaceutical Manufacturing)
- 40 CFR 465 (Coil Coating) – Subparts A and C per 2007 application
- 40 CFR 411 (Cement manufacturing)
- 40 CFR 469 (Electrical and Electronic components) – Subpart A per 2007 application
- 40 CFR 418 (Fertilizer Manufacturing)
- 40 CFR 455 (Pesticide Chemicals)
- 40 CFR 463 (Plastics Molding and Forming)
- 40 CFR 414 (Organic Chemicals, Plastics and Synthetic fibers)
- Non-categorial mercury recycler and landfill leachate and hospitals per 2007 application. There was a Part 465 Subparts A and C IU identified in the 2007 Application. No mention of dentists (some dental facilities now have a narrative pretreatment ELG). Unclear if the mercury recycler and/or LCA Pretreatment Plant falls under the Centralized Waste Treatment category.

- A number of listed SIC codes have potential Categorical limits (per the 2010 EPA SIC/NAICS source category cross-walk) but had no identified Category
  - SIC Code 2033 under 40 CFR 407 (Canned & Preserved Fruits and Vegetables)
  - SIC Code 2257 and 2269 under 40 CFR 410 (Textile Mills)
  - SIC Code 2869 for 40 CFR 414 (Organic Chemicals, Plastics, & Synthetic Fibers)
  - SIC 3559 and 3711 under 40 CFR 433 (Metal Finishing)
  - Several SIC/NAIC codes were missing from the table
- Hauled-In sources: There were four listed hauled-in wastewater sources, but not all hauled wastewater to the POTW directly in 2023.
- Total SIUs: 37 (with “current control mechanisms”). Narrative indicated 39 permits have been issued. IPP report noted two IUs ceased discharging two (2) hauled-in wastewater sources did not discharge to them. One IU was noted as “inactive” without details.
- Nonsignificant IUs: 4

- Other Information:
  - No violation of pretreatment standards reported
  - One (1) SIU with passthrough/interference
  - Accepts hauled-in septage and hauled-in industrial sources’ wastewater
  - Receives landfill leachate (40 CFR 445)
  - LCA Pretreatment Plant was noted to have experienced treatment difficulties in August.
- Effluent sampling data attached (including PFAS chemicals). They have data regarding:
  - Metals, Total Hardness, Nitrate-Nitrite, TDS, TP, pesticides/PCBs, semivolatiles, volatiles
  - Discharge Hardness (250 mg/l on 3/5)
  - Grab PFAS sampling data included.
- Existing NPDES Permit Part C Eight Item 2.3 required identification of the discharge point designated by the POTW for acceptance of such wastewater. This information was not found in the provided Annual IPP Report. The location where hauled-in wastewater is received was previously identified as the manhole prior to the headworks and with WTP sludges directly into a gravity thickener tank (WQM permit application schematic). Other documentation indicated a new hauled-in truck unloading area.

- Form Item 10 (Sewage Sludge): Existing permit does not include current Part C Sewage Sludge Management Inventory requirements. In 2024, the KIWWTP generated 13,907.2 wet tons (approximately 2,394.6 dry tons) of biosolids cake through normal sludge dewatering process. 100% of this went to land application under General Permit #PAG-082203. The KIWWTP has been under contract with Synagro Mid-Atlantic since May 1999 for year-round land application and storage services. Disposal sites are for the most part in Berks and Lehigh Counties, but occasionally sites in Bucks, Carbon, Chester, Lancaster, and Schuylkill are used (3 to 4 dozen in total). The KIWWTP generates approximately 37 wet tons/day of biosolid cake which is transported on a daily basis.
- LCA Trib Report: Covered the Western Lehigh Interceptor and Pumping System.
  - It discusses the LCA Pretreatment Plant (7678 Industrial Blvd Allentown PA 18106, no SIC Code in the IPP Annual Report) but did not identify its organic loadings (influent or effluent). IPP Report

and Chapter 94 Report did not include IU permit for the LCA Pretreatment Plant. There were LCA Pretreatment Plant problems in August 2023.

- The Upstream 5.75 MGD LCA Pretreatment Plant (on-line since 1990 and located in LCA's Western Lehigh Interceptor service area) provides a substantial reduction in the organic loading to KIWWTP, primarily treating industrial wastewater in Upper Macungie Township. The IPP treated an average daily flow of 4.78 MGD in 2023.
- The LCA Pretreatment Plant also receives and processes waste as part of a waste hauler program. Over 1716.94 million gallons of waste per year are discharged into the LCA PTP; this includes 58.95 million gallons of trucked waste (based on 2023 data). Prior to accepting a new trucked-in waste, an analysis is performed to determine the waste characteristics (strength) and to determine if the waste will pose any problem to either the LCA PTP or the downstream City KIWWTP. Each load of waste that is accepted at the LCA PTP is sampled and laboratory analyzed. The PTP also holds an Industrial Waste Permit from the City of Allentown Pretreatment Program.

- Park Pumping Station.
  - Design capacity: 22 MGD
  - 2023 Average Daily Flow: 5.76 MGD
  - 2023 Total Flow: 2107.16 MG
  - Maximum Daily Flow: 21.55 MGD (12/18/23)
  - Projected maximum flows for the next 2 years: 14 to 16 MGD during periods of wet weather with instantaneous peaks reaching over 22 MGD.

- Other noted information:
  - WWTP provides secondary treatment with ammonia reduction. Odor removal is accomplished by treating off gases with a sodium hypochlorite mist. Off-gases from the sludge thickening tanks are also treated.
  - LCA trucks sludge offsite. There are no wastewater residuals stockpiled at KIWWTP.
  - Wastewater flows at KIWWTP are monitored by a main Venturi meter with dual range (0 to 60 MGD and 0 to 90 MGD) for better accuracy. A recycle flow from the rock media trickling filters discharges upstream of the main Venturi and is measured by a Venturi. A recycle flow from the anaerobic digestion and sludge processing also discharges upstream of the main Venturi and is measured by a Parshall Flume. Both recycle flows must be subtracted from the main Venturi flow to obtain the KIWWTP influent. The meters are calibrated annually by an outside contractor and quarterly by KIWWTP personnel. **(Underlining added).**
  - They plan onsite Septage receiving and vacuum truck unloading improvements in 2024. Also planned to be finished with design and ready to bid in 2024 are as follows (Chapter 94 Report):
    - Primary Sludge System Upgrades
    - Final Settling Tanks 1-4
  - Flow Information: Wastewater flows from the tributary municipalities are measured by several types of meters, including Parshall Flumes, and magnetic meters. These meters are owned and maintained by the various municipalities. They are calibrated annually with certifications forwarded to LCA. Flow volumes are reported to LCA monthly. The Chapter 94 Report contained flow meter calibration reporting for Effluent Flume Meter, Main Influent Flow – High Range Meter, Main Influent Flow – Low Range, Sludge Digester Return (SDR) Recirculation Flow, Plastic Recirculation Flow, RMTF Recirculation Flow, and assorted offsite flow meters in the sewer system (including trib municipalities).
  - CAP and connection status:
    - 12/31/2019: This CAP was submitted on 12/31/19 and was subsequently approved by PaDEP on 1/17/20. The 2020 Connection Management Plan allowed for 1.5 MGD of planning modules to be processed.
    - 6/25/2021: DEP approved the Interim Act 537 Plan.

Compliance History

DMR Data for Outfall 001 (from October 1, 2024 to September 30, 2025)

Parameter	SEP-25	AUG-25	JUL-25	JUN-25	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24
Flow (MGD) Average Monthly	**31.07**	**31.91**	**32.77**	**34.38**	**36.79**	**32.59**	**30.45**	**29.56**	**31.79**	**33.70**	**29.60**	**28.08**
Flow (MGD) Daily Maximum	**37.66**	**36.36**	**38.50**	**41.45**	**55.352**	**41.36**	**34.08**	**41.45**	**35.15**	**40.88**	**36.36**	**30.87**
pH (S.U.) Minimum	7.06	7.30	7.17	7.11	6.97	7.15	7.26	7.40	7.22	7.32	7.15	7.23
pH (S.U.) Maximum	7.51	7.72	7.68	7.49	7.49	7.59	7.72	7.84	7.71	7.78	7.77	7.65
DO (mg/L) Minimum	7.05	7.55	6.93	7.20	7.90	8.25	8.69	8.79	8.15	8.21	7.53	7.41
TRC (mg/L) Average Monthly	0.27	0.25	0.31	0.29	0.33	0.34	< 0.26	< 0.31	< 0.29	0.25	0.21	0.28
CBOD5 (lbs/day) Average Monthly	1089	1099	1186	1416	1384	1268	1269	1221	1441	1672	1505	1124
CBOD5 (lbs/day) Weekly Average	1267	1242	1382	1689	1626	1561	1369	1538	1853	1798	1739	1259
CBOD5 (mg/L) Average Monthly	**4.0**	**4.0**	**4.0**	**5.0**	**4.0**	**5.0**	**5.0**	**5.0**	**5.0**	**6.0**	**6.0**	**5.0**
CBOD5 (mg/L) Weekly Average	**5.0**	**5.0**	**5.0**	**6.0**	**5.0**	**5.0**	**5.0**	**6.0**	**6.0**	**7.0**	**7.0**	**5.0**
TSS (lbs/day) Average Monthly	1111	972	1140	1514	1714	1443	1497	1450	1504	1610	1297	1148
TSS (lbs/day) Weekly Average	1220	1048	1379	1828	1879	1667	1572	1503	2022	1856	1418	1269
TSS (mg/L) Average Monthly	4.0	4.0	4.0	5.0	5.0	5.0	6.0	6.0	6.0	6.0	5.0	5.0
TSS (mg/L) Weekly Average	5.0	4.0	5.0	6.0	6.0	6.0	6.0	6.0	7.0	6.0	6.0	5.0
Fecal Coliform (CFU/100 ml) Geometric Mean	**< 7**	**< 17**	**< 8**	**< 11**	**< 13**	**< 12**	**< 14**	**< 22**	**< 40**	**< 21**	**< 34**	**< 13**
Ammonia (lbs/day) Average Monthly	369	< 214	446	855	809	768	504	546	781	927	511	433
Ammonia (mg/L) Average Monthly	1.4	< 0.8	1.6	3.0	2.6	2.9	2.0	2.2	2.9	3.3	2.1	1.8

DMR Data for Outfall 001 (from July 1, 2023 to June 30, 2024)

Parameter	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23
Flow (MGD) Average Monthly	**32.20**	**34.33**	**40.54**	**39.10**	**35.14**	**40.77**	**38.18**	**29.92**	**31.72**	**32.76**	**31.79**	**32.93**
Flow (MGD) Daily Maximum	34.11	38.88	**71.34**	56.76	39.90	**73.78**	**75.75**	42.47	34.37	40.09	38.73	44.98
pH (S.U.) Minimum	7.00	7.06	7.10	6.97	7.14	7.10	7.23	7.30	7.18	7.09	7.00	7.22
pH (S.U.) Maximum	7.63	7.51	7.39	7.54	7.52	7.58	7.65	7.74	7.67	7.49	7.57	7.53
DO (mg/L) Minimum	7.18	7.74	7.77	8.30	8.08	8.60	7.37	7.77	7.26	6.43	6.50	7.05
TRC (mg/L) Average Monthly	0.29	0.26	0.31	0.33	0.38	0.22	0.24	0.31	0.31	0.31	0.34	0.31
CBOD5 (lbs/day) Average Monthly	1631	2177	2451	27.53	2602	2555	2266	1690	< 1219	1226	1406	1326
CBOD5 (lbs/day) Weekly Average	1967	2817	3243	3087	2814	3181	2923	1906	1488	1327	1626	1636
CBOD5 (mg/L) Average Monthly	**6.0**	**8.0**	**7.0**	**8.0**	**9.0**	**7.0**	**7.0**	**7.0**	**< 5.0**	**5.0**	**5.0**	**5.0**
CBOD5 (mg/L) Weekly Average	**7.0**	**10.0**	**7.0**	**10.0**	**10.0**	**8.0**	**8.0**	**7.0**	**6.0**	**5.0**	**6.0**	**6.0**
TSS (lbs/day) Average Monthly	1354	1935	2482	2380	2192	2919	2234	1340	1273	1419	1479	1268
TSS (lbs/day) Weekly Average	1568	2199	3693	2624	2396	3595	2896	1402	1414	1615	1773	1818
TSS (mg/L) Average Monthly	5.0	7.0	7.0	7.0	7.0	9.0	7.0	5.0	5.0	5.0	6.0	5.0
TSS (mg/L) Weekly Average	6.0	8.0	8.0	8.0	8.0	9.0	8.0	5.0	5.0	6.0	7.0	6.0
Fecal Coliform (CFU/100 ml) Geometric Mean	**< 8**	**< 9**	**< 9**	**10**	**16**	**< 47**	**< 10**	**29**	**9**	**< 6**	**6**	**7**
Ammonia (lbs/day) Average Monthly	814	628	1506	1792	1777	835	636.2	591.4	322.2	979.9	1099.5	637.7
Ammonia (mg/L) Average Monthly	3.0	2.2	4.4	5.5	6.1	2.5	1.9	2.3	1.2	3.6	4.2	2.4

Compliance History

Inspection History: 2016 to 9/30/2025

SITE NAME	INSP PROGRAM	INSP ID	INSPECTED DATE	INSP TYPE	INSPECTION RESULT DESC	INSPECTOR ID	# OF VIOLATIONS
ALLENTOWN CITY WWTP	WPCNP	3004028	06/10/2025	Routine/Partial Inspection	No Violations Noted	00613405	0
ALLENTOWN CITY WWTP	WPCNP	3190572	02/04/2025	Routine/Partial Inspection	No Violations Noted	00613405	0
ALLENTOWN CITY WWTP	WPCNP	3500455	10/24/2023	Routine/Partial Inspection	No Violations Noted	00613405	0
ALLENTOWN CITY WWTP	WPCNP	3340628	02/06/2023	Biosolids Processor Admin/File Review	No Violations Noted	00610365	0
ALLENTOWN CITY WWTP	WPCNP	4000250	09/07/2022	Administrative/File Review	Violation(s) Noted	00816308	1
ALLENTOWN CITY WWTP	WPCNP	3926630	04/01/2022	Administrative/File Review	Violation(s) Noted	00613405	4
ALLENTOWN CITY WWTP	WPCNP	3114065	10/21/2021	Administrative/File Review	No Violations Noted	00610365	0
ALLENTOWN CITY WWTP	WPCNP	3035273	08/12/2021	Administrative/File Review	No Violations Noted	00613405	0
ALLENTOWN CITY WWTP	WPCNP	3646796	05/13/2021	Compliance Evaluation	No Violations Noted	00613405	0
ALLENTOWN CITY WWTP	WPCNP	3092775	04/27/2021	Compliance Evaluation	No Violations Noted	00613405	0
ALLENTOWN CITY WWTP	WPCNP	3191207	09/24/2020	Biosolids Processor Admin/File Review	No Violations Noted	00610365	0
ALLENTOWN CITY WWTP	WPCNP	3285238	05/21/2020	Compliance Evaluation	No Violations Noted	00613405	0
ALLENTOWN CITY WWTP	WPCNP	3433210	03/18/2020	Routine/Partial Inspection	No Violations Noted	00613405	0
ALLENTOWN CITY WWTP	WPCNP	3233020	02/12/2020	Follow-up Inspection	No Violations Noted	00613405	0

Other Comments:

- **I&I flows**: See Communications Log for general history.
  - Existing 2003 NPDES Permit Part C.I One (Stormwater Prohibition): "No storm water from pavements, area ways, roofs, foundation drains or other sources shall be directly admitted to the sanitary sewers associated with the herein approved discharge". Per Background Information Section above, the application indicates that various WWTP drainage areas' stormwater is being directed into WWTP treatment units, contrary to this condition, with the consequent reduction of available WWTP peak wet weather treatment capacity and increased likelihood of offsite SSO events prior to the headworks.
    - Unless contaminated, the facility must stop discharging Outfall No. 005 first flush stormwater flows into the WWTP (except as the new Part C.I.A condition might allow for discharges in the future).
    - The facility may need modify the WWTP facility to allow stormwater discharges from the northern part to be collected and pumped to the former bypass Outfall 002, but that would likely require a lift station similar to the Outfall No. 004 drainage area and NPDES Permitting for new stormwater Outfall No. 002.
  - Variable Influent Loadings: The facility has had historically high I&I flows. The Influent Pollutant Group Tables estimated 34.05 MGD LTA flow, 73.78 MGD max average monthly flow, and 25.73 MGD minimum daily flows. The 2025 Application indicated the facility discharged 34.04 MGD AADF (2024), 32.23 MGD AADF (2023), 32.61 MGD AADF (2022) with highest monthly discharge of 44.77 MGD (January 2024) and 89.34 MGD Peak Instantaneous Flow (2024) in comparison.
    - The POTW has made progress in eliminating I&I.
    - The 10/2025 Act 537 Plan discusses further projects to address I&I, but some possible sewer system projects might eliminate SSOs/surcharging (upstream in the POTW sewer system) with the side-effect of increasing flows at receiving sewer system components downstream and WWTP itself.
  - Outfall 003 SSOs: The facility has been reporting SSOs (prior to headworks at "Outfall 003" to the Little Lehigh River (HQ)) which flows are
  - not counted by the influent or effluent WWTP flow meter. Other information indicates a flow meter might exist for that SSO.
  - Outfall 002 Overflows: No in-plant Outfall 002 bypass discharge was reported in the 2025 NPDES Application update for the period of 2020 – 6/9/2025.
  - Collection System SSOs:
    - The (8/8/2020 - 9/5/2025) table of SSOs included collection/conveyance system SSOs blamed on: Rainfall & Gate failure; Excessive rainfall; Grease; Grease & Rags; and/or Blockages/clogging.
    - There were recurrent SSO events on 1730 Martin Luther King Jr. Drive Manholes U-4-1 & U-4-3, which might indicate a hydraulic restriction that should be eliminated to prevent recurrences. There was also a U-4-3 manhole SSO on Lehigh Parkway N that might be related (and/or the POTW needs to clarify why there are two manholes with the same numbering.

