

Application Type Renewal
 Facility Type Municipal
 Major / Minor Minor

**NPDES PERMIT FACT SHEET
 INDIVIDUAL SEWAGE
 Addendum**

Application No. PA0029432
 APS ID 826443
 Authorization ID 998970

Applicant and Facility Information

Applicant Name	<u>PA Department of Human Services (DHS) A.K.A. Department of Public Welfare (DPW)</u>	Facility Name	<u>Clarks Summit State Hospital WWTP</u>
Applicant Address	<u>CoPA Hub – Suite 150 2525 N. Seventh St Harrisburg, PA 17110-2511</u>	Facility Address	<u>Clarks Summit State Hospital Clarks Summit, PA 18411</u>
Applicant Contact	<u>Carl Rundquist</u>	Facility Contact	<u>Paul Pasek</u>
Applicant Phone	<u>(717) 772-2088</u>	Facility Phone	<u>(570) 587-7246</u>
Client ID	<u>51700</u>	Site ID	<u>271078</u>
Ch 94 Load Status	<u>Not Overloaded</u>	Municipality	<u>Newton Township</u>
Connection Status	<u>No Limitations</u>	County	<u>Lackawanna</u>
Date Published in PA Bulletin	<u>March 18, 2017</u>	EPA Waived?	<u>No</u> EPA compliance involvement; EPA commented on 2017 Draft NPDES Permit
Comment Period End Date	<u>May 3, 2017</u>	If No, Reason	
Purpose of Application	<u>Application for a renewal of an NPDES permit for discharge of treated Sewage</u>		

Summary of Review

This is FS Addendum is for a 0.395 MGD Redraft POTW NPDES Permit for the PA Department of Public Welfare (DPW)/Department of Human Services (DHS) Clark Summit State Hospital's Sewage Treatment Plant that discharges to Falls Creek (CWF; Stream# 28678; impaired for aquatic life) near the headwaters.

- This facility is a POTW per Chapter 92a definitions.
- It is a hospital WWTP that received school flows, with the 2/27/2024 EPA CWA Compliance Evaluation and Inspection Report stating that the EPA inspectors were informed the facility has an existing Act 537 agreement with Newton Township that allows Newton Township to contribute up to 300,000 GPD to the WWTP in emergency situations.
- It is a failing severely-underloaded 1950s WWTP (Trickling Filters), with long-term compliance issues, discharging to a heavily effluent-dominated stream.

A Redraft NPDES Permit was required due to age, NPDES Permit template changes, updated DEP Policies (EDMR/ICIS reporting requirements, etc.) requirements, regulatory changes (E Coli Chapter 93 WQS, etc.), and new application information (sampling data used in updated water quality modeling) found in Public Upload No. **345600**. The Redraft NPDES Permit will also help the applicant to design the proposed WWTP upgrading project described in its Compliance-related correspondence. No design information on the proposed treatment plant replacement project has been provided to date (other than several feasibility studies that contained recommendations that might not be followed). This FS Addendum has expanded sections due to age of previous 2017 Draft NPDES Permit and to consolidate information for the benefit of the permittee as it designs a replacement Treatment Plant.

Approve	Deny	Signatures	Date
X		James D. Berger (signed) James D. Berger, P.E. / Environmental Engineer	January 20, 2026
X		 Edward Dudick, P.E. / Environmental Engineer Manager	January 29, 2026

Summary of Review

The permitting had been on-hold while the Permittee looked at options such as Regionalization, privatization, and the chosen WWTP replacement option to resolve long-term compliance issues from old, failing and severely underloaded facility (originally built in the 1950s with a projected 0.600 MGD flow). See Background Section (below) and Communications Log for history. See 2017 Draft NPDES Permit Fact Sheet for additional information on facility history and compliance issues.

Changes to 2017 Draft NPDES Permit:

- Parts A, B, and applicable C conditions: Updated standard municipal NPDES Permit Template conditions. Regeneration also modified NPDES Part C condition numbering.
- Part A.I.A and Part A.I.B:
 - Schedules of compliance updated per 6/6/2024 Permittee Letter schedule for design, construction and start-up operations of replacement WWTP final compliance milestone (start-up of replacement WWTP circa 1/1/2029).
 - Ammonia-N limits moved to Part A.I.A and A.I.B (from Part A.I.C) due to WMS/ICIS coding issues and Part C schedule of compliance for new daily max Ammonia-N WQBEL.
 - Part A.I.B Total Copper Final WQBELs updated per updated Reasonable Potential Analysis.
 - Final TRC monitoring tied to Part C.I.D (Chlorine Minimization) conditional monitoring requirement in case they pursue UV disinfection.
 - UV disinfection monitoring conditional upon them implementing it in the WWTP replacement.
- Part A.I.C (Outfall No. 001):
 - CBOD5 and TSS Limits: Mass loadings from previous permit retained (Antibacksliding prohibition) and changed BOD5 back to CBOD5 for same reason, after accounting for claimed 0.300 MGD Newton Township emergency loadings.
 - 85% BOD5 and TSS Minimum monthly average reduction limit per regulatory requirements and to address EPA public comment. Facility progress in removing I&I, plus commitment to start-up of replacement WWTP by 1/1/2029. There is a standard 1.2 BOD5 effluent: 1.0 CBOD5 effluent ratio in the absence of better site specific information.
 - CBOD5 and TSS proposed weekly limits changed back to daily max to reflect previous permit and 1/week sampling requirement
 - E Coli Monitoring: Standard M&R requirement added (Chapter 92a.61)
 - Total Zinc Monitoring: Total Zinc monitoring requirement added per updated Reasonable Potential Analysis
 - UV Intensity Monitoring: Conditional M&R requirement in case the replacement WWTP goes to UV disinfection, to avoid the potential need for NPDES Permit amendment requirements in that event.
 - Bromide Monitoring: Deleted due to new sampling data.
- Part A.I Additional Requirements: Hydraulic design capacity load redesignated 0.395 MGD to correspond with NPDES permit basis flow and due to nonfunction WWTP units/equipment at the failing (originally 0.600 MGD) WWTP. The organic design capacity value will be updated in the future Replacement WWTP WQM permit, so original design capacity retained until the next NPDES permit renewal or amendment.
- Part C.III (Daily Max Ammonia-N and Total Residual Chlorine (TRC) Schedule of Compliance):
 - Clarified to only apply to new Ammonia-N daily max limit, and not existing Ammonia-N limits (but WWTP replacement will impact noncompliance with existing Ammonia-N limits and other limits).
 - New TRC limits have not been moved to a TRC-specific schedule of compliance because the WWTP upgrade will be the means of compliance with the more stringent future limits. Part A.I.B (WWTP construction/start up) has a UV intensity monitoring requirement in event the Replacement WWTP uses UV disinfection. Due to small stream, it is unlikely any site-specific studies (chlorine demand or mixing study) would allow for any relief from the Final TRC WQBELs.
 - Schedule of Compliance has been adjusted to not conflict with the 6/6/2024 Permittee Letter (responding to compliance letter) Schedule of Compliance. The NPDES Permit compliance milestones represent the latest acceptable date for compliance with the identified milestone. Chapter 92a.51 does not allow for interim compliance milestones more than 1 year apart, and requires calendar quarterly reporting where practicable.

Compliance Milestone	NPDES Permit Compliance Milestone date	6/6/2024 Permittee Compliance Schedule milestones
Feasibility Study	Completed	Permittee has chosen the Replacement WWTP option to address ammonia-N issues. This option means

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		a replacement disinfection system as well.
Final plan completion	12/31/2026	All permit approvals to be received by 12/25/2026
Start construction	12/31/2027	Effective date of contracts is 5/9/2027.
Construction progress reports	Quarterly calendar reporting (March 31, June 30, September 30, and December 31) after construction begins	Assorted interim milestones for design status, bidding, and construction in the 2026 – 2028 time-frames.
End Construction	12/7/2028	Final Inspection/operational WWTP by 12/7/2028
Compliance with Final WQBELs	1/1/2029 (calendar month following construction completion)	12/7/2028

- Part C.V (WQBELs for Toxic Pollutants: Total Copper): New standard condition replaced previous (obsolete) Toxic Reduction Evaluation (TRE) conditions. Chapter 92a.51 does not allow for interim compliance milestones more than 1 year apart, and requires calendar quarterly reporting where practicable.

Compliance Milestone	NPDES Permit Compliance Milestone date	6/6/2024 Permittee Compliance Schedule milestones
Complete TRE Work Plan and Submit Work Plan if Requested by DEP	6/30/2026	Permittee has chosen the Replacement WWTP option to address ammonia-N issues. Interim Replacement WWTP design (75%) to be completed by 6/28/2026. 100% by 8/27/2026.
Complete TRE and Site-Specific Data Collection	6/30/2027	Effective date of WWTP Replacement contract is 5/9/2027, so any alternate TRE option must be determined by this point. If the facility can meet the Total Copper limits by the Final WQBEL Effective date (1/1/2029), then TRE requirements are minimized. If not, more will be required
Begin Implementing Actions Identified in the TRE to Reduce Pollutant Load (if applicable)	9/30/2027	Effective date of contracts 5/9/2027, so any chosen TRE action would require implementation by this point.
Submit Final WQBEL Compliance Report	12/31/2027	The Final WQBEL Compliance Report would have to include any proposed NPDES Permit amendment to modify Final Total Copper WQBELs by this date. If Replacement WWTP will address requirement, then documentation of completed TRE work still needed.
Complete Actions Identified in TRE and Comply with Final Permit Limit	1/1/2029	Complete Actions Identified in TRE and Comply with Final Permit Limit by 12/7/2028.

Public Comment/Responses: Responses bolded.

4/5/2017 EPA (Dana Hales) E-mailed public comments on the Draft NPDES Permit: This is a minor permit that discharges to Falls Creek, and is considered a non-significant Chesapeake Bay discharger. Therefore, EPA has performed a limited review of the draft permit based on the wasteload allocation requirements of the Chesapeake Bay TMDL. I have

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completed my review and offer no comments related to the TMDL requirements. However, it was noted during our review and as we discussed on the phone today, that Part C.II. of the permit includes a compliance schedule for the existing ammonia-nitrogen WQBEL and the technology-based requirement of 85% removal for BOD5 and TSS. We offer the following comments regarding this permit condition:

1. The draft permit provides a compliance schedule for ammonia-nitrogen, even though the WQBEL was already in effect in the previous permit. PA's Chapter 92a.51 was indicated as the justification for allowing this schedule. 40 CFR 122.44(l)(1) states that when a permit is renewed or reissued, interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless circumstances that formed the basis of the previous permit have materially and substantially changed). Since the ammonia-nitrogen WQBEL was already in effect in the previous permit (and as we understand, had been in effect for a number of years), affording a compliance schedule to meet the existing WQBEL would be considered backsliding per 40 CFR 122.44(l)(1). Any proposed permit requirement that is less stringent, would need to meet one of the exceptions listed under 40 CFR 122.44(l)(2)(i). It is not clear to us that the exceptions apply here, so it is our position that a compliance schedule should not be granted for ammonia-nitrogen. **Part A.I.A, A.I.B, and Part C have been revised to clarify that the schedule pertains only to the new Daily Max Ammonia-N WQBEL (and new Final TRC WQBELs), and incorporates the Permittee-provided WWTP replacement project compliance milestones. The Permittee has committed to a WWTP Replacement Project that will address the long-term pattern of Ammonia-N permit limit exceedances in addition to the new limit.**
2. The draft permit also provides a compliance schedule to meet the 85% removal requirement for POTWs (a technology-based requirement). This facility is being reclassified as a POTW and this is being applied as a new requirement. 301(b) of the Clean Water Act (CWA) establishes statutory deadlines for meeting effluent limitations, and all of the statutory deadlines for meeting limits requiring the application of BPT, CBT and BAT have passed. Specifically, 40 CFR 125.3(a)(1)(i) states that permits shall contain technology-based limit treatment requirements for POTWs, based upon secondary treatment from the date of permit issuance. A compliance schedule, therefore, cannot be granted to meet the secondary treatment 85% removal requirement for BOD5 and TSS. **The 85% minimal monthly average removal limits (Chapter 92a.47) have been incorporated into Part A.I.C and were already included in the Part A.I Additional Requirements Item 2.**
3. If additional time is needed for the facility to come into compliance with these permit requirements, the additional time could be afforded through an enforcement action outside of the permitting process. EPA has had a conversation with Central Office about this issue, and if you feel that more discussion is necessary we can certainly set up a conference call. **The Department is utilizing its enforcement discretion to encourage investment to resolve the environmental problems in this situation, instead of penalty enforcement. The Permittee has chosen replacement of WWTP to address all compliance issues with Permittee-provided Schedule of Compliance. See comment-responses (below) for more details regarding the compliance schedule.**

5/3/2017 Department of Human Services (DHS) Letter Public Comment:

