Pennsylvania Department of Environmental Protection

NORTHEAST REGIONAL OFFICE
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0044997**
Facility Type	**Sewage**	APS ID	**342333**
Major / Minor	**Minor**	Authorization ID	**1421927**

NPDES PERMIT FACT SHEET ADDENDUM

Applicant and Facility Information

Applicant Name	**Mount Pocono Municipal Authority (MPMA) Monroe County**	Facility Name	**Mt Pocono Municipal Authority (MPMA) POTW**
Applicant Address	1361 Pocono Boulevard	Facility Address	1478 Pocono Boulevard
	Mount Pocono, PA 18344-1045		Mount Pocono, PA 18344-1679
Applicant Contact	Jonathan Klotz	Facility Contact	Daniel Fisher
Applicant Phone	(570) 839-7993	Facility Phone	(570) 839-2061
Client ID	117290	Site ID	250294
SIC Code	4952	Municipality	Mount Pocono Borough
SIC Description	Trans. & Utilities - Sewerage Systems	County	Monroe
Date Published in PA Bulletin	September 21, 2024	EPA Waived?	Yes
Comment Period End Date	January 17, 2024 (extended)	If No, Reason	-
Purpose of Application	Application for a renewal of an NPDES permit for discharge of treated Sewage		

Internal Review and Recommendations

Approve	Return	Deny	Signatures	Date
X			James D. Berger (signed) James D. Berger, P.E. / Environmental Engineer	June 6, 2025
X			Edward Dudick, P.E. / Environmental Engineer Manager	June 16, 2025
NA			NA – not required for a Redraft NPDES Permit Amy M. Bellanca, P.E. / Program Manager	

This Redraft Fact Sheet Addendum is for the 0.400/0.500 MGD (tiered limits) Mount Pocono Municipal Authority POTW Redraft NPDES Permit Renewal No. PA0044997 (Mount Pocono Borough, Monroe County) and the Draft Spray Irrigation WQM Permit Renewal No. 4515401-A1 (spray irrigation renewal). This Fact Sheet Addendum describes changes to the 9/9/2024 Draft NPDES permit and summarizes/responds to public comments received. No public comments were received on the concurrent Draft WQM permit renewal (spray irrigation renewal).

Changes to NPDES Permit:

- **General Formatting Update**: The NPDES Permit was regenerated due to: Updated permit limits due to revised stream Q7-10 low flow value assumption & new site-specific stream temperature information; EDMR/ICIS reporting system requirements; and potential Tier 2 flows within the near future. This resulted in renumbering of some Parts from the previous Draft NPDES Permit.
- **Tiered Limits**: To further explain these limits and WMS Coding:
  - **Neutrality on Tiered Flows**: This Redraft NPDES Permit is neutral on whether MPMA has addressed permit requirements for Tier 2 discharges. Interim Tier 1 limits were retained due to several more stringent Thermal limits and to provide opportunity to the permittee to pursue further definition of stream-specific low flows (Q7-10, Low Flow Yield) if it so chooses. Tier 1 limits will remain in effect until Tier 2 flows are authorized (separately from this permit action).
  - **General Updating**:
    - Flow values transposition corrected (Tiered monthly average flow limits and reporting daily max flows apply)
    - Ammonia-N and TRC limits updated per updated water quality modeling below.
    - Total Copper, Total Lead, and Total Zinc WQBELs per updated water quality modeling below.
    - Thermal limits updated per updated water quality modeling below.
    - Mass loadings recalculated.
    - Minimum monitoring frequency has been changed to “weekly when discharging” or “daily when discharging” or “monthly when discharging” to account for alternate spray irrigation under the concurrent WQM Permit for warmer weather (March 15 through November 15, weather allowing).
    - Time-frames for Final limits (thermal and WQBELs schedule of compliance) have been reduced to 30 months for consistency and facility having existing TRE Phase I information, extensive stream/discharge data, and extensive operational experience with the existing thermal chiller unit onsite. The facility also has the option of spray irrigation (no Outfall No. 001 discharge) during the March through November time-frames in terms of more stringent warmer weather limits. Facility is otherwise required to come into compliance with existing limits as soon as practicable in terms of any pattern of permit limits exceedances.
  - **Outfall No. 001 Tiered Limits**. **Please note that an Antibacksliding Exception triggers US EPA review of this Redraft NPDES Permit due to several less stringent thermal limits (during Chapter 93 reporting periods).** To otherwise clarify the complicated NPDES Permit Part A requirements:
    - **Thermal Limits and Tiered Mass Loadings:**
      - **Part A.I.D: Interim Tier 1 (existing permit limits)**: Effective date to Start of Interim Period End 3 (30 months or transition to Final Tier 1 limits unless facility qualifies for Tier 2 flow).
      - **Part A.I.C: Final Tier 1**: End of Interim Period 3 (31 months after PED) to Start of Final Period (Tier 2) or permit expiration.
      - **Part A.I.D: Final Tier 2**: Start of Final Period (Tier 2) to Permit Expiration. See Part C requirements for Tier 2 flow authorization.
    - **New WQBELs (Ammonia-N, Copper, Lead, Zinc) for Tiers 1 and 2:**
      - **Part A.I.B: Interim Tier 1 (existing limits and Monitoring requirements**: Effective to End of Interim Period 1 (30 months of PED)
      - **Part A.I.A: Final Tier 1 limits**: End of Interim Period 1 (31 months after PED) to End of Interim Period 2 (end of Final Tier 1 limits or Permit expiration).
      - **Part A.I.F: Final Tier 2 limits**: End of Interim Period 2 (Final Tier 1) to Permit Expiration. See Part C requirements for Tier 2 flow authorization.
- **Part A.I.G (Outfall No. 001 Effective to Expiration)**: Monitoring frequencies changed to “when discharging” due to spray irrigation months with no Outfall No. 001 discharge.
- **Part A.I.H (101: Surface Water Monitoring Point Upstream of Outfall No. 001 discharge**): Minor editing to clarify requirements.
- **Part A.I.I (102: Downstream Surface Water Monitoring Point Downstream of Outfall No. 001 discharge)**: Minor editing to clarify requirements.

- **Part A.I.J (103: land spray discharge only under WQM Permit No. 4515401)**: No changes. This is to allow reporting of volumes being sent for use in spray irrigation.
- **Part A.I.K (104: Downstream Surface Water Monitoring Point Downstream of Outfall No. 001 discharge and 102)**: Minor editing to clarify requirements.
- **Part A.I Additional Requirements: Supplemental Information**: WWTP Hydraulic Design Capacity and Organic Design Capacity updated to reflect completion of WQM-permitted upgrades to WQM-permitted design capacities (0.500 MGD hydraulic design capacity and 1,397 lb BOD/day organic design capacity). The facility can accept ~0.500 MGD influent flows/loadings upon either authorization for Tier 2 discharge flows/loading or diversion of >Tier 1 flows/loadings to spray irrigation. Redundant/obsolete Part C.I.H language was deleted.
- **Part C.I.I (Max 2 °F change):** Several typos were corrected to clarify point of compliance.
- **Part C.II (30-month Schedule of Compliance for Revised Ammonia-N and Thermal Limits – Tier 1 and Tier 2):** Final Tier 2 limits would apply upon authorization to discharge Tier 2 (0.500 MGD monthly average flows) to Forest Hills Run due to High Quality (HQ) receiving stream antidegradation considerations.
    - The facility has not been in consistent compliance with the existing less stringent permit limits. The facility must address any pattern of noncompliance with existing permit limits as soon as practicable (Chapter 92a.51). See below.
    - The existing WQM Permit No. 4515401 Special Condition C states: If within 365 days of final completion of Phase III of the Project or any time thereafter Monitoring Station 2 and Monitoring Station 3 do not attain a bioassessment benthic macroinvertebrate score greater than 83% of Monitoring Station 1, based on RBP, or Monitoring Station 2 and Monitoring Station 3 do not attain aquatic life use, based on IBI, **the Authority will, within 30 months, install equipment sufficient to cool the discharge from the Facility to Forest Hills Run to the degree necessary for the Authority to comply with the temperature limits in the Permit, or with any more stringent temperature limits in any subsequent NPDES permit or renewal or revision issued to the Authority authorizing the Authority to discharge wastewater from the Facility to Forest Hills Run**. (bolding added.). In practical term, MPMA has indicated compliance with the requirements after prolonged warm weather cessation of WWTP discharge (spray irrigation time-frame), but has not confirmed requirements are met after November through March WWTP discharges.
- **Part C.IV (WQBELs for Toxic Pollutants (30-month Schedule of Compliance for Revised Total Copper, Lead, and Zinc):** The Part C.IV schedule of compliance was revised to 30 months for final WQBELs to be consistent with the Part A and also Part C.II schedule (in event WWTP upgrades are required). Final Tier 2 limits would apply upon authorization to discharge Tier 2 (0.500 MGD monthly average flows) to Forest Hills Run due to High Quality (HQ) receiving stream antidegradation considerations. It is unclear if the facility can meet the proposed WQBELs (no previous limits). The facility conducted a limited TRE Phase I investigation under the previous NPDES Permit (no TRE Phase I report submitted) and has additional stream data from its other stream-related investigations.
- **Part C.I.N: (New Annual Cause & Effect Survey Requirement)**: The Department is requiring an annual Forest Hills Run Cause & Effect Survey to evaluate impacts on Forest Hills Run: "Within sixty (60) days of the permit issuance, applicant shall submit a plan of study, by an experienced environmental consultant, to the Department for approval to conduct a once-a-year Cause and Effect Survey on Forest Hills Run bracketing the MPMA waste water treatment plant discharge. The plan of study shall be consistent with the Cause and Effect Section in Chapter 2 of the Department's Office of Water Programs, Bureau of Clean Water, Water Quality Monitoring Protocols for Streams and Rivers 2021, as updated and amended. The Cause and Effect Surveys shall be conducted each year from April 1st to May 15th during the NPDES permit cycle. The annual Cause and Effect Survey reports must be submitted to the Department's Clean Water Program Manager (c/o Clean Water Program manager) within sixty (60) calendar days of completion of the annual Cause and Effect Survey via DEP Public Upload". As noted by the permittee public comments, the Department cannot rely on the non-DEP Consent Order requirements in terms of stream evaluations. This annual survey will evaluate impact of MPMA discharges to Forest Hills Run after the non-spray irrigation months (November through March).

Updated Water Quality Modeling: The Redraft NPDES Permit incorporates revised permit limits and monitoring requirements based on the revised Q7-10/low flow for both 0.400 MGD and 0.500 MGD tiered flows, plus additional site-specific stream temperature data provided in the public comments:

Revised Q7-10/Low Flow Yield Assumption: The Q7-10 low flow is the actual or estimated lowest 7 consecutive-day average flow that occurs once in 10 years for a stream with unregulated flow, or the estimated minimum flow for a stream with regulated flow (Chapter 96.1). The Q7-10 low flow is used in Department water quality modeling to address Chapter 96.3 (Water quality protection requirements) and Chapter 96.4 (TMDLs and WQBELs) requirements. The Low Flow Yield (LFY) is the Q7-10 low flow divided by the drainage area in square miles. When drainage areas do not allow for direct

calculation of the Q7-10 via USGS Monitoring Gage data and/or USGS PA Streamstats issues, the LFY method allows for calculation of a watershed-specific Q7-10 low flow, assuming the watershed LFY is representative of site conditions. In this case, the permittee argued that the PA Streamstats-derived value was incorrect (too low), and noted that there was historic downstream area gage information that could be used to determine the watershed Q7-10/Low Flow Yield. The DEP Biologist (Tim Daley), with direct stream knowledge, concurred that there was likely greater flow in Forest Hills Run (than estimated by PA Streamstats) based on Biologist observations. The Department has revised the LFY estimate (and consequent Q7-10 low flow estimate):

- **The revised watershed Low Flow Yield (LFY) was determined to be 0.127 CFS/square mile which equates to 0.1447 CFS Forest Hills Run Q7-10 low flow at the Outfall No. 001 location. See below for details.**
- See the Draft NPDES Permit Fact Sheet for how the previously assumed Q7-10/LFY was derived and additional background information.
- The MPMA Outfall No. 001 is located near the headwaters of Forest Hills Run. Forest Hills Run flows into a ~0.1-mile reach of Swiftwater Creek (below Swiftwater Lake and downstream from the Swiftwater Creek at Swiftwater PA gage location) which then flows into Paradise Creek (no existing gage, but with historic gage no longer present) which flows into Brodhead Creek, and then into the Delaware River.
    - The Forest Hills Run headwaters are shown to start in Mount Pocono Borough (i.e. urban stormwater and historic legacy pollution contributions) on E-maps.
    - The WWTP Outfall is located near the headwaters, i.e. limited dilution capacity from a small drainage area contributing to stream flow. USGS PA Streamstats has self-identified limited accuracy for such small drainage areas and regulated streams. There is a downstream dam (with minimum release requirement), i.e. the stream is regulated downstream of the outfall.
    - There are no downstream USGS stream gage on Forest Hill Run, with downstream Brodhead Creek USGS stream gages too distant and with too dissimilar watershed characteristics (as compared to the headwaters of Forest Hills Run) to allow their usage in developing a Q7-10 low flow.
    - The Swiftwater Creek USGS Stream Gage is reporting anomalous flows (too far outside of expected ranges), rendering it unusable for estimating Forest Hills Run watershed flow estimation. USGS scientific papers have also noted the flows were anomalous.
    - There was a historic Paradise Creek gage which included the Forest Hills Run watershed. The USGS Scientific Investigations Report No. 2005-5162 (Streamflow Statistics for the Paradise and Pocono Creek Watersheds and Selected Streamflow-Gaging Stations in Monroe County, Pennsylvania by Ronald E. Thompson and Gregory J. Cavallo) contained old watershed gage data and calculated low flows:

USGS Gage	Thomson & Cavallo Predicted Q7-10*	Other Flow information
Gage# 01440485 Swiftwater Creek at Swiftwater, PA (6.59 square mile drainage area; gage data from **2001 to present)**. Only ~3-years of data was available for the Thompson & Cavallo analysis. Latitude: 41.093889˚ Longitude: -75.322500˚	4.1 CFS**	4.6 CFS Q7-10 low flow per USGS Hydrologic Toolbox analysis of 2001-2024 gage data. 4.6 CFS would equate to a 0.69 CFS/square mile LFY for the gaged Swiftwater Creek watershed. **NOTE**: The DEP statewide LFY default is 0.1 CFS/square mile.
Gage# 01440500 Paradise Creek at Henryville, PA (30.2 square mile drainage area; gage data from **1965 – 1991**; located below the Swiftwater Creek confluence and above the Cranberry Creek Confluence per USGS report coordinates) Latitude: 41.100000˚ Longitude: -75.251389˚	7.1 CFS**	USGS PA Streamstats estimated the Q7-10 low flow at 2.1 CFS for approximate drainage area of 29.4 square miles at the given old gage location in comparison. This is equivalent to 0.0714 CFS/square mile watershed LFY per PA Streamstats. See below for calculation of the watershed LFY.
Mount Airy Dam	-	There is a downstream dam on Forest Hills Run, but there is no historical flow data for influent into

		the dam's reservoir/pond and none provided for dam releases. In comparison, the 0.127 CFS/square mile watershed LFY (calculated below) would result in a 0.350 CFS flow at the Mount Airy Lake/Dam, which is in the ballpark of the 0.375 CFS Mount Airy Dam minimum release rate required to sustain biological life downstream, as historically separately determined under the Dam permit.

This downstream Paradise Creek Gage Location (downstream of both Forest Hills Run and Swiftwater Creek) was calculated to have a 0.235 CFS/square mile watershed LFY. If one subtracts the abnormally high Swiftwater Creek Q7-10 low flow (4.1 CFS) and gage drainage area (6.59 square miles), this results in a ~3 CFS Q7-10 discharge from a 23.61 square mile watershed drainage area. This is equivalent to a **0.127 CFS/square mile watershed Low Flow Yield (LFY)**. This watershed LFY was used to calculate the Forest Hills Run **0.1447 CFS Q7-10 low flows at the 1.14 Square Mile MPMA Outfall No. 001 drainage area**. In the absence of a stream-specific USGS gage above the dam (regulating stream flow downstream), no more accurate Q7-10 low flow can be determined. See Public Comment/Responses below in regard to the MPMA-proposed alternative values.

NPDES Permit Part A.I.A, B, and C (mass load limits): MPMA requested the mass loading limits be recalculated (apparent math error). **They have been recalculated and updated as needed. Mass loading are calculated by multiplying Flow (MGD) by concentration (mg/l) and by the conversion factor 8.34.**

- **CBOD5:**
  - **33.3 lb/day monthly average and 50.0 lb/day weekly average at 0.400 MGD Tier**
  - **41.7 lb/day monthly average and 62.50 lb/day weekly average at 0.500 MGD Tier**
- **TSS:**
  - **100.0 lb/day monthly average and 150.1 lb/day weekly average at 0.400 MGD Tier**
  - **125.1 lb/day monthly average and 187.6 lb/day weekly average at 0.500 MGD Tier**
- **Ammonia-N Limits:**
  - **Interim Summer @ 0.400 MGD: 9.0 lb/day monthly average and 18.0 lb/day daily/IMAX**
  - **Interim Winter @ 0.400 MGD: 27.0 lb/day monthly average and 54.0 lb/day daily/IMAX**
  - **Final Summer @ 0.400 MGD: 6.5 lb/day monthly average and 13.0 lb/day daily/IMAX**
  - **Final Winter @ 0.400 MGD: 19.5 lb/day monthly average and 39.0 lb/day daily/IMAX**
  - **Final Summer @ 0.500 MGD: 7.6 lb/day monthly average and 15.2 lb/day daily/IMAX**
  - **Final Winter @ 0.500 MGD: 22.8 lb/day monthly average and 45.7 lb/day daily/IMAX**
- **Toxic WQBELs: See TMS output.**

Updated TRC Spreadsheet: More stringent TRC limits were determined to apply. UV disinfection is the approved method of disinfection at this facility. The facility reports use of chlorine for non-disinfection purposes only. The NPDES Permit Part A.I.A TRC limit cross-references Part C.I.D (Chlorine Minimization) optimization requirements applicable when chlorine is used in a manner that results in chlorine in the Outfall No. 001 effluent. EDMR data ranged from 0.2 mg/l – 0.3 mg/l monthly average and 0.04 – 0.26 mg/l IMAX in the March 2024 – February 2025 time-frame. The facility should be able to meet the more stringent limits by proper O&M.

- **At 0.400 MGD discharge**:

TRC EVALUATION					
Input appropriate values in A3:A9 and D3:D9		MPMA WWTP			
0.1447	= Q stream (cfs)	0.5	= CV Daily		
0.4	= 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 =	0.094	1.3.2.iii	WLA cfc = 0.084
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc=	0.035	5.1d	LTA_cfc = 0.049
Source		Effluent Limit Calculations			
PENTOXSD TRG	5.1f	AML MULT =	1.720		
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) =	0.060	AFC	
		INST MAX LIMIT (mg/l) =	0.140		

- **At 0.500 MGD discharge**:

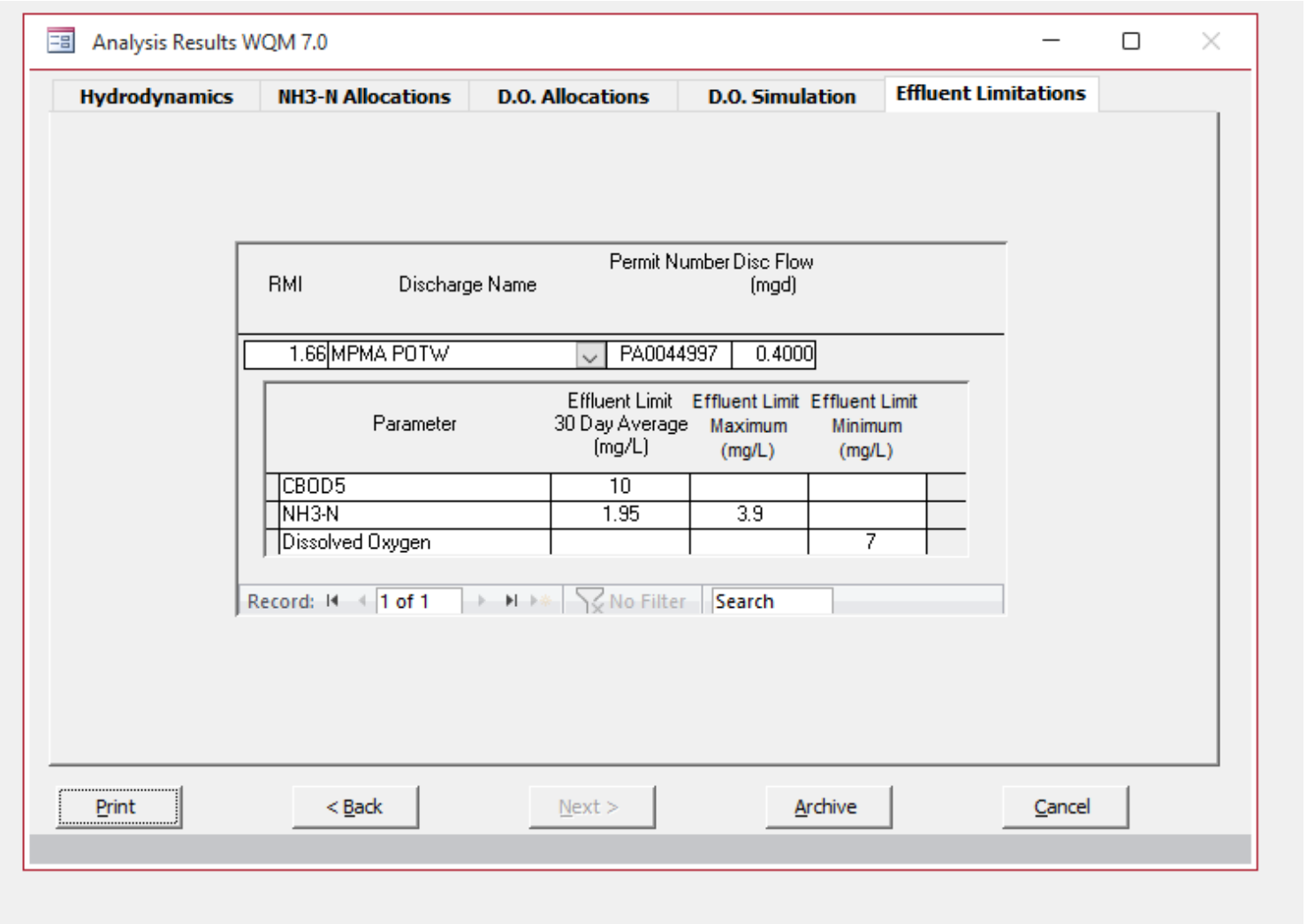
TRC EVALUATION					
Input appropriate values in A3:A9 and D3:D9		MPMA WWTP			
0.1447	= Q stream (cfs)	0.5	= CV Daily		
0.5	= Q discharge (MGD)	0.5	= CV Hourly		
4	= no. samples	1	= AFC_Partial Mix Factor		
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor		
0	= Chlorine Demand of Discharge	15	= 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 =	0.079	1.3.2.iii	WLA cfc = 0.069
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc=	0.029	5.1d	LTA_cfc = 0.040
Source		Effluent Limit Calculations			
PENTOXSD TRG	5.1f	AML MULT =	1.720		
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) =	0.050	AFC	
		INST MAX LIMIT (mg/l) =	0.118		

WQM Model 7.1.1: More stringent Ammonia-N WQBELs (than existing limits) were determined to be required. The facility does have the option (not DEP permit requirement) for spray irrigation during the warmer months (March 15 and November 15, weather allowing). A 30-month schedule of compliance was retained because of June exceedance and concern of potential spiking daily max values, given only monthly average data available.

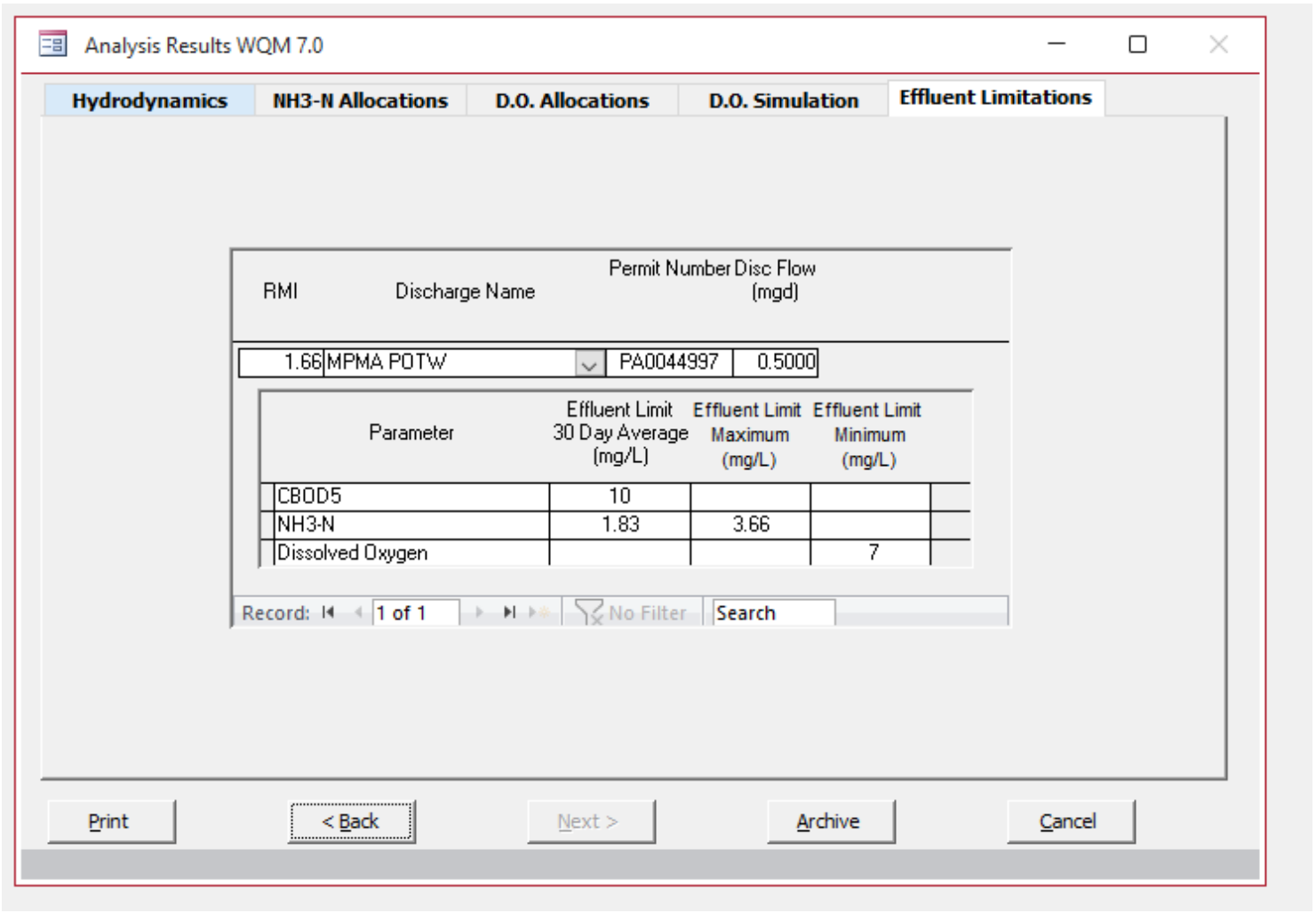
- The existing Ammonia-N limits were 2.7 mg/l monthly average/5.4 mg/l IMAX summer limits and 8.1 mg/l monthly average/16.2 mg/l IMAX limits (Tier 1 and 2).