- **City of Allentown Compliance History (Client# 76667)**:
  - No open violations per 8/2/2024 WMS Query but long-term pattern of SSO discharges being addressed by I&I work per the Annual Chapter 94 Reports.
  - 2/4/2025 NOV issued to permit limit exceedances (Fecal Coliform and Ammonia-N); failure to provide Part B.I.G.4.g unanticipated bypass notification; WWTP overflows; SSOs, and several pollution incidents.
  - 6/10/2025 NOV issued due to failure to pay annual fee.

- **LCA Compliance History (client# 67774)**: No open violations for Allentown City. Eight (8) open violations for LCA (client# 67774) per 10/31/2025 Opev Violations by Client number query.

FACILITY	INSP PROGRAM	PROGRAM SPECIFIC ID	INSP ID	VIOLATION ID	VIOLATION DATE	VIOLATION CODE	VIOLATION
LEHIGH CNTY AUTH-SAND SPRINGS WWTP	WPC NPDES	PA0034029	3471399	978129	12/13/2022	92A.44	NPDES - Violation of effluent limits in Part A of permit
LEHIGH CNTY AUTH-SAND SPRINGS WWTP	WPC NPDES	PA0034029	3827938	8200585	05/09/2024	92A.44	NPDES - Violation of effluent limits in Part A of permit
LEHIGH CNTY AUTH-SAND SPRINGS WWTP	WPC NPDES	PA0034029	3827938	8200586	05/09/2024	92A.41(A)10C	NPDES - Failure to collect representative samples
WYNNEWOOD TERRACE	WPC NPDES	PA0036081	4076714	8252490	10/09/2025	92A.44	NPDES - Violation of effluent limits in Part A of permit
LYNN TWP WWTP	WPC NPDES	PA0070254	3780179	8190603	06/06/2024	92A.44	NPDES - Violation of effluent limits in Part A of permit
LEHIGH COUNTY AUTHORITY WWTP AKA LCA PRETREATMENT PLANT	WPC NPDES	PAS902202	3333195	947817	03/07/2022	92A.41(B)	NPDES - Failure to orally notify DEP within 4 hours of a pollution incident or submit written report within 5 days of incident
LEHIGH COUNTY AUTHORITY WWTP AKA LCA PRETREATMENT PLANT	WPC NPDES	PAS902202	3333195	947822	03/07/2022	92A.41(A)4	NPDES - Failure to take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of a permit
LEHIGH COUNTY AUTHORITY WWTP AKA LCA PRETREATMENT PLANT	WPC NPDES	PAS902202	3333195	947823	03/07/2022	92A.44	NPDES - Violation of effluent limits in Part A of permit

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 40.0
Latitude 40º 36' 6.39" **Longitude** -75º 27' 9.10"
Wastewater Description: Sewage Effluent

Permit Limits & Monitoring Requirements: Changes from Third Draft NPDES Permit bolded.

Parameter	Limit (mg/l unless otherwise specified)	SBC	Model/Basis
CBOD5 **(interim)**	6672 Lbs/d 10008 Lbs/d 20.0 30.0 40.0	Monthly Average Weekly Average Monthly Average Weekly Average IMAX	**New WQBELs needed due to organic enrichment issue in receiving stream from municipal point sources (including this facility). Based on Antideg policy WQBEL ABACT limits. Effective in three years due to uncertainties about how I&I flows impact weekly average/IMAX values.** 2025 Application data: **14 mg/l max avg monthly**, 7 mg/l LTA (366 samples). Max value not identified. 2014 Application data: 2014 data was 14 mg/l daily max, 9 mg/l max average monthly, and 5 mg/l LTA (365 samples). EDMR Data (12 months): <5.0 – 9.0 mg/l monthly average; 5.0 – 10.0 mg/l weekly average.
CBOD5 **(final)**	**3336 Lbs/d** **5004 Lbs/d** **10.0** **15.0** **20.0**	Monthly Average Weekly Average Monthly Average Weekly Average IMAX	**New WQBELs due to organic enrichment issue in receiving stream. Based on Antideg policy WQBEL ABACT limits and EDMR data indicating facility is in current compliance. Effective in three years due to uncertainties about how I&I flows impact compliance with more stringent limits.**
TSS	10,008 Lbs/d 15,012 Lbs/d 30.0 45.0 60.0	Monthly Average Weekly Average Monthly Average Weekly Average IMAX	Existing Technology limit (Chapter 92a.47) 2025 Application data: 13 mg/l max avg monthly, 6 mg/l LTA (366 samples). Max value not identified. 2014 Application data: 2014 data was 9 mg/l max, 6 mg/l max average monthly, and 5 mg/l LTA (365 samples). EDMR Data (12 months): 5.0 – 9.0 mg/l monthly average; 5.0 – 9.0 mg/l weekly average.
pH	6.0 – 9.0 SU	**Inst.** Min - IMAX	Existing Technology limit (Chapter 92a.47) 2025 Application data: 6.97 – 7.78 SU (366 samples) 2014 Application data: 2014 data was 6.9 – 7.8 SU (365 samples) EDMR Data (12 months): 6.97 – 7.74 SU
Dissolved Oxygen (DO)	5.0	**Inst.** Minimum	Existing WQBEL. 2025 Application data: 6.47 mg/l minimum, no LTA (366 samples)

			2014 Application Data: 2014 data was 6.7 mg/l min (365 samples) EDMR Data (12 months): 6.43 mg/l min
Fecal Coliform **(Year-round)**	200/100 ml 1,000/100 ml	Geo Mean IMAX	**Existing year-round DRBC Docket limit incorporated per Chapter 92a.12 & 92a.36 superseded winter limits.** 2025 Application data: **15531/100 ml max** avg monthly, 164 mg/l LTA (366 samples). Max value not identified. 2014 Application Data: 2014 data was **4700/100 ml max**, 168/100 ml max average monthly, and 35/100 ml LTA (365 samples) EDMR Data (12 months): <6 – 47/100 ml Geo Mean
E Coli	**Report/100 ml**	**IMAX**	**Standard monitoring requirement due to Chapter 93 WQS. (Chapter 92a.61)** Application data: None
Total Residual Chlorine (TRC)	0.5**0** 1.0**0**	Monthly Average IMAX	Existing WQBEL supported by updated TRC Spreadsheet. **Significant digit added.** 2025 Application data: **0.75 mg/l max avg monthly**, 0.26 mg/l LTA (366 samples). Max value not identified. 2014 Application data: 1.0**1** mg/l max, 0.41 mg/l max monthly average, and 0.38 mg/l LTA (365 samples) EDMR data (24 months): 0.22 – 0.38 mg/l monthly average range
Ammonia-Nitrogen (5/1 – 10/31) Summer	1668 Lbs/d **3256 Lbs/d** 5.0 **10.0** 10.0	Monthly Average **Daily Max** Monthly Average **Daily Max** IMAX	Existing WQBELs are supported by water quality modeling. 2025 Application data: 8.7 mg/l max avg monthly, 3.1 mg/l LTA (366 samples). Max value not identified. 2014 Application data: 5.90 mg/l max, 2.22 mg/l max monthly average; and <1.26 mg/l LTA (365 samples). EDMR Data (24 months): <0.8 – 6.1 mg/l monthly average range
Ammonia-Nitrogen (11/1 – 4/30) Winter	5004 Lbs/d **9768 Lbs/d** 15.0 **30.0** 30.0	Monthly Average **Daily Max** Monthly Average **Daily Max** IMAX	See above. Standard winter multipliers applied. EDMR Data (12 months): 1.2 – 6.1 mg/l monthly average for applicable months
Total Nitrogen (Nitrate-N + Nitrite-N + TKN measured in same sample)	Report Lbs/day **Report Lbs/day** Report **Report**	Monthly Average **Daily Max** Monthly Average **Daily Max**	M&R requirement. (Chapter 92a.61) 2025 Application data: 22.55 mg/l max avg monthly, 22.12 mg/l LTA (3 samples). Max value not identified. 2014 Application data: 35.4 mg/l max and 24.4 mg/l max monthly average and 22.2 mg/l LTA (19 samples)
Nitrate-Nitrite as N	Report Lbs/day **Report Lbs/day** Report **Report**	Monthly Average **Daily Max** Monthly Average **Daily Max**	See above 2025 Application data: 19.18 mg/l max avg monthly, 18.84 mg/l LTA (3 samples). Max value not identified

			2014 Application data: 20.2 mg/l max, 19.8 mg/l max monthly average, and 18.1 mg/l (4 samples)
Total Kjehldahl Nitrogen (TKN)	Report Lbs/day **Report Lbs/day** Report **Report**	Monthly Average **Daily Max** Monthly Average **Daily Max**	See above 2025 Application data: 3.72 mg/l max avg monthly, 3.28 mg/l LTA (3 samples). Max value not identified 2014 Application data: 15.9 mg/ max, 6.2 mg/l max monthly average, and 4.0 mg/l LTA (7 samples).
Total Phosphorus	Report Lbs/day **Report Lbs/day** Report **Report**	Monthly Average **Daily Max** Monthly Average **Daily Max**	M&R requirement. (Chapter 92a.61) 2025 Application data: 3.81 mg/l max avg monthly, 3.46 mg/l LTA (3 samples). Max value not identified 2014 Application data: 8.3 mg/l max, 4.6 mg/l max monthly average, and 4.01 mg/l (23 samples)
CBOD5 Minimum Reduction	**85 %**	**Minimum Monthly Average**	**Existing 2003 NPDES Permit limit.** Application data: none
TSS Minimum Reduction	**85%**	**Minimum Monthly Average**	**Existing 2003 NPDES Permit limit and existing DRBC Docket requirement incorporated per Chapter 92a.12 and 92a.36** Application data: none
BOD5 Raw Sewage Influent	Report Lbs/day **Report Lbs/day** Report **Report**	Monthly Average **Daily Max** Monthly Average **Daily Max**	Raw sewage influent M&R requirement required due to Chapter 92a.47 requirements and Chapter 94 Reporting. 2025 Application data: 224 mg/l max avg monthly and 152 mg/l average (366 samples) 2014 Application data: 255 mg/l max, 154 mg/l max monthly average, and 137 mg/l LTA (365 samples)
CBOD5 **Raw Sewage Influent**	**Report Lbs/day** **Report Lbs/day** **Report** **Report**	**Monthly Average** **Daily Max** **Monthly Average** **Daily Max**	Raw sewage influent M&R requirement required due to Existing 2003 NPDES Permit limit, Chapter 92a.47 requirements. 2025 Application data: None (only BOD5 data) 2014 Application data: None (only BOD5 data)
TSS Raw Sewage Influent	Report Lbs/day **Report Lbs/day** Report **Report**	Monthly Average **Daily Max** Monthly Average **Daily Max**	Raw sewage influent M&R requirement required due to Chapter 92a.47 requirements 2025 Application data: 355 mg/l max avg monthly and 149 mg/l LTA (366 samples) 2014 Application data: 272 mg/l max, 168 mg/l max monthly average, and 152 mg/l LTA (365 samples)
Total Dissolved Solids (TDS)	**Report Lbs/day** **Report Lbs/day** Report **Report**	**Monthly Average** **Daily Max** **Monthly** Average **Daily Max**	Existing quarterly M&R requirement (Chapter 92a.61) changed to monthly monitoring. 2025 Application data: 940 mg/l max avg monthly, 874 mg/l LTA (3 samples). Max value not identified 2014 Application data: 2014 data was 899 mg/l max, 810 mg/l max monthly average, and 712 mg/l LTA (55 samples)
PFOA	**Report Lbs/day** **Report Lbs/day** **Report ng/l** **Report ng/l**	**Quarterly Average** **Daily Max** **Quarterly Average** **Daily Max**	**New PFAS monitoring requirement for a Major STP with Categorical Industries with PFAS effluent constituents per DEP PFAS Policy (Chapter 92a.61).**

			2025 Application data: 10.8 ng/l max and 9.020 ng/l LTA (3 samples). DEP TQL of 4.0 ng/l.
PFOS	**Report Lbs/day** **Report Lbs/day** **Report ng/l** **Report ng/l**	**Quarterly Average** **Daily Max** **Quarterly Average** **Daily Max**	**See above** 2025 Application data: 6.9 ng/l max and 6.85 ng/l LTA (3 samples). DEP TQL of 3.7 ng/l.
PFBS	**Report Lbs/day** **Report Lbs/day** **Report ng/l** **Report ng/l**	**Quarterly Average** **Daily Max** **Quarterly Average** **Daily Max**	**See above** 2025 Application data: 35.4 ng/l max and 24.63 ng/l LTA (3 samples). DEP TQL of 3.5 ng/l.
HFPO-DA	**Report Lbs/day** **Report Lbs/day** **Report ng/l** **Report ng/l**	**Quarterly Average** **Daily Max** **Quarterly Average** **Daily Max**	**See above** 2025 Application data: <1.89 ng/l max and <1.853 ng/l LTA (3 samples). 3 ND values. DEP TQL of 6.4 ng/l.
WQBELs for Toxic Pollutants	-	-	See Reasonable Potential Analysis below.
Total Copper	**Report Lbs/day** **Report Lbs/day** **Report ug/l** **Report ug/l**	**Monthly Average** **Daily Max** **Monthly Average** **Daily Max**	**Monitoring required per Reasonable Potential Analysis. The hypothetical WQBEL would have been 39.0 ug/l.** 2025 Application data: 16 ug/l max and 15.7 ug/l LTA (3 samples). DEP TQL of 4.0 ug/l. Single influent sample at 42 ug/l. 2014 Application data: 51.0 ug/l max and <21.2 ug/l LTA (35 samples). Influent was 171 ug/l max and 72.2 ug/l average (35 samples). The 2014 public comments indicated the metal results were suspect, but other metals concentrations were substantially reduced in the 2025 results, making it more likely that influent quality change & better operations caused improved 2025 effluent quality.
Free Cyanide	**5.88 Lbs/day** **9.18 Lbs/day** **17.6 ug/l** **27.5 ug/l** **44.1 ug/l**	**Monthly Average** **Daily Max** **Monthly Average** **Daily Max** **IMAX**	**New WQBELs per Reasonable Potential Analysis, with interim monitoring and final limits effective in three years.** 2025 Application data: 19 ug/l max and 12.7 ug/l LTA (3 samples). DEP TQL of 1.0 ug/l. Single influent sample at 31 ug/l. 2014 Application data: <20.0 ug/l max and <20.0 ug/l LTA (4 samples). Influent was <20.0 ug/l max and <20.0 ug/l average (35 samples).
Total Zinc	**Report Lbs/day** **Report Lbs/day** **Report ug/l** **Report ug/l**	**Monthly Average** **Daily Max** **Monthly Average** **Daily Max**	**Monitoring required per Reasonable Potential Analysis. The hypothetical WQBEL would have been 330 ug/l.** 2025 Application data: 44 ug/l max and 36.3 ug/l LTA (3 samples). DEP TQL of 5.0 ug/l. Single influent sample at 91 ug/l. 2014 Application data: 224.0 ug/l max and 74.6 ug/l LTA (35 samples). Influent was <509.0 ug/l max and 162.9 ug/l average (35 samples). The 2014 public comments indicated the metal results were suspect, but other metals concentrations were substantially reduced in the 2025 results,