- The DHS/DPW requested "the standards, limitations, and obligations under the Draft Permit be modified and/or the timeframes for compliance be extended to allow the Hospital to determine and implement the best option for meeting appropriate environmental standards". DHS is looking into all of its options, including the possibility of connecting to a regional publicly owned wastewater treatment system (a.k.a. "regionalization"). **The Department provided additional time for the Permittee to pursue its options via the long-term permitting hold. The Permittee has chosen the replacement WWTP option (with 6/6/2024 Permittee Letter schedule of compliance milestones) to address noncompliance issues and failing treatment plant issues. The Permittee has indicated Regionalization is not an option. In the updated NPDES Permit application, the Permittee has not pursued derating (and has an emergency agreement to accept up to 300,000 GPD from the local municipality per application). The new Final WQBELs' effective dates have been modified to conform to the Permittee-identified compliance milestone target date for replacement WWTP start-up.**
- It will be extremely difficult – financially and operationally – for the Hospital to meet the new, heightened, requirements within the Draft Permit's five year period. **This comment is obsolete due to long-term permitting hold and the 6/6/2024 Permittee Compliance-related letter that committed to a replacement WWTP with a defined compliance schedule. The Permittee has reportedly undertaken some needed O&M work in 2025, indicating progress in meeting existing limits. The Permittee is a state agency with access to state resources and indicates a facility-specific capital improvement project is ongoing.**

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6/6/2024 Permittee Letter Response to 5/24/2024 DEP NE M&C Letter: Highlights relevant to permitting: DGS and DHA are currently in the process of a design and construction project to replace the existing wastewater treatment plant due to such considerations as Ammonia-N exceedances (“inability to nitrify ammonia to NPDES permit limits at all times of the year spans nearly a decade”), plant aging beyond design life, unavailability of spare parts, and plant equipment corroded/eroded beyond repair. CBOD₅, TSS, DO, and Fecal Coliform exceedances were attributed to mechanical failures or weather events. They planned for Upper Trickling Filter O&M work and then to look at process to see if they can perform adjustments in any feasible way to improve ammonia removal. The Anticipated Design and Construction Schedule milestones included:

- Phases 1 and 2 Infiltration and Inflow study and remediation: To be completed by 9/1/2025
- Schematic Design (25%): 2/28/2026
- Design Development (50%): 4/29/2026
- Interim Construction Documents: 6/28/2026
- Construction Documents Design of New WWTP (100%): 8/27/2026
- All Permit Approvals Received: 12/25/2026
- Construction Documents Approved: 1/24/2027
- Bid/Proposal Advertisement: 2/28/2027
- Bid/Proposal Opening: 4/11/2027
- Effective date of Contract: 5/9/2027
- Final Inspection/Operational WWTP: 12/7/2028

Background Information:

- General History: See Communications Log and previous 2017 Draft NPDES Permit Fact Sheet for further details.
 - The facility is operating under the administratively-extended 2/9/2009 NPDES Permit.
 - The renewal application was received in 2013 but long-term compliance issues delayed permit action. The facility has a long-term pattern of permit limits exceedances due to age/condition of facility, old technology (Trickling filters units not originally designed to meet existing Ammonia-N limits), and severe underloading (facility was originally designed for 0.600 MGD flows but was receiving flows in the 0.050 – 0.100 MGD monthly average range, except during intermittent periods of high stormwater I&I flows).
 - The 3/3/2017 Draft NPDES Permit had been on-hold pending DPW/Department of Human Services exploration of regionalization (connection to a local POTW – Abington Regional Wastewater Authority (ARWA) NPDES Permit No. PA0028576 (South Abington Township, Lackawanna County), which was reportedly denied in summer of 2023), third party interest in potential connection (nothing materialized) for new development; and DPW exploration of potential WWTP upgrading/replacement (including derating option to lower NPDES Permit Basis flows) due to assorted site-specific issues.
 - The Department requested updated NPDES Permit application information for preparation of this Redraft NPDES Permit via 2/7/2025 DEP (Berger) E-mail with follow-up correspondence. (See communications log.) The facility has been doing O&M per a 9/11/2025 DPW (Carl Rundquist) E-mail:
 - Our 1st priority for the past 2.5 months has been to keep our wastewater plant running and to provide adequate treatment of wastewater and avoid polluting Commonwealth waters. We have had 5 major equipment failures in the last 2.5 months at the Clarks Summit State Hospital WWTP so this has set us back with our timing for our NPDES permit renewal. In this period, both recirculation pumps have been replaced and are operational, both primary sludge pumps have failed and one has been rebuilt and is now operational as of 9/8/25. We have another new replacement primary sludge pump being scheduled for purchase. The lower rotating arm on our secondary trickling filter has also failed and was sent out to be rebuilt on August 1, 2025 and should be back in mid October 2025 for installation. Even with the secondary trickling filter out of service we are somehow still meeting all of the limits of our NPDES permit.
 - We are trying to eliminate as much I&I as possible up front with an ongoing construction project to hopefully significantly down size the new proposed WWTP hydraulically as much as possible and save a significant amount of Commonwealth funds. After the I&I reduction project ends, we will have a several month period of influent flow measurements to verify our influent flow rates for design purposes. We do not want to design for our existing peak hydraulic flows as we feel we can lower these flows with our existing I&I removal project and save Commonwealth money on the new plant

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design on a hydraulic basis. Several large sources of I&I in our system are being removed during the ongoing I & I project at CSSH.

- The 9/11/2025 (supplemented 1/14/2026 with new influent/effluent data) revised/updated NPDES Permit Renewal Application Information:
 - Replacement WWTP Project: WWTP requires replacement due to extreme age of WWTP, with a capital project in place to build a new plant. Periodic equipment repair and replacement will be necessary until the STP is replaced. Long history of Ammonia-N issues blamed on old Trickling Filter technology in use during cold weather, but application indicated current compliance after assorted site O&M work.
 - Application did not propose derating (reduction of NPDES Permit Basis flows). **NOTE:** Derating would not allow for relief from existing permit limits unless a regulatory Antbacksliding Exception was shown to apply, but nothing was proposed.
 - Application did not provide application-required design information for any replacement WWTP and/or plant upgrades/changes and/or schedule. **NOTE:** No permit coordination information for such a project was included. To date, no Part II Water Quality Management Permit Application has been received for a replacement Treatment Plant design. The 6/6/2024 Permittee Letter compliance schedule's Final Compliance Milestone (12/8/2028 for replacement WWTP start-up) would require facility to meet new limits starting 1/1/2029. In terms of the NPDES Permit, a Part A.I.C UV monitoring requirement (only applicable if UV disinfection is installed in the replacement WWTP) has been included to avoid potential need for NPDES permit amendment later. Any WWTP-specific technology-related NPDES permit condition (SBR conditions for intermittent discharges, etc.) can potentially be addressed in the WQM permitting.
 - Updated Application information:
 - Service Area: This WWTP receives contributions from the Abington Heights School District. The
 - Hospital has ~550 patients and personnel. **NOTE:** At the DWFMS Section 43.51 default assumptions (150 – 250 GPCD; 0.17 lb BOD5/day/capita; no allowance for extra facilities), this would equate to 82,500 – 137,500 GPD and 93.5 lb BOD5/day loadings.
 - School District has ~1,400 students. **NOTE:** DEP Inspection Report indicates Abington Middle and Elementary Schools are the specific sources. At the DWFMS Section 43.51 public school default assumptions (7 GPCD, 0.04 lb BOD5/day/capita for toilets only), this would equate to 9800 GPD and 56 lbs BOD5/day loadings, with additional DWFMS allowances required for kitchen and/or gym. Reported sewer system I&I issues would be contributing to higher peak wet weather flows to the WWTP, but not organic loadings.
 - 2/27/2024 EPA CWA Compliance Evaluation and Inspection Report stating that the EPA inspectors were informed the facility has an existing Act 537 agreement with Newton Township that allows Newton Township to contribute up to 300,000 GPD to the WWTP in emergency situations. **NOTE:** This had been mentioned by the Permittee, but no documentation submitted in the NPDES Permit Renewal Application. No derating proposed in the NPDES Permit renewal application.
 - AADF Flows: 0.049 MGD AADF (2024), 0.062 MGD AADF (2023), and 0.048 MGD (2022), with highest August 2024 monthly average flow at 0.077 MGD. **NOTE:** AADF would be reduced due to summer school breaks.
 - Influent loadings: See Effluent Section for data. Does not show excessive dilution in 2026 submitted sampling results..
 - Effluent loadings: See Effluent Section for data. Data shows facility still not compliant with assorted existing permit limits.
 - Sludge use and disposal description and location(s): 4.008 dry tons of sewage sludge was produced in 2024 and sent to WWSA.

Part C Special Conditions: Basis for Part C special conditions (which changes from 2017 Draft NPDES permit bolded).

- Parts C.I.A, B, C: Standard conditions (stormwater prohibition; necessary property rights; proper management of residuals).
- Part C.I.D: **Updated** Chlorine Minimization condition due to effluent-dominated stream **and possible conversion to UV disinfection.**
- Part C.I.E: Dry stream condition due to effluent-dominated receiving stream with little dilution.

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- Part C.I.F: **Revised** O&M Plan conditions due to facility operating far below its original 0.600 MGD design capacity, ongoing pattern of violations, and other new permit requirements.
- Part C.I.G: **Updated** Operator in responsible charge notification requirement. The facility has had noncompliance issues (including discovery of unpermitted discharge) and previous eDMR reporting issues.
- Part C.I.H: Site-specific Best Management Practices (BMPs) for the storage, distribution and application of salt and deicing chemicals on the hospital's private roads, driveways, parking lots, and walkways due to known facility contribution to excessive chlorides and salt ions in the receiving stream. This is a narrative effluent limit. The permittee can choose to implement BMPs from any national or state source.
- Part C.VI.I: Existing Site-specific Condition (discharge/stream changes) retained due to effluent-dominated stream.
- Part C.VI.J: Annual Chapter 94 Report condition for this POTW unless the Department specifically requests such submittals.
- Part C.II: Chesapeake Bay Nutrient conditions suffice for Phase 4 CB facilities.
- **Part C.III: Revised Schedule of Compliance for Replacement WWTP clarified to apply only to Ammonia-N Daily Max Final WQBELs and TRC Final WQBELs.**
- Part C.IV: Standard Solids Management standard conditions for non-lagoon Treatment Facilities.
- **Part C.V: New WQBELs for Toxic Pollutants condition replaces superseded Toxic Reduction Evaluation (TRE) Conditions for Total Copper.**
- Part C.VI: Whole Effluent Toxicity (WET) Testing conditions due to stream impairment with multiple known and potential synergistic/cumulative causes for 55:1 effluent-dominated stream.
- Part C.VII: TRC Effluent Limitations Below Quantitation Limits conditions because new WQBELs are below current DEP Target QLs, but DEP Target QLs might become more sensitive over time.
- Part C.VIII: Chemical Additive conditions due to concerns over boiler wastewater impacts on the impaired receiving stream and potential for chemical additives to negatively impact receiving stream.

Public Participation

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

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	.395
Latitude	41° 29' 7.78"	Longitude	-75° 44' 53.51"
Quad Name	Scranton	Quad Code	0740 (3.21.4)
Wastewater Description: Sewage Effluent			
Receiving Waters	Falls Creek (CWF, MF)	Stream Code	28678
NHD Com ID	66408581	RMI	3.3900
Drainage Area	0.96 square miles	Yield (cfs/mi ²)	0.01238
Q ₇₋₁₀ Flow (cfs)	0.011 CFS	Q ₇₋₁₀ Basis	PAStreamstats-derived LFY
Elevation (ft)	~1160 Feet	Slope (ft/ft)	-
Watershed No.	4-G	Chapter 93 Class.	CWF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	28678
Assessment Status	Localized impairment for Aquatic Life; Recreation impairment		
Cause(s) of Impairment	See below; Pathogens		
Source(s) of Impairment	Facility source for Ammonia-N loadings and salts (winter salt usage suspected contributing source); Unknown sources for pathogen		
TMDL Status	-	Name	-
<u>Background/Ambient Data:</u> See table below		<u>Data Source:</u> 2/4/2015 DEP Biologist "Cause/Effect Stream Survey included 11/3/2015 Stream sampling immediately upstream of the Outfall #001 discharge (FC01) and ~400 feet Downstream (FC02)	
<u>Nearest Downstream Public Water Supply Intake</u>		Danville	
PWS Waters	Susquehanna River	Flow at Intake (cfs)	-
PWS RMI	-	Distance from Outfall (mi)	76

Changes Since Last Permit Issuance: Permit coordinates updated per application. Illicit discharge (boiler blowdown was previously piped to stream until 2016) was found and ended.

