pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northeast Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0045985**
Facility Type	**Municipal**	APS ID	**762659**
Major / Minor	**Major**	Authorization ID	**1463992**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Mountaintop Area Joint Sanitary Authority (MAJSA) Luzerne County**	Facility Name	**Mountaintop Area Joint Sanitary Authority POTW**
Applicant Address	290 Morio Drive Mountain Top, PA 18707	Facility Address	290 Morio Drive Mountain Top, PA 18707
Applicant Contact	Jeffery Mylet	Facility Contact	Jeffery Mylet (alternate contact Jayce Temperance)
Applicant Phone	(570) 678-7411	Facility Phone	(570) 678-7411
Client ID	169775	Site ID	1478
Ch 94 Load Status	Not Overloaded	Municipality	Dorrance Township
Connection Status	Legally Modified Connection Ban	County	Luzerne
Date Application Received	November 21, 2023	EPA Waived?	No
Date Application Accepted	January 16, 2024	If No, Reason	Major Facility, Significant CB Discharge
Purpose of Application	Renewal of NPDES Permit.		

Summary of Review

This is a 4.16 MGD POTW that discharges to a 4:1 effluent-dominated impaired stream (impairment causes include Organic Enrichment from Municipal Point Sources, i.e. Treatment Plant) and is a significant Chesapeake Bay discharger with annual mass caps.

- Application:
  - Public Upload# 253053 (received 8/15/2024) – revised NPDES Application
  - Public Upload# 245577 (received 7/15/2024) – site specific studies (Zinc TRE from previous NPDES Permit Term)
  - Public Upload# 270536 (received 11/12/2024) – supplemental information
  - Public Upload# 104010 (received 1/3/2024)– original NPDES renewal application
  - Public Upload# 201565 (received 1/16/2024) – supplemental information (Predraft Survey Workbook and lab sheets)
- Flows: AADF flows were 2.77 MGD (2022), 3.01 MGD (2021) and 2.96 MGD (2020), with 4.47 MGD highest monthly average flow in April 2022, and peak instantaneous flow of 9.32 MGD.
- POTW bypasses and Overflows:
  - Overflows (2019, 2020, 2021, 2022, 2023): There is a pattern (12) of overflows at the (offsite) Walden Park Pump Station in the last 5 years. MAJSA blamed the overflows on I&I (groundwater and stormwater) in the Walden Park collection system area, and has been doing I&I work (smoke testing, inline flow measurements, televising, and visual manhole inspections).
  - WWTP bypasses (2020 and 2023): There have been two (2) WWTP EQ Tank overflow discharges, said to be “necessary to prevent severe property damage” to the MAJSA’s treatment facility. I&I work in progress (including a sewer replacement project) is expected to reduce peak influent wet weather flows.
- Previous Zinc TRE: A Zinc TRE/Final WQBEL Compliance Report was done in the previous NPDES Permit term, which concluded they could comply with the Final Zinc WQBELs. Related submittals included:

Approve	Deny	Signatures	Date
X		James D. Berger (signed) James D. Berger, P.E. / Environmental Engineer	March 21, 2025
X		Edward Dudick, P.E. / Environmental Engineer Manager	March 21, 2025

Summary of Review

- On-Base No. 9200 (uploaded 12/24/2020): This information was regarding the separate Part C.II CBOD5/TSS WQBELs
- On-Base No. 9201 (uploaded 12/24/2020): Part C.IV Site-specific information) contained collected site-specific information at that time.
- On-Base No. 9202 (uploaded 12/24/2020): Industrial Waste Survey
- On-Base No. 25208 (uploaded 6/25/2021): Final WQBEL Compliance Report submittal. Additional site-specific sampling data was included.

Sludge use and disposal description and location(s): 222 dry tons was disposed at Wayne Township Landfill.

Part A: Substantial changes flagged below (in addition to permit template updates):

- **Part A.I.A and B (Outfall No. 001)**: Interim monitoring and Final WQBELs (Total Copper and Hexachlorobutadiene) due to Reasonable Potential Analysis. See also related Part C.IV requirements/options.
- **Part A.I.C (Outfall No. 001):** Revised Ammonia-N limits due to water quality modeling (2020 Chapter 93 revised WQS), new E Coli monitoring (2020 Chapter 93 WQS), and new PFAS Strategy monitoring requirements (with footnote). TRC limits slightly revised. New Total Aluminum, Hexavalent Chromium, and Total Manganese monitoring requirement per Reasonable Potential Analysis. Several previous monitoring requirements and WET Test TUc limits dropped per Effluent Limitations and WET Test Sections below.
- **Part A.I.D (Outfall No. 002) and A.I.E (Outfall No. 003):** Several PAG-03 Appendix J (Miscellaneous) monitoring requirements added (Chemical Oxygen Demand, TN, TP). See also Part C.VII requirements.

Part C Special Conditions: Changes bolded.

- **Part C.I**: Existing Standard Chesapeake Bay conditions for this significant Chesapeake Bay discharger.
- **Part C.II**: **Updated** POTW Pretreatment Program **Implementation** Conditions **(including new PFAS related requirements)**
- **Part C.III**: Existing Standard Solids Management Conditions
- **Part C.IV**: **New WQBEL for Toxic Pollutants Permit Condition (Total Copper and Hexachlorobutadiene) with 3-year schedule of compliance per Reasonable Potential Analysis.**
- **Part C.V**: **Updated** Chronic WET Test conditions **(No limits per WET Test section)**. Slight change in the dilution ratios.
- **Part C.VI**: **New WQBELs below Quantitation Limits (Hexachlorobutadiene)**
- **Part C.VII: Updated** stormwater standard conditions for major POTW, (with existing language to address infiltration/sheet flow scenarios due to Authority statements that stormwater infiltrates prior to reaching main branch of Big Wapwallopen Creek). **Added IW Stormwater Annual Report submittal requirement and benchmark language for Chemical Oxygen Demand (COD).**
- **Parts C.VIII.A, B, & C**: Existing Standard Sewage conditions (stormwater prohibition; necessary property rights; proper management of residuals).
- **Part C.VIII.D**: **Updated** Chlorine minimization condition
- **Part C.VIII.E**: Existing Dry Stream condition due to limited dilution at facility discharge outfalls.
- **Part C.VIII.F**: **New High Flow Management Plan condition due to several Influent EQ tank overflow incidents.**
- **Part C.VIII.G**: Existing Site-specific Condition (discharge/stream changes).

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)	4.16
Latitude	41º 6' 47.58"	Longitude	-75º 57' 33.50"
Quad Name	Freeland	Quad Code	1038 (4.20.3)
Wastewater Description:	Sewage Effluent		
Receiving Waters	Big Wapwallopen Creek (CWF, MF)	Stream Code	28231
NHD Com ID	65636529	RMI	-
Drainage Area	18.8 square miles	Yield (cfs/mi^2)	0.0781
Q_{7-10} Flow (cfs)	1.47	Q_{7-10} Basis	USGS PA Streamstats
Elevation (ft)	~1060 Feet (USGS Terrain Mapper)	Slope (ft/ft)	-
Watershed No.	5-B	Chapter 93 Class.	CWF, MF
Existing Use	None	Existing Use Qualifier	
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Impaired		
Cause(s) of Impairment	ORGANIC ENRICHMENT		
Source(s) of Impairment	MUNICIPAL POINT SOURCE DISCHARGES		
TMDL Status	None	Name	

Background/Ambient Data		Data Source
pH (SU)	7.06	1/17/2019 Upstream Sample ID: 227465; Sequence Number: 678; ~0.09 miles upstream of Outfall No. 001. 1/17/2019 Downstream Sample ID: 2274645 (was at 7.46 SU), ~0.09 miles downstream of Outfall No. 001 (downstream of UNT confluence).
Temperature (°C)	0.4	See above. Downstream Sample at 1.6 C.
Hardness (mg/L)	32	See above. Downstream Sample at 73 mg/l. Application information was 49.4 mg/l (7/24/2020 48 mg/l; 7/21/2020 56 mg/l; 7/27/2020 54 mg/l; 8/22/2020 40 mg/l).
CBOD5 (mg/l)	1.92	See above. Downstream Sample at 1.90 mg/l.
Total N (mg/l)	0.66	See above (0.60 Nitrate-N). Downstream sample was 2.06 mg/l (1.88 mg/l Nitrate-Nitrite).
Total P (mg/l)	<0.01	See above. Downstream sample was 0.095 mg/l
TSS (mg/l)	12	See above. Downstream Sample at 14 mg/l.
Aluminum (ug/l)	17.3	See above. Downstream Sample at 30.100 ug/l
Manganese (ug/l)	54.0	See above. Downstream Sample at 51.0 ug/l.
Zinc (ug/l)	<5.00	See above. Downstream Sample at 6.930 ug/l. Copper, Lead, Total Iron were ND for both samples.

Nearest Downstream Public Water Supply Intake	DANVILLE BORO MUNI AUTH (ID# 101934-001)		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	-
PWS RMI	-	Distance from Outfall (mi)	~41 miles

Changes Since Last Permit Issuance:

- The Chapter 93 Water Quality Standards were revised in 2020 (revised Ammonia-N criteria; new E Coli criteria). The previous 5/21/2019 NPDES Permit was issued prior to their 7/11/2020 effective date.

- See attached 5/23/2019 DEP Biologist (Tim Daley) Cause/Effect Stream Survey Memo. Stream improvement noted, but 2018-2019 were very wet years which might bias results (aquatic life benefitting from abnormal wet weather years' dilution as compared to more normal conditions). Facility also supplied stream data in terms of Dissolved Oxygen (DO) levels in previous NPDES Permit Renewal application that showed low oxygen was not contributing to stream impairment.

MAJSAStreamSurvey.pdf

Other Comments:

Background Information:

- This is a natural trout reproduction stream.
- Effluent Dominated-stream: This is a 4:1 effluent-dominated stream at NPDES Permit Basis flow.
- Q7-10/Low Flow: USGS PA Streamstats (at Outfall 001 coordinates) was used as more conservative than the previously used USGS Report 2011-1070 "Selected Streamflow Statistics for Streamgage Locations in and near Pennsylvania" by Maria H. Stuckey and Mark A. Roland (Table 2, page 25) regarding the downstream USGS Gage #01538000 (Wapwallopen Creek near Wapwallopen PA), about 9.2 miles downstream (and which would also include the MAJSA discharge flows during low flow conditions).
    - The previous LFY used was 0.0820 CFS/square miles. The new LFY is slightly reduced to 0.0781 CFS/square mile.
    - The Outfall No. 001 Q7-10 low flow was reduced from 1.606 CFS (~1.038 MGD) to 1.47 CFS.
    - The (~9.2 mile downstream) gage location is on the larger Wapwallopen Creek, with assorted changes in elevation, etc.:

	Outfall No. 001 on Big Wapwallopen Creek (ungaged)	**Gage No. 1538000 (Wapwallopen Creek near Wapwallopen PA)**
Drainage area	18.8 square miles	43.8 square miles
Elevation	~1060 Feet	752.41 Feet
Precipitation (mean annual)	44 inches	43.7 inches
Depth to Rock	4.4 feet	4.47 feet
Stream density (total length of stream divided by drainage area)	1.45 miles/square mile	1.37 miles/square miles
Q7-10 Low Flow	1.47 CFS per PA Streamstats	3.6 CFS per PA Streamstats
Low Flow Yield	0.0781 CFS/square mile (calculated)	0.0821 CFS/square mile (calculated)

- Ongoing Stream Impairment (aquatic life) Background Information: The known and/or potential causes (individually or synergistically/cumulatively) for stream impairment include:
    - Organic Enrichment (known cause of stream impairment):
        - Previous MAJSA stream sampling eliminated low DO as a known cause of stream impairment.
        - The previous NPDES permit incorporated more stringent ABACT-based CBOD5/TSS limits, and additional monitoring/reporting (CBOD5/TSS minimum monthly average reduction; TOC).
    - Potential Short Term Exceedances/Cumulative Impacts of Metals: The previous NPDES permit term included additional monitoring and IPP conditions. See updated Reasonable Potential Analysis.
    - Potential Nutrient impacts on Receiving Stream (TN and TP): The 12/20/2006 DEP Chesapeake Bay Letter (annual mass cap limits) stated that the Big Wapwallopen Creek had been identified as "susceptible to nutrient-related problems, or has previously been identified impaired and nutrients may be the cause. If at some time in the future a TMDL is implemented to correct a nutrient-related water quality

problem in this segment, nutrient effluent limits for your discharge may be more restrictive than the Chesapeake Bay cap loads". (Underlining added.) No such TMDL developed to date.