			making it more likely that influent quality change & better operations caused improved 2025 effluent quality.
Bis(2-Ethylhexyl) Phthalate	**1.48 Lbs/day** **2.32 Lbs/day** **4.45 ug/l** **6.94 ug/l** **11.1 ug/l**	**Monthly Average** **Daily Max** **Monthly Average** **Daily Max** **IMAX**	**New WQBELs per Reasonable Potential Analysis, with interim monitoring and final limits effective in three years.** 2025 Application data: **10.1 ug/l** max and **<5.36** ug/l LTA (3 samples). DEP TQL of 5.0 ug/l. Two ND results out of 3 at lab QL of 2.94 ug/l. Single influent sample at <14.7 ug/l. 2014 Application data: <5.62 ug/l max and <3.49 ug/l LTA (4 samples). Influent was <10.50 ug/l max and <8.51 ug/l average (4 samples)
Hexachlorobutadiene	**0.046 Lbs/day** **0.072 Lbs/day** **0.14 ug/l** **0.22 ug/l** **0.35 ug/l**	**Monthly Average** **Daily Max** **Monthly Average** **Daily Max** **IMAX**	**New WQBELs per Reasonable Potential Analysis, with interim monitoring and final limits effective in three years.** 2025 Application data: <1 ug/l max and <0.99 ug/l LTA (3 samples). DEP TQL of 0.5 ug/l. Single influent sample at <4.9 ug/l. DEP TQL is 0.5 ug/l. EPA Sufficiently Sensitive Rule triggering permit limits. **WQBELs below TQL condition will apply**. 2014 Application data: >5.62 ug/l max and <2.40 ug/l LTA (4 samples). Influent was <5.00 ug/l max and <3.68 ug/l average (4 samples)
1,2,4-Trichlorobenzene	**0.10 Lbs/day** **0.16 Lbs/day** **0.31 ug/l** **0.48 ug/l** **0.77 ug/l**	**Monthly Average** **Daily Max** **Monthly Average** **Daily Max** **IMAX**	**New WQBELs per Reasonable Potential Analysis, with interim monitoring and final limits effective in three years.** 2025 Application data: <1 ug/l max and <0.99 ug/l LTA (3 samples). DEP TQL of 0.5 ug/l. Single influent sample at <4.9 ug/l. DEP TQL is 0.5 ug/l (insensitive ND concentration triggering permit limits per EPA Sufficiently Sensitive Rule). **WQBELs below TQL condition will apply**. 2014 Application data: <5.00 ug/l max and <2.09 ug/l LTA (4 samples). Influent was <10.50 ug/l max and <2.92 ug/l average (4 samples)
Beta-BHC	**0.037 Lbs/day** **0.058 Lbs/day** **0.11 ug/l** **0.17 ug/l** **0.28 ug/l**	**Monthly Average** **Daily Max** **Monthly Average** **Daily Max** **IMAX**	**New WQBELs per Reasonable Potential Analysis, with interim monitoring and final limits effective in three years.** 2025 Application data: 0.010 ug/l max and <0007 ug/l LTA (3 samples). DEP TQL of 0.05 ug/l. No influent sample data provided. **WQBELs below TQL condition will apply**. 2014 Application data: <0.02 ug/l max and <0.01 ug/l LTA (4 samples). Influent was <0.02 ug/l max and <0.01 ug/l average (4 samples). 2 samples of 3 were ND at 0.005 ug/l lab QL.
Total Aluminum	**Report Lbs/day** **Report Lbs/day** **Report ug/l** **Report ug/l**	**Annual Average** **Daily Max** **Annual Average** **Daily Max**	**Annual Monitoring & reporting with sampling during processing of Allentown WTP sludge as indicator chemical due to**

			high metal concentrations reported in 2014. 2025 Application Data: 52 ug/l max and 45.3 mg/l average (23 samples) 2014 Application Data: 153 ug/l max and <68.4 mg/l average (23 samples)
Total Iron	**Report Lbs/day** **Report Lbs/day** **Report ug/l** **Report ug/l**	**Annual Average** **Daily Max** **Annual Average** **Daily Max**	**Annual Monitoring & reporting with sampling during processing of Allentown WTP sludge as indicator due to high metal concentrations reported in 2014.** 2025 Application Data: 185 ug/l max and 152 mg/l average (23 samples) 2014 Application Data: 912.0 ug/l max and 218.9 mg/l average (23 samples)

Comments:

- Separate Influent Outfall/IMP No. 101: Raw Sewage Influent monitoring moved to this new IMP/Outfall.
- Daily Maximum M&R & Limits: Additional daily max load/concentration reporting does not require any additional sampling. Daily max limits set equal to existing/proposed IMAX limits as any duration of exceedance is an IMAX exceedance.
- Retained Third Draft NPDES Permit Monitoring Frequency changes: TRC: The permittee requested the monitoring frequency be changed from 1/shift to 1/day. This change was retained.
- WQM Modeling: The existing/proposed CBOD5, Ammonia-N, and DO limits are supported by water quality modeling.

KlineIslandWQModel2025.pdf

- Updated Reasonable Potential Analysis: Updated per 2025 NPDES Permit Application update and site-specific stream issue (Rock Berm in River discussed in Stream Information Section).
    - Outfall No. 001 location and Rock Berm in River: The updated water quality modeling took the existing in-stream “rock berm” impacts on available flow into account. See Stream Section above for related Rock Berm information. This site-specific issue was addressed in the updated water quality modeling.
        - Outfall No. 001 location: River Effective width of 60 feet wide, with 84% river flow going by Outfall No. 001 (i.e. reducing Q7-10 from full river flow to only 84% of river flow, i.e. 180.9 CFS).
        - Modeled Point 2 (above confluence with Little Lehigh River): River width ~215 feet (100% River flow). It is assumed the 16% river flow is essentially unmixed until below Point 2 for conservatism. In practical terms, the restricted/channelized 84% main flow will be moving faster than the 16% on the other side of the rock berm, spreading out faster and tending to slowing remixing in the absence of a DEP-approved site-specific mixing study.
    - PFAS: Monitoring & reporting is now required per assorted standard permit conditions including: NPDES Permit Part A.I.C (Outfall 001), NPDES Permit Part B.I (General Pretreatment), and NPDES Permit Part C (IPP conditions). In this case, the POTW receives wastewater from industry categories expected or suspected of PFAS discharges (as listed out in Part B.I.) with PFAS chemicals detected in effluent. The permittee may discontinue monitoring if the results in 4 consecutive monitoring periods indicated non-detect at or below Quantitation Limits of 4.0 ng/l PFOA; 3.7 ng/ PFOS; 3.5 ng/l PFBS; and 6.4 ng/l for HFPO-DA. When monitoring is discontinued, the permittee shall report “GG” via DMR.
    - Industrial Pretreatment Program (IPP): The facility has an existing EPA-approved Industrial Pretreatment Program. The 2025 NPDES Application updated included an EPA Pretreatment Annual Report (Form No. 2040-0004). This NPDES Permit includes the updated standard IPP conditions. See Background Information Section for related information. See Treatment Plant Section for Chapter 94 Information. In addition, the NPDES Permit conditions apply including: Part A.III.C.2 (Planned Changes to Waste Streams), Part B.I.C.4 (Additional Chapter 94 Reporting requirements), Part B.I.D (General Pretreatment

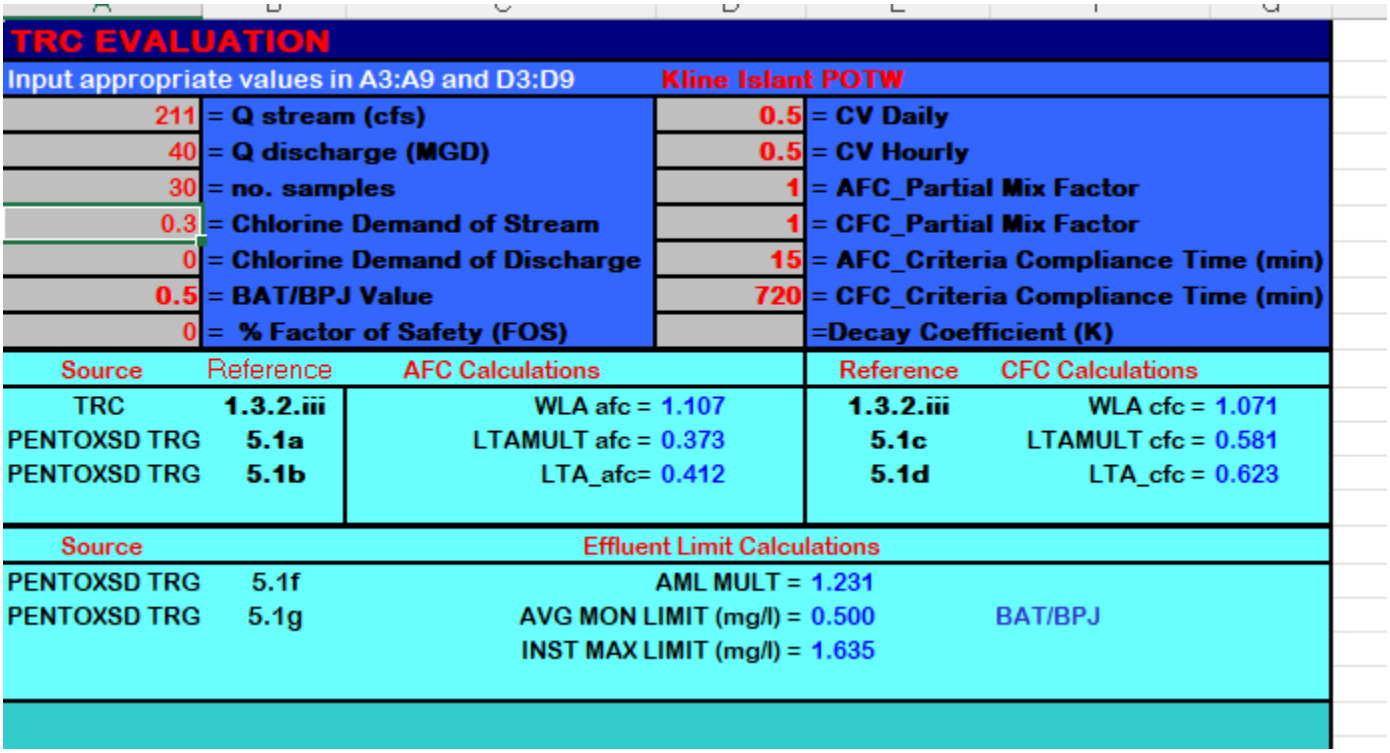
Requirements), Part C.I.I (Additional Reporting requirements), Part C.III (POTW Pretreatment Program Implementation), Part C.IV (Solids Management pertaining to RSW sludge management),

- Metals:
  - Total Hardness values in the effluent are high, due to area's carbonate geology. Increased Total Hardness reduces toxicity of assorted metals per Chapter 93 WQS.
  - The 2014 public comments indicated the 2014 metal results were suspect (wrong analytical method cited, but without further details), but other metals (Aluminum, Total Iron, Dissolved Iron, etc.) influent concentrations were substantially reduced in the 2025 sampling results, making it more likely that influent quality change & better WWTP operations caused improved 2025 effluent quality. For example, a number of spiking metal concentrations could be due to the Allentown WTP sludge dewatering onsite.
- Variable Influent Loadings: The facility has had historically high I&I flows. The Pollutant Group Tables indicate I&I dilution effects.
  - The 2025 influent BOD5 concentrations of 152 mg/l LTA, 224 mg/l Max Avg Monthly, and **41 mg/l Minimum** (366 samples) indicates impact of I&I on influent concentrations by dilution, i.e. not clear if the single 2025 influent sample was representative of normal influent concentrations since the influent flow was not identified for that sampling date.
  - The 2025 influent TSS concentrations of 149 mg/l LTA, 355 mg/l max avg monthly, and **28 mg/l Minimum** (366 samples) indicates I&I impact on influent concentrations by dilution.
- TMS Output using 2025 Application Update data:

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Copper	Report	Report	Report	Report	Report	µg/L	41.5	AFC	Discharge Conc > 10% WQBEL (no RP)
Free Cyanide	5.88	9.18	17.6	27.5	44.1	µg/L	17.6	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	354	AFC	Discharge Conc > 10% WQBEL (no RP)
Bis(2-Ethylhexyl)Phthalate	1.48	2.32	4.45	6.94	11.1	µg/L	4.45	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Hexachlorobutadiene	0.046	0.072	0.14	0.22	0.35	µg/L	0.14	CRL	Discharge Conc ≥ 50% WQBEL (RP)
1,2,4-Trichlorobenzene	0.1	0.16	0.31	0.48	0.77	µg/L	0.31	THH	Discharge Conc ≥ 50% WQBEL (RP)
beta-BHC	0.037	0.058	0.11	0.17	0.28	µg/L	0.11	CRL	Discharge Conc ≥ 50% WQBEL (RP)

KlineIslandTMSPDF.pdf

TRC Spreadsheet: Existing limits (with significant digit added) are protective. Antibacksliding prohibition does not allow for a less stringent IMAX limit.



TRC EVALUATION			
Input appropriate values in A3:A9 and D3:D9		Kline Island POTW	
211	= Q stream (cfs)	0.5	= CV Daily
40	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 1.107	1.3.2.iii	WLA cfc = 1.071
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.412	5.1d	LTA_cfc = 0.623

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.635	

Development of Effluent Limitations

Outfall No.	004 & 005	**Design Flow (MGD)**	0
	40º 36' 6.39" (004)		-75º 27' 9.11" (004)
Latitude	40º 36' 5.17" (005)	**Longitude**	-75º 27' 25.31" (005)
Wastewater Description:	Stormwater		

Permit Limits & Monitoring Requirements: Changes from Third Draft Permit bolded

Parameter	Limit (mg/l unless otherwise specified)	SBC	Model/Basis
pH	**6.0 – 9.0 SU**	**Inst. Min - IMAX**	**Chapter 95.2 limit for PAG-03 Appendix J (Miscellaneous) parameter**
Total Suspended Solids (TSS)	Report	**IMAX**	PAG-03 Appendix J (Miscellaneous) parameter. See Part C.VIII.G benchmark (100 mg/l)
Chemical Oxygen Demand (COD)	**Report**	**IMAX**	**PAG-03 Appendix J (Miscellaneous) parameter. See Part C.VIII.G benchmark (120 mg/l) (Chapter 92a.61).**
Oil & Grease	**30**	**IMAX**	**Chapter 95.2 limit for PAG-03 Appendix J (Miscellaneous) parameter**
Total Iron	Report	**IMAX**	Monitoring requirement in previous Draft (Chapter 92a.61)
Total Nitrogen (TKN + Nitrate-Nitrite measured in same sample)	**Report**	**IMAX**	**PAG-03 Appendix J (Miscellaneous) parameter. (Chapter 92a.61).**
Total Kjehldahl Nitrogen (TKN)	Report	**IMAX**	PAG-03 Appendix J (Miscellaneous) parameter (Chapter 92a.61)
Nitrate-Nitrite as N	**Report**	**IMAX**	**PAG-03 Appendix J (Miscellaneous) parameter. (Chapter 92a.61).**
Total Phosphorus	**Report**	**IMAX**	**PAG-03 Appendix J (Miscellaneous) parameter. (Chapter 92a.61).**

Comments:

- There are three known stormwater drainage areas in this 40.0 MGD Treatment Plant:

Outfall No.	Area Drained (ft^2)	Latitude	Longitude	Description
001	-			**Site stormwater is being directed into the Treatment Process from several drainage areas. Any WWTP water directed into the treatment process would be ultimately discharged via Outfall No. 001.**
004	296,000	40°36'07"	75°27'09"	Uncontaminated Storm Water directed to lift station/monitoring point prior to discharge via Outfall No. 001 pipe. Area includes primary clarifiers and plastic media trickling filters.

005	120,000	40°36’05”	75°27’26”	Uncontaminated Storm Water but dumpsters in area. First flush previously diverted to headworks until 70 MGD influent (now prohibited by stormwater prohibition unless known to be contaminated). Area included effluent pump station, chlorine contact tank, etc.

Antidegradation: Outfall No. 005 discharges to a HQ receiving stream and therefore requires additional protection. No additional degradation of the Little Lehigh Creek (HQ-CWF) is expected from this existing outfall, with new permit limits/monitoring requirements, stormwater BMPs, and IW Stormwater Preparedness, Prevention, & Contingency (PPC) Plan requirements to address any spills, leaks or other releases.

Development of Effluent Limitations

Outfall No. 101 **Design Flow (MGD)** NA
Latitude 40º 36' 6.39" **Longitude** -75º 27' 9.10"
Wastewater Description: Raw Sewage Influent

Permit Limits & Monitoring Requirements: Changes from Third Draft Permit bolded

Parameter	Limit (mg/l unless otherwise specified)	SBC	Model/Basis
Flow	**Report MGD** **Report MGD**	**Monthly Average** **Daily Max**	**Influent flows M&R due to need to maximize flow directed through WWTP to eliminate SSOs. The facility has an influent flow-meter and can subtract return flows.**
BOD5	Report lb/d Report lb/d Report Report	Monthly Average Daily Max Monthly Average Daily Max	Chapter 94 reporting requirement and to calculate Minimum Monthly Average reduction.
CBOD5	Report lb/d Report lb/d Report Report	Monthly Average Daily Max Monthly Average Daily Max	Needed to calculate minimum monthly average reduction (as there is no standard default for Raw Sewage Influent BOD5 to CBOD5 ratio.
Total Suspended Solids (TSS)	Report lb/d Report lb/d Report Report	Monthly Average Daily Max Monthly Average Daily Max	Chapter 94 reporting requirement and to calculate Minimum Monthly Average reduction

Comments: Outfall administratively created due to need to clarify influent flows due to I&I issues. Facility has been doing daily influent monitoring for BOD5 and TSS per application, with existing NPDES Permit with 85% CBOD5/TSS minimum monthly average reduction requirement. Location of sampling point (downstream of recycle flows) raises questions of how the facility reports accurate & representative flows/loading.

Pennsylvania
Department of
Environmental Protection

Whole Effluent Toxicity (WET)

Whole Effluent Toxicity (WET)

For Outfall 001, **Chronic** WET Testing was completed:

X For the permit renewal application (4 tests circa 2007). The 2003 Permit set forth a TIWCc of 17% (No Observed Effect Concentration (NOEC)). The 2003 Permit allowed for alternate test method involving 0.45 micron filtration to remove filamentous bacteria (021N) upon Department approval. This procedure is allowed by the EPA WET Test Guidance. The 7/23/2004 Department Letter noted the use of this methodology and allowed cessation of WET testing until the next NPDES Permit renewal time-frame. The 2007 NPDES Permit Renewal Application included a March 13, 2006 Tetra Tech "Substitute Whole Effluent Toxicity Testing Plan for City of Allentown, PA" that included use of "microfiltration" (0.45 microgram) of the sample prior to use in the WET Test.