- Stream impairment found (pathogens of unknown sources per E-maps).
- The 12/4/2015 DEP Biologist "Cause/Effect Stream Survey" found a localized aquatic life impairment. Since the 2015 sampling locations were very near the headwaters of the stream, the DEP biologist (Tim Daley) has clarified it was considered a more "localized" impairment at the time of that survey (not impairing all of Falls Creek) with additional downstream samples needed to be collected to fully capture the length of impairment.
 - The receiving stream was impaired for aquatic life upstream of the facility.
 - The facility has caused changes to the macroinvertebrate community immediately downstream of the discharge (i.e. contributing to ongoing impairment).
 - Upstream sampling indicated elevated specific conductivity, chloride, and TDS from an unknown upstream source. See Table below.
 - Downstream sampling showed increased specific conductivity, chloride, and TDS due to additional contribution from the facility.



FallsCreekAssess20
15.pdf

Other Comments:

- **Effluent-dominated Stream:** The discharge location is at the Falls Creek headwaters, in an effluent-dominated location, but the facility discharge has historically been a fraction of its permitted discharge capacity. This is a 55:1 effluent dominated stream at the 0.395 MGD NPDES permit basis flows.
- **Q7-10 Low Flow/LFY:** USGS PA Streamstats was used at a downstream Falls Creek location (where drainage area was within the regression equations range) per the LFY Method (Q7-10 low flow yield divided by stream drainage area) to derive the overall watershed Low Flow Yield (CFS/square mile). The watershed LFY was then multiplied by the drainage areas at points used for the water quality modeling to calculate the Q7-10 low flow (lowest 7-day flow in a 10-year period) at those locations. The Q7-10 low flow is basically the stream groundwater recharge rate under critical design conditions used in DEP water quality modeling.
- **Chesapeake Bay:** This is a Phase 4 Chesapeake Bay facility with unusually high TN effluent concentrations due to inability to meet existing Ammonia-N limits due to failing and severely underloaded treatment plant.
- **Falls Creek Impairments:** E-maps indicated that the receiving stream was “attaining” for aquatic life, but impaired for recreation due to pathogens of unknown source. The receiving stream was previously determined to be impaired for aquatic life per 2015 Stream Cause/Effect Survey. Pathogen impairment found per E-maps. In terms of known/potential causes of impairment:
 - **Pathogens:** If compliant with existing permit limits, the facility should not be contributing to pathogen impairment.
 - **Ongoing Exceedences of the Ammonia-N WQBELs:** This will ultimately be addressed by a replacement Treatment Plant.
 - **Unapproved Boiler Discharge Outfall:** Unauthorized Outfall has been eliminated. Chemical Additive conditions added to permit due to uncertainties about all existing causes of localized stream impairment.
 - **Toxic Pollutants:** The Reasonable Potential Analysis showed that copper had Reasonable Potential to cause exceedances in the receiving stream. Part C. (WQBELs for Toxic Pollutants) conditions have been added to the permit. Zinc monitoring also required. WET testing added due to potential cumulative/synergistic impacts on the 55:1 effluent-dominated stream at 0.395 MGD NPDES Permit-basis discharge.
 - **Salts (Chapter 92a.10; 92a.46(1)):** Additional sampling data, submitted January 2017, indicated a high specific conductivity in the site effluent (triple DEP Biologist upstream sample) indicating site effluent is contributing salt ions to the effluent-dominated stream. The DEP Biologist Report and sampling showed that the facility is a contributor to elevated stream TDS, chlorides, and salt ion concentrations (winter salts include: Sodium Chloride; Calcium Chloride; Magnesium Chloride; Potassium Chloride; and other compounds) which can impact stream biology.
 - This permit will require additional monitoring for Specific Conductivity, TDS, Chlorides, Sulfates, and Bromides to gather information on effluent loadings.
 - This permit will require implementation of stormwater Best Management Practices in regard to winter “salting” as a narrative effluent limit to prevent excessive salt residues from impacting the waters of the Commonwealth. There are a variety of nationally recognized sources of salt storage, distribution, and application (parking lots, roads, walkways) Best Management Practices that the facility can choose from. The need for additional stormwater outfalls and stormwater-related practices will be re-evaluated in the next NPDES Permit Renewal cycle.
 - **Therapeutic/Pharmaceutical Products and Breakdown Products:** The State Hospital WWTP receives sewage containing therapeutic/pharmaceutical products and/or their breakdown products (emerging contaminants of concern). Hospitals are required to segregate and separately dispose of any medical (infectious, chemotherapeutic, lab) wastes per other regulatory requirements, but there would be some constituents discharged to the heavily effluent-dominated stream. Whole Effluent Toxicity (WET) Testing (Chapter 92a.27(a)(2)) will be required due to known local impairment and to gather information. The WET Testing requirement will be re-evaluated during the next NPDES permit renewal cycle. Factors requiring WET Testing in this permit term include the cumulative and synergistic impacts of:
 - Known stream impairment for aquatic life including long-term pattern of Ammonia-N exceedances
 - Potential pass-through to the 55:1 effluent-dominated stream precluding dilution
 - Elevated stream concentrations of TDS, chlorides and salt ions (sodium, calcium, magnesium, potassium, etc.

Table 1 (Available Stream Sampling & Related Information)

Constituent	Upstream Sample (FC01)	Downstream Sample (FC02)	Application Effluent Data	DMR data range (7/1/2015 to 6/30/2016)	Limits
Flow (MGD)	-	-		0.041 – 1.088 (30-day) 0.113 – 4.315 (daily max)	0.395 (ADF permit basis)
pH (SU)	7.13	7.34	6.5 (min) 8.3 (max)	6.63 – 7.5	6.0 – 9.0
Temperature	8 °C (~46.4 °F)	8.3 °C (~46.9 °F)	-	-	-
Hardness (mg/L)	127	138	-	-	-
Spec. Conductivity (umhos/cm)	902.00	1039.0	-	-	-
Ammonia-N (mg/L)	<0.02	0.35	0.05 (min) 22.0 (max)	0.48 – 10.74 (30-day)	0.5S/1.5W (30-day) 1.0S/3.0W (IMAX)
Total N (mg/L)	0.70	2.84	1.5 (min) 11.7 (max)		-
Total P (mg/L)	0.028	0.451	2.4 (min) 4.6 (max)		-
Nitrate (mg/L)	0.39	1.54	-	-	-
Nitrite (mg/L)	<0.20	<0.44	-	-	-
Nitrite-Nitrate (mg/l)	<0.59 (calculated)	<1.98 (calculated)	4.2 (min) 32.1 (max)	3.87 – 7.79	-
TDS (mg/L)	526	626	1730 (1 sample)	-	-
TSS (mg/L)	<5	10	-	5.3 – 20 (30-day)	30.0 (30-day) 45.0 (Daily Max)
Chlorides (mg/l)	232.00	259.00	-	-	-
Sulfate (mg/l)	19.09	21.56	-	-	-
Salt Ions:	-	-	-	-	-
Calcium (mg/l)	42.990	47.300	-	-	-
Potassium (mg/l)	2.360	3.533	-	-	-
Magnesium (mg/l)	4.645	4.898	-	-	-
Sodium (mg/l)	124.700	126.00	-	-	-
Constituents of Interest:	-	-	-	-	-
Copper (ug/l)	<4	10.400	20.8 (1 sample)	-	9.33 (30-day)*
Lead (ug/l)	<1.0	<1.0	27.7 (1 sample)	-	3.255 (30-day)*
Zinc (ug/l)	<5.0	6.570	58.3 (1 sample)	-	119.8 (30-day)*
Fe (ug/l)	353.00	382.000	-	-	-
Al (ug/l)	23.17	81.16	-	-	-
Mn (ug/l)	441.000	359.00	-	-	-
Total Residual Chlorine (TRC) (mg/l)	-	-	0.092 (min) 2.50 (max)	0 – 0.2 (30-day) 0 – 0.4 (IMAX)	0.01 (30-day)* 0.03 (IMAX)*
Fecal Coliform (#/100 ml)	-	-	1 (min) 20,000 (max)	1 – 448 (30-day)	200S/2000W (GEO/IMAX) 1000S/10000W (GEO/IMAX)*

*New or Revised Permit Limit in this Permit Cycle.

Treatment Facility Summary				
Treatment Facility Name: Clarks Summit State Hospital WWTP				
WQM Permit No.	Issuance Date	Scope		
8530	1954	The 1954 Permit required a complete new STP and outfall be constructed including screen chamber, two “high rate recirculating type” rock filters, final clarifier, sludge digester, glass-enclosed sludge drying beds, control building, chlorination system, etc. with 2500 LF outfall sewer to creek. Plant originally designed for 0.6 MGD annual flow; 1.05 MGD peak flow; and minimum flow of 0.35 MGD per 1954 Final Report and Basis for Design.		
3592402	2/25/1992	STP modification involving the construction of an aerobic digester and dual component chlorine contact tank. The existing chlorination system was to continue in use.		
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Trickling Filter With Settling	Hypochlorite (with dechlorination)	0.395
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.395 MGD (permit) 0.600 (original design)	610 lb BOD5/day* (original design)	Not Overloaded (severely underloaded)	Aerated Sludge tank/digester with abandoned sludge drying beds onsite.	disposal

*Original 8/20/1954 “Sewage Collection and Treatment Project Final Report and Basis of Design” assumed that the proposed plant would have the capacity to service 2680 persons (patients and employees) at the original 0.60 MGD design flow.

- The High Rate Recirculating Rock Filters (i.e. Trickling Filter) Primary Filter had an identified design loading of 450 lb BOD/day (including an allowance for recirculation) and the second filter had an identified design loading of 160 lbs BOD/day (including an allowance for recirculation). i.e. ~610 lb BOD/day design capacity (with allowance for recirculation). In practical terms, the facility is severely underloaded at 0.048 MGD – 0.069 MGD AADF in the 2022 – 2024 time-frames, with failing or non-operational equipment/treatment units that are operating far outside their original design assumptions. Lower as-built/as-operated capacities must be expected.
- May 2012 Unitech Report assumed the primary biofilter (trickling filter) had 430 lb BOD/day capacity (page 25) and the second filter BOD capacity was not explicitly assumed. The May 2012 Report Appendix E (Basic Design Criteria) assumed an annual average 659 lb BOD/day loading at 200 mg/l BOD concentration for design comparison.
- The 2026 Revised Application assumed an 823 lb BOD5/day organic design capacity (but without technical justification).

Changes Since Last Permit Issuance:

- The April 22, 2015 PADHS Letter indicated that several minor upgrades have been implemented (Trickling Filter media replacement, installation of VFD driven recirculation pumps, and some SCADA features).
- The January 30, 2015 PADHS Letter noted that the STP had:
 - Upgraded the STP electrical systems.
 - Installed of a Muffin Monster/Grinder pump at head of plant.

- Installed new dispensing tanks and chemical feed pumps for the sodium hypochlorite and sodium bisulfite.
- Assorted O&M work done in 2025 while the facility is proposing a replacement WWTP (no design details available).

Other Comments:

- Replacement WWTP: The permittee has committed to a WWTP replacement project, but no design details are presently available. Anticipated replacement WWTP start-up in 12/2028.
- Minimum Average Reduction Percentage: Using application influent (1 sample after O&M work) and effluent data (3 samples after O&M work), they would meet the 85% minimum monthly average reduction, but it is unclear if that would be the case in months of heavy precipitation (with influent dilution).

Constituent	Influent	Effluent	Reduction
BOD5	212 mg/l average	16.1 mg/l CBOD5* average The standard default is 1.2 BOD5/1 CBOD5 in treated sewage (i.e. 19.32 mg/l BOD5 here)	~90%
TSS	203 mg/l average	25.7 mg/l average	~87%

* BOD5 = CBOD5 plus nitrogenous oxygen demand.

- 2026 Updated Application Existing WWTP description: WWTP was built in 1954 and, along with various periodic minor improvements and equipment replacements since that time, received a significant upgrade in 1996. Basically, the current treatment plant consists of the following facilities: (1) headworks containing coarse bar screen influent chamber, comminutor with screened bypass channel, Parshall flume, and distribution chamber which apportions plant influent flow along with plant recycled flow to the primary clarifiers; (2) two primary clarifiers; (3) primary and secondary biofilters; (4) final clarifier; (5) chlorine contact tank and associated chlorination (12.5% sodium hypochlorite) and dechlorination facilities (sodium bisulfite); (6) sludge digester with associated aeration tank and blower building; (7) abandoned sludge drying beds with greenhouse enclosure; and (8) control building with recirculation pumps, sludge pumps, and laboratory, maintenance, and office areas. Soda ash is used for pH/alkalinity control. Originally, the treatment plant was permitted to discharge 0.600 million gallons per day (MGD) to its receiving stream (Falls Creek); however, the latest National Pollutant Discharge Elimination System (NPDES) permit (effective date of March 1, 2009) recognized the request of the Department of Public Welfare to have the permitted capacity reduced to 0.395 MGD.
- Replacement WWTP design: The 2026 Revised Application contained no description of the Replacement WWTP design. The Permittee had conducted several feasibility studies and could always propose something else in a future WQM permit application.
- 2012 Feasibility Study: The May 2012 “Wastewater Planning and Feasibility Study” for the Clark Summit State Hospital (prepared by UNI-TEC Consulting Engineers) was intended to address winter ammonia-N exceedances, potential new Chesapeake Bay mass caps (Total Nitrogen & Total Phosphorus), and operations up to Design Year 2035. Assorted WWTP upgrade recommendations were identified that have not been implemented, due to funding issues per the April 22, 2015 PADHS Letter (plus several implemented changed identified above). **NOTE:** DPW/DHS has indicated that it thinks the report recommendations are too expensive and potentially inadequate (proposed geodesic domes and other improvements might not be enough to achieve/maintain adequate temperatures for biological treatment of Ammonia-N or other constituents) as an interim solution to site issues at 10/5/2016 meeting. Report Upgrade recommendations (summarized as ammonia-N reduction-related upgrade options) included:
 - Headworks:
 - Remove comminutor and replace with automatic fine screen (with bypass), screenings washer/compactor, and storage/disposal vessel to address “large quantities of rags and other suspended materials characteristic of the raw wastewater influent to plant”.
 - Baffling in flow distribution chamber (downstream of Parshall flume) should be upgraded to minimize influences of variable-rate primary recirculation on hydraulics.
 - Bioremediation in upstream facilities as standard procedures to minimize grease problems in headworks and subsequent operations.
 - Primary Clarifiers: Covering clarifiers (geodesic domes) to preserve heat to optimize Trickling Filter performance & control odors.