- Contribution of Historic Operational problems: During the previous renewal review, the DEP Biologist indicated that the WWTP had had operational problems of various kinds over the years (including flooding that burned out pumps, releasing raw sewage at one time) that might have contributed to historic stream impairment. Proper O&M prevent recurrences of these types of problem and their impact on the waters of the Commonwealth.
- Cumulative/Synergistic Impacts: The standard Whole Effluent Toxicity (WET) Test requirements address synergistic/cumulative effects.

- **6/21/2021 Final WQBEL Compliance Report (On-Base No. 25208, "Evaluation of Big Wapwallopen Creek for Zinc Levels") and 2020 Site-specific data collection**: This Final WQBEL Compliance Report was submitted in accordance with the previous NPDES Permit Part C.IV (WQBELs for Toxic Pollutants - Zinc) condition. Earlier Site-specific data was submitted on 12/24/2020 (On-Base Nos. 9200 (CBOD5 and TSS sampling due to Part C.II new limits), 9201 (Zinc Metal Translator), and 9202 (TRE Industrial Waste Survey)). The Final WQBEL Compliance Report indicated that facility should meet the Final Zinc WQBELs based on the data and in the absence of any significant changes in the POTW Influent. The gathered site-specific data and analysis are discussed below and were incorporated into this Renewal's Reasonable Potential Analysis as appropriate:
  - Section 3.0 noted the presence of upstream dischargers that might contribute zinc to ambient stream conditions.
  - Section 2.0 (Water Quality Assessment) included Site-specific stream-sampling (grab sample at mid-stream) data "collected upstream of the POTW discharge #1" but also "samples were taken beyond the mixing zone to ensure the effluent is well mixed with the waters of the Big Wapwallopen Creek" (about 25 meters downstream of Outfall No. 001). Original 2020 sampling showed ND concentration levels of Zinc but data conflicts with Final WQBEL Compliance Report Section 2.0 where concentration levels were identified (along with discrepancy in table units and sampling dates). Additional sampling was conducted February 2021 – April 2021 (outside the normal July – November stream low flow periods) at more sensitive 0.005 mg/l detection levels. Some dissolved Zinc concentrations were above the Total Zinc concentrations or were ND. No lab sheets were provided. A Zinc Metal Translator of 0.982206 (Geo Mean, no TSS correlation available) was calculated.
    - Upstream Sampling Data:

Sampling Date	Background Total Zinc (mg/l)	Total Hardness Background Stream Grab Sample (mg/l)	Stream Flow (MGD)
7/16/2020	<0.01	48	12.6
7/21/2020	<0.01	56	8.5
7/27/2020	<0.01	54	6.4
8/6/2020	<0.01	40	15.7
8/13/2020	<0.01	52	7.6
8/20/2020	<0.01	46	6.6
8/26/2020	<0.01	46	6.4
9/3/2020	<0.01	40	17.2
9/10/2020	<0.01	48	26.5
9/18/2020	<0.01	52	5.6
2/5/2021	0.003	104	-
2/11/2021	0.006	50	-
2/17/2021	0.007	58	-
2/25/2021	0.008	64	-
3/3/2021	0.004	40	-
3/9/2021	0.003	40	-
3/16/2021	0.003	40	-
3/23/2021	0.003	32	-
4/6/2021	0.004	32	-
Mean (Arith))	0.0076	-	-
Mean Detected	0.0051	-	-

- Downstream Sampling Data:

Date	Stream Calculated Total Hardness (mg/l) and stream flow (MGD)	Discharge Total Hardness (mg/l) And Plant Flow (MGD)*	Total Zinc (mg/l)	"Assumed" Dissolved Zinc (mg/l)	Field pH (SU)	TOC (mg/l)	TSS (mg/l)
7/16/2020	48 12.6	422 2.31	0.014	0.01	7.79	2.6	<3.0
7/21/2020	56 8.5	350 2.21	0.014	0.019	7.16	2.50	<3.0
7/27/2020	54 6.4	356 2.02	0.020	0.019	7.85	2.60	-
8/7/2020	40 15.7	248 2.33	0.017	0.012	7.68	3.60	-
8/13/2020	52 7.6	344 2.27	0.013	0.022	7.79	3.00	-
8/20/2020	46 6.6	394 2.13	0.018	0.038	7.92	3.20	-
8/26/2020	46 6.4	374 2.16	0.022	0.017	7.74	3.20	-
9/4/2020	40 17.2	344 2.44	<0.01	<0.01	7.95	3.40	-
9/10/2020	48 26.5	334 2.18	<0.01	<0.01	7.6	2.30	-
9/18/2020	52 5.6	230 2.30	0.017	0.017	7.66	2.90	-
2/5/2021	104 -	288 2.47	0.01	0.01	7.67	1	-
2/11/2021	50 -	320 2.37	0.003	0.007	7.84	1.8	-
2/17/2021	58 -	306 3.21	0.006	0.009	7.25	2.3	-
2/25/2021	64 -	334 3.15	0.007	0.006	7.68	1.7	-
3/3/2021	40 -	186 4.97	0.008	0.011	7.26	2	-
3/9/2021	40 -	232 4.72	0.004	0.007	7.63	1.5	-
3/16/2021	40 -	224 3.15	0.003	0.006	7.68	1.2	-
3/23/2021	32 -	228 3.51	0.003	0.004	7.13	1.5	-
3/30/2021	32 -	134 4.18	0.003	0.008	7.32	2.5	-
4/6/2021	50 -	208 3.13	0.004	0.008	7.56	1.9	-
Mean (Arith)	49.4	292.8*	0.0126	0.0127	-	2.34	-

*Lower discharge hardness at higher discharge rates noted, in addition to conflict with Renewal Application discharge data. Cause of discrepancy unknown. Given effluent-dominated stream, the higher Discharge total hardness values would normally be expected to contribute to higher downstream Total Hardness values.

Stream Design Total Hardness Calculation (log-normal calculation per DEP Policy No. 386-2000-005, 6/28/2023):

- The permittee took ten stream samples above the Outfall No. 001 during the normal low flow period (July through November), and additional sampling outside the low flow time frame.
- The DEP Policy referenced the EPA Technical Support Document for WQBELs Appendix E (Lognormal Distribution and Permit Limits Derivations) which uses a log normal distribution for ≤10 samples.
    - The DEP Policy indicates that when hardness correlates to flow, it is generally an inverse correlation (the higher the flow, the lower the hardness) which is expected due to stormwater contributions generally diluting the stream value, including AMD concentration.
    - Stream Discharge Hardness (calculated per DEP Technical Guidance Policy): 48.2 mg/l. See calculations below.
    - The Reported Discharge Hardness conflicted with new NPDES Permit Renewal Application data, and was discarded in the Renewal Reasonable Potential Analysis. Cause of change in effluent Total Hardness is unknown (possibly reduction of potential I&I over time, lab error, other).

Date	Total Hardness Stream above Outfall, i.e. "x" (mg/l)	Reported Effluent Total Hardness for comparison only* (mg/l)	Y = ln(x)	Y - u	$(Y – u)^2$
7/16/2020	48	422	3.8712	0.0019	0.0000361
7/21/2020	56	350	4.0253	0.156	0.024336
7/27/2020	54	356	3.9889	0.1196	0.01430416
8/6/2020	40	248	3.6888	-0.1805	0.03258025
8/13/2020	52	344	3.9512	0.0819	0.00670761
8/20/2020	46	394	3.8286	-0.0407	0.00165649
8/26/2020	46	374	3.8286	-0.0407	0.00165649
9/4/2020	40	344	3.6888	-0.1805	0.03258025
9/10/2020	48	334	3.8712	0.0019	0.0000361
9/18/2020	52	230	3.9512	0.0819	0.00670761
Total	482	-	38.6938	-	0.11389345

*2020 Effluent discharge Total Hardness data is inconsistent with renewal application sampling data (84 mg/l minimum, 125 mg/l max and 99.16 average for three samples), and therefore discarded in updated Reasonable Potential Analysis.

- Number of Samples (k): 10 in low flow period.
- Arithmetic Mean of x: 48.2
- Uy = Estimated Mean (log normal): 3.8693
- Vy = Estimated Variance (log normal): 0.01265 for k – 1 (9)
- Estimated Standard Deviation (log normal): 0.9709
- Estimated Coefficient of Variation (log normal): 0.3421
- **Ex = Mean (Daily Average, normal) = Exp (Uy + variance/2): 48.2 mg/l (used in updated TMS for ambient stream concentration)**

December 22, 2020 MAJSA Part C.IV (WQBELs for Toxic Pollutants) Report, prepared by Dennis Peters, P.E. (Peters Consultant Inc.): The cover letter indicated that this Report would be incorporated into a subsequent Final WQBEL Compliance Report (due 6/30/2021). This report was superseded by the Final WQBEL Compliance Report but included the following additional information:

- Exhibit A (MAJSA Zinc Metal Translator): The Table footnote: "A change in the testing occurred when Total Suspended Solids in the samples were below the detection limits. Therefore, Total Organic Carbon was the only category continued for the samples":
    - The Report also only provided two samples (initial two samples) TSS data (ND at <3.0 mg/l) which prevented correlation to TSS concentrations at higher TSS concentration levels.
    - The Table provided TOC concentrations instead (in the range of 2.30 mg/l – 3.60 mg/l).
    - The pH range was 7.16 – 7.92 SU.
- Exhibit B (Cross-Section Sample Point Section B-B, Big Wapwallopen Creek: Table (3/27/2020 – 9/17/2020 measurement data, 22 data points) provided for Velocity, "Distance from Top or Rebar to Water Surface", "Depth of Water at Rebar"; "Cross Sectional Area (A) in sqft at Sampling Point" and "Flow Rate (Q) Cubic Feet/Second" provided. However, no statistical analysis was provided to calculate average velocity at Q7-10 low flow and/or evaluation of data in terms of Q7-10 low flows.

