pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northeast Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0065030**
Facility Type	**Municipal**	APS ID	**552915**
Major / Minor	**Minor**	Authorization ID	**1439461**

Applicant and Facility Information

Applicant Name	**Meshoppen Borough Wyoming County**	Facility Name	**Meshoppen Borough POTW**
Applicant Address	PO Box 237	Facility Address	181 Sterling Street
	Meshoppen, PA 18630-0237		Meshoppen, PA 18630
Applicant Contact	John Bunnell	Facility Contact	Ryan Detweiler (Certified Operator)
Applicant Phone	(570) 833-5556	Facility Phone	(570) 341-6738
Client ID	86151	Site ID	654991
Ch 94 Load Status	Not Overloaded	Municipality	Meshoppen Borough
Connection Status	No Limitations	County	Wyoming
Date Application Received	May 3, 2023	EPA Waived?	No
Date Application Accepted	June 14, 2023	If No, Reason	EPA Discretion (prior renewal)
Purpose of Application	NPDES Permit renewal.		

Summary of Review

0.050 MGD POTW NPDES Permit Renewal Application for discharge to the Susquehanna River (WWF, MF).

Background:

- Application:
  - On-Base No. 106866 (original submittal)
  - On-Base No. 111361 (response to Technical Deficiency Letter)
  - Public Upload# 278803 (received 12/20/2024)
- Facility was previously “EPA discretionary” due Susquehanna River TMDL (PCBs). As it is not a source of PCBs and was previously reviewed by EPA, the renewal has been removed from that category.
- Annual Average Daily Flows (AADF): The underloaded treatment facility has a permitted 0.050 MGD hydraulic design capacity and 67 lbs BOD5/day organic design capacity (Planning-based with additional capacity for expansion purposes), receiving flows from a Low Pressure Sewer (LPS) System with apparent solids build-up problems (with intermittent solids spiking when flushing occurs):
  - AADF per Application: 0.0075 MGD (2020), 0.0074 MGD (2021), 0.0099 MGD (2022) with highest monthly average flow of 0.0179 MGD (July 2022).
  - BOD5 Influent Loadings (Organic Loading) per Application (48 samples): The 4/8/2024 DEP NOV Letter indicated the facility had been doing only influent grab sampling in the 2022-2023 period, with 2025 Meshoppen (ESC) letter indicating start of use of composite sampler in late Fall 2024, i.e. concentrations and loading data may be biased. Please note that previous Chapter 94 Reports had indicated projected organic overloading with recommended corrective actions to include composite sampling.
    - The BOD5 influent mass loadings were 19 lbs BOD5/daily average and 38 lbs BOD5/day maximum.
    - The BOD5 influent concentrations were 259 mg/l average and 455 mg/l max. WQM Permit design assumed 240 mg/l influent concentration.

Approve	Deny	Signatures	Date
X		James D. Berger (signed) James D. Berger, P.E. / Environmental Engineer	April 24, 2025
X		Edward Dudick, P.E. / Environmental Program Manager	April 28, 2025

Summary of Review

- TSS Influent Loadings Per Application (48 samples): The 4/8/2024 DEP NOV Letter indicated the facility had been doing only influent grab sampling in the 2022-2023 period, with 2025 Meshoppen (ESC) letter indicating start of use of composite sampler in late Fall 2024, i.e. concentrations and loading data may be biased.
  - The TSS concentrations ranged from 274 mg/l average to **1757 mg/l max**. WQM Permit solids design capacity was 220 mg/l max daily influent concentration.
  - The TSS mass load ranged from 22 lbs/day average to **151 lbs/day max**.
- Service Area: Meshoppen Brough (99%, ~450 persons). Meshoppen Township (1%, two commercial businesses). Original Planning Letter assumed 175 residences (which would equate to 438 persons at 2.5 person/EDU default assumption). 450± persons would generate (at typical DWFM default values):
  - ~36,000 GPD (at 80 GPCD default for LPS System without I&I) with WQM permit assuming 33,000 GPD average daily flow at 75 GPCD. (Service area over 150 residences.)
  - ~76.5 lbs BOD5/day (at 0.17 lbs/capita default)
  - ~87.5 lbd Total Solids (at 0.20 lbs/capita default)

- **Underloading Operational Problem**: The 0.050 MGD Facility is subject to underloading with permittee-acknowledged problem of solids build-up in LPS System and the treatment units (EQ Tank, clarifier sludge baffles per 8/29/2024 DEP Inspection; 3/31/2022 DEP Inspection noted discharge of solids), with intermittent influent spiking concentrations/loadings (see max TSS influent concentration above) due to LPS system allowing solids accumulation before flushing to the Treatment Plant. Home grinder-grinded wastewater solids can also re-aggregate enroute or at the treatment plant. Underloading a Treatment Plant can result in O&M issues, with DEP Files indicating extensive O&M work has been required for this <20-year old facility. **NOTE**: Facility also temporarily used improvised tablet chlorination to supplement/replace the failing or being repaired UV disinfection system (with UV system unable to measure intensity or dosage per application despite assorted repairs). Excess solids in the clarifiers and disinfection system can impair UV disinfection effectiveness.
  - Contributing Factors to operational problems: The 2023 and 2024 Chapter 94 Reports lacked documentation of flow-meter calibration.
  - LPS System Service Area: The 9/19/2002 Planning Letter and 3/1/2007 WQM Permit IRR indicated a LPS system with 175 connections (i.e. EDUs), with force mains ranging from 1.5-inch to 4-inches. The 2023 Chapter 94 Report only identified 77 existing EDUs. This discrepancy might indicate failure to connect residential lots has contributed to site operational problems.
  - The 12/20/2024 Response Letter Item 2.a.iii stated: It is the hope that with the recent UV repairs, future aeration and blower repairs, and operational adjustments, problems associated with sludge build up and fecal coliform exceedances will be resolved. Otherwise, there are currently no specific site upgrades implemented or proposed. The Borough, operator, and engineer will coordinate together and with vendors (if needed) to evaluate potential site and treatment upgrades if the above-mentioned repairs don't resolve plant issues.
  - The 12/20/2024 Response Letter Item 2.a.iv stated:
    - The operator does not have the ability to measure and report UV intensity at this time.
    - The operator does not have the ability to measure and report UV transmittance at this time.
    - The operator does not have the ability to measure and report UV dosage at this time.
    - Per the operator, the UV system does not appear to be in need of replacement. The UV sensors and bulbs were recently replaced and no further fecal exceedances have been reported.
    - Per the operator, in September, the UV bulbs and sensor were replaced and in October and November no further exceedances were reported. If the solid build up due to lack of air can be corrected, this would improve the quality of waste flowing through the UV system and ultimately increase disinfection capabilities.
  - The 12/20/2024 Response Letter Item 2.a stated: Per the operator, it is correct that the plant is currently underloaded and that there is a problem with solids build up in the treatment units. Tablet chlorination is no longer being used as an improvised solution and both aeration trains have been operational since March 2022.
  - The 12/20/2024 Response Letter Item 2.a.iv stated: Per the operator and recent records/data, Dissolved Oxygen (DO) is typically in the 3.0 mg/l to 4.5 mg/l range. 5.0 mg/l DO concentration is not currently able to be achieved consistently. **NOTE**: The application also identified some Aeration O&M issues.
  - The 12/20/2024 Response Letter Item 2.a.vi identified Operator-in-Responsible Charge: Ryan Detweiler – ESC. License No. 259581 Expires. 06/30/2027
- EPA discretionary project: Per last renewal.

Summary of Review

Sludge use and disposal description and location(s): 3.4 dry tons sent to Greater Hazleton Sewer Authority. See Treatment Plant section for Chapter 94 Report information regarding sludge disposal.