- Trickling Filters:
 - Covering trickling filters (geodesic domes) to preserve heat & optimize biological nitrification (i.e. ammonia-N reduction)
 - Forced ventilation system to provide desired oxygen levels in Trickling Filters (with some temperature benefit per Study).
 - Operational changes to optimize nitrification (first Filter to reduce CBOD5 and second dedicated to removing ammonia-N in series operation). **NOTE:** In series operation, the two trickling filters will not have redundancy.
- Plant Recirculation System & SCADA:
 - Modify flow recirculation system to allow recirculation after primary clarification to reduce heat loss & decrease hydraulic/solids loadings on clarifiers
 - SCADA Monitoring & Control system (not just SCADA features) to better handle variable loadings
 - Flow metering on system for all recirculation pumps (unknown if implemented or not)
 - Recirculation piping to provide an option for partial/full recirculation of primary trickling filter flows without going through primary clarifiers
- Chlorine Contact Tank: Instrumentation to monitor and record chlorine residual and pH in effluent.
- Other Changes:
 - Chemical feed systems (alum and soda ash) for pH adjustment in the secondary trickling filter to optimize nitrification (located in proposed screening building or elsewhere in control building) and for potential TP treatment.
 - Denitrification Filtration System (sand filtration system for TN reduction with new building, associated accessory equipment).
 - Convert decommissioned sludge drying bed/greenhouses into storage building for chemicals, equipment, etc.
 - The Study (page 17) noted that the Sludge Aeration Tank “would be a potential means of supplemental treatment” “should the need arise to provide nitrification treatment beyond that afforded by the secondary biofilter” (i.e. secondary trickling filter).
 - The Study also looked at two other treatment system options: Alternative B SBR system and Alternative C Multichannel Oxidation Ditch (MOD) System.
- 4/10/2018 Feasibility Study (“Wastewater Treatment Plant Evaluation Planning and Feasibility Study – Final, Clarks Summit State Hospital Wastewater Treatment Plant, NPDES Permit No. PA0029432, February 2018”, prepared by HRG Inc.): Highlights:
 - STP description noted headworks contain distribution chamber for plant influent and recycle flows (likely boiler blowdown) and that sludge drying beds are abandoned. Liquid chlorine disinfection system in use.
 - The Feasibility concluded the existing 0.395 MGD WWTP exceeds the required treatment capacity. They indicate a 0.120 MGD MMAF flow was adequate. They indicated historic ADF of 0.065 MGD from 2015 through June 2017.
 - They noted the facility is subject to I&I (0.264 MG combined peak daily flow was received on 10/29/2017) and recommended that WWTP improvements at the plant consider influent flow equalization and assumed influent equalization capacity will be provided (via retrofitting and repurposing existing tanks onsite). HRG also noted that alternatively the facility can further investigate I&I sources at the facility and contributing offsite sources (schools and connecting sewer lines). Additional flow monitoring was “warranted” and “collection system improvements beyond the scope of this study may be required to reduce peak WWTP flows”. **NOTE:** They did not identify the peak instantaneous or hourly flows or the minimum hourly flows to the WWTP.
 - New WWTP Options: The Study considered a number of options including:
 - Privatization
 - Alternative 2 (pre-engineered package modular WWTP) with Alternative 2.a (~3,658,153 Total Present Worth) to meet current limits and Alternative 2.b (\$4,304,678 Total Present Worth) to achieve BNR. Study-described Purestream system was only an 0.120 MGD design (Purestream did not appear to propose a design for 0.395 MGD flow).
 - Design included replacing headworks with new 1.0 inch coarse screen and mechanical screen; new aerated grit chamber; addition of chemical feed system for copper effluent reduction; primary clarifier upgrades into equalization tanks; retrofitting existing Primary Wet Well into pump station to direct flow to pre-engineered 60,000 GPD package treatment units; inclusion of anoxic selector tank for Alternative 2.b; instrumentation and controls; inclusion of TP removal system for Alternative 2.b; inclusion of existing chlorine disinfection system (no upgrades), inclusion of existing Aerobic Digesters (no upgrades).

Trickling filters and existing Secondary Clarifier would be eliminated/demolished. They used the Purestream Extended Aeration System for design comparison (two 60,000 gallon aeration tank, two 10,000 gallon clarifier, two airlifts, five blowers, five air distribution, two pumps, flow distribution, controls). Alternative 2.b would add anoxic selector tanks.

- Alternative 3: New Oxidation Ditch, Modified Ludzack-Ettinger (MLE) Process WWTP: Design included replacing headworks with new 1.0 inch coarse screen and mechanical screen; new aerated grit chamber; addition of chemical feed system for copper effluent reduction; primary clarifier upgrades into equalization tanks; retrofitting existing Primary Wet Well into pump station to direct flow to process tanks; Phased oxidation ditch tanks with inclusion of bio-phosphorus removal selector; installation of screened raw wastewater pump station to pump to proposed phased oxidation tanks; retrofit existing secondary clarifier with replacement sludge pump; inclusion of existing chlorine disinfection system and aerobic digesters (no upgrades) plus instrumentation/controls. Trickling filters to be eliminated/demolished. Alternative 3.a for 0.395 MGD facility (\$5,456,474 Total Present Worth) and 3.b (\$4,081,055 Total Present Worth) for 0.120 MGD facility.
- Alternative 4.a and 4.b: SBR Process (4.a at 0.395 MGD and 4.b at 0.120 MGD capacity): Design included replacing headworks with new 1.0 inch coarse screen and mechanical screen; new aerated grit chamber; addition of chemical feed system for copper effluent reduction; primary clarifier upgrades into equalization tanks; retrofitting existing Primary Wet Well into pump station to direct flow to SBRs tanks; installation of screened raw wastewater pump station to pump to SBR tanks, SBR tanks, retrofit existing secondary clarifier with replacement sludge pump; inclusion of existing chlorine disinfection system and aerobic digesters (no upgrades) plus instrumentation/controls; installation of chemical feed system for TP removal in event of future BNR requirements; elimination/demolition of existing Trickling filters. Alternative 4.a assumed 0.395 MGD plant (\$5,590,861 Total Present Worth), whereas Alternative 4.b was for 0.120 MGD plant (\$4,820,712 Total Present Worth).
- The Feasibility Study indicated HRG provided CSSH with “detailed review comments” separately on the 3/3/2017 Draft NPDES Permit (per Feasibility Study Section 1.0 Executive Summary, page 2), but the 5/3/2017 Department of Human Services (DHS) Letter simply requested “the standards, limitations, and obligations under the Draft Permit be modified and/or the timeframes for compliance be extended to allow the Hospital to determine and implement the best option for meeting appropriate environmental standards”.
- Wet Weather Flows:
 - Facility has reported peak wet weather flow issues, and problems with monitoring/measuring influent flows. Old flow meter eDMR data was inaccurate at higher flows per the permittee. Results of more recent I&I work and impact on influent flows not clarified beyond reported 2022-2024 AADF flows.
 - The May 2012 Uni-Tec Study’s 11/8/2011 Meeting Minutes (no DEP attendees) indicated dry/wet weather flow estimates (40 – 50,000 GPD dry weather flows, and 900,000+ GPD wet weather flows) but the wet weather flow data was suspect per Permittee statements. The 1/9/2012 – 2/15/2012 School flow monitoring indicated dry weather flows of only 0.0185 MGD, but seasonal conditions limit usefulness of data in terms of gauging I&I during peak precipitation events during rest of year.

Compliance History

DMR Data for Outfall 001 (from December 1, 2024 to November 30, 2025)

Parameter	NOV-25	OCT-25	SEP-25	AUG-25	JUL-25	JUN-25	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24
Flow (MGD) Average Monthly	0.027	0.032	0.029	0.024	0.037	0.075	0.095	0.049	0.055	0.033	0.036	0.04977 36
Flow (MGD) Daily Maximum	0.046	0.122	0.064	0.027	0.103	0.25	0.362	0.111	0.154	0.075	0.105	0.07186 8
pH (S.U.) Minimum	7.9	7.7	7.5	7.2	7.2	7.7	7.4	7.1	7.6	7.3	6.9	7.4
pH (S.U.) Maximum	8.9	8.7	8.9	8.8	8.9	8.7	8.7	8.6	8.0	8.8	8.5	8.2
DO (mg/L) Instantaneous Minimum	6.49	6.09	6.24	6.42	6.03	6.69	7.79	7.0	7.41	10.41	6.8	6.94
TRC (mg/L) Average Monthly	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
TRC (mg/L) Instantaneous Maximum	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
CBOD5 (lbs/day) Average Monthly	3.0	4.0	2.0	1.0	2.0	6.0	4.0	6.0	10.0	8.0	10.0	4.0
CBOD5 (lbs/day) Daily Maximum	5.0	5.0	3.0	1.0	3.0	11.0	6.0	8.0	17.0	10.0	20.0	5.0
CBOD5 (mg/L) Average Monthly	11.37	13.11	9.08	6.2	6.5	6.56	6.0	13.58	22.8	30.2	50.9	11.67
CBOD5 (mg/L) Daily Maximum	16.5	19.0	11.9	6.78	7.47	8.22	6.0	9.11	35.0	39.9	99.9	14.1
TSS (lbs/day) Average Monthly	1.0	5.0	2.0	1.0	2.0	4.0	4.0	3.0	9.0	6.0	5.0	2.0
TSS (lbs/day) Daily Maximum	2.0	7.0	4.0	2.0	2.0	9.0	7.0	6.0	15.0	7.0	10.0	2.0
TSS (mg/L) Average Monthly	5.2	16.2	9.2	7.9	6.9	5.0	5.5	6.7	18.4	21.8	23.2	5.4
TSS (mg/L) Daily Maximum	5.8	24.0	12.4	12.3	12.5	5.0	6.8	9.5	33.0	34.0	52.0	6.4
Fecal Coliform (CFU/100 ml) Geometric Mean	65	2420	1048	9.0	44	10.0	83	2.0	58	24	49.0	1

**NPDES Permit Fact Sheet
Clarks Summit State Hospital WWTP**

NPDES Permit No. PA0029432

Ammonia (lbs/day) Average Monthly	0.6	0.7	0.2	0.1	0.09	0.20	0.5	2.0	4.0	3.0	3.0	1.0
Ammonia (mg/L) Average Monthly	2.26	2.861	0.895	0.676	0.324	0.274	0.699	5.24	8.33	10.46	15.47	3.17

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

Parameter	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24
Flow (MGD) Average Monthly	1.31024	0.04687 5	0.04465 77	0.06303 4	0.04373	0.04322 1
Flow (MGD) Daily Maximum	0.05795	0.07301 9	0.04841 8	0.42815	0.05127 4	0.04667 3
pH (S.U.) Minimum	7.3	7.2	7.0	7.3	7.4	7.4
pH (S.U.) Maximum	7.9	7.9	7.8	8.1	7.9	7.9
DO (mg/L) Instantaneous Minimum	9.18	5.26	4.97	6.4	1.45	3.4
TRC (mg/L) Average Monthly	0.02	0.02	0.02	0.02	0.02	0.02
TRC (mg/L) Instantaneous Maximum	0.02	0.02	0.02	0.02	0.02	0.02
CBOD5 (lbs/day) Average Monthly	7.0	8.0	7.0	4.0	4.0	14.2
CBOD5 (lbs/day) Daily Maximum	11.0	9.0	9.0	8.0	5.0	15.1
CBOD5 (mg/L) Average Monthly	19.54	21.6	19.1	7.87	11.63	5.0
CBOD5 (mg/L) Daily Maximum	32.1	27.0	26.1	9.87	14.5	4.0
TSS (lbs/day) Average Monthly	5.0	9.0	12.0	5.0	7.0	5.0
TSS (lbs/day) Daily Maximum	7.0	12.0	18.0	8.0	10.0	6.0
TSS (mg/L) Average Monthly	15.6	24.5	32.8	10.7	20.5	13.8
TSS (mg/L) Daily Maximum	19.5	33.3	49.0	15.5	27.1	15.9
Fecal Coliform (CFU/100 ml) Geometric Mean	320	20	526	298	180	207