- The proposed summer limits (May 1 - Oct 31) are shown below (WQM Model 7.1.1 output), with a typical seasonal factor of 3 for winter discharges (Nov 1 – April 30):
  - Final Tier 1 (May 1 – Oct 31): 1.95 mg/l monthly average, 3.9 mg/l Daily/IMAX
  - Final Tier 2 (May 1- Oct 31): 1.83 mg/l monthly average, 3.66 mg/l Daily/IMAX
  - Final Tier 1 (Nov 1 – April 30): 5.85 mg/l monthly average, 11.7 mg/l Daily/IMAX
  - Final Tier 2 (Nov 1 – April 30): 5.49 mg/l monthly average, 10.98 mg/l Daily/IMAX
- EDMR data ranged from 0.1 mg/l – **3.4 mg/l** monthly average in the March 2024 – February 2025:
  - February 2025: 0.1 mg/l
  - January 2025: 0.14 mg/l
  - December 2024: 1.84 mg/l
  - November 2024: 0.2 mg/l
  - October – July 2024, May 2024: Not discharging (spray irrigation)
  - **June 2024: 3.4 mg/l**
  - April 2024: 3.3 mg/l
  - March 2024: 2.8 mg/l

- **At 0.400 MGD**:



- **At 0.500 MGD**:



MPMARevWQMModel.pdf

Toxic Management Spreadsheet (TMS): The updated water quality modeling required new WQBELs.

- Previously calculated LTAMEC and daily COV:

Reviewer/Permit Engineer:	James Berger
Facility:	Mount Pocono Municipal Authority WWTP
NPDES #:	PA0044997
Outfall No:	001
n (Samples/Month):	4

Parameter	Distribution Applied	Coefficient of Variation (daily)	Avg. Monthly
Copper (µg/L)	Delta-Lognormal	0.6079073	13.7633924
Lead (µg/L)	Delta-Lognormal	8.4373105	4.9522703
Zinc (µg/L)	Lognormal	0.3333964	123.0644495

- March 2024 – February 2025 EDMR data range:
  - Total Copper: 0.0040 mg/l – 0.0103 mg/l monthly average
  - Total Lead: 0.0003 mg/l – **0.0010 mg/l** monthly average
  - Total Zinc: 0.0575 mg/l – **0.2021 mg/l** monthly average Total Zinc in the March 2024 – February 2025 time-frame.
  - Updated TMS Reasonable Potential Analysis.

- **At 0.400 MGD**:

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

No. Samples/Month: 4

	Mass Limits		Concentration Limits						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Copper	0.043	0.072	13.0	21.5	32.5	µg/L	13.0	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Lead	0.016	0.018	4.72	5.51	11.8	µg/L	4.72	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Zinc	0.45	0.45	135	135	135	µg/L	135	AFC	Discharge Conc ≥ 50% WQBEL (RP)

- **At 0.500 MGD**:

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

No. Samples/Month: 4

	Mass Limits		Concentration Limits						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Copper	0.053	0.087	12.7	20.9	31.6	µg/L	12.7	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Lead	0.019	0.022	4.61	5.38	11.5	µg/L	4.61	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Zinc	0.57	0.57	137	137	137	µg/L	137	AFC	Discharge Conc ≥ 50% WQBEL (RP)

MPMARevTMS.pdf

Thermal Limits Spreadsheet Analysis: The updated thermal analysis incorporated site-specific in-stream ambient temperature monitoring data (~5 years-worth which allowed for calculation of median temperatures for the Chapter 93.7 periods) and updated Q7-10 low flow values (discussed above). See the Communications Log for the 2/14/2025 Public Comments including the thermal data (Chapter 93.7 Thermal Monitoring periods for 2020 – 2024 time-frame). The "CWF Daily WLA^{3}" Column is the calculated thermal WQBELs.

- **For 0.400 MGD Tier 1 discharge**:

Facility: **Mount Pocono Municipal Authority WWTP**
Permit Number: PA0044997
Stream: Forest Hills Run

	CWF Ambient Stream Temperature (°F) (Default)	Ambient Stream Temperature (°F) (Site-specific data)	Target Maximum Stream Temp.[1] (°F)	CWF Daily WLA[2] (Million BTUs/day)	CWF Daily WLA[3] (°F)	at Discharge Flow (MGD)	PMF
Jan 1-31	34	41.36	42.36	N/A -- Case 2	43.1	0.4	1.00
Feb 1-29	35	41.04	42.04	N/A -- Case 2	42.9	0.4	1.00
Mar 1-31	39	43.61	44.61	N/A -- Case 2	46.2	0.4	1.00
Apr 1-15	46	47.7	48.7	N/A -- Case 2	50.9	0.4	1.00
Apr 16-30	52	49.5	52	N/A -- Case 2	57.4	0.4	1.00
May 1-15	55	51.59	54	N/A -- Case 2	56.9	0.4	1.00
May 16-31	59	54.57	58	N/A -- Case 2	62.1	0.4	1.00
Jun 1-15	63	55.49	60	N/A -- Case 2	63.2	0.4	1.00
Jun 16-30	67	56.64	64	N/A -- Case 2	69.2	0.4	1.00
Jul 1-31	71	58.41	66	N/A -- Case 2	69.0	0.4	1.00
Aug 1-15	70	58.51	66	N/A -- Case 2	68.5	0.4	1.00
Aug 16-31	70	58.39	66	N/A -- Case 2	68.5	0.4	1.00
Sep 1-15	66	58	64	N/A -- Case 2	65.5	0.4	1.00
Sep 16-30	60	54.79	60	N/A -- Case 2	61.3	0.4	1.00
Oct 1-15	55	52.79	54	N/A -- Case 2	54.3	0.4	1.00
Oct 16-31	51	51.43	52.43	N/A -- Case 2	52.7	0.4	1.00
Nov 1-15	46	49.9	50.9	N/A -- Case 2	51.3	0.4	1.00
Nov 16-30	40	45.53	46.53	N/A -- Case 2	46.9	0.4	1.00
Dec 1-31	35	43.49	44.49	N/A -- Case 2	45.1	0.4	1.00

This is the maximum of the CWF WQ criterion or the ambient temperature. The ambient temperature may be either the design (median) temperature for CWF, or the ambient stream temperature based on site-specific data entered by the user.
A minimum of 1°F above ambient stream temperature is allocated.
The WLA expressed in Million BTUs/day is valid for Case 1 scenarios, and disabled for Case 2 scenarios.
The WLA expressed in °F is valid only if the limit is tied to a daily discharge flow limit (may be used for Case 1 or Case 2).
WLAs greater than 110°F are displayed as 110°F.

- **For 0.500 MGD Tier 2 discharge:**

Facility: **Mount Pocono Municipal Authority WWTP**
Permit Number: PA0044997
Stream: Forest Hills Run

	CWF Ambient Stream Temperature (ºF) (Default)	Ambient Stream Temperature (ºF) (Site-specific data)	Target Maximum Stream Temp.[1] (ºF)	CWF Daily WLA[2] (Million BTUs/day)	CWF Daily WLA[3] (ºF)	at Discharge Flow (MGD)	PMF
Jan 1-31	34	41.36	42.36	N/A -- Case 2	43.0	0.5	1.00
Feb 1-29	35	41.04	42.04	N/A -- Case 2	42.7	0.5	1.00
Mar 1-31	39	43.61	44.61	N/A -- Case 2	45.9	0.5	1.00
Apr 1-15	46	47.7	48.7	N/A -- Case 2	50.4	0.5	1.00
Apr 16-30	52	49.5	52	N/A -- Case 2	56.3	0.5	1.00
May 1-15	55	51.59	54	N/A -- Case 2	56.3	0.5	1.00
May 16-31	59	54.57	58	N/A -- Case 2	61.3	0.5	1.00
Jun 1-15	63	55.49	60	N/A -- Case 2	62.5	0.5	1.00
Jun 16-30	67	56.64	64	N/A -- Case 2	68.1	0.5	1.00
Jul 1-31	71	58.41	66	N/A -- Case 2	68.4	0.5	1.00
Aug 1-15	70	58.51	66	N/A -- Case 2	68.0	0.5	1.00
Aug 16-31	70	58.39	66	N/A -- Case 2	68.0	0.5	1.00
Sep 1-15	66	58	64	N/A -- Case 2	65.2	0.5	1.00
Sep 16-30	60	54.79	60	N/A -- Case 2	61.1	0.5	1.00
Oct 1-15	55	52.79	54	N/A -- Case 2	54.3	0.5	1.00
Oct 16-31	51	51.43	52.43	N/A -- Case 2	52.7	0.5	1.00
Nov 1-15	46	49.9	50.9	N/A -- Case 2	51.2	0.5	1.00
Nov 16-30	40	45.53	46.53	N/A -- Case 2	46.8	0.5	1.00
Dec 1-31	35	43.49	44.49	N/A -- Case 2	44.9	0.5	1.00

[1] This is the maximum of the CWF WQ criterion or the ambient temperature. The ambient temperature may be either the design (median) temperature for CWF, or the ambient stream temperature based on site-specific data entered by the user. A minimum of 1ºF above ambient stream temperature is allocated.

[2] The WLA expressed in Million BTUs/day is valid for Case 1 scenarios, and disabled for Case 2 scenarios.

[3] The WLA expressed in ºF is valid only if the limit is tied to a daily discharge flow limit (may be used for Case 1 or Case 2). WLAs greater than 110ºF are displayed as 110ºF.

Thermal Antibacksliding Exception (CWA 402(o)(2)): The updated ambient stream temperature data (from permanent MPMA-installed in-stream temperature stations-collected data installed in the previous NPDES Permit Term), used in the thermal analysis above, represents new information not available during previous permitting or during preparation of the Draft NPDES Permit (in addition to the revised 0.127 watershed LFY value which was lower than assumed by previous NPDES permitting). The (~5-years-worth) ambient stream temperatures are higher than previously assumed as demonstrated by in-stream monitoring data provided. This allows for relaxation of some previous less stringent NPDES Permit daily max thermal limits to those calculated above and summarized below. Some proposed thermal limits are more stringent than existing limits. See below for a direct comparison of existing thermal limits, proposed thermal limits, and March 2024 – February 2025 EDMR data **(with exceedances of proposed thermal limits bolded and more stringent limits *bold italicized, and less stringent limits marked by ***)**. In practical terms, the facility has made separate commitments (non-DEP Consent document) to redirect MPMA discharge to a spray irrigation system during warmer weather in the March 15 – November 15 time-frame (when the majority of the more stringent limits apply), with some relief from existing more stringent thermal limits in the coldest months. See table below:

Chapter 93.7 Thermal M&R Period	Tier 1 Existing Daily Max Limits (°F)	Tier 1 Proposed Daily Max Limits (°F)	Tier 2 Existing Daily Max Limits (°F)	Tier 2 Proposed Daily Max Limits (°F)	Recent 12-month EDMR Daily Max Data* (°F)
Jan 1 - 31	41.6	43.1**	41.2	43.0**	**49.3**
Feb 1 - 28	42.2	42.9**	41.8	42.7**	39.9
Mar 1 - 31	46.7	***46.2***	45.8	45.9**	**53.2**
Apr 1 - 15	63	***50.9***	63	***50.4***	**51.7**
Apr 16 - 30	63	***57.4***	63	***56.3***	51.7
May 1 - 15	64	***56.9***	64	***56.3***	-
May 16 - 31	69	***62.1***	69	***61.3***	-
Jun 1 - 15	72.3	***63.2***	69.8	***62.5***	**70.8**
Jun 16 - 30	75	***69.2***	75	***68.1***	**70.8**
Jul 1 - 31	77.3	***69.0***	75	***68.4***	-
Aug 1 - 15	75	***68.5***	73.2	***68.0***	-
Aug 16 - 31	75	***68.5***	73.2	***68.0***	-
Sep 1 - 15	70.7	***65.5***	69.3	***65.2***	-
Sep 16 - 30	63.2	***61.3***	62.6	***61.1***	-
Oct 1 - 15	55.8	***54.3***	55.4	***54.3***	-
Oct 16 - 31	51.2	52.7**	51	52.7**	-
Nov 1 - 15	49	51.3**	48.8	51.2**	47.4
Nov 16 - 30	47.2	***46.9***	47	***46.8***	**GG**
Dec 1 - 31	43.3	45.1**	43	44.9**	**57.1**

*Bolding of exceedances of existing thermal limits. No discharge months are months when spray irrigation was conducted in lieu of discharge to stream (under a non-DEP Consent document between the permittee and local environmental groups for the period of March 15 to November 15 (conditions allowing) and WQM Permit). However, the NPDES/WQM Permits do not prohibit discharge during the March 15 – November 15 time-frames if all NPDES/WQM permit requirements are addressed.
****Less stringent limits addressed under the Antibacksliding Exception.**

Public Comments: 1/21/2025 MPMA Public Comment Letter & Attachments was received. Additional supplemental MPMA public comments and information was received 2/14/2025. Responses are bolded. See Communications Log below for additional MPMA communications and Department responses. For brevity, the MPMA public comments are summarized/edited.