The dilution series used for the tests was: 100%, 34%, 17%, and 10% plus lab control (0%) per a modified WET Test Method (using "microfiltration"+ and reduced dilution series). The Target Instream Waste Concentration (TIWC) used for analysis of the results was: 17%.

Summary of Four Most Recent Test Results

NOEC/LC50 Data Analysis

	***Ceriodaphnia* Results (% Effluent)**			***Pimephales* Results (% Effluent)**			
Test Date	**NOEC Survival**	**NOEC Reproduction**	**LC50**	**NOEC Survival**	**NOEC Growth**	**LC50**	**Pass? ***
2/2007	34	34	>34%	34	34	>34%	Yes
11/2006	34	34	>34%	34	34	>34%	Yes
8/2006	34	34	>34%	34	34	>34%	Yes
5/2006	34	34	>34%	34	34	>34%	Yes

***** *A "passing" result is that which is greater than or equal to the TIWC value.*

Is there reasonable potential for an excursion above water quality standards based on the results of these tests? **NO**

Comments:

- See revised dilution series below (taking into account the Rock Berm dam's impact on available Q7-10 low flow at Outfall No. 001).
- The POTW will have to address the EPA Guidance requirements to justify use of any modified WET Test procedure in the new NPDES Permit Term. EPA's "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms" (EPA-821-R-02-013, latest edition) requirements applies:
    - Section 11.3.4.6 states (bolding added): When parallel testing has confirmed pathogen interference, the regulatory authority **may** allow modifications of the effluent samples or receiving water diluent to remove or inactivate the pathogens (Subsection 11.3.4.6.1 - 11.3.4.6.4). Techniques that control pathogen interference without modifying the effluent sample (11.3.4.5) are recommended, but they may not always be able to minimize pathogen interference to the extent that test results are not confounded by mortality due to pathogens. Therefore, regulatory authorities **may** allow appropriate pathogen control techniques (including those that modify the effluent sample) on a case-by-case basis. TIE approaches (USEPA, 1991b; USEPA, 1992) and the following procedures (Subsection 11.3.4.6.1 - 11.3.4.6.4) can be used alone or in combination to ascertain the adverse influence on tests caused by pathogens. **Prior to routine use of pathogen control techniques that modify the sample, the effects of pathogenic bacteria and the effectiveness of the selected pathogen control technique must be confirmed by parallel and simultaneous testing of the technique with altered and unaltered samples. NOTE:** This can be done with the next WET Test. The POTW can then request permission to use a modified (ultrafiltration) methodology thereafter.
    - Section 11.3.4.6.2 (bolding added) states: **Ultra-filtration through a 0.22 µm pore diameter filter (such as Gelman Suprocap®) may be conducted on sample aliquots before daily use. Samples may**

need to be filtered through a glass fiber filter prior to the 0.22 µm filter. This is time consuming and volume restricted. Treatment of the large volumes of water necessary for test dilution may be impractical. Caution: Since the effluent or receiving water samples must be passed through the filter, the effect of filtering must be evaluated. Filtration can remove toxicity if toxic components of the sample are bound to particles (USEPA, 1991b; 1992). The removal of suspended solids also may influence the bioavailability of chemical pollutants. These effects should be considered in the selection of pathogen control strategies, and the analyst should attempt to minimize these effects to the extent reasonably practicable. **The removal of toxicity by filtration must be evaluated for each sample by testing samples before and after filtration. All toxicity tests using a sterilized sample also must include a blank preparation consisting of similarly sterilized reconstituted laboratory water.**

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

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

1. Determine IWC – Acute (IWCa):

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

[(40.0 MGD x 1.547) / ((211 cfs x 1) + (40.0 MGD x 1.547))] x 100 = **IWCa% = 22.6% = ~23% (rounded)**

Is IWCa < 1%? **NO**

If the discharge is to the tidal portion of the Delaware River, indicate how the type of test was determined: **NA**

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

2a. Determine Target IWCa (If Acute Tests Required): NA

2b. Determine Target IWCc (If Chronic Tests Required)

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

[(40.0 MGD x 1.547) / ((**211** cfs x 1) + (40.0 MGD x 1.547))] x 100 = **TIWCc% = 22.6% = 23% (rounded)**

3. Determine Dilution Series

Dilution Series = **100%, 62%, 23%, 12%, and 6%.**

WET Limits

Has reasonable potential been determined? **NO**

Will WET limits be established in the permit? **NO**

If WET limits will be established, identify the species and the limit values for the permit (TU). **NA**

If WET limits will not be established, but reasonable potential was determined, indicate the rationale for not establishing WET limits: **NA**

Public Comments/Responses to the 2016 Third Draft NPDES Permit: DEP responses bolded.

11/3/2016 US EPA Comments on the Draft NPDES Permit:

Cadmium, Cobalt, and Copper Monitoring versus Previous Draft NPDES Permit Limits: We reviewed the permittee comments on PADEP's 2014 RP assessment for cadmium, cobalt, and copper. While we understand that the information provided by the permittee likely caused PADEP to change its RP determination and remove the proposed effluent limits for these parameters, the fact sheet should document and explain DEP's revised position. Further, the permittee indicated that it has an approved copper WER that should have been, but was not included in DEP's determination of the copper WQBEL. Did DEP consider the copper WER to re-evaluate RP for this revised draft, or was RP re-evaluated based on DEP's 2014 copper WQBEL? This kind of information should be part of the fact sheet documentation. Please note that any time a WER is used in the derivation of a permit effluent limit, it must be included as part of the public notice process.

- **See the updated Reasonable Potential Analysis (Effluent Limits section below) for revised Final WQBELs and monitoring requirements for toxic pollutants.**
- **The Third Draft Permit went to monitoring (only) to gather data because the 2014 POTW public comments indicated that the (updated 2014) NPDES Permit Application pollutant group tables included suspect data (inaccurate in-house process sampling analysis that did not comply with accredited test methods). Internal process monitoring does not have to comply with NPDES Part A.III.A requirements (ballpark values are often all that is needed for plant operational purposes), but all application, DMR/EDMR, and Industrial Pretreatment Program (IPP) analysis must meet all NPDES Part A.III.A requirements. The 2014 POTW comments included POTW comments regarding potential contamination in the lab quality-control blank samples. The POTW also raised a site-specific stream condition (breached rock berm dam that impacted effective river width at Outfall No. 001 location) with implications for a Reasonable Potential Analysis. Accurate site-specific information was required for an updated Reasonable Potential Analysis.**
- **The POTW-referenced circa 1994 Copper Water Effects Ratio (WER) was too outdated for Department consideration in the Reasonable Potential Analysis. EPA also separately determined the simplified EPA Copper WER methodology was inaccurate post-1994, resulting in PA regulatory changes that also render this outdated Copper WER invalid. The Part C (WQBELs for Toxic Pollutants) include the current process and permittee options for seeking modifying or eliminating proposed Final WQBELs (toxic pollutants) via a major NPDES Permit Amendment (subject to public notice requirements).**

EDMR Language: We noted that Part A.III.B. does not include PADEP's updated eDMR requirements. **The regenerated NPDES Permit Part A.III.B language includes up-to-date EDMR language**.

Part C.VI Wet Weather Schedule of Compliance: Part C.VI of the draft permit includes a schedule of compliance for wet weather flow management at the WWTP. Since the feasibility study and construction projects are intended to address SSO discharges that are not authorized in the permit, we do not think that the permit is an appropriate mechanism for this schedule. **This condition has been deleted per EPA comments. The Department defers to the EPA in terms of any required compliance action due to previous EPA Administrative Orders and the EPA-approved Regional Flow Management Strategy (RFMS) that addressed SSO issues. In practical terms:**

- **The POTW/trib municipalities have made substantial I&I reduction progress since 2016.**
- **There is a pending 10/2025 Act 537 Plan Submittal, under separate review, that will further address system-wide I&I issues in the POTW/Trib Municipal Sewer Systems and at the WWTP itself.**
- **2025 WQM Permit for WWTP upgrades (meant to handle 100 MGD peak wet weather influent flows) was indicated to likely eliminate SSO discharges directly upstream of the WWTP.**

11/18/2016: Allentown/LCA (POTW) public comments on 10/2/2016 Draft NPDES Permit:

11/17/2016 LCA Cover Letter:

- The LCA indicated its appreciation to be added as a co-permittee to the draft NPDES Permit as the treatment plant operator. **The NPDES Permit Transfer application (to add LCA as a co-permittee) had been merged with the NPDES Permit renewal application per DEP SOP.**
- The City of Allentown owns the facility and continues to be the primary permit-holder who will determine the scope of future wet weather treatment modifications to be implemented at the plant in response to the US EPA Administrative Order to eliminate sanitary sewer overflows.
    - **Upon Final NPDES Permit action, the LCA will become a NPDES Permit co-permittee (operator) responsible for meeting all NPDES permit responsibilities for the POTW (as defined in NPDES**

Permit Part A.II) in addition to the City. As the actual plant operator, LCA has additional NPDES permit responsibilities.
  - **The City will retain co-permittee NPDES permit responsibilities and the City-retained Part II Water Quality Management (WQM) permit responsibilities. This permit action does not supersede or modify any EPA Administrative order or requirement.**
  - **The 10/2025 Kline Island Sewer System (KISS) Regional Act 537 Plan addresses POTW/Trib Municipality plans to further address I&I issues in the POTW (WWTP and sewer system).**
- Request for a meeting: The City and LCA both requested a meeting to discuss the public comments.
  - **This Redraft NPDES Permit's public comment period allows for scheduling a meeting to discuss any previous or new public comments. A detailed meeting agenda, list of participants, and tentative meeting dates (within the public comment period) will be required a productive meeting.**
  - **The available Department files did not include meeting dates or summaries for subsequent DEP/POTW meetings regarding the Draft NPDES Permit. There were other discussions regarding Planning and wet weather issues per the Communications Log.**

Item 1 (Outfall #003, Wet Weather Flows and Blending): DEP stated that State regulation regarding significant biological treatment in 25 Pa. Code 92a.47 prohibits "blending" at a September 16, 2016 Meeting. A September 30, 2016 EPA Consensus Letter set forth in writing "that according to state regulation, all flows from a sanitary system need to receive biological treatment, and therefore blending would be inappropriate". The POTW noted that they, DEP and EPA had been discussing the option over the previous decade. The public comment asked for DEP to reconsider its position on the basis that Chapter 92a.47 requires 65% removal of BOD/TSS, but does not specify biological treatment. The POTW cited a Federal court case (as an example where EPA lost a case regarding a blending prohibition). The POTW believes that blending is not a "bypass" under Federal Law and requested it not be classified as a bypass. **The Department's understanding is that "blending" is not being pursued. In practical terms, the Department does not have authority to set aside the Chapter 92a.47(a) requirement that sewage "shall be given a minimum of secondary treatment" as defined in the regulation to include "significant biological treatment".**

- **Chapter 92a.47(a)(3) requires 85% (not 65%) CBOD5/BOD5 removal (minimum monthly average basis) unless specific Chapter 92a.47(i) requirements are explicitly addressed. The available Department files lack any Chapter 92a.47(i) evaluation by the POTW.**
- **The existing DRBC Docket 85% TSS minimum monthly average reduction requirement has been incorporated into the NPDES Permit per Chapter 92a.12 and 92a.36 (as a more stringent DRBC Docket requirement even if Chapter 92a.47(i) might otherwise have allowed for relief).**
- **PA State regulations, based on the PA State Constitution and PA Clean Streams Law, can be more stringent than the Federal regulations.**
- **The Part A.II definition for "bypass" means the intentional diversion of waste streams from any portion of a treatment facility. (40 CFR 122.41(m)(1)(i)). This would include any bypassing of the permitted treatment units (Trickling filters or other) onsite.**

Item 2 (Approval of Anticipated Bypass for Flows Exceeding Ten-Year Storm Event):

The POTW noted that it had been considering a Phase I WWTP upgrade to handle peak flow treatment capacity up to 120 MGD and a Phase II peak flow capacity up to 160 MGD, in addition to previous discussions about a 95 MGD peak flow treatment capacity (wet weather). The POTW indicated EPA and DEP are in agreement that it is reasonable to complete Phase I ending in 2025 and that the ten-year storm level of protection chosen is reasonable. Once these measures are implemented, the wastewater plant will no longer pose a threat of bypass except possibly under some extreme storm condition (e.g., greater than once in ten year occurrence) associated with area-wide flooding or where some unforeseen operational condition occurs. The Attachment 1 (August 12, 2011 City Letter) indicated the City would pursue a ten-year storm event design standard. Other EPA correspondence was referenced but not included. **This comment is moot as the facility has a 2025 WQM Permit for 100 MGD peak wet weather influent flow upgrades, and has submitted a 10/2025 Kline Island Sewer System (KISS) Regional Act 537 Plan where future flows/loadings will be better defined and addressed. In practical terms, the priority is to comply with existing/future NPDES Permit/regulatory requirements including SSO prohibition and NPDES Permit limits going forward. The Department can exercise enforcement discretion for extreme wet weather events (hurricanes).**

The POTW noted that the Department Third Draft Fact Sheet had stated the Department could not grant their request for anticipated bypasses for flows exceeding 95 MGD. The Third Fact Sheet was quoted (including language reference the state's regulation for secondary treatment of sewage). The POTW stated its belief that the Department misconstrues 25 Pa. Code 92a.47(a). The permittees stated that in promulgating the secondary treatment standard ("STS"), the

Department specifically assured the regulatory community that: The STS as described in this final rulemaking applies to final effluent limits only, but does not limit other requirements that may apply to internal bypasses. **See above public comment regarding the referenced Chapter 92a.47 secondary treatment requirements. In practical terms, the 2025 WQM Permit allows for limited internal bypassing during peak wet weather events. See NPDES Permit Part A.I Additional Item 4 (bypass sampling), Part A.II definitions, and Part B.I.G (bypassing) requirements for other bypass requirements.**

The POTW then cited the existing NPDES Permit and Draft NPDES Permit Part B.I.G.3.a requirements for bypassing. The POTW said that Sanitary Sewer Overflows (SSOs) and bypasses are not mutually exclusive. The POTW cited a Federal case where bypassing was allowed. The POTW request that the Outfall No. 003 discharge (prior to plant headworks) be subject to the bypass defense. The POTW also stated that the Department's approval of Outfall No. 002 is a similar case for permitting an anticipated bypass (allowing for gravity discharge of secondary effluent from the Intermediate Settling Tanks (bypassing nitrification trickling filters, final clarifiers, and chlorine contact tank, but with provisions for chlorination per the 2014 POTW public comments) the should failure of the Effluent Pumping Station occur during high river stages. The POTW requests relief from Outfall No. 002 effluent limits as a bypass from a ten-year storm.

- **Outfall No. 003 is an SSO per definition. SSOs are strictly prohibited (Chapter 92a.47(c)) and cannot be permitted. Chapter 92a.2 defines Sanitary Sewer Overflows (SSOs) as "**An overflow of wastewater, or other untreated discharge from a separate sanitary sewer system (which is not a combined sewer system), which results from a flow in excess of the carrying capacity of the system or from some other cause prior to reaching the headworks of the sewage treatment facility"**. (underlining added.) PA State regulations, based on the PA State Constitution and PA Clean Streams Law, can be more stringent than the Federal regulations.**
- **Outfall No. 002 is an "bypass" under extreme weather conditions that have apparently not occurred since the 1990s per the 10/2025 Kline Island Sewer System (KISS) Regional Act 537 Plan submittal, even prior to 2025 WQM permitted plant upgrades to handle 100 MGD peak wet weather flows. It is not "anticipated" to discharge except possibly in extreme weather conditions (hurricanes). It is not an SSO by Part B.I.G definition. Any discharge would have to meet all NPDES Permit bypass conditions (NPDES Permit Part A.I Additional Requirements; Part A.II definitions; Part B.I.G). If a bypass is ever anticipated for maintenance reasons, the Department would expect prior notification with written explanation of how all NPDES Permit requirements will be met.**

Item 3 (Part C.VI (Schedule of Compliance for Wet Weather Flow Management at the Kline's Island WWTP)): The Fact Sheet provided no discussion of this new requirement, the reason for it, or addresses any of assorted issues (cessation of discharge (of what outfall?); updated feasibility study requirement (for what within 1 year, with WQM permit application submittal within 2 years); Start/end construction (within 3 years, with milestone dates too short for WQM permitting and legal processes); inconsistency with EPA Administrative Orders pertaining to overflows and Outfall No. 003). The permittees cited a September 30, 2016 EPA Letter addressing a "Phase I" schedule for determining financial requirements for the intended projects ending in 2025. Per the POTW's public comments, the Department, EPA and the POTW have agreed that the facility should be upgraded to handle the peak wet weather flows/loadings associated with a ten (10) year storm event. The POTW noted its willingness to discuss a schedule for any specific "Phase I" actions that should be undertaken during the permit term: **This condition was deleted due to EPA comments (see above), facility progress in I&I reduction, and the 2025 WQM permitted facility upgrade to 100 MGD peak wet weather flow capacity. The 10/2025 Kline Island Sewer System (KISS) Regional Act 537 Plan submittal will address future I&I related requirements.**

Item 4 (Reporting of SSOs): The POTW noted the Part B.I.H (SSO) language, and previous Department guidance that the POTW must report all SSOs in its sewer system, and should report any known SSO in the tributary sewer systems.