Ammonia (lbs/day) Average Monthly	0.3	1.0	1.0	0.4	0.2	0.8
Ammonia (mg/L) Average Monthly	0.705	2.986	3.579	0.568	0.565	2.18

Compliance History

Effluent Violations for Outfall 001, from: June 1, 2024 To: November 30, 2025

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
DO	10/31/24	Inst Min	5.26	mg/L	6.0	mg/L
DO	09/30/24	Inst Min	4.97	mg/L	6.0	mg/L
DO	07/31/24	Inst Min	1.45	mg/L	6.0	mg/L
CBOD5	02/28/25	Avg Mo	30.2	mg/L	25.0	mg/L
CBOD5	01/31/25	Avg Mo	50.9	mg/L	25.0	mg/L
CBOD5	01/31/25	Daily Max	99.9	mg/L	40.0	mg/L
TSS	09/30/24	Avg Mo	32.8	mg/L	30.0	mg/L
TSS	01/31/25	Daily Max	52.0	mg/L	45.0	mg/L
TSS	09/30/24	Daily Max	49.0	mg/L	45.0	mg/L
Fecal Coliform	10/31/25	Geo Mean	2420	CFU/100 ml	2000	CFU/100 ml
Fecal Coliform	09/30/25	Geo Mean	1048	CFU/100 ml	200	CFU/100 ml
Fecal Coliform	09/30/24	Geo Mean	526	CFU/100 ml	200	CFU/100 ml
Fecal Coliform	08/31/24	Geo Mean	298	CFU/100 ml	200	CFU/100 ml
Ammonia	11/30/25	Avg Mo	2.26	mg/L	1.5	mg/L
Ammonia	10/31/25	Avg Mo	2.861	mg/L	.5	mg/L

**NPDES Permit Fact Sheet
Clarks Summit State Hospital WWTP**

NPDES Permit No. PA0029432

Ammonia	09/30/25	Avg Mo	0.895	mg/L	.5	mg/L
Ammonia	08/31/25	Avg Mo	0.676	mg/L	.5	mg/L
Ammonia	05/31/25	Avg Mo	0.699	mg/L	.5	mg/L
Ammonia	04/30/25	Avg Mo	5.24	mg/L	1.5	mg/L
Ammonia	03/31/25	Avg Mo	8.33	mg/L	1.5	mg/L
Ammonia	02/28/25	Avg Mo	10.46	mg/L	1.5	mg/L
Ammonia	01/31/25	Avg Mo	15.47	mg/L	1.5	mg/L
Ammonia	12/31/24	Avg Mo	3.17	mg/L	1.5	mg/L
Ammonia	10/31/24	Avg Mo	2.986	mg/L	.5	mg/L
Ammonia	09/30/24	Avg Mo	3.579	mg/L	.5	mg/L
Ammonia	08/31/24	Avg Mo	0.568	mg/L	.5	mg/L
Ammonia	07/31/24	Avg Mo	0.565	mg/L	.5	mg/L

Summary of Inspections:

FACILITY NAME	INSP PROGRAM	INSP ID	INSPECTED DATE	INSP TYPE	INSPECTION RESULT DESC	# OF VIOLATIONS
CLARKS SUMMIT STATE HOSPITAL (DPW)	WPCNP	1998733	05/24/2024	Follow-up Inspection	Adverse Events or Actions Reported	<u>0</u>
CLARKS SUMMIT STATE HOSPITAL (DPW)	WPCNP	3027765	09/01/2022	Administrative/File Review	No Violations Noted*	<u>0</u> *
CLARKS SUMMIT STATE HOSPITAL (DPW)	WPCNP	2130612	05/04/2020	Administrative/File Review	Violation(s) Noted	<u>1</u>
CLARKS SUMMIT STATE HOSPITAL (DPW)	WPCNP	3784008	01/04/2017	Administrative/File Review	Violation(s) Noted	<u>0</u>
CLARKS SUMMIT STATE HOSPITAL (DPW)	WPCNP	3416364	12/21/2015	Compliance Evaluation	Violation(s) Noted	<u>0</u>

**NPDES Permit Fact Sheet
Clarks Summit State Hospital WWTP**

NPDES Permit No. PA0029432

CLARKS SUMMIT STATE HOSPITAL (DPW)	WPCNP	2561213	10/13/2015	Routine/Partial Inspection	Violation(s) Noted	<u>1</u>
CLARKS SUMMIT STATE HOSPITAL (DPW)	WPCNP	2561214	10/24/2013	Routine/Partial Inspection	Violation(s) Noted	<u>1</u>
CLARKS SUMMIT STATE HOSPITAL (DPW)	WPCNP	1922674	01/10/2013	Administrative/File Review	Violation(s) Noted	<u>1</u>
CLARKS SUMMIT STATE HOSPITAL (DPW)	WPCNP	2561210	10/03/2012	Compliance Evaluation	Violation(s) Noted	<u>1</u>
CLARKS SUMMIT STATE HOSPITAL (DPW)	WPCNP	2104683	03/03/2011	Routine/Partial Inspection	No Violations Noted	<u>0</u>
CLARKS SUMMIT STATE HOSPITAL (DPW)	WPCNP	2215713	10/18/2010	Routine/Complete Inspection	No Violations Noted	<u>0</u>

*Mismatch between query results and Report. Actual 9/1/2022 DEP Inspection Report identified open violations:

- Chapter 92.41(a)(5) for failure to maintain units in operable condition, i.e. Trickling Filter #2 was inoperable with significant leak observed in center column. Filter arm was not rotating.
- Chapter 92a.61: Failure to collect samples during a bypass event.
- Chapter 92a.41(a)(10): Failure to use NIST thermometer.
- Chapter 92a.41(a)(13): Failure to notify Department of an anticipated bypass.

Other Comments:

- Compliance Letter: 5/24/2024 DEP NE M&C Letter indicated a pattern of effluent exceedances above permit limit for Ammonia-N, CBOD5, DO, and Fecal Coliform for the period of September 2019 through February 2024; possible DMR date entry errors for March 2022; late DMR submittals for January 2020 & February 2021; 9/1/2022 DEP Inspection Report-listed O&M issues including inoperable Trickling Filter #2 (due to distribution arms needing further repair), leaking Trickling filter center column at time of inspection, onsite composite sampler did not contain NIST thermometer; and failure to provide notification of an anticipated bypass for Trickling Filter O&M work. 6/6/2024 DPW Response Letter received. See FS Addendum Summary of Review Section above for anticipated schedule for replacement WWTP design, construction, and start-up.
- Application Data-identified exceedances: See Effluent Section for new effluent sampling data (3) samples. There were apparent permit limit exceedances that were not reported in EDMR. Unless the exceedances took place in December 2025, EDMR reporting might be omitting exceedances.
- Administrative Extension: A 1/5/2015 Administrative Letter Extension was issued. Renewal application was not timely.
- 2/27/2024 EPA CWA Compliance Evaluation and Inspection Report: Highlights:
 - Facility Description:
 - The facility is owned and operated by Pennsylvania's Department of Public Welfare. There are approximately 150 full-time residents and 300 staff personnel at the state hospital. The wastewater treatment plant (hereinafter, the "WWTP") was built in 1954 and has a design flow of 395,000 GPD. An elementary school and middle school also feed into the WWTP. Facility representatives estimate that the hospital contributes 40,000 - 50,000 GPD, while the schools contribute 6,000 - 10,000 GPD during the school year. Mr. Rundquist explained that the facility has an existing 537 agreement with Newton Township that allows Newton township to contribute up to 300,000 GPD to the WWTP in emergency situations.

- The current treatment train consists of a Muffin Monster grinder pump (installed in 2014), bar screen, a second grinder pump, splitter box where recirculating flow from Recirculating Pumps #3 and #4 mixes, 2 primary clarifiers, 2 trickling filters with recirculating sludge flow at Trickling Filter #1 from Recirculating Pumps #1 and #2, Final Clarifier, chlorine contact tank, sodium bisulfite injection, composite sampler, two sludge pumps, anaerobic digester used as a sludge holding tank, and aeration tank for water that decants from sludge the holding tank. The pumps and chlorine storage room are in the WWTP building. Effluent discharges from Outfall 001 to Falls Creek.
- According to EPA's ECHO database, the Plant experienced 46 effluent limit exceedances from Outfall 001 between February 27, 2020, and February 27, 2024 (refer to Table 2 below). The highest percentage of exceedances occurred for Nitrogen, total ammonia, followed by BOD5, fecal coliform, and dissolved oxygen. EPA's ECHO database indicates the Plant was in a state of significant noncompliance (SNC) from April 1, 2021, through October 1, 2023.
- During the site inspection, the EPA Inspection Team observed several components of the treatment train that were not operating properly.
 - Primary Clarifier #1 (Photograph 8) was taken offline on February 26th. The gear box (Photographs 9 and 10) was removed from Primary Clarifier #1 to be installed into the Final Clarifier due to the Final Clarifier's gear box (Photograph 32) which was not functioning. All flow was going to Primary Clarifier #2.
 - Primary Clarifier #2 has multiple holes in the ground around the perimeter of clarifier (Photograph 15). Mr. Wilbur (licensed operator) reported these holes are from wildlife and it was unclear to the EPA Inspection Team if the clarifier was being impacted from this. Parts of the weir in Primary Clarifier #2 were broken off (Photographs 11 and 14). There was debris resembling plastic trash in the clarifier that was not removed from preliminary treatment (Photograph 13).
 - Trickling Filter #1 (Photographs 19-23) was not operational at the time of inspection. The arm of Trickling Filter #1 was not moving. Mr. Rundquist (DPW Civil Engineer Consultant) stated that the bearings have not been functioning properly to allow the arm to rotate since October 2023.
 - According to Mr. Wilbur (licensed operator), Recirculation Pump #1 (Photograph 50) has been offline for approximately a year. Sludge Pump #2 (Photograph 48) was also leaking at the time of inspection.
 - The Final Clarifier weir had sections of concrete spalling (Photographs 34 and 35). There was biological growth and debris prior to the clarifier discharge point (Photographs 34 and 36).
 - The composite sampler (Photographs 41-43) located next to the Chlorine Contact Tank was not in operation at the time of inspection. Mr. Wilbur stated that this sampler has not been in use for at least 5 years and that samples are manually taken and composited.
- Stormwater-related: During the site inspection, Mr. Wilbur and Mr. Pasek indicated that there was recently a storm event where there was sheet flow of stormwater directly entering the clarifiers and trickling filters. The treatment plant is downhill from the hospital and directly below Newton Ransom Boulevard and Winola Road. **NOTE:** This situation is contrary to existing NPDES Permit Part C.I One stormwater prohibition condition.

Development of Effluent Limitations

Outfall No. <u>001</u>	Design Flow (MGD) <u>.395</u>
Latitude <u>41° 29' 8.19"</u>	Longitude <u>-75° 44' 53.57"</u>
Wastewater Description: <u>Sewage Effluent</u>	

Permit limits and/or monitoring: Changes from 2017 Draft NPDES Permit bolded.