- Exhibit C (Sealed Cross-Section B-B Drawing): The figures show Cross-Section B-B but not relation to Outfall No. 001 location. Stream (3/5/2020) is shown at ~24 feet in width and 1.55 feet deep at deepest. Cross-flow area was calculated to be 26 square feet.
- Exhibit D (Effluent Zinc Hourly Coefficient of Variation): Table of measurements (date, time, Total Zinc concentration, lognormal Total Zinc concentration, Variance provided. Estimated 0.058078954 Long Term Average, with Variance of 0.000217393, and estimated hourly COV of 25%. 6 days of measurements with 4 – 5 sample points per day.
- Exhibit E (Effluent Zinc Daily Coefficient of Variability): Table of 39 data points (10/28/2019 – 9/15/2020, samples less than weekly apart and skipping months) was used to calculate the COV. The LTA was estimated at 0.0434594 mg/l with 0.000231163 daily COV, and "AMEC" of 0.000866029. See Effluent Section for TOXCONC-calculated LTAMEC and Daily COV using a 12-month data set (June 2023 – 2024), used in the updated Reasonable Potential Analysis.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	002 and 003	Design Flow (MGD)	0 (stormwater only)
Latitude	41º 6' 55.50" (002) 41º 6' 50.48" (003)	Longitude	-75º 57' 37.75" (002) -75º 57' 37.61" (003)
Quad Name	Freeland	Quad Code	1038
Wastewater Description:	Stormwater		
Receiving Waters	Unnamed Tributary to Big Wapwallopen Creek (CWF, MF)	Stream Code	-
NHD Com ID	65636531	RMI	0.19 (002) 0.10 (003)
Drainage Area	-	Yield (cfs/mi^2)	-
Q_{7-10} Flow (cfs)	-	Q_{7-10} Basis	-
Elevation (ft)	-	Slope (ft/ft)	-
Watershed No.	5-B	Chapter 93 Class.	CWF, MF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	E-maps indicates this UNT supports aquatic life		
Cause(s) of Impairment	-		
Source(s) of Impairment	-		
TMDL Status	-	Name	

Background/Ambient Data: None available		Data Source
pH (SU)	-	-
Temperature (°F)	-	-
Hardness (mg/L)	-	-
Other:	-	-

Nearest Downstream Public Water Supply Intake		DANVILLE BORO MUNI AUTH (ID# 101934-001)	
PWS Waters	Susquehanna	Flow at Intake (cfs)	-
PWS RMI	-	Distance from Outfall (mi)	~41

Changes Since Last Permit Issuance: None known

Other Comments: This ~0.224 mile UNT is parallel and adjacent to I-81, and receives highway runoff (in addition to Treatment plant stormwater discharges).

Treatment Facility Summary

Treatment Facility Name: Mountaintop Area Joint San Authority POTW

WQM Permit No.	Issuance Date	Scope
4073404-T1	10/28/1976	Original permit for collection and treatment of sewage transferred to MASJA.
4099405	2/17/2000	WWTP Expansion to 4.16 MGD, including new screening building, three aeration basins, new clarifiers, an aerobic digester, chlorine contact tank, sludge recirculation, and replacement of some existing equipment.
4006403	5/12/2006	Transformation of existing aerobic digesters to partitioned anaerobic/anoxic tanks (BNR process), two existing clarifiers to be converted to aerobic digesters, converting to UV disinfection, and installation of a 90-foot clarifier, an additional aerobic digester, and new gravity belt thickener. The WQM Application Module 1 identified the expected organic load capacity at 4,600 lbs BOD_5/day.
4009401	5/13/2009	Installation of 3 million-gallon EQ tank, a potassium permanganate feed system, a replacement sluice gate and concrete channels, piping, valves, and appurtenance. All done according to Authority.
4013401	10/22/2013	WQM Part II Permit to demolish a WWTP belt filter press, install new WWTP centrifuge for sludge dewatering, and improve (offsite) pump stations at I81 N/S Rest stops. Additional work at the treatment plant includes the installation of covers over the flumes conveying effluent to the clarifiers in an effort to minimize algae growth. NOTE: Construction certification for Centrifuge received 11/5/2013. Construction certification for pump stations received 5/9/2014.

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Tertiary	Activated Sludge With Solids Removal	Ultraviolet	4.16

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
4.16	4600	Not Overloaded	Anaerobic Digestion	Landfill

Changes Since Last Permit Issuance: None known.

Other Comments:

Treatment Plant:

- Application indicates plans for a grit removal building with two automatic rag screens, grit chamber and grit removal conveyance system within the 5-year NPDES permit term. 2/16/2024 DEP Letter indicated a grit removal system could be installed without a WQM permit.
- Application indicates wastewater treatment chemicals include Soda Ash (influent pH adjustment), DEL PAC 2000 (for phosphorus removal and water polisher), and Defoamer.
- No hauled-in wastes.
- Facility has a 2.9-MG influent flow equalization tank that helps with peak wet weather influent flows. Several EQ Tank overflows have occurred but there has been I&I work at one (Walden Park) pump station area to eliminate overflows.
- 10/31/2025 DEP Inspection report indicated: One (1) influent screen, one (1) comminutor (muffin monster), one (1) secondary bar screen for rag removal), one (1) EQ Tank/Basin, three (3) Aeration basins, three (3)

nitrification/denitrification systems (aerobic and anoxic tanks), two (2) secondary clarifiers, and UV disinfection (two UV chambers). One (1) sludge thickener (centrifuge) and three (3) sludge digesters.

- Influent sampling data included low BOD5 (35 mg/l) and TSS (17 mg/l) values indicating times of high I&I contributions in the collection system.

2023 Chapter 94 Report (Upload No. 222612):

- Form Items 1, 2, 3, and 9: No existing or projected overloading.
  - Hydraulic Loading: 3.32 MGD 3-month Average for 4.16 MGD Hydraulic Design Capacity.
  - Organic Loading: 4,103 lbs BOD5/day max month for 4,600 lbs BOD5/day Organic Design Capacity.
  - Existing EDUs: 7,422 EDUs (3.5 persons per EDU, decreasing from 8,000 EDUs for 2022. Trending decrease in EDUs since 2019 (8,675 EDUs).
    - Cause of decreasing EDUs trend was not explained.
    - NPDES Permit Renewal Application indicated ~14,662 persons in service. This would be 5865 EDUs at 2.5 persons/EDU for comparison with expected dry weather sewage loading of 1.466 MGD (in absence of any industrial contribution) and 2,496 lbs BOD5/day per DWFM defaults.
  - Load/Capita: 0.089 lbs BOD5/day. DWFM default assumption is 0.17 lbs/capita for comparison.
- Form Item 4 (Sewer Extensions) & Attachment C: Attachment C figure provided showing “Heritage Oaks” development, without any other identified sewer extension (constructed or proposed).
- Form Item 5 (Sewer System monitoring/maintenance): Smoke testing has begun in the Walden Park Pump Station basin. Attachment D summarized other O&M work, but no breakdown by area. Attachment had WWTP O&M activities listed.
- Form Item 6 (Capacity exceedances): Walden Park SSOs due to stormwater inflow issues. Smoke testing and pump station rehab indicated in progress. Attachment E included SSO reports, but lacked a copy of the Corrective Action Plan for the Walden Park Pump Station/basin overflows and I&I issues. The report also did not mention the (issued) separate WQM permit application for a replacement sewer system the (Fairview) Glen Summit Development sewer system which would replace a failing sewer system area.
- Form Item 7 (Pump Stations): Eight (8) pump stations. Attachment F included 2023 Pump Station Draw Down Results per pump, not actual flow data by meter or estimation. For example, no information on Walden Pump Station flows given to clarify overload issues. Only two (2) pumps identified at the different pump stations. Identified capacities:
  - Walden Park PS: 410 and 405 GPM capacities)
  - Nuangola Elementary PS: 285 GPM (for each of the two pumps)
  - I-81 Southbound PS: 35 GPM (for each of the two pumps)
  - I-81 Northbound PS: 24 GPM (for each of the two pumps)
  - McDonalds PS: 42 GPM and 50 GPM
  - Lehigh Street PS: 20 GPM (for each of the two pumps)
  - Fawn Lake PS: 80 GPM (for each of the two pumps)
  - Ice Lakes PS: 125 GPM and 110 GPM
- Form Item 8 (IW):
  - IPP Annual Report not attached (NPDES Permit Part B.I.C.4.e and Part C.VIII.D). Attachment G indicated MAJSA adopted EPA-approved local limits on 4/19/2023 (Resolution 2-4-19-2023), with full EPA approval of the IPP on 11/2/2023. Annual IPP Report will be required in the next Chapter 94 Report.
  - Attachment G included Industrial Waste Report that indicated 5 SIUs.
    - Item 8.a (Applicable ordinance/reg): No copy of ordinance/reg included. Given adoption of local limits, this is problematic.
    - Item 8.b (Monitoring Program): Influent monitoring and IU monitoring data provided.
    - Item 8.c (problems): Several NOVs issued to IUs.
- Form Item 10 (Sewage Sludge Management Inventory): Attachment H included the DEP Operator worksheet for the required Sewage Sludge Management Inventory. The Sludge Production and Wasting Calculations were outside expected range (85 – 115%) with 83% (based on Chapter 94 Report) and 77% (based on Population).
- Form Item 12 (Flow Meter Calibration Report): Attachment I included WWTP effluent flow meter, UV channel flow meters, “North Bound PS”, “Walden Park PS”, “South Bound PS” calibration reports. No Calibration reports for Nuangola/Elementary School PS, McDonald PS, Lehigh Street PS, Fawn Lane PS, and Ice Lakes PS.