Background Informational Comments: See previous Draft NPDES Permit Fact Sheet for additional background information, but the following is provided for permitting context:

- **2016 WQM Permit No. 4515401**: Authorized assorted WWTP upgrades (including thermal chillers), spray irrigation system (no point discharge), and installation of three (3) temperature monitoring stations in Forest Hills Run. Two pre-spray effluent storage tanks are on-site – one (1) 1.0 million gallon storage tank is at the WWTP site and one 0.5 million gallon tank is near the spray area adjacent to the irrigation pumping system. The spray irrigation area has 764 individual spray heads and is computer controlled to spray tertiary treated effluent from the effluent storage tanks onto the spray fields. Spray rates are controlled by permitted effluent limits, field soil moisture probes, and weather

conditions (spray is halted if rainfall reaches 0.5 inches for the day). The combined disposal capacity of all five spray areas varies throughout the spray season from 272,000 gpd during late fall to 599,000 gpd during the summer months. The system is deactivated and winterized from November 16 through March 14 of each year, and during this time, effluent is removed via stream discharge per the NPDES permit requirements. The Spray Irrigation WQM permit is being renewed concurrently with Final NPDES permit action.

- **2018 NPDES Permit**: Included Tier 1 (0.400 MGD) and Tier 2 (0.400 MGD to 0.500 MGD) monthly average flows. Higher monthly average flows would be subject to Chapter 93 Antidegradation requirements. Special Conditions included:
  - Part A.I.B: Existing Tier 1 limits.
  - Part A.I.D: Existing Tier 2 limits
  - Part C.I (Limitation on Discharge Flows): Requirements for Tier 2 limits and stream monitoring stations
  - Part C.II (Maximum Temperature Change): No more than 2 °F in receiving stream
  - Part C.III (Flow Equalization to ensure continuous discharge)
  - Part C.IV (TRE for Total Copper, Total Lead, and Total Zinc): No proposed WQBELs.
  - Part C.V.E: Attached non-DEP Consent Decree referenced.
  - Part C.V.F: SBR Storm Mode condition
- **Antibacksliding Exception (CWA 402(o))**: Due to revised Thermal Limits Analysis (see below), an Antibacksliding Exception has been triggered because some thermal limits will be less stringent than in the previous NPDES Permit (based on new ambient stream temperature information not previously available). This triggers EPA review of the Redraft NPDES Permit per the DEP/EPA Memorandum of Understanding.
- **Outfall Location**: Forest Hills Run is a HQ-CWF stream; impaired by metals (elevated zinc historically), organic enrichment (addressed by ABACT CBOD5 limits), and thermal modifications with known causes including: Municipal point source discharges (addressed by MPMA thermal limits and spray irrigation alternative to discharge), Urban runoff/storm sewers, and Highway/road/bridge runoff (non-construction related). The facility has existing thermal limits due to known stream thermal impacts. Please note that the Chapter 93.7 thermal water quality criteria and Chapter 96.6 (Heated wastewater discharges) pertain to "heated wastewater" (i.e. generally IW process water and cooling waters), not treated sewage in the absence of impairment traced to thermal impacts. There is a downstream lake/dam with a dam minimum release requirement. Forest Hills Run flows into a ~0.1-mile reach of Swiftwater Creek (below Swiftwater Lake and downstream from the Swiftwater Creek at Swiftwater PA gage location) which then flows into Paradise Creek (no existing gage, but with historic gage no longer present) which flows into Brodhead Creek, and then into the Delaware River. Forest Hill Run is heavily effluent-dominated at 0.400 MGD discharge (~4.7:1) and 0.500 MGD discharge (~5.3:1) at the revised Q7-10 low flow.
- **Non-DEP Consent Decree**: The facility is subject to a voluntary non-DEP Consent Decree (April 18, 2012 US District Court Consent Decree CA No.: 3:10-CV-02520), between the permittee and several environmental groups:
  - General: The existing Part C.I.K condition was previously negotiated with the permittee and other parties during previous NPDES permit renewal. It states: "If there is a conflict between the above special conditions and the attached Consent Decree (as amended), the conditions of the Consent Decree shall govern" (with an enclosed copy of the Consent Decree for reference purposes).
    - The Department was not a signature party to the "Brodhead Watershed Association and Citizens for Pennsylvania's Future v. Mount Pocono Municipal Authority" (CA No.: 3:10-CV-02520), and therefore cannot grant any relief from its requirements.
    - The NPDES/WQM Permits do not modify any Consent Decree requirement. The Department would enforce any overlapping NPDES and WQM Permit requirements under those permits.
  - Consent Decree Paragraph 3.a: Requirements included sampling/collection and reporting of macroinvertebrates every April and October of each year (commencing October 2012) at specific stream monitoring stations. "The obligations in this Paragraph shall terminate 10 years after completion of the final phase of the Project (defined in Paragraph 6) that Defendant is obligated to complete pursuant to the terms of this Consent Decree or upon final completion of Phase IV of the Project". **NOTE**: Phases I through III included construction of the land application system. Phase IV (final phase) included construction of any necessary thermal treatment system required to meet NPDES Permit thermal limits. MPMA chose to construct the entire land application system (Phase I through III) and a thermal "chiller" unit simultaneously, under WQM Permit No. WQM Permit No. 4515401. Spray Irrigation Area start-up was in 2021.
  - Consent Decree Paragraph 3.b: Requirements included stream water temperature monitoring and reporting. "The obligations in this Paragraph shall terminate 10 years after completion of the final phase of the Project (defined in Paragraph 6) that Defendant is obligated to complete pursuant to the terms of this Consent Decree or upon final completion of Phase IV of the Project".

- Consent Decree Paragraph 4: Notwithstanding the terms of National Pollutant Discharge Elimination System (NPDES) Permit Number PA0044997 (the Permit) or any subsequent NPDES permit or renewal or revision issued to the Defendant to discharge wastewater from the Facility to Forest Hills Run, Defendant's 30 day average discharge of wastewater from the Facility to Forest Hills Run shall not exceed 0.40 million gallons per day (MGD) unless and until Monitoring Station 2 and Monitoring Station 3 attain a bioassessment benthic macroinvertebrate score greater than 83% of Monitoring Station 1, based on RBP, and Monitoring Station 2 and Monitoring Station 3 attain aquatic life use, based on IBI, in which case Defendant's 30 day average discharge flow of wastewater from the Facility to Forest Hills Run may exceed 0.40 MGD but shall not exceed 0.50 MGD.
- Consent Decree Paragraph 6: The purpose of the project ("Project") is to improve the water quality of Forest Hills Run by (a) Installing equipment allowing Defendant to land apply treated wastewater from the Facility to the Property to reduce the annual volume of treated wastewater that Defendant discharges from the Facility to Forest Hills Run, and if necessary, (b) **installing equipment sufficient to cool the discharge from the Facility to Forest Hills Run to the degree necessary to comply with the temperature limit in the Permit, or with any more stringent temperature limits in any subsequent NPDES permit or renewal or revision…"**. (Bolding added.)
- Consent Decree Paragraph 10: Phase IV of project included:
  - Installation of equipment sufficient to cool the discharge from the Facility to Forest Hills Run to the degree necessary for Defendant to comply with the temperature limits in the Permit, or with any more stringent temperature limits in the Permit, or with any more stringent temperature limits in any subsequent NPDES permit or renewal or revision…
  - **Upon final completion of Phase IV of the Project**:
    - **Between March 15 and November 15 of each year, Defendant will land apply up to 0.50 MGD of treated wastewater from the Facility to the Property, provide that such application is consistent with the Defendant's Water Quality Management Part II Permit. Between March 15 and November 15 of each year, except as provided in Paragraph 12 of this Consent Decree, Defendant shall not discharge any treated wastewater from the Facility to Forest Hills Run.**
    - Between November 16 and March 14 of each year, Defendant's 30 day average discharge flow shall not exceed 0.40 MGD, unless and until Monitoring Station 2 and Monitoring Station 3 attain a bioassessment benthic macroinvertebrate score greater than 83% of Monitoring Station 1, based on RBP, and Monitoring Station 2 and Monitoring Station 3 attain aquatic life use, based on IBI, in which case Defendant's 30 day average discharge flow of wastewater from the Facility to Forest Hills Run may exceed 0.40 MGD but shall not exceed 0.50 MGD.
- Consent Decree Paragraph 11: Defendant shall land apply treated wastewater from the Facility to the Property to the greatest extent that the Defendant's Water Quality Management Part II Permit and site conditions allow, and Defendant shall not discharge treated wastewater from the Facility to Forest Hills Run until the Defendant has land applied treated wastewater from the Facility to the Property to the greatest extent that Defendant's Water Quality Management Part II Permit and site conditions allow. **NOTE**: Paragraph 12 provided for limited exceptions including unusual heavy precipitation conditions, unusual winter conditions, and land application system failure (with notification requirements).

- **Updated Forest Hills Run Stream Assessment Information**:
  - The DEP Biologist (Tim Daley) reviewed the October 2024 MPMA Forest Hills Run macroinvertebrate data provided by MPMA (submitted with the February 14, 2025 MPMA Letter within the amended October 17, 2024 "Benthic Macroinvertebrates of Forest Hills Run above and below Mount Pocono Municipal Authority Wastewater Treatment Plant" (by Michael D. Bilger and Davi Rebuck for JB Ecological Services) now Amendment 2 (RPB Table). Both stations (#2 and #3) downstream of the MPMA discharge had IBI scores greater than 63.0 (attaining) and also scored 100% compared to Station #1 when using the Dep RBP metrics comparisons. Collectively, these October 2024 results downstream of the discharge appear to be the best the macroinvertebrate community has looked since their monitoring began in 2013. **NOTE**: These results show the stream benefitted from redirecting WWTP discharge to spray irrigation during the March through November land application period. It is unknown what was the Winter 2024 WWTP discharges' impact on the receiving stream.
  - The Department also conducted a stream assessment (including March 2025 sampling) for Forest Hills Run: The Report is expected to be completed in 2026.
- **2024 Chapter 94 Report (Public Upload# 306598):** Informational highlights:

