



## WATER QUALITY MANAGEMENT PERMIT

<p>A. PERMITTEE (Name and Address): CLIENT ID#: <b>87712</b></p> <p><b>PA American Water Co.</b> <b>4 Wellington Boulevard</b> <b>Wyomissing, PA 19610</b></p>	<p>B. PROJECT/FACILITY (Name):</p> <p><b>Coatesville Sewer System &amp; STP</b></p>
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<p>C. LOCATION (Municipality, County):</p> <p><b>South Coatesville Borough, Chester County</b></p>	<p>SITE ID#: <b>254792</b></p>
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D. This permit amendment approves the construction and operation of sewage facilities consisting of: Aerobic Digester

Pennsylvania American Water Company (PAWC), who owns and operates the Coatesville Wastewater Treatment Plant (WWTP) is installing an Ovivo's Mechanically Thickened Aerobic Digestion (M-TAD) aerobic digestion process at the location of the former (no longer in service) primary settling tanks. The two existing aerobic digesters are to be retained for continued use. New piping and valves will be installed to allow the existing digesters to be operated in series or parallel with the new M-TAD tanks. The proposed improvements include:

1. New Aerobic Digesters with dedicated: new Blower Facilities, new Electrical Building, new Odor Control, 2. New Emergency Generator
3. Replace Existing Digester Blowers

The proposed design included the addition of two M-TAD aerobic digesters to be used initially in series with the two existing aerobic digesters. Each of the M-TAD digesters will have two dedicated blowers and an installed shared spare blower, control valves and piping. The M-TAD package includes an integrated cover system that uses the hollow box supports to convey air to the specialty designed diffusers within draft tubes to promote mixing through shear tubes. The existing thickened sludge pumps will be used to convey the thickened waste activated sludge (TWAS) to the new M-TAD digesters where the bulk of the aerobic digestion will be achieved. The piping between the thickened sludge pumps and the digesters will have valves and flowmeters to allow for operational flexibility. As designed by Ovivo, the M-TAD system can be operated with all four digesters in series or two parallel trains. In both cases, the first digester tank(s) will be an M-TAD digester followed by the existing digester(s). The existing digesters will provide polishing treatment and feed storage for the dewatering operations.

The M-TAD design assumed that the gravity belt thickener would continue to provide 3.0% - 5.0% thickened sludge to the digesters and that the volatile fraction would be approximately 70% under all loading conditions. Stabilized solids will flow by gravity to one of the two existing digesters which will serve as either additional stabilization and/or the loading tank for the dewatering process, depending on the design condition and season. In the evaluation of the existing aerobic digesters, it is noted that the units are operating under a continually stressed condition despite having sufficient mixing and aeration per industry standards. There are no upgrades required to the existing digesters as part of this project. The implementation of the M-TAD system upstream will alleviate the loads to the aerobic digesters and the existing aeration system and blowers will be adequate for their new operating conditions. All digesters including the existing digesters will be covered with aluminum covers to help prevent odors from migrating offsite and installing an odor control system to treat the headspace of the digesters with ionization.

Ovivo utilizes an air requirement of 40 SCFM/1,000 cubic feet of volume for design. This value is more conservative than the 10 State Standard recommendation of 30 SCFM/1,000 cubic feet of volume for aerobic digestion and accounts for both biological and mixing air requirements. Volatile Solids Loading is as per the PA domestic wastewater manual. Overall, it is the opinion of the Department that the proposed aerobic digester meets the design standards of the Domestic Wastewater Facilities Manual.

Pump Stations: _____ Design Capacity: _____ GPM	Manure Storage: Volume: _____ MG Freeboard: _____ inches	Sewage Treatment Facility: Annual Average Flow: <u>7</u> MGD Design Hydraulic Capacity: <u>7</u> MGD Design Organic Capacity: <u>19,557</u> lb/day
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E. APPROVAL GRANTED BY THIS PERMIT IS SUBJECT TO THE FOLLOWING:

1. **Amendments:** All construction, operations and procedures shall be in accordance with the Water Quality Management Permit Amendment application dated **2/2/2022** and its supporting documentation.
2. Permit Conditions Relating to Sewerage are attached and made part of this permit.

F. THE AUTHORITY GRANTED BY THIS PERMIT IS SUBJECT TO THE FOLLOWING FURTHER QUALIFICATIONS:

1. If there is a conflict between the application or its supporting documents and amendments and the attached conditions, the attached conditions shall apply.
2. Failure to comply with the rules and regulations of DEP or with the terms or conditions of this permit shall void the authority given to the permittee by the issuance of this permit.
3. This permit is issued pursuant to the Clean Streams Law Act of June 22, 1937, P.L. 1987, as amended 35 P.S. §691.1 *et seq.* Issuance of this permit shall not relieve the permittee of any responsibility under any other law..