Permit Conditions:

Parts A.I.A: Significant changes (in addition to NPDES Permit Template Parts A and B updating):

- **New UV intensity monitoring & reporting (daily)**: Now required as a standard requirement and critical due to site UV disinfection system O&M problems and previous pattern of fecal coliform exceedances. The application indicates O&M work will be required to restore the UV system capacity to measure UV intensity, but that is required under existing NPDES/WQM Permit conditions.
- **New Ammonia-N limit**: Application of minimum technology statewide BPJ standards per DEP SOP No. BCW-PMT-033 (Establishing Effluent Limitations for Individual Sewage Permits). New limits effective upon PED since Application and EDMR data indicates existing compliance. Reporting frequency increased to standard minimum monitoring frequency.
- **New Dissolved Oxygen (DO) limit:** Application of minimum technology statewide BPJ standards per DEP SOP No. BCW-PMT-033 (Establishing Effluent Limitations for Individual Sewage Permits) for discharge to a WWF stream. 2007 WQM Permit Application indicated system was designed for ≥5.0 mg/l DO discharge (limit not in the 2006 NPDES Permit). but application indicate values ranging from 3.0 to 5.0 mg/l. DEP files indicate aeration system O&M issues are likely contributing to the lower DO discharge from the extended aeration system. O&M should allow compliance.
- **New E Coli Monitoring**: New quarterly monitoring requirement due to new Chapter 93 E Coli WQS at standard monitoring frequency for this size facility.
- **New Minimum Monthly Average Reduction BOD5 and TSS Reporting:** Existing POTW NPDES Permit Part A.I Additional Requirements Item 2 requirements (Chapter 92a.47) shall now be reported via EDMR. Please note the DEP Inspector has noted the existing influent composite sampling location (inside the Influent EQ Tank subject to recirculation flows) be relocated to ensure representative sampling per Part A.III requirements (with the side-benefit of better process control).
- **Revised TRC Limit**: The TRC Limit has been revised per Water Quality Modeling and due to previous extended period of emergency chlorination. No monitoring is required if chlorine is not being used in a manner that would result in its presence in the site discharge.
- **Flow-proportional 24-hour composite sampling requirement**: Due potential biasing, the existing 8-hour composite sampling requirement has been changed to flow-proportional 24-hour composite sampling to allow for accurate monitoring and reporting. See Part A.II (definitions) for composite sampling requirements. Accurate influent information is also needed for proper process control.

Part B.I.D.4: New standard PFAS-related requirement. Each POTW without an approved Pretreatment Program shall, within six (6) months of the permit effective date, develop a list of Industrial Users (IUs) in industry categories expected or suspected of per- and polyfluoroalkyl substance (PFAS) discharges to the POTW and submit the list (electronically) within 6 months of PED. This requirement pertains even if the facility must report zero industrial users in the identified categories. **NOTE**: See the (internet available) EPA SIC Code-to-ELG (Effluent Limitation Guidelines) and NAICS Code-to-ELG crosswalks for available EPA guidance on who falls under the condition-identified industrial categories.

Part C Special Conditions: Changes bolded:

- **Part C.I.A, B, C**: Stormwater prohibition; Necessary property rights, Residuals Management
- **Part C.I.D**: **Updated** Chlorine Minimization condition **(to clarify EDMR reporting requirements) and chlorine minimization requirements.**
- **Part C.I.E: New Notification of Operator-in-responsible charge for POTW (Treatment Plant and Collection System) due to O&M problems noted in DEP files (likely due to underloading).**
- **Part C.I.F: New POTW-wide O&M Plan requirement due to long-term O&M problems (facility underloading, previous solids build-up noted; UV disinfection system malfunctions with pattern of fecal coliform exceedances with solids being potential contributory cause; facility statements of previous algae issues requiring chlorination), facility underloading, etc. The clarifiers and disinfection system shall be inspected weekly for solids build-up, with solids build-up removed per Part C.II.A.**
- **Part C.I.G: New WQM Permit condition due to DEP Inspection Reports and application statements that indicate the as-built/as-operated treatment facility has been modified from the 2007 WQM permitted-design and operations.**
- **Part C.I.H: New UV Disinfection System reporting requirement due to pattern of site UV system issues.**

Summary of Review

- **Part C.I.H: Restored condition that was accidentally omitted from previous Renewal. Previous Fact Sheet did not explain why it was omitted, but it had been present in the two previous NPDES permits.**

C. If, in the opinion of the Department, by reason of change in the character of wastes or increased load upon the treatment facilities, or changed use or condition of the receiving body of water, or otherwise, the said effluent ceases to be satisfactory or the treatment facilities shall have created public nuisance, then upon notice by the Department the right herein granted to discharge such effluent shall cease and become null and void unless within the time specified by the Department, the permittee shall adopt such remedial measures as will produce an effluent which, in the opinion of the Department, will be satisfactory for discharge into the said receiving body of water.

- **Part C.II**: Existing Solids Management conditions.

Public Participation

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

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.050
Latitude	41º 36' 32.15"	Longitude	-76º 2' 57.63"
Quad Name	Meshoppen	Quad Code	0637 (2.19.2)
Wastewater Description:	Sewage Effluent		
Receiving Waters	Susquehanna River (WWF)	Stream Code	6685
NHD Com ID	66405129	RMI	218
Drainage Area	8720 mi^2 (based on downstream gage information)	Yield (cfs/mi^2)	0.074
Q_{7-10} Flow (cfs)	645.28	Q_{7-10} Basis	Gage 01533400
Elevation (ft)	608.8 (USGS Terrain Mapper)	Slope (ft/ft)	-
Watershed No.	4-G	Chapter 93 Class.	WWF. MF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Impaired		
Cause(s) of Impairment	MERCURY, POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN, SOURCE UNKNOWN		
TMDL Status	Final, Final	Name	Susquehanna River PCB Susquehanna River Metals (AMD) Luzerne County

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

Nearest Downstream Public Water Supply Intake		PAWC Springbrook Dist ID# 101800-100 (Pittston area)	
PWS Waters	Susquehanna River	Flow at Intake (cfs)	-
PWS RMI	-	Distance from Outfall (mi)	>5 miles

Changes Since Last Permit Issuance: None known.

Other Comments:

- Discharge Location: STP and Outfall 001 are downstream of the Meshoppen Creek (CWF; Stream# 29348) confluence with the Susquehanna River. There is a USGS stream gage ~0.15 miles downstream of the Outfall.
- Q7-10 Low Flow: USGS Gage No. 01533400 (Susquehanna River at Meshoppen, PA) is downstream (~0.15 miles on other side of River). Gage elevation at 599.76 Feet, 8720 square mile drainage area. USGS PA Streamstats now identifies the Q7-10 low flow at 648 CFS for 8720 square mile drainage area (0.0743 CFS/square mile watershed LFY). Due to proximity of gage to Outfall No. 001, the gage flow and outfall location flow are approximately identical.
- Stream Impairments: A small STP is not expected to contribute to PCBs or Mercury in the receiving River. A small STP is not expected to contribute significantly to AMD metals (Aluminum, Total Iron, or Manganese) in the receiving River. Meshoppen Borough is considered a Phase 5 facility within the Chesapeake Bay Tributary Strategy.
    - Dilution factor of >8000:1
    - No TMDL WLAs were assigned to this facility.

- From previous Fact Sheet: Susquehanna River TMDL: The TMDL does not assign any wasteload allocations (WLAs) for PCBs since there are no known point sources of the pollutant on the stream segment. Monitoring/reporting requirements are not included in the permit since this facility is not expected to discharge PCBs. The production and use of PCB in the United States was banned in July 1979. PCBs that currently enter receiving streams are likely transported via groundwater flow or surface runoff of PCB contaminated soils.