- Chapter 94 Narrative Information (MPMA viewpoint commentary, with DEP informational notes added):
  - The Authority's Water Quality Management Part II permit is limited to 0.4 MGD discharge. The permitted hydraulic capacity of the treatment plant is 0.4 MGD average monthly flow. The organic capacity of the treatment plant is 1,067.5 lbs/day. **NOTE**: The 12/14/2016 WQM Permit No. 4515401 (Spray Irrigation and WWTP upgrades) identified the Hydraulic Design Capacity at 0.50 MGD (but with special requirements for when a 0.50 MGD discharge is allowed) and Organic Design Capacity of 1,397 lb BOD5/day. The facility can handle higher flows/loadings than assumed due to completion of the permitted construction and due to the spray irrigation option (no stream discharge)
  - Chapter 94 reports prior to 2006 were projecting that the Authority flow would exceed their Part II permit limit. Water Quality Management Part II permit applications to re-rate the plant to 0.6 MGD discharge were not approved. Therefore, in April 2006, the Authority passed a resolution adopting a self-imposed moratorium so the discharge limit would not be exceeded. This in essence has halted any further economic development within the Authority's service area. This action has prevented individual property owners and businesses from purchasing capacity in the plant. They have unsuccessfully attempted to do on-lot disposal in order to build their homes and build or expand their businesses due to poor soil testing results. Therefore, the hydraulic loading projections do not take into account the property owners who wish to connect but cannot due to the moratorium. The demand for sewage exceeds Part II permitted capacity.
  - Effective July 1, 2012, the Authority was issued an NPDES permit for discharge flow up to 0.4 MGD with an expiration date of June 30, 2017. **NOTE**: The 2012 NPDES Permit included tiered limits (0.40 and 0.50 MGD), temperature limits, and stream macroinvertebrate recovery requirements to allow for higher (0.50 MGD) tiered discharges.
  - On June 28, 2018, the Authority received a renewed NPDES permit. The new permit is effective on July 1, 2018 and expires on June 30, 2023. The current NPDES permit included limits from a Consent Decree requiring the regulation of effluent temperatures discharged to Forest Hills Run. As a result of these limits, a spray irrigation and cooling system was designed to meet these limits. In 2021, the construction of this spray irrigation and cooling system was completed. The project includes upgrades at the WWTP and a new spray irrigation system on the Authority's property adjacent to the WWTP and stream discharge to the Forest Hills Run during non-spray days. **NOTE**: The 2018 NPDES Permit had tiered limits (0.400 MGD/0.500 MGD), thermal temperature limits, TRE requirements (copper, lead, and zinc), and a special condition regarding non-DEP Consent Decree (If there is a conflict between the above special conditions and the attached Consent Decree, the conditions of the Consent Decree shall govern).
  - Treatment Process:
    - The present treatment sequence during spray days is as follows: bar screening, comminution, grit removal system, SBR treatment, decant equalization, rapid sand filtration, ultraviolet disinfection, and then land application via the spray irrigation system. The amount of effluent applied to the different zones of the spray irrigation system is calculated by the irrigation system's software by tracking the number of spray heads in each zone and the time each zone receives effluent.
    - The present treatment sequence during non-spray days is as follows: bar screening, comminution, grit removal system, SBR treatment, decant equalization, rapid sand filtration, ultraviolet disinfection, and cooling.
- DEP Chapter 94 Form Items 1, 2, 3, and 9 (Flows and Loadings) and attachments B & C: No existing or projected hydraulic or organic overloading. DEP Chapter 94 Report Form and Spreadsheet, plus narrative provided.
  - Report-identified Hydraulic Design Capacity: 0.4 MGD
  - Report-identified Organic Design Capacity: 1,068 lb BOD5/day
  - 2024 Annual Average Flow: 0.286 MGD
  - Max 3-month Average Flow: 0.334 MGD
  - Existing EDUs: 2,282 EDUs
  - Flow/EDU: 125.3 GPD (normal default assumption of 250 GPD at 2.5 persons/EDU)
  - Flow/Capita: 50.1 GPD (normal default assumption at 100 GPD)
  - Annual Average Load: 712 lb BOD5/day
  - Max Month Load: 870 lb BOD5/day
  - Load/EDU: 0.312 lb BOD5/day
  - Load/Capita: 0.125 lb BOD5/day
  - Total Monthly Precipitation: DEP Spreadsheet table not completed.

- DEP Chapter 94 Form Item 4 (Sewer extension/projects): No sewer extension constructed in 2024. A 40 EDU warehouse was connected in 2024. Narrative indicates no currently known projects requiring sewer extension. Narrative indicates a self-imposed connection moratorium was in effect.
- DEP Chapter 94 Form Item 5 (Sewer System Monitoring, Maintenance, Repair and Rehab): The Authority monitors and maintains all of the municipally owned sewer system and equipment. Review and evaluation of the sewer system and plant indicates items in need of repair or replacement and the addition of equipment necessary to process increasing flow. Plant operators have been inspecting manholes on a phased approach. Plant operators continue making repairs to manholes and broken clean out caps each Spring and as needed. During 2024, the following non-routine maintenance was performed on the sanitary sewer system: One third of the collection system was televised and cleaned, followed by a review for future I&I repairs
- DEP Chapter 94 Form Item 6 (Capacity exceedances): None reported for the calendar year.
- DEP Chapter 94 Form Item 7 (Pump Stations): Two pump stations reported in good condition, but pump station (and/or lift station) flow data not provided:
  - Pumping Station 1 (Holly Forest Road): Two 130 GPM submersible pumps.
  - Pumping Station 2 (Route 940 East): Two 480-GPM pumps
  - Two lift stations were identified in narrative: Lift Station 2 (Pine Hill) contains an extra standby pump (pump capacities not identified). A third lift station is owned/operated by the Pocono Mountain Industrial Authority.
- DEP Chapter 94 Form Item 8 (IW): Item left blank. No industrial wastewater is being discharged to POTW per narrative. Attachment D (Section IX – Non-residential Wastes included MPMA requirements, but no information on any IW indirect discharger to the POTW. The Pocono Mountain Industrial Park began operations in 1983 and has only generated domestic waste, which is pumped to Municipal Authority sewers from an Industrial Park-owned lift station.
- DEP Chapter 94 Form Item 10 (Sewage Sludge Management Inventory) & Appendix E: The total volume of sludge hauled in 2024 was 1,269,900 gallons hauled to GHJSA. Estimated 115.01 dry tons total sludge generated, but sewage sludge management inventory did not follow EPA methodology. (The existing NPDES permit lacks the standard solids management conditions requiring a sewage sludge management inventory (meeting specified EPA methodology)).
- DEP Chapter 94 Form Item 12 (Flow Meter Calibration): Effluent flow meter was calibrated, but no calibration report provided for influent flow meter or spray irrigation system flow meter(s).

- **Previous NPDES Permit Toxic Reduction Evaluation (TRE) Requirements**: The 2018 NPDES Permit included Part C.IV (Toxic Reduction Evaluation (TRE)) requirements for Total Copper, Total Lead, and Total Zinc without any Final WQBELs or Final WQBEL effective date, along with 1/month sampling and monthly average concentration reporting. The Phase I TRE requirements included: influent/effluent quality review; source inventory and reduction; source reduction evaluation; and implementation of pollution prevention, sound housekeeping practices, and other management practices; and optional components. No TRE Phase I report has been submitted (to date), and therefore no TRE Phase II process initiated.
  - The 12/21/2018 DEP Letter approved a 11/13/2018 TRE Phase I Work Plan. Assorted TRE Status Report updates found in On-Base (up to TRE Status Update No. 8).
  - 3/17/2024 MPMA E-mail contained several years of collected pH & metals data at assorted locations (manholes, well, influent, effluent, etc.)
  - See Communications Log for 9/20/2024 Meeting discussion for additional TRE-related information.
  - The 2018 NPDES permit TRE requirements are now a subset of the new Part C (WQBELs for Toxic Pollutants) requirements, which include additional requirements such as site-specific data collection (stream hardness, etc.) that would have to be addressed under the Part C Schedule of Compliance. MPMA can also pursue further refinement of the site-specific Q7-10/LFY flows during Part C process.
  - TOXCONC-derived Long Term Average Monthly Effluent Concentrations (LTAMEC) and daily Coefficient of Variation (COVs) from previous Draft NPDES Permit Fact Sheet:

		Reviewer/Permit Engineer:	James Berger
Facility:	Mount Pocono Municipal Authority WWTP		
NPDES #:	PA0044997		
Outfall No:	001		
n (Samples/Month):	4		

Parameter	Distribution Applied	Coefficient of Variation (daily)	Avg. Monthly
Copper (µg/L)	Delta-Lognormal	0.6079073	13.7633924
Lead (µg/L)	Delta-Lognormal	8.4373105	4.9522703
Zinc (µg/L)	Lognormal	0.3333964	123.0644495

Q7-10 Low Flow: The 1/21/2025 MPMA Public Comments included a January 7, 2025 Technical Memorandum (Q7-10 Low Flow Analysis for Forest Hills Run) prepared by Michael Rogalus, P.H. (EHS Support LLC) to justify a different Q7-10 low flow assumption (0.428 CFS, which would equate to a LFY of 0.3754 CFS/square mile). This report is hereafter referenced as the MPMA Report. MPMA indicated that it did not believe the USGS PA Streamstats-derived Q7-10/Low Flow Yield was accurate for site-specific conditions. **The Department could only concur in part (see above updated Q7-10 low flow and water quality modeling). See Draft NPDES Permit Fact Sheet for the PA Streamstats-generated values and previous NPDES permitting assumptions. Additional feedback on the MPMA public comments:**

- General: **The MPMA Report did not have a PA Professional Engineer or Licensed Professional Geologist seal, and/or otherwise clarify the Report preparer's professional expertise in hydrology.**
- DRBC Docket Information: The MPMA Report indicated disagreement with the DRBC Docket information on Forest Hill Run status (believing it a perennial stream) and the previous Draft NPDES Permit-assumed Q7-10 low flow value. **The comment is moot due to different regulatory standards. The DRBC Docket No. Section B.2 states: "At the WWTP discharge location, Forest Hills Run has an estimated seven-day low flow with a recurrence interval of ten years (Q7-10) of less than 0.1 cubic feet per second (cfs) and therefore is classified by the Commission as an intermittent stream". The Department previously determined that Forest Hill Run is a HQ-CWF perennial stream according to Pennsylvania regulations and stream evaluations and has re-evaluated the Q7-10 low flow value. See DEP Policy No. 386-2000-013 (Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers) regarding how the DEP defines intermittent and perennial streams.**
- Stream Flow observation: The MPMA Report noted that Forest Hills Run upstream of Route 611 was flowing during "an abnormally dry period" (October 17, 2024 photograph) but did not identify the location relative to Outfall No. 001 discharge (or whether there was an Outfall No. 001 discharge at the time), and did not identify the exact meaning of the terminology. No estimate of stream flow was provided for the photograph time-frame. **The Department partly concurs due to DEP Biologist observations of the stream over time and historic downstream gage data, but the DEP does not have site-specific Forest Hill flow data.**
    - **No additional Forest Hills Run streamflow data was provided or proposed to be provided within the 5-year NPDES Permit Term.**
    - **No additional drainage area information was provided to identify any additional source of stream flow during Q7-10 low flows (springs or other).**
- USGS PA Streamstats has limitations:
    - The (previous) PA Streamstats-predicted flow would qualify Forest Hills Run as an intermittent stream, but it is a perennial stream per USGS Quadrangle Maps. **The Department concurs that Forest Hills Run is a perennial HQ-CWF stream subject to Chapter 93 Water Quality Standards and protected water uses. No information on drought conditions/flows was provided for Department technical consideration besides a October 17, 2024 photograph.**
    - The Outfall No. 001 location drainage area is too small for PA Streamstats regression equations: **Correct. The Department previously used a watershed LFY derived downstream, where there was sufficient drainage area to allow PA Streamstats usage in the Draft NPDES Permit. The comment is otherwise moot due to use of a MPMA-identified historic gage's data to calculate a watershed LFY.**

- PA Streamstats estimates differed from two Brodhead Creek USGS Gage Location Q7-10 low flows derived from gage data: **Noted. In practical terms, the two Brodhead Creek gage locations did not represent conditions near the headwaters of Forest Hills Run, and the comments are moot as a MPMA-identified historic Paradise Creek gage's data was used to determine the watershed LFY above.**

- USGS PA Streamstats: The MPMA Report noted that the USGS PA Streamstat relies upon the regression equations from the 2006-5130 USGS Scientific Investigations Report "Low-Flow, Base-Flow, and Mean-Flow Regression Equations for Pennsylvania Streams", by Marla H. Stuckey. The MPMA Report noted that the Study broke down PA into 5 regions, and used data from 33 continuous-record and 30 partial-record stream Gage stations to develop the regression equations that allow determination of Q7-10 low flow and other flows at ungaged stream location. The MPMA Report noted the PA Streamstats regression equation modeling did not use Paradise Creek specific gage information, and then compared Brodhead Creek gage's observed Q7-10 low flows to PA Streamstats-estimated Q7-10 low flows. The MPMA comparison indicated the two Brodhead Creek gage station flows were underestimated by more than 20%, but the estimates were within the 90% prediction interval.

USGS Gage	Observed Gage Q7-10	Predicted Q7-10	Prediction interval
Gage# 01440400 Brodhead Creek near Analomink, PA (65.9 square mile drainage area; gage data from 1957 to present; 44.5 inches mean annual precipitation per 2006 USGS Report)	7.3 CFS	5.7 CFS*	2.3 – 13.9 CFS
Gage# 01442500 Brodhead Creek at Minisink Hills (259 square mile drainage area; gage data from 1950 to present; 46.3 inches mean annual precipitation per 2006 USGS Report)	48.3 CFS	31.6 CFS**	13.0 – 77.0 CFS

*The 2005 Thompson & Cavallo Report (see below) estimated 6.5 CFS, which was ~12% off from the gage-calculated Q7-10 flow (7.3 CFS) at that time. The 2006 Thompson & Hoffman report (see below) estimated 7.0 CFS gage calculated and 6.2 CFS calculated by that report's regression analysis (~13% difference).

** The 2005 Thompson & Cavallo Report (see below) estimated 43 CFS, which was ~11% off from the gage-calculated Q7-10 flow (48 CFS) at that time. The 2006 Thompson & Hoffman report (see below) estimated 47 CFS gage calculated and 38 CFS calculated by that report's regression analysis (~21% difference).