- The POTW requested that the Third Fact sheet language ("Allentown and LCA are not held responsible under the report for reporting instances of SSOs to DEP if the SSOs occur in sewer not owned or operated by Allentown and/or the LCA") be included in the NPDES Permit. **The NPDES Part A and B standard template language (agreed upon by the US EPA and DEP to implement regulatory requirements) will not be changed. The Department does not believe that any Part C language is needed or appropriate. The permittees would be expected to notify the Department if they learned of any SSOs in any of the Tributary municipal systems to allow for Department follow-up. The scope of the NPDES Permit is the POTW (sewer system and treatment plant) as defined in Chapter 92a.2 and NPDES Permit Part A.II. There are separate Chapter 94 Annual Municipal Wasteload Reporting requirements for the POTW and its tributary municipalities that also apply.**

- The POTW stated that the Third Draft NPDES Permit Fact Sheet indicated that if Allentown and/or the LCA became aware of SSOs outside of its collection system, failure to notify would constitute noncompliance. DEP response "asserted" that Allentown and LCA are responsible for policing the contributing municipalities' Chapter 94 Report to make sure the SSOs are included in the report. The POTW requested that the permit be clarified "to make it absolutely clear that the City/LCA's liability only applies to the SSOs from the collection system and operated by LCA. City/LCA liability does not apply in other instances. The POTW believes that some SSO events would not reach receiving waters, and are not pollution events subject to the Chapter 91 notification requirements. Specifically, the following language was proposed: "Allentown and LCA (as the operator of the Allentown system) are only responsible under the permit for reporting instances of SSOs to DEP if the SSOs occur in sewers owned by Allentown and operated by Allentown and LCA". **The Third Draft language was:** "In Addition, Allentown and LCA are not held responsible under the permit for reporting instances of SSOs to DEP if the SSOs occur in sewers not owned or operated by Allentown and/or LCA. However, if Allentown and/or LCA become aware of SSOs outside its collection system, DEP would expect notification. Failure to notify in such instances would constitute non-compliance. Further, DEP would expect that if Allentown and/or LCA are aware of SSOs and such SSOs are not specified in a contributing municipality's annual report under Chapter 94, Allentown and/or LCA would work with the contributing municipality to correct the report prior to submission to DEP. Where SSOs do occur in sewers owned or operated by Allentown and/or LCA, immediate reporting is defined as 4 hours in accordance with 25 Pa. § 92a.41(b)".
    - **The Department does not have the authority to waive legal liability for the POTW and/or to void Chapter 94 Reporting requirements (which includes accurate and complete information; reporting of capacity issues; etc.).**
        - **See the NPDES Permit Part A.II POTW definition. The NPDES Permit does not require the City or LCA to patrol the tributary municipalities, but only to report any known SSO event that it becomes aware of.**
        - **The tributary municipalities retain their own responsibilities under the regulations and their existing Water Quality Management (WQM) permits.**
        - **Any sewer system discharge of raw sewage to the environment is a pollution event, with the PA Cleans Streams Law also protecting the groundwater of the Commonwealth. Rain water would also wash any pollutant residues to the waters of the Commonwealth.**
    - **As NPDES permittees, the POTW (i.e. permittees) have responsibility to report SSOs when they occur (i.e. when they become aware of them) and to submit accurate information in the Chapter 94 Reports (which requires information on overflows and capacity issues).**
- The POTW asked for definitions of "separate sanitary sewer system" that limit their potential liability and distinguish between SSOs that discharge to the "waters of the US" (subject to the Federal Clean Water Act) and those that do not discharge to the US waters (that may be regulated by the PA Clean Stream Law): **The Department does not have authority to modify regulatory-defined definitions and/or waive legal liabilities for the POTW**. **All PA NPDES permitting must comply with the Pennsylvania Constitution and PA Clean Streams Law. Applicable Chapter 92a.2 definitions and regulations include, but are not limited to**:
    - POTWs - Publicly Owned Treatment Works:
        - A treatment works which is owned by a state or municipality.
        - The term includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature.
        - The term also includes sewers, pipes or other conveyances if they convey wastewater to a POTW treatment plant. The term also means the municipality as defined in section 502(4) of the Federal Act (33 U.S.C.A. § 1362(4)), which has jurisdiction over the indirect discharges to and the discharges from such a treatment works.
    - SSO - Sanitary Sewer Overflow: An overflow of wastewater, or other untreated discharge from a separate sanitary sewer system (which is not a combined sewer system), which results from a flow in excess of the carrying capacity of the system or from some other cause prior to reaching the headworks of the sewage treatment facility.
    - Combined sewer system - A sewer system that has been designed to serve as both a sanitary sewer and a storm sewer.
    - Chapter 92a.47(b): The permittee shall comply with the immediate oral notification requirements of § 91.33 (relating to incidents causing or threatening pollution). Oral notification is required as soon as possible, but no later than 4 hours after the permittee becomes aware of the incident causing or threatening pollution. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the incident causing or threatening pollution. The written submission must conform to the requirements of 40 CFR 122.41(l)(6).

Item 5 (Recognition of Additional Defenses for Overflow/Bypasses Beyond City/LA Reasonable Control): The POTW noted an EPA consent decree with another party (City of Waterloo, unidentified state) contained language that the NPDES Permit should recognize as "affirmative defenses" for Sanitary Sewer Overflows and other plant overflows/bypasses. The identified "affirmative defenses" included: plant upsets; overflows due to flooding based upon an identified river stage; overflow when complying with standard permit conditions; and bypassing/overflows due to inadequate capacity (based upon the ten-year storm event) or due to operations & maintenance deficiencies. **The Department cannot waive its rights and duties in terms of potential enforcement actions under the PA Constitution, Clean Streams Law, and existing regulations. The Department would determine the applicability of any "defense" applied on a site-specific case-by-case basis. Please note:**

- **SSOs are strictly prohibited in Pennsylvania.**
- **The Department has enforcement discretion during extreme weather events (such as hurricanes).**
- **NPDES Permit Part B.I.D (General Pretreatment Requirements) has standard language regarding plant upsets.**
- **NPDES Permit Part B.I.E (Proper Operation and Maintenance), Part B.I.G (Bypassing) plus Part A.I Additional Requirements, Part A.II definitions, and the applicable existing WQM permit conditions have standard language regarding Operations & Maintenance (O&M) requirements and bypass requirements.**
- **Chapter 94 has requirements applicable to hydraulic overloads.**

Instantaneous Maximum (IMAX) Effluent Limits:

- **Purpose of IMAX Limits:** The POTW cited old obsolete permit language that it requested be in the revised NPDES Permit: "The Instantaneous Maximum Discharge Limitations are for compliance use by DEP only. Do not report instantaneous maximums of DMRs or Supplemental DMRs unless specifically required on those forms to do so". The permittees also noted Third Draft NPDES Permit Fact Sheet E comment that the IMAX limits are part of the permit to assist DEP inspectors and water quality. **The Department cannot grant this request, as it would only confuse current NPDES permit monitoring & reporting requirements. To clarify the NPDES Permit requirements:**
  - **The purpose of NPDES permit limits is to protect the waters of the Commonwealth by preventing exceedances of Chapter 93 Water Quality Standards and/or other regulatory limits (Technology-based or other). Exceedance of an IMAX limit would be a violation.**
  - **Some IMAX monitoring results (such as pH, TRC, fecal coliform) must be reported by the permittee because of the Permit-specified IMAX permit limits for grab sampling. Dissolved Oxygen (DO) and pH also have instantaneous minimum permit limits.**
  - **Other IMAX limits are for the purpose of allowing the DEP inspectors to determine facility compliance with NPDES permit limits by DEP grab sampling (although the facility can voluntarily do grab sampling in addition to required 24-hour composite sampling).**
  - **The DMRs will identify what IMAX limits must be reported and omit reference to those that do not require permittee monitoring & reporting. IMAX limits apply to grab samples, not 24-hour composite sampling.**
- **Arbitrary Multiplier Not Justified When New Data Show Greater Variability:** The POTW noted that the NPDES Permit limits include a standard multiplier of 2 to derive the IMAX limits from average monthly effluent limits (for CBOD5, TSS, ammonia-nitrogen). The permittees noted that the basis of the standard multiplier was not discussed in the Fact Sheet. The POTW expressed a concern that the facility might be in compliance with the underlying monthly average limit (water quality or technology-based) but not the IMAX limit. The permittees noted that the DEP uses the EPA-approved methodology (from the 1991 EPA Technical Support Document for Water Quality-Based Toxics Control) to develop permit limits to account for effluent variability, averaging period, and number of observations in evaluating the monthly average and daily maximum limits. The POTW believe that the EPA statistical methodology would result in a multiplier higher than a factor of 2 in relation to the monthly average limit. The permittees provided calculations showing that there is generally a greater factor than two between the reported monthly average value and daily maximum (24 hour composite sampling) value for Ammonia-N and indicated a similar variability with CBOD5 and TSS (no data provided). The Federal Secondary Treatment Rule BOD5 and TSS values (30 mg/l monthly average values and 45 mg/l weekly average values would have a corresponding factor of 1.33 IMAX value. The POTW restated their understanding that the IMAX values are only to assist the DEP Inspectors. The POTW concerned that site-specific variability is much greater. They requested site-specific IMAX limits be developed and included in the NPDES Permit. They proposed Ammonia-N monthly average limits of 11.6 mg/l (summer) and 9.8 mg/l winter with IMAX limits of 58 mg/l (summer) and 147 mg/l (winter) based on their calculated site-specific daily/monthly ratios. They requested CBOD5 IMAX limit of 70 mg/l and TSS IMAX limit of 81 mg/l (but did not provide a table similar to the Ammonia-N table, but some calculations in their 2014 public comments). They referenced a 1990s statistics package to propose an alternate method of

converting one-hour average acute criterion durations to a 24-hour composite limit. **The Department cannot grant this request.**

- **The cited limits are existing permit limits. The regulatory Antibacksliding prohibition prohibits any relief from the existing permit limits unless the permittees demonstrate that an identified regulatory Antibacksliding exception applied. No such case has been made.**
- **The current Department water quality modeling (including the WQM Model 7.1, Toxic Management Spreadsheet (TMS), and TRC Spreadsheet), Technical Guidance Documents, and permitting procedures are scientifically-supported and incorporate the EPA-approved statistical methodology and the DEP standard multiplier (as needed) to protect public health, welfare, safety and the environment.**
  - **Effluent variability is expected, but the WQBELs are based on levels to prevent exceedances of the applicable Chapter 93 Water Quality Standard and other regulatory limits to protect the public health, safety, welfare and environment. If the POTW believes the as-built facility cannot comply with existing/proposed IMAX or daily max limits, the permittees will need to identify which constituents and propose via a Chapter 92a.51 Schedule of Compliance for coming into compliance within the 5-year NPDES Permit term.**
  - **See the DEP Water Quality Model and Tool webpage for available DEP models. See DEP E-library for the applicable DEP Technical Guidance documents.**

Item 7 (TRC Limits): The acute mixing zone used to derive water quality-based effluent limitations for TRC was based on a partial mixing factor of 0.364. This mixing factor did not account for site-specific conditions in the Lehigh River that divert river flow toward the bank of the river where the outfall is located. This configuration is seen in the Google Earth photograph of the region. We (the permittees) expect that under low flow conditions, the effluent will mix with virtually river flow, resulting in 100% mixing of the effluent with the 7Q10 flow at the edge of the acute mixing zone as detailed in attachment 2. In response to the previous Third Draft Permit comment that partial mixing factors will not be changed unless scientific site specific data is submitted, an 11/11/2016 photograph (when river flow was at 533 CFS at the USGS Bethlehem Gage versus a 7Q10 flow of 370 CFS) show clearly that the vast majority of the river flow passes in through the West Channel in front of the outfall under low flow conditions. The permittees indicate that the river width is greatly restricted and the bulk of the flow passes through a channel that is about 60 feet wide, consequently the 150 foot stream width (at Q7-10 low flow) is invalid. The permittees believe the water quality-based effluent limits would be 1.2 mg/l monthly average with w1.8 mg/l maximum daily limit, and 3.6 mg/l IMAX limit. Attachment 2 included a Google Earth image (4/17/2016) that showed the rock berm structure (diagonal to Lehigh River flow with River flow on both ends, but slanted toward the Treatment Plant) at a time when the downstream USGS Gage 01453000 measured 1,730 CFS river flow. The distance between the rock berm and the Outfall was estimated at 60 feet. The channel on the other side of the rock berm was estimated at 40 feet. Under low flow conditions, a significant portion of the total river flow will be directed toward the outfall, with rapid mixing expected at the outfall. Riffles in the stream bed (600 feet below the outfall) would also contribute to rapid mixing, the POTW believe this documentation meets the Department requirement for scientific site-specific information. **The Department has updated its water quality modeling and Redraft NPDES Permit limits to address this existing river structure (apparently a historic dam with breaches at both ends).**

Item 8 (WET Testing):

Item 8.a (Procedures in Permit): The POTW had assorted comments on the 2016 WET Test conditions, including need to defer to EPA method guidance in terms of analysis times or holding time per 40 CFR 136; request that DEP make a determination if a retest is needed (not the POTW and its technical consultant).

- **The Part C WET Test conditions have been regenerated with the current NPDES Permit template that incorporates EPA guidance and regulatory requirements.**
  - **The current template language states**: Samples must be analyzed within 36 hours from the end of the compositing period and must be placed on ice and held at ≤ 6°C. Refer to the sample handling and preservation regulations set forth in 40 CFR 136, 25 Pa. Code Chapter 252, The NELAC Institute (TNI) Standard, and the appropriate EPA methods.
  - **The current template language states:** If the permittee or its accredited laboratory determines that QA/QC requirements and/or test acceptability standards have not been met, a re-test shall be initiated within 45 days. Original test data must be maintained by the laboratory and be submitted to DEP upon request. The justification for a re-test must be clearly documented and kept on file with the sample

results. **The burden falls on the permittee & its technical consultant to determine if retesting is required upfront. See also WET condition language regarding invalid and failed WET tests.**

Item 8.b (WET Test Conditions and Methods): The permittees requested that the Part C permit language incorporate 2003 NPDES Permit language WET test permit condition language incorporating a previous study plan involving use of a 0.45 micron syringe filter to filter effluent prior to use in testing. The permittees indicated this practice was undertaken to due to a 2004 assessment confirming that test failures were caused by pathogens, not toxicity, and that filtration was required. The permittees noted the Third Draft Fact Sheet had stated that a re-evaluation is needed before such a practice could be authorized in the current permit. The City indicated it re-evaluated its biological treatment system in 2014, and found Type 021N filamentous organisms present via microscopic inspection with staining (methylyene blue and India Ink). The 2014 Draft Permit Part C.IV.F.2 referenced the EPA's "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms" (EPA-821-R-02-013) as the appropriate method. That Guidance Section 11.2 includes a discussion on interference, including a Section 11.3.4.6.1 discussion of filtration to eliminate pathogen interference. **The Part C WET Test conditions have been regenerated with the current NPDES Permit template that incorporates EPA guidance and regulatory requirements. The burden falls on the permittee to make the technical case that its proposed filtration practice meets current Permit requirements. See Part C.I.K and Part C.VI requirements.**

- The current template language states:
  - Chronic tests shall be completed in accordance with EPA's "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms" (EPA-821-R-02-013, latest edition). Seven (7) day tests shall be used with renewal every 24 hours.
  - The quality assurance and control (QA/QC) requirements and test acceptability standards specified in EPA's test methods and the requirements set forth in 25 Pa Code Chapter 252 or the TNI Standard must be followed.
- The EPA's "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms" (EPA-821-R-02-013) Section 11.3.4.6 states: Pathogenic and/or predatory organisms in effluent samples or receiving water that is used for dilution may affect test organism survival and confound test results. When pathogen interference is suggested by observation (11.3.4.1) and data evaluations (11.3.4.2) and confirmed by parallel testing (11.3.4.4), steps should be taken to minimize pathogen interference to the extent that test results are not confounded by mortality due to pathogens. Pathogen control techniques that do not require modification of effluent samples, such as use of the modified test design described in Subsection 11.3.4.5, are recommended for controlling pathogen interference. Upon approval by the regulatory authority, analysts also may use additional pathogen control techniques that require sample modification (11.3.4.6) provided that parallel testing of altered and unaltered samples further confirms the presence of pathogen interference and demonstrates successful pathogen control (11.3.4.6). (**Underlining added.)**
  - **The POTW-referenced 2003 Tetra Tech Report is outdated and did not address all of the Technical Guidance requirements. A 2007 Modified WET test submittal was found in the Department files, but it did not clearly meet the WET Test-condition referenced Technical Guidance requirements. The POTW-referenced 2014 evaluation of its biological treatment system (for pathogenic bacteria) indicated the presence of bacteria but did not address EPA Technical Guidance requirements for modification of the WET Test methodology. The EPA Guidance indicates:**
    - **Section 11.3.4.6.1 (Use of ultra-violet light to irradiate the sample) is an obvious alternative to filtration.**
    - **Section 11.3.4.6.2 (Ultra-filtration) is an allowable option but it requires a new evaluation of impact of filtration on toxicity with specific requirements that would have to be met.**
  - **The POTW will have the option of submitting this new evaluation with the future WET Test Report for Department consideration. See Part C.I.K special condition.**