- This is a Phase 5 Chesapeake Bay facility without any annual mass loading caps for TN or TP.
- Meshoppen Creek (CWF; Stream# 29348) is an attaining stream. The 2007 WQM Permit Application had indicated deterioration due to failure of on-lot systems that were to be connected to the permitted LPS System and Treatment Plant. Since only 77 out of 175 residences have been connected to the POTW (as of 2023), there is potential for future impacts.

Treatment Facility Summary

Treatment Facility Name: Meshoppen Borough POTW

WQM Permit No.	Issuance Date	Scope
6606402	March 1, 2007	LPS collection system (1.5 – 4-inch force main pipe with grinder pumps for each connection) and Extended Aeration Sewage Treatment Plant: Comminutor/bar screen, 25,000-gallon aerated flow EQ Tank (with baffles to promote circular flow therein & 3.0-HP 60 CFM blower; duplex 90 GPM @ 15 Feet TDH Gould 0.5-HP pumps for pumping flow to the aeration tanks); Splitter box (with V-notch and overflow weirs); two (2) train extended aeration tanks (25,000-gallon each (with baffles) & three 5.0-HP 125 CFM blowers); two (2) settling tanks/clarifiers (4,176-gallon each)); UV disinfection (four lamp system allowing maintenance of lamps while shutting off effluent flow via valving); and one (1) 10,000-gallon sludge holding tank (with a 3.0 HP 60 CFM blower). Gravity Line (with ultrasonic open channel flow meter) to Susquehanna River outfall. A portable emergency generator with capacity to operate the plant was to be provided. Control building.

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Extended Aeration	Ultraviolet	0.050

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.050	67*	Not Overloaded	Holding tank	Hauled to GHJSA

*Based on original Planning approval. Facility was designed to allow for expansion to 100 lb BOD5/day ultimate organic design capacity to meet future needs.

Changes Since Last Permit Issuance:

- 2022 Meshoppen Correspondence indicated 2017 installation of weir board in clarifier to prevent scum from going across clarifier and out the weir.
- The 1/4/2016 Response to the 12/30/2015 NOV had indicated plans to create a small pit and have a pump installed near the UV light system to occasionally drain the system and pump contents to the EQ Tank, but it is unclear if this was done.

Other Comments:

Application description: Flow enters a comminutor and then goes into an EQ Tank. Flow then enters a splitter box. Following the splitter box, are two aeration trains with clarifiers. After the clarifier, flow enters a UV channel and goes to the outfall. Return sludge goes from the clarifier back to aeration. Waste sludge goes to sludge holding. Polymer thicken waste sludge before offsite hauling when needed. Soda Ash is used for pH control. No proposed upgrades in next 5 years.
Application Process Flow Diagram: Showed the comminutor and splitter box but did not identify Aerated EQ Tank as such. Soda ash is added to the two aeration tanks.
Application "Current As operated Treatment Process" Section-identified O&M Issues:

- EQ Tank Issues: Raw sewage enters the treatment plant via the operational comminutor located in the EQ Tank. The floats within in the EQ Tank are disconnected and were never connected during the duration that ESC were Operators. Because of this the pumps consistently run. The tank lacks capability of providing ample air due to a leak in the air pipe. Meshoppen patched the line, however it is in need of a new line. Because of this solids build up more frequently.
- Splitter Box Issues: Flow from the Influent EQ Tank is distributed via a splitter box. The splitter box needs to be replaced because operationally it is hard to balance the flow between Aeration Basins and what is returned back

to the Influent EQ Tank. The Splitter is being held with C Clamps. In order to make adjustments the clamps need to be removed which is a tedious process.

- Clarifier Issues: After treatment in the Aeration Basins, flow is directed to 2 Clarifiers. Clarifier 1 & 2 are susceptible to solid build up in the scum troughs. The scum troughs are pumped out when the Sludge Holding Tank needs to be pumped out. In Clarifier 2, the baffle is made of wood and is severely bowed out. This should be repaired with non-wood material. ESC would like to see both of these tanks drained and cleaned. **NOTE**: See Solid Management Condition C.III.A (solids buildup in clarifiers or disinfection system is prohibited).
- Aeration Blowers: Only 2/3 blowers for the aeration tanks are operational.
- Sludge Holding Tank: The Sludge Holding Tank is located to Influent EQ Tank but connected to the Train 2 Aeration Basins. The SHT is aerated however the air drops need to be replaced as they are showing serious signs of deterioration.

Other Issues:

- The Application (and 2023 Chapter 94 Report) did not contain a Part C.III.C Solids Management Condition-specified EPA methodology Sewage Sludge Management Inventory.
- The 4/19/2024 ESC "Circuit Rider System Specific Management Plan" "Treatment Unit Processes (Influent – Effluent) Section omitted reference to 25,000-gallon Aerated EQ Tank.
- They had been using tablet chlorination during UV System issues, but indicated cessation of chlorination. See above sections for related information.

2023 Chapter 94 Report & 2024 Chapter 94 Report (Public Upload# 306934), prepared by Environmental Service Corp:

- Form Items 1, 2, 3, and 9 (flows and loadings):
  - Noted Issues:
    - Per provided DEP Spreadsheet information, no existing or projected overloading but Inspection Reports and response to 2024 NOVs indicate they were using grab sampling (not the required 8-hour composite sampling until late 2024), rendering influent organic loading data of dubious accuracy.
    - The 0.050 MGD STP is substantially underloaded (~0.011 MGD average flows and 19 lbs BOD5/day average loading). The discrepancies between design flows/loadings and reported values raise possibility of unconnected residential lots.
    - 77 existing EDUs would not equate to the Planning-approved 175 connections, raising question of whether all required connections have been made to the Treatment Plant.
  - Hydraulic Design Capacity: 0.050 MGD
  - Organic Design Capacity: 67 lbs BOD5/day
  - Persons/EDU: 3.5
  - ADF: 0.0112 MGD (2023); 0.010593 (2024)
  - Max 3-mon Avg: 0.0144 MGD (2023); 0.01259 (2024)
  - Max Monthly Avg.: 0.0157 MGD (2023); 0.01437 (2024)
  - Existing EDUs: 77 (no change since 2019). At the standard 2.5 persons/EDU, 77 EDUs equate to 193 persons. At the report-used 3.5 persons/EDU assumption, the population would be 270 persons. At the DWFM Default values, 77 EDUs would equate to:
    - 0.0154 MGD flow (at 80 GPCD/person and 2.5 persons/EDU)
    - 32.7 lbs BOD5/day (at 0.17 lb BOD5/person and 2.5 persons/EDU)
  - Flow/EDU: 145.5 GPD (2023); 127.6 GPD (2024)
  - Flow/Capita: 41.6 GPD (2023) and 39.3 GPD (2024), with 75 GPCD for <150 home subdivision (with infiltration allowance)
  - Annual Average Loading: 19 lbs BOD5/day (2023 and 2024)
  - Max Month Loading: 30 lbs BOD5/day (2023); 25 lbs BOD5/day (2024)
  - Load/EDU: 0.240 lbs BOD5/day (2023); 0.252 lbs BOD5/day (2024)
  - Load/Capita: 0.069 lbs BOD5/day (2023) and 0.072 lbs BOD5/day (0.17 BOD5 lb/day/capita DWFM default without garbage grinders; 0.22 lb BOD5/day/capita with prevalent garbage grinders)
  - NPDES Permit Renewal Application Trib Information:
    - Meshoppen Brough (99%, ~450 persons). 450 persons would equate to 129 EDUs at 3.5 persons per EDU or 180 EDUs at 2.5 persons per EDU.
    - Meshoppen Township (1%, two commercial businesses). Each business was assumed to be 1 EDU.
  - DEP Spreadsheet (2023 Report): There was a substantial decrease in organic loadings between 2019 and 2020, and between 2020 and 2021 with constant 77 EDUs identified (without change) from 2019 to 2023. Cause not identified.