Parameter	Limit (mg/l unless otherwise specified)	SBC	Model/Basis
BOD5	140 Lbs/d 165 Lbs/d 30.0 45.0 60.0 85%	Monthly Average Daily Max Monthly Average Daily Max IMAX Minimum Monthly Removal	Deleted per discussion below (going back to previous NPDES Permit CBOD5 mass and concentration limits to account for 0.300 MGD emergency Newton Township loadings. See below for details.
CBOD5	82.4 Lbs/d 131.8 Lbs/d 25.0 40.0 50.0 85%	Monthly Average Daily Max Monthly Average Daily Max IMAX Minimum Monthly Removal	Previous NPDES Permit limits (Chapter 92a.47) retained. New 85% minimum monthly reduction requirement for POTW. See below. <u>2026 application data: 99.9 mg/l max CBOD5 and 6.79 mg/l average (3 samples)</u>
TSS	21.32 Lbs/d 36.22 Lbs/d 30.0 45.0 60.0 85%	Monthly Average Daily Max Monthly Average Daily Max IMAX Minimum Monthly Removal	New ELG limits being imposed per 40 CFR 260, superseding previous TSS mass limits (98.9 lbs/d Monthly average; 148.2 lbs/day Daily Max). See below for details. Existing concentration Technology limit (Chapter 92a.47) retained due antibacksliding considerations. Daily Max was in previous permit, converted to weekly average for POTW (Chapter 92a.47 secondary treatment limit). As a POTW, the 85% minimum reduction requirements applied. See below for further details. <u>2026 application data: 49 mg/l max and 25.7 mg/l average (3 samples)</u>
pH	6.0 – 9.0 SU	Inst. Min - IMAX	Existing Technology limit (Chapter 92a.47) <u>2026 application data: 6.6 – 8.9 SU (3 samples)</u>
Fecal Coliform (5/1 – 9/30)	200/100 ml 1,000/100 ml	Geo Mean IMAX	Existing Technology limit (Chapter 92a.47) with IMAX added per Chapter 92a.47. <u>2026 application data: >2419/100 ml max and <1/100 ml average (3 samples)</u>
Fecal Coliform (10/1 – 4/30)	2,000/100 ml 10,000 ml/100 ml	Geo Mean IMAX	Existing Technology limit (Chapter 92a.47) with IMAX added per Chapter 92a.47.
E Coli	Report/100 ml	IMAX	New standard monitoring requirement
Total Residual Chlorine (TRC) – until Replacement WWTP start-up. (1/1/2019).	0.02 0.04	Average Monthly IMAX	Interim existing limits. The facility has dechlorination facilities per May 2012 Study. <u>2026 application data: 0.04 mg/l max and average (3 samples)</u>

Total Residual Chlorine (TRC) – upon Replacement WWTP start-up. (1/1/2019).	0.011 0.037	Average Monthly IMAX	Revised WQBEL from TRC Spreadsheet, effective upon Replacement start-up , with old limits retained. The facility has dechlorination facilities per May 2012 Study. New limits below DEP Target QL, therefore the Part C.VIII (TRC limits below Quantitation Limits) conditions will apply. TRC Requirement condition added for TRC minimization plan due to new limit and due to occasional fecal coliform exceedances indicating chlorine disinfection system issues.
Ammonia-Nitrogen (May 1 - Oct 31) – until Replacement WWTP start-up (1/1/2019).	Report (lbs) 1.6 (lbs/d) 0.5 Report 1.0	Total Annual Monthly Average Monthly Average Daily Max IMAX	Existing WQBEL supported by updated water quality modeling and retained due to antibacksliding considerations, and effluent-dominated stream. Daily Max reporting added. Chesapeake Bay monitoring added. <u>2026 application data: 15.47 mg/l max and 4.09 mg/l average (3 samples)</u>
Ammonia-Nitrogen (Nov 1 - Apr 30) – until Replacement WWTP start-up (1/1/2019)	Report (lbs) 4.9 (lbs/d) 1.5 Report 3.0	Total Annual Monthly Average Monthly Average Daily Max IMAX	See above. Winter multiplier used.
Ammonia-Nitrogen (May 1 - Oct 31) – upon Replacement WWTP start-up (1/1/2019)	Report (lbs) 1.6 (lbs/d) 0.5 Report 1.0	Total Annual Monthly Average Monthly Average Daily Max IMAX	Existing WQBEL supported by updated water quality modeling and retained due to antibacksliding considerations, and effluent-dominated stream. Daily Max reporting added. Chesapeake Bay monitoring added. <u>2026 application data: 15.47 mg/l max and 4.09 mg/l average (3 samples)</u>
Ammonia-Nitrogen (Nov 1 - Apr 30) – upon Replacement WWTP start-up (1/1/2019)	Report (lbs) 4.9 (lbs/d) 1.5 Report 3.0	Total Annual Monthly Average Monthly Average Daily Max IMAX	See above. Winter multiplier used.
Dissolved Oxygen (DO)	6.0	Inst. Minimum	Existing WQBEL supported by Water Quality Modeling <u>2026 application data: 3.41 mg/l minimum and 6.79 mg/l average (3 samples)</u>
Total Phosphorus	Report (lbs) Report (lbs) Report (lbs/day) Report Report	Total Annual (Net) Total Annual Monthly Average Monthly Average Daily Max	Monitoring updated per current Chesapeake Bay monitoring requirements for a Phase 4 Significant Chesapeake Bay discharger. Net loadings added in event that they want to trade nutrients. <u>2026 application data: 2.31 mg/l max and 2.1 mg/l average (3 samples)</u>
Total Nitrogen (TKN + Nitrate-Nitrite-N measured in same sample)	Report (lbs) Report (lbs) Report (lbs/day) Report Report	Total Annual (Net) Total Annual Monthly Average Monthly Average Daily Max	Monitoring updated per current Chesapeake Bay monitoring requirements for a Phase 4 Significant Chesapeake Bay discharger. Net loadings added in event that they want to trade nutrients. <u>2026 application data:</u> <u>TN: 17.6 mg/l max and 15.21 mg/l average (3 samples)</u>

			TKN: 13.3 mg/l max and 9.8 mg/l average (3 samples) Nitrate-Nitrite: 6.7 mg/l max and 5.42 mg/l average (3 samples)
TDS, Chlorides, Sulfates	Report (lbs/day) Report (lbs/day) Report Report	Monthly Average Daily Max Monthly Average Daily Max	TDS concentration triggers monitoring requirements per Reasonable Potential analysis and due to stream impairment with site contributing to elevated stream TDS, Chlorides, and sulfates concentrations. <u>2026 application data:</u> TDS: 469 mg/l (1 sample) Chloride: 161 mg/l (1 sample) Bromide: <1 mg/l (1 sample) Sulfate: 32.8 mg/l (1 sample)
Total Copper – until Replacement WWTP start-up (1/1/2019)	Report (lbs/d) Report (lbs/d) Report Report	Monthly Average Daily Max Monthly Average Daily Max	New monitoring requirement for interim time-frame with TRE conditions due to new WQBEL per Reasonable Potential Analysis. <u>2026 application data:</u> 0.0153 mg/l (1 sample)
Total Copper – upon Replacement WWTP start-up (1/1/2019)	0.054 (lbs/d) 0.084 (lbs/d) 0.016 0.025 0.041	Monthly Average Daily Max Monthly Average Daily Max IMAX	Updated Reasonable Potential Analysis modified IMAX limits and mass loading limits.
Total Zinc	Report (lbs/d) Report (lbs/d) Report Report	Monthly Average Daily Max Monthly Average Daily Max	New monitoring requirement per updated Reasonable Potential Analysis. <u>2026 Application data:</u> 0.0294 mg/l (1 sample)
Specific Conductivity	Report (umhos)	Daily Max	Due to high effluent concentrations measured in 2016, addition of boiler wastewater to STP, with salts being a known cause of stream impairment.
Raw Sewage Influent BOD5 and TSS	Report (lbs/day) Report (lbs/day) Report Report	Monthly Average Daily Max Monthly Average Daily Max	As a POTW, the facility must monitor incoming BOD5 and TSS influent loadings to determine if it is meeting the 85% treatment requirements. If more than 1 sample per month, the monthly average will differ from daily max value. <u>2026 Application data:</u> BOD5: 477 mg/l max and 212 mg/l average (4 samples) TSS: 704 mg/l max and 203 mg/l average (4 samples) TDS: 476 mg/l (1 sample) TN: 39 mg/l (1 sample) TKN: 46.6 mg/l max and 39 mg/l average (4 samples) but application numbers transposed Nitrate-Nitrite: <5 mg/l (1 sample) TP: 7.55 mg/l max and 6.05 mg/l average (4 samples)

Comments:

New POTW Requirements: Chapter 92a.2 POTW definition includes state-owned facilities. Permit updated to address POTW-specific requirements: influent CBOD5/TSS monitoring and reporting; weekly average limits; 85% minimum average monthly reduction in Part A.I Additional Requirements) will be incorporated into the Draft NPDES Permit.

Composite Sampling: 24-hour composite sampling required for toxics (metals). All composite sampling changed to 24-hour composite sampling for consistency. Facility has purchased a 24-hour composite sampler per 10/5/2016 Meeting discussions.

WQ Modeling Assumptions: Upstream hardness of 127 mg/l from previous modeling. Discharge hardness of 189 mg/l from previous modeling. WQM Model 7.0 validity is impacted by effluent-dominated stream scenarios, but superseded by existing limits subject to antibacksliding considerations.

Point	Drainage Area	Elevation	Modeling Reach-assumed RMI
1 (Outfall #001)	0.96 square mile	~1160 Feet	3.39
2	1.57 square miles	~1100 Feet	2.21
3	5.61 square miles	~946 Feet	0.001

ELG Requirements: This hospital is subject to the Federal ELG (40 CFR 460) as an existing source subject to 40 CFR 460.12 (Best Practicable control technology currently available, regulation promulgated circa 1976). The Federal ELG expresses limits in terms of the “functional operations of the hospital”, i.e. occupied beds (40 CFR 460.10 through 460.12) for existing facilities except as 40 CFR 125.30 (Fundamentally different factors), 125.31 (Criteria), and 125.32 (Method of application) apply. The Federal ELG does not appear to have been addressed by previous NPDES Permitting per available DEP files. Being existing ELG limits, the Department cannot delay imposition of these limits.

For permitting purposes, the revised Federal ELG loadings @ 242 hospital beds (with allowances for school district flows) have been incorporated into this permit’s mass loading limits, with Chapter 92a.47 secondary treatment concentration limits due to antibacksliding considerations. (Secondary BOD5 and CBOD5 limits are equivalent except that the BOD5 limits incorporated an allowance for nitrogenous oxygen demand).

- Historic Loadings: The facility actual occupancy rates dropped from a high of 1450 beds in the 1940s, to a present 242 occupied beds per the PA DHS website. The original July 28, 1954 Sewage Permit documents indicate a potential for 2500 patients onsite. Original NPDES permitting documents noted the potential for up to 2500 occupied beds onsite (with 1420 occupied beds) design basis flow (2680 persons allowing for work shifts) with an original 0.600 MGD average hospital design flow.
- Original CBOD5/BOD Design Loadings Loading: Using the 120% BOD5/CBOD5 limit conversion factor (Metcalf & Eddy, also seen in the EPA BOD5/DEP CBOD5 secondary treatment limits), the existing 82.4 lbs/day CBOD5 monthly average loading limits would equate up to 98.88 lbs/day BOD5 effluent loading, and would allow up to 1093 occupied beds at the Hospital using the ELG factors. NOTE: They have had exceedances of their existing CBOD5 daily max load limit (218 lbs/day).
- TSS Loading: The existing TSS load limits (98.8 lbs/day monthly average limit) would equate to ~807 occupied beds using the ELG factors. NOTE: They have had exceedances of their existing TSS load limits (175.6 lbs/day per Compliance Section above).
- ELG contribution to Effluent pollutant loadings (242 occupied hospital beds):

Constituent	Daily Max for 1000 beds	Allowable loading (Daily Max)	Monthly Average for 1000 beds	Allowable Loading (Monthly Average)
BOD5	90.4 lbs	21.87 lbs/day @242 (present CBOD5 limit of 131.8 lbs/day)	74.0 lbs	17.90 lbs/day @ 242 (present CBOD5 limit of 82.4 lbs/day)
TSS	122.4 lbs	29.62 lbs/day @242 (present TSS limit of 148.2 lbs/day)	74.5 lbs	18.02 lbs/day @242 (present TSS limit of 98.8 lbs/day)
pH	6.0 – 9.0 SU	-	6.0 – 9.0 SU	-

- School contributions: This STP also receives flows from several schools, but does not measure influent.