The comment is moot in that the Department has used a MPMA-identified historic gage data (see Q7-10 comments above) to more accurately identify the Forest Hills Run low flow conditions. The MPMA Report did not otherwise make any technical case for the use of Brodhead Creek gage data to determine Forest Hills Run flows. Distance from the MPMA facility, differences in drainage area characteristics, and location on different streams did not allow for use of Brodhead Creek flows to determine Forest Hills Run flows.

- The MPMA Report also compared the USGS PA Streamstats results to a separate 2005 USGS Scientific Investigations Report No. 2005-5162 (Streamflow Statistics for the Paradise and Pocono Creek Watershed and Selected Streamflow-Gaging Stations in Monroe County, PA, by Ronald E. Thompson and Gregory J. Cavallo) for Paradise Creek and Pocono Creek watersheds. The USGS paper predicted stream flows at two stream gages in the Paradise Creek Watershed (which contains the Forest Hills Run watershed) which was assumed to capture localized hydrological variations that may not be fully accounted for in the 2006 Stuckey broader regression model (part of basis for USGS PA Streamstats). The MPMA Report noted that since the 2005 Thompson and Cavallo Report, there is now 2001 -2024 data that can be used to calculate the Q7-10 gage flow at the existing Swiftwater gage location via the USGS Hydrologic Toolbox (based on the collected gage data and statistical analysis). Neither gage below was used in the 2006 Stuckey Report analysis.

USGS Gage	Thomson & Cavallo Predicted Q7-10*	Stuckey Predicted Q7-10	Prediction interval
Gage# 01440485 Swiftwater Creek at Swiftwater, PA (6.59 square mile drainage	4.1 CFS**	0.318 CFS	0.13 – 0.78 CFS

area; gage data from **2001 to present)**. Only ~3-years of data was available for the Thompson & Cavallo analysis			
Gage# 01440500 Paradise Creek at Henryville, PA (30.2 square mile drainage area; gage data from **1965 – 1991**; located below the Swiftwater Creek confluence and above the Cranberry Creek Confluence per USGS report coordinates)	7.1 CFS***	2.1 CFS	0.86 – 5.12 CFS

*Stream locations flows not addressed in the 2006 Thompson & Hoffman Report (see below).

4.6 CFS Q7-10 low flow per USGS Hydrologic Toolbox analysis of 2001-2024 gage data per MPMA Report. 4.6 CFS would equate to a 0.69 CFS/square mile LFY. **NOTE: The DEP statewide LFY default is 0.1 CFS/square mile. USGS scientific papers also noted the Swiftwater Gage flows were anomalous, which rendered the Swiftwater Gage data unusable for Forest Hill Run.

***This is equivalent to a 0.235 CFS/square mile LFY. If one subtracts the Swiftwater Creek Q7-10 low flow and drainage area form the old Paradise Creek gage location estimates, the rest of the Paradise Creek watershed area (containing Forest Hills Run) would have 3 CFS Q7-10 low flow for a 23.61 square mile drainage area, equivalent to 0.127 CFS/square mile watershed LFY.

The comment is moot due to the DEP's usage of the Paradise Creek Gage data to compute a watershed LFY for Forest Hills Run as more accurate than the USGS PA Streamstats' estimate or distant gages' low flows.

- MPMA Report-Proposed Alternative Q7-10 low flow methodology: Given the discrepancy between the Swiftwater results, the data from the Swiftwater Creek gages calculations was used. The Swiftwater Creek low flow was reduced by 0.2216 MGD (0.3429 CFS) to account for potential discharges from three permitted sources. The Paradise Creek low flow was reduced by 1.0636 MGD (1.6456 CFS) to account for potential discharges from 6 discharges.
  - Swiftwater Creek Gage Station LFY: The 4.1 CFS estimate was reduced to 3.757 CFS for a 6.59 square mile drainage area, which resulted in 0.570 CFS/square mile watershed LFY. **As noted above, the Department cannot use the anomalous Swiftwater Creek gage data to estimate conservative Q7-10 low flows or LFY for Forest Hills Run.**
  - Paradise Creek Gage Station LFY (including the Swiftwater Creek gage drainage area): The 7.1 CFS estimate was reduced to 5.4544 CFS for a 30.2 square mile drainage area, which resulted in 0.181 CFS/square mile watershed LFY. In terms of NPDES discharges: **As noted above, the Department cannot use the anomalous Swiftwater Creek gage data to estimate conservative Q7-10 low flows or LFY for Forest Hills Run. The Department subtracted the Swiftwater gage flow/drainage area to calculate an overall Paradise Creek/Forest Hills Run watershed LFY (0.127 CFS/square mile) that was used instead. Subtraction of the cited discharge flows (below) would only result in a lower LFY for the MPMA Outfall No. 001 location:**
    - MPMA Discharge (PA0044997): 0.500 MGD (highest tier)
    - Mt. Airy Lodge (PA0060054): 0.22 MGD
    - Pocono Mt. School District (PA0040444): Zero (land application at Swiftwater campus, ceased NPDES discharging to stream)
    - Pocono Manor (PA0029149): 0.14 MGD
    - Sanofi Pasteur (PA0060071): 0.55 MGD
    - Monsignor McHugh (PA0029190): 0.022 MGD
    - SC Stream PA LLC (PA0061115): 0.1 MGD
    - Progressive Labels (PA0063584): SFTF (2018 transfer withdrawn, status unknown, assume 0.002)
    - Total NPDES Annual Average Daily Flows: 1.534 MGD
  - Proposed Outfall No. 001 LFY: Forest Hill Run Q7-10 flow was estimated with both LFYs (resulting in 0.206 CFS to 0.650 CFS) which averaged to 0.428 CFS. This equates to a predicted Outfall 001 LFY of 0.375 CFS/square mile, and proposed Q7-10 low flow of 0.4275 CFS. Adjusting values for all NPDES permitted or proposed discharger NPDES Permit-Basis flow (Annual Average Daily Flows in general), the resultant

0.1843 watershed LFY results in a 0.210 CFS Q7-10 flow. **See above. As the Swiftwater Creek flows were already addressed in the raw Paradise Creek gage flow data, the MPMA higher value was effectively double-counting the anomalously high Swiftwater Gage flows.**

- Additional Information and analysis: **This is a case where three (3) different USGS expert analyses (all using partly overlapping data but different regression equations) resulted in widely variable results in terms of the expected Forest Hills Run Q7-10 low flow/Low Flow Yield (LFY). In this situation, the Department fell back to the historic downstream watershed gage data (in the absence of better information, after discounting anomalously high Swiftwater Creek low flows). In terms of the available information**:
  - The Thompson and Cavallo USGS Report (available via Internet) Information:
    - Abstract: Suite of 36 observed streamflow statistics, ranging from high to low flows, were computed for 7 continuous-record and predicted for 12 partial-record streamflow-gaging stations in Monroe County, Pa. The predicted statistics for the partial-record stations were determined from regression analyses of intermittent streamflow measurements made at the partial-record stations and concurrent daily mean flows at index continuous-record stations. The prediction methodology has been previously used only for estimating low-flow statistics. Results from this study indicate the methodology may have applicability for predicting high- and intermediate-flow statistics as well. Three sets of base-flow measurements were made at 40 sites in the Paradise and Pocono Creek watersheds to determine subbasin yields and stream reaches gaining or losing flow. Subbasin yields, the base-flow measurements normalized to respective drainage areas, were consistent for each measurement period.
    - Monroe County is in the Pocono Mountains of northeastern Pennsylvania. Surficial geology includes glacial deposits, sandstones, conglomerates, siltstones, shales, and small amounts of carbonate rock. Areas where porous glacial deposits are connected to the water table typically yield higher stream base flows per unit of drainage area during dry periods than nonglaciated parts of Pennsylvania.
    - Monroe County is in the Pocono Mountains area of northeastern Pennsylvania and, for the period 1931-2000, had an average annual temperature of 47°F and average annual precipitation of 44 in. (National Climatic Data Center, 2002). Average annual potential evaporation ranges from 25 to 27 in. (Flippo, 1982a).
    - The Lehigh River flows along the northwestern boundary of the county, and the Delaware River is part of the southeastern boundary. The Borough of Stroudsburg, on the south-central boundary, is the county seat. Paradise and Pocono Creeks, which flow in an easterly direction and share a common watershed divide, are tributaries to Brodhead Creek, which flows in a southerly direction (fig. 1).
    - Relative subbasin yields for the Paradise and Pocono Creek watersheds were consistent during each measurement period with few exceptions. One exception was a losing reach along the Pocono Creek main stem. **Another exception was the high subbasin yield for Swiftwater Creek in the Paradise Creek watershed that probably reflects surface-water discharges from treatment facilities upstream.**
    - The study and the resulting statistics are limited to streams in Monroe County. All the observed, predicted, and subbasin yield statistics are estimates affected by time and measurement errors. The comparison of predicted and observed statistics for the continuous-record stations indicates the prediction methodology used in the study may have application potential for predicting high- and intermediate-flow statistics, not just for low flow statistics as done in previous investigations. Although all the statistics contain error, as discussed herein, these statistics do constitute the results needed by Delaware River Basin watershed groups for planning purposes and input for ground-water modeling.
  - The separate (unreferenced by MPMA) USGS Scientific Investigations Report 2006-5244 (Selected Streamflow Statistics and Regression Equations for Predicting Statistics at Stream Locations in Monroe County, Pennsylvania) by Ronald E. Thompson & Scott A. Hoffman), also estimated ungaged location Q7-10 low flows in the watershed (but did not estimate flows at the Paradise Creek partial-record gage location referenced above):
    - Abstract: A suite of 28 streamflow statistics, ranging from extreme low to high flows, was computed for 17 continuous-record streamflow-gaging stations and predicted for 20 partial-record stations in Monroe County and contiguous counties… The predicted statistics for the partial-record stations were based on regression analyses relating intermittent flow measurements made at the partial-record stations indexed to concurrent daily mean flows at continuous-record stations during base-flow conditions. The same statistics also were predicted for 134 ungaged stream locations in Monroe

County on the basis of regression analyses relating the statistics to GIS-determined basin characteristics for the continuous-record station drainage areas. … **Caution is indicated in using the predicted statistics for small drainage area situations**. Study results constitute input needed by water-resource managers in Monroe County for planning purposes and evaluation of water-resources availability.

- Ungaged location 115 (**Forest Hill Run downstream of East Swiftwater, PA**): This location had a 3.76 square mile drainage area, 45.6 inch mean annual precipitation, 5.5% base slope, 1401 Feet mean elevation, 0.8% lakes, and 72% forested area. The Q7-10 flow was calculated at 0.2 CFS. This equates to a **0.0531 CFS/square mile LFY.**
- Ungaged location 119 (**Forest Hill Run at Mount Pocono, PA**): This location had a 0.41 square mile drainage area, 47.3 inch mean annual precipitation, 3.6% base slope, 1794 Feet mean elevation, 0 % lakes, and 45% forested area. The Q7-10 flow was calculated at 0.0 CFS. **This equates to a LFY of zero (0).**
- Ungaged location 65 (**Paradise Creek near Paradise Valley**): This location (closest ungaged stream location upstream of confluence with Swiftwater Creek) had 12.7 square mile drainage area, 46.0 inches mean annual precipitation, 5.0% basin slope, 1599 Feet Mean elevation, 0% lakes, and 86% forested. The Q7-10 flow was calculated at 1.2 CFS. This equates to a **LFY of 0.0944 CFS/square mile**. This approximates the 0.1 CFS/square mle DEP Statewide default LFY.
- Ungaged location 66 (Swiftwater Creek below Swiftwater lake): This location (immediately upstream of the confluence with Forest Hill Run) had a 9.7 square mile drainage area, 46.3 inches mean annual precipitation, 6.2% basin slope, 1479 Feet mean elevation, and 0.3% lake, 79% forested. The Q7-10 flow was estimated at 0.9 CFS. **This equates to a LFY of 0.0927 CFS/square mile**. This approximates the 0.1 CFS/square mile DEP Statewide default LFY.

- Comparison of location characteristics (using USGS Report coordinates & PA Streamstats): The MPMA Report did not compare drainage area characteristics to determine if they are similar. PA Streamstats was used to allow for comparison the drainage areas information used in the PA Streamstats estimates. Some minor variability due to limitations of coordinate accuracy and GIS informational systems.

PA Streamstats Results	**Gage# 01440500 Paradise Creek at Henryville, PA**	**Gage# 01440485 Swiftwater Creek at Swiftwater, PA**
Drainage area	29.4 square miles	6.86 square miles
Forest	82.0321%	75.8023%
Glaciated	100%	100%
Mean Annual Precipitation	46 inches	47 inches
Q7-10 low flow	2.1 CFS ± 57% standard error (~0.0714 CFS/square mile LFY)	0.317 CFS ± 57% standard error* (~0.0462 CFS/square mile LFY)
Lat & Long	41.100000°; -75.251390°	41.093889°; -75.322500°

*As noted by the USGS Reports, there may be some additional surface water discharge contribution to stream flow in the Swiftwater gage location drainage area. As the LFY is a factor of 6.9 greater than the 0.1 CFS/square mile PA statewide default LFY per gage data, the gage drainage area cannot be considered representative of other streams' conditions.