Compliance History

DMR Data for Outfall 001 (from February 1, 2024 to January 31, 2025)

Parameter	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24
Flow (MGD) Average Monthly	2.39	2.78	2.17	1.88	2.05	2.63	2.11	2.24	2.81	3.73	4.12	2.93
Flow (MGD) Daily Maximum	3.54	6.44	3.79	2.21	2.85	**7.98**	2.51	2.77	3.77	**7.87**	**6.49**	5.99
pH (S.U.) Instantaneous Minimum	6.71	6.37	6.56	7.06	6.99	6.74	6.96	6.94	6.86	6.53	6.57	6.67
pH (S.U.) Instantaneous Maximum	7.44	7.42	7.51	7.48	7.41	7.42	7.51	7.26	7.14	7.1	6.91	7.04
DO (mg/L) Instantaneous Minimum	7.9	7.4	7.0	6.7	7.1	7.2	6.8	7.2	7.4	7.1	7.1	7.2
TRC (mg/L) Average Monthly	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG
TRC (mg/L) Instantaneous Maximum	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG
CBOD5 (lbs/day) Average Monthly	< 63.3	< 59.6	< 54.2	< 47.1	< 50.9	< 61.6	< 53.8	< 56.4	< 69.8	< 86.3	< 107.0	< 67.2
CBOD5 (lbs/day) Weekly Average	< 93.0	< 76.6	< 75.1	< 48.8	< 57.0	< 75.1	< 57.9	< 58.5	70.8	< 110.3	< 147.2	< 75.3
CBOD5 (mg/L) Average Monthly	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
CBOD5 (mg/L) Weekly Average	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
BOD5 (lbs/day) Influent Average Monthly	1919	1859	2233	1900	1696	1551	1986	1840	2299	2092	2239	1953
BOD5 (lbs/day) Influent Daily Maximum	4624	2790	2837	2908	2262	2010	2606	2114	2724	3409	3461	2262
BOD5 (mg/L) Influent Average Monthly	90.4	96.1	128.3	123.3	101.3	77.2	110.9	98.1	98.9	76	62.2	87.5

BOD5 (mg/L) Influent Daily Maximum	176	148	170	197	155	92.7	148	119	115	140	95.1	100
CBOD5 % Removal (%) Minimum Monthly Average	96	96	97	97	97	96	97	97	96	94	93	96
TSS (lbs/day) Average Monthly	< 50.9	< 54.4	< 45.1	< 39.2	< 42.4	< 51.3	< 45.2	< 47.0	< 58.1	< 84.6	< 104.9	< 60.2
TSS (lbs/day) Influent Average Monthly	1562	1908	< 2262	2530	2228	2298	2472	2431	2556	2075	2167	2450
TSS (lbs/day) Influent Daily Maximum	3402	3110	3157	3394	2573	4470	3183	2936	3278	2755	3875	3172
TSS (lbs/day) Weekly Average	< 68.1	< 63.8	< 62.6	< 40.7	< 47.5	< 62.6	< 50.2	< 48.8	< 59.0	< 141.7	< 123.5	< 67.7
TSS (mg/L) Average Monthly	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
TSS (mg/L) Influent Average Monthly	79.3	98.7	< 136	165	132	113	139	130	110	75	60.2	111
TSS (mg/L) Daily Maximum	< 2.5	4.5	< 2.5	< 2.5	< 2.5	< 2.5	2.7	< 2.5	< 2.5	< 6.25	< 6.25	< 3.0
TSS (mg/L) Influent Daily Maximum	188	165	228	238	158	203	188	163	150	112	88	154
TSS % Removal (%) Minimum Monthly Average	96	97	97	98	98	97	98	98	98	95	93	97
Fecal Coliform (No./100 ml) Geometric Mean	< 3	2	< 2	< 2	< 2	< 2	< 3	25	17	10	5	3
Fecal Coliform (No./100 ml) Instantaneous Maximum	10.9	5.2	6.3	7.3	7.5	6.3	8.5	387.3	68.4	54.6	35	10.9
UV Intensity (µw/cm²) Instantaneous Minimum	24.53	24.04	24.26	24.04	24.07	24.3	24.24	24.1	24.1	23.56	24.05	24.04
Nitrate-Nitrite (mg/L) Average Monthly	3.54	3.17	3.59	5.04	4.55	4.37	3.94	3.75	4.32	3.48	3.13	2.96
Nitrate-Nitrite (mg/L) Daily Maximum	4.93	3.77	4.35	6.02	5.75	5.2	4.37	4.27	5.07	6.31	4.55	3.35

Nitrate-Nitrite (lbs) Total Monthly	2165	1927	1862	2467	2297	2763	2186	2119	3107	2804	3303	1931
Total Nitrogen (mg/L) Average Monthly	4.3	< 3.72	4.36	5.91	5.47	< 5.08	4.82	4.72	5.09	4.61	4.41	3.81
Total Nitrogen (mg/L) Daily Maximum	5.85	4.35	5.1	7.14	6.52	6.11	6.27	5.66	5.96	7.38	7.09	4.36
Total Nitrogen (lbs) Effluent Net Total Monthly	2631	< 2269	2268	2891	2769	< 3213	2678	2667	3663	3771	4527	2477
Total Nitrogen (lbs) Total Monthly	2631	< 2269	2268	2891	2769	< 3213	2678	2667	3663	3771	4527	2477
Total Nitrogen (lbs) Effluent Net Total Annual					< 39999							
Total Nitrogen (lbs) Total Annual					< 39999							
Ammonia (lbs/day) Average Monthly	< 1.8	< 1.7	< 1.6	< 1.4	< 2.7	< 2.4	< 1.6	< 1.6	< 2.0	13.6	19.9	< 2.4
Ammonia (mg/L) Average Monthly	**< 0.0876**	**< 0.0876**	**< 0.0877**	**< 0.0876**	**< 0.1574**	**< 0.1128**	**< 0.0876**	**< 0.0876**	**< 0.0876**	**0.468**	**0.7175**	**< 0.1052**
Ammonia (mg/L) Daily Maximum	**< 0.0876**	**< 0.0876**	**0.0881**	**< 0.0876**	**0.692**	**0.251**	**0.0878**	**< 0.0876**	**< 0.0876**	**1.56**	**2.73**	**0.182**
Ammonia (lbs) Total Monthly	< 55.3	< 54.0	< 47.5	< 42.6	< 82.5	< 73.1	< 48.7	< 49.4	< 63.2	409.3	617.7	< 69.7
Ammonia (lbs) Total Annual					< 1936							
TKN (mg/L) Average Monthly	0.752	< 0.548	0.768	0.87	0.918	< 0.708	0.881	0.968	0.771	1.131	1.278	0.844
TKN (mg/L) Daily Maximum	0.937	0.626	1.01	1.12	1.49	0.905	1.9	1.64	0.894	2.41	3.45	1.01
TKN (lbs) Total Monthly	465	< 341	406	424	472	< 450	491	548	556	967	1224	547
Total Phosphorus (lbs/day) Average Monthly	18	18	22	38	21	16	21	20	18	15	21	25
Total Phosphorus (mg/L) Average Monthly	0.872	0.939	1.3	2.44	1.273	0.819	1.189	1.058	0.766	0.556	0.661	1.125
Total Phosphorus (mg/L) Daily Maximum	1.43	1.28	1.94	2.88	1.87	1.2	1.7	1.72	0.938	1.05	1.3	1.32
Total Phosphorus (lbs) Effluent Net Total Monthly	561	561	653	1182	636	498	659	597	554	456	661	724

Total Phosphorus (lbs) Total Monthly	561	561	653	1182	636	498	659	597	554	456	661	724
Total Phosphorus (lbs) Effluent Net Total Annual					9335							
Total Phosphorus (lbs) Total Annual					9335							
Total Cadmium (lbs/day) Average Monthly	GG	GG	GG	GG	< 0.005	GG	GG	< 0.01	GG	GG	< 0.01	GG
Total Cadmium (lbs/day) Daily Maximum	GG	GG	GG	GG	< 0.005	GG	GG	< 0.01	GG	GG	< 0.01	GG
Total Cadmium (mg/L) Average Monthly	GG	GG	GG	GG	< 0.0003	GG	GG	< 0.0006	GG	GG	< 0.0006	GG
Total Cadmium (mg/L) Daily Maximum	GG	GG	GG	GG	< 0.0003	GG	GG	< 0.0006	GG	GG	< 0.0006	GG
Total Chromium (lbs/day) Average Monthly	GG	GG	GG	GG	< 0.06	GG	GG	< 0.07	GG	GG	< 0.1	GG
Total Chromium (lbs/day) Daily Maximum	GG	GG	GG	GG	< 0.06	GG	GG	< 0.07	GG	GG	< 0.1	GG
Total Chromium (mg/L) Average Monthly	GG	GG	GG	GG	< 0.0035	GG	GG	< 0.004	GG	GG	< 0.004	GG
Total Chromium (mg/L) Daily Maximum	GG	GG	GG	GG	< 0.0035	GG	GG	< 0.004	GG	GG	< 0.004	GG
Total Copper (lbs/day) Average Monthly	0.06	0.1	0.05	0.04	< 0.08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.2	< 0.2	< 0.2
Total Copper (lbs/day) Daily Maximum	0.07	0.4	0.07	0.05	< 0.1	< 0.2	< 0.1	< 0.1	0.2	< 0.3	0.4	0.3
Total Copper (mg/L) Average Monthly	0.00296	0.00683	0.00298	0.00316	< 0.00478	< 0.00723	< 0.00718	< 0.0062	< 0.00702	< 0.007	< 0.00642	< 0.01017
Total Copper (mg/L) Daily Maximum	0.00346	**0.0176**	0.00356	0.00387	< 0.007	0.00791	0.00778	0.0082	0.00707	< 0.007	0.00786	0.0134
Total Nickel (lbs/day) Average Monthly	0.06	0.05	0.05	0.04	< 0.1	< 0.3	< 0.2	< 0.2	< 0.3	< 0.4	< 0.4	< 5
Total Nickel (lbs/day) Daily Maximum	0.08	0.08	0.06	0.05	< 0.3	< 0.3	< 0.2	< 0.2	< 0.3	< 0.5	< 0.7	< 21
Total Nickel (mg/L) Average Monthly	0.00289	0.00291	0.0031	0.00301	< 0.00609	< 0.013	< 0.013	< 0.011	< 0.013	< 0.013	< 0.011	< 0.263

Total Nickel (mg/L) Daily Maximum	0.00412	0.00345	**0.0043**	0.00316	< 0.013	< 0.013	< 0.013	< 0.013	< 0.013	< 0.013	< 0.013	< 1.013
Total Silver (lbs/day) Average Monthly	GG	GG	GG	GG	< 0.009	GG	GG	< 0.02	GG	GG	< 0.02	GG
Total Silver (lbs/day) Daily Maximum	GG	GG	GG	GG	< 0.009	GG	GG	< 0.02	GG	GG	< 0.02	GG
Total Silver (mg/L) Average Monthly	GG	GG	GG	GG	< 0.0005	GG	GG	< 0.001	GG	GG	< 0.001	GG
Total Silver (mg/L) Daily Maximum	GG	GG	GG	GG	< 0.0005	GG	GG	< 0.001	GG	GG	< 0.001	GG
Total Zinc (lbs/day) Average Monthly	1.00	1.00	0.90	0.60	0.50	0.30	0.70	0.50	0.70	0.90	1.00	1.00
Total Zinc (lbs/day) Daily Maximum	2	2.0	1.0	0.7	1.0	0.4	1	0.60	0.80	1.0	2	1
Total Zinc (mg/L) Average Monthly	0.052	0.0525	0.0513	0.0407	0.0335	0.0154	0.0404	0.0286	0.0287	0.0332	0.0339	0.0463
Total Zinc (mg/L) Daily Maximum	**0.115**	0.0684	0.0883	0.0496	0.0736	0.0162	0.0878	0.0338	0.036	0.042	0.0364	0.0503
Total Toxic Organics (lbs/day) Average Monthly	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG
Total Toxic Organics (lbs/day) Daily Maximum	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG
Total Toxic Organics (mg/L) Average Monthly	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG
Total Toxic Organics (mg/L) Daily Maximum	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG
TOC (lbs/day) Average Monthly	105	83	91	88	91	114	120	114	119	140	150	111
TOC (lbs/day) Daily Maximum	133	93	135	93	112	140	194	140	151	177	205	136
TOC (mg/L) Average Monthly	5.24	4.72	5.17	6.17	5.53	5.63	6.91	6.27	5.16	4.96	4.05	4.99
TOC (mg/L) Daily Maximum	6.42	6.42	7.58	6.43	6.74	7.04	11	7.78	6.38	5.47	4.53	5.39
Chronic WET - Ceriodaphnia Survival (TUc) Daily Maximum		GG			1.25			GG			GG	