Item 8.c (Effect of revised mixing allowing on IWC): The permittees noted that any evaluation of acute toxicity must reflect the acute partial mixing factor. **As only chronic WET testing is required here, this comment is moot. Please note the partial mixing factors were automatically recalculated by the DEP Toxic Management Spreadsheet (TMS) based upon site-specific inputs.**

Item 9 (Revised 7Q10):

- **Item 9.a (Design Flow Conditions Overly Conservative):** The analysis used to determine the Water Quality-Based Effluent Limits were based on the facility design dry weather flow (40 MGD) with the revised Q7-10 low flow. This is overly conservative because the facility has lower discharge flows (estimated on the order of 30 MGD) under dry weather conditions consistent with Q7-10 low flow conditions. The permit limits should be based

on the reasonable flow expected to occur during drought flow conditions. EPA was indicated to allow for use of alternative flows in 81 Fed Reg. 31343, 31355-56 (May 16, 2016). **The Department calculates Sewage Treatment Plant WQBELs based upon scientifically-supported water quality modeling and Technical Guidance documents using the NPDES Permit-basis flow (40.0 MGD) and Chapter 96-defined design conditions, unless site-specific conditions require use of a higher design flow.**

- **Unless the facility pursues derating in the Act 537 Planning, the Department will continue to use the 40.0 MGD NPDES Permit Basis flow in the Reasonable Potential Analysis. Several months exceeded 40.0 MGD discharge within the last 12 months per EDMR.**
- **See below for the revised Q7-10 low flow, calculated LFY, and updated Reasonable Potential Analysis.**

- **Item 9.b (Use of BPJ to Derive CBOD5, Ammonia-N, and DO Effluent Limits):** The permittees do not believe BPJ limits apply to CBOD5, Ammonia-N, and DO effluent limits. The regulatory secondary treatment limits were requested for CBOD5. Updated modeling limits (incorporating the revised higher Q7-10 low flow values) were requested for Ammonia-N and Dissolved Oxygen (DO). **The comment is moot because no change from the existing NPDES Permit limits was proposed by the Third Draft NPDES Permit or allowed by the Antibacksliding Prohibition. This draft permit does incorporate changes to the existing CBOD5, but the DMR data shows the facility can comply with the proposed limits.**
  - **The CBOD5 limits have become more stringent this redraft due to watershed organic enrichment issues. CBOD is "carbonaceous biochemical oxygen demand" and addresses organic material in the effluent.**
  - **See the DEP SOP webpage for DEP Clean Water Standard Operating Procedures (SOPs) for establishing effluent limits for sewage permits for how BPJ limits are applied under other circumstances.**

Item 10 (Compliance with Narrative Requirements): The permittees noted a Part C.I.D condition indicated that the Department would compare a location upstream of Outfall to a location 100 feet downstream of an Outfall to determine compliance with the NPDES Permit Part A.I Additional Requirements conditions. This is within the allowed mixing zone which was estimated at 1087 feet in PENTOXSD for 15 minutes of discharge under Q7-10 conditions. The distance should be changed to the edge of the acute mixing zone or the permit condition should exclude all parameters subject to WQBELs or evaluated for Reasonable Potential. **The draft Part C.I.D language is now part of the NPDES Permit Template Part A conditions, and has been removed from the Part C Section. The Part A.I Additional Requirement Item 1 permit template language (agreed upon with the US EPA to address regulatory requirements) applies:**

1. The permittee may not discharge:

   a. Floating solids, scum, sheen or substances that result in observed deposits in the receiving water. (25 Pa Code § 92a.41(c))

   b. Oil and grease in amounts that cause a film or sheen upon or discoloration of the waters of this Commonwealth or adjoining shoreline, or that exceed 15 mg/l as a daily average or 30 mg/l at any time (or lesser amounts if specified in this permit). (25 Pa. Code § 92a.47(a)(7), § 95.2(2))

   c. Substances in concentration or amounts sufficient to be inimical or harmful to the water uses to be protected or to human, animal, plant or aquatic life. (25 Pa Code § 93.6(a))

   d. Foam or substances that produce an **observed change in the color, taste, odor or turbidity of the receiving water**, unless those conditions are otherwise controlled through effluent limitations or other requirements in this permit. For the purpose of determining compliance with this condition, **DEP will compare conditions in the receiving water upstream of the discharge to conditions in the receiving water approximately 100 feet downstream of the discharge to determine if there is an observable change in the receiving water**. (25 Pa Code § 92a.41(c))

Item 11 (Metal Limits/Monitoring for Cadmium, Cobalt, Copper, and Iron)): The permittees agreed with DEP's position (Third Draft NPDES Permit) to only monitor metals, but believe monthly monitoring during the 5-year permit term (60 monthly samples) as excessive. The permittees noted that the EPA Technical Support Document (TSD) statistical methodology (using a log normal distribution) would allow for determination of the metal concentrations with fewer sample results. The permittees noted the Industrial Pretreatment Program requires quarterly monitoring for all constituents with local (POTW) limits and an annual influent priority pollutant scan. Additional Attachment 2 (breached rock dam impact on River flows) comments regarding water quality modeling was referenced. **This comment is obsolete due to updated**

Reasonable Potential Analysis including updated water quality modeling. Cadmium and Cobalt monitoring is not required. Copper monitoring is required by the Reasonable Potential Analysis. Annual Total Iron monitoring is being required due to unknown impact of RSW WTP sludge dewatering fluids on effluent quality.

Item 12.a (Clarification Required as to When Bypass Reporting is Required): The permittees asked DEP to clarify that the NPDES Permit Part A.I Additional Requirements Item 4 bypass reporting is not required when "blending". Clarification was requested as to the required sampling location for bypassing. **The comment is moot due as the facility is no longer pursuing blending. No relief can be granted for bypass monitoring per Part A.I Additional Requirements and Part A.III (Representative sampling) requirements (agreed upon with the US EPA to implement regulatory requirements).**

Item 12.b (Representative Sampling Should Not Include All Bypass Events): The permittees do not believe that NPDES Permit Part A.I Additional Requirements Item 4 bypass reporting should be reported via DMRs. The permittees noted Part A.III.A.1 requires representative samples including sampling during adverse weather, changes in treatment plant performance, and changes in treatment plant loadings. They believe representative sampling does not include skewing for only good performance or worst situations. Representative sampling includes a random or unbiased sampling protocol. The permit appears to indicate that sampling must be undertaken when bypassing, or where possible, during periods of adverse weather, changes in plant performance, and changes in treatment plant loadings. Such an approach would conflict with EPA and DEP requirements that all sampling be representative. Therefore, these provisions should be clarified to reflect sampling should not occur in a manner that intentionally avoids the sampling during bypass, periods of adverse weather, etc.

- **The Department will not modify the NPDES Permit Part A Template conditions (agreed upon with the US EPA to implement regulatory requirements), which include Part A.I Additional Requirements and Part A.III.A (Representative sampling) requirements that reflect statutory and regulatory requirements to protect the waters of the Commonwealth. Short-term bypass discharges can cause exceedances of the applicable Chapter 93 Water Quality Standards in the receiving stream.**
- **No relief from DMR/EDMR reporting requirements is possible.**

Item 13 (Sampling Location): The permittees expressed concerns over Part A.III.A.1 and Part C.I.E sampling language. Part A.III.A.1 requires "if possible" that samples be collected where the effluent is well mixed and at approximate mid-depth point where turbulence is at a maximum and the settlement of solids is minimized. Part C.I. requires the effluent be collected where the effluent is well mixed near the center of the discharge conveyance and at the appropriate mid-depth point, eliminating the words "if possible". The language changed from "approximate" to "appropriate" mid-depth point. "We do not believe such sampling should be imposed regardless of the required efforts and effects on the representative nature of the sample". **The Part C.I.E condition is Part C.I.H in the Redraft NPDES Permit.**

- The Part A.III.A.1 language should be changed from "If possible, effluent samples must be collected" to "Efforts should be undertaken with the objective of collecting samples near the center of the stream or where the wastestream otherwise would be expected to be well mixed". **The Department will not modify the NPDES Permit Part A Template conditions (agreed upon with the US EPA to implement regulatory requirements). In practical terms, the POTW can relocate its sampling location within the plant to a location, if it does not believe the current monitoring set-up can meet the permit conditions.**
- Currently, 24-composite samples are collected from a sampling station located within a building at the terminus of the chlorine contact chamber. Flow from the chlorine contact chamber is diverted into a 12-foot by 14-foot chamber under the building where it enters the 72-inch pipe to the effluent Parshall flume and outfall. The suction tube for the composite sampler is lowered through a hole in the floor above the chamber. This hole is situated approximately in the middle of the chamber, in line with the 72-inch pipe to the Parshall flume, and the suction tube is suspended above the floor of the chamber. The treated wastewater in the chamber is well mixed given the flow path makes a 90 degree turn when it reaches the end of the chlorine contact chamber, another 90 degree turn as it enters the chamber, and one final 90 degree turn as it enters the 72-inch pipe. These multiple changes in direction keep the flow turbulent and well mixed at the point where the composite sampler collects a sample. Similarly, grab samples are collected at the point of discharge from the Parshall flume. The sample is collected by inserting a Nalgene bottle connected to a staff into the effluent flow spilling from the flume. Based on the descriptions presented above and the configuration of the outfall and sampling locations, we believe the samples and measurements taken for the purpose of monitoring are representative of the facility effluent. We request a "determination from the Department as to whether our current sampling methods provide representative sampling and whether the current methods meet the new draft permit conditions". If not, the City objects to the permit conditions. If so, a minimum two-year schedule of compliance would be required. The permittees requested that the Part A.III.A.1 last sentence and Part C.I.E condition be deleted.

- **The Department will not modify the NPDES Permit Part A Template conditions (agreed upon with the US EPA to implement regulatory requirements).**
- **The Part C.I.E condition has been retained to provide guidance on minimum sampling requirements for representative sampling.**
- **The Department is prohibited from acting as the POTW's technical consultant by regulation. If the POTW has any concerns about its sampling point and sampling methodology ability to take representative samples, its certified operators and/or other technical consultants should make their own determination and document it for the public record. If the POTW discovers significant issues, the Department should then be contacted with explanation and schedule for any required corrective action (as soon as practicable). As the sampling equipment can be easily relocated in a large treatment plant, a proposed two-year schedule of compliance would not be acceptable for POTW-identified noncompliance with Part A representative sampling requirements.**

Item 14 (Planned Changes to Waste Streams): The POTW indicated confusion over the NPDES Permit Part A.III.C.2 (Planned Changes to Waste Stream) requirements to new pollutants or increased loadings of new pollutants. Previous public comment and Third Draft DEP response was quoted. The permittees believe there is a disconnect between permit language paragraphs between notification requirements for concentration changes and mass loading (lbs/day) loadings. The POTW noted previous Department feedback that the 45-day notice provision starts when the POTW becomes aware of a proposed increase in IU loading (mass and concentration) going to the POTW. They requested that the 45-day notice provision be waived as needed to address unanticipated issues requiring action on a timelier basis to ensure permit compliance. The POTW requests that the loadings be based solely on the loadings arriving at the Kline Island Treatment Plant, not the LCA Pretreatment Plant. **The Department will not modify the NPDES Permit Part A Template conditions (agreed upon with the US EPA to implement regulatory requirements).**

- **Both pollutant concentration and mass loadings can have environmental impacts on the receiving waters of the Commonwealth.**
- **The condition applies to "planned changes" which the POTW should be aware of via its IPP and IU approval process (including any POTW monitoring provisions). For example, if a landfill decided to start to send leachate to the facility (previously only a "back-up facility"), it might trigger this requirement even if it had been approved as a non-discharging IU discharger to the POTW.**
- **The 45-day notice requirement does not prevent "timelier" notification prior to the 45-day deadline. See also NPDES Permit Part A.I.C.4 and C.5 notification requirements.**
- **The LCA Pretreatment Plant is presently being regulated as an Indirect Discharger/Industrial User to the Kline Island POTW, like any other customer. It was not identified in the 2007 NPDES Permit Renewal Application and no IU information was found in the application. It would be subject to any applicable pretreatment ELG limits and might also fall under 40 CFR 437 (Centralized Waste Facility).**
  - **The LCA Pretreatment Plant would be required to notify the POTW (in writing) of any planned increased in loadings going to the Kline Island Treatment Plant, with the POTW then subject to the notification requirements. In practical terms, the LCA (NPDES co-permittee/Treatment Plant Operator and LCA Pretreatment Plant operator) should not wait to the last minute in notifying the Department in event of potential impacts on the receiving POTW.**
  - **The NPDES Permit notification requirements applies to loadings received at the Kline Island POTW, unless the POTW formally incorporates the LCA Pretreatment Plant into the POTW for Act 537 Planning or permitting purposes.**

Item 15 (Planned Changes in Waste Stream – Introduction of New Pollutant and Increased Loadings of Approved Pollutants): The permittees reiterated a previous request that the Part A.III.C.2.a(i) language be modified to insert "were not otherwise analyzed in the influent and reported to DEP prior to permit issuance" as an agreed upon change. **The Department will not modify the (current) NPDES Permit Part A Template conditions (agreed upon with the US EPA to implement regulatory requirements).**

Item 16 (Planned Changes to Waste Stream - Increased Loading of Approved Pollutants): The permittees believes the Part A.III.C.2.b language (20% increase) is arbitrary and capricious. The permit language states: "The permittee shall provide notification of the introduction of increased influent loading (lbs/day) of approved pollutants in accordance with paragraph 2 above when (1) the cumulative increase in influent loading (lbs/day) exceeds 20% of the maximum loading reported in the permit application, or a loading previously approved by DEP and/or EPA, or (2) may cause an exceedance in the effluent of Effluent Limitation Guidelines (ELGs) or limitations in Part A of this permit, or (3) may cause interference or pass through at the POTW (as defined at 40 CFR 403.3), or (4) may cause exceedances of the applicable water quality standards in the receiving stream. Unless specified otherwise in this permit, if DEP does not respond to the notification within 30 days of its receipt, the permittee may proceed with the increase in loading. The acceptance of increased loading

of approved pollutants may not result in an exceedance of ELGs or effluent limitations, may not result in a hydraulic or organic overload condition as defined in 25 Pa. Code § 94.1, and may not cause exceedances of the applicable water quality standards in the receiving stream". **(Underlining added.)**

- The permittees believe the 20% reporting requirement should be adjusted to be consistent with the 40 CFR Part 122.42(a) 500% standard as incorporated by PA regulation. **The Department will not modify the existing NPDES Permit Part A template conditions (agreed upon with the US EPA to implement regulatory requirements). A 40.0 MGD POTW's effluent pollutant mass loadings can negatively impact a receiving stream. 40 CFR Part 122.42(a) requires notification when toxic pollutant exceed several different notification levels for both routine and non-routine basis, including the level established per 40 CFR 122.44(f) by the Director's initiative (i.e. the DEP in this case). A notification and internal POTW review process are not burdensome requirements. The Department has broad authority under the statutes and regulations to require information to protect the public health, safety, welfare and environment.**
- The POTW requested confirmation of their understanding that the Department interprets this provision as being triggered when there is a 20% increase that occurs over a short time-frame, namely 30 days or less, and that long-term gradual increases in pollutants associated with growth or normal variations in pollutant concentrations which exceed 20% do not trigger the requirement to report and receive prior DEP approval. We request DEP clarify the language.
    - **The Department cannot confirm the POTW interpretation. The referenced paragraph 2 condition language:** "Under the authority of 25 Pa. Code § 92a.24(a) and 40 CFR 122.42(b), the permittee shall provide notice to DEP and EPA as soon as possible but no later than 45 days prior to any planned changes in the volume or pollutant concentration of its influent waste stream as a result of indirect discharges or hauled-in wastes, as specified in paragraphs 2.a. and 2.b., below. Notice shall be provided on the "Planned Changes to Waste Stream" Supplemental Report (3800-FM-BCW0482), available on DEP's website. The permittee shall provide information on the quality and quantity of waste introduced into the POTW, and any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW (40 CFR 122.42(b)(3)). The Report shall be sent via Certified Mail or other means to confirm DEP's receipt of the notification. DEP will determine if the submission of a new application and receipt of a new or amended permit is required". **(Underlining added.) The referenced Part A.III.C.2.b language:** "The permittee shall provide notification of the introduction of increased influent loading (lbs/day) of approved pollutants in accordance with paragraph 2 above when (1) the cumulative increase in influent loading (lbs/day) exceeds 20% of the maximum loading reported in the permit application, or a loading previously approved by DEP and/or EPA, or (2) may cause an exceedance in the effluent of Effluent Limitation Guidelines (ELGs) or limitations in Part A of this permit, or (3) may cause interference or pass through at the POTW (as defined at 40 CFR 403.3), or (4) may cause exceedances of the applicable water quality standards in the receiving stream. Unless specified otherwise in this permit, if DEP does not respond to the notification within 30 days of its receipt, the permittee may proceed with the increase in loading. The acceptance of increased loading of approved pollutants may not result in an exceedance of ELGs or effluent limitations, may not result in a hydraulic or organic overload condition as defined in 25 Pa. Code § 94.1, and may not cause exceedances of the applicable water quality standards in the receiving stream". **(Underlining added.) "Planned" means there is an intentional increase in the mass loadings due to new Indirect dischargers (new Industrial Users and/or increased hauled-in wastewater customers) and/or increased Existing Industrial Users (and hauled-in wastewater customers) loadings that will be going to the Kline Island facility.**
        - **This condition and the Part C Pretreatment Program condition requires the POTW to evaluate the impact on Kline Island effluent loadings with notification requirements if the Kline Island effluent mass loadings are expected to increase by 20% or more. Such increases would trigger potential concerns for plant upsets, interference, pass-through and/or negative impact on the receiving waters of the Commonwealth.**
        - **The condition does not apply to Act 537 Plan-approved sewage flows. The Act 537 Planning process applies instead. It would apply to the LCA Pretreatment Plant due to non-sewage waste streams received there.**
    - Exceeds 20% of the maximum loading reported in the permit application**: The facility has updated 2025 NPDES Permit Application influent sampling data to update the 2007 NPDES Permit Application influent Pollutant Group Tables now for the Pollutant Group Table constituents. NOTE: The 2014 NPDES Pollutant Group Table used the wrong units in its mass unit calculations, resulting in an overestimate of mass loadings by 1000 (ug/l units were treated as mg/l units). 2014 Public comments also indicated problems with the analytical results.**