<p><b>PERMIT ISSUED:</b></p> <p><u>5/24/2022</u></p>	<p><b>BY:</b></p>	<p><u>/s/</u></p> <p><b>Thomas L. Magge</b> <b>Clean Water Program Manager</b> <b>Southeast Regional Office</b></p>
<p><b>TITLE:</b></p>		



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

**PERMIT CONDITIONS RELATING TO SEWERAGE**  
For use in Water Quality Management Permits

(Check boxes that apply)

**General**

- 1. The Department of Environmental Protection (DEP) considers the licensed Professional Engineer whose seal is affixed to the design documents to be fully responsible for the adequacy of all aspects of the facility design.
- 2. The permittee shall adopt and enforce an ordinance requiring the abandonment of privies, cesspools or similar receptacles for human waste and onlot sewage disposal systems on the premises of occupied structures accessible to public sewers. All such structures must be connected to the public sewers.
- 3. The outfall sewer or drain shall be extended to the low water mark of the receiving body of water. Where necessary to ensure proper mixing and waste assimilation, an outfall sewer or drain may be extended with appurtenances below the low water mark and into the bed of a navigable stream provided that the permittee has secured an easement, right-of-way, license or lease from DEP in accordance with Section 15 of the Dam Safety and Encroachments Act, the Act of November 26, 1978, P.L. 1375, as amended.
- 4. The approval is specifically made contingent on the permittee acquiring all necessary property rights, by easement or otherwise, providing for the satisfactory construction, operation, maintenance and replacement of all sewers or sewerage structures in, along or across private property with full rights of ingress, egress and regress.
- 5. When construction of the approved sewerage facilities is completed and before they are placed in operation, the permittee shall notify DEP in writing so that a DEP representative may inspect the facilities.
- 6. The approval of the plans, and the authority granted in this permit, if not specifically extended, shall cease and be null and void 5 years from the issuance date of this permit unless construction or modification of the facilities covered by this permit has begun on or before the fifth anniversary of the permit date.
- 7. If, at any time, the sewerage facilities covered by this permit create a public nuisance, including but not limited to, causing malodors or causing environmental harm to waters of the Commonwealth, DEP may require the permittee to adopt appropriate remedial measures to abate the nuisance or harm.
- 8. If, after the issuance of this permit, DEP approves a municipal sewage facilities official plan or an amendment to an official plan under Act 537 (Pennsylvania Sewage Facilities Act, the Act of January 24, 1966, P.L. 1535 as amended) in which sewage from the herein approved facilities will be treated and disposed of at other planned facilities, the permittee shall, upon notification from the municipality or DEP, provide for the conveyance of its sewage to the planned facilities, abandon use and decommission the herein approved facilities including the proper disposal of solids, and notify DEP accordingly. The permittee shall adhere to schedules in the approved official plan, amendments to the plan, or other agreements between the permittee and municipality. This permit shall then, upon notice from DEP, terminate and become null and void and shall be relinquished to DEP.
- 9. This permit does not relieve the permittee of its obligations to comply with all federal, interstate, state or local laws, ordinances and regulations applicable to the sewerage facilities.
- 10. This permit does not give any real or personal property rights or grant any exclusive privileges, nor shall it be construed to grant or confirm any right, easement or interest in, on, to or over any lands which belong to the Commonwealth.
- 11. The authority granted by this permit is subject to all effluent requirements, monitoring requirements and other conditions as set forth in the NPDES Permit and all subsequent amendments and renewals. No discharge is authorized from these facilities unless approved by an NPDES Permit.

**Construction**

- 12. This permit is issued under the authorization of The Clean Streams Law and 25 Pa. Code Chapter 91. The permittee shall obtain all necessary permits, approvals and/or registrations under 25 Pa. Code Chapters 102, 105 and 106 prior to commencing construction of the facilities authorized by this permit, as applicable. The permittee should contact the DEP office that issued this permit if there are any questions concerning the applicability of additional permits.