Chronic WET - Ceriodaphnia Reproduction (TUc) Daily Maximum		GG			1.25			GG			GG	

DMR Data for Outfall 002 (from February 1, 2024 to January 31, 2025)

Parameter	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24
pH (S.U.) Instantaneous Minimum		6.73						6.53				
pH (S.U.) Instantaneous Maximum		6.73						6.53				
TSS (mg/L) Instantaneous Maximum		2.9						16.7				
Oil and Grease (mg/L) Instantaneous Maximum		< 4.78						< 5.0				
TKN (mg/L) Instantaneous Maximum		< 0.5						< 0.5				
Total Iron (mg/L) Instantaneous Maximum		< 0.2						0.548				

DMR Data for Outfall 003 (from February 1, 2024 to January 31, 2025)

Parameter	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24
pH (S.U.) Instantaneous Minimum		6.64						6.62				
pH (S.U.) Instantaneous Maximum		6.64						6.62				
TSS (mg/L) Instantaneous Maximum		< 2.58						4.5				

Oil and Grease (mg/L) Instantaneous Maximum		< 4.95						< 5.0				
TKN (mg/L) Instantaneous Maximum		< 0.5						< 0.5				
Total Iron (mg/L) Instantaneous Maximum		0.214						0.237				

DMR Data for Outfall 001 (from April 1, 2023 to March 31, 2024)

Parameter	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23
Flow (MGD) Average Monthly	4.12	2.93	**4.27**	4.11	2.66	3.19	3.1	2.96	2.71	2.16	3.27	2.39
Flow (MGD) Daily Maximum	6.49	5.99	5.54	**11.42**	3.64	5.85	5.15	5.14	3.98	3.73	**9.02**	2.8
pH (S.U.) Instantaneous Minimum	6.57	6.67	6.39	6.18	6.44	6.35	6.58	6.7	6.61	6.80	6.60	6.68
pH (S.U.) Instantaneous Maximum	6.91	7.04	7.12	7.12	7.26	7.04	7.06	7.13	7.24	7.16	7.21	7.1
DO (mg/L) Instantaneous Minimum	7.1	7.2	7.2	7.8	8.4	7.2	7.1	7.1	7.7	7.0	7.0	7.0
TRC (mg/L) Average Monthly	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG
TRC (mg/L) Instantaneous Maximum	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG
CBOD5 (lbs/day) Average Monthly	< 107.0	< 67.2	< 93.6	< 116.6	< 65.9	< 78.9	< 87.4	< 69.6	< 69.6	< 57.8	< 57.8	< 44.1
CBOD5 (lbs/day) Weekly Average	< 147.2	< 75.3	< 133.9	< 176.8	< 84.6	< 94.1	126.9	< 74.6	< 86.6	< 76.6	< 106.6	< 53.3
CBOD5 (mg/L) Average Monthly	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 2.0	< 2.0
CBOD5 (mg/L) Weekly Average	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0

BOD5 (lbs/day) Influent Average Monthly	2239	1953	2474	2470	2006	1826	2493	1866	1211	1396	1976	2488
BOD5 (lbs/day) Influent Daily Maximum	3461	2262	3785	3473	2371	2293	3521	3229	2108	1974	2632	3542
BOD5 (mg/L) Influent Average Monthly	62.2	87.5	80.7	71.3	94.1	71.8	90.2	80.7	51.7	80	88	121
BOD5 (mg/L) Influent Daily Maximum	95.1	100	118	109	115	101	159	120	78	133	167	164
CBOD5 % Removal (%) Minimum Monthly Average	93	96	95	95	96	94	95	95	93	95	96	98
TSS (lbs/day) Average Monthly	< 104.9	< 60.2	< 88.3	< 201.9	< 59.0	< 91.5	< 88.8	< 97.4	< 58.0	< 61.4	< 80.1	< 64.7
TSS (lbs/day) Influent Average Monthly	2167	2450	2960	3354	2546	2240	2810	2583	1685	1285	1684	2037
TSS (lbs/day) Influent Daily Maximum	3875	3172	7248	6030	3348	3696	5244	6576	5661	2728	3342	3348
TSS (lbs/day) Weekly Average	< 123.5	< 67.7	< 144.7	519.7	< 86.0	114.6	< 149.4	< 233.4	< 72.1	< 117.1	< 159.9	< 74.6
TSS (mg/L) Average Monthly	< 3.0	< 3.0	< 3.0	< 5.0	< 3.0	< 3.0	< 3.0	< 4.0	< 3.0	< 3.0	< 3.0	< 3.0
TSS (mg/L) Influent Average Monthly	60.2	111	94.2	99	119	87.6	100.4	110.8	70.7	70.4	79	99
TSS (mg/L) Daily Maximum	< 6.25	< 3.0	3.9	14.3	< 3.57	5.6	4.6	< 14.3	2.5	6.32		
TSS (mg/L) Influent Daily Maximum	88	154	153	180	174	160	175	282	181	155	212	159
TSS (mg/L) Weekly Average											< 3.0	< 4.0
TSS % Removal (%) Minimum Monthly Average	93	97	97	92	98	94	97	95	95	95	94	96
Fecal Coliform (No./100 ml) Geometric Mean	5	3	< 3	< 2	< 3	3	< 3	< 4	< 3	< 2	< 2	3

Fecal Coliform (No./100 ml) Instantaneous Maximum	35	10.9	12.1	7.3	5.2	9.8	17.1	114.5	114.3	5.2	9.8	10
UV Intensity (µw/cm²) Instantaneous Minimum	24.05	24.04	24.09	20.2	24.0	24.02	24	24.01	24.08	24.16	24.13	24.13
Nitrate-Nitrite (mg/L) Average Monthly	3.13	2.96	2.65	2.68	3.74	3.71	3.60	3.14	3.707	2.995	< 3.47	< 3.44
Nitrate-Nitrite (mg/L) Daily Maximum	4.55	3.35	3.72	3.44	5.52	6.25	8.91	4.21	5.98	4.52	< 4.34	< 4.2
Nitrate-Nitrite (lbs) Total Monthly	3303	1931	2489	3063	2419	2981	3043	2231	2698	1724	< 2830	< 2130
Total Nitrogen (mg/L) Average Monthly	4.41	3.81	< 3.55	3.53	< 4.71	4.86	4.29	3.92	< 4.57	3.94	< 4.71	< 4.69
Total Nitrogen (mg/L) Daily Maximum	7.09	4.36	4.58	4.52	6.87	7.37	9.45	5.09	6.68	5.84	< 5.34	< 5.61
Total Nitrogen (lbs) Effluent Net Total Monthly	4527	2477	< 3349	4113	< 3034	3928	3646	2799	< 3342	2286	< 3873	< 2908
Total Nitrogen (lbs) Total Monthly	4527	2477	< 3349	4113	< 3034	3928	3646	2799	< 3342	2286	< 3873	< 2908
Total Nitrogen (lbs) Effluent Net Total Annual							< 40609					
Total Nitrogen (lbs) Total Annual							< 40609					
Ammonia (lbs/day) Average Monthly	19.9	< 2.4	6.7	< 5.0	< 2.0	< 2.9	< 2.6	< 2.1	< 2.6	< 3.9	< 13.8	8.7
Ammonia (mg/L) Average Monthly	**0.7175**	**< 0.1052**	**0.223**	**< 0.1208**	**< 0.0919**	**0.1139**	**< 0.0903**	**< 0.0894**	**< 0.1047**	**< 0.1869**	**< 0.591**	**0.41**
Ammonia (mg/L) Daily Maximum	**2.73**	**0.182**	**0.488**	**0.278**	**0.122**	**0.279**	**0.103**	**0.095**	**0.236**	**0.416**	**1.12**	**0.91**
Ammonia (lbs) Total Monthly	617.7	< 69.7	208.4	< 155.4	< 61.5	< 90.7	< 79.5	< 64.4	< 79.7	< 116.4	< 426.6	260.5
Ammonia (lbs) Total Annual							< 1468					
TKN (mg/L) Average Monthly	1.278	0.844	< 0.893	0.847	< 0.967	1.152	0.685	0.787	< 0.86	0.947	< 1.242	< 1.25
TKN (mg/L) Daily Maximum	3.45	1.01	1.24	1.73	1.35	1.81	0.793	0.994	1.45	1.6	2.02	1.97
TKN (lbs) Total Monthly	1224	547	< 860	1050	< 615	947	604	569	< 643	562	< 1043	< 778

Total Phosphorus (lbs/day) Average Monthly	21	25	23	42	37	47	45	33	43	16	18	15
Total Phosphorus (mg/L) Average Monthly	0.661	1.125	0.781	1.18	1.68	1.8	1.582	1.405	1.8	0.907	0.808	0.71
Total Phosphorus (mg/L) Daily Maximum	1.3	1.32	1.11	1.71	2.04	2.15	2.09	2.22	2.84	2.09	1.28	1.14
Total Phosphorus (lbs) Effluent Net Total Monthly	661	724	722	1301	1096	1451	1352	1026	1323	481	572	445
Total Phosphorus (lbs) Total Monthly	661	724	722	1301	1096	1451	1352	1026	1323	481	572	445
Total Phosphorus (lbs) Effluent Net Total Annual							8795					
Total Phosphorus (lbs) Total Annual							8795					
Total Cadmium (lbs/day) Average Monthly	< 0.01	GG	GG	< 0.04	GG	GG	< 0.5	< 0.01	GG	< 0.02	GG	GG
Total Cadmium (lbs/day) Daily Maximum	< 0.01	GG	GG	< 0.04	GG	GG	< 0.02	< 0.01	GG	< 0.02	GG	GG
Total Cadmium (mg/L) Average Monthly	< 0.0006	GG	GG	< 0.0006	GG	GG	< 0.0006	< 0.0006	GG	< 0.0006	GG	GG
Total Cadmium (mg/L) Daily Maximum	**< 0.0006**	**GG**	**GG**	**< 0.0006**	**GG**	**GG**	**< 0.0006**	**< 0.0006**	**GG**	**< 0.0006**	**GG**	**GG**
Total Chromium (lbs/day) Average Monthly	< 0.1	GG	GG	< 0.2	GG	GG	< 2	< 0.04	GG	< 0.1	GG	GG
Total Chromium (lbs/day) Daily Maximum	< 0.1	GG	GG	< 0.2	GG	GG	< 0.05	< 0.05	GG	< 0.1	GG	GG
Total Chromium (mg/L) Average Monthly	< 0.004	GG	GG	< 0.004	GG	GG	< 0.002	< 0.002	GG	< 0.004	GG	GG
Total Chromium (mg/L) Daily Maximum	**< 0.004**	**GG**	**GG**	**< 0.004**	**GG**	**GG**	**< 0.002**	**< 0.002**	**GG**	**< 0.004**	**GG**	**GG**
Total Copper (lbs/day) Average Monthly	< 0.2	< 0.2	< 0.2	< 0.3	< 0.2	< 0.2	< 0.2	< 0.1	< 0.2	< 0.1	< 0.1	< 0.08