Monthly Average BOD5 Loads for Past Five Years (lbs/day)

Month	2019	2020	2021	2022	2023
January	45	31	10	18	12
February	41	16	13	19	15
March	54	15	10	25	23
April	37	16	14	11	20
May	50	16	5	20	16
June	51	18	9	24	19
July	36	28	3	33	24
August	17	12	6	20	30
September	18	12	11	14	13
October	18	14	5	13	21
November	21	15	6	12	13
December	63	31	13	18	16
Annual Avg	38	19	9	19	19
Max Mo Avg	63	31	14	33	30
Max : Avg Ratio	1.68	1.66	1.60	1.74	1.62
Existing EDUs	77	77	77	77	77
Load/EDU	0.488	0.242	0.114	0.246	0.240
Load/Capita	0.139	0.069	0.032	0.070	0.069
Exist. Overload?	NO	NO	NO	NO	NO

- Form Item 4 (Sewer Extensions): No sewer extension in 2023 or 2024. Wyoming County Housing Authority conducted a feasibility study to connect 15 existing apartments to the sewer system, but project was noted to be in “very early planning stages”.
- Form Item 5 (Sewer system monitoring, maintenance, repair and rehab):
    - LPS sewer mains indicated to be in good condition. Borough maintains stock of grinder pumps. Borough monitors home sites for downspouts, sumps, and other illegal connections. No mention of reported solids accumulation issues in the LPS system.
    - Routine maintenance was mentioned for the WWTP equipment, but no mention of UV disinfection issues (inability to measure UV intensity).
    - Attachment C indicated: The Authority has established a program for inspection and maintenance in the sewer system. The Authority uses Environmental Service Corp. to respond to problems or emergencies that may develop in the sewer system.
- Form Item 6 (Capacity-related bypassing, SSOs, etc.): Item was left blank.
- Form Item 7 (Pump Stations): Item was left blank. No checking of box that there were not pump stations. (Home grinder pumps do exist for a LPS system, but are not the focus of this item).
- Form Item 8 (IW): Item was left blank. NPDES Renewal Application indicated assorted commercial sources, but no industrial wastewater source.
- Item 9 (Existing or Projected Overload): The 2024 DEP form indicated an existing organic overload and that a corrective action plan was attached. Attachment D (Corrective Action Plan) indicated no 2024 overloading, but noted that a CAP may be put in place depending on the results of the Wastewater Treatment Plant Evaluation. The Attachment C narrative noted that DEP has asked for a system evaluation by a Professional Engineer. The Attachment noted that Milnes had been contracted to do this project, with report due by end of April 2025.
- Form Item 10 (Sewage Sludge Management Inventory): Item left blank. Contrary to Attachment E, the current NPDES Permit Part C.II.C requires a sewage sludge management inventory (following a specific EPA methodology referenced in the condition). 25,300 gallons of sewage sludge has said to be removed from the “Westgage WWTP” and hauled to GHJSA in 2023, and 55,300 gallons removed in 2024.
- Form Item 12 (Calibrations): Item was left blank in 2023 but flow calibration report was indicated to be attached in 2024. No flow meter calibration report found in Attachment F (Flow Meter Calibration) in 2023 or 2024.
- Signature Sections: No visible signatures on the 2024 Report sections (municipality or preparer).

Compliance History

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

Parameter	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24
Flow (MGD) Average Monthly	**0.0141**	**0.0112**	**0.0101**	**0.0095**	**0.009218**	**0.0097**	**0.0142**	**0.009632**	**0.0095**	**0.0108**	**0.0115**	**0.01437**
Flow (MGD) Daily Maximum	**0.0248**	**0.0208**	**0.0198**	**0.0141**	**0.0175**	**0.0179**	**0.02**	**0.0162**	**0.0153**	**0.0165**	**0.0186**	**0.0201**
pH (S.U.) Instantaneous Minimum	6.52	6.76	7.02	6.88	7.08	7.19	7.07	7.22	6.87	6.94	6.41	6.9
pH (S.U.) Instantaneous Maximum	7.77	7.86	7.71	7.57	7.64	7.7	7.95	7.76	7.69	7.57	7.60	7.52
TRC (mg/L) Instantaneous Maximum	GG	GG	GG	GG	**0.42**	**0.5**	**0.5**	**0.51**	**0.5**	**0.63**	GG	GG
CBOD5 (lbs/day) Average Monthly	< 0.4	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	1.1	1.8	1.2	2.5
CBOD5 (lbs/day) Weekly Average	0.6	< 0.2	< 0.2	< 0.2	< 0.2	< 0.1	< 0.2	< 0.2	1.3	2.7	1.8	3.5
CBOD5 (mg/L) Average Monthly	< 3.0	< 2.5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	16.0	22.0	13.0	19.0
CBOD5 (mg/L) Weekly Average	4.0	3.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	21.0	36.0	19.0	24.0
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	**22**	**20**	**22**	**18**	**17**	**14**	**16**	**22**	**21**	**23**	**19**	**25**
BOD5 (mg/L) Raw Sewage Influent Average Monthly	**188**	**254**	**314**	**241**	**248**	**217**	**240**	**250**	**318**	**263**	**237**	**208**
TSS (lbs/day) Average Monthly	< 1.1	0.3	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.3	1.2	0.4	< 0.4
TSS (lbs/day) Raw Sewage Influent Average Monthly	**33**	**14**	**12**	**9**	**7**	**12**	**16**	**21**	**19**	**22**	**20**	**57**
TSS (lbs/day) Weekly Average	1.9	0.3	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.3	0.4	1.8	0.6	0.4
TSS (mg/L) Average Monthly	< 8.0	4.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 5.0	15.0	5.0	< 3.0

TSS (mg/L) Raw Sewage Influent Average Monthly	**259**	**171**	**172**	**122**	**101**	**177**	**221**	**238**	**283**	**252**	**235**	**417**
TSS (mg/L) Weekly Average	13.0	4.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	7.0	24.0	6.0	3.0
Fecal Coliform (No./100 ml) Geometric Mean	34	8	6	355	< 49	< 1	2	12	18	1184	2420	2420
Fecal Coliform (No./100 ml) Instantaneous Maximum	105	10	8	2420	2420	< 1	3	152	20	2420	2420	2420
Nitrate-Nitrite (mg/L) Average Quarterly		40.7			41.8			48.7			40.5	
Total Nitrogen (mg/L) Average Quarterly		42.7			42.8			50.5			< 41.5	
Ammonia (mg/L) Average Quarterly		**0.1**			**0.18**			**0.34**			**0.11**	
TKN (mg/L) Average Quarterly		2.0			< 1			1.80			< 1.0	
Total Phosphorus (mg/L) Average Quarterly		7.10			7			7.4			5.40	

DMR Data for Outfall 001 (from October 1, 2023 to January 30, 2024)

Parameter	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23
Flow (MGD) Average Monthly	**0.009218**	**0.0097**	**0.0142**	**0.009632**	**0.0095**	**0.0108**	**0.0115**	**0.01437**	**0.368**	**0.012714**	**0.0115**	**0.0157**
Flow (MGD) Daily Maximum	**0.0175**	**0.0179**	**0.02**	**0.0162**	**0.0153**	**0.0165**	**0.0186**	**0.0201**	**0.0187**	**0.0166**	**0.0167**	**0.137**
pH (S.U.) Instantaneous Minimum	7.08	7.19	7.07	7.22	6.87	6.94	6.41	6.9	6.7	6.91	6.7	6.93
pH (S.U.) Instantaneous Maximum	7.64	7.7	7.95	7.76	7.69	7.57	7.60	7.52	7.82	7.84	7.64	7.39
TRC (mg/L) Instantaneous Maximum	**0.42**	**0.5**	**0.5**	**0.51**	**0.5**	**0.63**	GG	GG	GG	GG	GG	GG