- 13. The facilities shall be constructed under the supervision of a Pennsylvania licensed Professional Engineer in accordance with the approved reports, plans and specifications.
- 14. A Pennsylvania licensed Professional Engineer shall certify that construction of the permitted facilities was completed in accordance with the application and design plans submitted to DEP, using the "Post Construction Certification" form (3800-PM-WSFR0179a). It is the permittee's responsibility to ensure that a Professional Engineer is on-site to provide the necessary oversight and/or inspections to certify the facilities. The certification must be submitted to DEP before the facility is placed in operation. As-built drawings, photographs (if available) and a description of all deviations from the application and design plans must be submitted to DEP within 30 days of certification.
- 15. Manhole inverts shall be formed to facilitate the flow of the sewage and to prevent the stranding of sewage solids. The manhole structure shall be built to prevent undue infiltration, entrance of street wash or grit and provide safe access to facilitate manhole maintenance activities.
- 16. The local Waterways Conservation Officer of the Pennsylvania Fish and Boat Commission (PFBC) shall be notified when the construction of any stream crossing and/or outfall is started and completed. A written permit must be secured from the PFBC if the use of explosives in any waterways is required and the permittee shall notify the local Waterways Conservation Officer when explosives are to be used.

### Operation and Maintenance

- 17. The permittee shall maintain records of "as-built" plans showing all the treatment facilities as actually constructed together with facility operation and maintenance (O&M) manuals and any other relevant information that may be required. Upon request, the "as-built" plans and O&M manuals shall be filed with DEP.
- 18. The sewers shall have adequate foundation support as soil conditions require. Trenches shall be back-filled to ensure that sewers will have proper structural stability, with minimum settling and adequate protection against breakage. Concrete used in connection with these sewers shall be protected from damage by water, freezing, drying or other harmful conditions until cured.
- 19. Stormwater from roofs, foundation drains, basement drains or other sources shall not be admitted directly to the sanitary sewers.
- 20. The approved sewers shall be maintained in good condition, kept free of deposits by flushing or other cleaning methods and repaired when necessary.
- 21. The sewerage facilities shall be properly operated and maintained to perform as designed.
- 22. The attention of the permittee is called to the highly explosive nature of certain gases generated by the digestion of sewage solids when these gases are mixed in proper proportions with air and to the highly toxic character of certain gases arising from such digestion or from sewage in poorly ventilated compartments or sewers. Therefore, at all places throughout the sewerage facilities where hazard of fire, explosion or danger from toxic gases may occur, the permittee shall post conspicuous permanent and legible warnings. The permittee shall instruct all employees concerning the aforesaid hazards, first aid and emergency methods of meeting such hazards and shall make all necessary equipment and material accessible.
- 23. An operator certified in accordance with the Water and Wastewater Systems Operator Certification Act of February 21, 2002, 63 P.S. §§1001, *et seq.* shall operate the sewage treatment plant.
- 24. The permittee shall properly control any industrial waste discharged into its sewerage system by regulating the rate and quality of such discharge, requiring necessary pretreatment and excluding industrial waste, if necessary, to protect the integrity or operation of the permittee's sewerage system.
- 25. There shall be no physical connection between a public water supply system and a sewer or appurtenance to it which would permit the passage of any sewage or polluted water into the potable water supply. No water pipe shall pass through or come in contact with any part of a sewer manhole.
- 26. All connections to the approved sanitary sewers must be in accordance with the official Act 537 Plan and, if applicable, a corrective action plan as contained in the approved Title 25 Pa. Code Chapter 94 Municipal Wasteload Management Annual Report.
- 27. Collected screenings, slurries, sludge and other solids shall be handled and disposed of in compliance with Title 25 Pa. Code Chapters 271, 273, 275, 283 and 285 (related to permits and requirements for land filling, land application, incineration and storage of sewage sludge), Federal Regulations 40 CFR 257 and the Federal Clean Water Act and its amendments.



**WATER QUALITY MANAGEMENT  
 POST CONSTRUCTION CERTIFICATION**

<b>PERMITTEE IDENTIFIER</b>	
Permittee	PA American Water Co.
Municipality	South Coatesville Borough
County	Chester
WQM Permit No.	<u>1506404</u>
Facility Type	Sewage
<b>CERTIFICATION</b>	
<p>This certification must be completed and returned to the permits section of the DEP's regional office issuing the WQM permit within 30 days of completion of the project and received by DEP prior to operation, and if requested, as-built drawings, photographs (if available) and a discussion of any DEP-approved deviations from the design plans during construction.</p>	
<p>I, being a Registered Professional Engineer in Pennsylvania, do hereby certify to the best of my knowledge and belief, based upon personal observation and interviews, that the above facility approved under the Water Quality Management Permit has been constructed in accordance with the plans, specifications and modifications approved by DEP.</p>	
<p>Construction Completion Date (MM/DD/YYYY): _____</p>	
<p>Engineer' s Seal</p>	<b>Professional Engineer</b>
	Name _____ (Please Print or Type)
	Signature _____
	Date _____
	License Expiration Date _____
	Firm or Agency _____
	Telephone _____
	<b>Permittee or Authorized Representative</b>
	Name _____ (Please Print or Type)
	Signature _____
	Title _____
	Telephone _____