- Exceeds 20% of the EPA Approved Loadings**: If EPA approves a loading limit under the Pretreatment Conditions, then a 20% increase in loadings would also trigger notification requirements. The EPA is the lead in terms of Pretreatment requirements.**
- May cause an exceedance in the effluent of Effluent Limitation Guidelines (ELGs) or limitations in Part A of this permit**:**
  - **See Part C.III IPP conditions for when an IU might not meet its existing pretreatment ELG limits.**
  - **Anything that might result in Part A permit limit exceedances and/or Federal ELG exceedances (i.e. if ELG-based discharge effluent limits are present in the existing NPDES Permit) would require notification. There are no current ELG-based discharge limits in the NPDES Permit.**
- May cause Passthrough or interference**: See also Part B.I.D (General Pretreatment Requirements) and Part C.III (Pretreatment) conditions.**
- May cause exceedances of the applicable water quality standards in the receiving stream**: See Chapter 93 for existing WQS. Future WQS would be subject to the regulatory issuance process. See Chapter 92a.12 for the NPDES permit amendment process that can be triggered by new Chapter 93 water quality standards.**

Item 17 (Reporting Requirements for Hauled-in Wastes):

- The permittees objected to Part A.III.C.3 (Reporting Requirements for Hauled-In Wastes) language. The POTW understands that the hauled-in wastewater to the LCA Pretreatment Plant is not covered by the NPDES Permit hauled-in wastewater reporting language. **The Department will not modify the existing NPDES Permit Part A template conditions (agreed upon with the US EPA to implement regulatory requirements). The Department has broad authority under the statutes and regulations to require information required to protect the public health, safety, welfare and environment. Hauled-in wastewater characteristics can negatively impact treatment plant performance and effluent quality. In practical terms, the LCA Pretreatment Plant is being treated as a customer by the POTW, and is subject to Federal Pretreatment regulations and IPP requirements.**
- The permittees believe Part A.II "Hauled-in Wastes") definition is overly broad and could apply to infiltration. "Hauled-In Wastes" means any waste that is introduced into a treatment facility through any method other than a direct connection to the sewage collection system. The term includes wastes transported to and disposed of within the treatment facility or other entry points within the collection system. **The Department will not modify the existing NPDES Permit Part A template conditions (agreed upon by the US EPA to implement regulatory requirements). In practical terms, sewer system inflow & infiltration (I&I) stormwater and groundwater are not hauled to a wastewater facility or its sewer system. Uncontaminated Stormwater/Groundwater cannot be hauled-in to the POTW (sewer system or treatment plant) per the Part C.I.A stormwater prohibition. Hauled-in contaminated stormwater/groundwater would be classified as a wastewater.**
- The POTW requested specific language be added to the permit that the LCA Pretreatment Plant is not subject to the hauled-in reporting requirements. **The Department could not develop suitable language in the absence of clarification of the permittee's long-term plans for the LCA Pretreatment Facility and missing Chapter 94/IPP information in addition to Federal Pretreatment regulations (40 CFR 400 – 472). There are a number of scenarios/options available to the permittees that might make the facility an intrinsic part of the POTW within the 5-year NPDES permit term under Act 537 Planning or NPDES permitting.**
- The POTW noted that NPDES Permit Part C.3.b(i)(3) requirements for BOD (Biochemical Oxygen Demand) load and concentration are beyond the Third Draft NPDES Permit Fact Sheet cited MSW Chapter 271.103(e) and RSW Chapter 287.102(c) reporting requirements. **Irrelevant. The information is also required for wastewater going into the NPDES permitted POTW treatment system and per Chapter 94 Report requirements. The previous Department response was pointing out where some additional reporting requirements originated. The Department has broad authority under the statutes and regulations to require information required to protect the public health, safety, welfare, and environment.**

Item 18 (Receipt of Residual Waste): The permittees requested that the Part A.III.C.a reporting requirement be deleted. The permittees indicated it did not understand why the hauled-in wastewater reporting requirements differed from indirect discharger (IU) discharged to the sewer system. The recording of license plate number, permit numbers of the generator, or type of wastewater should not required. This information would not be required if the same wastewater was discharged into the sewer system at a facility a short distance upstream of the designated location for receipt of hauled-in wastewater.

- **The Department will not modify the existing NPDES Permit Part A template conditions (agreed upon with the US EPA to implement regulatory requirements). The Department has broad authority under the statutes and regulations to require information required to protect the public health, safety, welfare, and environment.**
- **Hauled-in wastewater characteristics can negatively impact treatment plant performance and effluent quality. See EPA technical literature regarding potential extreme variability of septage constituents (which would not be diluted as in a sewer system discharge). Residual wastewater (including liquid sludges) can have even more variable concentrations and loadings. In event of a plant upset or pass-through, such information would allow the Department and POTW to determine the cause and source of the problem. Please note that some facilities have received unapproved wastewaters by mistake and/or deliberate intention of the generator/hauler, with resulting pass-through or interference.**
- **Any hauled-in wastewater discharge into the POTW sewer system elsewhere would be subject to the same requirements, if authorized at all.**
    - **At present, the <u>only</u> authorized <u>POTW</u> "designated location for receipt of hauled-in waste" is a WWTP receiving point directly upstream of the Kline Island Treatment Plant headworks (but within the Treatment Plant site boundary), which will be subject to the site's High Flow Management Plan and site-specific PPC Plan.**
    - **The (separate) LCA Pretreatment Plant is presently regulated as a separate indirect discharger/Industrial User/POTW customer (without NPDES/WQM permitting but subject to the Kline Island POTW Pretreatment Program and IU permitting). It can accept hauled-in wastewater, but would have to meet any applicable Federal Effluent Limitation Guideline Pretreatment Limits and other requirements of the EPA-approved Kline Island POTW Pretreatment Program. The Department has broad authority under the statutes and regulations to require information required to protect the public health, safety, welfare, and environment.**

<u>Item 19 (Receipt of Residual Waste)</u>: The Third Draft Fact Sheet indicated that if the hauled-in residual wastes do not have a waste characterization, then the WWTF would be obligated to perform an analysis of the waste. The public comment then referenced permittees' comments that their understanding is that the POTW is not required to review or obtain copies of the Form 26R report, but only confirm with the transporter whether or not such a form was generated. The permittee is not required to reject a load of waste because the generator did not complete a Form 26R. The permittee is only required to maintain such forms as the generator and/or hauler provide and failure to have these forms is not an NPDES permit violation. The POTW asked for confirmation that its understanding is correct. The NPDES Permit language states: "If the generator is required to complete a chemical analysis of residual wastes in accordance with 25 Pa. Code § 287.51, <u>the permittee must receive and maintain on file a chemical analysis of the residual wastes it receives. The chemical analysis must conform to the Bureau of Waste Management's Form 26R. Each load of residual waste received must be covered by a chemical analysis if the generator is required to complete it</u>." **The Department cannot confirm the stated POTW understanding as the POTW must know what is being received at their facility and meet its own NPDES Permit conditions. The POTW is under no obligation to accept a wasteload of unknown chemical composition. See NPDES Permit Part B.I.D (General Pretreatment Requirements) and Part C Pretreatment Program Implementation requirements. The POTW is not subject to enforcement action for the hauler/generator's noncompliance with their own permit and regulatory requirements. The Department has broad authority under the statutes and regulations to require information required to protect the public health, safety, welfare, and environment.**

<u>Item 20 (Information Provided in Annual Report)</u>: Part B.I.C.4 and Part C.III.C requires a solid management inventory that summarizes the amount of sewage sludge/biosolids produced and wasted during the calendar year, and submit a "Solids Management Inventory" with the Annual Chapter 94 Report. The POTW requested the reference to an EPA handbook methodology be eliminated. The POTW also requested clarification that the solids management inventory may only contain information for that period of the calendar year in which the new permit is effective.

- **The Department does not concur. The Department has broad authority under the statutes and regulations to require information to protect the public health, safety, welfare and environment. The methodology helps to determine if a treatment plant is operating properly. See the DEP Operators Webpage for a sample spreadsheet that incorporates the EPA-approved methodology.**
- **The new NPDES Permit effective date governs when its requirements take effect. In practical terms, if you have the relevant information prior to the Permit Effective Date, then it should be included in the Solids Management Inventory if available. If not availabe, any permittee should clearly state that in the first applicable Chapter 94 Report submittal (with explanation).**

Item 21 (Information Provided in Annual Reports: Pretreatment); Item 22 (Annual Priority Pollutant Scans); 23 (Identification of All Permit Violations); 24 (Headworks Analysis); and 25 (Allocation of Loadings Under Local Limits Analysis): The POTW requested deletion of Part C IPP information collection and submittal requirements on the basis that 40 CFR 403.12(i) identifies only an abbreviated list of information requirements. The POTW questioned EPA authority to require such information, and requested the 2003 IPP language requirements be retained. The POTW questioned the annual priority pollutant scan requirement and requested it be limited to three scans in the 5-year NPDES Permit term. The POTW believes the violation reporting requirement should be changed to the 2003 NPDES permit language, as it would require reporting of non-pretreatment-related violations. The POTW believes the choice of pollutants for the headworks analysis should be left to the POTW, that there is no reasonable potential for the listed constituents, and that no new headworks analysis should be required due to 40 CFR 122.21(j)(4) language requiring only a written technical evaluation and conditions have not substantially changed. The POTW indicated that it would use "the probability of exceeding MAIL" (maximum industrial headworks load) into account in developing industrial user limits. **The Department could not concur:**

- **EPA is the lead for Pretreatment requirements in Pennsylvania, and is the only party that can grant relief from any pretreatment requirements. Contact them directly if you have any questions on Pretreatment-related reporting requirements and/or alternative approaches. See the Third Draft Fact Sheet for previous EPA responses to repeated POTW public comments.**
- **The revised NPDES Permit includes the current NPDES template language regarding Pretreatment requirements. The Part B.I.D (General Pretreatment Requirements) and Part C.III (POTW Pretreatment Program Implementation) condition language was agreed upon by both the PA DEP and US EPA to implement regulatory requirements. The Department has broad authority under the statutes and regulations to require information required to protect the public health, safety, welfare and environment.**
- **See Effluent limits section below for the updated Reasonable Potential Analysis results.**

Item 26 (Solids Management):

- Request for deletion of Part C.III: The POTW requested deletion of Part C.III Solids Conditions on the basis that they were "optional" and requiring regulatory rule-making. **The Solids Conditions are now standard requirements for all sewage treatment facilities (superseding previous Part A/B solids-related language in previous NPDES Permit template conditions). The Department has broad authority under the statutes and regulations to require information required to protect the public health, safety, welfare and environment.**
- The DMR Supplemental Form "Influent & Process Control" requires information on Aeration MLSS, Aeration DO, and Sludge Wasted fields that are not applicable to this type of treatment facility (Trickling Filters). **The POTW elsewhere indicates sludge is wasted at this facility. The Department will modify the Supplemental Form as needed with the Final NPDES Permit action.**

Item 27 (NPDES Permit Fact Sheet: Outfall No. 002): The POTW indicated: "The plant is not constructed in a configuration that will allow for treated effluent to be pumped through Outfall No. 002 to the Lehigh River" and "allows for gravity discharge of secondary effluent from the Intermediate Settling Tanks should failure of the Effluent Pumping Station occur during high river stages. Under these emergency conditions the Rock Media Trickling Filters, Final Settling Tanks, and the Chlorine Contact Tank would be bypassed". "In addition, Outfall 002 is configured so that wastewater that has received tertiary nitrification and final settling can be discharged by gravity to the Lehigh River directly from the Final Settling Tanks without flowing through the Chlorine Contact Tanks. This provides for maintenance of the Chlorine Contact Tanks should total isolation be required". "Please be advised that chlorine solution piping was provided during the 1998 upgrade to allow for chlorination of the Intermediate Settling Tanks or Final Settling Tanks depending on the required discharge point utilized with Outfall 002". (Underlining added.) **See above comments regarding bypass requirements. Use of chlorination in intermediate settling tanks would negatively impact the nitrifying Rock Media Trickling Filter treatment effectiveness.**

Item 28 (PPC Plan Development): The Stormwater Part C.V condition requires a PPC Plan (addressing IW Stormwater at the treatment plant) be developed and in-place upon Permit Effective Date. The permit must contain adequate time to develop such a PPC Plan. Request for 180 days for development of a site-specific PPC Plan. **The Department can only concur in part. The NPDES Permit Part C.I.M Special Condition that will require submittal of a site-specific PPC Plan (addressing all Part C requirements) no later than 180 days after PED. In practical terms, nothing prevents the permittees from developing an adequate site-specific PPC Plan during the public comment period. The POTW has been aware of IW stormwater permit requirements since 2014 and already has site-specific contingency plans. The Part C.VIII-referenced Guidelines are available via DEP E-library, and are recommended for all forms of industry, but required for facilities subject to IW stormwater permitting requirements.**

Item 29 (Outfall No. 005): The 2014 and 2016 Draft NPDES Permit conflict on which stream that the stormwater Outfall No. 005 discharges to (whether Jordan Creek or the Little Lehigh Creek). It discharges to the Little Lehigh Creek. **Correct per Chapter 93.9d. Inaccurate information in the DEP GIS data layers autogenerated incorrect information in the previous Draft NPDES Permit. The permit has been corrected.**

Communications Log & Partial Permit & Wet Weather Flow History: This is a partial history to clarify recent permit history and POTW wet weather flows. It does not address separate DEP/EPA compliance or Planning communications/meetings:

- **8/6/1997**: The 8/6/1997 DRBC Docket No. D-97-14 CP (most recent docket) was issued to address plant upgrades. The DRBC Docket noted the upgraded facility could handle a peak flow of 84.8 MGD. It includes an 85% minimum monthly reduction requirement for TSS and a (non-seasonal year-round) fecal limit of 200/100 ml as GEO Average.
- **3/20/2003**: Administratively extended NPDES Permit issued including 85% minimum monthly average CBOD5 and TSS reduction requirements. Special conditions included Stormwater prohibition; Necessary Property Rights; Changes to Effluent; winter fecal limits, CBOD5 test method; Residuals management; DMRs; Operation and Implementation of Pretreatment Program; Whole Effluent Toxicity (WET). Part C.I. Three: "If in the opinion of the Department, these works are not so operated or if by reason of change in the character of wastes or increased load upon the works, or changed use or condition or the receiving body of water, or otherwise, the said effluent ceases to be satisfactory or the sewage facilities or the sewerage facilities shall have created public nuisance, then upon notice by the Department, the permittee shall adopt such remedial measures as will produce an effluent which, in the opinion of the Department, will be satisfactory for discharge into said body of water".
- **3/27/2007**: NPDES permit renewal application received.
- **7/27/2007**: City of Allentown WWTP High Flow Procedure: Included keeping storm valve open until 70 MGD "to prevent storm water from causing an overflow condition at the plant headworks".
- **9/28/2007**: EPA Administrative Order No. CWA-03-2007-0332DN (Findings of Violation, Order for Compliance and Request for Information) issued. Respondent was the City of Allentown. The Order covered the WWTP and sewer system. Issues included SSO and bypass violations (of flows which had passed the headworks). Information regarding satellite systems was required.
- **9/30/2007**: Existing NPDES Permit Expiration Date (but permit was administratively extended).
- **11/25/2007**: Draft NPDES Permit issued.
- **12/19/2007**: Allentown public comments on Draft NPDES permit.
- **2008**: Allentown completed a Sanitary Sewer System Flow Monitoring Program per the 2023 Chapter 94 Report.
- **9/28/2009**: EPA Administrative Order No. CWA-03-2009-0313DN ((Findings of Violation, Order for Compliance and Request for Information)) issued to POTW and thirteen outlying jurisdictions (municipality) including City of Allentown, Alburtis Borough, Emmaus Borough, Macungie Borough, Coplay-Whitehall Sewer Authority, Hanover Township, Lehigh County Authority, Lower Macungie Township, Lowhill Township, Salisbury Township, South Whitehall Township, Upper Macungie Township, Upper Milford Township, and Weisenberg Township. The Order required elimination of SSOs in the System.
- **2/3/2011**: Submittal of City of Allentown "Preparation of an EPA-Directed Feasibility Study to Analyze Alternatives for Wet Weather Flow Management at the Kline's Island WWTP". In 2011, Allentown engaged a consultant to act as program manager to conduct its RDII Removal Corrective Action Plan. The draft plan was completed in January 2014. It was approved by Allentown and submitted to EPA in 2014.
- **5/13/2013**: Attorney letter to DRBC (DEP on copy list) notifying them of the "Allentown Water and Sewer System Concession and Lease Agreement". Copy of Agreement included.
- **7/8/2013**: DEP Letter regarding "City of Allentown Permits with Lehigh County as Concessionaire". The Department understanding was that the City would own the infrastructure and LCA would be the operator. The letter noted LCA should become co-permittee for the NPDES permit and PAG-08 biosolids permit. The City would retain the WQM permits.
- **8/13/2013**: NPDES Permit Transfer Application (LCA to become co-permittee and POTW operator). Transfer of Operations was August 2013. (Merged into pending NPDES Permit renewal.)
- **12/10/2013**: DEP Letter reminder for submittal of requested sampling data and any other pertinent information/modules to append the application submitted 2007.
- **3/21/2014**: Application update. Included LCA cover letter, first page of NPDES Application form (Trib section left blank), Influent Pollutant Group Tables, Outfall No. 001 Effluent Pollutant Group Tables, and copy of 12/10/2013 DEP Letter. Influent metal levels indicated IU metal contributions (but identified mass loadings were miscalculated by factor of 1000 due to mistaken use of ug/l concentrations as mg/l in the mass loading calculations). Detected influent organics included Chloroform, Toluene, Benzidine at the (pre-EPA Sufficiently Sensitive Rule) lab QLs. **NOTE**: 2014 LCA/Allentown public comments indicated analysis did not use approved test methods, rendering results suspect.
- **6/28/2014**: Second Draft NPDES Permit Issued.
- **7/24/2014**: LCA/Allentown public comments received for Second Draft NPDES Permit. The POTW public comments indicated the existing facility operations became "unstable" at flows ranging from 85 – 87 MGD.