CBOD5 (lbs/day) Average Monthly	< 0.1	< 0.1	< 0.1	< 0.2	1.1	1.8	1.2	2.5	0.2	0.2	< 0.2	< 0.2
CBOD5 (lbs/day) Weekly Average	< 0.2	< 0.1	< 0.2	< 0.2	1.3	2.7	1.8	3.5	0.3	0.4	< 0.2	< 0.2
CBOD5 (mg/L) Average Monthly	< 2.0	< 2.0	< 2.0	< 2.0	16.0	22.0	13.0	19.0	3.0	3.0	< 2.0	< 2.0
CBOD5 (mg/L) Weekly Average	< 2.0	< 2.0	< 2.0	< 2.0	21.0	36.0	19.0	24.0	3.0	3.0	2.0	< 2.0
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	**17**	**14**	**16**	**22**	**21**	**23**	**19**	**25**	**16**	**13**	**16**	**21**
BOD5 (mg/L) Raw Sewage Influent Average Monthly	**248**	**217**	**240**	**250**	**318**	**263**	**237**	**208**	**236**	**190**	**189**	**246**
TSS (lbs/day) Average Monthly	< 0.2	< 0.2	< 0.2	< 0.2	< 0.3	1.2	0.4	< 0.4	0.4	0.6	0.7	0.4
TSS (lbs/day) Raw Sewage Influent Average Monthly	**7**	**12**	**16**	**21**	**19**	**22**	**20**	**57**	**9**	**12**	**20**	**17**
TSS (lbs/day) Weekly Average	< 0.2	< 0.2	< 0.2	< 0.3	0.4	1.8	0.6	0.4	0.5	1.2	0.8	0.5
TSS (mg/L) Average Monthly	< 3.0	< 3.0	< 3.0	< 3.0	< 5.0	15.0	5.0	< 3.0	7.0	10.0	9.0	5.0
TSS (mg/L) Raw Sewage Influent Average Monthly	**101**	**177**	**221**	**238**	**283**	**252**	**235**	**417**	**128**	**215**	**241**	**195**
TSS (mg/L) Weekly Average	< 3.0	< 3.0	< 3.0	< 3.0	7.0	24.0	6.0	3.0	7.0	10.0	9.0	7.0
Fecal Coliform (No./100 ml) Geometric Mean	< 49	< 1	2	12	18	**1184**	**2420**	**2420**	13.03	**2420**	**488**	22.0
Fecal Coliform (No./100 ml) Instantaneous Maximum	**2420**	< 1	3	152	20	**2420**	**2420**	**2420**	**1733**	**2420**	**517**	**488.00**
Nitrate-Nitrite (mg/L) Average Quarterly	41.8			48.7			40.5			40.2		
Total Nitrogen (mg/L) Average Quarterly	42.8			50.5			< 41.5			< 41.2		
Ammonia (mg/L) Average Quarterly	**0.18**			**0.34**			**0.11**			**< 0.10**		

TKN (mg/L) Average Quarterly	< 1			1.80			< 1.0			< 1.00		
Total Phosphorus (mg/L) Average Quarterly	7			7.4			5.40			4.40		

DMR Data for Outfall 001 (from April 1, 2022 to March 31, 2023)

Parameter	MAR-23	FEB-23	JAN-23	DEC-22	NOV-22	OCT-22	SEP-22	AUG-22	JUL-22	JUN-22	MAY-22	APR-22
Flow (MGD) Average Monthly	**0.0094**	**0.0113**	**0.0101**	**0.0085**	**0.0077**	**0.0087**	**0.0082**	**0.0081**	**0.0066**	**0.0088**	**0.0091**	**0.0098**
Flow (MGD) Daily Maximum	**0.0156**	**0.0156**	**0.0222**	**0.0133**	**0.0109**	**0.0105**	**0.0138**	**0.011**	**0.0071**	**0.0112**	**0.0132**	**0.0162**
pH (S.U.) Instantaneous Minimum	7.09	7.1	6.98	6.88	7.09	7.12	7.04	7.08	7.17	7.04	7.14	7.20
pH (S.U.) Instantaneous Maximum	7.36	7.49	7.39	7.35	7.45	7.46	7.5	7.37	7.48	7.43	7.52	7.47
TRC (mg/L) Instantaneous Maximum	**GG**	**GG**	**GG**	**GG**	**0.50**	**0.76**	**GG**	**GG**	**GG**	**GG**	**GG**	**GG**
CBOD5 (lbs/day) Average Monthly	< 0.1	< 0.2	< 0.2	< 0.1	< 0.1	< 0.2	0.1	0.1	0.1100	0.2339	0.0087	0.3552
CBOD5 (lbs/day) Weekly Average	< 0.1	0.2	0.3	< 0.1	< 0.1	< 0.2	0.1	0.1	0.1184	0.2502	0.0090	0.0087
CBOD5 (mg/L) Average Monthly	< 2.0	< 2.5	< 2.5	< 2.0	< 2.0	< 2.0	2.0	2.0	2.0	3.0	5.0	5.0
CBOD5 (mg/L) Weekly Average	< 2.0	3.0	3.0	< 2.0	< 2.0	< 2.0	2.0	2.0	2.0	3.0	5.0	7.0
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	**23**	**23**	**12.0**	**18**	**12**	**13.0**	**14**	**20.0**	**0.1100**	**23.64**	**19.92**	**11.03**
BOD5 (mg/L) Raw Sewage Influent Average Monthly	**401**	**353**	**147**	**294**	**202**	**174.0**	**222**	**278**	**225**	**301**	**276.5**	**159**
TSS (lbs/day) Average Monthly	< 0.2	0.8	< 0.8	0.6	0.9	0.70	0.3	0.3	0.2159	0.4987	0.9307	0.7439

TSS (lbs/day) Raw Sewage Influent Average Monthly	**20**	**15**	**36**	**16**	**11.0**	**14.0**	**11**	**16.0**	**10.75**	**13.98**	**16.39**	**15.55**
TSS (lbs/day) Weekly Average	0.3	1.2	1.3	0.6	0.9	1.00	0.4	0.4	0.2543	0.5804	1.261	1.015
TSS (mg/L) Average Monthly	< 4.0	12.0	< 9.0	10.0	14.5	9.00	5.0	4.0	4.0	6.5	13.0	10.5
TSS (mg/L) Raw Sewage Influent Average Monthly	**358**	**243**	**438**	**255**	**176**	**185.0**	**166**	**223**	**197.5**	**179**	**225**	**220.5**
TSS (mg/L) Weekly Average	4.0	16.0	15.0	10.0	16.0	13.00	6.0	5.0	5.0	8.0	18.0	14.0
Fecal Coliform (No./100 ml) Geometric Mean	**678**	**209**	**5**	**152.0**	**77.0**	**23.0**	**1087**	**7.74**	**139.1**	**101.3**	**316.6**	**347.8**
Fecal Coliform (No./100 ml) Instantaneous Maximum	**1120**	**649**	**12**	**228**	**96**	**47.0**	**2420**	**20**	**> 2420**	**163**	**517**	**< 2420**
Nitrate-Nitrite (mg/L) Average Quarterly	34.4			43.8			45.0			18.15		
Total Nitrogen (mg/L) Average Quarterly	< 35.4			46.1			46.6			38.8		
Ammonia (mg/L) Average Quarterly	**< 0.1**			**< 0.10**			**< 0.10**			**0.13**		
TKN (mg/L) Average Quarterly	< 1.0			2.30			1.56			2.83		
Total Phosphorus (mg/L) Average Quarterly	3.40			5.10			6.50			6.10		

Compliance History

Effluent Violations for Outfall 001, from: May 1, 2022 To: January 31, 2025

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Fecal Coliform	05/31/22	Geo Mean	316.6	No./100 ml	200	No./100 ml
Fecal Coliform	09/30/22	Geo Mean	1087	No./100 ml	200	No./100 ml
Fecal Coliform	05/31/23	Geo Mean	985	No./100 ml	200	No./100 ml