MPMARevWQMModel.pdf

NPDES Permit Part A.I.A, B, C (Total Lead WQBEL) and Part C.IV (WQBELs for Toxic Pollutants): MPMA requested deletion of the Total Lead WQBEL on the basis that the June 2, 2021 MPMA-reported 18.9 ug/l result was a suspected outlier as compared to the other MPMA-reported lead concentrations. MPMA referenced DEP SOP No. BCW-PMT-037 (Establishing Water Quality-Based Effluent Limitations (WQBELs) and Permit Conditions for Toxic Pollutants in NPDES Permits for Existing Dischargers) Section I.B NOTE 1: "if outliers are suspected in sample sizes greater than or equal to 10, the median rather than the AMEC should be used to determine whether a pollutant is a candidate for modeling". Because the 18.9 ug/l result for lead is an outlier and the sample size is greater than 10, MPMA believes that the median value for lead (0.41 ug/l) should be used by PADEP…". **The Department could not concur. The first part of NOTE 1 indicates that the Department may not remove data perceived to be outliers unless there are extenuating circumstances such as laboratory or sampling error that are documented in the fact sheet.**

- **MPMA has not shown the reported high value is due to lab or sampling error or other identified extenuating circumstances.**
- **The Reasonable Potential Analysis uses EPA-approved statistical methodology that accounts for the limited number of sample results, expected effluent variability, and minimum sampling frequencies in determining whether permit limits or monitoring is required. High values can occur during normal operations. Spiking (abnormal variation) is also a reality at sewage treatment plant.**
- **MPMA can pursue elimination of the Total Lead WQBEL per the Part C.IV-defined schedule of compliance.**
- **MPMA indicated it had been preparing a TRE Report during the 9/20/2024 Conference, but then received the Draft NPDES Permit during a conference call, but no TRE Report was subsequently received with the public comments.**

Part A.I.A, B, C (Thermal Limits):

- MPMA believes the thermal limits should be recalculated using its proposed Q7-10 low flow (see above public comment and response). **The thermal limits were recalculated. See updated thermal modeling and Q7-10 public comment response above.**
- MPMA noted an apparent discrepancy between the Thermal Limits Spreadsheet/PA Bulletin limits and NPDES Permit Part A.I.C (0.500 MGD tiered limits). **The issue is moot as the revised Thermal Limits have replaced previous values in the Redraft NPDES Permit and its public notice. In this case, the incorrect limits came from an obsolete analysis that lacked site-specific stream data inputs.**
- MPMA conducted an analysis of ambient Forest Hills Run stream temperatures using the upstream Stream Monitoring Station No. 1 (located ~70 feet upstream of Outfall No. 001) and believe that the analysis results are more representative than old 2002-2004 thermal data previously used in DEP thermal modeling. The MPMA analyzed the mean (average) and median temperatures for each month for the period of January 2020 through August 2024, and noted the mean temperature is nearly equal to the median temperature data. There was no meaningful statistical difference between the mean (average) and median temperature for the January 2020 through August monitoring period. The DEP Policy No. 386-2000-007 (Implementation Guidance Design Conditions) indicates the design ambient temperature is the median temperature (50 percent value), derived from site-specific historical data, for each monthly or semi-monthly period (Chapter 93.7). MPMA utilized the median temperature data for use as the ambient stream temperature input into the DEP Thermal Limit Spreadsheet. **The Department could only concur in part due to the updated Thermal Limits Analysis (above) that used the Department-identified LFY/Q7-10 low flow values and the provided ambient stream temperature data. The MPMA-proposed site-specific Q7-10 of 0.428 CFS was not acceptable for reasons discussed above.**

- MPMA requests a special condition that provides that the daily average thermal effluent limitation is the higher of the limit in the Part A table or the average ambient stream temperature. MPMA noted the DEP Policy No. 386-2000-007 (Implementation Guidance Design Conditions) provides that when the ambient stream temperature exceeds the

Chapter 93.7 water quality criteria, then the ambient stream temperature becomes the criterion. During the winter, the ambient stream temperature of Forest Hills Run can increase significantly on warm days. This situation occurs frequently at the MPMA discharge point (Outfall No. 001). During the winter, MPMA would have to operate its effluent chiller treatment unit to meet effluent limits that may be significantly below the ambient stream temperature. **The Department cannot concur with this request.**

- **The Thermal Limit Spreadsheet (TLS) already incorporates the available ambient stream temperature data to address when the site-specific ambient stream temperatures exceed the Chapter 93 statewide Water Quality Standard temperatures.**
- **The Department cannot grant this request for delta (Δ) temperature limits (comparing ambient stream temperature directly to same day discharge temperature) <u>in addition to</u> the TLS limits. Chapter 95.2(5) applies when an industrial facility takes water from a stream (usually for cooling water) and then returns the <u>uncontaminated</u> water back to the same stream, with the approximately same temperature and/or chemical concentrations (ambient TN, TP, metals). This regulation does <u>not</u> pertain to a Sewage Treatment Plant's treated sewage discharge. A treated sewage discharge adds to the mass/thermal loading on the receiving stream. In addition, when two different permit limits apply (mass load versus concentration for example) apply to the same parameter, both permit limits must be complied with, i.e. there would also be no benefit to MPMA to include <u>additional</u> permit limits to the permit.**

<u>NPDES Part A.I.A, B (0.400 MGD Tier 1 limits), Part C.I.H</u>: MPMA requested DEP provide written confirmation that the Part C.I.H requirements for Tier 2 (0.500 MGD) discharge flows have been met and deletion of conditions/limits based on 0.400 MGD Tier 1 flows based upon a previous November 25, 2024 Letter (with an October 2024 Macroinvertebrate Assessment).

MPMA submitted an updated version of the Benthic Macroinvertebrate Study through OnBase. The updated report includes a new Amendment 1 that compares the bioassessment benthic macroinvertebrate scores based on Rapid Bioassessment Protocols ("RBP") for Monitoring Station 1 (reference) against Monitoring Stations 2 and 3. The comparison confirms that the bioassessment benthic macroinvertebrate scores for Monitoring Stations 2 and 3 were greater than 83% of Monitoring Station 1. Therefore, the study confirms that both the RBP and IBI criteria in Part C.I.H of the permit have been met. **The Redraft NPDES Permit is neutral in regard to whether MPMA has met the Tier 2 requirements. The Department is considering the MPMA request separately in order to avoid any entanglements from delaying Final NPDES Permit action. In practical terms, the stream recovered following many months of zero WWTP discharges, but it is unclear what impact the November through March discharges are having on the stream.**

<u>Part C.I.H language included (but was not limited to, with bolding added)</u>: The 30-day average discharge flow to Forest Hills Run shall not exceed 0.400 million gallons per day (MGD) unless and until the permittee has demonstrated to the Department, based upon submission of a biological assessment, that Monitoring Station 2 (IMP/Outfall No. 102) and Monitoring Station 3 (IMP/Outfall No. 104) as described below, attain a bioassessment benthic macroinvertebrate score greater than 83% of Monitoring Station 1, based on Rapid Bioassessment Protocols for Use in Streams and Rivers: Benthic Macroinvertebrates and Fish, Plafkin, et al., (EPA/444/4-89-001), as updated and amended (RBP), **and** Monitoring Station 2 and Monitoring Station 3 attain aquatic life use, based on A Benthic Index of Biotic Integrity for Wadeable Freestone Riffle-Run Streams in Pennsylvania, PADEP (April 2009), as updated and amended (IBI).

If the assessment demonstrates that Monitoring Station 2 and Monitoring Station 3 attain a bioassessment benthic macroinvertebrate score greater than 83% of Monitoring Station 1, based on RBP, **and** Monitoring Station 2 and Monitoring Station 3 attain aquatic life use, based on IBI, then the Department will advise the permittee in writing that the 30-day average discharge flow to Forest Hills Run may exceed 0.400 MGD but shall not exceed 0.500 MGD and shall be subject to the effluent limitations in Part A I.A and A I.B. Upon Department written authorization for Tier 2 flow discharge, the Chapter 94 Reporting may use 0.500 MGD as the hydraulic design capacity.

Within thirty (30) days of Permit Effective Date, the latitude/longitude (with elevations) of Stream Temperature Monitor Stations 1 (a.k.a. IMP/Outfall No. 101), 2 (a.k.a. IMP/Outfall No. 102), and 3 (a.k.a. IMP/Outfall No. 104), plus RO1 ("Runoff Stream 1") and RO2 ("Runoff Stream 2") and any additional Groundwater Monitoring Plan-required surface water monitoring points, shall be submitted to the Department in writing, with completed Post-Construction Certification for the permitted Stream Sampling Stations with:

- As-built engineering design detail (including in-situ temperature sensor location relative to stream width and depth).
- Copy of any Department approval for the monitoring station location.

In the written public comments, MPMA indicated Stream Monitoring Station No. 1 is located ~70 feet upstream of Outfall No. 001 discharge at:

- **Latitude: 41.1152120°**
- **Longitude: -75.3513307°**

MPMA offered the following information/clarifications:

- The Fairview Lake Dam No 45-074 has been breached due to significant portions of missing dam wall. Therefore, this dam does not appear to be functioning as a dam any longer. **Noted**.
- The Mount Airy Casino Resort complex pond has a dam that is approximately 1.65 miles downstream from Outfall No. 001. **Noted**. **The facility has separately indicated that it is considering a dam removal project, but no details or written commitment are available at this time.**
- There is a slight difference in the location of the temperature monitoring station (Monitoring Station #1) and the monitoring station for macroinvertebrates. Monitoring Station #1 for temperature is located approximately 70 feet upstream of Outfall No. 001 as noted in MPMA's comment letter. The monitoring for macroinvertebrates occurred slightly upstream of that location. The location for macroinvertebrate sampling was chosen by the biologists due to riffle availability, stream coverage, channeling of the waterway, and the available habitat for macroinvertebrates. The latitude/longitude for the macroinvertebrate monitoring was approximately 41° 06' 54.3"N, 75° 21' 05.2"W. **Noted.**
- MPMA understands that the NPDES/WQM Permit does not modify any requirements of the Consent Decree and vice versus. The Department is not a party to the Consent Decree and MPMA believes that it is not appropriate for the Department to include any requirements related to the Consent Decree in the draft permit or fact sheet. **The Department addressed overlapping requirements in the NPDES/WQM permits. The previous and Redraft NPDES Permits and related Fact Sheets included the Consent Decree for informational purposes.**

Other Public Comments: See Draft NPDES Permit Fact Sheet for discussion of public comments received from other parties prior to issuance of the Draft NPDES Permit.

Compliance History:

- The permittee has not submitted the previous NPDES Permit-required TRE Phase I Report (Copper, Lead, Zinc) to date.
- The facility started up spray irrigation and WWTP upgrades prior to submittal of the required construction certification submittals.
- No open violations per 6/6/2025 WMS query (open violations by client number):

- **EDMR-reported Effluent Violations for Outfall 001, from: January 1, 2024 To: February 28, 2025:**

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Temperature	01/31/24	Daily Max	48.3	ºF	41.6	ºF
Temperature	03/31/24	Daily Max	53.2	ºF	46.7	ºF
Temperature	11/30/24	Daily Max	47.4	ºF	47.2	ºF
Temperature	12/31/24	Daily Max	57.1	ºF	43.3	ºF
Temperature	01/31/25	Daily Max	49.3	ºF	41.6	ºF
Temperature	03/31/25	Daily Max	54.1	ºF	46.7	ºF
CBOD5	03/31/24	Avg Mo	11.7	mg/L	10	mg/L
CBOD5	03/31/24	Wkly Avg	26.0	mg/L	15	mg/L
Ammonia	06/30/24	Avg Mo	3.4	mg/L	2.7	mg/L

Communications Log:

9/9/2024: Draft NPDES Permit issued.
9/15/2024:

- The 9/15/2024 MPMA (ARRO) E-mail requested a meeting/conference call to review the draft NPDES and WQM permit requirements:
- The 9/15/2024 DEP (Berger) E-mail scheduled the conference call for 9/20/2024 (Friday) and asked for a meeting agenda in case others needed to be invited. The E-mail also asked for clarification on when the site chiller cooling system started up (as it matters in terms of potential stream impacts).
- The 9/15/2024 MPMA (Klotz) E-mail response indicated they received the meeting/conference call response E-mail. The response also stated: "The Cooling system was started up in December of 2020. It has been in full operation beginning of spring of 2021. We are compiling all the temperature data for your review".

9/18/2024: MPMA E-mail asking for conference call to review the draft NPDES and WQM permit requirements.
9/19/2024: MPMA Agenda e-mail
9/20/2024: Conference Call: See attached meeting agenda.