Total Copper (lbs/day) Daily Maximum	0.4	0.3	0.4	0.3	0.2	0.2	< 0.3	< 0.2	0.4	< 0.1	< 0.2	< 0.08
Total Copper (mg/L) Average Monthly	< 0.00642	< 0.01017	< 0.00745	< 0.00675	< 0.00706	< 0.00713	< 0.00695	< 0.0069	< 0.0094	< 0.00614	< 0.004	< 0.004
Total Copper (mg/L) Daily Maximum	0.00786	**0.0134**	0.00927	0.00765	0.00724	0.00764	< 0.007	< 0.007	**0.0188**	< 0.007	< 0.007	< 0.004
Total Nickel (lbs/day) Average Monthly	< 0.4	< 5	< 0.4	< 0.4	< 0.3	< 0.3	< 0.4	< 0.3	< 0.3	< 0.2	< 0.1	0.06
Total Nickel (lbs/day) Daily Maximum	< 0.7	< 21	< 0.6	< 0.6	< 0.4	< 0.4	< 0.5	< 0.3	< 0.4	0.2	< 0.2	0.06
Total Nickel (mg/L) Average Monthly	< 0.011	< 0.263	< 0.013	< 0.011	< 0.013	< 0.013	< 0.013	< 0.013	< 0.013	< 0.011	< 0.005	0.003
Total Nickel (mg/L) Daily Maximum	**< 0.013**	**< 1.013**	**< 0.013**	**< 0.013**	**< 0.013**	**< 0.013**	**< 0.013**	**< 0.013**	**< 0.013**	**< 0.013**	**< 0.013**	**0.003**
Total Silver (lbs/day) Average Monthly	< 0.02	GG	GG	< 0.06	GG	GG	< 3	< 0.09	GG	< 0.03	GG	GG
Total Silver (lbs/day) Daily Maximum	< 0.02	GG	GG	< 0.06	GG	GG	< 0.1	< 0.09	GG	< 0.03	GG	GG
Total Silver (mg/L) Average Monthly	< 0.001	GG	GG	< 0.001	GG	GG	< 0.004	< 0.004	GG	< 0.001	GG	GG
Total Silver (mg/L) Daily Maximum	< 0.001	GG	GG	< 0.001	GG	GG	< 0.004	< 0.004	GG	< 0.001	GG	GG
Total Zinc (lbs/day) Average Monthly	1.00	1.00	1.00	2.00	0.80	0.90	0.90	0.70	0.80	0.70	0.9	0.9
Total Zinc (lbs/day) Daily Maximum	2	1	2	2.00	1.0	1.0	1	0.90	1.0	1.0	2.0	1.0
Total Zinc (mg/L) Average Monthly	0.0339	0.0463	0.0329	0.0451	0.0346	0.0363	0.0329	0.0351	0.0365	0.0361	0.0353	0.046
Total Zinc (mg/L) Daily Maximum	**0.0364**	**0.0503**	**0.0368**	**0.0549**	**0.0407**	**0.044**	**0.0371**	**0.0432**	**0.0454**	**0.0476**	**0.0415**	**0.053**
Total Toxic Organics (lbs/day) Average Monthly	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG
Total Toxic Organics (lbs/day) Daily Maximum	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG
Total Toxic Organics (mg/L) Average Monthly	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG
Total Toxic Organics (mg/L) Daily Maximum	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG
TOC (lbs/day) Average Monthly	150	111	146	152	115	132	139	120	125	100	111	96

TOC (lbs/day) Daily Maximum	205	136	195	205	151	167	205	166	200	108	240	107
TOC (mg/L) Average Monthly	**4.05**	**4.99**	**4.73**	**4.59**	**5.41**	**5.17**	**4.95**	**5.61**	**5.55**	**6.37**	**4.22**	**4.87**
TOC (mg/L) Daily Maximum	**4.53**	**5.39**	**5.58**	**5.11**	**6.86**	**5.38**	**5.41**	**7.05**	**6.29**	**6.95**	**5.60**	**5.09**
Chronic WET - Ceriodaphnia Survival (TUc) Daily Maximum	GG			GG			**1.25**			GG		
Chronic WET - Ceriodaphnia Reproduction (TUc) Daily Maximum	GG			GG			**1.25**			GG		

DMR Data for Outfall 002 (from April 1, 2023 to March 31, 2024)

Parameter	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23
pH (S.U.) Instantaneous Minimum				7.54						7.15		
pH (S.U.) Instantaneous Maximum				7.54						7.15		
TSS (mg/L) Instantaneous Maximum				4.00						55.0		
Oil and Grease (mg/L) Instantaneous Maximum				< 4.76						< 5.0		
TKN (mg/L) Instantaneous Maximum				0.514						< 1.00		
Total Iron (mg/L) Instantaneous Maximum				0.203						0.444		

DMR Data for Outfall 003 (from April 1, 2023 to March 31, 2024)

Parameter	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23

pH (S.U.) Instantaneous Minimum				6.61						6.70		
pH (S.U.) Instantaneous Maximum				6.61						6.70		
TSS (mg/L) Instantaneous Maximum				8.98						21.0		
Oil and Grease (mg/L) Instantaneous Maximum				< 4.85						< 5.0		
TKN (mg/L) Instantaneous Maximum				2.56						< 1.00		
Total Iron (mg/L) Instantaneous Maximum				0.286						0.658		

Compliance History

Exceedances: No exceedances reported via EDMR in last 12 months.

Inspection History:

FACILITY NAME	INSP PROGRAM	INSP ID	INSPECTED DATE	INSP TYPE	UPDATE DATE	# OF VIOLATIONS
MOUNTAINTOP AREA JT SAN AUTH	WPCNP	3026953	10/31/2024	Administrative/File Review		0
MOUNTAINTOP AREA JT SAN AUTH	WPCNP	3861247	11/29/2022	Compliance Evaluation		0
MOUNTAINTOP AREA JT SAN AUTH	WPCNP	3464064	05/18/2021	Compliance Evaluation		0
MOUNTAINTOP AREA JT SAN AUTH	WPCNP	3193123	09/01/2020	Compliance Evaluation		0

MOUNTAINTOP AREA JT SAN AUTH	WPCNP	3074550	04/28/2020	Compliance Evaluation	10/26/2020	1

Other Comments:

Influent STP EQ Tank Overflows: There was one overflow in 2020 and one in 2023. MAJSA indicate the bypasses were necessary to prevent "severe property damage" but did not specify the exact nature of the avoided "severe property damage" in the application. I&I reduction work at Walden Park PS and WQM permitted sewer replacement project (Fairview Glen Summit) will further reduce peak wet weather influent flows.
Walden Park Pump Station Overflows: There has been a pattern of overflows at this pump station (blamed on groundwater and stormwater I&I). The application indicated smoke testing, inline flow measurements, televising and visual manhole inspections are being done to determine the I&I sources. The single 2023 overflow showed evidence of I&I improvement over the three 2022 overflow events and three 2021 overflow events.

Compliance History: No open violations per 3/20/2025 WMS query (open violation by client number):

Client ID: 169775
Client: All

Open Violations: 0
No data was found using the criteria entered. Please revise your choices and try again.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 4.16
Latitude 41º 6' 47.62" **Longitude** -75º 57' 33.46"
Wastewater Description: Sewage Effluent

Permit Limits and Monitoring Requirements:

Parameter	Limit (mg/l unless otherwise specified)	SBC	Model/Basis: See Previous Fact Sheets
$CBOD_5$	346.9 lbs/d 520.4 lbs/d 10.0 15.0 20.0	Monthly Average Weekly Average Monthly Avg Weekly Avg IMAX	Existing WQBELs (ABACT-based) supported by updated modeling. Application data: 3.06 mg/l max average, 2.62 mg/l LTA, and 5.00 mg/l Max (96 samples)
TSS	346.9 lbs/d 520.4 lbs/d 10.0 15.0 20.0	Monthly Average Weekly Average Monthly Average Weekly Average IMAX	Existing WQBELs (ABACT-based) Application data: 3.85 mg/l max average, 3.19 mg/l LTA, and 14.3 mg/l Max (95 samples)
Ammonia-Nitrogen (May 1 - Oct 31)	Report lbs **66.9** lbs/d **133.9 lb/d** **1.93** **3.86** **3.86**	Annual Total Monthly Average **Daily Max** Monthly Average Daily Max IMAX	**Revised WQBELs from updated water quality modeling that incorporated the revised 2020 WQS. Old WQBELs(2.5 mg/l monthly average and 5.0 mg/l) are not supported. As the POTW have been consistently meeting the new limits, the new limits are effective upon PED**. Application data: 0.512 mg/l max average, 0.18 mg/l LTA, and 1.12 mg/l Max (96 samples). See EDMR section.
Ammonia-Nitrogen (Nov 1 - Apr 30)	Report lbs **200.8** lbs/d **401.7** lbs/d **5.79** **11.58** **11.58**	Annual Total Monthly Average **Daily Max** Monthly Average Daily Max IMAX	See above. Winter multiplier used.
Dissolved Oxygen (DO)	6.0	Inst. Minimum	Existing WQBEL supported by updated modeling. Application data: 7.0 mg/l instantaneous minimum (333 samples)
pH	6.0 – 9.0 SU	Inst. Min - IMAX	Existing TBEL. Application data: 6.31 - 7.87 SU (333 samples)
Fecal Coliform (5/1 – 9/30)	200/100 ml 1,000/100 ml	Geo Mean IMAX	Existing TBEL limit Application data: 2.03/100 ml max average value, 2.53/100 ml LTA and 121/100 ml max (96 samples)
Fecal Coliform (10/1 – 4/30)	2,000/100 ml 10,000 ml/100 ml	Geo Mean IMAX	No change
E Coli	**Report/100 ml**	**IMAX**	**New monthly reporting requirement due to Chapter 93 WQS.**

Total Residual Chlorine (TRC)	0.05 0.13	Monthly Average IMAX	Updated WQBEL (when chlorine is used in a manner resulting in discharges). **Previous limits were 0.06 mg/l monthly average and 0.14 mg/l IMAX.** Application data: None. EDMR was "GG"
UV intensity	Report (µw/cm²)	Inst. Minimum	Existing monitoring requirement. Application data: None.
Total Phosphorus	10185 lbs Report lbs Report lbs/d Report Report	Net Total Annual Total Annual Monthly Average Monthly Average Daily Max	Existing Chesapeake Bay water quality annual mass load limit. Application data: 1.80 mg/l max average, 1.02 mg/l LTA, and 2.84 mg/l Max (95 samples). 24.32 lbs/day LTA.
Total Nitrogen (requiring TKN and Nitrate-Nitrite-N monitoring to calculate)	76318 lbs Report lbs Report lbs/d Report Report	Net Total Annual Total Annual Monthly Average Monthly Average Daily Max	Existing Chesapeake Bay water quality annual mass load limit. Application data: 5.48 mg/l max average, 4.66 mg/l LTA, and Unidentified mg/l Max (96 samples). 113.02 lbs/day LTA.
Total Zinc	7.1 lbs/day Report lb/d 0.206 0.321 0.412	Monthly Average Daily Max Monthly Average Daily Max IMAX	Existing WQBELs supported by Reasonable Potential Analysis. Antibacksliding prohibition prevents any relief. Application data: 38.1 ug/l average (3 samples) and 38.5 ug/l max. LTAMEC value of 0.0444365 mg/l (44.4365 ug/l) based on one year of sampling data.
Total Copper **(Final)**	**0.32** (lb/d) **0.55** (lb/d) **9.2 ug/l** **16.6 ug/l** **23.0 ug/l**	Monthly Average Daily Max Monthly Average Daily Max IMAX	**New WQBEL per Reasonable Potential Analysis, effective in three years**. Interim existing monitoring requirement. Application data: 3.89 ug/l average (3 samples) and 4.8 ug/l max. LTAMEC value of 0.0080842 mg/l (8.0842 ug/l) based on one year of sampling data. EDMR showed spiking.
Hexachlorobutadiene	Report (lb/d) Report (lb/d) Report Report	Monthly Average Daily Max Monthly Average Daily Max	**New WQBEL per Reasonable Potential Analysis, effective in three years**. New Interim existing monitoring requirement. Application Data: Insensitive ND concentrations reported (original application and resampling), not meeting DEP TQL (0.5 ug/l).
Total Organic Carbon (TOC)	Report (lb/d) Report (lb/d) Report Report	Monthly Average Daily Max Monthly Average Daily Max	Existing M&R requirement
BOD_5 Influent (IMP/Outfall 101)	Report lbs/day Report lbs/day Report Report	Monthly average Daily Max Monthly average Daily Max	Existing M&R requirement
TSS Influent (IMP/Outfall 101)	Report lbs/day Report lbs/day Report	Monthly average Daily Max Monthly average	Existing M&R requirement

	Report	Daily Max	
CBOD5 Reduction	85%	Minimum monthly average	Existing POTW requirement. The Department accepts an effluent 1.2 BOD5 to 1.0 CBOD5 ratio in the absence of better information.
TSS Reduction	85%	Minimum monthly average	Existing POTW requirement.