- **2/10/2016**: EPA AO No. CWA-03-2009-0313DN amendment compliance deadline extension to December 31, 2017
- **10/2/2016**: Third Draft NPDES Permit issued. Fact Sheet Addendum included responses to public comments.
- **11/3/2016**: EPA public comments on the 10/2/2016 Draft NPDES Permit received.
- **11/18/2016**: Allentown/LCA comments on 10/2/2016 Draft NPDES Permit received.
- **3/19/2019**: EPA Letter (superseding 3/11/2019 EPA Letter with incorrect docket numbers) to Allentown City and LCA. EPA reviewed the "regional flow management strategy" (RFMS) and found it acceptable. EPA found that all of the Respondents to the Administrative Orders have completed the requirements. PADEP will be the lead agency to oversee compliance assurance activities, with continued EPA monitoring. EPA noted that "any noncompliance with the NPDES Permit or Clean Water Act (CWA) could result initiation of further review and action pursuant to the federal enforcement provisions…".
- **3/2019**: The 2018 Chapter 94 Report indicated the City of Allentown, Lehigh County Authority (LCA) and all other contributors to the Kline's Island Sewer System (collectively the "KISS Signatories") developed a Regional Flow Management Strategy (RFMS). This submission was based on EPA's alternative plan to implement a RFMS and defer any improvement that may be needed to the KIWWTP to a future date after the effectiveness of the RFMS can be evaluated.
    - RFMS components included the following:
        - Collection System Operation and Maintenance: Listed activities included evaluating the Signatories' Sewage Billing Meters (SBMs), building inspections, downspout inspections, CCTV inspections of MS4 stormwater system, etc.
        - System Characterization
        - Inflow and Infiltration Removal
        - Flow Monitoring: Included recording peak flows at all SBMs whenever peak flow to the KIWWTP exceeds 60 MGD. Future work was to include data analysis and interpretation of peak flow data, development of data quality control mechanisms, evaluation of relationships between SBMs where flows from one signatory may contribute to flows captured by another Signatory SBM, and correlation of peak flows to other data points including groundwater and historical or localized rainfall patterns.
    - RFMS Section 6.1 (Annual Progress Reports): "Each Signatory will report its activities and progress individually to LCA by March 1st for compilation into the annual PADEP Chapter 94 Report".
    - Additional Details: The 2018 Chapter 94 Report referenced a March 8, 2019 Response document (to the 12/21/2018 DEP Review letter regarding the RFMS) for additional details including regional flow characterization and inflow/infiltration source removal programs planned by each signatory.
- **8/26/2019**: DEP Letter provided additional PaDEP's comments, concerns, and questions relative to the RFMS. The review indicated the KIWWTP is in a hydraulic overload condition based on submitted discharge monitoring reports submitted. The PaDEP indicated at that time a deadline of 12/31/23 for the Act 537 Plan submission. The flow monitoring with the SBMs shall begin on 1/1/21. The tributary municipal Chapter 94 reports were referenced in terms of ongoing RFMS activities. (2023 Chapter 94 Report)
- **8/2019**: DEP informed the region (Allentown and tribs) that Chapter 94 requirements were enacted due to the KIWWTP hydraulic overload condition in 2019, with additional concerns about future growth and continued efforts to address RDII. In order to process sewer planning modules in 2020, the Agency required a Corrective Action Plan to be submitted by 12/31/19. (2023 Chapter 94 Report)
- **12/31/2019**: This CAP was submitted on 12/31/2019 and was subsequently approved by PaDEP on 1/17/2020. The 2020 Connection Management Plan allowed for 1.5 MGD of planning modules to be processed. (2023 Chapter 94 Report)
- **6/25/2021**: DEP approved the Interim At 537 Plan. (2023 Chapter 94 Report)
- **12/2/2021**: WQM Permit issued to hydraulically rerate facility to 44.6 MGD. (NPDES Permit-basis flow and organic design capacity not modified).
- **3/31/2024**: 2023 Chapter 94 Annual Municipal Wasteload Report and Annual IPP Report received.
- **8/21/2024:** LCA e-mail with 8/22/2024 conference call agenda and power point presentation.
- **8/22/2024:** LCA Conference Call Invite stated: "This is a meeting to review proposed modifications to the Kline's Island Wastewater Treatment Plant. We have developed a plan with several new elements to address wet weather flows and anticipated increases in BOD and solids loading due to effluent changes at the upstream facility. We intend to maintain our current Chapter 94 / design loading for BOD, TSS, Ammonia, Flow. Our goal for the meeting is to communicate our plan, solicit feedback and understand if any planned elements might impact our permit limits". Referenced upstream facility is the LCA Pretreatment Plant. Highlights:
    - Participants:
        - DEP: Amy Bellanca, Scott Novatnak, James Berger, Staci Shoemaker
        - LCA: Liesel Gross, Albert Capuzzi, Philip DePoe, Andrew Moore

- Allentown City: Brian Chamberlain
- DRBC: David Kovach
- Technical Consultants: Chris Curran (AE.Com), Timothy Bradley (Kleinfield), Dan Koplish

- Flows and Loadings: No change in NPDES permit-basis flows (40.0 MGD) or loadings (70,000 lbs BOD5/day; Ammonia-N; TSS) proposed.
  - Organic Design Capacity: As-built facility can only handle ~47,000 lbs/day, not the permitted 70,000 lbs/day. Upgrades being proposed to allow facility to handle 70,000 lbs/day. They estimated that 10,000 lbs/day extra loading from either LCA Pretreatment Plant (transferred) or growth by 2028. CEPT is expected to help facility meet the 85% TSS reduction goal (during wet weather), send more digestible solids to digesters, and help with the transition from higher Ammonia-N limits to lower summer Ammonia-N limits. LCA is working on a LCA Pretreatment Plant replacement plan.
  - Flows: The WWTP Upgrades assumed increasing peak wet weather Treatment Plant capacity to 100 MGD (Phase 1, by end of 2027 with concurrent WWTP solids management upgrades) and 132 MGD (Phase 2, by end of 2032, prior to new interceptors increasing peak wet weather flows to the WWTP and concurrent solids management upgrades). They used a 2021 flow study hydraulic model (~87 basins) to estimate the impact of a major storm (Hurricane Ida being mentioned) circa 2035 as the source of the flow figures. They estimated ~174 MGD peak wet weather flow, with the as-built plant able to handle 87 MGD peak wet weather flow. The Phase I project is expected to reduce SSOs, but Phase 2 includes new/replacement interceptors (KISS Relief Interceptor; Park Pump Station force main extension; Western Lehigh Interceptor) that will increase peak wet weather flows received at the Treatment Plant (but eliminate SSOs upstream of the local Water Treatment Plant) by eliminating hydraulic bottlenecks. They report the hydrographs indicate that they can eliminate about 40 MGD from the collection system via (~15) municipality Source Reduction Plans (manhole inspection/rehab to stop inflow on all 25,000 manholes in the sewer system). They noted that Allentown had done a survey of a part of its system (2000 of 8000 manholes) and found issues with ~70% of its inspected manholes, with additional inspection/rehab planned projects. Allentown is still deciding upon the best method for manhole rehab. They have been submitting Corrective Action Plan (CAP) reports on progress since ~2021, per the approved Chapter 94 Hydraulic Corrective Action Plan. The Phase I Part II WQM Permit application (Phase I WWTP upgrades) will be submitted by the end of 2025. The new Act 537 Plan will be submitted in July 2025.
    - The Department noted that the basic goal is elimination of I&I from the system (maintaining WWTP received flows, not increasing them), as discussed in previous meetings, not WWTP upgrades.
      - Going from 32 MGD dry weather flow to 132 MGD wet weather flow (factor of 4:1) resembles a combined sewer system. This is a separated sewer system.
      - Perhaps the Phase I can proceed and future data/Act 537 Planning will show if Phase II WWTP upgrades are needed.
    - The Department was skeptical that the assumed 40 MGD reduction can be achieved without a program to eliminate illegal connections (sump pumps, storm drains, etc.). Pre-rehab and post-rehab monitoring will be required to quantify any reduction in I&I and determine the source areas of remaining I&I flows for targeting rehab work.
    - The Department noted such I&I problems cannot be addressed by normal annual O&M/budgeting. LCA then noted that it was looking into a regional rehab plan where the different municipalities would chip in money to correct the I&I problems in the overall system (the most bang for the buck) in addition to the municipality SRPs. Different municipalities have different views on the projects (some not expecting any growth or other benefit from the I&I projects). They noted some municipalities have already done collection system rehab work, but others are just getting started. Some municipalities have newer systems with little I&I and others have been doing a good job to address I&I as well.
    - The Department offered to have another joint LCA/Department meeting with the municipalities to get their attention.
    - The Department noted EPA will be reviewing the NPDES permitting, and would have their own views on the proposals.

    NOTE: The presentation did not explicitly identify the referenced 5-year design storm flows or the (previous POTW public comment-referenced) 10-year design storm flows (peak instantaneous, peak hourly, and daily max flows).

- KIWWTP Process Flow Diagram (Existing Conditions): They indicated the influent pump station has four single speed pumps (main) with two 2-speed pumps (auxiliary). Solids are land applied offsite. **NOTE**: The Diagram does not show: Existing hydraulic capacities or hydraulic profile; influent pipelines to headworks (to be modified in future); Influent points (hauled-in wastewater & sludges); influent/effluent flow measurement/sampling locations; the supplemental oxygen addition, any site stormwater influent per 2007 Wet Weather SOP (005 flow was going into system until 70 MGD back then; 004 flow piped to 001 discharge pipe; unclear where majority of site stormwater goes (002 or toward north of facility); the Outfall No. 002 bypass (when high river levels prevent 001 discharge); etc.
- Proposed Schedule:
  - Phase 1 (100 MGD KIWWTP peak wet weather): Completed by End of 2027.
    - Main influent/auxiliary pump station upgraded to 120 MGD (100 MGD plus 20%); Intermediate Pump station upgrades; and >87 MGD parallel flow to the CBOD5 Trickling Filters and Nitrifying Trickling Filters (no specified Trickling Filter upgrades and no parallel operation during dry weather flow): **NOTE**: This proposal will have to address impact of wet weather flows on the nitrifying Trickling Filter biology & transition back to nitrification; impacts on Ammonia-N reduction; and potential additional cold weather impacts. In addition, it is a plant bypass that will require narrative showing NPDES Permit Part A.II and B.I.G bypassing requirements have been addressed.
    - Concurrent Solids Management upgrades including Chemically Enhanced Primary Treatment (CEPT), a.k.a. coagulant addition; replacement of sludge piping with glass-lined piping; and Digester mixer improvements.
  - Phase 2 (132 MGD KIWWTP peak wet weather): **Completed by End of 2032 (probably 2031)**:
    - KRI (KISS Relief Interceptor) influent pipeline and KRI screening facility prior to influent screening. 60-inch KRI pipeline goes to 72-inch to WWTP.
    - Influent screening – 20 MGD flow diversion plus 12 MGD Park PS Force Main extension/screening to new 32 MGD aerated grit chamber, supplemental Primary Settling Tanks to Supplemental PST effluent pumps to existing Rock Media Trickling Filters.
    - 50 MGD bypass from Intermediate Settling Tanks (bypassing Rock Media Trickling Filters and Final Settling Tanks) to Chlorine Tank
    - 132 MGD Existing Pump Station and New Effluent Pumps.
    - Concurrent conversion of secondary digester into third primary digester, new 0.6-MG sludge holding tan. Fourth dewatering unit under consideration (with 3 existing belt filters).

      NOTE: KIWWTP 132 Peak Flow Schematic figure used color to distinguish existing, Phase 1 and Phase 2 flows/units, but unclear on Phase 1/Phase 2 parallel Trickling Filter (Plastic Media Trickling Filter for CBOD5 reduction; Rock Media Trickling Filter for Nitrification/Ammonia-N reduction) bypass flow paths. 100 MGD flow to new primary effluent pumps, but no bypass line show from pumps to Rock Media Trickling Filters.
      - 50 MGD Green Phase I bypass shown from Plastic Media Trickling Filters (bypassing Intermediate Settling Tanks and Rock Media Trickling Filters) to Final Settling Tank/single Chlorine Contact Tank, with 50 MGD proceeding through existing process (including Rock Media Trickling Filters, Final Settling Tanks, single Chlorine Contact Tank). Unclear if Phase 1 bypass line retained in Phase 2.
      - 50 MGD Red Phase 2 bypass shown from Intermediate Settling Tanks (bypassing Rock Media Trickling Filters and Final Settling Tanks) to single Chlorine Contact Tank.
      - 32 MGD Red Phase 2 bypass line for KRI/Park PS Force Main flows: KRI flow goes through existing influent screening. Park PS Force Main extension goes through PS FM screening. Both flows into 32 MGD aerated grit chamber, supplemental Primary Settling Tanks to Rock Media Trickling Filters, then via Final Settling Tanks, single Chlorine Tank, and upgraded effluent pumps to Lehigh River.
      - The flow diagram did not show: Other influent pipelines; hauled in-wastewater/sludge influent points; return flows; supplemental oxygen addition; flow meters/sampling points; stormwater tie-in (004 or other); etc.
  - Offsite Park Pump Station Force Main Extension (20 MGD), KISS Relief Interceptor, and Western Lehigh Interceptor projects: No date given but Phase 2 WWTP upgrades required to handle expected increased peak wet weather influent flows.

- KISS Relief Interceptor**:** 60-inch interceptor pipe to 72-inch interceptor pipe to KIWWTP. Addresses existing hydraulic bottleneck of 27-inch, 30-inch, and 36-inch pipelines going into 90-year old 30-inch interceptor prior to WWTP, plus existing surcharging/overflows.
- Park Pump Station Force Main Extension: To address another hydraulic bottleneck to WWTP.
- Western Lehigh Interceptor**:** 10.4 miles of new pipe, 250 manholes, in-line storage capacity increase claimed. Overloaded with risks of major sewer overflows in "environmentally sensitive areas".

- Permitting/Approval Process:
  - DRBC Docket: Will follow WQM permitting when they see what is being proposed. Will be checking to see how they handled the CEPT in another facility to verify BDT limits are not triggered. LCA noted that the current NPDES permit loadings predated the 2005 designation of Lehigh River as a Special Protection Water.
  - WQM Permitting: Do not put everything in the same WQM permit application.
  - NPDES Permitting:
    - Status of requested new sampling data: Being worked on (redoing one sample to meet detection levels). Old 2014 data would trigger 32 new permit limits/monitoring requirements.
    - Target date: 2024 for new draft NPDES Permit so that the POTW will know if further plant upgrading might be needed.

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9/11/2025: DEP (Berger) E-mail requiring updated NPDES permit application for restarted NPDES permitting review, due 10/11/2025.
9/11/2025: DEP (Berger) E-mail forwarding above e-mail to alternate LCA contacts (Moore and DePoe) due to undeliverable message for previous LCA site contact (Saunders). Requested site contact information be updated**.**
9/11/2025: LCA (DePoe and Moore) E-mails with correct site contact e-mail address. (E-facts updated accordingly.)
10/7/2025: Regional Act 537 Update application (hard copy) received. Its focus was on I&I-related issues.
10/30/2025: Public Upload# **357902** (NPDES Permit Application Update information) received**.**