Fecal Coliform	12/31/23	Geo Mean	2420	No./100 ml	2000	No./100 ml
Fecal Coliform	**02/29/24**	Geo Mean	2420	No./100 ml	2000	No./100 ml
Fecal Coliform	03/31/24	Geo Mean	2420	No./100 ml	2000	No./100 ml
Fecal Coliform	07/31/22	IMAX	> 2420	No./100 ml	1000	No./100 ml
Fecal Coliform	09/30/22	IMAX	2420	No./100 ml	1000	No./100 ml
Fecal Coliform	05/31/23	IMAX	1020	No./100 ml	1000	No./100 ml
Fecal Coliform	06/30/23	IMAX	2420	No./100 ml	1000	No./100 ml
Fecal Coliform	08/31/23	IMAX	<2420	No./100 ml	1000	No./100 ml
Fecal Coliform	09/30/23	IMAX	2420	No./100 ml	1000	No./100 ml
Fecal Coliform	**09/30/24**	IMAX	2420	No./100 ml	1000	No./100 ml

Summary of Inspections:

FACILITY NAME	INSP PROGRAM	INSP ID	INSPECTED DATE	INSP TYPE	INSPECTION RESULT DESC	# OF VIOLATIONS
MESHOPPEN BORO - WWTP	WPCNP	3926175	01/29/2025	Compliance Evaluation	Violation(s) Noted	3
MESHOPPEN BORO - WWTP	WPCNP	3366194	08/29/2024	Administrative/File Review	Violation(s) Noted	2
MESHOPPEN BORO - WWTP	WPCNP	3353113	06/15/2023	Routine/Partial Inspection	Violation(s) Noted	3
MESHOPPEN BORO - WWTP	WPCNP	3020711	05/23/2022	Administrative/File Review	No Violations Noted	0
MESHOPPEN BORO - WWTP	WPCNP	3353113	03/31/2022	Routine/Partial Inspection	Violation(s) Noted	3
MESHOPPEN BORO - WWTP	WPCNP	3366194	05/13/2021	Administrative/File Review	Violation(s) Noted	2
MESHOPPEN BORO - WWTP	WPCNP	2595289	04/17/2020	Routine/Partial Inspection	Violation(s) Noted	3

MESHOPPEN BORO - WWTP	WPCNP	2512110	05/16/2017	Compliance Evaluation	Violation(s) Noted	1
MESHOPPEN BORO - WWTP	WPCNP	3200998	06/14/2016	Compliance Evaluation	No Violations Noted	0

Other Comments:

- **Application Compliance History Information**: The facility acknowledged it was in non-compliance (failure to submit or properly complete monitoring reports; failure to monitor pollutants per permit) but indicated ongoing compliance. The identified solutions were:
  - "Operator has developed tracking mechanism and has worked with 3rd party labs to ensure data (DMR's) are submitted on time to avoid late submissions and that all pollutants are monitored".
  - "The Operators developed standard operating procedures to ensure that the plant is run accordingly. The operators review the NPDES Permit on a more frequent basis. The operators run weekly process control in order to operate the plant in compliance. Additional samples will be collected if an elevated sample is received. In September, the UV bulbs and sensor were replaced and in October and November, no further exceedances were reported".
- **4/8/2024 NOV**: Issued included fecal coliform exceedances and NPDES Permit requirements for a composite influent sampler, not grab sampling which was conducted in 2022 and 2023. 1/31/2025 (resubmitted 2/3/2025) ESC (Tara Roche) response letter attributed fecal coliform exceedances (2023 – 2024) to the November 2022 new UV disinfection system which was determined to be not operating as designed due to a "cracked balance" that was repaired. The ESC letter also noted the UV unit required a "wiring upgrade" that would be discussed at a February 2025 Board meeting. New UV bulbs were purchased on January 9, 2025. In Fall 2024, the Borough started to utilize a non-refrigerated sampler to collect 8-hour composite samples.
- **6/15/2023 NOV**: Issues including Fecal Coliform exceedances, late DMRs, and samples not collected as required.
- **5/23/2022 NOV**: Issues including Total Residual Chlorine (TRC) exceedance, other exceedances, DMR reporting issues, and observable changes or deposits in the receiving waters in violation of 25 Pa. Code 92a.41(c)
- **1/29/2025 Inspection (with follow-up meeting on 2/6/2025 including Application-identified "operator-in-responsible charge" Ryan Detweiler and Tara Roche of ESC)**: Noted failure to collect representative influent samples (EQ tank sampling location is subject to wastewater recirculation), failure to maintain auto-sampler temperature control for influent composite sampling, WWTP O&M issues (leak in influent EQ Tank line impacting EQ tank aeration; splitter box modified from original design (with inoperable float system; inoperable UV intensity sensor). Related:
  - Splitter box level is adjusted via facility staff re-clamping metal plates on either side of the splitter box with C-clamps. Facility staff reported this method makes it very difficult to adjust splitter box level.
  - The sensor used for reading UV intensity within the unit was reported to be faulty. The UV monitor read "sensor main alarm UV: 0%" at the time of inspection. Facility staff reported the issue with the UV sensor was diagnosed months prior to the inspection, but are unaware of active plans to fix the sensor. The facility is required to maintain all sensors in an operable and accurate condition.
  - The Department requested that Meshoppen have the wastewater treatment facility evaluated by a 3rd party, licensed professional engineer. The Department requests that Meshoppen provide a copy of the engineer's evaluation report and a plan to address issues noted in this inspection report, and any other deficiencies discovered within 60 days of receiving this Report (i.e. 3/25/2025). If the original float system is not intended to be replaced, the Department requests that Meshoppen Borough submit a modification to the Water Quality Management permit to reflect that a float system for the splitter box pump no longer exists.
  - The Inspection Report also noted lack of an operable on-site emergency generator during a power outage (that resulted in discharge of improperly treated wastewater). (Electrical power is critical for UV disinfection.)
  - At the time of inspection, Department staff as well as facility staff were concerned about the structural integrity of the wooden sludge trough walls.
  - Heat taping was used to address a frozen "wasting" valve issue.
- **8/29/2024 Inspection**: Noted some O&M issues (EQ tank solids needed removal; clarifier sludge baffles needed to be cleaned out; some UV system bulbs were not operating (inspector unsure if they were burned out or off until higher flows received).