Comments:

New Ammonia-N Limits: Updated WQM Model 7.1.1 Water Quality Modeling (applying the revised 2020 Ammonia-N WQ criteria) resulted in more stringent Ammonia-N limits. However, Application data and EDMR data indicates the facility complies with the new limits, therefore the more stringent limits will apply on Permit Effective Date:

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
05B	28231	BIG WAPWALLOPEN CREEK

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
0.710	MAJSA POTW	PA0045985	4.160	CBOD5	10		
				NH3-N	1.93	3.86	
				Dissolved Oxygen			6

MAJSAWQModel.pdf

Reasonable Potential Analysis:

- Dropped Monitoring Requirements: Previous monitoring for Total Cadmium, Total Lead, Total Nickel, Total Silver, and TTO (organics) determined to be unnecessary by the updated Reasonable Potential Analysis.
- Zinc TRE Report:
  - Used June 2023 through June 2024 Copper and Zinc data (from TRE) to calculate LTAMEC and daily COV for use in the TMS via TOXCONC. Insensitive ND Total Copper values potentially biasing the LTAMEC calculation.
  - The (revised) TRE Zinc Metal Translator calculated a Zinc Metal translator of 0.9289.

		Reviewer/Permit Engineer:	Berger
Facility:	Mountaintop Area Joint Sewer Authority		
NPDES #:	PA0045985		
Outfall No:	001		
n (Samples/Month):	4		

Parameter	Distribution Applied	Coefficient of Variation (daily)	Avg. Monthly
Total Zinc (mg/L)	Lognormal	0.1993827	0.0444365
Total Copper (mg/L)	Delta-Lognormal	0.9264331	0.0080842

- Influent Sampling Data:
  - The Influent sample showed elevated Aluminum, Copper, Free Cyanide, Total Iron, Manganese, Nickel, and Zinc concentrations from either AMD I&I and/or commercial/Industrial sources. Spiking was noted for Copper, Nickel, and Zinc.
  - Chloroform and several other organics detected in influent sampling.
- Total Hardness Application Data:
  - Discharge Hardness ranged from 84 mg/l to 125 mg/l per Application. Low value used in analysis to be conservative (some metals being more toxic at lower Total Hardness values). Previous 2020 TRE data discarded as not reflecting current conditions.
  - Upstream sample at 49.4 mg/l per Application. Calculated Total Hardness value used in Reasonable Potential Analysis.
- Application listed-Industrial users are subject to:
  - 40 CFR 467 Subpart C (Aluminum Forming PSC - Extrusion): Pretreatment ELG constituents include Chromium, Cyanide, Zinc, TTO, Oil & Grease (with Aluminum, TSS, and pH ELGs for direct dischargers).
  - 40 CFR 469 Subpart A (Electrical and Electronic Components (semiconductors) PSC): Pretreatment ELG constituents include TTO (with Fluoride and pH ELGs for direct dischargers).
  - Other Industrial Users per IU permits (attached to application):
    - SIC Code# 2086 (Bot & Can Soft Drink and Carb Water): No ELG
    - SIC Code# 2099 (Food Preparation, NEC): No ELG
    - SIC Code# 3069 (Rubber Category per IU permit): 40 CFR 428. Unclear what subpart might apply.
    - No SIC Code, NAICS# 332231 per IU permit, but Metal Finisher category per IU Permit form table: Unclear what ELG applies, but presumably metal finishing. Unclear if NAICS code is correct.
    - No SIC Code or NAICS#, but dairy product processing plus Soap & detergents per IU Permit:
- TMS Output:
  - New limits (effective in three years):
    - Hexachlorobutadiene: Sampling results (original 3 samples and 3 resamples) had an insensitive ND concentration above DEP TQL. Per the EPA Sufficiently Sensitive Rule, the Department must treat the constituent being present at the insensitive ND concentration. In practical terms, monitoring samples (meeting TQLs) may allow for deletion of the limits per the Part C condition.
    - Total Copper: EDMR showed spiking above the proposed new WQBEL. The calculated LTAMEC value was biased due to Sampling results (June 2023 – June 2024) results with insensitive ND Levels. Per the EPA Sufficiently Sensitive Rule, the Department must treat the constituent being present at the insensitive ND concentration.
  - Existing Zinc Limits: The Antibacksliding prohibition prevents any relief from the existing Zinc limits.
  - New Monitoring Requirements: Aluminum, Hexavalent Chromium, Manganese per the Reasonable Potential Analysis.
  - Deleted Monitoring Requirements: The updated Reasonable Potential Analysis allowed for dropping of previous Cadmium, Total Chromium, Nickel, Silver, and TTO monitoring requirements as unneeded.

☑ ***Recommended WQBELs & Monitoring Requirements***

No. Samples/Month: 4

Pollutants	*Mass Limits* AML (lbs/day)	*Mass Limits* MDL (lbs/day)	*Concentration Limits* AML	*Concentration Limits* MDL	*Concentration Limits* IMAX	*Concentration Limits* Units	Governing WQBEL	WQBEL Basis	Comments
Total Aluminum	Report	Report	Report	Report	Report	µg/L	750	AFC	Discharge Conc > 10% WQBEL (no RP)
Hexavalent Chromium	Report	Report	Report	Report	Report	µg/L	12.8	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Copper	0.32	0.58	9.2	16.6	23.0	µg/L	9.2	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Manganese	Report	Report	Report	Report	Report	µg/L	1,228	THH	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	101	AFC	Discharge Conc > 10% WQBEL (no RP)
Hexachlorobutadiene	0.0009	0.001	0.026	0.041	0.065	µg/L	0.026	CRL	Discharge Conc ≥ 50% WQBEL (RP)

MAJSATMSPDF.pdf

TRC Spreadsheet: Updated TRC Spreadsheet indicates slightly more stringent TRC limits apply (when chlorine is used in a manner that would result in its present in the discharge for this UV disinfection facility):

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9 — **MAJSA POTW**

1.47	= Q stream (cfs)	0.5	= CV Daily
4.16	= Q discharge (MGD)	0.5	= CV Hourly
4	= 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 = 0.092	1.3.2.iii	WLA cfc = 0.082
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.034	5.1d	LTA_cfc = 0.048

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.720	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.059	AFC
		INST MAX LIMIT (mg/l) = 0.138	

Development of Effluent Limitations

Outfall No.	002 and 003	**Design Flow (MGD)**	0 (stormwater only)
Latitude	41º 6' 55.54" (002) 41º 6' 50.49" (003)	**Longitude**	-75º 57' 36.44" (002) -75º 57' 37.31" (003)
Wastewater Description:	Stormwater		

Permit Limits and/or Monitoring: Changes bolded

Parameter	Limit (mg/l unless otherwise specified)	SBC	Basis
Total Suspended Solids (TSS)	100.0	IMAX	Existing monitoring requirement with 100 mg/l Statewide PAG-03 Best Professional Judgment (BPJ) benchmark value incorporated. Antibacksliding prohibits relief.
Total Kjehldahl Nitrogen (TKN)	Report	IMAX	Existing monitoring requirement
Total Iron	Report	IMAX	Existing monitoring requirement
pH	6.0 SU – 9.0 SU	IMIN – IMAX	Existing Chapter 95.2 regulatory requirement
Oil & Grease	30.0	IMAX	Existing Chapter 95.2 regulatory requirement
Chemical Oxygen Demand (COD)	**Report**	**IMAX**	**New PAG-03 Appendix J (Miscellaneous) parameter being added in this permit term. Benchmark of 120 mg/l.**
Total Nitrogen	**Report**	**IMAX**	**New PAG-03 Appendix J (Miscellaneous) parameter being added in this permit term.**
Total Phosphorus	**Report**	**IMAX**	**New PAG-03 Appendix J (Miscellaneous) parameter being added in this permit term.**

Comments:

Outfall Description: Discharges to UNT to Big Wapwallopen Creek, with UNT also receiving I-81 runoff.

- Outfall #002 (a.k.a. North Stormwater Swale) on North side of WWTP: ~4,550 SF (~1500 SF impervious). Roof drains have strainers.
- Outfall #003 (a.k.a. South Stormwater Swale discharge) on I81 side of WWTP: ~18,036 SF (~3926 SF impervious). Drainage culverts have silt socks. The application drawing indicates that the stormwater from the main plant area appears to flow to this outfall.

Application-identified Stormwater BMPs:

- Vehicles are not washed in locations that drain to catch basins. However, no stormwater BMPs were noted for the vehicle washing locations.
- No chemical storage outside.
- Silt socks are installed in drainage culverts.
- Cleaning leaf litter from outfalls, annual stormwater basin cleaning, and annual cleanup of garbage and debris around outfall No, 003 drainage area to where it discharges to Big Wapwallopen Creek.

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Whole Effluent Toxicity (WET)

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

X For the permit renewal application (4 Annual WET tests).

The dilution series used for the tests was: 100%, 90%, 80%, 40%, and 20%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 80%.

Summary of Four Most Recent Test Results

NOEC/LC50 Data Analysis

Test Date	*Ceriodaphnia* Results (% Effluent)			*Pimephales* Results (% Effluent)			Pass? *
	NOEC Survival	NOEC Reproduction	LC50	NOEC Survival	NOEC Growth	LC50	
1/28/2020	100%	100%	>100%	100%	100%	>100%	PASS
4/28/2020	100%	100%	>100%	100%	100%	>100%	PASS
4/27/2021	100%	100%	>100%	100%	100%	>100%	PASS
7/19/2022	100%	100%	>100%	100%	100%	>100%	PASS
8/23/2023	100%	100%	>100%	100%	100%	>100%	PASS

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

TST Data Analysis

Test Date	*Ceriodaphnia* Results (Pass/Fail)		*Pimephales* Results (Pass/Fail)	
	Survival	Reproduction	Survival	Growth
7/15, 16/2019	Pass	Pass	Pass	Pass
11/4, 5/2019	Pass	Pass	Pass	Pass
2/4/2020	Pass	Pass	Pass	Pass
5/4, 5/2020	Pass	Pass	Pass	Pass
5/4/2021	Pass	Pass	Pass	Pass
7/25, 26/2022	Pass	Pass	Pass	Pass
9/5/2023	Pass	Pass	Pass	Pass

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

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

Comments: Previous TUc EDMR reporting is no longer required, given lack of Reasonable Potential.