- May 2012 Uni-Tech Report (CSSH Wastewater Planning and Feasibility Study) information: This report prepared by the applicant's technical consultant, noted that the Abington Heights School District (Newton Ransom Elementary and Abington Middle School, directed flows to this STP. The loadings were estimated at 7% of the estimated CSSH total flow (using possibly inaccurate CSSH flow meters that resulted in an estimated 0.234 MGD CSSH flow). **The Uni-Tech Report Appendix C (Flow Monitoring & Wastewater Sampling Report) included a 45-day flow monitoring period that estimated an average 0.0185 MGD (18,500 GPD) school flow during the flow monitoring period (January 6 – February 19), measured at a manhole. The report calculated that the school was adding 34 lbs/day BOD5 and 22 lbs/day TSS loading to the influent flow.** Calculating school-related effluent allowances, and assuming 85% removal efficiency:
 - Monthly Average BOD5 Effluent Load: 5.1 lbs/day
 - Monthly Average TSS Effluent Load: 4.5 lbs/day
 - Daily Max BOD5 loading (2.0 multiplier): 10.2 lbs/day
 - Daily Max TSS loading (2.0 multiplier): 9.0 lbs/day
- 2026 Application Information: School District has ~1,400 students. At the DWFM Section 43.51 public school default assumptions (7 GPCD, 0.04 lb BOD5/day/capita for toilets only), this would equate to 9800 GPD and 56 lbs BOD5/day loadings, with additional DWFM allowances required for kitchen (3 GPCD and 0.02 lb BOD5/day) and/or gym (3 GPCD and 0.02 lb BOD5/day). Reported sewer system I&I issues would be contributing to higher peak wet weather flows to the WWTP, but not organic loadings. Assuming both gyms and kitchen (cafeterias), the loadings would be 13 GPD and 0.08 lb BOD5/day/capita defaults. Total school loadings on the WWTP (using default assumptions) at 18,200 GPD flow and 112.0 lb BOD5/day, with minimum 85% reduction:
 - Effluent BOD5/day Monthly Average: 16.8 lbs BOD5/day
 - Effluent BOD5/day Daily Max: 33.6 lb BOD5/day daily
 - TSS: No special school DWFM influent loading factor. Assume effluent loading based on secondary treatment of 18,200 GPD sewage at 30 mg/l TSS effluent loading):
 - Effluent TSS Monthly Average: 4.5 lb TSS/day
 - Effluent TSS Daily Max: 9.0 lb TSS/day
- Emergency BOD5 Loading from Newton Township: The 2/27/2024 EPA CWA Compliance Evaluation and Inspection Report noted that the EPA inspectors were informed the facility has an existing Act 537 agreement with Newton Township that allows Newton Township to contribute up to 300,000 GPD to the WWTP in emergency situations. This had been mentioned in previous DEP/Permittee discussions but no written supporting documentation was provided. It is uncertain if the as-built/as-operated failing WWTP could handle such a loading. It is also uncertain if the Replacement WWTP will be sized for such flows (as the Permittee engineer had indicated he was looking at potentially designing a smaller replacement WWTP with potential phased construction for larger capacity). At 220 mg/l BOD5/day and 0.300 MGD flow, the influent loading would be 550 lb BOD5/day influent loading resulting in (at 85% minimum monthly average reduction):
 - Monthly Average BOD5: ~82.5 lb BOD5/day
 - Daily Max BOD5: 165.1 lb BOD5/day
 - TSS: Assume effluent loading based on secondary treatment of 0.3 MGD at 30 mg/l TSS:
 - Effluent TSS Monthly Average: 75.0 lb TSS/day
 - Effluent TSS Daily Max: 150.0 lb TSS/day
- Total BOD5 Mass Loading (Hospital, Schools, and Emergency Township Loading) and use of standard secondary treatment ratio of 1.2 BOD5/1.0 CBOD5:
 - Monthly Average BOD5: 117.2 lb BOD5/day, equivalent to 97.8 lb CBOD5
 - Daily Max BOD5: 220.5 lb BOD5/day, equivalent to 183.7 lb CBOD5
 - Monthly Average TSS: 102.0 lb TSS/day
 - Daily Max TSS: 188.6 lb TSS/day
- **Existing CBOD5 and TSS limits are more stringent, and will be retained per Antibacksliding Prohibition:** See above table for existing retained CBOD5 and TSS limits (mass and concentration).

WQM Model 7.1.1: Existing permit limits are protective (if the facility can maintain compliance with the existing permit limits):

Ammonia-N: Daily maximum Ammonia-N limits (with schedule of compliance tied to Replacement WWTP start-up schedule) has been included. The Replacement WWTP is also expected to resolve the long-term year-round pattern of existing Ammonia-N exceedances. In 2012, the ammonia-N exceedances spread to Fall months (before I&I problems substantially worsened). The application did not request any relief from existing ammonia-N limits. **The Ammonia-N daily max limits are based on the existing IMAX limits (since any duration exceedance of an IMAX limit is exceeding the Instantaneous Maximum (IMAX) limit.**

Analysis Results WQM 7.0

Hydrodynamics NH3-N Allocations D.O. Allocations D.O. Simulation **Effluent Limitations**

RMI	Discharge Name	Permit Number	Disc Flow (mgd)
3.39	DHA Clarks Sum	PA0029432	0.3950

Parameter	Effluent Limit 30 Day Average (mg/L)	Effluent Limit Maximum (mg/L)	Effluent Limit Minimum (mg/L)
CBOD5	25		
NH3-N	0.5	1	
Dissolved Oxygen			6

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Analysis Results WQM 7.0

Hydrodynamics | NH3-N Allocations | D.O. Allocations | D.O. Simulation | **Effluent Limitations**

RMI	Discharge Name	Permit Number	Disc Flow (mgd)
3.39	DHA Clarks Sum	PA0029432	0.0000

Parameter	Effluent Limit 30 Day Average (mg/L)	Effluent Limit Maximum (mg/L)	Effluent Limit Minimum (mg/L)
CBOD5	25		
NH3-N	0.5	1	
Dissolved Oxygen			6

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Chesapeake Bay Requirements: This is a “non-significant” Phase 4 Chesapeake Bay Facility (>0.2 MGD; <0.4 MGD capacity), which chose to reduce their permit basis capacity from 0.60 MGD to 0.395 MGD in the 2009 NPDES Permit. They conducted the required two years of monitoring. Minimum monthly monitoring is required for Phase 4 facilities. Additional monitoring would be required if they chose to engage in nutrient trading.

Reasonable Potential Analysis: Updated Reasonable Potential Analysis used 2026 Application-update sampling data.

- **Copper:** The Toxic Screening Spreadsheet recommended copper limits. Copper limits and TRE conditions have been added to the permit. The max copper effluent concentration exceeded the copper WQBEL.
- **Zinc:** Monitoring required per updated Reasonable Potential Analysis.
- **TDS, Sulfates, Chlorides and Bromides, plus Specific Conductivity:** The Draft NPDES Permit Fact Sheet Toxic Screening Spreadsheet recommended monitoring of TDS, Sulfates, Chlorides and Bromides. Per the 11/3/2015 DEP Biologist sampling, the facility is contributing detectable levels of these constituents (except unsampled Bromide) to the impaired stream. Such constituents might be a sign of stormwater runoff issues such as excessive winter salting, etc.) in addition to potential effluent issues.
 - **Specific Conductivity & Salts (Sodium Chloride; Calcium Chloride; Magnesium Chloride; Potassium Chloride):** January 2017 e-mailed data indicated specific conductivity a factor of 3 of the DEP Biologist upstream sample, with boiler wastewater being a potential source of salt ions to the waters of the Commonwealth. Specific conductivity monitoring is being required to monitor salt ions (sodium,

calcium, magnesium, potassium, etc.). Specific conductivity is a measure of ions (cations and anions) in the water. These conductive ions come from dissolved salts and inorganic materials such as alkalis, chlorides, sulfides and carbonate compounds. Salts dissolve in water to produce an anion and a cation. Dissolved salts from outdoor usage in winter is an obvious source (sodium chloride, calcium chlorides, magnesium chlorides, and potassium chlorides are in wide usage, with other chemicals often added to the mix such as: Sodium acetate and calcium magnesium acetate and calcium hydroxide). See above for DEP Biologist sample results.

- **Salt-related BMPs added to Permit:** Due to apparent salt contribution to the stream, a requirement for salt-related Best Management Practices (BMPs) has been added to the permit per Pollution Prevention considerations (Chapter 92a.10; Chapter 92a.46(1); BMPs defined in Chapter 92a.2): There are internet-available BMPs for salt management, specifically addressing application to parking lots, private roads, etc. that could be incorporated into the NPDES permit.
 - **TDS, Specific Conductivity, and Chloride Effluent Monitoring:** Monitoring will clarify effluent discharge contributions.
- **Chemical Additives:** During permitting, an unauthorized outfall for boiler blowdown was found. Discharges were terminated. Due to this situation, the boiler system chemical additives were identified and addressed in the Reasonable Potential Analysis and tables below. Normally, chemical additives are not addressed in sewage permitting for a STP, but hypothetical WQBELs were calculated (see below). In practical terms, if the chemical additives were used daily at their maximum usage rates, then the limits below would be pertinent due to discharge to heavily-effluent impaired stream (as the chronic fish criterion would apply, with the AFC criterion about a factor of ~10 greater). Due to history and stream impairment, the chemical additives conditions were included in this permit to ensure the facility discharge does not contribute to stream impairment. See Chemical Additives Table and Reasonable Potential Analysis for further information. WET Testing will determine if the site effluent negatively impacts aquatic life.

✓ Recommended WQBELs & Monitoring Requirements

No. Samples/Month:

Pollutants	Mass Limits		Concentration Limits				Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units			
Total Copper	0.054	0.084	0.016	0.025	0.041	mg/L	0.016	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Zinc	Report	Report	Report	Report	Report	mg/L	0.2	AFC	Discharge Conc > 10% WQBEL (no RP)
Greentech PT2700F	0.004	0.007	0.001	0.002	0.003	mg/L	0.001	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Formula 2340-F	0.005	0.008	0.002	0.002	0.004	mg/L	0.002	CFC	Discharge Conc ≥ 50% WQBEL (RP)



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Chemical Additives (Boiler Usage):

Chemical Additive	Max Daily Volume (both boiler max reported usage)*	AQUATIC LIFE EFFECT LEVEL ACUTE (mg/L)	AQUATIC LIFE EFFECT LEVEL CHRONIC (mg/L)	HUMAN HEALTH SAFE USAGE CONCENTRATION (mg/L)	Comment
Greentech PT2700F a.k.a. Condor Technologies Inc. Boiler Water Treatment Chemical	1.5 gallons (~12.5 lb/day at density of water). Concentrations of proprietary chemicals not given in MSDS. Assume 100% for conservatism.	11.87	1.32	NA	Usage rate reporting recommended

Formula 2340-F is a boiler treatment chemical	0.25 gallons (~4.167 lbs/day at density of water) 34 – 44% active ingredient per MSDS	13.54	1.51	NA	Usage rate reporting recommended
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*1 gallon out of an 0.048 MGD AADF (lowest of three years) is equivalent to 20.8 mg/l as worst-case modeling (assuming no reduction in concentration due to physical/chemical processes).

Table (Boiler 4 Chemical Usage from CSSH Spreadsheets)

Month	Boiler Water Tests	Lab test?	Tannin 2700 (pt)	2340 (pt)	Amine	Blowdowns Main Count	Condensate Return Test
Report-identified range	2500 – 3500 (micro-mhs)	Not identified	-	-	-	-	0 – 10 (micro-mhs)
May 2016 (5 days reported)	1501 – 2721	Filter: 109 – 140 Unfiltered: 116 – 155	1 - 4	2	-	-	21 - 68
June 2016 (28 days reported)	3078 – 11788	Filter: 150 – 308 Unfiltered: 141 – 296	-	1 - 2	-	-	8 – 104
July 2016 (25 days reported)	11324 – 15960	Filter: 274 – 395 Unfiltered: 250 – 294	-	1 – 2	-	13 days blowdown (1/day)	9 – 102
August 2016 (28 days reported)	14211 – 115710 (typo?) or 17000	Filter: 232 - 301 Unfiltered: 248 - 322	-	1 – 2	-	15 days blowdown (1/day)	21 - 100
September 2016 (22 days reported)	9361 – 16770	Filter: 96 – 254 Unfiltered: 116 – 271	1 – 4	1	-	16 days blowdown (1/day)	22 – 300
October 2016 (10 days reported)	6024 – 9112	Filter: 50 - 305 Unfiltered: 66 – 323	4 – 8	1	-	1 days blowdown (1/day)	17 - 102

Table (Boiler 5 Chemical Usage from CSSH Spreadsheets)

Month	Boiler Water Tests	Lab Results?	Tannin 2700* (pt)	2340 (Pt)	Amine	Blowdowns Main Count	Condensate Return Test
Report-identified range	2500 – 3500 (micro-mhs)	Not identified	Not identified	-	-	-	0 – 10 (micro-mhs)
January 2016 (30 days reported)	6207 – 13220	Filter: 71 - 212 Unfiltered: 110 - 231	1 – 2	1	-	-	10 - 91
February 2016 (23 days reported)	8723 - 18327	Filter: 40 - 253 Unfiltered: 87 - 323	1 – 2 qt	-	1 pt – 1 qt	1 days	6 - 452
March 2016	3900 - 24495	Filter: 38 - 192	1 – 8	-	1 pt	3 days	8 – 116

**NPDES Permit Fact Sheet
Clarks Summit State Hospital WWTP**

NPDES Permit No. PA0029432

(23 days reported)		Unfiltered: 58 - 272					
April 2016 (27 days reported)	10125 - 16745	Filter: 98 - 198 Unfiltered: 109-301	1 - 4? (wrong column)	1	-	4 days	10 - 131
May 2016 (24 days reported)	11169 - 16877	Filter: 111-3131 Unfiltered: 143-275	1	1	-	6 days	9 - 66
September 2016 (4 days reported)	2931 - 7357	Filter: 150 - 295 Unfiltered: 158 - 325	1	1	-	-	55 - 115
October 2016 (15 days reported)	6760 - 10273	Filter: 116 - 234 Unfiltered: 200-291	1	1	-	4 days	26 - 179
November 2016 (26 days reported)	5242 - 9901	Filter: 135-219 Unfiltered: 146-260	-	2	1 pt	1	21-138
December 2016 (28 days reported)	7469-10184	Filter: 150 - 231 Unfiltered: 150 - 248	1-2	1-2	-	-	26-85

*GreenTech PT2700-F includes tannin as a component (45 - 50%) and >5% sodium hydroxide.

**Formula 2340-F includes diethylaminoethanol (34-44%) and is shipped under "amines".

TRC Limits: TRC Spreadsheet supports the proposed TRC limits.