MPMAAgenda1.docx

Highlights:

- Participants:
  - DEP: Amy Bellanca and James Berger
  - MPMA: Jonathan Klotz
  - ARRO: David Kopp, David Kee
  - DRBC: David Kovach
- Extension Request: The PA Bulletin notice will be published on 9/21/2024, with 30-day public comment period starting and automatic 15-day extension upon request. MPMA will be given the 15 days per verbal request. MPMA can ask for more time if they clarify what the time will be used for and how long. MPMA indicated that it would likely ask for an extension as they investigate Q7-10 options. Submittals:
  - Public Comments: All public comments (including supporting data and analysis) should be submitted at the same time.
  - Aquatic Biologist Report: A copy of the future Aquatic Biologist Report can be included as an attachment to the public comments, but is also separately required.
    - MPMA will check with its Aquatic Biologist to find out when the Aquatic Biologist Report will be submitted. MPMA may use the same Biologist who prepared other reports.
    - MPMA asked if the Aquatic Biologist Report should cover only the most recent sampling event. The Department noted that the Report should address all available historic information (including thermal data and analysis) and its meaning to allow for its consideration in terms of NPDES permit requirements over the next 5-years. This includes the Agenda comment that the 10/11/2022 sampling event showed no MPMA influence on stream samples, with spray irrigation all summer from May 30, 2022 onward.
- Day 1 Issues:
  - Mass loading (CBOD5, TSS, Ammonia-N, Nitrate-Nitrite, etc.): The mass loadings are calculated from the concentration limits. Any math error (misremembered equation, etc.) can be identified in the public comments and corrected in the Final NPDES Permit.
  - Thermal Issues:
    - Thermal data and analysis: They have been compiling thermal data and are almost ready to submit their data and analysis. The Department asked all public comments/info to be submitted at the same time (not piece-meal).
      - MPMA said ambient actual stream temperatures are often above the thermal temperature limits, including due to weather temperature changes (such as during snow melts or 55 °F ambient temperatures in January-February).

- MPMA said ambient stream temperatures are highly variable, even when MPMA is not discharging.
- The Department noted that if they have site-specific stream data, then it can be used to update the Thermal Spreadsheet analysis.

▪ Cooling System: MPMA indicates a problem in meeting thermal limits in Jan/February due to cooling system limitations. Their cooling system can reach a minimum temperature of 34.15 °F, but they generally operate 2.6 – 2.8 °F colder than the target discharge temperature. Their system uses utility water for cooling. There is limited mixing capacity due to location of cooling system prior to discharge.

▪ Ambient Stream Temperature Change of ≥2 °F limit for 1 hour or more Permit Limit: The change in temperature is determined from direct comparison of ambient stream temperature upstream of the discharge to downstream of the discharge. Variable ambient stream temperatures are addressed by this limit.

- Thirty-first Month Permit Issues:
  - Other Thermal Limits: If MPMA provides site-specific ambient stream temperatures, then the data can be inputted into the Thermal Modeling to see if that impacts permit limits.
  - Q7-10 Change:
    - MPMA is talking to a hydrologist about the Q7-10 low flow value. They will likely ask for additional time to investigate a site-specific gage or other options. The Department noted that the MPMA hydrologist would have to propose a specific stream gage location (for accurate stream measurement) to the Department, and provide analysis to make any case for a revised Q7-10 low flow. The Department gives extra weight to a PA PE-sealed report and analysis. The NPDES Permit Part C schedules of compliance can be modified to give more time per Chapter 92a.51.
    - The Q7-10 low flow was calculated via USGS PA Streamstats as discussed in the Draft Fact Sheet. The USGS PA Streamstats program is publicly usable.
    - MPMA commented that Q7-10 low flows were generally summer time-frame flows when the facility would be discharging via spray irrigation, but did not ask a specific question.
  - Chlorine Issues: The facility uses chlorine in the SBR anoxic stage to control filamentous bacteria, etc., not disinfection.
    - TRC Testing: The current DEP Target Quantitation limit is 0.02 mg/l (at present, TQLs can become more stringent as lab state-of-the-art improves in the future), with proposed limits at 0.02 mg/l daily average and 0.06 mg/l.
    - They can change their treatment chemicals: Any exotic chemical would require Department notification and approval. The TDS Limits would apply to any additional solids from de-chlorination or other chemical usage.
- TRE Reports (Copper, Lead, and Zinc): MPMA indicated it had been preparing a TRE Report, but then received the Draft NPDES Permit.
  - Sources: They believe the source of the metals (copper, lead, zinc) is from the potable water supply system (PAWC) and metals in onsite well water. They do not have an existing Industrial User or commercial impact.
  - Options:
    - Public Water Supply: They have been in contact with PAWC about corrosion control, but PAWC did not indicate receptivity to changing their corrosion control chemical. The Department noted that any change would have to consider impact on effluent (change to zinc orthophosphate chemicals for example).
    - Utility Water: They are looking to utilize more utility water onsite.
    - Well Water: They are looking at a new onsite well option, but unsure if they could find a new aquifer (with less metals).
    - New IUs: They would address any new industrial user as a potential source.
    - Other options: Other facilities have explored site-specific criteria via BLM model, use of polymer, etc.
  - EDMR data: MPMA indicated that some EDMR metal data was incorrect, and would be updated.
- Open Violations: There are still two open violations (2/26/2024) per a DEP query per check prior to conference call. MPMA indicated it had sent in Noncompliance Reports for those two violations, but did not know what else to do. The Department noted there might be a backlog in updating the E-facts/EDMR compliance system as DEP M&C is very busy due to end-of-water-year requirements. The Department noted that compliance history is looked at during final permit action. **NOTE**: On 9/25/2024, this reviewer e-mailed MPMA and its consultant a link that can be used to access open violations (provided by NE Monitoring & Compliance). “The public/permittee can go to the following link Wastewater Reports (pa.gov) and then scroll down to “Wastewater facility violations” to access a violation report”.

- Comments on Fact Sheet information:
  - MPMA can send in information in its public comments. MPMA believes the Fairview Dam is non-existent. MPMA noted the Mt. Airy dam still exists, but the Department noted it is downstream (no real impact on water quality modeling at Outfall No. 001 discharge point). There have been discussions but no permit application for removal of the downstream Mt. Airy dam (to date of conference call).
  - MPMA can send in site-specific coordinates and elevations to refine the DEP water quality modeling. Stormwater channels do not impact water quality modeling in general.
- Affordability: MPMA has general concerns over affordability and impact on user rates, but indicated much of its concerns were addressed by this conference call.

10/9/2024: MPMA requested the DEP water quality models and inputs for Toxic Management Spreadsheet, WQM Model 7.1, Thermal Spreadsheet, TOXCONC to better understand the DEP modeling.
10/10/2024: DEP (Berger) E-mail provided the following feedback: See the DEP Water Quality Models & Tools webpage for the water quality models (which can be downloaded). The e-mail included a copy of the TOXCONC spreadsheet (TOXCONC spreadsheet not on the DEP webpage).

- There are links to related courses at the DEP Clean Water Academy on the webpage.
- See the Fact Sheet and its attached PDF models for the actual inputs values used in the modeling.
- Additional DEP Technical Guidance documents are available via DEP E-library Technical Guidance for how the DEP develops permit limits (WQBELs. Ammonia-N, Thermal, etc.).
- See the EPA Technical Support Document for Water Quality-Based Effluent Limits (available via Internet) for the EPA-approved statistical approach incorporated into the TOXCONC Spreadsheet (methodology also incorporated into assorted DEP Technical Guidance documents and DEP models).

10/11/2024: MPMA Letter request for extension of Draft NPDES Permit public comment period to January 17, 2024. Letter noted MPMA had hired a license hydrologist to analyze Forest Run, their aquatic biologist would be doing a stream assessment in October, and their MPMA (with its technical consultant) was gathering/analyzing temperature data. **DEP granted the extension, and requested the MPMA Aquatic Biologist contact the DEP biologists about the stream survey in case they wanted to split sample.**

10/11/2024: MPMA e-mail request for PDFs for DEP water quality modeling. **DEP (Berger) E-mail with copies of PDF versions plus DEP Biologist request for submittal of 2023 and Spring 2024 Stream Survey Reports.**


MPMAmodelsMailed.msg

11/25/2024: MPMA (Jonathan Klotz) letter indicated that MPMA was preparing public comments on the Draft NPDES Permit (including data compilation still outstanding regarding the temperature limits and the Q7-10 low flow estimates). Enclosed was the October 17, 2024 “Benthic Macroinvertebrate of Forest Hills Run Above and Below Mount Pocono Municipal Authority Wastewater Treatment Plant” (JB Ecological Services).


MPMAMount Pocono October 202

The MPMA letter also requested authorization for a 0.500 MGD discharge based upon the Report (using October 2024 sampling data): On page 14 of our current permit, Item 2 under Supplemental Information states that if MPMA’s macroinvertebrate assessment “demonstrates that Monitoring Station 2 and Monitoring Station 3 attain a bioassessment benthic macroinvertebrate score greater than 83% of Monitoring Station 1, based on RBP, and Monitoring Station 2 and Monitoring Station 3 attain aquatic life use, based on IBI, then the Department will advise the permittee in writing that the 30-day average discharge flow to Forest Hills Run may exceed 0.400 MGD but shall not exceed 0.500 MGD and shall be subject to the effluent limitations in Part A I.C.2 and A I.D.2.” Upon review of the October 2024 Macroinvertebrate report, the

conditions in Item 2 under Supplemental Information have now been met. We request that the department review the report and confirm in writing that MPMA is authorized to discharge up to 0.500 MGD in accordance with Item 2 under Supplemental Information.

The 2018 NPDES Permit Part C.I "Limitation on Discharge Flow (page) also states: The 30-day average discharge flow to Forest Hills Run shall **not** exceed 0.400 million gallons per day (MGD) unless and until the permittee has demonstrated to the Department, based upon submission of a biological assessment, **that Monitoring Station 2 and Monitoring Station 3 as described below, attain a bioassessment benthic macroinvertebrate score greater than 83% of Monitoring Station 1,** based on Rapid Bioassessment Protocols for Use in Streams and Rivers: Benthic Macroinvertebrates and Fish, Plafkin, et al., (EPA/444/4-89-001), as updated and amended (RBP), **and** Monitoring Station 2 and Monitoring Station 3 attain aquatic life use, based on A Benthic Index of Biotic Integrity for Wadeable Freestone Riffle-Run Streams in Pennsylvania, PADEP (April 2009), as updated and amended (IBI). (Bolding added.)

If the assessment demonstrates that Monitoring Station 2 and Monitoring Station 3 attain a bioassessment benthic macroinvertebrate score greater than 83% of Monitoring Station 1, based on RBP, and Monitoring Station 2 and Monitoring Station 3 attain aquatic life use, based on IBI, then the Department will advise the permittee in writing that the 30 day average discharge flow to Forest Hills Run may exceed 0.400 MGD but shall not exceed 0.500 MGD and shall be subject to the effluent limitations in Part A I.C.2 and A I.D.2. (Bolding added.)

Monitoring Station 1 shall be located upstream from the discharge from the facility to Forest Hills Run, Monitoring Station 2 shall be located downstream from the discharge from the facility to Forest Hills Run, and Monitoring Station 3 shall be located further downstream from the discharge from the facility to Forest Hills Run. The Monitoring Station locations must be approved by the Department prior to conducting the biological assessment. **NOTE**: The Report noted that Station 2 sampling point was moved downstream. The Report noted that Station No. 2 was originally approved for a location immediately downstream of Route 611, but that directly below the Route 611 culvert is a plunge pool followed by a boulder-strewn steep area not suitable for sampling protocols nor sufficiently like the other stations. Therefore, the sampling reach began farther downstream and ended approximately 30 meters below the Route 611 culvert. The Station locations were described as follows:

- Station 1 (Above WWTP Discharge): Beginning at the PP&L power line crossing approximately 100 meters above the MPMA discharge and progressing upstream 10 meters. (41.11493N; -75.35159W).
- Station 2 (Below Route 611): Beginning approximately 130 meters below where Forest Hills Run exits the Route 611 culvert and progressing upstream to 30 meters below the Route 611 culvert. (41.11587N; -75.35005W)
- Station 3 (Below Grange Road): Beginning approximately 100 meters below where Forest Hills Run flows under Grange Road and progresses 100 meters up to Grange Road crossing. (41.11520N; -75.34697W)

1/21/2025: MPMA Public Comments Letter (hard copy) received.
1/29/2025: DEP (Berger) E-mail asking for omitted Public Comment information (stream thermal data and analysis), additional Part C.I.H-required information to support the request for Tier 2 (0.500 MGD limits), and any other public comment or information by 2/14/2025.
2/14/2025: Supplemental MPMA Public Comment information received.

- **Public Upload# 292600**: 2/14/2025 MPMA Letter plus Site stream data with calculated average and median temperatures for Chapter 93 Thermal monitoring periods.
- **Public Upload# 292653**: 2/14/2025 MPMA Letter plus Site stream data with calculated average and median temperatures for Chapter 93 Thermal monitoring periods.
- **Public Upload# 292673**: Thermal data.
- 2/14/2025 Letter indicated macroinvertebrate RBP calculation was in a revised document. The attached October 17, 2024 "Benthic Macroinvertebrates of Forest Hills Run Above and Below Mount Pocono Municipal Authority Wastewater Treatment Plant" (submitted by Michael D. Bilger and David Rebuck for JB Ecological Services) included an Amendment 1 (RPB Table added to address comments made by Pennsylvania Department of Environmental Protection on January 29, 2025. Response to PA DEP comments submitted February 14, 2025.).