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

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

1. Determine IWC – Acute (IWCa):

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

Approve	Deny	Signatures	Date
X		James D. Berger (signed) James D. Berger, P.E. / Environmental Engineer	March 21, 2025
X		Edward Dudick, P.E. / Environmental Engineer Manager	March 21, 2025

[(4.16 MGD x 1.547) / ((1.47 cfs x 1) + (4.16 MGD x 1.547))] x 100 = **IWCa% = 81.4% (rounded to 82%)**

Is IWCa < 1%? **NO**

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

Type of Test for Permit Renewal: Chronic

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

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

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

[(4.16 MGD x 1.547) / (1.47 cfs x 1) + (4.16 MGD x 1.547))] x 100 = **TIWCc% = 81.4% (rounded to 82%)**

3. Determine Dilution Series

Dilution Series = 100%, 91%, 82%, 41%, and 21%.

WET Limits

Has reasonable potential been determined? NO.

Will WET limits be established in the permit? NO. Dropping TUc reporting as not needed due to updated WET

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

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

Communication Log:

- **11/21/2023:** On-Base No. **130449** (original submittal). Application was due 12/3/2023. Assigned 12/6/2023.
- **12/14/2023:** Initial Incompleteness Letter issued (missing GIF, etc.).
- **1/3/2024:** On-Base No. **104010** – partial/incomplete response (supplemental analytical data promised, etc.).
- **1/16/2024:** On-Base No. **201565** (revised application)
- **3/5/2024:** MAJSA (Jayce Temperine) Phone Call/E-mail regarding response to DEP Incompleteness Letter. MAJSA indicated it had submitted something on 1/16/2024 via On-Base. It was subsequently located. Jayce Temperine also identified himself as an alternate site contact for MAJSA. Told him I was going to issue an Admin Extension letter (permit not automatically extended).
- **3/5/2024:** Administrative Extension Letter issued.
- **6/26/2024:** DEP Technical Deficiency Letter issued.
- **6/27/2024:** MAJSA (Temperine) E-mail asking for DEP TOXCONC Spreadsheet.
- **6/27/2024:** DEP (Berger) E-mail with requested blank TOXCONC Spreadsheet, and some general guidance on it.
- **7/15/2024:** **Public Upload #245577** (received 7/15/2024) – MAJSA Pre-Draft Survey for Toxic Pollutants response (indicating MAJSA will perform additional sampling as noted on the survey form).
- **8/15/2024**: **Public Upload# 253053** (received 8/15/2024) – incomplete revised NPDES Application (missing new sampling data and any related updating)
- **10/21/2024:** MAJSA (Temperine) E-mail asking how to submit new sampling data (meeting DEP TQLs)
- **10/21/2024:** DEP (Berger) E-mail directing that new sampling data be submitted via Public upload (with e-mail to notify this reviewer of Public Upload#).

- **11/12/2024: Public Upload# 270436** (revised analytical data from Predraft Survey) table with labsheets: Max value bolded for resampled constituents (or one sample if all results the same).

Date	Parameter	<>	Result ug/l	PA DEP TQL ug/L	<>	Loading Lbs/day	MDL Used as result?
8/13/2024	Dissolved Iron	<	10	20	<	0.2385	No
8/20/2024	Dissolved Iron		15	20		0.3303	No
8/27/2024	Dissolved Iron		11	20		0.2037	No
8/13/2024	Free Cyanide	<	0.5	1	<	0.0119	Yes
8/20/2024	Free Cyanide	<	1	1	<	0.0220	J- qualified
8/27/2024	Free Cyanide	<	0.5	1	<	0.0093	Yes
8/13/2024	Hex Chromium	<	2	1	<	0.0477	Yes
8/20/2024	Hex Chromium	<	2	1	<	0.0440	Yes
8/27/2024	Hex Chromium		3	1		0.0555	J- qualified
8/13/2024	Total Silver	<	0.2	0.4	<	0.0048	Yes
8/20/2024	Total Silver	<	0.2	0.4	<	0.0044	Yes
8/27/2024	Total Silver	<	0.2	0.4	<	0.0037	Yes
8/13/2024	Total Aluminum		94	10		2.2421	J- qualified
8/20/2024	Total Aluminum		48	10		1.0568	J- qualified
8/27/2024	Total Aluminum		78	10		1.4442	J- qualified
8/13/2024	Total Cadmium	<	0.1	0.2	<	0.0024	Yes
8/20/2024	Total Cadmium	<	0.1	0.2	<	0.0022	Yes
8/27/2024	Total Cadmium	<	0.1	0.2	<	0.0019	Yes
8/13/2024	Total Copper		2.0	4		0.0477	No
8/20/2024	Total Copper	<	2.0	4	<	0.0440	No
8/27/2024	Total Copper		2.0	4		0.0370	No
8/13/2024	Total Zinc		19	5		0.4532	No
8/20/2024	Total Zinc		21	5		0.4624	No
8/27/2024	Total Zinc		20	5		0.3703	No
8/13/2024	Acrolein	<	1.0	2	<	0.0239	No
8/20/2024	Acrolein	<	1.0	2	<	0.0220	No
8/27/2024	Acrolein	<	1.0	2	<	0.0185	No
8/13/2024	Bromodichloromethane	<	0.5	0.5	<	0.0119	No
8/20/2024	Bromodichloromethane	<	0.5	0.5	<	0.0110	No
8/27/2024	Bromodichloromethane	<	0.5	0.5	<	0.0093	No
8/13/2024	1,2-Dichloropropane	<	0.5	0.5	<	0.0119	No
8/20/2024	1,2-Dichloropropane	<	0.5	0.5	<	0.0110	No
8/27/2024	1,2-Dichloropropane	<	0.5	0.5	<	0.0093	No
8/13/2024	1,3-Dichlorobenzene	<	0.5	0.5	<	0.0119	No
8/20/2024	1,3-Dichlorobenzene	<	0.5	0.5	<	0.0110	No
8/27/2024	1,3-Dichlorobenzene	<	0.5	0.5	<	0.0093	No
8/13/2024	2,4-Dinitrophenol	<	2.86	10	<	0.0682	No
8/20/2024	2,4-Dinitrophenol	<	2.86	10	<	0.0630	No

8/27/2024	2,4-Dinitrophenol	<	2.86	10	<	0.0530	No
8/13/2024	2,4-Dinitrotoluene	<	0.952	5	<	0.0227	No
8/20/2024	2,4-Dinitrotoluene	<	0.952	5	<	0.0210	No
8/27/2024	2,4-Dinitrotoluene	<	0.952	5	<	0.0176	No
8/13/2024	2-methyl-4,6-dinitrophenol	<	2.86	10	<	0.0682	No
8/20/2024	2-methyl-4,6-dinitrophenol	<	2.86	10	<	0.0630	No
8/27/2024	2-methyl-4,6-dinitrophenol	<	2.86	10	<	0.0530	No
8/13/2024	3,3'-Dichlorobenzidine	<	0.952	5	<	0.0227	No
8/20/2024	3,3'-Dichlorobenzidine	<	0.952	5	<	0.0210	No
8/27/2024	3,3'-Dichlorobenzidine	<	0.952	5	<	0.0176	No
8/13/2024	Benzo(a)anthracene	<	0.952	2.5	<	0.0227	No
8/20/2024	Benzo(a)anthracene	<	0.952	2.5	<	0.0210	No
8/27/2024	Benzo(a)anthracene	<	0.952	2.5	<	0.0176	No
8/13/2024	Benzo(a)pyrene	<	0.952	2.5	<	0.0227	No
8/20/2024	Benzo(a)pyrene	<	0.952	2.5	<	0.0210	No
8/27/2024	Benzo(a)pyrene	<	0.952	2.5	<	0.0176	No
8/13/2024	Benzo(b)fluoranthene	<	0.952	2.5	<	0.0227	No
8/20/2024	Benzo(b)fluoranthene	<	0.952	2.5	<	0.0210	No
8/27/2024	Benzo(b)fluoranthene	<	0.952	2.5	<	0.0176	No
8/13/2024	Benzo(k)fluoranthene	<	0.952	2.5	<	0.0227	No
8/20/2024	Benzo(k)fluoranthene	<	0.952	2.5	<	0.0210	No
8/27/2024	Benzo(k)fluoranthene	<	0.952	2.5	<	0.0176	No
8/13/2024	Chrysene	<	0.952	2.5	<	0.0227	No
8/20/2024	Chrysene	<	0.952	2.5	<	0.0210	No
8/27/2024	Chrysene	<	0.952	2.5	<	0.0176	No
8/13/2024	Dibenzo(a.h)anthracene	<	0.952	2.5	<	0.0227	No
8/20/2024	Dibenzo(a.h)anthracene	<	0.952	2.5	<	0.0210	No
8/27/2024	Dibenzo(a.h)anthracene	<	0.952	2.5	<	0.0176	No
8/13/2024	**Hexachlorobutadiene**	**<**	**0.952**	**0.5**	**<**	**0.0227**	**No**
8/20/2024	**Hexachlorobutadiene**	**<**	**0.952**	**0.5**	**<**	**0.0210**	**No**
8/27/2024	**Hexachlorobutadiene**	**<**	**0.952**	**0.5**	**<**	**0.0176**	**No**
8/13/2024	Hexachlorocyclopentadiene	<	0.952	5	<	0.0227	No
8/20/2024	Hexachlorocyclopentadiene	<	0.952	5	<	0.0210	No
8/27/2024	Hexachlorocyclopentadiene	<	0.952	5	<	0.0176	No
8/13/2024	Indeno(1,2,3-cd)pyrene	<	0.952	2.5	<	0.0227	No
8/20/2024	Indeno(1,2,3-cd)pyrene	<	0.952	2.5	<	0.0210	No
8/27/2024	Indeno(1,2,3-cd)pyrene	<	0.952	2.5	<	0.0176	No
8/13/2024	Pentachlorophenol	<	0.952	10	<	0.0227	No
8/20/2024	Pentachlorophenol	<	0.952	10	<	0.0210	No
8/27/2024	Pentachlorophenol	<	0.952	10	<	0.0176	No
8/13/2024	Phenathrene	<	0.952	2.5	<	0.0227	No
8/20/2024	Phenathrene	<	0.952	2.5	<	0.0210	No

8/27/2024	Phenathrene	<	0.952	2.5	<	0.0176	No
8/13/2024	Toxaphene	<	0.48	0.5	<	0.0114	No
9/24/2024	Toxaphene	<	0.48	0.5	<	0.0087	No
10/1/2024	Toxaphene	<	0.48	0.5	<	0.0082	No
10/8/2024	Toxaphene	<	0.48	0.5	<	0.0081	No