- **5/13/2021 Inspection**: Two (2) treatment trains exist at the facility. One (1) treatment train was active at the time of inspection. **The equalization tank of the second train was utilized as a sludge holding tank**. The active train consisted of a comminuter, manual bar screen, equalization tank, splitter box, aeration tank, scum trough, clarifier, effluent launder, UV chamber, and an effluent flowmeter pit. The comminuter was recently replaced and was operational. The bar screen was free of debris at the time of inspection. The equalization basin appeared to be of good integrity and had adequate freeboard during the inspection. The aeration basin was observed to have good color and no odors were detected. Aeration appeared to be relatively uniform across the basin. Minimal foam was present at the surface at the time of inspection. The clarifier had approximately two (2) feet of clear water at the surface. **The effluent launder contained chlorine tablets at the time of inspection. Mr. Detweiler stated that the chlorine tablets were placed in the effluent launder to control algae growth. The facility utilizes UV for primary disinfection**. Where the permittee does not use chlorine for primary or backup disinfection, but proposes the use of chlorine for cleaning or other purposes, the permittee shall notify DEP prior to initiating use of chlorine and monitor TRC concentrations in the effluent on each day in which chlorine is used. The results shall be submitted in the monthly DMR. The facility was not monitoring for TRC concentrations at the time of inspection. Mr. Detweiler stated that TRC monitoring would begin. The Department recommends that a cleaning schedule regarding the effluent launder should be implemented as required. In addition, the treatment works should be evaluated to determine if elevated nutrient levels are contributing to algae growth. The sludge holding tank appeared to be in good condition at the time of inspection. Adequate freeboard remained in the tank. Currently, the tank decanting pump is lowered by hand to remove supernatant. A crane system should be installed to lower and raise the pump for safety purposes and ease of use.
- **UV System Issues**: Assorted fecal coliform exceedance blamed on UV system malfunctions (WMS Facilities Non-compliance Tab external comments). They have been using calcium hypochlorite supplement. UV unit was sent offsite for repairs in 2022; they reached out to a third party for UV assessment in 12/2023; they received a bid to repair the system in February 2024; Meshoppen Borough approved the repair in April 2024.
    - 8/29/2024 Inspection Report noted **build-up of solids**. **NOTE**: Excessive solids can potentially impair UV treatment efficiency. Holding excess sludge within clarifiers or in the disinfection process is not permissible per existing NPDES Permit Part C.II.A.
    - See EDMR for months when Chlorine was used for disinfection.
    - In the application, Meshoppen indicated it could measure UV intensity in percentage.
- **Flows**: Some 2022 exceedances (Facilities Tab external comment section) were blamed on high flows, which normally one does not expect in a Low Pressure Sewer System, unless there are prohibited connections or lateral leakage.
- **Compliance Check**: Eight (8) open violations per 3/2/2025 WMS query (open violations by client number).

CLIENT	INSP PROGRAM	INSP ID	VIOLATION ID	VIOLATION DATE	VIOLATION CODE	VIOLATION
MESHOPPEN BORO WYOMING CNTY	WPC NPDES	3366194	956379	01/29/2025	92A.44	NPDES - Violation of effluent limits in Part A of permit
MESHOPPEN BORO WYOMING CNTY	WPC NPDES	3366194	956380	01/29/2025	92A.61(C)	NPDES - Failure to monitor pollutants as required by the NPDES permit
MESHOPPEN BORO WYOMING CNTY	WPC NPDES	3586072	8152340	01/29/2025	92A.44	NPDES - Violation of effluent limits in Part A of permit
MESHOPPEN BORO WYOMING CNTY	WPC NPDES	3586072	8152341	06/15/2023	92A.41(A)12B	NPDES - Failure to submit monitoring report(s) or properly complete monitoring reports
MESHOPPEN BORO WYOMING CNTY	WPC NPDES	3586072	8152342	06/15/2023	92A.61(C)	NPDES - Failure to monitor pollutants as required by the NPDES permit

MESHOPPEN BORO WYOMING CNTY	WPC NPDES	3926175	8222645	06/15/2023	92A.41(A)10C	NPDES - Failure to collect representative samples
MESHOPPEN BORO WYOMING CNTY	WPC NPDES	3926175	8222646	05/23/2022	92A.41(A)10B	NPDES - Failure to utilize approved analytical methods
MESHOPPEN BORO WYOMING CNTY	WPC NPDES	3926175	8222647	05/23/2022	92A.41(A)5	NPDES - Failure to properly operate and maintain all facilities which are installed or used by the permittee to achieve compliance

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .050
Latitude 41º 36' 34.00" **Longitude** -76º 2' 55.00"
Wastewater Description: Sewage Effluent

Permit Limits and/or Monitoring: Changes Bolded

Parameter	Limit (mg/l unless otherwise specified)	SBC	Model/Basis
CBOD5	10.4 Lbs/d 16.7 Lbs/d 25.0 40.0 50.0	Monthly Average Weekly Average Monthly Average Weekly Average IMAX	Existing Technology limit (Chapter 92a.47) supported by water quality modeling. Application data: 32 mg/l max, <6.08 mg/l average (48 samples)
TSS	12.5 Lbs/d 18.8 Lbs/d 30.0 45.0 60.0	Monthly Average Weekly Average Monthly Average Weekly Average IMAX	Existing Technology limit (Chapter 92a.47). Application data: 29 mg/l max, <9.43 mg/l average (48 samples)
pH	6.0 – 9.0 SU	Inst. Min - MAX	Existing Technology limit (Chapter 92a.47). Application data: 6.12 - 7.84 SU (730 samples)
Dissolved Oxygen (DO)	**4.0**	**Inst. Minimum**	**Application of minimum technology statewide BPJ standards per DEP SOP No. BCW-PMT-033 (Establishing Effluent Limitations for Individual Sewage Permits). WQM Permit Application indicated system was designed for ≥5.0 mg/l DO discharge (limit not in the 2006 NPDES Permit). but application indicate values ranging from 3.0 to 5.0 mg/l. DEP files indicate aeration system O&M issues are likely contributing to the lower DO discharge.** Application data: None
Fecal Coliform (5/1 – 9/30)	200/100 ml 1,000/100 ml	Geo Mean IMAX	Existing Technology limit (Chapter 92a.47). Application data: **>2420/100** ml max, **<477/100 ml** average (48 samples). NOTE: Some UV system O&M work done.
Fecal Coliform (10/1 – 4/30)	2,000/100 ml 10,000 ml/100 ml	Geo Mean IMAX	See above.
E Coli	**Report**	**IMAX**	**New monitoring requirement due to new Chapter 93 E Coli WQS.**
Total Residual Chlorine	**0.50** **1.17**	Average Monthly IMAX	**More stringent permit limits per updated TRC Spreadsheet and frequent use of chlorine to address UV system issues (with UV disinfection system still lacking a working UV intensity meter).** Previous permit limits in prior permit was report monthly average and 1.6 mg/l IMAX when used. Previous NPDES permits were 0.5 mg/l monthly average and 1.2 mg/l IMAX. TRC