TRC EVALUATION					
Input appropriate values in A3:A9 and D3:D9			Clarks Summit State Hospital WWTP		
0.011	= Q stream (cfs)		0.5	= CV Daily	
0.395	= 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 = 0.025		1.3.2.iii	WLA cfc = 0.017
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373		5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.009		5.1d	LTA_cfc = 0.010
Source	Effluent Limit Calculations				
PENTOXSD TRG	5.1f	AML MULT = 1.231			
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.011		AFC	
		INST MAX LIMIT (mg/l) = 0.037			

Whole Effluent Toxicity (WET) Testing Requirements (new NPDES Permit Term)

Due to ongoing Stream Impairment with various known/potential causes (both cumulative and synergistic) discussed above, WET Testing will be required for the new NPDES Permit Term, there was no previous NPDES permit requirement for WET Testing, and consequently no previous WET Test data for evaluation.

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):

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

$$[(0.395 \text{ MGD} \times 1.547) / ((0.011 \text{ cfs} \times 1) + (0.395 \text{ MGD} \times 1.547))] \times 100 = \text{IWCa}\% = 98.23\%$$

Is IWCa < 1%?: X **NO (chronic tests required)**

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 Tests required

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

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

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

$$[(0.395 \text{ MGD} \times 1.547) / ((0.011 \text{ cfs} \times 1.0) + (0.395 \text{ MGD} \times 1.547))] \times 100 = \text{TIWCC}\% = 98.23\%$$

3. Determine Dilution Series

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

Dilution Series = 100%, 98%, 73%, 49%, and 25%.

WET Limits

Has reasonable potential been determined? **X YES**

Will WET limits be established in the permit? **X 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:

There is reasonable potential due to DEP Biologist memo indicating ongoing stream impairment for aquatic life (not present during 1998 sampling apparently for a 55:1 effluent-dominated stream), with the facility being a known source of ongoing ammonia-N exceedences of the WQBELs; effluent concentrations exceeding WQBELs for toxics (copper and lead, with reasonable potential for zinc to cause exceedences); high flows (intermittent high flows can impact aquatic life); high elevations of salts ions and chlorides that can impact aquatic life; potential for unusual pass-through therapeutic chemicals; possible chemical additive contribution from the hospital and overall cumulative and/or synergistic impacts. The WET Testing during the permit term will allow for the facility to address known impacts and determine if reasonable potential exists for the next NPDES Permit Renewal (where potential limits would be determined).

Communications Log: This log is limited to permitting. Separate Planning (regionalization discussions) and compliance communications not included.

3/3/2017: Draft NPDES Permit documents e-mailed to permittee

3/6/2017: EPA E-mail with public comments on Draft NPDES Permit.

4/5/2017: EPA telephone call asking for information about Draft NPDES Permit.

4/5/2017: EPA (Dana Hales) E-mail containing public comments on the Draft NPDES Permit.

4/14/2017: Department of Human Services (Applicant) letter requesting extension of minimum 30-day public comment period.

5/3/2017: Department of Human Services (Applicant) Public Comment Letter that requested “the standards, limitations, and obligations under the Draft Permit be modified and/or the timeframes for compliance be extended to allow the Hospital to determine and implement the best option for meeting appropriate environmental standards”.

4/10/2018: Feasibility Study (“Wastewater Treatment Plant Evaluation Planning and Feasibility Study – Final, Clarks Summit State Hospital Wastewater Treatment Plant, NPDES Permit No. PA0029432, February 2018”, prepared by HRG Inc.) received. The available submitted Study was missing several attachments. Highlights:

- STP description noted headworks contain distribution chamber for plant influent and recycle flows (likely boiler blowdown) and that sludge drying beds are abandoned. Liquid chlorine disinfection system in use.
- The Feasibility concluded the existing 0.395 MGD WWTP exceeds the required treatment capacity. They indicate a 0.120 MGD MMAF flow was adequate. They indicated historic ADF of 0.065 MGD from 2015 through June 2017.
- They noted the facility is subject to I&I (0.264 MG combined peak daily flow was received on 10/29/2017) and recommended that WWTP improvements at the plant consider influent flow equalization and assumed influent equalization capacity will be provided (via retrofitting and repurposing existing tanks onsite). HRG also noted that alternatively the facility can further investigate I&I sources at the facility and contributing offsite sources (schools and connecting sewer lines). Additional flow monitoring was “warranted” and “collection system improvements beyond the scope of this study may be required to reduce peak WWTP flows”. **NOTE:** They did not identify the peak instantaneous or hourly flows or the minimum hourly flows to the WWTP.
- **New WWTP Options:** The Study considered a number of options including:
 - Privatization
 - Alternative 2 (pre-engineered package modular WWTP) with Alternative 2.a (~3,658,153 Total Present Worth) to meet current limits and Alternative 2.b (\$4,304,678 Total Present Worth) to achieve BNR. Study-described Purestream system was only an 0.120 MGD design (Purestream did not appear to propose a design for 0.395 MGD flow).
 - Design included replacing headworks with new 1.0 inch coarse screen and mechanical screen; new aerated grit chamber; addition of chemical feed system for copper effluent reduction; primary clarifier upgrades into equalization tanks; retrofitting existing Primary Wet Well into pump station to direct flow to pre-engineered 60,000 GPD package treatment units; inclusion of anoxic selector tank for Alternative 2.b; instrumentation and controls; inclusion of TP removal system for Alternative 2.b; inclusion of existing chlorine disinfection system (no upgrades), inclusion of existing Aerobic Digesters (no upgrades). Trickling filters and existing Secondary Clarifier would be eliminated/demolished. They used the Purestream Extended Aeration System for design comparison (two 60,000 gallon aeration tank, two 10,000 gallon clarifier, two airlifts, five blowers, five air distribution, two pumps, flow distribution, controls). Alternative 2.b would add anoxic selector tanks.
 - Alternative 3: New Oxidation Ditch, Modified Ludzack-Ettinger (MLE) Process WWTP: Design included replacing headworks with new 1.0 inch coarse screen and mechanical screen; new aerated grit chamber; addition of chemical feed system for copper effluent reduction; primary clarifier upgrades into equalization tanks; retrofitting existing Primary Wet Well into pump station to direct flow to process tanks; Phased oxidation ditch tanks with inclusion of bio-phosphorus removal selector; installation of screened raw wastewater pump station to pump to proposed phased oxidation tanks; retrofit existing secondary clarifier with replacement sludge pump; inclusion of existing chlorine disinfection system and aerobic digesters (no upgrades) plus instrumentation/controls. Trickling filters to be eliminated/demolished. Alternative 3.a for 0.395 MGD facility (\$5,456,474 Total Present Worth) and 3.b (\$4,081,055 Total Present Worth) for 0.120 MGD facility.
 - Alternative 4.a and 4.b: SBR Process (4.a at 0.395 MGD and 4.b at 0.120 MGD capacity): Design included replacing headworks with new 1.0 inch coarse screen and mechanical screen; new aerated grit chamber; addition of chemical feed system for copper effluent reduction; primary clarifier upgrades into equalization tanks; retrofitting existing Primary Wet Well into pump station to direct flow to SBRs tanks;

installation of screened raw wastewater pump station to pump to SBR tanks, SBR tanks, retrofit existing secondary clarifier with replacement sludge pump; inclusion of existing chlorine disinfection system and aerobic digesters (no upgrades) plus instrumentation/controls; installation of chemical feed system for TP removal in event of future BNR requirements; elimination/demolition of existing Trickling filters. Alternative 4.a assumed 0.395 MGD plant (\$5,590,861 Total Present Worth), whereas Alternative 4.b was for 0.120 MGD plant (\$4,820,712 Total Present Worth).

- The Feasibility Study indicated HRG provided CSSH with “detailed review comments” separately on the 3/3/2017 Draft NPDES Permit (per Feasibility Study Section 1.0 Executive Summary, page 2), but the 5/3/2017 Department of Human Services (DHS) Letter that simply requested “the standards, limitations, and obligations under the Draft Permit be modified and/or the timeframes for compliance be extended to allow the Hospital to determine and implement the best option for meeting appropriate environmental standards”.

2/7/2025: DEP (Berger) E-mail restarting NPDES permitting process, and asking for updated NPDES permit application information (and any public comments on 2017 Draft NPDES Permit) by 4/7/2025.

2/7/2025: Applicant (Paul Pasek) E-mail indicating receipt of DEP 2/7/2025 E-mail and asking for additional parties to be copied on future communications.

2/7/2025: DEP (Berger) E-mail asking for updating of application client and site contact information, given new parties listed in 2/7/2025 Pasek E-mail.

3/6/2025: DPW engineer (Rundquist) telephone call indicated that they were going to start an I&I project and had hopes of getting a WWTP unit arm operating again (3rd try). He is going to send an e-mail for application information (what I have readily available) and may do file review since they are now looking at replacing the old STP. Told him I vaguely remembered a boiler discharge issue that he should check on.

4/2/2025: DPW Engineer (Rundquist) E-mail: In our telephone conversation today, I informed you that we had the rebuilt rotating arm for the primary trickling filter installed on March 25, 2025 after several years of efforts and multiple JOC contracts to get the primary unit back into service. Ryan Wilbur, our operator at CSSH WWTP was able to add some additional pumping from the final clarifier into the recirculation system and the new unit is now rotating 24/7. Although we have not seen it yet in the very short time the primary filter has been back in operation, we expect to be back in compliance with all NPDES parameters within a few weeks. In addition to the above I let you know that I was looking into a modification of the primary recirculation pump system back to the primary filter that would raise the pumping rate to a sufficient flow to rotate the primary TF rotating arm with only one primary recirculation pump in service.

4/3/2025: DEP (Berger) E-mail providing requested extension to 6/1/2025 for NPDES Permit Application update.

4/17/2025: Assorted DEP (Berger) E-mail to Rundquist with requested electronic copies of the 2018 NPDES Permit renewal application submittal, 2018 WWTP Evaluation Planning and Feasibility Study (without attachments), 1/4/2017 Permittee letter on boiler blow-down issues, 1/10/2017 Consulting Engineer (Gillette) Letter to Carachilo (about WWTP issues and options), and 1/20/2017 E-mail with boiler water MSDS, plus copy of 2017 Draft NPDES Permit & Fact Sheet & EPA comments to Rundquist as he indicated missing files at the facility.

6/23/2025: Rundquist E-mail: Good News, We are and have been meeting all of our NPDES limits for about the last 2 months now that we have the upper trickling filter rotating. We now know that we can meet our ammonia limits consistently during the warm weather months. We are still expecting difficulties meeting our ammonia limits during the cold weather months. As I discussed with you, at the current time we have an I&I reduction project that will be ongoing for about the next year. We will have the flow data to move ahead with the design of a new WWTP for the hospital to replace the aged facility we have now. We continue to have many mechanical issues at the WWTP due to it's age.

6/26/2025: DEP Berger E-mail asking for overdue application with 7/11 deadline unless they are resampling in which case would give them another 60 days. They have repaired TF and working on I&I reduction plan.

6/27/2025: Rundquist E-mail: At the present time we have an I&I reduction project just starting up. Our plan is to see how much we can reduce the plant average daily design flow below 0.395 MGD so we can reduce the new plants size and save the Commonwealth on cost. This will require an observation period of at least several months before we can determine the impacts of the project on our influent flow rates. We know we can reduce the 0.395 MGD number as our ADF in dry weather are Like 40,000 to 50,000 GPD is all. During wet weather we have much higher flows due to I&I. We plan to apply for an NPDES permit at the lowest flow rate possible and that will be much lower than the 0.395 MGD. We currently are permitted for. Effluent quality has definitely changed and we plan to resample at his point also. The July 11th, 2025 submission deadline for the NPDES permit renewal is problematic as the scheduled completion date for our I&I reduction project is 1/10/26 and a several month (depending on adequate rainfall data) period of flow data will be required after that to determine our average daily design flowrate for the new WWTP. Spring of 2026 looks to be about the earliest time we will be able to submit our NPDES renewal about the time we plan to begin the design of a new SBR treatment plant to replace our existing aged facility.

7/16/2025: DEP (Berger) E-mail requiring NPDES permit application update by **9/11/2025** (additional time given to allow for updated sampling and analysis).

8/12/2025: DEP (Berger) E-mail reminder for revised NPDES Permit application by 9/11/2025.

9/11/2025: DPW (Rundquist) E-mail and partial updated application submittal (**Public Upload# 345600**). E-mail discussed operation history and indicated concern that the effluent data might not be representative due to out-of-service equipment/units. Proposed additional sampling.

9/24/2025: DPW (Rundquist) E-mail indicating additional sampling scheduled.

12/31/2025: DEP (Berger) E-mail requiring submittal of promised application sampling data by 1/15/2026.

12/31/2025: DPW (Rundquist) E-mail indicating sampling data would be submitted the following week.

1/14/2026: Revised NPDES Permit Application form (**Public Upload# 345600**) and influent/effluent sampling data submitted.

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

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
CBOD ₅	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)



Pennsylvania
Department of
Environmental Protection