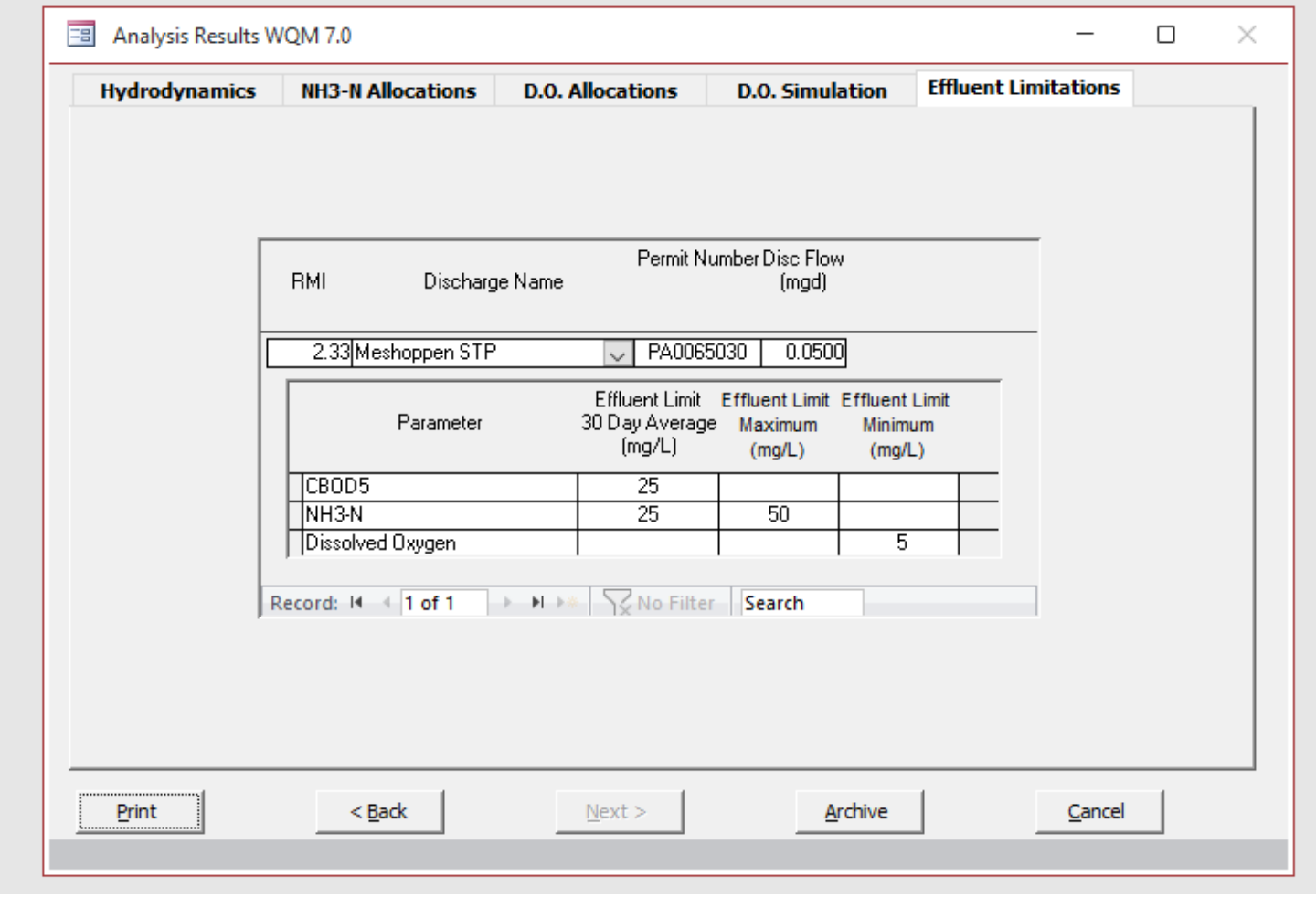
			limit when chlorine is being used per Chlorine Minimization condition (UV disinfection in use**). Frequent usage due to UV system issues and fecal coliform exceedances.** Application Data: **0.76 mg/l max and 0.36 mg/l average for facility with UV disinfection system**.
Ammonia-Nitrogen	**Report Lbs/d** Report Lbs/d **25.0** **50.0**	**Monthly Average** **Daily Max** **Monthly Average** **Daily Max/IMAX**	**Application of minimum technology statewide BPJ standards per DEP SOP No. BCW-PMT-033 (Establishing Effluent Limitations for Individual Sewage Permits). New limits effective upon PED since Application and EDMR data indicates existing compliance. Reporting frequency increased to standard frequency.** Application Data: 2.8 mg/l max and <0.97 mg/l average (7 samples)
Total Phosphorus	**Report Lbs/d** **Report Lbs/d** Report **Report**	**Quarterly Average** **Daily Max** Quarterly Average **Daily Max**	Existing Monitoring requirement. Application Data: 7.3 mg/l max and 5.5 mg/l average (7 samples)
Total Nitrogen (Nitrate Nitrite-N + TKN measured in same sample)	**Report Lbs/d** **Report Lbs/d** Report **Report**	**Quarterly Average** **Daily Max** Quarterly Average **Daily Max**	Existing Monitoring requirement. Application Data: 46.6 mg/l max and <33.1 mg/l average (7 samples)
Nitrate-Nitrite-N	**Report Lbs/d** **Report Lbs/d** Report **Report**	**Quarterly Average** **Daily Max** Quarterly Average **Daily Max**	Application Data: None
UV intensity	**Report**	**Inst. Min**	**New monitoring requirement needed due to fecal coliform exceedances and previous UV Disinfection System issues. The facility only needs to perform standard O&M to restore the UV intensity meter to functioning.** Application data: None.
Influent BOD5	**Report Lb/d** **Report Lb/d** Report **Report**	**Monthly Average** **Daily Max** Monthly Average **Daily Max**	Existing Monitoring requirement (Chapter 94). Application Data: None
Influent TSS	**Report Lb/d** **Report Lb/d** Report **Report**	**Monthly Average** **Daily Max** Monthly Average **Daily Max**	Existing Monitoring requirement (Chapter 94). Application Data: None
85% minimum monthly average reduction for BOD5 and TSS	**85%**	**Minimum Monthly Average**	**Existing POTW requirement.** The Department accepts a 1.2:1 BOD5/CBOD5 conversion factor in the absence of better data. Application Data: None
Copper, Total	**-**	**-**	No monitoring or limits per Reasonable Potential Analysis. Application Data: 0.0117 mg/l max and 0.01107 mg/l average (3 samples)

Lead Total	-	-	No monitoring or limits per Reasonable Potential Analysis. Application Data: <0.0000825 mg/l max and <0.0000825 mg/l average (3 samples)
Zinc Total	-	-	No monitoring or limits per Reasonable Potential Analysis. Application Data: 0.0465 mg/l max and 0.0379 mg/l average (3 samples)

Comments:

- Going to 24-hour composite sampling to eliminate potential biasing.
- Additional mass loading and daily max reporting (no additional sampling required).
- Ammonia-N going to standard minimum monitoring frequency.

WQM Model 7.1.1 Output: New Ammonia-N and DO limits (based on statewide DEP BPJ TBELs). The Ammonia-N limits are being achieved. An extended aeration treatment system should be able to achieve minimum 4 mg/l DO effluent quality.



Reasonable Potential Analysis: None. No industrial users and some commercial customers only. No permit limits or monitoring recommended. See Toxic Management Spreadsheet (TMS) output below.

☑ *Recommended WQBELs & Monitoring Requirements*

No. Samples/Month: 4

Pollutants	*Mass Limits* AML (lbs/day)	MDL (lbs/day)	*Concentration Limits* AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments

TRC Spreadsheet:

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9 — Meshppen Borough STP

645.28	= Q stream (cfs)	0.5	= CV Daily
0.05	= Q discharge (MGD)	0.5	= CV Hourly
4	= no. samples	0.031	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	0.211	= 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 = 82.516	1.3.2.iii	WLA cfc = 547.444
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 30.748	5.1d	LTA_cfc = 318.258

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.720	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.170	

Communications Log and history: See compliance section for compliance history.

9/19/2002: DEP Planning Letter for 50,000 GPD Treatment Plant and LPS System. The Planning covered ~175 dwellings units.
Original NPDES Permitting: Original NPDES Permit indicated "PROJ PROPOSED TO CONSTRUCT MUNI WW FAC TO REPLACE MALFUNCTIONING ON-LOT SEWAGE DISPOSAL SYS. PROJ WILL INCLUDE INSTL OF LOW PRESS COLLECTION SYS W/INDIVIDUAL RES GRINDER PUMPS".
5/3/2024: On-Base No. 106866 (original submittal)
5/15/2024: Incompleteness Letter issued.
6/15/2024: On-Base No. 111361 (response to Incompleteness Letter)
11/7/2024: Technical Deficiency Letter issued
12/20/2024: Public Upload# 278803 (response to 11/7/2024 Tech Def Letter)
1/29/2025: DEP Inspection Report (1/29/2025 Compliance Inspection and 2/6/2025 follow-up meeting with Certified Operators): The Department requests that Meshoppen have the wastewater treatment facility evaluated by a 3rd party, licensed professional engineer. The Department requests that Meshoppen provide a copy of the engineer's evaluation report and a plan to address issues noted in this inspection report, and any other deficiencies discovered within 60 days of receiving this Report. Report issues included failure to maintain influent auto sampler temperature control, potentially non-representative influent sampling location (in EQ Tank), and failure to maintain permitted treatment units in operable conditions (leak in influent EQ Tank air line; splitter box modified from original design; EQ Tank float system inoperable; and inoperable UV intensity sensor). … If the original float system is not intended to be replaced, the Department requests that Meshoppen Borough submit a modification to the Water Quality Management permit to reflect that a float system for the splitter box pump no longer exists.